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Evaluation of the Cisco TelePresence SX10 Quick Set Group Video Conferencing System

Hands-on testing of a leading huddle and small room set-top conferencing system



Background

With annual revenue exceeding US \$47B (in 2014) and with more than 70,000 employees around the world, Cisco is the big gorilla and market leader of the video conferencing jungle.

In-depth coverage of Cisco's involvement in the video conferencing space is beyond the scope of this document. Those seeking additional detail should review our January 2015 [research note](#) on this subject.

In March 2014, Cisco made a series of new product announcements including two additions to the SX-series of group video systems:

- the SX80 (rack-mount, integration-ready group video system with multiple inputs and outputs)
- the SX10 (low cost, entry-level, small group video system)

While we appreciate the power and flexibility of the SX80, we also recognize that such power (and the associated high price tag) is justified in only a limited number of meeting rooms. But it was the SX10, and specifically its purported street price of < \$2k (Cisco's initial press release claimed the cost to be less than the price of a PC), that caught our eye.

The SX10 was not the first low cost, standards-based group video system available on the market. Early players included Aver, Biscotti, Kedacom, Tely Labs, and others. But Cisco (and previously Tandberg) had always positioned itself as the BMW of the video conferencing industry offering premium performance at a premium price. The SX10 represented a clear departure from this "we cost more, and we're worth it" stance.

From our perspective, it is not just the SX10's low cost that makes it interesting ... it is the fact that SX10 acts like every other Cisco video system – in terms of both usability and back-end management. In this case, low cost doesn't mean a loss of manageability or the need to introduce a new, less well-known video vendor to the environment.

In the last few months, WR has observed that the SX10 has found its way into offices and small meeting rooms of many of our enterprise consulting clients. In some cases, the SX10 was the first Cisco video product ever installed in those environments. This prompted us to take a closer look at this system.

This document contains the results of WR's independent, third-party testing, and our overall opinions of the Cisco TelePresence SX10 Quick Set group video conferencing system.¹

To be clear, Cisco did NOT pay WR to evaluate this solution. After reviewing our final test results [for accuracy](#), Cisco licensed this document for public distribution.

¹ Unfortunately, at the time of this assessment, the WR test lab did not include a CUCM environment. For this reason, we were unable to test the SX10's CUCM registration and provisioning capabilities.

The Cisco SX10 Group Video System

The SX10 is a standards-based, individual or small-group video conferencing system, with a list price of US \$3,990, intended for use in huddle and small-sized conference rooms for 1-3 participants. The SX10 is a set-top system designed for installation above the display in the front of the meeting room.



Key features of the SX10 include:

- All-In-One (set-top) device
- Dual-power (PoE or external 12v supply) with maximum power consumption of 12 watts (stand-by power of less than 8W - class B certified)
- Standards-based (SIP, H.264, H.263+, H.263, etc.)
- Support for a single HDMI display (1080p/60 fps)
- Integrated microphone
- Integrated 1080p motorized PTZ camera (2.65x optical zoom, 83 degrees horizontal FOV)
- Support for 1080p/30 fps video resolution
- Support for 1080p/5 fps and WXGA/5 fps content sharing (via HDMI and VGA content inputs)
- Integrated mic input (supports only Cisco Telepresence Table Microphone 20)
- Integrated line-level audio out for optional external speakers

The SX10 ships with a wall mount adapter, and an optional top-of-display mounting kit is also available for purchase. In addition, the SX10 package includes an IR remote control, but the system can also be used with the optional Cisco TelePresence Touch 10 control panel.

The SX10 was designed to register natively with (and be provisioned by) the following Cisco infrastructure systems:

- Cisco Unified Communications Manager (CUCM) – local or remote via Expressway
- Cisco TelePresence Video Communication server (VCS)

Alternatively, the SX10 can be registered to any standard SIP server and to the Cisco TelePresence Management Suite (TMS) for provisioning and system management.

Registration to the Cisco infrastructure provides access to a wide range of features and capabilities (depending on the system, versions, and licensing) including centralized directory services, centralized firmware updates, NAT / firewall traversal, basic telephony features, and integration with scheduling systems.



The screenshot at right shows a Cisco SX10 connected to an LCD display showing information about the next scheduled meeting for that room. Clicking the Call icon automatically connects the SX10 to the proper meeting, without requiring the user to dial a complex IP address, SIP URI, or meeting ID.

Hands-On Testing of the SX10

The SX10 does not resemble a standard set-top system with a PTZ camera mounted on a rectangular base. Instead, like many other recently released Cisco video conferencing solutions, the SX10 is based on an advanced industrial design. The WR test team was impressed by the careful attention to detail on the unit. For example ...

- the connectors on the back of the SX10 are mounted vertically instead of horizontally (see image at right showing two cables connected to the SX10). This seemingly trivial design choice allows the SX10 to be installed 4 – 6 inches closer to the wall than competing set-top systems.
- the included wall mount adapter makes it fast and easy to mount the SX10, and eliminates the need to procure a separate adapter or shelf.



It is refreshing to see a vendor think about more than just feeds and speeds. Cisco clearly spent some cycles considering ease and speed of installation, and the look and feel of the device in the room. We've said it before and we'll say it again ... often it's the small things that make the difference. Cisco clearly gets it in this area.

In addition, we appreciate various elements of the technical design of the system. For example, making the SX10 PoE-enabled is convenient, reduces installation time, and eliminates the need to ship an external power supply with the unit (which in turn cuts manufacturing and shipping cost). We also like the low power consumption (12 watts) of the SX10. We don't know whether the wish to support PoE (and sell PoE switches) came first and forced a low power design, or whether the low power design enabled the use of PoE. Either way, this is another noted benefit.²

System Installation

The basic installation of the SX10 was quick and easy, requiring the connection of only two cables: an Ethernet (with PoE) cable and an HDMI cable to the display. This compares favorably to competing set-top video systems which typically require an Ethernet cable, a power cable, an HDMI cable, and a microphone connection.

² For situations where a PoE-enabled switch is not available, Cisco (and many others) offer a PoE power injector for purchase separately. In addition, the SX10 can be powered using a 12-volt, 2 amp power adapter (not included).

We think Cisco has the right idea equipping the SX10 out of the box for wall mounting, but there are a few things to consider with this approach:

- 1) If used with a thick display (combination of display and wall mount of 100 mm or more), the SX10 must be mounted higher on the wall to avoid having the display obstruct the camera view. This also means the cables connected to the SX10 are likely to be visible.
- 2) The optional display mount uses the VESA mount on the back of the display. In some situations, this could impact or block the ability to mount the display on the wall using a VESA mount.

In our view, the simplicity and speed of the integrated wall mount approach outweighs the potential gotchas described above. And to its credit, Cisco describes both of these situations clearly within the SX10 Quick Set manual included with each unit. Such transparency is likely to save installers lots of time and stress in the field.

System Configuration

Once power was applied, the SX10 booted up in approximately one minute. There is no power switch on the SX10, so once PoE is applied the device boots right up. We expect that most (if not all) customers will keep the SX10 plugged in and powered up at all times.

The first time we powered up the SX10, we were presented with a 10-step configuration wizard that allowed us to select (1) our preferred language, (2) the appropriate network settings (set to DHCP by default), and (3) the appropriate auto-provisioning option (CUCM, CUCM via Expressway, VCS, or none).³ Lacking access to CUCM or VCS, we chose to skip the auto provisioning step.

Next, the wizard helped us test our mic levels, adjust our speaker volume, and set the default camera position. Finally, the wizard helped us test the VGA / HDMI content input. We then manually entered the address and credentials for our SIP server using the web user interface.

While time consuming to document, the setup process - including the manual entry of our network settings - took only a few minutes to complete. For organizations with Cisco infrastructure in place, the system configuration and provisioning should be even faster.

We appreciate the user friendliness of the configuration wizard, but there are things Cisco could do to simplify and expedite the initial device setup. For example ...

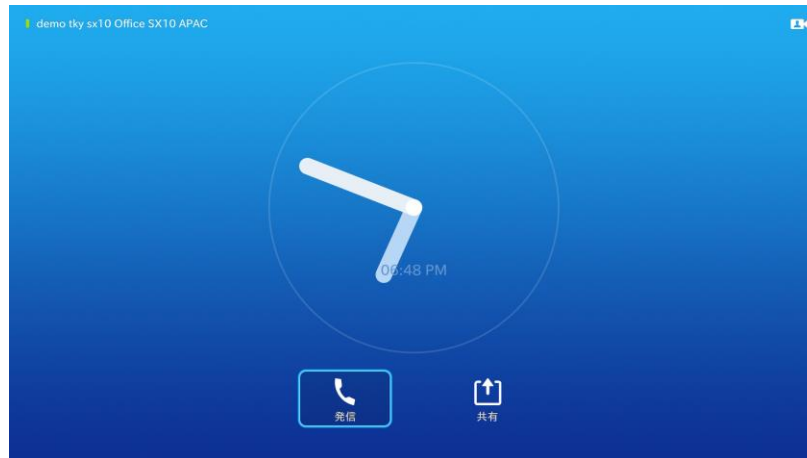
- It should not be necessary for users to manually enter the CUCM or VCS server information using the IR remote. Instead, Cisco should provide a pairing code, leverage on-screen QR codes, provide an installation app, or offer some other method to simplify the process.
- The initial wizard should allow the user to name the system. As it stands today, the system name must be assigned via CUCM or VCS, or manually via the SX10's web interface.

³ Those choosing CUCM or VCS must then enter their server address and credentials, and which point the system would auto-register and auto-provision itself to the Cisco infrastructure.

Such creative workflows not only reduce installation cost, but also enable the use of less experienced / trained staff (e.g. local admins) instead of certified video conferencing technicians.

System User Interface

Years ago, video conferencing system user interfaces were designed to give users (and admins) access to every aspect of the system. While appreciated by engineers and video professionals, this complexity served to intimidate all but the most die-hard video users.



Following the industry trend of simplifying the user experience and workflow, the SX10 offers a minimal on-screen UI and a streamlined (perhaps too much so) IR remote.

The on-screen UI (see image above) provides direct (meaning one-click) access to only the most important functions, place a call, and share content. By navigating to and clicking on the system name (top left), the user can also activate do not disturb, reboot the system, re-initiate the initial setup wizard.

The above highlights Cisco's choice to prioritize simplicity and user friendliness within the UI. This design principle (and streamlined UI) spans the entire Cisco video endpoint product line. In fact, the SX10's UI is almost identical to the UI on the SX20 and SX80 systems, the MX-series systems, and even the older C-series codecs. The result is a simplified and consistent user experience for Cisco video customers, regardless of the endpoint in use.

As always, no good deed goes unpunished. The result of the streamlined UI and IR remote is that some functions are less accessible than we'd like.

For example ...

- to adjust the camera, the user must navigate to the camera icon (see top right of image above), click on the camera icon, and select the camera. Only then, after three preliminary clicks, is the user presented with the camera adjustment (pan / tilt / zoom) menu.
- also while in the camera adjustment menu, the user cannot use the IR remote to adjust the volume level because those same buttons are now used for camera control.

To be clear, we do NOT view these as major concessions for the user. The reality is that most users will rarely (if ever) adjust the camera during a video call. So burying those commands a few levels down in the UI makes perfect sense. From our perspective after using the system for a few weeks, we think Cisco made the right choices here.

Video Call Experience

To assess the system's performance, the WR test team used the SX10 during a series of test calls and even during some production calls with clients and partners. Without exception, the SX10-powered call experience was very strong.

- The video quality during our video calls was on-par, and sometimes far better, than that of competing systems – many with much higher price tags. In addition, the camera's 83 degree horizontal field offered a wide view of the local room, making it especially well-suited for smaller venues.
- The incoming and outgoing audio quality was also quite good, with two caveats:
 - o The SX10 (unlike many competing systems) was designed to use the speakers on the system display, and therefore audio performance will depend on the display in use.
 - o By default, the SX10 uses the internal microphone on the face of the unit itself. During our testing, this single mic worked surprisingly well in "typical" use scenarios where the participants were within a few meters of the mic. For larger rooms, the optional Cisco external mic, which we did not have for our testing, would likely be a better choice.
- The content sharing experience was on-par with competing entry-level systems in terms of video resolution. We also appreciate that whenever a content source is connected, the SX10 automatically displays a preview of that source on the display. However, the maximum frame rate of 5 fps for the content channel may be an issue for some users or applications.

While in a call and sharing content, the SX10 allowed our team to choose between four screen layouts. In all cases, the layouts positioned the far-end video image at the top of the screen to optimize eye contact. This is yet another example of a small, seemingly trivial item that can make or break the overall call experience.

As a part of this effort, WR conducted video calls between the SX10 and, (1) other Cisco video systems, (2) video systems from leading (and some 2nd tier) competitors, (3) several leading video bridges, and (4) several hosted video conferencing / video bridging services. In all cases, the video calls connected properly and yielded a strong overall experience. In one case we stumbled across an apparently interop issue related to content sharing between Polycom RealPresence Desktop (PC software client) and the SX10. WR has since notified both Cisco and Polycom of this issue.

Cisco Intelligent Proximity

The WR test team also tried to test the heavily touted Cisco Intelligent Proximity feature with the SX10. Proximity allows users to pair their mobile devices with various Cisco endpoints using ultrasound technology. Once paired, Proximity allows the user to:

- Control the video endpoint using his mobile device
- Receive (and take snapshots of) content being shared on the video endpoint on his mobile device

During our testing, we discovered several key items:

- 1) Although Proximity was announced and even previewed in late 2013, Proximity has yet to be released. Fortunately, Cisco has made Intelligent Proximity available as an experimental feature.
- 2) Some displays (e.g. our test display's integrated speakers) were not able to faithfully reproduce the ultrasound pairing signal, which impacted the ability to pair our mobile devices to the SX10.

In the end, our test was successful, but we noted that not all features are currently enabled.

Analysis and Opinions

The Cisco SX10 offers a compelling combination of easy installation, strong ease of use, a high quality user experience, and support for Cisco-level back-end management --- at a lower than expected (and frankly, non-Cisco-like) sub-\$2k end-user price point.

Throughout our testing, we were pleased by the SX10's performance and workflow. And we were happy to learn that with this entry-level system, Cisco did not skimp in the areas that count. In recent quarters, Cisco has distinguished itself with its attention to product design details. The SX10 is no exception.

While not specific to the SX10, one of the SX10's key benefits is that the system sports the same UI as other Cisco video systems. So users comfortable with the SX10 will feel right at home with any other current generation (and even one-generation older) Cisco video system. Achieving UI consistency across different product levels and generations is not trivial, but it is an important part of driving adoption. Cisco has done well in this area.

The SX10 may not be new. And it's not the cheapest video system available today. And it doesn't have all of the features of more expensive alternatives. But the SX10 walks and talks like a full-fledged Cisco video conferencing system. That is a big deal.

Overall, we view the Cisco SX10 as an excellent choice for organizations seeking to cost-effectively video-enable a small to medium-sized room.

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Wainhouse Research, www.wainhouse.com, is an independent analyst firm that focuses on critical issues in the Unified Communications and Collaboration (UC&C). The company conducts multi-client and custom research studies, consults with end users on key implementation issues, publishes white papers and market statistics, and delivers public and private seminars as well as speaker presentations at industry group meetings.

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