Accton

Making Partnership Work

CheetaHub Classic-2040
Quick Installation Guide

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CheetaHub Classic-2040

Smart Ethernet Hub
with 8 10BASE-T (RJ-45) Ports and 1 BNC Port

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Contents

Introduction

The CheetaHub Classic-2040 includes 8 RJ-45 ports and 1 BNC port for connection to thin Ethernet (10BASE2). The hub also has an indicator panel that includes utilization and link/traffic LEDs to provide easy monitoring of hub conditions. This guide contains all the information required to install and operate the hub.
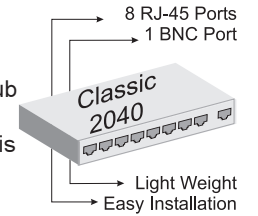
Package Contents

Your CheetaHub Classic-2040 package includes:

- CheetaHub Classic-2040 (Model No. EN2040) Ethernet hub with 8 RJ-45 ports and 1 BNC port
- Four rubber foot pads
- Power adapter
- T-type BNC connector
- Quick Installation Guide
- Owner registration card

Description of Hardware

This hub contains 8 RJ-45 Ethernet ports and 1 BNC port. It also includes an RJ-45 daisy-chain port (used instead of Port 8) for linking to another compatible hub or switch using straight-through twisted-pair cable.

The following figure shows the components of this hub:
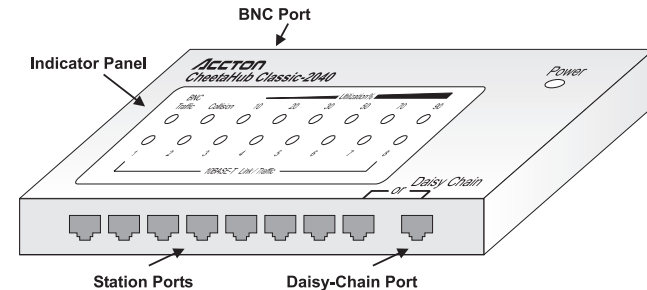
Mounting the Hubs

This hub can be placed directly on your desktop, or mounted on a wall or partition.

Before you start installing the hub, make sure you can provide the right operating environment, including power requirements, sufficient physical space, and proximity to other network devices that are to be connected. Verify the following installation requirements:

- Power requirements: 7.5 - 12 VAC at 50 to 60 Hz (± 3Hz). The power adapter will be suitable for the input voltage level in your area.
- The hub should be located in a cool dry place, with at least 10 cm. (4 in.) of space at the front and back for ventilation.
- Place the hub out of direct sunlight, and away from heat sources or areas with a high amount of electromagnetic interference.
- Check if network cables and connectors needed for installation are available.

The CheetaHub can be located anywhere there is a enough flat space, such as on a table or desktop.

1. Stick the self-adhesive rubber foot pads (that come with this package) on each of the 4 concave spaces located on the bottom of the hub.
2. Place the hub on a firm flat surface or mount it on a partition or wall.
3. If you need to stack the hub, repeat step 1 for each hub before stacking them. The rubber foot pads cushion against shock/vibrations and provide space between each hub for ventilation.

Connecting the Hub

This hub has 8 RJ-45 ports on the front panel and one BNC port on the rear panel that support connection to standard 10 Mbps Ethernet. The RJ-45 (MDI-X) station ports allow you to make connections to devices such as a workstation, server or router; while the BNC port permits attachment to a thin Ethernet segment (10BASE2). If you need to cascade to another compatible hub or switch, just run a connection from the (MDI) daisy-chain port on the hub to an MDI-X port on the other device.

Making a Connection via an MDI-X Station Port

You can connect any RJ-45 (MDI-X) station port on the hub to any device that uses a standard network interface such as a workstation or server, or to a network interconnection device such as a bridge or router (depending on the port type implemented).

1. Prepare the network devices you wish to network. Make sure you have installed 10BASE-T network interface cards for connecting to the hub's RJ-45 (MDI-X) station ports. You also need to prepare straight-through shielded or unshielded twisted-pair cables with RJ-45 plugs at both ends. Use 100Ω Category 3, 4 or 5 cable for all connections.
2. Connect one end of the cable to the RJ-45 port of the network interface card, and the other end to any available (MDI-X) station port on the hub. When inserting an RJ-45 plug, be sure the tab on the plug clicks into position to ensure that it is properly seated. Using the hub in a stand-alone configuration, you can network up to 8 end nodes, in addition to making an additional connection via the BNC port.

✋ Do not plug a phone jack connector into any RJ-45 port. This may damage the hub. Instead, use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.

Notes: 1. Make sure each twisted-pair cable does not exceed 100 meters (328 feet).
2. If you need to cascade to another compatible hub or switch, run a connection from the (MDI) daisy-chain port on the hub to an MDI-X port on the other device. If you must cascade to another hub or switch using MDI-X ports at both ends, then use crossover cable.

Making a Connection via the BNC Port

Plug a BNC T-type connector into the BNC port on the back of the hub. When connecting two devices via BNC ports, there should be at least 0.5 meters (1.64 feet) of coaxial cable between the two BNC ports. A thin Ethernet coaxial cable segment can be extended up to 185 meters (607 feet) and can link up to 30 nodes. If the unit is at the terminal end of a trunk segment, connect a 50Ω terminator to the open end of the "T" connector.

Powering on the Hub

1. Plug the power cord into the power socket at the rear of the hub, and the adapter into a power outlet.
2. Check the LED marked Power on the front panel to see if it is on.

Note: The unit supports a "hot remove" feature which permits you to connect/ disconnect cables without powering off the hub and without disrupting the operation of the devices attached to the hub.

Verifying Port Status

Check each connection by viewing the port status indicators shown in the following figure and table.
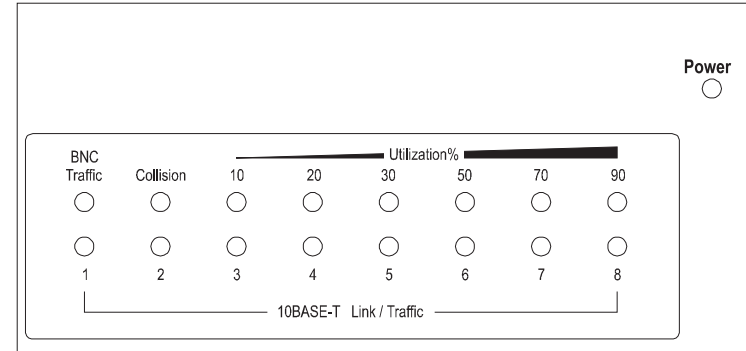
LED	State	Indication
Power	On	Hub is receiving power.
BNC Traffic	Flashing	Traffic is crossing the BNC port.
Collision	Flashing	Two or more devices attempted to transmit data at the same time. (Normal situation under Ethernet CSMA/CD.)
Utilization	Flashing	Percentage of Ethernet bandwidth used by this hub.
Link/Traffic	On	Port has established a valid network connection.
	Flashing	Traffic is traversing the port.

Verifying System Operation

Verify that all attached devices have a valid connection. The hub monitors the link status for each port. If any device is properly connected to the hub and transmitting a link beat signal, the Link indicator will light up for the corresponding port. If the Link indicator fails to light when you connect a device to the hub, check the following items:

• Be sure all network cables and connectors are properly attached to the connected device and the hub.

• See if your cable is functioning properly by using it for another port and attached device that displays valid indications when connected to the network.

• Verify that you have not exceeded the specified limits for any attached media type as summarized in the following table:

Media Type	Max Length	Max Nodes	Other
Twisted Pair	100 meters (328 feet)	1000	
Thin Ethernet	185 meters (607 feet)	30	0.5 meters[1]
1- Minimum distance between nodes (5 meters = 1.64 feet).			

- If a computer is attached to the hub, verify that its adapter card is functioning properly by trying it in another computer that has been successfully connected to the network.
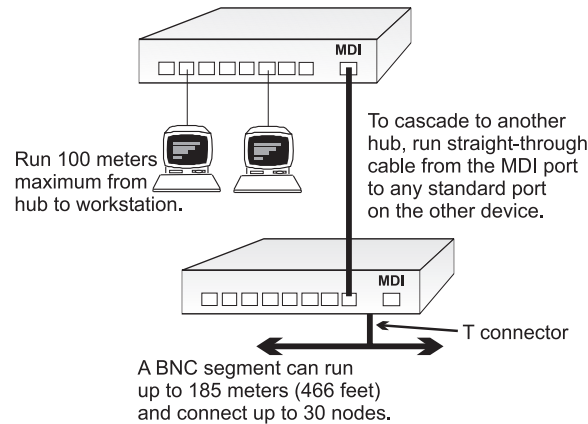
Applications

This hub provides up 8 RJ-45 ports for standard twisted-pair connections and 1 BNC port for connecting to thin Ethernet. The hub can also be easily cascaded to another hub or switch using the daisy-chain port.

Stand Alone - This hub can be used in a simple stand-alone configuration. In compliance with Ethernet standards, the maximum cable distance between the hub and workstation is 100 meters.

Using the Daisy-Chain Port - This hub provides an (MDI) daisy-chain port that you can easily use to connect to another hub or switch.

Using the BNC Port - This hub can also be stacked with other hubs using the BNC port. Through this port, hubs can be connected via thin coaxial cable.

Guidelines for Multiple Hub Configuration - In a multiple hub configuration, the maximum limit between 2 workstations is 5 cable segments and 4 hubs. However, to control the number of hubs in a path, we recommend using one hub to connect to several other hubs. Also remember to make sure there is only one path between any 2 stations on the network.

Run 100 meters maximum from hub to workstation.

To cascade to another hub, run straight-through cable from the MDI port to any standard port on the other device.

T connector

A BNC segment can run up to 185 meters (466 feet) and connect up to 30 nodes.

Product Specifications

Access Method	CSMA/CD, 10 Mbps
Standards Conformance	IEEE 802.3 10BASE-T, 10BASE2
Communication Rate	10 Mbps
Media Supported	*10BASE-T* - 100Ω Category 3,4,5 twisted-pair, *10BASE2* - thin Ethernet coaxial cable
Number of Ports	8 10BASE-T ports and 1 BNC port
Indicator Panel	LEDs for utilization, collision, link/traffic
Dimensions	200 x 110 x 26.8 mm (7.87 x 4.33 x 1.06 in)
Weight	0.556 kg (1.22 lb)
Input Power	Power adapter 7.5V ~ 12V AC, 50 to 60 Hz
Power Consumption	8VA at 100/120/220-230/240 V
Heat Dissapation	27.3 BTU/hr

Temperature	0°C to 40°C (32 to 104°F) Standard Operating
Humidity	5% to 95% (Noncondensing)
Certification	CE Mark
Emissions	FCC Class A, VCCI Class A, CISPR 22 Class A
Immunity	IEC 1000-4-2/3/4/6
Safety	UL, CSA, TÜV/GS

Troubleshooting

Diagnosing Hub Indicators

The hub can be easily monitored through panel indicators to assist the network manager in identifying problems. This section describes common problems you may encounter and possible solutions.

Symptom: Link indicator does not light up (green) after making a connection.
Cause: Network interface (e.g., a network adapter card on the attached device), network cable, or hub port is defective.
Solution: Verify that the hub and attached device are powered on. Be sure the cable is plugged into both the hub and corresponding device. Verify that the proper cable type is used and its length does not exceed specified limits (100m or 328ft). Check the adapter on the attached device and cable connections for possible defects. Replace the defective adapter or cable if necessary.

Symptom: Power indicator does not light up (green) after power on.
Cause: Defective power outlet, power cord, or power adapter.
Solution: Check the power outlet by plugging in another device that is functioning properly. Check the power cord with another device. If these measures fail to resolve the problem, replace the unit's power adapter.

Power and Cooling Problems

If the Power indicator does not turn on when the power cord is plugged in, you may have a problem with the power outlet, power cord, or power adapter as explained in the previous section. However, if the unit powers off after running for a while, check for loose power connections, power losses or surges at the power outlet. If you still cannot isolate the problem, then the power adapter may be defective. In this case, contact your Accton distributor for assistance.

Installation

Verify that all system components have been properly installed. If one or more components appear to be malfunctioning (e.g., the power adapter or network cabling), test them in an alternate environment where you are sure that all the other components are functioning properly.

Port and Cable Assignments

RJ-45 Port Description

RJ-45 station ports (MDI-X) can be attached to any devices which use a standard network interface (e.g., a workstation, server, bridge or router). Similar networking devices (e.g., another hub or switch) can be cascaded by connecting the (MDI) daisy-chain port on the hub to an (MDI-X) RJ-45 port on the other device. Use unshielded twisted-pair (UTP) or shielded twisted-pair (STP) cable for RJ-45 connections: 100Ω Category 3, 4 or 5 cable for 10 Mbps connections or 100Ω Category 5 cable for 100 Mbps connections. Also be sure that the length of any twisted-pair connection does not exceed 100 meters (328 feet).
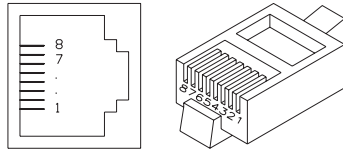
Pin	Assignment (Station Ports 1 - 8)	Assignment (Daisy-Chain Port, other device)
1	Input Receive Data +	Output Transmit Data +
2	Input Receive Data -	Output Transmit Data -
3	Output Transmit Data +	Input Receive Data +
6	Output Transmit Data -	Input Receive Data -
4,5,7,8	Not Used	Not Used

Schematics for both straight and crossover twisted-pair cable are shown below.

Straight-Through		Crossover	
(Station Port)	(Daisy-Chain Port)	(Station Port)	(Station Port)
1 IRD+ ——— 1 OTD+		1 IRD+	1 IRD+
2 IRD- ——— 2 OTD-		2 IRD-	2 IRD-
3 OTD+ ——— 3 IRD+		3 OTD+	3 OTD+
6 OTD- ——— 6 IRD-		6 OTD-	6 OTD-

BNC Port Description

The BNC Port can be attached to a thin Ethernet segment (10BASE2).

center conductor   ground shield
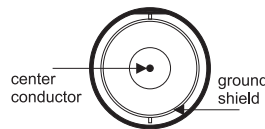
EMI Certification

FCC Class A (USA)

Warning: This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A digital device pursuant to Subpart B of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures are required to correct the interference.

You may use unshielded twisted-pair (UTP) for RJ-45 connections - Category 3 or greater.

Class A (Canada Department of Communications)

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus", ICES-003 of the Department of Communications.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur le matériel brouilleur: "Appareils Numérques", NMB-003 édictée par le ministère des Communications.

VCCI Class A Compliance (Japan)

この装置は、情報技術装置等電源障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

CE Mark Declaration of Conformance for EMI and Safety (EEC)

This is to certify that this product complies with ISO/IEC Guide 22 and EN45014. It conforms to the following specifications:

EMC:	EN55022(1988)/CISPR-22(1985)	class A
	EN60555-2(1995)	class A
	EN60555-3	
	IEC1000-4-2(1995)	4kV CD, 8kV AD
	IEC1000-4-3(1995)	3V/m
	IEC1000-4-4(1995)	1kV - (power line), 0.5kV - (signal line)
	IEC1000-4-6(1995)	3Vrms

This product complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC.

Warning! Do not plug a phone jack connector in the RJ-45 port. This may damage this device. Les raccordeurs ne sont pas utilisé pour le système téléphonique!

Safety Compliance

Underwriters Laboratories Inc. (USA)

Important! Before making connections, make sure you have the correct Cord Set. Check it (read the label on the cable) against the following specification list.

Voltage	Cord Set Specifications
120 Volts	UL Listed/CSA Certified Cord Set
	Minimum 18 AWG; type SVT or SJT three conductor cord
	Maximum length of 15 feet
	Parallel blade, grounding type attachment plug rated 15A, 125V
240 Volts (North America)	UL Listed/CSA Certified Cord Set
	Minimum 18 AWG; type SVT or SJT three conductor cord
	Maximum length of 15 feet
	Tandem blade, grounding type attachment plug rated 15A, 125V
240 Volts (Europe only)	Cord Set with H05VV-F cord having three conductors with minimum diameter of 0.75 mm²
	IEC-320 receptacle; male plug rated 10A, 250V

Wichtige Sicherheitshinweise (Germany)

1. Bitte lesen Sie diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie keine Flüssigoder Aerosolreiniger. Am besten eignet sich ein angefeuchtetes Tuch zur Reinigung.
4. Die Netzanschlu ßsteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Beschädigungen hervorrufen.
7. Die Belüftungsöffnungen dienen der Luftzirkulation, die das Gerät vor Überhitzung schützt. Sorgen Sie dafür, daß diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim Anschluß an das Stromnetz die Anschlußwerte.
9. Verlegen Sie die Netzanschlußleitung so, daß niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen, die sich am Gerät befinden, sind zu beachten.
11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.
13. Öffnen sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von authorisiertem Servicepersonal geöffnet werden.
14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
    a. Netzkabel oder Netzstecker sind beschädigt.
    b. Flüssigkeit ist in das Gerät eingedrungen.
    c. Das Gerät war Feuchtigkeit ausgesetzt.
    d. Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
    e. Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
    f. Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
15. Stellen Sie sicher, daß die Stromversorgung dieses Gerätes nach der EN 60950 geprüft ist. Ausgangswerte der Stromversorgung sollten die Werte von AC 7,5-8V, 50-60Hz nicht über oder unterschreiten sowie den minimalen Strom von 1A nicht unterschreiten.

Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70dB(A) oder weniger.

Warranty

Accton warrants to the original owner that the product delivered in this package will be free from defects in material and workmanship for the lifetime of the product. For the warranty to apply, you must register your purchase by returning the registration card indicating the date of purchase and including proof of purchase. There will be a minimal charge to replace consumable components, such as fuses, power transformers, and mechanical cooling devices. The warranty does not cover the product if it is damaged in the process of being installed.

THE ABOVE WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ANY WARRANTY ARISING OUT OF ANY PROPOSAL, SPECIFICATION OR SAMPLE. ACCTON SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. ACCTON NEITHER ASSUMES NOR AUTHORIZES ANY PERSON TO ASSUME FOR IT ANY OTHER LIABILITY.