TITLE Title Page

POWERstation and POWERserver

Common Diagnostics Information Manual

EDITION Edition Notice
First Edition (June 1995)

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CONTENTS Table of Contents

FIGURES Figures

TABLES Tables

FRONT_1 Preface

Subtopics
FRONT_1.1 About This Book

FRONT_1.1 About This Book

The diagnostic information in this book is common to all system units. Any information or diagnostic procedure that is specific to a certain system or device is in the service guide for that system unit or device.

Subtopics

FRONT_1.1.1 Audience Description

This book is used for problem isolation and service procedures by a service representative specifically trained on the system unit being serviced.

FRONT_1.1.2 How This Book is Organized

Combines operating instructions for hardware diagnostic programs with Maintenance Analysis Procedures (MAPS), corresponding Service Request Numbers (SRNs) and three-digit display codes. The SRNs are, in turn, keyed to failing function codes (FFCs) and corresponding part numbers for specific machine types.

FRONT_1.1.3 How to Use This Book

This book has a version number in the title. Always use the book version that is equal to or greater than the first two digits of your diagnostics version level. For example, if your diskette or CD-ROM version is 2.2 or 2.25, version 2.2 or higher of this diagnostics and service guide.

If you are analyzing a system problem, start with the "Quick Entry MAP" Chapter 1 in topic 1.0

The SRN lists in Chapter 2 in topic 2.0 direct you to the correct failing function code in Chapter 3 in topic 3.0 A cross reference by name, (adapter, device, etc.) to Failing Function Code can be found in Chapter 4 in topic 4.0

If you are checking the system after installation, refer to Chapter 5 in topic 5.0

FRONT_1.1.4 Related Publications

The following books are used to isolate a problem in the system.

- The *Problem Solving Guide and Reference* should be the first book used by the customer when a problem occurs during normal operation of the system. This book is used to isolate problems with the operating system, the application program, improper operator procedures and hardware failures.

- If the problem is a hardware failure, the *Problem Solving Guide and Reference* sends the user to the "Hardware Problem Determination Procedure" in the installation and service guide for the system unit.

  The *Problem Solving Guide and Reference* is common to all system units.

- The *POWERstation and POWERserver Service Request Number Cross-Reference*, Order Number SA23-2629, contains condensed information from this guide: three-digit display codes and the SRN list from Chapter 2 in topic 2.0, and the failing function code list from Chapter 3 in topic 3.0 This *POWERstation and POWERserver Service Request Number Cross-Reference* is conveniently pocket-sized to assist the service representative.

  Note: This book has a version number in the title. Always use the book version that is equal to or greater than the first two digits of your diagnostics version level. For example, if your diskette or CD-ROM version is 2.2 or 2.25, use version 2.2 or higher of this diagnostics and service quide.

- *Adapters, Devices, and Cable Information* Order Number SA23-2764 contains information about common device, adapter and cabling of the system unit.

- *Site and Hardware Planning Information* Order Number SA38-0508 is a planning and site preparation guide.

- The *AIX Version 4.1 Installation Guide* , Order Number SC23-2550, contains the instructions for installing the operating system.

- The *5080 Graphics System Installation, Operation, and Problem Determination* manual, Order Number GA23-2063, contains the information needed to attach a system unit to a 5085, 5086 graphics processor or a 5088 communication controller. The systems are installed and checked out separately, then attached together and checked for proper operation.

- The installation and service guide for the system units or devices contains the installation instructions and the service procedures that are specific to that device or system unit. The service guide contains the following:

  Reference information such as data flow, cable diagrams, and specifications
  - System unit or device specific Maintenance Analysis Procedures (MAPs) such as the power MAP
  - Removal and replacement procedures
  - The system unit or device installation procedures
  - Parts diagrams and parts lists.

1.0 Chapter 1. Chapter 1. Maintenance Analysis Procedures (MAPs)

Subtopics

1.1 Using the Maintenance Analysis Procedures

The maintenance analysis procedures (MAPs) provide the service representative a step-by-step procedure to analyze a problem with the system hardware. The hardware procedures are intended for use by a service representative trained on the system unit being serviced.

Some of the devices that are supported by the diagnostic programs also have their own maintenance documentation. You may want to use the maintenance for that device before running the diagnostics for the system. Sometimes maintenance package for the attached device will allow the customer to continue operating the system while that device is being diagnosed. You can use the diagnostic programs to check the adapter to which that device is attached.

All problem analysis should begin with "Quick Entry MAP" in this chapter.

These MAPs may direct you to other MAPs or to other service information.

Be prepared to record code numbers and other data while using these MAPs.

1.2 Service Hints

This section provides additional information about subjects not easily addresed in MAPs.

Subtopics

1.2.1 System Halts with 221 in the Operator Panel Display.

When loaded in normal mode and with NVRAM invalid (possibly caused by battery disconnection), the system will halt with **221** in the operator panel display. Clear this condition by loading the system in service mode from either disk or diskette. This procedure may not work on older versions of read only storage (ROS) and the AIX operating system. Contact your support person for further problem determination.

1.2.2 Operator Panel Display Codes 225,235,245, and 255

A 7012 may halt with **225, 235, 245** or **255** in the operator panel display if the disk data is corrupted. Format the disk using the diagnostic diskettes, then reinstall the system.

1.2.3 Service Request Numbers (SRNs) 101-245 and 101-255

SRNs 101-245 and 101-255 can occur on a 7012 if the disk data is corrupted and diagnostics are being run from disk. Format the disk using the diagnostic diskettes, and then reinstall the system.

1.2.4 Service Request Number (SRN) 834-990

This SRN may appear in the form of a console warning message or in the mailbox (for system group users). The SRN will also be recorded in the system error log. The warning may occur after a system hardware configuration change, such as adding or moving an adapter, or when version 3.2 or greater of the AIX operating system has been installed.

The AIX operating system initial program load (IPL) procedure has determined that a 64-port controller adapter having a certain engineering change (EC) level may cause undetected data loss due to a bus address conflict with another on the I/O bus. When this conflict is detected by the system, the 64-port controller adapter will not be configured during the system IPL. The after 64-port controller adapter field replaceable unit (FRU) numbers are: 00G1168, 31F4078, 59F2968, and 53F3372.

Corrective Action
When SRN 834-990 occurs due to a hardware configuration change, replace 64-port controller adapters that match the FRU numbers listed in the previous paragraph. Consult RETAIN for detailed information and to obtain the proper engineering change announcement (ECA) number to order. Until the correct 64-port controller adapters can be obtained, reconfigure the hardware as was prior to the change.

If the AIX operating system version 3.1.5 or lower is installed, SRN 834-990 will not be posted in the mail or error log. The following symptoms may appear during IPL:

- Operator panel display numbers **888-103-208-299** (first the flashing 888, then the succeeding numbers each time the Reset button is pressed)
- A steady operator panel display number **727**
- Unrecognizable HFT screen display
- System hangs with no operator panel display or display on the screen, or keyboard is locked.

If any of these symptoms appear, remove the 64-port controller adapters perform another IPL. If these symptoms appear again, the problem is *not* an address conflict with the 64-port controller adapters. If the above symptoms do not appear, refer to RETAIN to obtain the correct ECA numbers for ordering the 64-port controller adapters.

1.2.5 Service Request Number (SRN) 850-920

This SRN may appear in a console warning message or may appear in the mail box for system group users and be recorded in the system error log. The warning may occur after Token-Ring, color or grayscale graphics accelerator microchannel adapters have been added to the system or have had slot locations change or when the AIX operating system version 3.x.x or greater has been installed.

The AIX operating system IPL procedure has determined that the slot location of certain Token-Ring adapters relative to the slot location of graphic accelerator adapters presents a risk of undetected data loss under rare circumstances. This problem may occur with the following Token-Ring adapters: 74F4134, 53F6046, 53F6064, and 39F7824.

Note: The following corrective actions apply only to the preceding list of Token-Ring adapters. All of the following configurations show adapters arranged in lowest-to-highest numerical card slots. Consult RETAIN for the proper ECA number to order replacement parts.

Corrective actions for systems with one graphics accelerator adapter are

1. Reconfigure the slot positions of the Token-Ring adapters (TR) and graphics accelerator adapter (GA) to agree with one of the following configurations:

   - TR-GA
   - GA-TR
   - TR-GA-TR
   - TR-TR-GA

2. If three Token-Ring adapters are in use, reconfigure the slots as follows: TR-TR-GA-TR.

3. If four token-ring adapters are in use, replace one or more of the Token-Ring adapters with new ones, and reconfigure the remaining adapters as in steps 1 or 2.

Corrective actions for systems with two graphics accelerator adapters are:

1. Group the graphics accelerator adapters in adjacent slots.
2. If one Token-Ring adapter is in use, reconfigure the slots as follows: TR-GA-GA.
3. If two Token-Ring adapters are in use, reconfigure the slots as follows: TR-GA-GA-TR. If this system unit is a 7012, replace one Token-Ring adapter with a new one, and reconfigure the remaining adapters as in step 2 above.
4. If three Token-Ring adapters are in use, replace one Token-Ring adapter with a new one, and reconfigure the remaining adapters as in step 3 above.
5. If four Token-Ring adapters are in use, replace two token-ring adapters new ones, and reconfigure the remaining adapters as in step 3.

1.2.6 Service Request Numbers (SRNs) 866-130, 866-131, 866-191, 866-211

These SRNs indicate a SCSI bus error, possibly due to a tripped positive temperature coefficient (PTC) resistor in the SCSI controller circuitry, or to the attachment of differential devices or terminators to the single-ended SCSI bus, or to missing or incorrect single-ended terminators. Refer to the article later in this section that addresses PTC tripping in SCSI-2 single-ended controllers.

1.2.7 Service Request Number (SRN) 869-210

This SRN may appear in a console warning message or may appear in the mail box for system group users and be recorded in the system error log. The warning may occur after SCSI microchannel adapters have been added to the system, non-IBM adapters have been added to the system, or when version 3.x.x or greater of the AIX operating system has been installed.

The AIX operating system IPL procedure has determined that the EC level and quantity of SCSI microchannel adapters in the system present a risk of undetected loss under extremely heavy microchannel loading conditions. Heavy loading conditions can occur when a combination of at least three SCSI adapters and other burst mode microchannel devices are present, and one or more of t SCSI adapters has a part number (*not* FRU Number) from the following list: 70F9735, 70F9794, 71F0114, 71F0232, or 71F1172.

Note: The FRU number 30F8834 is common to the above part numbers.

Long-term corrective actions are:

- Replace all SCSI adapters that match the part numbers listed in the preceding paragraph.
- Consult RETAIN for the proper ECA number to order.

Interim corrective actions are:

- Reconfigure the system using only two SCSI adapters until all the old adapters have been replaced.
- If there are three SCSI adapters, determine the other type of adapters installed in the system. If more than one of the following adapter types is installed, reconfigure the system using only two SCSI adapters until all affected SCSI adapters can be replaced. If only one of the adapters in the following is installed, the system is safe to operate as configured until all affected adapters can be replaced.
  - 4-port multiprotocol adapter
  - Ethernet adapter
  - Token-Ring adapter
  - Color or mono graphics adapter
  - 3D graphics adapter
  - System/370 host interface adapter
  - 5085 interface adapter
  - 5086 interface adapter
  - Any non-IBM adapter

1.2.8 SRN and Failing Function Code (FFC) discrepancies

SRNs listed in this book may not list the same FFCs and FRUs as reported on-screen diagnostics. If the FRUs listed in this book do not solve the problem, check if any other FRUs are listed by on-screen diagnostics, and if so, try them.

1.2.9 Using Concurrent Mode Diagnostics

Note: Concurrent mode diagnostics should only be used when circumstances prevent standalone diagnostics from being used. Standalone diagnostics perform better problem isolation than concurrent mode diagnostics, and some devices may not be supported by concurrent mode diagnostics.

Certain devices can be tested by the diagnostic programs while the AIX operating system is running. However, the diagnostic programs must have exclusive use of the device to be tested. For example, if a communications adapter is used by a network program, diagnostics will display a message that the device is busy and cannot be tested until freed. To free the device you wish to test, consult a system support person.

To run diagnostics in concurrent mode, take the following steps:

1. Log on as **root** or **superuser** (the person responsible for the system must do this).

2. Enter the **diag** command.

3. Wait for **DIAGNOSTIC OPERATING INSTRUCTIONS** to be displayed.

   Warning: If concurrent mode diagnostics are being executed against a device, no attempt should be made to switch to another window; to do so will cause unpredictable results. If it is necessary to switch to another window, diagnostics should first be exited by using the F3 key.

4. When testing is complete, use the F3 key to return to **DIAGNOSTIC OPERATING INSTRUCTIONS**. Then press F3 again to return to the AIX operating system prompt. If you changed the state of any device prior to testing, be sure to return that device to its original state.

5. Press the Ctrl-D key sequence to log off from **root** or **superuser**.

1.2.10 Using the Diskette Package

Consider the following when using version 2.0 or later of the diagnostic package:

- Beginning with version 2.0 of the diagnostics diskettes, the diskettes are labeled with the devices and functions they contain. The following disk must be inserted in the given order before the **DIAGNOSTIC OPERATING INSTRUCTIONS** will be displayed:

  a. Boot Diskette

  b. Configuration Diskette

  c. Graphics Diskette (optional if system does not contain a graphics adapter)

  d. Console Definition Diskette

- There are two different boot diskettes, one for use only in systems containing 8MB of memory, and one for use in systems containing a minimum of 16MB of memory. Only one diskette may be loaded.

- There are several different graphics diskettes for testing and configuring graphics adapters. Use only the graphics diskette(s) for the type of graphics adapter(s) installed in the system. For each type of graphics adapter installed in a system, you must insert the graphics diskette which supports that adapter in order to test it.

  The diskette containing the graphics adapter that will be used as the console for running diagnostics should be inserted first. If there are other graphics adapter types installed in the system, insert the diskette supporting the adapters immediately following the first graphics diskette.

- If a device installed in a system is not supported by one of the diskettes shipped with the system, check for the existence of a supplemental diagnostic diskette shipped with the device.

- After the DIAGNOSTIC OPERATING INSTRUCTIONS are displayed, follow the display instructions to test the device or to run a service aid.

1.3 SCSI Problem Isolation Procedures

Subtopics

1.3.1 SCSI-1 Adapter Fuse Blowing

Before replacing a suspected defective SCSI-1 adapter, check the fuse mounted on the adapter. This fuse protects the internal and external SCSI buses. The fuse can be blown by a cable, terminator or any device attached to the SCSI bus, but *not* by a defective SCSI-1 adapter. Do not replace the SCSI-1 adapter because of a blown fuse.

Isolate the blown-fuse problem with the following procedure:

Important: Ensure that system power and all externally attached device power is turned Off. All testing will be accomplished with the power Off.

1. With the SCSI-1 adapter still installed in the system unit, remove and check the fuse using a digital Ohmmeter. If blown, install a new fuse, and continue.

2. Locate diode D1 and oscillator Y1, and complete the following substeps:

   - Connect the positive (+) Ohmmeter lead to the cathode of D1 (the end nearest the fuse).
   - Connect the negative (-) Ohmmeter lead to the can of Y1.

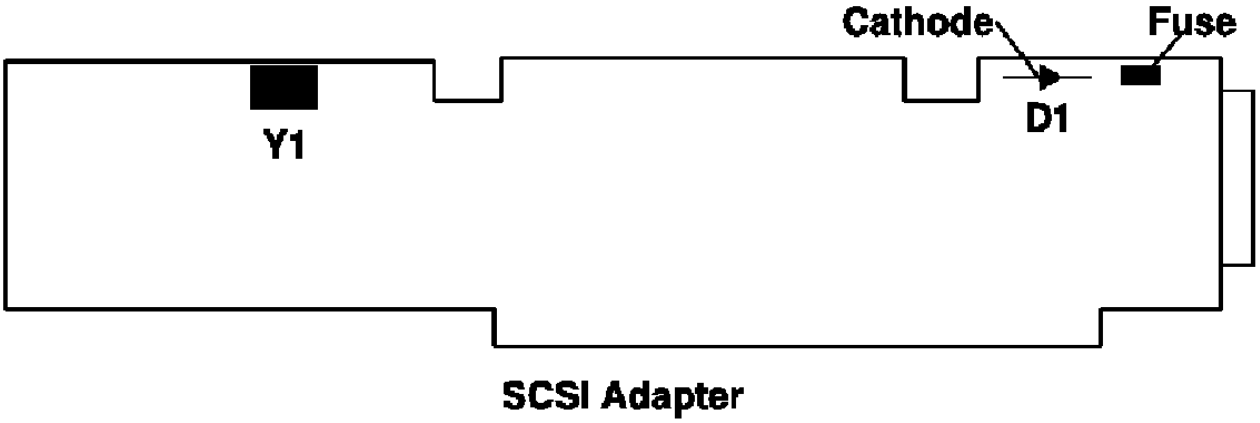


Figure 1-1. SCSI Adapter

3. If both terminators are installed on the ends of the SCSI bus, resistance indicate between 12 and 28 Ohms.

   - If resistance is between 12 and 28 Ohms, there is no apparent cause for blown fuse.
   - If resistance is greater than 28 Ohms, one of the bus-end terminators is missing and should be replaced; a missing terminator will cause SCSI problems.
   - If the resistance is less than 12 Ohms, troubleshoot the system by disconnecting cables, terminators, and devices attached to the SCSI bus until the cause of the low resistance is found.

   Note: Missing terminators will affect the resistance reading. A disconnected external terminator will produce a resistance reading between 28 and 37 Ohms; if both terminators are disconnected, the resistance reading should be greater than 1K Ohms.

   Note: With only the external terminator attached, resistance readings could vary from 28 Ohms to 1.8K Ohms, this is due to the different resistance characteristics of FPT terminators.

   Generally, FPT-18 terminators have the highest resistance, followed by F terminators; non-FPT terminators have the least resistance.

Probable Blown Fuse Causes:

- More than two terminators on the bus.
- A shorted terminator or cable.
- Intermittent fuse blowing may be due to a shorted cable or improperly seated cable connector. Replace the fuse, reseat the connector, and flex the cable in an attempt to duplicate the fuse failure.
- A shorted SCSI device.
- An internal terminator installed on a SCSI device.
- Hot-plugging SCSI cables *will* blow the fuse.

1.3.2 PTC Tripping (SCSI-2 Single-Ended Controller, Integrated SCSI on 7012/340 through 375, 7013/550L, 570

Before replacing a suspected defective SCSI-2 single-ended controller, I/O planar with integrated SCSI or SCSI riser card, check the positive temperature coefficient (PTC) resistor mounted on the controller, I/O planar or SCSI bus extension card (riser card).

Note: The term *controller* as used in this section, refers to SCSI adapter circuitry, whether as a standalone adapter (SCSI-2), integrated with the I/O planar (7013/580), or split between the I/O planar and the SCSI riser card (7012/340/350).

The PTC protects the internal and external SCSI busses. The PTC can be tripped by a cable, terminator or any device attached to the SCSI bus, but *not* by a defective SCSI controller. Do not replace the SCSI controller because of a tripped PTC.

A SCSI bus short between terminator power and ground increases current flow through the PTC. The increased current flow generates heat and causes the PTC resistance to increase, thereby limiting the short circuit current. The PTC automatically returns to a low resistance state (resets) within five minutes after the short is removed from the SCSI bus, and the system is powered Off.

1.3.3 Symptoms of a Tripped PTC

During system operation a tripped PTC will cause all devices on the SCSI bus to be inaccessible; if the tripped PTC is on the system SCSI bus, a system hang may result. For the SCSI single-ended controller follow this procedure if diagnostic testing indicates SRN's 866-130, 866-131, 866-191 or 866-211. If the PTC trips during system power-up, a hang at LED code 223 or 233 (normal mode) or LED code 243 or 253 (service mode) will result.

Although PTC tripping may appear to be a controller problem, *defective controller circuitry cannot trip the PTC.*

1.3.4 Probable Causes of a Tripped PTC:

- Attaching differential devices or terminators to the single-ended bus. Differential IBM devices, cables, terminators and adapters are marked Differential SCSI at or near their connectors. The single-ended SCSI bus will not operate until the differential device or terminator is removed.
- More than two terminators on the SCSI bus, including inadvertent installation of an internal terminator on a SCSI device.

  Note: For high availability configurations, the presence of a card edge terminator on a SCSI controller which is also connected to passthrough terminator cable, FRU 51G8568, results in more than two terminators on the SCSI bus. Remove the card edge terminator, and install the two-piece P3 jumper on the left row of pins (B side) so that the A and B jumper pin rows are disconnected (refer to the SCSI-2 single-ended Type 4-4 controller section of *Adapters, Devices, and Cable Information).*

- A shorted terminator or SCSI device is on the SCSI bus.
- A shorted cable or improperly seated cable connector is often signified by intermittent shorts and PTC resets. Reseat the connector, and flex the cable in an attempt to duplicate the PTC failure. If cable flexing causes the PTC to trip, replace the cable. Note that the PTC will not reset within five minutes if the system power remains On.
- A bent pin on the SCSI-2 controller-to-external device cable connector.
- Hot-plugging SCSI cables. Connecting a new device to the SCSI bus while power is on may cause a one-time PTC trip event. Once the device is connected the short is gone. If you suspect this scenario, power down the system for five minutes, and re-IPL the system.

  Warning: Hot-Plugging may also cause data integrity exposures or damage to CMOS SCSI controller devices.

1.3.5 PTC Problem Isolation

If the preceding probable causes do not solve the tripped PTC problem, isolate the probable cause with the following procedures:

Important: Ensure that the system power and all externally attached device power is turned Off. Perform all testing with power Off. Measure resistance with a digital voltmeter (DVM); analog meters may not have sufficient accuracy. Test point locations are illustrated on following pages.

With the SCSI-2 controller still installed in the system unit, verify that the PTC is cool (wait for five minutes). Verify that both terminators are installed, locate test points, and measure the resistance.

Note: Test points and measured resistances vary, depending on the type of controller; refer to the table of resistances (categorized as: high, good, or low) and to location diagrams on following pages.

- **Good Resistance Range:** A normally functioning SCSI bus, with a terminator on each end (note that the 7012/340 through 375 have a built-in terminator on the SCSI riser card, and that the 7013/550L, 570 through 59H and 7015/R10 through R24 have a built-in terminator on the I/O planar) should provide a "good" reading, and there is no apparent cause for PTC tripping. Either the problem does not exist anymore or the PTC was not involved.

- **High Resistance Range:** One or more terminators are either the incorrect part number, are defective or are missing. Refer to SCSI Terminator tables beginning on 1.3.6 for correct part numbers. Generally, FPT-18 terminators have the highest resistance, followed by FPT-3 terminators, and then by non-FPT terminators which have the least resistance. Install any missing terminators, and recheck the resistance. If the resistance is still in the high range, replace one terminator at a time, checking for a reading of good resistance after each replacement.

  Notes:

  1. For integrated SCSI circuits, the internal terminator is on the SCSI riser card or I/O planar, and these larger components may have to be replaced if they were a terminator.

  2. For internal SCSI cables, the terminator is usually permanently attached.

- **Low Resistance Range:** Troubleshoot the system by disconnecting cables, terminators and devices (including internal disk drives) attached to the SCSI bus until the cause of the low resistance is evidenced by a resistance reading of good.

Table 1-1.

SCSI-2 Single-Ended Controller Type	**Resistance Ranges**(Ohms) **Low**	**Good**	**High**
SCSI-2 Controller (Type 4-4)	0-16	16-38	38+
SCSI-2 Controller (Type 4-4) with 9334/010 subsystem	0-15	15-25	25+
7012/340 through 375	0-12	12-28	28+
7013/550L, 570 through 59H	0-12	12-30	30+
7015/R10 through R24	0-12	12-30	30+

1.3.6 Terminator Tables

Table 1-2. Card Edge (Internal)

FRU Part Number	Terminator Type	Connector Type	Comments
70F9900	Non-FPT	Card-Edge 50-Pin	4-1 only
00G0972	FPT-3	Card-Edge 50-Pin	4-1, 4-4

Table 1-3. Card (External)

FRU Part Number	Terminator Type	Connector Type	Comments
15F6743	Non-FPT	60-Pin	4-1 only
00G2223	FPT-3	50-Pin High-Density	4-4, SCSI-1 and SCSI-2 Internal Controller
43G0378	FPT-18	50-Pin High-Density	4-4, SCSI-1 and SCSI-2 Internal Controller
51G7737	FPT-18+	50-Pin High-Density	4-4, SCSI-1 and SCSI-2 Internal Controller
52G4259	FPT-18C	50-Pin High-Density	4-4, SCSI-1 and SCSI-2 Internal Controller

Table 1-4. Cable (Single-Ended)

FRU Part Number	Terminator Type	Connector Type	Comments
70F9671	Non-FPT	50-Pin Low-Density	8-bit
00G0968	FPT-3	50-Pin Low-Density	8-bit
43G0467	FPT-18	50-Pin Low-Density	8-bit
51G7736	FPT-18+	50-Pin Low-Density	8-bit
52G4260	FPT-18C	50-Pin Low-Density	8-bit
92F0432	Boulay	68-Pin High-Density	16-bit

Table 1-5. Cable (Differential)

FRU Part Number	Connector Type	Comments
79X3795	50-Pin Low-Density	8-bit
87G1356	50-Pin Low-Density	8-bit
52G7350	50-Pin High-Density	8-bit
61G8324	68-Pin High-Density	16-bit

SCSI Test Point Locations

The following illustrations show SCSI bus resistance test point locations for various SCSI controller circuitry. The test points are labeled (+) and (-). For oscillators Y2 and Y8, touch the probe tip to the oscillator can.

Notes:

1. Some controllers may have a surface mount oscillator Y2 which requires that the EMI shield be used as the (-) test point.

2. For the 7015/R24 use the PTC labeled Y2 for (+) and oscillator Y1 for (-) test points.

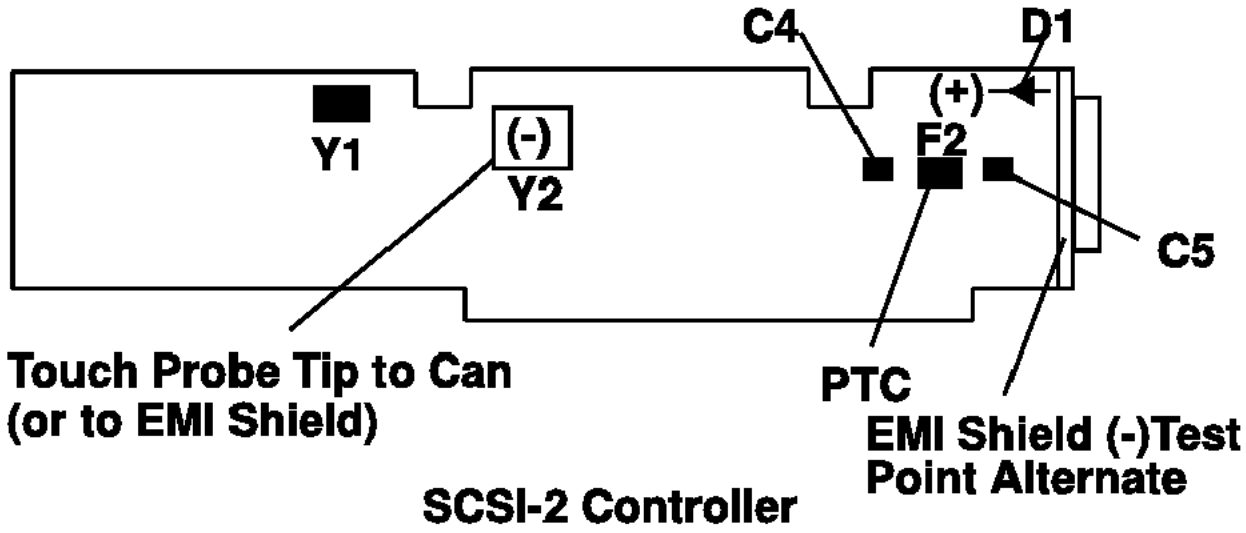


Figure 1-2. SCSI-2 Controller

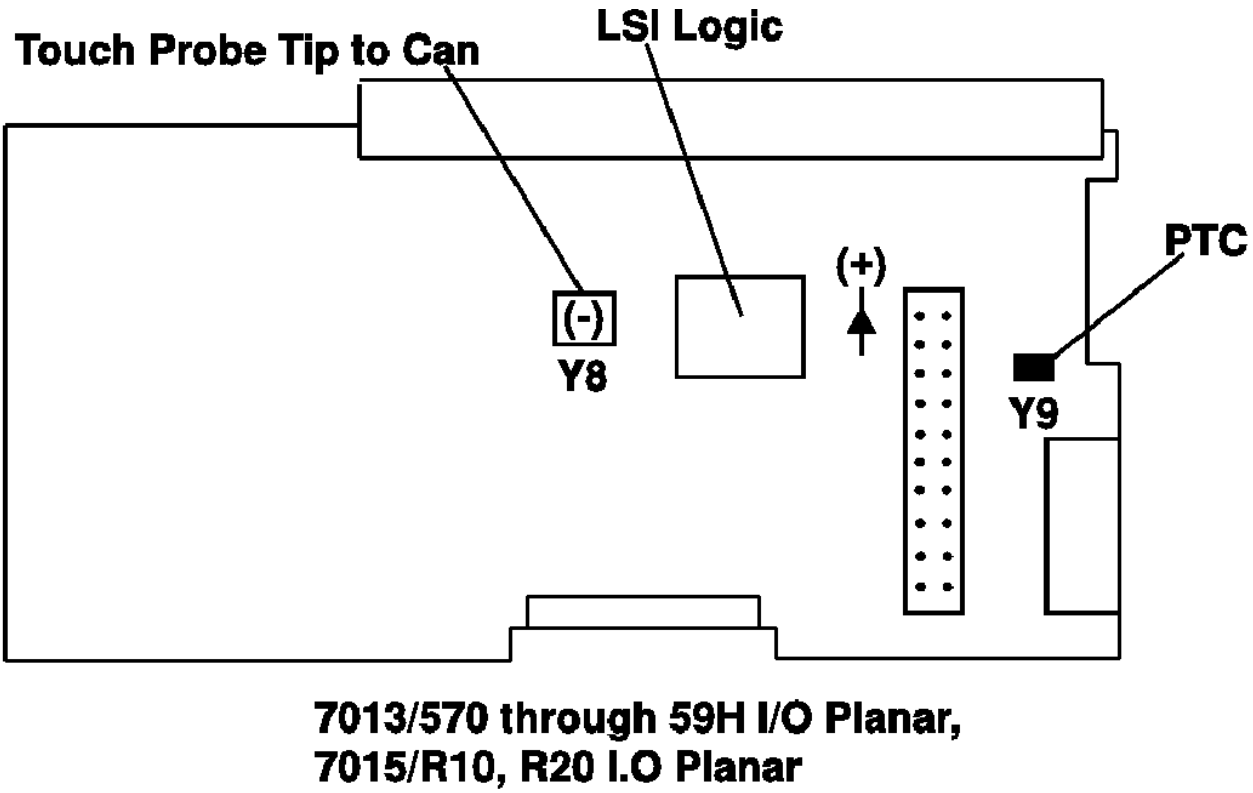


Figure 1-3. 7013/570 through 59H I/O Planar, 7015/R10, R20 I/O Planner

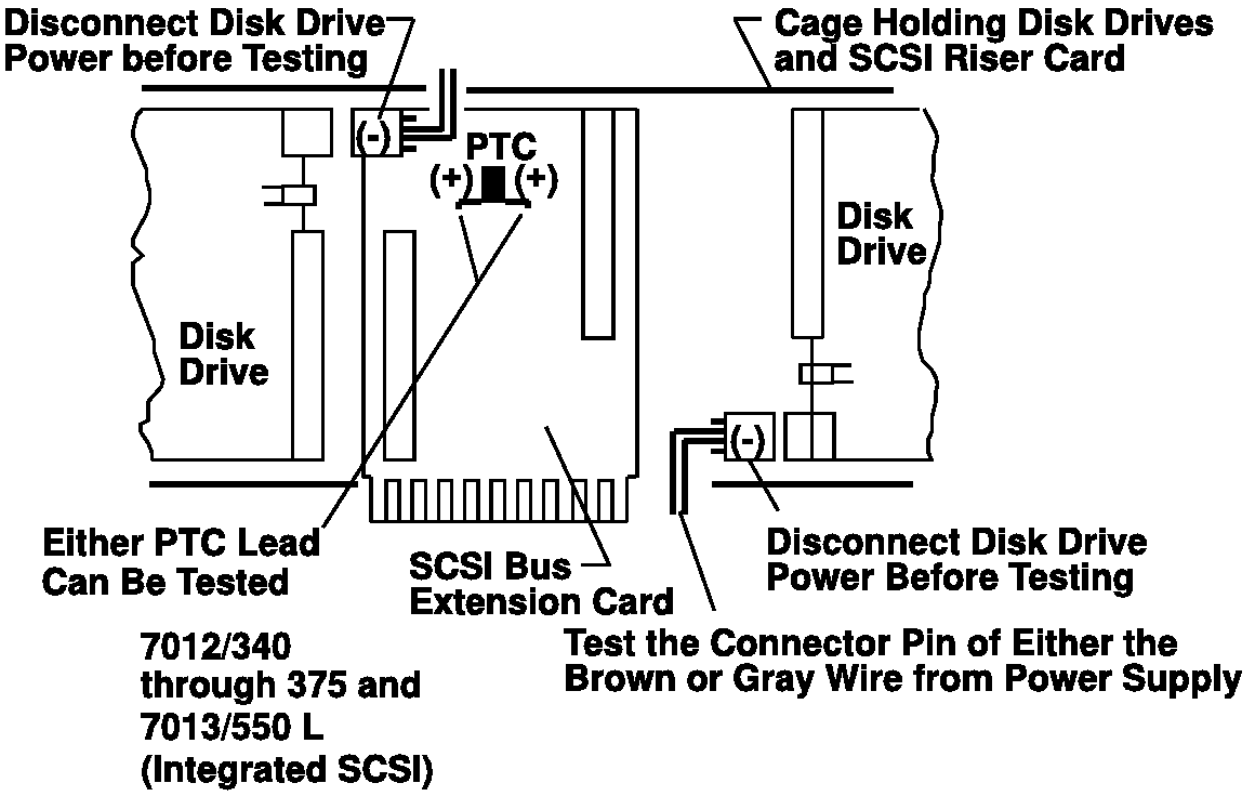


Figure 1-4. 7012/340 through 375 and 7013/550 L (Integrated SCSI)

1.3.7 Integrated SCSI Fuse Blowing (7012/340 through 375, 7013/550L)

Before replacing an I/O slot planar because of suspected internal SCSI circuitry, check the fuse mounted on the SCSI bus extension card. This fuse can be blown by a cable, *terminator* or any device attached to the SCSI bus, but *not* a defective internal SCSI circuitry. Do *not* not replace the I/O slot planar because of a blown fuse unless it has been determined that the planar has shorted.

Isolate the blown-fuse problem with the following procedure:

Important: Ensure that system power and all externally attached device power is turned Off. All testing will be accomplished with power Off.

1. Remove the disk drive cage assembly for easier access to fuse F1 on the SCSI bus extension card (the riser card between the two SCSI disk drives).

2. Remove and check fuse F1 using a digital Ohmmeter. If blown, install a new fuse, and continue.

3. Reinstall the disk drive cage assembly into the system, but do *not* connect the disk drive power connectors P3 or P4 (male connectors with female pins).

4. Using either power connector P3 or P4, complete the following procedure:

   - Connect the positive (+) Ohmmeter lead to either end of fuse F1.
   - Connect the negative (-) Ohmmeter lead to either of the two middle pins of the power connector (brown and gray wires).

5. If a terminator is installed on the external portion of the SCSI bus, resistance should indicate between 12 and 28 Ohms.

   - If resistance is between 12 and 28 Ohms, there is no apparent cause for the blown fuse.
   - If resistance is greater than 28 Ohms but less than 1.6K Ohms, the external bus-end terminator is missing or the SCSI bus extension card is defective.

     a. Replace the missing external bus-end terminator, and recheck the resistance.

     b. If the resistance is not between 12 and 28 Ohms, replace the SCSI bus extension card.

   - If the resistance is less than 12 Ohms, troubleshoot the system by disconnecting cables, terminators, and devices (including internal disk drives) attached to the SCSI bus until the cause of the low resistance is found. The cause of the short will be evident when the resistance rises to 12 Ohms or greater. If the short still cannot be located, replace the SCSI bus extension card and the I/O slot planar, in that order.
   - If the resistance is greater than 1.8K Ohms, the external bus-end terminator is missing, and the SCSI bus extension card is defective; replace both.

Note: The internal portion of the SCSI bus is terminated by the SCSI bus extension card.

Probable Blown Fuse Causes:

- More than two terminators on the bus.
- A shorted terminator or cable.
- Intermittent fuse blowing may be due to a shorted cable or improperly seated cable connector. Replace the fuse, reseat the connector, and flex the cable in an attempt to duplicate the fuse failure.
- A shorted SCSI device.
- An internal terminator installed on a SCSI device.
- Hot-plugging SCSI cables *will* blow the fuse.

1.3.8 SCSI-2 Differential Controller PTC Failure Isolation

Use the following procedures if diagnostic testing indicates SRNs 889-191 or 889-211.

Before replacing a suspected defective SCSI-2 differential controller, check the positive temperature coefficient (PTC) resistor mounted on the controller. The PTC protects the external SCSI bus. The PTC can be tripped by a cable, terminator or any device attached to the SCSI-2 differential bus, but *not* a defective SCSI-2 controller. Do not replace the SCSI-2 controller because of a tripped PTC.

A fault causes an increase in PTC resistance, and the resultant heat trips the protective device. The PTC automatically returns to a low resistance when the fault is removed from the SCSI bus, and the system is powered Off. 15 minutes is usually sufficient time for the device to fully reset.

Isolate the tripped PTC problem with the following procedure:

CAUTION: Ensure that system power and all externally attached device power is turned Off. All testing will be accomplished with power Off.

1. With the SCSI-2 differential controller still installed in the system unit(except in Model 7015 machine types where, because of inaccessibility, the controller should be removed and remain attached to the external cable) verify that the PTC is cool and is in a low resistance state (500 milliohms or less) by checking with a digital Ohmmeter. If necessary, allow 5 minutes for PTC cooling.

2. Locate diode D1 and oscillator Y1, and complete the following substeps:

   - Connect the positive (+) Ohmmeter lead to the cathode of D1 (the end nearest the PTC).
   - Connect the negative (-) Ohmmeter lead to the can of Y1.

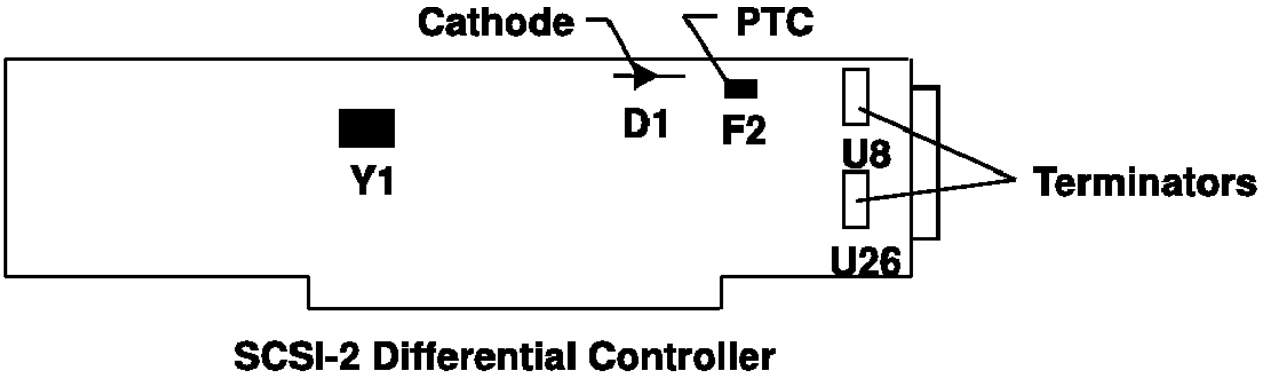


Figure 1-5. SCSI-2 Differential Controller

1. If all differential terminators (U8 and U26 mounted on the controller, and the terminator at the last device on the bus) are installed, resistance should indicate between 19 and 25 Ohms.

   - If resistance is between 19 and 25 Ohms, there is no apparent cause for the tripped PTC.
   - If resistance is greater than 25 Ohms, one of the bus-end terminators is missing and should be replaced; a missing terminator will cause SCSI problems.
   - If the resistance is less than 19 Ohms, troubleshoot the system by disconnecting cables, terminators, and devices attached to the SCSI bus until the cause on the low resistance is found.

Notes: Missing terminators will affect the resistance reading as follows:

- A disconnected external terminator (part number 79X3795 for the 9334 expansion unit) will produce a resistance reading between 40 and 48 Ohms.

- If both on-card terminators U8 and U26 (42G3326) and the external terminator are disconnected, the resistance reading should be greater than 4K Ohms.

- If the on-card terminators U8 and U26 (42G3326) are disconnected and the external differential terminator (79X3795) is connected, the resistance reading should be between 40 and 48 Ohms.

1. For increased availability configurations, ensure that the on-card terminators (U8 and U26) are removed and that the SCSI-2 differential terminator (52G7359) is plugged into the SCSI-2 differential Y cable.

Probable Tripped PTC Causes:

- More than two terminators on the bus.
- A shorted terminator or cable. Check for bent pins in the cable and terminator.
- Intermittent PTC tripping may be due to a shorted cable or improperly seated cable connector. Reseat the connector, and flex the cable in an attempt to duplicate the PTC failure.
- A shorted SCSI device.
- Missing on-card terminators U8 or U26 (42G3326). These terminators should only be removed for the increased availability configuration. The SCSI-2 differential terminator (52G7350) is plugged into the SCSI-2 differential Y cable in the increased availability configuration.
- Hot-plugging SCSI cables may trip the PTC.

1.3.9 Single-Ended Device: Differential Bus Prohibition

Before replacing a suspected SCSI-2 differential controller, ensure that all SCSI cables, terminators, and devices attached to the bus are differential. Non-OEM differential cables, adapters, terminators, and devices are marked Differential SCSI at or near the connector.

If single-ended SCSI devices are attached to a differential SCSI bus, the bus will not operate until the single-ended device is removed.

Probable Tripped PTC Causes:

- More than two terminators on the bus.
- A shorted terminator or cable.
- Intermittent PTC tripping may be due to a shorted cable or improperly seated cable connector. Reseat the connector, and flex the cable in an attempt to duplicate the PTC tripping.
- A shorted SCSI device.
- An internal terminator installed on a SCSI device.
- Hot-plugging SCSI cables *will* trip the PTC.

1.3.10 SCSI-2 Fast/Wide Adapter/A Problem Isolation Procedure

This procedure is intended to be used for the single-ended and differential ended versions of the SCSI-2 Fast/Wide Adapter/A. Use it after diagnostics have been run on the adapter and further isolation is needed for appropriate FRU identification and replacement.

Note: This procedure can be applied to adapters configured with both internal and external devices.

Some implementation considerations are:

- The system will not allow concurrent diagnostics to be run on an adapter associated with a device in the root volume group (such as page spacing). If the adapter being diagnosed is associated with the root volume group for the system, standalone diagnostics must be used in this procedure.

- The system must be powered OFF before performing any connecting and disconnecting of cables or devices to prevent any damage to hardware or erroneous diagnostic results.

- The differential version of the adapter has socketed terminators to support high-availability. If the adapter being diagnosed is configured this way, terminators would have been removed from the adapter. Steps in this procedure that require the removal of the cable from the adapter cannot be used because the adapter with its terminators removed will always fail diagnostics. To perform diagnostics properly in this case, the terminators must be replaced. Or a Y-cable is in use for the configuration, leave it and the appropriate terminator attached to the adapter. Refer to Figure 1-7 in topic 1.3.25 for location of terminators RN1, RN2, and RN3.

- This procedure is also valid for embedded SCSI-2 Fast/Wide implementations. Replace the planar (or parent device) when the procedure calls for replacing the adapter.

The following steps should be followed for determining the defective FRU's in the SCSI system.

1.3.11 Step 1

This step determines the error that led to this procedure.

Error Description	**SRN**	**Action**
Terminator power failure (PTC error)	890-106, 890-107, 890-160, 890-175, 890-180, 890-206, 890-207, 890-260, 890-275, 890-280, 890-306, 890-307, 890-360, 890-375, 890-380, 890-406, 890-407, 890-460, 890-475, 890-480	Go to Step 2.
SCSI bus error on external bus.	890-109, 890-190, 890-209, 890-290, 890-309, 890-390, 890-407, 890-490	Go to Step 3.
SCSI bus error on internal bus.	890-108, 890-185, 890-208, 890-285, 890-308, 890-385, 890-408, 890-485	Go to Step 5.
Any other SCSI error		Go to Step 8.

1.3.12 Step 2

This step determines the component causing the PTC failure. For details on probable causes and a more thorough procedure, refer to SCSI-2 Fast/Wide PTC Problem Isolation Procedure on 1.3.29

If diagnostics indicated a terminator power failure (PTC error) then perform the following:

1. Turn the system off to allow PTC to cool (five minutes is recommended).

2. While waiting for the PTC to cool, check that SCSI cables and terminators on the failing buses are properly connected. Inspect for bent pins and obvious cable damage. To review other probable causes, refer to the SCSI-2 Fast/Wide PTC Problem Isolation Procedure beginning on 1.3.29

3. Rerun diagnostics for the adapter.

   - If this same error persists, refer to the SCSI-2 Fast/Wide PTC Problem Isolation Procedure beginning on 1.3.29

   - If no errors are indicated, the problem is intermittent, or was corrected by adjusting the cables.

     If any damage was noted in cables or terminators, suspect that component as the source of intermittent problems. For further analysis refer to the SCSI-2 Fast/Wide PTC Problem Isolation Procedure beginning on 1.3.29

4. No further diagnostics can be done. Exit this procedure.

1.3.13 Step 3

This step determines if an external device may be causing this failure.

Turn off the power to all external devices and rerun diagnostics for the adapter. (If there is an external cable attached, but no devices, go directly to Step 5.)

- If diagnostics fails with the same error, go to Step 5.
- If no failures occurred, go to Step 4.
- If any other error occurred, follow the instructions for the SRN indicated.

1.3.14 Step 4

This step determines if a particular device can be identified as the source of the problem.

Note: This step may be time consuming if there are several devices on the bus. For a possibly faster path to determine whether there is a device problem and not an adapter problem, turn on all of the devices at once instead of one at a time as directed below. If the adapter diagnostics indicates a failure again, the only way to try to isolate the failing FRU is to proceed with the procedure as stated, turning on one device at a time.

Turn on the external SCSI devices one at a time. After turning on each device, follow this procedure:

- Rerun diagnostics for the adapter.
- If there is any failure, the problem should be with the last device turned back on. Follow the problem determination procedure for that device.
- If no errors occurred, the problem could be intermittent. Make a record of the problem. Running diagnostics for each of the devices on the bus may provide more information.

1.3.15 Step 5

Steps from this point on isolate the problem to the adapter, cables, or devices by bringing the system down to a minimum configuration and methodically building it back to the original configuration.

Disconnect the SCSI cable from the adapter on the bus that is indicating the error. Rerun diagnostics for the adapter.

Reminder: No terminator needs to be attached to the open connector on the adapter for this step because the adapter has built-in terminators. For differential adapters see the **Notes** section on 1.3.8

- If there is any failure, replace the adapter.
- If no errors occurred, go to Step 6.

1.3.16 Step 6

This step continues to build up from a minimum configuration to determine if a cable, terminator, or device is the cause of the error. This step concentrates on the cable and terminator.

Reconnect the SCSI cable without any devices attached.

For the external bus, only attach the first section of cable. If the appropriate terminator is not available for the end of the cable, reconnect the SCSI cable with one device attached so that the bus can be properly terminated through the device connector. The device should be turned off.

Rerun diagnostics for the adapter.

- If there is any failure, replace components in the following order:
  - Cable
  - Terminator
  - Device (if attached)
- If no errors occurred, go to Step 7.

1.3.17 Step 7

This step determines whether a particular section of cable or a device may be causing a problem. This step differs from Step 4 because, the devices are detached from the bus, not just turned off. Make sure all cables, terminators, and devices are reconnected before leaving this step.

Reconnect the SCSI devices one at a time, making sure that the bus remains appropriately terminated. (A new section of cable will be added with each device on an external bus). After connecting each device and turning it on, follow the procedure below:

- Rerun diagnostics.
- If there is any failure, the problem should be that device or cable. Replace the components in following order:
  - Cable
  - Device
- If no errors occurred, the problem could be intermittent. The problem is most likely cabling or a device. Contact the next level of support if this problem continues to occur.

This is the end of this part of the procedure. Go to Step 9.

1.3.18 Step 8

This step determines if the error is caused by the adapter.

Disconnect all cables, and rerun diagnostics for the adapter. For differential adapters see the **Notes** section on 1.3.8

- If there is any failure, replace adapter.
- If no errors were indicated, reconnect the cable with the devices and re diagnostics.

  Note: If there are both external and internal devices, then reconnect one bus at a time, starting with the internal bus. If the internal bus had no errors, then reconnect the external bus.

- If there is any failure, go to Step 6.
- If no failure occurs, there may be intermittent or transient errors. The problem is most likely the cabling or a device. If the problem continues contact next level of support.

1.3.19 Step 9

This step finds out if there are operational errors that can be determined by actually transferring data on the SCSI bus.

Run the SCSI service aid to issue an inquiry command to a device on the bus. The command completion status returned by adapter will indicate if a failure occurred, and whether the failure was due to a device error. If a device error occurred, diagnostics for that device should be performed. If it fails with other errors, replace components in the following order:

- Cable
- Adapter
- Devices

1.3.20 SCSI-2 Fast/Wide Adapter/A PTC Failure Isolation

Use the following procedures if diagnostics testing indicates a potential temperature coefficient (PTC) resistor fault and you are diagnosing a single-ended adapter. The SRNs do not distinguish between the SCSI-2 Differential Fast/Wide Adapter/A or the SCSI-2 Fast/Wide Adapter/A.

Before replacing a SCSI-2 Fast/Wide Adapter/A, use these procedures to determine if a short-circuit condition exists on the SCSI Bus. There is one PTC for the internal SCSI bus and another for the external bus. The PTC protects the SCSI bus from high currents due to shorts on the cable, terminator, or device. It is unlikely that the PTC can be tripped by a defective adapter. Unless instructed to do so by these procedures, *do not* replace the adapter because of a tripped PTC resistor.

A fault (short-circuit) causes an increase in PTC resistance and temperature. The increase in resistance causes the PTC to halt current flow. The PTC returns to a low resistive and low temperature state when the fault is removed from the SCSI bus or when the system is turned off. Wait 5 minutes for the PTC resistor to fully cool, then reset.

These procedures determine if the PTC resistor is still tripped and then determines if there is a short somewhere on the SCSI bus.

Picking the Proper Procedure

For SRNs 890-160, 890-260, 890-360 and 890-460, follow the procedure for isolating the internal PTC and then follow the procedure for isolating the external bus PTC resistor.

For SRNs 890-106, 890-175, 890-206, 890-275, 890-306, 890-375, 890-406 and 890-475, follow the procedure for isolating the internal bus PTC resistor.

For SRNs 890-107, 890-180, 890-207, 890-280, 890-307, 890-380, 890-407 and 890-480, follow the procedure for isolating the external bus PTC resistor.

1.3.21 Internal Bus PTC Isolation Procedure

Isolate the internal SCSI bus PTC resistor fault with the following procedure.

Note: The internal bus is single-ended.

1. Ensure that system power and all externally attached device power is turned off.

2. Disconnect the internal and external cables from the adapter then remove the adapter from the system.

3. Verify with a digital Ohmmeter, that the internal PTC resistor, labeled TR30, is cool and in a low resistance state, typically less than 1/2 Ohm. Measuring across, be sure to probe both sides of the PTC where the solder joints a board come together. The polarity of the test leads is not important. If necessary, allow the PTC to cool and remeasure. Refer to Figure 1-6

   If there was no internal cable attached, diagnostics either sent you here in error or the adapter is shorted. The next step determines if there is a short on the adapter.

SCSI-2 Fast/Wide Adapter/A Test Locations

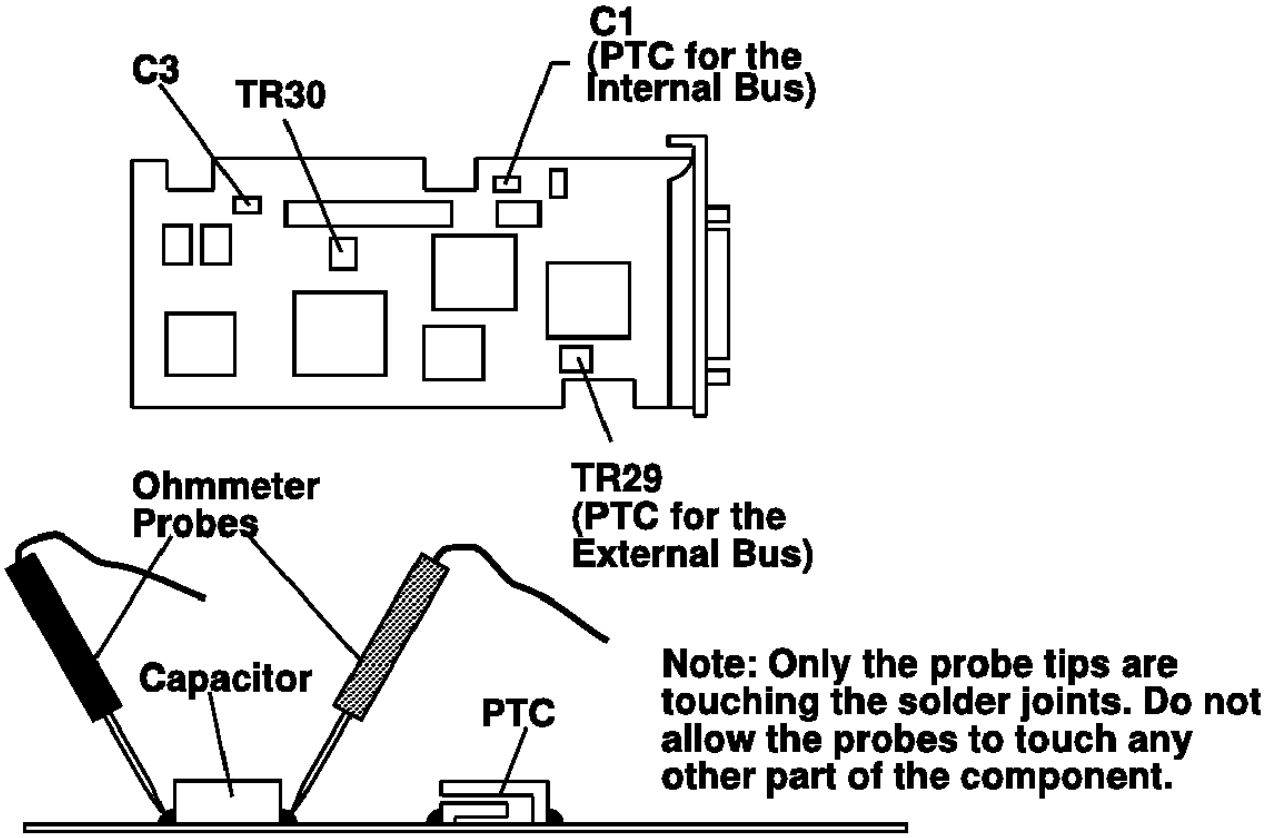


Figure 1-6. SCSI-2 Fast/Wide Adapter/A Test Locations

4. Locate capacitor C3 and measure the resistance across it using the following procedure:

   a. Connect the positive lead to the side of the capacitor where the + is indicated. Be sure to probe at the solder joint where the capacitor and board come together.

   b. Connect the negative lead to the opposite side of the capacitor. Be sure to probe at the solder joint where the capacitor and board come together.

   c. If there is no short present, the resistance reading will be high, typically hundreds of Ohms.

   Note: This reading is a function of the Ohmmeter used and is not predictable.

   - If there is a fault, the resistance reading is low, typically below 10 Ohms. Because there are no cables attached, the fault is on the adapter. The adapter should be replaced.
   - If the resistance is high and there is no internal cable to reattach, there is no apparent cause for the PTC resistor diagnostic failure.
   - If the resistance is high and there is an internal cable to reattach, proceed to the next step.

5. Reattach the internal cable to the adapter then:

   a. Remeasure across C3 as described above.
   b. If the resistance is still high, above 25 Ohms, there is no apparent cause for a PTC failure.
   c. If the resistance is less than 10 Ohms, there is a possibility of a fault the internal SCSI bus. Troubleshoot the internal SCSI bus by disconnecting devices and terminators. Measure across C3 to determine if the fault has been removed.

   Note: Some internal cables have nonremovable terminators.

Probable Tripped PTC Resistor Causes

- A shorted terminator or cable. Check for bent pins on each connector and removable terminator.
- Intermittent PTC failures can be caused by improperly seated cable connectors. Reseat the connector and flex the cable in an attempt to duplicate the fault condition across C3.
- A shorted device.
- On some systems, the terminator is fixed to the internal cable and cannot be removed. If all devices are removed from the cable and the resistance is still low, then the cable should be replaced.

Note: The SCSI-2 Fast/Wide Adapter/A uses an onboard electronic terminator on the internal SCSI bus. When power is removed from the adapter, as in the case of this procedure, the terminator goes to a high impedance state and the resistance measured can not be verified, other than it will be high. Some internal terminators use an electronic terminator which also goes to a high impedance state when power is removed. Therefore, this procedure is designed to find a short or low resistance fault as opposed to the presence of a terminator or a missing terminator.

1.3.22 External Bus PTC Isolation Procedure

Isolate the external SCSI bus PTC fault with the following procedure.

Note: The external bus is of single-ended design.

1. Ensure the system power and all externally attached device power is turned off. All testing is accomplished with the power off.

2. Disconnect the internal and external cables from the adapter and remove the adapter from the system.

3. Verify with a digital Ohmmeter that the internal PTC resistor, labeled TR29, (refer to Figure 1-6 in topic 1.3.21) is cool and in a low resistance state, typically less than 1/2 Ohm. Measuring across, be sure to probe both sides of the PTC where the solder joints and board come together. The polarity of the test leads is not important. If necessary, allow the PTC resistor to cool and remeasure.

   If there was no internal cable attached, diagnostics either sent you here in error or the adapter is shorted. The next step determines if there is a short on the adapter.

4. Locate Capacitor C1 and measure the resistance across it using the following procedure:

   a. Connect the positive lead to the side of the capacitor where the + is indicated on the board near C1. Be sure to probe at the solder joint where the capacitor and board come together.
   b. Connect the negative lead to the opposite side of the capacitor. Be sure to probe at the solder joint where the capacitor and board come together.
   c. If there is no short present, then the resistance reading will be high, typically hundreds of Ohms.

   Note: This reading is a function of the Ohmmeter used and is not predictable.

   - If there is a fault, the resistance reading is low, typically below 10 Ohms. Because there are no cables attached, the fault is on the adapter. The adapter should be replaced.

   - If the resistance is high and there is no external cable to reattach, there is no apparent cause for the PTC diagnostic failure.

   - If the resistance measured was high and there is an external cable to reattach proceed to the next step.

5. Reattach the external cable to the adapter, then:

   a. Remeasure across C1 as previously described.
   b. If the resistance is still high, in this case above 10 Ohms, then there is no apparent cause for a PTC failure.
   c. If the resistance is less than 10 Ohms, there is a possibility of a fault on the external SCSI bus. Troubleshoot the external SCSI bus by disconnecting devices and terminators. Measure across C1 to determine if the fault has been removed.

Probable Tripped PTC Causes

- A shorted terminator or cable. Check for bent pins on each connector and removable terminator.

- Intermittent PTC failures can be caused by improperly seated cable connectors. Reseat the connector and flex the cable in an attempt to duplicate the fault condition across C1.

- Plugging or unplugging a cable or terminator while the system is turned on (hot plugging).

- A shorted device.

- Differential devices or terminators are attached to the single-ended SCSI bus.

Note: The SCSI-2 Fast/Wide Adapter/A uses an onboard electronic terminator on the external SCSI bus. When power is removed from the adapter, as in the case of this procedure, the terminator goes

to a high impedance state and the resistance measured cannot be verified, other than it will be high. Some external terminators use an electronic terminator which also goes to a high impedance state when power is removed. Therefore, this procedure is designed to find a short or low resistance fault as opposed to the presence of a terminator or a missing terminator.

1.3.23 SCSI-2 Differential Fast/Wide Adapter/A PTC Failure Isolation

Use the following procedures if diagnostics testing indicates a potential positive temperature coefficient (PTC) resistor fault and you are diagnosing a single-ended adapter. The SRNs do not distinguish between the SCSI-2 Differential Fast/Wide Adapter/A or the SCSI-2 Fast/Wide Adapter/A.

Before replacing a SCSI-2 Differential Fast/Wide Adapter/A, use these procedures to determine if a short-circuit condition exists on the SCSI Bus. There is one PTC for the internal SCSI bus and another for the external bus. The PTC protects the SCSI bus from high currents due to shorts on the cable, terminator, or device. It is highly unlikely that the PTC resistor can be tripped by a defective adapter. Unless instructed to do so by these procedures, *do not* replace the adapter because of a tripped PTC.

A fault (short circuit) causes an increase in PTC resistance and temperature. The increase in resistance causes the PTC resistor to halt current flow. The PTC resistor returns to a low resistive and low temperature state when the fault is removed from the SCSI bus or when the system is powered off. Wait 5 minutes for the PTC resistor to fully cool, then reset.

These procedures determine if the PTC resistor is still tripped and then determine if there is a short somewhere on the SCSI bus.

1.3.24 Picking the Proper Procedure

For SRNs 890-160, 890-260, 890-360 and 890-460, follow the procedure for isolating the internal PTC and then follow the procedure for isolating the external PTC resistor.

For SRNs 890-106, 890-175, 890-206, 890-275, 890-306, 890-375, 890-406 and 890-475, follow the procedure for isolating the internal PTC resistor.

For SRNs 890-107, 890-180, 890-207, 890-280, 890-307, 890-380, 890-407 and 890-480, follow the procedure for isolating the external PTC resistor.

1.3.25 Internal Bus PTC Isolation Procedure

Isolate the internal SCSI bus PTC resistor fault with the following procedure:

Note: The internal bus is single-ended.

1. Ensure that system power and all externally attached device power is turned off.

2. Disconnect the internal and external cables from the adapter then remove the adapter from the system.

3. Verify with a digital Ohmmeter that the internal PTC resistor, labeled TR1, is cool and in a low resistance state, typically less than 1/2 Ohm. Measuring across, be sure to probe both sides of the PTC resistor where the solder joints and board come together. The polarity of the test leads is not important. If necessary, allow the PTC resistor to cool and remeasure.

   If there was no internal cable attached, diagnostics either sent you here in error or the adapter is shorted. The next step determines if there is a short on the adapter.

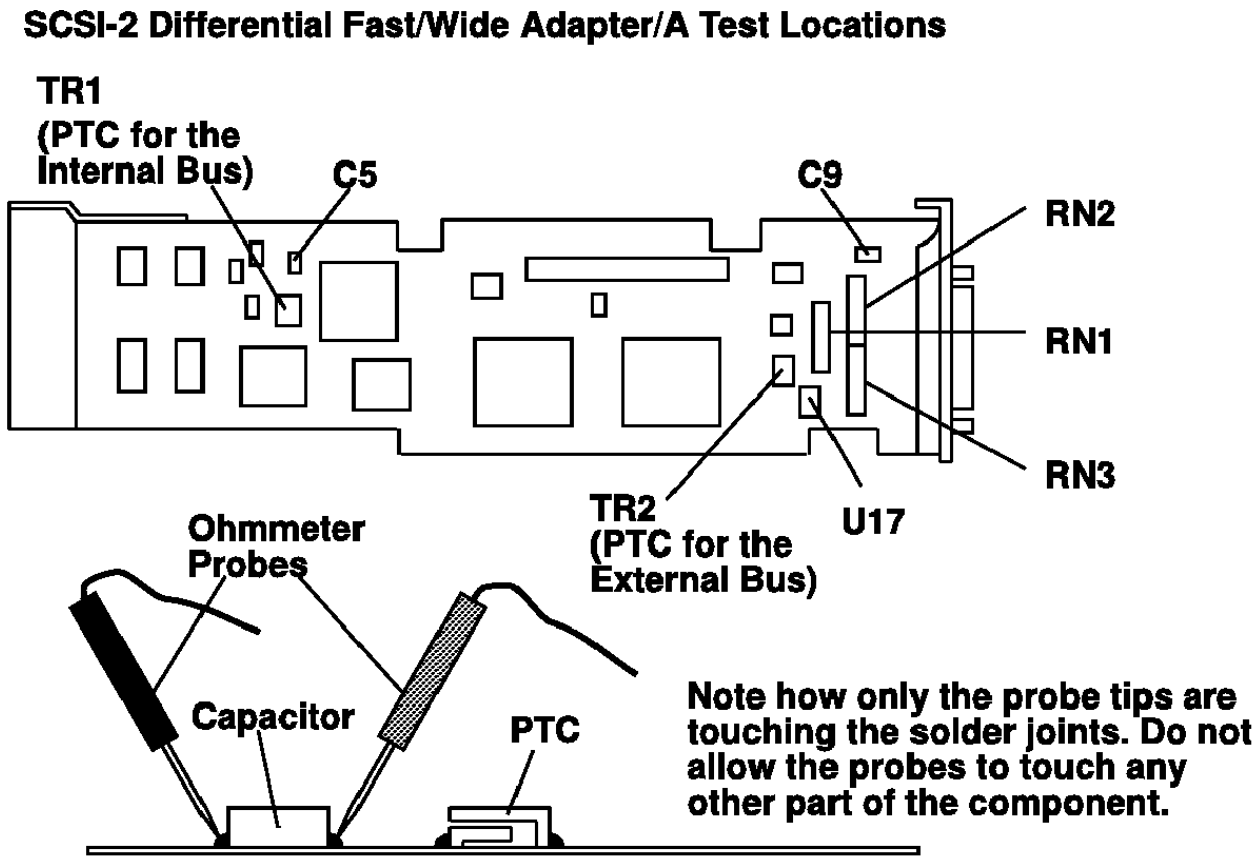


Figure 1-7. SCSI-2 Differential Fast/Wide Adaper/A Test Locations

4. Locate capacitor C5 and measure the resistance across it using the following procedure:

   a. Connect the positive lead to the side of the capacitor where the + is indicated. Be sure to probe at the solder joint where the capacitor and board come together.
   b. Connect the negative lead to the opposite side of the capacitor. Be sure to probe at the solder joint where the capacitor and board come together.
   c. If there is no short present, then the resistance reading will be high, typically hundreds of Ohms.

   Note: This reading is a function of the Ohmmeter used and is not predictable.

   - If there is a fault, the resistance reading is low, typically below 10 Ohms. Because there are no cables attached, the fault is on the adapter. The adapter should be replaced.

- If the resistance is high and there is no internal cable to reattach, there is no apparent cause for the PTC diagnostic failure.

- If the resistance is high and there is an internal cable to reattach, proceed to the next step.

5. Reattach the internal cable to the adapter, then:

   a. Remeasure across C5 as previously described.
   b. If the resistance is still high, in this case above 25 Ohms, there is no cause for a PTC failure.
   c. If the resistance is less than 10 Ohms, there is a possibility of a fault on the internal SCSI bus. Troubleshoot the internal SCSI bus by disconnecting devices and terminators. Measure across C5 to determine if the fault has been removed.

   Note: Some internal cables have nonremovable terminators.

   Probable Tripped PTC Causes

   - A shorted terminator or cable. Check for bent pins on each connector and removable terminator.

   - Intermittent PTC failures can be caused by improperly seated cable connectors. Reseat the connector and flex the cable in an attempt to duplicate the fault condition across C5.

   - A shorted device.

   - On some systems, the terminator is fixed to the internal cable and cannot be removed. If all devices are removed from the cable and the resistance is still low, then the cable should be replaced.

     Note: The SCSI-2 Differential Fast/Wide Adapter/A uses an onboard electronic terminator on the internal SCSI bus. When power is removed from the adapter, as in the case of this procedure, the terminator goes to a high impedance state and the resistance measured cannot be verified, other than it will be high. Some terminators use an electronic terminator which also goes to a high impedance state when power is removed. Therefore, this procedure is designed to find a short or low resistance fault as opposed to the presence of a terminator or a missing terminator.

1.3.26 External Bus PTC Isolation Procedure

Isolate the external SCSI bus PTC fault with the following procedure.

Note: The external bus is differential.

1. Ensure that system power and all externally attached device power is turned off.

2. Check to ensure all devices are marked SCSI-Differential and that the terminator on the end of the SCSI bus is also marked differential. If not, you may have a single-ended SCSI device or terminator on the differential SCSI bus. Single-ended devices do not work on a differential SCSI bus and may cause a PTC type error to be reported. The entire SCSI bus may appear to be intermittent. After the system is completely differential, continue.

3. Disconnect the internal and external cables from the adapter and remove the adapter from the system.

4. Verify with a digital Ohmmeter, that the internal PTC resistor, labeled TR2, (refer to Figure 1-7 in topic 1.3.25 is cool and in a low resistance state typically less than 1/2 Ohm. Measuring across, be sure to probe both sides of the PTC resistor where the solder joints and board come together. The polarity of the test leads is not important. If necessary, allow the PTC resistor cool and remeasure.

   If there was no internal cable attached, diagnostics either sent you here in error or the adapter is shorted. The next step determines if there is a short on the adapter.

5. Locate capacitor C9 and measure the resistance across it using the following procedure:

   a. Connect the positive lead to the side of the capacitor where the + is indicated on the board near C9. Be sure to probe at the solder joint where the capacitor and board come together.
   b. Connect the negative lead to the opposite side of the capacitor. Be sure to probe at the solder joint where the capacitor and board come together.
      - If there is no fault present, then the resistance reading will be 25 to 35 Ohms. The adapter is not faulty. Continue to the next step.
      - If the resistance measured is higher than 35 Ohms, check to see if RN1, RN2, and RN3 are plugged into their sockets. If these sockets are empty, you are working with a Multi-Initiators or High-Availability system. With these sockets empty, a resistive reading across C9 cannot be verified other than it will measure a high resistance (not a short). If the resistance measurement is not low enough to be suspected as a fault (lower than 10 Ohms), continue to next step.
      - If the resistance is high and there is no external cable to reattach, there is no apparent cause for the PTC diagnostic failure.
      - If the resistance reading is low, typically below 10 Ohms, there is a fault. Because there are no cables attached, the fault is on the adapter. The adapter should be replaced.
      - If the resistance measured was high and there is an external cable to reattach proceed to the next step.

6. Reattach the external cable to the adapter.

   a. Remeasure across C9 as previously described.
   b. If the resistance is between 10 to 20 Ohms, there is no apparent cause for a PTC resistor failure.
   c. If the resistance is less than 10 Ohms, there is a possibility of a fault on the external SCSI bus. Troubleshoot the external SCSI bus by disconnecting devices and terminators. Measure across C9 to determine if the fault has been removed.

   Probable Tripped PTC Causes

   - A shorted terminator or cable. Check for bent pins on each connector and removable terminator.
   - Intermittent PTC failures can be caused by improperly seated cable connectors. Reseat the connector and flex the cable in an attempt to duplicate the fault condition across C9.
   - Plugging or unplugging a cable or terminator while the system is turned on (hot plugging).
   - A shorted device.
   - Single-ended devices are attached to the differential SCSI bus.

1.3.27 Enhanced SCSI-2 Differential Fast/Wide Adapter/A PTC Failure Isolation

Use the following procedures if diagnostics testing indicates a potential positive temperature coefficient (PTC) resistor fault and you are diagnosing an adapter. The SRNs do not distinguish between the Enhanced SCSI-2 Differential Fast/Wide Adapter/A, SCSI-2 Differential Fast/Wide Adapter/A or the SCSI-2 Fast/Wide Adapter/A.

Before replacing an Enhanced SCSI-2 Differential Fast/Wide Adapter/A, use these procedures to determine if a short-circuit condition exists on the SCSI Bus. There is one PTC for the internal SCSI bus and another for the external bus. The PTC protects the SCSI bus from high currents due to shorts on the cable, terminator, or device. It is highly unlikely that the PTC resistor can be by a defective adapter. Unless instructed to do so by these procedures, *do not* replace the adapter because of a tripped PTC.

A fault (short circuit) causes an increase in PTC resistance and temperature. The increase in resistance causes the PTC resistor to halt current flow. The PTC resistor returns to a low resistive and low temperature state when the fault is removed from the SCSI bus or when the system is powered off. Wait 5 minutes for the PTC resistor to fully cool, then reset.

These procedures determine if the PTC resistor is still tripped and then determine if there is a short somewhere on the SCSI bus.

1.3.28 Picking the Proper Procedure

For SRNs 890-501, and 890-560 follow the procedure for isolating the internal PTC and then follow the procedure for isolating the external PTC resistor.

For SRNs 890-506, and 890-575, follow the procedure for isolating the internal PTC resistor.

For SRNs 890-507, and 890-580 follow the procedure for isolating the external PTC resistor.

1.3.29 Internal Bus PTC Isolation Procedure

Isolate the internal SCSI bus PTC resistor fault with the following procedure:

Note: The internal bus is single-ended.

1. Ensure that system power and all externally attached device power is turned off.

2. Disconnect the internal and external cables from the adapter then remove the adapter from the system.

3. Verify with a digital Ohmmeter that the internal PTC resistor, labeled TR1, is cool and in a low resistance state, typically less than 1/2 Ohm. Measuring across, be sure to probe both sides of the PTC resistor where the solder joints and board come together. The polarity of the test leads is not important. IF necessary, allow the PTC resistor to cool and remeasure.

   If there was no internal cable attached, diagnostics either sent you here in error or the adapter is shorted. The next step determines if there is a short on the adapter.

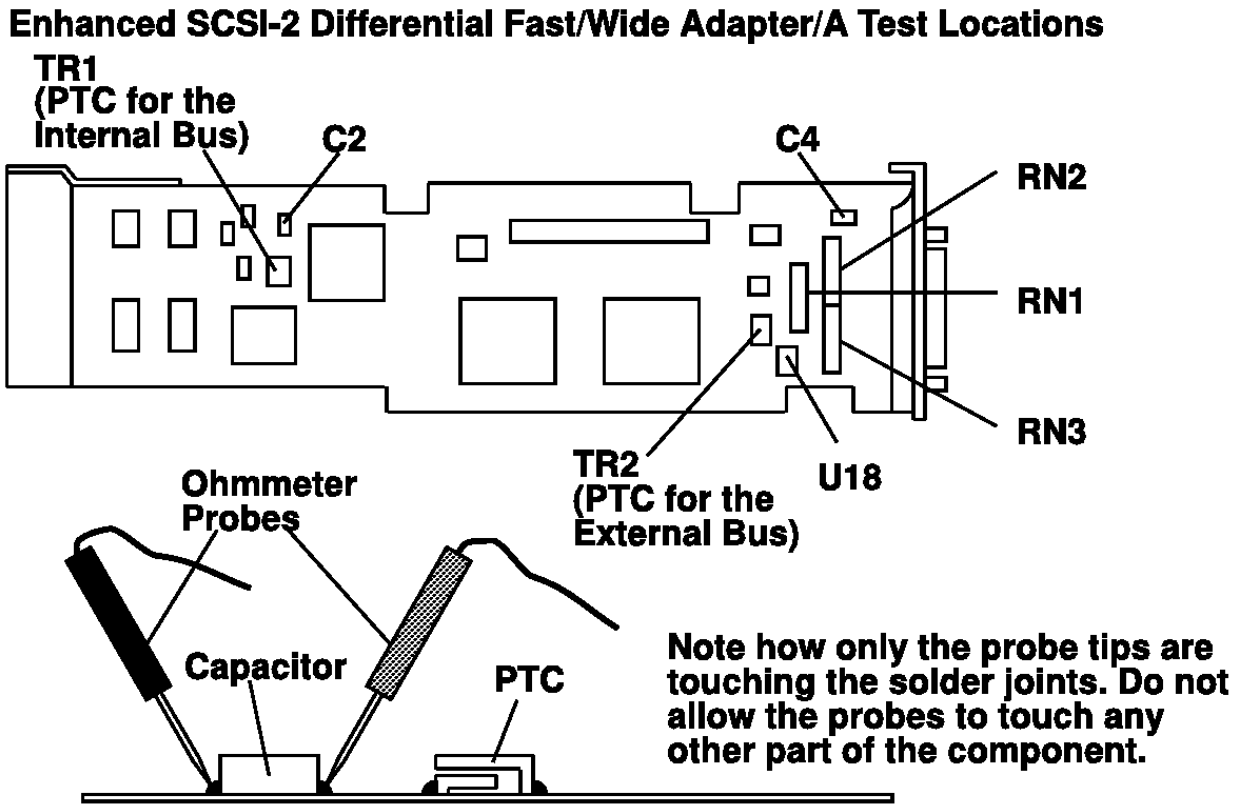


Figure 1-8. Enhanced SCSI-2 Differential Fast/Wide Adapter/A Test Locations

4. Locate capacitor C2 and measure the resistance across it using the following procedure:

   a. Connect the positive lead to the side of the capacitor where the + is indicated. Be sure to probe at the solder joint where the capacitor and board come together.
   b. Connect the negative lead to the opposite side of the capacitor. Be sure to probe at the solder joint where the capacitor and board come together.
   c. If there is no short present, then the resistance reading will be high, typically hundreds of Ohms.

   Note: This reading is a function of the Ohmmeter used and is not predictable.

   - If there is a fault, the resistance reading is low, typically below 10 Ohms. Because there are no cables attached, the fault is on the adapter. The adapter should be replaced.

- If the resistance is high and there is no internal cable to reattach, there is no apparent cause for the PTC diagnostic failure.
- If the resistance is high and there is an internal cable to reattach, proceed to the next step.

5. Reattach the internal cable to the adapter, then:

   a. Remeasure across C2 as previously described.
   b. If the resistance is still high, in this case above 25 Ohms, there is no cause for a PTC failure.
   c. If the resistance is less than 10 Ohms, there is a possibility of a fault on the internal SCSI bus. Troubleshoot the internal SCSI bus by disconnecting devices and terminators. Measure across C2 to determine if the fault has been removed.

   Note: Some internal cables have nonremovable terminators.

Probable Tripped PTC Causes

- A shorted terminator or cable. Check for bent pins on each connector and removable terminator.
- Intermittent PTC failures can be caused by improperly seated cable connectors. Reseat the connector and flex the cable in an attempt to duplicate the fault condition across C2.
- A shorted device.
- On some systems, the terminator is fixed to the internal cable and cannot be removed. If all devices are removed from the cable and the resistance is still low, then the cable should be replaced.

  Note: The Enhanced SCSI-2 Differential Fast/Wide Adapter/A uses an onboard electronic terminator on the internal SCSI bus. When power is removed from the adapter, as in the case of this procedure, the terminator goes to a high impedance state and the resistance measured cannot be verified, other than it will be high. Some internal terminators use an electronic terminator which also goes to a high impedance state when power is removed. Therefore, this procedure is designed to find a short or low resistance fault as opposed to the presence of a terminator or a missing terminator.

1.3.30 External Bus PTC Isolation Procedure

Isolate the external SCSI bus PTC fault with the following procedure.

Note: The external bus is differential.

1. Ensure that system power and all externally attached device power is turned off.

2. Check to ensure all devices are marked SCSI-Differential and that the terminator on the end of the SCSI bus is also marked differential. If not, you may have a single-ended SCSI device or terminator on the differential SCSI bus. Single-ended devices do not work on a differential SCSI bus and may cause a PTC type error to be reported. The entire SCSI bus may appear to be intermittent. After ensuring the system is completely differential, continue.

3. Disconnect the internal and external cables from the adapter and remove the adapter from the system.

4. Verify with a digital Ohmmeter, that the internal PTC resistor, labeled TR2, (refer to Figure 1-7 in topic 1.3.25) is cool and in a low resistance state, typically less than 1/2 Ohm. Measuring across, be sure to probe both sides of the PTC resistor where the solder joints and board come together. The polarity of the test leads is not important. If necessary, allow the PTC resistor cool and remeasure.

   If there was no internal cable attached, diagnostics either sent you here in error or the adapter is shorted. The next step determines if there is a short on the adapter.

5. Locate capacitor C4 and measure the resistance across it using the following procedure:

   a. Connect the positive lead to the side of the capacitor where the + is indicated on the board near C4. Be sure to probe at the solder joint where the capacitor and board come together.
   b. Connect the negative lead to the opposite side of the capacitor. Be sure to probe at the solder joint where the capacitor and board come together.

      - If there is no fault present, then the resistance reading will be 25 to 35 Ohms. The adapter is not faulty. Continue to the next step.

      - If the resistance measured is higher than 35 Ohms, check to see if RN1, RN2 and RN3 are plugged into their sockets. If these sockets are empty, you are working with a Multi-Initiators or High-Availability system. With these sockets empty, a resistive reading across C4 cannot be verified other than it will measure a high resistance (not a short). If the resistance measurement is low enough to be suspected as a fault (lower than 10 Ohms), continue to next step.

      - If the resistance is high and there is no external cable to reattach, there is no apparent cause for the PTC diagnostic failure.

      - If the resistance reading is low, typically below 10 Ohms, there is a fault. Because there are no cables attached, the fault is on the adapter. The adapter should be replaced.

      - If the resistance measured was high and there is an external cable to reattach proceed to the next step.

6. Reattach the external cable to the adapter.

   a. Remeasure across C4 as previously described.
   b. If the resistance is between 10 to 20 Ohms, there is no apparent cause for a PTC resistor failure.
   c. If the resistance is less than 10 Ohms, there is a possibility of a fault on the external SCSI bus. Troubleshoot the external SCSI bus by disconnecting devices and terminators. Measure across C4 to determine if the fault has been removed.

   Probable Tripped PTC Causes

   - A shorted terminator or cable. Check for bent pins on each connector and removable terminator.
   - Intermittent PTC failures can be caused by improperly seated cable connectors. Reseat the connector and flex the cable in an attempt

to duplicate the fault condition across C4.

- Plugging or unplugging a cable or terminator while the system is turned on (hot plugging).
- A shorted device.
- Single-ended devices are attached to the differential SCSI bus.

1.3.31 Drawer/Deskside Unit Documentation

Various SRNs direct the service person to drawer/deskside unit documentation. Consider the following installation and service guides:

- *9333 Model 010 and 011 High-Performance Disk-Drive Subsystem Installation Service Guide*, order number SY33-0161.
- *9333 Model 500 and 501 High-Performance Disk-Drive Subsystem Installation Service Guide*, order number SY33-0168.
- *9334 Models 010 and 011 SCSI Expansion Units Installation and Service Guide*, order number SY33-0165.
- *9334 Models 500 and 501 SCSI Expansion Units Installation and Service Guide*, order number SY33-0167.

1.4 Quick Entry MAP

Subtopics
1.4.1 Purpose of This MAP
1.4.2 Quick Entry MAP Table of Contents

1.4.1 Purpose of This MAP

This MAP is the starting point for all service calls. It directs you to other MAPs and service information.

Please read and understand the following notes before using the "Quick Entry MAP."

Note:

1. Review diagnostic instructions found in Chapter 7 "Using the Diagnostics."

2. Use the Service Hints service aid in this chapter for possible updated diagnostic and repair information.

3. A system should not be powered-off without first executing a shutdown procedure. If you are unfamiliar with the shutdown procedure, obtain help from the system administrator or a person familiar with the system. When executing diagnostics from a disk drive or network be sure to exit diagnostics so that a shutdown is performed before powering-off the system.

4. Do not perform any actions, such as removing the diskette, operating the mouse, or keying information on the keyboard, until directed by the instructions.

5. When a MAP instructs you to exchange a FRU, use the service guide for the system unit, drawer, or device. Be sure to observe the *danger, caution,* and *warning* notices in that book.

6. See the operator manual for your type tty terminal to find the key sequences you need to respond to the diagnostic programs.

7. If a console display is not defined, **c31** is displayed. Follow the displayed instructions to select a console display. If you do not have a console display, set the keymode switch to Normal then back to Service to indicate to the diagnostics that there is no console display. The console display can be any direct-attached display or a terminal attached to the S1 port.

8. If additional information is needed about an adapter or device, refer to *Adapters, Devices, and Cable Information*.

9. There will be steps in the following MAPs that instruct you to power-off the system unit and replace a failing FRU. If the system unit only has a power on/off switch or button and no main switch, unplug the power cord before executing any replacement procedure.

10. When an 7012 G Series, 7013 J Series, and 7015/R30 system unit, known to be working correctly is powered-on in the Service position, either the **Maintenance Menu** or the **Diagnostic Operating Instructions** screen is displayed, depending on the setting of the **AutoService IPL** flag. Some steps of the following MAPs ask to verify if the **Diagnostic Operating Instructions** screen is displayed. In these cases after powering-on the system in the Service position, the **Maintenance Menu** is displayed, select "System Boot" and indicate the boot device, then verify if the **Diagnostic Operating Instructions** screen has been displayed.

11. If the operator panel on a 7012/G series, 7013/J series, or 7015/R30, is displaying part of an SRN or a solid number, check the system console for a complete SRN.

1.4.2 Quick Entry MAP Table of Contents

1.5 Quick Entry MAP

Symptoms	**What You Should Do**
Service Actions	
You have parts to exchange or a corrective action to perform.	1. Go to Removal and Replacement Procedures in the System Service Guide. 2. Go to MAP 0410 Repair checkout.
You need to verify that a part exchange or corrective action corrected the problem.	Go to MAP 0410 Repair Checkout.
You need to verify correct system operation.	Go to MAP 0420 System Checkout.
SRNs	
An SRN is displayed when running diagnostics.	1. Record SRN and location code. 2. Look up the SRN in the SRN List and do the action listed.
You have an SRN.	Look up the SRN in the SRN List and do the action listed. **Note:** Customer provided SRNs should be verified. This can be done by using the Display Previous Service Aid or by running the diagnostics again.

Symptoms	**What You Should Do**
Flashing 888 Displayed In Operator Panel Display	
The system stops with a flashing 888 in the operator panel display. 888 103 and 888 105 are diagnostic messages which contain an SRN and in most cases a location code. 888 102 is a system crash message which indicates some type of check in the processor or memory area. The check could be caused by hardware or software. Crash Codes 20x and 53x normally indicate a hard- ware problem. Most of the other codes indicate a software problem. A dump is written to the dump device whenever a dump occurs. It can be analyzed to determine if the problem is software or hardware. The hardware should be tested whenever a crash occurs. **Note:** Processor and memory tests are done during BIST and POST. Only problems that prevent the system from booting are reported during BIST and POST. All other problems are logged and analyzed when the Base System Diagnostic is run. Crashes are logged in the AIX Error Log. The Base System Diagnostic must be loaded from a disk or LAN and run in the Problem Determination Mode to analyze the error.	Refer to Chapter 2 "Reading Flashing 888 numbers on an Operator Panel Display." **If the second three digits are 103 or 105 then:** 1. Record the SRN and the location code. 2. Look up the SRN in the SRN table and do the action listed. **If the second three digits are 102 and the system is NOT an SMP system then:** 1. Power-Off the system. 2. Power-On the system and boot from a disk or LAN in the Service Mode. **Note:** If 888-102-xxx still occurs, go to MAP 0020. 3. Run the Base System Diagnostic in Problem Determination Mode. 4. If an SRN is displayed at any time, record the SRN and location code. 5. Look up the SRN in the SRN List and do the action listed. 6. If no SRN is displayed refer to MAP 020 Step 1. 7. If after reviewing MAP020 you have the same problem, it may be software related. Have the customer get a "Dump to Software Support" analysis. The procedure for doing a dump is documented in the

	Problem Solving Guide and Reference. **If the second three digits are 102 and the system is an SMP system then:** 1. If the flashing 888 did NOT occur during boot, perform the above steps for a 102 for non-SMP systems. 2. If the flashing 888 did occur during boot, then proceed. 3. Power Off. 4. Enable the BUMP Console flag and disable the Autoservice IPL flag. 5. Power On. 6. When the Maintenance Menu displays, display the BUMP Error Log. 7. If an SRN is logged, record it and do the listed action. **Note:** SRNs will be preceded by an 888 103. 8. If no SRN is logged, look up the error code in the system service guide and suspect the FRUs listed. 9. If nothing is logged, perform the above steps for a 102 for non-SMP systems.

Symptoms	**What You Should Do**
System Stops with a Solid Number Displayed in the Operator Panel Display	
The system stops with a number displayed in the operator panel display. **Note:** Most values do not remain in the display very long. Some values such 242, 243, 252, 253, 834, 835, 836, 837, 868, or 869 on any system may remain displayed for several minutes. A value of 165 on an SMP system may display for about 10 minutes. Other numbers depend on the number of SCSI devices and tty ports that are attached.	Find the number in the chart below, then do the action listed. c03 Wrong diskette inserted. c05 Diskette read error. c07 Insert next diagnostic diskette. c31 Select a console. 200 Place the key mode switch in the service Position, then: 1. Record SRN 101-200. 2. Look up the SRN in the SRN listing and do the action listed. 260 ----+ +---Go to MAP 0020 and do 261 ¦ problem determination 262 ----+ For numbers other than those listed above, do the following: 1. Record SRN 101-xxx where xxx is the number displayed. 2. Look up the SRN in the SRN List and do the action listed. If the operator panel display contains a non-alpha numeric pattern or the 101-*xxx* SRN is not listed in Chapter 2, use SRN 101-FFF.
System Stops with 6-Digit Error Code Displayed on an SMP System	
The system stops with a 6-digit error code displayed when booting.	1. Record the 6-digit error code. 2. If HIT RETURN TO CONTINUE is displayed on the BUMP console then hit RETURN. 3. Display the BUMP error log. 4. If an SRN is logged, record it and do the listed action. **Note:** An SRN will be preceded

	by a 888 103. 5. If no SRN is logged, look up the error code in the system service guide and suspect the FRUs listed.
System Stops with Alternating Numbers Displayed in the Operator Panel Display	
The system stops with numbers between 221 and 299 alternating in the operator panel display. This symptom indicates that the system cannot find a valid boot record. The system will continue, attempting to boot unless a fatal error is detected. The only fatal errors are: not enough memory, faulty processor, and machine checks.	1. Suspect corrupted software on the load device. 2. Try running diagnostics from an alternate device. 3. If are you able to load from an alternate load device, run diagnostics on the primary load device and adapter. If the diagnostics do not report a problem, suspect a corrupted boot record on the primary load device. 4. If you are unable to load from an alternate load device, go to the Minimum Configuration MAP 1540 in the system service guide.

Symptoms	**What You Should Do**
System Automatically Reboots	
The system automatically reboots. This symptom indicates that checkstops are occurring, a power supply problem, or a power source problem. If checkstops are occurring they should be logged in the error log.	1. Power-Off the system. 2. Power-On the system and boot from a disk or LAN in the Service Mode. 3. Run the Base System Diagnostic in Problem Determination Mode. 4. Run System Checkout. 5. If an SRN is displayed at anytime, record the SRN and location code. 6. Look up the SRN in the SRN List and do the action listed. 7. If an SRN is not displayed, suspect a power supply or power source problem.
Async Communication Problems	
You suspect an Async communication problem.	1. Run the Advanced Async diagnostics on the ports you are having problems with. If an SRN is displayed, look up the SRN and do the listed action. 2. If you suspect a problem with the Async Concentrator, Remote Async Node, etc. refer to the service documentation for these devices and perform any tests or checks listed.
Block Multiplexer Channel Adapter Problems	
You suspect a Block Multiplexer Channel Adapter problem.	Go to the Block Multiplexer Channel Adapter Section in Chapter 7.
CD-ROM Problems	
You suspect a CD-ROM drive problem.	1. Refer to the CD-ROM documentation and do any listed problem determination procedures. 2. Run the Advanced CD-ROM diagnostics in the Problem Determination Mode from a disk or LAN. If an SRN is displayed, look up the SRN and do the action listed.

	3. Use the SCSI Problem Isolation Procedure in Chapter 1. 4. Use the SCSI Bus Service Aid to exercise and test the SCSI Bus. 5. Refer to the *Adapters, Device and Cable Information* manual for additional information and problem determination procedures. **Note:** The CD-ROM problem determination is normally in the CD-ROM Drive Operator Guide or the system operator guide.

Symptoms	**What You Should Do**
Dials and Lighted Programmable Function Keyboard	
You suspect a Dials or LPFK problem.	Run the dials or LPFK diagnostics. If a SRN is displayed, look up the SRN and do the action listed. **Note:** If the 6094 Dials or the 6094 Lighted Programmable Function Keyboard (LPFK) are attached to serial port S1 or S2, consider the following: - Dials and LPFK must be configured using the Dials and LPFK Service Aid before they will appear on any menu or can be tested with the diskette or CD-ROM diagnostic package. - Dials and LPFK may not appear in the New Resource Menu when running diagnostics from disk. - Dials and LPFK must be configured, using AIX documentation or the Dials and LPFK Service Aid, before they will appear on any menu or can be tested with diagnostics loaded from disk or a server.
Disk Problems	
You suspect a disk drive problem. Disk problems are logged in the error log and are analyzed when the disk diagnostics are loaded from a disk or LAN and run in problem determination mode. Problems are reported if the number of errors are above defined thresholds. If diagnostics are booted from a disk, then diagnostics can only be run on those drives that are not part of the root volume group; however, an error log analysis will be run if these drives are selected. To run disk diagnostic tests on disks that are part of the root volume group, diagnostics must be booted from alternate media.	1. Run the disk drive diagnostics from alternate media. If an SRN is displayed, look up the SRN and do the action listed. 2. Boot from a disk or LAN in the Service Mode and run the disk drive diagnostics in Problem Determination Mode. If a SRN is displayed, look up the SRN and do the action listed. 3. Use the Certify Disk Service Aid to verify that the disk can be read. 4. Use the SCSI Problem Isolation Procedure in Chapter 1. 5. Use the SCSI Bus Service Aid to exercise and test the SCSI Bus. 6. Refer to the *Adapters, Device and Cable Information* manual for additional information and problem determination procedures.
Diskette Problems	

You suspect a diskette drive problem.	1. Run the diskette drive diagnostics. If an SRN is displayed, look up the SRN and do the listed action. 2. Use the Diskette Media Service Aid to test the diskette media. 3. Use the Backup/Restore Media Service Aid to exercise and test the drive and media.

Symptoms	**What You Should Do**
Display Problems	
You suspect a graphics display problem.	1. Go to the Problem Determination Procedures for the display. 2. Run diagnostics on the adapter that the display is attached to. If an SRN is displayed, look up the SRN and do the action listed. 3. Use the Display Test Patterns to test or adjust the display. 4. Refer to the *Adapters, Device and Cable Information* manual for additional information and problem determination procedures.
Ethernet Problems	
You suspect an Ethernet Adapter or network problem.	1. Run the Advanced Ethernet diagnostics in the Problem Determination Mode from disk. If an SRN is displayed, look up the SRN in the SRN List and do the action listed. 2. Use the Local Area Network Service Aids along with the Ethernet Service Aids to exercise and test the network. 3. Use the ping command to exercise and test the network. 4. Refer to the *Adapters, Device and Cable Information* manual for additional information and problem determination procedures.
Enterprise System Connection (ESCON) Adapter Problems	
You suspect a ESCON Adapter problem.	Go to the ESCON section of Chapter 7.
FDDI Problems	
You suspect a FDDI Adapter or network problem.	1. Run the Advanced FDDI diagnostics in the Problem Determination Mode from disk. If an SRN is displayed, look up the SRN in the SRN List and do the action listed. 2. Use the Local Area Network Service Aid to exercise and test the network. 3. Go to the FDDI section of chapter 7.
High-Availability SCSI	
You suspect a High-Availability SCSI problem.	Go to the FDDI section of chapter 7.
Keyboard, Mouse, or Tablet	
You suspect a keyboard, mouse, or tablet problem.	Run the device diagnostics. If an SRN is displayed, look up the SRN

	and do the action listed.
Operator Panel Problems	
You suspect an operator panel problem.	Run the Base System diagnostics. If an SRN is displayed, look up the SRN in the SRN List and do the action listed.

Symptoms	**What You Should Do**
Printer and TTY Problems	
You suspect a tty terminal or printer problem.	1. Go to the Problem Determination Procedures for the printer or terminal. 2. Check the port that the device is attached to by running diagnostics on the port. If an SRN is displayed, look up the SRN in the SRN List and do the action listed. 3. Use the Testing the Line Printer procedure in Chapter 6, to test the connection to the printer.
Processor and Memory Problems	
You suspect a processor or memory problem. Processor and memory tests are only done during BIST and POST. Only problems that prevent the system from booting are reported during BIST and POST. All other problems are logged and are ana- lyzed when the Base System Diagnostic is run. System Crashes are logged in the AIX Error Log. The Base System Diagnostic must be run in Problem Determination Mode to analyze the error.	1. Power off the system. 2. Power on the system and boot from a disk or LAN in Service Mode. 3. Run the Base System Diagnostic in Problem Determination Mode. 4. If an SRN is displayed at anytime, record the SRN and location code. 5. Look up the SRN in the SRN List and do the action listed.
Power Problems	
You cannot power on the system.	Go to Power MAP 1520 in the service documentation.
Power Light does not come on or stay on.	Go to Power MAP 1520 in the service documentation.
SCSI Adapter Problems	
You suspect a SCSI Adapter problem. The SCSI Adapter Diagnostics can only be run on a SCSI Adapter that was not used for booting; how- ever, the POST does test SCSI Adapters before at- tempting to use it to boot. If the system was able to boot while using the suspected faulty SCSI Adapter, the adapter is most likely good. Also, SCSI Adapter problems are logged in the error log and are analyzed when the disk diagnos- tics are loaded from a disk or LAN and run in prob- lem determination mode. Problems are reported if the number of errors are above a defined threshold.	1. If possible, run the adapter diagnostics from an IPL source attached to a different SCSI adapter. If an SRN is displayed, look up the SRN in the SRN List and do the listed action. 2. 2. Boot from a disk or LAN in the Service Mode and run the adapter diagnostics in Problem Determination Mode. If an SRN is displayed, look up the SRN in the SRN List and do the listed action. 3. Use the SCSI Problem Isolation Procedure in Chapter 1.
SCSI Bus Problems	

You suspect a SCSI bus problem.	1. Use the SCSI Problem Isolation Procedure in Chapter 1. 2. Use the SCSI Bus Service Aid to exercise and test the SCSI Bus.

Symptoms	**What You Should Do**
Tape Problems	
You suspect a tape drive problem.	1. Refer to the tape drive documentation and clean the tape drive. 2. Refer to the tape drive documentation and do any listed problem determination procedures. 3. Run the Advanced Tape diagnostics in Problem Determination Mode from a disk or LAN. If an SRN is displayed, look up the SRN in the SRN List and do the action listed. 4. Use the Backup/Restore Media Service Aid to exercise and test the drive and media. 5. Use the SCSI Problem Isolation Procedure in Chapter 1. 6. Use the SCSI Bus Service Aid to exercise and test the SCSI Bus. 7. Refer to the *Adapters, Device and Cable Information* manual for additional information and problem determination procedures. **Note:** Tape Drive Cleaning and Problem Determination is normally either in the Tape Drive Operator Guide or the System Operator Guide.
Token-Ring Problems	
You suspect a Token-Ring Adapter or network problem.	1. Run the Advanced Token-Ring diagnostics in Problem Determination Mode from a disk. If an SRN is displayed, look up the SRN in the SRN List and do the action listed. 2. Use the Local Area Network Service Aid to exercise and test the network. 3. Use the ping command to exercise and test the network. 4. Refer to the *Adapters, Device and Cable Information* manual for additional information and problem determination procedures.
Other Adapter Problems	
You suspect a problem on another adapter that is not listed above.	1. Run the Advanced diagnostics in Problem Determination Mode from a disk or LAN on the adapter you suspect. If an SRN is displayed, look up the SRN in the SRN List and do the listed action. 2. Refer to the *Adapters, Device and Cable Information* manual for additional information and problem determination procedures.

System Messages	
A System Message is displayed.	1. Some messages give instructions on how to resolve the problem. If the message describes the cause of the problem, attempt to correct it. If you are not given enough information to correct the problem, refer to the Message Index to determine the nature and scope of the message. 2. Look for another symptom to use.

Symptoms	**What You Should Do**
Boot Problems	
You suspect a boot problem on a non-SMP system.	All symptoms that can prevent the system from booting should be listed previously. Find the symptom and use it.
You suspect a boot problem on a SMP system.	All symptoms that can prevent the system from booting should be listed previously Find the symptom and use it; however, if you are unable to resolve the problem, refer to the "Using System Guard" chapter in the system unit service guide. Ensure that all flags and parameters are properly set.
System Hangs or Loops	
The system always hangs in the same application.	Suspect the application. To check the system: 1. Power off the system. 2. Power on the system and boot from a disk or LAN in Service Mode. 3. Run the Base System Diagnostic in Problem Determination Mode. 4. Run System Checkout. 5. If an SRN is displayed at anytime, record the SRN and its location code. 6. Look up the SRN in the SRN List and do the action listed.
The system hangs in different applications.	1. Power off the system. 2. Power on the system and boot from a disk or LAN in Service Mode. 3. Run the Base System Diagnostic in Problem Determination Mode. 4. Run System Checkout. 5. If a SRN is displayed at anytime record the SRN and its location code. 6. Look up the SRN in the SRN List and do the action listed.
The system hangs when running diagnostics.	Record SRN 110-*xxx*, where: 1. *xxx* is the first three digits of the menu number 2. displayed in the upper-right corner of the diagnostic menu screen. 3. If no menu number is displayed, use the "FRU Name

	Cross-Reference List" in Chapter 4 to obtain the failing function code (FFC) for the device. 4. Use the FFC code of the device for *xxx*. 5. Find the SRN in the "Service Request Number List" in Chapter 2; then do the action listed.
Intermittent Problems	
You suspect an intermittent problem.	Go to MAP 0040.
Miscellaneous Problems	
You suspect a cable problem.	Refer to the *Adapters, Device and Cable Information* manual for additional information and problem determination procedures.
You Cannot Find the Symptom in this Table	
All other problems.	Go to MAP 0020.

1.6 MAP 0020: Problem Determination Procedure

Subtopics
1.6.1 Purpose of MAP 0020

1.6.1 Purpose of MAP 0020

Use this MAP to get a service request number (SRN) if you were not provided with one by the customer or when directed by the MAPs.

Be prepared to record code numbers and use those numbers in the course of analyzing a problem. Go to Step 1.

Subtopics

1.6.1.1 Step 1

Note: If this system is connected to another system, refer to Chapter 7 of this book for possible pertinent information before proceeding further. If you have not done so already, read the section "Diagnostic Version 4.1 Considerations" in chapter 7 before proceeding.

Visually check the system for obvious problems such as unplugged power cables or external devices powered off.

Did you find an obvious problem?

NO Go to Step 2.
YES Fix the problem; then go to MAP 0410.

1.6.1.2 Step 2 (from Step 1)

If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

The AIX operating system contains the diagnostic programs. Other operating systems may not contain diagnostic programs.

Note: If you are not sure whether or not the AIX operating system is being used, assume that it is.

Is the AIX operating system used on this system?

NO Go to Step 14.
YES Go to Step 3.

1.6.1.3 Step 3 (from Steps 2, 4)

Note: If possible, run diagnostics from disk or from a server over a network. Diagnostics that are run from a disk or from a server take less time to run and perform additional functions.
If you are not able to run diagnostics from disk or a server, go to Step 14.
Unless the system (client) is set up to IPL from a server over a network, the server cannot be used to load diagnostics on the system (client).
If you wish to run concurrent mode diagnostics, follow the Service Hint procedure under "Using Concurrent Mode Diagnostics" at the beginning of this chapter; then go to Step 7.

Take the following action:

1. If the operating system is running, shut it down.

2. Set the system unit power switch to Off.

3. Set the key mode switch to the Service position.

4. Set the power switches of the attached devices to On.

5. Set the key power switch to On.

6. If **c31** displays in the operator panel display, follow the displayed instructions to select the console display. If you cannot select a console display, go to Step 20; otherwise, continue to the next substep.

   Note: If you do not have a console display, go to MAP 0220.

7. Wait until one of the following conditions occurs; then go to the next substep:

   - The power-on light does not come on or comes on and does not stay on.
   - The same numbers are displayed in the operator panel display for longer than three minutes.

     Note: If the diagnostics are being loaded from a server over a network, some numbers may be displayed for longer than three minutes.

   - The number **888** is flashing in the operator panel display.
   - The operator panel display is blank.
   - The system stops with two or more numbers between **221** and **296** alternatinating in the operator panel display.
   - Characters other than **888** are flashing in the operator panel display.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.

8. Find your symptom in the following table; then follow the instructions given in the Action column.

Symptom	**Action**
The system stops with the DIAGNOSTIC OPERATING INSTRUCTIONS displayed, and there is no obvious console display problem (for example, distortion or blurring).	Go to Step 7.
The power-on light does not come on, or comes on and does not stay on. **Note:** Some systems will not power-on if the key mode switch is in the Secure position. Ensure that the key mode switch is in the Service position. If it is not, place the key mode switch in the Service position, and start over at the beginning of this substep.	Go to the power MAP in the service guide or installation and service guide for your system unit, drawer, or enclosure.
The system stops with a *steady* (not flashing) number displayed in the operator panel display, and the power light is on.	Go to Step 4.

The system stops with **888** flashing in the operator panel display.	Go to Step 5.
The system stops with a 6-digit error code displayed when booting on an SMP system.	1. Record the 6-digit error code. 2. If HIT RETURN TO CONTINUE is displayed on the BUMP console then hit RETURN. 3. Display the BUMP error log. 4. If an SRN is logged, record it and do the listed action. **Note:** SRNs will be preceded by an 888 103. 5. If no SRN is logged, look up the error code in the system service guide and suspect the FRUs listed.
The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.	Go to Step 13.
The operator panel display is blank and the normal system login screen is displayed.	Be sure the key mode switch is set to the Service position. If the key mode switch is not in the Service position, repeat this step. If the key mode switch is in the Service position, record and report SRN 111-102; then go to Step 15.
The system stops with a blank operator panel display, and the DIAGNOSTIC OPERATING INSTRUCTIONS are not displayed correctly.	Go to Step 6.
The system stops with characters other than **888** flashing in the operator panel display.	Record SRN 111-105, and then go to Step 15.

1.6.1.4 Step 4 (from Steps 3, 10, 13, 14)

The following steps analyze a *steady* (not flashing) number displayed in the operator panel display while attempting to load the diagnostics.

Table 1-6.

operator panel display Number	**Action**
200	Be sure the key mode switch is set to the Service position. If the key mode switch is not in the Service position, go to Step 3. If the key mode switch is in the Service position, record SRN 101-200; then go to Step 15.
871	Go to MAP 0430 in this service guide.
c07	Insert the next diagnostic diskette and go to Step 14, substep 6.
c31	Follow the displayed instructions to select a console display; then return to Step that brought you here. (either Step 3 or Step 14) **Note:** If you cannot select a console display, go to Step 20; otherwise, continue to the next substep.
c03	The wrong diskette was inserted. Insert the proper diskette, and go to Step 14, substep 6.
c05	An error occurred while reading the diskette. Remove and insert the diskette again. If **c05** is displayed again, obtain a replacement diskette. If **c05** does not appear again, go to Step 14, substep 6.
260, 261 or 262	Go to Step 22
Any other number	Record SRN 101-*xxx* (where *xxx* is the number displayed in the operator panel display). **Note:** If the operator panel display contains a non-alphanumeric pattern the 101-*xxx* SRN is not listed in Chapter 2, use SRN 101-FFF. Find the SRN in the "Service Request Number List" in Chapter 2; then perform the action listed.

1.6.1.5 Step 5 (from Steps 3, 14, 15)

A flashing **888** in the operator panel display indicates that a crash message or a diagnostic message is ready to be read.

1. Use the instructions under "Reading Flashing 888 Numbers" in Chapter 2 of this book to read the message. After you read the complete message, identify and record the following, and then return here.

   Note: If you identified an SRN, proceed to substep 2; otherwise, go to Step 14.

   - Message type
   - Crash code (if displayed)
   - Diagnostic message

     Note: If an incomplete diagnostic message is displayed, run diagnostics from removable media. Suspect corrupted disk data.

   - Translated location code

2. Locate the SRN in the data recorded.

3. Find that SRN in the "Service Request Number List" in Chapter 2 of this book.

4. Perform the action listed.

1.6.1.6 Step 6 (from Steps 3, 14, 20, 23)

The following step analyzes a console display problem.

Find your type of console display in the following table; then, follow the instructions given in the Action column.

Type of Console Display	**Action**
5081 display	Go to the 5081 documentation and continue problem determination. If you do not find the problem, go to Step 17.
6091 display	Go to the 6091 documentation and continue problem determination. If you do not find the problem, go to Step 17.
7008 system display	Go to the 7008 documentation and continue problem determination. If you do not find the problem, go to Step 17.
8508 display	Go to the 8508 documentation and continue problem determination. If you do not find the problem, go to Step 17.
8517 display	Go to the 8517 documentation and continue problem determination. If you do not find the problem, go to Step 17.
tty-type terminal	Be sure the tty terminal attributes are set correctly. See "Running the Diagnostic Programs from a TTY Terminal" in Chapter 7 of this book. If you did not find a problem with the attributes, go to the documentation for this type of tty terminal, and continue problem determination. If you do not find the problem, go to Step 19.
Graphics display not listed above	Go to the documentation for this type of graphics display, and continue problem determination. If you do not find the problem, or there is no documentation, go to Step 17.

1.6.1.7 Step 7 (from Steps 3, 10, 14)

The diagnostic controller loaded correctly.

Press the Enter key.

Is the FUNCTION SELECTION menu displayed?

NO Go to Step 8.
YES Go to Step 9.

1.6.1.8 Step 8 (from Steps 7, 9, 19, 20)

There is a problem with the keyboard.

Find the type of keyboard you are using in the following table; then follow the instructions given in the Action column.

Keyboard Type	**Action**
Type 101 keyboard (U.S.). Identify by the size of the Enter key. The Enter key is in only one horizontal row of keys.	Record SRN 111-921; then go to Step 12.
Type 102 keyboard (W.T.). Identify by the size of the Enter key. The Enter key extends into two horizontal rows.	Record SRN 111-922; then go to Step 12.
Kanji-type keyboard. (Identify by the Japanese characters.)	Record SRN 111-923; then go to Step 12.
tty terminal keyboard	Go to the documentation for this type of tty terminal and continue problem determination.

1.6.1.9 Step 9 (from Step 7)

1. Select the Advanced Diagnostics Routines option.

   Note: If the terminal type has not been defined, you will be prompted to define the terminal type. If you are using diagnostic version 4.1 or later the DEFINE TERMINAL menu will appear after selecting the **Advanced Diagnostic Routines** option. If you are using an earlier version of the diagnostics a note appearing on the FUNCTION SELECTION menu will inform you to initialize the terminal setting. You will not be allowed to proceed until this is done.

2. When the DIAGNOSTIC MODE SELECTION menu displays, select the Problem Determination option.

3. Find your system response in the following table; then follow the instructions in the Action column.

System Response	**Action**
The ADVANCED DIAGNOSTIC SELECTION menu is displayed.	Go to Step 10.
The MISSING RESOURCE menu or the NEW RESOURCE menu is displayed.	Follow the displayed instructions until either the ADVANCED DIAGNOSTIC SELECTION menu or an SRN is displayed. If you are running diagnostics from diskettes, be sure that all adapters and SCSI devices are listed on the NEW RESOURCE menu. **Note:** Resources attached to serial and parallel ports may not appear in the NEW RESOURCE menu. If the ADVANCED DIAGNOSTIC SELECTION menu is displayed, go to Step 10. If an SRN is displayed, record it, and go to Step 12.
The diagnostics begin testing a resource. **Note:** If the Problem Determination Option was selected from the DIAGNOSTIC MODE SELECTION menu, and if a recent error has been logged in the error the diagnostics will automatically begin testing the resource.	Follow the displayed instructions. If the No Trouble Found screen is displayed, press Enter. If another resource is tested, repeat this step. If the ADVANCED DIAGNOSTIC SELECTION menu is displayed, go to Step 10. If an SRN is displayed, record it, and go to Step 12.
The system did not respond to selecting the Advanced Diagnostics Option.	Go to Step 8.
The system stops with a steady (not flashing) number displayed in the operator panel display, and the power light is on.	Go to Step 4
The system stops with 888 flashing in the operator panel display.	Go to Step 5
The system stops with characters other than 888 flashing in the operator display.	Record SRN 111-105 and then go to Step 15.
The system stops with the message "The system will now continue the boot process. Please wait..."	Go to Map 1540 in either the service guide or the installation and service guide for this system unit, drawer or enclosure.

1.6.1.10 Step 10 (from Step 9)

Select and run the diagnostic tests on the resources you are having problems with. Find the response in the following table and take the action for it.

Note: If you are using the diskette package and the device you want to test doesn't appear on the test list, find this symptom in the following table, and take the action listed.

Diagnostic Response	**Action**
An SRN is displayed.	Record the SRN, the FRU names, and the location code for the FRUs; then go to Step 12.
The system stops for five minutes or more with a steady (not flashing) number displayed in the operator panel display.	Go to Step 4.
The TESTING COMPLETE menu and the **No trouble was found** message are displayed and you have not tested all of the resources.	Press Enter and continue testing other resources.
The TESTING COMPLETE menu and the **No trouble was found** message are displayed and you *have* tested all of the resources.	Go to Step 16.
The system halted while testing a resource, and the system has only 8 MB of memory.	Load diagnostics again, and test this resource first. If the system halts again, find the other diagnostic response in this table for a system halt while testing a resource.
The system halted while testing a resource.	Record SRN 110-*xxx*, where *xxx* is the first three digits of the menu number displayed in the upper-right corner of the diagnostic menu screen. If no menu number is displayed, use the "FRU Name Cross-Reference List" in Chapter 4 to obtain the failing function code (FFC) for the device. Use the FFC code of the device for *xxx*. Find the SRN in the "Service Request Number List" in Chapter 2; then do the action listed.
An installed device does not appear in the test list of the disk based diagnostic programs	Ensure that the diagnostic support for the device was installed on the disk. The Display Configuration service aid can be used to determine whether diagnostic support is installed for the device.
A device does not appear in the test list.	Record SRN 110-101. Find the SRN in the "Service Request Number List" in Chapter 2; then do the listed action. **Note:** Ensure that the diagnostic diskette containing the diagnostics for that device has been read before doing the action listed. Supplemental diskettes may be required if service aids are run from CD-ROM or diskette.
The system stops with 888 flashing in the operator panel display.	Go to Step 11.

Note: If Dials or LPFK are attached to serial port S1 or S2, diagnostics cannot be run on them from diskette until they are configured using the Dials and LPK Configuration Service Aid. If Dials or LPFK are attached to serial port S1 or S2, and diagnostics are being run from disk or server, Dials or LPFK will only appear on the selection screen if they have been configured by the user. Use the Dials and LPFK Configuration Service Aid on these devices.

1.6.1.11 Step 11 (from Step 10)

A flashing **888** in the operator panel display indicates that a crash message or a diagnostic message is ready to be read.

1. Use the instructions in the "Reading Flashing **888** Numbers" procedure in Chapter 2 of this book to read the message. Record the message number, the crash message, and the diagnostic message.

2. If you identified an SRN, proceed to substep 3; otherwise, go to substep 5.

3. Record the SRN from the diagnostic message.

4. Go to Step 12.

5. Go to MAP 1540 in either the service or the installation and service guide for this system unit, drawer, or enclosure.

1.6.1.12 Step 12 (from Steps 8, 9, 10, 11)

Take the following actions:

1. Find the SRN in the "Service Request Number List" in Chapter 2 of this book.

   Note: If the SRN is not listed in Chapter 2, look for it in the following:

   - Any supplemental service manual for the device
   - The diagnostic problem report screen for additional information
   - The Service Hints service aid in Chapter 1
   - The CEREADME file (by using the Service Hints service aid).

2. Perform the action listed.

1.6.1.13 Step 13 (from Step 3)

The system stopped with two or more numbers between **221** and **296** alternating in the operator panel display. This indicates the diagnostic programs could not load from disk or server, and that the load program is looking for the diagnostic programs on the diskette or some other load device.

Are you trying to load either disk based or server based diagnostics?

NO Record SRN 111-101; then go to Step 15.
YES Go to Step 14.

1.6.1.14 Step 14 (from Steps 2, 3, 4, 5, 13, 23)

If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

The following steps analyze a failure to load the diagnostic programs from disk or a server. The steps are also used when the diagnostic programs are not available on disk or through a server.

1. Be sure the application programs and the operating system are stopped.

2. Set the system unit power switch to Off.

3. Set the key mode switch to the Service position.

4. Locate the diagnostic diskettes or the CD-ROM diagnostic disc that was shipped with the system unit. If you are using diskettes, insert the first diagnostic diskette into the diskette drive; otherwise, insert the diagnostic CD-ROM disc into the caddy, and then insert the caddy into the CD-ROM drive.

   Note: If the system does not have a diskette drive or CD-ROM drive with diagnostic disc, continue to the next substep.

5. Set the system unit power switch to On.

6. Wait until one of the following conditions occurs; then go to the next substep:

   - The system stops with **c02, c07** or **c31** displayed in the operator panel display.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.
   - A number is displayed in the operator panel display for longer than three minutes.
   - The number **888** is flashing in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS display.

7. Find your symptom in the following table; then follow the instructions given in the Action column.

Symptom	**Action**
The system stops with **c07** displayed in the operator panel display.	Insert the next diagnostic diskette into the diskette drive; then wait for one of the other symptoms in this table to occur.
The system stops with c31 displayed in the operator panel display.	Follow the displayed instructions to select a console display; then wait for one of the other symptoms in this table to occur. If you cannot select a console display, go to Step 20. If you do not have a console display, go to MAP 0220.
The system stops with **c02** displayed in the operator panel display.	Start over at the beginning of this step, and use the 16MB Diagnostic Boot diskette.
The system stops with **538** displayed in the operator panel display, and you used the 16 MB Diagnostic Boot diskette to load diagnostics.	Start over at the beginning of this step, and use the 8MB Diagnostic Boot diskette.
The system stops with **260, 261** or **262** displayed in the operator panel display.	If the system has either a diskette drive or CD-ROM drive with diagnostic disc, record SRN 111-101, and then go to Step 15; otherwise, go to MAP 1540 in service guide for this system unit.
The system stops with the DIAGNOSTIC OPERATING INSTRUCTIONS displayed, and there is no obvious	Go to Step 7.

console display problem (for example, distortion or blurring).	
The system stops with a steady (not flashing) number displayed in the operator panel display, and the power-on light is on.	Go to Step 4.
The system stops with **888** flashing in the operator panel display.	Go to Step 21.
The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.	Record SRN 111-101; then go to Step 15.
The system stops with a blank operator panel display, and the DIAGNOSTIC OPERATING INSTRUCTIONS are not displayed correctly.	Go to Step 6.
The system stops with a blank operator panel display, and instructions are displayed on the console.	Follow the instructions, and wait for one of the other symptoms in this table to occur.
The power-on light does not come on, or comes on but does not stay on.	Go to the power MAP in the service guide or installation and service guide for your system unit, drawer, or enclosure.

1.6.1.15 Step 15 (from Steps 3, 4, 13, 14, 17, 18, 19)

Take the following actions:

1. Find the SRN in the "Service Request Number List" in Chapter 2.
2. Look at the Description and Action column, and go to the MAP listed.

1.6.1.16 Step 16 (from Steps 9, 10)

The diagnostics did not find a problem. The problem may be caused by software or an intermittent hardware problem. If you think you have an intermittent hardware problem, go to MAP 0040. If the failure is related to an external resource, use the problem determination procedures, if available, for that external resource. If a problem occurs when running diagnostics from disk but not when running from other diagnostic media, suspect software. Check for the presence of supplemental diagnostic material such as diskettes or documentation.

Note: Use the appropriate service (TAC) and action code, using the *QSAR Preparation Guide*, order number Z229-0455.

1.6.1.17 Step 17 (from Step 6)

Perform the following actions and then answer the question.

1. Set the system unit power switch to Off.
2. Place the key mode switch in the secure position.
3. Set the power switch to the On position.
4. Wait for five minutes or until 200 displays in the operator panel display.

Is the number 200 displayed in the operator panel display?

NO Record SRN 111-106; then go to Step 15.
YES Go to Step 18.

1.6.1.18 Step 18 (from Steps 17, 22)

Find your type display adapter in the table below; then complete the listed action.

Display Adapter Type	**Action**
Color graphics display adapter (Type 1-1)	Record SRN 111-874; then go to Step 15.
Grayscale graphics display adapter (Type 1-2)	Record SRN 111-872; then go to Step 15.
High-performance 8-bit 3D color graphics processor (Type 1-3)	Record SRN 111-128; then go to Step 15.
High-performance 24-bit 3D color graphics processor (Type 1-3)	Record SRN 111-128; then go to Step 15.
Graphics subsystem adapter (Type 1-4)	Record SRN 111-871; then go to Step 15.
7008 system display	Record SRN 111-725; then go to Step 15.
7235 Graphics subsystem Adapter (Type 1-4)	Record SRN 111-871; then go to Step 15.
POWER Gt4 subsystem adapter (8-bit)(Type 1-5)	Record SRN 111-878; then go to Step 15.
POWER Gt4 subsystem adapter (24-bit)(Type 1-5)	Record SRN 111-878; then go to Step 15.
POWER Gt4x subsystem adapter (8-bit)(Type 1-5)	Record SRN 111-878; then go to Step 15.
POWER Gt4x subsystem adapter (24-bit)(Type 1-5)	Record SRN 111-878; then go to Step 15.
POWER Gt4xi subsystem adapter (8-bit)(Type 1-5)	Record SRN 111-C52; then go to Step 15.
POWER Gt4xi subsystem adapter (24-bit)(Type 1-5)	Record SRN 111-C52; then go to Step 15.
POWER Gt4i processor card (Type 1-5)	Record SRN 111-C49; then go to Step 15.
POWER Gt4xi processor card (Type 1-5)	Record SRN 111-C50; then go to Step 15.
POWER Gt1 graphics adapter (7008, 7011/220/230)	Record SRN 111-880; then go to Step 15.
POWER Gt1x graphics adapter (7008, 7011/220/230)	Record SRN 111-898; then go to Step 15.
POWER Gt3 subsystem adapter (Type 1-6)	Record SRN 111-877; then go to Step 15.
POWER Gt4e subsystem adapter (Type 1-8)	Record SRN 111-B59; then go to Step 15.
POWER Gt3i subsystem adapter (Type 1-9)	Record SRN 111-B58; then go to Step 15.
POWER GXT100/GXT150	Record SRN 111-942; then go to Step 15.
POWER GXT155L	Record SRN 111-942; then go to Step 15.
POWER GXT150M	Record SRN 111-710; then go to Step 15.
POWER GXT1000 graphics adapter (Type 1-A)	Record SRN 111-908; then go to Step 15.
Unknown type graphics adapter.	Record SRN 111-725; then go to Step 15.

1.6.1.19 Step 19 (from Step 6)

Record SRN 111-259; then go to Step 15.

1.6.1.20 Step 20 (from Steps 3, 14)

When the c31 halt was present, were the instructions to select a console display readable with no obvious problems with the display?

NO Go to Step 6.
YES Go to Step 8.

1.6.1.21 Step 21 (from Step 14)

A flashing **888** in the operator panel display indicates that a crash message or a diagnostic message is ready to be read.

1. Use the instructions under "Reading Flashing 888 Numbers" in Chapter 2 of this book to read the message. After you read the complete message, identify and record the following, and then return here.

   Note: If you identified an SRN, proceed to substep 2; otherwise, go to substep 5.

   - Message number
   - Crash code (if displayed)
   - Diagnostic message

     Note: If an incomplete diagnostic message is displayed, run diagnostics from an alternate diagnostic source.

   - Translated location code

2. Locate the SRN in the data recorded.

3. Find that SRN in the "Service Request Number List" in Chapter 2 of this book.

4. Perform the action listed, and then stop; you have finished Step 21.

5. Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.

1.6.1.22 Step 22 (from Step 4)

The following table analyses a steady (not flashing) number displayed in the operator panel display while attempting to load diagnostics:

Three-Digit Display Number	**Action**
260	If the display console is attached to a graphics adapter, go to Step 23; otherwise, press the 1 key on the tty terminal keyboard, and then go to Step 23.
261	If the console is a tty terminal, press the 1 key on the tty terminal keyboard, and then go to Step 23; otherwise, go to Step 18.
262	A keyboard was not detected. If a keyboard is attached to the system's keyboard port, record SRN 101-262, and then go to Step 15; otherwise, press the 1 key on the tty terminal keyboard, and then go to Step 23.

1.6.1.23 Step 23 (from Step 22)

Find your symptom in the table below; then complete the listed action.

Symptom	**Action**
Information is not displayed or is displayed incorrectly on the console. For example, the information is distorted, blurred, or not otherwise readable.	Go to Step 6.
An SRN is displayed on the console.	Record the SRN. Find the SRN in the "Service Request Number List" in Chapter 2. Then perform the action listed.
The MAIN MENU or the SELECT LANGUAGE MENU is displayed on the console.	Go to Step 14.
An SRN or the MAIN MENU is not displayed on the console display.	Go to MAP 1560 in the service guide for this system unit.

1.7 MAP 0030: Additional Problem Determination

Subtopics
1.7.1 Purpose of MAP 0030

1.7.1 Purpose of MAP 0030

This MAP is used for problems that still occur after all FRUs indicated by the SRN have been exchanged. Go to Step 1.

Adapters and controllers are logic interfaces with devices, local area networks (LANs), and other networks. These logic interfaces may be located on microchannel adapters, the standard I/O planar, or on the system planar.

Subtopics

1.7.1.1 Step 1

Determine if one of the exchanged FRUs is external to the system unit.

Is one of the exchanged FRUs either an externally attached device or a device installed in a drawer in a rack-type system unit?

NO Go to Step 3.
YES Go to Step 2.

1.7.1.2 Step 2 (from Step 1)

Some externally attached devices and some of the drawers in a rack-type system unit have their own problem determination procedures. When they have separate problem determination procedures, they should be used first.

Check the documentation for the external device.

Does the external device have separate problem determination procedures that you have not used on this problem?

NO Go to Step 3.
YES Go to the problem determination procedures for the external device, and follow them. If they do not fix the problem, return to this MAP, and go to Step 3.

1.7.1.3 Step 3 (from Steps 1, 2)

Look at the SRN source code for your SRN and take the action listed in the following table for your source code.

SRN Source Code	**Action**
A, E, H, J, K	Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
B	Go to Step 10.
C	Go to Step 9.
D	Go to Step 4.
G	Use the Service Hints service aid for possible information about this problem. If the service aid does not help, call your support person.

1.7.1.4 Step 4 (from Step 3)

The SRN can be reported on the screen or by the operator panel display.

Was the SRN reported by the operator panel display?

NO Go to Step 5.
YES Go to Step 9.

1.7.1.5 Step 5 (from Step 4)

The diagnostic programs are part of the AIX operating system. After the AIX operating system is installed using the **installp** command, the diagnostics can be loaded from disk or server.

Are you able to load the diagnostic programs from disk or server?

NO Go to Step 9.
YES Go to Step 6.

1.7.1.6 Step 6 (from Steps 5, 9)

System checkout sometimes detects a problem that is not detected by the other diagnostics.

Have you run system checkout using the advanced diagnostics?

NO Go to Step 7.
YES Go to Step 9.

1.7.1.7 Step 7 (from Step 6)

Run system checkout using the advanced diagnostics.

Did you get an SRN?

NO Go to Step 9.
YES Go to Step 8.

1.7.1.8 Step 8 (from Step 7)

Look at the new SRN.

Did you get a different SRN than when you started?

NO Go to Step 9.
YES Look at the Description and Action column, and then go to the MAP or service information listed.

1.7.1.9 Step 9 (from Steps 3, 4, 5, 6, 7, 8)

1. Find the failing resource in the table that follows on the next three pages.

2. Perform the first action for the resource.

3. If you exchange a FRU or change a switch setting, test the resource again by running the diagnostic programs.

4. If the action does not correct the problem, perform the next action until all actions have been tried. If an action says to exchange a FRU that you have already exchanged, go to the next action. If an action corrects the problem, go to MAP 0410.

5. If you perform all of the actions and do not correct the problem, use the Service Hints service aid in Chapter 1 for applicable information updates. If the service aid does not help, call your support person.

Table 1-7.

Failing Resource	**Repair Actions**
Disk drive Tape drive Diskette drive CD-ROM drive Keyboard Tablet Dials LPFK Mouse	Go to Step 11.
SCSI I/O controller	Go to Step 12.
8-port async adapters 16-port async adapters	1. If the adapter is plugged into a planar via a riser card, check or exchange the riser card. 2. Exchange the planar into which the adapter is plugged.
64-port async controller or 16-port async concentrator	Check or exchange the following: 1. Check the power to the 16-port concentrator. To check the power, unplug the external power cable from the outlet; then plug it in again while watching the status light. The status light should blink as the concentrator runs the power-on tests. If the status light does not blink, check or exchange the external power cable, the transformer, or the 16-port concentrator. 2. Exchange the 64-port controller or the 16-port concentrator. 3. Check or exchange the cable between the controller and the concentrator. 4. If the 64-port controller is one of the FRUs called out by the SRN, exchange the planar into which the controller is plugged.
128-port async controller or 16-port remote async node	Check or exchange the following: 1. Check the power to the 16-port remote async node. To check the power, observe the remote async node front panel; the status indicators and two-digit display should be illuminated. If they are not illuminated, check or exchange the external power cable,

	power supply or 16-port remote async node. 2. Exchange the 128-port controller or the 16-port remote async node. 3. Check or exchange the controller line cabling to which the 16-port remote async node is attached. 4. If the 128-port controller is one of the FRUs called out by the SRN, exchange the planar into which the controller is plugged.
Other I/O and communication adapters	Determine whether the adapter contains any attached FRUs such as fuses, DRAMs, and crossover cables. **Note:** To check for other FRUs, find the resource in Chapter 4; then go to the failing function code listed. 1. Check or exchange any attached FRU on the resource. 2. If the adapter is plugged into a planar via a riser card, check or exchange the riser card. 3. Exchange the planar into which the adapter is plugged.
Display adapter that has only one card	Exchange the planar into which the adapter is plugged. If the adapter is plugged into a planar via a riser card, exchange the riser card first.
Color graphics base card (MGE2)	Exchange the following: 1. Color graphics video card (MRV2) 2. The planar or system planar the base card is plugged into.
Color graphics video card (MRV2)	Exchange the following: 1. 8-bit color graphics card (MDE1) or the 24-bit color graphics card (MEV2) 2. If present, 24-bit Z-buffer option (MZB1) 3. Color graphics base card (MGE2) 4. Crossover cables between the base card and video card.
8-bit color graphics card (MDE1) 24-bit color graphics card (MEV2) 24-bit Z-buffer option (MZB1)	Exchange the following: 1. 8-bit color graphics card (MDE1) or the 24-bit color graphics card (MEV2). 2. If present, 24-bit Z-buffer option (MZB1). 3. Color graphics video card (MRV2).
Standard I/O planar	Check or exchange the following: 1. The fuse on the standard I/O planar 2. The I/O planar.
The device is a SCSI device and there is more than one device attached to this SCSI controller.	Determine and record the addresses of all of the devices attached to this SCSI controller (both internal and external). Each device must have a different address. If addresses are changed, test the resource again.
Standard I/O planar	Perform the following: 1. Test the fuse, if present, on the standard I/O planar; replace if faulty.

	2. Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
System planar	Check or exchange the following: 1. Any fuses on the system planar 2. The CPU card (if applicable).
I/O planar or combination planar	Perform the following: 1. Test the fuse, if present, on the standard I/O planar; replace if faulty. 2. Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
System planar	Perform the following: 1. Test the fuse, if present, on the system planar; replace if faulty. 2. Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer or enclosure.
Other FRUs	Check the Service Hints service aid for applicable information updates. If the Service Hints service aid does not help, call your support person.

1.7.1.10 Step 10 (from Step 3)

Check the system for loose cards, cables, and obvious problems. If you do not find a problem, check the Service Hints service aid in Chapter 1 for applicable information updates. If the Service Hints service aid does not help, call your support person.

1.7.1.11 Step 11 (from Step 9)

The SRN identified a device as the failing resource and the previous MAPs have not corrected the problem. Use the following information to isolate the problem.

Consider each of the following actions; then do each action that applies to your resource. Do the actions in the order listed.

Note: The FRU Name Cross-Reference List in chapter 4 can be used to find the FFC for adapters or devices. Once the FFC is obtained, use the Failing Function Code list in chapter 3 to determine the physical location of an adapter.

Considerations	**Repair Actions**
The adapter or controller for the device has a fuse on it. (Check the description column for the adapter or controller in the "Failing Function Code List" in Chapter 3.)	Check the fuse. If you exchange the fuse, test the resource again.
The device is a SCSI device, and there is more than one device attached to this SCSI controller.	Determine and record the addresses of all the devices (both internal and external) attached to this SCSI controller. Each device must be set to a different address. If addresses are changed, test the device again.
The device is a SCSI device, and there is more than one device attached to this SCSI controller. You have already checked the addresses.	Use the SCSI Bus service aid described in Chapter 7 of this book to isolate the problem to a cable, the device, or the terminator. If you are unable to fix the problem, check the Service Hints service aid for applicable information updates. If the Service Hints service aid does not help, call your support person.
Determine the adapter or controller to which the failing device is attached.	Exchange the adapter or controller for the failing device.
The device or the enclosure that the device is located in is attached to the adapter or controller by a single cable.	If there is a terminator or other device on the cable, check or exchange it also.
The resource is a mouse, keyboard, tablet, or standard I/O planar.	Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.

1.7.1.12 Step 12 (from Step 9)

The SRN identified a SCSI controller as the failing resource and the previous MAPs have not corrected the problem. Use the following information to isolate the problem.

Note: 1. For detailed information regarding SCSI controller fuse or PTC problems, refer to Service Hints in Chapter 1.

2. The FRU Name Cross-Reference List in Chapter 4 can be used to find the FFC for adapters or devices. Once the FFC is obtained, use the Failing Function Code list in Chapter 3 to determine the physical location of an adapter.

Consider each of the following actions; then do each action that applies to your resource. Do the actions in the order listed.

Considerations	**Repair Actions**
The SCSI controller has a fuse on the card.	Check the fuse. If you exchange the fuse, test the resource again.
The SCSI controller has a card-mounted thermal fuse which does not reset.	A device attached to the SCSI bus or a defective cable may be causing the thermal fuse to open. Remove all devices on the external SCSI bus, one at a time, until the failure no longer occurs. If all devices have been removed and the failure still occurs, suspect the cable.
Only one device is attached to the SCSI controller	Exchange the device. Test the resource again.
There is only one cable between the SCSI controller and a device, and that device is called as one of the FRUs.	Check or exchange the SCSI controller cable. Also check or exchange the terminator. Test the resource again.
There is more than one device attached to this SCSI controller. You have already checked the addresses.	Use the SCSI Bus service aid described in Chapter 7 of this book to isolate the problem to a cable, the device, or the terminator. **Note:** If you cannot use the SCSI Bus service aid, proceed to the next applicable action.
You have tried the above actions.	Go to MAP 1540 in either the service guide or installation and service guide for this system unit, drawer, or enclosure.

1.8 MAP 0040: Intermittent Problem Isolation

Subtopics

1.8.1 Purpose of MAP 0040

This MAP provides a structured way of analyzing intermittent problems. This MAP is divided into two tables, the hardware symptoms and the software symptoms.

Since intermittent problems can be caused by software or hardware, you should consider all of the symptoms that may apply to your problem.

1.8.2 How to Use This MAP

This MAP contains information about causes of intermittent symptoms. In the table on the following pages, look at the symptoms that relate to the problem you are checking, and read the list of things to check.

When you exchange a FRU, go to MAP 0410 to check out the system.

1.8.3 Hardware Symptoms

Symptom of Hardware Problem	**Things to Check For**
Any hardware log entry in the error log.	Use the Hardware Error Report service aid to view the error log, and check for: □ Multiple errors on devices attached to one SCSI bus. □ Multiple errors on diskette drives; they are driven from the standard I/O planar. □ Multiple errors on devices attached to one async adapter. □ Multiple errors on internally installed devices only. Contact your service support structure for assistance with error report interpretation.
Hardware-caused system crashes	□ The connections on the CPU planar or CPU card □ Memory cards and SIMMs for correct connections □ Connections to the I/O planar or system planar □ The environment for a too high or low operating temperature.
System unit powers Off a few seconds after powering On.	□ Whether or not the problem occurs immediately after applying power. □ Fan speed. Some of the fans contain a speed-sensing circuit. If one of these fans does not turn at full speed, the power supply powers the system unit Off. □ Correct voltage at the outlet into which the system unit is plugged. □ Loose power cables and fan connectors, both internal and external.
System unit powers Off after running for more than a few seconds.	□ Excessive temperature in the power supply area; the system power supply contains a temperature sensor. □ Properly installed heat baffles. The system has heat baffles installed to control the air flow over the memory cards. □ Loose cable connectors on the power distribution cables. □ Fans turning at full speed after the system power has been on for more than a few seconds.
Only internally installed devices are failing.	Check the following items that are common to more than one device: □ Ground connections on all of the disk drives and other types of drives installed. □ Loose connections on the power cables to the planars, drives, fans, and battery. □ System unit cooling. Is the input air within limits? Are all the fans running at full speed? Are any of the vent areas blocked? □ Signal cables to the diskette drives, the power supply, and the operator panel. □ SCSI device signal cables for loose connectors and terminators.

	□ Terminators for any 857MB disk drives must be removed. See *Adapters, Devices, and Cable Information* for drive information. □ Loose SCSI device address jumpers.
Only internally installed devices are failing.	□ Possible contamination of any device that has a cleaning procedure. See the operator guide for cleaning instructions. □ Excessive static electricity. □ Correct voltage at the system unit power outlet
Only externally attached devices are failing.	Check the following items that are common to more than one device. □ Check for loose connectors and terminators on SCSI to device signal cables. □ Terminators must be removed from any 857MB disk drives that are installed in a device. Refer to *Adapters, Devices, and Cable Information* for drive information. □ Check for loose jumpers on devices that use jumpers to set the SCSI address. □ Check any device that has a cleaning procedure for contamination. Refer to the operator guide for cleaning instructions. □ Check for excessive static electricity. □ Check the device power outlet for proper voltage. □ Check the error log entries for the adapter driving the failing devices. □ Check the temperature of the devices. Are the cooling vents blocked? Are fans running? □ Check for other devices near the failing device that may be radiating noise (displays, printers, and such).

1.8.4 Software Symptoms

Symptom of Software Problem	**Things to Check For**
Any symptom you suspect is related to software.	Use the symptom index in Chapter 2 of the *Problem Solving Guide and Reference* to analyze software problems. Be sure to check RETAIN for known problems with your type of system unit or software.
Hardware-caused system crashes.	Check the following hardware items: □ Check the connections on CPU planar or CPU card. □ Check the memory cards and SIMMs for correct connections. □ Check the connections to the I/O planar or system planar. □ Check the environment for too high or low operating temperature. □ Is a display, keyboard, mouse, or tablet connector loose? □ Are the display operator controls (brightness, contrast, volume) set correctly?
Software-caused system crashes.	Check the following software items: □ Is the problem only with one application program? □ Is the problem only with one device? □ Does the problem occur on a recently installed program? □ Was the program recently patched or modified in any way? □ Is the problem associated with any communication lines? □ Check for static discharge occurring at the time of the failure.

1.9 MAP 0210: General Problem Resolution

Subtopics
1.9.1 Purpose of MAP 0210

1.9.1 Purpose of MAP 0210

Use this MAP to exchange the FRUs in the order of their listing within the SRN table in Chapter 2 of this manual. This MAP directs you to exchange the most-likely-to-fail FRU first if it is easily exchanged.

Subtopics

1.9.1.1 Step 1 (from Step 20)

1. Refer to Chapter 2, "Diagnostic Numbers and Codes," and record the SRN source code, and the FFCs by order of their listing in the table. Replace each in the same order as were the recorded FFCs.

2. Find the failing function codes in the "Failing Function Code List" in Chapter 3, and record the part number and description for each FRU.

3. If the system is accepting commands, enter the appropriate system shutdown command (or press the indicated PF key). Refer to Chapter 3 in topic 3.0.

4. Set the system unit power switch to Off.

   Notes:

   a. If the most probable FRU listed is the standard I/O planar, you first may want to exchange any other listed FRUs because the standard I/O planar takes more time to exchange.

   b. If the most probable FRU listed is a disk drive, you first may want to exchange any other FRUs listed, since the data stored on the disk is very important to the customer.

5. Replace FRU parts in the order by which the FFCs are listed.

Have you exchanged the first FRU in the listing?

NO Exchange the first FRU in the list, and then go to Step 2.
YES Go to Step 2.

1.9.1.2 Step 2 (from Step 1)

1. To verify the repair, find the SRN source code you recorded in the following table; then go to the step indicated in the Action column.

SRN Source Code	**Action**
A	Go to Step 3.
C	Go to Step 8.
D	Go to Step 12.
E	Go to Step 12.
F	Go to Step 12.
G	Go to Step 19.
H	Go to Step 18.
J	Go to Step 23.
K	Go to Step 12.

1.9.1.3 Step 3 (from Steps 2, 6)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

The following steps address problems when the system stops during POST with a steady value displayed in the operator panel display.

1. Set the key mode switch to the Service position.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

2. Set the system unit power switch to On. If **c07** displays in the operator panel display, insert the next diagnostic diskette. If **c31** displays, follow the displayed instructions to select a console display.

3. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady value in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Is a steady value other than c07, c31, 260, 261 or **262 displayed in the operator panel display?**

NO Go to Step 7.

YES Go to Step 4.

1.9.1.4 Step 4 (from Step 3)

Look at the operator panel display.

Is the displayed number the same as the last three digits of the SRN?

Note: If the last three digits of the SRN are FFF, answer the question YES.

NO The symptom has changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to MAP 0020 and get a new SRN.

YES Go to Step 5.

1.9.1.5 Step 5 (from Step 4)

Look at the FRU part numbers you recorded for this SRN.

Have you exchanged all the FRUs that correspond to the failing function codes?

NO Go to Step 6.
YES The SRN did not identify the failing FRU. Go to MAP 0030.

1.9.1.6 Step 6 (from Step 5)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the system unit power switch to Off.

2. Remove the new FRU and install the original FRU.

3. Exchange the next FRU in order of its failing function code SRN table listing.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

4. Set the system unit power switch to On. If **c07** displays in the operator panel display, insert the next diagnostic diskette. If **c31** displays, follow the displayed instructions to select a console display.

5. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Is the displayed number the same as the last three digits of the SRN?

NO Go to Step 7.

YES Go to Step 3, and repeat these steps.

1.9.1.7 Step 7 (from Steps 3, 6)

This completes the repair. Go to MAP 0410.

1.9.1.8 Step 8 (from Steps 2, 11)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

The following steps handle the problems when the system does not detect a resource.

Note: The following substeps are to be used with SRNs having source code C. In addition, diagnostics *must* be run from a disk or server.

1. Set the key mode switch to the Service position.

2. Set the system unit power switch to On. If **c31** displays, follow the displayed instructions to select a console display. If you do not have a console display, go to MAP 0220.

3. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the Operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS display.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO The symptom has changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to MAP 0020 to get a new SRN.

YES Go to Step 9.

1.9.1.9 Step 9 (from Steps 8, 11)

1. Press the Enter key.

2. If the terminal type has not been defined, you must use the Initialize Terminal option on the FUNCTION SELECTION menu to initialize the AIX operating system environment before you can continue with the diagnostics. This is a separate and different operation than selecting the console display.

3. Select the Advanced Diagnostics option.

4. When the DIAGNOSTIC MODE SELECTION menu displays, select System Verification.

Is the MISSING RESOURCE menu displayed?

NO Check the FRU you just exchanged by selecting System Verification on the DIAGNOSTIC MODE SELECTION menu; then select the FRU you exchanged. This completes the repair. Go to MAP 0410.

YES Go to Step 10.

1.9.1.10 Step 10 (from Step 9)

Look at the failing function codes and the FRU part numbers you recorded for this SRN.

Have you exchanged all the FRUs that correspond to the failing function codes?

NO Go to Step 11.
YES The SRN did not identify the failing FRU. Go to MAP 0030.

1.9.1.11 Step 11 (from Step 10)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. After performing a system shutdown, set the system unit power switch to Off.

2. Remove the new FRU and install the original FRU.

3. Exchange the next FRU in order of its failing function code SRN table listing.

4. Set the system unit power switch to On. If **c31** displays, follow the displayed instructions to select a console display.

5. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO The symptom has changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to MAP 0020 and get a new SRN.

YES Go to Step 8, and repeat the steps.

1.9.1.12 Step 12 (from Steps 2, 19)

Notes:

1. If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

2. Run diagnostics from disk or server, if possible. If the system planar or battery has been replaced and you are loading diagnostics from a server over a network, it will be necessary for the customer to set the network boot information for this system before diagnostics can be loaded. The system time and date information should also be set when the repair is completed.

1. Set the key mode switch to the Service position.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

2. Set the system unit power switch to On. If **c07** displays in the operator panel display, insert the next diagnostic diskette. If **c31** displays, follow the displayed instructions to select a console display. If you do not have a console display, go to MAP 0220.

3. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to Step 19.

Note: If the symptom is a flashing **888** in the operator panel display, go to step 20 instead.

YES Go to Step 13.

1.9.1.13 Step 13 (from Step 12)

1. Press the Enter key.

2. If the terminal type has not been defined, you must use the Initialize Terminal option on the FUNCTION SELECTION menu to initialize the AIX operating system environment before you can continue with the diagnostics. This is a separate and different operation than selecting the console display.

3. Select the Advanced Diagnostics Routines option.

4. When the DIAGNOSTIC MODE SELECTION menu displays, select the System Verification option.

Is the ADVANCED DIAGNOSTIC SELECTION menu displayed?

NO The symptom has changed. Check for loose cards, cables, and obvious Problems. If you do not find a problem, go to MAP 0020 and get a new SRN.
YES Go to Step 14.

1.9.1.14 Step 14 (from Step 13)

Select the FRU you exchanged.

Did the FRU pass the test?

NO Go to Step 15.
YES This completes the repair. Go to MAP 0410.

1.9.1.15 Step 15 (from Steps 14, 17)

Look at the failing function codes and FRU part numbers you recorded for this SRN.

Have you exchanged all the FRUs that correspond to the failing function codes?

NO Go to Step 16.
YES The SRN did not identify the failing FRU. Go to MAP 0030.

1.9.1.16 Step 16 (from Step 15)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. After performing a system shutdown, set the system unit power switch to Off.

2. Remove the new FRU and install the original FRU.

3. Exchange the next FRU in order of its failing function code SRN table listing.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

4. Set the system unit power switch to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If you do not have a console display, go to MAP 0220.

5. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO The symptom has changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to MAP 0020 and get a new SRN.

YES Go to Step 17.

1.9.1.17 Step 17 (from Step 16)

1. Press the Enter key.

2. When the FUNCTION SELECTION menu displays, select the Advanced Diagnostics Routines option.

3. When the DIAGNOSTIC MODE SELECTION menu displays, select the System Verification option.

4. Select the FRU you exchanged.

Did the FRU pass the test?

NO Go to Step 15, and repeat the steps.
YES This completes the repair. Go to MAP 0410.

1.9.1.18 Step 18 (from Step 2)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

The following steps handle the problem when the machine stops with a flashing **888** displayed in the operator panel display while it is loading diagnostics.

1. Set the key mode switch to the Service position.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

2. Set the system unit power switch to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

3. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Did the system stop with 888 flashing in the operator panel display?

NO This completes the repair. Go to MAP 0410.
YES Go to Step 20.

1.9.1.19 Step 19 (from Steps 2, 12)

Each time the Problem Determination option is selected from the Diagnostic Mode Selection menu, the error log for the preceding 24-hour period is analyzed, and problems are assigned SRN source G. Although a FRU may have already been replaced based on that error log analysis, repeated selection of the Problem Determination option will continue to reflect the same error for 24-hours, if the Product Topology service aid has not been run. The System Verification option does not perform error analysis. Ensure that the indicated failing FRU has not been replaced in the previous 24-hours.

Has the FRU called out by this SRN been replaced in the 24-hour period prior to this repair action?

NO Go to Step 12.
YES Disregard this SRN. If the Problem Determination option needs to be run, use the AIX operating system **errclear** command (refer to the AIX operating system *Commands Reference*) to delete the error log entry for the replaced resource. Go to MAP 0010.

1.9.1.20 Step 20 (from Steps 12, 18)

1. Read out the message in the operator panel display. If needed, see "Reading Flashing 888 Numbers" in Chapter 2 of this book.

2. Find and record the SRN in the message read out.

3. Find and record the location codes for the FRUs in the message read out.

Are the SRN and the location codes the same as the SRN you were analyzing?

NO Go to Step 1, and analyze the new SRN.
YES Go to Step 21.

1.9.1.21 Step 21 (from Steps 20, 22)

Look at the failing function codes and FRU part numbers you recorded for this SRN.

Have you exchanged all the FRUs that correspond to the failing function codes?

NO Go to Step 22.
YES The SRN did not identify the failing FRU. Go to MAP 0030.

1.9.1.22 Step 22 (from Step 21)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Remove the new FRU and install the original FRU.

3. Replace FRU parts in the order by which the FFCs are listed.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

4. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

5. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Did the system stop with 888 flashing in the operator panel display?

NO This completes the repair. Go to MAP 0410.
YES Go to Step 21.

1.9.1.23 Step 23 (from Step 2)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

If the built-in diagnostics detect a problem while the system IPL is performed in Service mode, follow these steps.

Note: If the system planar or battery has been replaced and you are loading diagnostics from a server over a network, it will be necessary for the customer to set the network boot information for this system before diagnostics can be loaded. The system time and date information should also be set when the repair is completed.

1. Set the key mode switch to the Service mode.

2. Set the system unit power switch to On.

3. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - A flashing **888** is displayed in the operator panel display.
   - The MAIN MENU is displayed.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS or the MAIN MENU displayed?

NO Go to Step 24.
YES This completes the repair. Go to MAP 1560 in the service guide for this system unit for repair verification.

1.9.1.24 Step 24 (from Steps 23, 25)

Look at the failing function codes and FRU part numbers you recorded for this SRN.

Have you exchanged all the FRUs that correspond to the failing function codes?

NO Go to Step 25.
YES Go to MAP 1560 in the service guide for this system unit.

1.9.1.25 Step 25 (from Step 24)

Notes:

1. If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

2. If the system planar or battery has been replaced and you are loading diagnostics from a server over a network, it will be necessary for the customer to set the network boot information for this system before diagnostics can be loaded. The system time and date information should also be set when the repair is completed.

1. Set the system unit power switch to Off.

2. Remove the new FRU, and reinstall the original FRU.

3. Replace FRU parts in the order by which the FFCs are listed.

4. Set the system unit power switch to On.

5. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - A flashing **888** is displayed in the operator panel display.
   - The MAIN MENU is displayed.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS or the MAIN MENU displayed?

NO Go to Step 24.
YES This completes the repair. Go to MAP 0410.

1.10 MAP 0220: Checking a System with No Console Display

Subtopics

1.10.1 Purpose of MAP 0220

This MAP guides you in checking out a system unit that does not have a console display.

The diagnostic programs use the operator panel display to communicate with the user when there is no console display available. You should have entered this MAP from a point where you were loading the diagnostic programs, and a **c31, 260, 261,** or **262** is displayed in the operator panel display.

The diagnostic programs will loop on the System Checkout option of the diagnostics until a problem is detected or a **c99** is displayed in the operator panel display. A **c99** indicates that all resources have been tested.

Note: On those systems that power off when the AIX "shutdown" command is entered will also power off immediately after the **c99** is displayed to indicate that testing is complete. It may be necessary to closely monitor the operator panel to see the **c99** displayed before the system powers off.

The numbers being displayed while the diagnostic programs are looping are the failing function code numbers for the resources being tested. Find the number in the "Failing Function Code List" in Chapter 3 to find out which resource is being tested. Go to Step 1.

1.10.2 Running Diagnostics with No Console from the Diskette Package

Diskette diagnostics run without a console behave differently from those from other media. Note the following differences:

- A **c99** indicating that all resources have been tested is not displayed.
- When all the devices on a diskette have tested successfully, **c07** is displayed. When the **c07** is displayed in the operator panel display, you may insert another diskette to test additional resources.

Subtopics

1.10.2.1 Step 1

Are you running diagnostics from the diskette package?

NO Go to Step 2.

YES Go to Step 8.

1.10.2.2 Step 2 (from Step 1)

The diagnostic loading should have halted, and one of the following should be displayed in the operator panel display: **c31, 260, 261,** or **262**.

Note: If **260, 261,** or **262** is displayed in the operator panel display, set the key mode switch to the Normal position and then back to the Service position; wait for **c31** to appear in the operator panel display before proceeding with this step.

1. Set the key mode switch to Normal and back to Service. This indicates to the diagnostics that there is no console display.

2. Wait until a **c99** or a flashing **888** is displayed in the operator panel display.

Is a flashing 888 displayed?

NO Go to Step 7.

YES Go to Step 3.

1.10.2.3 Step 3 (from Steps 2, 8)

The flashing 888 indicates the diagnostics found a problem.

Are you doing a checkout after exchanging a FRU?

NO Go to Step 6.

YES Go to Step 4.

1.10.2.4 Step 4 (from Step 3)

Look at the the FRU part numbers you recorded for this SRN.

Have you exchanged all of the FRUs identified by the failing function codes for this SRN?

NO Go to Step 5.
YES The SRN did not fix the problem. Check for loose cards, cables, and other obvious problems. If you do not find an obvious problem, call your support person.

1.10.2.5 Step 5 (from Step 4)

1. Set the power switch on the system unit to Off.

2. Remove the new FRU and install the original FRU.

3. Replace FRU parts in the order by which the FFCs are listed.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

4. Set the power switch on the system unit to On.

5. Wait until **c31** displays; then go to Step 2 if you are running diagnostics from disk; otherwise, go to Step 8.

1.10.2.6 Step 6 (from Step 3)

A flashing 888 in the operator panel display indicates that a crash message or a diagnostic message is ready to be read.

Use the instructions in "Reading Flashing 888 Numbers" in Chapter 2 of this book to read the message. Record the message number, the crash message, and the diagnostic message.

1. Locate the SRN in the message.

2. Find the SRN in the "Service Request Number List" in Chapter 2.

3. Perform the action listed.

1.10.2.7 Step 7 (from Steps 2, 8)

Are you doing a checkout after exchanging a FRU?

NO The diagnostics did not find a problem. The problem may be caused by a software failure or be an intermittent hardware problem. If you think you have an intermittent problem, go to MAP 0040.

YES This completes the checkout. Return the system to the customer.

1.10.2.8 Step 8 (from Steps 1, 5)

The diagnostic loading should have halted, and **c31** should be displayed in the operator panel display. Perform the following:

1. Insert the diskette containing the device(s) you want to test.

2. Set the keymode switch to Normal and then back to Service. This indicates to the diagnostics that there is no console display.

3. Wait until **c09** is displayed in the operator panel display; then proceed the next substep.

4. Wait until **c07** or a flashing **888** is displayed in the operator panel display; then answer the following question.

Is a flashing 888 displayed?

NO Go to Step 7.

YES Go to Step 3.

Note: You can test other devices while **c07** is displayed by repeating Steps 1, 3, and 4 before answering the question.

1.11 MAP 0230: SMP VPD Problem Resolution

Subtopics
1.11.1 Purpose of MAP 0230

1.11.1 Purpose of MAP 0230

This MAP handles SMP VPD Problems.

This MAP determines the problem by attempting to read the VPD from the system planar and the CPU cards. If the VPD can be read, the problem is a VPD problem. If the VPD can not be read, the problem is a hardware problem.

SRN 409-089 indicates that either the VPD from the system planar or a CPU card could not be read or the VPD that was read is not compatible.

Subtopics

1.11.1.1 Step 1

1. Shutdown or power-off the system unit.

2. Place the Key Mode Switch to Service.

3. Enter *sbb*.

4. Select **I2C Maintenance**. The I2C Maintenance Menu should appear.

5. Select **rd EEPROM** from the I2C Maintenance Menu. The EEPROM list menu should appear.

6. Select **MP**. The MP VPD should be displayed. A **.VPD** should be displayed at the beginning of the VPD.

Did the .VPD display?

NO Replace the System Planar.
YES Go to Step 2.

1.11.1.2 Step 2

Select **CPU0**. The CPU's VPD should be displayed. A **.VPD** should be displayed at the beginning of the VPD.

Did the .VPD display?

NO Replace the CPU card.
YES Repeat this step for each CPU card that is installed. If the VPD for all the CPU cards has been displayed, Go to Step 3.

1.11.1.3 Step 3

The problem is a VPD mismatch between the system planar and one of the CPU cards. Call your support center for assistance or replace the CPU card.

1.12 MAP 0240: Memory Problem Resolution

Subtopics
1.12.1 Purpose of MAP 0240

1.12.1 Purpose of MAP 0240

This MAP handles memory problems.

Note: When a FRU callout is a memory card, remove the memory SIMMs from the card being replaced, and insert the SIMMs into the new card.

Subtopics

1.12.1.1 Step 1 (from Step 21)

1. Find your SRN in the "Service Request Number List" in Chapter 2.

2. Record the SRN source code, and the failing function code. For SRNs which point to more than one FFC record and replace in the order as listed.

3. Find the function codes in the "Failing Function Code List" in Chapter 3 and record the part number and description for each FRU.

4. Set the power switch on the system unit to Off.

5. Replace FRU parts in the order by which the FFCs are listed.

   Note: If the SRN table lists multiple FRUs replace the FRUs one at a time in the order as listed. If a replaced FRU does not fix the problem, reinstall the original FRU, and then replace the next FRU on the list, when directed by the MAPs.

6. To verify the repair, find the SRN source code you recorded in the following table and go to the step indicated in the Action column.

SRN Source Code	**Action**
H, K	Go to Step 2.
E	Go to Step 10.

1.12.1.2 Step 2 (from Step 1)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the key mode switch to the Service position.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

2. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

3. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Did the system stop with 888 flashing in the operator panel display?

NO This completes the repair. Go to MAP 0410.

YES Go to Step 3.

1.12.1.3 Step 3 (from Steps 2, 4)

Look at the failing function codes you recorded.

Have you replaced all the FRUs that correspond to the failing function codes?

NO Go to Step 4.

YES Go to Step 21.

1.12.1.4 Step 4 (from Step 3)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Remove the new FRU and install the original FRU.

3. Replaced FRU parts in the order by which the FFCs are listed. If all FRUs have been replaced, go to the the next substep.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

4. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

5. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Did the system stop with 888 flashing in the operator panel display?

NO This completes the repair. Go to MAP 0410.

YES Go to Step 3.

1.12.1.5 Step 5 (from Step 21)

Look at the FRU descriptions you recorded for this SRN.

Was the only FRU identified by this SRN a memory SIMM?

NO Go to Step 6.
YES Go to Step 9.

1.12.1.6 Step 6 (from Steps 5, 15)

Look at the FRU descriptions you recorded for this SRN.

Was the only FRU identified by this SRN a memory card?

NO The SRN did not identify the failing FRU. Go to MAP 1540 in either the service guide or the installation and service guide for this system unit or drawer.
YES Go to Step 7.

1.12.1.7 Step 7 (from Step 6)

Look at the Machine Type/Model.

Is the Machine Type/Model either 7012, 7013/520/52H/J series, 7015/R30, or 7018?

NO Go to Step 8.

YES Go to Step 18.

1.12.1.8 Step 8 (from Step 7)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

For CPU planars with paired memory cards (refer to "System Unit Cross-Reference Data" in Chapter 3), the pairs are:

- Cards in slots D and H (first pair)
- Cards in slots B and F (second pair)
- Cards in slots C and G (third pair)
- Cards in slots A and E (fourth pair).

1. Remove all memory cards except the pair containing the failing memory card.

2. Replace the memory card you removed with the other memory card of the pair.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

3. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

4. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Did the system stop with 888 flashing in the operator panel display?

NO This completes the repair. Go to MAP 0410.

YES Go to Step 19.

1.12.1.9 Step 9 (from Step 5)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. If the memory SIMM is located on a memory card, replace that memory card. If the SIMM is located on a system planar, replace the CPU planar.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

3. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

4. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Did the system stop with 888 flashing in the operator panel display?

NO This completes the repair. Go to MAP 0410.

YES Go to Step 20.

1.12.1.10 Step 10 (from Step 1)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

The following steps handle the problem when the diagnostics identify a memory problem.

1. Set the key mode switch to the Service position.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

2. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

3. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO The symptom has changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to MAP 0020 and get a new SRN.

YES Go to Step 11.

1.12.1.11 Step 11 (from Step 10)

1. Press the Enter key.

2. When the FUNCTION SELECTION menu is displayed, select the Advanced Diagnostics option.

3. When the DIAGNOSTIC MODE SELECTION menu is displayed, select the System Verification option.

4. When the ADVANCED DIAGNOSTIC SELECTION menu is displayed, select the Base System Memory option.

Did the memory pass the test?

NO Go to Step 12.

YES This completes the repair. Go to MAP 0410.

1.12.1.12 Step 12 (from Steps 11, 14)

1. Find the SRN in the "Service Request Number List" in Chapter 2.

2. Record the SRN source code, and the failing function code. For SRNs which point to more than one FFC record and replace in the order as listed.

3. Find the function codes in the "Failing Function Code List" in Chapter 3 and record the part number and description for each FRU.

Have you replaced all the FRUs that correspond to the failing function codes?

NO Go to Step 13.

YES Go to Step 15.

1.12.1.13 Step 13 (from Step 12)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. After performing a system shutdown, set the power switch on the system unit to Off.

2. Remove the new FRU and install the original FRU.

3. Find the SRN in the "Service Request Number List" in Chapter 2.

4. Replace FRU parts in the order by which the FFCs are listed. If more than one memory SIMM is listed, replace all SIMMS.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

5. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

6. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO The symptom has changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to MAP 0020 and get a new SRN.
YES Go to Step 14.

1.12.1.14 Step 14 (from Step 13)

1. Press Enter.

2. If the terminal type has not been defined, you must use the Initialize Terminal option on the FUNCTION SELECTION menu to initialize the AIX operating system environment before you can continue with the diagnostics. This is a separate and different operation than selecting the console display.

3. Select the Advanced Diagnostics option.

4. When the DIAGNOSTIC MODE SELECTION menu displays, select the System Verification option.

5. When the ADVANCED DIAGNOSTIC SELECTION menu is displayed, select the Base System Memory option.

Did the memory pass the test?

NO Go to Step 12, and repeat the steps.

YES This completes the repair. Go to MAP 0410.

1.12.1.15 Step 15 (from Step 12)

Look at the FRU descriptions you recorded for this SRN.

Is the only FRU identified by this SRN a memory SIMM?

NO Go to Step 6.

YES Go to Step 16.

1.12.1.16 Step 16 (from Step 15)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. After performing a shutdown, set the power switch on the system unit to Off.

2. Replace the memory card that contains the memory SIMM.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

3. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If you do not have a console display, go to MAP 0220.

4. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO The symptom has changed. Check for loose cards, cables, and obvious problems If you do not find a problem, go to MAP 0020 and get a new SRN.
YES Go to Step 17.

1.12.1.17 Step 17 (from Step 16)

1. Press Enter.

2. If the terminal type has not been defined, you must use the Initialize Terminal option on the FUNCTION SELECTION menu to initialize the AIX operating system environment before you can continue with the diagnostics. This is a separate and different operation than selecting the console display.

3. Select the Advanced Diagnostics option.

4. When the DIAGNOSTIC MODE SELECTION menu is displayed, select the System Verification option.

5. When the ADVANCED DIAGNOSTIC SELECTION menu is displayed, select the Base System Memory option.

Did the memory pass the test?

NO The SRN did not identify the failing FRU. Go to MAP 0030.
YES This completes the repair. Go to MAP 0410.

1.12.1.18 Step 18 (from Step 7)

The failure may be caused by a memory SIMM.

1. Obtain two good memory SIMMs for the type of memory on which you are working.

2. Isolate the failure to a pair of memory SIMMs by following this procedure:

   a. Install the two new SIMMs in locations 1 and 2 on the old card.

   b. Move the SIMMs from locations 3 through 8 to the old card.

   c. Use the failing procedure to test the SIMMs.

   d. If the system still fails, continue testing the SIMMs in pairs (3 and 4, 5 and 6, 7 and 8) until the system does not fail or all SIMMs have been tested.

      Note: The quickest way to isolate a failing SIMM pair is to reduce the system memory to one card. With only the failing memory card installed, the system should stop with a flashing **888** in the operator panel display during the POST.

Were you able to isolate the problem?

NO Go to MAP 1540 in either the service guide or the installation and service guide for this system unit or drawer.
YES This completes the repair. Go to MAP 0410.

1.12.1.19 Step 19 (from Step 8)

The failure may be caused by a memory SIMM on one of the two memory cards.

1. Obtain two good memory SIMMs for the type of memory on which you are working.

2. Isolate the failure to a pair of memory SIMMs by following this procedure:

   a. Install the two new SIMMS in locations 1 and 2 on one of the cards.

   b. Use the failing procedure to test the SIMMs.

   c. If the system still fails, continue testing the SIMMs in pairs (3 and 4, 5 and 6, 7 and 8 on each card) until the system does not fail or all SIMMs have been tested.

Were you able to isolate the problem?

NO Go to MAP 1540 in the installation and service guide for this system.
YES This completes the repair. Go to MAP 0410.

1.12.1.20 Step 20 (from Step 9)

Are the same FRUs being called out in the flashing 888 sequence?

NO Find the SRN in the "Service Request Number List" in Chapter 2, and perform the action indicated.

YES The SRN list did not identify the failing FRU. Go to MAP 1540 in the installation and service guide for this system unit.

1.12.1.21 Step 21 (from Step 3)

Use the "Reading the Flashing 888 Numbers" procedure in Chapter 2 to read the flashing **888** message. Record the message number, the crash message (if present), and the diagnostic message.

Is the SRN and location code(s) of the FRU(s) the same as previously recorded?

NO Go to Step 1.
YES Go to Step 5.

1.13 MAP 0250: Unexpected System Halts During Diagnostics

Subtopics

1.13.1 Purpose of MAP 0250

This MAP handles unexpected system halts that occur while running the diagnostic programs. Go to Step 1.

Subtopics

1.13.1.1 Step 1

The last three digits of the SRN match a failing function code number.

Look at the "Failing Function Code List" in Chapter 3 and find the failing function code that matches the last three digits of your SRN. Record the part number and description.

Does this system unit contain only one of this kind of FRU?

NO Go to Step 2.

YES Go to Step 3.

1.13.1.2 Step 2 (from Step 1)

One of the multiple FRUs of this kind is defective.

Remove this kind of FRUs one at a time. Test the system unit after each FRU is removed. When the test is successful or all FRUs of this kind have been removed, answer the following question.

Were you able to identify a failing FRU?

NO Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.

YES Go to Step 3.

1.13.1.3 Step 3 (from Steps 1, 2)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Exchange the FRU identified in Step 2 or the FRU identified by the last three digits of the SRN.

3. Set the key mode switch to the Service position.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

4. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

5. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to Step 6.

YES Go to Step 4.

1.13.1.4 Step 4 (from Step 3)

1. Press the Enter key.

2. When the FUNCTION SELECTION menu is displayed, select the Advanced Diagnostics option.

3. When the DIAGNOSTIC MODE SELECTION menu is displayed, select the System Verification option.

Did the ADVANCED DIAGNOSTIC SELECTION menu display?

NO The symptom changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to MAP 0020 and get a new SRN.

YES Go to Step 5.

1.13.1.5 Step 5 (from Step 4)

Run the diagnostic checkout on the FRU you exchanged.

Did the FRU pass the test?

NO Contact your support person.

YES This completes the repair. Go to MAP 0410.

1.13.1.6 Step 6 (from Step 3)

A flashing **888** may be displayed in the operator panel display.

Is a flashing 888 displayed in the operator panel display?

NO The symptom changed. Check for loose cards, cables and other obvious problems. If you do not find a problem, go to MAP 0020, and get a new SRN.

YES Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.

1.14 MAP 0260: System Hangs During Resource Configuration

Subtopics

1.14.1 Purpose of MAP 0260

This MAP handles problems when the system unit hangs while configuring a resource. Go to Step 1.

Subtopics

1.14.1.1 Step 1

The last three digits of the SRN match a failing function code number.

Look at the "Failing Function Code List" in Chapter 3 and find the failing function code that matches the last three digits of your SRN. Record the FRU part number and description.

Does your system unit contain only one of this kind of FRU?

NO Go to Step 2.

YES Go to Step 3.

1.14.1.2 Step 2 (from Step 1)

One of the FRUs of this kind is defective.

Remove this kind of FRU one at a time. Test the system unit after each FRU is removed. When the test completes successfully or when you have removed all of the FRUs of this kind, answer the following question.

Were you able to identify a failing FRU?

NO Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.

YES Go to Step 3.

1.14.1.3 Step 3 (from Steps 1, 2)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Exchange the FRU identified in Step 2 or identified by the last three digits of your SRN.

3. Set the key mode switch to the Service position.

4. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

5. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to Step 4.

YES Go to Step 9.

1.14.1.4 Step 4 (from Steps 3, 10)

Look at the operator panel display.

Is the number displayed the same as the last three digits of your SRN?

NO The symptom changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to MAP 0020 and get a new SRN.

YES Go to Step 5.

1.14.1.5 Step 5 (from Step 4)

Was the FRU you exchanged an adapter or a planar?

NO Go to Step 6.

YES Go to Step 8.

1.14.1.6 Step 6 (from Step 5)

Was the FRU you exchanged a device?

NO Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.

YES Go to Step 7.

1.14.1.7 Step 7 (from Step 6)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

The adapter for the device may be causing the problem.

1. Set the power switch on the system unit to Off.

2. Exchange the adapter for the device.

3. Set the key mode switch to the Service position.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

4. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

5. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.

YES Go to Step 11.

1.14.1.8 Step 8 (from Step 5)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

The FRU identified by failing function code **227** may be causing the problem.

1. Set the power switch on the system unit to Off.

2. Find failing function code **227** in the "Failing Function Code List" in Chapter 3.

3. If the FRU identified by failing function code **227** has not been exchanged, exchange that FRU.

4. Set the key-mode switch to the Service position.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

5. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

6. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.

YES Go to Step 13.

1.14.1.9 Step 9 (from Step 3)

Are you executing diagnostics from the diskette package?

NO Go to MAP 0410.

YES Go to Step 10.

1.14.1.10 Step 10 (from Step 9)

1. Follow the displayed instructions. Load the diskette containing the resource that is hanging during resource configuration.

2. Wait until one of the following conditions occur; then answer the question:

   - The ADVANCED DIAGNOSTIC SELECTION MENU is displayed.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.

Is the ADVANCED DIAGNOSTIC SELECTION MENU displayed?

NO Go to Step 4.

YES Go to MAP 0410.

1.14.1.11 Step 11 (from Step 7)

Are you executing diagnostics from the diskette package?

NO Go to MAP 0410.

YES Go to Step 12.

1.14.1.12 Step 12 (from Step 11)

Follow the displayed instructions. Load the diskette containing the resource that is hanging during resource configuration.

1. Wait until one of the following conditions occur; then answer the question:

   - The ADVANCED DIAGNOSTIC SELECTION MENU is displayed.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.

Is the ADVANCED DIAGNOSTIC SELECTION MENU displayed?

NO Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.

YES Go to MAP 0410.

1.14.1.13 Step 13 (from Step 8)

Are you executing diagnostics from the diskette package?

NO Go to MAP 0410.

YES Go to Step 14.

1.14.1.14 Step 14 (from Step 13)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Follow the displayed instructions. Load the diskette containing the resource that is hanging during resource configuration.

2. Wait until one of the following conditions occur; then answer the question:

   - The ADVANCED DIAGNOSTIC SELECTION MENU is displayed.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.

Is the ADVANCED DIAGNOSTIC SELECTION MENU displayed?

NO Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.

YES Go to MAP 0410.

1.15 MAP 0270: System Hangs During Adapter Configuration

Subtopics

1.15.1 Purpose of MAP 0270

This MAP handles unexpected system halts that occur while configuring the adapters. Go to Step 1.

Subtopics
1.15.1.1 Step 1
1.15.1.2 Step 2 (from Step 1)
1.15.1.3 Step 3 (from Step 2)

1.15.1.1 Step 1

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

The right-most digit of the SRN identifies the slot number of the adapter being configured. The second digit from the right in the SRN, identifies the planar containing the adapter slot.

1. Set the power switch on the system unit to Off.

2. Look at the right-most digit of your SRN. Exchange the adapter plugged into the slot indicated by that number.

3. Set the key mode switch to the Service position.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

4. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

5. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to Step 2.

YES Go to MAP 0410.

1.15.1.2 Step 2 (from Step 1)

Look at the operator panel display.

Is the number displayed the same as the last three digits of your SRN?

NO The symptom changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to MAP 0020 and get a new SRN.

YES Go to Step 3.

1.15.1.3 Step 3 (from Step 2)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

The FRU identified by failing function code **227** may be causing the problem.

1. Set the power switch on the system unit to Off.

2. Find failing function code **227** in the "Failing Function Code List" in Chapter 3.

3. If the FRU identified by failing function code **227** has not been exchanged, exchange that FRU.

4. Set the key-mode switch to the Service position.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

5. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

6. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.

YES Go to MAP 0410.

1.16 MAP 0280: IPL Problem Resolution

Subtopics
1.16.1 Purpose of MAP 0280

1.16.1 Purpose of MAP 0280

Use this MAP to handle problems when the SRN was the result of a MAP callout. Go to Step 1.

Subtopics

1.16.1.1 Step 1

1. Find the SRN in the "Service Request Number List" in Chapter 2.

2. Record the SRN source code, and the failing function code. For SRNs which point to more than one FFC record and replace in the order as listed.

3. Find the function codes in the "Failing Function Code List" in Chapter 3 and record the part number and description for each FRU.

4. Set the power switch on the system unit to Off.

   Notes:

   a. If the first FRU listed is the standard I/O planar, you first may want to exchange the other listed FRUs, because the standard I/O planar takes more time to exchange.

   b. If the first FRU listed is a disk drive, you first may want to exchange the other listed FRUs, because the data stored on the disk is important to the customer.

5. Replace FRU parts in the order by which the FFCs are listed.

6. Find the FRU you exchanged in the following table and go to the step listed in the Action column.

FRU	**Action**
Keyboard	Go to Step 2.
Diskette drive	Go to Step 8.
Display adapter	Go to Step 12.
Terminal cable	Go to Step 22.
Other	Go to Step 31.

1.16.1.2 Step 2 (from Step 1)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

The following steps handle problems where the system fails to respond to a key stroke while trying to select diagnostics.

1. Set the key mode switch to Service position.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

2. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

3. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO The symptom has changed. Check for loose cards, cables, or an obvious problem. If you do not find a problem, go to MAP 0020 and get a new SRN.

YES Go to Step 3.

1.16.1.3 Step 3 (from Steps 2, 5)

Press the Enter key.

Is the FUNCTION SELECTION menu displayed?

NO Go to Step 4.

YES Go to Step 6.

1.16.1.4 Step 4 (from Steps 3, 5, 6)

Look at the FRU part numbers you recorded for this SRN.

Have you exchanged all the FRUs that correspond to the failing function codes?

NO Go to Step 5.

YES Contact your support person.

1.16.1.5 Step 5 (from Step 4)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Remove the new FRU and install the original FRU.

3. Replace FRU parts in the order by which the FFCs are listed.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

4. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not respond when you attempt to select a console display, go to Step 4. If your system does not have a console display, go to MAP 0220.

5. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO The symptom has changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to MAP 0020 and get a new SRN.

YES Go to Step 3, and repeat the steps.

1.16.1.6 Step 6 (from Step 3)

1. Select Advanced Diagnostics.

2. When the DIAGNOSTIC MODE SELECTION menu displays, select the System Verification option.

Is the ADVANCED DIAGNOSTIC SELECTION menu displayed?

NO Go to Step 4.

YES Go to Step 7.

1.16.1.7 Step 7 (from Step 6)

Select the keyboard checkout.

Did the keyboard pass the test?

NO The symptom has changed. Check for loose cards, cables, and obvious problems. If you do not find a problem, go to MAP 0020 and get a new SRN.

YES This completes the repair. Go to MAP 0410.

1.16.1.8 Step 8 (from Step 1)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

The following steps handle problems when the diagnostic programs cannot do an IPL from the diskette drive.

1. Set the key mode switch to the Service position.

2. Insert the first diagnostic diskette into the diskette drive.

3. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

4. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Did the system stop with two or more numbers between 221-296 alternating in the operator panel display?

NO Go to Step 9.

YES Go to Step 10.

1.16.1.9 Step 9 (from Steps 1, 8, 11)

Look at the console display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO The symptom has changed. Check for loose cards, cables, and obvious Problems. If you do not find a problem, go to MAP 0020 and get a new SRN.

YES This completes the repair. Go to MAP 0410.

1.16.1.10 Step 10 (from Steps 8, 11)

Look at the FRU part numbers you recorded for this SRN.

Have you exchanged all the FRUs that correspond to the failing function codes?

NO Go to Step 11.

YES The SRN did not identify the failing FRU. Go to MAP 0030.

1.16.1.11 Step 11 (from Step 10)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Remove the new FRU and install the original FRU.

3. Replace FRU parts in the order by which the FFCs are listed.

4. Insert the first diagnostic diskette into the diskette drive.

5. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

6. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Did the system stop with two or more numbers between 221 and 296 alternating in the operator panel display?

NO Go to Step 9.

YES Go to Step 10.

1.16.1.12 Step 12 (from Step 1)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

The following steps handle problems where information is not displayed correctly while loading the diagnostics.

1. Set the key mode switch to the Service position.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

2. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette.

3. Wait until one of the following conditions occurs; then go to the next substep.

   - The DIAGNOSTIC OPERATING INSTRUCTIONS display.
   - The machine stops for at least three minutes with a steady **c31** in the operator panel display.
   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.
   - The MAIN MENU is displayed.
   - The system stops with a blank operator panel display, and the DIAGNOSTIC OPERATING INSTRUCTIONS are not displayed correctly.

4. Find the condition in the following table and go to the step listed in the Action column.

Condition	**Action**
c31 is displayed in the operator panel display.	Go to Step 13.
The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.	Go to Step 14.
The system stops with a blank operator panel display, and the DIAGNOSTIC OPERATING INSTRUCTIONS or the MAIN MENU are not displayed correctly.	Go to Step 16.
The MAIN MENU is displayed.	Go to Step 14.
One of the other conditions exists.	Go to Step 15.

1.16.1.13 Step 13 (from Steps 12, 17)

The instructions for selecting a console display should be on all of the direct-attached displays and any terminal attached to the S1 port.

Are the instructions for selecting a console display displayed without any obvious display problem?

NO Go to Step 16.

YES This completes the repair. Go to MAP 0410.

1.16.1.14 Step 14 (from Steps 12, 17)

The DIAGNOSTIC OPERATING INSTRUCTIONS should be displayed now.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed without any obvious display problems?

NO Go to Step 16.

YES This completes the repair. Go to MAP 0410.

1.16.1.15 Step 15 (from Steps 12, 17, 18, 22, 26, 27)

The symptom has changed. Check for loose cards, cables, or an obvious problem. If you do not find a problem, go to MAP 0020 and get a new SRN.

1.16.1.16 Step 16 (from Steps 12, 13, 14, 17, 22, 26, 27)

Look at the FRU part numbers you recorded for this SRN.

Have you exchanged all the FRUs that correspond to the failing function codes?

NO Go to Step 17.

YES Go to Step 18.

1.16.1.17 Step 17 (from Step 16)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Remove the new FRU and install the original FRU.

3. Replace FRU parts in the order by which the FFCs are listed.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

4. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette.

5. Wait until one of the following conditions occurs; then go to the next substep.

   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The machine stops for at least three minutes with a steady **c31** in the operator panel display.
   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.
   - The MAIN MENU is displayed.
   - The system stops with a blank operator panel display, and the DIAGNOSTIC OPERATING INSTRUCTIONS are not displayed correctly.

6. Find the condition in the following table and go to the step listed in the Action column.

Condition	**Action**
c31 is displayed in the operator panel display.	Go to Step 13.
The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.	Go to Step 14.
The system stops with a blank operator panel display, and the DIAGNOSTIC OPERATING INSTRUCTIONS or the MAIN MENU are not displayed correctly.	Go to Step 16.
One of the other conditions exists.	Go to Step 15.

1.16.1.18 Step 18 (from Step 16)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Remove the new FRU and install the original FRU.

3. Remove all of the adapters except the display adapter.

4. Set the keymode switch to the Service position.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

5. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette.

6. Wait until one of the following conditions occurs; then go to the next substep.

   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The machine stops for at least three minutes with a steady **c31** in the operator panel display.
   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.
   - The MAIN MENU is displayed.
   - The system stops with a blank operator panel display, and the DIAGNOSTIC OPERATING INSTRUCTIONS are not displayed correctly.

7. Find the condition in the following table and go to the step listed in the Action column.

Condition	**Action**
c31 is displayed in the operator panel display.	Go to Step 19.
The system stops with a blank operator panel display, and the DIAGNOSTIC OPERATING INSTRUCTIONS or the MAIN MENU are not displayed correctly.	Go to Step 34.
One of the other conditions exists.	Go to Step 15.

1.16.1.19 Step 19 (from Step 18)

The instructions for selecting a console display should be on all of the direct-attached displays and any terminal attached to the S1 port.

Are the instructions for selecting a console display displayed without any obvious display problem?

NO Go to Step 21.
YES Go to Step 20.

1.16.1.20 Step 20 (from Step 19)

One of the adapters you removed is causing the problem. Install the adapters one at a time to determine the failing adapter. Test the system after each adapter. Exchange the failing adapter; then go to MAP 0410.

1.16.1.21 Step 21 (from Step 19)

The problem is most likely a display problem. The display problem determination procedures did not detect the problem. Continue with the problem determination procedures for your display.

1.16.1.22 Step 22 (from Step 1)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

The following steps handle problems where information is not displayed correctly on an attached terminal while loading the diagnostics.

1. Set the key mode switch to the Service position.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

2. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette.

3. Wait until one of the following conditions occurs; then go to the next substep.

   - The DIAGNOSTIC OPERATING INSTRUCTIONS displayed.
   - The machine stops for at least three minutes with a steady **c31** in the operator panel display.
   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.
   - The system stops with a blank operator panel display, and the DIAGNOSTIC OPERATING INSTRUCTIONS are not displayed correctly.

4. Find the condition in the following table and go to the step listed in the Action column.

Condition	**Action**
c31, 260, 261, or 262 is displayed in the operator panel display.	Go to Step 23.
The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.	Go to Step 24.
The system stops with a blank operator panel display, and the DIAGNOSTIC OPERATING INSTRUCTIONS or the MAIN MENU are not displayed correctly.	Go to Step 16.
One of the other conditions exists.	Go to Step 15.

1.16.1.23 Step 23 (from Steps 22, 26)

The instructions for selecting a console display should be on all of the direct-attached displays and any terminal attached to the S1 port.

Are the instructions for selecting a console display displayed without any obvious display problem?

NO Go to Step 25.

YES This completes the repair. Go to MAP 0410.

1.16.1.24 Step 24 (from Steps 22, 26)

The DIAGNOSTIC OPERATING INSTRUCTIONS or the MAIN MENU should be displayed now.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS or the MAIN MENU displayed without any obvious display problems?

NO Go to Step 25.

YES This completes the repair. Go to MAP 0410.

1.16.1.25 Step 25 (from Steps 23, 24)

Look at the FRU part numbers you recorded for this SRN.

Have you exchanged all the FRUs that correspond to the failing function codes?

NO Go to Step 26.

YES Go to Step 27.

1.16.1.26 Step 26 (from Step 25)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Remove the new FRU and install the original FRU.

3. Replace FRU parts in the order by which the FFCs are listed.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

4. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette.

5. Wait until one of the following conditions occurs; then go to the next substep.

   - The DIAGNOSTIC OPERATING INSTRUCTIONS displayed.
   - The machine stops for at least three minutes with a steady **c31** in the operator panel display.
   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

6. Find the condition in the following table and go to the step listed in the Action column.

Condition	**Action**
c31, 260, 261, or 262 is displayed in the operator panel display.	Go to Step 23.
The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.	Go to Step 24.
The system stops with a blank operator panel display, and the DIAGNOSTIC OPERATING INSTRUCTIONS are not displayed correctly.	Go to Step 16.
One of the other conditions exists.	Go to Step 15.

1.16.1.27 Step 27 (from Step 25)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Remove the new FRU and install the original FRU.

3. Remove all of the adapters except the display adapter.

4. Set the key mode switch to the Service position.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

5. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette.

6. Wait until one of the following conditions occurs; then go to the next substep.

   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The machine stops for at least three minutes with a steady **c31** in the operator panel display.
   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

7. Find the condition in the following table and go to the step listed in the Action column.

Condition	**Action**
c31, 260, 261, or 262 is displayed in the operator panel display.	Go to Step 28.
The system stops with a blank operator panel display, and the DIAGNOSTIC OPERATING INSTRUCTIONS are not displayed correctly.	Go to Step 16.
One of the other conditions exists.	Go to Step 15.

1.16.1.28 Step 28 (from Steps 18, 27)

The instructions for selecting a console display should be on all of the direct-attached displays and any terminal attached to the S1 port.

Are the instructions for selecting a console display displayed without any obvious display problem?

NO Go to Step 30.

YES Go to Step 29.

1.16.1.29 Step 29 (from Step 28)

One of the adapters you removed is causing the problem. Install the adapters one at a time to determine the failing adapter. Test the system after each adapter. Exchange the failing adapter; then go to MAP 0410.

1.16.1.30 Step 30 (from Step 28)

The problem is most likely an attached terminal problem. The terminal problem determination procedures did not detect the problem. Continue with the problem determination procedures for your terminal.

1.16.1.31 Step 31 (from Step 1)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the key mode switch to the Service position.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

2. Set the power switch on the system unit to On. If **c07** displays in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a display, go to MAP 0220.

3. Wait until one of the following conditions occurs; then go to the next subsetp.

   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The machine stops for at least three minutes with a steady **c31** in the operator panel display.
   - The power-on light does not come on or does not stay on.
   - Either **888** or other characters are flashing in the operator panel display.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to Step 32.

YES This completes the repair. Go to MAP 0410.

1.16.1.32 Step 32 (from Step 31, 33)

Look at the FRU part numbers you recorded for this SRN.

Have you exchanged all the FRUs that correspond to the failing function codes?

NO Go to Step 33.

YES Check for loose cards, cables, and obvious problems. If you do not find a problem, call your support person.

1.16.1.33 Step 33 (from Step 32)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Remove the new FRU and install the original FRU.

3. Replace FRU parts in the order by which the FFCs are listed.

   Note: If the AIX operating system is not used on the system, insert the first diagnostic diskette into the diskette drive, or insert the CD-ROM diagnostic disc into the CD-ROM drive.

4. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a display, go to MAP 0220.

5. Wait until one of the following conditions occurs; then go to the next substep.

   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The machine stops for at least three minutes with a steady **c31** in the operator panel display.
   - The power-on light does not come on or does not stay on.
   - Either **888** or other characters are flashing in the operator panel display.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to Step 32.

YES This completes the repair. Go to MAP 0410.

1.16.1.34 Step 34 (from Step 18)

1. Set the power switch on the system unit to Off.

2. Observe the operator panel display while setting the system unit power switch to On.

Did the operator panel display remain blank when the system unit power switch was set to On?

NO Go to MAP 0030.

YES Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.

1.17 MAP 0290: Missing Resource Problem Resolution

Subtopics
1.17.1 Purpose of MAP 0290

1.17.1 Purpose of MAP 0290

Use this MAP to handle problems when a resource is not detected by the diagnostics. Go to Step 1.

Subtopics

1.17.1.1 Step 1

Use the Display or Change Configuration or Vital Product Data (VPD) service aid to display the resources that were sensed by the configuration program when the diagnostic programs were loaded; then go to Step 2.

Note: Supplemental diskettes may be required for specific adapters and devices if service aids are run from CD-ROM or diskette.

1.17.1.2 Step 2 (from Step 1)

Determine which resource was not detected by the diagnostics.

Is the undetected resource a SCSI device installed in either a rack type system unit or in an externally attached enclosure for a SCSI device(s)?

NO Go to Step 7.

YES Go to Step 3.

1.17.1.3 Step 3 (from Step 2)

Go to the documentation for SCSI devices installed in a rack type system unit or in an externally attached enclosure for a SCSI device(s), and check the device(s) for proper power, cabling, fans running, and any other checks available. Return here after you check the device.

Did you find a problem?

NO Go to Step 5.

YES Go to Step 4.

1.17.1.4 Step 4 (from Step 3)

Correct the problem; then go to MAP 410.

1.17.1.5 Step 5 (from Step 3)

Is the failing device installed in a drawer/deskside unit?

NO Go to Step 6.

YES Go to Step 7.

1.17.1.6 Step 6 (from Step 5)

Determine the type of problem you are analyzing.

Is the problem a power problem?

NO Go to Step 7.

YES Go to MAP 1520 in the installation and service guide for the system unit.

1.17.1.7 Step 7 (from Steps 2, 5, 6)

Are you running diagnostics from removable media?

NO Go to Step 10.

YES Go to Step 8.

1.17.1.8 Step 8 (from Step 7)

Are multiple devices missing?

NO Go to Step 10.

YES Suspect a problem with the device adapter. Execute diagnostics on the device adapter then go to Step 9.

1.17.1.9 Step 9 (from Step 8)

Did the diagnostics detect a problem with the adapter?

NO Go to Step 10.

YES Record the SRN then go to MAP 0210.

1.17.1.10 Step 10 (from Steps 7, 8, 9)

Take the following steps:

1. Replace FRU parts in the order by which the FFCs are listed.

2. Test the repair by doing an IPL of the diagnostics; then use the Display or Change Configuration or Vital Product Data (VPD) service aid to display the resources sensed by the configuration program.

Is the resource listed?

NO Go to Step 11.

YES Go to MAP 0410.

1.17.1.11 Step 11 (from Step 10)

Have all FRUs identified by the SRN been exchanged?

NO Replace FRU parts in the order by which the FFCs are listed.
Then go to Step 10 substep 2.

YES Go to MAP 0030.

1.18 MAP 0310: No Memory Detected Problem Resolution

Subtopics
1.18.1 Purpose of MAP 320

1.18.1 Purpose of MAP 320

This MAP handles problems when the system unit power-on self-test (POST) did not detect any memory installed in the system unit.

Note: When a FRU callout is a memory card, remove the memory SIMMs from the card being replaced, and insert the SIMMs in the new card or replace the memory card. To identify the memory cards and SIMMS in the system, refer to "Memory Card and SIMM Cross-Reference" in Appendix C.

Subtopics

1.18.1.1 Step 1

1. Set the power switch on the system unit to Off.

2. Set the key mode switch to the Service position.

3. Find the system unit model number in the following table, and go to the step listed in the Action column.

System Unit Type/Model Number	**Action**
7011/220	Go to Step 3.
7012/320/32E/32H/340/350/355/360/36T/365/370/37T/375	Go to Step 16.
7013/520/52H	Go to Step 11.
7013/55L	Go to Step 11.
7018/740/741	Go to Step 11.
7012 G Series, 7013 J Series, 7015/R30	Go to Step 21.
All other models	Go to Step 2.

1.18.1.2 Step 2 (from Step 1)

Look at the memory cards.

Are there only two memory cards installed?

NO Go to Step 3.

YES Go to Step 4.

1.18.1.3 Step 3 (from Step 1, 2)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Exchange the planar containing the CPU.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

3. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

4. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.

YES Go to MAP 0410.

1.18.1.4 Step 4 (from Step 2)

For CPU planars with paired memory cards (refer to "System Unit Cross-Reference Data" in Chapter 3), the pairs are:

- Cards in slots D and H (first pair)
- Cards in slots B and F (second pair)
- Cards in slots C and G (third pair)
- Cards in slots A and E (fourth pair).

Check to be sure the memory cards are installed correctly.

Did you find a problem?

NO Go to Step 5.

YES Go to Step 8.

1.18.1.5 Step 5 (from Step 4)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Exchange one of the memory cards.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

3. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

4. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to Step 6.

YES Go to MAP 0410.

1.18.1.6 Step 6 (from Step 5)

Look at the operator panel display.

Is a steady 213 or a flashing 888 displayed?

NO Go to MAP 0020.

YES Go to Step 7.

1.18.1.7 Step 7 (from Step 6)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Remove the new memory card and put the old memory card back into the system unit.

3. Exchange another memory card that has not been exchanged yet.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

4. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

5. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to Step 9.

YES Go to MAP 0410.

1.18.1.8 Step 8 (from Step 4)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Exchange one pair of memory cards. For CPU planars with paired memory cards refer to "System Unit Memory Combinations" table in Appendix C of this manual.

   The pairs are:

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

   - Cards in slots D and H (first pair)
   - Cards in slots B and F (second pair)
   - Cards in slots C and G (third pair)
   - Cards in slots A and E (fourth pair).

3. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

4. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to MAP 0020.

YES Go to MAP 0410.

1.18.1.9 Step 9 (from Step 7)

Look at the operator panel display.

Is a steady 213 or a flashing 888 displayed?

NO Go to MAP 0020.

YES Go to Step 10.

1.18.1.10 Step 10 (from Step 9)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Remove the new memory card, and put the old memory card back into the system unit.

3. Exchange the CPU planar.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

4. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

5. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
YES Go to MAP 0410.

1.18.1.11 Step 11 (from Step 1)

Look at the memory cards.

Is there only one memory card installed?

NO Go to Step 12.

YES Go to Step 13.

1.18.1.12 Step 12 (from Step 11)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Exchange the CPU planar.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

3. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

4. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
YES Go to MAP 0410.

1.18.1.13 Step 13 (From Step 11)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Exchange the memory card.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

3. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

4. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to Step 14.

YES Go to MAP 0410.

1.18.1.14 Step 14 (from Step 13)

Look at the operator panel display.

Is a steady 213 or a flashing 888 displayed?

NO Go to MAP 0020.

YES Go to Step 15.

1.18.1.15 Step 15 (from Step 14)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Remove the new memory card and put the old memory card back into the system unit.

3. Exchange the CPU planar.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

4. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

5. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
YES Go to MAP 0410.

1.18.1.16 Step 16 (from Step 1)

Look at the memory cards.

Is there only one memory card installed?

NO Go to Step 17.

YES Go to Step 18.

1.18.1.17 Step 17 (from Step 16)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Exchange the CPU card.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

3. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

4. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
YES Go to MAP 0410.

1.18.1.18 Step 18 (from Step 16)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Exchange the memory card.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

3. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

4. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to Step 19.

YES Go to MAP 0410.

1.18.1.19 Step 19 (from Step 18)

Look at the operator panel display.

Is a steady 213 or a flashing 888 displayed?

NO Go to MAP 0020.

YES Go to Step 20.

1.18.1.20 Step 20 (from Step 19)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Remove the new memory card and put the old memory card back into the system unit.

3. Exchange the CPU planar xx32.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

4. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

5. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
YES Go to MAP 0410.

1.18.1.21 Step 21 (from Step 1)

Look at the memory cards.

Is there only one memory card installed?

NO Go to Step 22.

YES Go to Step 24.

1.18.1.22 Step 22 (from Step 21)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Exchange the first CPU planar.

3. Set the power switch on the system unit to On. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

4. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Repeat the operation for all installed CPU planars. If, after the replacement of all CPU planars, the **DIAGNOSTIC OPERATING INSTRUCTIONS** are not displayed, go to Step 23.

YES Go to MAP 0410.

1.18.1.23 Step 23 (from Step 22)

1. Set the power switch on the system unit to Off.

2. Exchange the first memory card.

3. Set the power switch on the system unit to On. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

4. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Repeat the operation for all installed memory cards. If, after the replacement of all memory cards, the **DIAGNOSTIC OPERATING INSTRUCTIONS** are not displayed, go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.

YES Go to MAP 0410.

1.18.1.24 Step 24 (from Step 21)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Exchange the memory card.

3. Set the power switch on the system unit to On. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

4. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to Step 25.

YES Go to MAP 0410.

1.18.1.25 Step 25 (from Step 24)

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the power switch on the system unit to Off.

2. Exchange the first CPU planar.

3. Set the power switch on the system unit to On. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

4. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **296** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Repeat the operation for all installed CPU planars. If, after the replacement of all CPU planars, the **DIAGNOSTIC OPERATING INSTRUCTIONS** are not displayed, go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.

YES Go to MAP 0410.

1.19 MAP 0410: Repair Checkout

Subtopics
1.19.1 Purpose of MAP 0410

1.19.1 Purpose of MAP 0410

This MAP is used to check out the system after a repair is completed. Go to Step 1.

Note: This MAP does not analyze the error log.

Subtopics

1.19.1.1 Step 1

Notes:

1. If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

2. If the system planar or battery has been replaced and you are loading dignostics from a server over a network, it will be necessary for the customer to set the network boot information for this system before diagnostics can be loaded. The system time and date information should also be set when the repair is completed.

1. After performing a system shutdown, set the power switch on the system unit to Off.

2. Install all of the cards, adapters, cables, devices, and any other FRUs that were removed during problem analysis.

3. Set the key mode switch to the Service position.

   Note: If the AIX operating system is not used on the system, start diagnostics from an alternate source.

4. Set the power switch on the system unit to On. If **c07** is displayed in the operator panel display, insert the next diagnostic diskette. If **c31** is displayed, follow the displayed instructions to select a console display. If your system does not have a console display, go to MAP 0220.

5. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **291** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to Step 2.

YES Go to Step 3.

1.19.1.2 Step 2 (from Step 1)

The diagnostic programs should be loaded from an IPL device.

Does the system have a console display?

NO This completes the repair. Return the system to the customer.

YES There is a problem that keeps the DIAGNOSTIC OPERATING INSTRUCTIONS from displaying. Go to MAP 0020.

1.19.1.3 Step 3 (from Step 1)

1. Press the Enter key.

2. If the terminal type has not been defined, you must use the Initialize Terminal option on the FUNCTION SELECTION menu to initialize the operating system environment before you can continue with the diagnostics. This is a separate and different operation than selecting the console display.

3. Select the Advanced Diagnostics option.

4. When the DIAGNOSTIC MODE SELECTION menu is displayed, select System Verification.

5. When the ADVANCED DIAGNOSTIC SELECTION menu displays, select the System checkout option or checkout the FRUs you exchanged by selecting the FRU or the FRU that contains the FRU.

Did the test pass?

NO There is still a problem. Go to MAP 0020.

YES Go to Step 4.

1.19.1.4 Step 4 (from Step 3)

After you replace a part of the system, you must run the Product Topology service aid which does the following:

- Updates the error log to indicate that a system-detectable part has been replaced.
- Updates the Product Topology System diskette.
- Prepares a Product Topology Update diskette to be returned to the plant of control.

The Product Topology diskettes are stored with the diagnostic diskettes on those systems equipped with a diskette drive.

Perform the following steps, and then answer the question:

1. Select the service aid option from the FUNCTION SELECTION menu.

2. Select Product Topology from the SERVICE AID SELECTION menu.

3. Follow the displayed instructions to modify the Product Topology System and Update diskettes.

   Note: Help screens are available to provide context-sensitive information when needed; press the Help key to display the information.

Did the Product Topology service aid display the message No Update Required?

NO This completes the repair. Return the Product Topology Update diskette to the plant of control. If the system is supported by Product Topology at the plant, store the Product Topology System diskette with the diagnostic diskettes.

YES This completes the repair. Return the system to the customer.

Note: Use the appropriate service TAC and Action Code, using *QSAR Preparation Guide*, order number Z229-0455.

1.20 MAP 0420: System Checkout

Subtopics
1.20.1 Purpose of MAP 0420

1.20.1 Purpose of MAP 0420

Use this MAP to verify that the system is working properly. Go to Step 1.

Note: This MAP does not analyze the contents of the error log.

Subtopics

1.20.1.1 Step 1

Note: If the Maintenance Menu is displayed, select System Boot then boot from list and continue with this step.

1. Set the key mode switch to the Service position.

2. Set the power switch on the system unit to On.

3. Wait until one of the following conditions occurs; then answer the question.

   - The power-on light does not come on or does not stay on.
   - The machine stops for at least three minutes with a steady number in the operator panel display.
   - A flashing **888** is displayed in the operator panel display.
   - The operator panel display is blank.
   - The DIAGNOSTIC OPERATING INSTRUCTIONS are displayed.
   - The system stops with two or more numbers between **221** and **291** alternating in the operator panel display.

Are the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO There is a problem. Go to MAP 0020.

YES Go to Step 2.

1.20.1.2 Step 2 (from Step 1)

1. Press the Enter key.

2. When the FUNCTION SELECTION menu displays, select Advanced Diagnostics.

3. When the DIAGNOSTIC MODE SELECTION menu displays, select the System Verification option.

4. If the NEW RESOURCE menu is displayed, be sure that all resources listed are installed; then follow the instructions.

5. The MISSING RESOURCE menu should only be displayed if a resource was removed or moved. If the MISSING RESOURCE menu is displayed, follow the instructions.

6. When the ADVANCED DIAGNOSTIC SELECTION menu displays, test the system by selecting the System Checkout option or any individual resource you want to test.

Did the test pass?

NO There is a problem. Go to MAP 0020.

YES This completes the system checkout.

1.21 MAP 0430: System Hangs with 871 in the Operator Panel Display

Subtopics

1.21.1 Purpose of MAP 0430

Use this MAP to analyze problems when the system hangs with 871 displayed in the operator panel display.

Note: This is not a Start of Call MAP. You should be using this MAP only after being directed here from MAP 0020.

Subtopics

1.21.1.1 Step 1

If this is a POWERstation Model 7016, the system is trying to configure the Graphics Card Cage Assembly. If this is any other system with a 7235 attached, the system is trying to configure the 7235.

Allow approximately 10 minutes for the system to continue configuration attempts.

Did the system eventually stop with the DIAGNOSTIC OPERATING INSTRUCTIONS displayed?

NO Go to Step 2.

YES Go back to MAP 0020, Step 7, and continue.

1.21.1.2 Step 2 (from Step 1)

The system hangs while trying to configure the resource.

Is this a 7016 machine type?

NO Go to Step 3.

YES Go to Step 4.

1.21.1.3 Step 3 (from Step 2)

1. Set the power switch of the system unit to Off.

2. Set the power switch of the 7235 to Off.

3. Disconnect the external CVME cable from the rear of the system unit.

4. Set the key mode switch to the Service position.

5. Set the power switch on the system unit to On.

Did the operator panel display progress past 871?

NO Exchange the Graphics Subsystem Adapter. Locate the correct part number by referring to failing function code **871** listed in Chapter 3. Go to MAP 0410.

YES Exchange the CVME Interface Card in the 7235. Obtain the correct part number by referring to failing function code **110** in Chapter 3. Go to MAP 0410.

1.21.1.4 Step 4 (from Step 2)

1. Set the power switch of the 7016 system unit to Off.

2. Remove the covers of the 7016 system unit. Refer to the *7016 POWERstation and POWERserver Installation and Service Guide*.

3. Disconnect the cable connected to the Graphics Subsystem Adapter.

4. Set the power switch of the 7016 to On.

Did the operator panel display progress past 871?

NO Exchange the Graphics Subsystem Adapter. Locate the correct part number by referring to failing function code **871** listed in Chapter 3. Go to MAP 0410.

YES Exchange the CVME Interface Card in the graphics card cage assembly. Obtain the correct part number by referring to failing function code **110** in Chapter 3. Go to MAP 0410.

2.0 Chapter 2. Diagnostic Numbers and Codes

Subtopics

2.1 Operator Panel Display Numbers

This section contains lists of the various numbers and characters that may be displayed in the operator panel display. The numbers and characters are divided into two broad categories. The first group tracks power-on testing of the system unit; the second group provides information about messages that follow a *flashing* **888** number.

The operator panel display numbers listed below are valid only when the power-on indicator is lit.

To form an SRN from any *steady* number that occurs during system power-on test (BIST or POST), add 101-in front of the displayed number.

For more detailed explanations of operator panel display numbers, refer to the *Problem Solving Guide and Reference*, order number SC23-2606.

Subtopics

2.1.1 Built-In Self-Test (BIST) Indicators

100 BIST completed successfully; control was passed to IPL ROS.
101 BIST started following Reset.
102 BIST started following power-on Reset.
103 BIST could not determine the system model number.
104 Equipment conflict; BIST could not find the CBA.
105 BIST could not read from the OCS EPROM.
106 BIST failed: CBA not found
111 OCS stopped; BIST detected a module error.
112 A checkstop occurred during BIST; checkstop results could not be logged out.
113 Three checkstops have occurred.
120 BIST starting a CRC check on the 8752 EPROM.
121 BIST detected a bad CRC in the first 32K bytes of the OCS EPROM.
122 BIST started a CRC check on the first 32K bytes of the OCS EPROM.
123 BIST detected a bad CRC on the OCS area of NVRAM.
124 BIST started a CRC check on the OCS area of NVRAM.
125 BIST detected a bad CRC on the time-of-day area of NVRAM.
126 BIST started a CRC check on the time-of-day area of NVRAM.
127 BIST detected a bad CRC on the 8752 EPROM.
130 BIST presence test started.
140 Running BIST. (Box Manufacturing Mode Only)
142 Box manufacturing mode operation.
143 Invalid memory configuration.
144 Manufacturing test failure.
151 BIST started AIPGM test code.
152 BIST started DCLST test code.
153 BIST started ACLST test code.
154 BIST started AST test code.
160 Bad EPOW Signal/Power status signal.
161 BIST being conducted on BUMP I/O.
162 BIST being conducted on JTAG.
163 BIST being conducted on Direct I/O.
164 BIST being conducted on CPU.
165 BIST being conducted on DCB and Memory.
166 BIST being conducted on Interrupts.
170 BIST being conducted on Multi-Processors.
180 Logout in progress.
185 A checkstop condition occurred during the BIST.
186 System logic-generated checkstop (Model 250 only).
187 Graphics-generated checkstop (Model 250).
195 BIST completed.
888 BIST did not start.

2.1.2 Power-On Self-Test (POST) Indicators

20c L2 cache POST error. (The display shows a solid 20c for 5 seconds.)
21c L2 cache is not detected. (The display shows a solid 21c for 2 seconds.)
22c Attempting a normal mode IPL from FDDI specified in NVRAM IPL device list.
23c Attempting a normal mode IPL from FDDI specified in IPL ROM device list.
24c Attempting a service mode IPL from FDDI specified in NVRAM IPL device list.
25c Attempting a service mode IPL from FDDI specified in IPL ROM device list.
200 IPL attempted with keylock in the Secure position.
201 IPL ROM test failed or checkstop occurred (irrecoverable).
202 Unexpected machine check interrupt.
203 Unexpected data storage interrupt.
204 Unexpected instruction storage interrupt.
205 Unexpected external interrupt.
206 Unexpected alignment interrupt.
207 Unexpected program interrupt.
208 Unexpected floating point unavailable interrupt.
209 Unexpected SVC interrupt.
210 Unexpected SVC interrupt.
211 IPL ROM CRC comparison error (irrecoverable).
212 RAM POST memory configuration error or no memory found (irrecoverable).
213 RAM POST failure (irrecoverable).
214 Power status register failed (irrecoverable).
215 A low voltage condition is present (irrecoverable).
216 IPL ROM code being uncompressed into memory.
217 End of boot list encountered.
218 RAM POST is looking for good memory.
219 RAM POST bit map is being generated.
220 IPL control block is being initialized.
221 NVRAM CRC comparison error during AIX IPL(key mode switch in Normal mode). Reset NVRAM by reaccomplishing IPL in Service mode. For systems with an internal, direct-bus-attached (DBA) disk, IPL ROM attempted to perform an IPL from that disk before halting with this operator panel display value.
222 Attempting a Normal mode IPL from Standard I/O planar-attached devices specified in NVRAM IPL Devices List.
223 Attempting a Normal mode IPL from SCSI-attached devices specified in NVRAM IPL Devices List.
224 Attempting a Normal mode IPL from 9333 subsystem device specified in NVRAM IPL Devices List.
225 Attempting a Normal mode IPL from 7012 DBA disk-attached devices specified in NVRAM IPL Devices List.
226 Attempting a Normal mode IPL from Ethernet specified in NVRAM IPL Devices List.
227 Attempting a Normal mode IPL from Token-Ring specified in NVRAM IPL Devices List.
228 Attempting a Normal mode IPL from NVRAM expansion code.
229 Attempting a Normal mode IPL from NVRAM IPL Devices List; cannot IPL from any of the listed devices, or there are no valid entries in the Devices List.
230 Attempting a Normal mode IPL from adapter feature ROM specified in IPL ROM Device List.
231 Attempting a Normal mode IPL from Ethernet specified in IPL ROM Device List.
232 Attempting a Normal mode IPL from Standard I/O planar-attached devices specified in ROM Default Device List.
233 Attempting a Normal mode IPL from SCSI-attached devices specified in IPL ROM Default Device List.
234 Attempting a Normal mode IPL from 9333 subsystem device specified in IPL ROM Device List.
235 Attempting a Normal mode IPL from 7012 DBA disk-attached devices specified in IPL ROM Default Device List.
236 Attempting a Normal mode IPL from Ethernet specified in IPL ROM Default Device List.
237 Attempting a Normal mode IPL from Token-Ring specified in IPL ROM Default Device List.
238 Attempting a Normal mode IPL from Token-Ring specified by the operator.
239 System failed to IPL from the device chosen by the operator.
240 Attempting a Service mode IPL from adapter feature ROM.
241 Attempting a normal boot from devices specified in the NVRAM boot list.
242 Attempting a Service mode IPL from Standard I/O planar-attached devices specified in the NVRAM IPL Devices List.
243 Attempting a Service mode IPL from SCSI-attached devices specified in the NVRAM IPL Devices List.
244 Attempting a Service mode IPL from 9333 subsystem device specified in the NVRAM IPL Devices List.

245 Attempting a Service mode IPL from 7012 DBA disk-attached devices specified in the NVRAM IPL Devices List.
246 Attempting a Service mode IPL from Ethernet specified in the NVRAM IPL Devices List.
247 Attempting a Service mode IPL from Token-Ring specified in the NVRAM Device List.
248 Attempting a Service mode IPL from NVRAM expansion code.
249 Attempting a Service mode IPL from the NVRAM IPL Devices List; cannot IPL from any of the listed devices, or there are no valid entries in the Devices List.
250 Attempting a Service mode IPL from adapter feature ROM specified in the IPL ROM Device List.
251 Attempting a Service mode IPL from Ethernet specified in the IPL ROM Default Device List.
252 Attempting a Service mode IPL from Standard I/O planar-attached devices specified in the ROM Default Device List.
253 Attempting a Service mode IPL from SCSI-attached devices specified in the IPL ROM Default Device List.
254 Attempting a Service mode IPL from 9333 subsystem device specified in the IPL ROM Devices List.
255 Attempting a Service mode IPL from 7012 DBA disk-attached devices specified in IPL ROM Default Device List.
256 Attempting a Service mode IPL from Ethernet specified in the IPL ROM Devices List.
257 Attempting a Service mode IPL from Token-Ring specified in the IPL ROM Devices List.
258 Attempting a Service mode IPL from Token-Ring specified by the operator.
259 Attempting a Service mode IPL from FDDI specified by the operator.
260 Information is being displayed on the display console.
261 No supported local system display adapter was found.
262 Keyboard not detected as being connected to the system's keyboard port.
263 Attempting a Normal mode IPL from adapter feature ROM specified in the NVRAM Device List.
269 Stalled state - the system is unable to IPL.
271 Mouse and Mouse port POST.
272 Tablet Port POST.
277 Auto Token-Ring LANstreamer MC 32 Adapter.
278 Video ROM scan POST.
279 FDDI POST.
280 3com Ethernet POST.
281 Keyboard POST executing.
282 Parallel port POST executing.
283 Serial port POST executing.
284 **POWER Gt1** graphics adapter POST executing.
285 **POWER Gt3** graphics adapter POST executing.
286 Token-Ring adapter POST executing.
287 Ethernet adapter POST executing.
288 Adapter card slots being queried.
289 POWER GT0 Display Adapter POST.
290 IOCC POST error (irrecoverable).
291 Standard I/O POST running.
292 SCSI POST running.
293 7012 DBA disk POST running.
294 IOCC bad TCW SIMM in slot location J being tested.
295 Graphics Display adapter POST, color or grayscale.
296 ROM scan POST.
297 System model number does not compare between OCS and ROS (irrecoverable).
298 Attempting a software IPL.
299 IPL ROM passed control to the loaded program code.
301 Flash Utility ROM test failed or checkstop occurred (irrecoverable
302 Flash Utility ROM: User prompt, move the key to the service position in order to perform an optional Flash Update. LED **302** will only appear if the key switch is in the secure position. This signals the user that a Flash Update may be initiated by moving the key switch to the service position. If the key is moved to the service position then LED **303** will be displayed, this signals the user to press the reset button and select optional Flash Update.
303 Flash Utility ROM: User prompt, press the reset button in order to perform an optional Flash Update. LED **302** will only appear if the key switch is the secure position. This signals the user that a Flash Update may be initiated by moving the key switch to the service position. If the key is moved to the service position LED **303** will be displayed, this signals the user to press the reset button and select optional Flash Update.
304 Flash Utility ROM IOCC POST error (irrecoverable).
305 Flash Utility ROM standard I/O POST running.
306 Flash Utility ROM is attempting IPL from Flash Update media device.
307 Flash Utility ROM system model number does not compare between OCS and ROM (irrecoverable).
308 Flash Utility ROM: IOCC TCW memory is being tested.
309 Flash Utility ROM passed control to a Flash Update Boot Image.

311 Flash Utility ROM CRC comparison error (irrecoverable).
312 Flash Utility ROM RAM POST memory configuration error or no memory found (irrecoverable).
313 Flash Utility ROM RAM POST failure (irrecoverable).
314 Flash Utility ROM Power status register failed (irrecoverable).
315 Flash Utility ROM detected a low voltage condition.
318 Flash Utility ROM RAM POST is looking for good memory.
319 Flash Utility ROM RAM POST bit map is being generated.
322 CRC error on media Flash Image. No Flash Update performed.
323 Current Flash Image is being erased.
324 CRC error on new Flash Image after Update was performed. (Flash Image is corrupted.)
325 Flash Update successful and complete.

2.1.3 Configuration Program Indicators

5c0 Streams-based hardware drive being configured.
5c1 Streams-based X.25 protocol being configured.
5c2 Streams-based X.25 COMIO emulator driver being configured.
5c3 Streams-based X.25 TCP/IP interface driver being configured.
5c4 FCS adapter device driver being configured.
5c5 SCB network device driver for FCS is being configured.
5c6 AIX SNA channel being configured.
500 Querying Standard I/O slot.
501 Querying card in Slot 1.
502 Querying card in Slot 2.
503 Querying card in Slot 3.
504 Querying card in Slot 4.
505 Querying card in Slot 5.
506 Querying card in Slot 6.
507 Querying card in Slot 7.
508 Querying card in Slot 8.
510 Starting device configuration.
511 Device configuration completed.
512 Restoring device configuration files from media.
513 Restoring basic operating system installation files from media.
516 Contacting server during network boot.
517 Mounting client remote file system during network IPL.
518 Remote mount of the root and /usr file systems failed during network boot.
520 Bus configuration running.
521 **/etc/init** invoked **cfgmgr** with invalid options; **/etc/init** has been corrupted or incorrectly modified (irrecoverable error).
522 The configuration manager has been invoked with conflicting options (irrecoverable error).
523 The configuration manager is unable to access the ODM database (irrecoverable error).
524 The configuration manager is unable to access the config.rules object in the ODM database (irrecoverable error).
525 The configuration manager is unable to get data from a customized device object in the ODM database (irrecoverable error).
526 The configuration manager is unable to get data from a customized device driver object in the ODM database (irrecoverable error).
527 The configuration manager was invoked with the phase 1 flag; running phase 1 at this point is not permitted (irrecoverable error).
528 The configuration manager cannot find sequence rule, or no program name was specified in the ODM database (irrecoverable error).
529 The configuration manager is unable to update ODM data (irrecoverable error).
530 The program **savebase** returned an error.
531 The configuration manager is unable to access the **PdAt** object class (irrecoverable error).
532 There is not enough memory to continue (malloc failure); irrecoverable error.
533 The configuration manager could not find a configure method for a device.
534 The configuration manager is unable to acquire database lock (irrecoverable error).
535 HIPPI diagnostics interface driver being configured.
536 The configuration manager encountered more than one sequence rule specified in the same phase (irrecoverable error).
537 The configuration manager encountered an error when invoking the program in the sequence rule.
538 The configuration manager is going to invoke a configuration method.
539 The configuration method has terminated, and control has returned to the configuration manager.
551 IPL vary-on is running.
552 IPL varyon failed.
553 IPL phase 1 is complete.
554 The boot device could not be opened or read, or unable to define NFS swap device during network boot.
555 An ODM error occurred when trying to varyon the rootvg, or unable to create an NFS swap device during network boot.
556 Logical Volume Manager encountered error during IPL vary-on.
557 The root filesystem will not mount.
558 There is not enough memory to continue the system IPL.
559 Less than 2 M bytes of good memory are available to load the AIX kernel.
570 Virtual SCSI devices being configured.
571 HIPPI common function device driver being configured.
572 HIPPI IPI-3 master transport driver being configured.
573 HIPPI IPI-3 slave transport driver being configured.
574 HIPPI IPI-3 transport services user interface device driver being configured.
575 A 9570 disk-array driver is being configured.
576 Generic async device driver being configured.
577 Generic SCSI device driver being configured.

578 Generic commo device driver being configured.
579 Device driver being configured for a generic device.
580 HIPPI TCPIP network interface driver being configured.
581 Configuring TCP/IP.
582 Configuring Token-Ring data link control.
583 Configuring an Ethernet data link control.
584 Configuring an IEEE Ethernet data link control.
585 Configuring an SDLC MPQP data link control.
586 Configuring a QLLC X.25 data link control.
587 Configuring a NETBIOS.
588 Configuring a Bisync Read-Write (BSCRW).
589 SCSI target mode device being configured.
590 Diskless remote paging device being configured.
591 Configuring an LVM device driver.
592 Configuring an HFT device driver.
593 Configuring SNA device drivers.
594 Asynchronous I/O being defined or configured.
595 X.31 pseudo-device being configured.
596 SNA DLC/LAPE pseudo-device being configured.
597 OCS software being configured.
598 OCS hosts being configured during system reboot.
599 Configuring FDDI data link control.
600 Starting network boot portion of **/sbin/rc.boot**
602 Configuring network parent devices.
603 **/usr/lib/methods/defsys**, **/usr/lib/methods/cfgsys**, or **/usr/lib/methods/cfgbus** failed.
604 Configuring physical network boot device.
605 Configuration of physical network boot device failed.
606 Running **/usr/sbin/ifconfig** on logical network boot device.
607 **/usr/sbin/ifconfig** failed.
608 Attempting to retrieve the **client.info** file with **tftp.** Note that a flashing 608 indicates multiple attempt(s) to retrieve the **client_info** file are occurring.
609 The **client.info** file does not exist or it is zero length.
610 Attempting remote mount of NFS file system.
611 Remote mount of the NFS file system failed.
612 Accessing remote files; unconfiguring network boot device.
614 Configuring local paging devices.
615 Configuration of a local paging device failed.
616 Converting from diskless to dataless configuration.
617 Diskless to dataless configuration failed.
618 Configuring remote (NFS) paging devices.
619 Configuration of a remote (NFS) paging device failed.
620 Updating special device files and ODM in permanent filesystem with data from boot RAM filesystem.
622 Boot process configuring for operating system installation.
77c Progress indicator. A 1.0 GB 16-bit SCSI disk drive being identified or configured.
700 Progress indicator. A 1.1 GB 8-bit SCSI disk drive being identified or configured.
701 Progress indicator. A 1.1 GB 16-bit SCSI disk drive is being identified or configured.
702 Progress indicator. A 1.1 GB 16-bit differential SCSI disk drive is being identified or configured.
703 Progress indicator. A 2.2 GB 8-bit SCSI disk drive is being identified or configured.
704 Progress indicator. A 2.2 GB 16-bit SCSI disk drive is being identified or configured.
705 The configuration method for the 2.2 GB 16-bit differential SCSI disk drive is being run. If an irrecoverable error occurs, the system halts.
706 Progress indicator. A 4.5 GB 16-bit SCSI disk drive is being identified or configured.
707 Progress indicator. A 4.5 GB 16-bit differential SCSI disk drive is being identified or configured.
708 Progress indicator. A L2 cache is being identified or configured.
710 POWER GXT150M graphics adapter being identified or configured.
711 Unknown adapter being identified or configured.
712 Graphics slot bus configuration is executing.
713 The IBM ARTIC960 device is being configured.
714 A video capture adapter is being configured.
715 The Ultimedia Services audio adapter is being configured. This LED displays briefly on the panel.
720 Unknown read/write optical drive type being configured.
721 Unknown disk or SCSI device being identified or configured.
722 Unknown disk being identified or configured.
723 Unknown CD-ROM being identified or configured.
724 Unknown tape drive being identified or configured.
725 Unknown display adapter being identified or configured.
726 Unknown input device being identified or configured.
727 Unknown async device being identified or configured.
728 Parallel printer being identified or configured.
729 Unknown parallel device being identified or configured.
730 Unknown diskette drive being identified or configured.

731 PTY being identified or configured.
732 Unknown SCSI initiator type being configured.
733 7GB 8mm tape drive being configured.
754 1.1GB 16-bit SCSI disk drive being configured.
755 2.2GB 16-bit SCSI disk drive being configured.
756 4.5GB 16-bit SCSI disk drive being configured.
85c Progress indicator. Token-Ring High-Performance LAN adapter is being identified or configured.
89c Progress indicator. A multimedia SCSI CD-ROM is being identified or configured.
811 Processor complex being identified or configured.
812 Memory being identified or configured.
813 Battery for time-of-day, NVRAM, and so on being identified or configured, or system I/O control logic being identified or configured.
814 NVRAM being identified or configured.
815 Floating-point processor test
816 Operator panel logic being identified or configured.
817 Time-of-day logic being identified or configured.
819 Graphics input device adapter being identified or configured.
821 Standard keyboard adapter being identified or configured.
823 Standard mouse adapter being identified or configured.
824 Standard tablet adapter being identified or configured.
825 Standard speaker adapter being identified or configured.
826 Serial Port 1 adapter being identified or configured.
827 Parallel port adapter being identified or configured.
828 Standard diskette adapter being identified or configured.
831 3151 adapter being identified or configured, or Serial Port 2 being identified or configured.
834 64-port async controller being identified or configured.
835 16-port async concentrator being identified or configured.
836 128-port async controller being identified or configured.
837 16-port remote async node being identified or configured.
838 Network Terminal Accelerator Adapter being identified or configured.
839 7318 Serial Communications Server being configured.
841 8-port async adapter (EIA-232) being identified or configured.
842 8-port async adapter (EIA-422A) being identified or configured.
843 8-port async adapter (MIL-STD 188) being identified or configured.
844 7135 RADiant Array disk drive subsystem controller being identified or configured.
845 7135 RADiant Array disk drive subsystem drawer being identified or configured.
847 16-port serial adapter (EIA-232) being identified or configured.
848 16-port serial adapter (EIA-422) being identified or configured.
849 X.25 Interface Co-Processor/2 adapter being identified or configured.
850 Token-Ring network adapter being identified or configured.
851 T1/J1 Portmaster adapter being identified or configured.
852 Ethernet adapter being identified or configured.
854 3270 Host Connection Program/6000 connection being identified or configured.
855 Portmaster Adapter/A being identified or configured.
857 FSLA adapter being identified or configured.
858 5085/5086/5088 adapter being identified or configured.
859 FDDI adapter being identified or configured.
861 Optical adapter being identified or configured.
862 Block Multiplexer Channel Adapter being identified or configured.
865 ESCON Channel Adapter or emulator being identified or configured.
866 SCSI adapter being identified or configured.
867 Async expansion adapter being identified or configured.
868 SCSI adapter being identified or configured.
869 SCSI adapter being identified or configured.
870 Serial disk drive adapter being identified or configured.
871 Graphics subsystem adapter being identified or configured.
872 Grayscale graphics adapter being identified or configured.
874 Color graphics adapter being identified or configured.
875 Vendor generic communication adapter being configured.
876 8-bit color graphics processor being identified or configured.
877 POWER Gt3/POWER Gt4 being identified or configured.
878 POWER Gt4 graphics processor card being configured.
880 POWER Gt1 adapter being identified or configured.
887 Integrated Ethernet adapter being identified or configured.
889 SCSI adapter being identified or configured.
890 SCSI-2 Differential Fast/Wide and Single-Ended Fast/Wide Adapter/A.
891 Vendor SCSI adapter being identified or configured.
892 Vendor display adapter being identified or configured.
893 Vendor LAN adapter being identified or configured.
894 Vendor async/communications adapter being identified or configured.
895 Vendor IEEE 488 adapter being identified or configured.
896 Vendor VME bus adapter being identified or configured.
897 S/370 Channel Emulator adapter being identified or configured.
898 POWER Gt1x graphics adapter being identified or configured.
899 3490 attached tape drive being identified or configured.
901 Vendor SCSI device being identified or configured.

902 Vendor display device being identified or configured.
903 Vendor async device being identified or configured.
904 Vendor parallel device being identified or configured.
905 Vendor other device being identified or configured.
908 POWER GXT1000 Graphics subsystem being identified or configured.
912 2.0GB SCSI-2 differential disk drive being identified or configured.
913 1.0GB differential disk drive being identified or configured.
914 5GB 8 mm differential tape drive being identified or configured.
915 4GB 4 mm tape drive being identified or configured.
916 Non-SCSI vendor tape adapter being identified or configured.
917 Progress indicator. 2.0GB 16-bit differential SCSI disk drive is being identified or configured.
918 Progress indicator. 2GB 16-bit single-ended SCSI disk drive is being identified or configured.
920 Bridge Box being identified or configured.
921 101 keyboard being identified or configured.
922 102 keyboard being identified or configured.
923 Kanji keyboard being identified or configured.
924 Two-button mouse being identified or configured.
925 Three-button mouse being identified or configured.
926 5083 tablet being identified or configured.
927 5083 tablet being identified or configured.
928 Standard speaker being identified or configured.
929 Dials being identified or configured.
930 Lighted program function keys (LPFK) being identified or configured.
931 IP router being identified or configured.
933 Async planar being identified or configured.
934 Async expansion drawer being identified or configured.
935 3.5-inch diskette drive being identified or configured.
936 5.25-inch diskette drive being identified or configured.
937 An HIPPI adapter is being configured.
942 POWER GXT 100 graphics adapter being identified or configured.
943 Progress indicator. 3480 and 3490 control units attached to a System/370 Channel Emulator/A adapter are being identified or configured.
945 1.0GB SCSI differential disk drive being identified or configured.
946 Serial port 3 adapter is being identified or configured.
947 Progress indicator. A 730MB SCSI disk drive is being configured.
948 Portable disk drive being identified or configured.
949 Unknown direct bus-attach device being identified or configured.
950 Missing SCSI device being identified or configured.
951 670MB SCSI disk drive being identified or configured.
952 355MB SCSI disk drive being identified or configured.
953 320MB SCSI disk drive being identified or configured.
954 400MB SCSI disk drive being identified or configured.
955 857MB SCSI disk drive being identified or configured.
956 670MB SCSI disk drive electronics card being identified or configured.
957 120MB DBA disk drive being identified or configured.
958 160 MB DBA disk drive being identified or configured.
959 160MB SCSI disk drive being identified or configured.
960 1.37GB SCSI disk drive being identified or configured.
968 1.0GB SCSI disk drive being identified or configured.
970 Half-inch, 9-track tape drive being identified or configured.
971 150MB 1/4-inch tape drive being identified or configured.
972 2.3GB 8 mm SCSI tape drive being identified or configured.
973 Other SCSI tape drive being identified or configured.
974 CD-ROM drive being identified or configured.
975 Progress indicator. An optical disk drive is being identified or configured.
977 M-Audio Capture and Playback Adapter being identified or configured.
981 540MB SCSI-2 single-ended disk drive being identified or configured.
985 M-Video Capture Adapter being identified or configured.
986 2.4GB SCSI disk drive being identified or configured.
987 Progress indicator. Enhanced SCSI CD-ROM drive is being identified or configured.
989 200MB SCSI disk drive being identified or configured.
990 2.0GB SCSI-2 single-ended disk drive being identified or configured.
991 525MB 1/4-inch cartridge tape drive being identified or configured.
994 5GB 8 mm tape drive being identified or configured.
995 1.2GB 1/4 inch cartridge tape drive being identified or configured.
996 Progress indicator. Single-port, multi-protocol communications adapter is being identified or configured.
997 FDDI adapter being identified or configured.
998 2.0GB4 mm tape drive being identified or configured.
999 7137 or 3514 Disk Array Subsystem being configured.

2.2 Diagnostic Load Progress Indicators

Note: When a lowercase **c** is listed, it displays in the lower half of the seven-segment character position.

c00 AIX Install/Maintenance loaded successfully.
c01 Insert the first diagnostic diskette.
c02 Diskettes inserted out of sequence.
c03 The wrong diskette is in diskette drive.
c04 The loading stopped with a nonrecoverable error.
c05 A diskette error occurred.
c06 The **rc.boot** configuration shell script is unable to determine type of boot.
c07 Insert the next diagnostic diskette.
c08 RAM file system started incorrectly.
c09 The diskette drive is reading or writing a diskette.
c20 An unexpected halt occurred, and the system is configured to enter the kernel debug program instead of entering a system dump.
c21 The **ifconfig** command was unable to configure the network for the client network host.
c22 The **tftp** command was unable to read client's *ClientHostName* **info** file during a client network boot.
c24 Unable to read client's *ClientHostName*.**info** file during a client network boot.
c25 Client did not mount remote miniroot during network install.
c26 Client did not mount the /usr file system during the network boot.
c29 The system was unable to configure the network device.
c31 Select the console display for the diagnostics. To select No console display, set the key mode switch to Normal then to Service. The diagnostic programs will then load and run the diagnostics automatically.
c32 A direct-attached display (HFT) was selected.
c33 A tty terminal attached to serial ports S1 or S2 was selected.
c34 A file was selected. The console messages store in a file.
c40 Configuration files are being restored.
c41 Could not determine the boot type or device.
c42 Extracting data files from diskette.
c43 Cannot access the boot/install tape.
c44 Initializing installation database with target disk information.
c45 Cannot configure the console.
c46 Normal installation processing.
c47 Could not create a physical volume identifier (PVID) on disk.
c48 Prompting you for input.
c49 Could not create or form the JFS log.
c50 Creating root volume group on target disks.
c51 No paging devices were found.
c52 Changing from RAM environment to disk environment.
c53 Not enough space in the **/tmp** directory to do a preservation installation.
c54 Installing either BOS or additional packages.
c55 Could not remove the specified logical volume in a preservation installation.
c56 Running user-defined customization.
c57 Failure to restore BOS.
c58 Displaying message to turn the key.
c59 Could not copy either device special files, device ODM, or volume group information from RAM to disk.
c61 Failed to create the boot image.
c99 Diagnostics have completed. This code is only used when there is no console.

2.3 Reading Flashing 888 Numbers on a Three-Digit Operator Panel Display

A flashing **888** number indicates that the diagnostic programs detected an error and a diagnostic message is ready to be read. For additional information about flashing **888** numbers, refer to Chapter 6, "System Unit Error Isolation Features."

Note: The 9333 displays four-digit SRNs that are not listed in this book. To decode these SRNs, refer to 9333 documentation listed in "Service Hints" in Chapter 1.

2.4 Step 1. Determine the Type of Message

The operator panel display should be flashing **888**.

1. Get a problem summary form from the *Problem Solving Guide and Reference* or a blank sheet of paper to record the numbers appearing in the operator panel display.

2. Be sure the key mode switch is set to Normal or Service.

   Note: Every time you press the Reset button, hold it for about one second to allow the program to sense the change.

3. Press the Reset button once. Record the number in the operator panel display. This is the message type.

4. In the following list, go to the step for your message type.

   Type 102 Go to Step 2.

   Type 103 Go to Step 3.

   Type 105 Go to Step 4.

   Other Go to Step 5.

2.5 Step 2. Reading the Type 102 Message

A 102 message is generated when a software or hardware error occurs during system execution of an application. Use the following steps and information to determine the content of the Type 102 message. Crash and dump status codes are listed on the following page.

102 = Message type
RRR = Crash code
SSS = Dump status code
888 or **103** or **105**

1. Press the Reset button once and record the crash code. If the crash code is **558**, see the note at the end of this step.

2. Press the Reset button and record the dump status code (dump progress indicator).

3. Press the Reset button again. Look at the number in the operator panel display to answer the following question.

Is 888 flashing in the operator panel display?

NO The message has a Type 103 or 105 message included in it. Go to Step 3 to read out the SRN and FRU information about Type 103 messages. Go to Step 4 to read out the SRN and FRU information about Type 105 messages.

YES This completes the read-out of this message. You can repeat the message by pressing the Reset button. You must power the system unit Off to recover from this halt. Return to the MAP step that directed you here.

Note: There are no SRNs associated with this message type. If the crash code is **558** and you were loading the diagnostic diskettes, the problem may be that you used the wrong diagnostic boot diskette. Try using the boot diskette for 8MB systems. To access CEREADME file information on 8MB systems, refer to Chapter 6.

Subtopics
2.5.1 Crash Codes
2.5.2 Dump Progress Indicators (Dump Status Codes)

2.5.1 Crash Codes

The following crash codes are part of a Type 102 message.

000 Unexpected system interrupt.
200 Machine check because of a memory bus error.
201 Machine check because of a memory timeout.
202 Machine check because of a memory card failure.
203 Machine check because of a out of range address.
204 Machine check because of an attempt to write to ROS.
205 Machine check because of an uncorrectable address parity.
206 Machine check because of an uncorrectable ECC error.
207 Machine check because of an unidentified error.
208 Machine check due to an L2 uncorrectable ECC.
300 Data storage interrupt from the processor.
32x Data storage interrupt because of an I/O exception from IOCC.
38x Data storage interrupt because of an I/O exception from SLA.
400 Instruction storage interrupt.
500 External interrupt because of a scrub memory bus error.
501 External interrupt because of an unidentified error.
51x External interrupt because of a DMA memory bus error.
52x External interrupt because of an IOCC channel check.
53x External interrupt from an IOCC bus timeout; x represents the IOCC number.
54x External interrupt because of an IOCC keyboard check.
558 There is not enough memory to continue the IPL.
700 Program interrupt.
800 Floating point is not available.

2.5.2 Dump Progress Indicators (Dump Status Codes)

The following dump progress indicators, or dump status codes, are part of a Type 102 message.

Note: When a lowercase **c** is listed, it displays in the lower half of the seven-segment character position. The leftmost position is blank on the following codes.

0c0 The dump completed successfully.
0c2 A dump, requested by the user, is started.
0c3 The dump is inhibited.
0c4 The dump did not complete. A partial dump may be present.
0c5 The dump program could not access the dump device.
0c6 A dump to the secondary dump device was requested. Make the secondary dump device ready; then press Ctrl-Alt-Numpad2.
0c7 Reserved.
0c8 The dump function is disabled.
0c9 A dump is in progress.

2.6 Step 3. Reading the Type 103 Message

A Type 103 message is generated when a hardware error is detected. Use the following steps and information to determine the content of the Type 103 message. (You may have come here from a Type 102 message. If so, use the same procedure).

1. Press the Reset button and record the first three digits of the six-digit SRN.

   Note: The 9333 machine type displays four-digit SRNs that are not listed in this book. To decode these SRNs, refer to 9333 documentation.

2. Press the Reset button and record the next three digits of the SRN.

3. Each time the Reset button is pressed, three digits of a FRU location code display. When all FRU location codes are read out, the operator panel display returns to the flashing **888** or, if another message is waiting to be displayed, a **ccc**. If a ccc is displayed, repeat this step to receive the next message. Try the first SRN listed; if it does not resolve the problem, try following SRNs in the order listed. If the message contains more than four FRUs, not all FRU location codes will be present.

   Press the Reset button and record the three-digit numbers until a flashing **888** displays. Use the following to identify the numbers being read.

   103 = Message type
   XXX-XXX = SRN
   c01 1xx 2xx 3xx 4xx 5xx 6xx 7xx 8xx = First FRU location code
   c02 1xx 2xx 3xx 4xx 5xx 6xx 7xx 8xx = Second FRU location code
   c03 1xx 2xx 3xx 4xx 5xx 6xx 7xx 8xx = Third FRU location code
   c04 1xx 2xx 3xx 4xx 5xx 6xx 7xx 8xx = Fourth FRU location code

4. Identify the SRN. You can cycle through the numbers again by pressing the Reset button.

5. The FRU location codes translate into an eight-digit location code (AB-CD-EF-GH). Each digit of the eight-digit location code is presented as a three-digit number in the operator panel display.

   A B C D E F G H = Eight-digit location code
   c01 1xx 2xx 3xx 4xx 5xx 6xx 7xx 8xx = First FRU location code
   c02 1xx 2xx 3xx 4xx 5xx 6xx 7xx 8xx = Second FRU location code
   c03 1xx 2xx 3xx 4xx 5xx 6xx 7xx 8xx = Third FRU location code
   c04 1xx 2xx 3xx 4xx 5xx 6xx 7xx 8xx = Fourth FRU location code

   Note: If a **ccx** (**x** can be any digit from 2 through 9) is encountered as part of the location code, only the part of the code that is different from the location code of the previous FRU is shown. To form the complete location code of the next FRU, substitute the information following the **ccx** into the location code of the previous FRU.

   For example, if the previous FRU location is:

   c01 100 200 300 401 500 601 700 800,

   and the next FRU location is listed as:

   cc2 602,

   the complete location code of the next FRU is:

   cc2 100 200 300 401 500 602 700 800.

   To identify each digit of the location code (AB-CD-EF-GH), translate the right-most two digits using the following table. See "Location Codes" in this chapter to determine the physical location of the resource.

xx Value	xx Value	xx Value	xx Value
00 = 0	11=A	21=K	31=U
01 = 1	12=B	22=L	31=V
02 = 2	13=C	23=M	31=W

03 = 3	14=D	24=N	31=X
04 = 4	15=E	25=O	31=Y
05 = 5	16=F	26=P	36=Z
06 = 6	17=G	27=Q	
07 = 7	18=H	28=R	
08 = 8	19=I	29=S	
09 = 9	20=J	30=T	

6. The only way to recover from an **888** type of halt is to power the system unit Off. Return to the MAP step that directed you here.

2.7 Step 4. Reading the Type 105 Message

Type 105 and 103 messages are similar. The Type 105 message contains SRNs in encoded form because the SRN contains characters that cannot be displayed in the operator panel display. Use the following steps and information to determine the content of the Type 105 message. (You may have come here from a Type 102 message. If so, use the same procedure).

1. Press the Reset button and record the first three digits of the SRN.

2. Press the Reset button and record the next three digits of the SRN.

3. Repeatedly press the Reset button, each time recording the numbers in the operator panel display, until **c01** is displayed.

4. Each time the Reset button is pressed, three digits of a FRU location code display. When all FRU location codes are read out, the operator panel display returns to the flashing **888** or, if another message is waiting to be displayed, a **ccc**. If a **ccc** is displayed, repeat this step to receive the next message. Try the first SRN listed; if it does not resolve the problem, try following SRNs in the order listed. If the message contains more than four FRUs, not all FRU location codes will be present. Press the Reset button and record the three-digit numbers until a flashing 888 displays. Use the following to identify the numbers being read.

   105 = Message type
   1xx 2xx 3xx 4xx = encoded SRN
   c01 1xx 2xx 3xx 4xx 5xx 6xx 7xx 8xx = First FRU location code
   c02 1xx 2xx 3xx 4xx 5xx 6xx 7xx 8xx = Second FRU location code
   c03 1xx 2xx 3xx 4xx 5xx 6xx 7xx 8xx = Third FRU location code
   c04 1xx 2xx 3xx 4xx 5xx 6xx 7xx 8xx = Fourth FRU location code

5. Determine the SRN by translating the rightmost two digits of each position within the encoded SRN (1xx 2xx 3xx 4xx) using the table at the end of the following substep. You can cycle through the numbers again by pressing the Reset button.

6. The FRU location codes translate into an eight-digit location code (AB-CD-EF-GH). Each digit of the eight-digit location code is presented as a three-digit number in the operator panel display.

   A B C D E F G H = Eight-digit location code
   c01 1xx 2xx 3xx 4xx 5xx 6xx 7xx 8xx = First FRU location code
   c02 1xx 2xx 3xx 4xx 5xx 6xx 7xx 8xx = Second FRU location code
   c03 1xx 2xx 3xx 4xx 5xx 6xx 7xx 8xx = Third FRU location code
   c04 1xx 2xx 3xx 4xx 5xx 6xx 7xx 8xx = Fourth FRU location code

   Note: If a **ccx** (**x** can be any digit from 2 through 9) is encountered as part of the location code, only the part of the code that is different from the location code of the previous FRU is shown. To form the complete location code of the next FRU, substitute the information following the **ccx** into the location code of the previous FRU.

   For example, if the previous FRU location is:

   c01 100 200 300 401 500 601 700 800,

   and the next FRU location is listed as:

   cc2 602,

   the complete location code of the next FRU is:

   cc2 100 200 300 401 500 602 700 800.

   To identify each digit of the location code (AB-CD-EF-GH), translate the right-most two digits using the following table. See "Location Codes" in this chapter to determine the physical location of the resource.

xx Value	xx Value	xx Value	xx Value
00 = 0	11=A	21=K	31=U
01 = 1	12=B	22=L	31=V
02 = 2	13=C	23=M	31=W
03 = 3	14=D	24=N	31=X

04 = 4	15=E	25=O	31=Y
05 = 5	16=F	26=P	36=Z
06 = 6	17=G	27=Q	
07 = 7	18=H	28=R	
08 = 8	19=I	29=S	
09 = 9	20=J	30=T	

7. The only way to recover from an **888** type of halt is to power the system unit Off. Return to the MAP step that directed you here.

2.8 Step 5. Other Numbers

The only valid message types are types 102, 103, 104, and 105. Type 104 messages are used by the manufacturing plant and should be ignored. If you have any other number displayed, take the following actions:

1. Press the Reset button again and again until a flashing **888** appears in the operator panel display. If you do not get a flashing **888** in the display, you should consider the numbers as *steady* numbers. Go to "Operator Panel Display Numbers" in this chapter, and follow the procedures for analyzing operator panel display codes.

2. When the flashing **888** is displayed, go to "Step 1. Determine the Type of Message" in topic 2.4.

2.9 Reading a Flashing 888 Message on an Multi-Line Operator Panel Display

An **888** flashing in the first line of the operator panel display indicates that a hardware or software error has been detected and that an error message is being displayed. For additional information about flashing **888** messages, refer to Chapter 6, "System Unit Error Isolation Features."

2.10 Step 1. Determine the Type of Message

The first line of the operator panel display should be displaying a line with 888 flashing in it.

1. Get a problem summary form from the *AIX Problem Solving Guide and Reference*. or a blank sheet of paper to record the characters appearing in the operator panel display.

2. Be sure the mode switch is set to Normal or Service.

3. Record the three digits following the flashing **888** in the first line of the operator panel display. This is the message type.

4. In the following list, go to the step for your message type.

   Type 102 Go to Step 2.

   Type 103 Go to Step 3.

   Type 105 Go to Step 3.

   Other Go to Step 4.

2.11 Step 2. Reading the Type 102 Message

A 102 message is generated when a software or hardware error occurs during system execution of an application. Use the following steps and information to determine the contents of the type 102 message. Refer to the "Crash Codes" and "Dump Progress Indicators (Dump Status Codes)" in topic 2.11.2.

The following is an example of the first line of the multiline operator panel display;
888 102 RRR SSS

where:

102 = Message type
RRR = Crash code
SSS = Dump status code

1. Record the three digits following the 102 in the first line of the operator panel display, this is the crash code. Record the three digits immediately following the crash code, this is the dump status.

2. Look at the second line of the operator panel display and then answer the following question.

Is the second line of the operator panel display blank?

NO The message has a type 103 or 105 message included in it. Press the Reset button once, then go to Step 3. Read out the SRN and FRU for these message types.

YES This completes the read-out of this message. You must power-off the system unit to recover from this halt. There are no SRNs associated with this message type. Return to the MAP step that directed you here.

Subtopics
2.11.1 Crash Codes
2.11.2 Dump Progress Indicators (Dump Status Codes)

2.11.1 Crash Codes

The following crash codes are part of a Type 102 message.

000 Unexpected system interrupt.
200 Machine check because of a memory bus error.
201 Machine check because of a memory timeout.
202 Machine check because of a memory card failure.
203 Machine check because of a out of range address.
204 Machine check because of an attempt to write to ROS.
205 Machine check because of an uncorrectable address parity.
206 Machine check because of an uncorrectable ECC error.
207 Machine check because of an unidentified error.
208 Machine check due to an L2 uncorrectable ECC.
300 Data storage interrupt from the processor.
32x Data storage interrupt because of an I/O exception from IOCC.
38x Data storage interrupt because of an I/O exception from SLA.
400 Instruction storage interrupt.
500 External interrupt because of a scrub memory bus error.
501 External interrupt because of an unidentified error.
51x External interrupt because of a DMA memory bus error.
52x External interrupt because of an IOCC channel check.
53x External interrupt from an IOCC bus timeout;x represents the IOCC number.
54x External interrupt because of an IOCC keyboard check.
558 There is not enough memory to continue the IPL.
700 Program interrupt.
800 Floating point is not available.

2.11.2 Dump Progress Indicators (Dump Status Codes)

The following dump progress indicators, or dump status codes, are part of a Type 102 message.

Note: When a lowercase **c** is listed, it displays in the lower half of the seven character position. The leftmost position is blank on the following codes.

0c0 The dump completed successfully.
0c2 A dump, requested by the user, is started.
0c3 The dump is inhibited.
0c4 The dump did not complete. A partial dump may be present.
0c5 The dump program could not access the dump device.
0c6 A dump to the secondary dump device was requested. Make the secondary dump device ready; then press Ctrl-Alt-Numpad2.
0c7 Reserved.
0c8 The dump function is disabled.
0c9 A dump is in progress.

2.12 Step 3. Reading the Type 103 and 105 Message

A type 103 and 105 message is generated when a hardware error is detected. Use the following steps and information to record SRN and FRU location code information.

1. Record all characters following the first 103 or 105 in the first line of the operator panel display. This is the SRN.

2. Record all characters following the number in the first position on the second line, this is the location code information for the first FRU.

3. Each time the reset button is pressed the operator panel display will scroll upwards one line. When all the information has been displayed the bottom line of the operator panel display will contain a line with **888** flashing. This indicates that the message is being repeated.

   Press the reset button and record the information in the bottom line of the operator panel display. Continue this exercise until a line with a flashing **888** is displayed. Use the following information to help identify the information in each line.

Note: X represents any character.

Displayed Information	**Meaning**
103 XXX-XXX	SRN being displayed, XXX-XXX is the SRN.
105 XXXX	SRN being displayed, XXXX is the SRN.
1 XX-XX-XX-XX	First FRU location code, XX-XX-XX-XX is the location code.
2 XX-XX-XX-XX	Second FRU location code, XX-XX-XX-XX is the location code.
3 XX-XX-XX-XX	Third FRU location code, XX-XX-XX-XX is the location code.
4 XX-XX-XX-XX	Fourth FRU location code, XX-XX-XX-XX is the location code.

Note: All eleven characters of the location code may not be displayed.

4. If multiple SRNs were recorded start with the SRN recorded first. If that does not fix the problem try the remaining SRNs in the order recorded until the problem is fixed.

5. When the system halts with a flashing 888 you must power-off the system unit to recover. Return to the MAP step that directed you here.

2.13 Step 4. Other Numbers

The only valid message types are types 102, 103, 104, and 105. Type 104 messages are used by the manufacturing plant and should be ignored. If you have any other number displayed, take the following actions:

1. Press the Reset button again and again until a flashing *888* appears in the first line of the operator panel display. If you do not get a flashing *888* in the display, you should consider the numbers as *steady* numbers. Go to "Operator Panel Display Numbers" in this chapter, and follow the procedures for analyzing operator panel display codes.

2. When the flashing *888* is displayed, go to Step 1 on page 2-18.

2.14 Location Codes

Because the same diagnostic programs are used on all of the system units, a location code is used to physically locate a failing device or unit. The location code is displayed along with the service request number (SRN) when the diagnostic programs isolate a failure. If the location code is not known, you can run the Display Previous Diagnostic Results service aid to display the results of the last time the diagnostic programs were run.

The rack-type system unit has several labels on the drawers and devices. These help the operator and service person identify various drawers and devices. The drawer ID should match the slot location of the adapter that drives it. The SCSI devices may be labeled with a number that identifies the SCSI address to which the device is set. See Appendix A of the *Installation and Service Guide* to determine the physical location of a device.

Subtopics

2.14.1 Location Code Format for 7135, and 9334

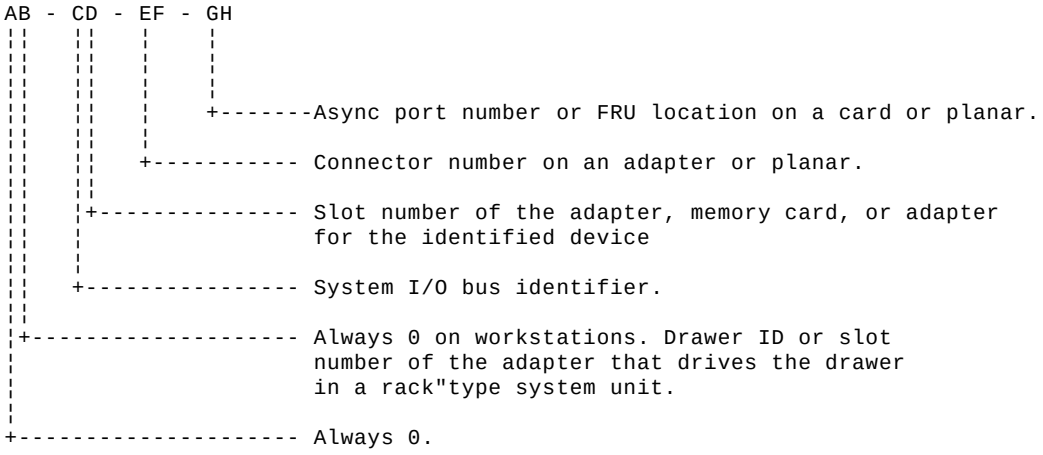
Refer to the 7135 and 9334 service information for their location code formats.

2.15 Location Code Format for Non-SCSI Devices

The following example is for non-SCSI devices. These include planars, memory cards, adapters, and async distribution boxes.

Use the example to determine the physical location of a device.

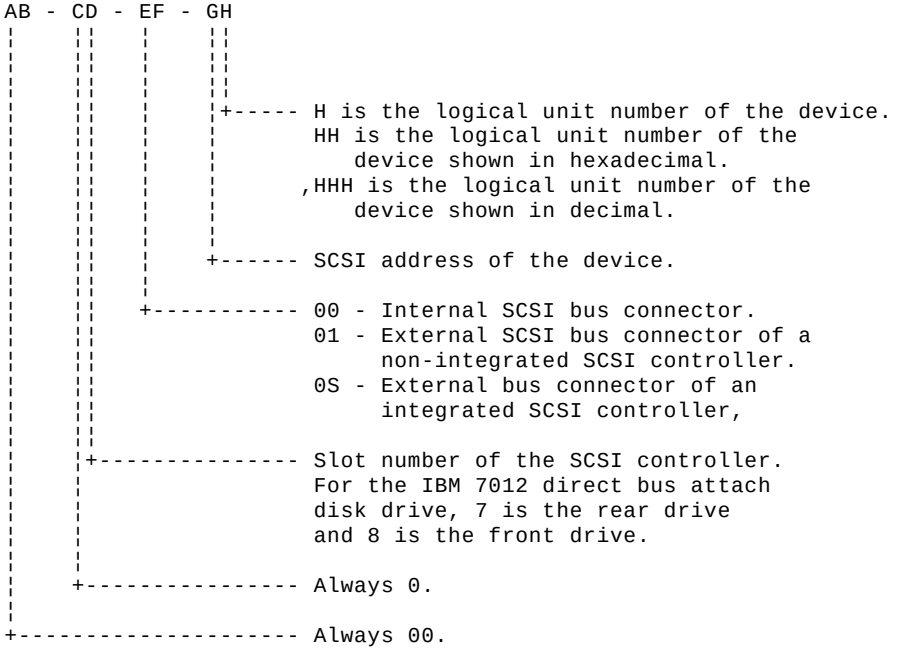
Note: The G and H fields each can contain one, two, or three characters.



Subtopics
2.15.1 Location Code Format for SCSI Devices

2.15.1 Location Code Format for SCSI Devices

Refer to *Adapters, Devices, and Cable Information* to determine the physical location of a SCSI device.



Note: Refer to the machine specific service guide if your SCSI location code does not appear in the above table.

To aid the operator and service person, the rack-type system unit has several identification labels on drawers and devices. The drawer ID should match the slot location of the adapter that drives it. SCSI devices may be labeled with a number that identifies the SCSI address to which the device is set.

2.16 Location Code Format for 9333 High Performance Disk Drive Subsystems

If the 9333 is connected to only one adapter port, each disk drive module has only one location code; if the 9333 is connected to more than one adapter port, each disk drive module has a location code for each adapter port.

- In 9333 Models 010 and 011 drawer subsystems, the left-hand compartment (viewed from the front) is compartment 0; the right-hand compartment is compartment 3.

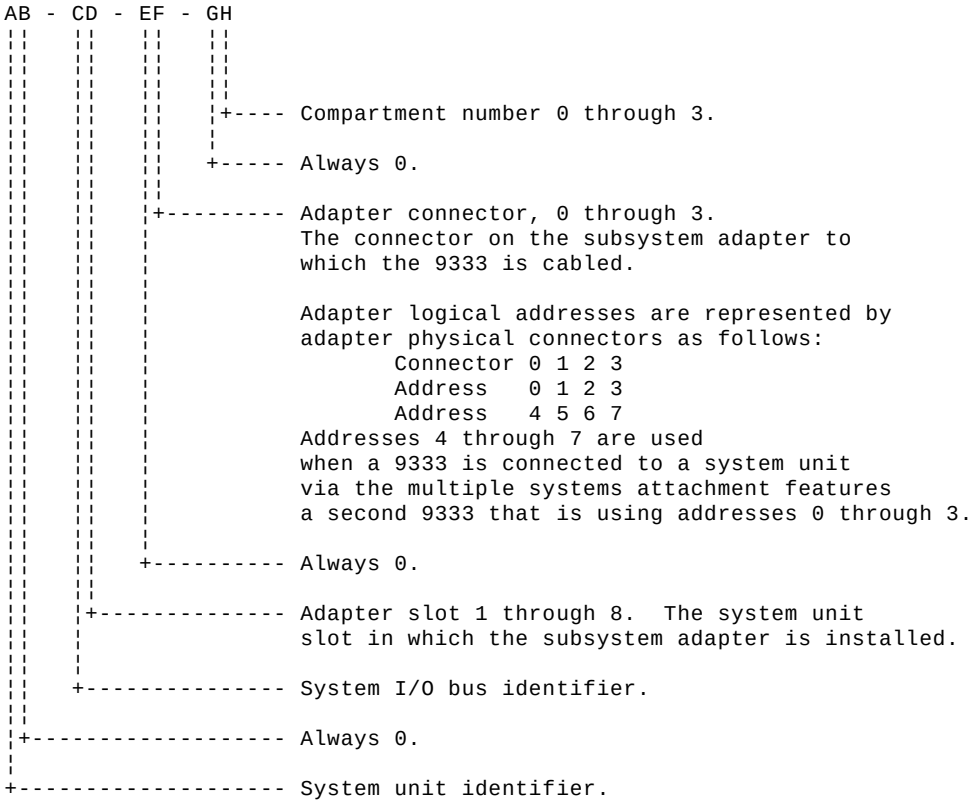
- In 9333 Models 500 and 501 deskside subsystems, the top compartment is compartment 0; the bottom compartment is compartment 3.

Notes:

Adapter in the following diagram refers to the particular High-Performance Disk Drive Subsystem Adapter in use.

The 9333 software location code displayed by the system unit *always* shows the system unit identifier (A) as 0.

If the 9333 is connected to only one system unit, the system unit identifier is always 0; if the 9333 is connected to more than one system unit, you must determine the system unit identifier for the system unit that displayed the location code, and then add that identifier to the A field of the code.



2.17 Location Code Table

Use the following table to determine the physical location of a device or unit.

Note: The location code format for 9333 devices is described on the previous page and in 9333 documentation.

Use the following example to identify these two-character pairs: AB-CD-EF-GH.

Pair	Value	Description
AB	00	Workstation-type system unit.
	00	CPU drawer or enclosure in a rack-type system unit.
	00	SCSI device drawer in a rack-type system unit.
	00	SCSI disk drawer in a rack-type system unit.
	01	Async expansion adapter in slot 1 of CPU drawer.
	02	Async expansion adapter in slot 2 of CPU drawer.
	03	Async expansion adapter in slot 3 of CPU drawer.
	04	Async expansion adapter in slot 4 of CPU drawer.
	05	Async expansion adapter in slot 5 of CPU drawer.
	06	Async expansion adapter in slot 6 of CPU drawer.
	07	Async expansion adapter in slot 7 of CPU drawer.
	08	This is not an invalid number. Slot 8 contains a standard SCSI adapter.
CD	00	CPU planar.
	00	Standard I/O planar.
	00	A device attached to the standard I/O planar.
	01	Adapter in slot 1 of the I/O planar.
	02	Adapter in slot 2 of the I/O planar.
	03	Adapter in slot 3 of the I/O planar.
	04	Adapter in slot 4 of the I/O planar.
	05	Adapter in slot 5 of the I/O planar.
	06	Adapter in slot 6 of the I/O planar.
	07	Adapter in slot 7 of the I/O planar.
	08	Adapter in slot 8 of the I/O planar.
	07	Rear Direct-Bus-Attach Disk Drive (7012).
	08	Front Direct-Bus-Attach Disk Drive (7012).
	10	Second I/O planar.
	11	Adapter in slot 1 of the second I/O planar or expansion cabinet.
	12	Adapter in slot 2 of the second I/O planar or expansion cabinet.
	13	Adapter in slot 3 of the second I/O planar or expansion cabinet.
	14	Adapter in slot 4 of the second I/O planar or expansion cabinet.
	15	Adapter in slot 5 of the second I/O planar or expansion cabinet.
	16	Adapter in slot 6 of the second I/O planar or expansion cabinet.
	17	Adapter in slot 7 of the second I/O planar or expansion cabinet.
	18	Adapter in slot 8 of the second I/O planar or expansion cabinet.
	0J	Graphics adapter slot.
	0J	TCW SIMM socket.
	0K	TCW SIMM socket.
CD	0A	Memory SIMM/card in slot A on the system/CPU planar.
	0B	Memory SIMM/card in slot B on the system/CPU planar.
	0C	Memory SIMM/card in slot C on the system/CPU planar.
	0D	Memory SIMM/card in slot D on the system/CPU planar.
	0E	Memory SIMM/card in slot E on the system/CPU planar.
	0F	Memory SIMM/card in slot F on the system/CPU planar.
	0G	Memory SIMM/card in slot G on the system/CPU planar.
	0H	Memory SIMM/card in slot H on the system/CPU planar.
	AA	Serial Optic Converter in slot AA of system/CPU planar.
	AB	Serial Optic Converter in slot AB of system/CPU planar.
	0P	CPU card located in slot P.
	0Q	CPU card located in slot Q.
	0R	CPU card located in slot R.
	0S	CPU card located in slot S.

EF	00	Does not have a connector or software was not able to identify the connector number.
	01 02 03 04	The number of the connector on an adapter card, distribution box, or planar. If needed, see Chapter 8 for the connector numbering on your adapter.
	0D	Internal diskette connector on the standard I/O planar.
	0E	Built-in Ethernet adapter.
	0K	Keyboard connector.
	0M	Mouse connector.
	0P	Parallel printer connector.
	0S	Built-in SCSI adapter.
	0T	Tablet connector.
	S1	Serial port 1 connector.
	S2	Serial port 2 connector.
	S3	Serial Port 3 connector.
	1A	Port A of the Serial Optic Converter in slot AA of the CPU planar.
	1B	Port B of the Serial Optic Converter in slot AA of the CPU planar.
	2A	Port A of the Serial Optic Converter in slot AB of the CPU planar.
	2B	Port B of the Serial Optic Converter in slot AB of the CPU planar.
	11	Remote async node 1 on line 1.
	12	Remote async node 2 on line 1.
	13	Remote async node 3 on line 1.
	14	Remote async node 4 on line 1.
	21	Remote async node 1 on line 2.
	22	Remote async node 2 on line 2.
	23	Remote async node 3 on line 2.
	24	Remote async node 4 on line 2.
GH	01	Memory SIMM or DIMM in location 1 on the memory card.
	02	Memory SIMM or DIMM in location 2 on the memory card.
	03	Memory SIMM or DIMM in location 3 on the memory card.
	04	Memory SIMM or DIMM in location 4 on the memory card.
	05	Memory SIMM or DIMM in location 5 on the memory card.
	06	Memory SIMM or DIMM in location 6 on the memory card.
	07	Memory SIMM or DIMM in location 7 on the memory card.
	08	Memory SIMM or DIMM in location 8 on the memory card.
	0A	Video RAM in slot A of the graphics adapter.
	0B	Video RAM in slot B of the graphics adapter.
	0C	Video RAM in slot C of the graphics adapter.
	0D	Video RAM in slot D of the graphics adapter.
	0E	Video RAM in slot E of the graphics adapter.
	0F	Video RAM in slot F of the graphics adapter.
	0G	Video RAM in slot G of the graphics adapter.
	0H	Video RAM in slot H of the graphics adapter.
	0J	Video RAM in slot J of the graphics adapter.
	0K	Video RAM in slot K of the graphics adapter.
GH or GHH or G,HHH	00	For devices other than those listed here
	00 thru 15	Port addresses for 8-port async, 16-port async, and 16-port concentrator distribution boxes.
	01	Diskette drive 1
	00 thru FF	SCSI address and logical unit number of the device.
	000 thru FFF	SCSI address and logical unit number of the device shown in hexadecimal.
	0,000 thru F,255	SCSI address and logical unit number of the device shown in decimal. **Note:** When a comma appears between the G and H, digits appearing to the right of the comma are represented in decimal.
	NOTE: See the Appendix A to determine physical location.	

2.18 Description of the Service Request Number List

The service request number (SRN) list is in numerical sequence by the SRN.

The SRNs listed in this chapter are for all systems and devices for which this version of the diagnostic programs can produce an SRN.

The columns in the table are used as follows:

Service Request Number
Usually a six-digit number (9333 uses four digits) representing a specific failure of a specific function.

Source of SRN
SRN source codes identify the program or procedure that produced the SRN:

A The SRN is from a *steady* number in the operator panel display.

B The SRN is from a MAP callout.

C The SRN was due to a missing resource at configuration time .

D The SRN is from a diagnostic test after complete isolation testing.

E The SRN is from a POST failure.

F The SRN is from a diagnostic test after partial isolation testing.

G The SRN is from the Error Log Analysis program.

H The SRN is from a diagnostic message after a flashing *888.*

G The SRN is from the Error Log Analysis program.

J The SRN is from built-in ROM diagnostics.

K The SRN is from off-line diagnostics.

Failing Function Codes
These numbers represent functional areas of the system unit. The "Failing Function Code List" in Chapter 3 identifies the FRU that contains this function for each specific system unit.

Failure Percent (%)
The numbers in this column show probability percentages of failing functions. The total in this column may exceed more than 100% because some functions may be in more than one option.

Description and Action
This column lists a brief description of the failure this SRN represents. It also contains instructions as to what to do to continue the problem analysis.

2.19 How to Use the Service Request Number List

The service request number list is in numerical sequence by the SRN.

1. Find your SRN in the table.

2. Record the code letter for the Source of SRN.

3. Record the failing function codes in the order listed.

4. Read the description to be sure that the problem you are analyzing is this type. If it is not, consider the source of your SRN, and decide if you should continue to analyze this SRN or go to MAP 0030 to get another SRN.

5. Perform the action shown in the Action column.
   Notes:

   a. If you cannot find SRN information in the "Service Request Number List," check for the existence of supplemental material supporting the device for which the SRN was generated.

   b. x in an SRN represents any digit or character.

   c. If the Description and Action column of an SRN directs you to use the diskett package, and if the system does not have a diskette drive or the SRN was obtained using the diskette package, use the MAP and failing function codes listed in the SRN.

2.20 Service Request Number List

Replace FRU parts in the order by which the "Failing Function Codes" are

Service Request Number	SRN Scr.	Failing Function Codes	Description and Action (Unless indicated otherwise use MAP 0210.)
01xx			**Description:** Diagonstics detected a problem with the 9333 subsystem. **Action:** See "Drawer/Deskside Unit Documentation" under "Service Hints" in Chapter 1 to choose the appropriate 9333 service guide; then go to that 9333 service guide, and continue.
02xx			**Description:** Diagnostics detected a problem with the 9333 subsystem. **Action:** See "Drawer/Deskside Unit Documentation" under "Service Hints" in Chapter 1 to choose the appropriate 9333 service guide; then go to that 9333 service guide, and continue.
03xx			**Description:** Diagnostics detected a problem with the 9333 subsystem. **Action:** See "Drawer/Deskside Unit Documentation" under "Service Hints" in Chapter 1 to choose the appropriate 9333 service guide; then go to that 9333 service guide, and continue.
04xx			**Description:** Diagnostics detected a problem with the 9333 subsystem. **Action:** See "Drawer/Deskside Unit Documentation" under "Service Hints" in Chapter 1 to choose the appropriate 9333 service guide; then go to that 9333 service guide, and continue.
05xx			**Description:** Diagnostics detected a problem with the 9333 subsystem. **Action:** See "Drawer/Deskside Unit Documentation" under "Service Hints" in Chapter 1 to choose the appropriate 9333 service guide; then go to that 9333 service guide, and continue.
Axxx			**Description:** Diagnostics detected a problem with the 9333 subsystem. **Action:** See "Drawer/Deskside Unit Documentation" under "Service Hints" in Chapter 1 to choose the appropriate 9333 service guide; then go to that 9333 service guide, and continue.
Bxxx			**Description:** Diagnostics detected a problem with the 9333 subsystem. **Action:** See "Drawer/Deskside Unit Documentation" under "Service Hints" in Chapter 1 to choose the appropriate 9333 service guide; then go to that 9333 service guide, and continue.
B08-098	J	B08 852	**Description:** Ethernet twisted-pair transceiver failed.
B08-099	J	B08 887	**Description:** Ethernet twisted-pair transceiver failed.
B09-098	J	B09 852	**Description:** Ethernet thin transceiver failed.
B09-099	J	B09 887	**Description:** Ethernet thin transceiver failed.
B38-097	J	B38 214	**Description:** IPLROS detected a problem with memory SIMM pair. **Action:** Exchange the SIMM pair. Use MAP 0210.
B38-098	J	B38 214	**Description:** IPLROS detected a problem with the memory SIMM. If exchanging the

			indicated SIMM does not resolve the problem, exchange the other SIMM in the pair before exchanging the planar.
B39-097 **B39-098**	J	B39 214	**Description:** IPLROS detected a problem with the memory SIMM pair. **Action:** Exchange the SIMM pair. If exchanging the indicated SIMM does not resolve the problem, exchange the other SIMM in the pair before exchanging the planar. Use MAP 0210.
B49-098	J	B88 227	**Description:** Automatic solid-state circuit breaker (PTC device) is open. Remove electrical short on SCSI device or cable, or system planar. Wait at least three minutes, and then retest.
B49-099	J	227 B08/B09	**Description:** Automatic solid-state circuit breaker (PTC device) is open. Remove electrical short on Ethernet device or system planar. Wait at least three minutes, and then retest.
B58-099	J	B58 B41 227	**Description:** The POWER Gt3i adapter test failed.
B59-099	J	B59 B41 227	**Description:** The POWER Gt4e adapter test failed.
Cxxx			**Description:** Diagnostics detected a problem with the 9333 subsystem. **Action:** See "Drawer/Deskside Unit Documentation" under "Service Hints" in Chapter 1 to choose the appropriate 9333 service guide; then go to that 9333 service guide, and continue.
C99-098	J	C99 221	**Description:** detected a problem with the FDDI Dual Ring Upgrade adapter. **Note:** Determine Dual Ring Upgrade adapter type (copper or fiber) and use FRU of same type.
C99-099	J	C99 221	**Description:** IPLROS detected a problem with the FDDI adapter. **Note:** Determine adapter type (copper or fiber) and use FRU of same type.
Dxxx			**Description:** Diagnostics detected a problem with the 9333 subsystem. **Action:** See "Drawer/Deskside Unit Documentation" under "Service Hints" in Chapter 1 to choose the appropriate 9333 service guide; then go to that 9333 service guide, and continue.
Fxxx			**Description:** Diagnostics detected a problem with the 9333 subsystem. **Action:** Substitute SRN 0xxx for SRN Fxxx, where xxx is the last three digits of the SRN. See "Drawer/Deskside Unit Documentation" under "Service Hints" in Chapter 1 to choose the appropriate 9333 service guide; then go to that 9333 service guide, and continue.
100-099	J	721 711 868	**Description:** An unknown device/adapter was not detected. The location code indicates the failing device/adapter.
101-c32	D		**Description:** The system hung while indicating that a direct-attached display was selected as the console. **Action:** Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure. Suspect the graphics adapter being used for the display console first.
101-100	A	210	**Description:** Testing stopped when BIST

		223	passed control to POST.
101-20C **101-21c**	A	D01 210	**Description:** L2 cache POST failed.
101-101	A	210 169 223	**Description:** Starting BIST from Reset button.
101-102	A	223	**Description:** Starting BIST after power on.
101-103 **101-104**	A	210 223	**Description:** BIST could not determine the system model number or could not find the CBA.
101-105	A	216 223	**Description:** BIST could not read from the OCS EPROM.
101-106 **to** **101-113**	A	210 223	**Description:** BIST detected a module failure, could not log the checkstop results, or the checkstop count was greater than 1.
101-120	A	223	**Description:** Starting CRC check on 875X EPROM.
101-121 **101-122**	A	210 223	**Description:** The BIST detected a bad CRC on the OCS EPROM.
101-123 **101-124**	A	814	**Description:** The BIST detected a bad CRC on the OCS NVRAM.
101-125	A	814 152	**Description:** The BIST detected a bad CRC on the time of day NVRAM.
101-126	A	814	**Description:** The BIST detected a bad CRC on the time of day NVRAM.
101-127	A	223	**Description:** The BIST detected a bad CRC on the 8752 EPROM.
101-130	A	210 169 223	**Description:** Starting BIST after pressing the Reset button.
101-140 **101-154**	A	210 223	**Description:** The BIST failed.
101-180	A	210 223	**Description:** The BIST logout failed.
101-185	A	210 D01 223	**Description:** BIST checkstop. Refer to the following note regarding FFC D01. **Note:** Some systems may not have D01 installed. If this is the case the FFCs for this SRN are 210 and 223.
101-186 **101-187**	A	C27	**Description:** System logic or Graphics-generated checkstop.
101-195	A	210	**Description:** The BIST logout failed.
101-200	A	168 816	**Description:** POST detected the key mode switch in the Secure position. **Action:** Check the key mode switch. If it is in the Secure position, switch it to Service position and start over. If not, use MAP 0210 and the FFCs listed.
101-201	A	210	**Description:** POST initialization checkstop. **Action:** Run diagnostics from diskettes or CD-ROM. Start with MAP 0020 Step 14. If the diagnostics run correctly from diskette or CD-ROM, the problem may be damaged data on the disk. Contact the Software Support Center. If a different problem occurs, correct that problem. If SRN 101-201 is still received, use failing functional code 210, and go to MAP 0210.
101-209 **101-210**	A	B24	**Description:** POST is executing floating or fixed point tests.

101-211	A	217	**Description:** POST IPL ROM CRC error.
101-212	A	214	**Description:** Memory configuration error or no memory found.
101-213	A	131 214	**Description:** The POST of the memory failed while looking for 1M-bytes of good memory. **Action:** Use MAP 0310.
101-214	A	816 218	**Description:** The power-status register test failed.
101-215	A	152 816	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose cable connectors. If no problem found, use MAP 0210.
101-216	A	131	**Description:** The system hangs while uncompressing ROM into memory. **Action:** Unidentified memory error. Check all SIMMS to be present and properly installed. Check all SIMMS to be the same, as shown in Appendix G. If no discrepancy is found then replace the SIMM in the location called out by the flashing 888 LEDs. Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
101-217	A	218	**Description:** The system was unable to continue through the boot list.
101-218 **101-219** **101-220**	A	131	**Description:** The POST of the memory failed while looking for 1M bytes of good memory, generating a bit map or control block. **Action:** Use MAP 0310. **Note:** For 7012/G series, 7013/J series, and 7015/R30 system units, use FFC221 and MAP 0210.
101-221	A		**Description:** The NVRAM was bad during normal IPL. **Action:** Set the key mode switch to Service and load the diagnostic programs again. **Note:** For 7012/G series, 7013/J series, and 7015/R30 system units, use FFC 814 and MAP 0210.
101-222	A	828 227 210	**Description:** The system hangs while trying to IPL from a SCSI device.
101-223	A	B88 227 210	**Description:** The system hangs while trying to IPL from a SCSI device. **Action:** Run diagnostics from diskette or CD-ROM. Go to MAP 0020, Step 14. If you received this SRN while attempting to load diagnostics from CD-ROM, use MAP 0210 and the listed failing function codes. **Note:** May be caused by incorrect jumper settings for external SCSI devices or by incorrect SCSI terminator.
101-224	A		**Description:** Normal mode IPL problem. **Action:** Use the Start MAP in the 9333 service guide.
101-225	A	950 227 210	**Description:** The system hangs while trying to IPL from a SCSI device. **Note:** SRNs 101-245 and 101-255 can occur on a 7012 if diagnostics are being run with damaged disk data. Solve this problem by formatting the disk using diagnostic diskettes or diagnostic CD-ROM and then reinstalling the system.
101-226	A	887	**Description:** The system hangs while attempting to IPL from the Ethernet adapter.
101-227	A	850	**Description:** The system hangs while

			attempting to IPL from the Token-Ring.
101-228 **101-229**	A	218	**Description:** The system was unable to restart from an expansion code or restart from devices specified in the NVRAM.
101-230	A		**Description:** The system hangs while attempting to IPL from ROM scan code. **Action:** Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
101-231	A	887	**Description:** The system hangs while attempting to IPL from the Ethernet adapter.
101-232	A	828 227 210	**Description:** The system hangs while trying to IPL from a SCSI device.
101-233	A	B88	**Description:** The system hangs while trying to IPL from a SCSI device. **Action:** If possible, run diagnostics from diskette; go to MAP 0020, Step 14. If it is not possible to run diagnostics from diskette, or if the error occurred while using diskette diagnostics, use MAP 0210 and the failing function code listed.
101-234	A		**Description:** Normal mode IPL problem. **Action:** Use the Start MAP in the 9333 service guide.
101-235	A	950 227 210	**Description:** The system hangs while trying to IPL from a SCSI device. **Note:** SRNs 101-245 and 101-255 can occur on a 7012 if diagnostics are being run with damaged disk data. Solve this problem by formatting the disk using the diagnostic diskettes or diagnostic CD-ROM and then reinstalling the system.
101-236	A	887	**Description:** The system hangs while attempting to IPL from the Ethernet adapter.
101-237 **101-238**	A	850	**Description:** The system hangs while attempting to IPL from the Token-Ring.
101-239	A	218	**Description:** The system was unable to restart from a device specified by the user.
101-240	A		**Description:** The system hangs while attempting to IPL from ROM scan code. **Action:** Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
101-242	A	828 227 210	**Description:** The system hangs while trying to IPL from a SCSI device.
101-243	A	B88	**Description:** The system hangs while trying to IPL from a SCSI device. **Action:** If possible, run diagnostics from the diskette; go to MAP 0020, Step 14. If it is not possible to run diagnostics from diskette, or if the error occurred while using diskette diagnostics, use MAP 0210 and the failing function code listed.
101-244	A		**Description:** Service mode IPL problem. **Action:** Use the Start MAP in the 9333 service guide.
101-245	A	950 227 210	**Description:** The system hangs while trying to IPL from a SCSI device. **Note:** SRNs 101-245 and 101-255 can occur on a 7012 if diagnostics are being run with damaged disk data. Solve this problem by formatting the disk using the

			diagnostic diskettes or diagnostic CD-ROM and then reinstalling the system.
101-246	A	887	**Description:** The system hangs while attempting to IPL from the Ethernet adapter. **Note:** Ensure that the system is not still trying to IPL from a server over a network. It is not uncommon for the three-digit display to display the value associated with this SRN for longer than three minutes.
101-247	A	850	**Description:** The system hangs while attempting to IPL from the Token-Ring.
101-248 **101-249**	A	218	**Description:** The system was unable to restart from an expansion code or restart from devices specified in the NVRAM.
101-250	A		**Description:** The system hangs while attempting to IPL from ROM scan code. **Action:** Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
101-251	A	887	**Description:** The system hangs while attempting to IPL from the Ethernet adapter. **Note:** Ensure that the system is not still trying to IPL from a server over a network. It is not uncommon for the three-digit display to display the value associated with this SRN for longer than three minutes.
101-252	A	828 227 210	**Description:** The system hangs while trying to IPL from diskette.
101-253	A	B88	**Description:** The system hangs while trying to IPL from a SCSI device. **Action:** If possible, run diagnostics from diskette; go to MAP 0020, Step 14. If it is not possible to run diagnostics from diskette, or if the error occured while using diskette diagnostics, use MAP 0210 and the failing function code listed.
101-254	A		**Description:** Service mode IPL problem. **Action:** Use the Start MAP in the 9333 service guide.
101-255	A	950 227 210	**Description:** The system hangs while trying to IPL from a SCSI device. **Note:** SRNs 101-245 and 101-255 can occur on a 7012 if diagnostics are being run with damaged disk data. Solve this problem by formatting the disk using the diagnostic diskettes or diagnostic CD-ROM and then reinstalling the system.
101-256	A	887	**Description:** The system hangs while attempting to IPL from the Ethernet **Note:** Ensure that the system is not still trying to IPL from a server over a network. It is not uncommon for the three-digit display to display the value associated with this SRN for longer than three minutes.
101-257 **101-258**	A	850	**Description:** The system hangs while attempting to IPL from the Token-Ring. **Note:** Ensure that the system is not still trying to IPL from a server over a network. It is not uncommon for the three-digit display to display the value associated with this SRN for longer than three minutes.
101-259 **101-25c**	A	C99	**Description:** The system hangs while attempting to IPL from FDDI. **Note:** Ensure that the system is not still

			trying to IPL from a server over a network. It is not uncommon for the three-digit display to display the value associated with this SRN for longer than three minutes.
101-262	A	B31 821	**Description:** The keyboard was not detected. **Action:** Determine the keyboard type, and then use MAP 0210. **Note:** Check for blown planar fuses or for a corrupted boot record on disk drive.
101-263	A		**Description:** The system hangs while attempting to IPL from ROM scan code. **Action:** Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
101-269	A		**Description:** IPL failed. Boot record could not be loaded. **Note:** This problem can be caused by a corrupted boot record, a boot list that does not contain the correct boot device, SCSI device addressing, SCSI terminators, open PTC, or SCSI cable. On the 7013/J30 this problem can be caused by a loose or faulty flex cable. **Action:** Go to the SCSI Problem Isolation Procedure. If a problem is not found, suspect the flex cable and SCSI adapter
101-271	A	B29 168	**Description:** The POST for the mouse port failed.
101-272	A	B29	**Description:** The POST for the tablet port failed.
101-277	A	850 210	**Description:** The Auto Token-Ring LANstreamer MC 32 Adapter POST is executing.
101-278	A		**Description:** The POST from Video ROM Scan has failed. **Action:** Go to Map 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
101-279	A	C99 210	**Description:** The FDDI POST is executing.
101-280	A	852 210	**Description:** The 3com POST is executing.
101-281	A	B31 B29	**Description:** The keyboard POST is executing.
101-282 **101-283**	A	B29	**Description:** The parallel or serial port POST is executing.
101-284	A	880 B29	**Description:** The display adapter POST is executing.
101-285	J	see NOTE 214	**Description:** The display adapter POST is executing. **NOTE:** This SRN is valid for FFC 877, B58, or B59
101-286	A	850 210	**Description:** The Token-Ring POST is executing.
101-287	A	887	**Description:** The Ethernet POST is executing.
101-288	A	221 C90	**Description:** The system hangs while executing an adapter POST. **Action:** For 7012/G series, 7013/J series, and 7015/R30 system units, use listed FFCs and MAP 0210. For all other system units, go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.

101-289	A	871 210	**Description:** The POWER GT0 POST is executing.
101-290	A	218 227	**Description:** The POST of the IOCC failed.
101-291	A	828	**Description:** The POST of the standard I/O failed.
101-292	A		**Description:** SCSI adapter POST failed. **Note:** This problem is normally caused by a defective SCSI adapter or an open PTC on the SCSI adapter. An open PTC can be caused by a short on the SCSI bus. **Action:** Go to the SCSI Problem Isolation Procedure. If a problem is not found suspect the SCSI adapter.
101-293	A	950 227	**Description:** The POST of the direct-attached disk drive failed.
101-294	A	B19	**Description:** The TCW memory SIMM failed.
101-295	A	872 874	**Description:** The grayscale graphics adapter failed or The color graphics adapter failed.
101-296	A		**Description:** The system halted while running a POST of an adapter installed in an I/O slot. **Action:** Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
101-297	A	217	**Description:** The ROS model and type number does not match the system model and type number. **Action:** Check for compatibility problems with the processor complex. If you do not find a problem, use MAP 0210.
101-298	A		**Description:** Error during a software IPL. **Action:** Set the system unit power switch to Off, wait 30 seconds, and set it to On again.
101-299	A	132 210	**Description:** Error when control passed to IPL program. **Action:** Attempt to IPL the system from another boot device. If the system completes IPL, the boot program on the original device may be corrupted. If the boot attempt fails on the second boot device use FFC 210 and go to MAP 0210.
101-301	A	210	**Description:** Flash Utility ROM test failed, or checkstop occurred. **Action:** Run diagnostics from diskette or CD ROM. Start with MAP 0020 Step 14. If the diagnostics run correctly from diskette or CD ROM, the problem may be damaged data on the disk. Contact the Software Support Center. If a different problem occurs, correct that problem. If SRN 101-301 is still received, use Failing Function Code 210, and go to MAP 0210.
101-304	A	218 227	**Description:** The POST of the IOCC failed.
101-305	A	828	**Description:** The POST of the standard I/O failed.
101-306	A	828 227 210	**Description:** The system hangs while trying to IPL from diskette.
101-307	A	217	**Description:** The ROM model and type number does not match the system model and type number. **Action:** Check for compatibility problems

			with the processor module. If no problem is found, use MAP 0210.
101-309	A	132	**Description:** Error when control passed to IPL program. **Action:** Check the IPL media. If no problem is found, IPL from another device.
101-311	A	217	**Description:** POST IPL ROM CRC error.
101-312	A	214	**Description:** Memory configuration error or no memory found.
101-313	A	131 214	**Description:** The POST of the memory failed while looking for good memory. **Action:** Use MAP 0310.
101-314	A	816 218	**Description:** The power status register test failed.
101-315	A	152 816	**Description:** A low voltage is being sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If now problem is found, use MAP 0210.
101-318 **101-319**	A	131	**Description:** The POST failed while it was generating the memory bit map. **Action:** Use MAP 0310.
101-322	A	132	**Description:** CRC error on media Flash Image. **Action:** Check the IPL media. If no problem is found, obtain another copy of the diskette.
101-323 **101-324**	A	217	**Description:** CRC error on ROM Flash Image.
101-500 **to** **101-508**	A		**Description:** The system hung while configuring the adapters. The rightmost digit of the SRN identifies the slot number of the adapter. **Action:** Use MAP 0270.
101-518	A		**Description:** CD-ROM read problems after boot. **Note:** The boot record was read from the CD-ROM disk. However, errors occurred when trying to mount the CD-ROM file system. This problem can be caused by SCSI device addressing, SCSI terminator, open PTC, SCSI cable, etc. **Action:** Go to the SCSI Problem Isolation Procedure.
101-521 **to** **101-538**	A		**Description:** The configuration manager detected an error. **Action:** If you are running the diagnostics from a disk, try running the diagnostics from diskettes or CD-ROM. If the diagnostics run correctly from diskettes or CD-ROM, the problem may be damaged data on the disk. Contact your software support facility. If a different problem occurs when you run the diagnostics from diskette or CD-ROM, correct that problem. If you were running from diskettes or CD- ROM at first, go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
101-540 **to** **101-543**	A		**Description:** The system hung while configuring the adapters in the async expansion drawer. The rightmost digit of the SRN identifies the slot number of the adapter being configured. **Action:** Use MAP 0270.
101-544	A		**Description:** Disk read problems occurred after booting. **Note:** The boot record was read from the

			disk. However, errors occurred when trying to open the disk drive. This problem can be caused by SCSI device addressing, SCSI terminator, open PTC, SCSI cable, etc. **Action:** Go to the SCSI Problem Isolation Procedure.
101-545 to 101-548	A		**Description:** The system hung while configuring the adapters in the async expansion drawer. The rightmost digit of the SRN identifies the slot number of the adapter being configured. **Action:** Use MAP 0270.
101-551 to 101-557	A		**Description:** The system hung while loading the software. This can be caused by a hardware or software problem. **Action:** Run diagnostics from diskette or CD-ROM. Start at MAP 0020, Step 14. If the diagnostics run correctly from diskette or CD-ROM, the problem may be damaged disk data. Consider having the customer contact Software Support before reinstalling the operating system on the disk. If you still get the same SRN, go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
101-558	A		**Description:** There is not enough memory to execute diagnostics. **Action:** There must be a minimum of 16MB of installed memory. If the system has 16MB or more of memory installed, suspect a problem with a memory card.
101-559 to 101-599	A		**Description:** The system hung while loading the software. This can be caused by a hardware or software problem. **Action:** Run diagnostics from diskette or CD-ROM. Start at MAP 0020, Step 14. If the diagnostics run correctly from diskette or CD-ROM, the problem may be damaged disk data. Consider having the customer contact Software Support before reinstalling the operating system on the disk. If you still get the same SRN, go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
101-711 to 101-726	A		**Description:** The system hung while trying to configure an unknown resource. **Action:** Run diagnostics from diskette or CD-ROM. Start at MAP 0020, Step 14. If you still get the same SRN, look at the "Failing Function Code List" in Chapter 3, and find the FFC that matches the the last three digits of the SRN. Suspect the device adapter or device itself. If more than one adapter or device is installed, isolate the failing resource by removing the adapters or devices one at a time and checking if the system stops with the same value in the three-digit display.
101-727	A		**Description:** The system hung while trying to configure an asynchronous adapter. **Action:** Use MAP 1540 in the installation and service guide for this system unit or drawer. Suspect a problem with one of the async adapters.
101-728 to 101-730	A		**Description:** The system hung while trying to configure an unknown resource. **Action:** Run diagnostics from diskette or CD-ROM. Start at MAP 0020, Step 14. If you still get the same SRN, look at the "Failing Function Code List" in Chapter 3, and find the FFC that matches the the last three digits of the SRN. Suspect the device adapter or device itself. If more than one adapter or device is installed, isolate the failing resource by removing

			the adapters or devices one at a time and checking if the system stops with the same value in the three-digit display.
101-811 to 101-858	A		**Description:** The system hung while configuring a resource. The rightmost three digits of the SRN identify the failing function code for the resource being configured. **Action:** Use MAP 0260.
101-859	A	859/997	**Description:** The system hung while configuring an adapter; you must determine which of the listed FFCs is failing. **Action:** Use MAP 0260.
101-860 to 101-868	A		**Description:** The system hung while configuring a resource. The rightmost three digits of the SRN identify the failing function code for the resource being configured. **Action:** Use MAP 0260.
101-869	A	B88	**Description:** The system hung while configuring a SCSI adapter; you must determine the adapter type. **Action:** Use MAP 0260.
101-870	A		**Description:** The system hung while configuring a resource. The rightmost three digits of the SRN identify the failing function code for the resource being configured. **Action:** Use the Start MAP in the 9333 Service Guide.
101-871 to 101-876	A		**Description:** The system hung while configuring a resource. The rightmost three digits of the SRN identify the failing function code for the resource being configured. **Action:** Use MAP 0260.
101-877	A	877 or 878 or B58	**Description:** The system hung while configuring a resource. **Note:** You must determine which adapter is installed in the system. It is possible that different types are installed in the system, and you may have to remove one to isolate the problem. **Action:** Use MAP 0260.
101-878 to 101-887	A		**Description:** The system hung while configuring a resource. The rightmost three digits of the SRN identify the failing function code for the resource being configured. **Action:** Use MAP 0260.
101-888	A	223 152 C23	**Description:** The BIST could not start.
101-889 to 101-948	A		**Description:** The system hung while configuring a resource. The rightmost three digits of the SRN identify the failing function code for the resource being configured. **Action:** Use MAP 0260.
101-949	A	949 189	**Description:** The system hung while configuring a direct bus attached drive. **Note:** You must determine the type of direct bus attached drive. **Action:** Use MAP 0260.
101-950 to 101-999	A		**Description:** The system hung while configuring a resource. The rightmost three digits of the SRN identify the failing function code for the resource being configured. **Action:** Use MAP 0260.
101-FFF	A	210	**Description:** Invalid three-digit display

			value.
103-151	D	151	**Description:** The time-of-day battery failed.
103-202 to 103-210	H		**Description:** Unexpected interrupt. **Action:** Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
104-c0c	H	173	**Description:** POST detected an unsynchronized memory problem. **Action:** Examine the system for a missing memory card or for a memory card installed in the wrong slot.
104-108	H	173	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
104-109	H	174	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
104-110	H	187	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
104-111	H	177	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
104-208 104-209	H	171	**Description:** POST detected a memory card problem. **Action:** Use MAP 0240.
104-210	H	180	**Description:** POST detected a memory card problem. **Action:** Use MAP 0240.
104-211	H	178	**Description:** POST detected a memory card problem. **Action:** Use MAP 0240.
105-101 105-102	H	221	**Description:** POST detected a memory SIMM problem.
105-103	H	B38 221	**Description:** POST detected a memory SIMM problem.
105-104	H	B39 221	**Description:** POST detected a memory SIMM problem.
105-105	H	154 221	**Description:** POST detected a memory SIMM problem.
105-106	H	C32 221	**Description:** POST detected a memory SIMM problem.
106-c0c	H		**Description:** POST detected an unsynchronized memory problem. **Action:** Examine the memory card for missing or incorrectly installed memory SIMMS. Also ensure that all SIMMS are of the same type.
106-004	H	177	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-008	H	176	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-028	H	187	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-200	H	131	**Description:** POST detected an invalid memory type. **Action:** Check the memory for compatible SIMMs and cards. If a problem is not found, replace the part that is called

			out. Use MAP 0240.
106-205 **106-207**	H	182	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-208	H	154	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-209	H	172	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-210	H	154	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-211	H	172	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-224	H	182	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-225	H	175	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-226	H	182	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-227	H	175	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-240	H	182	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-241	H	179	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-242	H	182	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-243	H	179	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-244	H	182	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-245	H	179	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-246	H	182	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-247	H	179	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-263 **106-300**	H	131	**Description:** POST detected an invalid memory type. **Action:** Check the memory for compatible SIMMs and cards. If a problem is not found, replace the part that is called out. Use MAP 0240.
106-301	H	C30	**Description:** POST detected a memory SIMM problem. **Action:** Check the memory for compatible SIMMs and cards. If a problem is not found, replace the part that is called out. Use MAP 0240.

106-305 **106-307**	H	182	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-308	H	154	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-309	H	172	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-310	H	154	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-311	H	172	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-324	H	182	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-325	H	175	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-326	H	182	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-327	H	175	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-340	H	182	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-341	H	179	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-342	H	182	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-343	H	179	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-344	H	182	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-345	H	179	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-346	H	182	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-347	H	179	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-363	H	131	**Description:** POST detected an invalid memory type. **Action:** Check the memory for compatible SIMMs and cards. If a problem is not found, replace the part that is called out. Use MAP 0240.
106-400	H	131	**Description:** POST detected an invalid memory type. **Action:** Check the memory for compatible SIMMs and cards. If a problem is not found, replace the part that is called out. Use MAP 0240.
106-401	H	D64	**Description:** POST detected a memory SIMM problem.

			Action: Use MAP 0240.
106-405	H	D63	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-408	H	C42	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-409	H	D62	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
106-463	H	131	**Description:** POST detected an invalid memory type. **Action:** Check the memory for compatible SIMMs and cards. If a problem is not found, replace the part that is called out. Use MAP 0240.
107-c0c	H		**Description:** POST detected an unsynchronized memory problem. **Action:** Examine the memory card for missing or incorrectly installed memory SIMMS. Also ensure that all SIMMS are of the same type.
107-004 **107-008**	H	178	**Description:** POST detected a memory card problem. **Action:** Use MAP 0240.
107-028	H	180	**Description:** POST detected a memory card problem. **Action:** Use MAP 0240.
107-200	H	131 214	**Description:** POST detected an invalid memory type. **Action:** Check the memory for compatible SIMMs and cards. If a problem is not found, replace the part that is called out. Use MAP 0240.
107-201 **to** **107-262**	H	157 210	**Description:** POST detected a memory card problem. **Action:** Use MAP 0240.
107-263 **107-300**	H	131 214	**Description:** POST detected an invalid memory type. **Action:** Check the memory for compatible SIMMs and cards. If a problem is not found, replace the part that is called out. Use MAP 0240.
107-301 **to** **107-362**	H	157 210	**Description:** POST detected a memory card problem. **Action:** Use MAP 0240.
107-363	H	131 214	**Description:** POST detected an invalid memory type. **Action:** Check the memory for compatible SIMMs and cards. If a problem is not found, replace the part that is called out. Use MAP 0240.
107-400	H	131 214	**Description:** POST detected an invalid memory type. **Action:** Check the memory for compatible SIMMs and cards. If a problem is not found, replace the part that is called out. Use MAP 0240.
107-401 **thru** **107-462**	H	157 210	**Description:** POST detected a memory SIMM problem. **Action:** Use MAP 0240.
107-463	H	131 214	**Description:** POST detected an invalid memory type. **Action:** Check the memory for compatible SIMMs and cards. If a problem is not found, replace the part that is called out. Use MAP 0240.
108-200	H	157	**Description:** POST detected an invalid

thru 108-363			memory type. **Action:** Check the memory for compatible SIMMs and cards. If a problem is not found, replace the part that is called out. Use MAP 0240.
108-400 thru 108-463	H	131	**Description:** POST detected an invalid memory type. **Action:** Check the memory for compatible SIMMs and cards. If a problem is not found, replace the part that is called out. Use MAP 0240.
109-200	B		**Description:** The system crashed while being run by the customer. **Action:** Use MAP 0020, and get a new SRN.
110-xxx	D	xxx 227	**Description:** The system halted while diagnostics were executing. **Note:** xxx corresponds to the last three digits of the SRN. If your 110 SRN is not listed below, use the 110-xxx procedure.
110-101	C		**Description:** The diagnostics did not detect an installed resource. **Action:** Use MAP 0290.
110-921 to 110-926	D	xxx 812	**Description:** The system halted while diagnostics were executing. **Note:** xxx corresponds to the last three digits of the SRN.
110-931	D	931 812	**Description:** The system halted while diagnostics were executing.
110-935	D	935 812	**Description:** The system halted while diagnostics were executing.
110-937 110-938	D	xxx 812	**Description:** The system halted while diagnostics were executing. **Note:** xxx corresponds to the last three digits of the SRN.
110-946	D	946 227	**Description:** The system halted while diagnostics were executing.
110-951 to 110-955	D	xxx B88	**Description:** The system halted while diagnostics were executing. **Note:** xxx corresponds to the last three digits of the SRN.
110-957 and 110-958	D	xxx 189 227	**Description:** The system halted while diagnostics were executing. **Note:** xxx corresponds to the last three digits of the SRN.
110-959	D	959 B88	**Description:** The system halted while diagnostics were executing.
110-970 to 110-972	D	xxx 812	**Description:** The system halted while diagnostics were executing. **Note:** xxx corresponds to the last three digits of the SRN.
110-974	D	974 B88	**Description:** The system halted while diagnostics were executing.
111-B31	B	B31 821	**Description:** The keyboard attached to the system does not respond. **Note:** You must determine the correct keyboard type. **Action:** Use MAP 0280.
111-B58	B	B58	**Description:** Cannot display readable information on the display. **Action:** Use MAP 0280.
111-B59	B	B59	**Description:** Cannot display readable information on the display. **Action:** Use MAP 0280.
111-101	B	133	**Description:** Cannot load the diagnostics programs from the diskettes or CD-ROM. **Action:** Go to MAP 1540 in either the

			service guide or the installation and service guide for this system unit, drawer, or enclosure. **Note:** This SRN can be caused by a bad diagnostic diskette or CD-ROM disc. Verify that the diskettes or CD-ROM disc are good before proceeding.
111-102	B	169 816	**Description:** Cannot detect the key mode switch in Service mode. **Action:** Use MAP 280.
111-103	B	B88 721	**Description:** The customer was unable to load diagnostics from disk. **Action:** Use MAP 0020, and get a new SRN.
111-104			**Description:** The customer did not wish to run diagnostics from diskette or CD-ROM, but does have a problem. **Action:** Use MAP 0020, and get a new SRN.
111-105	B	227	**Description:** Characters other than 888 are flashing in the three-digit display. **Action:** Use MAP 0280.
111-106	B	221 210	**Description:** System unable to IPL. **Action:** Use MAP 0280.
111-113	B		**Description:** There is a problem with power to the resource. **Action:** Ask the customer for the Problem Summary Form, then do problem determination on the failing resource.
111-116	B		**Description:** There is a problem with alternating numbers in the three-digit display. **Action:** Ask the customer for the Problem Summary Form, then perform a hardware problem determination.
111-117	B		**Description:** There is a problem with the system being inactive. **Action:** Ask the customer for the Problem Summary Form, then do hardware problem determination.
111-118	B		**Description:** There is a problem with a local area network. **Action:** Ask the customer for a Problem Summary Form, then do hardware problem determination.
111-121	B		**Description:** There is a display problem. **Action:** Ask the customer for the Problem Summary Form, then do hardware problem determination on the failing display.
111-122	B		**Description:** There is a system problem. **Action:** Ask the customer for the Problem Summary Form, then do hardware problem determination.
111-128	B	128 879 876 220	**Description:** Cannot display readable information on the display. **Action:** Use MAP 0280.
111-152	B	152	**Description:** The Power-On light does not come on. **Action:** Go to the power MAP in the system unit installation and service guide for this system unit.
111-259	B	259 252 261 D49 826	**Description:** Cannot display readable information on a terminal. **Action:** Use MAP 0280.
111-710	B	710	**Description:** Graphics subsystem problem **Action:** Use MAP 0280.
111-725	B	725	**Description:** Cannot display readable

			information on the display. **Note:** Suspect the display adapter attached to the console display. **Action:** Use MAP 0280.
111-871	B	112/115 111 114	**Description:** Cannot display readable information on the display. **Action:** Use MAP 0280.
111-872	B	872 227	**Description:** Cannot display readable information on the display. **Action:** Use MAP 0280.
111-874	B	874 220 227	**Description:** Cannot display readable information on the display. **Action:** Use MAP 0280.
111-877	B	877 B01 227	**Description:** Cannot display readable information on the display. **Action:** Use MAP 0280.
111-878	B	878 119 227	**Description:** Cannot display readable information on the display. **Action:** Use MAP 0280.
111-880	B	880	**Description:** Cannot display readable information on the display. **Action:** Use MAP 0280.
111-898	B	898	**Description:** Cannot display readable information on the display. **Action:** Use MAP 0280.
111-908	B	908	**Description:** Cannot display readable information on the display. **Action:** Use MAP 0280.
111-921	B	921 821	**Description:** The keyboard does not respond. **Action:** Use MAP 0280.
111-922	B	922 821	**Description:** The keyboard does not respond. **Action:** Use MAP 0280.
111-923	B	923 821	**Description:** The keyboard does not respond. **Action:** Use MAP 0280.
111-942	B	942 227	**Description:** Cannot display readable information on the display. **Action:** Use MAP 0280.
120-0xx	H	210 223	**Description:** BIST detected an error. **Action:** Use MAP 0280.
123-700	H	B21	**Description:** Testing stopped when BIST passed control to POST.
123-701	H	B21 B26	**Description:** Starting BIST from reset.
123-702 to 123-727	H	B21	**Description:** Starting BIST after power on, or BIST detected an error.
123-730	H	B21 B26	**Description:** Starting BIST after pressing the Reset button.
123-740 to 123-795	H	B21	**Description:** The BIST failed.
123-800	H	B20	**Description:** Testing stopped when BIST passed control to POST.
123-801	H	B20 B26	**Description:** Starting BIST from reset.
123-802 to 123-827	H	B20	**Description:** Starting BIST after power-on, or BIST detected an error.
123-830	H	B20	**Description:** Starting BIST after pressing

		B26	the Reset button.
123-840 to 123-895	H	B20	**Description:** The BIST failed.
123-960	H	B26	**Description:** The EPOW connector is indicated as not connected. **Note:** Ensure that the connector is securely connected before replacing parts.
123-987	H	B21	**Description:** BIST detected an error.
125-700	H	C78	**Description:** Testing stopped when BIST passed control to POST.
125-701	H	C78 B87	**Description:** Starting BIST from reset.
125-702 to 125-727	H	C78	**Description:** Starting BIST after power-on, or BIST detected an error.
125-730	H	C78 B87	**Description:** Starting BIST after pressing the Reset button.
125-740 to 125-795	H	C78	**Description:** The BIST failed.
125-800	H	C79	**Description:** Testing stopped when BIST passed control to POST.
125-801	H	C79 B87	**Description:** Starting BIST from reset.
125-802 to 125-827	H	C79	**Description:** Starting BIST after power-on, or BIST detected an error.
125-830	H	C79 B87	**Description:** Starting BIST after pressing the Reset button.
125-840 125-895	H	C79	**Description:** The BIST failed.
125-901	H	D09 B87	**Description:** Starting BIST from reset.
125-902 to 125-927	H	D09	**Description:** Starting BIST after power-on, or BIST detected an error.
125-930	H	D09 B87	**Description:** Starting BIST after pressing the reset button.
125-940 to 125-995	H	D09	**Description:** The BIST failed.
126-300	H	B23	**Description:** Testing stopped when BIST passed control to POST.
126-301	H	B23 B28	**Description:** Starting BIST from reset.
126-302 to 126-327	H	B23	**Description:** Starting BIST after power-on, or BIST detected an error.
126-330	H	B23 B28	**Description:** Starting BIST after pressing the Reset button.
126-340 to 126-395	H	B23	**Description:** The BIST detected a problem or failed .
126-400	H	B84	**Description:** Testing stopped when BIST passed control to POST.
126-401	H	B84 B28	**Description:** Starting BIST from reset.
126-402	H	B84	**Description:** Starting BIST after power-on,

to 126-427			or the BIST detected an error.
126-430	H	B84 B28	**Description:** Starting BIST after pressing the reset button.
126-440 to 126-495	H	B84	**Description:** The BIST failed.
126-600	H	B85	**Description:** Testing stopped when BIST passed control to POST.
126-601	H	B85 B86	**Description:** Starting BIST from reset.
126-602 to 126-627	H	B85	**Description:** Starting BIST after power-on, or the BIST detected an error.
126-630	H	B85 B28	**Description:** Starting BIST after pressing the Reset button.
126-640 to 126-695	H	B85	**Description:** The BIST failed.
126-700	H	B92	**Description:** Testing stopped when BIST passed control to POST.
126-701	H	B92 B86	**Description:** Starting BIST from reset.
126-702 to 126-727	H	B92	**Description:** Starting BIST after power-on, or the BIST detected an error.
126-730	H	B92 B28	**Description:** Starting BIST after pressing the Reset button.
126-740 to 126-795	H	B92	**Description:** The BIST failed.
127-000	H	C54	**Description:** Testing stopped when BIST passed control to POST.
127-001	H	C54 B86	**Description:** Starting BIST from reset.
127-002 to 127-027	H	C54	**Description:** Starting BIST after power-on, or the BIST detected an error.
127-030	H	C54 B28	**Description:** Starting BIST after pressing the reset button.
127-040 to 127-054	H	C54	**Description:** The BIST failed.
127-060	H	152 C57	**Description:** The EPOW connector indicates not being connected. **Note:** Ensure the connector is properly connected.
127-080 to 127-095	H	C54	**Description:** The BIST failed.
127-100	H	C56	**Description:** Testing stopped when BIST passed control to POST..
127-101	H	C56 B28	**Description:** Starting BIST from reset.
127-102 to 127-127	H	C56	**Description:** Starting BIST after power-on, or the BIST detected an error.
127-130	H	C56 B28	**Description:** Starting BIST after pressing the reset button.
127-140	H	C56	**Description:** The BIST failed.

to			
127-154			
127-160	H	152 C57	**Description:** The EPOW connector indicates not being connected. **Note:** Ensure the connector is properly connected.
127-180	H	C56	**Description:** The BIST failed.
to			
127-195			
127-200	H	C77	**Description:** Testing stopped when BIST passed control to POST.
127-201	H	C77 C83	**Description:** Starting BIST from reset.
127-202	H	C77	**Description:** Starting BIST after power-on, or the BIST detected an error.
to			
127-227			
127-230	H	C77 B28	**Description:** Starting BIST after pressing the Reset button.
127-240	H	C77	**Description:** The BIST failed.
to			
127-254			
127-260	H	152 C57	**Description:** The EPOW connector is indicating that it may not be connected. **Note:** Ensure the connector is properly connected.
127-280	H	C77	**Description:** The BIST failed.
to			
127-295			
127-500	H	B90	**Description:** Testing stopped when BIST passed control to POST.
127-501	H	B90 B87	**Description:** Starting BIST from reset.
127-502	H	B90	**Description:** Starting BIST after power-on, or the BIST detected an error.
to			
127-527			
127-530	H	B90 B87	**Description:** Starting BIST after pressing the Reset button.
127-540	H	B90	**Description:** The BIST failed.
to			
127-595			
127-600	H	B89	**Description:** Testing stopped when BIST passed control to POST.
127-601	H	B89 B87	**Description:** Starting BIST from reset.
127-602	H	B89	**Description:** Starting BIST after power-on, or the BIST detected an error.
to			
127-627			
127-630	H	B89 B87	**Description:** Starting BIST after pressing the reset button.
127-640	H	B89	**Description:** The BIST failed.
to			
127-695			
127-700	H	B91	**Description:** Testing stopped when BIST passed control to POST.
127-701	H	B91 B87	**Description:** Starting BIST from reset.
127-702	H	B91	**Description:** Starting BIST after power-on, or the BIST detected an error.
to			
127-727			
127-730	H	B91 B87	**Description:** Starting BIST after pressing the Reset button.

127-740 to 127-795	H	B91	**Description:** The BIST failed.
127-900	H	D79	**Description:** Testing stopped when BIST passed control to POST.
127-901	H	D79 B86	**Description:** Starting BIST from reset.
127-902 to 127-927	H	D79	**Description:** Starting BIST after power-on, or the BIST detected an error.
127-930	H	D79 221	**Description:** Starting BIST after pressing the reset button.
127-940 to 127-954	H	D79	**Description:** The BIST failed.
127-960	H	152 221	**Description:** The EPOW connector indicates not being connected. **Note:** Ensure the connector is properly connected.
127-980 to 127-995	H	D79	**Description:** The BIST failed.
128-000	H	C53	**Description:** Testing stopped when BIST passed control to POST
128-001	H	C53 B28	**Description:** Starting BIST from reset.
128-002 to 128-027	H	C53	**Description:** Starting BIST after power-on, or the BIST detected an error.
128-030	H	C53 B28	**Description:** Starting BIST after pressing the reset button.
128-040 to 128-054	H	C53	**Description:** The BIST failed.
128-060	H	152 C58	**Description:** The EPOW connector indicates not being connected. **Note:** Ensure the connector is properly connected.
128-080 to 128-095	H	C53	**Description:** The BIST failed.
128-085	H	C53	**Description:** BIST checkstop occurred.
128-087	H	C53	**Description:** DD level not detected in logout data.
128-095	H	C53	**Description:** The BIST logout failed.
128-200	H	C76	**Description:** Testing stopped when BIST passed control to POST.
128-201	H	C76 C82	**Description:** Starting BIST from reset.
128-202 to 128-227	H	C76	**Description:** Starting BIST after power-on, or the BIST detected an error.
128-230	H	C76 B28	**Description:** Starting BIST after pressing the Reset button.
128-240 to 127-254	H	C76	**Description:** The BIST failed.
128-260	H	152 C57	**Description:** The EPOW connector is indicating that it may not be connected. **Note:** Ensure the connector is properly

			connected.
128-280 to 128-295	H	C76	**Description:** The BIST failed.
128-523 128-524	H	221	**Description:** The BIST detected a bad CRC on the OCS EPROM.
128-525	H	221 152	**Description:** The BIST detected a bad CRC on the time-of-day NVRAM.
128-526	H	221	**Description:** The BIST detected a bad CRC on the time-of-day NVRAM.
128-560	H	221	**Description:** The EPOW connector is indicating that it may not be connected. **Note:** Ensure that the connector is securely connected before replacing parts.
128-564 to 128-569	H	221 210	**Description:** Error reading NVRAM.
128-623 128-624	H	221	**Description:** The BIST detected a bad CRC on the OCS EPROM.
128-625	H	221 152	**Description:** The BIST detected a bad CRC on the time-of-day NVRAM.
128-626	H	221	**Description:** The BIST detected a bad CRC on the time-of-day NVRAM.
128-660	H	221	**Description:** A power supply connector leading to the system planar may not be connected. **Note:** Ensure that the connector is securely connected before replacing parts.
128-664 to 128-669	H	221 210	**Description:** Error reading NVRAM.
128-723 128-724	H	221	**Description:** The BIST detected a bad CRC on the OCS EPROM.
128-725	H	221 152 fans (166, 167 170)	**Description:** The BIST detected a bad CRC on the time-of-day NVRAM.
128-726	H	221	**Description:** The BIST detected a bad CRC on the time-of-day NVRAM.
128-760	H	221	**Description:** The EPOW connector is indicating that it may not be connected. **Note:** Ensure that the connector is securely connected before replacing parts.
128-764 to 128-769	H	221 210	**Description:** Error reading NVRAM.
128-823 128-824	H	221	**Description:** The BIST detected a bad CRC on the OCS EPROM.
128-825	H	221 152	**Description:** The BIST detected a bad CRC on the time-of-day NVRAM.
128-826	H	221	**Description:** The BIST detected a bad CRC on the time-of-day NVRAM.
128-860	H	221	**Description:** The EPOW connector is indicating that it may not be connected. **Note:** Ensure that the connector is securely connected before replacing parts.
128-864 to 128-869	H	221 210	**Description:** Error reading NVRAM.
143-711 143-712	H	B21	**Description:** POST IPL ROS CRC, memory configuration or no memory found error.

143-714	H	B26 B21	**Description:** The power status register failed.
143-715	H	152 B26	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
143-790	H	B21 B26	**Description:** The POST of the IOCC failed.
143-797	H	B21	**Description:** The ROS model and type number do not match the system model and type number.
143-811 **143-812**	H	B20	**Description:** POST IPL ROS CRC, memory configuration or no memory found error.
143-814	H	B26 B20	**Description:** The Power Status Register failed.
143-815	H	152 B26	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
143-890	H	B20 B26	**Description:** The POST of the IOCC failed.
143-897	H	B20	**Description:** The ROS model and type number do not match the system model and type number.
144-111 **144-112**	H	B24	**Description:** POST IPL ROS CRC, memory configuration or no memory found error.
144-190	H	B24 B29	**Description:** The POST of the IOCC failed.
144-197	H	B24	**Description:** The ROS model and type number do not match the system model and type number.
144-211 **to** **144-297**	H	C85	**Description:** System Planar problems.
144-311 **to** **144-314**	H	B75	**Description:** POST IPL ROS CRC, memory configuration, no memory found, or the power status register failed.
144-315	H	B76 B75	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
144-390 **to** **144-397**	H	B75	**Description:** The POST of the IOCC failed, or the ROS model and type number do not match the system model and type number.
144-50c	H	210	**Description:** Cache error.
144-511 **to** **144-514**	H	B29	**Description:** POST IPL ROS CRC, memory configuration, no memory found, or the power status register failed.
144-515	H	152 B29	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
144-590	H	B29	**Description:** The POST of the IOCC failed.
144-597	H	B21	**Description:** The ROS model and type number do not match the system model and type

			number.
144-611 to 144-697	H	C27	**Description:** POST IPL ROS CRC error, or IPL ROS detected a system planar error.
144-70c 144-711 to 144-797	H	B93	**Description:** Cache is bad, POST IPL ROS CRC error, IOCC POST failed, or the ROS model and type number do not match the system model and type number.
144-811 to 144-897	H	C84	**Description:** I/O Planar problems.
144-911 to 144-997	H	D15	**Description:** POST IPL ROS CRC error, or IPL ROS detected a problem with the system planar or CPU. IOCC POST failed, or the ROS model and type number not match the system model and type number.
145-711 145-712	H	C78	**Description:** POST IPL ROS CRC, memory configuration error or no memory found.
145-714	H	C81 C78	**Description:** The power status register failed.
145-715	H	152 C78	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
145-790	H	C78 C81	**Description:** The POST of the IOCC failed.
145-794	H	B19	**Description:** The TCW memory SIMM failure.
145-797	H	C78	**Description:** The ROS model and type number do not match the system model and type number.
145-811 145-812	H	C79	**Description:** POST IPL ROS CRC, memory configuration error, or no memory found.
145-814	H	C81 C79	**Description:** The power status register failed.
145-815	H	152 C79	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
145-890	H	C79 C81	**Description:** The POST of the IOCC failed.
145-894	H	B19	**Description:** The TCW memory SIMM failure.
145-897	H	C79	**Description:** The ROS model and type number do not match the system model and type number.
145-911 145-912	H	D09	**Description:** POST IPL ROS CRC, memory configuration error, or no memory found.
145-914	H	C81 D09	**Description:** The power status register failed.
145-915	H	152 D09	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
145-990	H	D09 C81	**Description:** The POST of the IOCC failed.
145-994	H	B19	**Description:** The TCW memory SIMM failure.
145-997	H	D09	**Description:** The ROS model and type number

			do not match the system model and type number.
146-311 **146-312**	H	B23	**Description:** POST IPL ROS CRC, memory configuration error, or no memory found.
146-314	H	B28 B23	**Description:** The power status register failed.
146-315	H	152 B28	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
146-390	H	B23 B28	**Description:** The POST of the IOCC failed.
146-394	H	B19	**Description:** TCW memory SIMM failure.
146-397	H	B23	**Description:** The ROS model and type number do not match the system model and type number.
146-411 **146-412**	H	B84	**Description:** POST IPL ROS CRC, memory configuration error, or no memory found.
146-414	H	B28 B84	**Description:** The power status register failed.
146-415	H	152 B28	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
146-490	H	B84 B28	**Description:** The POST of the IOCC failed.
146-494	H	B19	**Description:** TCW memory SIMM failure.
146-497	H	B84	**Description:** The ROS model and type number do not match the system model and type number.
146-611 **146-612**	H	B85	**Description:** POST IPL ROS CRC, memory configuration error, or no memory found.
146-614	H	B86 B85	**Description:** The power status register failed.
146-615	H	152 B86	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
146-690	H	B85 B86	**Description:** The POST of the IOCC failed.
146-694	H	B19	**Description:** TCW memory SIMM failure.
146-697	H	B85	**Description:** The ROS model and type number do not match the system model and type number.
146-711 **146-712**	H	B92	**Description:** CPU card problem.
146-714	H	B86 B92	**Description:** The power status register failed.
146-715	H	152 B86	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
146-790	H	B92 B86	**Description:** The POST of the IOCC failed.

146-794	H	B19	**Description:** TCW memory SIMM failure.
146-797	H	B92	**Description:** The ROS model and type number do not match the system model and type number.
147-011 **147-012**	H	C54	**Description:** CPU planar problem.
147-014	H	C57 C54	**Description:** The power status register failed.
147-015	H	152 C54	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
147-090	H	C54 C57	**Description:** The POST of the IOCC failed.
147-094	H	B19	**Description:** TCW memory SIMM failure.
147-097	H	C54	**Description:** The ROS model and type number do not match the system model and type number.
147-111 **147-112**	H	C56	**Description:** POST IPL ROS CRC, memory configuration error, or no memory found.
147-114	H	B86 C56	**Description:** The power status register failed.
147-115	H	152 C56	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
147-190	H	C56 B86	**Description:** The POST of the IOCC failed.
147-194	H	B19	**Description:** The TCW memory SIMM failed.
147-197	H	C56	**Description:** The ROS model and type number did not match the system model and type number.
147-211 **to** **147-214**	H	C77	**Description:** CPU Planar problems.
147-215	H	152 C77	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
147-290	H	C77 C83	**Description:** The POST of the IOCC failed.
147-294	H	B19	**Description:** TCW memory SIMM failure.
147-297	H	C77	**Description:** The ROS model and type number do not match the system model and type number.
147-511 **147-512**	H	B90	**Description:** POST IPL ROS CRC, memory configuration error, or no memory found.
147-514	H	B87 B90	**Description:** The power status register failed.
147-515	H	152 B90	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.

147-590	H	B90 B87	**Description:** The POST of the IOCC failed.
147-594	H	B19	**Description:** The TCW memory SIMM failure.
147-597	H	B90	**Description:** The ROS model and type number do not match the system model and type number.
147-611 **147-612**	H	B89	**Description:** POST IPL ROS CRC, memory configuration error, or no memory found.
147-614	H	B87 B89	**Description:** The power status register failed.
147-615	H	152 B89	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
147-690	H	B89 B87	**Description:** The POST of the IOCC failed.
147-694	H	B19	**Description:** The TCW memory SIMM failure.
147-697	H	B89	**Description:** The ROS model and type number do not match the system model and type number.
147-711 **147-712**	H	B91	**Description:** POST IPL ROS CRC, memory configuration error, or no memory found.
147-714	H	B87 B91	**Description:** The power status register failed.
147-715	H	152 B91	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
147-790	H	B91 B87	**Description:** The POST of the IOCC failed.
147-794	H	B19	**Description:** The TCW memory SIMM failure.
147-797	H	B91	**Description:** The ROS model and type number do not match the system model and type number.
147-911 **147-912**	H	D79	**Description:** CPU planar problem.
147-914	H	221 D79	**Description:** The power status register failed.
147-915	H	152 D79	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
147-990	H	D79 221	**Description:** The POST of the IOCC failed.
147-994	H	B19	**Description:** TCW memory SIMM failure.
147-997	H	D79	**Description:** The ROS model and type number do not match the system model and type number.
148-011 **148-012**	H	C53	**Description:** POST IPL ROS CRC, memory configuration error, or no memory found.
148-014	H	B58 C53	**Description:** The Power Status Register failed.
148-015	H	152 C53	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the

			customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
148-090	H	C53 C58	**Description:** The POST of the IOCC failed.
148-094	H	B19	**Description:** TCW memory SIMM failure.
148-097	H	C53	**Description:** The ROS model and type number do not match the system model and type number.
148-111 **148-112**	H	C76	**Description:** POST IPL ROS CRC, memory configuration error, or no memory found.
148-114	H	C58 C76	**Description:** The power status register failed.
148-115	H	152 C76	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
148-190	H	C76 C58	**Description:** The POST of the IOCC failed.
148-194	H	B19	**Description:** TCW memory SIMM failure.
148-197	H	C76	**Description:** The ROS model and type number do not match the system model and type number.
148-211 **148-213**	H	C76	**Description:** POST IPL ROS CRC, memory configuration error, or no memory found.
148-214	H	C82	**Description:** The power status register failed.
148-215	H	152 C82	**Description:** A low voltage condition was sensed. **Action:** Check the voltage at the customer's outlet. Check for loose connectors. If no discrepancy is found, use MAP 0210.
148-290	H	C82 C76	**Description:** The POST of the IOCC failed.
148-294	H	B19	**Description:** TCW memory SIMM failure.
148-297	H	C76	**Description:** The ROS model and type number do not match the system model and type number.
149-011 **to** **149-097**	H	D26	**Description:** CPU card problem.
149-111 **to** **149-197**	H	C85	**Description:** System Planar problems.
201-xxx	H	210	**Description:** Checkstop during ROS IPL. xxx is the three-digit display code being displayed when the error occurred.
202-20c	H		**Description:** Machine check during cache POST. **Action:** Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
202-201	B	210	**Description:** Machine check during IPL ROM test.
202-21c	H		**Description:** Machine check during cache POST. **Action:** Go to MAP 1540 in either the service guide or the installation and service guide for this system unit,

			drawer, or enclosure.
202-211 to 202-214	H	210	**Description:** Machine check during ROS CRC or CPU test. Unexpected interrupt during ROM IPL.
202-215	H	227 210	**Description:** Unexpected interrupt during IPL tests.
202-216 **202-217**	H	227 210	**Description:** Unexpected interrupt during IPL tests.
202-218 to 202-220	H	131 D01 214	**Description:** Machine check during memory tests or memory initialization.
202-221	H	210	**Description:** Unexpected interrupt during ROM IPL.
202-222 to 202-224	H	828 227 210	**Description:** Unexpected interrupt during ROM IPL while trying to load from diskette, or SCSI device. Replace the SCSI adapter that is used for the IPL.
202-225	H	949 227 210	**Description:** Unexpected interrupt during ROM IPL while trying to load from a direct-attached fixed disk. Replace the disk that is used for the IPL.
202-226	H	227 210	**Description:** Unexpected interrupt during IPL tests while trying to load from Ethernet.
202-227	H	850 227 210	**Description:** Unexpected interrupt during IPL tests while trying to load from a Token-Ring.
202-228 **202-229**	H	227 210	**Description:** Unexpected interrupt during IPL tests while trying to load from expansion code or any device.
202-230	H		**Description:** Unexpected interrupt during IPL tests while trying to load from ROM scan. **Action:** Go to MAP 1540 in the service guide or the installation and service guide for this system unit, drawer, or enclosure.
202-231 **202-232**	H	868 227 210	**Description:** Unexpected interrupt during IPL tests while trying to load from a SCSI device or diskette.
202-233 **202-234**	H	B88 227 210	**Description:** Unexpected interrupt during ROM IPL while trying to load from a SCSI device. Replace the SCSI adapter that is used for the IPL.
202-235	H	949 227 210	**Description:** Unexpected interrupt during ROM IPL while trying to load from a direct-attached fixed disk. Replace the disk that is used for the IPL.
202-236	H	227 210	**Description:** Unexpected interrupt during IPL tests while trying to load from Ethernet.
202-237 **202-238**	H	850 227 210	**Description:** Unexpected interrupt during IPL tests while trying to load from a Token-Ring.
202-239	H	210 227	**Description:** Unexpected interrupt during IPL tests.
202-240	H		**Description:** Unexpected interrupt during IPL tests while trying to load from ROM scan. **Action:** Go to MAP 1540 in the service guide or the installation and service guide for this system unit, drawer, or enclosure.
202-242	H	828 227	**Description:** Unexpected interrupt during ROM IPL while trying to load from

		210	diskette.
202-243 **202-244**	H	B88 227 210	**Description:** Unexpected interrupt during ROM IPL while trying to load from a SCSI device. Replace the SCSI adapter that is used for the IPL.
202-245	H	949 227 210	**Description:** Unexpected interrupt during ROM IPL while trying to load from a direct-attached fixed disk. Replace the disk that is used for the IPL.
202-246	H	227 210	**Description:** Unexpected interrupt during IPL tests while trying to load from Ethernet.
202-247	H	850 227 210	**Description:** Unexpected interrupt during IPL tests while trying to load from a Token-Ring.
202-248 **202-249**	H	227 210	**Description:** Unexpected interrupt during IPL tests while trying to load from expansion code or any device.
202-250	H		**Description:** Unexpected interrupt during IPL tests while trying to load from ROM scan. **Action:** Go to MAP 1540 in the service guide or the installation and service guide for this system unit, drawer, or enclosure.
202-251	H	852 227 210	**Description:** Unexpected interrupt during IPL tests while trying to load from Ethernet.
202-252	H	828 227 210	**Description:** Unexpected interrupt during ROM IPL while trying to load from diskette.
202-253 **to** **202-255**	H	B88 227 210	**Description:** Unexpected interrupt during ROM IPL while trying to load from a SCSI device or a direct-attached fixed disk.Replace the SCSI adapter that is used for the IPL.
202-256	H	227 210	**Description:** Unexpected interrupt during IPL tests while trying to load from Ethernet.
202-257 **202-258**	H	850 227 210	**Description:** Unexpected interrupt during IPL tests while trying to load from a Token-Ring.
202-260 **to** **202-262**	H	227 210	**Description:** Unexpected interrupt during IPL tests while trying to load from any device.
202-263	H		**Description:** Unexpected interrupt during IPL tests while trying to load from ROM scan. **Action:** Go to MAP 1540 in the service guide or the installation and service guide for this system unit, drawer, or enclosure.
202-271 **202-272**	H	227 210	**Description:** Unexpected interrupt during IPL tests of the mouse or tablet POST.
202-277	H	850 227 210	**Description:** Unexpected interrupt during IPL tests of the Auto Token-Ring LANstreamer MC 32 Adapter.
202-280	H	852 C56 C58	**Description:** Unexpected interrupt during IPL tests of the 3-COMM adapter.
202-281	H	B31 227 210	**Description:** Unexpected interrupt during IPL tests of the keyboard POST.
202-282 **202-283**	H	227 210	**Description:** Unexpected interrupt during IPL tests of the parallel or serial port POST.

202-284	H	880 227 210	**Description:** Unexpected interrupt during IPL tests of the POWER Gt1.
202-285	H	xxx 210	**Description:** IPLROS detected a problem while running the POST for the Power Gtx adapter. **Note:** Substitute 877, 878, or B01 for xxx, depending upon the type of adapter installed.
202-286 **202-287**	H	850 227 210	**Description:** Unexpected interrupt during IPL tests of the Token-Ring or ehternet.
202-288	H		**Description:** Unexpected interrupt during IPL tests while polling all adapters. **Action:** Go to MAP 1540 in the service guide or the installation and service guide for this system unit, drawer, or enclosure.
202-289	H	871 227 210	**Description:** Unexpected interrupt during IPL tests of the graphics subsystem adapter.
202-290	H	227 210	**Description:** Unexpected interrupt during I/O support POST.
202-291	H	828 227 210	**Description:** Unexpected interrupt during standard I/O planar POST.
202-292	H	B88 227 210	**Description:** Unexpected interrupt during IPL tests of the SCSI POST. Replace the SCSI adapter that is used for the IPL.
202-293	H	949/950 227 210	**Description:** Unexpected interrupt during disk drive POST. Replace the disk drive. **Note:** You must determine if the drive is a SCSI type (FFC 950) or a direct-attached drive type (FFC 949).
202-294	H		**Description:** Unexpected interrupt during disk drive POST. **Action:** Use the Start MAP in the 9333 service guide.
202-295	H	874 C56 C58	**Description:** Unexpected interrupt during IPL-tests of the Graphics Display adapter.
202-296	H		**Description:** Unexpected interrupt during IPL tests while polling all adapters. **Action:** Go to MAP 1540 in the service guide or the installation and service guide for this system unit, drawer, or enclosure.
202-297	H	210	**Description:** The ROS model and type number does not match the system model and type number. **Action:** Check for compatibility problems with the processor complex. If you do not find a problem, use MAP 0210.
202-298	H		**Description:** Error during a software IPL. **Action:** Set the system unit power switch to Off, wait 30 seconds, and set it to On again.
202-299	H	132 210	**Description:** Machine check when control is passed to the IPL program. **Action:** Be sure there is a valid IPL program on the IPL device. If there is, exchange the media or the device. Use MAP 0210.
202-301 **to** **202-303**	H	210	**Description:** Machine check during Flash Utility ROM test.
202-304	H	218	**Description:** Machine check during IOCC

		221 131	POST. **Action:** Use MAP 0310 for FFC 131, otherwise use MAP 0210.
202-305	H	221 218 131	**Description:** Machine check during built-in diskette adapter POST. **Action:** Use MAP 0310 for FFC 131, otherwise use MAP 0210.
202-306	H	132 131 214	**Description:** Machine check during built-in diskette adapter POST. **Action:** Check the IPL media. If no problem is found, IPL from another device. For FFC 131 use MAP 0310.
202-307	H	210	**Description:** Machine check during Flash Utility ROM test.
202-308	H	218 221 131	**Description:** Machine check during IOCC POST. **Action:** Use MAP 0310 for FFC 131, otherwise use MAP 0210.
202-309	H	132 131 214	**Description:** Machine check when control is passed to loaded code. **Action:** Check the IPL media . If no problem is found, IPL from another device. For FFC 131, use MAP 0310.
202-311	H	210	**Description:** Machine check when calculating Flash ROM CRC.
202-312 **202-313**	H	214 131	**Description:** Machine check when configuring memory. **Action:** Use MAP 0310 for FFC 131, otherwise use MAP 0210.
202-314 **202-315**	H	816 218	**Description:** Machine check when testing the power status register.
202-318 **to** **202-325**	H	214 131	**Description:** Machine check when testing for good memory or updating flash ROM. **Action:** Use MAP 0310 for FFC 131, otherwise use MAP 0210.
203-20c	H	210	**Description:** Data storage interrupt during cache POST.
203-100	H	227 210	**Description:** Unexpected data storage interrupt during IPL tests.
203-201 **to** **203-214** **203-21c**	H	210	**Description:** Unexpected data storage interrupt during IPL ROM, or ROS CRC test. Unexpected data storage interrupt during CPU test, or cache POST.
203-215	H	227 210	**Description:** Unexpected data storage interrupt during IPL tests.
203-216 **203-217**	H	227 210	**Description:** Unexpected data storage interrupt during IPL tests.
203-218 **to** **203-221**	H	210	**Description:** Unexpected data storage interrupt during ROM IPL.
203-222	H	828 227 210	**Description:** Unexpected data storage interrupt during ROM IPL while trying to load from diskette.
203-223 **203-224**	H	B88 227 210	**Description:** Unexpected data storage interrupt during ROM IPL while trying to load from a SCSI device. Replace the SCSI adapter that is used for the IPL.
203-225	H	949 227 210	**Description:** Unexpected data storage interrupt during ROM IPL while trying to load from a direct-attached fixed disk. Replace the disk that is used for the IPL.
203-226	H	227 210	**Description:** Unexpected data storage interrupt during IPL tests while trying to load from Ethernet.

203-227	H	850 227 210	**Description:** Unexpected data storage interrupt during IPL tests while trying to load from a Token-Ring.
203-228 **203-229**	H	227 210	**Description:** Unexpected data storage interrupt during IPL tests while trying to load from expansion code or any device.
203-230	H		**Description:** Unexpected data storage interrupt during IPL tests while trying to load from ROM scan. **Action:** Go to MAP 1540 in the service guide or the installation and service guide for this system unit, drawer, or enclosure.
203-231	H	868 227 210	**Description:** Unexpected data storage interrupt during IPL tests while trying to load from a SCSI device.
203-232	H	828 227 210	**Description:** Unexpected data storage interrupt during ROM IPL while trying to load from diskette.
203-233 **203-234**	H	B88 227 210	**Description:** Unexpected data storage interrupt during ROM IPL while trying to load from a SCSI device. Replace the SCSI adapter that is used for the IPL.
203-235	H	949 227 210	**Description:** Unexpected data storage interrupt during ROM IPL while trying to load from a direct-attached fixed disk. Replace the disk that is used for the IPL.
203-236	H	227 210	**Description:** Unexpected data storage interrupt during IPL tests while trying to load from Ethernet.
203-237 **203-238**	H	850 227 210	**Description:** Unexpected data storage interrupt during IPL tests while trying to load from a Token-Ring.
203-239	H	210 227	**Description:** Unexpected data storage interrupt during IPL tests.
203-240	H		**Description:** Unexpected data storage interrupt during IPL tests while trying to load from ROM scan. **Action:** Go to MAP 1540 in the service guide or the installation and service guide for this system unit, drawer, or enclosure.
203-242	H	828 227 210	**Description:** Unexpected data storage interrupt during ROM IPL while trying to load from diskette.
203-243 **203-244**	H	B88 227 210	**Description:** Unexpected data storage interrupt during ROM IPL while trying to load from a SCSI device. Replace the SCSI adapter that is used for the IPL.
203-245	H	949 227 210	**Description:** Unexpected data storage interrupt during ROM IPL while trying to load from a direct-attached fixed disk. Replace the disk that is used for the IPL.
203-246	H	227 210	**Description:** Unexpected data storage interrupt during IPL tests while trying to load from Ethernet.
203-247	H	850 227 210	**Description:** Unexpected data storage interrupt during IPL tests while trying to load from a Token-Ring.
203-248 **203-249**	H	227 210	**Description:** Unexpected data storage interrupt during IPL tests while trying to load from expansion code any device.
203-250	H		**Description:** Unexpected data storage interrupt during IPL tests whiletrying to load from ROM scan. **Action:** Go to MAP 1540 in the service guide or the installation and service

			guide for this system unit, drawer, or enclosure.
203-251	H	852 227 210	**Description:** Unexpected data storage interrupt during IPL tests while trying to load from Ethernet.
203-252	H	828 227 210	**Description:** Unexpected data storage interrupt during ROM IPL while trying to load from diskette.
203-253 **203-254**	H	B88 227 210	**Description:** Unexpected data storage interrupt during ROM IPL while trying to load from a SCSI device. Replace the SCSI adapter that is used for the IPL.
203-255	H	949 227 210	**Description:** Unexpected data storage interrupt during ROM IPL while trying to load from a direct-attached fixed disk. Replace the disk that is used for the IPL.
203-256	H	227 210	**Description:** Unexpected data storage interrupt during IPL tests while trying to load from Ethernet.
203-257 **203-258**	H	850 227 210	**Description:** Unexpected data storage interrupt during IPL tests while trying to load from a Token-Ring.
203-260 **to** **203-262**	H	227 210	**Description:** Unexpected data storage interrupt during IPL tests while trying to load from any device.
203-263	H		**Description:** Unexpected data storage interrupt during IPL tests while trying to load from ROM scan. **Action:** Go to MAP 1540 in the service guide or the installation and service guide for this system unit, drawer, or enclosure.
203-271 **203-272**	H	227 210	**Description:** Unexpected data storage interrupt during IPL tests of the mouse or tablet POST.
203-277	H	850 227 210	**Description:** Unexpected data storage interrupt during IPL tests of the Auto Token-Ring LANstreamer MC 32 Adapter.
203-280	H	852 C56 C58	**Description:** Unexpected data storage interrupt during IPL tests of the 3-COMM adapter.
203-281	H	B31 227 210	**Description:** Unexpected data storage interrupt during IPL tests of the keyboard POST.
203-282 **203-283**	H	227 210	**Description:** Unexpected data storage interrupt during IPL tests of the parallel or serial port POST.
203-284	H	880 227 210	**Description:** Unexpected data storage interrupt during IPL tests of the POWER Gt1.
203-285	H	xxx 210	**Description:** IPLROS detected a problem while running the POST for the Power Gtx adapter. **Note:** Substitute 877, 878, or B01 for xxx, depending upon the type of adapter installed.
203-286	H	850 227 210	**Description:** Unexpected data storage interrupt during IPL tests of the Token-Ring.
203-287	H	887 227 210	**Description:** Unexpected data storage interrupt during IPL tests of the ethernet.
203-288	H		**Description:** Unexpected data storage interrupt during IPL tests while polling all adapters. **Action:** Go to MAP 1540 in the service

			guide or the installation and service guide for this system unit, drawer, or enclosure.
203-289	H	871 227 210	**Description:** Unexpected data storage interrupt during IPL tests of the subsystem adapter.
203-290	H	227 210	**Description:** Unexpected data storage interrupt during I/O support POST.
203-291	H	828 227 210	**Description:** Unexpected data storage interrupt during standard I/O planar POST.
203-292	H	B88 227 210	**Description:** Unexpected data storage interrupt during IPL tests of the SCSI POST. Replace the SCSI adapter that is used for the IPL.
203-293	H	949/950 227 210	**Description:** Unexpected data storage interrupt during disk drive POST. Replace the disk drive. **Note:** You must determine if the drive is a SCSI type (FFC 950) or a direct-attach drive type (FFC 949).
203-294	H		**Description:** Unexpected data storage interrupt during disk drive POST. **Action:** Use the Start MAP in the 9333 service guide.
203-295	H	874 C56 C58	**Description:** Unexpected data storage interrupt during IPL-tests of the Graphics Display adapter.
203-296	H		**Description:** Unexpected data storage interrupt during IPL tests while polling all adapters. **Action:** Go to MAP 1540 in the service guide or the installation and service guide for this system unit, drawer, or enclosure.
203-297	H	210	**Description:** The ROS model and type number does not match the system model and type number. **Action:** Check for compatibility problems with the processor complex. If you do not find a problem, use MAP 0210.
203-298	H		**Description:** Error during a software IPL. **Action:** Set the system unit power switch to Off, wait 30 seconds, and set it to On again.
203-299	H	132 210	**Description:** Unexpected data storage interrupt when control is passed to the IPL program. Be sure there is a valid IPL program on the IPL device. If there is, exchange the media or the device.
203-301 to 203-303	H	210	**Description:** Data Storage Interrupt during Flash Utility ROM test.
203-304	H	218 221	**Description:** Data Storage Interrupt during IOCC POST.
203-305	H	812 221	**Description:** Data Storage Interrupt during built-in diskette adapter POST.
203-306	H	812 210	**Description:** Data Storage Interrupt during built-in diskette adapter POST.
203-307	H	210	**Description:** Data Storage Interrupt during Flash Utility ROM test.
203-308	H	218 221 131	**Description:** Data Storage Interrupt during IOCC POST. **Action:** Use MAP 0310 for FFC 131 otherwise use MAP 0210.
203-309	H	132	**Description:** Data Storage Interrupt when

		131 214	control is passed to loaded code. **Action:** Check the IPL media. If no problem is found, IPL from another device. Use MAP 0310 for FFC131.
203-311	H	210	**Description:** Data Storage Interrupt when calculating Flash ROM CRC.
203-312 **203-313**	H	214 131	**Description:** Data Storage Interrupt when configuring memory. Use MAP 0310 for FFC 131.
203-314 **203-315**	H	816 218	**Description:** Data Storage Interrupt when testing the power status register.
203-318 **203-319**	H	214 131	**Description:** Data Storage Interrupt when testing for good memory. Use MAP 0310 for FFC 131.
203-322 **203-325**	H	214	**Description:** Data Storage Interrupt when updating flash ROM.
204-200 **to** **204-298**	H	210	**Description:** Unexpected instruction storage interrupt during ROS IPL.
204-299	H	132 210	**Description:** Unexpected instruction storage interrupt when control is passed to the IPL program. Be sure there is a valid IPL program on the IPL device. If there is, exchange the media or the device.
204-301 **to** **204-325**	H	210	**Description:** Instruction Storage Interrupt during Flash Update Utility.
205-20c	H	210	**Description:** Unexpected external interrupt during cache POST.
205-201	B	210	**Description:** Unexpected external interrupt during IPL ROM check.
205-21c	H	210	**Description:** Unexpected external interrupt during cache POST.
205-211 **to** **205-213**	H	210	**Description:** Unexpected external interrupt during ROS CRC, CPPU test or ROM IPL. **Note:** On systems with minimum memory, SRN 205-218 may be caused by a defective memory SIMM 1 or a defective memory card. The memory SIMM can be checked by swapping it with another memory SIMM on the card.
205-215	H	227 210	**Description:** Unexpected external interrupt during IPL tests.
205-216 **205-217**	H	210 131	**Description:** Unexpected external interrupt during IPL tests.
205-218 **to** **205-221**	H	210	**Description:** Unexpected external interrupt during ROM IPL. **Note:** On systems with minimum memory, SRN 205-218 may be caused by a defective memory SIMM 1 or a defective memory card. The memory SIMM can be checked by swapping it with another memory SIMM on the card.
205-222	H	828 227 210	**Description:** Unexpected external interrupt during ROM IPL while trying to load from diskette.
205-223 **205-224**	H	B88 227 210	**Description:** Unexpected external interrupt during ROM IPL while trying to load from a SCSI device. Exchange the SCSI adapter for the IPL device.
205-225	H	949 227 210	**Description:** Unexpected external interrupt during ROM IPL while trying to load from a direct-attached disk drive. Exchange the direct-attached disk drive being used as an IPL device.
205-226	H	227	**Description:** Unexpected external interrupt

		210	during IPL tests while trying to load from ethernet.
205-227	H	850 227 210	**Description:** Unexpected external interrupt during IPL tests while trying to load from a Token-Ring.
205-228 **205-229**	H	227 210	**Description:** Unexpected external interrupt during IPL tests while trying to load from expansion code or any device.
205-230	H		**Description:** Unexpected external interrupt during IPL tests while trying to load from ROM scan. **Action:** Go to MAP 1540 in the service guide or the installation and service guide for this system unit, drawer, or enclosure.
205-231	H	227 210	**Description:** Unexpected external interrupt during IPL tests while trying to load from Ethernet.
205-232	H	828 227 210	**Description:** Unexpected external interrupt during ROM IPL while trying to load from diskette.
205-233 **205-234**	H	B88 227 210	**Description:** Unexpected external interrupt during ROM IPL while trying to load from a SCSI device. Exchange the SCSI adapter or disk that is used for the IPL.
205-235	H	949 227 210	**Description:** Unexpected external interrupt during ROM IPL while trying to load from a direct-attached disk drive. Exchange the direct-attached disk drive being used as an IPL device.
205-236	H	227 210	**Description:** Unexpected external interrupt during IPL tests while trying to load from ethernet.
205-237 **205-238**	H	850 227 210	**Description:** Unexpected external interrupt during IPL tests while trying to load from a Token-Ring.
205-239	H	210 227	**Description:** Unexpected external interrupt during IPL tests.
205-240	H		**Description:** Unexpected external interrupt during IPL tests while trying to load from ROM scan. **Action:** Go to MAP 1540 in the service guide or the installation and service guide for this system unit, drawer, or enclosure.
205-242	H	828 227 210	**Description:** Unexpected external interrupt during ROM IPL while trying to load from diskette.
205-243 **205-244**	H	B88 227 210	**Description:** Unexpected external interrupt during ROM IPL while trying to load from a SCSI device. Exchange the SCSI adapter for the IPL device.
205-245	H	949 227 210	**Description:** Unexpected external interrupt during ROM IPL while trying to load from a direct-attached disk drive. Exchange the direct-attached disk drive being used as an IPL device.
205-246	H	227 210	**Description:** Unexpected external interrupt during IPL tests while trying to load from ethernet.
205-247	H	850 227 210	**Description:** Unexpected external interrupt during IPL tests while trying to load from a Token-Ring.
205-248 **205-249**	H	227 210	**Description:** Unexpected external interrupt during IPL tests while trying to load from expansion code or any device.

205-250	H		**Description:** Unexpected external interrupt during IPL tests while trying to load from ROM scan. **Action:** Go to MAP 1540 in the service guide or the installation and service guide for this system unit, drawer, or enclosure.
205-251	H	227 210	**Description:** Unexpected external interrupt during IPL tests while trying to load from Ethernet.
205-252	H	828 227 210	**Description:** Unexpected external interrupt during ROM IPL while trying to load from diskette.
205-253 **205-254**	H	B88 227 210	**Description:** Unexpected external interrupt during ROM IPL while trying to load from a SCSI device. Replace the disk that is used for IPL.
205-255	H	949 227 210	**Description:** Unexpected external interrupt during ROM IPL while trying to load from a direct-attached disk drive. Exchange the direct-attached disk drive being used as an IPL device.
205-256	H	227 210	**Description:** Unexpected external interrupt during IPL tests while trying to load from Ethernet.
205-257 **205-258**	H	850 227 210	**Description:** Unexpected external interrupt during IPL tests while trying to load from a Token-Ring.
205-260 **to** **205-262**	H	227 210	**Description:** Unexpected data storage interrupt during IPL tests while trying to load from any device.
205-263	H		**Description:** Unexpected external interrupt during IPL tests while trying to load from ROM scan. **Action:** Go to MAP 1540 in the service guide or the installation and service guide for this system unit, drawer, or enclosure.
205-271 **205-272**	H	227 210	**Description:** Unexpected data storage interrupt during IPL tests of the mouse or tablet POST.
205-277	H	850 227 210	**Description:** Unexpected data storage interrupt during IPL tests of the Auto Token-Ring LANstreamer MC 32 Adapter.
205-280	H	852 C56 C58	**Description:** Unexpected external interrupt during IPL-tests of the 3-COMM adapter.
205-281	H	B31 227 210	**Description:** Unexpected data storage interrupt during IPL tests of the keyboard POST.
205-282 **205-283**	H	227 210	**Description:** Unexpected data storage interrupt during IPL tests of the parallel or serial port POST.
205-284	H	880 227 210	**Description:** Unexpected data storage interrupt during IPL tests of the POWER Gt1.
205-285	H	877 227 210	**Description:** Unexpected data storage interrupt during IPL tests of the POWER Gt3.
205-286	H	850 227 210	**Description:** Unexpected data storage interrupt during IPL tests of the Token-Ring.
205-287	H	B29 227 210	**Description:** Unexpected data storage interrupt during IPL tests of the ethernet.
205-288	H		**Description:** Unexpected external interrupt

			during IPL tests while trying to load from ROM scan. **Action:** Go to MAP 1540 in the service guide or the installation and service guide for this system unit, drawer, or enclosure.
205-289	H	871 227 210	**Description:** Unexpected data storage interrupt during IPL tests of the graphics subsystem adapter.
205-290	H	227 210	**Description:** Unexpected external interrupt during I/O support POST.
205-291	H	828 227 210	**Description:** Unexpected external interrupt during standard I/O planar POST.
205-292	H	B88 227 210	**Description:** Unexpected data storage interrupt during IPL tests of the SCSI POST. Replace the SCSI adapter that is used for the IPL.
205-293	H	950 227 210	**Description:** Unexpected external interrupt during disk drive POST. Exchange the disk drive.
205-295	H	874 C56 C58	**Description:** Unexpected external interrupt during IPL-tests of the Graphics Display adapter.
205-299	H	132 210	**Description:** Unexpected external interrupt when control is passed to the IPL program. Be sure there is a valid IPL program on the IPL device. If there is, exchange the media or the device.
205-301 to 205-303	H	210	**Description:** External Interrupt during Flash Utility ROM test.
205-304	H	218 221	**Description:** External Interrupt during IOCC POST.
205-305	H	812 221	**Description:** External Interrupt during built-in diskette adapter POST.
205-306	H	812 210	**Description:** External Interrupt during built-in diskette adapter POST.
205-307	H	210	**Description:** External Interrupt during Flash Utility ROM test.
205-308	H	218 221 131	**Description:** External Interrupt during IOCC POST. Use MAP 0310 for FFC 131.
205-309	H	132 131 214	**Description:** External Interrupt when control is passed to loaded code. **Action:** Check the IPL media. If no problem is found, IPL from another device. Use MAP 0310 for FFC 131.
205-311	H	210	**Description:** External Interrupt when calculating Flash ROM CRC.
205-312 205-313	H	214 131	**Description:** External Interrupt when configuring memory. Use MAP 0310 for FFC 131.
205-314 205-315	H	816 218	**Description:** External Interrupt when testing the power status register.
205-318 205-319	H	214 131	**Description:** External Interrupt when testing for good memory Use MAP 031 for FFC 131.
205-322 to 205-325	H	214	**Description:** External Interrupt when updating Flash ROM.
206-200 to 206-298	H	210	**Description:** Unexpected alignment interrupt during ROS IPL.

206-299	H	132 210	**Description:** Unexpected alignment interrupt when control is passed to the IPL code. Be sure there is a valid IPL program on the IPL device. If there is, exchange the media or the device.
206-301 **to** **206-325**	H	210	**Description:** Alignment Interrupt during Flash Update Utility.
207-200 **to** **207-298**	H	210	**Description:** Unexpected program exception interrupt during ROS IPL.
207-299	H	132 210	**Description:** Unexpected program exception interrupt when control is passed to IPL program. Be sure there is a valid IPL program on the IPL device. If there is, exchange the media or the device.
207-301 **to** **207-325**	H	210	**Description:** Program exception during Flash Update Utility.
208-200 **to** **208-298**	H	210	**Description:** Unexpected floating-point unavailable exception during ROS IPL. **Action:** Use MAP 0260.
208-299	H	132 210	**Description:** Unexpected floating-point unavailable exception when control is passed to IPL program. Be sure there is a valid IPL program on the IPL device. If there is, exchange the media or the device.
208-301 **to** **208-325**	H	210	**Description:** Floating point exception during Flash Update Utility.
209-200 **to** **209-298**	H	210	**Description:** Unexpected supervisor call during ROS IPL.
209-299	H	132 210	**Description:** Unexpected supervisor call when control is passed to the IPL program. Be sure there is a valid IPL program on the IPL device. If there is, exchange the media or the device.
209-301 **to** **209-325**	H	210	**Description:** Supervisor exception during Flash Update Utility.
210-200 **to** **210-298**	H	210	**Description:** Unexpected supervisor call during ROS IPL.
210-299	H	132 210	**Description:** Unexpected supervisor call when control is passed to the IPL program. Be sure there is a valid IPL program on the IPL device. If there is, exchange the media or the device.
210-301 **to** **210-325**	H	210	**Description:** Supervisor exception during Flash Update Utility.
409-000	K	C59 C90 C61	**Description:** I/O Card vital part FATAL ERROR.
409-001	K		**Description:** JTAG chain check fails before ASICs initialization FATAL ERROR. **Action:** Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
409-002	K	B48 C61	**Description:** Main memory data lines FATAL ERROR.
409-003	K	C61 B48	**Description:** Main memory address lines FATAL ERROR.

			Note: This problem can be caused by a loose memory card or memory connector problem on the memory card or system planar. If more than one memory card is installed suspect the system planar. If only one memory card is installed suspect either the memory card or the system planar.
409-004	K	C61 B48	**Description:** Main memory boards decoding FATAL ERROR.
409-005	K	169 B48 C68	**Description:** Main memory basic accesses FATAL ERROR.
409-006	K	B48 C61	**Description:** No 2MB available in MM. Memory common access FATAL ERROR.
409-007	K	C68 C61	**Description:** No valid CPU. FATAL ERROR.
409-008	K	B48	**Description:** No configured memory. Check that memory boards are not deconfigured. If they are. configure them; otherwise, use the indicated FFC and perform the listed action.
409-020	K	C68	**Description:** No configured CPU in the configuration table. FATAL ERROR.
409-021	K	C68	**Description:** Already checked CPU failed FATAL ERROR. **Action:** Go to MAP 1540 in either the service guide or the installation and service guide for this system unit, drawer, or enclosure.
409-022	K		**Description:** I/O common resources not available. FATAL ERROR. **Action:** On 7013/J30 this problem can be caused by a loose or faulty flex cable. Check the flex cable. If no problem is found, go to MAP 1540. All other systems go to MAP 1540.
409-023	K	Install-ation Error	**Description:** A "hole" between two memory cards was found (ie. boards in slot A and C, no board in B) FATAL ERROR. **Action:** Reinstall memory cards in the correct slots: the first card in slot A, the second card in slot B, the third card in slot C, and the fourth card in slot D. If the symptom does not change go to MAP 1540.
409-070	E	D21	**Description:** CPU fan (fan 10) failed.
409-072	K	B48	**Description:** Different voltage among present memory boards.
409-074	E	D58	**Description:** Power Supply 2 fan (fan 4) failed.
409-075	E	D22	**Description:** Media fan (fan 5) failed.
409-076	E	D22	**Description:** Media fan (fan 6) failed.
409-077	E	D22	**Description:** Media fan (fan 7) failed.
409-078	E	D21	**Description:** CPU fan (fan 8) failed.
409-079	E	D21	**Description:** CPU fan (fan 9) failed.
409-080	K	C59 165 C88	**Description:** BUMP access to OPP or OPP access to SIB failed.
409-081	K	C59 C88	**Description:** BUMP access to SIB failed.
409-082	K	C59 165	**Description:** Operator panel cannot access the BUMP.

409-083	K	165	**Description:** OP microcontroller not working.
409-085	K		**Description:** Bad VPD was detected on the board indicated by the acronym following the SRN. The number following the acronym indicates the system unit. **Action:** Correct the VPD or replace the FRU with the bad VPD.
409-086	K	C68 C61	**Description:** VPD could not be read on the board indicated by the acronym following the SRN. **Action:** Replace the FRU indicated by the acronym.
409-087	K		**Description:** The power supply is not compatible with the CPU cards. **Action:** Check that the correct power supply and CPU cards are installed.
409-088	K	C68	**Description:** Power Supply not compatible with the CPU boards, or different cycle time between the present CPU boards.
409-089	K		**Description:** A VPD problem was detected. **Note:** For systems with pre-BUMP-17.0 firmware, go to MAP 0230. For systems with BUMP-17.0 firmware or greater, check that the correct CPU cards and system planar are installed.
409-090 **409-091**	K	C88	**Description:** No SIB reply on power-on command.
409-092	K	C59	**Description:** No valid Flash EPROM/EPROM.
409-093	E	152 C88	**Description:** Power Supply Fan failed.
409-094	E	D16 or D1 C88	**Description:** Main Fan or fan 1 of power supply 1 failed. **Note:** The character following the SRN indicates the unit that contains the fault.
409-095	E	D18 or D4 or D19 C88	**Description:** Disk fan or MCA fan , or fan 2 of power supply 1 failed.
409-096	E	D17 or D4 C88	**Description:** MCA Fan or CPU/Memory/Disk failed.
409-097	K		**Description:** Loss of primary power unit #X. **Action:** Check the expansion unit's main switch and power cable. If the problem is not solved, use FFC 152 and MAP 0210.
409-098	K		**Description:** Unit top cover is not closed. **Action:** Close top cover. **Note:** The cover switch may be defective or the top cover may not be closed correctly. Follow the procedure in your service guide for correctly closing the top cover; otherwise, call your service support person for assistance.
409-Axy	K	152	**Description:** Power failure. This can be caused by the power supply or a shorted load. **Action:** Use MAP 1520.
409-Bxy	K	D58	**Description:** Power failure. This can be caused by the power supply or a shorted load. **Action:** Use MAP 1520.
700-099	J	700 B88 221	**Description:** IPLROS detected a problem with a SCSI disk drive
700-102 **to**	D	700	**Description:** 1.1GB single-ended disk drive problem.

700-114			
700-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, application software to be sure they are all compatible. If you do not find a problem, call your support person.
700-117	D	700	**Description:** A write protect error occurred.
700-118	D	700 B88	**Description:** A SCSI command time-out.
700-120 to 700-124	D	700	**Description:** A SCSI error.
700-126	D	700 B88	**Description:** A software error was caused by a hardware failure.
700-128	G	700	**Description:** The error log analysis indicates a hardware failure.
700-130	G	700 B88	**Description:** The error log analysis indicates a hardware failure.
700-132	D	700	**Description:** A disk drive hardware error occurred.
700-134	D	B88 software	**Description:** The device failed to configure.
700-136	D	700	**Description:** The certify operation failed.
701-099	J	701 B88 221	**Description:** IPLROS detected a problem with a SCSI disk drive
701-102 to 701-114	D	701	**Description:** 1.1GB 16-bit single-ended disk drive problem.
701-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, application software to be sure they are all compatible. If you do not find a problem, call your support person.
701-117	D	701	**Description:** A write protect error occurred.
701-118	D	701 B88	**Description:** A SCSI command time-out.
701-120 to 701-124	D	701	**Description:** A SCSI error.
701-126	D	701 B88	**Description:** A software error was caused by a hardware failure.
701-128	G	701	**Description:** The error log analysis indicates a hardware failure.
701-130	G	701 B88	**Description:** The error log analysis indicates a hardware failure.
701-132	D	701	**Description:** A disk drive hardware error occurred.
701-134	D	B88 software	**Description:** The adapter failed to configure.
701-135	D	701 B88 software	**Description:** The device failed to configure.
701-136	D	701	**Description:** The certify operation failed.
702-099	J	702 B88	**Description:** IPLROS detected a problem with a SCSI disk drive

		221	
702-102 to 702-114	D	702	**Description:** 1.1GB 16-bit differential disk drive problem.
702-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, application software to be sure they are all compatible. If you do not find a problem, call your support person.
702-117	D	702	**Description:** A write protect error occurred.
702-118	D	702 B88	**Description:** A SCSI command time-out.
702-120 to 702-124	D	702	**Description:** A SCSI error.
702-122 702-124	D	702	**Description:** A SCSI reservation or check condition error.
702-126	D	702 B88	**Description:** A software error was caused by a hardware failure.
702-128	G	702	**Description:** The error log analysis indicates a hardware failure.
702-130	G	702 B88	**Description:** The error log analysis indicates a hardware failure.
702-132	D	702	**Description:** A disk drive hardware error occurred.
702-134	D	B88 software	**Description:** The adapter failed to configure.
702-135	D	702 B88 software	**Description:** The device failed to configure.
702-136	D	702	**Description:** The certify operation failed.
703-099	J	703 B88 221	**Description:** IPLROS detected a problem with a SCSI disk drive
703-102 to 703-114	D	703	**Description:** 2.2GB single-ended disk drive problem.
703-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, application software to be sure they are all compatible. If you do not find a problem, call your support person.
703-117	D	703	**Description:** A write protect error occurred.
703-118	D	703 B88	**Description:** A SCSI command time-out.
703-120 to 703-124	D	703	**Description:** A SCSI error.
703-126	D	703 B88	**Description:** A software error was caused by a hardware failure.
703-128	G	703	**Description:** The error log analysis indicates a hardware failure.
703-130	G	703 B88	**Description:** The error log analysis indicates a hardware failure.
703-132	D	703	**Description:** A disk drive hardware error occurred.

703-134	D	B88 software	**Description:** The adapter failed to configure.
703-135	D	703 B88 software	**Description:** The device failed to configure.
703-136	D	703	**Description:** The certify operation failed.
704-099	J	704 B88 221	**Description:** IPLROS detected a problem with a SCSI disk drive
704-102 to 704-114	D	704	**Description:** 2.2GB 16-bit single-ended disk drive problem.
704-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, application software to be sure they are all compatible. If you do not find a problem, call your support person.
704-117	D	704	**Description:** A write protect error occurred.
704-118	D	704 B88	**Description:** A SCSI command time-out.
704-120 to 704-124	D	704	**Description:** A SCSI error.
704-126	D	704 B88	**Description:** A software error was caused by a hardware failure.
704-128	G	704	**Description:** The error log analysis indicates a hardware failure.
704-130	G	704 B88	**Description:** The error log analysis indicates a hardware failure.
704-132	D	704	**Description:** A disk drive hardware error occurred.
704-134	D	B88 software	**Description:** The adapter failed to configure.
704-135	D	704 B88 software	**Description:** The device failed to configure.
704-136	D	704	**Description:** The certify operation failed.
705-099	J	705 B88 221	**Description:** IPLROS detected a problem with a SCSI disk drive
705-102 to 705-114	D	705	**Description:** 2.2GB 16-bit differential disk drive problem.
705-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, application software to be sure they are all compatible. If you do not find a problem, call your support person.
705-117	D	705	**Description:** A write protect error occurred.
705-118	D	705 B88	**Description:** A SCSI command time-out.
705-120 to 705-124	D	705	**Description:** A SCSI error.
705-126	D	705 B88	**Description:** A software error was caused by a hardware failure.
705-128	G	705	**Description:** The error log analysis

			indicates a hardware failure.
705-130	G	705 B88	**Description:** The error log analysis indicates a hardware failure.
705-132	D	705	**Description:** A disk drive hardware error occurred.
705-134	D	B88 software	**Description:** The adapter failed to configure.
705-135	D	705 B88 software	**Description:** The device failed to configure.
705-136	D	705	**Description:** The certify operation failed.
706-099	J	706 B88 221	**Description:** IPLROS detected a problem with a SCSI disk drive
706-102 to 706-114	D	706	**Description:** 4.5GB 16-bit single-ended disk drive problem
706-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
706-117	D	706	**Description:** A write protect error occurred.
706-118	D	706 B88	**Description:** A SCSI command time-out.
706-120 to 706-124	D	706	**Description:** A SCSI error.
706-126	D	706 B88	**Description:** A software error was caused by a hardware failure.
706-128	G	706	**Description:** The error log analysis indicates a hardware failure.
706-130	G	706 B88	**Description:** The error log analysis indicates a hardware failure.
706-132	D	706	**Description:** A disk drive hardware error occurred.
706-134	D	B88 software	**Description:** The adapter failed to configure.
706-135	D	706 B88 software	**Description:** The device failed to configure.
706-136	D	706	**Description:** The certify operation failed.
707-099	J	707 B88 221	**Description:** IPLROS detected a problem with a SCSI disk drive
707-102 to 707-114	D	707	**Description:** Any of the following may have occurred: an ` unrecoverable media error, motor failed to restart, the drive did not become ready, electronics card test failed, bus test failed, media format failed, or diagnostic test failed.
707-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, application software to be sure they are all compatible. If you do not find a problem, call your support person.
707-117	D	707	**Description:** A write protect error occurred.

707-118	D	707 B88	**Description:** A SCSI command time-out.
707-120 **to** **707-124**	D	707	**Description:** A SCSI error.
707-126	D	707 B88	**Description:** A software error was caused by a hardware failure.
707-128	G	707	**Description:** The error log analysis indicates a hardware failure.
707-130	G	707 B88	**Description:** The error log analysis indicates a hardware failure.
707-132	D	707	**Description:** A disk drive hardware error occurred.
707-134	D	B88 software	**Description:** The adapter failed to configure.
707-135	D	707 B88 software	**Description:** The device failed to configure.
707-136	D	707	**Description:** The certify operation failed.
710-130 **to** **710-994**	D	710	**Description:** POWER GXT150M Graphics Subsystem problem.
713-101 **to** **713-103**	D	713 C94 C95	**Description:** Coprocessor platform test failure.
713-104	D	C94 713 C95	**Description:** Coprocessor platform dynamic random access memory (DRAM) test failure.
713-105 **713-106**	D	713 C94 C95	**Description:** Coprocessor platform memory protection or debug port test failure.
713-107	D	C95 713 C97	**Description:** AIB card wrap test failure.
713-110	D	C94 713 C95	**Description:** Coprocessor platform download diagnostics test failure.
713-123	D	C95 C98 C97	**Description:** AIB non-wrap test failure.
713-150 **713-151**	D	713 Software 227	**Description:** Device configuration or hardware failure.
713-152	D	713	**Description:** Failure and error in determining which type of coprocessor platform.
713-153	D	713 227 C94 Software	**Description:** Error log analysis indicates a coprocessor platform failure. **Action:** Use errpt command to check error log.
713-154	D	C94 713 C95	**Description:** Coprocessor platform initialization failure.
713-155	D	713 C94 C95	**Description:** Coprocessor platform initialization failure.
713-156	D	C95 713 C94	**Description:** Coprocessor platform initialization failure.
713-157	D	C98 C97 C95	**Description:** Cable wrap test failure.

714-101	D	714 Software	**Description:** Open diagex and initialize device failed.
714-102 **to** **714-105**	D	714	**Description:** Video I/O Adapter failed.
714-106	D	D11 714	**Description:** Video setup test failed.
714-107 **to** **714-109**	D	714	**Description:** Video I/O Adapter failed.
714-110 **to** **714-112**	D	D11 714	**Description:** Video I/O Adapter failed.
714-113 **714-114**	D	714	**Description:** Video I/O Adapter failed.
714-115	D	Software	**Description:** Closing diagex/device failed.
714-120	D	714	**Description:** Analysis of the error log indicates a problem with the hardware.
715-101	D	715 Software	**Description:** Ultimedia audio adapter failed
715-102 **to** **715-106**	D	715	**Description:** Ultimedia audio adapter failed
716-001	E	C59 B98	**Description:** I/O Card test failed.
716-011	K	C62 B98	**Description:** CPU card test failed.
716-012	E	C63 B98	**Description:** CPU card test failed.
716-021	K	C62	**Description:** Checkstop or machine checks.
716-022	G	C63 or C6	**Description:** Checkstop or machine checks.
716-147	E	B96	**Description:** Memory test failed.
716-148	E	D33	**Description:** A memory DIMM was found to be defective during IPL.
716-149	E	D33	**Description:** A memory DIMM was found to be defective during IPL.
716-158	E	D34	**Description:** A memory DIMM was found to be defective during IPL.
716-159	E	D34	**Description:** A memory DIMM was found to be defective during IPL.
716-167	E	B97	**Description:** Memory test failed.
716-168	E	D35	**Description:** A memory DIMM was found to be defective during IPL.
716-169	E	D35	**Description:** A memory DIMM was found to be defective during IPL.
716-247	E	B94 169	**Description:** Memory test failed.
716-248	E	D32 C61	**Description:** A memory DIMM was found to be defective during IPL.
716-249	E	D27 C61	**Description:** A memory DIMM was found to be defective during IPL.
716-258	E	D32 C61	**Description:** A memory DIMM was found to be defective during IPL.
716-259	E	D27 C61	**Description:** A memory DIMM was found to be defective during IPL.

716-267	E	C64 169	**Description:** Memory test failed.
716-268	E	D32 C61	**Description:** A memory DIMM was found to be defective during IPL.
716-269	E	D27 C61	**Description:** A memory DIMM was found to be defective during IPL.
716-347	E	B94 B96	**Description:** Memory test failed.
716-348	E	D32 D33 D33	**Description:** A memory card and 2 DIMMs were found to be defective during IPL.
716-349	E	D27 D33 D33	**Description:** A memory card and 2 DIMMs were found to be defective during IPL.
716-358	E	D32 D34 D34	**Description:** A memory card and 2 DIMMs were found to be defective during IPL.
716-359	E	D27 D34 D34	**Description:** A memory card and 2 DIMMs were found to be defective during IPL.
716-367	E	C64 B97	**Description:** Memory test failed.
716-368	E	D32 D35 D35	**Description:** A memory card and 2 DIMMs were found to be defective during IPL.
716-369	E	D27 D35 D35	**Description:** A memory card and 2 DIMMs were found to be defective during IPL.
716-447	E	B94 B96	**Description:** Memory test failed.
716-448	E	D32 D33 D33 D33	**Description:** A memory card and 3 DIMMs were found to be defective during IPL.
716-449	E	D27 D33 D33 D33	**Description:** A memory card and 3 DIMMs were found to be defective during IPL.
716-458	E	D32 D34 D34 D34	**Description:** A memory card and 3 DIMMs were found to be defective during IPL.
716-459	E	D27 D34 D34 D34	**Description:** A memory card and 3 DIMMs were found to be defective during IPL.
716-467	E	C64 B97	**Description:** Memory test failed.
716-468	E	D32 D35 D35 D35	**Description:** A memory card and 3 DIMMs were found to be defective during IPL.
716-469	E	D27 D35 D35 D35	**Description:** A memory card and 3 DIMMs were found to be defective during IPL.
716-547	G	B94 B96x4	**Description:** Checkstop or machine checks.
716-567	G	C64 B97x4	**Description:** Checkstop or machine checks.
716-747	G	B96x4 B94	**Description:** Checkstop or machine checks.

716-767	G	B97x4 B64	**Description:** Checkstop or machine checks.
716-847	G	B96 B94	**Description:** Checkstop or machine checks.
716-867	G	B97 C64	**Description:** Checkstop or machine checks.
716-947	G	B96	**Description:** Checkstop or machine checks.
716-967	G	B97	**Description:** Checkstop or machine checks.
718-101	D	718 227	**Description:** GXT500 Graphics Adapter
718-1AA	D	718 RGB Cable Display	**Description:** GXT500 Graphics Adapter
718-1xx	D	718	**Description:** GXT500 Graphics Adapter
718-201	D	D51 227	**Description:** GXT500D Graphics Adapter
718-2AA	D	D51 RGB Cable Display	**Description:** GXT500D Graphics Adapter
718-2xx	D	D51	**Description:** GXT500D Graphics Adapter
721-102 **to** **721-114**	D	721	**Description:** Unknown SCSI or device error.
721-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
721-117	D	721	**Description:** A write protect error occurred.
721-118	D	721 B88	**Description:** A SCSI command time-out.
721-120 **to** **721-124**	D	721	**Description:** Unknown SCSI or device error.
721-126	D	721 B88	**Description:** A software error was caused by a hardware failure.
721-128	G	721	**Description:** The error log analysis indicates a hardware failure.
721-130	G	721 B88	**Description:** The error log analysis indicates a hardware failure.
721-132	D	721	**Description:** A disk drive hardware error occurred.
721-135	D	721 B88 software	**Description:** The device failed to configure.
722-xxx	D	722	**Description:** Unknown disk drive type is failing.
722-098	J	722 B88 221	**Description:** IPLROS detected a problem with the SCSI disk drive.
722-099	J	722 B88	**Description:** IPLROS detected a problem with the SCSI disk drive.
723-xxx	D	723	**Description:** Unknown CD-ROM type is failing.
723-098	J	723 B88 221	**Description:** IPLROS detected a problem with the SCSI CDROM.

723-099	J	723 B88	**Description:** IPLROS detected a problem with the SCSI CDROM.
724-xxx	D	724	**Description:** Unknown tape drive failure.
724-098	J	724 B88 221	**Description:** IPLROS detected a problem with the SCSI tape drive.
724-099	J	724 B88	**Description:** IPLROS detected a problem with the SCSI tape drive.
733-110 **733-120**	D	733	**Description:** The **Reserve** command failed, or the **Inquiry** command failed.
733-130 **733-135**	D	733 media	**Description:** The **Load** command failed, or the **Unload** command failed.
733-140	D	733	**Description:** The **Mode Select** command failed.
733-150 **to** **733-169**	D	733 media	**Description:** The **Test Unit Ready** command failed, or the **Send Diagnostic** command failed.
733-170	D	733 B88 media	**Description:** The Read, Write and Compare test failed.
733-180 **733-185**	D	733 media	**Description:** The **Load** command failed, or the **Unload** command failed.
733-190	D	733	**Description:** The **Mode Select** command failed.
733-200	D	733 media	**Description:** The **Test Unit Ready** command failed.
733-210	D	733 B88	**Description:** The device configuration failed.
733-220 **to** **733-240**	D	733	**Description:** 140GB 8mm tape drive failed.
733-300	D	733 software	**Description:** The device configuration failed.
733-310	D	B88 733 software	**Description:** SCSI adapter configuration failed.
733-320	D	733 media	**Description:** Error log analysis indicates a failure.
733-411 **to** **733-423**	D	733 B88 software	**Description:** A reservation conflict occurred.
733-511 **to** **733-523**	D	733 B88	**Description:** The drive returned bad or non-extended sense data.
733-611 **to** **733-723**	D	733 B88 software	**Description:** An adapter, device, or bus I/O error occurred.
734-098	J	734 B88 221	**Description:** IPLROS detected a problem with the CDROM drive.
734-099	J	734 B88	**Description:** IPLROS detected a problem with the CDROM drive.
734-111	D	734 B88	**Description:** Unable to reserve device.
734-112	D	734 B88	**Description:** Unable to do configuration.
734-113	D	734 B88	**Description:** Unable to open the device driver.

734-121	D	734	**Description:** The CD-ROM drive indicates an error.
734-122	D	734	**Description:** The CD-ROM drive indicates an error.
734-123	D	734	**Description:** The CD-ROM drive indicates an error.
734-125	D	734 B88	**Description:** The CD-ROM drive indicates an error.
734-126	D	734	**Description:** The CD-ROM drive indicates an error.
734-127	D	734	**Description:** The CD-ROM drive indicates an error.
734-128	D	734	**Description:** The CD-ROM drive indicates an error.
734-129	D	734	**Description:** The CD-ROM drive indicates an error.
734-150	D	Media 734	**Description:** A media error was detected.
734-151	D	734 D88	**Description:** A command timeout was detected.
734-152	D	734	**Description:** A command reservation conflict was detected.
734-162	D	734	**Description:** The CD-ROM drive indicates an error.
734-171	D	734	**Description:** Unable to reserve device.
734-172	D	734	**Description:** Unable to do configuration.
734-173	D	734	**Description:** Unable to open device driver.
734-175	D	734	**Description:** The CD-ROM drive indicates an error.
734-198	D	734 B88	**Description:** Undefined error detected.
734-199	D	734	**Description:** Undefined error detected.
734-281	D	734	**Description:** No tone during audio test.
734-301	G	734	**Description:** Errors found during ELA.
734-302	G	734 B88	**Description:** Errors found during ELA.
740-099	J	740 B88 221	**Description:** IPLROS detected a problem with a SCSI disk drive
741-098	J	741	**Description:** Disk drive indicates an error.
741-099	J	741 B88 221	**Description:** IPLROS detected a problem with a SCSI disk drive.
741-102 to 741-114	D	741	**Description:** SCSI disk drive problems.
741-116	D		**Description:** A protocol error. Action: Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
741-117	D	741	**Description:** A write protect error occurred.
741-118	D	741 B88	**Description:** A SCSI command time-out.

741-120 to 741-124	D	741	**Description:** SCSI disk drive problems.
741-126	D	741 B88	**Description:** A software error was caused by a hardware failure.
741-128	G	741	**Description:** The error log analysis indicates a hardware failure.
741-130	G	741 B88	**Description:** The error log analysis indicates a hardware failure.
741-132	D	741	**Description:** A disk drive hardware error occurred.
741-134	D	B88 software	**Description:** The adapter failed to configure.
741-135	D	741 B88 software	**Description:** The device failed to configure.
745-100	D	media 745	**Description:** Recovered error. **Action:** No action required.
745-200	D	media 745	**Description:** Drive Not Ready **Action:** Install media, refer to the tape autoloader service guide.
745-300 to 745-350	D	media 745	**Description:** 16GB 4mm Tape Auto Loader problem. **Action:** Replace media, clean drive, refer to the tape autoloader service guide.
745-400	D	745 magazine media	**Description:** General Hardware Failure **Action:** Replace media, clean drive, refer to the tape autoloader service guide.
745-410 to 745-435	D	745 media	**Description:** Internal Hardware Failure **Action:** Replace drive, refer to the tape autoloader service guide.
745-440	D	745 SCSI Adapter	**Description:** SCSI Hardware Failure **Action:** Replace drive, refer to the tape autoloader service guide.
745-441 to 745-443	D	745 media	**Description:** 16GB 4mm Tape Auto Loader problem. **Action:** Replace drive, refer to the tape autoloader service guide.
745-444	D	745 environ- ment media	**Description:** Humidity too High **Action:** Lower humidity, replace media, refer to the tape autoloader service guide.
745-445	D	clean media drive	**Description:** Drive Requires Cleaning **Action:** Clean drive, replace media, refer to the tape autoloader service guide.
745-460 to 745-465	D	745 magazine media	**Description:** Magazine Movement Failure **Action:** Check magazine and media, clean rollers, refer to the tape autoloader service guide.
745-470 to 745-475	D	745 magazine media	**Description:** Media Insert/Eject Failure **Action:** Check clean magazine and media, clean rollers, refer to the tape autoloader service guide.
745-480 to 745-485	D	745 magazine media	**Description:** Drawer Open/Close Failure **Action:** Check magazine and media, refer to the tape autoloader service guide.
745-500	D	745 system	**Description:** Illegal request to drive **Action:** Software conflict, refer to the tape autoloader service guide.
745-600	D	745 system	**Description:** Unit Attention **Action:** Software conflict, media changed, refer to the tape autoloader service guide.

745-700	D	745 media	**Description:** Not Writeable **Action:** Check media for write protect, refer to the tape autoloader service guide.
745-800	D	745 media	**Description:** Blank Media **Action:** Check media, refer to the tape autoloader service guide.
745-B00	D	SCSI Adapter	**Description:** SCSI Interface Failure **Action:** Check SCSI interface, refer to the tape autoloader service guide.
745-D00	D	745 media	**Description:** Tape Full **Action:** Check replace media, refer to the tape autoloader service guide.
801-101 **801-102**	C		**Description:** The diagnostics did not detect an installed resource. **Action:** Ensure supplemental diskettes have been read, if applicable, then use MAP 0290.
802-xxx (except 802-849 802-855)	C	Use the xxx number	**Description:** The diagnostics did not detect an installed resource.
802-849	C	849 C17	**Description:** The diagnostics did not detect an installed resource.
802-855	C	855 C16	**Description:** The diagnostics did not detect an installed resource.
803-xxx (See note in Action column.)	D	Use the xxx number	**Description:** An error occurred while running the diagnostics. **Action:** Run nondisk-based diagnostics where possible. If this SRN was generated from the nondisk-based diagnostic package, or it is not possible to use the nondisk-based package, go to MAP 0250. If the problem occurs only from disk- or server-based diagnostics, suspect a software problem. **Note:** If your 803-xxx SRN is listed in this section, use the procedure for that SRN instead of this one.
803-834	A		**Description:** An error occurred while running diagnostics. **Action:** This SRN will occur when an early level 64-Port Async Controller is installed in a system with a POWER Gt3 Graphics Adapter. If the 64-Port Async Controller is part number 00G1168, 31F4078, 59F2968 or 53F3372, refer to RETAIN to obtain an ECA number so that a new 64 Port Async Controller may be ordered. If a POWER Gt3 Graphics Adapter is installed with a 64-Port Async Adapter having one of the above part numbers, run diagnostics from the diskette package. If the same error occurs while running the diagnostic diskette package, use MAP 0250; otherwise suspect a software problem.
803-849	D	849 221 software	**Description:** An error occurred while running the diagnostics. **Action:** Run nondisk-based diagnostics where possible. If this SRN was generated from the nondisk-based diagnostic package, or it is not possible to use the nondisk-based package, go to MAP 0250. If the problem occurs only from disk- or server-based diagnostics, suspect a software problem.
803-867	D	867 288 152	**Description:** The Async Expansion Adapter was not found. **Action:** Check if the power is On in the Async Expansion Drawer. If the power is not On, refer to the service guide for the expansion drawer. If the power is On, use

			FFCs 867 and 288.
803-869	D	B88 software	**Description:** An error occurred while running the diagnostics. **Action:** Run diagnostics from diskette or CD-ROM, if you have not done so already, If this error occurs while executing either diskette or CD-ROM-based diagnostics, use MAP 0210. If the error only occurs while using disk- or server-based diagnostics, suspect software.
803-877	D	877 or 87 or B58 or B59	**Description:** An error occurred while running the diagnostics. **Note:** If the SRN was obtained using concurrent diagnostics, execute diagnostics from the diskette package. If no problem is found using the diskette package, suspect a software problem. The failing function code may be 877, 878, B58, or B59 for this SRN. It is possible that more than one adapter type is installed in the same machine, and you may have to remove one to isolate the problem. **Action:** Use MAP 0250.
803-878	D	878	**Description:** An error occurred while running the diagnostics. **Note:** If the SRN was obtained using concurrent diagnostics, execute diagnostics from the diskette package. If no problem is found using the diskette package, suspect a software problem. The failing function code may be either 877 or 878 for this SRN. It is possible that both adapter types are installed in the same machine, and you may have to remove one to isolate the problem. **Action:** Use MAP 0250.
804-xxx	H	Use the xxx number	**Description:** An unexpected halt occurred while running the diagnostics. **Action:** Use MAP 0250.
80c-099	J	80c 227	**Description:** The SCSI adapter failed.
810-401	D	C61 C62 C65	**Description:** Power problem in expansion unit **Action:** Check covers, fans, and cables, if no problem is found use FFC 152 and MAP 0210.
810-501	D	C65	**Description:** Floating point processor failed.
810-502	D	D54	**Description:** Floating point processor failed.
810-511	E	C65 C61	**Description:** CPU module test failed.
810-512	E	D54 C61	**Description:** CPU module test failed.
810-521	D	C61 C62 C65	**Description:** Interprocessor test unit failed.
810-522	D	C61 C63 C65	**Description:** Interprocessor test unit failed.
810-523	D	C61 C65 C65	**Description:** Interprocessor test unit failed.
810-524	D	C61 D54 D54	**Description:** Interprocessor test unit failed.
810-525	D	C61 D54	**Description:** Interprocessor test unit failed.

810-526	D	C61 D54	**Description:** Interprocessor test unit failed.
811-100	G		**Description:**
811-101	G	210 131 221	**Description:** A checkstop has occurred.
811-102	G	D01	**Description:** Error Log Analysis indicates L2 cache error.
811-110 **811-115**	G	210 221	**Description:** A checkstop has occurred.
811-200 **811-210**	G	131 815	**Description:** An external check occurred. Error log analysis indicates a hardware failure.
811-240	G	131 815	**Description:** An external check occurred. Error log analysis indicates a hardware failure.
811-250	G	Software 815 131	**Description:** An external check occurred. Error log analysis indicates a software failure.
811-300 **to** **811-320**	G	131 815	**Description:** A machine check occurred. Error log analysis indicates a hardware failure.
811-330	G	Software 815 131	**Description:** A machine check occurred. Error log analysis indicates a software failure.
811-400 **to** **811-445**	G	171 815	**Description:** An external check occurred. Error log analysis indicates a hardware failure.
811-450	G	Software 815 171	**Description:** An external check occurred. Error log analysis indicates software failure.
811-500 **to** **811-525**	G	171 815	**Description:** A machine check occurred. Error log analysis indicates a hardware failure.
811-530	G	Software 815 171	**Description:** A machine check occurred. Error log analysis indicates a software failure.
811-600 **to** **811-615**	G	171 815	**Description:** An external check occurred. Error log analysis indicates a hardware failure.
811-620	G	815	**Description:** An external check occurred. Error log analysis indicates a hardware failure.
811-630	G	Software 815	**Description:** A machine check occurred. Error log analysis indicates a software failure.
811-640 **811-645**	G	171 815	**Description:** An external check occurred. Error log analysis indicates a hardware failure.
811-650	G	Software 815 179	**Description:** An external check occurred. Error log analysis indicates a software failure.
811-700 **to** **811-725**	G	171 815	**Description:** A machine check occurred. Error log analysis indicates a hardware failure.
811-730	G	Software 815 171	**Description:** An external check occurred. Error log analysis indicates a software failure.
811-740	G	Software 815	**Description:** A machine check occurred. Error log analysis indicates a software failure.

811-800 to 811-845	G	180 815	**Description:** An external check occurred. Error log analysis indicates hardware failure.
811-850	G	Software 815 180	**Description:** An external check occurred. Error log analysis indicates a software failure.
811-888	E	812	**Description:** The standard I/O planar test failed.
811-900 to 811-925	G	180 815	**Description:** A machine check occurred. Error log analysis indicates a hardware failure.
811-930	G	Software 815 180	**Description:** An external check occurred. Error log analysis indicates a software failure.
811-991 to 811-994	G	152	**Description:** Power Supply problem. **Action:** Use the service documentation for the power distribution unit.
811-995	G	167	**Description:** Error log analysis indicates an EPOW occurred due to a hardware problem.
811-996	G	170	**Description:** Error log analysis indicates an EPOW occurred due to a hardware problem.
811-997	G	160	**Description:** Error log analysis indicates an EPOW occurred due to a hardware problem.
811-999	E	227	**Description:** The I/O planar test failed. **Action:** Use MAP 0260.
812-157	E	157	**Description:** The 8,16, 32, or 64M-byte S3 memory card test failed. **Action:** Use MAP 0240.
812-171	E	171	**Description:** The 8M-byte or 16M-byte S1 memory card test failed. **Action:** Use MAP 0240.
812-172	E	172	**Description:** The 4M-byte S3 memory SIMM test failed. **Action:** Use MAP 0240.
812-173	E	173	**Description:** The 1M-byte S1 memory SIMM test failed. **Action:** Use MAP 0240.
812-174	E	174	**Description:** The 2M-byte S1 memory SIMM test failed. **Action:** Use MAP 0240.
812-175	E	175	**Description:** The 1M-byte S3 memory SIMM test failed. **Action:** Use MAP 0240.
812-176	E	176	**Description:** The 4M-byte S1.5 memory SIMM test failed. **Action:** Use MAP 0240.
812-177	E	177	**Description:** The 8M-byte S1.5 memory SIMM test failed. **Action:** Use MAP 0240.
812-178	E	178	**Description:** The 32M-byte S1.5 or 64M-byte S1.5 memory card test failed. **Action:** Use MAP 0240.
812-179	E	179	**Description:** The 2M-byte S3 memory SIMM test failed. **Action:** Use MAP 0240.
812-180	E	180	**Description:** The 32M-byte U1 memory card test failed. **Action:** Use MAP 0240.
812-182	E	182	**Description:** The 8M-byte S3 memory SIMM test failed.

			Action: Use MAP 0240.
812-187	E	187	**Description:** The 4M-byte U1 memory SIMM test failed. **Action:** Use MAP 0240.
812-190 **812-195**	E	171 173	**Description:** The 8M-byte S1 memory card test and two or three 1M-byte S1 memory SIMM tests failed. **Action:** Use MAP 0240.
812-200 **812-205**	E	171 174	**Description:** The 16M-byte S1 memory card test and two or three 2M-byte S1 memory SIMM tests failed. **Action:** Use MAP 0240.
812-210 **812-215**	E	180 187	**Description:** The 32M-byte U1 memory card test and two or three 4M-byte U1 memory SIMM tests failed. **Action:** Use MAP 0240.
812-220 **812-225**	E	178 177	**Description:** The 64M-byte S1.5 memory card test and two or three 8M-byte S1.5 memory SIMM tests failed. **Action:** Use MAP 0240.
812-230 **812-235**	E	178 176	**Description:** The 32M-byte S1.5 memory card test and two or three 4M-byte S1.5 memory SIMM tests failed. **Action:** Use MAP 0240.
812-240 **812-245**	E	157 182	**Description:** The 64M-byte S3 memory card test and two or three 8M-byte S3 memory SIMM tests failed. **Action:** Use MAP 0240.
812-250 **812-255**	E	157 172	**Description:** The 32M-byte S3 memory card test and two or three 4M-byte S3 memory SIMM tests failed. **Action:** Use MAP 0240.
812-270 **812-275**	E	157 175	**Description:** The S3 memory card test and two or three 1M-byte S3 memory SIMM tests failed. **Action:** Use MAP 0240.
812-280 **812-285**	E	157 179	**Description:** The S3 memory card test and two or three 2M-byte S3 memory SIMM tests failed. **Action:** Use MAP 0240.
812-300 **812-400**	E	214 171	**Description:** Two 8M-byte or 16MB S1 memory card tests failed. **Action:** Use MAP 0240.
812-500	E	214 180	**Description:** Two 32M-byte U1 memory card tests failed. **Action:** Use MAP 0240.
812-600	E	214 178	**Description:** Two 8, 16, 32, or 64M-byte S1.5 memory card tests failed. **Action:** Use MAP 0240.
812-700	E	214 157	**Description:** Two 8, 16, 32, or 64M-byte S3 memory card tests failed. **Action:** Use MAP 0240.
812-900	E	815	**Description:** POST indicates hardware error.
812-904	E	B38	**Description:** Memory SIMM failure. **Action:** Use MAP 0240.
812-908	E	B39	**Description:** Memory SIMM failure. **Action:** Use MAP 0240.
812-910	E	C31	**Description:** Memory test failed. **Action:** Use MAP 0240.
812-920	E	C32	**Description:** Memory test failed. **Action:** Use MAP 0240.
814-112	D	814	**Description:** The NVRAM test failed.

Service Request Number	SRN Scr.	Failing Function Codes	Description and Action (Unless indicated otherwise use MAP 0210.)
814-113	D	227	**Description:** The VPD test failed.
814-114	D	814	**Description:** I/O Card NVram test failed.
814-099	J	812	**Description:** The NVRAM test failed.
815-100	D	815	**Description:** The floating-point processor test failed.
815-101	D	815	**Description:** Floating point processor failed.
815-102	D	815	**Description:** Floating point processor failed.
816-140	D	165 816 227	**Description:** The three-digit display test failed.
816-141	D	165 816	**Description:** LCD display test failed.
816-185	D	169 168 227	**Description:** The keylock test failed.
816-186	D	165 816	**Description:** Keylock test failed.
817-123	D	817	**Description:** The I/O planar time-of-day clock test failed.
817-124	D	817	**Description:** Time of day RAM test failed.
817-210	D	817	**Description:** The time-of-day clock is at POR.
817-211	D	817 169	**Description:** Time of day POR test failed.
817-212	D	151 816	**Description:** The battery is low.
817-213	D	817	**Description:** The real-time clock is not running.
817-214	D	227	**Description:** The EPOW connector test failed.
817-215	D	C59	**Description:** Time of day clock not running test failed.
817-216	D	227	**Description:** The register test on the second I/O planar failed.
817-217	D	817 169	**Description:** Time of day clock not running.
817-300	D	164 227	**Description:** Battery backup failure.
817-301	D	D21 or D1 C88	**Description:** CPU fan failure.
817-302	D	D18 or D2 or D40 C88	**Description:** Disk or MCA fan failure.
817-303	D	152 C88	**Description:** Power supply 1 (primary) fan failure.
817-304	D	152 C88	**Description:** Power supply 2 (secondary) or shell fan failure.
818-101	G	815	**Description:** Checkstops or machine checks have been posted in the error log.
818-102	G	C62	**Description:** Checkstop or machine checks.

818-103	G	C63	**Description:** Checkstop or machine checks.
818-111	G	171 173 x 8	**Description:** Checkstops or machine checks have been posted in the error log. **Note:** This SRN requires the replacement of multiple FRUs.
818-114	G	157 175 x 8	**Description:** Checkstops or machine checks have been posted in the error log. **Note:** This SRN requires the replacement of multiple FRUs.
818-121	G	171 174 x 8	**Description:** Checkstops or machine checks have been posted in the error log. **Note:** This SRN requires the replacement of multiple FRUs.
818-124	G	157 179 x 8	**Description:** Checkstops or machine checks have been posted in the error log. **Note:** This SRN requires the replacement of multiple FRUs.
818-130	G	180 187 x 8	**Description:** Checkstops or machine checks have been posted in the error log. **Note:** This SRN requires the replacement of multiple FRUs.
818-132	G	178 176 x 8	**Description:** Checkstops or machine checks have been posted in the error log. **Note:** This SRN requires the replacement of multiple FRUs.
818-134	G	157 172 x 8	**Description:** Checkstops or machine checks have been posted in the error log. **Note:** This SRN requires the replacement of multiple FRUs.
818-141	G	171	**Description:** Checkstops or machine checkshave been posted in the error log. **Action:** See MAP 0210.
818-142	G	178 177 x 8	**Description:** Checkstops or machine checks have been posted in the error log. **Note:** This SRN requires the replacement of multiple FRUs.
818-144	G	157 182 x 8	**Description:** Checkstops or machine checks have been posted in the error log. **Note:** This SRN requires the replacement of multiple FRUs.
818-147	G	B94 B96x4	**Description:** Checkstop or machine checks.
818-154	G	157 154 x 8	**Description:** Checkstops or machine checks have been posted in the error log. **Note:** This SRN requires the replacement of multiple FRUs.
818-167	G	C64 B97x4	**Description:** Checkstop or machine checks.
818-211	G	171 x 2 173 x 16	**Description:** Checkstops or machine checks have been posted in the error log. **Note:** This SRN requires the replacement of multiple FRUs.
818-214	G	157 x 2 175 x 16	**Description:** Checkstops or machine checks have been posted in the error log. **Note:** This SRN requires the replacement of multiple FRUs.
818-221	G	171 x 2 174 x 16	**Description:** Checkstops or machine checks have been posted in the error log. **Note:** This SRN requires the replacement of multiple FRUs.
818-224	G	157 x 2 179 x 16	**Description:** Checkstops or machine checks have been posted in the error log. **Note:** This SRN requires the replacement of multiple FRUs.
818-230	G	180 x 2 187 x 16	**Description:** Checkstops or machine checks have been posted in the error log.

			Note: This SRN requires the replacement of multiple FRUs.
818-232	G	178 x 2 176 x 16	**Description:** Checkstops or machine checks have been posted in the error log. **Note:** This SRN requires the replacement of multiple FRUs.
818-234	G	157 x 2 172 x 16	**Description:** Checkstops or machine checks have been posted in the error log. **Note:** This SRN requires the replacement of multiple FRUs.
818-242	G	178 x 2 177 x 16	**Description:** Checkstops or machine checks have been posted in the error log. **Note:** This SRN requires the replacement of multiple FRUs.
818-244	G	157 x 2 182 x 16	**Description:** Checkstops or machine checks have been posted in the error log. **Note:** This SRN requires the replacement of multiple FRUs.
818-254	G	157 x 2 154 x 16	**Description:** Checkstops or machine checks have been posted in the error log. **Note:** This SRN requires the replacement of multiple FRUs.
818-312	G	173 171	**Description:** Memory test failed.
818-314	G	175 157	**Description:** Memory test failed.
818-315	G	C38 C37	**Description:** Memory test failed.
818-322	G	174 171	**Description:** Memory test failed.
818-324	G	179 157	**Description:** Memory test failed.
818-325	G	C39 C37	**Description:** Memory test failed.
818-330	G	187 180	**Description:** Memory test failed.
818-332	G	176 178	**Description:** Memory test failed.
818-334	G	172 157	**Description:** Memory test failed.
818-335	G	C40 C37	**Description:** Memory test failed.
818-342	G	177 178	**Description:** Memory test failed.
818-344	G	182 157	**Description:** Memory test failed.
818-345	G	C41 C37	**Description:** Memory test failed.
818-347	G	B94 B96x4	**Description:** Checkstop or machine checks.
818-354	G	154 157	**Description:** Memory test failed.
818-355	G	C42 C37	**Description:** Memory test failed.
818-365	G	C43 C37	**Description:** Memory test failed.
818-367	G	B64 B97x4	**Description:** Checkstop or machine checks.
818-400	G	180 815	**Description:** Memory test failed.

818-401	G	171 815	**Description:** Memory test failed.
818-402	G	178 815	**Description:** Memory test failed.
818-404	G	157 815	**Description:** Memory test failed.
818-405	G	C37 815	**Description:** Memory test failed.
818-447	G	B94	**Description:** Checkstop or machine checks.
818-467	G	B64 B97	**Description:** Checkstop or machine checks.
818-990	D	B19 210	**Description:** Defective TCW SIMM for option I/O planar.
818-991	D	227 210	**Description:** Option I/O planar test failed.
819-111	D	819 227	**Description:** The register test failed.
819-112	D	275	**Description:** The GIO adapter fuse needs replacement.
819-113	D	819	**Description:** The VPD verification test failed.
819-114	D	819 227	**Description:** Software error caused by hardware failure.
819-221 **819-222**	D	819	**Description:** The wrap test failed.
819-300	G	819	**Description:** The error log analysis indicates a hardware failure.
819-301	G	819 227	**Description:** The error log analysis indicates a hardware failure.
819-302	G	275	**Description:** The error log analysis indicates a fuse failure.
819-331 **to** **819-442**	D	819	**Description:** Graphics Input Device Adapter failed.
819-500	D	819 227	**Description:** The device failed to configure.
819-501	D	819 227 software	**Description:** The device driver indicates a hardware failure.
819-551 **819-552**	D	819	**Description:** Graphics Input Device Adapter failed.
820-101	D	169 C62	**Description:** Interprocessor test failed.
820-102	D	169 C62 C63	**Description:** Interprocessor test failed.
820-103 **820-104**	D	169 C63	**Description:** Interprocessor test failed.
821-098	J	821	**Description:** Keyboard test failed.
821-099	J	921 821	**Description:** Keyboard test failed.
821-111	D	821 B31	**Description:** Unexpected results from the test.
821-220	D	B10 821	**Description:** Keyboard adapter fuse failed.
821-221	D	821	**Description:** The keyboard adapter test

			failed.
821-230	D	821 227	**Description:** Software error caused by hardware failure.
821-240	G	821	**Description:** The error log analysis indicates hardware failure.
821-241	G	821 227	**Description:** The error log analysis indicates hardware failure.
821-242	G	921 821	**Description:** The error log analysis indicates hardware failure.
821-243	G	922 821	**Description:** The error log analysis indicates hardware failure.
821-244	G	923 821	**Description:** The error log analysis indicates hardware failure.
821-310 to 821-331	D	821	**Description:** Standard Keyboard Adapter failed.
821-332	D	821 software	**Description:** Cannot open device.
821-333 **821-334**	D	821	**Description:** Keyboard/tablet adapter failed.
821-921	D	921 821	**Description:** The keyboard adapter control logic failed.
821-922	D	922 821	**Description:** The keyboard adapter control logic failed.
821-923	D	923 821	**Description:** The keyboard adapter control logic failed.
823-099	J	823 925	**Description:** Mouse test failed.
823-111 **823-112**	D	823	**Description:** Standard Mouse adapter failed.
823-113	D	B10 823	**Description:** The mouse adapter fuse failed.
823-121 **823-122**	D	823	**Description:** Built-In mouse adapter problems.
823-130	D	823 227	**Description:** Software error caused by hardware failure.
823-131	D	823 925	**Description:** Unable to put mouse adapter into nonblock mode.

Service Request Number	**SRN Scr.**	**Failing Function Codes**	**Description and Action (Unless indicated otherwise use MAP 0210.)**
823-132 **823-133**	D	823	**Description:** Built-In mouse adapter problem.
823-134	D	823 software	**Description:** Cannot open device.
823-140	G	823	**Description:** The error log analysis indicates hardware failure.
823-141	D	823 925	**Description:** Unable to place mouse adapter in block mode.
823-142	D	823	**Description:** Unable to place mouse adapter in block mode.
823-220	D	B10 823	**Description:** The mouse adapter fuse failed.
824-099	J	824	**Description:** Tablet test failed.

824-220	D	B10 824	**Description:** The tablet adapter fuse failed.
824-331	D	824 227	**Description:** An unexpected error occurred.
824-332	D	824 227	**Description:** The enable/disable device test failed. **Note:** Ensure that the wrap plug was not attached when the test was run. If the wrap plug was attached, remove it, and rerun the test.
824-333	D	824	**Description:** The internal wrap test failed.
824-334	D	B10 824	**Description:** The tablet adapter fuse failed.
824-441	D	824	**Description:** An unexpected error occurred.
824-442	D	824	**Description:** The wrap test failed.
824-450	D	824 227	**Description:** Software error caused by hardware failure.
824-461	G	824 227	**Description:** The error log analysis indicates a hardware failure.
824-511	D	824	**Description:** An unexpected error occurred.
824-512	D	824	**Description:** Tablet adapter reset test failed.
824-522	D	B10 824	**Description:** Adapter fuse failure.
824-523	D	824	**Description:** Device cannot be configured.
824-524	D	824 software	**Description:** Cannot open device.
826-099	J	826	**Description:** The serial port 1 test failed.
826-111	D	826 227	**Description:** Cannot run the test because the device driver detected a hardware error.
826-112	D	826 227	**Description:** Unable to determine the type of adapter from the VPD.
826-113	D	826	**Description:** The VPD verification test failed.
826-114	D	826	**Description:** The register verification test failed.
826-121	D	826 227	**Description:** Cannot run the test because the device driver detected a hardware error.
826-122	D	826 227	**Description:** The data-wrap communications test failed.
826-123	D	826 227	**Description:** The modem control line test failed.
826-131	D	826 227	**Description:** Cannot run the test because the device driver detected a hardware error.
826-132	D	826 227	**Description:** The data wrap communications test failed.
826-133	D	826 227	**Description:** The modem control line test failed.
826-161	D	252	**Description:** Cannot run the test because the device driver detected a hardware error.
826-162	D	252	**Description:** The data wrap communications

			test failed.
826-163	D	252	**Description:** The modem control line test failed.
826-171	D	259	**Description:** Cannot run the test because the device driver detected a hardware error.
826-172	D	259	**Description:** The data wrap communications test failed.
826-173	D	259	**Description:** The modem control line test failed.
826-181	D	261	**Description:** Cannot run the test because the device driver detected a hardware error.
826-182	D	261	**Description:** The data wrap communications test failed.
826-183	D	261	**Description:** The modem control line test failed.
826-271	D	826 259	**Description:** Cannot run the test because the device driver detected a hardware error.
826-272	D	826 259	**Description:** The data wrap communications test failed.
826-273	D	826 259	**Description:** The modem control line test failed.
826-281	D	826 259	**Description:** Cannot run the test because the device driver detected a hardware error.
826-282	D	826 259	**Description:** The data wrap communications test failed.
826-283	D	826 259	**Description:** The modem control line test failed.
826-321	D	826	**Description:** Cannot run the test because the device driver detected a hardware error.
826-322	D	826	**Description:** The data wrap communications test failed.
826-323	D	826	**Description:** The modem control line test failed.
826-331	D	826	**Description:** Cannot run the test because the device driver detected a hardware error.
826-332	D	826	**Description:** The data wrap communications test failed.
826-333	D	826	**Description:** The modem control line test failed.
826-371	D	826	**Description:** Cannot run the test because the device driver detected a hardware error.
826-372	D	826	**Description:** The data wrap communications test failed.
826-373	D	826	**Description:** The modem control line test failed.
826-381	D	826	**Description:** Could not do the test because the device driver detected a hardware error.
826-382	D	826	**Description:** The data wrap communication test failed.
826-383	D	826	**Description:** The modem control line test failed.

826-481	D	D56	**Description:** Could not do the test because the device driver detected a hardware error.
826-482	D	D56	**Description:** The data wrap communication test failed.
826-483	D	D56	**Description:** The modem control line test failed.
826-581	D	826 D56	**Description:** Could not do the test because the device driver detected a hardware error.
826-582	D	826 D56	**Description:** The data wrap communication test failed.
826-583	D	826 D56	**Description:** The modem control line test failed.
826-9xx series	D	Software	**Description:** An unexpected error occurred that can be attributed to software or hardware. **Action:** Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 0210 with a FFC of 826; otherwise, suspect a software problem.
827-112	D	827 227	**Description:** The parallel port data register write/read test failed.
827-121	D	827	**Description:** Cannot run the test because the device driver detected a hardware error.
827-122	D	827	**Description:** The parallel port data register write/read test failed.
827-123	D	827	**Description:** The parallel port control register write/read test failed.
827-124	D	827	**Description:** The parallel port data register read test failed.
827-125	D	827	**Description:** The parallel port control register read test failed.
827-126	D	827	**Description:** The parallel port control register read test failed.
827-131	D	827	**Description:** Cannot run the test because the device driver detected a hardware error.
827-132	D	827	**Description:** The control port register direction bit (write) test with BIDI enabled failed.
827-133	D	827	**Description:** The control port register direction bit (read) test with BIDI enabled failed.
827-141	D	827	**Description:** Cannot run the test because the device driver detected a hardware error.
827-142	D	827	**Description:** The parallel port control register write/read test with BIDI enabled failed.
827-151	D	827 227	**Description:** Cannot run the test because the device driver detected a hardware error.
827-152	D	827	**Description:** The parallel port status register read test failed.
827-161	D	827	**Description:** Cannot run the test because the device driver detected a hardware error.

827-162	D	827 227	**Description:** The parallel port interrupt test failed.
827-163	D	827 227	**Description:** The parallel port interrupt test failed.
828-097	J	935 828	**Description:** Diskette drive not found.
828-098	J	935 828	**Description:** Diskette test failed.
828-099	J	828 935	**Description:** Diskette test failed.
828-501	D	828	**Description:** The diskette adapter test failed.
831-099	J	831	**Description:** Serial port 2 test failed.
831-111	D	831 227	**Description:** Cannot run the test because the device driver detected a hardware error.
831-112	D	831 227	**Description:** Unable to determine the type of adapter from the VPD.
831-113	D	831	**Description:** The VPD verification test failed.
831-114	D	831	**Description:** The register verification test failed.
831-121	D	831 227	**Description:** Cannot run the test because the device driver detected a hardware error.
831-122	D	831 227	**Description:** The data wrap communications test failed.
831-123	D	831 227	**Description:** The modem control line test failed.
831-131	D	831 227	**Description:** Cannot run the test because the device driver detected a hardware error.
831-132	D	831 227	**Description:** The data wrap communications test failed.
831-133	D	831 227	**Description:** The modem control line test failed.
831-161	D	252	**Description:** Cannot run the test because the device driver detected a hardware error.
831-162	D	252	**Description:** The data wrap communications test failed.
831-163	D	252	**Description:** The modem control line test failed.
831-164	D	227 252	**Description:** Cannot run the test because the device driver detected a hardware error.
831-165	D	227 252	**Description:** The data wrap communications test failed.
831-166	D	227 252	**Description:** The modem control line test failed.
831-171	D	259	**Description:** Cannot run the test because the device driver detected a hardware error.
831-172	D	259	**Description:** The data wrap communications test failed.
831-173	D	259	**Description:** The modem control line test failed.

831-181	D	261	**Description:** Cannot run the test because the device driver detected a hardware error.
831-182	D	261	**Description:** The data wrap communications test failed.
831-183	D	261	**Description:** The modem control line test failed.
831-271	D	831 259	**Description:** Cannot run the test because the device driver detected a hardware error.
831-272	D	831 259	**Description:** The data wrap communication test failed.
831-273	D	831 259	**Description:** The modem control line test failed.
831-281	D	831 259	**Description:** Cannot run the test because the device driver detected a hardware error.
831-282	D	831 259	**Description:** The data wrap communications test failed.
831-283	D	831 259	**Description:** The modem control line test failed.
831-321	D	831	**Description:** Cannot run the test because the device driver detected a hardware error.
831-322	D	831	**Description:** The data wrap communications test failed.
831-323	D	831	**Description:** The modem control line test failed.
831-331	D	831	**Description:** Cannot run the test because the device driver detected a hardware error.
831-332	D	831	**Description:** The data wrap communications test failed.
831-333	D	831	**Description:** The modem control line test failed.
831-371	D	831	**Description:** Cannot run the test because the device driver detected a hardware error.
831-372	D	831	**Description:** The data wrap communications test failed.
831-373	D	831	**Description:** The modem control line test failed.
831-381	D	831	**Description:** Cannot run the test because the device driver detected a hardware error.
831-382	D	831	**Description:** The data wrap communications test failed.
831-383	D	831	**Description:** The modem control line test failed.
831-481	D	D56	**Description:** Could not do the test because the device driver detected a hardware error.
831-482	D	D56	**Description:** The data wrap communication test failed.
831-483	D	D56	**Description:** The modem control line test failed.
831-581	D	831 D56	**Description:** Could not do the test because the device driver detected a hardware error.

831-582	D	831 D56	**Description:** The data wrap communication test failed.
831-583	D	831 D56	**Description:** The modem control line test failed.
831-9xx series	D	Software	**Description:** An unexpected error occurred that can be attributed to software or hardware. **Action:** Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 0210 with a FFC of 831; otherwise, suspect a software problem.
834-111	D	834 227	**Description:** Cannot run the test because the device driver detected a hardware error.
834-112	D	834 227	**Description:** Unable to determine the type of adapter from the VPD.
834-113	D	834	**Description:** The VPD verification test failed.
834-115	D	835	**Description:** The VPD verification test failed.
834-121	D	834	**Description:** Cannot run the test because the device driver detected a hardware error.
834-124	D	834	**Description:** The memory test failed.
834-131	D	834	**Description:** Cannot run the test because the device driver detected a hardware error.
834-132	D	834	**Description:** The data wrap communications test failed.
834-134	D	834	**Description:** The sync wrap communications test failed.
834-141	D	265	**Description:** Cannot run the test because the device driver detected a hardware error.
834-142	D	265	**Description:** The 64-port controller cable data wrap communication test failed.
834-144	D	265	**Description:** The sync wrap communications test failed.
834-151	D	835 834	**Description:** Cannot run the test because the device driver detected a hardware error.
834-152	D	835 834	**Description:** The data wrap communications test failed.
834-153	D	835 834	**Description:** The modem control line test failed.
834-161	D	266	**Description:** Cannot run the test because the device driver detected a hardware error.
834-162	D	266	**Description:** The data wrap communications test failed.
834-163	D	266	**Description:** The modem control line test failed.
834-171	D	259	**Description:** Cannot run the test because the device driver detected a hardware error.
834-172	D	259	**Description:** The data wrap communications test failed.
834-173	D	259	**Description:** The modem control line test

			failed.
834-181	D	261	**Description:** Cannot run the test because the device driver detected a hardware error.
834-182	D	261	**Description:** The data wrap communications test failed.
834-183	D	261	**Description:** The modem control line test failed.
834-231	D	834	**Description:** Cannot run the test because the device driver detected a hardware error.
834-234	D	834	**Description:** The sync wrap communications test failed.
834-241	D	834 265	**Description:** Cannot run the test because the device driver detected a hardware error.
834-244	D	834 265	**Description:** The sync wrap communications test failed.
834-251	D	834 835	**Description:** Cannot run the test because the device driver detected a hardware error.
834-252	D	834 835	**Description:** The data wrap communications test failed.
834-253	D	834 835	**Description:** The modem control line test failed.
834-271	D	834 835	**Description:** Cannot run the test because the device driver detected a hardware error.
834-272	D	834 835	**Description:** The data wrap communications test failed.
834-273	D	834 835	**Description:** The modem control line test failed.
834-281	D	834 835	**Description:** Cannot run the test because the device driver detected a hardware error.
834-282	D	834 835	**Description:** The data wrap communications test failed.
834-283	D	834 835	**Description:** The modem control line test failed.
834-481	D	D56	**Description:** Could not do the test because the device driver detected a hardware error.
834-482	D	D56	**Description:** The data wrap communication test failed.
834-483	D	D56	**Description:** The modem control line test failed.
834-990	D	834	**Description:** The AIX system IPL procedure has determined that 64-port controller adapters having a certain EC level may cause undetected data loss due to bus address conflict with another adapter on the I/O bus. When this conflict is detected, the 64-port controller adapter will *not* be configured during system IPL. The affected 64-port controller adapter FRU numbers are: 00G1168, 31F4078, 59F2968, and 53F3372. **Note:** For more detailed information on this SRN, refer to "Service Hints" in Chapter 1.
834-9xx series	D	Software	**Description:** An unexpected error occurred that can be attributed to software or hardware.

			Action: Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 0210 with a FFC of 834; otherwise, suspect a software problem.
836-101	D	836	**Description:** Cannot run the test because the device driver detected a hardware error.
836-111	D	836 227	**Description:** Cannot run test because the device driver detected a hardware error.
836-112	D	836 227	**Description:** Unable to determine the type of adapter from the VPD.
836-113	D	836	**Description:** The VPD verification test failed.
836-114	D	836	**Description:** The register verification test failed.
836-115	D	836	**Description:** The VPD verification test failed.
836-116	D	B54 836	**Description:** The 128-port controller line test failed.
836-118	D	837	**Description:** Remote async node test failed.
836-119	F	836	**Description:** Sync line termination test failed.
836-151	D	837	**Description:** Cannot run the test because the device driver detected a hardware error.
836-152	D	837	**Description:** The data wrap communications test failed.
836-153	D	837	**Description:** The modem control line test failed.
836-161	D	C22	**Description:** Cannot run the test because the device driver detected a hardware error.
836-162	D	C22	**Description:** The data wrap communications test failed.
836-163	D	C22	**Description:** The modem control line test failed.
836-164	D	D06	**Description:** The data wrap communication test failed.
836-171	D	259	**Description:** Cannot run the test because the device driver detected a hardware error.
836-172	D	259	**Description:** The data wrap communications test failed.
836-173	D	259	**Description:** The modem control line test failed.
836-181	D	261	**Description:** Cannot run the test because the device driver detected a hardware error.
836-182	D	261	**Description:** The data wrap communications test failed.
836-183	D	261	**Description:** The modem control line test failed.
836-251	D	836 837	**Description:** Cannot run the test because the device driver detected a hardware error.
836-252	D	836	**Description:** The data wrap communications

		837	test failed.
836-253	D	836 837	**Description:** The modem control line test failed.
836-271	D	836 837	**Description:** Cannot run the test because the device driver detected a hardware error.
836-272	D	836 837	**Description:** The data wrap communications test failed.
836-273	D	836 837	**Description:** The modem control line test failed.
836-281	D	836 837	**Description:** Cannot run the test because the device driver detected a hardware error.
836-282	D	836 837	**Description:** The data wrap communication test failed.
836-283	D	836 837	**Description:** The modem control line test failed.
836-481	D	D56	**Description:** Could not do the test because the device driver detected a hardware error.
836-482	D	D56	**Description:** The data wrap communication test failed.
836-483	D	D56	**Description:** The modem control line test failed.
836-9xx series	D	Software	**Description:** An unexpected error occurred that can be attributed to software or hardware. **Action:** Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 0210 with a FFC of 836; otherwise, suspect a software problem.
838-100	D	838 227	**Description:** Adapter diagnostic failure.
841-111	D	841 227	**Description:** Cannot run the test because the device driver detected a hardware error.
841-112	D	841 227	**Description:** Unable to determine the type of adapter from the VPD.
841-113	D	841	**Description:** The VPD verification test failed.
841-114	D	841	**Description:** The register verification test failed.
841-121	D	841 227	**Description:** Cannot run the test because the device driver detected a hardware error.
841-122	D	841 227	**Description:** The data wrap communications test failed.
841-123	D	841 227	**Description:** The modem control line test failed.
841-131	D	841	**Description:** Cannot run the test because the device driver detected a hardware error.
841-132	D	841	**Description:** The data wrap communications test failed.
841-133	D	841	**Description:** The modem control line test failed.
841-141	D	269	**Description:** Cannot run the test because the device driver detected a hardware

			error.
841-142	D	269	**Description:** Data wrap communications test failed.
841-143	D	269	**Description:** The modem control line test failed.
841-151	D	262 841	**Description:** Cannot run the test because the device driver detected a hardware error.
841-152	D	262 841	**Description:** Data wrap communications test failed.
841-153	D	262 841	**Description:** The modem control line test failed (does not apply to 8-port EIA 422 adapter).
841-171	D	259	**Description:** Cannot run the test because the device driver detected a hardware error.
841-172	D	259	**Description:** Data wrap communications test failed.
841-173	D	259	**Description:** The modem control line test failed.
841-181	D	261	**Description:** Cannot run the test because the device driver detected a hardware error.
841-182	D	261	**Description:** Data wrap communications test failed.
841-183	D	261	**Description:** The modem control line test failed.
841-241	D	841 269	**Description:** Cannot run the test because the device driver detected a hardware error.
841-242	D	841 269	**Description:** Data wrap communications test failed.
841-243	D	841 269	**Description:** The modem control line test failed.
841-251	D	841 262	**Description:** Cannot run the test because the device driver detected a hardware error.
841-252	D	841 262	**Description:** Data wrap communications test failed.
841-253	D	841 262	**Description:** The modem control line test failed (does not apply to 8-port EIA 422 adapter).
841-271	D	841 262	**Description:** Cannot run the test because the device driver detected a hardware error.
841-272	D	841 262	**Description:** Data wrap communications test failed.
841-273	D	841 262	**Description:** The modem control line test failed.
841-281	D	841 262	**Description:** Cannot run the test because the device driver detected a hardware error.
841-282	D	841 262	**Description:** Data wrap communications test failed.
841-283	D	841 262	**Description:** The modem control line test failed.
841-481	D	D56	**Description:** Could not do the test because the device driver detected a hardware error.

841-482	D	D56	**Description:** The data wrap communication test failed.
841-483	D	D56	**Description:** The modem control line test failed.
841-9xx series	D	Software	**Description:** xpected error occurred that can be attributed to software or hardware. **Action:** Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 0210 with a FFC of 841; otherwise, suspect a software problem.
842-111	D	842 227	**Description:** Cannot run the test because the device driver detected a hardware error.
842-112	D	842 227	**Description:** Unable to determine the type of adapter from the VPD.
842-113	D	842	**Description:** The VPD verification test failed.
842-114	D	842	**Description:** The register verification test failed.
842-121	D	842 227	**Description:** Cannot run the test because the device driver detected a hardware error.
842-122	D	842 227	**Description:** Data wrap communications test failed.
842-123	D	842 227	**Description:** The modem control line test failed.
842-131	D	842	**Description:** Cannot run the test because the device driver detected a hardware error.
842-132	D	842	**Description:** Data wrap communications test failed.
842-141	D	269	**Description:** Cannot run the test because the device driver detected a hardware error.
842-142	D	269	**Description:** Data wrap communications test failed.
842-151	D	262 842	**Description:** Cannot run the test because the device driver detected a hardware error.
842-152	D	262 842	**Description:** Data wrap communications test failed.
842-171	D	263	**Description:** Cannot run the test because the device driver detected a hardware error.
842-172	D	263	**Description:** The data wrap communications test failed.
842-241	D	842 269	**Description:** Cannot run the test because the device driver detected a hardware error.
842-242	D	842 269	**Description:** Data wrap communications test failed.
842-251	D	842 262	**Description:** Cannot run the test because the device driver detected a hardware error.
842-252	D	842 262	**Description:** Data wrap communications test failed.
842-271	D	842 262	**Description:** Cannot run the test because the device driver detected a hardware error.

842-272	D	842 262	**Description:** Data wrap communications test failed.
842-9xx series	D	Software	**Description:** An unexpected error occurred that can be attributed to software or hardware. **Action:** Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 0210 with a FFC of 842; otherwise, suspect a software problem.
843-111	D	843 227	**Description:** Cannot run the test because the device driver detected a hardware error.
843-112	D	843 227	**Description:** Unable to determine the type of adapter from the VPD.
843-113	D	843	**Description:** The VPD verification test failed.
843-114	D	843	**Description:** The register verification test failed.
843-121	D	843 227	**Description:** Cannot run the test because the device driver detected a hardware error.
843-122	D	843 227	**Description:** Data wrap communications test failed.
843-123	D	843 227	**Description:** The modem control line test failed.
843-131	D	843	**Description:** Cannot run the test because the device driver detected a hardware error.
843-132	D	843	**Description:** Data wrap communications test failed.
843-133	D	843	**Description:** The modem control line test failed.
843-141	D	269	**Description:** Cannot run the test because the device driver detected a hardware error.
843-142	D	269	**Description:** Data wrap communications test failed.
843-143	D	269	**Description:** The modem control line test failed.
843-151	D	262 843	**Description:** Cannot run the test because the device driver detected a hardware error.
843-152	D	262 843	**Description:** Data wrap communications test failed.
843-153	D	262 843	**Description:** The modem control line test failed (does not apply to 8-port EIA 422 adapter).
843-171	D	259	**Description:** Cannot run the test because the device driver detected a hardware error.
843-172	D	259	**Description:** Data wrap communications test failed.
843-173	D	259	**Description:** The modem control line test failed.
843-181	D	261	**Description:** Cannot run the test because the device driver detected a hardware error.
843-182	D	261	**Description:** Data wrap communications test

			failed.
843-183	D	261	**Description:** The modem control line test failed.
843-241	D	843 269	**Description:** Cannot run the test because the device driver detected a hardware error.
843-242	D	843 269	**Description:** Data wrap communications test failed.
843-243	D	843 269	**Description:** The modem control line test failed.
843-251	D	843 262	**Description:** Cannot run the test because the device driver detected a hardware error.
843-252	D	843 262	**Description:** Data wrap communications test failed.
843-253	D	843 262	**Description:** The modem control line test failed (does not apply to 8-port EIA 422 adapter).
843-271	D	843 262	**Description:** Cannot run the test because the device driver detected a hardware error.
843-272	D	843 262	**Description:** Data wrap communications test failed.
843-273	D	843 262	**Description:** The modem control line test failed.
843-281	D	843 262	**Description:** Cannot run the test because the device driver detected a hardware error.
843-282	D	843 262	**Description:** Data wrap communications test failed.
843-283	D	843 262	**Description:** The modem control line test failed.
843-481	D	D56	**Description:** Could not do the test because the device driver detected a hardware error.
843-482	D	D56	**Description:** The data wrap communication test failed.
843-483	D	D56	**Description:** The modem control line test failed.
843-9xx series	D	Software	**Description:** An unexpected error occurred that can be attributed to software or hardware. **Action:** Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 0210 with a FFC of 843; otherwise, suspect a software problem.
844-XXX series	D	844	**Description:** A 7135 controller problem is indicated. **Action:** Use 7135 documentation.
845-XXX series	D	845	**Description:** A 7135 DASD drawer problem is indicated. **Action:** Use 7135 documentation.
846-XXX series	D	846	**Description:** A 7135 DASD drawer problem is indicated. **Action:** Use 7135 documentation.
847-111	D	847 227	**Description:** Cannot run the test because the device driver detected a hardware error.
847-112	D	847	**Description:** Unable to determine the type

		227	of adapter from the VPD.
847-113	D	847	**Description:** The VPD verification test failed.
847-114	D	847	**Description:** The register verification test failed.
847-121	D	847 227	**Description:** Cannot run the test because the device driver detected a hardware error.
847-122	D	847 227	**Description:** Data wrap communications test failed.
847-123	D	847 227	**Description:** The modem control line test failed.
847-131	D	847	**Description:** Cannot run the test because the device driver detected a hardware error.
847-132	D	847	**Description:** Data wrap communications test failed.
847-133	D	847	**Description:** The modem control line test failed.
847-141	D	269	**Description:** Cannot run the test because the device driver detected a hardware error.
847-142	D	269	**Description:** Data wrap communications test failed.
847-143	D	269	**Description:** The modem control line test failed.
847-151	D	291 847	**Description:** Cannot run the test because the device driver detected a hardware error.
847-152	D	291 847	**Description:** Data wrap communications test failed.
847-153	D	291 847	**Description:** The modem control line test failed.
847-171	D	263	**Description:** Cannot run the test because the device driver detected a hardware error.
847-172	D	263	**Description:** Data wrap communications test failed.
847-173	D	263	**Description:** The modem control line test failed.
847-181	D	261	**Description:** Cannot run the test because the device driver detected a hardware error.
847-182	D	261	**Description:** Data wrap communications test failed.
847-183	D	261	**Description:** The modem control line test failed.
847-241	D	847 269	**Description:** Cannot run the test because the device driver detected a hardware error.
847-242	D	847 269	**Description:** Data wrap communications test failed.
847-243	D	847 269	**Description:** The modem control line test failed.
847-251	D	847 291	**Description:** Cannot run the test because the device driver detected a hardware error.
847-252	D	847 291	**Description:** Data wrap communications test failed.

847-253	D	847 291	**Description:** The modem control line test failed.
847-271	D	847 291	**Description:** Cannot run the test because the device driver detected a hardware error.
847-272	D	847 291	**Description:** Data wrap communications test failed.
847-273	D	847 291	**Description:** The modem control line test failed.
847-281	D	847 291	**Description:** Cannot run the test because the device driver detected a hardware error.
847-282	D	847 291	**Description:** Data wrap communications test failed.
847-283	D	847 291	**Description:** The modem control line test failed.
847-481	D	D56	**Description:** Could not do the test because the device driver detected a hardware error.
847-482	D	D56	**Description:** The data wrap communication test failed.
847-483	D	D56	**Description:** The modem control line test failed.
847-9xx series	D	Software	**Description:** An unexpected error occurred that can be attributed to software or hardware. **Action:** Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 0210 with a FFC of 847; otherwise, suspect a software problem.
848-111	D	848 227	**Description:** Cannot run the test because the device driver detected a hardware error.
848-112	D	848 227	**Description:** Unable to determine the type of adapter from the VPD.
848-113	D	848	**Description:** The VPD verification test failed.
848-114	D	848	**Description:** The register verification test failed.
848-121	D	848 227	**Description:** Cannot run the test because the device driver detected a hardware error.
848-122	D	848 227	**Description:** Data wrap communications test failed.
848-123	D	848 227	**Description:** The modem control line test failed.
848-131	D	848	**Description:** Cannot run the test because the device driver detected a hardware error.
848-132	D	848	**Description:** Data wrap communications test failed.
848-141	D	269	**Description:** Cannot run the test because the device driver detected a hardware error.
848-142	D	269	**Description:** Data wrap communications test failed.
848-151	D	290 848	**Description:** Cannot run the test because the device driver detected a hardware

			error.
848-152	D	290 848	**Description:** Data wrap communications test failed.
848-171	D	263	**Description:** Cannot run the test because the device driver detected a hardware error.
848-172	D	263	**Description:** Data wrap communications test failed.
848-241	D	848 269	**Description:** Cannot run the test because the device driver detected a hardware error.
848-242	D	848 269	**Description:** Data wrap communications test failed.
848-251	D	848 290	**Description:** Cannot run the test because the device driver detected a hardware error.
848-252	D	848 290	**Description:** Data wrap communications test failed.
848-271	D	848 290	**Description:** Cannot run the test because the device driver detected a hardware error.
848-272	D	848 290	**Description:** Data wrap communications test failed.
848-9xx series	D	Software	**Description:** An unexpected error occurred that can be attributed to software or hardware. **Action:** Run diagnostics from a source other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 0210 with a FFC of 848; otherwise, suspect a software problem.
849-101	D	849 227	**Description:** Adapter logic test failure.
849-102	D	849	**Description:** Adapter logic test failure.
849-109	D	849	**Description:** Adapter channel Input/Output test failure.
849-113	D	849	**Description:** Adapter Serial Communication Controller (SCC) test failure.
849-114	D	849 227	**Description:** Adapter logic test failure.
849-140	D	271 849	**Description:** An error was found with the X.21 interface adapter cable.
849-150	D	272 849	**Description:** An error was found with the X.24 interface adapter cable.
849-160	D	273 849	**Description:** An error was found with the X.35 interface adapter cable.
849-170	D	849	**Description:** The adapter hardware failed.
849-180	D	849	**Description:** The adapter hardware failed.
849-190	D	849	**Description:** The adapter hardware failed.
849-210	D	849 185	**Description:** An error was found on the adapter.
849-211	D	849 227	**Description:** The adapter card POST test failed.
849-230	D	849	**Description:** The adapter card hardware failed.
849-240	D	849	**Description:** The adapter card hardware failed.

849-250	D	185 849	**Description:** An error was found on the adapter.
849-260	D	849	**Description:** The adapter card hardware failed.
849-270	D	849	**Description:** The adapter card hardware failed.
849-280	D	849	**Description:** The adapter card hardware failed.
849-290	D	849	**Description:** The adapter card hardware failed.
849-300	G	849	**Description:** An adapter error was found during error log analysis.
849-310	G	849 185	**Description:** An adapter error was found during error log analysis.
849-320	G	849 227	**Description:** An adapter error was found during error log analysis.
849-330	G	849 227	**Description:** Error log analysis indicates a hardware problem.
849-400	D	849 227	**Description:** A software error was caused by a hardware failure.
849-501	D	B67/B68 B60/B61	**Description:** Low address memory SIMM failed. **Note:** You must determine which FRU among the listed FRU pairs is applicable. The low address SIMM is the SIMM closest to the bottom edge of the card. B67 applies to the 512K-byte card, and B68 applies to the1M-byte card.
849-502	D	B67/B68 B60/B61	**Description:** High address memory SIMM failed. **Note:** You must determine which FRU among the listed FRU pairs is applicable. The high address SIMM is the SIMM closest to the top edge of the card. B67 applies to the 512K-byte card, and B68 applies to the1M-byte card.
849-503	D	B60/B61 227	**Description:** Adapter hardware failed. **Note:** You must determine whether B60 or B61 is applicable.
849-504	D	B60/B61	**Description:** Adapter hardware failed. **Note:** You must determine whether B60 or B61 is applicable.
849-511	D	B62 B60/B61	**Description:** Adapter hardware failed. **Note:** You must determine whether B60 or B61 is applicable.
849-512	D	B63 B60/B61	**Description:** Adapter hardware failed. **Note:** You must determine whether B60 or B61 is applicable.
849-513	D	B64 B60/B61	**Description:** Adapter hardware failed. **Note:** You must determine whether B60 or B61 is applicable.
849-514	D	B65 B60/B61	**Description:** Adapter hardware failed. **Note:** You must determine whether B60 or B61 is applicable.
849-515	D	B66 B60/B61	**Description:** Adapter hardware failed. **Note:** You must determine whether B60 or B61 is applicable.
849-516	D	B79	**Description:** Multiport/2 interface cable failed.
849-517	D	B80	**Description:** Synchronous interface cable failed.
849-551	D	B67/B68	**Description:** Low address memory SIMM

		B60/B61	failed. **Note:** You must determine which FRU of the listed FRU pair is applicable. The low address SIMM is the SIMM closest to the bottom edge of the card. B67 applies to the 512K-byte card, and B68 applies to the1M-byte card.
849-552	D	B67/B68 B60/B61	**Description:** High address memory SIMM failed. **Note:** You must determine which FRU of the listed FRU pair is applicable. The high address SIMM is the SIMM closest to the top edge of the card. B67 applies to the 512 K-byte card, and B68 applies to the 1M-byte card.
849-700	D	849 227 software	**Description:** The adapter failed to configure.
849-710	D	B69 227 software	**Description:** The device driver open failed.
849-720	D	D10 849	**Description:** Cable wrap test failed.
849-721	D	D10 849	**Description:** Port wrap test failed.
849-722	D	D10 849	**Description:** Cable wrap test failed.
850-098	J	850 256 B41 227	**Description:** The open test failed.
850-099	J	850 256 240 B41 227	**Description:** The open test failed.
850-710	D	850	**Description:** The adapter open test failed at ring speed 4M bytes.
850-711	D	850 227	**Description:** The adapter open test failed at ring speed 4M bytes.
850-712	D	850	**Description:** The adapter open test failed at ring speed 4M bytes.
850-713	D	850	**Description:** The adapter open test failed at ring speed 4M bytes.
850-714	F	240 850 256	**Description:** The adapter open test failed at ring speed 4M bytes.
850-715	D	850 256	**Description:** The adapter open test failed at ring speed 4M bytes.
850-716	F	240 850	**Description:** The adapter open test failed at ring speed 4M bytes.
850-717	D	850	**Description:** The adapter open test failed at ring speed 4M bytes.
850-720	D	850	**Description:** The wrap data test failed at ring speed 4M bytes.
850-721	D	850	**Description:** The wrap data test failed at ring speed 4M bytes.
850-722	D	850	**Description:** The wrap data test failed at ring speed 4M bytes.
850-770	D	850 227	**Description:** Unable to set ring speed to 4M bytes.
850-810	D	850	**Description:** The adapter open test failed at ring speed 16M bytes.

850-811	D	850 227	**Description:** The adapter open test failed at ring speed 16M bytes.
850-812	D	850	**Description:** The adapter open test failed at ring speed 16M bytes.
850-813	D	850	**Description:** apter open test failed at ring speed 16M bytes.
850-814	F	240 850 256	**Description:** The adapter open test failed at ring speed 16M bytes.
850-815	D	850 256	**Description:** The adapter open test failed at ring speed 16M bytes.
850-816	F	240 850	**Description:** The adapter open test failed at ring speed 16M bytes.
850-817	D	850	**Description:** The adapter open test failed at ring speed 16M bytes.
850-820	D	850	**Description:** The wrap data test failed at ring speed 16M bytes.
850-821	D	850	**Description:** The wrap data test failed at ring speed 16M bytes.
850-822	D	850	**Description:** The wrap data test failed at ring speed 16M bytes.
850-880	D	850	**Description:** Unable to set ring speed to16M bytes.
850-900	D	850 227	**Description:** A software error was caused by a hardware failure.
850-901	G	850	**Description:** Analysis of the error log indicates a problem with the hardware.
850-902	G	850 227	**Description:** Analysis of the error log indicates a problem with the hardware.
850-903	G	850 256	**Description:** Analysis of the error log indicates a problem with the hardware.
850-904	G	850	**Description:** Analysis of the error log indicates a problem with the hardware.
850-905	D	850 227 software	**Description:** The device failed to configure.
850-906	D	850 227	**Description:** The device failed to configure.
850-910	D	850	**Description:** An unidentified error occurred.
850-920	D		**Description:** The operating system IPL procedure has determined that the location of certain Token-Ring adapters relative to the slot location of graphic accelerator adapters presents a risk of undetected data loss under rare circumstances. This problem may occur with the following Token-Ring adapters: 74F4134, 53F6052, 53F6046, 53F6064, and 39F7824. **Action:** Refer to "Service Hints" on page 1-1.
851-101	D	851 227	**Description:** Adapter power-on self-test failed.
851-102	D	851 227	**Description:** Adapter vital product data (VPD) test failed.
851-103	D	851 227	**Description:** General registers test failed.
851-104	D	851 227	**Description:** Adapter download diagnostics failed.

851-105	D	851 227	**Description:** Adapter interrupt test failed.
851-106	D	851 227	**Description:** Adapter CPU test failed.
851-107	D	851 227	**Description:** Adapter DRAM test failed.
851-108	D	851 227	**Description:** Adapter test failed.
851-109	D	851	**Description:** Adapter channel input/output test failed.
851-110	D	851	**Description:** Adapter download diagnostics test failed.
851-111	D	851	**Description:** Adapter download diagnostics test failed.
851-112	D	C19	**Description:** Cable wrap test failed.
851-113	D	851	**Description:** Adapter serial communication controller (SCC) test failed.
851-150	D	851 software 227	**Description:** Device configuration failed.
851-151	D	851 software 227	**Description:** Device driver indicates a hardware failure.
851-152	D	851 or C18	**Description:** Adapter failure and error in determining which type of adapter is present.
851-401	D	C18 227	**Description:** Adapter power-on self-test failed.
851-402	D	C18 227	**Description:** Adapter vital product data (VPD) test failed.
851-403	D	C18 227	**Description:** General registers test failed.
851-404	D	C18 227	**Description:** Adapter download diagnostics failed.
851-405	D	C18 227	**Description:** Adapter interrupt test failed.
851-406	D	C18 227	**Description:** Adapter CPU test failed.
851-407	D	C18 227	**Description:** Adapter DRAM test failed.
851-408	D	C18	**Description:** Adapter test failed.
851-409	D	C18	**Description:** Adapter channel input/output test failed.
851-410	D	C18	**Description:** Adapter download diagnostics test failed.
851-411	D	C18	**Description:** Adapter download diagnostics test failed.
851-412	D	C20	**Description:** Cable test failed.
851-450	D	C18 227 software	**Description:** Device configuration failed.
852-096	J	852 227	**Description:** The Ethernet GA test wrap failed.
852-097	J	852 227	**Description:** The Ethernet external wrap failed.
852-099	J	852 227	**Description:** The Ethernet parameter test failed.

852-101	D	852	**Description:** POS register test failed.
852-110	D	852 227	**Description:** The POS register test failed.
852-117	D	852 Software	**Description:** Device configuration test failed.
852-120	D	852 227	**Description:** The hard reset test failed.
852-121	D	C08	**Description:** 10Base-T Transceiver test failed.
852-122	D	C09	**Description:** 10Base-2 Transceiver test failed.
852-124	D	852 Software	**Description:** Error log analysis indicates a hardware problem.
852-130	D	852	**Description:** The shared memory test failed.
852-140	D	852	**Description:** The I/O registers test failed.
852-150	D	852	**Description:** The vital product data test failed.
852-160	D	852 227	**Description:** The internal loopback test failed.
852-170	D	852	**Description:** The external loopback (DIX connector) test failed.
852-180	D	852	**Description:** The external loopback (BNC connector) test failed.
852-202	D	852	**Description:** Vital Product Data test failed.
852-203	D	852	**Description:** I/O Register test failed.
852-304	D	852	**Description:** LAN coprocessor 82596 internal test failed.
852-305	D	852	**Description:** Internal Loopback test failed.
852-306	D	852	**Description:** Internal Loopback test failed.
852-307	D	852	**Description:** External Loopback test failed.
852-319	D	852 Software	**Description:** Device driver indicates a hardware problem.
852-402	D	B09 852	**Description:** 10Base-2 Transceiver test failed.
852-403	D	B08 852	**Description:** 10Base-T Transceiver test failed.
852-900	D	852 227	**Description:** A software error was caused by a hardware failure.
852-901	G	852	**Description:** Analysis of the error log indicates a problem with the hardware.
852-902	G	852 227	**Description:** Analysis of the error log indicates a problem with the hardware.
852-903	G	852 227	**Description:** Analysis of the error log indicates a problem with the hardware.
852-904	G	852 241	**Description:** Analysis of the error log indicates a problem with the hardware.
852-905	D	852 227 software	**Description:** The device driver indicates a hardware failure.

852-906	D	852 227	**Description:** The device failed to configure.
852-907	D	B08	**Description:** The transceiver test failed.
852-908	D	B09	**Description:** The transceiver test failed.
854-110	D	854 227	**Description:** The adapter register test failed.
854-120	D	854	**Description:** The adapter RAM test failed.
854-130	D	854	**Description:** The adapter interrupt test failed.
854-140	D	854	**Description:** The adapter mode test failed.
854-150	D	854 242	**Description:** The connection test failed. (The user indicated that the connection was supposed to be operational.)
854-900	D	854 227	**Description:** A software error was caused by a hardware failure.
854-901	D	854 227 software	**Description:** The device failed to configure.
854-902	D	854 227	**Description:** The device failed to configure.
855-101	D	855 227 186	**Description:** ROS POST adapter software initialization error.
855-102	D	855	**Description:** Extended DRAM SIP test failed.
855-103	D	855	**Description:** ROS checksum test failed.
855-104	D	855	**Description:** Busmaster DMA test failed.
855-105	D	855	**Description:** Memory size test failed.
855-106	D	855 186	**Description:** Interface ID test failed.
855-107	D	855 186	**Description:** EIB ID test failed.
855-108	D	855	**Description:** ROS version test failed.
855-109	D	186 855	**Description:** DUSCC register test failed.
855-110	D	186	**Description:** CIO register test failed.
855-111	D	855	**Description:** DMA register test failed.
855-112	D	186 855	**Description:** X.21 PAL test failed.
855-113	D	186 855	**Description:** External wrap test failed.
855-114	D	186 855	**Description:** Twin tail logic test failed.
855-115	D	258 186	**Description:** Fanout box wrap test failed.
855-116	D	254	**Description:** The RS-232 cable wrap test failed.
855-117	D	253	**Description:** The RS-422A cable wrap test failed.
855-118	D	257	**Description:** The V.35 cable wrap test failed.
855-119	D	260	**Description:** The X.21 cable wrap test failed.
855-120	D	267	**Description:** The 4-port jumper cable

			assembly wrap test failed.
855-121	D	186 855 267	**Description:** The 4-port jumper cable assembly wrap test failed.
855-200	G	855	**Description:** The error log analysis indicates the adapter failed.
855-201	D	855 227	**Description:** A software error was caused by a hardware failure.
855-221	G	855 227	**Description:** The error log analysis indicates the adapter hardware failed.
855-300	D	855 227	**Description:** The device failed to configure.
855-500	D	B69 227 B71	**Description:** Power-on self-test (POST) failed.
855-501	D	B77/B78 B69 227	**Description:** The power-on self-test (POST) failed. **Note:** You must determine which FRU of the listed FRU pair is applicable. B77 applies to the 1M-byte card, and B78 applies to the 2M-byte card.
855-502	D	B77/B78	**Description:** The memory module failed. **Note:** You must determine which FRU of the listed FRU pair is applicable.B77 applies to the 1M-byte card, and B78 applies to the 2M-byte card.
855-503	D	855 227	**Description:** Adapter hardware failure.
855-504	D	B69	**Description:** Adapter hardware failure.
855-505	D	B71 B69	**Description:** Adapter hardware failure.
855-506	D	B72 B69	**Description:** Adapter hardware failure.
855-507	D	B73 B69	**Description:** Adapter hardware failure.
855-508	D	B74 B69	**Description:** Adapter hardware failure.
855-509	D	B81	**Description:** 8-port cable test failed.
855-510	D	B82	**Description:** 6-port V.35 cable test failed.
855-511	D	B83	**Description:** 6-port X.21 cable test failed.
855-512	D	B69 227 B71	**Description:** Power-on self-test (POST) failed.
855-513	D	B69 227 B72	**Description:** Power-on self-test (POST) failed.
855-514	D	B69 227 B73	**Description:** Power-on self-test (POST) failed.
855-515	D	B69 227 B74	**Description:** Power-on self-test (POST) failed.
855-516	D	B77/B78 B69	**Description:** Adapter Test Failure **Note:** You must determine which FRU of the listed FRU pair is applicable. B77 applies to the 1MB card, and B78 applies to the 2MB card.
855-517	D	B69 B77/B78	**Description:** Adapter Test Failure **Note:** You must determine which FRU of the

			listed FRU pair is applicable. B77 applies to the 1MB card, and B78 applies to the 2MB card.
855-700	D	B69 227 software	**Description:** The adapter failed to configure.
855-710	D	B69 227 software	**Description:** The device driver open failed.
855-720	D	D10 849	**Description:** Cable wrap test failed.
855-721	D	D10 849	**Description:** Port wrap test failed.
858-101	D	858	**Description:** The POS test failed.
858-102	D	858	**Description:** The POS test failed.
858-103	D	858	**Decscription:** The POS MEM is loaded incorrectly.
858-104	D	858	**Description:** The POS M code did not start.
858-105	D	858	**Description:** The POS test failed.
858-106	D	858	**Description:** The POS test failed.
858-107	D	858	**Description:** The POS test failed.
858-108	D	858	**Description:** The POS test failed.
858-109	D	858	**Description:** The POS test failed.
858-110	D	858	**Description:** The POS test failed.
858-111	D	858	**Description:** The POS test failed.
858-112	D	858	**Description:** The POS test failed.
858-113	D	858	**Description:** The POS test failed.
858-114	D	858	**Description:** The POS test failed.
858-115	D	858	**Description:** The POS test failed.
858-116	D	858	**Description:** The POS test failed.
858-117	D	858	**Description:** The POS test failed.
858-118	D	858 227	**Description:** The memory test failed (byte transfer).
858-119	D	858 227	**Description:** The memory test failed (word transfer).
858-120	D	858 227	**Description:** The memory test failed (long word transfer).
858-121	D	858 227	**Description:** The memory test failed (long word transfer).
858-122	D	858	**Description:** The register test failed.
858-123	D	858	**Description:** The register test failed.
858-124	D	858	**Description:** The register test failed.
858-125	D	858	**Description:** The register test failed.
858-126	D	858	**Description:** The register test failed.
858-127	D	858	**Description:** The register test failed.
858-128	D	858	**Description:** The hardware test failed.
858-129	D	858	**Description:** The 68k instruction set test failed.
858-130	D	858	**Description:** The 68k instruction set test failed.

858-131	D	858	**Description:** The 68k instruction set test failed.
858-132	D	858	**Description:** The RAM test failed.
858-133	D	858	**Description:** The RAM test failed.
858-134	D	858	**Description:** The RAM test failed.
858-135	D	858	**Description:** The RAM test failed.
858-136	D	858	**Description:** The RAM test failed.
858-137	D	858	**Description:** The RAM test failed.
858-138	D	858	**Description:** The RAM test failed.
858-139	D	858	**Description:** The TRAP test failed.
858-140	D	858	**Description:** The TRAP test failed.
858-141	D	858	**Description:** The timer test failed.
858-142	D	858	**Description:** The timer test failed.
858-143	D	858	**Description:** The timer test failed.
858-144	D	858	**Description:** The timer test failed.
858-145	D	858	**Description:** The timer test failed.
858-146	D	858	**Description:** The MTOS interrupt failed.
858-147	D	858	**Description:** The MTOS interrupt failed.
858-148	D	858	**Description:** The hardware test failed.
858-149	D	858	**Description:** The hardware test failed.
858-150	D	858	**Description:** The hardware test failed.
858-151	D	858	**Description:** The SDLC wrap test failed.
858-152	D	858	**Description:** The SDLC wrap test failed.
858-153	D	858	**Description:** The SDLC wrap test failed.
858-154	D	858	**Description:** The SDLC wrap test failed.
858-155	D	858	**Description:** The SDLC wrap test failed.
858-156	D	858	**Description:** The SDLC wrap test failed.
858-157	D	858	**Description:** The modem wrap test failed.
858-158	D	858	**Description:** The modem wrap test failed.
858-159	D	858	**Description:** The modem wrap test failed.
858-160	D	858 227	**Description:** The DMA test for the 5080 adapter failed.
858-161	D	858 227	**Description:** The DMA test for the 5080 adapter failed.
858-162	D	858 227	**Description:** The DMA test for the 5080 adapter failed.
858-163	D	858 227	**Description:** The DMA test for the 5080 adapter failed.
858-164	D	858 227	**Description:** The interrupt test failed.
858-165	D	858 227	**Description:** The interrupt test failed.
858-166	D	858 227	**Description:** The interrupt test failed.
858-167	D	858 227	**Description:** The interrupt test failed.

858-168	D	858 227	**Description:** The interrupt test failed.
858-169	D	858 227	**Description:** The interrupt test failed.
858-170	D	858 227	**Description:** The interrupt test failed.
858-171	D	858 227	**Description:** The interrupt test failed.
858-172	G	858 227	**Description:** A hardware error was logged by the device driver.
858-173	G	858 227	**Description:** A hardware error was logged by the device driver.
858-174	G	858	**Description:** A hardware error was logged by the device driver.
858-175	G	858	**Description:** A hardware error was logged by the device driver.
859-098	J	B14 859 227 B45	**Description:** The FDDI test failed.
859-099	J	859 227	**Description:** The FDDI test failed.
859-101	D	859 227	**Description:** Cannot place adapter in diagnostics mode.
859-102	D	859 227	**Description:** Cannot place adapter in normal mode.
859-103	D	859	**Description:** Cannot place adapter in online diagnostics mode.
859-104	D	859	**Description:** Cannot release adapter from online diagnostics mode.
859-106	D	859 227	**Description:** Serial Interface Register failure.
859-107	D	859	**Description:** Adapter shared RAM failure.
859-108	D	859 227	**Description:** One transfer adapter RAM buffer failure.
859-109	D	859	**Description:** Two transfers adapter RAM buffer failure.
859-110	D	859	**Description:** Three transfers adapter RAM buffer failure.
859-111	D	859	**Description:** One transfer adapter node processor bus data store failure.
859-112	D	859	**Description:** Two transfers adapter node processor bus data store failure.
859-113	D	859	**Description:** Three transfers adapter node processor bus data store failure.
859-114	D	859	**Description:** One transfer adapter node processor bus data store failure.
859-115	D	859	**Description:** Two transfers adapter node processor bus data store failure.
859-116	D	859	**Description:** Three transfers adapter node processor bus data store failure.
859-117	D	859	**Description:** Primary card data wrap failure.
859-118	D	859	**Description:** Download microcode failure.
859-121	D	859	**Description:** Download diagnostics microcode failure.

859-122	D	859	**Description:** Node processor instruction test failure.
859-123	D	859	**Description:** Interface test failure.
859-124	D	859	**Description:** VPD CRC test failure.
859-125	D	859	**Description:** Node processor data memory test failure.
859-126	D	859	**Description:** Logic interface test failure.
859-127	D	859	**Description:** Interface test failure.
859-128	D	859	**Description:** Data path test failure.
859-129	D	859	**Description:** Class B data path failure.
859-130	D	B14 859 B15	**Description:** Class A data path failure.
859-131	D	859	**Description:** Operational microcode CRC test failure.
859-132	D	B14 B15	**Description:** Extender card VPD CRC test failure.
859-133	D	B14	**Description:** Extender card wrap data test failure.
859-134	G	859 B14 227 software	**Description:** Device driver indicates a hardware problem.
859-135	D	B14	**Description:** Extender card VPD CRC test failure.
859-137	D	859 B14 B15	**Description:** AMD interface chip failure.
859-150	D	859 B14 227 software	**Description:** Device configuration failure.
859-151	D	859 227	**Description:** Device driver indicates a hardware problem.
859-170	D	859	**Description:** An error occurred while running diagnostics. **Action:** This SRN may occur with early versions of the adapter; refer to RETAIN to obtain an ECA number for part replacement.
859-180	D	859 B14 B15	**Description:** An error occurred while running diagnostics. **Action:** This SRN may occur with early versions of the adapter; refer to RETAIN to obtain an ECA number for part replacement.
85c-098	J	85c 256 B41 227	**Description:** The Token-Ring adapter test failed.
85c-099	J	85c 256 240 B41 227	**Description:** The Token-Ring adapter test failed.
85c-101	D	85c 227	**Description:** Program Option Select (POS) register test failure.
85c-102	D	85c 227	**Description:** Input/Output (I/O) register test failure.
85c-103	D	85c 227	**Description:** Adapter self-test failure.

85c-104	D	85c 227	**Description:** Token-ring cable test failure.
85c-105	D	85c 227	**Description:** Token-ring cable wrap failure.
85c-106	D	85c 227 D46	**Description:** Token-ring cable wrap failure.
85c-107	D	85c 227 D46	**Description:** Network Initialization test failure.
85c-200	D	85c 227	**Description:** Error log analysis indicates hardware failure.
85c-300	D	85c 227	**Description:** The device driver indicates a hardware failure.
85c-500	D	85c 227 Software	**Description:** Device driver failure.
861-101	D	861 215	**Description:** Buffer access mode test failed.
861-103	D	215	**Description:** The buffer access mode test failed.
861-201	D	861 215	**Description:** Serial Link Adapter internal wrap test failed.
861-301	D	861 215	**Description:** Internal wrap test failed.
861-401	D	861	**Description:** Port wrap test failed.
861-501	D	861 215 software	**Description:** Device driver cannot be configured.
861-601	D	861 software	**Description:** Device driver cannot be configured.
861-701	D	861 215	**Description:** The device driver indicates a hardware failure.
861-801	D	861 215	**Description:** The device driver indicates a hardware failure.
861-901 and 861-902	G	215	**Description:** Error log analysis indicates a hardware failure.
861-903 to 861-905	G	861 cable	**Description:** Error log analysis indicates a hardware failure.
861-906	G	861	**Description:** Error log analysis indicates a hardware failure.
862-101	D	862	**Description:** Power-on self-test failed.
862-102	D	862 227	**Description:** POS register test failed.
862-103	D	862	**Description:** PCA adapter-to-system unit test failed.
862-104	D	862	**Description:** PCA 80186 microprocessor test failed.
862-105	D	862	**Description:** DRAM test failed.
862-106	D	862	**Description:** STATIC shared RAM test failed.
862-107	D	862	**Description:** VPD verification test failed.
862-109	D	862	**Description:** Internal wrap test failed. Check the wrap plug.

862-110	D	862	**Description:** System/370 adapter wrap test failed.
862-112	D	862	**Description:** PCA hardware register test failed.
862-114	D	862	**Description:** Diagnostic microcode download failed; a hardware error.
862-115	D	B05 B04	**Description:** System/370 channel cable interface box wrap test failed. Check the wrap plug.
862-117	D	862	**Description:** Hardware FIFO test from the 80186 to the 370 failed.
862-118	D	862	**Description:** Hardware FIFO test from the microchannel interface to the 80186 failed.
862-121	D	862	**Description:** Base address switching test failed.
862-123	D	862	**Description:** Static RAM test failed.
862-124	D	862	**Description:** DMA test failed.
862-125	D	862	**Description:** Interrupt test failed.
862-500	D	862 227	**Description:** Cannot open device.
862-600	D	862 227 software	**Description:** Cannot configure device.
865-101	D	865	**Description:** Unexpected test results.
865-110	D	B47 865	**Description:** Memory failure.
865-115	D	B47 865	**Description:** Processor test failure.
865-120	D	B47 865	**Description:** Processor test failure.
865-125	D	865	**Description:** Microchannel interface failure.
865-130	D	865 227	**Description:** DMA test failure.
865-135	D	865	**Description:** Controller test failure.
865-140	D	865 227	**Description:** Processor storage test failure.
865-145	D	865	**Description:** Processor storage test failure.
865-150	D	865	**Description:** Memory controller test failure.
865-153	D	865 B47	**Description:** Micro Channel interface controller wrap test failed.
865-155	D	865	**Description:** On-chip monitor testing of microchannel interface controller failed.
865-160	D	865 B47	**Description:** Micro Channel DMA test failed.
865-165	D	865	**Description:** VPD CRC did not match.
865-200	D	B47	**Description:** The optical power measurement test failed.
865-500	D	865 software	**Description:** Device cannot be configured.
865-501	D	865	**Description:** Cannot open device.
865-503	G	865	**Description:** Error log analysis indicates

			that a hardware failure occurred.
865-505	D	865 B47	**Description:** The adapter failed to configure.
865-506	D	865	**Description:** The adapter failed to configure.
865-507	D	B47	**Description:** The adapter failed to configure.
865-508	D	865 B47	**Description:** The adapter failed to configure.
866-097	J	866 227	**Description:** The SCSI adapter test failed.
866-098	J	866 227	**Description:** The SCSI adapter was not found.
866-099	J	866 227	**Description:** The SCSI adapter test failed.
866-110	D	866 227	**Description:** The adapter diagnostic subcommand test failed.
866-130	D	279	**Description:** The adapter PTC device test failed. **Note:** Refer to the "Service Hints" section in Chapter 1 relating to the SCSI-2 I/O controller for additional procedures to follow prior to replacing FRUs. If those procedures do not correct the problem, perform the following action. **Action:** Use MAP 210.
866-131	D	866	**Description:** The PTC device did not reset. **Note:** Refer to the "Service Hints" section in Chapter 1 relating to the SCSI-2 I/O controller for additional procedures to follow prior to replacing FRUs. If those procedures do not correct the problem, perform the following action. **Action:** Use MAP 210.
866-140	D	866	**Description:** The wrap test failed.
866-150	D	866	**Description:** The BCR registers write/read test failed.
866-160	D	866	**Description:** The POS registers write/read test failed.
866-170	D	866	**Description:** The internal/external reset test failed.
866-180	D	279 B88	**Description:** The adapter command timed out. **Note:** Check the fuse before replacing.
866-190	D	866 227	**Description:** A software error was caused by a hardware failure.
866-191	G	SCSI bus problem 866	**Description:** Analysis of the error log indicates a problem. **Action:** Refer to the "Service Hints" section in Chapter 1 relating to the SCSI-2 I/O controller for additional procedures to follow prior to replacing FRUs. If those procedures do not correct the problem, use MAP 0210 and the listed FFC.
866-192	G	866 227	**Description:** Analysis of the error log indicates a problem with the hardware.
866-193	G	279	**Description:** Analysis of the error log indicates a problem with the hardware.
866-194	G	866	**Description:** Analysis of the error log indicates a problem with the hardware.
866-200	D	866	**Description:** ROM CRC error.

866-201	D	866	**Description:** Adapter RAM error.
866-202	D	866	**Description:** The control logic failed.
866-203	D	866	**Description:** The control logic failed.
866-204	D	866	**Description:** The control logic failed.
866-205	D	866	**Description:** The control logic failed.
866-206	D	866	**Description:** Diagnostics completed with a previous error.
866-211	G	SCSI bus problem 866	**Description:** The controller failed to configure. **Action:** Refer to the "Service Hints" section in Chapter 1 relating to the SCSI-2 I/O controller for additional procedures to follow prior to replacing FRUs. If those procedures do not correct the problem, use MAP 0210 and the listed FFC.
867-111	D	867 227	**Description:** The POS register test failed.
867-112	D	867 227	**Description:** The I/O register test failed.
867-113	D	867 227	**Description:** The comparator register test failed.
867-121	D	867	**Description:** The VPD ROS or logic test failed.
867-131	D	867	**Description:** The data wrap test failed.
867-141	D	867	**Description:** The adapter did not recognize a valid address.
867-142	D	867	**Description:** The adapter recognized an invalid address and/or did not recognize a valid address.
867-143	D	867	**Description:** The adapter recognized an invalid address and/or did not recognoze a valid address.
867-151	D	288 867	**Description:** The POS register test failed - a hardware error.
867-152	D	288 867	**Description:** The I/O register test failed.
867-161	D	288	**Description:** The VPD ROS or logic test failed.
867-171	D	288	**Description:** The data wrap test failed.
868-097	J	868 227	**Description:** The SCSI adapter test failed.
868-098	J	868 227	**Description:** SCSI adapter not found.
868-099	J	868 227	**Description:** SCSI adapter test failed.
868-110	D	868 227	**Description:** The adapter diagnostic subcommand test failed.
868-130	D	279	**Description:** The adapter fuse test failed.
868-140	D	868	**Description:** The wrap test failed.
868-150	D	868	**Description:** The BCR registers write/read test failed.
868-160	D	868	**Description:** The POS registers write/read test failed.
868-170	D	868	**Description:** The internal/external reset test failed.

868-180	D	279 868	**Description:** The adapter command timed out. **Note:** Check the fuse before replacing.
868-190	D	868 227	**Description:** A software error was caused by a hardware failure.
868-191	G	868	**Description:** Analysis of the error log indicates a problem with the hardware.
868-192	G	868 227	**Description:** Analysis of the error log indicates a problem with the hardware.
868-193	G	279	**Description:** Analysis of the error log indicates a problem with the hardware.
868-194	G	868	**Description:** Analysis of the error log indicates a problem with the hardware.
868-200	D	868	**Description:** ROM CRC error.
868-201	D	868	**Description:** Adapter RAM error.
868-202	D	868	**Description:** The control logic failed.
868-203	D	868	**Description:** The control logic failed.
868-204	D	868	**Description:** The control logic failed.
868-205	D	868	**Description:** The control logic failed.
868-206	D	868	**Description:** Diagnostics completed with a previous error.
868-211	D	279 868 software	**Description:** The device failed to configure.
869-097	J	869 227	**Description:** The SCSI adapter test failed.
869-098	J	869 227	**Description:** The SCSI adapter was not found.
869-099	J	869 227	**Description:** The SCSI adapter test failed.
869-110	D	869 227	**Description:** The adapter diagnostic subcommand test failed.
869-130	D	279	**Description:** The adapter fuse test failed.
869-131	D	869	**Description:** The thermal device did not reset. **Note:** Before replacing parts, ensure that the system was powered off in an attempt to allow the thermal device to reset.
869-140	D	869	**Description:** The wrap test failed.
869-150	D	869	**Description:** The BCR registers write/read test failed.
869-160	D	869	**Description:** The POS registers write/read test failed.
869-170	D	869	**Description:** The internal/external reset test failed.
869-180	D	279 868	**Description:** The adapter command timed out. **Note:** Check the fuse before replacing.
869-190	D	869 227	**Description:** A software error was caused by a hardware failure.
869-191	G	869	**Description:** Analysis of the error log indicates a problem with the hardware.
869-192	G	869 227	**Description:** Analysis of the error log indicates a problem with the hardware.
869-193	G	279	**Description:** Analysis of the error log indicates a problem with the hardware.

869-194	G	869	**Description:** Analysis of the error log indicates a problem with the hardware.
869-200	D	869	**Description:** ROM CRC error.
869-201	D	869	**Description:** Adapter RAM error.
869-202	D	869	**Description:** The control logic failed.
869-203	D	869	**Description:** The control logic failed.
869-204	D	869	**Description:** The control logic failed.
869-205	D	869	**Description:** The control logic failed.
869-206	D	869	**Description:** Diagnostics completed with a previous error.
869-210	D	869	**Description:** The operating system IPL procedure has determined that the EC level and quantity of SCSI microchannel adapters in the system present a risk of undetected data loss under extremely heavy microchannel loading conditions. Heavy loading conditions can occur when a combination of at least three SCSI adapters and other burst mode microchannel devices are present, and one or more of the SCSI adapters has an assembly part number from the following list: 59F3527, 70F9735, 70F9794, 71F0114, 71F0232 and 71F1172. **Action:** Refer to "Service Hints" regarding this SRN in Chapter 1.
869-211	D	279 869 software	**Description:** The device failed to configure.
870-099	J	870 221	**Description:** IPLROS detected a problem with the high-performance disk drive subsystem adapter.
871-092	J	114	**Description:** The graphics subsystem test failed.
871-093	J	110	**Description:** The graphics subsystem test failed.
871-094	J	110 871 227 116	**Description:** The graphics subsystem test failed.
871-095	J	112 115	**Description:** The graphics subsystem test failed.
871-096	J	113	**Description:** The graphics subsystem test failed.
871-097	J	111	**Description:** The graphics subsystem test failed.
871-098	J	116 871 110 227	**Description:** The graphics subsystem memory test failed.
871-099	J	871 227	**Description:** The graphics subsystem test failed.
871-101	D	110 871 227 116	**Description:** The graphics subsystem memory test failed.
871-102	D	110 871 227 116	**Description:** The graphics subsystem memory test failed.
871-103	D	110	**Description:** The graphics subsystem memory test failed.

871-104	D	110	**Description:** The graphics subsystem memory test failed.
871-105	D	110	**Description:** The graphics subsystem memory test failed.
871-106	D	110	**Description:** The graphics subsystem memory test failed.
871-107	D	110	**Description:** The graphics subsystem memory test failed.
871-108	D	110	**Description:** The graphics subsystem memory test failed.
871-109	D	110	**Description:** The graphics subsystem memory test failed.
871-110	D	110	**Description:** The graphics subsystem memory test failed.
871-111	D	110	**Description:** The graphics subsystem register test failed.
871-112	D	110	**Description:** The graphics subsystem register test failed.
871-113	D	110	**Description:** The graphics subsystem register test failed.
871-114	D	110	**Description:** The graphics subsystem register test failed.
871-115	D	110	**Description:** The graphics subsystem register test failed.
871-116	D	110	**Description:** The graphics subsystem register test failed.
871-117	D	110 871 227 116	**Description:** The graphics subsystem register test failed.
871-118	D	110	**Description:** The graphics subsystem register test failed.
871-119	D	110	**Description:** The graphics subsystem register test failed.
871-120	D	110	**Description:** The graphics subsystem register test failed.
871-121	D	110 871 227 116	**Description:** The graphics subsystem DMA test failed.
871-122	D	110	**Description:** The graphics subsystem FIFO test failed.
871-123	D	110	**Description:** The graphics subsystem register test failed.
871-124	D	110	**Description:** The graphics subsystem register test failed.
871-125	D	110	**Description:** The graphics subsystem MBC register test failed.
871-126	D	110	**Description:** The graphics subsystem MBC register test failed.
871-127	D	110	**Description:** The graphics subsystem MBC register test failed.
871-128	D	110	**Description:** The graphics subsystem MBC register test failed.
871-129	D	110	**Description:** The graphics subsystem MBC register test failed.
871-130	D	110	**Description:** The program was not able to

		111 113 114	load more than one of the cards. **Action:** Use MAP 0210.
871-133	D	111	**Description:** The graphics control processor was not found.
871-136	D	114	**Description:** The drawing processor was not found.
871-140	D	113	**Description:** The shading processor was not found.
871-151	D	111 114	**Description:** The visual test failed.
871-152	D	114 111	**Description:** The visual test failed.
871-153	D	114 112 display	**Description:** The visual test failed.
871-155	D	871	**Description:** The VPD test failed in the graphics subsystem adapter.
871-156	D	111 110	**Description:** The VPD test failed in the graphics control processor.
871-157	D	112	**Description:** The VPD test failed in the 8-bit pixel memory card.
871-158	D	113	**Description:** The VPD test failed in the shading processor.
871-159	D	114 110	**Description:** The VPD test failed in the drawing processor.
871-160	D	110	**Description:** The VPD test failed in the CVME interface card.
871-161	D	110	**Description:** The program was not able to load more than one of the cards.
871-163	D	114 112	**Description:** The drawing processor test failed.
871-164	D	112 114	**Description:** The 8-bit pixel memory test failed.
871-165	D	113 111	**Description:** The shading processor test failed.
871-166	D	111 113	**Description:** The graphics subsystem processor test failed.
871-172	D	115 RGB display cable 114	**Description:** The visual test failed.
871-173	D	112 RGB display cable B50	**Description:** The visual test failed.
871-174	D	115 RGB display cable B50	**Description:** The visual test failed.
871-176	D	115	**Description:** The VPD test failed in the 8-bit pixel memory card.
871-178	D	114 115	**Description:** The drawing processor card test failed.
871-179	D	B50 112	**Description:** The drawing processor card test failed.
871-180	D	B50	**Description:** The drawing processor card

		115 test failed.	
871-181	D	115 114	**Description:** The 8-bit pixel memory failed.
871-182	D	B52 114	**Description:** The 8-bit pixel memory failed.
871-183	D	B53 114	**Description:** The 8-bit pixel memory failed.
871-230	D	110 111 B51 114	**Description:** The program was not able to load more than one of the cards.
871-236	D	B50	**Description:** The drawing processor was not found.
871-240	D	B51	**Description:** The shading processor was not found.
871-251	D	111 B50	**Description:** The visual test failed.
871-252	D	B50 111	**Description:** The visual test failed.
871-253	D	B52 display and RGB cable 114	**Description:** The visual test failed. **Action:** Verify that the 7235 and display refresh rates are the same.
871-257	D	B52	**Description:** The VPD test failed in the 8-bit pixel memory card.
871-258	D	B51	**Description:** The VPD test failed in the shading processor.
871-259	D	B50 110	**Description:** The VPD test failed in the drawing processor.
871-263	D	114 B52	**Description:** The drawing processor card test failed.
871-264	D	112 B50	**Description:** The 8-bit pixel memory failed.
871-265	D	B51 111	**Description:** The shading processor test failed.
871-266	D	111 B51	**Description:** The graphics subsystem processor test failed.
871-272	D	B53 display and RGB cable 114	**Description:** The visual test failed. **Action:** Verify that the 7235 and display refresh rates are the same.
871-273	D	B52 display and RGB cable B50	**Description:** The visual test failed. **Action:** Verify that the 7235 and display refresh rates are the same.
871-274	D	B53 display and RGB cable B50	**Description:** The visual test failed. **Action:** Verify that the 7235 and display refresh rates are the same.
871-276	D	B53 display	**Description:** The VPD test failed in the 8-bit pixel memory card.
871-278	D	114 B53	**Description:** The drawing processor card test failed.
871-279	D	B50 B52	**Description:** The drawing processor card test failed.
871-280	D	B50 B53	**Description:** The drawing processor card test failed.

Service Request Number	SRN Scr.	Failing Function Codes	Description and Action
871-281	D	115 B50	**Description:** The 8-bit pixel memory failed.
871-282	D	B52 B50	**Description:** The 8-bit pixel memory failed.
871-283	D	B53 B50	**Description:** The 8-bit pixel memory failed.
871-301	D	111 C12 C13	**Description:** The shared bus test failed. **Action:** Record the machine type and model.
871-302	D	111 C12	**Description:**The shared bus test failed. **Action:** Record the machine type and model.
871-336	D	C12	**Description:** The drawing processor was not found. **Action:** Record the machine type and model.
871-340	D	C13	**Description:** The shading processor was not found. **Action:** Record the machine type and model.
871-351	D	111 C12	**Description:** The visual test failed. **Action:** Record the machine type and model. Use MAP 0210.
871-352	D	C12 111	**Description:** The visual test failed. **Action:** Record the machine type and model. Use MAP 0210.
871-353	D	C12 C14 display	**Description:** The visual test failed. **Action:** Record the machine type and model. Use MAP 0210.
871-357	D	C14	**Description:** The VPD test failed in the pixel memory card. **Action:** Record the machine type and model. Use MAP 0210.
871-358	D	C13	**Description:** The VPD test failed in the shading processor. **Action:** Record the machine type and model. Use MAP 0210.
871-359	D	C12 C10	**Description:** The VPD test failed in the drawing processor. **Action:** Record the machine type and model. Use MAP 0210.
871-363	D	C12 C14	**Description:** The drawing processor test failed. **Action:** Record the machine type and model. Use MAP 0210.
871-364	D	C14 C12	**Description:** The pixel memory test failed. **Action:** Record the machine type and model. Use MAP 0210.
871-365	D	C13 111	**Description:** The shading processor test failed. **Action:** Record the machine type and model. Use MAP 0210.
872-101	D	872 227	**Description:** An error occurred during the direct access display control test.
872-102	D	872	**Description:** An error occurred during the indexed access display control test.
872-103	D	872	**Description:** An error occurred during the CRTC horizontal display registers test.
872-104	D	872	**Description:** An error occurred during the

			CRTC vertical display registers test.
872-105	D	872	**Description:** An error occurred during the CRTC sprite control registers test.
872-106	D	872	**Description:** An error occurred during the CRTC sprite control registers-disable sprite test.
872-107	D	872	**Description:** An error occurred during the miscellaneous registers test.
872-108	D	872	**Description:** An error occurred during the CRTC sprite/pallette control registers test.
872-109	D	872	**Description:** An error occurred during the clear VRAM memory test.
872-110	D	872	**Description:** An error occurred during the VRAM write OxFF memory test.
872-111	D	872	**Description:** An error occurred during the VRAM write 0x33 memory test.
872-112	D	872	**Description:** An error occurred during the VRAM write 0xCC memory test.
872-113	D	872	**Description:** An error occurred during the VRAM write 0x55 memory test.
872-114	D	872	**Description:** An error occurred during the VRAM write 0xAA memory test.
872-115	D	872	**Description:** An error occurred during the pattern fill VRAM memory test.
872-116	D	872	**Description:** An error occurred during the 16 bit address fill VRAM memory test.
872-117	D	872	**Description:** An error occurred during the 32 bit address fill VRAM memory test.
872-118	D	872	**Description:** An error occurred during the Bressenham line draw test.
872-119	D	872	**Description:** An error occurred during the multiple line draw test.
872-120	D	872	**Description:** An error occurred during the screen length line draw test.
872-121	D	872	**Description:** An error occurred during the step and draw line test.
872-122	D	872	**Description:** An error occurred during the step and draw multiple line test.
872-123	D	872	**Description:** An error occurred during the step and draw screen length line test.
872-124	D	872	**Description:** An error occurred during the area fill test.
872-125	D	872	**Description:** An error occurred during the color compare test.
872-126	D	872	**Description:** An error occurred during the color plane test.
872-127	D	872	**Description:** An error occurred during the pxblt octant test.
872-128	D	872	**Description:** An error occurred during the 4 bit per pel test.
872-129	D	872	**Description:** An error occurred during the mask boundary test.
872-130	D	872	**Description:** An error occurred during the mask enabled test.
872-131	D	872 227	**Description:** An error occurred during the VRAM to host to VRAM DMA transfer test.

872-132	D	872 227	**Description:** An error occurred during the VRAM to host to VRAM DMA transfer using the 4 bits per pel test.
872-133	D	872 227	**Description:** An error occurred during the interrupt level test.
872-134	D	872	**Description:** An error occurred during the verify vital product data test.
872-136	D	872 725	**Description:** An error occurred during the clear display test.
872-137	D	872	**Description:** An unknown adapter error occurred.
872-138	D	872 725	**Description:** An unknown display error occurred.
872-139	D	725	**Description:** An unknown display error occurred.
874-101	D	874 227	**Description:** An error occurred during the direct access display control registers test.
874-102	D	874	**Description:** An error occurred during the indexed access display control registers test.
874-103	D	874	**Description:** An error occurred during the CRTC horizontal display registers test.
874-104	D	874	**Description:** An error occurred during the CRTC vertical display registers test.
874-105	D	874	**Description:** An error occurred during the CRTC sprite control registers test.
874-106	D	874	**Description:** An error occurred during the CRTC sprite control registers - display sprite test.
874-107	D	874	**Description:** An error occurred during the miscellaneous registers test.
874-108	D	874	**Description:** An error occurred during the CRTC sprite/palette control registers test.
874-109	D	874	**Description:** An error occurred during the clear VRAM memory test.
874-110	D	874	**Description:** An error occurred during the VRAM write 0xFF memory test.
874-111	D	874	**Description:** An error occurred during the VRAM write 0x33 memory test.
874-112	D	874	**Description:** An error occurred during the VRAM write 0xCC memory test.
874-113	D	874	**Description:** An error occurred during the VRAM write 0x55 memory test.
874-114	D	874	**Description:** An error occurred during the VRAM write 0xAA memory test.
874-115	D	874	**Description:** An error occurred during the pattern fill VRAM memory test.
874-116	D	874	**Description:** An error occurred during the 16-bit address fill VRAM memory test.
874-117	D	874	**Description:** An error occurred during the 32-bit address fill VRAM memory test.
874-118	D	874	**Description:** An error occurred during the Bressenham line draw test.
874-119	D	874	**Description:** An error occurred during the multiple line draw test.

874-120	D	874	**Description:** An error occurred during the screen length line draw test.
874-121	D	874	**Description:** An error occurred during the step and draw line test.
874-122	D	874	**Description:** An error occurred during the step and draw multiple line test.
874-123	D	874	**Description:** An error occurred during the step and draw screen length line test.
874-124	D	874	**Description:** An error occurred during the area fill test.
874-125	D	874	**Description:** An error occurred during the color compare test.
874-126	D	874	**Description:** An error occurred during the color plane test.
874-127	D	874	**Description:** An error occurred during the pxblt octant test.
874-128	D	874	**Description:** An error occurred during the 4-bit per pel test.
874-129	D	874	**Description:** An error occurred during the mask boundary test.
874-130	D	874	**Description:** An error occurred during the mask enabled test.
874-131	D	874 227	**Description:** An error occurred during the VRAM to host to VRAM DMA transfer test.
874-132	D	874 227	**Description:** An error occurred during the VRAM to host to VRAM DMA transfer using the 4 bits per pel test.
874-133	D	874 227	**Description:** An error occurred during the interrupt level test.
874-134	D	874	**Description:** An error occurred during the verify vital product data test.
874-139	D	725	**Description:** Monitor test failed.
874-135	D	874 725	**Description:** An error occurred during the color display test.
874-136	D	874 725	**Description:** An error occurred during the clear display test.
874-137	D	874	**Description:** An unknown adapter error occurred.
874-138	D	874 725	**Description:** An unknown adapter error occurred.
876-101	D	130 227	**Description:** An error occurred during the EDDY initialization test.
876-102	D	130 227	**Description:** An error occurred during the DMA registers test.
876-103	D	130 227	**Description:** An error occurred during the FIFO address and memory test.
876-104	D	130 227	**Description:** An error occurred during the DMA host to data RAM test.
876-105	D	128 130	**Description:** An error occurred during the DMA host to raster engine fram buffer test.
876-106	D	130 227	**Description:** An error occurred during the EDDY interrupt test.
876-107	D	130	**Description:** An error occurred during the set-of-graphics register pointer test.
876-108	D	130	**Description:** An error occurred during the download of diagnostic microcode.

876-109	D	130	**Description:** An error occurred during the RAM address uniqueness test.
876-110	D	130	**Description:** An error occurred during the RAM data test.
876-111	D	130	**Description:** An error occurred during the data RAM address uniqueness test.
876-112	D	130	**Description:** An error occurred during the data RAM data test.
876-113	D	130	**Description:** An error occurred during the microcode RAM test.
876-114	D	130	**Description:** An error occurred during the geometry subsystem FIFO test.
876-115	D	130	**Description:** An error occurred during the finish flag test.
876-116	D	130	**Description:** An error occurred during the FIFO/data RAM read test.
876-117	D	128 130	**Description:** An error occurred during the raster engine test.
876-118	D	128 130	**Description:** An error occurred during the raster subsystem cursor test.
876-119	D	128 130	**Description:** An error occurred during the frame buffer full test.
876-121	D	118 128	**Description:** An error occurred during the Z buffer full test.
876-122	D	128 130	**Description:** An error occurred during the quick frame buffer test.
876-124	D	118 128	**Description:** An error occurred during the quick Z buffer test.
876-125	D	876 128	**Description:** An error occurred during the XPC registers write/read/compare test.
876-126	D	876 128	**Description:** An error occurred during the RGB digital-to-analog converter register test.
876-129	D	876 725	**Description:** An error occurred during the color display test.
876-130	D	130 227	**Description:** An unknown error occurred during the 3D graphics base card test.
876-131	D	128 130	**Description:** An unknown error occurred during the 3D graphics base card test.
876-132	D	130	**Description:** An unknown error occurred during the 3D graphics base card test.
876-133	D	118 128	**Description:** An unknown error occurred during the 3D graphics base card test.
876-134	D	876 128	**Description:** An unknown error occurred during the 3D graphics base card test.
876-135	D	876 128	**Description:** An unknown error occurred during the 3D graphics base card test.
877-097	J	B58 227	**Description:** The graphics adapter test failed.
877-098	J	877 B01 B41 227	**Description:** The graphics adapter test failed.
877-099	J	877 B01 B41 227	**Description:** The graphics adapter test failed.

877-110	D	877 227	**Description:** The POS test failed.
877-121	D	877 227	**Description:** The VPD test failed.
877-130	D	877 227	**Description:** The host Bus Interface Module test failed.
877-140	D	877 227	**Description:** The host memory test failed.
877-150	D	877	**Description:** The processor memory test failed.
877-160	D	877	**Description:** The Blast C30 Mem failed.
877-170	D	877	**Description:** The Bus Interface Module test failed.
877-180	D	877 227	**Description:** The host interrupt failed.
877-190	D	877 227	**Description:** The Bus Interface Module DMA test failed.
877-191	D	227 877	**Description:** The Bus Interface Module DMA test failed.
877-200	D	877 227	**Description:** The Bus Interface Module dynamic test failed.
877-201	D	877	**Description:** The Bus Interface Module dynamic test failed.
877-210	D	877 B01	**Description:** The Bus Interface Module test failed.
877-211	D	877 B01	**Description:** The Bus Interface Module test failed.
877-212	D	B01 877	**Description:** The Bus Interface Module test failed.
877-213	D	B01 877	**Description:** The bus Interface Module test failed.
877-220	D	877 B01	**Description:** The ramdac test failed.
877-230	D	877 B01	**Description:** The blast test failed.
877-240	D	877 B01	**Description:** The frame buffer test failed.
877-290	D	877 B01	**Description:** The write buffer test failed.
877-330	D	877 725	**Description:** The display test failed.
877-400	D	877 227	**Description:** The adapter test failed.
877-410	D	B01 877	**Description:** The adapter test failed.
877-420	D	877 B01	**Description:** The adapter test failed.
877-430	D	B01 877	**Description:** The adapter test failed.
877-440	D	877 B01	**Description:** The adapter test failed.
877-500	D	877 227	**Description:** The graphics adapter test failed.
877-510	D	B58 227	**Description:** The graphics adapter test failed.
877-520	D	B59	**Description:** The graphics adapter test

		227	failed.
877-600	D	877 B01	**Description:** The graphics adapter test failed.
877-610	D	B58	**Description:** The graphics adapter test failed.
877-620	D	B59	**Description:** The graphics adapter test failed.
877-700	D	877	**Description:** The graphics adapter test failed.
877-705	D	B01	**Description:** The graphics adapter test failed.
877-800	D	227 877	**Description:** The graphics adapter test failed.
877-810	D	227 B58	**Description:** The graphics adapter test failed.
877-820	D	227 B59	**Description:** The adapter test failed.
877-850	D	877 B01	**Description:** The graphics adapter test failed.
877-860	D	877 B01	**Description:** The graphics adapter test failed.
877-880	D	877, B58 or B59 725	**Description:** The display test failed. **Note:** You must determine which of the first three FFCs is installed in the system at the given location.
877-900	G	877	**Description:** The error log indicates a hardware problem.
877-905	G	B01	**Description:** The error log indicates a hardware problem.
877-910	G	B58	**Description:** The graphics adapter test failed.
877-920	G	B59	**Description:** The graphics adapter test failed.
878-099	J	878 221	**Description:** IPLROS detected a problem with the graphics processor card.
878-100	D	878 227	**Description:** Processor card error.
878-110	D	878	**Description:** Processor card error.
878-200	D	878 227	**Description:** Processor card error.
878-210	D	878	**Description:** Processor card error.
878-300	D	119 227	**Description:** Graphics card error.
878-301	F	119 C49	**Description:** Base Graphics card error.
878-302	F	119 C50	**Description:** Base base graphics card error.
878-310	D	119	**Description:** Graphics card error.
878-400	D	120 227	**Description:** Option card error.
878-410	D	120 878	**Description:** Option card error.
878-411	F	120 C49	**Description:** 24-bit option card error. POWER Gt4-i Processor card error.
878-412	F	120 C50	**Description:** 24-bit option card error. POWER Gt4x-i Processor card error.

878-420	D	B16 227	**Description:** Pipe card error.
878-430	D	B16	**Description:** Pipe card error.
878-500	D	878 227	**Description:** Cannot open device.
878-600	D	878 725	**Description:** The display test failed. **Action:** Use Service Procedure 210.
878-610	D	227 878	**Description:** The DMA Bus Interface Module test failed.
878-700	G	878	**Description:** Error log analysis indicates processor card failure.
878-710	G	119	**Description:** Error log analysis indicates graphics card failure.
878-720	G	120	**Description:** Error log analysis indicates option card failure.
878-800	F	C49 227	**Description:** 24-bit option card error. POWER Gt4i processor card error.
878-811	F	C49	**Description:** POWER Gt4i processor card error.
878-830	F	C51 878	**Description:** Gt4i 8-bit graphics card error. POWER Gt4 processor card error.
878-831	F	C51	**Description:** Gt4i 8-bit graphics card error.
878-832	F	C52 878	**Description:** POWER Gt4i 24-bit graphics card error. POWER Gt4 card error.
878-833	F	C52	**Description:** POWER Gt4i 24-bit graphics card error.
878-834	F	C51 C50	**Description:** POWER Gt4i 8-bit graphics card. POWER Gt4xi processor card error.
878-835	F	C52 C49	**Description:** POWER Gt4i 24-bit graphics card error. POWER Gt4i processor card error.
878-836	F	C52 C50	**Description:** POWER Gt4i 24-bit graphics card error. POWER Gt4i processor card error.
878-837	F	C51 C49	**Description:** POWER Gt4i 8-bit graphics card. POWER Gt4i processor card error.
878-861	F	878 227	**Description:** POWER Gt4 card error. DMA test failed.
878-862	F	227 C49	**Description:** DMA test failed. POWER Gt4i Processor card error.
878-863	F	227 C50	**Description:** DMA test failed. POWER Gt4xi Processor card error.
878-900	F	C50 227	**Description:** POWER Gt4xi Processor card error.
878-911	F	C50	**Description:** POWER Gt4xi Processor card error.
878-961	F	C50 227	**Description:** DMA test failed.
879-120	D	879 128	**Description:** An error occurred during the extended frame buffer test.
879-123	D	879 128	**Description:** An error occurred during the quick extended frame buffer test.
879-127	D	879 128	**Description:** An error occurred during the quick extended frame buffer test.
879-128	D	879	**Description:** An error occurred during the

		128	quick extended frame buffer test.
879-129	D	879 725	**Description:** An error occurred during the quick extended frame buffer test.
879-136	D	879 128	**Description:** An unknown error occurred during the 24-bit graphics display card test.
879-137	D	879 725	**Description:** An unknown error occurred during the display test.
880-097	J	B34 880	**Description:** The graphics adapter memory test failed.
880-098	J	880 227	**Description:** The graphics adapter test failed.
880-099	J	880 B42 227	**Description:** The graphics adapter was not found.
880-101	D	880	**Description:** Adapter failed to configure.
880-110	D	880	**Description:** Adapter error detected.
880-120	D	880 227	**Description:** Adapter error detected.
880-130	D	B34 880	**Description:** Video RAM error detected.
880-140	D	B34 880	**Description:** Video RAM error detected.
880-150	D	725 880	**Description:** Monitor test failed.
887-096	J	887 227	**Description:** Ethernet GA wrap test failed.
887-097	J	887 227	**Description:** Ethernet external wrap failed.
887-098	J	887 227	**Description:** Ethernet fuse test failed. **Action:** Use MAP 0210; check fuse before exchanging planar.
887-099	J	887 227	**Description:** Ethernet parameter test failed.
887-101	D	887	**Description:** POS register test failed.
887-102	D	887	**Description:** I/O register test failed.
887-103	D	887	**Description:** Local RAM test failed.
887-104	D	887	**Description:** Vital Product Data (VPD) failed.
887-105	D	887	**Description:** LAN coprocessor internal tests failed.
887-106	D	887 B06	**Description:** Internal loopback test failed.
887-107	D	B06 887	**Description:** External loopback test failed.
887-108	D	B06 887	**Description:** External loopback test failed.
887-109	D	887	**Description:** External loopback parity tests failed.
887-110	D	887	**Description:** External loopback fairness test failed.
887-111	D	887	**Description:** External loopback fairness and parity tests failed.
887-112	D	B11 887	**Description:** External loopback (twisted pair) test failed.

887-113	D	887	**Description:** External loopback (twisted pair) parity test failed.
887-114	D	887	**Description:** Ethernet loopback (twisted pair) fairness test failed.
887-115	D	887	**Description:** External loopback (twisted pair) fairness and parity tests failed.
887-116	D	B07 887	**Description:** Twisted pair wrap data failed).
887-117	D	887 software	**Description:** Device configuration fails.
887-118	D	887 B06/B11	**Description:** Device driver indicates a hardware problem.
887-120	D	887	**Description:** Device driver indicates a hardware problem.
887-121	D	B08	**Description:** Ethernet transceiver test failed.
887-122	D	B09	**Description:** Ethernet 10 Base-2 transceiver test failed.
887-123	D	887 B11	**Description:** Internal loopback test failed.
887-124	G	887 software	**Description:** Error log indicates a hardware problem.
887-125	D	B11	**Description:** Fuse test failed.
887-202	D	887	**Description:** Vital product data test failed.
887-203	D	887	**Description:** Vital product data test failed.
887-209	D	C29 887	**Description:** RJ-45 converter test failed.
887-304	D	887	**Description:** Coprocessor internal test failed.
887-305	D	887	**Description:** Internal loopback test failed.
887-306	D	887	**Description:** Internal loopback test failed.
887-307	D	887	**Description:** External loopback test failed.
887-319	D	887 software	**Description:** Device driver indicates a hardware failure.
887-400	D	B40	**Description:** Fuse test failed.
887-401	D	887	**Description:** Circuit breaker for Ethernet test failed.
887-402	D	B09 887	**Description:** Ethernet 10 Base-2 transceiver test failed.
887-403	D	B08 887	**Description:** Ethernet 10 Base-T transceiver test failed.
887-404	D	C29 887	**Description:** RJ-45 converter test failed.
887-405	F	Ethernet network 887	**Description:** Rerun diagnostics in advanced mode for accurate problem determination.
889-097	J	889 227	**Description:** The SCSI adapter test failed.
889-098	J	889 227	**Description:** The SCSI adapter was not found.
889-099	J	889	**Description:** The SCSI adapter test failed.

		227	
889-110	D	889 227	**Description:** The adapter diagnostic subcommand test failed.
889-130	D	279	**Description:** The adapter fuse test failed. **Note:** Refer to the "Service Hints" section of this book relating to the SCSI-2 I/O controller for additional procedures to follow prior to replacing FRUs. If those procedures do not correct the problem, perform the following action.
889-131	D	889	**Description:** The thermal device did not reset. **Note:** Refer to the "Service Hints" section of this book relating to the SCSI-2 I/O controller for additional procedures to follow prior to replacing FRUs. If those procedures do not correct the problem, perform the following action.
889-140	D	889	**Description:** The wrap test failed.
889-150	D	889	**Description:** The BCR registers write/read test failed.
889-160	D	889	**Description:** The POS registers write/read test failed.
889-170	D	889	**Description:** The internal/external reset test failed.
889-180	D	279 B88	**Description:** The adapter command timed out. **Note:** Check the fuse before replacing.
889-190	D	889 227	**Description:** A software error was caused by a hardware failure.
889-191	G	SCSI bus problem 889	**Description:** Analysis of the error log indicates a problem. **Action:** Refer to the "Service Hints" section of this book relating to the SCSI-2 I/O differential controller for additional procedures to follow prior to replacing FRUs. If those procedures do not correct the problem, use MAP 0210 and the listed FFC.
889-192	G	889 227	**Description:** Analysis of the error log indicates a problem with the hardware.
889-193	G	279	**Description:** Analysis of the error log indicates a problem with the hardware.
889-194	G	889	**Description:** Analysis of the error log indicates a problem with the hardware.
889-200	D	889	**Description:** ROM CRC error.
889-201	D	889	**Description:** Adapter RAM error.
889-202	D	889	**Description:** The control logic failed.
889-203	D	889	**Description:** The control logic failed.
889-204	D	889	**Description:** The control logic failed.
889-205	D	889	**Description:** The control logic failed.
889-206	D	889	**Description:** Diagnostics completed with a previous error.
889-211	D	SCSI bus problem 889	**Description:** The controller failed to configure. **Action:** Refer to the "Service Hints" section of this book relating to the SCSI-2 I/O differential controller for additional procedures to follow prior to replacing FRUs. If those procedures do not correct the problem, use MAP 0210 and the listed FFC.

890-087	J	C26 227	**Description:** The SCSI adapter test failed.
890-088	J	C26 227	**Description:** The SCSI adapter test failed.
890-089	J	C26 227	**Description:** The SCSI adapter test failed.
890-097	J	890 227	**Description:** The SCSI adapter test failed.
890-098	J	890 227	**Description:** The SCSI adapter was not found.
890-099	J	890 227	**Description:** The SCSI adapter test failed.
890-101	D	890	**Description:** The reset test failed.
890-102	D	890	**Description:** The command interface register test failed.
890-103	D	890	**Description:** The immediate pacing command test failed.
890-104	D	890	**Description:** The subsystem control block test failed.
890-105	D	890	**Description:** The system address line test failed.
890-106	D	890	**Description:** The internal SCSI bus terminal power failed. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-107	D	890	**Description:** The external SCSI bus terminal power failed. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-108	D	890	**Description:** Internal SCSI bus error. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-109	D	890	**Description:** External SCSI bus. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-110	D	890 227	**Description:** The system address line failed.
890-150	G	890	**Description:** Error log analysis indicates microcode corruption.
890-155	G	890 227	**Description:** Error log analysis indicates get adapter information timed out.
890-160	G	890 Cable/ Terminato	**Description:** Error log analysis indicates adapter reset failed. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-165	G	890 227	**Description:** Error log analysis indicates adapter DMA failed.
890-170	G	890	**Description:** Error log analysis indicates adapter microcode corrupted.
890-175	G	890	**Description:** Error log analysis indicates internal SCSI bus terminal power failure. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-180	G	890	**Description:** Error log analysis indicates external SCSI bus terminal power failure. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-185	G	890	**Description:** Error log analysis indicates internal SCSI bus error. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.

890-190	G	890	**Description:** Error log analysis indicates external SCSI bus error. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-195	G	890	**Description:** Error log analysis indicates hardware failure.
890-201	D	C26	**Description:** The reset test failed.
890-202	D	C26	**Description:** The command interface register test failed.
890-203	D	C26	**Description:** The immediate pacing command test failed.
890-204	D	C26	**Description:** The subsystem control block test failed.
890-205	D	C26	**Description:** The system address line test failed.
890-206	D	C26	**Description:** The internal SCSI bus terminal power failed. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-207	D	C26	**Description:** The external SCSI bus terminal power failed. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-208	D	C26	**Description:** Internal SCSI bus error. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-209	D	C26	**Description:** External SCSI bus error. **Action:** Use the SCSI subsystem problem isolation procedure.
890-210	D	C26 227	**Description:** The system address line test failed.
890-250	G	C26	**Description:** The error log analysis indicates microcode corrupted.
890-255	G	C26 227	**Description:** The error log analysis indicates that the get adapter information has timed out.
890-260	G	C26 Cable/ Terminato	**Description:** The error log analysis indicates that the adapter reset failed. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-265	G	C26 227	**Description:** The error log analysis indicates adapter DMA failed.
890-270	G	C26 227	**Description:** The error log analysis indicates adapter microcode corrupted.
890-275	G	C26	**Description:** The error log analysis indicates internal SCSI bus terminal power failure. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-280	G	C26	**Description:** The error log analysis indicates external SCSI bus terminal power failure. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-285	G	C26	**Description:** The error log analysis indicates an internal SCSI bus error. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-290	G	C26	**Description:** The error log analysis indicates an external SCSI bus error. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.

890-295	G	C26	**Description:** The error log indicates hardware failure.
890-301	D	C55	**Description:** The reset test failed.
890-302	D	C55	**Description:** The command register test failed.
890-303	D	C55	**Description:** The immediate pacing command test failed.
890-304	D	C55	**Description:** The subsystem control block test failed.
890-305	D	C55	**Description:** The system address test line failed.
890-306	D	C55	**Description:** The internal SCSI bus terminal power failed. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-307	D	C55	**Description:** The external SCSI bus terminal power failed. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-308	D	C55	**Description:** Internal SCSI bus error. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-309	D	C55	**Description:** External SCSI bus error. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-310	D	C55 227	**Description:** The system address line failed.
890-350	G	C55	**Description:** The error log analysis indicates microcode corrupted.
890-355	G	C55 227	**Description:** The error log analysis indicates that the get adapter information has timed out.
890-360	G	C55 Cable/ Terminato	**Description:** The error log analysis indicates adapter reset failed. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-365	G	C55 227	**Description:** The error log analysis indicates adapter DMA failure.
890-370	G	C55	**Description:** The error log analysis indicates adapter microcode corrupted.
890-375	G	C55	**Description:** The error log analysis indicates internal SCSI bus terminal power failure. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-380	G	C55	**Description:** The error log analysis indicates external SCSI bus terminal power failure. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-385	G	C55	**Description:** The error log analysis indicates internal SCSI bus error. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-390	G	C55	**Description:** The error log analysis indicates external SCSI bus error. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-395	G	C55	**Description:** The error log analysis indicates hardware failure.
890-401	D	B88	**Description:** The reset test failed.
890-402	D	B88	**Description:** The command interface

			register test failed.
890-403	D	B88	**Description:** The immediate pacing command test failed.
890-404	D	B88	**Description:** The subsystem control block test failed.
890-405	D	B88	**Description:** The system address test line failed.
890-406	D	B88	**Description:** The internal SCSI bus terminal power failed. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-407	D	B88	**Description:** The external SCSI bus terminal power failed. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-408	D	B88	**Description:** Internal SCSI bus error. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-409	D	B88	**Description:** External SCSI bus error. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-410	D	B88 227	**Description:** The system address line failed.
890-450	G	B88	**Description:** The error log analysis indicates microcode corrupted.
890-455	G	B88 227	**Description:** The error log analysis indicates that the get adapter information has timed out.
890-460	G	B88 Cable/ Terminato	**Description:** The error log analysis indicates adapter reset failed. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-465	G	B88 227	**Description:** The error log analysis indicates adapter DMA failure.
890-470	G	B88	**Description:** The error log analysis indicates adapter microcode corrupted.
890-475	G	B88	**Description:** The error log analysis indicates internal SCSI bus terminal power failure. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-480	G	B88	**Description:** The error log analysis indicates external SCSI bus terminal power failure. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-485	G	B88	**Description:** The error log analysis indicates internal SCSI bus error. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-490	G	B88	**Description:** The error log analysis indicates external SCSI bus error. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-495	G	B88	**Description:** The error log analysis indicates hardware failure.
890-501	D	D47	**Description:** The reset test failed.
890-502	D	D47	**Description:** The command interface register test failed.
890-503	D	D47	**Description:** The immediate pacing command test failed.
890-504	D	D47	**Description:** The subsystem control block

			test failed.
890-505	D	D47	**Description:** The system address test line failed.
890-506	D	D47	**Description:** The internal SCSI bus terminal power failed. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-507	D	D47	**Description:** The external SCSI bus terminal power failed. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-508	D	D47	**Description:** Internal SCSI bus error. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-509	D	D47	**Description:** External SCSI bus error. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-510	D	D47 227	**Description:** The system address line failed.
890-550	G	D47	**Description:** The error log analysis indicates microcode corrupted.
890-555	G	D47 227	**Description:** The error log analysis indicates that the get adapter information has timed out.
890-560	G	D47 Cable/ Terminato	**Description:** The error log analysis indicates adapter reset failed. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-565	G	D47 227	**Description:** The error log analysis indicates adapter DMA failure.
890-570	G	D47	**Description:** The error log analysis indicates adapter microcode corrupted.
890-575	G	D47	**Description:** The error log analysis indicates internal SCSI bus terminal power failure. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-580	G	D47	**Description:** The error log analysis indicates external SCSI bus terminal power failure. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-585	G	D47	**Description:** The error log analysis indicates internal SCSI bus error. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-590	G	D47	**Description:** The error log analysis indicates external SCSI bus error. **Action:** Use the SCSI-2 Fast/Wide Adapter/A problem isolation procedure.
890-595	G	D47	**Description:** The error log analysis indicates hardware failure.
897-101	D	897 C21 221	**Description:** POS register test failed.
897-104	D	897 C21 221	**Description:** External wrap test failed.
897-105	D	897 C21 221	**Description:** Register wrap test failed.
897-106	D	897 C21 221	**Description:** Initial selection test failed.

897-107	D	897 C21 221	**Description:** Hardware data transfer test failed.
897-111	D	897 C21 221	**Description:** Control interface test failed.
897-117	D	897 C21 221	**Description:** Hardware data transfer test failed.
897-121	D	897 C21 221	**Description:** I/O buffer test failed.
897-127	D	897 C21 221	**Description:** Timer test failed.
898-110	D	898	**Description:** Adapter test failed.
898-120	D	898 227 B35	**Description:** Adapter test failed.
898-130	D	725	**Description:** User indicates a problem with the display after performing the display problem determination procedure. **Action:** Repair or replace the display.
898-880	D	898 725	**Description:** Display test failed.
898-900	G	898	**Description:** The error log analysis indicates a hardware failure.
898-910	G	898 227	**Description:** The error log analysis indicates a hardware failure.
89c-098	J	89c B88 221	**Description:** IPLROS detected a problem with the SCSI CDROM drive.
89c-099	J	89c B88	**Description:** IPLROS detected a problem with the CDROM drive.
89c-111	D	89c B88	**Description:** Unable to reserve device.
89c-112	D	89c B88	**Description:** Unable to do configuration.
89c-113	D	89c B88	**Description:** Unable to open the device driver.
89c-121	D	89c	**Description:** The CD-ROM drive indicates an error.
89c-122	D	89c	**Description:** The CD-ROM drive indicates an error.
89c-123	D	89c	**Description:** The CD-ROM drive indicates an error.
89c-125	D	89c B88	**Description:** The CD-ROM drive indicates an error.
89c-126	D	89c	**Description:** The CD-ROM drive indicates an error.
89c-127	D	89c	**Description:** The CD-ROM drive indicates an error.
89c-128	D	89c	**Description:** The CD-ROM drive indicates an error.
89c-129	D	89c	**Description:** The CD-ROM drive indicates an error.
89c-150	D	Media 89c	**Description:** A media error was detected.

89c-151	D	89c D88	**Description:** A command timeout was detected.
89c-152	D	89c	**Description:** A command reservation conflict was detected.
89c-162	D	89c	**Description:** The CD-ROM drive indicates an error.
89c-171	D	89c	**Description:** Unable to reserve device.
89c-172	D	89c	**Description:** Unable to do configuration.
89c-173	D	89c	**Description:** Unable to open device driver.
89c-175	D	89c	**Description:** The CD-ROM drive indicates an error.
89c-198	D	89c B88	**Description:** Undefined error detected.
89c-199	D	89c	**Description:** Undefined error detected.
89c-211	D	89c	**Description:** The LED test failed.
89c-281	D	89c	**Description:** No tone during audio test.
89c-301	G	89c	**Description:** Errors found during ELA.
89c-302	G	89c B88	**Description:** Errors found during ELA.
901-099	J	901 221	**Description:** IPLROS detected a problem with the SCSI disk drive.
901-xxx			**Description:** Vendor SCSI device problem. Refer to the service documentation for this device.
902-xxx			**Description:** display problem. Refer to the service documentation for this display.
903-xxx			**Description:** Vendor Async device problem. Refer to the service documentation for this device.
904-xxx			**Description:** Parallel device problem. Refer to the service documenation for this device.
905-xxx			**Description:** Vendor device problem. Refer to the service documentation for this device.
908-001	D	C34 C33 C48	**Description:** Invalid function request or bad parameters passed.
908-004	D	C33 908 C36	**Description:** Mailbox error set but error code equals 0.
908-009 to 908-010	D	C34 C33 C48	**Description:** Invalid command or test request parameter.
908-016 to 908-019	D	908	**Description:** MCIC failed reading header.
908-020	D	C33 908 C36	**Description:** Error closing 7250 DD.
908-111	D	C34 C33 C48	**Description:** Loader check sum error.
908-112	D	908 C33 C36 C34	**Description:** DMA failed to complete a transfer.

Service Request Number	SRN Scr.	Failing Function Codes	Description and Action
908-113 to 908-118	D	908 C33 C36	**Description:** Errors in loading ASCII registers.
908-120 to 908-150	D	C33 908 C36	**Description:** DMA transfer or PFCA data error.
908-151 to 908-158	D	908	**Description:** PIO error on the MCIC.
908-160	D	908 C36 System C33	**Description:** 7250 is not available.
908-200 to 908-454	D	C33 908 C36	**Description:** GPSS board failure.
908-455	D	C33 C34 908 C48	**Description:** CP NMI bus timeout interrupt error.
908-456 to 908-699	D	C33 908 C36	**Description:** GPSS board failure.
908-700 to 908-766	D	C34 C33 C48	**Description:** BLT or RATTLER error.
908-767 to 908-769	D	C35 C34 C44	**Description:** VOO feature error.
908-770 to 908-790	D	C34 C33 C48	**Description:** RSS BIST failure.
908-791 to 908-793	D	Display RGB cable C34	**Description:** RSS VPD checksum failure.
908-794	D	C34 C33 C48	**Description:** RSS OP-CODE table checksum failure.
908-795	D	Display RGB cable C34	**Description:** RSS context map checksum failure.
908-796 to 908-797	D	C34 C33 C48	**Description:** RSS display table checksum failure.
908-800	D	C46 C34	**Description:** RSS base 16M CHAP0 SIMM bad (800). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum*part number 52G0657.
908-801	D	C45 C34	**Description:** RSS base 12M CHAP0 SIMM bad (801). Refer to the *7250 POWER Graphics Accelerator Service Addendum* part number 52G0657.
908-802	D	C46 C34	**Description:** RSS AG 16M CHAP0 SIMM bad (802). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-803	D	C45 C34	**Description:** RSS AG 12M CHAP0 SIMM bad (803). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-804	D	C47	**Description:** RSS TX 16M CHAP0 SIMM bad

		C34	(804). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-805	D	C46 C34	**Description:** RSS base 16M CHAP1 SIMM bad (805). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-806	D	C45 C34	**Description:** RSS base 12M CHAP1 SIMM bad (806). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-807	D	C46 C34	**Description:** RSS AG 16M CHAP1 SIMM bad (807). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-808	D	C45 C34	**Description:** RSS AG 12M CHAP1 SIMM bad (808). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-809	D	C47 C34	**Description:** RSS TX 16M CHAP1 SIMM bad (809). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-810	D	C46 C34	**Description:** RSS base 16M CHAP2 SIMM bad (810). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-811	D	C45 C34	**Description:** RSS base 12M CHAP2 SIMM bad (811). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-812	D	C46 C34	**Description:** RSS AG 16M CHAP2 SIMM bad (812). Refer to the 7250 POWER GXT1000 Graphics Accelerator Service Addendum part number 52G0657.
908-813	D	C45 C34	**Description:** RSS AG 12M CHAP2 SIMM bad (813). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-814	D	C47 C34	**Description:** RSS TX 16M CHAP2 SIMM bad (814). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-815	D	C46 C34	**Description:** RSS base 16M CHAP3 SIMM bad (815). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-816	D	C45 C34	**Description:** RSS base 12M CHAP3 SIMM bad (816). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-817	D	C46 C34	**Description:** RSS AG 16M CHAP3 SIMM bad (817). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-818	D	C45 C34	**Description:** RSS AG 12M CHAP3 SIMM bad (818). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-819	D	C47 C34	**Description:** RSS TX 16M CHAP3 SIMM bad (819). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-820	D	C46 C34	**Description:** RSS base 16M CHAP4 SIMM bad (820). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.

908-821	D	C45 C34	**Description:** RSS base 12M CHAP4 SIMM bad (821). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-822	D	C46 C34	**Description:** RSS AG 16M CHAP4 SIMM bad (822). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-823	D	C45 C34	**Description:** RSS AG 12M CHAP4 SIMM bad (823). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-824	D	C47 C34	**Description:** RSS TX 16M CHAP4 SIMM bad (824). Refer to the *7250 POWER GXT1000 Graphics Accelerator Service Addendum* part number 52G0657.
908-830 to 908-870	D	C34 C33 C48	**Description:** Multiple SIMMs failed.
908-891 to 908-892	D	C35 C34 C44	**Description:** VOO header or CRC compare failed.
908-900	D	C33 C34	**Description:** BST failed on the GPSS and RSS boards.
908-901	D	C33 C34	**Description:** BST failed on multiple FRUs on the GPSS and RSS boards.
908-903	D	C33 C34	**Description:** The register test gets multiple failures on the GPSS and RSS boards.
910-101	D	910 227	**Description:** P.O.S. Register test failed.
910-102	D	910 227	**Description:** I/O register test failed.
910-103	D	910 227	**Description:** Shared RAM test failed.
910-104	D	910 227	**Description:** Power on self-test failed.
910-105	D	910 227	**Description:** Adapter interrupt test failed.
910-106	D	910 227	**Description:** Adapter D.M.A. test failed.
910-107	D	910	**Description:** Optical wrap test failed.
910-108	D	910 227	**Description:** Host/adapter shared RAM test failed.
910-109	D	910 227	**Description:** Shared RAM contention test failed.
910-110	D	910 227	**Description:** I/O contention test failed.
910-111	D	910	**Description:** Counter test failed.
910-112	D	910	**Description:** Timer test failed.
910-113	D	C24	**Description:** Cable wrap test failed.
910-114	G	C24 910	**Description:** Error log Analysis indicates hardware failure.
910-150	D	910 227 software	**Description:** Device configuration failure.
910-151	D	910 227 software	**Description:** Device driver indicates a hardware error.

910-152	D	910	**Description:** Adapter failed and error in determining which type of adapter.
912-098	J	912 B88 221	**Description:** Drive indicates an error.
912-099	J	912 B88 221	**Description:** Drive not found.
912-102	D	912	**Description:** An unrecoverable media error.
912-104	D	912	**Description:** The motor failed to restart.
912-105	D	912	**Description:** The drive did not become ready.
912-106	D	912	**Description:** The electronics card test failed.
912-108	D	912	**Description:** The bus test failed.
912-110	D	912	**Description:** The media format failed.
912-112	D	912	**Description:** The diagnostic test failed.
912-114	D	912	**Description:** An unrecoverable hardware error.
912-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
912-117	D	912	**Description:** A write protect error occurred.
912-118	D	912 B88	**Description:** A SCSI command time-out.
912-120	D	912	**Description:** A SCSI busy or command error.
912-122	D	912	**Description:** A SCSI reservation conflict error.
912-124	D	912	**Description:** A SCSI check condition error.
912-126	D	912 B88	**Description:** A software error was caused by a hardware failure.
912-128	G	912	**Description:** The error log analysis indicates a hardware failure.
912-130	G	912 B88	**Description:** The error log analysis indicates a hardware failure.
912-132	D	912	**Description:** A disk drive hardware error occurred.
912-134	D	B88 software	**Description:** The adapter failed to configure.
913-098	J	913 B88 221	**Description:** Drive indicates an error.
913-099	J	913 B88 221	**Description:** Drive not found.
913-102	D	913	**Description:** An unrecoverable media error.
913-104	D	913	**Description:** The motor failed to restart.
913-105	D	913	**Description:** The drive did not become ready.
913-106	D	913	**Description:** The electronics card test failed.
913-108	D	913	**Description:** The bus test failed.

913-110	D	913	**Description:** The media format failed.
913-112	D	913	**Description:** The diagnostic test failed.
913-114	D	913	**Description:** An unrecoverable hardware error.
913-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
913-117	D	913	**Description:** A write protect error occurred.
913-118	D	913 B88	**Description:** A SCSI command time-out.
913-120	D	913	**Description:** A SCSI busy or command error.
913-122	D	913	**Description:** A SCSI reservation conflict error.
913-124	D	913	**Description:** A SCSI check condition error.
913-126	D	913 B88	**Description:** A software error was caused by a hardware failure.
913-128	G	913	**Description:** The error log analysis indicates a hardware failure.
913-130	G	913 B88	**Description:** The error log analysis indicates a hardware failure.
913-132	D	913	**Description:** A disk drive hardware error occurred.
913-134	D	B88 software	**Description:** The adapter failed to configure.
914-110	D	914	**Description:** The **Reserve** command failed.
914-120	D	914	**Description:** The **Inquiry** command failed.
914-130	D	914 media	**Description:** The **Load** command failed.
914-135	D	914 media	**Description:** The **Unload** command failed.
914-140	D	914	**Description:** The **Mode Select** command failed.
914-150	D	914 media	**Description:** The **Test Unit Ready** command failed.
914-160	D	914 media	**Description:** The **Send Diagnostic** command failed.
914-170	D	914 B88 media	**Description:** The Read, Write and Compare test failed.
914-180	D	914 media	**Description:** The **Load** command failed.
914-185	D	914 media	**Description:** The **Unload** command failed.
914-190	D	914	**Description:** The **Mode Select** command failed.
914-200	D	914 media	**Description:** The **Test Unit Ready** command failed.
914-210	D	914 B88	**Description:** The device configuration failed.
914-220	D	914	**Description:** The **Release** command failed.
914-230	D	914	**Description:** The **Request Sense** command

			failed.
914-240	D	914	**Description:** The **Openx** command failed.
914-300	D	914 software	**Description:** The device configuration failed.
914-310	D	B88 914 software	**Description:** SCSI adapter configuration failed.
914-320	G	914 media	**Description:** Error log analysis indicates a failure.
914-411 **to** **914-423**	D	914 B88 software	**Description:** A reservation conflict occurred.
914-511 **to** **914-523**	D	914 B88	**Description:** The drive returned bad or non-extended sense data.
914-611 **to** **914-623**	D	914 B88 software	**Description:** An adapter or bus I/O error occurred.
914-711 **to** **914-723**	D	914 B88 software	**Description:** A device timeout error occurred.
915-098	J	915 B88 221	**Description:** Drive indicates an error.
915-099	J	915 B88 221	**Description:** Drive not found.
915-110	D	915	**Description:** The **Reserve** command failed.
915-120	D	915	**Description:** The **Inquiry** command failed.
915-130	D	915 media	**Description:** The **Load** command failed.
915-135	D	915 media	**Description:** The **Unload** command failed.
915-140	D	915	**Description:** The **Mode Select** command failed.
915-150	D	915 media	**Description:** The **Test Unit Ready** command failed.
915-160	D	915 media	**Description:** The **Send Diagnostic** command failed.
915-169	D	915 media	**Description:** The **Send Diagnostic** command failed.
915-170	D	915 B88 media	**Description:** The Read, Write and Compare test failed.
915-180	D	915 media	**Description:** The **Load** command failed.
915-185	D	915 media	**Description:** The **Unload** command failed.
915-190	D	915	**Description:** The **Mode Select** command failed.
915-200	D	915 media	**Description:** The **Test Unit Ready** command failed.
915-210	D	915 B88	**Description:** The device configuration failed.
915-220	D	915	**Description:** The **Replace** command failed.
915-230	D	915	**Description:** The **Request Sense** command failed.

915-240	D	915	**Description:** The **Openx** command failed.
915-300	D	915 software	**Description:** The device configuration failed.
915-310	D	B88 915 software	**Description:** SCSI adapter configuration failed.
915-320	D	915 media	**Description:** Error log analysis indicates a failure.
915-411 **to** **915-423**	D	915 B88 software	**Description:** A reservation conflict occurred.
915-511 **to** **915-523**	D	915 B88	**Description:** The drive returned bad or non-extended sense data.
915-611 **to** **915-623**	D	915 B88 software	**Description:** An adapter or bus I/O error occurred.
915-711 **to** **915-723**	D	915 B88 software	**Description:** A device timeout error occurred.
917-098	J	917 B88 221	**Description:** Drive indicates an error.
917-099	J	917 B88 221	**Description:** Drive not found.
917-102	D	917	**Description:** An unrecoverable media error.
917-104	D	917	**Description:** The motor failed to restart.
917-105	D	917	**Description:** The drive did not become ready.
917-106	D	917	**Description:** The electronics card test failed.
917-108	D	917	**Description:** The bus test failed.
917-110	D	917	**Description:** The media format failed.
917-112	D	917	**Description:** The diagnostic test failed.
917-114	D	917	**Description:** An unrecoverable hardware error.
917-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
917-117	D	917	**Description:** A write protect error occurred.
917-118	D	917 B88	**Description:** A SCSI command time-out.
917-120	D	917	**Description:** A SCSI busy or command error.
917-122	D	917	**Description:** A SCSI reservation conflict error.
917-124	D	917	**Description:** A SCSI check condition error.
917-126	D	917 B88	**Description:** A software error was caused by a hardware failure.
917-128	G	917	**Description:** The error log analysis indicates a hardware failure.
917-130	G	917 B88	**Description:** The error log analysis indicates a hardware failure.

917-132	D	917	**Description:** A disk drive hardware error occurred.
917-134	D	B88 software	**Description:** The adapter failed to configure.
917-135	D	917 B88 software	**Description:** The device failed to configure.
917-136	D	917	**Description:** The certify operation failed.
918-098	J	918 B88 221	**Description:** Drive indicates an error.
918-099	J	918 B88 221	**Description:** Drive not found.
918-102	D	918	**Description:** An unrecoverable media error.
918-104	D	918	**Description:** The motor failed to restart.
918-105	D	918	**Description:** The drive did not become ready.
918-106	D	918	**Description:** The electronics card test failed.
918-108	D	918	**Description:** The bus test failed.
918-110	D	918	**Description:** The media format failed.
918-112	D	918	**Description:** The diagnostic test failed.
918-114	D	918	**Description:** An unrecoverable hardware error.
918-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
918-117	D	918	**Description:** A write protect error occurred.
918-118	D	918 B88	**Description:** A SCSI command time-out.
918-120	D	918	**Description:** A SCSI busy or command error.
918-122	D	918	**Description:** A SCSI reservation conflict error.
918-124	D	918	**Description:** A SCSI check condition error.
918-126	D	918 B88	**Description:** A software error was caused by a hardware failure.
918-128	G	918	**Description:** The error log analysis indicates a hardware failure.
918-130	G	918 B88	**Description:** The error log analysis indicates a hardware failure.
918-132	D	918	**Description:** A disk drive hardware error occurred.
918-134	D	B88 software	**Description:** The adapter failed to configure.
918-135	D	918 B88 software	**Description:** The device failed to configure.
918-136	D	918	**Description:** The certify operation failed.
921-101	D	821	**Description:** An unexpected adapter error occurred.
921-102	D	921	**Description:** An unexpected device or

		821	adapter error occurred.
921-103	D	921 821	**Description:** The keyboard reset failed.
921-104	D	921	**Description:** Unknown keyboard.
921-201	D	821	**Description:** An unexpected adapter error occurred.
921-202	D	921 821	**Description:** An unexpected device or adapter error occurred.
921-203	D	921	**Description:** The read keyboard ID test failed.
921-204	D	921	**Description:** The keyboard layout ID test failed.
921-205	D	921	**Description:** The keyboard echo test failed.
921-206	D	921	**Description:** The select scan code set test failed.
921-301	D	821	**Description:** An unexpected adapter error occurred.
921-302	D	921 821	**Description:** An unexpected device or adapter error occurred.
921-303	D	921	**Description:** An error occurred in turning on the lamps.
921-304	D	921	**Description:** An error occurred in turning off the lamps.
921-401	D	821	**Description:** An unexpected adapter error occurred.
921-402	D	921 821	**Description:** An unexpected device or adapter error occurred.
921-403	D	921	**Description:** Unable to recognize the keyboard.
921-404	D	921	**Description:** The keyboard is failing.
921-501	D	821	**Description:** An unexpected adapter error occurred.
921-502	D	921 821	**Description:** An unexpected device or adapter error occurred.
921-503	D	921	**Description:** The auto-click cannot be disabled.
921-504	D	921	**Description:** The auto-click cannot be enabled.
921-505	D	921	**Description:** Unable to recognize the keyboard.
921-601	D	821	**Description:** An unexpected adapter error occurred.
921-602	D	921 821	**Description:** An unexpected device or adapter error occurred.
921-603	D	921 821	**Description:** The speaker test failed.
921-701	D	921 821	**Description:** Error configuring the device.
921-901	G	821	**Description:** The error log analysis indicates an adapter failure.
921-902	G	921	**Description:** The error log analysis indicates a device failure.
921-903	G	921 821	**Description:** The error log analysis indicates an unknown failure.

922-101	D	821	**Description:** An unexpected adapter error occurred.
922-102	D	922 821	**Description:** An unexpected device or adapter error occurred.
922-103	D	922 821	**Description:** The keyboard reset failed.
922-104	D	922	**Description:** Unknown keyboard.
922-201	D	821	**Description:** An unexpected adapter error occurred.
922-202	D	922 821	**Description:** An unexpected device or adapter error occurred.
922-203	D	922	**Description:** The read keyboard id test failed.
922-204	D	922	**Description:** The keyboard layout id test failed.
922-205	D	922	**Description:** The keyboard echo test failed.
922-206	D	922	**Description:** The select scan code set test failed.
922-301	D	821	**Description:** An unexpected adapter error occurred.
922-302	D	922 821	**Description:** An unexpected device or adapter error occurred.
922-303	D	922	**Description:** An error occurred in turning on the lamps.
922-304	D	922	**Description:** An error occurred in turning off the lamps.
922-401	D	821	**Description:** An unexpected adapter error occurred.
922-402	D	922 821	**Description:** An unexpected device or adapter error occurred.
922-403	D	922	**Description:** The keyboard is failing.
922-404	D	922	**Description:** Unable to recognize the keyboard.
922-501	D	821	**Description:** An unexpected adapter error occurred.
922-502	D	922 821	**Description:** An unexpected device or adapter error occurred.
922-503	D	921	**Description:** The auto-click cannot be disabled.
922-504	D	922	**Description:** The auto-click cannot be enabled.
922-505	D	922	**Description:** Unable to recognize the keyboard.
922-601	D	821	**Description:** An unexpected adapter error occurred.
922-602	D	922 821	**Description:** An unexpected device or adapter error occurred.
922-603	D	922	**Description:** The speaker test failed.
922-701	D	922 821	**Description:** Error configuring the device.
922-901	G	821	**Description:** The error log indicates an adapter failed.
922-902	G	922	**Description:** The error log indicates a device failed.

922-903	G	922 821	**Description:** The error log analysis indicates an unknown failure.
923-101	D	821	**Description:** An unexpected adapter error occurred.
923-102	D	923 821	**Description:** An unexpected device or adapter error occurred.
923-103	D	923 821	**Description:** The keyboard reset failed.
923-104	D	923	**Description:** Unknown keyboard.
923-201	D	821	**Description:** An unexpected adapter error occurred.
923-202	D	923 821	**Description:** An unexpected device or adapter error occurred.
923-203	D	923	**Description:** The read keyboard id test failed.
923-204	D	923	**Description:** The keyboard layout id test failed.
923-205	D	923	**Description:** The keyboard echo test failed.
923-206	D	923	**Description:** The select scan code set test failed.
923-301	D	821	**Description:** An unexpected adapter error occurred.
923-302	D	923 821	**Description:** An unexpected device or adapter error occurred.
923-303	D	923	**Description:** An error occurred in turning on the lamps.
923-304	D	923	**Description:** An error occurred in turning off the lamps.
923-401	D	821	**Description:** An unexpected adapter error occurred.
923-402	D	923 821	**Description:** An unexpected device or adapter error occurred.
923-403	D	923	**Description:** The keyboard is failing.
923-404	D	923	**Description:** Unable to recognize the keyboard.
923-501	D	821	**Description:** An unexpected adapter error occurred.
923-502	D	923 821	**Description:** An unexpected device or adapter error occurred.
923-503	D	923	**Description:** The auto-click cannot be disabled.
923-504	D	923	**Description:** The auto-click cannot be enabled.
923-505	D	923	**Description:** Unable to recognize the keyboard.
923-601	D	821	**Description:** An unexpected adapter error occurred.
923-602	D	923 821	**Description:** An unexpected device or adapter error occurred.
923-603	D	923	**Description:** The speaker test failed.
922-701	D	923 821	**Description:** Error configuring the device.
923-901	G	821	**Description:** The error log indicates an adapter failed.

923-902	G	923	**Description:** The error log analysis indicates a device failure.
923-903	G	923 821	**Description:** The error log analysis indicates an unknown failure.
924-111	D	924 823	**Description:** A device failure occurred.
924-112	D	924 823	**Description:** The device disable test failed.
924-113	D	924	**Description:** A device would not reset.
924-114	D	924 823	**Description:** The read status command failed.
924-115	D	924	**Description:** Device hardware failure.
924-116	D	924	**Description:** Unknown Mouse type.
924-117	D	924 823	**Description:** Mouse wrap mode failed.
924-118	D	924 823	**Description:** Error setting mouse parameters.
924-121	D	924	**Description:** Device hardware failure.
924-131	D	924	**Description:** Device hardware failure.
924-141	D	924	**Description:** Device hardware failure.
924-151	D	924	**Description:** Device hardware failure.
924-161	D	924	**Description:** Device hardware failure.
924-167	D	924	**Description:** Device hardware failure.
924-171	D	924	**Description:** Device hardware failure.
924-200	D	924 823	**Description:** Software error caused by hardware failure.
924-300	G	924	**Description:** Error log analysis indicates hardware failure.
924-301	G	924 823	**Description:** Error log analysis indicates hardware failure.
925-111	D	925 823	**Description:** An unexpected device error occurred.
925-112	D	925 823	**Description:** The device disable test failed.
925-113	D	925	**Description:** Could not reset the device.
925-114	D	925 823	**Description:** The read status command failed.
925-115	D	925	**Description:** The device test failed.
925-116	D	925	**Description:** Unknown Mouse type.
925-117	D	925 823	**Description:** Mouse wrap mode failed.
925-118	D	925 823	**Description:** Error setting mouse parameters.
925-121 to 925-171	D	925	**Description:** The device test failed.
925-200	D	925 823	**Description:** A software error was caused by a hardware failure.
925-300	G	925	**Description:** The error log analysis indicates a hardware failure.
925-301	G	925 823	**Description:** The error log analysis indicates a hardware failure.

926-104	D	926 159	**Description:** Input device cable is not attached.
926-111	D	824	**Description:** Adapter error.
926-112 **926-115**	D	926 824	**Description:** Device, adapter or tablet reset failed.
926-116	D	159	**Description:** The input device cable is not attached.
926-119	D	188	**Description:** The input device cable is not attached.
926-121	D	824	**Description:** Adapter error.
926-131	D	824 926	**Description:** Adapter error.
926-132 **to** **926-135**	D	926	**Description:** Device or adapter error.
926-141	D	824 926	**Description:** Adapter error.
926-142 **to** **926-161**	D	926	**Description:** Device or adapter error.
926-162	D	159 926	**Description:** Device or adapter error.
926-163	D	159 926	**Description:** Error in turning off input device LED.
926-164	D	159 926	**Description:** Error in turning off input device LED.
926-165	D	159	**Description:** The input device cable is not attached.
926-166	D	188 926	**Description:** Device or adapter error.
926-167	D	188 926	**Description:** Error in turning off input device LED.
926-168	D	188 926	**Description:** Error in turning on input device LED.
926-169	D	188	**Description:** The input device cable is not attached.
926-172	D	159 926	**Description:** Device or adapter error.
926-173	D	159 926	**Description:** Error in turning off input device switch.
926-174	D	159 926	**Description:** Error in turning on input device switch.
926-175	D	159	**Description:** The input device cable is not attached.
926-176	D	188 926	**Description:** Device or adapter error.
926-177	D	188 926	**Description:** Error in turning off input device switch.
926-178	D	188 926	**Description:** Error in turning on input device switch.
926-179	D	188	**Description:** The input device cable is not attached.
926-181	D	824 926	**Description:** Adapter error.
926-182	D	159 926	**Description:** Device or adapter error.

926-183	D	159 926	**Description:** Error in incremental data mode test.
926-184	D	159	**Description:** The input device cable is not attached.
926-186	D	188 926	**Description:** Device or adapter error.
926-187	D	188 926	**Description:** The incremental data mode test failed.
926-188	D	188	**Description:** The input device cable is not attached.
926-203	D	926 824	**Description:** Error in disabling tablet.
926-204	D	926 824	**Description:** Error in enabling tablet.
926-207	D	926 824	**Description:** Enabled/disabled test failed.
926-208	D	926 824	**Description:** Enabled/disabled test failed.
926-221	D	824	**Description:** Adapter error.
926-222	D	926 824	**Description:** Device or adapter error.
926-225	D	159	**Description:** The input device cable is not attached.
926-229	D	188	**Description:** The input device cable is not attached.
926-271	D	926	**Description:** Adapter error.
926-272	D	159 926	**Description:** Device or adapter error.
926-273	D	159	**Description:** Error in input device switch test.
926-274	D	159	**Description:** The input device cable is not attached.
926-276	D	188 926	**Description:** Device or adapter error.
926-277	D	188 926	**Description:** Error in input device switch test.
926-278	D	188	**Description:** Input device cable is not attached.
926-281	D	824 926	**Description:** Adapter error.
926-282	D	159 926	**Description:** Device or adapter error.
926-283	D	159 926	**Description:** Error in incremental data mode test.
926-284	D	159	**Description:** The input device cable is not attached.
926-286	D	188 926	**Description:** Device or adapter error.
926-287	D	188 926	**Description:** Error in incremental data mode test.
926-288	D	188	**Description:** The input device cable is not attached.
927-104	D	927 159	**Description:** The input device cable is not attached.
927-111	D	824	**Description:** Adapter error.

927-112	D	927 824	**Description:** Device or adapter error.
927-113	D	927 824	**Description:** Tablet reset failed.
927-114	D	927 824	**Description:** The read configuration test failed.
927-115	D	927 824	**Description:** The read status test failed.
927-116	D	159	**Description:** The input device cable is not attached.
927-119	D	188	**Description:** The input device cable is not attached.
927-121	D	824	**Description:** Adapter error.
927-122	D	927 824	**Description:** Device or adapter error.
927-125	D	927 824	**Description:** The input device cable is not attached.
927-131	D	824 927	**Description:** Adapter error.
927-132	D	927	**Description:** Device or adapter error.
927-133	D	927	**Description:** The set conversion mode test failed.
927-134	D	927	**Description:** The set resolution test failed.
927-135	D	927	**Description:** The read status test failed.
927-141	D	824 927	**Description:** Adapter error.
927-142	D	927	**Description:** Device or adapter error.
927-143	D	927	**Description:** Error in tablet indicator.
927-161	D	927	**Description:** Adapter error.
927-162	D	159 927	**Description:** Device or adapter error.
927-163	D	159 927	**Description:** Error in turning off input device LED.
927-164	D	159 927	**Description:** Error in turning on input device LED.
927-165	D	159	**Description:** The input device cable is not attached.
927-166	D	188 927	**Description:** Device or adapter error.
927-167	D	188 927	**Description:** Error in turning off input device LED.
927-168	D	188 927	**Description:** Error in turning on input device LED.
927-169	D	188	**Description:** The input device cable is not attached.
927-171	D	927	**Description:** Adapter error.
927-172	D	159 927	**Description:** Device or adapter error.
927-173	D	159 927	**Description:** Error in turning off input device switch.
927-174	D	159 927	**Description:** Error in turning on input device switch.
927-175	D	159	**Description:** The input device cable is not

			attached.
927-176	D	188 927	**Description:** Device or adapter error.
927-177	D	188 927	**Description:** Error in turning off input device switch.
927-178	D	188 927	**Description:** Error in turning on input device switch.
927-179	D	188	**Description:** The input device cable is not attached.
927-181	D	824 927	**Description:** Adapter error.
927-182	D	159 927	**Description:** Device or adapter error.
927-183	D	159 927	**Description:** Error in incremental data mode test.
927-184	D	159	**Description:** The input device cable is not attached.
927-186	D	188 927	**Description:** Device or adapter error.
927-187	D	188 927	**Description:** Error in incremental data mode test.
927-188	D	188	**Description:** The input device cable is not attached.
927-203	D	927 824	**Description:** Error in disabling tablet.
927-204	D	927 824	**Description:** Error in enabling tablet.
927-221	D	824	**Description:** Adapter error.
927-222	D	927 824	**Description:** Device or adapter error.
927-225	D	159	**Description:** The input device cable is not attached.
927-229	D	188	**Description:** The input device cable is not attached.
927-271	D	927	**Description:** Adapter error.
927-272	D	159 927	**Description:** Device or adapter error.
927-273	D	159 927	**Description:** Error in input device switch test.
927-274	D	159	**Description:** The input device cable is not attached.
927-276	D	188 927	**Description:** Device or adapter error.
927-277	D	188 927	**Description:** Error in input device switch test.
927-278	D	188	**Description:** The input device cable is not attached.
927-281	D	824 927	**Description:** Adapter error.
927-282	D	159 927	**Description:** Device or adapter error.
927-283	D	159 927	**Description:** Error in incremental data mode test.
927-284	D	159	**Description:** The input device cable is not attached.

927-286	D	188 927	**Description:** Device or adapter error.
927-287	D	188 927	**Description:** Error in incremental data mode test.
927-288	D	188	**Description:** The input device cable is not attached.
929-121	D	274	**Description:** Signal line failure.
929-122	D	826 270	**Description:** The cable wrap test failed.
929-131	D	929 274	**Description:** The device does not reset.
929-132	D	280 929 270	**Description:** The device does not reset.
929-141	D	929	**Description:** The device hardware failed.
929-142	D	929	**Description:** The device hardware failed.
929-200	D	929 274	**Description:** A software error was caused by a hardware failure.
929-300	D	929	**Description:** The error log analysis indicates a hardware failure.
929-301	D	929 274	**Description:** The error log analysis indicates a hardware failure.
929-800	D	929 227	**Description:** The device failed to configure.
929-801	D	819 929 software	**Description:** The device failed to configure.
929-802	D	929 227 software	**Description:** The device driver indicates a hardware failure.
929-803	D	819 929 software	**Description:** The device driver indicates a hardware failure.
930-200	D	930 274	**Description:** A software error was caused by a hardware failure.
930-300	G	930	**Description:** The error log analysis indicates a hardware failure.
930-301	G	930 274	**Description:** The error log analysis indicates a hardware failure.
930-661	D	274	**Description:** The cable wrap test failed.
930-662	D	826 270	**Description:** The cable wrap test failed.
930-771	D	930 274	**Description:** The device does not reset.
930-772	D	280 930 270	**Description:** The device does not reset.
930-781	D	930	**Description:** The device hardware failed.
930-800	D	930 270	**Description:** The device failed to configure.
930-801	D	819 930 software	**Description:** The device failed to configure.
930-802	D	930 227 software	**Description:** The device driver indicates a hardware failure.
930-803	D	819	**Description:** The device driver indicates a

		930 software	hardware failure.
931-101	D	821	**Description:** An unexpected adapter error occurred.
931-102	D	931 821	**Description:** An unexpected device or adapter error occurred.

Service Request Number	SRN Scr.	Failing Function Codes	Description and Action (Unless indicated otherwise use MAP 0210.)
931-103	D	931 821	**Description:** The keyboard reset failed.
931-104	D	931	**Description:** Unknown keyboard.
931-201	D	821	**Description:** An unexpected adapter error occurred.
931-202	D	931 821	**Description:** An unexpected device or adapter error occurred.
931-203	D	931	**Description:** The read keyboard ID test failed.
931-204	D	931	**Description:** The keyboard layout ID test failed.
931-205	D	931	**Description:** The keyboard echo test failed.
931-206	D	931	**Description:** The select scan code set test failed.
931-301	D	821	**Description:** An unexpected adapter error occurred.
931-302	D	931 821	**Description:** An unexpected device or adapter error occurred.
931-303	D	931	**Description:** An error occurred in turning on the lamps.
931-304	D	931	**Description:** An error occurred in turning off the lamps.
931-401	D	821	**Description:** An unexpected adapter error occurred.
931-402	D	931 821	**Description:** An unexpected device or adapter error occurred.
931-403	D	931	**Description:** Unable to recognize the keyboard.
931-404	D	931	**Description:** The keyboard is failing.
931-501	D	821	**Description:** An unexpected adapter error occurred.
931-502	D	931 821	**Description:** An unexpected device or adapter error occurred.
931-503	D	931	**Description:** The auto-click cannot be disabled.
931-504	D	931	**Description:** The auto-click cannot be enabled.
931-505	D	931	**Description:** Unable to recognize the keyboard.
931-601	D	821	**Description:** An unexpected adapter error occurred.
931-602	D	931 821	**Description:** An unexpected device or adapter error occurred.

931-603	D	931	**Description:** The speaker test failed.
931-901	G	821	**Description:** The error log analysis indicates an adapter failure.
931-902	G	931	**Description:** The error log analysis indicates a device failure.
931-903	G	931 821	**Description:** The error log analysis indicates an unknown failure.
935-101 **935-102**	D	935 828	**Description:** The diskette-drive select or deselect test failed.
935-103 **to** **935-107**	D	935 828 183	**Description:** The diskette failed.
935-108	D	935	**Description:** The diskette read test failed.
935-109 **935-110**	D	935 828	**Description:** The read/write on the diskette drive failed.
935-111 **to** **935-114**	D	935	**Description:** A diskette drive test failed.
935-115 **to** **935-121**	D	935 828	**Description:** The diskette drive test failed.
935-122	G	935 828 183	**Description:** The error log analysis indicates a hardware failure.
935-123	G	935	**Description:** The error log analysis indicates a hardware failure.
935-124	D	935 software	**Description:** Unable to configure the device.
936-201 **936-202**	D	936 828	**Description:** A diskette drive test failed.
936-203 **to** **936-207**	D	936 828 183	**Description:** A diskette drive test failed.
936-208	D	936	**Description:** The diskette read test failed.
936-209 **936-210**	D	936 828	**Description:** A diskette test failed.
936-211 **to** **936-214**	D	936	**Description:** A diskette drive test failed.
936-215 **to** **936-218**	D	936 828	**Description:** A diskette test failed.
936-219	G	828	**Description:** The error log analysis indicates diskette adapter failure.
936-220	D	936 828	**Description:** A software error was caused by a hardware failure.
936-221	G	936 828	**Description:** The error log analysis indicates a hardware failure.
936-222	G	936 828 183	**Description:** The error log analysis indicates a hardware failure.
936-223	G	936	**Description:** The error log analysis indicates a hardware failure.
936-224	D	936 software	**Description:** Unable to configure the device.
936-301 **936-302**	D	184 828	**Description:** The diskette select or de-select test failed.

936-303 to 936-307	D	184 828 183	**Description:** A diskette drive test failed.
936-308	D	184	**Description:** The diskette read test failed.
936-309 936-310	D	184 828	**Description:** The diskette write or write/read/compare test failed.
936-311 to 936-314	D	184	**Description:** A diskette drive test failed.
936-315 to 936-318	D	184 828	**Description:** A diskette drive test failed.
936-319	G	828	**Description:** The diskette adapter failed.
936-320	D	184 828	**Description:** A software error was caused by a hardware failure.
936-321	G	184 828	**Description:** The error log analysis indicates a hardware failure.
936-322	G	184 828 183	**Description:** The error log analysis indicates a hardware failure.
936-323	G	184	**Description:** The error log analysis indicates a hardware failure.
936-324	E	936 software	**Description:** Unable to configure the device.
940-087 940-088	J	C32 214	**Description:** IPLROS detected a problem with the memory SIMM pair. If exchanging the pair does not resolve the problem exchange the next SIMM pair before exchanging the planar.
940-097 940-098	J	C31 214	**Description:** IPLROS detected a problem with the memory SIMM pair. If exchanging the pair does not resolve the problem exchange the next SIMM pair before exchanging the planar.
940-112	G	173	**Description:** The memory test failed.
940-114	G	175	**Description:** The memory test failed.
940-115	E	C38	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-122	E	174	**Description:** The memory test failed.
940-124	E	179	**Description:** The memory test failed.
940-125	E	C39	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-130	E	187	**Description:** The memory test failed.
940-132	E	176	**Description:** The memory test failed.
940-134	E	172	**Description:** The memory test failed.
940-135	E	C40	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-136	E	D62	**Description:** The memory test failed.
940-142	E	177	**Description:** The memory test failed.
940-144	E	182	**Description:** The memory test failed.
940-145	E	C41	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-146	E	D63	**Description:** The memory test failed.
940-147	G	B96	**Description:** Checkstop or machine checks.

940-154	E	154	**Description:** The memory card test failed.
940-155	E	C42	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-156	E	C42	**Description:** The memory test failed.
940-165	E	C43	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-166	E	D64	**Description:** The memory test failed.
940-167	G	B97	**Description:** Checkstop or machine checks.
940-215	E	C37 815	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-216	E	D61	**Description:** The memory test failed.
940-217 **to** **940-245**	E	C37 815	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-254	E	157 815	**Description:** The memory card test failed. **Action:** Use MAP 0240.
940-255 **940-265**	E	C37 815	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-315	E	C37 C38	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-325	E	C37 C39	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-335	E	C37 C40	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-336	E	D61 D62 D62	**Description:** The memory test failed.
940-345	E	C37 C41	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-346	E	D61 D63 D63	**Description:** The memory test failed.
940-354	E	157 154	**Description:** The memory card test failed. **Action:** Use MAP 0240.
940-355	E	C37 C42	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-356	E	D61 C42 C42	**Description:** Memory Test Failed.
940-365	E	C37 C43	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-366	E	D61 D64 D64	**Description:** The memory test failed.
940-415	E	C37 C38	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-425	E	C37 C39	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-435	E	C37 C40	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-436	E	D61 D62 D62 D62	**Description:** The memory test failed.
940-445	E	C37 C41	**Description:** The memory test failed. **Action:** Use MAP 0240.

940-446	E	D61 D63 D63 D63	**Description:** The memory test failed.
940-454	E	157 154	**Description:** The memory card test failed. **Action:** Use MAP 0240.
940-455	E	C37 C42	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-456	E	D61 C42 C42 C42	**Description:** Memory Test Failed.
940-465	E	C37 C43	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-466	E	D61 D64 D64 D64	**Description:** The memory test failed.
940-515	E	C37	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-516	E	D61 D61	**Description:** The memory test failed.
940-517 to 940-545	E	C37	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-554	E	157	**Description:** The memory card test failed. **Action:** Use MAP 0240.
940-555 940-565	E	C37	**Description:** The memory test failed. **Action:** Use MAP 0240.
940-600	E	D05	**Description:** POST indicates L2 cache error.
940-601	E	D02	**Description:** POST indicates L2 cache error.
940-602	E	D03	**Description:** POST indicates L2 cache error.
940-604	E	D04	**Description:** POST indicates L2 cache error.
942-049	J	C28 C25 C27	**Description:** A graphics adapter problem is indicated.
942-050	J	942 C25 C27	**Description:** A graphics adapter problem is indicated.
942-101	D	942	**Description:** The adapter test failed.
942-102	D	942 C27 C25	**Description:** The adapter test failed.
942-103	D	942 C27	**Description:** The display test failed.
942-111	D	C28	**Description:** The adapter test failed.
942-112	D	C28 C27 C25	**Description:** The adapter test failed.
942-113	D	C28 C27	**Description:** The display test failed.
942-120	D	725	**Description:** The display test failed.
942-126	D	C87	**Description:** The adapter test failed.
942-127	D	C28 C87	**Description:** The adapter test failed.

		C25	
942-128	D	C87 C27	**Description:** The display test failed.
942-150	G	942	**Description:** Error log analysis indicates a hardware failure.
942-151	G	942 C27	**Description:** Error log analysis indicates a hardware failure.
942-160	G	C28	**Description:** Error log analysis indicates a hardware failure.
942-161	G	C28 C27	**Description:** Error log analysis indicates a hardware failure.
942-175	G	C87	**Description:** Error log analysis indicates a hardware failure.
942-176	G	C87 C27	**Description:** Error log analysis indicates a hardware failure.
942-201	D	C75	**Description:** Adapter test failed.
942-202	D	C75 C27 C25	**Description:** Adapter test failed.
942-203	D	C75 C27	**Description:** Display test failed.
942-250	G	C75	**Description:** Error log analysis indicated a hardware failure.
942-251	G	C75 C27	**Description:** Error log analysis indicated a hardware failure.
942-300	G	725 942 D07	**Description:** Unsupported display connected to the system.
942-310	G	725 C28 D07	**Description:** Unsupported display connected to the system.
942-325 **942-345**	G	725 C87 D07	**Description:** Unsupported display connected to the system.
942-400	G	725 C75 D07	**Description:** Unsupported display connected to the system.
942-500	F	725 942 D07	**Description:** Check the switch settings on the adapter to assure that they are set correctly.
942-510	F	725 C28 D07	**Description:** Check the switch settings on the adapter to assure that they are set correctly.
942-525 **942-545**	F	725 C87 D07	**Description:** Check the switch settings on the adapter to assure that they are set correctly.
942-600	F	725 C75 D07	**Description:** Check the switch settings on the adapter to assure that they are set correctly.
945-098 **945-099**	J	990 B88	**Description:** Disk drive indicates an error or not found.
945-102 **to** **945-114**	D	990	**Description:** 1GB 16-bit SCSI differential disk drive problem.
945-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.

945-117	D	990	**Description:** A write protect error occurred.
945-118	D	990 B88	**Description:** A SCSI command time-out.
945-120 to 945-124	D	990	**Description:** 1GB 16-bit SCSI differential disk drive problem.
945-126	D	990 B88	**Description:** A software error was caused by a hardware failure.
945-128	G	990	**Description:** The error log analysis indicates a hardware failure.
945-130	G	990 B88	**Description:** The error log analysis indicates a hardware failure.
945-132	D	990	**Description:** A disk drive hardware error occurred.
945-134	D	B88 software	**Description:** The adapter failed to configure.
945-136	D	990	**Description:** The certify operation failed.
946-111	D	946 227	**Description:** Cannot run the test because the device driver detected a hardware error.
946-114	D	946	**Description:** The register verification test failed.
946-121	D	946 227	**Description:** Cannot run the test because the device driver detected a hardware error.
946-122	D	946 227	**Description:** The data wrap communications test failed.
946-123	D	946 227	**Description:** The modem control line test failed.
946-131	D	946	**Description:** Cannot run the test because the device driver detected a hardware error.
946-132	D	946 227	**Description:** The data wrap communications test failed.
946-133	D	946	**Description:** The modem control line test failed.
946-161	D	252	**Description:** Could not do the test because the device driver detected a hardware error.
946-162	D	252	**Description:** The data wrap communication test failed.
946-163	D	252	**Description:** The modem control line test failed.
946-171	D	259	**Description:** Cannot run the test because the device driver detected a hardware error.
946-172	D	259	**Description:** The data wrap communications test failed.
946-173	D	259	**Description:** The modem control line test failed.
946-181	D	261	**Description:** Cannot run the test because the device driver detected a hardware error.
946-182	D	261	**Description:** The data wrap communications test failed.
946-183	D	261	**Description:** The modem control line test failed.

946-271	D	946 259	**Description:** Cannot run the test because the device driver detected a hardware error.
946-272	D	946 259	**Description:** The data wrap communication test failed.
946-273	D	946 259	**Description:** The modem control line test failed.
946-281	D	946 261	**Description:** Cannot run the test because the device driver detected a hardware error.
946-282	D	946 261	**Description:** The data wrap communications test failed.
946-283	D	946 261	**Description:** The modem control line test failed.
946-321	D	946	**Description:** Cannot run the test because the device driver detected a hardware error.
946-322	D	946	**Description:** The data wrap communications test failed.
946-323	D	946	**Description:** The modem control line test failed.
946-331	D	946	**Description:** Cannot run the test because the device driver detected a hardware error.
946-332	D	946	**Description:** The data wrap communications test failed.
946-333	D	946	**Description:** The modem control line test failed.
946-371	D	946	**Description:** Cannot run the test because the device driver detected a hardware error.
946-372	D	946	**Description:** The data wrap communications test failed.
946-373	D	946	**Description:** The modem control line test failed.
946-381	D	946	**Description:** Cannot run the test because the device driver detected a hardware error.
946-382	D	946	**Description:** The data wrap communications test failed.
946-383	D	946	**Description:** The modem control line test failed.
946-481	D	D56	**Description:** Could not do the test because the device driver detected a hardware error.
946-482	D	D56	**Description:** The data wrap communication test failed.
946-483	D	D56	**Description:** The modem control line test failed.
946-581	D	946 D56	**Description:** Could not do the test because the device driver detected a hardware error.
946-582	D	946 D56	**Description:** The data wrap communication test failed.
946-583	D	946 D56	**Description:** The modem control line test failed.
946-9xx series	D	Software	**Description:** An unexpected error occurred that can be attributed to software or hardware. **Action:** Run diagnostics from a source

			other than from the disk or a network. If the same error occurs or if the original SRN was not obtained from disk or a network based diagnostics, use MAP 0210 with a FFC of 946; otherwise, suspect a software problem.
947-098	J	947 B88 221	**Description:** IPLROS detected a problem with the SCSI disk drive.
947-099	J	947 B88	**Description:** IPLROS detected a problem with the SCSI disk drive.
947-102	D	947	**Description:** An unrecoverable media error.
947-104	D	947	**Description:** The motor failed to restart.
947-105	D	947	**Description:** The drive did not become ready.
947-106	D	947	**Description:** The electronics card test failed.
947-108	D	947	**Description:** The bus test failed.
947-110	D	947	**Description:** The media format failed.
947-112	D	947	**Description:** The diagnostic test failed.
947-114	D	947	**Description:** An unrecoverable hardware error.
947-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic soft-ware, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
947-117	D	947	**Description:** A write protect error occurred.
947-118	D	947 B88	**Description:** A SCSI command time-out.
947-120	D	947	**Description:** A SCSI busy or command error.
947-122	D	947	**Description:** A SCSI reservation conflict error.
947-124	D	947	**Description:** A SCSI check condition error.
947-126	D	947 B88	**Description:** A software error was caused by a hardware failure.
947-128	G	947	**Description:** The error log analysis indicates a hardware failure.
947-130	G	947 B88	**Description:** The error log analysis indicates a hardware failure.
947-132	D	947	**Description:** A disk drive hardware error occurred.
947-134	D	B88 software	**Description:** The adapter failed to configure.
947-135	D	947 B88 software	**Description:** The device failed to configure.
947-136	D	947	**Description:** The certify operation failed.
950-100	C	192	**Description:** Power supply problem. **Action:** Use the service documentation for the portable disk.
950-200	C	203	**Description:** Power supply problem. **Action:** Use the service documentation for the external device.
950-201	C	SCSI Bus	**Description:** SCSI bus problem. **Action:** Use the SCSI Bus Service Aid to

			further isolate the problem.
950-203	C	158 D24 153	**Description:** Power supply problem. **Action:** Use the expansion unit service documentation.
950-300	C	158 153	**Description:** The fans good light on the drawer/deskside unit is not on. **Action:** Use the service documentation for the drawer/deskside unit containing the failing fan.
950-301	C	158	**Description:** AC fan assembly problem. **Action:** Refer to the service documentation.
950-302	C	D08	**Description:** DC fan assembly problem. **Action:** Refer to the service documentation.
950-400	C	153	**Description:** Power supply problem. **Action:** Use the service documentation for the drawer/tower containing the failing power supply. Refer to "Drawer/Deskside Unit Documentation" under Service Hints in Chapter 1. If the drawer/deskside unit service documentation does not isolate the problem, go to MAP 1520 in the system unit installation and service guide.
950-500	C	152	**Description:** Power supply problem. **Action:** Use the service documentation for either the system unit, rack or drawer/deskside unit the missing device is located in.
950-600	C	184 828	**Description:** Device does not respond. **Action:** Use the service documentation for the external diskette drive.
950-700	C	700 B88	**Description:** The device is not responding. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-701	C	701 B88	**Description:** The device is not responding. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-702	C	702 B88	**Description:** The device is not responding. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-703	C	703 B88	**Description:** The device is not responding. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-704	C	704 B88	**Description:** The device is not responding. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.

950-705	C	705 B88	**Description:** The device is not responding. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-706	C	706 B88	**Description:** The device is not responding. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-707	C	707 B88	**Description:** The device is not responding. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-721	C	721 B88	**Description:** An unknown drive type is not responding.
950-722	C	722 B88	**Description:** The device is not responding. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-723	C	723 B88	**Description:** The device is not responding. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-724	C	724 B88	**Description:** The device is not responding. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-734	C	734 B88	**Description:** The device is not responding. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-741	C	741 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-89A	C	89C B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.

950-89C	C	89C B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-912	C	912 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-914	C	914 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-915	C	974 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-917	C	917 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-918	C	918 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-935	C	935 828	**Description:** Device does not respond.
950-936	C	936 828	**Description:** Device does not respond.
950-947	C	947 B88	**Description:** The device is not responding. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-951	C	951 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-952	C	952 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside

			Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-953	C	953 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-954	C	954 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-955	C	955 B88 141	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210. If the drawer/deskside unit service documentation does not isolate the problem, go to MAP 0210.
950-956	C	956 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-959	C	959 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-960	C	960 B88	**Description:** Device does not respond.
950-968	C	968 B88	**Description:** Device does not respond.
950-970	C	970 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-971	C	971 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-972	C	972 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.

950-974	C	974 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-981	C	981 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-984	C	984 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-986	C	986 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-987	C	974 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-989	C	989 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-990	C	990 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-991	C	991 B88	**Description:** Device does not respond.
950-994	C	994 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-995	C	995 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.

950-996	C	996 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
950-998	C	998 B88	**Description:** Device does not respond. **Action:** For devices located in drawer/deskside units, use the service documentation for the drawer/deskside unit. Refer to "Drawer/Deskside Documentation" under Service Hints in Chapter 1. For all other locations, use MAP 0210.
951-098	J	951	**Description:** Disk drive indicates an error.
951-099	J	951 B88	**Description:** Disk drive not found.
951-102	D	951	**Description:** An unrecoverable media error.
951-104	D	951	**Description:** The motor failed to restart.
951-105	D	951	**Description:** The drive did not become ready.
951-106	D	951	**Description:** The electronics card test failed.
951-108	D	951	**Description:** The bus test failed.
951-110	D	951	**Description:** The media format failed.
951-112	D	951	**Description:** The diagnostic test failed.
951-114	D	951	**Description:** An unrecoverable hardware error.
951-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, and application software to ensure they are all compatible. If you do not find a problem, call your support person.
951-117	D	951	**Description:** A write protect error occurred.
951-118	D	951 B88	**Description:** A SCSI command timeout.
951-120	D	951	**Description:** A SCSI busy or command error.
951-122	D	951	**Description:** A SCSI reservation conflict error.
951-124	D	951	**Description:** A SCSI check condition error.
951-126	D	951 B88	**Description:** A software error was caused by a hardware failure.
951-128	G	951	**Description:** The error log analysis indicates a hardware failure.
951-130	G	951 B88	**Description:** The error log analysis indicates a hardware failure.
951-132	D	951	**Description:** A disk drive hardware error occurred.
951-134	D	B88 software	**Description:** The adapter failed to configure.
951-135	D	951 B88 software	**Description:** The device failed to configure.
951-136	D	951	**Description:** The certify operation failed.

952-098	J	952	**Description:** Disk drive indicates an error.
952-099	J	952 B88	**Description:** Disk drive not found.
952-102	D	952	**Description:** An unrecoverable media error.
952-104	D	952	**Description:** The motor failed to restart.
952-105	D	952	**Description:** The drive did not become ready.
952-106	D	952	**Description:** The electronics card test failed.
952-108	D	952	**Description:** The bus test failed.
952-110	D	952	**Description:** The media format failed.
952-112	D	952	**Description:** The diagnostic test failed.
952-114	D	952	**Description:** An unrecoverable hardware error.
952-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
952-117	D	952	**Description:** A write protect error occurred.
952-118	D	952 B88	**Description:** A SCSI command timeout.
952-120	D	952	**Description:** A SCSI busy or command error.
952-122	D	952	**Description:** A SCSI reservation conflict error.
952-124	D	952	**Description:** A SCSI check condition error.
952-126	D	952 B88	**Description:** A software error was caused by a hardware failure.
952-128	G	952	**Description:** The error log analysis indicates a hardware failure.
952-130	G	952 B88	**Description:** The error log analysis indicates a hardware failure.
952-132	D	952	**Description:** A disk drive hardware error occurred.
952-134	D	B88 software	**Description:** The adapter failed to configure.
952-135	D	952 B88 software	**Description:** The device failed to configure.
952-136	D	952	**Description:** The certify operation failed.
953-098	J	953	**Description:** Disk drive indicates an error.
953-099	J	953 B88	**Description:** Disk drive not found.
953-102	D	953	**Description:** An unrecoverable media error.
953-104	D	953	**Description:** The motor failed to restart.
953-105	D	953	**Description:** The disk drive did not become ready.
953-106	D	953	**Description:** The electronics card test failed.
953-108	D	953	**Description:** The bus test failed.

953-110	D	953	**Description:** The media format failed.
953-112	D	953	**Description:** The diagnostic test failed.
953-114	D	953	**Description:** An unrecoverable hardware error.
953-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
953-117	D	953	**Description:** A write protect error.
953-118	D	953 B88	**Description:** A SCSI command timeout.
953-120	D	953	**Description:** A SCSI busy or command error.
953-122	D	953	**Description:** A SCSI reservation conflict error.
953-124	D	953	**Description:** A SCSI check condition error.
953-126	D	953 B88	**Description:** A software error was caused by a hardware failure.
953-128	G	953	**Description:** The error log analysis indicates a hardware failure.
953-130	G	953 B88	**Description:** The error log analysis indicates a hardware failure.
953-132	D	953	**Description:** A disk drive hardware error occurred.
953-134	D	B88 software	**Description:** The adapter failed to configure.
953-135	D	953 B88 software	**Description:** The device failed to configure.
953-136	D	953	**Description:** The certify operation failed.
954-098	J	954	**Description:** Disk drive indicates an error.
954-099	J	954 B88	**Description:** Disk drive not found.
954-102	D	954	**Description:** An unrecoverable media error.
954-104	D	954	**Description:** Motor failed to restart.
954-105	D	954	**Description:** The disk drive did not become ready.
954-106	D	954	**Description:** Electronics card failure.
954-108	D	954	**Description:** Bus failure.
954-110	D	954	**Description:** Media format corrupted.
954-112	D	954	**Description:** Diagnostic failure.
954-114	D	954	**Description:** An unrecoverable hardware error.
954-116	D		**Description:** A protocol error was detected. **Action:** Check the levels of the device, adapter, diagnostic software, and application software, ensure that they are all compatible. If you do not find a problem, call your support person.
954-117	D	954	**Description:** Write protect error.
954-118	D	954 B88	**Description:** SCSI command timeout.

954-120	D	954	**Description:** SCSI busy/command error.
954-122	D	954	**Description:** SCSI reservation conflict error.
954-124	D	954	**Description:** SCSI check condition error.
954-126	D	954 B88	**Description:** Software error caused by hardware failure.
954-128	G	954	**Description:** Error log analysis indicates hardware failure.
954-130	D	954 B88	**Description:** Error log analysis indicates hardware failure.
954-132	D	954	**Description:** A disk drive hardware error occurred.
954-134	D	B88 software	**Description:** The adapter failed to configure.
954-135	D	954 B88 software	**Description:** The device failed to configure.
954-136	D	954	**Description:** The certify operation failed.
955-098	J	955	**Description:** Disk drive indicates an error.
955-099	J	955 B88	**Description:** Disk drive not found.
955-102	D	955 141	**Description:** A media error was encountered.
955-104	D	955 141	**Description:** The motor failed to restart. **Action:** For devices installed in a drawer/deskside unit, use the drawer/deskside unit documentation. Refer to "Drawer/Deskside Unit Documentation" under Hints in Chapter 1. For other locations, go to MAP 0210. If the electronics card has been exchanged, exchange the adapter first. If the drawer/deskside unit documentation does not isolate the problem, go to MAP 0210.
955-105	D	955 141	**Description:** The disk drive did not become ready.
955-106	D	955 141	**Description:** The electronics card failed.
955-108	D	955	**Description:** The bus test failed.
955-110	D	955 141	**Description:** The media format failed.
955-112	D	955 141	**Description:** The diagnostic test failed.
955-114	D	955 141	**Description:** An unrecoverable hardware error.
955-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
955-118	D	955 B88	**Description:** A SCSI command timeout.
955-120	D	955 B88	**Description:** A SCSI busy or command error.
955-122	D	955	**Description:** A SCSI reservation conflict error.
955-124	D	955 B88	**Description:** A SCSI check condition error.

955-126	D	955 B88	**Description:** A software error was caused by a hardware failure.
955-128	G	955 141	**Description:** The error log analysis indicates a hardware failure.
955-130	G	955 141 B88	**Description:** The error log analysis indicates a hardware failure.
955-132	D	955	**Description:** A disk drive hardware error occurred.
955-134	D	B88 software	**Description:** The adapter failed to configure.
955-135	D	955 B88 software	**Description:** The device failed to configure.
955-136	D	955 141	**Description:** The certify operation failed.
956-102	D	956	**Description:** An unrecoverable media error.
956-104	D	956	**Description:** The motor failed to restart.
956-105	D	956	**Description:** The drive did not become ready.
956-106	D	956	**Description:** The electronics card test failed.
956-108	D	956	**Description:** The bus test failed.
956-110	D	956	**Description:** The media format failed.
956-112	D	956	**Description:** The diagnostic test failed.
956-114	D	956	**Description:** An unrecoverable hardware error.
956-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
956-117	D	956	**Description:** A write protect error occurred.
956-118	D	956 B88	**Description:** A SCSI command time-out.
956-120	D	956	**Description:** A SCSI busy or command error.
956-122	D	956	**Description:** A SCSI reservation conflict error.
956-124	D	956	**Description:** A SCSI check condition error.
956-126	D	956 B88	**Description:** A software error was caused by a hardware failure.
956-128	G	956	**Description:** The error log analysis indicates a hardware failure.
956-130	G	956 B88	**Description:** The error log analysis indicates a hardware failure.
956-132	D	956	**Description:** A disk drive hardware error occurred.
956-134	D	B88 software	**Description:** The adapter failed to configure.
956-136	D	956	**Description:** The certify operation failed.
957-100	D	957 189 227	**Description:** The diagnostic self-test failed.

957-101	D	957	**Description:** The diagnostic self-test failed, and an **abort** command was sent.
957-102	D	957	**Description:** The Write/Read Compare test failed.
957-103	D	957	**Description:** The Write/Read Compare test failed, and an **abort** command was sent.
957-104	F	957	**Description:** The Read/Write test failed.
957-105	D	957	**Description:** The Read/Write test failed, and an **abort** command was sent.
957-106	D	957	**Description:** The Seek test failed.
957-107	D	957	**Description:** The Seek test failed, and an **abort** command was sent.
957-108	D	957	**Description:** The Read Verify test failed.
957-109	D	957	**Description:** The Read Verify test failed, and an **abort** command was sent.
957-110	D	957	**Description:** The POS register test failed.
957-112	D	957	**Description:** The Write/Read buffer test failed.
957-114	D	957 227	**Description:** The **system** command timed out.
957-116	D	957	**Description:** Device failure.
957-118	D	957 227	**Description:** A software error was caused by a hardware failure.
957-120	G	957	**Description:** The error log analysis indicates a hardware failure.
957-122	G	957 227	**Description:** The error log analysis indicates a hardware failure.
957-124	D	957	**Description:** The disk drive is failing.
957-126	D	957	**Description:** The disk drive is failing.
957-128	D	957	**Description:** The disk drive is failing.
957-134	D	B88 software	**Description:** The adapter failed to configure.
957-135	D	957 B88 software	**Description:** The device failed to configure.
958-xxx		958	**Note:** Use the data listed under the corresponding 957-xxx SRN. Substitute FFC 958 for FFC 957.
959-098	J	959	**Description:** Disk drive indicates an error.
959-099	J	959 B88	**Description:** Disk drive not found.
959-102	D	959	**Description:** Non-recoverable medium error.
959-104	D	959	**Description:** Motor failed to restart.
959-105	D	959	**Description:** The drive did not become ready.
959-106	D	959	**Description:** Electronics card failure.
959-108	D	959	**Description:** Bus failure.
959-110	D	959	**Description:** Medium format corrupted.
959-112	D	959	**Description:** Diagnostic failure.
959-114	D	959	**Description:** Non-recoverable hardware error.

959-116	D		**Description:** A protocol error was detected. **Action:** Check the levels of the device, adapter, diagnostic and application software, and ensure they are all compatible. If you do not find a problem, call your support person.
959-117	D	959	**Description:** Write protect error.
959-118	D	959 B88	**Description:** SCSI command timeout.
959-120	D	959	**Description:** SCSI busy/command error.
959-122	D	959	**Description:** SCSI reservation conflict error.
959-124	D	959	**Description:** SCSI check condition error.
959-126	D	959 B88	**Description:** Software error caused by hardware failure.
959-128	G	959	**Description:** Error log analysis indicates hardware failure.
959-130	G	959 B88	**Description:** Error log analysis indicates hardware failure.
959-134	D	B88 software	**Description:** The adapter failed to configure.
959-135	D	959 B88 software	**Description:** The device failed to configure.
959-136	D	959	**Description:** The certify operation failed.
960-098	J	960	**Description:** Disk drive indicates an error.
960-099	J	960 B88	**Description:** Disk drive not found.
960-102	D	960	**Description:** An unrecoverable media error.
960-104	D	960	**Description:** The motor failed to restart.
960-105	D	960	**Description:** The drive did not become ready.
960-106	D	960	**Description:** The electronics card test failed.
960-108	D	960	**Description:** The bus test failed.
960-110	D	960	**Description:** The media format failed.
960-112	D	960	**Description:** The diagnostic test failed.
960-114	D	960	**Description:** An unrecoverable hardware error.
960-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
960-117	D	960	**Description:** A write protect error occurred.
960-118	D	960 B88	**Description:** A SCSI command time-out.
960-120	D	960	**Description:** A SCSI busy or command error.
960-122	D	960	**Description:** A SCSI reservation conflict error.
960-124	D	960	**Description:** A SCSI check condition error.
960-126	D	960	**Description:** A software error was caused

		B88	by a hardware failure.
960-128	G	960	**Description:** The error log analysis indicates a hardware failure.
960-130	G	960 B88	**Description:** The error log analysis indicates a hardware failure.
960-132	D	960	**Description:** A disk drive hardware error occurred.
960-134	D	B88 software	**Description:** The adapter failed to configure.
960-135	D	960 B88 software	**Description:** The device failed to configure.
960-136	D	960	**Description:** The certify operation failed.
968-098	J	968	**Description:** Disk drive indicates an error.
968-099	J	968 B88	**Description:** Disk drive not found.
968-102	D	968	**Description:** An unrecoverable media error.
968-104	D	968	**Description:** The motor failed to restart.
968-105	D	968	**Description:** The drive did not become ready.
968-106	D	968	**Description:** The electronics card test failed.
968-108	D	968	**Description:** The bus test failed.
968-110	D	968	**Description:** The media format failed.
968-112	D	968	**Description:** The diagnostic test failed.
968-114	D	968	**Description:** An unrecoverable hardware error.
968-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
968-117	D	968	**Description:** A write protect error occurred.
968-118	D	968 B88	**Description:** A SCSI command time-out.
968-120	D	968	**Description:** A SCSI busy or command error.
968-122	D	968	**Description:** A SCSI reservation conflict error.
968-124	D	968	**Description:** A SCSI check condition error.
968-126	D	968 B88	**Description:** A software error was caused by a hardware failure.
968-128	G	968	**Description:** The error log analysis indicates a hardware failure.
968-130	G	968 B88	**Description:** The error log analysis indicates a hardware failure.
968-132	D	968	**Description:** A disk drive hardware error occurred.
968-134	D	B88 software	**Description:** The adapter failed to configure.
968-135	D	968 B88 software	**Description:** The device failed to configure.

968-136	D	968	**Description:** The certify operation failed.
970-098	J	970	**Description:** Tape drive indicates an error.
970-099	J	970 B88	**Description:** Tape drive not found.
970-101	D	970	**Description:** Timeout while attempting to communicate with SCSI device.
970-102	D	970	**Description:** The SCSI device indicates busy.
970-103	D	970	**Description:** The SCSI device indicates a reservation conflict.
970-104	D	970	**Description:** The SCSI device indicates a check condition.
970-105	D	970	**Description:** An error is detected in request sense data.
970-107	D	970	**Description:** Sense data from the SCSI drive has unexpected data.
970-110	D	970	**Description:** The Reserve command failed.
970-111	D	970	**Description:** Invalid condition from the drive after a reserve.
970-112	D	970	**Description:** The write protect sensor test failed.
970-113	D	970	**Description:** Invalid condition from drive after a request sense.
970-114	D	970	**Description:** Timeout while attempting to communicate with the SCSI device.
970-120	D	970	**Description:** The **Inquiry** command failed.
970-130	D	970 media	**Description:** The **Load** command failed.
970-134	D	B88 software	**Description:** The adapter failed to configure.
970-135	D	970 media	**Description:** The **Unload** command failed.
970-140	D	970	**Description:** The **Mode Select** command failed.
970-150	D	970 media	**Description:** The **Test Unit Ready** command failed.
970-160	D	970 media	**Description:** The **Send Diagnostic** command failed.
970-161	D	970 B88	**Description:** Invalid condition from the drive after a reserve.
970-163	D	970 B88	**Description:** Invalid condition from the drive after a request sense.
970-164	D	970 B88	**Description:** Timeout while attempting to communicate with the SCSI device.
970-165	D	970 B88 276	**Description:** Write, Read and Compare Test failed.
970-166	D	970 B88 software	**Description:** Unable to configure the device.
970-167	D	970 B88	**Description:** An unexpected SCSI error occurred.
970-168	D	B88 software	**Description:** The adapter failed to configure.
970-169	D	970	**Description:** The send diagnostic command

		media	failed.
970-170	D	970 B88 media	**Description:** The Read, Write and Compare test failed.
970-180	D	970 media	**Description:** The **Load** command failed.
970-185	D	970 media	**Description:** The **Unload** command failed.
970-190	D	970	**Description:** The **Mode Select** command failed.
970-200	D	970 media	**Description:** The **Test Unit Ready** command failed.
970-201	G	970 B88	**Description:** Error diagnosed from error log analysis.
970-210	D	970 B88	**Description:** The device configuration failed.
970-211	D	970 B88	**Description:** The device open failed.
970-220	D	970	**Description:** The **Release** command failed.
970-230	D	970	**Description:** The **Request Sense** command failed.
970-240	D	970	**Description:** The **Openx** command failed.
970-260	D	970	**Description:** The device configuration failed.
970-261	D	970	**Description:** The device open failed.
970-300	D	970 software	**Description:** The device configuration failed.
970-310	D	B88 970 software	**Description:** SCSI adapter configuration failed.
970-320	G	970 media	**Description:** Error log analysis indicates a failure.
970-411 to 970-423	D	970 B88 software	**Description:** A reservation conflict occurred.
970-511 to 970-523	D	970 B88	**Description:** The drive returned bad or non-extended sense data.
970-611 to 970-623	D	970 B88 software	**Description:** An adapter or bus I/O error occurred.
970-711 to 970-723	D	970 B88 software	**Description:** A device timeout error occurred.
971-098	J	971	**Description:** Tape drive indicates an error.
971-099	J	971 B88	**Description:** Tape drive not found.
971-101	D	971	**Description:** Timeout while attempting to communicate with SCSI device.
971-102	D	971	**Description:** The SCSI device indicates busy.
971-103	D	971	**Description:** The SCSI device is indicating a reservation conflict.
971-104	D	971	**Description:** The SCSI device indicates a check condition.
971-105	D	971	**Description:** Sense data from the SCSI

			device shows an error.
971-107	D	971	**Description:** The SCSI drive returned unexpected sense data.
971-110	D	971	**Description:** The **Reserve** command failed.
971-111	D	971	**Description:** Invalid condition from the drive after a reserve.
971-112	D	971	**Description:** The write protect sensor test failed.
971-113	D	971	**Description:** Invalid condition from the drive after a request sense.
971-114	D	971	**Description:** Timeout while attempting to communicate with the SCSI device.
971-120	D	971	**Description:** The **Inquiry** command failed.
971-130	D	971 media	**Description:** The **Load** command failed.
971-135	D	971 media	**Description:** The **Unload** command failed.
971-140	D	971	**Description:** The **Mode Select** command failed.
971-150	D	971 media	**Description:** The **Test Unit Ready** command failed.
971-160	D	971 media	**Description:** The **Send Diagnostic** command failed.
971-161	D	971 B88	**Description:** Invalid condition from the drive after a reserve.
971-163	D	971 B88	**Description:** Invalid condition from the drive after a request sense.
971-164	D	971 B88	**Description:** Timeout while attempting to communicate with the SCSI device.
971-165	D	971 B88 276	**Description:** Write, Read and Compare Test failed.
971-166	D	971 B88 software	**Description:** Unable to configure the device.
971-167	D	971 B88	**Description:** An unexpected SCSI error occurred.
971-168	D	B88 software	**Description:** The adapter failed to configure.
971-169	D	971 media	**Description:** The **Send Diagnostic** command failed.
971-170	D	971 B88 media	**Description:** The Read, Write and Compare test failed.
971-180	D	971 media	**Description:** The **Load** command failed.
971-185	D	971 media	**Description:** The **Unload** command failed.
971-190	D	971	**Description:** The **Mode Select** command failed.
971-200	D	971 media	**Description:** The **Test Unit Ready** command failed.
971-201	G	971 B88	**Description:** An error is diagnosed from the error log analysis.
971-210	D	971 B88	**Description:** The device configuration failed.

971-211	D	971 B88	**Description:** The device open test failed.
971-220	D	971	**Description:** The **Release** command failed.
971-230	D	971	**Description:** The **Request Sense** command failed.
971-240	D	971	**Description:** The **Openx** command failed.
971-260	D	971	**Description:** The device configuration failed.
971-261	D	971	**Description:** The device open test failed.
971-300	D	971 software	**Description:** The device configuration failed.
971-310	D	B88 971 software	**Description:** SCSI adapter configuration failed.
971-320	G	971 media	**Description:** Error log analysis indicates a failure.
971-411 to 971-423	D	971 B88 software	**Description:** A reservation conflict occurred.
971-511 to 971-523	D	971 B88	**Description:** The drive returned bad or non-extended sense data.
971-611 to 971-623	D	971 B88 software	**Description:** An adapter or bus I/O error occurred.
971-711 to 971-723	D	971 B88 software	**Description:** A device timeout error occurred.
972-098	J	972	**Description:** Tape drive indicates an error.
972-099	J	972 B88	**Description:** Tape drive not found.
972-101	D	972	**Description:** Timeout while attempting to communicate with SCSI device.
972-102	D	972	**Description:** The SCSI device indicates busy.
972-103	D	972	**Description:** The SCSI device indicates a reservation conflict.
972-104	D	972	**Description:** The SCSI device indicates a check condition.
972-105	D	972	**Description:** An error is detected in request sense data.
972-107	D	972	**Description:** The drive has returned unexpected sense data.
972-110	D	972	**Description:** The **Reserve** command failed.
972-111	D	972	**Description:** Invalid condition from the drive after a reserve.
972-112	D	972	**Description:** The write protect sensor test failed.
972-113	D	972	**Description:** Invalid condition from the drive after a request sense.
972-114	D	972	**Description:** Timeout while attempting to communicate with the SCSI device.
972-120	D	972	**Description:** The **Inquiry** command failed.
972-130	D	972 media	**Description:** The **Load** command failed.

972-135	D	972 media	**Description:** The **Unload** command failed.
972-140	D	972	**Description:** The **Mode Select** command failed.
972-150	D	972 media	**Description:** The **Test Unit Ready** command failed.
972-160	D	972 media	**Description:** The **Send Diagnostic** command failed.
972-161	D	972 B88	**Description:** Invalid condition from the drive after a reserve.
972-163	D	972 B88	**Description:** Invalid condition from the drive after a request sense.
972-164	D	972 B88 276	**Description:** Timeout while attempting communication with SCSI device.
972-165	D	972 B88 276	**Description:** Write, Read and Compare Test failed.
972-166	D	972 B88 software	**Description:** Unable to configure the device.
972-167	D	972 B88	**Description:** An unexpected SCSI error occurred.
972-168	D	B88 software	**Description:** The adapter failed to configure.
972-169	D	972 media	**Description:** The send diagnostic command failed.
972-170	D	972 B88 media	**Description:** The Read, Write and Compare test failed.
972-180	D	972 media	**Description:** The **Load** command failed.
972-185	D	972 media	**Description:** The **Unload** command failed.
972-190	D	972	**Description:** The **Mode Select** command failed.
972-200	D	972 media	**Description:** The **Test Unit Ready** command failed.
972-201	G	972 B88	**Description:** An error is diagnosed from the error log analysis.
972-210	D	972 B88	**Description:** The device configuration failed.
972-211	D	972 B88	**Description:** The device open test failed.
972-220	D	972	**Description:** The **Release** command failed.
972-230	D	972	**Description:** The **Request Sense** command failed.
972-240	D	972	**Description:** The **Openx** command failed.
972-260	D	972	**Description:** The device configuration test failed.
972-261	D	972	**Description:** The device open test failed.
972-300	D	972 software	**Description:** The device configuration failed.
972-310	D	B88 972 software	**Description:** SCSI adapter configuration failed.
972-320	G	972	**Description:** Error log analysis indicates

		media	a failure.
972-411 to 972-423	D	972 B88 software	**Description:** A reservation conflict occurred.
972-511 to 972-523	D	972 B88	**Description:** The drive returned bad or non-extended sense data.
972-611 to 972-623	D	972 B88 software	**Description:** An adapter or bus I/O error occurred.
972-711 to 972-723	D	972 B88 software	**Description:** A device timeout error occurred.
973-110	D	973	**Description:** The **Reserve** command failed.
973-120	D	973	**Description:** The **Inquiry** command failed.
973-130	D	973 media	**Description:** The **Load** command failed.
973-135	D	973 media	**Description:** The **Unload** command failed.
973-140	D	973	**Description:** The **Mode Select** command failed.
973-150	D	973 media	**Description:** The **Test Unit Ready** command failed.
973-160	D	973 media	**Description:** The **Send Diagnostic** command failed.
973-169	D	973 media	**Description:** The **Send Diagnostic** command failed.
973-170	D	973 B88 media	**Description:** The Read, Write and Compare test failed.
973-180	D	973 media	**Description:** The **Load** command failed.
973-185	D	973 media	**Description:** The **Unload** command failed.
973-190	D	973	**Description:** The **Mode Select** command failed.
973-200	D	973 media	**Description:** The **Test Unit Ready** command failed.
973-210	D	973 B88	**Description:** The device configuration failed.
973-220	D	973	**Description:** The **Release** command failed.
973-230	D	973	**Description:** The **Request Sense** command failed.
973-240	D	973	**Description:** The **Openx** command failed.
973-300	D	973 software	**Description:** The device configuration failed.
973-310	D	B88 973 software	**Description:** SCSI adapter configuration failed.
973-320	D	973 media	**Description:** Error log analysis indicates a failure.
973-411 to 973-423	D	973 B88 software	**Description:** A reservation conflict occurred.
973-511 to 973-523	D	973 B88	**Description:** The drive returned bad or non-extended sense data.

973-611 to 973-623	D	973 B88 software	**Description:** An adapter or bus I/O error occurred.
973-711 to 973-723	D	973 B88 software	**Description:** A device timeout error occurred.
974-111	D	974 B88	**Description:** Unable to reserve device.
974-112	D	974 B88	**Description:** Unable to do configuration.
974-113	D	974 B88	**Description:** Unable to open the device driver.
974-121	D	974	**Description:** The CD-ROM drive indicates an error.
974-122	D	974	**Description:** The CD-ROM drive indicates an error.
974-123	D	974	**Description:** The CD-ROM drive indicates an error.
974-125	D	974 B88	**Description:** The CD-ROM drive indicates an error.
974-126	D	974	**Description:** The CD-ROM drive indicates an error.
974-127	D	974	**Description:** The CD-ROM drive indicates an error.
974-128	D	974	**Description:** The CD-ROM drive indicates an error.
974-129	D	974	**Description:** The CD-ROM drive indicates an error.
974-150	D	Media 974	**Description:** A media error was detected.
974-151	D	974 D88	**Description:** A command timeout was detected.
974-152	D	974	**Description:** A command reservation conflict was detected.
974-162	D	974	**Description:** The CD-ROM drive indicates an error.
974-171	D	974	**Description:** Unable to reserve device.
974-172	D	974	**Description:** Unable to do configuration.
974-173	D	974	**Description:** Unable to open device driver.
974-175	D	974	**Description:** The CD-ROM drive indicates an error.
974-198	D	974 B88	**Description:** Undefined error detected.
974-199	D	974	**Description:** Undefined error detected.
974-211	D	974	**Description:** The LED test failed.
974-281	D	974	**Description:** No tone during audio test.
974-301	G	974	**Description:** Errors found during ELA.
974-302	G	974 B88	**Description:** Errors log analysis indicates hardware failure.
975-098	J	975	**Description:** CD-ROM drive indicates an error.
975-099	J	975 B88	**Description:** CD-ROM drive not found.
977-101	D	977 227	**Description:** Reset operation failed.

977-110	D	977 227	**Description:** Host status register test failed.
977-120	D	977	**Description:** Microcode download failed.
977-130	D	977	**Description:** Interrupt test failed.
977-140	D	977	**Description:** Shared memory test failed.
977-150	D	977	**Description:** Memory test failed.
977-160	D	977	**Description:** DMA Arbitration test failed.
977-170	D	977	**Description:** Playback test failed.
977-180	D	977	**Description:** Analog loop test failed.
977-190	D	977 227	**Description:** Device driver indicates a hardware failure.
977-200	D	977 227 software	**Description:** Unable to configure adapter.
977-300	G	977 227	**Description:** Error log analysis indicates a hardware failure.
977-310	G	977	**Description:** Error log analysis indicates a hardware failure.
981-102	D	981	**Description:** An unrecoverable media error.
981-104	D	981	**Description:** The motor failed to restart.
981-105	D	981	**Description:** The drive did not become ready.
981-106	D	981	**Description:** The electronics card test failed.
981-108	D	981	**Description:** The bus test failed.
981-110	D	981	**Description:** The media format failed.
981-112	D	981	**Description:** The diagnostic test failed.
981-114	D	981	**Description:** An unrecoverable hardware error.
981-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
981-117	D	981	**Description:** A write protect error occurred.
981-118	D	981 B88	**Description:** A SCSI command time-out.
981-120	D	981	**Description:** A SCSI busy or command error.
981-122	D	981	**Description:** A SCSI reservation conflict error.
981-124	D	981	**Description:** A SCSI check condition error.
981-126	D	981 B88	**Description:** A software error was caused by a hardware failure.
981-128	G	981	**Description:** The error log analysis indicates a hardware failure.
981-130	G	981 B88	**Description:** The error log analysis indicates a hardware failure.
981-132	D	981	**Description:** A disk drive hardware error occurred.
981-134	D	B88 software	**Description:** The adapter failed to configure.

981-136	D	981	**Description:** The certify operation failed.
984-102	D	984	**Description:** An unrecoverable media error.
984-104	D	984	**Description:** The motor failed to restart.
984-105	D	984	**Description:** The drive did not become ready.
984-106	D	984	**Description:** The electronics card test failed.
984-108	D	984	**Description:** The bus test failed.
984-110	D	984	**Description:** The media format failed.
984-112	D	984	**Description:** The diagnostic test failed.
984-114	D	984	**Description:** An unrecoverable hardware error.
984-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
984-117	D	984	**Description:** A write protect error occurred.
984-118	D	984 B88	**Description:** A SCSI command time-out.
984-120	D	984	**Description:** A SCSI busy or command error.
984-122	D	984	**Description:** A SCSI reservation conflict error.
984-124	D	984	**Description:** A SCSI check condition error.
984-126	D	984 B88	**Description:** A software error was caused by a hardware failure.
984-128	G	984	**Description:** The error log analysis indicates a hardware failure.
984-130	G	984 B88	**Description:** The error log analysis indicates a hardware failure.
984-132	D	984	**Description:** A disk drive hardware error occurred.
984-134	D	B88 software	**Description:** The adapter failed to configure.
985-100	D	985	**Description:** M-Video Capture Adapter initialization test failed.
985-110	D	985	**Description:** M-Video Capture Adapter register test failed.
985-120	D	985	**Description:** Image memory test failed.
985-130	D	985	**Description:** Overlay memory failed.
985-140	D	985	**Description:** M-Video Capture Adapter interrupt test failed.
985-150	D	985	**Description:** COMPOSITE wrap test failed.
985-160	D	985	**Description:** RGB red wrap test failed.
985-170	D	985	**Description:** RGB green wrap test test failed.
985-180	D	985	**Description:** RGB blue wrap test test failed.
985-190	D	985	**Description:** YC wrap test test failed.
985-200	D	985	**Description:** Color bar screen aid failed.

985-210	D	985	**Description:** Black white screen aid failed.
985-220	D	985	**Description:** White screen aid failed.
985-230	D	985	**Description:** Black screen aid failed.
985-240	D	985	**Description:** Yellow cursor screen aid failed.
985-250	D	985	**Description:** Red screen aid failed.
985-260	D	985	**Description:** Green screen aid failed.
985-270	D	985	**Description:** Blue screen aid failed.
985-290	D	985	**Description:** VCA adapter error.
986-102	D	986	**Description:** An unrecoverable media error.
986-104	D	986	**Description:** The motor failed to restart.
986-105	D	986	**Description:** The drive did not become ready.
986-106	D	986	**Description:** The electronics card test failed.
986-108	D	986	**Description:** The bus test failed.
986-110	D	986	**Description:** The media format failed.
986-112	D	986	**Description:** The diagnostic test failed.
986-114	D	986	**Description:** An unrecoverable hardware error.
986-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
986-117	D	986	**Description:** A write protect error occurred.
986-118	D	986 B88	**Description:** A SCSI command time-out.
986-120	D	986	**Description:** A SCSI busy or command error.
986-122	D	986	**Description:** A SCSI reservation conflict error.
986-124	D	986	**Description:** A SCSI check condition error.
986-126	D	986 B88	**Description:** A software error was caused by a hardware failure.
986-128	G	986	**Description:** The error log analysis indicates a hardware failure.
986-130	G	986 B88	**Description:** The error log analysis indicates a hardware failure.
986-132	D	986	**Description:** A disk drive hardware error occurred.
986-134	D	B88 software	**Description:** The adapter failed to configure.
986-136	D	986 C11	**Description:** The certify operation failed.
987-098	J	987 B88 221	**Description:** IPLROS detected a problem with the CDROM drive.
987-099	J	987 B88	**Description:** IPLROS detected a problem with the CDROM drive.
987-111	D	987 B88	**Description:** Unable to reserve device.

987-112	D	987 B88	**Description:** Unable to do configuration.
987-113	D	987 B88	**Description:** Unable to open the device driver.
987-121	D	987	**Description:** The CD-ROM drive indicates an error.
987-122	D	987	**Description:** The CD-ROM drive indicates an error.
987-123	D	987	**Description:** The CD-ROM drive indicates an error.
987-125	D	987 B88	**Description:** The CD-ROM drive indicates an error.
987-126	D	987	**Description:** The CD-ROM drive indicates an error.
987-127	D	987	**Description:** The CD-ROM drive indicates an error.
987-128	D	987	**Description:** The CD-ROM drive indicates an error.
987-129	D	987	**Description:** The CD-ROM drive indicates an error.
987-150	D	Media 987	**Description:** A media error was detected.
987-151	D	987 D88	**Description:** A command timeout was detected.
987-152	D	987	**Description:** A command reservation conflict was detected.
987-162	D	987	**Description:** The CD-ROM drive indicates an error.
987-171	D	987	**Description:** Unable to reserve device.
987-172	D	987	**Description:** Unable to do configuration.
987-173	D	987	**Description:** Unable to open device driver.
987-175	D	987	**Description:** The CD-ROM drive indicates an error.
987-198	D	987 B88	**Description:** Undefined error detected.
987-199	D	987	**Description:** Undefined error detected.
987-211	D	987	**Description:** The LED test failed.
987-281	D	987	**Description:** No tone during audio test.
987-301	G	987	**Description:** Errors found during ELA.
987-302	G	987 B88	**Description:** Errors found during ELA.
989-135	D	989 B88 software	**Description:** The device failed to configure.
989-136	D	989	**Description:** The certify operation failed.
989-102	D	989	**Description:** An unrecoverable media error.
989-104	D	989	**Description:** The motor failed to restart.
989-105	D	989	**Description:** The drive did not become ready.
989-106	D	989	**Description:** The electronics card test failed.
989-108	D	989	**Description:** The bus test failed.

989-110	D	989	**Description:** The media format failed.
989-112	D	989	**Description:** The diagnostic test failed.
989-114	D	989	**Description:** A non-recoverable hardware error.
989-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
989-117	D	989	**Description:** A write protect error occurred.
989-118	D	989 B88	**Description:** A SCSI command time-out.
989-120	D	989	**Description:** A SCSI busy or command error.
989-122	D	989	**Description:** A SCSI reservation conflict error.
989-124	D	989	**Description:** A SCSI check condition error.
989-126	D	989 B88	**Description:** A software error was caused by a hardware failure.
989-128	G	989	**Description:** The error log analysis indicates a hardware failure.
989-130	G	989 B88	**Description:** The error log analysis indicates a hardware failure.
989-132	D	989	**Description:** A disk drive hardware error occurred.
989-134	D	B88 software	**Description:** The adapter failed to configure.
989-135	D	989 B88 software	**Description:** The device failed to configure.
990-098	J	990 B88	**Description:** Disk drive indicates an error.
990-099	J	990 B88	**Description:** Disk drive not found.
990-102	D	990	**Description:** An unrecoverable media error.
990-104	D	990	**Description:** The motor failed to restart.
990-105	D	990	**Description:** The drive did not become ready.
990-106	D	990	**Description:** The electronics card test failed.
990-108	D	990	**Description:** The bus test failed.
990-110	D	990	**Description:** The media format failed.
990-112	D	990	**Description:** The diagnostic test failed.
990-114	D	990	**Description:** An unrecoverable hardware error.
990-116	D		**Description:** A protocol error. **Action:** Check the levels of the device, adapter, diagnostic software, and application software to be sure they are all compatible. If you do not find a problem, call your support person.
990-117	D	990	**Description:** A write protect error occurred.
990-118	D	990 B88	**Description:** A SCSI command time-out.

990-120	D	990	**Description:** A SCSI busy or command error.
990-122	D	990	**Description:** A SCSI reservation conflict error.
990-124	D	990	**Description:** A SCSI check condition error.
990-126	D	990 B88	**Description:** A software error was caused by a hardware failure.
990-128	G	990	**Description:** The error log analysis indicates a hardware failure.
990-130	G	990 B88	**Description:** The error log analysis indicates a hardware failure.
990-132	D	990	**Description:** A disk drive hardware error occurred.
990-134	D	B88 software	**Description:** The adapter failed to configure.
990-136	D	990	**Description:** The certify operation failed.
991-098	J	991 B88 221	**Description:** Tape drive indicates an error.
991-099	J	991 B88 221	**Description:** Tape drive not found.
991-101	D	991	**Description:** Timeout while attempting to communicate with SCSI device.
991-102	D	991	**Description:** The SCSI device indicates busy.
991-103	D	991	**Description:** The SCSI device is indicating a reservation conflict.
991-104	D	991	**Description:** The SCSI device indicates a check condition.
991-105	D	991	**Description:** Sense data from the SCSI device shows an error.
991-107	D	991	**Description:** The SCSI drive returned unexpected sense data.
991-110	D	991	**Description:** The Reserve command failed.
991-111	D	991	**Description:** Invalid condition from the drive after a reserve.
991-112	D	991	**Description:** The write protect sensor test failed.
991-113	D	991	**Description:** Invalid condition from the drive after a request sense.
991-114	D	991	**Description:** Timeout while attempting to communicate with the SCSI device.
991-120	D	991	**Description:** The Inquiry command failed.
991-130	D	991 media	**Description:** The Load command failed.
991-135	D	991 media	**Description:** The Unload command failed.
991-140	D	991	**Description:** The Mode Select command failed.
991-150	D	991 media	**Description:** The Test Unit Ready command failed.
991-160	D	991 media	**Description:** The Send Diagnostic command failed.
991-161	D	991 B88	**Description:** Invalid condition from the drive after a reserve.

991-163	D	991 B88	**Description:** Invalid condition from the drive after a request sense.
991-164	D	991 B88	**Description:** Timeout while attempting to communicate with the SCSI device.
991-165	D	991 B88 276	**Description:** Write, Read and Compare Test failed.
991-166	D	991 B88 software	**Description:** The device failed to configure.
991-167	D	991 B88	**Description:** An unexpected SCSI error occurred.
991-168	D	B88 software	**Description:** The adapter failed to configure.
991-169	D	991 media	**Description:** The **Send Diagnostic** command failed.
991-170	D	991 B88 media	**Description:** The Read, Write and Compare test failed.
991-180	D	991 media	**Description:** The **Load** command failed.
991-185	D	991 media	**Description:** The **Unload** command failed.
991-190	D	991	**Description:** The **Mode Select** command failed.
991-200	D	991 media	**Description:** The **Test Unit Ready** command failed.
991-201	G	991 B88	**Description:** An error is diagnosed from the error log analysis.
991-210	D	991 B88	**Description:** The device configuration failed.
991-211	D	991 B88	**Description:** The device open test failed.
991-220	D	991	**Description:** The **Release** command failed.
991-230	D	991	**Description:** The **Request Sense** command failed.
991-240	D	991	**Description:** The **Openx** command failed.
991-260	D	991	**Description:** The device configuration failed.
991-261	D	991	**Description:** The device open test failed.
991-300	D	991 software	**Description:** The device configuration failed.
991-310	D	B88 991 software	**Description:** SCSI adapter configuration failed.
991-320	D	991 media	**Description:** Error log analysis indicates a failure.
991-411 to 991-423	D	991 B88 software	**Description:** A reservation conflict occurred.
991-511 to 991-523	D	991 B88	**Description:** The drive returned bad or non-extended sense data.
991-611 to 991-623	D	991 B88 software	**Description:** An adapter or bus I/O error occurred.
991-711 to	D	991 B88	**Description:** A device timeout error occurred.

991-723		software	
994-110	D	994	**Description:** The **Reserve** command failed.
994-120	D	994	**Description:** The **Inquiry** command failed.
994-130	D	994 media	**Description:** The **Load** command failed.
994-135	D	994 media	**Description:** The **Unload** command failed.
994-140	D	994	**Description:** The **Mode Select** command failed.
994-150	D	994 media	**Description:** The **Test Unit Ready** command failed.
994-160	D	994 media	**Description:** The **Send Diagnostic** command failed.
994-169	D	994 media	**Description:** The **Send Diagnostic** command failed.
994-170	D	994 B88 media	**Description:** The Read, Write and Compare test failed.
994-180	D	994 media	**Description:** The **Load** command failed.
994-185	D	994 media	**Description:** The **Unload** command failed.
994-190	D	994	**Description:** The **Mode Select** command failed.
994-200	D	994 media	**Description:** The **Test Unit Ready** command failed.
994-210	D	994 B88	**Description:** The device configuration failed.
994-220	D	994	**Description:** The **Release** command failed.
994-230	D	994	**Description:** The **Request Sense** command failed.
994-240	D	994	**Description:** The **Openx** command failed.
994-300	D	994 software	**Description:** The device configuration failed.
994-310	D	B88 994 software	**Description:** SCSI adapter configuration failed.
994-320	G	994 media	**Description:** Error log analysis indicates a failure.
994-411 **to** **994-423**	D	994 B88 software	**Description:** A reservation conflict occurred.
994-511 **to** **994-523**	D	994 B88	**Description:** The drive returned bad or non-extended sense data.
994-611 **to** **994-623**	D	994 B88 software	**Description:** An adapter or bus I/O error occurred.
994-711 **to** **994-723**	D	994 B88 software	**Description:** A device timeout error occurred.
995-098	J	995 B88	**Description:** Tape drive indicates an error.
995-099	J	995 B88	**Description:** Tape drive not found.
995-110	D	995	**Description:** The **Reserve** command failed.

995-120	D	995	**Description:** The **Inquiry** command failed.
995-130	D	995 media	**Description:** The **Load** command failed.
995-135	D	995 media	**Description:** The **Unload** command failed.
995-140	D	995	**Description:** The **Mode Select** command failed.
995-150	D	995 media	**Description:** The **Test Unit Ready** command failed.
995-160	D	995 media	**Description:** The **Send Diagnostic** command failed.
995-169	D	995 media	**Description:** The **Send Diagnostic** command failed.
995-170	D	995 B88 media	**Description:** The Read, Write and Compare test failed.
995-180	D	995 media	**Description:** The **Load** command failed.
995-185	D	995 media	**Description:** The **Unload** command failed.
995-190	D	995	**Description:** The **Mode Select** command failed.
995-200	D	995 media	**Description:** The **Test Unit Ready** command failed.
995-210	D	995 B88	**Description:** The device configuration failed.
995-220	D	995	**Description:** The **Release** command failed.
995-230	D	995	**Description:** The **Request Sense** command failed.
995-240	D	995	**Description:** The **Openx** command failed.
995-300	D	995 software	**Description:** The device configuration failed.
995-310	D	B88 995 software	**Description:** SCSI adapter configuration failed.
995-320	G	995 media	**Description:** Error log analysis indicates a failure.
995-411 **to** **995-423**	D	995 B88 software	**Description:** A reservation conflict occurred.
995-511 **to** **995-523**	D	995 B88	**Description:** The drive returned bad or non-extended sense data.
995-611 **to** **995-623**	D	995 B88 software	**Description:** An adapter or bus I/O error occurred.
995-711 **to** **995-723**	D	995 B88 software	**Description:** A device timeout error occurred.
996-101	D	996	**Description:** Multi-Protocol Adapter failed.
996-102	D	996	**Description:** Multi-Protocol Adapter failed.
996-103	D	996	**Description:** Multi-Protocol Adapter failed.
996-105	D	996	**Description:** Multi-Protocol Adapter failed.

996-106	D	996	**Description:** Multi-Protocol Adapter failed.
996-107	D	996	**Description:** Multi-Protocol Adapter failed.
997-101	D	997 227	**Description:** Cannot place adapter in diagnostics mode.
997-102	D	997 227	**Description:** Cannot place adapter in normal mode.
997-103	D	997	**Description:** Cannot place adapter in online diagnostics mode.
997-104	D	997	**Description:** Cannot release adapter from online diagnostics mode.
997-106	D	997 227	**Description:** Serial Interface Register failure.
997-107	D	997	**Description:** Adapter shared RAM failure.
997-108	D	997 227	**Description:** One transfer adapter RAM buffer failure.
997-109	D	997	**Description:** Two transfers adapter RAM buffer failure.
997-110	D	997	**Description:** Three transfers adapter RAM buffer failure.
997-111	D	997	**Description:** One transfer adapter node processor bus data store failure.
997-112	D	997	**Description:** Two transfers adapter node processor bus data store failure.
997-113	D	997	**Description:** Three transfers adapter node processor bus data store failure.
997-114	D	997	**Description:** One transfer adapter node processor bus data store failure.
997-115	D	997	**Description:** Two transfers adapter node processor bus data store failure.
997-116	D	997	**Description:** Three transfers adapter node processor bus data store failure.
997-117	D	997	**Description:** Primary card data wrap failure.
997-118	D	997	**Description:** Download microcode failure.
997-121	D	997	**Description:** Download diagnostics microcode failure.
997-122	D	997	**Description:** Node processor instruction test failure.
997-123	D	997	**Description:** Interface test failure.
997-124	D	997	**Description:** VPD CRC test failure.
997-125	D	997	**Description:** Node processor data memory test failure.
997-126	D	997	**Description:** Logic interface test failure.
997-127	D	997	**Description:** Interface test failure.
997-128	D	997	**Description:** Data path test failure.
997-129	D	997	**Description:** Class B data path failure.
997-130	D	B45 B46 997	**Description:** Class A data path failure.
997-131	D	997	**Description:** Operational microcode CRC test failure.
997-132	D	B45	**Description:** Extender card VPD CRC test

		B46	failure.
997-133	D	B45	**Description:** Extender card wrap data test failure.
997-134	G	997 B46 227 software	**Description:** The device driver indicates a hardware problem. **Note:** This is error log analysis.
997-135	D	B45	**Description:** Extender card VPD CRC test failure.
997-137	D	997 B46 B45	**Description:** AMD interface chip failure.
997-150	D	997 B46 227 software	**Description:** Device configuration failure.
997-151	D	997 227	**Description:** The device driver indicates a hardware problem.
998-098	J	998 B88	**Description:** Tape drive indicates an error.
998-099	J	998 B88	**Description:** Tape drive not found.
998-110	D	998	**Description:** The **Reserve** command failed.
998-120	D	998	**Description:** The **Inquiry** command failed.
998-130	D	998 media	**Description:** The **Load** command failed.
998-135	D	998 media	**Description:** The **Unload** command failed.
998-140	D	998	**Description:** The **Mode Select** command failed.
998-150	D	998 media	**Description:** The **Test Unit Ready** command failed.
998-160	D	998 media	**Description:** The **Send Diagnostic** command failed.
998-169	D	998 media	**Description:** The **Send Diagnostic** command failed.
998-170	D	998 B88 media	**Description:** The Read, Write and Compare test failed.
998-180	D	998 media	**Description:** The **Load** command failed.
998-185	D	998 media	**Description:** The **Unload** command failed.
998-190	D	998	**Description:** The **Mode Select** command failed.
998-200	D	998 media	**Description:** The **Test Unit Ready** command failed.
998-210	D	998 B88	**Description:** The device configuration failed.
998-220	D	998	**Description:** The **Release** command failed.
998-230	D	998	**Description:** The **Request Sense** command failed.
998-240	D	995	**Description:** The **Openx** command failed.
998-300	D	995 software	**Description:** The device configuration failed.
998-310	D	B88 995	**Description:** SCSI adapter configuration failed.

		software	
998-320	G	995 media	**Description:** Error log analysis indicates a failure.
998-411 **to** **998-423**	D	998 B88 software	**Description:** A reservation conflict occurred.
998-511 **to** **998-523**	D	998 B88	**Description:** The drive returned bad or non-extended sense data.
998-611 **to** **998-623**	D	998 B88 software	**Description:** An adapter or bus I/O error occurred.
998-711 **to** **998-723**	D	998 B88 software	**Description:** A device timeout error occurred.
999-xxx **series**	D	999	**Description:** A 7137 or 3514 disk array subsystem problem is indicated. **Action:** Use 7137 or 3514 documentation.

3.0 Chapter 3. Failing Function Codes (FFCs)

Failing function codes represent functions within the system unit.

Subtopics

3.1 Description of the Failing Function Code List

The failing function codes are listed in numerical sequence.

A function may not be physically packaged on the same FRU in different units. When this condition exists, the FRU part number for each type of unit is listed.

The columns in the failing function code list are as follows:

Failing Function Code
The failing function code number from the SRN list in Chapter 2.

Machine Type/Model
This column is used when the failing function is on a FRU which differs by machine type and model. Use the part number for the type system unit you are servicing. See "Machine Types" in this chapter for the names of the machine types.

Note: Although the machine cover logo may depict the model number as four digits, the service and parts ordering system requires three-digit numbers. For example, if the cover logo depicts model number 32H, service and parts documentation may refer to that model as 32H.

Part Number
This column contains the part number of the FRU that contains the failing function. Use the part number for the type of system unit you are servicing.

Description and Notes
This column contains the description of the FRU and any usage notes. The FRU description may be different in different system units. Use the one for the type of system unit you are servicing.

3.2 Machine Types

Machine Type	Description
3151	Display Terminal
3161	Display Terminal
3163	Display Terminal
3514	External Disk Array, Models 212 and 213
3812	Pageprinter
3852	Printer
4201	Proprinter II
4202	Proprinter XL
4207	Proprinter X24
4208	Proprinter XL24
4216	Personal Pageprinter
4224	Printer
4234	Printer
4869	5.25-Inch External Diskette Drive
5081	Color Display
5083	Tablet
5085	Graphics Processor
5086	Graphics Processor
5088	Communications Controller
5202	Quietwriter Printer
5204	Quickwriter Printer
6094	Model 10, Dials
6094	Model 20, Lighted Program Function Keyboard (LPFK)
6094	Model 30, Spaceball(TM)
7006	System Unit (table top)
7008	System Unit (table top)
7009	System Unit (floor standing)
7011	System Unit (table top)
7012	System Unit (table top)
7013	System Unit (narrow floor standing)
7013 J Series	System Unit (floor standing)
7015	System Unit (rack mounted)
7016	System Unit (wide floor standing)
7018	System Unit (floor standing)
7030	System Unit (table top)
7134	High Density SCSI Disk Subsystem, Model 010
7135	RADiant Array SCSI Disk Drive Subsystem, Models 010 and 110
7203	External Portable Disk Drive
7204	External Disk Drive Model 320
7206	2.0 GB or 4.0 GB External 4 mm Tape Drive
7207	150 MB, 525 MB or 1.2 GB External 1/4-Inch Cartridge Tape Drive
7208	2.3 GB or 5.0 GB External 8mm Tape Drive
7210	External CD-ROM Drive
7235	POWERgraphics GTO graphics subsystem
7250	POWERgraphics Accelerator
8508	Monochrome Display
9333	High-Performance Disk Drive Subsystem Models 010 and 011
9333	High-Performance Disk Drive Subsystem Models 500 and 501
9334	SCSI Expansion Unit Model 010 (Single-Ended), Model 011 (Differential)
9334	SCSI Expansion Unit Model 500 (Single-Ended), Model 501 (Differential)
9348	1/2-Inch 9-Track Tape Drive

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3.3 Failing Function Code List

Failing Function Code	Machine Type/Model	FRU Part Number	Description and Notes
B01		00G2916	Processor card, POWER Gt3
B04		92F6697	Cable, Block Multiplexer Channel Adapter
B05		25F9401	Channel cable interface box
B06	7012/34H/355/ 360/36T/365/ 370/37T/375/ 380/390 7013/550L 7030	43G0382	Ethernet thick and thin riser card **Note:** Check the Ethernet fuse before replacing the planar.
B07	7012/34H/355/ 360/36T/365/ 370/37T/375/ 380/390 7013/550L 7030	00G1276	Ethernet twisted-pair riser card **Note:** Check the Ethernet fuse before replacing the planar.
B08		02G7431	Ethernet 10 Base Twisted-pair transceiver
B09		02G7437	Ethernet/ISO 8802/3 (formerly IEEE 802.3) transceiver
B10		81F8129	System planar fuse or PTC (thermal fuse) **Note:** If a thermal fuse has opened, it should reset within ten minutes after powering off the system. If the thermal fuse does not reset, a faulty device may be drawing excessive power through the fuse.
B11	7012/355/360/36T /365/370/37T/375 7012/380/390 7030	00G1295 43G0382	Fuse for thick/thin riser card
B14	All except 7011/220/230	81F9014 43G0856	Fiber Distributed Data Interface (FDDI) dual ring upgrade adapter FDDI-Fiber dual ring upgrade adapter
B15	All except 7011/220/230	81F9012 93F1162	Fiber Distributed Data Interface (FDDI) crossover cable FDDI-Fiber crossover cable
B16		70F9664	Performance Option card, POWER Gt4
B19	7012/320 7012/32H 7012/340 7012/350 7012/34H/355/360 /36T/365/370/ 37T/375 7012/380 7012/390 7013/520 7013/52H 7013/530 7013/53H 7013/540 7013/550 7013/560 7013/55L/570/580 /58H/590/591 7013/59H 7015/970/97B/980	91F1009 81F8232 52G4190 52G4007 90X8624 11H3465 11H3462 71F1378 00G3528 81F7888 31F4350 53F3349 52G0020 51G9947 90X8624 8184612 90X8624	CPU Card Translation Control Word (TCW) memory SIMM CPU Card CPU Planar Translation Control Word (TCW) memory SIMM CPU Planar

	/98B/R10/R20/R21		Translation Control Word (TCW)
	7015/990/R24	52G6128	memory SIMM
	7030/3AT	11H3465	CPU Planar
	7030/3BT	11H3462	CPU Card
B20	7012/350	52G4007	CPU card
B21	7012/340	52G4190	CPU card
B23	7015/970/97B	65G3448	CPU planar
B24	7011/220	65G7374	System planar
B26	7012/340/350	51G8812	System planar
B28	7013/570/58H/590 /59H	43G2211	I/O planar
	7013/591	11H2515	
	7015/970/97B /980 /98B	65G3400	Standard I/O planar
	7015/R24/990	88G0216	Standard I/O planar
	7015/R10/R20	65G3009	I/O planar
	7015/R21		I/O planar
B29	7011/220	65G7374	System planar
B31			Unknown keyboard type
B34	7008	43G0053	System planar (video RAM)
	7011/220	00G2393	POWER Gt1 video RAM (1M-byte)
B35	7011/220/230	31F4292	POWER Gt1 riser card
B36			Unidentifiable Memory DIMM
		19H0240	MD2 8MB DIMM
		19H0271	MD4 32MB DIMM
		19H0293	MRE/NFx 8MB memory JECDE DIMM
		19H0288	MRE/NFx 16MB memory JECDE DIMM
		19H0289	MRE/NFx 32MB memory JECDE DIMM
B37	7006	8184416	2M-byte memory SIMM
	7009		
	7011/250		
B38	7006	51G8553	4M-byte memory SIMM
	7009		
	7011/220/230/250		
B39	7006	51G8554	8M-byte memory SIMM
	7009		
	7011/220/230/250		
B40	7011/220	1383417	Planar ethernet fuse
	7011/230		**Note:** If a thermal fuse has opened, it should reset within ten minutes after powering off the system. If the thermal fuse does not reset, a faulty device may be drawing excessive power through the fuse.
B41	7011	31F4288	I/O slot riser card
B42	7011/220/230	31F4292	Graphics adapter riser card
B45		43G0876	FDDI-STP dual ring upgrade kit
B46		93F1162	FDDI-STP crossover cable
B47		56G0295	ESCON channel adapter or emulator fiber optic subassembly
B48			Unidentifiable Memory Card
		19H0293	MRE memory card without DIMMS
		19H0283	MRB2 memory card without DIMMS
		19H0236	NFx memeory card without DIMMs
		19H0284	MRB4 memory card without DIMMS
			RLx memory card without DIMMs
B50	7235	09G3549	Drawing processor card
B51	7235	09G3521	Shading processor card

B52	7235	09G3533	8-bit pixel memory card
B53	7235	09G3534	24-bit pixel memory card
B54		43G0936	128-port async controller cable, 0.2 m (9 in.)
		43G0937	128-port async controller cable, 4.6 m (15 ft.)
B56		32G1866	S3.3 memory base card
B57	7012 7013 7015	43G1796	16M-byte memory card SIMM
B58		43G0681	POWER Gt3i graphics adapter
B59		51G8022	POWER Gt4e graphics adapter
B60		09F1888	Multiport/2 512K-byte base card
B61		09F1962	Multiport/2 1M-byte base card
B62		91F7976	4-port EIA-232-C Multiport/2 Interface Card
B63		91F7974	8-port EIA-232-C Multiport/2 Interface Card
B64		91F7966	4-port EIA-232-C/4-port EIA-422-A Multiport/2 Interface Card
		15F8858	8-port EIA-422-A Multiport/2 Interface Card
B65		91F7963	6-port synchronous EIA-232-C Multiport/2 Interface Card
B66		15F8858	8-port EIA-422-A Multiport/2 Interface Card
B67		16F2267	Multiport/2 256K-byte memory module package
B68		16F2265	Multiport/2 512K-byte memory module package
B69		53F2603	Portmaster base card
B71		53F2612	8-port EIA-232-D Portmaster Interface Card
B72		53F2615	8-port EIA-422-A Portmaster Interface Card
B73		72F0164	6-port V.35 Portmaster Interface Card
B74		04G5500	6-port X.21 Portmaster Interface Card
B75	7008	43G0053	System planar
B76	7008	43G0059	Display unit, Northern Hemisphere
		43G0069	Display unit, Southern Hemisphere
B77		53F2662	Portmaster 1M-byte SIMM
B78		53F2666	Portmaster 2M-byte SIMM
B79		00F5524	Multiport/2 interface cable (non-synchronous) **Note:** If cable has an 8 port or 6 port fanout box.
B80		15F8868	Multiport/2 synchronous interface cable
B81		53F2621	8-port Portmaster interface cable

B82		72F1966	6-port V.35 Portmaster interface cable
B83		04G5501	6-port X.21 Portmaster interface cable
B84	7015/980	65G6896	CPU planar
B85	7013/580	8184913	CPU planar
B86	7013/570/580/590/ 58H/59H 7013/591 7015/R10/R20 7015/R21	43G2211 65G3009	I/O planar
B87	7012/34H/360/36T/ 370/37T 7012/355/365/375 7013/55L	00G2793 51G9107 00G2793	System planar System planar System planar
B88			Generic SCSI I/O controller **Notes:** Refer to the FRU Name Cross-Reference List in this book for the FFCs of the SCSI and SCSI-2 adapters that this generic FFC represents. Choose the FFC for the appropriate SCSI I/O controller. Check the SCSI controller fuse or PTC resistor before exchanging the planar. Refer to Service Hints in Chapter 1. Check that the SCSI disable jumper is in the enabled position. Check the FRU number of the installed external terminator: Low density - 51G7736 High density - 51G7737 For 7012/G series, 7013/J series, and 7015/R30 system units refer also to FFC 221 and C90.
B89	7012/360/36T/365 7013/55L	51G9437 51G9433	CPU card CPU card
B90	7012/370/37T/375	51G9441	CPU card
B91	7012/34H/355	51G9433	CPU card
B92	7013/570 7015/R10	65G7623	CPU card
B93	7011/230	8184088	System planar
B94		19H0283	MRB2 base memory card (without DIMMs)
B96		19H0240	8 MB MD2 memory Dimm (Dimm only)
B97		19H0271	32 MB MD4 memory Dimm (Dimm only)
B98	7012/G30 7013/J30 7015/R30	Data Cross Bar 19H0228 19H0242 19H0242	System planar
C11		36G4280	2.4GB SCSI disk drive field repair assembly **Note** The field repair assembly includes one disk drive, the electronics planar, and the 5-1/4 inch form factor "cage". The remaining "good" drive is removed from the failed disk drive assembly and installed

			in the field repair assembly to create a complete dual-disk drive assembly. If saving data is critical, as a last resort try installing the "bad" drive in place of one of the the two "good" drives in the now-complete field repair assembly. If the "bad" drive operates satisfactorily, the problem was probably in the electronics planar.
C12	7016 7235/001/7235/ 002 7235/01i/7235/ 02i	88G2965 09G3549	Drawing processor Drawing processor
C13	7016 7235/002 7235/02i	74F3118 74F3118 09G3521	Shading processor Shading processor Shading processor
C14	7016 7016 7235/001 7235/002 7235/01i 7235/02i	53F6538 53F6536 53F6536 53F6538 09G3533 09G3534	24-bit pixel memory card 8-bit pixel memory card 8-bit pixel memory card 24-bit pixel memory card 8-bit pixel memory card 24-bit pixel memory card
C16			Generic reference for the Portmaster interface card. The FRU for this FTC could be associated with any of the following: B69, B71, B72, B73 or B74. Refer to information for the applicable FFC.
C17			Generic reference for the Multiport/2 interface card. The FRU for this FFC could be associated with any of the following: B62, B63, B64, B65 or B66. Refer to information for the applicable FFC.
C18		51G9361	E1 Portmaster Adapter/A (Europe)
C19		51G9431	T1/J1 Portmaster cable (U.S. and Japan)
C20		51G9432	E1 Portmaster cable (Europe)
C21		68F7209	S/370 Channel Emulator/A Interface cable
C22		49G0935	RJ-45 to DB-25 converter cable kit (four cables)
C23	7012/340 7012/350 7012/34H/355 7012/360/36T/365 7012/370/37T/375 7013/55L	52G4190 52G4007 51G9433 51G9437 51G9441 51G9433	CPU card CPU card CPU card CPU card CPU card CPU card
C24			Fiber optics cable
C25	7011/250	8184016	Riser card, graphics adapter
C26		65G7315	SCSI-2 Differential Fast/Wide Adapter/A
C27	7006/41T/41W 7006/42T/42W 7009/C10/C20 7011/250	88G2538 11H2578 65G7904 51G8101 8184306	System planar System planar System planar System planar (66MHz) System planar (80MHz)
C28	7011/250	52G8070 51G8092	POWER GXT100 graphics adapter POWER GXT150 graphics adapter
C29	7006	51G8479	RJ-45 Ethernet converter

	7011/250		
C30		65G6452	32M-byte S4.5 memory SIMM
C31	7006 7009 7011/250	60G2950	16M-byte SIMM
C32	7006 7009 7011/250	73G3235	32M-byte SIMM
C33	7250/001 /002	88G4478 65G4884	GPSS board
C34	7250/001 /002	88G4477 65G4885	RSS board
C35	7250	65G4887	VOO board
C36	7250	65G4892	Attachment adapter cable
C37	7012/39H 7030/3CT 9076/SP2	88G3536	CPU Card (If slot callout is slot location D.)
		65G1803	S4.5 base memory card (If slot callout is any slot except D.)
	All other models	65G1803	S4.5 base memory card
C38		59F4581	1M-byte memory card SIMM
C39		59F4582	2M-byte memory card SIMM
C40		70F9973	4M-byte memory card SIMM
C41		70F9976	8M-byte memory card SIMM
C42		43G1796	16M-byte memory card SIMM
C43	7013 7015	065G6452	32M-byte memory card SIMM
C44	7250	65G4894	VOO/RSS Crossover cable
C45	7250/002	65G4889	12M VRAM SIMM
C46	7250/002	65G4890	16M VRAM SIMM
C47	7250/002	65G4891	16M DRAM SIMM
C48	7250	65G4893	RSS/GPSS Crossover board
C49		52G4113	POWER Gt4-i processor card
C50		52G4118	POWER Gt4-i processor card
C51		52G4123	POWER Gt4-i 8-bit graphics card
C52		52G4128	POWER Gt4-i 24-bit graphics card
C53	7015/990	88G0262	CPU planar
C54	7013/590	8184825 11H5007	CPU planar ID 70 CPU planar ID 79
C55	7012/380/390 7030	52G4325	Integrated SCSI-2 Fast/Wide Adapter on the system planar board. Replace the planar.
C56	7013/58H	11H2375	CPU planar
C57	7013/58H	43G2211	I/O planar
C58	7015/990	88G0216	Combination planar
C59	7012/G30 7013/J30 7015/R30	19H0228 19H0246	System planar I/O card
C61	7012/G30	19H0228	System planar

	7013/J30 7015/R30	19H0242 19H0242	
C62			E1M Single CPU card
C63		19H0247	C1D Dual CPU card with 1MB cache
C64		19H0284	MRB4 base memory card
C65		19H0229	E1D Dual CPU card with 512KB cache
C66			RLx memory card without DIMMs
C68		 19H0247	Unidentifiable CPU Card E1M Single CPU Card C1D Dual CPU Card with 512KB cache E1D Dual CPU Card with 1MB cache
C69	7006/41T/41W 7006/42T/42W	88G2538 11H2578	System planar System planar
C70	7009/C10	65G8331	CPU card
C72	7006	8184016	MCA I/O Riser Card
C74	7009	65G7942	MCA I/O Riser Card
C75	7006	88G2547	POWER GXT155L adapter
C76	7015/R24	88G0007	CPU planar
C77	7013/59H 7015/R20	8184612	CPU planar
C78	7012/390 7030/3BT	11H3462	CPU card
C79	7012/380 7030/3AT	11H3465	CPU card
C81	7012/380/390/39H 7030/3BT/3AT/3CT	52G4325	System planar
C82	7015/R24	88G0216	I/O planar
C83	7013/59H	43G2211	I/O planar
C84	7009	65G7904	I/O planar
C85	7006/41T/41W 7006/42T/42W	88G2538 11H2578	System planar System planar
C87	7006	88G2479	POWER GXT150L graphic adapter
C88	7012/G30 7013/J30 7013/J01 7015/R30	19H0228 19H0216 19H0216 65G6131	System Planar SIB System Interface Board (base unit)
C90	7012/G30 7013/J30 7015/R30	19H0228 19H0237 19H0238	System Planar MCA planar base unit (MP) MCA expansion planar (MPe)
C91	7013/J01 7015/R30	19H0238	MCA expansion planar (MPe)
C93	7013/J30 7013/J01	19H0243 19H0244	Base unit backplane (BP) Expansion unit backplane
C94		59F4581 70F9973 71G6450 43G1796	ARTIC960 1MB packet memory module ARTIC960 4MB packet memory module ARTIC960 8MB packet memory module ARTIC960 16MB packet memory module
C95		61G2961	ARTIC960 co-processor platform application interface board

			(AIB) (4-port interface board)
C97		53G0632	ARTIC960 AIB 100-pin wrap plug
		33F8995	ARTIC960 EIA-232-D 25-pin wrap plug
		53G0639	ARTIC960 EIA-530-D 25-pin wrap plug
		53G0641	ARTIC960 ISO-4902-D 37-pin wrap plug
		53G0638	ARTIC960 ISO-4903-D 15-pin wrap plug
C98		61G2919	ARTIC960 EIA-232-D shell cable
		61G2924	ARTIC960 EIA-530-D shell cable
		61G2934	ARTIC960 ISO-4902 (V.36)-D shell cable
		61G2929	ARTIC960 ISO-4903 (X.21)-D shell cable
C99		81F9003	FDDI Network adapter (Type 2-6)
		81F9014	FDDI Network adapter (Type 2-7)
		43G0855	FDDI Network adapter (Type 2-R)
		43G0856	FDDI Network adapter (Type 2-S)
		43G0875	FDDI Network adapter (Type 2-T)
		43G0876	FDDI Network adapter (Type 2-U)
D01	7006	88G2731	.5MB L2 cache (Riser card with L2 cache)
	7009	65G7929	1MB L2 cache (CPU feature card)
	7012/380/390	88G3893	.5MB L2 cache SIMM
		88G4012	1MB L2 cache SIMM
	7013/59H	88G3894	.5MB L2 cache SIMM
	7015/R20	88G3894	.5MB L2 cache SIMM
	7015/R21		
	7015/R24	88G4012	1MB L2 cache SIMM
	7030/3AT3BT/3CT	88G3893	.5MB L2 cache SIMM
		88G4012	1MB L2 cache SIMM
D03	7013/59H	88G3894	0.5MB L2 cache SIMM
	7015/R20	88G3894	0.5MB L2 cache SIMM
D04	7009	65G7929	1MB L2 cache Simm
	7015/R24	88G4012	1MB L2 cache Simm
D05	7006	88G2731	Riser Card with L2 cache
D06		88G3650	64 Port to 128 Port Converter kit (four to a pack). **Note:** Converter part number is 88G3651
D07	7006		Graphics cable **Note:** Refer to "Setting the Display Switches on the POWER GXT150L Adapter" in the *7006 Graphics Workstation Operator Guide*
D08	7134	88G5722	DC fan assembly
D09	7012/39H 7030/3CT	88G3536	CPU Card
D10		00F5524 15F8868	Multiport/2 Interface Cable **Note:** If cable has an 8 port or 6 port fanout box. Multiport/2 Synchronous Interface Cable
D15	7011/250	51G8101 8184306	System planar (66MHz) System planar (80MHz)
D16	7013/J30 7013/J01	19H0219 19H0219	Main Fan (base unit) Main Fan (expansion unit)
D17	7013/J30 7013/J01	19H0222 19H0222	MCA Fan Module (base unit) MCA Fan Module (expansion

			unit)
D18	7013/J30 7013/J01	19H0224 19H0224	Disk Fan Module (base unit) Disk Fan Module (expansion unit)
D19	7013/J30	11H7393 11H2714	AC power supply DC power supply
D21	7015/R30	11H2686	Disk/CPU/Memory Fan module (rear fan)
D22	7015/R30	11H2676	Media fans
D24	7013/J01		Expansion unit power control relay
D26	7009/C20	65G8126	CPU card
D27		19H0236	NFx memory card without DIMMs
D28	7012/G30 7013/J30	19H0236 19H0293 19H0236	NFx memory board MRE memory board NFx memory board
D32		19H0293	MRE memory card without DIMMs
D33		19H0293	MRE/NFx 8MB memory Jecde DIMM
D34		19H0288	MRE/NFx 16MB memory Jecde DIMM
D35		19H0289	MRE/NFx 32MB memory Jecde DIMM
D37	7013/J30	19H0230	Bulk Head SCSI (BHS)
D40	7012/G30	11H3884	MCA Fans
D41	7012/G30	71H1128	CPU Fans
D46		60G1066 60G1063	Type 3 Media filter token-ring cable. .254m (10inch) Standard token-ring cable. 3m (10ft)
D47		52G3380	Enhanced SCSI-2 Differential Fast/Wide Adapter/A
D49		31F4126	Serial Dual Port Y-cable.
D51	7006	11H8885	GXT500D Graphics Adapter
D53	7006/42T/42W	11H2578	CPU card
D56		12H1204	EIA-232E Printer/ Terminal Serial Cable
D58			Backup power supply
D61		12H1331	S5.0 base memory card
D62		39H8924	4MB memory card SIMM
D63		39H8925	8MB memory card SIMM
D64		39H8312	32MB memory card SIMM
D79	7013/591 7015/R21	11H5216	CPU planar
110	7016 7235	09G3495 09G3715	CVME interface card CVME interface card
111	7016 7235	16F0806 74F3384	Graphics control processor card Graphics control processor card
112	7016 7235	53F6536 53F6536	8-bit pixel memory card 8-bit pixel memory card
113	7016 7235	74F3118 74F3118	Shading processor card Shading processor card
114	7016	88G2965	Drawing processor card

	7235		Drawing processor card
115	7016 7235	53F6538 53F6538	24-bit pixel memory card 24-bit pixel memory card
116	7016 7235	39F6807 39F6808 74F3102 74F3104	Cable, ribbon, CVME signal Cable, RGB Cable, ribbon, CVME signal Cable, RGB, internal
117	7016 7235	16F0795 16F0795	Graphics subsystem, Kanji, ROM Graphics subsystem, Kanji, ROM
118		42F6889	MZB1 Z-buffer option card (24-bit Color Graphics Upgrade)
119		51G9396	Base graphics card, POWER Gt4
120		51G9395 51G9225 51G9227	Memory Option, POWER Gt4 Field upgrade graphics card, 8- to 24-bit Cable, two-position **Note:** This FRU contains two cables, one with black connectors, 51G9224, one with brown connectors, 71F0253. If either of the connectors on the cable being replaced is brown, the replacement cable with the brown connectors must be used; if neither of the connectors on the cable being replaced is brown, the replacement cable with the black connectors must be used. Cable, three-position **Note:** This FRU contains two cables, one with black connectors, 51G9226, one with brown connectors, 71F0254. If either of the connectors on the cable being replaced is brown, the replacement cable with the brown connectors be used; if neither of the connectors on the cable being replaced is brown, the replacement cable with the black connectors must be used.
121	5081		Color display, model 16 (1280 x 1024)
122	5081		Color display, model 19 (1280 x 1024)
128		71F1151 53F3271 53F3272	MRV2, color graphics video card Card connector cable, wide Card connector cable, narrow
130		42F6842 53F3271 53F3272	MGE2, color graphics base card Card connector cable, wide Card connector cable, narrow
131			Unidentified memory error. Check all SIMMS to be present and properly installed. Check all SIMMS to be the same , as shown in Appendix G. If no discrepancy is found then replace the SIMM in the location called out by the flashing 888 LEDs. **Note:** For 7012/G series, 7013/J series, and 7015/R30 system units refer to FFC 221.
132			The program that just loaded may be damaged.
133			Unidentified micro-channel bus problem.

141		45G9502	857M-byte disk enclosure (assembly) **Notes:** Exchange the complete drive assembly whenever possible. Exchange logic card only when the data on the disk must be saved. Refer to RETAIN TDR #064942 for additional information. Card and frame assembly 95X2346 must used with the 95X2431 disk enclosure.
142		See note.	670 M-byte SCSI disk enclosure **Note:** Exchange the complete drive assembly (53F3429) whenever possible; disk enclosure is not available separately. Exchange the logic card (6373521) only when the data on the disk must be saved.
151	7006 7008 7009 7011	33F8354	Battery, time-of-day, NVRAM, etc.
	7012 G Series	23F0168	Battery
	7013 J Series	19H0214	Operator panel
	7015/960/970/97B /980/98B/990 /R24	02G7237	**Note:** After replacement of this FRU the following must be done by you or the customer:
	Other	23F0168	1. Time and date must be set. 2. Network IP addresses should be set (for machines that IPL from a network). 3. The bootlist should be set to reflect the customer's preference for the IPL devices (when set different than the default values.)
152	7006	65G8077	Power supply
	7009	65G8077	
	7011	51G8440	
	7012 except 380/ 390	91F0844	
	7012/380/390	52G4764	
	7012/G30	52G0223	
	7013 Below 570 except 55L	00G2520	
	7013/55L	52G7533	
	7013/570	65G7579	
	7013/580	65G7579	
	7013/58H/590/59H	8184794	
	7013/591		
	7013/J30	11H4977	Power supply, CPU drawer, async drawer
	7015/930/950	71F0067	Power supply
	7015/970/980	52G1137	Power supply (standard AC)
	7015/97B/98B	65G6995	Power supply (-48 V DC)
		88G0053	Power supply
	7015/990	65G6995	
	7015/R10	88G0131	
	7015/R20	88G0134	
	7015/R21		
	7015/R24	65G6995	AC Power supply
	7015/R30	11H7393	DC Power supply
		11H2714	
	7016	71F0069	
	7018/740/741	00G1249	
	7018/770/771	65G2946	
	7030	52G4764	
153	7013/J01	11H4977	Power Supply
	7015 Media Drawer	44F5287	Power supply, SCSI device drawer/SCSI deskside unit
	9334/010/011	07G4834	
	9334/500/501	07G4833	(110 V)
		07G4834	(220 V)

154		43G1796	16M-byte memory card SIMM
157			Base memory card. Refer to Appendix G. System Memory Reference for FRU numbers.
158	7013/J01	19H0270	Fan assembly
	7015	44F5280	Fan assembly, SCSI device drawer/SCSI deskside unit
	9334/010/011	44F5280	
	9334/500/501	44F9979	
	7134		
159		6247455	Tablet cursor, Models 21, 22
		74F3131	Tablet cursor, 4-button, 6093 Models11, 12
		74F3132	Tablet cursor, 6-button, 6093 Models11, 12
160	7015	40F9871	Fan, CPU drawer, front
		40F9872	Fan, CPU drawer, rear
		40F9871	Fan, CPU drawer, power supply
		42F9872	Fan, async drawer, front
		59F3688	Fan, async drawer, power supply
161	7015	59F3876	Battery, battery backup unit
162	7015	42F6840	Cable, battery backup unit
163	7015	59F3873	Bezel and status panel, battery backup unit
164	7015	00G3372	Battery backup switching supply unit
165	7006	31F4287	Three-digit display
	7008	43G0056	Operator panel assembly
	7009	65G7994	
	7011	31F4287	Three-digit display
	7012/320/32H	00G2121	
	7012 other models below 380	00G2230	
	7012/380/390	00G2230	Three-digit display
	7012/G30	11H3510	Operator panel
	7013/520/52H/530 540/53H/550/560	00G2126	Operator panel assembly
	7013/55L	52G7453	
	7013/570/580/58H /590/59H/591	94F3592	
	7013/J30	19H0214	Operator panel
	7015/930/950	00G2130	Operator panel, CPU drawer
		81F8234	Operator panel, async drawer
	7015/970/980	43G1803	Operator panel, CPU enclosure
	/97B/98B/990	43G1803	Operator panel, CPU media enclosure
	7015/R10/R20/R21	52G1465	
	7015/R24	43G1803	Operator panel
	7015/R30	11H3243	Operator panel with keylock
		11H3247	Operator panel without keylock
	7016	00G2126	
	7018/740	00G1968	
	7018/741	00G2193	
	7018/770	52G1446	
	7018/771	52G1485	
	7030	00G2230	Three-digit display
166	7006	88G2601	Fan, front
	7009	65G7989	Fan, front
	7012 models below 380/390	00G2981	Fan, front
		40F9979	Fan, rear
	7012/380/390	00G2981	Fan, front
		88G3761	Fan, rear
	7012/G30	11H3884	Fan, CPU/memory/disk fan (rear fan)
		71F1128	Fan, MCA (front fan)
	7013/55L	40F9979	Fan, rear
		32G1528	Fan, front
	7013 (exc./55L)	22F9685	Fan, memory
		00G3277	Fan, disk
		65G1877	Fan, supplemental cooling
	7013/59H	00G3277	Fan, disk
		65G1877	Fan, supplemental cooling

		42F7434	Fan, power supply
	7013/591		Fan,
	7013/J30	19H0219	Fan, Main Fan
		19H0224	Fan, Disk module
		19H0222	Fan, MCA
	7015 /930/950/R20	40F9871	Fan, CPU drawer, front
	7015 /	40F9872	Fan, CPU drawer, rear
	7015	40F9871	Fan, CPU drawer, power supply
	7015	42F9872	Fan, async drawer, front
	7015 7015	44F5280	Fan, SCSI device drawer
	7015	59F3688	Fan, async drawer, power supply
	7015/990	02G7253	Fan, CPU planar
		52G5560	Fan, Media carrier
		52G5543	Fan, Disk Drive
		8185454	Fan, high speed
	7015/R10/R20	42F7482	Fan, CPU
		52G1467	Fan, I/O
	7015/R21		
	7015/R24	02G7253	Fan, CPU planar
		52G5560	Fan, Media carrier
		52G5543	Fan, Disk Drive
		8185454	Fan, high speed
	7015/R30	11H2686	Fan, CPU
		11H2676	Fan, Media
		11H2694	Fan, Power Supply
	7016	22F9685	Fan, logic
		39F6802	Fan, graphics card cage
		70F9846	Fan, disk drive, small
	7018	40F9872	Fan, rear
	7030	88G3761	Fan, rear
		00G2981	Fan, front
167	7013 models below 570	22F9685	Fan, power supply
	7013/570/580/58H /590/591/59H	42F7434	Fan, power supply
	7015	40F9871	Fan, CPU drawer power supply
	7015/R10/R20/R21	40F9872	Fan, power supply
	7015/R24	02G7266	Fan, power supply
	7016	22F9685	Fan, power supply
	7018	59F4460	Fan, power supply
168	7006	88G2671	Keylock assembly, locking
	7009	65G7994	Keylock, Operator panel assembly
	7011	00G2360	Keylock w/keys
	7012/320/32H	40F9928	Keylock assembly, locking
		71F1354	Keylock assembly, nonlocking
	7012 below 380	81F9038	Keylock assembly, locking
		00G1924	Keylock assembly, nonlocking
	7012/380/390	88G3961	Keylock assembly, locking
		00G1924	Keylock assembly, nonlocking
	7012/G30	52G0252	Keylock assembly, locking
	7013 Below 570 except 55L	31F4215	Keylock
	7013 /55L/570/ 580/58H/590/591	51G9876	Keylock assembly
	7013/59H	51G9876	Keylock assembly
	7013/J30	19H0214	Keylock, Operator panel assembly
	7015/970/980/990	31G9609	Keylock assembly
	7015/R10	52G1485	Keylock, Operator panel assembly
	7015/R20/R21		
	7015/R24		
	7015/R30	11H3243	Keylock, Operator panel assembly
	7016	31F4215	Keylock assembly
	7018	00G2192	Keylock assembly
	7030/3AT/3BT	88G3961	Keylock assembly, locking
		00G1924	Keylock assembly, nonlocking
169	7006/41T/41W	88G2538	System planar
	7006/42T/42W	11H2578	
	7008	43G0053	CPU card
	7009/C10	65G8331	
	7009/C20	65G8126	System planar
	7011/220	65G7374	
	7011/230	8184088	System planar (66MHz)
	7011/250	51G8101	System planar (80MHz)
		8184306	System planar
	7012/320/32H	43G0534	
	7012/340/350	51G8812	
	7012/355/365/375	51G9107	

	7012/380/390	52G4325	
	7012/34H/360/36T/ 370/37T	00G2793	
		00G2793	
	7012/G30	19H0228	Operator panel
	7013 Below 570 except 55L	00G2126	
	7013/55L	52G7453	
	7013/570/580/58H /590/591/59H	94F3592	System planar
	7013/J30	19H0242	Operator panel, CPU drawer
	7015/930/950	00G2130	Operator panel, async drawer
		81F8234	Operator panel, CPU enclosure
	7015/970/980/	43G1803	Operator panel, CPU media enclosure
	97B/98B/990	43G1803	Operator panel
	7015/R10	52G1485	
	7015/R20/R21		
	7015/R24	43G1803	System planar
	7015/R30	19H0242	Operator panel
	7016	00G2126	
	7018/740	00G1968	
	7018/741	00G2193	
	7018/770	52G1446	
	7018/771	52G1485	System planar
	7030	52G4325	
170			Fan Problem **Note:** For type/model and FRU information, refer to FFC 166.
171		59F4433	8MB and 16MB SD1 base memory card
172		70F9973	4MB memory card SIMM
173		59F4581	1MB memory card SIMM
174		59F4582	2MB memory card SIMM
175		59F4581	1MB memory card SIMM
176		70F9973	4MB memory card SIMM
177		70F9976	8MB memory card SIMM
178		81F8926	32MB and 64MB S1.5 and S3 base memory card
179		59F4582	2MB memory card SIMM
180			See *System Unit Memory Combinations* in Appendix G.
181	7006	31F4284	Cable, diskette drive signal
	7009	65G8006	Cable, diskette drive signal
	7011/220/230/250	31F4283	Cable, diskette drive signal
	7012 Below 380	40F9925	Cable, diskette drive signal
	7012/380/390	51G9521	Cable, diskette drive signal
	7013 Below 570 except 55L	00G0976	Cable assembly, SCSI and diskette
	7013/55L	52G7449	Cable assembly, diskette
	7013/570/580/58H /590/591/59H	65G7537	Cable assembly, SCSI and diskette
	7015	71F0700	Cable, CPU drawer diskette signal
	7016	53F3319	Cable, diskette drive signal
	7018	71F0700	Cable, CPU drawer diskette signal
	7030	51G9521	Cable, diskette drive signal
182		70F9976	8M-byte memory card SIMM
183	7013 except 55L	53F3417	Diskette redrive card
184	4869/002	15F7993	5.25-inch external diskette drive, 1.2M-byte,
	7012/320/32H	11F8890	Riser card, external diskette
	7013 Below 570	40F9781	Cable, external 5.25-inch diskette
185		68X5706	X.25 memory DRAM SIP
186		8184299	Multiprotocol interface card

187	7013/540	59F4583	4M-byte memory card SIMM
188		6247454	Tablet stylus, Models 21, 22
		74F3133	Tablet stylus, 6093 Models 11, 12
189	7012/320/32H	81F8900	Direct Bus Attach Riser Card
	7012/ Below 380	00G2721	Extender, SCSI bus
190		00G0959	Cable, SCSI (Increased Availability)
	7006	88G2577	Cable, internal SCSI disk drive
	7009	65G8006	Cable, internal SCSI disk drive
	7011/220/230/250	31F4284	Cable, internal SCSI disk drive
	7012/320/32H	31G9675	Cable, internal SCSI disk drive
	7012 Below 380	43G0779	Cable, internal SCSI disk drive
	7012/380/390	52G4850	Cable, internal SCSI disk drive
	7012/G30	11H3928	Cable, internal SCSI 4-drop
		11H3929	Cable, internal SCSI 6-drop
	7013 Below 570 except 55L	00G0976	Cable, internal SCSI disk drive
	7013/55L	00G0977	Cable, internal SCSI, 2nd SCSI, 4-drop
		52G7451	Cable, internal SCSI, 2nd SCSI-1, 6-drop
		65G7539	Cable, internal SCSI
		52G7450	Cable, internal SCSI, 2nd SCSI-1, 4-drop
		52G7451	Cable, internal SCSI, 2nd SCSI-1, 6-drop
	7013/570	65G7537	Cable, internal SCSI
		00G0977	Cable, internal SCSI, 2nd SCSI, 4-drop
		52G7451	Cable, internal SCSI, 2nd SCSI -1, 6-drop
	7013/580/58H/590/591/59H	65G7538	Cable, internal SCSI
		00G0977	Cable, internal SCSI, 2nd SCSI, 4-drop
		52G7451	Cable, internal SCSI, 2nd SCSI-1, 6-drop
	7013/J30	19H0272	Cable, internal SCSI
	7015	00G0978	Cable, CPU drawer, SCSI device
	7015/R30	11H2681	Cable, internal SCSI, media devices
	7016	00G0979	Cable, internal SCSI disk drive
	7018	00G0978	Cable, internal SCSI disk drive
	7030	52G4850	Cable, internal SCSI disk drive
192	7203	00G2960	Power supply, portable disk drive
195	7015	71F1072	Cable, SCSI device drawer external signal
197	7015	00G0978	Cable, SCSI device drawer internal signal
201			Unidentified SCSI device drawer cable
203	7204	00G2960	Power supply
	7207	00G2960	Power supply
	7208	00G2960	Power supply
	7209	46G3934	Power supply
	7210/001	00G2960	Power supply
	7210/005	65G7585	Power supply/enclosure
205		46F2440	Cable, optical 6 m
		46F2441	Cable, optical 10 m
		46F2442	Cable, optical 20 m
		46F2443	Cable, optical 60 m
		46F2444	Cable, optical 100 m
208	7015	53F3524	Power distribution board
209	7015	70F9715	IPO switch assembly
210			Fixed-point processor problem
	7006/41T/41W	88G2538	System planar, ID 42
	7006/42T/42W	11H2578	System planar, ID 91
	7008	43G0053	System planar, ID 43
	7009/C10	65G8331	CPU card, ID 48
	7009/C20	65G8126	CPU card, ID 90

	7011/220	65G7374	System planar, ID 41 or 45
	7011/230	8184088	System planar, ID 47
	7011/250	51G8101	System planar, ID 46 (66MHz)
		8184306	System planar, ID 49 (80MHz)
	7012/320	91F1009	CPU card, ID 31
	7012/32H	81F8232	CPU card, ID 35
	7012/340	52G4190	CPU card, ID 37
	7012/350	52G4007	CPU card, ID 38
	7012/34H/355	51G9433	CPU card, ID 77
	7012/360/36T/365	51G9437	CPU card, ID 76
	7012/370/37T/375	51G9441	CPU card, ID 75
	7012/380	11H3465	CPU card, ID 58
	7012/390	11H3462	CPU card, ID 57
	7012/39H	88G3536	CPU card, ID 59
	7012/G30		See FFC C68
	7013/520	71F1378	CPU planar, ID 30
	7013/52H	00G3528	CPU planar, ID 34
	7013/530	81F7888	CPU planar, ID 10
	7013/53H	31F4350	CPU planar, ID 18
	7013/540	53F3349	CPU planar, ID 14
	7013/550	52G0020	CPU planar, ID 1C
	7013/55L	51G9433	CPU card, ID 77
	7013/560	51G9947	CPU planar, ID 5C
	7013/570	65G7623	CPU planar, ID 67
	7013/580	8184913	CPU planar, ID 66
	7013/590	11H5127	CPU planar, ID 70
	7013/591	11H5216	CPU planar, ID 79
	7013/58H	11H2375	CPU planar, ID 71
	7013/59H	8184612	CPU planar, ID 72
	7013/J30		See FFC C68
	7015/930	53F3350	CPU planar, ID 02 or 20
	7015/950	52G5762	CPU planar, ID 2E
	7015/970/97B	65G3448	CPU planar, ID 63
	7015/980/98B	65G6896	CPU planar, ID 64
	7015/990	88G0262	CPU planar, ID 80
	7015/R10	65G7623	CPU planar, ID 67
	7015/R20	8184612	CPU planar, ID 72
	7015/R21	11H5216	CPU planar, ID 79
	7015/R24	88G0007	CPU planar, ID 82
	7015/R30		See FFC C68
	7016/730	81F7888	CPU planar, ID 10
	7018/740/741	71F1378	CPU planar, ID 30
	7018/770/771	65G7623	
	7030/3AT	11H3465	CPU planar, ID 67
	7030/3BT	11H3462	CPU card, ID 58
			CPU card, ID 57
	7030/3CT	88G3536	CPU card, ID 59
214			Memory control unit problem
	7012/G30	19H0228	System planar System planar
	7013/J30	19H0242	System planar
	7015/R30	19H0242	**Note:** For type/model and FRU information, other than the machine type or models listed refer to FFC 210.
215			Optical channel support problem
	7013/520	71F1378	CPU planar, ID 30
	7013/52H	00G3528	CPU planar, ID 34
	7013/530	81F7888	CPU planar, ID 10
	7013/53H	31F4350	CPU planar, ID 18
	7013/540	53F3349	CPU planar, ID 14
	7013/550	52G0020	CPU planar, ID 1C
	7013/560	51G9947	CPU planar, ID 5C
	7013/570	65G7623	CPU planar, ID 67
	7013/580	52G7363	CPU planar, ID 66
	7015/930	53F3350	CPU planar, ID 02
	7015/950	52G5762	CPU planar, ID 2E
	7015/970/97B	65G3448	CPU planar, ID 63
	7015/980/98B	65G6896	CPU planar, ID 64
	7016/730	81F7888	CPU planar, ID 10
	7018/740 /741	71F1378	CPU planar, ID 30
	7018/770/771	65G7623	CPU planar, ID 66
216			OCS ROM problem **Note:** For type/model and FRU information, refer to FFC 210.
217			System unit ROM problem
	7012/G30	19H0228	System planar
	7013/J30	19H0246	System planar
	7015/R30	19H0246	I/O card **Note:** For type/model and FRU information, other than the

			machine type or models listed refer to FFC 210.
218			Processor IOCC problem **Note:** For type/model and FRU information, refer to FFC 210.
219			Common memory logic problem Refer to Appendix C for memory card and SIMM FRU numbers.
220		58F2903	Cable, RGB 3-position video
221			System I/O control logic problem
	7006/41T/41W	88G2538	System planar
	7006/42T/42W	11H2578	System planar
	7008	43G0053	System planar
	7009/C10/C20	65G7904	System planar
	7011/220	65G7374	System planar
	7011/230	8184088	System planar
	7011/250	51G8101	System planar (66MHz)
		8184306	System planar (80MHz)
	7012/320/32H	43G0534	System planar
	7012/340/350	51G8812	System planar
	7012/355/365/375	51G9107	System planar
	7012/34H/360/36T/370/37T	00G2793	System planar
	7012/380/390	52G4325	System planar
	7012/G30	19H0246	System planar
	7013/520/530/540/550/560	00G3165	I/O planar
	7013/55L	00G2793	System planar
	7013/570/580/58H/590/59H	43G2211	I/O planar
	7013/591	11H2515	I/O planar
	7013/J30	19H0246	I/O card
		19H0237	Micro-channel adapter planar
	7015/930/950	00G3165	I/O planar, CPU drawer
		59F3785	I/O planar, async drawer
	7015/970/97B	65G3400	Combination planar
		31F4324	Second I/O planar
	7015/980/98B	65G3400	Combination planar
		31F4324	Second I/O planar
	7015/990	88G0216	Combination planar
	7015/R10	65G3009	I/O planar
	7015/R20	65G3009	I/O planar
	7015/R21		I/O planar
	7015/R24	88G0216	I/O planar
	7015/R30	19H0246	I/O Card
		19H0237	Micro-channel adapter planar
	7016	00G3165	I/O planar
	7018/740/741	00G3165	I/O planar
	7018/770/771	52G1504	I/O planar
	7030/3AT/3BT	52G4325	System Planar
223		See:	OCS problem **Note:** 1. For type/model and FRU information, refer to FFC 221. 2. For type/model and FRU information refer to FFC 210.
	7006	note 1	
	7008	note 1	
	7009	note 2	
	7011	note 1	
	7012/320/32H	note 1	
	7012 All others	note 2	
	7012/G30	note 1	
	7013 Below 570 except 55L	note 1	
	7013/55L	note 2	
	7013/J30	note 1	
	7013 All others	note 2	
	7015/930/950	note 1	
	7015/R30	note 1	
	7015 All others	note 2	
	7016	note 1	
	7018/740/741	note 1	
	7018/770/771	note 2	
	7030	note 2	
226			System status logic problem **Note:** For type/model and FRU information, refer to FFC 221.
227			Micro channel logic problem **Note:** For type/model and FRU information, refer to FFC 221.

229	7204	42F7300	Fan
232		00G0972	Terminator, SCSI card edge
233		15F6743	Terminator, SCSI controller external
234			Terminator, external SCSI device. Refer to Cabling SCSI Devices in *Adapters, Devices, and Cable Information.*
239	7018/740	31F4221	Cable, SCSI controller, except High-Availability
	7018/741	31F4223	Cable, SCSI controller, except High-Availability
240			Token-ring network problem
241			Ethernet network problem
242			3270 network problem
244			X.25 network problem
245			Async Network Problem
251		8529214	Cable, parallel printer
252	7006 7009	31F4126	Standard I/O 10-pin to 25-pin converter cable, 12 in. (0.3 m)
	7012/320/32H 7012/G30	00G0943 6450242	Standard I/O 10-pin to 25-pin converter cable, 12 in. (0.3 m)
	7013 Below 570 except 55L	00G0943	Standard I/O 10-pin to 25-pin converter cable, 12 in. (0.3 m)
	7015 Below 970 7015 R30	81F8977 6450242	CPU drawer standard I/O 10-pin to 25-pin converter cable, 10 ft. (3 m)
	7016	00G0943	Standard I/O 10-pin to 25-pin converter cable, 12 in. (0.3 m)
253			Cable, multiprotocol, EIA-422A, customer-provided
254		71F0165	Cable, 4-port multiprotocol EIA-232, V.24
255		6247480	Cable, GIO adapter, power/signal, Dials/ LPFK
256		6339098	Cable, token-ring, 10 ft. (3.04 m)
		53F3930	Cable, token-ring, 20 ft. (6.08 m)
257		71F0162	Cable, 4-port multiprotocol, V.35
258		40F9897	4-Port multiprotocol cable
259		6323741	Cable, async EIA-232D, V.24
260		71F0164	Cable, 4-port multiprotocol, X.21
261		58F2861	Printer/terminal interposer, EIA-232
262		00F5524	Multiport interface cable
263		30F8966	Terminal cable, EIA-422A
264		81F8234	Operator panel, async expansion drawer
265		00G1109	64-Port controller cable
266		59F3432	RJ-45 to DB-25 converter cable (4 cables)

267	7015	81F8570	Cable assembly, 4-port multiprotocol jumper
268	7015	71F1379	Cable, async expansion drawer signal
269	7015	53F3048	Cable assembly, 8/16-port extension
270		39F8228	Cable, signal, serial port, Dials/LPFK
271		53F3926	Cable, X.25 attachment cable, X.21
272		53F3927	Cable, X.25 attachment cable, V.24
273		53F3928	Cable, X.25 attachment cable, V.35
274		6247480 6247480	Cable, graphics input device dials Cable, graphics input device LPFK
275		0123786	Fuse, graphics input device adapter
276		31F4221	Cable, SCSI controller cable
277			Cable, Internal SCSI problem **Note:** For type/model and FRU information, refer to FFC 190.
278	7018/740 7018/741	31F4222 31F4224	Cable, SCSI device-to-device Cable, SCSI device-to-device
279		 40F9736 1383417	Fuse blown or PTC resistor has been tripped. Fuse, SCSI plug-in style adapter Fuse, integrated SCSI adapter **Note:** If the system unit uses PTC resistors, refer to "PTC Tripping (SCSI-2 Single-Ended Controller, Integrated SCSI on 7012/340 through 375, 7013/550L, 570 through 59H, 7015/R10 through R24)" in topic 1.3.2.
280			Check power from display and serial attachment power and signal cables.
281		58F2903	Cable, 3-position video
283	7210	81F8216	Cable, Internal SCSI
288	7015	59F3785	I/O planar, async expansion drawer
290		43G0462	16-Port interface cable, EIA-422A
291		43G0463	16-Port interface cable, EIA-232
700	 7013/J30/J01	74G6995 10H0265 74G6998	1.1GB 8-bit single-ended disk drive assembly Carrier with DC3 card for the above drive. Electronics card assembly
701	 7013/J30/J01	74G7006 19H0207 19H0209 74G7014	1.1GB 16-bit single-ended disk drive assembly 1.1GB 16-bit single-ended disk drive with carrier Carrier with DC6 card for the above drive. Electronics card assembly
702		74G7009	1.1GB 16-bit differential disk

		&RBL.	drive assembly
		74G7015	Electronics card assembly
703		74G6996	2.2GB single-ended disk drive assembly
	7013/J30/J01	10H0265	Carrier with DC3 card for the above drive.
		74G6998	Electronics card assembly
704		74G7007	2.2GB 16-bit single-ended disk drive assembly
	7013/J30//J01	19H0203	2.2GB 16-bit single-ended disk drive with carrier.
		74G7014	Electronics card assembly
705		74G7010	2.2GB 16-bit differential disk drive assembly
		74G7015	Electronics card assembly
706		74G7008	4.5GB 16-bit single-ended disk drive assembly
	7013/J30//J01	19H0208	4.5GB 16-bit single-ended disk drive with carrier.
		74G7014	Electronics card assembly
707		74G7011	4.5GB 16-bit differential disk drive assembly
		74G7015	Electronics card assembly
710		11H2534	POWER GXT150M Graphics Subsystem
711			Unknown adapter
713		61G2916	ARTIC960 co-processor platform
714		88G3711	Ultimedia Video I/O Adapter
715		88G2774	Ultimedia Audio Adapter
718	7006	11H8879	GXT500 Graphics Adapter
721			Unknown SCSI device
722			Unknown disk drive
723			Unknown CD-ROM drive
724			Unknown tape drive
725	7008	43G0059	Display unit, Northern Hemisphere
	other	43G0069	Display unit, Southern Hemisphere
			Unknown display adapter type
726			Unknown input device
727			Unknown async device
728			Unknown parallel device
730			Unknown diskette drive
733			140GB 8mm Tape Drive
734		88G4921	Quad Speed SCSI-2 640MB CD-ROM Drive
741		84G9475	1080MB SCSI Disk Drive
745			16GB 4mm Tape Auto Loader Service documentation for this device will supply FRU part numbers.
77c		45G9467	GB 16-bit Single-Ended SCSI-2 Disk Drive
	7013/J30//J01	19H0202	1GB 16-bit Single-Ended SCSI-2 Disk Drive with carrier.
		19H0209	Carrier with DC6 card for the above drive.
811			System direct-attach bus

812			Common built-in adapter problem
	7006/41T/41W	88G2538	System planar
	7006/42T/42W	11H2578	System planar
	7008	43G0053	System planar
	7009	65G7904	I/O planar
	7011 All models	31F4289	Serial/parallel riser card
	7011/220	65G7374	System planar
	7011/230	8184088	System planar
	7011/250	51G8101	System planar (66MHz)
		8184306	System planar (80MHz)
	7012/320/32H	43G0534	System planar
	7012/ 340/350	51G8812	System planar
		32G0176	Serial Flex Cable
	7012/ 355/365/375	51G9107	System planar
		32G0176	Serial Flex Cable
	7012/34H/360/36T/ 370/37T	00G2793	System planar
		32G0176	Serial Flex Cable
	7012/380/390	52G4325	System planar
		88G3623	Serial Hard Card
	7012/G30	19H0246	System planar
	7013/520 thru 560	53F3345	Standard I/O planar
	7013 /55L	00G2793	Standard I/O planar
		94F3617	Serial Flex Cable
	7013 /570/580/590/ 58H/59H	43G2211	I/O planar
		52G7347	Standard I/O flex circuit
	7013/591	11H2515	I/O planar
	7013/J30	19H0246	I/O card
		19H0216	System Interface Board
	7015/930/950	53F3345	Standard I/O planar, CPU drawer
	7015/970/97B/980/ 98B	65G3400	Combination planar
	7015/990	88G0216	Combination planar
	7015/R10	65G3009	I/O planar
	7015/R20/	65G3009	I/O planar
	7015/R21		I/O planar
	7015/R24	88G0216	I/O planar
	7015/R30	19H0246	I/O card
		65G6131	System Interface Board
	7016	53F3345	Standard I/O planar
	7018/740/741	72X8488	Fuse, standard I/O planar
	7018/770/771	52G1504	Flex circuit and I/O planar
	7030/3AT/3BT	52G4325	System planar
		88G3623	Serial Hard Card
814	For 7009 refer to note 1. Other machine types except 7009 refer to note 2.		NVRAM problem **Note:** 1. For type/model and FRU information, refer to FFC 210. 2. For type/mocel and FRU information, refer to FFC 221.
	7012/G30		
	7013/J30	19H0228	System planar
	7015/R30	19H0246	I/O card
		19H0246	I/O card
815			Floating-point processor problem See FFC C68 **Note:** Refer to FFC 210.
816			Operator panel logic problem
	7006/41T/41W	88G2538	System planar
	7006/42T/42W	11H2578	System planar
	7008	43G0053	System planar
	7009/C10	65G8331	CPU card
	7009/C20	65G8126	
	7011/220	65G7374	System planar
	7011/230	8184088	System planar
	7011/250	51G8101	System planar (66MHz)
		8184306	System planar (80MHz)
	7012/320/32H	43G0534	System planar
	7012/ 340/350	51G8812	System planar
	7012/ 355/365/375	51G9107	System planar
	7012/34H/360/36T	00G2793	System planar
	7012/370/37T	00G2793	System planar
	7012/380/390	52G4325	System planar
	7012/G30	19H0228	System planar
	7013 Below 570 except 55L	00G3165	Standard I/O planar
	7013 /55L	00G2793	I/O planar
		94F3617	Operator panel assembly, flex

		65G7525	Operator panel riser card
	7013/570/580/590	43G2211	I/O planar
		94F3592	Operator panel assembly, flex
	7013/591		I/O planar
	7013/J30	19H0246	I/O card
	7015/930/950	53F3345	Standard I/O planar, CPU drawer
	7015/970/97B /980/98B	65G3400	Combination planar
	7015/990	88G0216	Combination planar
	7015/R10	65G3009	I/O planar
	7015/R20	65G3009	I/O planar
	7015/R21		I/O planar
	7015/R24	88G0216	I/O planar
	7015/R30	19H0246	I/O card
	7016	00G3165	I/O planar
	7018/740/741	00G3165	I/O planar
	7018/770	52G1504	I/O planar
		52G1446	Operator panel assembly
	7018/771	52G1504	I/O planar
		52G1485	Operator panel assembly
	7030	52G4325	System planar **Note:** After replacement of this FRU the following must be done by you or the customer: 1. Time and date must be set. 2. Network IP addresses should be set (for machines that IPL from a network). 3. The bootlist should be set to reflect the customer's preference for the IPL devices (when set different than the default values).
817	For 7009 refer to note 1. Other machine types except 7009 refer to note 2.		Time-of-day logic problem **Note:** 1. For type/model and FRU information, refer to FFC 210 2. For type/model and FRU information, refer to FFC 221
	7012/G30		
	7013/J30	19H0228	System planar
	7015/R30	19H0246	I/O card
		19H0246	I/O card
819		22F9758	Graphics input device adapter **Note:** Check the fuse before exchanging the adapter.
821	All models except those listed		Built-in keyboard adapter problem **Note:** For type/model and FRU information, refer to FFC 812. Keyboard/Mouse Daughter Card
	7012/G30		
		65G6131	System Interface Board (SIB)
823	All models except those listed		Built-in mouse adapter problem **Note:** For type/model and FRU information, refer to FFC 812. Keyboard/Mouse Daughter Card
	7012/G30		
		65G6131	System Interface Board (SIB)
824			Built-in tablet adapter problem **Note:** For type/model and FRU information, refer to FFC 812.
825			Built-in speaker adapter problem **Note:** For type/model and FRU information, refer to FFC 812.
826	All		Built-in serial port S1 problem **Note:** For type/model and FRU information, refer to FFC 812. For 7013/J30 and 7015/R30, refer also to FFC C88.
	7015/970/97B/980/	02G7307	Serial/Parallel ports data

	98B/990/R24/R30		signal cable
827	All		Built-in parallel adapter problem **Note:** For type/model and FRU information, refer to FFC 812. For 7013/J30 and 7015/R30, refer also to FFC C88.
	7015/970/97B/980/ 98B/990/R24/R24 /R30	02G7307	Serial/Parallel ports data signal cable
828			Built-in diskette adapter problem **Note:** For type/model and FRU information, refer to FFC 812. For 7013/J30 and 7015/R30, refer also to FFC 165.
831	All		Built-in serial port S2 adapter problem **Note:** For type/model and FRU information, refer to FFC 812. For 7013/J30 and 7015/R30, refer also to FFC C88.
	7015/970/97B/980/ 98B/990/R24 /R30	02G7307	Serial/Parallel ports data signal cable
834		32G1412	64-port async controller
835		43G0893	16-port async concentrator
836		52G4894	128-port async controller
837		51G8139	Remote async node, 16-port EIA-232
838		51G8538 51G8539	Network Terminal Adapter, 256 Network Terminal Adapter, 2048
841		32G1257	8-port async adapter, EIA-232
842		52G4757	8-port async adapter, EIA-422A
843		00G2436	8-port async adapter, MIL-STD 188
844	7135		RADiant Array SCSI subsystem controller **Note:** Refer to 7135 documentation.
845	7135		RADiant Array SCSI 2.0GB disk drive **Note:** Refer to 7135 documentation.
846	7135		RADiant Array SCSI 1.3GB disk drive **Note:** Refer to 7135 documentation.
847		32G1256	16-port async adapter, EIA-232
848		52G4739	16-port async adapter, EIA-422A
849		51G9060	X.25 interface co-processor/2 or Multiport/2 adapter
850		00G2652 65G7568	Token-Ring network adapter Auto Token-Ring LANstreamer MC 32 Adapter
851		51G9083	T1/J1 Portmaster Adapter/A (U.S. and Japan)
852		32G0285	Ethernet LAN adapter
854		22F9743	3270 connection
855		52G4322 8184299	4-Port Multiprotocol Communications Controller (Type 2-3) Interface card

858		09G3667	5080 attachment adapter
859		81F9003 65G1879	Fiber Distributed Data Interface (FDDI) single-ring adapter FDDI-Fiber single-ring adapter
861		59F2969	Serial optical channel converter
862		02G7425	Block Multiplexer Channel Adapter
865		56G0294	ESCON channel adapter or emulator processor card
866		52G7509	SCSI-2 SE I/O controller **Note:** Check the SCSI controller fuse or PTC resistor before exchanging the planar. Refer to Service Hints in Chapter 1.
867		53F3621	Async expansion adapter
868	7006/41T/41W	88G2538	System planar (integrated SCSI adapter) uses PTC
	7006/42T/42W	11H2578	System planar
	7008	43G0053	System planar (integrated SCSI adapter)
	7009	65G7904	I/O planar (integrated SCSI adapter) uses PTC
	7011/220	65G7374	System planar (integrated SCSI adapter)
	7011/230	8184088	System planar (integrated SCSI adapter) uses PTC
	7011/250	51G8101 8184306	Sys planar (integrated SCSI adptr) uses PTC (66MHz) Sys planar (integrated SCSI adptr) uses PTC (80MHz)
	7012/340/350	51G8812	System planar (integrated SCSI adapter)
	7012/34H/360/36T/ 370/37T	00G2793	System planar (integrated SCSI adapter)
	7012/355/365/375	51G9107	System planar (integrated SCSI adapter)
	7012/380/390	52G4325	System planar
	7013 55L	00G2793	System planar (integrated SCSI adapter)
	7013/570/580/58H/ 590/59H	43G2211	I/O planar (integrated SCSI adapter)
	7013/591		I/O planar (integrated SCSI adapter)
	7015/970/97B/980/ 98B	65G3400	Combination planar (integrated SCSI adapter)
	7015/990	88G0216	I/O planar (integrated SCSI adapter)
	7015/R10	65G3009	I/O planar
	7015/R20	65G3009	I/O planar
	7015/R21		I/O planar
	7015/R24	88G0216	I/O planar
	7018/770/771	52G1504	I/O planar (integrated SCSI adapter)
	7030/3AT/3BT	52G4325	System planar **Note:** Check the SCSI controller fuse or PTC resistor before exchanging the planar. Refer to Service Hints in Chapter 1.
869		51G9425 40F9736	SCSI I/O controller Fuse **Note:** Check the fuse before exchanging the planar. Refer to "SCSI Adapter Fuse Blowing" in Service Hints, Chapter 1.
870		52G1071 00G3357	High-performance disk drive subsystem adapter(40M-byte/sec, Type 4-3)

			High-performance disk drive subsystem
		67G1862	adapter (80M-byte/sec, Type 4-5)
			High-performance disk drive
		07G4859	subsystem
			adapter (40/80M-byte/sec, Type
		07G4860	4-8
			cable, serial link, 3m (10 ft.)
			cable, serial link, 10m (33 ft.)
871	7016	53F6532	Graphics subsystem adapter **Note:** If the problem still exists after exchanging the Graphics Subsystem adapter, exchange the following cards, one at a time, in the order listed.
		34F3156	CVME interface card
		74F3384	Graphics control processor card
		88G2965	Drawing processor card
		74F3118	Shading processor card
		53F6536	8-bit pixel memory card
		53F6538	24-bit pixel memory card
	7235	74F3158	Graphics subsystem adapter **Note:** If the problem still exists after exchanging the
		09G3515	Graphics Subsystem Adapter, exchange the following cards,
		74F3384	one at a time, in the order
		88G2965	listed. For ordering purposes,
		74F3118	refer to the part number on
		53F6536	the card.
		53F6538	CVME interface card
			Graphics control processor card
			Drawing processor card
			Shading processor card
			8-bit pixel memory card
			24-bit pixel memory card
872		71F1224	Grayscale graphics adapter
874		71F1223	Color graphics adapter
876		71F1117	8-Bit color graphics card, MDE1
877		00G1117	Base graphics card, POWER Gt3,
		43G0681	POWER Gt3i,
		51G8022	POWER Gt4e
878		51G9397	Graphics processor card, POWER Gt4 **Notes:** If the video is malfunctioning, first check that the setting of the display frequency switch (if present) agrees with the card frequency. The card default frequency is 60 Hz; 77 Hz can be set via software. If the problem still exists after exchanging the processor card, exchange the following, one at a time, in the order listed:
		51G9396	Base graphics card, POWER Gt4
		51G9395	Field upgrade graphics card,
		70F9664	8- to 24-bit, POWER Gt4
		51G9225	Performance option card, POWER Gt4
			Cable, two-position. **Note:** This FRU contains two cables, one with black connectors, 51G9224, and one with brown connectors, 71F0253. If either of the connectors on the cable being

			replaced is brown, the replacement cable with the brown connectors must be used; if neither of the connectors on the cable being replaced is brown, the replacement cable with the black connectors must be used. Cable, three-position **Note:** This FRU contains two cables, one with black connectors, 51G9226, one with brown connectors, 71F0254. If either of the connectors on the cable being replaced is brown, the replacement cable with the brown connectors must be used; if neither of the connectors on the cable being replaced is brown, the replacement cable with the black connectors must be used. POWER Gt4i processor card POWER Gt4xi processor card POWER Gt4xi 8-bit graphics card POWER Gt4i 24-bit graphics card Connector cable (two-position)
		51G9227	
		52G4113	
		52G4118	
		52G4123	
		52G4128	
		51G9225	
879		71F1114	24-bit color graphics card, MEV2
880	7008	43G0053	System planar
	7011/220/230	10G8659	Graphics adapter, POWER Gt1
887	7006/41T/41W	88G2538	System planar, integrated Ethernet adapter
	7006/42T/42W	11H2578	System planar
	7008	43G0053	
	7011/220	65G7374	
	7011/230	8184088	System planar, integrated Ethernet adapter (66MHz)
	7011/250	51G8101	System planar, integrated Ethernet adapter (80MHz)
		8184306	System planar, integrated Ethernet adapter
	7012/340/350	51G8812	
	7012/34H/360/36T/370/37T	00G2793	
	7012/355/365/375	51G9107	
	7012/380/390	52G4325	
	7013/55L	00G2793	
	7030	52G4325	
889		43G0176	SCSI-2 differential high performance external I/O controller **Note:** Check the SCSI controller PTC resistor before exchanging the planaar. Refer to Service Hints in Chapter 1.
890		5G7315	SCSI-2 Differential Fast/Wide Adapter/A
		11H3600	SCSI-2 Single-Ended Fast/Wide Adapter/A
		52G3380	Enhanced SCSI-2 Differential Fast/Wide Adapter/A
891			Vendor SCSI adapter
892			Vendor display adapter
893			Vendor LAN adapter
894			Vendor async communications adapter
897		65G1828	S/370 Channel Emulator/A
898	7011/220/230	51G7773	POWER Gt1x graphics adapter

85c		65G7568	Auto Token-Ring LANstreamer MC32 adapter
89c	7006 7009 7012/380/390/G30 7013/J30/J01 7013/other models 7015/models after 950 7030	88G4898 19H0206 19H0264 88G4898 88G4898	600MB Double Speed Tray-Loading CD-ROM 600MB Double Speed Tray-Loading CD-ROM with carrier. Carrier with DC5 card for the above device.
901			Vendor SCSI device
902			Vendor display
903			Vendor async device
904			Vendor parallel device
905			Other vendor device
908		65G4886	POWER GXT1000 Graphics Subsystem SPAN board
910	All	52G1006	1/4GB Fibre Channel/266 Standard Adapter
912		86F0119 86F0125	2.0GB SCSI-2 differential disk drive Differential frame electronics **Note:** Check RETAIN for frame electronics availability. Exchange the complete drive assembly whenever possible. Exchange the logic card only when the data on the disk must be saved.
913		6374682 6374683	1GB differential disk drive, half-height Differential frame electronics **Note:** Check RETAIN for frame electronics availability. Exchange the complete drive assembly whenever possible. Exchange the logic card only when the data on the disk must be saved.
914		16G8492	5GB 8mm differential tape drive
915	All except 7013/J30 7013/J30	87G1480 19H0213 19H0264	4GB 4mm tape drive 4GB 4mm tape drive with carrier Carrier with DC5 card for the above device.
917		86F0767	2.OGB Differential Fast/Wide Disk Drive **Note:** If the disk drive is in a 7134 drawer, replace with FRU P/N 67G302
918		86F0766 19H0201 19H0209	2.0GB 16-bit Single-Ended Fast/Wide Disk Drive 2.0GB 16-bit Single-Ended Fast/Wide Disk Drive carrier Carrier with DC6 card for the above drive.
921		 51G8572 8184692 1394609	101 Key Keyboard Keyboard U.S. English Keyboard, U.S. (Soft Touch) English Keyboard cable
922		1396079 1394543 88G3936 1394544 43G2778	Keyboard, Arabic Keyboard, Belgium-French/Dutch Keyboard, Brazilian Keyboard, Danish Keyboard, Dutch/Netherlands

		1394545	Keyboard, Finnish/Swedish
		1394546	Keyboard, French
		1394541	Keyboard, French-Canadian
		1394542	Keyboard, German
		1396078	Keyboard, Greek
		1396080	Keyboard, Hebrew
		1395968	Keyboard, Icelandic
		1394547	Keyboard, Italian
		1394548	Keyboard, Norwegian
		1394549	Keyboard, Portuguese
		1394550	Keyboard, Spanish
		1394551	Keyboard, Swiss-German/French
		1396077	Keyboard, Turkish (ID 179)
		43G2775	Keyboard, Turkish (ID 440)
		1395985	Keyboard, U.K. English
		1394609	Keyboard cable
923			106 keys International Keyboard
		30F9388	Keyboard, Japanese-Kanji
		02G7352	Keyboard, Korean
		02G7353	Keyboard, Taiwanese
924		61X8923	2-Button mouse
925		51G9652	3-Button mouse
926		6247450	Tablet, 5083 Model 21
		74F3130	Tablet, 6093 Model 11
927		6247452	Tablet, 5083 Model 21
		74F3140	Tablet, 6093 Model 11
929		39F8227	Dials, 6094 Model 10
		39F8302	Cable, serial attachment, power
930		39F8226	Lighted Program Function Keyboard
		39F8302	(LPFK), 6094 Model 20 Cable, serial attachment, power
931		6487683	5085 Keyboard, U.S.
		6487686	5085 Keyboard, France
		59X1088	5085 Keyboard, Germany
		6487687	5085 Keyboard, Italy
		60X5726	5085 Keyboard, Japan
		6487689	5085 Keyboard, Sweden (obsoleted)
		6487685	5085 Keyboard, U.K. English
		6247440	5086 Keyboard, U.S.
		6247442	5086 Keyboard, France
		6247444	5086 Keyboard, Germany
		6247443	5086 Keyboard, Italy
		6247446	5086 Keyboard, Japan
		6247445	5086 Keyboard, Sweden
		6247441	5086 Keyboard, U.K. English
935	7006/41T/41W 7009 7011 7012 7012/G30 7013 7013/J30 7015 7015/R30 7016 7018	00G2326 88G4768 53F3423 	4M-byte (2.88 M-byte), 3.5-inch diskette drive 2M-byte (1.44 M-byte), 3.5-inch diskette drive 2M-byte (1.44 M-byte), 3.5-inch diskette drive
936		71F1042	5.25-inch diskette drive, 1.2M-byte, internal
942	7011/250	52G3206	GXT100 Graphics adapter error
		52G3207	GXT150 Graphics adapter error
944	7009/C10 7013/59H	73G9821	100MB ATM adapter being configured
945		45G9467	1.0GB 16-bit SCSI differential

			disk drive
946	7012/G30 7013/J30 7015/R30	19H0228 19H0246 19H0246	System planar I/O Card
947			730MB single-ended disk drive assembly
949			Unknown direct-attached disk drive is failing
950			Unknown SCSI device is missing.
951		53F3429 6373521	670M-byte SCSI disk drive assembly Logic card **Note:** Exchange the complete drive assembly whenever possible. If extreme data-saving measures are necessary, exchange the logic card.
952		53F3427 6373521	355M-byte SCSI disk drive assembly Logic Card **Note:** Exchange the complete drive assembly whenever possible. If extreme data-saving measures are necessary, exchange the logic card.
953		93X0961 93X0901	320M-byte SCSI disk drive assembly Logic card and frame assembly **Note:** Exchange the complete drive assembly whenever possible. Exchange the logic card only when the data on the disk must be saved.
954		73F9001 73F8994	400M-byte disk drive assembly Logic card and frame assembly **Note:** Exchange the complete drive assembly whenever possible. Exchange the logic card only when the data on the disk must be saved.
955		45G9495 95X2346 95X2432 91F0935	857M-byte disk drive assembly 857M-byte logic card and frame assembly Isolator kit for 7016 **Note:** Check RETAIN for frame electronics availability. Exchange the complete drive assembly whenever possible. Exchange the logic card only when the data on the disk must be saved. Refer to RETAIN TDR #064942 for more information. 95X2346 must be used with the 95X2431 disk enclosure.
956		6373521	355/670M-byte logic card.
957	7012/320	53F3425 81F8900	120M-byte Direct Bus Attach disk drive Riser card, disk drive
958	7012/320 7012/32H	00G2603 81F8900	160M-byte Direct bus attach disk drive Riser card, disk drive
959	7008/M2A/M20 7011/220/230/250 7012/340/34H/350 / 355/360/36T/370 /37T	1383417 31F4288 81F8085	Fuse, riser card Riser card, disk drive 160M-byte SCSI disk drive

960		52G0061	1.37GB SCSI disk drive assembly
		31G9756	Logic card **Note:** Logic card stocking will be limited, and special ordering may be required. Check RETAIN for logic card availability. Exchange the complete drive assembly whenever possible. Exchange the logic card only when the data on the disk must be saved.
962	3161		Use device documentation.
963	3163		Use device documentation.
968		55F9902	1GB single-ended disk drive assembly, half-height
		55F9909	Single-ended frame electronics
		19H0265	Carrier with DC3 card for the above drive. **Note:** Check RETAIN for frame electronics availability. Exchange the complete drive assembly whenever possible. Exchange the logic card only when the data on the disk must be saved.
970	9348		1/2-Inch 9-Track Tape Drive Use device documentation.
971		16G8423	150M-byte 1/4-Inch Tape Drive
972		16G8421	2.3GB 8 mm Tape Drive
973			Other SCSI tape drive
974		88G3929	CD-ROM drive (Type A or Type B bezel)
977		51G8018	M-Audio Capture and Playback Adapter
980	4216		Use device documentation.
981		51G8237	540M-byte SCSI-2 single-ended disk drive
		19H0265	Carrier with DC3 card for the above drive.
982	3852		Use device documentation.
983	4201		Use device documentation.
984		45G9467	1GB 8-bit disk drive (one-inch height)
	7013/J30/J01	19H0202	1GB 8-bit disk drive (one-inch height) with carrier.
		19H0265	Carrier with DC3 card for the above drive.
985			M-Video Capture Adapter (M-VCA)
		32G0258	NTSC version (U.S.)
		92F3713	NTSC cable set
		32G0263	PAL version (non-U.S.)
		92F3714	PAL cable set
986		36G0454	2.4GB SCSI disk drive assembly **Note:** For field repair assembly, see Failing Function Code C11.
987	7012/G30 7013/59H/J30/J01	88G4898	600MB CD-ROM-2 drive (Type B bezel, has white underside on unload button)
	7013/J30/J01	19H0206	600MB CD-ROM-2 drive with carrier
		19H0266	Carrier with DC5 card for the above device.

	All other models	65G7563	600MB CD-ROM-2 drive
989		43G1842	200M-byte SCSI disk drive
990	7013/J30/J01	86F0118 86F0110 19H0201 19H0265	2.0GB SCSI-2 single-ended disk drive Single-ended frame electronics 2.0GB SCSI-2 single-ended disk drive with carrier. Carrier with DC3 card for the above drive. **Note:** Check RETAIN for frame electronics availability. Exchange the complete drive assembly whenever possible. Exchange the logic card only when the data on the disk must be saved.
991	7207	46G2700	525M-byte 1/4-inch SCSI tape drive
992		5202	Use device documentation.
993	5204		Use device documentation.
994	All models 7013/J30/J01	87G1687 19H0204 19H0266	5/10GB 8-mm internal tape drive 5/10GB 8-mm internal tape drive with carrier Carrier with DC5 card for the above device.
995		8191184	1.2GB 1/4-inch cartridge tape drive
996		43G0656	Multi-Protocol Adapter
997		65G1878	FDDI-STP (shielded twisted-pair) single-ring adapter
998		55F9306	2.0GB 4mm-tape drive
*		61F5396	Voice Server Attachment Adapter (VSCA) (61F5396 obsolete) * No Failing Function Code exists. For detailed diagnostic information, refer to the *DirectTalk/6000 Problem Solving Guide*, form number SC-22-0105.
*		34F0873	Voice Server Attachment Adapter cable * No Failing Function Code exists. For detailed diagnostic information refer to the *DirectTalk/6000 Problem Solving Guide*, form number SC22-0105.
*		43G3317	Voice Server Dual Attachment Adapter (VSDA) * No Failing Function Code exists. For detailed diagnostic information, refer to the *DirectTalk/6000 Problem Solving Guide*, form number SC-22-0105.
999	3514 7137		Disk Array Subsystems **Note:** Refer to the 3514 or 7137 documentation.

4.0 Chapter 4. FRU Cross-References

The FRU Cross-References enable the service technician to determine FRU numbers if the part name is known or to determine a FRU description if the FRU number is known.

Subtopics

4.1 Using the FRU Name Cross-Reference List

The following procedure is used to find a FRU part number when the FRU name is known. FRU names are listed in alphabetic order.

1. Find your FRU name in the FRU name column.

2. Record the failing function code for the FRU.

3. Go to the Failing Function Code List in Chapter 3 in topic 3.0 to find the FRU part number and description.

Subtopics
4.1.1 FRU Name Cross-Reference List

4.1.1 FRU Name Cross-Reference List

Description and Notes	**Failing Function Code**
Adapter, 8-port async, EIA-232	841
Adapter, 8-port async, EIA-422A	842
Adapter, 8-port async, MIL-STD 188	843
Adapter, 16-port async, EIA-232	847
Adapter, 16-port async, EIA-422A	848
Adapter, 64-port async controller	834
Adapter, 128-port async controller	836
Adapter, 3270 Host Connection Program 2.1 and 1.3.2 for AIX connection	854
Adapter, 5080 attachment	858
Adapter, 3D color graphics, 24-bit color graphics card, MEV2	879
Adapter, 3D color graphics, 24-bit Z-buffer option, MZB1	118
Adapter, 3D color graphics, 8-bit color graphics card, MDE1	876
Adapter, 3D color graphics base card, MGE2	130
Adapter, 3D color graphics video card, MRV2	128
Adapter, ARTIC960 Co-processor platform	713
Adapter, ARTIC960 Co-processor platform AIB card	C95
Adapter, async expansion	867
Adapter, ATM 100MB	944
Adapter, Auto Token-Ring LANstreamer MC 32	85c
Adapter, vendor async communications	894
Adapter, block multiplexer channel	862
Adapter, diskette (Built-in)	828
Adapter, color graphics display	874
Adapter, vendor display	892
Adapter, ESCON channel adapter or emulator	865
Adapter, ESCON channel adapter or emulator fiber optic subassembly	B47
Adapter, ethernet, 7012/340/350 system planar	887
Adapter, ethernet, 7011/220 system planar	887
Adapter, ethernet LAN	852
Adapter, Fibre Channel/266	910
Adapter, Fiber Distributed Data Interface (FDDI), single ring	859
Adapter, Fiber Distributed Data Interface (FDDI), dual ring upgrade	B14
Adapter, FDDI-Fiber, single ring	859
Adapter, FDDI-Fiber, dual ring upgrade	B14
Adapter, FDDI network	C99
Adapter, FDDI, Shielded Twisted Pair(STP), single ring	997
Adapter, FDDI, Shielded Twisted Pair(STP), dual ring upgrade	B45

Adapter, graphics input device	819
Adapter, graphics subsystem	871
Adapter, graphics subsystem, 8-bit pixel memory card	112
Adapter, graphics subsystem, 24-bit pixel memory card	115
Adapter, graphics subsystem, CVME interface card	110
Adapter, graphics subsystem, drawing processor card	114
Adapter, graphics subsystem, graphics control processor card	111
Adapter, graphics subsystem, Kanji ROM	117
Adapter, graphics subsystem, shading processor card	113
Adapter, grayscale graphics display	872
Adapter, GXT500 Graphics	718
Adapter, GXT500D Graphics	D51
Adapter, high-performance, disk drive subsystem	870
Adapter, keyboard (Built-in)	821
Adapter, vendor LAN	893
Adapter, M-Audio Capture and Playback	977
Adapter, mouse (Built-in)	823
Adapter, Multiport/2 interface card (generic reference)	C17
Adapter, Multiport/2 512K-byte base card	B60
Adapter, Multiport/2 1MB base card	B61
Adapter, Multi-Protocol	996
Adapter, Network Terminal Accelerator	838
Adapter, Parallel (Built-in)	827
Adapter, Portmaster base card	B69
Adapter, Portmaster interface card (generic reference)	C16
Adapter, E1 Portmaster (Europe)	C18
Adapter, T1/J1 Portmaster (US and Japan)	851
Adapter, 4-port multi-protocol communications controller	855
Adapter, multi-protocol interface card	186
Adapter, M-Video Capture	985
Adapter, Ultimedia Video I/O	714
Adapter, POWER Gt4 Performance Option	B16
Adapter, POWER Gt1, graphics subsystem	880
Adapter, POWER Gt1x graphics	898
Adapter, POWER GXT1000 Graphics Accelerator	908
Adapter, POWER GXT150L graphic 7006	C87
Adapter, POWER GXT155L	C75
Adapter, POWER Gt3, processor card	B01
Adapter, POWER Gt3, base graphics card	877
Adapter, POWER Gt3i graphics	B58
Adapter, POWER Gt4, graphics processor card	878
Adapter, POWER Gt4, base graphics card	119

Adapter, POWER Gt4, 8- to 24-bit field upgrade card	120
Adapter, POWER Gt4 performance option card	878
Adapter, POWER Gt4i processor card	878 C49 C50
Adapter, POWER Gt4xi processor card	878
Adapter, POWER Gt4xi 8-bit graphics card	878
Adapter, POWER Gt4i 8-bit graphics card	C51
Adapter, POWER Gt4i 24-bit graphics card	878 C52
Adapter, POWER Gt4e, graphics	B59
Adapter, POWER GXT100 graphics	942
Adapter, POWER GXT150 graphics	C28
Adapter, POWER GXT150M graphics	710
Adapter, S/370 Channel Emulator/A	897
Adapter, vendor SCSI	891
Adapter, SCSI I/O controller	869
Adapter, SCSI-2 I/O controller, single-ended	866
Adapter, SCSI-2 I/O controller, differential	889
Adapter, SCSI-2 Differential Fast/Wide	890
Adapter, Enhanced SCSI-2 Differential Fast/Wide Adapter/A	D47
Adapter, SCSI-2 Differential Fast/Wide	C26
Adapter, Serial port S1 (Built-in)	826
Adapter, Serial port S2 (Built-in)	831
Adapter, speaker (Built-in)	825
Adapter, tablet (Built-in)	824
Adapter, token-ring network	850
Adapter, voice server attachment (VSAA/VSCA)	*
Adapter, voice server dual attachment (VSDA)	*
Adapter, X.25 interface co-processor/2	849
Adapter, X.25 memory DRAM SIP	185
Adapter, Ultimedia Audio Adapter	715
Adapter, unknown	711
Async network problem	245
Async expansion drawer, operator panel	264
Backplane (BP)	C93
Battery, backup unit	161
Battery, time-of-day and NVRAM	151
Board, GPSS	C33
Board, NFx, MRE memory	D28
Board, RSS	C34
Board, GPSS/RSS crossover	C48
Board, VOO	C35
Board, System Interface Board base unit (for SMP units)	C88

Board, System Interface Board expansion unit (for SMP units)	C89
Box, channel cable interface	B05
Bulk Head SCSI (BHS)	D37
Bus, System direct-attach	811
Bus, Micro-channel bus problem	133
Cable, 8/16-port extension	269
Cable, 4-port multi-protocol jumper	267
Cable, 16-Port interface cable - EIA-232	291
Cable, 16-port interface cable - EIA-422A	290
Cable 3D-adapter, card connector	128
Cable, 4-port multi-protocol	258
Cable, 64-port controller signal	265
Cable, 128-port asynchronous controller signal	B54
Cable, ARTIC960 EIA-232, EIA-530, ISO-4902, ISO-4903	C98
Cable, Attachment adapter	C36
Cable, async EIA - 232D, V.24	259
Cable, async expansion drawer signal	268
Cable, battery backup unit,	162
Cable, block multiplexer channel adapter	B04
Cable, GIO adapter signal/power, dials/6094	255
Cable, crossover, FDDI	B15
Cable, crossover, FDDI-Fiber	B15
Cable, crossover, FDDI-STP	B46
Cable, CVME signal	116
Cable, diskette drive signal	181
Cable, Display	RGB
Cable, external diskette	184
Cable, external power. See the installation and service guide for the system unit.	
Cable, graphics input device, dials/6094	274
Cable, graphics 7006	D07
Cable, keyboard	921, 922
Cable, media drawer, SCSI	277
Cable, Multiport interface	262
Cable, Multiport/2 interface	B79 D10
Cable, Multiport/2 synchronous interface	B80
Cable, multi-protocol - EIA-232/V.24	254
Cable, multi-protocol - EIA-422A	253
Cable, multi-protocol - V.35	257
Cable, multi-protocol - X.21	260
Cable, optical, 6 m	205
Cable, optical, 10 m	205

Cable, optical, 20 m	205
Cable, optical, 60 m	205
Cable, optical, 100 m	205
Cable, optical, 4 m	C24
Cable, optical, 6 m	C24
Cable, optical, 10 m	C24
Cable, optical, 60 m	C24
Cable, optical, 100 m	C24
Cable, parallel printer	251
Cable, Portmaster 8-port	B81
Cable, Portmaster 6-port V.35	B82
Cable, Portmaster 6-port X.21	B83
Cable, E1 Portmaster (Europe)	C20
Cable, T1/J1 Portmaster (US and Japan)	C19
Cable, power, serial attachment, dials/6094	929
Cable, RGB 3-position video	220
Cable, RGB 3-position video, internal	116
Cable, RJ-45 to DB-25 converter, 64 port	266
Cable, RJ-45 to DB-25 converter, 128 port	C22
Cable, S/370 Channel Emulator/A Interface Cable	C21
Cable, SCSI-integrated planar, external device (1.5 m)	868
Cable, SCSI controller	276
Cable, SCSI controller, except Increased Availability	239
Cable, SCSI device to device	278
Cable, SCSI device drawer external signal	195
Cable, SCSI device drawer internal signal	197
Cable, SCSI internal signal	283
Cable, SCSI internal disk drive	190
Cable, passthru terminator, controller to first device, SCSI	190
Cable, serial link, high-performance disk drive subsystem	870
Cable, signal, serial attachment, Dials6094	270
Cable, standard I/O 10-pin to 25-pin converter	252
Cable, terminal cable, EIA-422A	263
Cable, token ring	256
Cable, Type 3 media filter token ring .254m (10inch) or Auto Token-Ring LANstreamer MC 32 Standard token ring cable	D46
Cable, two-position, POWER Gt4	878
Cable, three-position, POWER Gt4	878
Cable, VOO/RSS	C44
Cable, X.25 attachment cable - X.21	271
Cable, X.25 attachment cable - V.24	272
Cable, X.25 attachment cable - V.35	273

CD-ROM, unknown	723
CD-ROM drive, Type A or B bezel	974
CD-ROM-2 drive, Type B bezel (Unload button has a white underside)	987
CD-ROM 600MB Double Speed Tray-Loading, Type C bezel	89c
CD-ROM, Quad Speed 600MB Tray-Loading,	734
Color display, model 16	121
Color display, model 19	122
Concentrator, async, 16-port	835
Converter, serial optical channel	861
Converter, ethernet RJ-45	C29
Converter, 64 port to 128 port kit	D06
Controller, RADiant Array disk drive subsystem	844
Controller, SCSI I/O	B88 869
Controller, SCSI-2 Single-ended I/O	866
Controller, SCSI-2 differential high performance external I/O	889
CPU card	210 D09 D26
CPU card, 7006	D53
CPU card, 7009	C70
CPU card, 7012/G30	C62
CPU card, 7012/G30, 7013/J30, 7015/R30	C63
CPU card, 7012/350	B20
CPU card, 7012/340	B21
CPU card, 7012/360/36T/365, 7013/55L	B89
CPU card, 7012/370/37T/375	B90
CPU card, 7012/34H/355	B91
CPU card, 7012/340 thru 375, 7013/55L	C23
CPU card, 7012/390 7030/3BT	C78
CPU card, 7012/380 7030/3AT	C79
CPU card, 7013/570, 7015/R10	B92
CPU card, 7013/590	C54
CPU card, 7013/59H	C77
CPU planar	210 215
CPU planar, 7013/580/58H	B85 C56
CPU planar, 7015/970/97B	B23
CPU planar, 7015/980	B84
CPU planar, 7015/990	C53
CPU planar, 7015/R24	C76
Dials, model 10	929
Device, ASYNC unknown	727

Device, vendor ASYNC	903
Device, Diskette unknown	730
Device, Input unknown	726
Device, other vendor	905
Device, Parallel unknown	728
Device, vendor Parallel	904
Device, vendor SCSI	901
Device, SCSI unknown	721
Device, missing unknown SCSI	950
Disk drive, unknown	722
Disk drive, unknown direct attached	949
Disk drive assembly, 120MB direct bus attached	957
Disk drive assembly, 160MB direct bus attached	958
Disk drive assembly, 160MB SCSI	959
Disk drive assembly, 200MB SCSI, 3.5 inch	989
Disk drive assembly, 320MB SCSI	953
Disk drive, 320MB SCSI, logic card and frame assembly	953
Disk drive assembly, 355MB SCSI	952
Disk drive, 355MB SCSI, logic card and frame assembly	952
Disk drive assembly, 400MB SCSI	954
Disk drive, 400MB SCSI, logic card and frame assembly	954
Disk drive assembly, 540MB SCSI-2 (one-inch height)	981
Disk drive assembly, 670MB SCSI	142 951
Disk drive, 670MB SCSI, logic card and frame assembly	142
Disk Drive, 730MB Single-ended	947
Disk drive assembly, 857MB SCSI	141
Disk drive enclosure, 857MB SCSI	141
Disk drive, 857MB SCSI, logic card and frame assembly	955
Disk drive, 1080MB SCSI	741
Disk drive assembly, 1GB SCSI, single-ended	968
Disk drive assembly, 1GB SCSI, differential	913 945
Disk drive, 1GB SCSI, logic card and frame assembly	968
Disk drive assembly, 1.0GB SCSI (one-inch height)	984
Disk drive assembly, 1.1GB single-ended	700
Disk drive assembly, 1.1GB 16-bit single-ended	701
Disk drive assembly, 1.1GB 16-bit differential	702
Disk drive SCSI 1.3GB, 7135 RADiant Array	846
Disk drive assembly, 1.37GB SCSI	960
Disk drive, 1.37GB SCSI, logic card	960
Disk drive assembly, 2.0GB SCSI-2, single-ended	990
Disk drive assembly, 2.0GB SCSI-2, differential	912

Disk drive assembly, 2.0GB SCSI-2, differential Fast/Wide	917
Disk drive assembly, 2.0GB SCSI-2, single-ended Fast/Wide	918
Disk drive SCSI 2.0GB, 7135 RADiant Array	845
Disk drive assembly, 2.2GB single-ended	703
Disk drive assembly, 2.2GB 16-bit single-ended	704
Disk drive assembly, 2.2GB 16-bit differential	705
Disk drive assembly, 2.4GB SCSI	986
Disk drive assembly, 4.5GB 16-bit single-ended	706
Disk drive assembly, 4.5GB 16-bit differential	707
Diskette drive, 3.5-inch	935
Diskette drive, 5.25-inch external	184
Diskette drive, 5.25-inch internal	936
Diskette redrive card	183
Display unit, 7008	B76 725
Display, Attached	Display
Display, vendor	902
Extender, SCSI bus	189
Ethernet network problem	241
Fan assemblies	158, 160 166, 167 170, 229
Fan assembly, SCSI device drawer	158
Fan, CPU 7013/J30, 7015/R30	D21
Fan, Disk Fan Module (SMP units)	D18
Fan, Main Fan Module (SMP units)	16
Fan, Media 7013/J30, 7015/R30	D22
Fan, MCA Fan Module (SMP units)	D17
Fan, Power supply (SMP units)	D19
Fan, Power supply 7013/J30, 7015/R30	D23
Field repair assembly, 2.4GB SCSI disk drive	C11
Fuse, Ethernet riser, thick/thin	B11
Fuse, graphics input device adapter	275
Fuse, planar	B10
Fuse, planar, ethernet	B40
Fuse, SCSI I/O controller	279
Fuse, riser card, SCSI disk drive	959
Interface card, 4-port multi-protocol controller	855
Interface card, Multiport/2, 4-port EIA-232-C	B62
Interface card, Multiport/2, 8-port EIA-232-C	B63
Interface card, Multiport/2, 4-port EIA-232-C/4-port EIA-422-A	B64
Interface card, Multiport/2, 6-port synchronous EIA-232-C	B65
Interface card, Multiport/2, 8-port EIA-422-A	B66

Interface card, Portmaster, 6-port V.35	B73
Interface card, Portmaster, 6-port X.21	B74
Interface card, Portmaster, 8-port EIA-232-C	B71
Interface card, Portmaster, 8-port EIA-422-A	B72
Interface card, System Bus	D25
IPO module	209
Keyboard, Kanji	923
Keyboard U.S.	921
Keyboard, WT	922
Keyboard, 5085/5086	931
Keyboard, Type unknown	B31
Keylocks	168
Lighted Program Function Keyboard (6094, model 20	930
Logic, System status	226
Logic, Micro-channel	227
Logic card, 355/670MB	956
Memory card, S1 base	171
Memory card, S1.5 base	178
Memory card, S3 base	157, 219
Memory card, S3.3 base	180
Memory card, U1 base	180
Memory card, S4.5 base	C37
Memory card, 128 MB S4	B56
Memory card, MRB2 (SMP units)	B94
Memory card, MRB4 (SMP units)	C64
Memory card, 8-bit pixel	B52 C14
Memory card, 24-bit pixel	B53 C14
Memory, unidentified error	131
Memory, control unit problem	214
Memory, POWER Gt1, video RAM (1 MB)	B34
Memory SIMM, 1MB S1	173
Memory SIMM, 1MB	C38
Memory SIMM, 1MB S3 0r S4	175
Memory SIMM, 1MB, 4MB, 8MB, and 16MB ARTIC960 memory module	C94
Memory SIMM, 2MB S1	174
Memory SIMM, 2MB	C39
Memory SIMM, 2MB 7006, 7009, 7011/250	B37
Memory SIMM, 2MB S3 or S4	179
Memory SIMM, 4MB U1	187
Memory SIMM, 4MB	C40
Memory SIMM, 4MB S1.5	176

Memory SIMM, 4MB S3 or S4 base	172
Memory SIMM, 4MB S3, 7011	B38
Memory SIMM, 8MB	C41
Memory SIMM, 8MB S1.5	177
Memory SIMM, 8MB S3	182
Memory SIMM, 8MB (MD2) (SMP units)	B96
Memory SIMM, 16MB S3 or S4	154
Memory SIMM, 16MB	C42
Memory SIMM, 8MB S3, 7011	B39
Memory SIMM, 16MB S3, 7011	C31
Memory SIMM, 32MB	C43
Memory SIMM, 32MB S3, 7011	C32
Memory SIMM, 32MB S4.5	C30
Memory SIMM, 32MB (MD2) (SMP units)	B97
Memory SIMM, L2 cache	D01
Memory SIMM, L2 cache 7013/59H, 7015/R20	D03
Memory SIMM, L2 cache 7009, 7015/R24	D04
Memory SIMM, Multiport/2, 256KB	B67
Memory SIMM, Multiport/2, 512KB	B68
Memory SIMM, Portmaster base card, 1MB	B77
Memory SIMM, Portmaster base card, 2MB	B78
Memory SIMM, standard 8MB, 16MB, 32MB for 7012/G30, 7013/J30	D33
Memory SIMM, Translation Control Word (TCW),	B19
Memory SIMM, 16MB S4	B57
Memory SIMM 12MB VRAM	C45
Memory SIMM 16MB VRAM	C46
Memory SIMM 16MB DRAM	C47
Module, ROM	217
Module, OCS ROM	216
Mouse, 2-button	924
Mouse, 3-button	925
Network, Async problem	245
Network, Ethernet problem	241
Network, Token-ring problem	240
Network, 3270 problem	242
Network X.25 problem	244
Node, remote async, 16-port EIA-232-D	837
NVRAM problem	814
OCS, problem	223
Operator panel	165
Operator panel (SMP units)	C60
Operator panel, async expansion drawer	165 264

Planar, async expansion drawer	288
Planar, combination	221 C58
Planar, combination 7015/990	C58
Planar, CPU	210
Planar, CPU (for SMP units)	C62
Planar, I/O	221 C57
Planar, I/O for SMP units	C59
Planar, Integrated SCSI-2 Fast/Wide Adapter on the system planar	C55
Planar, MCA planar base unit (MP) for SMP units	C90
Planar, MCA expansion planar base unit (MPe) for SMP units	C91
Planar, Option I/O	221
Planar, standard I/O	816 B28 B86
Planar, I/O 7009	C84
Planar, I/O 7013/59H	C83
Planar, I/O 7015/R24	C82
Planar, IOC	946
Planar, system	169 B29 B87
Planar, system 7006	C69 C85
Planar, system 7011/220	B24
Planar, system 7011/250	C27 D15
Planar, system 7012/340/350	B26
Planar, system 7012/380/390, 7030/3AT/3BT	C81
Planar, system (for SMP units)	C61
Plug, wrap ARTIC960	C97
Power, display, serial attachment, and/or signal cables	280
Power distribution board, rack system unit	208
Power supplies	152
Power supplies (SMP units)	C92 or D19
Power supplies, external units	203
Power supply, portable disk drive	192
Power supply, SCSI device drawer	153
Power supply and display assembly, 7008	B76
Printer/terminal interposer, EIA-232	261
Processor card, drawing	B50 C12
Processor card, shading	B51 C13
Processor card, GT4i	C49

	C50
Processor, floating point problem	815
Processor, IOCC problem	218
Program, damaged	132
5.25-inch external diskette drive	184
RADiant Array SCSI disk drive subsystem controller (7135)	844
Remote async node, 16-port EIA-232-D	837
Relay, expansion unit power control 7013/J30	D24
Riser card, disk drive	189, 957 958, 959
Riser card, ethernet, thick/thin,	B06
Riser card, ethernet, twisted pair	B07
Riser card, external diskette	184
Riser card, I/O slot	B41
Riser card, operator panel,	812
Riser card, with L2 cache 7006	D05
Riser card, MCA I/O Riser card 7006	C72
Riser card, MCA I/O Riser card 7009	C74
Riser card, POWER GT 7011/220/230	B35
Riser card, POWER Gt1 graphics adapter	B42
Riser card, POWER GXT graphics adapters	C25
Riser card, SCSI, 7013/55L	812
ROM module	217
ROM, OCS problem	216
SCSI disk drive subsystem controller, 7135 RADiant Array	844
SIMM, Translation Control Word (TCW) memory	B19
SMP with 1 processor (single CPU)	C62
SMP with 2 processor (dual CPU)	C63
Status panel, battery backup unit, 7015	163
Status, System status logic	226
Stylus, tablet	188
Switching unit, battery backup unit	164
System workstation	System
Tablet cursor	159
Tablet, Model 21 or 6093/11	926
Tablet, Model 22 or 6093/12	927
Tape drive, unknown	724
Tape drive, 1/2-inch 9-Track	970
Tape drive, 140GB 8mm	733
Tape drive, 150MB 1/4-Inch	971
Tape drive, 525MB 1/4-Inch	991
Tape drive, 1.2GB 1/4-inch	995
Tape drive, 2.0GB 4 mm	998

Tape drive, 4GB 4 mm	915
Tape drive, 2.3GB 8 mm	972
Tape drive, 5GB 8 mm Single-Ended	994
Tape drive, 5GB 8 mm Differential	914
Tape drive, other SCSI	973
Tape, 16Gb 4mm Auto Tape Loader	745
Terminator, SCSI card edge	232
Terminator, SCSI controller external	233
Terminator, external SCSI device	234
Terminator, SCSI pass-through and cable assembly	277
Three-digit display	165
Time-of-day logic problem	817
Token-ring, network problem	240
Transceiver, ethernet, twisted pair	B08
Transceiver, ethernet, ISO 8802/3 (formerly IEEE 802.3)	B09
X.25 network problem	244
Ethernet adapter	962
SCSI Scanner being identified	963
3270 network problem	242
3514 External Disk Array, Models 212, and 213	999
3852 Graphics Visualization Server	982
XGA graphics adapter	983
Switching Network Interface	980
4755 Crytographic adapter	992
File Server	993
7134 High Density SCSI Disk Subsystem DC fan assembly	D08
7135 RADiant Array SCSI subsystem controller	844

* No Failing Function Code exists; check for FRU numbers at the end of the Failing Function Code listing in the previous chapter. For detailed diagnostics information, refer to the *DirectTalk/6000 Problem Solving Guide,* form number SC22-0105.

5.0 Chapter 5. Installation Checkout

The installation checkout is used by the service representative to verify quality after initial installation or after an MES or EC is installed.

Subtopics

5.1 Installation Checkout Procedure

To start the checkout, go to Step 1.

5.2 Step 1. Doing a Visual Check

Perform the following actions after initial installation or system alteration:

1. Be sure the system unit power switch is set to Off.

2. Be sure the power switches on all of the attached devices are set to Off.

3. Visually check the system unit and attached devices for:

   - All power cables are securely attached to the system unit or devices
   - All signal cables are connected at both ends
   - All power cables are plugged into the customer's outlet
   - All covers are installed and the vent openings are not obstructed
   - All ribbons, guides, and other attachments are in place.

4. Go to Step 2.

5.3 Step 2. Checking the TTY Terminal Attributes

Checking the TTY Terminal Attributes usually needs to be accomplished only during the initial installation.

If you have trouble selecting the console display and you are using an attached terminal, check the TTY Terminal Attributes again.

When you run the diagnostic programs from an attached TTY terminal, the attributes for the terminal must be set to match the defaults of the diagnostic programs. The TTY terminal must be attached to the S1 port on the system unit.

Are you going to run this procedure on an attached tty terminal?

NO Go to Step 3.

YES Go to "Running the Diagnostic Programs from a tty Terminal" in Chapter 7 in topic 7.0 of this book, and check the terminal attributes. Return to Step 3 when you finish checking the attributes.

5.4 Step 3. Loading the Diagnostics

The diagnostics can be run from diskettes, from a CD-ROM disc, from a locally attached disk, or from a server if the AIX operating system is installed on the system.

If you are not sure whether the AIX operating system is installed, you can check by setting the mode switch to the Service position and turning the system unit on. If the system stops with two or more numbers between 221 and 296 alternating in the three-digit display, the AIX operating system is not installed.

If the AIX operating system is installed, the diagnostic programs should load from a locally attached disk or from a server.

If the AIX operating system is not used, the diagnostics can be loaded from the diskettes or from the diagnostic CD-ROM disc.

The following procedure will attempt to load the diagnostics from a disk or from a server. If they cannot be loaded from a disk or server, the diagnostic diskettes or diagnostic CD-ROM disc will be used to load and run the checckout.

1. Set the mode switch to the Service position.

2. Set the power switches on all of the attached devices to On.

3. Set the power switch on the system unit to On.

4. Watch the three-digit display.

   If the system stops with two or more numbers between 221 and 296 alternating in the three-digit display, the AIX operating system is not installed. Do the following:

   a. Insert the first diagnostic diskette in the diskette drive, or insert the diagnostic CD-ROM disc into the CD-ROM drive.

      Note: For more information on using diagnostic diskettes, see "Using the Diskette Package" under "Service Hints" in Chapter 1 in topic 1.0

   b. When *c07* displays, insert the next diskette until the diagnostics are loaded. If *c31* displays, follow the displayed instructions to select the console display.

      If the system stops for at least three minutes with a steady number or a flashing *888* displayed in the three-digit display, a problem was detected during diagnostics IPL. Check for loose cables or cards. If you do not find a problem go to MAP 0020.

5. When the diagnostic programs load correctly the DIAGNOSTIC OPERATING INSTRUCTIONS display.

   Did the DIAGNOSTIC OPERATING INSTRUCTIONS display?

   NO Go to MAP 0020.

   YES Go to Step 4.

5.5 Step 4. Checking for the Correct Resources

Use the "Display or Change Configuration or VPD" service aid to check the resources that are present (memory cards, SCSI devices, adapters, diskette drives, disk drives, and input devices).

Note:

1. If the terminal type has not been defined, it will need to be defined before you can select the service aids. Use the Initialize Terminal option on the FUNCTION SELECTION menu to define the terminal.

2. If the Dials and LPFK are attached to serial ports S1 or S2, they will not be listed by the service aid unless they have been configured by the user. Refer to AIX operating system documentation to configure these devices.

Were all the resources listed by the service aid?

NO Check for loose cables or cards. If you do not find a problem, go to MAP 0020.

YES Go to Step 5.

5.6 Step 5. Checking the Hardware

If you are running from disk, the system can be checked by running the System Exerciser or by running diagnostics.

To run the System Exerciser:

1. Select System Exerciser from the Function Selection Menu.

2. Follow the on-screen instructions.

To run diagnostics:

1. Select Advanced Diagnostics on the FUNCTION SELECTION menu.

2. Select System Verification on the DIAGNOSTIC MODE SELECTION menu.

   All resources can be checked out by selecting System Checkout on the ADVANCED DIAGNOSTIC SELECTION menu, or you can select each resource individually.

3. Check each resource.

Did all of resources check out good?

NO Record the SRN; then go to MAP 0010.

YES Go to Step 7.

5.7 Step 6. Update the Service Boot List

To specify the order in which the devices will attempt to be loaded, the diagnostic programs must be updated using the *Display/Alter Bootlist* service aid. The following procedure will assist you in performing this task.

1. Select the Service Aid option on the FUNCTION SELECTION menu.

2. Run the Display/Alter Bootlist service aid.

3. Select the Service mode bootlist option.

4. Select the Alter Current bootlist option.

5. Use the following guideline in specifying the access order of the devices.

- When there are multiple choices for devices to load the diagnostic program from, the disk drives should always be the last option specified. This will result in the shortest amount of time required in loading the diagnostic programs.

5.8 Step 7. Completing the Product Topology Diskettes

Note: If your system does not have a diskette drive, skip this step, and go to Step 8.

If you are performing an initial installation, you should have a Product Topology System Diskette and a Product Topology Update Diskette in the ship group.

If you are performing a system configuration change or update using an MES or an EC, you should have a Product Topology Update Diskette in the ship group.

Both diskettes will be updated during this procedure. You will be instructed to keep the Product Topology System Diskette with the system books and send the Product Topology Update Diskette to the plant of control.

1. Select the Service Aid option on the FUNCTION SELECTION menu.

2. Run the Product Topology service aid. Follow the displayed instructions to complete the product topology diskettes.

3. Store the Product Topology System Diskette in the operator guide binder with the diagnostic diskettes.

4. Send the Product Topology Update Diskette to the plant of control in the mailer provided.

5. Go to Step 8.

5.9 Step 8. Completing the Installation

Some of the following steps only apply to an initial installation. These are provided as reminders in completing the installation or finishing a MES or EC activity.

1. If present, remove the diagnostic diskette or CD-ROM diagnostic disc from the appropriate drive, and store it in the binder with the operator guides.

2. Set the mode switch to Secure.

3. Give the keys to the customer and explain the importance of keeping the reorder tag for the keys in a safe place.

4. File a copy of the following items in the *Account Management Planning Guide*, form number Z-ZZ9-0417:

   - Cable Planning Charts
   - Cable Planning Charts
   - SCSI Address Record from Appendix A of the installation and service guide
   - Machine History Card for each system unit and device.

5. Microcode must be installed during system installation or after the AIX operating system is installed. If the system is using the AIX operating system, all microcode is preinstalled on the boot disk for all adapters and devices that were shipped with the system.

   Microcode is shipped on microcode diskettes, option diskettes and on the boot disk. For the AIX operating system, runtime microcode maintenance can be selected from the SMIT INSTALLATION AND MAINTENANCE MENU or from the Diagnostic Service Aid. The **adfutil -m** (command and flag) is normally used to install microcode shipped on option diskettes.

   If the system is using another type of operating system, that operating system should include microcode installation instructions.

   If you have the X.25 Interface Co-Processor or the 5080 Attachment Adapter, the microcode for them is normally not shipped with the AIX operating system. The microcode for these adapters must be installed before the adapters can be used. The 5080 Attachment Adapter Microcode is shipped on a microcode diskette. The X.25 Interface Co-Processor microcode is shipped on an option diskette.

6. Contact the person that is going to install the software or turn the system to the customer.

   If needed, go to the AIX operating system *Installation Kit* to install and configure the AIX operating system.

6.0 Chapter 6. General System Information

Information in this section is common to all system units. Any service information or diagnostic procedure that is specific to a certain system unit or device is in the operator guide or service guide for that system unit or device.

Subtopics

6.1 AIX Operating System Message Files

The AIX operating system message files must be installed on the system for proper operation of the diagnostic programs from the disk. If these files are not installed, the diagnostic programs will display in English only. To install the Message Files, use the **installp** command.

6.2 Base System Locale Program

The base system locale Program must be installed on systems running the diagnostic programs from the disk. If this program is not installed, **Catalog Error** messages will display when the diagnostic programs run. To install the base system locale program, use the **installp** command.

6.3 Microcode

There are two types of hardware microcode used in system units. The first type is the microcode stored on disk and used by the built-in disk drive controller. The second type is the microcode used by an adapter.

The first type of microcode is written on the disk before the original or replacement disk drive is shipped. This type of microcode only needs updating when there is an applicable Engineering Change (EC) or Miscellaneous Equipment Specification (MES). Use the Microcode Download service aid in Chapter 7 in topic 7.0 to load this microcode from diskettes to disk.

The second type of microcode is stored on the disk by the AIX operating system during installation of the operating system. This type microcode loads the adapter during the system IPL and must be installed before the diagnostics can be run from disk.

If you are using the AIX operating system, the **installp** and **adfutil** commands are used to load any microcode not shipped on the disk with the AIX operating system. All of the microcode stored on the disk for use with the AIX operating system is in either the **/etc/microcode** or the **/usr/lib/microcode** directory.

If you are using another operating system, refer to the documentation for that operating system to install microcode.

The diagnostic diskettes and CD-ROM diagnostic disc contain all of the required microcode for diagnostic purposes.

Microcode for the X.25 Interface Co-Processor is shipped on an option diskette.

6.4 CEREADME File

There is a **CEREADME** (CE read me) file available on all diagnostic media disk, diskette and CD-ROM). This file contains diagnostic and system unit errata not covered in the publications.

The **CEREADME** file can be displayed by using the Service Hints service aid after the diagnostics are loaded. Also, the file can be read directly from the using the Version 3 **pg** command to display **/usr/lpp/diagnostics/CEREADME.** The **CEREADME** file can be copied or printed using the normal commands. For information about using the Service Hints service aid, see Chapter 7 in topic 7.0.

Subtopics

6.4.1 Printing the CEREADME File from Tape

Insert the diagnostic tape into the tape drive and then enter the following commands:

```
mkdir/tmp/diag
cd /tmp/diag
tctl-f/dev/rmt0.1 fsf 8
restbyname -qvSf/dev/rmt0 ./usr/lpp/diagnostics/CEREADME
cat CEREADME>/dev/lp0
cd /tmp
rm -rf diag
```

6.4.2 Printing the CEREADME File from Disk

The **CEREADME** file that is on disk may be printed using the **cat** command. The path to this file is as follows:

```
/usr/lpp/diagnostics/CEREADME
```

A copy of this file should be printed and stored with the Service Information. **lp0** is normally the printer attached to the parallel port. If a printer attached to the parallel port and is considered as **lp0**, the command for printing the file is as follows:

```
cat /usr/lpp/diagnostics/CEREADME  >  /dev/lp0
```

6.4.3 Printing the CEREADME File from a Source other than Disk

The **CEREADME** file cannot be printed while diagnostics are being executed from a source other than from the disk. The file can be printed on a system when the AIX operating system is running in a normal user environment. The procedure involves copying the file from diskette to a temporary file on disk, printing the file and then deleting the file from disk. Check for directory **/tmp/diag**. To determine if this directory already exists, enter:

```
cd /tmp/diag
```

If the directory does not exist, the message **/tmp/diag: not found** will display, do NOT attempt to print the CEREADME file if this message is not displayed. To print the CEREADME file choose the appropriate section below and follow the steps listed.

6.4.4 Printing the CEREADME File from Diskette

Insert diagnostic diskette 8 into the diskette drive and then enter the following commands:

```
mkdir /tmp/diag
cd /tmp/diag
cpio -iudC36      usr/lpp/diagnostics/CEREADME.Z < /dev/fd0
uncompress /tmp/diag/usr/lpp/diagnostics/CEREADME
cat /tmp/diag/usr/lpp/diagnostics/CEREADME > /dev/lp0
cd
rm -rf /tmp/diag
```

6.4.5 Printing the CEREADME File from CDROM

Insert the diagnostic CD ROM disc into the CD ROM drive and then enter the following commands:

```
mkdir /tmp/diag
mount -o ro -v cdrfs /dev/cd0  /tmp/diag
cd /tmp/diag/usr/lpp/diagnostics
cat CEREADME > /dev/lp0
cd /tmp
unmount /dev/cd0
```

Note: The above procedure will only work when the version of AIX installed on the system is version 4.1.1 or later.

The CEREADME file will print on lp0, which is the printer normally attached to the parallel port. If this file is not the same as the CEREADME file the disk, a copy of this file should be printed and stored with the Service Information.

6.5 Testing the Line Printer

The following is a simple procedure for determining if a printer attached to your system is responding correctly. The AIX operating system should be up and running in your normal environment.

To determine what printers are available,enter the following:

```
lsdev -C -c printer
```

This command will display a list of printers currently defined on the system. Only those printers that are in the *available* state can be used (for example, those printers marked as *defined* can *not* be used). Ensure that a printer actually connected at the location specified in the output of the command.

To begin printing, enter the following:

```
cat /usr/lpp/diagnostics/CEREADME > /dev/lpx
```

Note: In the above step, you must substitute for x the value obtained from the **lsdev** command.

After the command is entered, the contents of the CEREADME file should print.

6.6 System Unit Error Isolation Features

All system units have the following features to detect and correct errors:

- Parity checking on the processor bus
- Parity checking on the microchannel bus
- Error checking and correction (ECC) on the memory
- Bit steering on memory
- ECC on all of the media devices
- Parity checking on the SCSI bus
- Parity checking on the internal buses of most of the adapters
- Processor complex internal error detection on the buses and cache memory.

The ECC function on the memory and media is able to detect and correct single-bit-errors; it can detect multiple bit errors but does not correct them.

The bit steering feature on the memory allows use of an extra bit position in the memory word to replace a failing bit position. The memory is checked after initial power-on, and any failing bit positions are assigned to the alternate bit.

The processor complex is checked during Built-In Self-Test (BIST) after initial power-on and is constantly monitored for error detection during normal system operation. When possible, the following types of errors are detected and logged in the error log:

- **Check stops** are detected by the processor. When a check stop occurs, the system unit is reset, and an initial program load (IPL) is begun. If another check stop occurs during this IPL, the system stops and displays **113**.

- **Machine checks** are caused by an uncorrectable memory errors or by certain privileged software sequences. The system stops and displays a flashing **888**.

- **Data storage interrupts** are caused by uncorrectable memory errors during load or store operations to an I/O device. The system stops and displays a flashing **888**.

- **External checks** are caused by memory addressing errors that occurred during direct memory access (DMA) operations. The system stops and displays a flashing **888**.

- **Instruction storage interrupt checks** are caused by memory addressing errors that occurred during instruction fetch operations. The system may stop and display a flashing **888**.

- **Program interrupt checks** can be caused by floating-point operation errors, invalid program operations, invalid privileged operations, or software error traps. The system may stop and display a flashing **888**.

- **Floating-point unavailable interrupt checks** are caused by attempted floating-point operations while the floating-point processor is not available. The system may stop and display a flashing **888**.

- **Alignment interrupt checks** are caused by instructions on the wrong memory boundary.

- **Memory scrubbing** is a software and hardware function that corrects single bit ECC errors. It operates in the background with the least favored priority and has minimal effect on the overall performance of the system. Memory scrubbing prevents single bit errors from becoming double bit errors, which are fatal to the system. Memory scrubbing is not supported on the AIX Diskless Workstation and, RISC System/6000 models 220, 230 and 250.

6.7 Operator Panel Features

The following operator panel features are used during hardware problem determination.

Subtopics

6.7.1 Power-On Light

The power-on light located on system unit and CPU drawer operator panels is used to help analyze power problems. When the power-on light is on, it indicates that all voltages in the power supply are present and within limits and that the fans are running. If a fan that is sensed by the power supply does not start to turn or stops turning, the power supply turns the system unit off.

6.7.2 Mode Switch

The mode switch has three positions:

- The Secure position prevents the system from performing an initial program load (IPL). This position does not lock the keyboard or block system network communication. When the mode switch is in the Secure position, the Reset button is disabled to prevent resetting the system unit. If an IPL is attempted the mode switch in the Secure position, the number **200** is displayed in the three-digit display.

  Note: Models 570/580 will not power-on in the Secure position. If an IPL is attempted from the power-off state, the system will not power up.

- In the Normal position, the AIX operating system loads from a disk after the Power-On Self-Test (POST) and configuration programs run.

- In the Service position, the diagnostic controller program loads. On the CPU drawer, the mode switch must be in the Service position to turn off the system unit. The load program searches for the diagnostic programs on the load devices in the following order:

  1. From any diskette drive
  2. From a non-disk SCSI load device
  3. From the disk drives
  4. From the server (using the network).

  The load program then repeats the search of the above load devices looking for the diagnostic programs.

- The mode switch is also used to indicate to the diagnostic program that there is no console available. The three-digit display is used to communicate the error.

6.7.3 Reset Button

The Reset button located on the system unit operator panel has several purposes:

- Reset the system unit and cause an IPL of the following:
  - AIX operating system when the mode switch is in the Normal position
  - Diagnostic controller program when the mode switch is in the Service position.
- Read out a crash message or a diagnostic message after a flashing **888** is displayed.
- Start the dump program when a dump is needed.

6.7.4 Operator Panel Display

The operator panel display performs the following functions:

- Tracks and controls the progress of the BIST, POST, and configuration programs
- Displays a crash message when the system control program comes to an abnormal end
- Displays a diagnostic program message when there is no console display present.

When a flashing **888** is displayed in the operator panel display, a crash message or a diagnostic message is waiting to be read. Refer to "Reading Flashing **888** Numbers" in Chapter 3 in topic 3.0 for the reading procedure.

6.8 Automatic Diagnostic Tests

All of the automatic diagnostic tests run after the system unit is turned on and before the AIX operating system is loaded. The automatic diagnostic tests also run when the system is reset after a check stop.

The automatic diagnostic tests display numbers in the three-digit display to track test progress. If a test stops, the number for that test remains displayed to identify the unsuccessful test.

Subtopics

6.8.1 Built-In Self-Test

The Built-In Self-Test (BIST) programs run first after the system unit is turned on. These programs test the 32-bit processor and memory addressing, displaying numbers between **100** and **199** in the three-digit display. Refer to "Built-Self-Test (BIST) Indicators" in Chapter 2 in topic 2.0 for a list of tests associated displayed numbers.

6.8.2 Power-On Self-Test

The Power-On Self-Test (POST) programs load from Read-Only Memory (ROM) and check the devices needed to accomplish an initial program load. The POST also checks the memory, common interrupt handler, and the direct memory access (DMA) handler.

The POST programs display numbers between 200 and 299 in the three-digit display. The POST programs are not the same for all system units so, depending on which system unit you are using, you may see a different sequence of numbers displayed. Refer to "Power-On Self-Test (POST) Indicators" in Chapter 2 in topic 2.0 for a list of tests associated with displayed numbers.

6.8.3 Configuration Program

When the POST programs complete, the configuration program determines what features, adapters, and devices are present on the system. The configuration program also builds a configuration list that is used by the diagnostic programs to control which tests are run during system checkout.

The configuration program displays numbers between 500 and 999 in the three-digit display. Refer to "Configuration Program Indicators" in Chapter 2 in topic 2.0 for a list of program actions associated with displayed numbers.

Devices attached to serial and parallel ports are not configured. The Dials and Lighted Program Function Keys (LPFKs) can be tested from disk after they are manually configured. No other device attached to the serial and parallel ports are supported by the diagnostics.

6.8.4 Considerations

Note: After a FRU is replaced based on an error log analysis program, the error log entries for the problem device must be removed, or the program may continue to indicate a problem with the device. To accomplish this task either run **errclear** command from the command line; or using **SMIT** select *Problem Determination/Error Log/Clear the Error Log.* Fill out the appropriate menu items.

- If either the Block Multiplexer Channel Adapter or ESCON Channel Adapter are installed, additional error log information may be available from the S/370/S/390 host system.

6.9 CPU and Memory Testing and Error Log Analysis

With the exception of the floating-point tests, all CPU and memory testing on the system units are done by POST and BIST. Memory is tested entirely by the POST. On systems with RS.9, RS1, and RS2 processors, bit steering is used to map out defective bits. The POST provides an error-free memory map. If POST cannot find at least 2MB of good memory, it will halt and display an SRN in the LEDs identifying the problem. If POST finds at least 2MB of good memory, the memory problems will be recorded in the the IPL Control Block and the system will continue to boot.

If any memory errors were recorded in the IPL Control Block, they will be reported by the Base System Diagnostics, which must be run to analyze the IPL Control Block. Normally, most memory problems that are detected by the POST are isolated to a single FRU.

The CPU and memory cannot be tested after the AIX based diagnostics are loaded; however, they are monitored for correct operation by various checkers such as Checkstop, Machine Check, Data Storage Interrupt, etc. The checkers may vary by processor type. If one of these checks intermittently occurs it is logged into the error log. To analyze these errors the Base System Diagnostics must be run in the Problem Determination Mode.

Single-bit memory errors are corrected by ECC (Error Checking and Correction).

Machine Checks occur when there is a double bit error. Except for 7011 system units, Machine Check problems are isolated to memory cards and SIMMs that were addressed when the error occurred. Depending on the system type and model, this may be a single memory card and two SIMMs, two memory cards and four SIMMS, or four memory cards and eight SIMMs, etc. On 7011 system units, Machine checks are isolated to two SIMMs and the CPU Planar.

Although Checkstops can be caused by things other than the CPU, the diagnostics will always callout the CPU when there is a Checkstop. Machine Checks can cause Checkstops. In the event that both a Checkstop and a Machine Check are logged, only the Machine Check entry will be analyzed.

Note: Normally, the Base System Diagnostics will not analyze any error more than four days old.

6.10 Diagnostic Programs

The following topics provide an overview of the diagnostic programs.

Subtopics

6.10.1 Sources for the Diagnostic Programs

The diagnostic programs are available on multiple sources. The diagnostic programs, included as part of the AIX operating system, are optionally installed along with the AIX operating system. The diagnostic programs, included as part of the AIX operating system, are installed along with the AIX operating system. These diagnostic programs are also updated with the AIX operating system.

The second source is diskettes shipped with the system unit. The diagnostic diskettes shipped with the system unit contain diagnostic programs that can be run in *standalone mode* only. These diagnostic programs contain a special version of Version 3 of the AIX operating system. The special version of the AIX operating system only supports the diagnostic programs and cannot be used for normal system activity. Diskette support is available only for system using AIX level 4.1 or earlier.

The third source is a diagnostic CD-ROM disc for systems equipped with a CD-ROM drive.

The diagnostic diskettes or the diagnostic CD-ROM disc are the only diagnostic programs available to a system that does not have the AIX operating system installed and also does not have built-in ROM diagnostics.

The fourth source is from a network. If your system unit has been configured to receive initial program load (IPL) from a server over a network, then the diagnostics can also be loaded and run from the network.

The fifth source is magnetic tape media.

6.10.2 Diagnostic Program Modes

The diagnostic programs run in the following modes:

Subtopics
6.10.2.1 Standalone Mode
6.10.2.2 Maintenance Mode
6.10.2.3 Concurrent Mode

6.10.2.1 Standalone Mode

To run the diagnostics in standalone mode, the diagnostic controller must be loaded during an initial program load (IPL) with the mode switch set to Service position. An IPL of the diagnostic controller is performed by setting the system power switch to On or pressing the Reset button while the mode is set to the Service position. Refer to "Running the Diagnostics in Standalone Mode" and "Diagnostic Modes of Operation" in Chapter 7 in topic 7.0 for additional information and instructions.

When the diagnostic programs are operating in standalone mode, no other programs can be loaded since all system resources are available for testing.

6.10.2.2 Maintenance Mode

To run the diagnostic programs in maintenance mode, Version 3 of the AIX operating system must be loaded and running. The IPL must be performed with the mode switch in the Normal position.

When the diagnostic programs are run in maintenance mode, normal operation of the AIX operating system is stopped using the **shutdown -m** command. Refer to "Running the Diagnostics in Maintenance Mode" and "Diagnostic Modes of Operation" in Chapter 7 in topic 7.0 for additional information and instructions.

Maintenance mode allows testing of all system resources except the SCSI adapters and the disk drives needed to do paging for the AIX operating system.

6.10.2.3 Concurrent Mode

To run the diagnostic programs in concurrent mode, Version 3 of the AIX operating system must be loaded and running. The IPL must be performed with the mode switch in the Normal position.

When the diagnostic programs are run in concurrent mode, the normal operation of the system continues under control of Version 3 of the AIXAIX operating system. Refer to "Running the Diagnostics in Concurrent Mode" and "Diagnostic Modes of Operation" in this chapter for additional information and instructions.

The only resources that can be tested using concurrent mode are:

- Those that can be shared with other programs
- Those that are not assigned to any other program.

6.10.3 Diagnostic Controller

The diagnostic controller runs as an application program on Version 3 of the AIX operating system. The diagnostic controller performs the following functions:

- Displays diagnostic menus.
- Checks availability of needed resources.
- Checks error log entries under certain conditions.
- Loads diagnostic application programs.
- Loads service aid programs.
- Displays test results.

When the diagnostic controller is loaded in standalone mode, it tests the keyboard adapter and keyboard, the built-in S1 serial port, and the display adapter (if present) before displaying any information. If a problem is detected the testing of these functions, the diagnostic controller displays a diagnostic message in the three-digit display.

The preceding functions are not tested when the diagnostic controller is loaded during maintenance mode or concurrent mode.

6.10.4 Diagnostic Applications Programs

To test an adapter or device, select the device or adapter from the Diagnostic Selection menu. The diagnostic controller then loads the diagnostic application program for the selected device or adapter.

The diagnostic application program loads and runs test units to check the functions of the device or adapter.

The diagnostic controller checks the results of the tests done by the diagnostic application and determines the action needed to continue the testing.

The amount of testing the diagnostic application does depends on the mode (standalone, maintenance, or concurrent) under which the diagnostic programs are running.

Subtopics
6.10.4.1 Error Log Analysis
6.10.4.2 Enhanced FRU Isolation

6.10.4.1 Error Log Analysis

When you select Diagnostics or Advanced Diagnostics from the Function Section menu, the Diagnostic Selection menu is displayed (other menus may be displayed before this menu). This menu allows you to select the purpose for running diagnostics.

When you select the Problem Determination option, the diagnostic programs and analyze the contents of the error log.

If the error log contains recent errors (approximately the last 48 hours), the diagnostic programs automatically select the diagnostic application program to test the logged function.

If there are no recent errors logged or the diagnostic application program runs without detecting an error, the Diagnostic Selection menu is displayed. This menu allows you to select a resource for testing.

If an error is detected while the diagnostic application program is running, the **A PROBLEM WAS DETECTED** screen displays a Service Request Number (SRN).

6.10.4.2 Enhanced FRU Isolation

The diagnostics provide enhanced Field Replaceable Unit (FRU) isolation by automatically selecting associated resources. The normal way diagnostics select a resource is to present a list of system resources and then ask you to select one. Diagnostics begin with that same type of selection.

If the diagnostic application for the selected resource detects a problem with that resource, the diagnostic controller checks for an associated resource. For example, if the test of a disk drive detects a problem, the diagnostics controller will test another disk drive on the same controller to determine if the drive or the controller is failing. This extra FRU isolation is apparent when you test a resource and notice that the diagnostic controller continues to test another resource that you did not select.

6.10.5 Advanced Diagnostics Function

The advanced diagnostics function is normally used by a service representative. These diagnostics may ask you to disconnect a cable and install a wrap plug.

The advanced diagnostics run in the same modes as the diagnostics used for normal hardware problem determination. The advanced diagnostics provide additional testing by allowing the service representative to do the following:

- Use wrap plugs for testing.
- Loop on a test (not available in concurrent mode) and display the results of the testing.

6.10.6 Service Aids Function

The service aids function is selected from the Function Selection menu. The service aids provide a means to display data, check media, and check functions without being directed by the hardware problem determination procedure. Refer to Chapter 7 in topic 7.0 for information and procedures about service aids.

6.10.7 System Checkout

The system checkout option can only be run in standalone or maintenance mode. This program uses the configuration list generated by the configuration procedure to determine which devices and features to test. These tests run without interaction. Refer to the installation and operating guide for your system for normal problem determination and to Chapter 5 in topic 5.0 for system checkout when problem determination is not needed.

6.10.8 Service Request Number

The service request number (SRN) is the method used to communicate information about a hardware problem to the service organization.

The SRN is generated by the diagnostic programs, or given in the procedures in the *AIX Version 4.1 Problem Solving Guide and Reference.* The SRN is reported to the service organization to allow the service representative to obtain correct field replaceable units (FRUs).

See Chapter 2 in topic 2.0 of this book for a list of the SRNs and their descriptions.

6.10.9 System Exerciser

The System Exerciser tests and exercises devices in an overlap mode and can be run from disk in standalone mode or in maintenance mode. The Exerciser can be used to check out the system following repairs and to identify intermittent problems. Devices that use media (tape drives, CD-ROM, and diskette drives) can be tested with or without the media installed in the device.

If either the Block Multiplexer Channel Adapter or ESCON Channel Adapter are installed, the 370/390 Host-Based System Exerciser (CSX) may be used.

6.11 Product Topology

Note: Product topology is not supported on systems that do not have a diskette drive or systems that do not have an IBM logo.

The purpose of product topology is to track the quality of individual parts as well as the system as a whole. This will help improve quality in Miscellaneous Engineering Specification (MES) and Engineering Change (EC) activity and help ensure that ordered alterations fit the system.

The plant-of-control maintains a product topology data base of all the parts in the tracking selection that were included in the initial system unit. If an EC becomes necessary, the database provides the information to be sure the correct system units get the change.

Two types of product topology diskettes are shipped with the system. The product topology information is also recorded on the disk if the system unit has the Version 3 AIX operating system preloaded at the plant-of-manufacture. The two types of diskettes shipped are as follows:

- Product Topology System Diskette
- Product Topology Update Diskette (there may be several of these).

The product topology system diskette is written at the plant-of-manufacture. This diskette will be updated during the installation process. This diskette remains with the system to become a record of the system level.

A product topology update diskette is written at system installation, MES installation, EC installation, and at each service call. The machine configuration and error log are written to the update diskette. The product topology update diskette is mailed to the plant-of-control to update the data base after any of the activities. A blank, formatted 2MB diskette can be used in place of the update diskette.

A product topology update diskette is shipped with MES and EC parts.

At each service call, one of the product topology update diskettes with the system is updated and returned to the plant-of-control. At the completion of each service call the service representative runs the Product Topology service aid.

For detailed Product Topology information, refer to Chapter 7 in topic 7.0 "Service Aids."

7.0 Chapter 7. Using the Diagnostics

Subtopics

7.1 Diagnostic Programs Operating Considerations

The following items identify some things to consider before using the diagnostic programs.

Subtopics

7.1.1 Diagnostic Version 4.x.x Considerations

Listed below are differences between version 4.1 (and higher) and earlier of the diagnostic programs. Use the Service Hints service aid to see additional considerations.

1. The following devices are not supported on Version 4.1 and higher of diagnostics:
   - 8-bit and 24-bit 3D color graphics adapter (FFC 876 and 879)
   - M-Video Capture adapter (FFC 985)
   - M-Video Capture and Playback adapter (FFC 977)
   - Async expansion adapter and drawer (FFC 867 and 288)
   - ESCON Channel adapter (FFC 865)
   - T1/J1 Portmaster Adapter/A (FFC 851)
   - E1 Portmaster Adapter/A (FFC C18)
   - 5080 Attachment Adapter (FFC 858)
   - 64 Port adapter (on version 4.1.1 and higher)
2. Diagnostics are now available on 8mm, 4mm, and 1/4 inch tape.
3. Some supplemental diagnostic diskettes are incompatible with version 4.1 or later diagnostics and will not work when used with version 4.1 CD-ROM or tape based diagnostics.

   To test these devices use an earlier version of either the diskette diagnostics or the CD-ROM based diagnostics.
4. Diagnostic support is optionally installed with the AIX operating system and therefore may not be installed on some systems. When diagnostics are installed, the device support for some devices may not get installed. If this is the case, that device will not appear in the diagnostic test list when running disk diagnostics.
5. Support for some TTY terminals is optionally installed. If you attach a TTY terminal to a system to run diagnostics beware that it may not work properly since the AIX support for the terminal may not be installed.

7.1.2 Diagnostics on a System Unit Attached to Another System

If your system unit is attached to another system using a network or directly attached to the channel of another system, see "General Information About Multiple Systems" in topic 7.3 before running any diagnostic procedures.

7.1.3 Selecting a Console Display

When you run diagnostics from diskettes, from a CD-ROM disc and, under some conditions, when you run them from disk, you need to select the console display. The diagnostic programs display **c31** in the operator panel display and display instructions on any direct-attached displays and the terminal attached to S1 port.

If **c31** is displayed, follow the instructions to select the console display. If you do not have a console display, set the key mode switch to Normal and then back to Service. This signals the diagnostic programs to use the operator panel display for instructions.

7.1.4 Identifying the Terminal Type to the AIX operating system

Note: This is a different function than selecting a console display.

When you run diagnostics, the AIX operating system must know what type of terminal you are using. If the terminal type is not known when the FUNCTION SELECTION menu is displayed, the diagnostics do not allow you to continue until a terminal is selected from the DEFINE TERMINAL option menu. Select **hft** for adapter-attached displays. This option sets the TERM environment variable in the AIX operating system.

Subtopics
7.1.4.1 Undefined Terminal Types

7.1.4.1 Undefined Terminal Types

If an undefined terminal type from the DEFINE TERMINAL option menu is entered, the menu will prompt the user to enter a valid terminal type, and the menu will be redisplayed until either a valid type is entered or the user exits the DEFINE TERMINAL option.

Resetting the Terminal

If the user enters a terminal type that is valid (according to the DEFINE TERMINAL option menu) but is not the correct type for the ASCII terminal being used, difficulty may be encountered in reading the screen, using the function keys or the Enter key. These difficulties can be bypassed by pressing Ctrl-C to reset the terminal. The screen display which results from this resetting action varies with the mode in which the system is being run:

- Normal or Maintenance Mode - The command prompt appears.
- Service Mode - The terminal type will be reset to "dumb," the Diagnostic Operating Instruction panel will be displayed, and the user will be required to go through the DEFINE TERMINAL process again.

7.1.5 Running Diagnostic Programs From Tape Drives

To load and execute diagnostics from a tape drive perform the following:

1. Power-on the tape drive if it is an externally attached device.

2. Set the key mode switch to the Service position, and then power-on the system unit.

3. Remove any tape currently in the tape drive.

4. Insert the diagnostic programs tape into the tape drive. Close the tape drive's door if applicable.

7.1.6 Running Diagnostic Programs from CD-ROM

Consider the following when you run diagnostic programs from the CD-ROM disc:

- The diagnostic disc must remain in the CD-ROM drive for the entire time diagnostics are executing.
- The diagnostic CD-ROM disc cannot be ejected from the CD-ROM drive once the diagnostic programs have loaded. The disc can only be ejected after the system has been powered-Off and then powered-On (standalone mode) or after after the diagnostics program has terminated (concurrent mode). The disc must be ejected prior the system attempting to load the diagnostic programs again.
- The CD-ROM drive from which diagnostics were loaded cannot be tested.
- The SCSI adapter (or circuitry) controlling the CD-ROM drive from which diagnostics were loaded cannot be tested.
- Diagnostics from CD-ROM are not supported on systems with less than 16MB of installed memory.

To run diagnostics from a CD-ROM drive, do the following:

1. Remove any diskette from the diskette drive.
2. Power-on the CD-ROM drive if it is an externally attached device.
3. Load the diagnostic disc into the CD-ROM drive.
4. If you have a graphics adapter installed in the system that is supported only on a supplemental diagnostic diskette, insert that diskette into the diskette drive.
5. Set the key mode switch to the Service position.
6. Power-on the system.

7.1.7 Running the Diagnostic Programs from Diskettes

Consider the following when you run the diagnostic programs from diskettes:

- The diagnostic diskettes are labeled as to the devices and functions the diskettes contain. The following diskettes must be inserted in the order shown before the DIAGNOSTIC OPERATING INSTRUCTIONS will be displayed.

  1. Boot diskette
  2. Configuration diskette
  3. Graphics diskette (optional if the system does not contain a graphics adapter)
  4. Console Definition diskette.

- There are two different Boot diskettes, one for use in systems containing 8M bytes of memory and one for use in systems containing a minimum of 16M bytes of memory. Only one diskette can be loaded.

  Note: When using the 8M-byte boot diskette only the following devices/adapters may be tested:

  -Base system (floating point, memory, I/O planar)
  -Async adapters
  -Graphic adapters
  -Keyboard
  -Media devices
  -SCSI adapters

  All other devices/adapters will not appear on the test list. The devices listed above will only show on the test list if they are normally supported in an 8M-byte system.

- There are several different graphics diskettes for configuring and testing graphics adapters. Use only the graphics diskettes for the type of graphics adapters installed in the system. For each type of graphics adapter installed in a system, you must load the graphics diskette which supports that adapter in order to test it.

  The diskette containing the graphics adapter that will be used as the console for running diagnostics should be loaded first. If there are other graphics adapter types installed in the system, load the diskette supporting those adapters immediately following the first graphics diskette.

- If a device installed in a system is not supported by one of the diskettes shipped with the system, check for the existence of a supplemental diagnostic diskette shipped with the device.

- After the DIAGNOSTIC OPERATING INSTRUCTIONS are displayed, follow the displayed instructions in order to test the device or to run a Service Aid.

- The diagnostic programs shipped on diskettes with the system unit have a version number on the label. The *Common Diagnostics and Service Guide* also has a version number on the cover which should match the first two version number digits of the diskettes in order for diagnostics to work correctly. You can check the version of the diagnostic programs on the Diagnostic Operating Instructions.

- When you load the diagnostic programs from diskettes, you may get the following messages on the operator panel display or on the console display:

  c01 Insert the first diagnostic diskette
  c02 Diskettes inserted out of sequence
  c03 The wrong diskette is in the diskette drive
  c05 A diskette error occurred
  c07 Insert the next diagnostic diskette
  c09 Diskette is being read or written
  c31 Select the console display.

7.1.8 Running the Diskette Diagnostics From a Non-RS232 Terminal

Version 1.3 and later versions of the Diagnostic Diskette package allows a terminal attached to any RS232 or RS-422 adapter to be selected as a console device. The default device is an RS232 tty attached to the first standard serial port (S1). However, the console device may be changed by editing the **/etc/consdef** file that is provided on Diagnostic Diskette 4. The file format follows:

```
#
# This is the console definition file used to describe the terminal
# device to be used as the console. It is in the form
# attribute=value, one per line. The location is the location code
# seen when listing devices using lsdev. Spaces must not be entered
# around the = sign.
#
# Remove the # signs from the first column of each line to take
# effect. The location must be specified for any attribute in
# this file to be processed.
#
# For example, to define the console device as an rs232 terminal on
# port S1:
#
#connection=rs232
#location=00-00-S1
#speed=9600
#bpc=8
#stops=1
#xon=yes
#parity=non#term=3163
```

To change this file, take the following steps:

1. Enter:

   ```
   cd /tmp
   mkdir diag4
   cd diag4
   ```

2. Insert Diagnostics Diskette 4 into the diskette drive.

3. Enter the following:

   ```
   cpio -iuvmdC36 </dev/rfd0
   cd etc
   ```

4. To edit the file, do the following:

   a. Enter **uncompress consdef**

   b. Edit the **consdef** file to work with your configuration

   c. Enter **compress consdef**.

5. Enter the following:

   ```
   cd /tmp/diag4
   find . -type f -print | cpio -ouvmC36 > /dev/rfd0
   ```

6. Use the new Diagnostics Diskette 4 with the new configuration.

7.1.9 Running the Diagnostic Programs from Disk or From a Server

Consider the following when you run the diagnostic programs from a disk:

- The diagnostics cannot be loaded and run from a disk until the AIX operating system has been installed and configured. After the **installp** command is used to install and configure the AIX operating system, all three modes of operation are available.

- The diagnostics cannot be loaded on a system (client) from a server if that system is not set up to IPL from a server over a network. When the system is set up to IPL from a server, the diagnostics are executed in the same manner as they were from disk.

- If the diagnostics were loaded from disk or a server, you must shutdown the AIX operating system before powering the system unit off to prevent possible damage to disk data. This is done in one of two ways:

  - If the diagnostic programs were loaded in standalone mode, press the F3 key until **DIAGNOSTIC OPERATING INSTRUCTIONS** displays; then press the F3 key once again to shutdown the AIX operating system.

  - If the diagnostic programs were loaded in maintenance or concurrent mode enter the **shutdown -F** command.

- Under some conditions c31 may appear in the operator panel display, with instructions displayed on attached displays and terminals. Follow the instructions to select a console display or set the key mode switch to Normal and back to Service if you do not have a console display.

7.1.10 Running the Diagnostic Programs from the Network

Consider the following when you run the diagnostic programs from a network:

- Diagnostics cannot be loaded and run from the network until AIX Version 3.2 or higher has been installed and configured on the server.
- Your system unit must be configured to receive IPL (initial program load) over the network or the server must be setup to send a service mode IPL of the diagnostics.

To run the diagnostic programs from the network:

- Enter the **shutdown -F** command to shut down the operating system.
- Turn the key mode switch to the Service position.
- Turn off the system unit, wait 30 seconds, then turn on the system unit.

7.1.11 Running the Diagnostic Programs with a 5080 Attached

Consider the following when you run the diagnostic programs on a system attached to a 5080 system:

- When the system unit is attached to a 5085 or 5086 system, the DIAGNOSTIC OPERATING INSTRUCTIONS are not displayed on the monitor attached to the 5085 or 5086 . See the *5080 Graphics System Installation, Operation, and Problem Determination* for information about operating the combination system.

- At power-on, the keyboard belongs to the graphics processor. Keyboard control can be switched to the system within two minutes of the system power-on by pressing and holding the Alt key and then pressing the Sw Keybd key.

  Warning: Do not attach the 5085 or 5086 keyboard to the system unit without the special diagnostic cable.

- There is a special diagnostic cable available with the combination system to attach the 5085/5086 keyboard directly to the system unit. See the *5080 Graphics System Installation, Operation, and Problem Determination* manual for information setting the combination system up.

7.1.12 Running the Diagnostic Programs from a TTY Terminal

Consider the following when you run diagnostic programs using a TTY-type terminal as the console display:

- See the operator manual for your type of tty terminal to find the key sequences you need to respond to the diagnostic programs. For the 3151, refer to the *3151 ASCII Display Station Guide to Operations*, form number GA18-2633. For the 3164, refer to the *3164 ASCII Color Display Station Description*, form number GA18-2617.

- When the diagnostic programs present display information through the S1 port, certain attributes are used. These attributes are set as if the diagnostic programs were using a 3161 display terminal. The following tables list attributes for the 3161 ASCII Display Terminal and for two other ASCII display terminals common used with the system.

- If you have a TTY terminal other than a 3151, 3161 or 3164 attached to the S1 port, your terminal may have different names for the attributes. Use the attribute descriptions in the following tables to determine the settings for your terminal.

7.1.13 General Attributes Always Required

The following general attributes are the default settings for the diagnostic programs. Be sure your terminal is set to these attributes.

Note: These attributes should be set before the diagnostic programs are loaded.

Refer to the following table.

General Setup Attributes	**3151 /11/31 /41 Setting**	**3151 /51/61 Settings**	**3161 /3164 Setting**	**Description**
Machine mode	IBM 3151	IBM 3151 PC	IBM 3161 or IBM 3164	The diagnostic programs are set to emulate use of the 3161 ASCII Display Terminal. If your terminal can emulate a 5085, 3161 or 3164 terminal, use the following attribute settings. Otherwise, refer to your operator's manual, compare the follow attribute descriptions with those of your terminal, and set your attributes accordingly.
Generated Code Set		ASCII		
Screen	Normal	Normal		Uses the EIA-232 interface protocol.
Row and Column	24 x 80	24 x 80		Uses the EIA-232 interface protocol.
Scroll	Jump	Jump	Jump	When the last character on the bottom line is entered, the screen moves down one line.
Auto LF	Off	Off	Off	For the "On" setting, pressing the Return key moves the cursor to the first character position of the next line. For the "Off" setting, pressing the Return key moves the cursor to the first character position of the current line. The CR and LF characters are generated by the New line setting.
CRT saver	Off	Off	10	The "10" setting causes the display screen to go blank if there is no activity for 10 minutes. When the system unit sends data or a key is pressed, the screen contents are displayed again.
Line wrap	On	On	On	The cursor moves to the first character position of the next line in the page after it reaches the last character position of the current line in the page.
Forcing insert	Off	Off		
Tab	Field	Field	Field	The column tab stops are ignored, and the tab operation depends on the

				field attribute character positions.
Trace			All	Both inbound data (data to the system unit) and outbound data (data from the system unit) to and from the main port can be transferred to the auxiliary port without disturbing communications with the system unit when the Trace key is pressed.

7.1.14 Additional Communication Attributes

The following communication attributes are for the 3151, 3161, and 3164 terminals.

Communication Setup Attributes	**3151/11 /31/41) Setting**	**3151 /51/61, Settings**	**3161 /3164 Setting**	**Description**
Operating mode	Echo	Echo	Echo	Data entered from the keyboard on the terminal is sent to the system unit for translation and then sent back to the display screen. Sometimes called conversational mode.
Line speed	9600 bps	9600 bps	9600 bps	Uses the 9600 bps (bits per second) line speed to communicate with the system unit.
Word length (bits)	8	8	8	Selects eight bits as a data word length (byte).
Parity	No	No	No	Does not add a parity bit, and is used together with the word length attribute to form the 8-bit data word (byte).
Stop bit	1	1	1	Places a bit after a data word (byte).
Turnaround character	CR	CR	CR	Selects the carriage return (CR) character as the line turnaround character.
Interface	EIA-232	EIA-232	EIA-232	Uses the EIA-232 interface protocol.
Line control	IPRTS	IPRTS	IPRTS	Uses the 'permanent request to send' (IPRTS) signal to communicate with system unit.
Break signal (ms)	500	500	500	The terminal sends a 'break signal' to the system unit within 500 ms after the Break key is pressed.
Send null suppress	On	On		Trailing null characters are not sent to the system unit.
Send null			On	Trailing null characters are sent to the system unit.
Response delay (ms)	100	100	100	The terminal waits for 100ms for the system unit to respond.

7.1.15 Additional Keyboard Attributes

The following keyboard attributes are for the keyboard attached to the 3151, 3161, and 3164 terminals.

Keyboard Setup Attributes	**3151/11 /31/41 Setting**	**3151 /51/61 Settings**	**3161 /3164 Setting**	**Description**
Enter	Return	Return	Return	The Enter key functions as the Return key.
Return	New line	New line	New line	The cursor moves to the next line when the Return key is pressed.
New line	CR	CR	CR	The Return key generates the carriage return (CR) and the line feed (LF) characters. The line turnaround occurs after the CR and LF characters are generated.
Send	Page	Page	Page	The contents of the current page are sent to the system unit when the Send key is pressed.
Insert character	Space	Space	Space	A blank character is inserted when the Insert key is pressed.

7.1.16 Additional Printer Attributes

The following printer attributes are for a printer attached to the 3151, 3161, and 3164 terminals.

Printer Setup Attributes	**3151/11 /31/41 Setting**	**3151 /51/61 Settings**	**3161 /3164 Setting**	**Description**
Line speed	9600	9600	9600	Uses 19200 or 9600 bps (bits per second) line speed to communicate with the system unit.
Word length (bits)	8	8	8	Selects eight bits as a data word length (byte).
Parity	Even	Even	No	
Stop bit	1	1	1	Places a bit after a data word (byte).
Characters	ALL	ALL		
Line end			CR-LF	
Print			View-port	
Print EOL			Off	
Print null			Off	

7.2 Diagnostic Modes of Operation

The diagnostics can be run in three modes:

- Maintenance Mode allows checking of most system resources
- Concurrent Mode allows the normal system functions to continue while selected resources are being checked.
- Standalone Mode allows checking of all the system devices and features

Subtopics
7.2.1 Maintenance Mode
7.2.2 Concurrent Mode
7.2.3 Standalone Mode
7.2.4 Running Built-In Diagnostics (7006, 7011 Only)
7.2.5 System Exerciser

7.2.1 Maintenance Mode

Maintenance mode runs the diagnostics using the customer's version of the AIX operating system. This mode requires that all activity on the AIX operating system be stopped so the diagnostics have most of the resources available to check. All of the system resources except the SCSI adapters and the disk drive for paging can be checked.

Error log analysis is done in maintenance mode when you select **the Problem Determination** option on the **DIAGNOSTIC MODE SELECTION** menu.

The **shutdown -m** command is used to stop all activity on the AIX operating system and put the AIX operating system into maintenance mode. Then the **diag** command is used to load the diagnostic controller so you can run the diagnostic programs from the menus. After the diagnostic controller is loaded, follow the no diagnostic instructions.

Subtopics
7.2.1.1 Running the Diagnostics in Maintenance Mode

7.2.1.1 Running the Diagnostics in Maintenance Mode

To run the diagnostics in maintenance mode you must be logged on to the customer's version of the AIX operating system as **root** or **superuser** and use the **shutdown -m** and **diag** commands. Use the following steps to run the diagnostics in mode:

1. Stop all programs except the AIX operating system (get help if needed).

2. Log onto the AIX operating system as **root** or **superuser**.

3. Enter the **shutdown -m** command.

4. When a message indicates the system is in maintenance mode, enter the **diag** command.

   Note: It may be necessary to set **TERM** type again.

5. When **DIAGNOSTIC OPERATING INSTRUCTIONS** is displayed, follow the displayed instructions to checkout the desired resources.

6. When testing is complete; use the F3 key to return to **DIAGNOSTIC OPERATING INSTRUCTIONS**. Then press the F3 key again to return to the AIX operating system prompt.

7. Press Ctrl-D to log off from **root** or **superuser**.

7.2.2 Concurrent Mode

Concurrent mode provides a way to run diagnostics on some of the system resources while the system is running normal system activity.

Because the system is running in normal operation, some of the resources cannot be tested in concurrent mode. The following resources *cannot* be tested in concurrent mode:

- SCSI adapters connected to paging devices
- The disk drive used for paging
- Some display adapters.

There are three levels of testing in concurrent mode:

- The *share-test level* tests a resource while the resource is being shared by programs running in the normal operation. This testing is mostly limited normal commands that test for the presence of a device or adapter.

- The *sub-test* level tests a portion of a resource while the remaining part of the resource is being used in normal operation. For example, this test could test one port of a multiport device while the other ports are being used in normal operation.

- The *full-test* level requires the device not be assigned to or used by any other operation. This level of testing on a disk drive may require the use of **varyoff** command. The diagnostics display menus to allow you to vary off the needed resource.

The diagnostics also display a menu to assign a resource if another resource is needed.

Error log analysis is done in concurrent mode when you select **the** Problem Determination option on the DIAGNOSTIC MODE SELECTION menu.

To run the diagnostics in concurrent mode you must be logged onto the AIX operating system and have proper authority to issue the commands (if needed, get help).

The **diag** command loads the diagnostic controller and displays the diagnostic menus.

Subtopics
7.2.2.1 Running the Diagnostics in Concurrent Mode

7.2.2.1 Running the Diagnostics in Concurrent Mode

To run diagnostics in concurrent mode, take the following steps:

1. Log on to the AIX operating system as root or superuser.

2. Enter the **diag** command.

3. When the DIAGNOSTIC OPERATING INSTRUCTIONS are displayed, follow the instructions to check out the desired resources.

4. When testing is complete; use the F3 key to return to the DIAGNOSTIC OPERATING INSTRUCTIONS. Then press the F3 key again to return to the AIX operating system prompt. Be sure to *vary on* any disk drives you had varied to off.

5. Press the Ctrl-D key sequence to log off from root or superuser.

7.2.3 Standalone Mode

Standalone mode provides the most complete checkout of the system resources. This mode also requires that no other programs be running on the system.

Standalone mode can be loaded in three ways:

- From diskettes or other removable load media. This method is the only method available for those systems that do not have the AIX operating system installed.

- From a disk within the system unit. This loads the diagnostic programs that are a part of the AIX operating system. The AIX operating system must be installed and configured before the diagnostics can run from it.

- On some system units, built-in diagnostics can be run from read-only memory (ROM). These diagnostics are intended to be used when it is not possible to use the AIX operating system diagnostic programs. The tests provided by the built-in diagnostic programs are not as complete as the AIX operating system diagnostic programs.

Subtopics
7.2.3.1 Running the Diagnostics in Standalone Mode

7.2.3.1 Running the Diagnostics in Standalone Mode

To run diagnostics in standalone mode, take the following steps:

1. Stop all programs including the AIX operating system (get help if needed).

2. Set the power switch on the system unit to Off.

3. Set the key mode switch to the Service position.

   Note: When the diagnostic programs are run from a source other than the network or from the disk the diagnostics *do not* check the error log entries.

4. If you want to load the standalone diagnostics from diskettes, insert the diagnostic diskette into the diskette drive.

5. If you want to load the standalone diagnostics from a CD-ROM disc, insert CD-ROM diagnostic disc into the CD-ROM drive.

6. If you want to load the diagnostics from the disk, leave diskette and CD-ROM drives empty.

7. Set the power switch on the system unit to On.

   If **c07** is displayed, insert the appropriate diagnostic diskette. If necessary refer to the CEREADME file for additional information.

   If **c31** is displayed, follow the instructions to select a console display

   Note: If while the diagnostics are loading, some system units stop with 260, 261, or 262 displayed in the operator panel display and the console display is blank, press the 1 (one) key on the console keyboard to cause the diagnostics to continue to load.

8. After the diagnostic controller loads, DIAGNOSTIC OPERATING INSTRUCTIONS appear on the console display.

   If the system unit *does not* have a console display, the diagnostics run automatically and loop on the diagnostic test until the system unit power switch is set to Off.

   When the diagnostics are run from disk, a c99 is displayed when the tests have completed.

   When the diagnostics are run from diskette, a c07 is displayed when the tests have completed.

9. If a problem is detected while the diagnostics are loading, a flashing 888 displays in the operator panel display. See Chapter 2 in topic 2.0 for instructions on reading the message.

10. Follow the displayed instructions to checkout the desired resources.

11. When testing is complete; use the F3 key to return to the DIAGNOSTIC OPERATING INSTRUCTIONS.

12. If you loaded the diagnostics from the disk, press the F3 key (from a defined terminal) or press 99 (for an undefined terminal) to shutdown the diagnostics before turning off the system unit.

    Note: Pressing the F3 key (from a defined terminal) produces a "Confirm Exit" popup menu which offers two options: continuing with the shutdown by pressing F3; or returning to diagnostics by pressing Enter.

    For undefined terminals, pressing 99 will produce a full screen menu which offers two options: continuing with the shutdown by pressing 99 and then Enter; or returning to diagnostics by pressing Enter.

13. If you loaded the diagnostics from a source other than from a disk or network, turn off the system unit after the shutdown is complete.

7.2.4 Running Built-In Diagnostics (7006, 7011 Only)

To run the built-in diagnostics, take the following steps:

1. Stop all programs including the AIX operating system (get help if needed).

2. Set the power switch on the system unit to Off.

3. Set the key mode switch to the Secure position.

4. Set the power switch on the system unit to On; then wait until the number 200 displays in the operator panel display.

5. Set the key mode switch to the Service position and immediately press the reset button.

6. When the MAIN MENU displays, select the Perform Diagnostics option.

7. Follow the displayed instructions to checkout the desired resources.

8. When testing is complete; select option 99 (Return to main menu).

9. Make the appropriate selection from the MAIN MENU or turn off the system unit if you do not want to check out any other areas.

7.2.5 System Exerciser

The System Exerciser tests and exercises devices in an overlap mode and can only be run from disk in standalone or maintenance mode.

Subtopics

7.2.5.1 Starting the System Exerciser

When the System Exerciser is selected from the FUNCTION SELECTION menu, another menu displays all devices to be tested. Pressing the Enter key starts tests for all of the devices.

The time required to test all of the devices depends on the number of devices to be tested and can range from several minutes to approximately one hour for a fully loaded system. Because some devices require less time to test than others, the number of times a device is tested under the System Exercise may be one or more.

Note: If the system contains tape devices, CD-ROM, or diskette drives, you will be asked whether you want to use media in the devices when you are testing.

7.2.5.2 Display Screens

If the console is a graphics display, normal test patterns are displayed during the tests. After the graphics adapter test is finished, the standby screen is displayed.

If the console is an async terminal, the standby screen will be displayed during testing. The time-of-day will be displayed at the top of the screen and is updated approximately every minute.

After all devices have been tested at least once, a results screen will be displayed until either the Enter key is pressed to restart the System Exerciser or the Exerciser is stopped. If no errors were detected, the results screen displays the **No trouble found** message; if errors have been detected, the results screen displays a list of devices with corresponding errors.

7.2.5.3 Stopping the System Exerciser

Although the System Exerciser can be stopped at any time, it is best to stop it while the results screen is displayed. Stopping the Exerciser at other times can cause the loss of test information.

When the System Exerciser is stopped, the screen displays all tested devices with errors flagged. Selecting a device that has an error flag provides details such as SRN, location code, number of times the device was tested, and the number of times an error was detected.

7.2.5.4 Using the System Exerciser to Check Out Repairs and Intermittent Problems

The System Exerciser can be used to check out the system following repairs and to identify intermittent problems.

When the System Exerciser is running, most built-in error recovery procedures are turned off. This can cause occasional errors to be reported that normally have no effect on system operation. Parts should only be replaced when the following occurs:

- A high number of errors are reported in relation to the number of times the device was tested.

- Errors reported by the System Exerciser are in the same area as that reported by the customer.

7.3 General Information About Multiple Systems

This chapter presents guideline information for anyone needing to run the diagnostic programs on a system unit that is attached to another system. These guidelines are intended for both the operator of the system and the service representative.

This guideline is presented by adapter type or by system configuration type.

These considerations and actions are not detailed step-by-step instructions, but are used to ensure that you have considered the attached system before you run diagnostics on this system unit.

You are directed to the detailed procedures for the various activities as needed.

These guidelines generally present considerations for the following:

- Starting and stopping the communications with the other system.
- Considerations before running diagnostics on the system.
- Analyzing the error log information.
- Using the wrap plugs with the diagnostics.

When this system unit is attached to another system, be sure you isolate this system unit before stopping the operating system or running diagnostic programs. Some system cabling changes (such as installing wrap plugs or removing a device from the configuration) may require action by the operator of the attached system before making the cabling changes on this system.

7.4 Block Multiplexer Channel Adapter

The Block Multiplexer Channel Adapter allows the system unit to directly attach to a system-370/390-type block multiplexer channel.

The block multiplexer channel adapter responds to channel commands similar to a 3088 Channel-to-Channel Adapter. However, this adapter does not support full emulation of a 3088.

The block multiplexer channel adapter may also be attached to a host system using the 3044 Model 2 Channel Extender or the 9034 Model 1 ESCON Converter.

Up to two block multiplexer channel adapters may be installed in a system unit.

Since the system is directly attached to the bus and tag cables of the box multiplexer channel of the host system, careful consideration must be made before doing the following:

- Powering the system unit off.
- Loading and running the diagnostic programs.
- Changing position of the bypass switch on the interface cable.
- Connecting or disconnecting any of the cables to the adapter or interface assembly.

Use the following guidelines to understand the actions needed.

Subtopics

7.4.1 Starting or Stopping Communications With the Host System

An operator console for the system is required. The console may be a direct-attached display and keyboard or an ASCII terminal.

Changes to the on-line or off-line status of the block multiplexer channel adapter is made using the System Management Interface Tool (SMIT). If there are two block multiplexer channel adapters installed in this system unit, the status of each adapter must be changed individually.

Subtopics

7.4.1.1 Stopping Communications

Use the following steps as a guideline for stopping communications with a host block multiplexer channel:

1. Have the operator of the host system stop any communications with this block multiplexer channel adapter.

2. Stop all application programs on this system that use this block multiplexer channel adapter.

3. Use SMIT to change the status of this adapter to *offline*. If needed, see the AIX Version 4.1 *Block Multiplexer Channel Adapter: User's Guide and Service Information* for procedures.

   If you have another block multiplexer channel adapter in this system unit, you must use this same procedure to stop it.

7.4.1.2 Starting Communications

Use the following steps as a guideline for starting communications with a host block multiplexer channel:

1. Use SMIT to change the status of this adapter to *online*. If needed, see the *AIX Version 4.1 Block Multiplexer Channel Adapter: User's Guide and Service Information* for procedures.
2. Start the application programs that need to use this block multiplexer channel adapter.
3. Have the operator of the host system start communications with this block channel adapter.

   If you have another block multiplexer channel adapter in this system unit, you must use this same procedure to start it.

7.4.2 Running the System Diagnostics

Since the system is directly attached to the bus and tag cables of the block multiplexer channel of the host system, the communications between the host system and all of the block multiplexer channel adapters must be stopped before diagnostics are run on any block multiplexer channel adapter. See "Stop Communications" for this adapter information for general guidelines, or see the *AIX Version 4.1 Block Multiplexer Channel Adapter: User's Guide and Information* for detailed procedures.

Before disconnecting *any* cables from the adapter or interface assembly, the host system block multiplexer channel must be stopped. Get the host system operator to do this for you.

The system diagnostics allow wrap testing at the adapter and at the bus and tag cable connectors. See the *AIX Version 4.1 Block Multiplexer Channel Adapter Information* for detailed procedures.

7.4.3 Error Log Entries

Both the error log in the Version 3 Operating System and the host system error log may provide valuable information for problem solving.

For a description of the system error logging and the error log entries representing this adapter, see the following manuals:

- *AIX Version 4.1 Problem Solving Guide and Reference*, form number SC23-2606
- *Adapters, Devices, and Cable Information,* form number SA23-2764
- *AIX Version 4.1 Block Multiplexer Channel Adapter: User's Guide and Service Information*, form number SC23-2427.

7.4.4 Solving System-to-Host System Communication Problems

Use the *AIX Version 4.1 Block Multiplexer Channel Adapter: User's Guide and Service Information* and the *AIX Version 4.1 Problem Solving Guide and Reference* to solve operational problems after initial installation.

For installation problems, use the *AIX Version 4.1 Block Multiplexer Channel Adapter: User's Guide and Service Information* to be sure the software is installed, the channel is cabled correctly, and the host system and operating system are configured correctly.

7.4.5 Cabling the System Unit to the Host System

Refer to *Adapters, Devices, and Cable Information*, form number SA23-2764, for more cabling information

7.5 Enterprise System Connection (ESCON) Adapter

The ESCON Adapter allows the system unit to directly attach to a system 390-type ESCON channel.

The ESCON channel adapter responds to channel commands similar to a 3088 Channel-to-Channel Adapter. However, this adapter does not support full emulation of a 3088.

The ESCON channel adapter may also be attached to a host system using the ESCON Director.

Up to two ESCON channel adapters may be installed in a system unit.

Since the system is directly attached to the ESCON channel of the host system, careful consideration must be made before:

- Powering the system unit off
- Loading and running the diagnostic programs
- Connecting or disconnecting any of the cables to the adapter.

Use the following guidelines to understand the actions needed.

Subtopics

7.5.1 Starting or Stopping Communications With the Host System

An operator console for the system is required. The console may be a direct-attached display and keyboard or an ASCII terminal.

Changes to the *online* or *offline* status of the ESCON channel adapter is made using the System Management Interface Tool (SMIT). If there are two ESCON channel adapters installed in this system unit, the status of each adapter must be changed individually.

Subtopics

7.5.1.1 Stopping Communications

Use the following steps as a guideline for stopping communications with a host ESCON channel:

1. Have the operator of the host system stop any communications with this ESCON channel adapter.
2. Stop all application programs on this system that use this ESCON channel adapter.
3. Use SMIT to change the status of this adapter to *offline.* If needed, see the *AIX Version 3.2 Enterprise Systems Connection Adapter: User's Guide and Service Information* for procedures.

   If you have another ESCON channel adapter in this system unit, you must use this same procedure to stop it.

7.5.1.2 Starting Communications

Use the following steps as a guideline for starting communications with a host ESCON channel:

1. Use SMIT to change the status of this adapter to *online*. If needed, see the *AIX Version 4.1 Enterprise Systems Connection Adapter: User's Guide and Service Information* for procedures.
2. Start the application programs that need to use this ESCON channel adapter.
3. Have the operator of the host system start communications with this ESCON channel adapter.

   If you have another ESCON channel adapter in this system unit, you must use this same procedure to start it.

7.5.2 Running the System Diagnostics

Since the system is directly attached to the channel of the host system, the communications between the host system and all of the ESCON channel adapters must be stopped before diagnostics are run on any ESCON channel adapter. See "Stopping Communications" for this adapter for general guidelines, or see the *AIX Version 4.1 Enterprise Systems Connection Adapter: User's Guide and Service Information* for detailed procedures.

Before disconnecting *any* cables from the adapter, the host system ESCON channel must be stopped. Get the host system operator to do this for you.

The system diagnostics allow wrap testing at the adapter connector. See the *AIX Version 4.1 Enterprise Systems Connection Adapter: User's Guide and Service Information* for detailed procedures.

7.5.3 Error Log Entries

Both the error log in the Version 3 of the AIX Operating System and the host system error log may provide valuable information for problem solving.

For a description of the system error logging and the error log entries representing this adapter, see the following manuals:

- *AIX Version 4.1 Problem Solving Guide and Reference*, form number SC23-2606
- *Adapters, Devices, and Cable Information*, form number SA23-2764
- *AIX Version 4.1 Enterprise Systems Connection Adapter: User's Guide and Service Information,* form number SC23-2474.

7.5.4 Solving System to Host System Communication Problems

Use the *AIX Version 4.1 Enterprise Systems Connection Adapter: User's Guide and Service Information* and the *AIX Version 4.1 Problem Solving Guide and Reference* to solve operational problems after initial installation.

For installation problems, use the *AIX Version 4.1 Enterprise Systems Connection Adapter: User's Guide and Service Information* to be sure the software is installed, the channel is cabled correctly, and the host system and operating system are configured correctly.

If there is a fiber cable problem, consult *Maintenance Information for Enterprise System Connection Links*, SY27-2597.

7.5.5 Cabling the System Unit to the Host System

Refer to *Adapters, Devices, and Cable Information,* form number SA23-2764 for cabling information.

7.6 Enterprise System Connection (ESCON) Channel Emulator

The S/390 Enterprise Systems Connection Channel Emulator adapter provides serial ESCON channel attachment capability between the POWERstation and POWERserver family and high-performance System/390 tape units and tape library units.

The S/390 ESCON Channel Emulator adapter with the AIX ESCON Channel Tape Attachment/6000 (Feature Code 5223) can be used with the following tape products:

- 3490 Magnetic Tape Subsystem, all models
- 3490E Magnetic Tape Subsystem, all models
- 3494 Tape Library Data Server
- 3495 Tape Library Data Server

The ESCON channel emulator adapter may also be attached to a tape control unit using the ESCON Director.

Up to two ESCON channel emulator adapters may be installed in a system unit.

Since the system is directly attached to the ESCON channel of the tape control unit, careful consideration must be made before:

- Powering the system unit off
- Loading and running the diagnostic programs
- Connecting or disconnecting any of the cables to the adapter.

Use the following guidelines to understand the actions needed.

Subtopics

7.6.1 Starting or Stopping Communications With the Tape Control Unit

AIX Version 4.1 Enterprise Systems Connection Adapter: User's Guide and Service Information

Changes to the *online* or *offline* status of the ESCON channel emulator adapter is made using the System Management Interface Tool (SMIT). If there are two ESCON channel adapters installed in this system unit, the status of each adapter must be changed individually.

Subtopics

7.6.1.1 Stopping Communications

Use the following steps as a guideline for stopping communications with a Tape Control Unit:

1. Have the operator of the system stop any communications with this ESCON channel emulator adapter.
2. Stop all application programs on this system that use this ESCON channel emulator adapter.
3. Use SMIT to change the status of this adapter to *offline*. If needed, see the *POWERstation and POWERserver S/390 Enterprise Systems Connection Channel Emulator Service Information* for procedures.

   If you have another ESCON channel adapter in this system unit, you must use this same procedure to stop it.

7.6.1.2 Starting Communications

Use the following steps as a guideline for starting communications with a tape control unit:

1. Use SMIT to change the status of this adapter to *online*. If needed, see the *POWERstation and POWERserver S/390 Enterprise Systems Connection Channel Emulator: User's Guide and Service Information* for procedures.
2. Start the application programs that need to use this ESCON channel emulator adapter.
3. Have the operator of the host system start communications with this ESCON channel emulator adapter.

   If you have another ESCON channel adapter in this system unit, you must use this same procedure to start it.

7.6.2 Running the System Diagnostics

Since the system is directly attached to the channel of the tape control unit,the communications between the host system and all of the ESCON channel emulator adapters must be stopped before diagnostics are run on any ESCON channel emulators. See "Taking the Control Unit Offline with SMIT" for this adapter for general guidelines, or see the *POWERstation and POWERserver S/390 Enterprise Systems Connection Channel Emulator: User's Guide and Service Information* for detailed procedures.

Before disconnecting *any* cables from the adapter, the tape control unit must be stopped. Get the system operator to do this for you.

The system diagnostics allow wrap testing at the adapter connector. See the *POWERstation and POWERserver S/390 Enterprise Systems Connection Channel Emulator: User's Guide and Service Information* for detailed procedures.

7.6.3 Error Log Entries

The error log in the Version 3 of the AIX Operating System may provide valuable information for problem solving.

For a description of the system error logging and the error log entries representing this adapter, see the following manuals:

- *AIX Version 4.1 Problem Solving Guide and Reference*, form number SC23-2606
- *Adapters, Devices, and Cable Information*, form number SA23-2764
- *POWERstation and POWERserver S/390 Enterprise Systems Connection Channel Emulator: User's Guide and Service Information* form number SA23-2722.

7.6.4 Solving System to Tape Control Unit Communication Problems

Use the and the *POWERstation and POWERserver S/390 Enterprise Systems Connection Channel Emulator: User's Guide and Service Information* and the *AIX Version 4.1 Problem Solving Guide and Reference* to solve operational problems after initial installation.

For installation problems, use the *AIX Enterprise Systems Connection Channel Tape Attachment/6000: Installation and User's Guide* to be sure the software is installed, the channel is cabled correctly, and the system and tape control unit system are configured correctly.

If there is a fiber cable problem, consult *Maintenance Information for Enterprise System Connection Links*, SY27-2597.

7.6.5 Cabling the System Unit to the Host System

Refer to *Adapters, Devices, and Cable Information*, form number SA23-2764, for more cabling information.

7.7 Fiber Distributed Data Interface (FDDI) Adapter

The Fiber Distributed Data Interface (FDDI) Adapter attaches the system unit to a FDDI network. There are two types of FDDI adapters:

- The fiber distribution data interface (FDDI) single ring adapter (Type 2-6)
- The fiber distribution data interface (FDDI) dual ring upgrade kit adapter (Type 2-7).

The communications link with the FDDI ring is established during workstation initialization; thus no special operator action is required to start using the ring.

For more information about this FDDI adapter and software, see the *Fiber Distributed Data Interface User's Guide*, form number SC23-2426. This manual is shipped with the FDDI adapter.

Subtopics

7.7.1 FDDI Single Ring Adapter Service Considerations

The single ring adapter provides a communication link to the concentrator. The concentrator links the workstations together to form a ring. The number of workstations that attach to a single concentrator is determined by the capacity of the concentrator. The concentrator may also have other concentrators attached to it to increase the number of workstations in the ring. Each workstation can communicate directly with any other workstation in the ring.

If any workstation in the ring has a failure that prevents the signal from being passed back to the concentrator, the concentrator automatically bypasses that workstation to allow communications to continue on the ring.

When you set the system power to Off or disconnect it from the concentrator the concentrator will bypass that connection to keep communications connection good.

7.7.2 FDDI Dual Ring Adapter Service Considerations

The dual ring adapter provides a dual path for communication between the workstations on the ring. The purpose of the dual path is to provide increased communication availability. The dual ring may also have more than one concentrator in the ring to provide connections to other FDDI rings.

If any workstation in the ring has a failure that prevents the signal from being passed on to the next workstation or concentrator, the FDDI adapter concentrator does a *loop* back on the secondary ring to allow communications to continue on the ring.

In the event two workstations or concentrators fail at the same time the ring could become *segmented*. That would mean part of the ring would act like a ring within itself, but could not communicate with the other parts of the ring. Returning either failing workstation or concentrator to correct working order will restore communications on the complete ring.

When you set the system unit power to Off or disconnect one of the FDDI cables, the workstations or concentrators on each side of the system unit will loop the signal back on the secondary ring. This will allow continued communications between each workstation on the ring, except the one that is powered off.

7.7.3 FDDI Cabling

Refer to *Adapters, Devices, and Cable Information* for additional cabling information.

7.8 High-Availability SCSI

A High-availability SCSI configuration consists of two system units or CPU drawers connected to a common set of SCSI devices. The configuration provides high-availability because either system unit or CPU drawer can continue to access the common devices while the other system is unavailable.

The actions needed to isolate a particular system unit or device from the configuration depends on the software controlling the systems and devices. Therefore, be sure you use the documentation with the software to prepare the configuration before turning a system unit or device off.

Subtopics
7.8.1 High-Availability Cabling

7.8.1 High-Availability Cabling

Refer to *Adapters, Devices, and Cable Information"* for additional cabling information

7.9 Introduction to Service Aids

The diagnostic programs contain programs called service aids. The service aids are used to display data and do additional testing.

The following service aids are provided:

- Service hints
- Display previous diagnostic results
- Display or change configuration or vital product data
- Display or change diagnostic test list
- Disk media
- Diskette media
- Local area network (LAN)
- SCSI bus
- Display test patterns
- Microcode download
- Product topology
- Display/alter bootlist
- Trace
- Dials and LPFK configuration
- Diagnostic diskette creation
- Disk-based diagnostic update
- Hardware error report
- Display test patterns for the multimedia video capture adapter
- Periodic Diagnostics Service Aid
- Generic Microcode Download Service Aid
- Disk Maintenance Service Aid
- Backup/Restore Media Service Aid
- Multiprocessor Service Aid
- Service Aids for use with Ethernet.
- AIX Shell Prompt
- BUMP Service Aid.

These service aids are described in the following topics.

7.10 Service Hints

The Service Hints service aid reads and displays the information in the CEREADME file from the diagnostics source (diskettes, disk, or CD-ROM). This file contains information that is not in the publications for this version of the diagnostics. It also contains information about using this particular version of diagnostics.

Use the Enter key to page forward through the information or the - (dash) and Enter keys to page backward through the file.

7.11 Display Previous Diagnostic Results

Note: This service aid is not available when you load the diagnostics from a source other than a disk drive or from a network.

Each time the diagnostics produce a service request number (SRN) to report a problem, information about that problem is logged. The service representative can look at this log to see which SRNs are recorded. This log also records the results of diagnostic tests that are run in loop mode.

When this service aid is selected, information on the last problem logged is displayed. The Page Down and Page Up keys can be used to look at information about previous problems.

This information is *not* from the error log maintained by the AIX operating system. This information is stored in the **/etc/lpp/diagnostics/data/*.dat** file.

7.12 Display or Change Configuration or Vital Product Data (VPD)

Note: The following AIX operating system commands are not available for use when you load this service aid from diskettes.

This service aid allows you to display and change configuration data and vital product data (VPD).

Use the **lscfg** command to copy the contents of the configuration and VPD files to another file or to a printer. This command identifies the resources that have diagnostic support. For more information about the **lscfg** command, see the AIX operating system information.

In the following examples, the first example copies the configuration data and VPD to a file named **/u/mine/VPD**. The second example prints the configuration list. The third example displays the VPD on the screen.

```
lscfg -v > /u/mine/VPD
lscfg | enq
lscfg -v | pg
```

Subtopics

7.12.1 Display Configuration

This service aid displays a list of the resources installed on this system.

7.12.2 Display Vital Product Data

This service aid displays the VPD for all of the resources installed on this system. Use the Page Down and Page Up keys to see the data for all resources.

Some of the data displayed by this service aid may have the characters "ME" added at the beginning of the data. The "ME" stands for "Manually Entered", and is used to indicate that the data that follows was obtained from user input instead of from hardware VPD.

7.12.3 Display/Alter Vital Product Data

Warning: If this service aid was loaded from a source other than the disk drive or network, any changes or additions you make to the VPD data will be lost when you set the power switch to Off.

This service aid allows you to display and alter the VPD for any resource. When you select this service aid, a menu allows you to select the desired resource.

7.12.4 Change Configuration

Warning: If this service aid was loaded from a source other than the disk drive or network, any changes or additions you make to the VPD data will be lost when you set the power switch to Off.

This service aid allows you to add or delete data for the drawer data from the configuration list. This service aid is used to add nonmachine-readable data to the configuration list.

7.13 Display or Change Diagnostic Test List

During power-on self-test (POST), the diagnostic controller uses the diagnostic test list to determine which resources to check.

This service aid provides a way to delete a resource from the diagnostic test list and a way to add a deleted resource back into the diagnostic test list. This service aid also provides a way to display the diagnostic test list.

7.14 Disk Media

This service aid provides a Format Disk service aid and a Certify Disk service aid.

Subtopics
7.14.1 Format Disk

7.14.1 Format Disk

There are two options available to format a disk, and an option that can be used to overwrite all accessible blocks on the disk with a user-selectable pattern.

Subtopics
7.14.1.1 Format without Certify
7.14.1.2 Format and Certify
7.14.1.3 Erase Disk
7.14.1.4 Certify Disk

7.14.1.1 Format without Certify

The format option writes all of the ID fields and writes a bit pattern in all of the data fields. This option does *not* reassign data blocks that are bad.

7.14.1.2 Format and Certify

The format and certify option writes all of the ID fields and writes a bit pattern in all of the data fields. It also reassigns any data blocks found to be bad during formatting. If there are too many bad data blocks, a message is sent to alert you.

This service aid should be used to completely erase the existing data on a disk. The diagnostic programs may instruct you to use this service aid when data on a disk is found to be badly damaged.

7.14.1.3 Erase Disk

This option can be used to overwrite (remove) all data currently stored in user-accessible blocks of the disk. The Erase Disk option writes one or more patterns to the disk. An additional option allows data in a selectable block to be read and displayed on the system console.

To use the Erase Disk option, specify the number (0-3) of patterns to be written. Select the patterns to be written; the patterns are written serially. That is, the first pattern is written to all blocks. Then the next pattern is to all blocks, overlaying the previous pattern. A random pattern will be by selecting the "Write random pattern?" option.

The Erase Disk service aid has not been certified as meeting the Department of Defense or any other organizations security guidelines. The following steps should be followed if the data on the drive is to be overwritten:

1. Run the "Erase Disk" Service Aid to overwrite the data on the drive.

2. Do a format without certify.

3. Run a second pass of the erase service aid.

For a newly installed drive, you can insure that all blocks on the drive will be overwritten with your pattern if you use the following procedure:

1. Format the drive.

2. Check the defect map by running the Erase Disk Service Aid.

   Note: If you use the "Format and Certify" option, there may be some blocks which get placed into the grown defect map.

3. If there are bad blocks in the defect map, record the information presented and ensure that this information is kept with the drive. This data will be used later when the drive is to be overwritten.

4. Use the drive as you would normally.

5. When the drive is no longer needed and is to be erased, run the same version of the Erase Disk Service Aid which was used in step 2.

   Note: Using the same version of the service aid is only critical if there were any bad blocks found in step 3.

6. Compare the bad blocks which were recorded with the drive in step 3 with those which now appear in the grown defect map.

   Note: If there are differences between the saved data and the newly obtained data, then all of the sectors on this drive cannot be overwritten. The new bad blocks will not be overwritten.

7. If the bad block list is the same, continue running the service aid to overwrite the disk with the chosen pattern(s).

7.14.1.4 Certify Disk

The Certify Disk service aid reads all of the ID and data fields. It checks for bad data in the ID and data fields. If there are too many bad data blocks, a message is sent to alert you.

7.15 Diskette Media

This service aid provides a way to verify the data written on a diskette. When this service aid is selected, a menu asks you to select the type of diskette being verified. The program then reads all of the ID and data fields on the diskette one time and displays the total number of bad sectors found.

7.16 Local Area Network

This service aid provides a means to analyze local area network (LAN) problems related to attached Ethernet, Token-Ring, and FDDI adapters. The service aid allows you to do the following:

- Monitor the ring (Token-Ring only). Abnormal conditions are reported.
- Test connectivity. Data is transferred between two stations, and the results are reported.

7.17 SCSI Bus

This service aid provides additional testing for SCSI bus problems and should be used only after the normal diagnostic test programs do not find a problem.

A **SCSI Inquiry** command is sent to a SCSI device you select from the SCSI BUS ADDRESS SELECTION menu; test results are then displayed. To analyze a SCSI bus problem, start with only one device attached; then add one device at a time until you identify the failing device. *Always* use a terminator at the end of the SCSI bus.

7.18 Display Test Patterns

Note: This service aid should not be run in a multiwindow environment.

This service aid provides a way to display the test patterns needed to adjust the 5081, 6091, and 8517 displays. Select the pattern you need from the menu.

7.19 Microcode Download

Microcode Download is a service aid that allows microcode resident on devices such as disk or tape drives to be updated. This service is normally needed when a problem is discovered or an enhancement is made to existing microcode.

This service aid presents you with a list of the drives that use microcode. Select the type drive on which you are installing the code, and follow the displayed instructions.

7.20 Product Topology

The Product Topology Data System has been created to enhance product and order quality within this system family.

Subtopics
7.20.1 Introduction
7.20.2 Completing the Product Topology Process
7.20.3 Older Versions of the Service Aid
7.20.4 Machines without Product Topology

7.20.1 Introduction

The Product Topology Data System records and maintains the following data:

- Machine configuration, including both Feature Code and Manufacturing Feature Bill of Material nomenclature
- Machine contents, including part numbers and EC levels
- History of actions taken with machine hardware.

Data collection and recording for a machine begins with the initial order and continues through the manufacturing process into field service. This physical history, combined with the current configuration, is a valuable resource managing product quality. Additionally, current machine configurations as reported from the field through Update Diskettes are used as a database for developing and improving Miscellaneous Engineering Specification (MES) upgrade orders and their installability.

Subtopics
7.20.1.1 Service Aid Operation
7.20.1.2 Initial Installation
7.20.1.3 Indentify the Location of SCSI Devices
7.20.1.4 Subsequent Executions

7.20.1.1 Service Aid Operation

The machines leave the plant of manufacture with a Product Topology System Diskette, which contains the latest version of this service aid.

This service aid can be executed in one of the following ways:

- By following the instructions that accompanied the Product Topology System Diskette included with the machine or included with the MES shipment from the plant of manufacture (the preferred method).

- By executing the Product Topology service aid from the operating system-based diagnostics on the disk drive.

- By executing the standalone diskette-based or CD-ROM disc-based diagnostics for machines that do not have, or do not plan to have, the operating system installed.

This service aid can be executed concurrently with other operating system applications; it is not necessary to remove the machine from normal operating service to run the program. In the case of a disk drive failure, or when the standalone diskette diagnostics package or the diagnostic CD-ROM disc is used, the Product Topology service aid should be run from the disk drive *after* the machine is restored to normal operation.

7.20.1.2 Initial Installation

The first time the Product Topology service aid is executed, or after having re-installed the operating system, you will be prompted to supply information on a screen that is similar to the following.

```
+-------------------------------------------------------------------------------+
|                                                                               |
| PRODUCT TOPOLOGY SYSTEM RECORD                                    802601      |
|                                                                               |
| The following information lists the current system record data.  Any          |
| data in brackets [] may be changed or added at this time.                     |
| Menu items with an asterisk (*) require a valid data entry.                   |
|                                                                               |
| * Machine serial number.......ie. 2612345.............  []                   |
| * Machine type................ie. 7015................  []                   |
| * Machine model...............ie. 98F.................  []                   |
| * Name (may be individual or company).................  []                   |
| * Address( number and street).........................  []                   |
| * Address (city and state)............................  []                   |
|   Address (zip).......................................  []                   |
|   Contact Name........................................  []                   |
|   Contact Phone..................ie. 512-555-1212......  []                   |
|   System number..................ie. 0000HBF...........  []                   |
|   Customer number................ie. 1234567...........  []                   |
|   Electronic address..................................  []                   |
|                                                                               |
| F1=Help            F2=Refresh            F3=Cancel            F4=List       |
| F5=Undo            F7=Commit             F10=Exit                            |
|                                                                               |
+-------------------------------------------------------------------------------+
```

Notes:

1. The serial number and machine type can be found on a label on the front top of your system unit.

2. The model number can be found on the product logo on the front panel of the system unit.

7.20.1.3 Indentify the Location of SCSI Devices

You will next be asked to identify the location of all detected SCSI devices (either 'Internal' or 'External'), using a screen that is similar to the following.

```
+-------------------------------------------------------------------------------+
|                                                                               |
| PRODUCT TOPOLOGY SCSI DEVICE LOCATION                          802603         |
|                                                                               |
| A new SCSI device was detected that is not in the Product Topology            |
| Data.  Please enter the SCSI device location ('IN' for internal,              |
| 'EX' for external) for the following device:                                  |
|  Title..................... 857 MB SCSI Disk Drive                          |
|  Part Number..............                                                    |
|  Part Location............. 00-00-0S-00                                     |
|  Resource Name............. hdisk0                                          |
|  EC Level.................                                                    |
|  Serial Number............. 00003453                                        |
|  Displayable Message......                                                    |
|                                                                               |
| When finished, or when no further information is available,                   |
| use 'Commit' to accept the data.                                              |
|                                                                               |
| SCSI Device Location (Internal or External)...    ??    +                     |
| F1=Help            F2=Refresh            F3=Cancel            F4=List       |
| F5=Undo            F7=Commit             F10=Exit                             |
|                                                                               |
+-------------------------------------------------------------------------------+
```

Note: This screen will appear for each SCSI device on your system that has not had a location determined for it.

7.20.1.4 Subsequent Executions

After the initial execution of this service aid, subsequent executions will allow you to verify or modify any of the previously entered information.

Note: Always be sure to verify that the Machine Type and Machine Model are correct for your machine. These values may need to change if your machine is upgraded to a new or different model.

7.20.2 Completing the Product Topology Process

The final step of the product topology process is to write an Update Diskette which is returned to the plant of manufacture. When you see the following screen, follow the instructions carefully.

```
+-------------------------------------------------------------------------------+
|                                                                               |
| PRODUCT TOPOLOGY SERVICE AID                                    802604        |
|                                                                               |
| REMOVE.............the diskette, if any, from the diskette drive.            |
| INSERT.............the Product Topology Update Diskette into the drive.      |
|                                                                               |
|         If an EC, MES, or external device was installed, use                  |
|         the Update Diskette that was shipped with the EC, MES,                |
|         or external device.  Otherwise, use one of the Update                 |
|         Diskettes shipped with the system and stored in the                   |
|         Service Information Binder.                                           |
|                                                                               |
| When finished, press Enter.                                                   |
|                                                                               |
| F1=Help             F3=Cancel                                                 |
| F10=Exit            Enter                                                     |
|                                                                               |
+-------------------------------------------------------------------------------+
```

When the diskette-writing procedure is finished, the Product Topology Service Aid menu automatically returns to the screen.

Note: Do not remove a diskette from the drive until:

- The diskette drive light has turned off.
- Prompted to do so by the software.
- The Product Topology Service Aid procedure terminates, and the Product T Service Aid menu is displayed.

7.20.3 Older Versions of the Service Aid

If you are running an older version of the Product Topology Service Aid, you will see screens that are different from the ones shown here. Either upgrade your version of this service aid to the latest level (using the diskette instructions that came with your machine or MES), or contact the support center for assistance.

7.20.4 Machines without Product Topology

Some disk drive machines do not have product topology data installed because the Product Topology service aid has not been run from disk. When the Product Topology service aid is run from the diskette diagnostics package or from diagnostic CD-ROM disc, the system does not record product topology data the disk drive. When the Product Topology service aid is eventually run the disk drive following an MES installation or repair action, the program will ask you to provide all of the machine-specific information in the same manner as is done for an Initial Installation.

7.21 Display/Alter Bootlist

This service aid allows you to display, alter, or erase the list of the IPL devices from which the system will attempt to load either the AIX operating system or the diagnostic programs.

The system will attempt to perform an IPL from the first device in the list. If the device is not a valid IPL device or if the IPL fails, the system will proceed in turn to the other devices in the list to attempt an IPL.

7.22 Trace

The Trace service aid is used as a tool to correct problems with microcode on either a serial disk adapter or a serial disk controller. This service aid is intended for use by trained service representatives.

7.23 Dials and LPFK Configuration

This service aid configures Dials or lighted programmable function keys (LPFK) devices to be used on the S1 or S2 serial port. Until these devices are configured, they cannot be tested by the diagnostic programs. If Dials or LPFK devices attached to the S1 or S2 serial port do not appear on the diagnostic test list, use this service aid first to configure the device.

7.24 Diagnostic Diskette Creation

Notes:

1. Before creating diagnostic diskettes with this service aid, any service update software (PTFs) should be applied first.
2. This service aid is not supported on version 4.1 or later of the diagnostic package.

The Diagnostic Diskette Creation service aid requires at least 10,000 blocks of free space in the **root** directory and 8800 blocks of free space in the **/tmp** directory. If you do not have enough free space in these directories, an error message displays when you run this service aid.

Note: If you receive any messages about missing files when you run this service aid, the diskettes created by this service aid may not work properly. The files identified by the messages may be necessary for these diskettes to work properly.

This service aid creates diagnostic diskettes that are customized to the system they were created on. The diskettes created by this service aid contain only the diagnostics for the devices on the system the service aid is run on.

7.25 Disk-Based Diagnostic Update

This service aid is used to update to the most current level, the diagnostics programs stored on the disk. The update is performed by inserting all diskettes containing the service update software (PTFs) into the diskette drive when the service aid prompts you to do so.

7.26 Hardware Error Report

This service aid provides a tool for viewing the system error log for hardware errors.

The service aid will display information concerning error log entries classified as hardware errors. This service aid scans the error log for hardware type errors and then displays the data to the user. The service aid has the option to format some error log entry types making them more meaningful to the user.

7.27 Display Test Patterns for the Multimedia Video Capture Adapter

Note: This service aid is not available on AIX diagnostics version 4.1 or later.

The Multimedia Video Capture Adapter service aid provides a selection of patterns to be used for adjusting the multimedia video capture adapter. Select the appropriate pattern from the choices listed on the Multimedia Video Service Aid menu.

7.28 Multiprocessor Service Aid

This service aid uses the **cpu_state** command to display or change processor states for the next boot. This command can also be used directly from the AIX command prompt.

Subtopics

7.28.1 Display Processor States

This service aid displays the states of physical processors.

7.28.2 Disable a Processor

This service aid is used to disable a processor. The disabling is taken account during the next boot.

7.28.3 Enable a Processor

This service aid is used to enable a processor. The enabling is taken into account during the next boot.

7.29 Service Aid for Use with Ethernet

This service aid provides a tool for diagnosing Ethernet problems.

7.30 BUMP Service Aid

This service aid is used to manage information relating to the BUMP, such as a diagnostics flags, service support phone numbers, modem configuration parameters, and the firmware stored in the flash EPROM.

Subtopics
7.30.1 Display or Change Flags and Configuration
7.30.2 Save or Restore Flags and Configuration
7.30.3 Flash EPROM download

7.30.1 Display or Change Flags and Configuration

This service aid is used to:

- Display remote support phone numbers.
- Display modem configuration
- Change remote support phone numbers
- Change modem configuration.

7.30.2 Save or Restore Flags and Configuration

This service aid allows the diagnostic modes and remote support phone numbers to be saved in a file. In this way, this information is easy to restore in cases where the NVRAM is replaced or corrupted.

7.30.3 Flash EPROM download

This service aid allows you to update the flash EPROM using a binary file.

7.31 Periodic Diagnostics Service Aid

The Periodic Diagnostic service aid performs the following functions:

- Execute diagnostics daily on hardware resources at a user selected time.
- Execute diagnostics against a device whenever a hardware error is logged in the system error log (concurrent error log analysis).

7.32 Generic Microcode Download

This service aid is used to restore a program from diskette or tape which is then used to update the microcode on a device or adapter. The restored program will provide instructions relevant to updating microcode on the device or adapter.

7.33 Disk Maintenance Service Aid

The Disk Maintenance service aid performs the following functions:

- Copies the entire contents of a selected disk (including the volume ID) to another disk. (Disks must have comparable capacities.)

- Displays the contents of a selected disk sector and allows the data in that sector to be altered.

The Disk Maintenance service aid is intended to be used when a disk must be replaced and the data residing on the disk must be saved. The service aid is also intended to be used to restore corrupted data in a sector of the disk by manually correcting parts of the data that are incorrect. To do this the user must be knowledgeable of what the data was before it became corrupted.

7.34 Backup/Restore Media Service Aid

This service aid is used to verify that a tape or diskette device used to backup files to media is functioning correctly. The service aid works by writing the file */usr/lpp/diagnostics/CEREADME* to the selected media. The file is then restored to the */tmp* directory where a comparison of the restored and the original file is performed. The user is allowed to select the backup format (tar, backup or cpio) to be used.

7.35 AIX Shell Prompt Service Aid

This service aid allows access to the AIX command line. In order to use this service aid the user must know the root password (when a root password has been established).

A.0 Appendix A. Wrap Plugs

Adapter Name	**Connector Type, Port Name, or Cable**	**Part Number**
4-Port Multiprotocol Communications Adapter	Adapter, 78-pin	40F9902
	X.21 port	40F9904
	V.35 port	40F9900
	V.35 cable	71F0163
	EIA-232 port	40F9903
	EIA-422A port	53F3886
4-Port EIA-232-C Multiport/2 Adapter	Adapter, 78-pin	09F1803
	25-pin, ports 0 and 1	6425494
	25-pin, ports 2 and 3	09F1799
4-Port EIA-232-C/4-Port EIA-422-A Multiport/2 Adapter	Adapter, 78-pin	09F1803
	25-pin, ports 0 and 1	6425494
	25-pin, ports 2 and 3	09F1799
4-Port EIA-232-C Multiport/2 Adapter	Adapter, 78-pin	09F1803
	25-pin, ports 0 and 1	6425494
	25-pin, ports 2 and 3	09F1799
6-Port Synchronous EIA-232-C Multiport/2 Adapter	Adapter, 78-pin	15F8856
	25-pin, ports, 0 through 5	33F8968
6-Port V.35 Portmaster Adapter/A	Adapter, 100-pin	72F0168
	25-pin, ports 0 through 7	72F0167
6-Port X.21 Portmaster Adapter/A	Adapter, 100-pin	85F0205
	25-pin, ports 0 through 7	85F0206
8-Port Async Adapters	Adapter, 78-pin	22F9694
	25-pin, EIA-232D	6298964
	25-pin, EIA-422A	30F9159
8-Port EIA-232-C Multiport/2 Adapter	Adapter, 78-pin	09F1803
	25-pin, ports 0 and 1	6425494
	25-pin, ports 2 through 7	09F1799
8-Port EIA-422-A Multiport/2 Adapter	Adapter, 78-pin	09F1803
	25-pin, ports 0 and 1	6425494
	25-pin, ports 2 through 7	09F1799
8-Port EIA-422-A Portmaster Adapter	Adapter, 100-pin D-shell	68F7208 or 15F8848
	25-pin, ports 2 through 7	33F8964
8-Port EIA-232-D Portmaster Adapter	Adapter, 100-pin D-shell	68F7208 or 57F0628 or 15F8848
	25-pin, ports 2 through 7	33F8985
16-Port Async - EIA-232	Adapter, 78-pin	53F3312
	25-pin D-shell	6298964
16-Port Async - EIA-422A	Adapter, 78-pin	53F3312
	25-pin D-shell	30F9159
64-Port Async Controller	Adapter, RJ-45 type connector	53F3623*
16-Port Async Concentrator	Input cable wrap, RJ-45	53F3205*
	Output connector, RJ-45	53F3624*
	25-pin D-shell	6298964
Block Multiplexer Channel Adapter	78-pin D-shell	71F1184
	bus cable	8575337
	tag cable	8575338
Built-in parallel printer adapter	Parallel printer port	71F0690
Built-in serial adapter	Serial ports S1 and S2	6298966
	25-pin D-shell	6298964
ESCON Channel Adapter	Fiber optic	5605670
Ethernet High-Performance	15-pin D-shell	70F9625

LAN Adapter Ethernet Tranceiver	BNC with 25-Ohm terminator Thin Thick	70F9626 02G7433 02G2380
Ethernet Adapter (thick) Ethernet Adapter (thin)		
FDDI Adapter	Two-port, fiber optic, MIC	81F9016
FDDI and FDDI-Fiber Single Ring Adapters		92F9003
FDDI and FDDI-Fiber Dual Ring Upgrade Adapters		92F9003
FDDI-STP Single and Dual Ring Adapters		33G2759
Fiber optical cable Feed-through connector	Fiber optic Fiber optic	46F2438 99F0489
Graphics Input Device Adapter	Adapter 8-pin DIN	22F9689
M-Video Capture Adapter (NTSC version)	Wrap test cable, 20-pin D-shell (incl. in cable set)	92F3713 (cable set)
M-Video Capture Adapter (PAL version)	Wrap test cable, 37-pin D-shell (incl. in cable set)	92F3714 (cable set)
S/370 Channel Emulator/A	Bus cable Tag cable	5479141 5479139
Serial Optical Channel Converter	Two-port, optic Fiber optic cable Feed-through connector	56F0203* 46F2438 99F0489
Tablet adapter	Tablet connector	22F9689
Voice Server Card adapter	Vpack cable CSU cable (T1 only) 9291, 15-pin, male connector Coax, CEPT only (all countries except France) Coax, network, CEPT only (all countries except France)	34F0874 34F0875 34F0876 61F5394 61F5395
X.25 Communications Adapter	Adapter, 37-pin X.21 Cable (07F3151) V.24 Cable (07F3161) V.35 Cable (07F3171)	07F3132 07F3153 07F3163 07F3173

* Available only as part of wrap plug kit, Part Number 53F3662.

** Shipped with converter.

B.0 Appendix B. Test Media

Device	**Media or Supplies**	**Part Number**
2.3 GB 8 mm tape drive	Tape/media kit	59F3907
	Kit includes:	
	- 8mm Cleaning tape cartridge	21F8593
	- 8mm Blank data tape cartridge	21F8575
	- 8mm Test tape cartridge	21F8577
	Package of five 8mm blank tapes	21F8595
1/2-inch 9-track tape drive	Tape/media kit	21F3108
	Kit includes:	
	- Cleaning kit	0352465
	- Crank	6200972
	- CE tape assembly	6201953
1/4-inch cartridge tape drive	1/4 inch head cleaning kit	21F8570
	150M-byte data tape cartridge (5-pack)	21F8588
	525M-byte data tape cartridge (5-pack)	21F8587
	1.2G-byte data tape cartridge (5-pack)	21F8732
	150M-byte 1/4 inch test tape cartridge	92X7510
	1.2G-byte 1/4 inch test tape cartridge	21F8734
5-1/4 inch diskette drive	5-1/4 inch 360K byte blank diskette	6023450
	5-1/4 inch 1.2M byte blank diskette	6109660
3-1/2 inch diskette drive	3-1/2 inch 1.0M byte blank diskette	6404095
	3-1/2 inch 1.0M byte diagnostic test diskette	71F1247
	3-1/2 inch 2.0M byte blank diskette	6404078
	3-1/2 inch 2.0M byte diagnostic test diskette	71F1248
	3-1/2 inch 4.0M byte diagnostic test diskette	00G3352
	3-1/2 inch 4.0M byte blank diskette	72X6107
CD-ROM drive, bezel type A	Media kit for bezel type A	59F3562
	Kit includes:	
	- Test disc	53F3088
	- Caddy	22F9419
	- Lens cleaner	59F3563
	Audio test device (headset)	53F3610
CD-ROM drive, bezel type B	Media kit for bezel type B	31F4232
	Kit includes:	
	- Test disc	81F8902
	- Caddy	22F9419
	Audio test device (headset)	53F3610
RISC System/6000 diagnostic package	Diagnostic and test diskettes	88G3890
	Diagnostic and tests on CD-ROM	88G4733

Subtopics
B.1 Supplemental Diskette FRU Part numbers

B.1 Supplemental Diskette FRU Part numbers

The following table contains a listing of supplemental diagnostic diskettes and their respective part numbers.

Supplemental Diagnostic Diskette Description	**FRU Part Number**
Artic multiport/2 .5/1.0 MB and portmaster .5/1.0 MB	43G2259
FDDI	65G7507
HIPPI	65G6553
Network Terminal Accelerator	8184102
S/370 block multiplexer channel adapter	65G1829
S/370 parallel channel	32G1451
S/370 serial channel-ESCON	43G0238
Speech Accelerator 1 adapter	40G6292
1 port MP (PS/2) adapter	43G0657
128 port cluster controller	51G8138
Fibre Channel/266	11H2519
Ultimedia Audio Feature Adapter	11H5718

C.0 Appendix C. System Memory Reference

Subtopics
C.1 System Unit Memory Combinations
C.2 Memory card and SIMM cross reference

C.1 System Unit Memory Combinations

Note: The CPU ID column of the following table reflects digits 7 and 8 of the Processor Component ID; refer to VPD in diagnostics.

Machine Type	Model	CPU ID	Sys. Memory Configuration Type/Size (Min./Max.)	Base Memory Card FRU Number	SIMM Size (Bytes)	SIMM FRU Number	Card Pair
7006	41T/41W	42	PS/2 16MB/256MB		2M 4M 8M 16M 32M	8184416 51G8553 51G8554 8184379 8184380	
7009	C10	48	PS/2 16MB/256MB		2M 4M 8M 16M 32M	8184416 51G8553 51G8554 8184379 8184380	
7008		43	PS/2 16MB/64MB	N/A	4M 8M	92F0105 64F3606	N/A
7011	220	41 or 45	PS/2 16MB/64MB	N/A	4M 8M	92F0105 or 51G8553 64F3606 or 51G8554	N/A
	230	47	PS/2 16MB/64MB	N/A	4M 8M	51G8553 51G8554	N/A
	250	46	PS/2 16MB/256MB		2M 4M 8M 16M 32M	8184416 51G8553 51G8554 8184379 8184380	
7012	320	31	S1 16MB/32MB	59F4433	1M 2M	59F4581 59F4582	No
			S1.5 16MB/128MB	81F8926	4M 8M	70F9973 70F9976	No
	32E /32H	35	S1 16MB/32MB	59F4433	1M 2M	59F4581 59F4582	No
			S1.5 16MB/128MB	81F8926	4M 8M	70F9973 70F9976	No
Note: The S4.6 base cards have been phased in to replace S4.5 base cards.							
	340	37	S3.1 16MB/128MB	00G2208	1M 2M 4M 8M	59F4581 59F4582 70F9973 70F9976	No
7012	340	37	S3.2 16MB/128MB	32G1022	1M 2M 4M 8M	59F4581 59F4582 70F9973 70F9976	No
			S3.3 16MB/256MB	32G1866	1M 2M 4M 8M 16M	59F4581 59F4582 70F9973 70F9976 43G1796	No
			S4.5 16MB/512MB	52G4801 88G3680	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	No
	350	38	S3.1 16MB/128MB	00G2208	1M 2M 4M	59F4581 59F4582 70F9973	No

					8M	70F9976	
			S3.2 16MB/128MB	32G1022	1M 2M 4M 8M	59F4581 59F4582 70F9973 70F9976	No
			S3.3 16MB/256MB	32G1866	1M 2M 4M 8M 16M	59F4581 59F4582 70F9973 70F9976 43G1796	No
			S4.5 16MB/512MB	52G4801 8G3680	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	No
	355	77	S3.3 16MB/128MB	32G1866	1M 2M 4M 8M 16M	59F4581 59F4582 70F9973 70F9976 43G1796	No
Note: The S4.6 base cards have been phased in to replace S4.5 base cards.							
7012	355	77	S4.5 16MB/256MB	52G4801 88G3680	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	No
	360/36T	76	S3.3 for the 360 = 16MB/256MB for the 36T = 32MB/128MB	32G1866	1M 2M 4M 8M 16M	59F4581 59F4582 70F9973 70F9976 43G1796	No
			S4.5 for the 360 = 16MB/512MB for the 36T = 32MB/256MB	52G4801 88G3680	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	No
	365	76	S3.3 16MB/64MB	32G1866	1M 2M 4M 8M 16M	59F4581 59F4582 70F9973 70F9976 43G1796	No
			S4.5 16MB/128MB	52G4801 88G3680	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	No
	370/37T	75	S3.3 for the 370 = 32MB/256MB for the 37T = 32MB/128MB	32G1866	1M 2M 4M 8M 16M	59F4581 59F4582 70F9973 70F9976 43G1796	No
			S4.5 for the 370 = 32MB/512MB for the 37T = 32MB/256MB	52G4801 88G3680	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	No
		75	S3.3 32MB/128MB	32G1866	1M 2M 4M 8M 16M	59F4581 59F4582 70F9973 70F9976 43G1796	No
Note: The S4.6 base cards have been phased in to replace S4.5 base cards.							

7012	375	75	S4.5 32MB/128MB	52G4801 88G3680	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	No
	380	58	S4.5 32MB/512MB	52G4801 88G3680	2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	No
	390	57	S4.5 32MB/512MB	52G4801 88G3680	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	No
	39H	59	S4.6 64MB/512MB	52G4801 88G3680	4M 8M 16M 32M	70F9973 70F9976 43G1796 65G6452	Yes
7013	520	30	S1 8MB/128MB	59F4433	1M 2M	59F4581 59F4582	No
			S1.5 8MB/512MB	81F8926	4M 8M	70F9973 70F9976	No
	52H	34	S1 8MB/128MB	59F4433	1M 2M	59F4581 59F4582	No
			S1.5 8MB/512MB	81F8926	4M 8M	70F9973 70F9976	No
	530	10	S1 16MB/128MB	59F4433	1M 2M	59F4581 59F4582	Yes
			S1.5 16MB/512MB	81F8926	4M 8M	70F9973 70F9976	Yes
	53H	18	S3.1 16MB/512MB	00G2208	1M 2M 4M 8M	59F4581 59F4582 70F9973 70F9976	Yes
7013			S3.2 16MB/512MB	32G1022	1M 2M 4M 8M	59F4581 59F4582 70F9973 70F9976	Yes
Note: The S4.6 base cards have been phased in to replace S4.5 base cards.							
			S3.3 16MB/1GB	32G1866	1M 2M 4M 8M 16M	59F4581 59F4582 70F9973 70F9976 43G1796	Yes
		18	S4.5 16MB/2GB	52G4801	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	Yes
	540	14	U1 64MB/256MB	59F4436	4M	59F4583	Yes
	550	1C	S3.1 64MB/512MB	00G2208	1M 2M 4M 8M	59F4581 59F4582 70F9973 70F9976	Yes
			S3.2 64MB/512MB	32G1022	1M 2M 4M 8M	59F4581 59F4582 70F9973 70F9976	Yes
			S3.3	32G1866	1M	59F4581	Yes

			64MB/1GB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
			S4.5	52G4801	1M	59F4581	Yes
			64MB/2GB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
			S4.6	52G4801	1M	59F4581	Yes
			64MB/2GB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
	55L	77	S3.3	32G1866	1M	59F4581	No
			32MB/256MB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
Note: The S4.6 base cards have been phased in to replace S4.5 base cards.							
7013	55L	77	S4.5	52G4801	1M	59F4581	No
			32MB/512MB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
				88G3680	32M	65G6452	
			S4.6	52G4801	1M	59F4581	No
			32MB/512MB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
				88G3680	32M	65G6452	
	560	5C	S3.2	32G1022	1M	59F4581	Yes
			64MB/512MB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
			S3.3	32G1866	1M	59F4581	Yes
			64MB/1GB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
			S4.5	52G4801	1M	59F4581	Yes
			64MB/2GB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
			S4.6	52G4801	1M	59F4581	Yes
			64MB/2GB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
	570	67	S3.3	32G1866	1M	59F4581	No
			32MB/512MB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
			S4.5	52G4801	1M	59F4581	No
			32MB/1GB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
Note: The S4.6 base cards have been phased in to replace S4.5 base cards.							
7013	570	67	S4.6/	52G4801	1M	59F4581	No

			32MB/2GB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
	580	66	S3.3	32G1866	1M	59F4581	Yes
			64MB/1GB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
			S4.5	52G4801	1M	59F4581	Yes
			64MB/2GB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
			S4.6	52G4801	1M	59F4581	Yes
			64MB/2GB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
	58H	71	S4.5	52G4801	1M	59F4581	Yes
			64MB/2GB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
			S4.6	52G4801	1M	59F4581	Yes
			64MB/2GB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
	590	70	S4.5	52G4801	1M	59F4581	Yes
			64MB/2GB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
Note: The S4.6 base cards have been phased in to replace S4.5 base cards.							
7013	590	70	S4.6	52G4801	1M	59F4581	Yes
			64MB/2GB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
	591	79	S5.0	12H1331	4M	39H8924	Yes
			64MB/2GB		8M	39H8925	
					16M	43G1796	
					32M	39H8312	
7013	59H	72	S4.5	52G4801	1M	59F4581	Yes
			64MB/2GB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
			S4.6	52G4801	1M	59F4581	Yes
			64MB/2GB		2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
7015	930	02 or 20	S1 16MB/128MB	59F4433	1M	59F4581	Yes
					2M	59F4582	
			S1.5 16MB/512MB	81F8926	4M	70F9973	Yes
					8M	70F9976	
	950	2E	S3.1	00G2208	1M	59F4581	Yes

			32MB/256MB		2M 4M 8M	59F4582 70F9973 70F9976	
			S3.2 32MB/256MB	32G1022	1M 2M 4M 8M	59F4581 59F4582 70F9973 70F9976	Yes
			S3.3 32MB/512MB	32G1866	1M 2M 4M 8M 16M	59F4581 59F4582 70F9973 70F9976 43G1796	Yes
Note: The S4.6 base cards have been phased in to replace S4.5 base cards.							
			S4.5 32MB/2GB	52G4801	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	Yes
7015	950	2E	S4.6 32MB/2GB	52G4801	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	Yes
	970	63	S3.3 128MB/1GB	32G1866	1M 2M 4M 8M 16M	59F4581 59F4582 70F9973 70F9976 43G1796	Yes
			S4.5 128MB/2GB	52G4801	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	Yes
			S4.6 128MB/2GB	52G4801	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	Yes
	97B	63	S3.3 128MB/1GB	32G1866	1M 2M 4M 8M 16M	59F4581 59F4582 70F9973 70F9976 43G1796	Yes
			S4.5 128MB/2GB	52G4801	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	Yes
Note: The S4.6 base cards have been phased in to replace S4.5 base cards.							
			S4.6 128MB/2GB	52G4801	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	Yes
	980	64	S3.3 128MB/1GB	32G1866	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	Yes
7015	980	64	S4.5 128MB/2GB	52G4801	1M 2M	59F4581 59F4582	Yes

					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
			S4.6 128MB/2GB	52G4801	1M	59F4581	Yes
					2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
	98B	64	S3.3 128MB/1GB	32G1866	1M	59F4581	Yes
					2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
			S4.5 128MB/2GB	52G4801	1M	59F4581	Yes
					2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
			S4.6 128MB/2GB	52G4801	1M	59F4581	Yes
					2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
Note: The S4.6 base cards have been phased in to replace S4.5 base cards.							
	990	80	S4.5 128MB/2GB	52G4801	1M	59F4581	Yes
					2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
			S4.6 128MB/2GB	52G4801	1M	59F4581	Yes
					2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
	R10	67	S3.3 128MB/512MB	32G1866	1M	59F4581	No
					2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
7015	R10	67	S4.5 128MB/1GB	52G4801	1M	59F4581	No
					2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
			S4.6 128MB/1GB	52G4801	1M	59F4581	No
					2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
	R20	72	S4.5 128MB/2GB	52G4801	1M	59F4581	Yes
					2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
			S4.6 128MB/2GB	52G4801	1M	59F4581	Yes
					2M	59F4582	
					4M	70F9973	
					8M	70F9976	
					16M	43G1796	
					32M	65G6452	
Note: The S4.6 base cards have been phased in to replace S4.5 base							

cards.							
	R21	79	S5.0 64MB/2GB	12H1331	4M 8M 16M 32M	39H8924 39H8925 43G1796 39H8312	Yes
	R24	82	S4.5 128MB/2GB	52G4801	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	Yes
			S4.6 128MB/2GB	52G4801	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	Yes
7016	730	10	S1 16MB/128MB	59F4433	1M 2M	59F4581 59F4582	Yes
			S1.5 16MB/512MB	81F8926	4M 8M	70F9973 70F9976	Yes
7018	740 and 741	30	S1 16MB/128MB	59F4433	1M 2M	59F4581 59F4582	No
	770 and 771	67	S3.3 128MB/1GB	32G1866	1M 2M 4M 8M 16M	59F4581 59F4582 70F9973 70F9976 43G1796	No
			S4.5 128MB/2GB	52G4801	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	No
			S4.6 128MB/2GB	52G4801	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	Yes
Note: The S4.6 base cards have been phased in to replace S4.5 base cards.							
7030	3AT	58	S4.5 32MB/512MB	52G4801 88G3680	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	No
	3BT	57	S4.5 32MB/512MB	52G4801 88G3680	1M 2M 4M 8M 16M 32M	59F4581 59F4582 70F9973 70F9976 43G1796 65G6452	No
	3CT	59	S4.6 64MB/512MB	52G4801 88G3680	4M 8M 16M 32M	70F9973 70F9976 43G1796 65G6452	Yes
Note: The S4.6 base cards have been phased in to replace S4.5 base cards.							

C.2 Memory card and SIMM cross reference

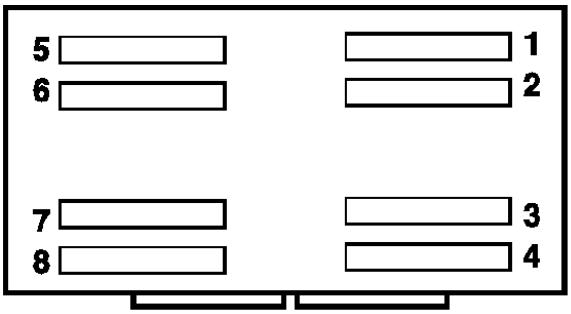
Use the following table to identify a base memory card or a memory SIMM.

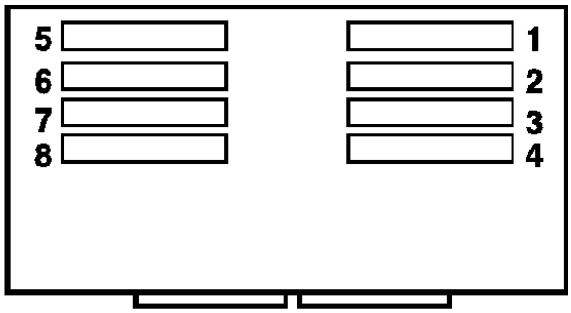
Number Marked on SIMM	Number Marked on Card	Description	FRU Number
	00G2205	S3.1 base memory card	00G2208
23F7365		4M-byte U1 memory SIMM	59F4583
23F7366		4M-byte U1 memory SIMM	59F4583
23F8549		1M-byte S1/3.1/3.2/3.3/4.5 memory SIMM	59F4581
	32G0101	S3.2 base memory card	32G1022
	32G1846	S3.3 base memory card	32G1866
32G8212		16M-byte S3.3/4.5 memory SIMM	43G1796
	41F0521	S1 base memory card	59F4433
	52F3091	S1 base memory card	59F4433
	53F3089	S1 base memory card	59F4433
	53F3091	S1 base memory card	59F4433
	53F3099	S1.5 base memory card	81F8926
	59F3116	U1 base memory card	59F4436
	59F4431	S1 base memory card	59F4433
	65G1797	S4.5 base memory card	52G4801
68X6271		2M-byte S1/3.1/3.2/3.3/4.5 memory SIMM	59F4582
		S4.6 base memory card	52G4801
68X6356		4M-byte S1.5/3.1/3.2/3.3/4.5 memory SIMM	70F9973
68X6357		8M-byte S1.5/3.1/3.2/3.3/4.5 memory SIMM	70F9976
	70F9970	S1.5 base memory card	81F8926
	70F9974	S1.5 base memory card	81F8926
	71F0062	S1.5 base memory card	81F8926
	71F0064	S1.5 base memory card	81F8926
	71F0853	U1 base memory card	59F4436
	71F0855	U1 base memory card	59F4436
	81F8924	S1.5 base memory card	81F8926
	81F8925	S1.5 base memory card	81F8926
	81F8927	S1.5 base memory card	81F8926

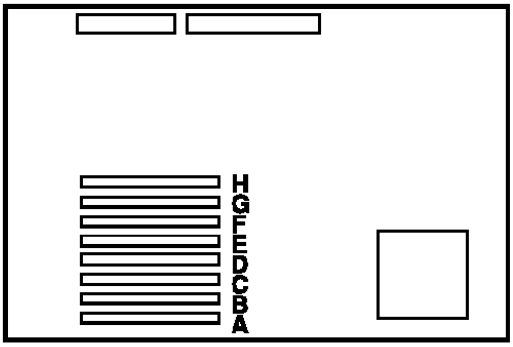
Subtopics
C.2.1 SIMM Numbering

C.2.1 SIMM Numbering

Memory board SIMM positions vary and are numbered as follows:

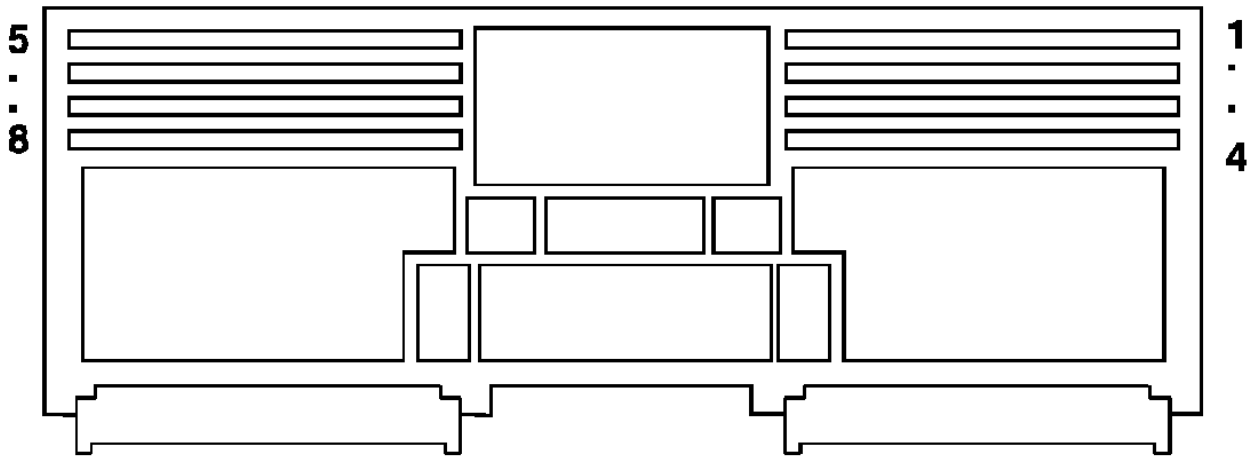




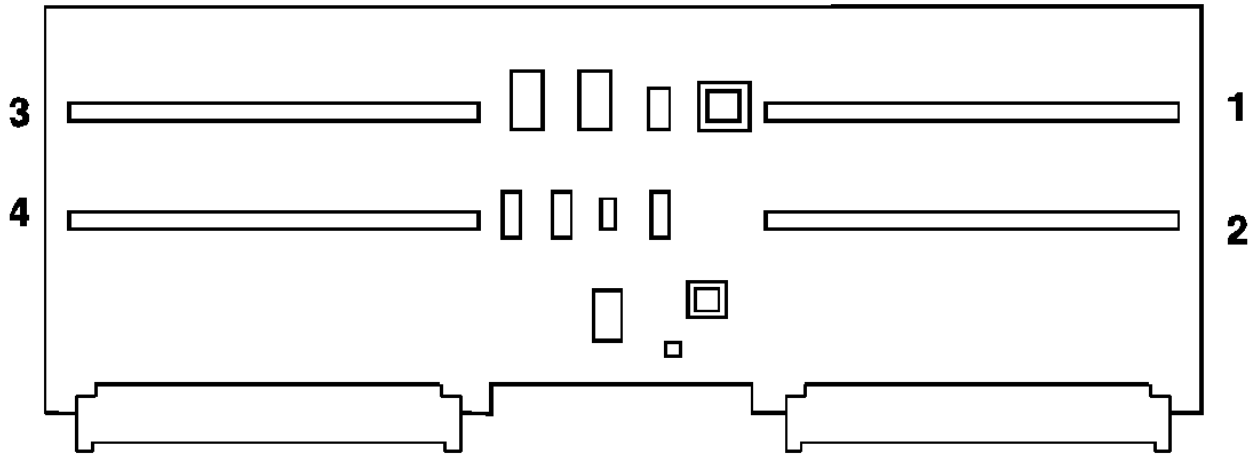


7006 System (Only)

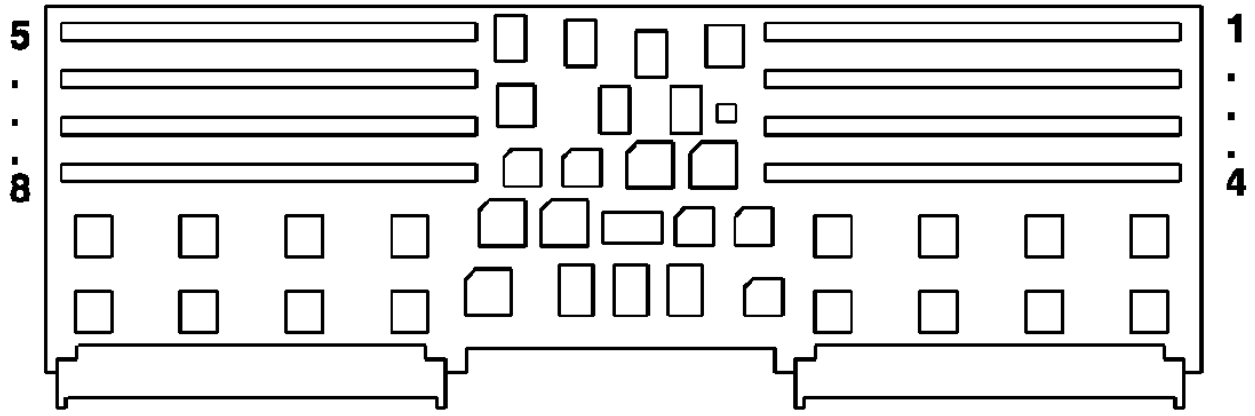
Base Memory Card (7013 J Series)



MRE Memory Card (7012 G Series)



Two Bank NFX Memory Card



Four Bank NFX Memory Card