



Evaluation

Cisco Webex Room Kit Mini

A hands-on look at Cisco's AI-powered video conferencing system designed for huddle spaces

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Introduction

Cisco describes its Webex Room Kit Mini as an AI-powered video conferencing system that's custom designed for huddle spaces. The Room Kit Mini (RKM) combines a codec, camera, microphones and speakers into a single device and is paired with the Cisco Touch 10 controller to facilitate one-touch meetings. The Room Kit Mini also includes Webex Assistant, a voice control solution intended to reduce the "touches" needed to start a meeting from one to zero. The system was introduced in November 2018 at the Cisco Partner Summit in Las Vegas.

Specifications

- 4K Ultra High Definition (HD) camera
- Support for up to 1080p / 60 frames per second (fps) for video encode and decode
- 8-megapixel (MP) image sensor
- 2x digital zoom
- 120-degree field of view (FOV)
- Auto framing (uses face detection)
- 4K content sharing (local 30 fps, remote 5 fps)
- Cisco Intelligent Proximity technology (for wireless screen sharing and wireless control from mobile devices)

The Webex Room Kit Mini with the Touch 10 controller is priced at \$5,990 – though we have seen it listed in the channel for as low as \$3,238.99 (CDW). The monthly Webex meeting service / cloud registration fee for the device is \$29 / mo. If the Mini is used as a standalone USB device, cloud registration is not required.

Unboxing Experience

The components arrived in a single shipping box measuring 24" L x 12.75" W x 8.5" H with four separate Cisco-branded boxes inside.

Room Kit Mini Shipping Box



Source: Wainhouse Research 05/19

What's in the box



Source: Wainhouse Research 05/19

What's in the Box

- Room Kit Mini unit
- Touch 10 controller
- Wall mount
- Display mount kit
- HDMI cable
- 2 Ethernet cables
- Power supply
- 15-page installation Guide for Touch 10

Not included in the box

- Instructions for mounting the device to a display or wall

Initial Thoughts

As the risk of paraphrasing a 19th century fairy tale, the size of the Room Kit Mini's video sound bar seems "just right." It's neither too small nor too large for its intended in-room use and our first impression is that it may be large enough to expect good audio yet small enough to not visually overpower a room. From an industrial design standpoint, the Room Kit Mini will fit nicely inside modern meeting spaces but may look a little out of place within older styled conference rooms. Both the video sound bar and the Touch 10 controller are white (except for the covering on the front of the soundbar, which is light gray) and are modern in appearance.

Video Soundbar

The Room Kit Mini video sound bar measures 19.75" L x 3.25" H x 2.75" D

Several ports are provided on the Room Kit Mini:

- HDMI output to display
- HDMI input from PC / Content
- RJ-45 to network (Wi-Fi for network is supported)
- RJ-45 to Touch 10
- USB-C for optional PC connection
- USB-A for future use
- Micro USB for maintenance
- Power connector

The video sound bar can be flipped 180 degrees for mounting below a display. The system senses when it is upside down and the image auto-rotates to accommodate without having to adjust any settings.

Touch 10 Controller

The Touch 10 controller measures 10" W x 7.5" H x 1" D (not including the integrated stand). It is connected to the video soundbar using the included flat network cable. This cable carries power to the Touch 10, so no additional power source is required. The Touch 10 has an integrated rotating stand that allows its angle to be adjusted to suit the user. The Touch 10 does not contain a battery and must always be physically connected to the video soundbar.

Installation and Setup

Equipment Installation

Since our display is not wall mounted, we chose to install the Room Kit Mini above it using the included mount. Unfortunately, no instructions were included to mount the device to the display. We were able to download the mounting instructions from Cisco's website – although they weren't completely clear. The downloaded instructions did not explain how to separate the two-piece wall mount – though we found an independent YouTube video that cleared it up for us.

Here are the steps for mounting the device above a display:

- Separate the two pieces of the wall mount (one piece will be used to mount above the display)
- Attach the horizontal display bracket to VESA mounts on back of the display using included screws
- Attach one piece of the wall mount to the short end of the L-shaped bracket
- Place the assembly in the horizontal mount and tighten it with a set screw
- Adjust top of the mount to make it flush with display and insert/tighten set screw
- Insert video sound bar into mount (listen for the click)

Completed Hardware Installation



Source: Wainhouse Research 05/19

This step in the installation process took 15 minutes due to lack of clarity with the instructions.

Plugging in and power up steps:

- Attach HDMI to display input and RKM's output (TV icon on RKM)
- Connect flat Ethernet cable from RKM to Touch 10
- Connect standard Ethernet cable from RKM to the network
- Connect power supply to RKM
- Turn on switch located on bottom of RKM

The first boot-up took approximately 50 seconds.

System Turn up

The installation process below assumes a "cloud registration license" has been purchased along with the system; this purchase is usually managed by the reseller.

On the Webex Control Hub web page:

- Log-in to the Control Hub with administrator privileges
- Navigate to Places
- Under New Place, create Name

The Control Hub provides a 16-digit code to enter on the Touch 10 (this code may also be provided via email as part of the "cloud registration license")

On the Touch 10 controller

- Tap the *Start* button
- Select Cisco Webex for registration
- Enter the 16-digit code provided from the Webex Control Hub or email
- Choose the proper time zone

A self-view appears on screen to enable image adjustment if necessary. Two adjustments can be made: digital via the Touch 10, or physical by rotating the RKM on its mount.

The system goes through a sound check to verify the microphones and speakers are working.

The device is now ready for use.

The plug-in and power up process took less than 10 minutes – thus the overall install time (for someone who has never done it before) was less than 25 minutes. The process could have easily been cut in half with better mounting instructions or prior experience. While installation requires several steps, it flows well. The only step we were briefed about beforehand (information typically handled by the reseller) was for creating a new “Place” in the Webex Control Hub.

The Room Kit Mini User Experience

The overall in-room experience with the Room Kit Mini when used with the Webex Meeting service is efficient and feels “modern.” The Touch 10 serves as the control system – so there is no handheld remote control to use, lose, or have batteries die on. The user interface of the Touch 10 fits in well with the industrial design of the hardware – modern and classy.

Ad hoc Meeting Workflow

On Room Kit Mini / Touch 10:

- Tap the *Call* icon on Touch 10, then *Directory*, tap the name of person to call, tap *Call*

Or, With the Webex Meeting Assistant enabled,

- Say “OK Webex, call (far end participant’s name). This assumes there is a Webex Teams connection or corporate directory listing.
- Say “Yes” when the Meeting Assistant audibly verifies the name asking “Call (far end participant)?”

If the receiving participant is using the Webex Teams app on a Windows PC, they get a notification pop-up to answer / join the call.

From the Webex Teams app for Windows – if the laptop is in a meeting room and paired to a Room Kit Mini:

- Open Teams app and verify connection to Room Kit Mini
- Click *phone* icon
- Type contact name in the *Search or dial* box located above the dial pad

Note: below the dial pad, the user can select a Place to make the call or use the desktop app

Calling from Webex Teams App



Source: Wainhouse Research 05/19

From the Webex Teams app – on a mobile device in a meeting room and paired to a Room Kit Mini:

- Open Teams mobile app and verify connection to Room Kit Mini
- Tap *Call* icon on mobile
- Tap *People* icon
- Tap the *Phone* icon next to name of person wishing to call
- Tap *start with video* –the remote party is called from the Room Kit Mini

Scheduled Meeting Workflow

In order to schedule meetings using the RKM / Webex service with our Office 365-based Outlook / Exchange service in the way Cisco recommends, two configuration steps need to be completed:

- The Office 365 administrator creates a “room resource” mailbox that is associated with the RKM room. During the creation of this mailbox, the administrator sets scheduling policies such as who can schedule the room.
- The cloud-based “Cisco Webex Calendar Service” needs permission to access the Office 365 email accounts of the users that will be using the Webex scheduling service. An Office 365 administrator does this by logging in to the Webex service admin pages and going through a set-up procedure that requires admin access to the Office 365 account. The process is straightforward and took us about 10 minutes. Once configured, “@webex” references that have been entered by users when creating meeting invitations can be accessed and processed by the Webex scheduling service.

To Schedule a Meeting Using Outlook:

- Click *New Meeting*
- In the “To” field, type the email address associated with the resource that’s associated with the Room Kit Mini and add any other participants. Alternatively, a user can click on *Rooms* and add the resource in the “Location” field.
- Add @webex in the “Location”
- Add any other participants
- Click *Send*

The participants will receive an invitation email with call details. Once the call is scheduled, the Touch 10 displays the upcoming meeting. Five minutes prior, the meeting can be joined from the Room Kit Mini’s Touch 10 by pressing the “Join” icon.

Without adding @webex the room is just “reserved” and we’re not able to join the call from the Touch 10. Note: no Webex-specific client-side Outlook add-ins are needed to enable the @webex features – this is handled by the cloud-based “Cisco Webex Calendar Service”.

To Schedule a Meeting using the Webex Teams Desktop App

- Click on the Name or “Space” with the team members to meet with.
- Click the *nine dots* icon on top right
- Click *Schedule*
- Click *Schedule Meeting*

Outlook automatically opens a meeting invite with the message body populated with call details and participants (which can be further modified before sending). The invitation also contains “@webex:space” as the location – which creates a Webex space as well as schedules the meeting. Also of note: IF the invitation is to include a room, the email address associated with the room should be added to the location as well.

If the Webex Teams Desktop app is paired to a Room Kit Mini, the meeting can be joined on the system by clicking the *Join With Video* icon in the app. The meeting is then handed off to the Room Kit Mini without any other user input.

Some Observations

- In practice we found that schedule changes made in Outlook that involve the “@webex” reference could take several minutes to be viewable on the Touch 10.
- The advantage of having the “Cisco Webex Calendar Service” and the use of the @webex email reference is that it requires no email client add-ins to schedule and include the meeting details in a meeting invitation. These details are added to the invitation after it is sent by the Webex Calendar Service. Because it is native to the Office 365 service, Microsoft Teams Rooms can do this natively. Other third-party meeting services (such as Zoom) rely on either an Outlook add-in (which brings along with it potential software maintenance issues) or their own native app (similar to the Webex Teams Desktop app).
- Meetings cannot be scheduled using the RKM / Touch 10 itself.

Content Sharing

In-Room sharing from a laptop

There are two ways to share content from a laptop screen with the RKM – using either a wired or wireless connection:

1) Using an HDMI cable connected to the Room Kit Mini

If the room is configured with an HDMI cable connected to the Room Kit Mini for content sharing, all a user needs to do is to plug the cable into the HDMI output on their laptop. Once connected, the laptop's entire screen is automatically shown on the meeting room display for local content sharing (at 30 fps), and audio is heard from the RKM's speaker.

To share content in a call, users simply tap the *Share* icon on the Touch 10 and then tap *Share in Call* and the laptop screen is shown to all participants in the call. Tapping the *End Share* icon on the Touch 10 ends screen sharing.

Users also can tap *Local Preview* to view the candidate content prior to sharing to all participants.

To share video content using the Webex Teams desktop app, first check *Optimize for video* in the app before sharing, which increases the frame rate for video playback. Not checking it will result in a frame rate not suitable for video playback.

To share audio content (or if the video content being shared contains audio), check *Share computer audio*. This will allow audio to pass through to the Room Kit Mini.

2) Using Proximity service for wireless sharing

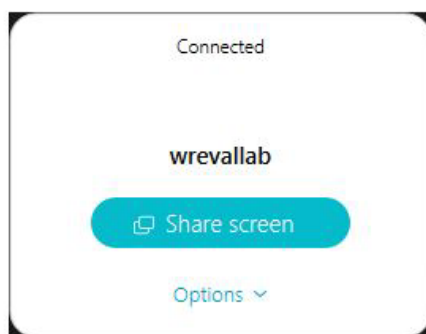
The Proximity service allows users to connect to the Room Kit Mini with a mobile device or PC to see, control, and share content when the device is near the system. Users can choose to automatically pair their device every time they approach the Room Kit Mini or pair each time as needed. The Proximity service can be enabled / disabled in the admin Web interface of the specific Room Kit Mini.

The Webex Teams desktop app must be used to wirelessly pair and subsequently share content from a (Windows or Mac) PC to the Room Kit Mini.

From the Webex Teams app when not in a call:

- Click *Connect to a device* in the lower left corner of the app
- Select in-room system
- Click the name of the system connected to on the lower left corner of the app
- Click *Share Screen*
- Select either an individual app or a full screen.

Screen share – not in a call



Source: Wainhouse Research 05/19

The selected screen content appears on the in-room screen in a matter of seconds.

From the Webex Teams app while in a call:

Click the *Share Screen* icon from the Teams app (note that it's a different Screen Share icon than above) and share either the entire screen or an individual app. The steps are also the same for remote participants using the Webex Teams application to share content.

Screen share – in a call



Source: Wainhouse Research 05/19

As new users of Webex Teams, we stumbled through the process the first few times we tried sharing content. We were always successful, but it just took a little effort to figure out the flow of sharing since we've used different methods over different devices. After becoming familiar with the process, content sharing became a normal part of the workflow and was relatively user friendly - except for the Screen Recording issues we document below.

[In-room sharing from an Apple iOS device](#)

To use wireless sharing from an Apple mobile device, it must be connected to the RKM prior to the meeting:

- Open the Webex Team app and tap *Device Available*, then tap *Connect*.
- Swipe to the Control Center
- Press and hold *Screen Recording*
- Select *Teams*
- Tap *Start Broadcast*

Sharing from an iOS device can be temperamental as Apple's Screen Recording function doesn't always work reliably. We found it necessary to not assume the iOS device is connected to the Room Kit Mini without verifying it first – though, even better, intentionally disconnecting from the RKM, then reconnecting to it gave us a higher likelihood of success.

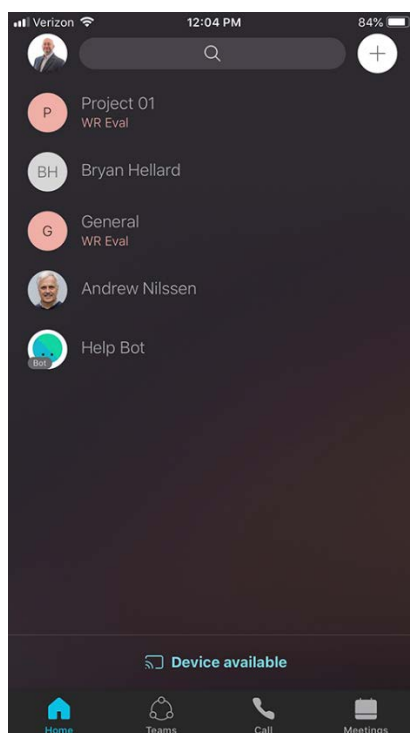
Intelligent Proximity

According to Cisco, the Intelligent Proximity feature “allows users to see, control, capture and share content directly on their own mobile devices, when the device is near a video system. The mobile device can automatically pair with the video system when it comes within range of ultrasound transmitted by the video system.”

The Intelligent Proximity feature can be enabled in the RKM’s web interface under Setup / Proximity.

When enabled, the proximity detection worked very well. When entering the meeting room the system generates a quiet “chirping” sound which confirms that our mobile device auto-connected to the Room Kit Mini (a notification with the account name associated with the device also appears on the RKM display). The proximity detection, which uses ultrasonic signals to detect devices, had no issues detecting and connecting to several devices - an iPhone, iPad Pro, and a Windows laptop. Because we were using different user accounts across several devices in the lab, we had multiple devices connecting to the RKM at the same time without issue – though only one device at a time was able to share content. Of note: ultrasonic detection can extend beyond the meeting room if the room is not acoustically isolated – thus the on-screen connection notification is very important when security is essential. If the notification is not adequate, Intelligent Proximity should be disabled.

Device Available to Connect using Intelligent Proximity



Source: Wainhouse Research 05/19

Each device can be set to either automatically connect to the RKM or have the user connect it manually whenever Webex Teams is launched.

A nice feature is the ability to “move” a call from a device to the Room Kit Mini. This is accomplished while in a call by tapping the *ellipsis* icon on the Webex Teams app, then tapping *Move Call*. This seamlessly transfers the call to the Room Kit Mini in about a second. It provides an effective way for a user who is on a call and walks into a meeting room equipped with a Room Kit Mini to easily transfer the meeting from their device to the RKM.

We did find that the Webex Teams app running on iOS sometimes didn't show that a device was available. When this happened, closing the app completely and re-launching it fixed the issue. This only happened when the devices were not set to automatically connect.

Cisco Webex Meeting Assistant

The Webex Meeting Assistant enables participants to use their voice in lieu of a remote control or touch interface to control the system by saying "OK Webex" followed by a command. We appreciate that commands are not started by saying "Hey" – as is the case with Apple's Siri. We also found that the system didn't inappropriately launch the Meeting Assistant – which is something we can't say about Siri or Alexa.

We did notice that sometimes a slight hesitation is needed between saying "OK Webex" and the next command. Without this gap the Assistant does not always understand that it is being addressed. Other than this, the Assistant works very well and was fun to test. We think it could be especially effective for users who don't use the system very often and, after gaining comfort, they probably won't want to go back to the traditional controls.

The feature can be enabled or disabled in the control hub under *Settings, Enable Cisco Webex Assistant*.

USB connected All-in-One

The RKM also can be connected to a PC / NUC via USB for use as a video soundbar device with video conferencing / UC apps other than Cisco Webex. When used as a USB device, specifications call for a maximum of 1080p / 30 fps video.

To test the USB capabilities, we connected the RKM using the Cisco-provided USB cable to a Windows PC (Dell OptiPlex) and performed test calls using the Zoom Rooms application.

- Our test calls were able to attain up to 1080p / 29 fps as measured through Zoom's Web Portal each way for the duration of the meeting.
- The call bandwidth was consistent with other Zoom Room test calls we have performed at 1080p using approximately 4,400 Kbps for both sending and receiving. The 720p calls utilized approximately 3,000 Kbps when both sending and receiving.
- The Touch 10 can be used to control the camera's PTZ functionality and system volume. There is no other functionality with the Touch 10 when the Room Kit Mini is used as USB device (the Zoom Room's iPad Mini continues to be used for meeting control).
- The RKM functionally performed as expected as a USB video soundbar device with Zoom Room calls. The experience was on par with other soundbars we've recently tested in terms of video and audio quality.

For organizations that use Cisco Webex for internal meetings but also use a variety of meeting services for external meetings, the Room Kit Mini could be used as a USB video bar with a separate PC. The RKM and the external PC would then be connected to separate HDMI ports on the display (or a matrix switcher); the appropriate input would be selected depending on the meeting. The RKM (with the Touch 10) would be used natively for internal Webex meetings, and the RKM would be used as a USB device with the PC for external meetings using the meeting apps for Zoom, Blue Jeans, or other meeting services. Alternatively, the RKM could be used natively for Webex meetings with the USB port available to plug into an attendee's laptop for occasional use with a different meeting service.

Evaluation: Cisco Webex Room Kit Mini The Room Kit Mini User Experience

We tested the USB capability with Mac and Windows laptops and the Dell OptiPlex as noted above. There were no issues using the Mac or Dell OptiPlex. We did, however, find an issue while using Microsoft Teams and Zoom Desktop on a Windows-based laptop. Microsoft Teams and Zoom taxed the GPU of the laptop when using the RKM as a USB camera, resulting in the outgoing video stuttering to the point of failure. The meeting app then disconnected the RKM as the primary audio and video device. The Webex Teams desktop app, however, had no such issue and did not tax the GPU. Note that the laptop used for this test is extensively used for video calls with a variety of platforms and hardware – this was the first time the laptop failed in this manner.

Device Management

The Room Kit Mini offers an extensive set of controls and manageability features that are accessible using a web browser by either browsing the RKM's IP address or clicking on the *Advanced Settings* section associated with the device on the Cisco Webex Control Hub web page. (The latter only works if the RKM and the web browser are on the same IP network.)

Alternatively, enterprises that have deployed Cisco Telepresence Management Suite on-premise can use it to manage their RKMs.

Room Kit Mini Web Interface

The screenshot displays the Cisco Webex Room Kit Mini Configuration web interface. The interface is organized into a navigation menu on the left and a main configuration area on the right. The navigation menu includes categories such as Audio, CallHistory, Cameras, Conference, FacilityService, HttpClient, Logging, Macros, Network, NetworkServices, Peripherals, Phonebook, Provisioning, Proximity, RoomAnalytics, RoomReset, RTP, Security, SerialPort, Standby, SystemUnit, Time, UserInterface, UserManagement, Video, and WebEngine. The main configuration area is titled 'Configuration' and shows several settings panels:

- Audio:** DefaultVolume (50, range 0 to 100), Microphones Mute Enabled (True).
- Input HDMI 1:** Level (0, range -24 to 0), Mode (On), VideoAssociation MuteOnInactiveVideo (On).
- KeyClickDetector:** Attenuate (On), Enabled (Off).
- SoundsAndAlerts:** RingTone (Sunrise, range 1 to 100 characters), RingVolume (50, range 0 to 100).
- Ultrasound:** MaxVolume (60, range 0 to 60), Mode (Dynamic).

The top of the interface shows the Cisco logo, the IP address 192.168.200.56, and the user name bhellard. The navigation menu also includes Home, Call Control, Setup, Security, Maintenance, and Integration.

Source: Wainhouse Research 05/19

Here is a look at some of the major management categories available via the RKM's administration web interface:

Setup

Within the setup menu, dozens of default settings can be customized to tweak how the Room Kit Mini operates. In addition, the Setup tab allows for device personalization to support addition of branding or custom wallpaper. Any changes made are implemented immediately.

Maintenance

Under the maintenance tab the administrator can view system diagnostics and call logs and restart or shut down the device. Our testing revealed that there is no method to turn on the Room Kit Mini remotely through the control hub – it can only be turned on by someone physically toggling the on/off switch on the device or unplugging the power plug and reconnecting it. Also available under the Maintenance tab are the ability to reset the system to factory default and to enable system backup or the ability to view call logs.

Integration

The Room Kit Mini can be used as a controller of ancillary room devices like lights, blinds or a thermostat via the drag and drop editor in the RKM web interface (assuming the relevant device hardware is present). The administrator can change the Touch 10 interface to add widgets to control these and other in-room items. In addition, macros can be created in the web interface to add custom icons to the Touch 10 to run custom pieces of code. For example, the administrator can add a custom speed dialing button to the interface of the Touch 10. While the Room Kit Mini can essentially function as a plug-and-play system, this sort of extensibility opens up a whole world of room control options.

The RKM admin web page offers a LOT of settings and configuration tweaks – perhaps too many for a casual administrator who could be confused or even intimidated by the complexity. A suggestion would be to break the settings into “Common” and “Advanced” levels – or find another way to make the page not as overwhelming.

Quality Impressions

We find that the Room Kit Mini handles the dynamics of a multi-party call exceptionally well. The typical annoying noises heard when people talk over each other in video calls are non-existent. Audio from remote participants is clear and we experienced no audio-to-video lip sync issues.

From a bandwidth perspective, we find that calls at 720p / 30 use roughly 1,500 Kbps for both send and receive. As noted in the USB test, a Zoom call with the Room Kit Mini as a USB device uses approximately 3,000 Kbps in each direction for the same 720p resolution. Thus, using the Room Kit Mini as a native Webex device requires about half of the bandwidth as a Zoom call, with subjectively equal call quality.

Video Quality

Room Kit Mini Camera specs

Component	Specs
Maximum Resolution	1080p / 60 fps
Sensor	8MP
Field of view	120 max, 84 min
Zoom	2x digital
Pan / Tilt	Digital
Control	Touch 10, Web browser
Focus	1m to infinity

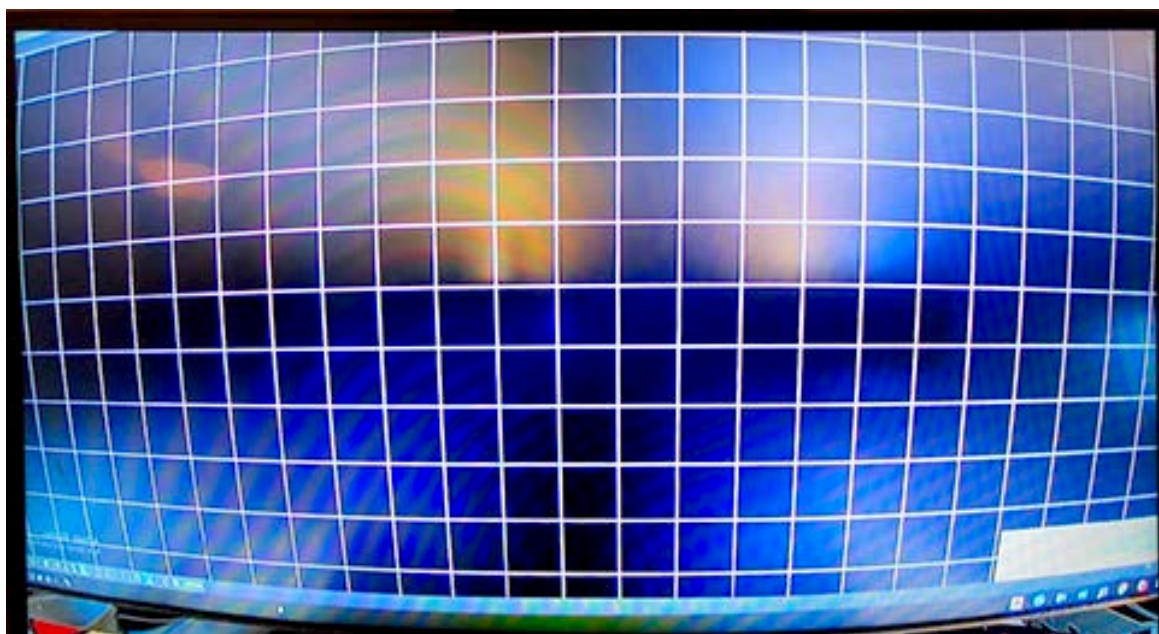
Source: Wainhouse Research 05/19

The camera's field of view ranges from 84 to 120 degrees and is adjusted using the Touch 10 controller. The camera doesn't zoom in as tight as many competing cameras but, as a result, the image maintains exceptional clarity over its entire zoom range. The camera has digital pan/tilt capability when zoomed in.

The camera automatically adapts to varying light conditions and performs well under adverse conditions of limited light.

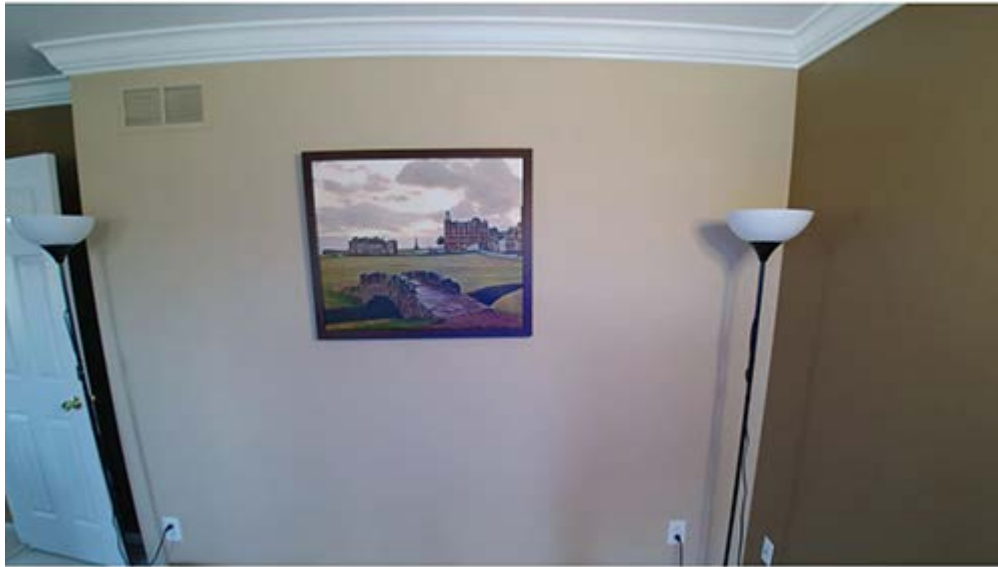
While the image quality is excellent on the Room Kit Mini, there is a substantial amount of fisheye as shown in the images below. Even with software geometric correction, it is difficult to correct the fisheye completely due to the camera's wide field of view lens.

Image Fisheye



Source: Wainhouse Research 05/19

Image Fisheye #2



Source: Wainhouse Research 05/19

“Best Overview” Technology

“The best overview feature uses automatic camera framing to select the best view based on how many people are in the room. The camera uses digital face detection to automatically create the best view of a single person or a group of people in the room. If people are moving around in the room, or additional participants enter the room, the feature will adopt to the changes and automatically adjust the view to include all persons in the picture.” (source: Cisco)

“Best Overview” detects and frames all participants in the room without singling out an individual speaker. It should not be confused with speaker tracking, which tracks a speaker walking around the room. The feature is enabled by default and can be disabled using either the Touch 10 or the web browser interface. There are no settings to customize or adjust how Best Overview operates. Framing a single participant that moves to a different place in the room takes about five seconds on average. Occasionally, the framing didn’t seem quite accurate and the participant(s) appeared too high or low in the frame. However, in general the framing works well for stationary participants.

Audio Quality

There is a fine line between attempting to cancel out too much ancillary noise and having voices come through loud and clear. Cisco walks this fine line very well with the Room Kit Mini. While the device doesn’t cancel out all noises, it certainly doesn’t sacrifice voice quality by attempting to over-suppress ambient noise.

The microphones performed well by demonstrating the ability to capture audio effectively to the distance limit of the lab (~23 feet).

Audio Processing

Our white noise test forces loud static white noise into the meeting space to discover if voices can be heard clearly by the remote participants. The Room Kit Mini did pass through some white noise at times – but not enough to be distracting. The louder the white noise, the more processing is

required – but not to the detriment of voice quality. At no point in our testing did the system fail by negatively impacting voice quality in favor of over-processing the noise.

Our ambient noise test is performed by using [Coffitivity.com](https://coffitivity.com), a website that generates ambient sounds resembling typical coffee shop background noise. We find that the Room Kit Mini doesn't suppress these sounds as much as some competing products, but this approach steers it clear from sacrificing voice quality to reduce ambient audio, which these other products can tend to do. Voices also do not sound as "suppressed" with loud ambient noise in the background. To our ear there is some overall reduction in the audio level when in a loud environment – but the sound quality of participant's voices in the noisy room aren't negatively affected.

We didn't find that the Room Kit Mini is particularly effective at controlling paper rustling and finger tapping tests as well as other competing video sound bars.

Speakers

The audio quality of far-end participant voices is very good for a product of this size – we didn't think the audio would be as good as it is due to the size of the bar. We tested a wide range of voices and found the speakers handled them all well to as loud as the unit can handle – which is louder than would be needed in a meeting room. The speakers could handle audio upward of 90dBA (measured directly in front of the device) without distortion.

The RKM does not have stereo capabilities – when sharing media content that includes a stereo audio stream, the right channel is not reproduced at the far end.

Bottom Line

What we like

- One device to manage
- Does not require third party equipment or separate PC
- A comprehensive web interface for manageability
- The Webex Meeting Assistant experience
- Simplified usability – with or without the Meeting Assistant
- Lower bandwidth requirement
- Call quality
- Location of inputs / outputs, industrial design

Potential areas for improvement

- No tabletop mount. The Room Kit Mini can only be mounted to a display or wall. Given its small size and intended usage we expect users will want more portability.
- Lack of right channel audio when sharing content.
- No dual-screen support.
- Stronger cloud-based system management that supports RKMs on different networks.
- The admin web page could be intimidating for some administrators.

While we thought evaluating such a feature rich offering might turn into a daunting task, our fears were relieved after experiencing the easy and natural workflow from the perspective of the end user. While there are dozens of settings that an administrator can adjust to personalize the Room Kit Mini experience, these settings are hidden from the end user – they can just enter a room with the system installed and "flow" right into a high-quality meeting with simple and intuitive user controls.

The Webex Meeting Assistant enabled us to use voice commands to establish and conduct a completely no-touch meeting – including content sharing. We predict the Meeting Assistant will be a hit with users. It actually makes the process of starting and controlling a meeting, in one word, *fun*.

The ease of use and workflow of the Room Kit Mini is possible because it is tightly integrated with the Webex Meeting Service – creating a full service-attached endpoint. What makes this different from competing service-attached kits is that the entire offering is supplied by one vendor, which enables tight integration between the hardware and the meeting service.

Using the Room Kit Mini as a USB peripheral is a bonus. Were it possible to use the Touch 10 for call control while using the RKM in this fashion, it would simplify the in-room experience even more and reduce the need for other control devices.

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Andy Nilssen is a Senior Analyst at Wainhouse Research where he manages the firm's room video conferencing coverage. Andy has been analyzing the video and web conferencing and collaboration marketplace for almost two decades. He previously held management positions in marketing for PictureTel, Sun Microsystems, and two start-ups. Andy earned his BSEE and MBA degrees at the University of New Hampshire and holds two ease-of-use related patents.

Bryan Hellard is a Researcher at Wainhouse Research where his primary focus is product evaluation and testing. He has 20 years' experience in the industry across several roles including product engineering and management, R&D, and end user consulting. Prior to Wainhouse Research, he was President of True View Video where he developed video conferencing related products and consulted with end users on best practices for collaboration. Bryan has also been a consultant to video collaboration vendors providing product design services. He lives in the Cincinnati, Ohio area.

Wainhouse Research is an independent analyst firm that focuses on critical issues in the unified communications and collaboration market. The company provides end-to-end coverage of the UC&C industry, with areas of focus covering unified communications, enterprise video, meeting room collaboration, personal & web-based collaboration, and audio conferencing market segments. The company acts as a trusted advisor providing strategic advice and direction for both the UC&C industry and its enterprise users. For further details contact sales@wainhouse.com or visit www.wainhouse.com.

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