Cisco TelePresence SX80 Codec

The Cisco TelePresence SX80 Codec (SX80 Codec) provides a powerful and flexible platform for creating the ultimate video collaboration experience. The SX80 Codec was built with the integrator in mind, enabling flexibility and creativity for customized video collaboration rooms that delight the customer. The SX80 acts as the audio and video engine to incorporate high-definition video collaboration applications into large meeting rooms, boardrooms and purpose-built or vertical application rooms.

The SX80 delivers up to a 1080p60 end-to-end high definition (HD) video and offers industry-first support for H.265, which lays the foundation for future bandwidth efficiencies made possible by the new standard. The codec offers a rich input and output set, flexible media engine and support for three screens enable a variety of use cases, adaptable to your specific needs.

Figure 1.   Cisco TelePresence SX80 Codec

Cisco offers three SX80 Integrator Packages to reduce the need for external equipment and the overall cost of enabling video in larger meeting rooms:

- SX80 Codec and PrecisionHD 1080p 4x camera for smaller room scenarios
- SX80 Codec and Precision 60 Camera, for lager room scenarios with the best image quality in the market
- SX80 and the SpeakerTrack 60 dual camera system, which features a unique direct, fast switching approach for active speaker tracking

With its powerful media engine, the SX80 Codec lets you build the video collaboration room of your dreams.

Figure 2.   Cisco TelePresence SX80 Integrator Package with Touch 10 and SpeakerTrack 60

Product Features

Table 1 summarizes the key features for the SX80 Codec.

Table 1. Feature Summary

Feature Summary	
Design features	• One of the most powerful and feature-rich codecs available with the ultimate in video and audio quality • The next generation HD video collaboration codec • 1 rack unit (1RU) high, rack-mountable, with rack-mounting solution included • Professional-grade connectors • Unmatched quality and flexibility • Standards-compliant 1080p solution - compatible with standards-based video without losing features
Application features	• 1080p30 HD embedded Cisco TelePresence MultiSite with individual transcoding • Collaborate with four simultaneous video inputs • HD collaboration with 1080p60 video and 1080p30 content • One button to push (OBTP) to start a meeting • Limitless integration possibilities • Ideal for team-based collaboration, boardrooms, meeting rooms, and industry applications
Performance features	• Optimal definition up to 1080p60 • H.323/SIP up to 10 Mbps point-to-point • Up to 10 Mbps total MultiSite bandwidth • Ability to connect up to four HD sources and 8 microphones directly to the codec • Full duplex audio with high-quality stereo sound • Full application programming interface (APIs) • Ability to take advantage of Cisco TelePresence Total Solution Management, transcoded HD MultiSite, recording and streaming, MultiWay, and firewall traversal • Cisco TelePresence ClearPath packet loss protection technology for optimal experience • Cisco Unified Communications Manager native support (requires Cisco Unified Communications Manager version 8.6 or higher)

Product Capabilities

Table 2 lists the product capability specifications for the SX80 codec.

Table 2. Product Specifications

Specification	Description
Unit delivered complete with	• See table 4 below
Bandwidth	• H.323/SIP up to 10 Mbps point-to-point • Up to 10 Mbps total MultiSite bandwidth
Minimum bandwidth for resolution/frame rate (H.264)	• 720p30 from 768 kbps • 720p60 from 1152 kbps • 1080p30 from 1472 kbps • 1080p60 from 2560 kbps
Firewall traversal	• Cisco TelePresence Expressway technology • H.460.18 and H.460.19 firewall traversal
Video standards	• H.261, H.263, H.263+, H.264 and H.265
Video features	• Advanced screen layouts • Custom video layouts • Local auto layout
Video inputs (five inputs)	**Three HDMI Inputs; supported formats:** • 1920 x 1080@60 and 59.94 Hz (1080p60) • 1920 x 1080@50 Hz (1080p50) • 1920 x 1080@30 and 29.97 Hz (1080p30)

Specification	Description
	• 1920 x 1080@25 Hz (1080p25)
	• 1920 x 1080@24, and 23.97 Hz (1080p24)
	• 1280 x 720@60, and 59.94 Hz (720p60)
	• 1280 x 720@50 Hz (720p50)
	• 720 x 480@60, and 59.94 Hz (480p60)
	• 640 x 480@60 Hz (480p60)
	• 1280 x 1024@60, and 75 Hz (SXGA)
	• 1024 x 768@60, 70, 75, and 85 Hz (XGA)
	• 800 x 600@56, 60, 72, 75, and 85 Hz (SVGA)
	• 1920 x 1200@50 and 60 Hz (WUXGA)
	• 1680 x 1050@60 Hz (WSXGA+)
	• 1440 X 900@60 Hz (WXGA+)
	• 1280 x 768@60 Hz (WXGA)
	One DVI-I Input; supported formats:
	Analog (VGA):
	• 1920 x 1080@60 Hz (1080p)
	• 1280 x 720@60 Hz (720p)
	• 1280 x 1024@60 and 75 Hz (SXGA)
	• 1280 x 960@60 Hz
	• 1024 x 768@60, 70, 75, and 85 Hz (XGA)
	• 1680 x 1050@60 Hz (WSXGA+)
	• 1440 x 900@60 Hz (WXGA+)
	• 1280 x 800@60 Hz (WXGA)
	• 1280 x 768@60 Hz (WXGA)
	Digital (DVI-D):
	• 1920 x 1080@60, 59.94 Hz (1080p60)
	• 1920 x 1080@50 Hz (1080p50)
	• 1920 x 1080@30, 29.97 Hz (1080p30)
	• 1920 x 1080@25 Hz (1080p25)
	• 1920 x 1080@24, 23.97 Hz (1080p24)
	• 1280 x 720@60, 59.94 Hz (720p60)
	• 1280 x 720@50 Hz (720p50)
	• 720 x 480@60, 59.94 Hz (480p60)
	• 640 x 480@60 Hz (480p60)
	• 1280 x 1024@60, 75 Hz (SXGA)
	• 1024 x 768@60, 70, 75, 85 Hz (XGA)
	• 800 x 600@56, 60, 72, 75, 85 Hz (SVGA)
	• 1680 x 1050@60 Hz (WSXGA+)
	• 1440 X 900@60 Hz (WXGA+)
	• 1280 x 768@60 Hz (WXGA)
	One Composite/S-Video Input (BNC Connectors)
	• PAL/NTSC
	Extended Display Identification Data (EDID)
Video outputs (three outputs	**Two HDMI Outputs and one DVI-I Output; supported formats:**
	• 1920 x 1080@60 Hz (1080p60)
	• 1920 x 1080@50 Hz (1080p50)
	• 1280 x 720@60 Hz (720p60)
	• 1280 x 720@50 Hz (720p50)
	VESA Monitor Power Management
	Extended Display Identification Data (EDID)

Specification	Description
Live video resolutions (encode and decode)	● 176 x 144@30 frames per second (fps) (QCIF) ● 352 x 288@30 fps (CIF) ● 512 x 288@30 fps (w288p) ● 576 x 448@30 fps (448p) ● 768 x 448@30 fps (w448p) ● 704 x 576@30 fps (4CIF) ● 1024 x 576@30 fps (w576p) ● 1280 x 720@30 fps (720p30) ● 1920 x 1080@30 fps (1080p30) ● 640 x 480@30 fps (VGA) ● 800 x 600@30 fps (SVGA) ● 1024 x 768@30 fps (XGA) ● 1280 x 1024@30 fps (SXGA) ● 1280 x 768@30 fps (WXGA) ● 1440 x 900@30 fps (WXGA+) ● 1680 x 1050@30 fps (WSXGA+) ● 512 x 288@60 fps (w288p60) ● 768 x 448@60 fps (w448p60) ● 1024 x 576@60 fps (w576p60) ● 1280 x 720@60 fps (720p60) ● 1920 x 1080@60 fps (1080p60)
Audio standards	● G.711, G.722, G.722.1, G.729AB, 64 kbps and 128 kbps MPEG4 AAC-LD mono and stereo
Audio features	● CD-quality 20 kHz mono and stereo ● Eight separate acoustic echo cancellers ● Eight-port audio mixer ● Automatic Gain Control (AGC) ● Automatic noise reduction ● Active lip synchronization
Audio inputs (fifteen inputs)	● Eight microphones, 48V phantom powered, Euroblock connector, each with separate echo cancellers and noise reduction; all microphones can be set for balanced line level ● Four balanced line level inputs, Euroblock connector ● Three HDMI, digital: stereo PC/DVD input
Audio outputs (eight outputs)	● Six balanced line level outputs, Euroblock connector ● Two HDMI outputs
Dual stream	● H.239 (H.323) dual stream ● BFCP (SIP) dual stream ● Support for resolutions up to 1080p30, and independent of main stream resolution
MultiPoint support	● Five way embedded SIP/H.323 MultiPoint (reference MultiSite) ● Cisco Ad-Hoc Conferencing (requires CUCM, Cisco TelePresence Server and Conductor) ● Cisco Conferencing Active Control
MultiSite features (embedded MultiPoint)	● Five way 720p30, three way and four way 1080p30 MultiSite ● Full individual audio and video transcoding ● Individual layouts in MultiSite continuous presence ● H.323/SIP/VoIP in the same conference ● Support for Presentation (H.239/BFCP) from any participant at resolutions up to 1080p15 ● Best Impression (Automatic continuous presence layouts) ● H.264, encryption, and dual stream from any site ● IP downspeeding ● Dial in and dial out ● Conference rates up to 10 Mbps
Protocols	● H.323 ● SIP ● Single call stack support (either SIP or H.323) ● ISDN (requires Cisco TelePresence ISDN Link)

Specification	Description
Embedded encryption	• H.323/SIP point-to-point • Standards-based: H.235 v3 and Advanced Encryption Standard (AES) • Automatic key generation and exchange • Supported in dual stream
IP network features	• DNS lookup for service configuration • Differentiated Services (QoS) • IP adaptive bandwidth management (including flow control) • Auto gatekeeper discovery • Dynamic playout and lip-sync buffering • H.245 DTMF tones in H.323 • Date and Time support via NTP • Packet Loss based downspeeding • URI Dialing • TCP/IP • DHCP • 802.1x Network authentication • 802.1Q Virtual LAN • 802.1p (QoS and class of service [CoS]) • ClearPath • Medianet: Mediatrace and Metadata
Cisco Unified Communications Manager (requires Cisco Unified Communications Manager Version 8.6 or later)	• Native registration with Cisco Unified Communications Manager • Basic Cisco Unified Communication Manager provisioning • Firmware upgrade from Cisco Unified Communications Manager • Cisco Discovery Protocol and DHCP option 150 support • Basic telephony features such as hold, resume, transfer, and corporate directory lookup
IPv6 network support	• Single call stack support for both H323 and SIP • Dual-stack IPv4 and IPv6 for DHCP, Secure Shell (SSH), HTTP, Secure HTTP (HTTPS), DNS, and Differentiated Services (DiffServ) • Support for both static and autoconfiguration (stateless address auto configuration)
Security features	• Management through HTTPS and SSH • IP administration password • Menu administration password • Disable IP services • Network settings protection
Network interfaces	• One LAN/Ethernet (RJ-45) 10/100/1000 Mbit • Two LAN/Ethernet (RJ-45) interfaces to be used for the Cisco TelePresence Peripherals
Other interfaces	• Two USB hosts for future usage • GPIO
System management	• Support for Cisco TelePresence Management Suite (TMS) • Management via embedded Telnet, SSH, XML, and SOAP • Full application programming interface (APIs) • Remote software upload via web server, SCP, HTTP, and HTTPS • One RS-232 for local control and diagnostics • Support for Cisco TelePresence Touch 10
Directory services	• Support for local directories (My Contacts) • Corporate directory (through CUCM and Cisco TMS) • Server directory supporting LDAP and H.350 (requires Cisco TelePresence Management Suite) • Call History with received, placed and missed calls with date and time
Power	• Auto-sensing power supply • 100-120/200-240 VAC, 50/60 Hz • 170 watt maximum for codec and main camera
Operating temperature and humidity	• 0 to 40° (32 to 104° F) ambient temperature • 10 to 90% relative humidity (RH)

Specification	Description
Storage and transport temperature	● -20° C to 60° C (-4° F to 140° F) at RH 10-90% (non-condensing)
Dimensions	● Length: 17.4 in. (44.2 cm) ● Height: 1.7 in (4.4 cm) ● Depth: 12.2 in. (30.98 cm) ● Weight: 8.05 lbs. (3.65 kg)
Regulatory Compliance	● Directive 2006/95/EC (Low Voltage Directive) - Standard EN 60950-1 ● Directive 2004/108/EC (EMC Directive) - Standard EN 55022, Class A - Standard EN 55024 - Standard EN 61000-3-2/-3-3 ● Approved according to UL 60950-1 and CAN/CSA-C22.2 No. 60950-1 ● Complies with FCC CFR 47 15B, Class A

Ordering Information

To place an order, please contact your local Cisco representative and refer to Table 3.

Table 3. Ordering Information

Product Name	Part Number	Compliance Model Number
Cisco SX80 Codec (comes with SX80 codec, rack ears, remote control, power cable)	CTS-SX80-K9	TTC6-12
Ordering Options for the Cisco TelePresence SX80		
SX80 MultiSite Software Option	LIC-SX80-MS	
Integrator packages		
Cisco SX80 Codec, PHD 1080p 4x Camera, TRC6 remote, Table Microphone 60	CTS-SX80-IP4X-K9	TTC6-12 (Codec) TTC8-05 (Camera)
Cisco SX80 Codec, Precision 60 Camera, TRC6 remote, Table Microphone 60	CTS-SX80-IP60-K9	TTC6-12 (Codec) TTC8-07 (Camera)
Cisco SX80 Codec, SpeakerTrack60 Microphone Array, TRC6 remote, Table Microphone 60	CTS-SX80-IPST60-K9	TTC6-12 (Codec) TTC8-09 (Camera)

Table 4. Cisco TelePresence SX80 Codec Deliverables

Product Name	Delivered with
Cisco SX80 Codec (comes with SX80 codec, rack ears, power cable**)**	SX80 Codec, rack ears, and power cable
Integrator packages	
Cisco SX80 Codec, PHD 1080p 4x Camera, and Touch 10	SX80 Codec, rack ears, power cables, presentation cable Precision HD 1080p 4x, camera control cable, power supply Touch 10", Ethernet cable, and power injector
Cisco SX80 Codec, Precision 60 Camera, and Touch 10	SX80 Codec, rack ears, power cables, presentation cable Precision 60 Camera 4x, power supply Touch 10", gray Ethernet cable, and power injector
Cisco SX80 Codec, SpeakerTrack60 Microphone Array, and Touch 10	SX80 Codec, rack ears, power cables, presentation cable Touch 10", gray Ethernet cable, and power injector SpeakerTrack 60 unit; refer to separate data sheet for details

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http://www.cisco.com/go/telepresenceservices.