

## Cisco TelePresence Codec C90



Also available as an integrator package with a Cisco TelePresence PrecisionHD™ 1080p Camera and two microphones.

The Cisco TelePresence™ portfolio creates an immersive, face-to-face experience over the network—empowering you to collaborate with others like never before. Through a powerful combination of technologies and design that allows you and remote participants to feel as if you are all in the same room, the Cisco TelePresence portfolio has the potential to provide great productivity benefits and transform your business. Many organizations are already using it to control costs, make decisions faster, improve customer intimacy, scale scarce resources, and speed products to market.

### Product Overview

The Cisco TelePresence Codec C90 is one of the most powerful, flexible telepresence and collaboration engine available delivering crisp, clear 1080p end-to-end HD video, HD collaboration, and HD embedded Cisco TelePresence MultiSite (MultiSite). With more inputs and outputs than ever before, the integration possibilities are endless.

### Cisco TelePresence Codec C90 Features

Table 1 summarizes the key features for the Cisco TelePresence Codec C90.

**Table 1.** Cisco TelePresence Codec C90 Feature Summary

Feature Summary	
<b>Design Features</b>	<ul style="list-style-type: none"> <li>• One of the best, most powerful codecs available with the ultimate in video and audio quality</li> <li>• 2U high, rack-mountable, with rack mounting solution included</li> <li>• Professional grade connectors</li> <li>• Unmatched quality and flexibility</li> <li>• Standards-compliant 1080p solution-compatible with standards-based video without losing features</li> </ul>
<b>Application Features</b>	<ul style="list-style-type: none"> <li>• 1080p30 HD embedded MultiSite with Individual Transcoding</li> <li>• Collaborate on virtually anything with 5 simultaneous video inputs</li> <li>• HD Collaboration with 1080p30 and UXGA†</li> <li>• Limitless integration possibilities</li> <li>• Ideal for immersive telepresence and collaboration studios, boardrooms, auditoriums, education and telemedicine applications</li> </ul>
<b>Performance Features</b>	<ul style="list-style-type: none"> <li>• Optimal Definition up to 1080p</li> <li>• H.323/SIP up to 6 Mbps point-to-point; up to 10Mbps total MultiSite bandwidth</li> <li>• Connect up to 12 HD sources and 8 microphones directly into the interface</li> <li>• Full Duplex Audio with high-quality stereo sound</li> <li>• Full APIs</li> <li>• Ability to take advantage of Cisco® TelePresence Total Solution Management, transcoded HD MultiSite, recording and streaming, Cisco TelePresence Multiway, and firewall traversal</li> <li>• Utilizes ClearPath packet loss protection technology for optimal experience</li> </ul>

## Product Capabilities

Table 2 provides a listing of the product capability specifications for the Cisco TelePresence Codec C90.

**Table 2.** Product Specifications

Specification	Description
<b>Unit Delivered Complete With:</b>	<ul style="list-style-type: none"> <li>• Videoconferencing codec, wireless remote control, rackmounting rails, LAN cable, power cable</li> </ul>
<b>Bandwidth</b>	<ul style="list-style-type: none"> <li>• H.323/SIP up to 6 Mbps point-to-point</li> <li>• Up to 10 Mbps total MultiSite bandwidth</li> </ul>
<b>Firewall Traversal</b>	<ul style="list-style-type: none"> <li>• Cisco TelePresence Expressway technology</li> <li>• H.460.18 and H.460.19 Firewall Traversal</li> </ul>
<b>Video Standards</b>	<ul style="list-style-type: none"> <li>• H.261, H.263, H.263+, H.264</li> </ul>
<b>Video Features</b>	<ul style="list-style-type: none"> <li>• Native 16:9 Widescreen</li> <li>• Advanced Screen Layouts</li> <li>• Intelligent Video Management</li> <li>• Local Auto Layout</li> <li>• 9 embedded individual video compositors — 1 for every output and 1 for every encoder</li> </ul>
<b>Video Inputs (13 Inputs)</b>	<p><b>4 X HDMI Inputs, Supported Formats:</b></p> <ul style="list-style-type: none"> <li>• 1920 x 1080@60, 59.94 Hz (1080p60)</li> <li>• 1920 x 1080@50 Hz (1080p50)</li> <li>• 1920 x 1080@30, 29.97 Hz (1080p30)</li> <li>• 1920 x 1080@25 Hz (1080p25)</li> <li>• 1920 x 1080@24, 23.97 Hz (1080p24)</li> <li>• 1280 x 720@60, 59.94 Hz (720p60)</li> <li>• 1280 x 720@50 Hz (720p50)</li> <li>• 720 x 480@60, 59.94 Hz (480p60)</li> <li>• 640 x 480@60 Hz (480p60)</li> <li>• 1600 x 1200@50, 60 Hz (UXGA)</li> <li>• 1280 x 1024@60, 75 Hz (SXGA)</li> <li>• 1024 x 768@60, 70, 75, 85 Hz (XGA)</li> <li>• 800 x 600@56, 60, 72, 75, 85 Hz (SVGA)</li> <li>• 1920 x 1200@50, 60 Hz (WUXGA)</li> <li>• 1680 x 1050@60 Hz (WSXGA+)</li> <li>• 1440 X 900@60 Hz (WXGA+)</li> <li>• 1280 x 768@60 Hz (WXGA)</li> </ul> <p><b>4 X HD-SDI Inputs, Supported Formats:</b></p> <ul style="list-style-type: none"> <li>• 1920 x 1080@30 Hz (1080p30)</li> <li>• 1920 x 1080@25 Hz (1080p25)</li> <li>• 1280 x 720@60 Hz (720p60)</li> <li>• 1280 x 720@50 Hz (720p50)</li> <li>• 1280 x 720@30 Hz (720p30)</li> <li>• 1280 x 720@25 Hz (720p25)</li> </ul> <p><b>2 X DVI-I Inputs, Supported Formats:</b></p> <p>Analog (VGA):</p> <ul style="list-style-type: none"> <li>• 1920 x 1080@60 Hz (1080p)</li> <li>• 1280 x 720@60 Hz (720p)</li> <li>• 1600 x 1200@60 Hz (UXGA)</li> <li>• 1280 x 1024@60, 75 Hz (SXGA)</li> <li>• 1280 x 960@60 Hz</li> <li>• 1024 x 768@60, 70, 75, 85 Hz (XGA)</li> <li>• 1920 x 1200@50 Hz (WUXGA)</li> <li>• 1680 x 1050@60 Hz (WSXGA+)</li> <li>• 1440 x 900@60 Hz (WXGA+)</li> <li>• 1280 x 800@60 Hz (WXGA)</li> <li>• 1280 x 768@60 Hz (WXGA)</li> </ul> <p>Analog (YPbPr):</p> <ul style="list-style-type: none"> <li>• 1920 x 1080@60 Hz (1080p60)</li> <li>• 1920 x 1080@50 Hz (1080p50)</li> </ul>

Specification	Description
	<ul style="list-style-type: none"> <li>• 1920 x 1080@30 Hz (1080p30)</li> <li>• 1920 x 1080@25 Hz (1080p25)</li> <li>• 1280 x 720@60 Hz (720p60)</li> <li>• 1280 x 720@50 Hz (720p50)</li> <li>• 1280 x 720@30 Hz (720p30)</li> <li>• 720 x 576@50 Hz (576p50)</li> <li>• 720 x 480@60 Hz (w480p60)</li> </ul> <p>Digital (DVI-D):</p> <ul style="list-style-type: none"> <li>• Same as HDMI, reference above</li> </ul> <p><b>2 X YPBPR Inputs (BNC Connectors), Supported Formats:</b></p> <ul style="list-style-type: none"> <li>• Same as DVI-I, Analog (YPbPr), ref. above</li> </ul> <p><b>1 X S-VIDEO/Composite Input (BNC Connectors):</b></p> <ul style="list-style-type: none"> <li>• PAL/NTSC</li> <li>• Extended Display Identification Data (EDID)</li> </ul>
<p><b>Video Outputs (5 Outputs)</b></p>	<p><b>2 X HDMI Outputs, 2 X DVI-I Outputs, Supported Formats:</b></p> <ul style="list-style-type: none"> <li>• 1920 x 1080@60 Hz (1080p60)</li> <li>• 1280 x 720@60 Hz (720p60)</li> <li>• 1600 x 1200@60 Hz (UXGA)</li> <li>• 1280 x 1024@60 Hz (SXGA)</li> <li>• 1024 x 768@60 Hz (XGA)</li> <li>• 800 x 600@60 Hz (SVGA)</li> <li>• 640 x 480@60 Hz (VGA)</li> <li>• 1920 x 1200@60Hz (WUXGA)</li> <li>• 1360 x 768@60 Hz</li> <li>• 1366 x 768@60 Hz</li> <li>• 1280 x 768@60 Hz (WXGA)</li> <li>• PAL/NTSC</li> <li>• VESA Monitor Power Management</li> <li>• Extended Display Identification Data (EDID)</li> </ul> <p><b>1 X Composite Output (BNC Connector), Supported Formats:</b></p> <ul style="list-style-type: none"> <li>• PAL/NTSC</li> <li>• VESA Monitor Power Management</li> </ul>
<p><b>Live Video Resolutions (Encode/Decode)</b></p>	<ul style="list-style-type: none"> <li>• 176 x 144@30 fps (QCIF)</li> <li>• 352 x 288@30 fps (CIF)</li> <li>• 512 x 288@30 fps (w288p)</li> <li>• 576 x 448@30 fps (448p)</li> <li>• 768 x 448@30 fps (w448p)</li> <li>• 704 x 576@30 fps (4CIF)</li> <li>• 1024 x 576@30 fps (w576p)</li> <li>• 1280 x 720@30 fps (720p30)</li> <li>• 1920 x 1080@30 fps (1080p30)**</li> <li>• 640 x 480@30 fps (VGA)</li> <li>• 800 x 600@30 fps (SVGA)</li> <li>• 1024 x 768@30 fps (XGA)</li> <li>• 1280 x 1024@30 fps (SXGA)</li> <li>• 1280 x 768@30 fps (WXGA)</li> <li>• 1440 x 900@30 fps (WXGA+)</li> <li>• 1680 x 1050@30 fps (WSXGA+)</li> <li>• 1600 x 1200@30 fps (UXGA)**</li> <li>• 1920 x 1200@25 fps (WUXGA)**</li> <li>• 512 x 288@60 fps (w288p60)</li> <li>• 768 x 448@60 fps (w448p60)</li> <li>• 1024 x 576@60 fps (w576p60)</li> <li>• 1280 x 720@60 fps (720p60)**</li> <li>• 720p30 from 768kbps</li> <li>• 720p60 from 1152kbps</li> <li>• 1080p30 from 1472kbps</li> </ul>
<p><b>Audio Standards</b></p>	<ul style="list-style-type: none"> <li>• G.711, G.722, G.722.1, 64 kbps &amp; 128 kbps MPEG4 AAC-LD, AAC-LD Stereo</li> </ul>

Specification	Description
<b>Audio Features</b>	<ul style="list-style-type: none"> <li>• CD-Quality 20KHz Mono and Stereo</li> <li>• Eight separate acoustic echo cancellers</li> <li>• 8-port Audio mixer</li> <li>• Automatic Gain Control (AGC)</li> <li>• Automatic Noise Reduction</li> <li>• Active lip synchronization</li> </ul>
<b>Audio Inputs (14 Inputs)</b>	<ul style="list-style-type: none"> <li>• 8 x microphone, 48V phantom powered, XLR connector each with separate echo cancellers and noise reduction, all microphones can be set for balanced line level</li> <li>• 2 x RCA/Phono, Line Level: Stereo PC input</li> <li>• 2 x RCA/Phono, Line Level: Stereo auxiliary/DVD input</li> <li>• 2 x HDMI, digital: Stereo PC/DVD inputs</li> </ul>
<b>Audio Outputs (8 Outputs)</b>	<ul style="list-style-type: none"> <li>• 2 x XLR, balanced line level, stereo main audio</li> <li>• 2 x RCA/Phono, line level, stereo main audio, configurable to S/PDIF</li> <li>• 2 x RCA/Phono, line level, stereo to recording device</li> <li>• 1 x HDMI, digital, stereo main audio</li> <li>• 1 x HDMI, digital, stereo to recording device</li> </ul>
<b>Dual Stream</b>	<ul style="list-style-type: none"> <li>• H.239 (H.323) dual stream</li> <li>• BFCP (SIP) dual stream</li> <li>• Available in MultiSite from any site</li> <li>• Support for resolutions up to 1080p30/WUXGA, independent of main stream resolution</li> </ul>
<b>Multisite Features</b>	<ul style="list-style-type: none"> <li>• 4-way 1080p30 High Definition SIP/H.323 MultiSite</li> <li>• Full individual audio and video transcoding</li> <li>• Individual layouts in MultiSite CP (takes out self view)</li> <li>• H.323/SIP/VoIP in the same conference</li> <li>• Support for Presentation (H.239/BFCP) from any participant at resolutions up to 1080p30/WUXGA</li> <li>• Best Impression (Automatic CP Layouts)</li> <li>• H.264, Encryption, Dual Stream from any site</li> <li>• IP Downspeeding</li> <li>• Dial in/Dial out</li> <li>• Additional telephone call (no license required)</li> <li>• Conference rates up to 10 Mbps</li> </ul>
<b>Protocols</b>	<ul style="list-style-type: none"> <li>• H.323</li> <li>• SIP</li> </ul>
<b>Embedded Encryption</b>	<ul style="list-style-type: none"> <li>• H.323/SIP point-to-point and multipoint calls</li> <li>• Standards-based: H.235 v2 &amp; v3 and AES</li> <li>• Automatic key generation and exchange</li> <li>• Supported in Dual Stream &amp; and MultiSite</li> </ul>
<b>IP Network Features</b>	<ul style="list-style-type: none"> <li>• DNS lookup for service configuration</li> <li>• Differentiated Services (QoS)</li> <li>• IP adaptive bandwidth management (including flow control)</li> <li>• Auto gatekeeper discovery</li> <li>• Dynamic playout and lip-sync buffering</li> <li>• H.245 DTMF tones in H.323</li> <li>• Date and Time support via NTP</li> <li>• Packet Loss based Downspeeding</li> <li>• URI Dialing</li> <li>• TCP/IP</li> <li>• DHCP</li> <li>• 802.1x Network authentication</li> <li>• ClearPath</li> </ul>
<b>IPv6 Network Support</b>	<ul style="list-style-type: none"> <li>• Single call stack support for both H323 and SIP</li> <li>• Dual-stack IPv4 and IPv6 for DHCP, SSH, HTTP, HTTPS, DNS, DiffServ</li> <li>• Support for both Static and Autoconfig (stateless address auto config)</li> </ul>

Specification	Description
<b>Security Features</b>	<ul style="list-style-type: none"> <li>• Management via HTTPS and SSH</li> <li>• IP Administration Password</li> <li>• Menu Administration Password</li> <li>• Disable IP services</li> <li>• Network Settings protection</li> </ul>
<b>Network Interfaces</b>	<ul style="list-style-type: none"> <li>• 2<sup>**</sup> x separate LAN/Ethernet (RJ-45) 10/100/1000 Mbit</li> </ul>
<b>Other Interfaces</b>	<ul style="list-style-type: none"> <li>• USB host for future usage</li> <li>• USB device for future usage</li> <li>• GPIO<sup>*</sup></li> </ul>
<b>Cisco TelePresence Precision HD Camera (1080p)</b>	<ul style="list-style-type: none"> <li>• 1/3" CMOS</li> <li>• 12 x zoom</li> <li>• +15/-25° tilt, +/- 90° pan</li> <li>• 43.5° vertical field of view</li> <li>• 72° horizontal field of view</li> <li>• Focus distance 0.3m–infinity</li> <li>• 1920 x 1080 pixels progressive @ 60fps</li> <li>• Other formats supported (configurable through Dip-switch): <ul style="list-style-type: none"> <li>◦ 1920x1080@60fps (HDMI only)</li> <li>◦ 1920x1080@50fps (HDMI only)</li> <li>◦ 1920x1080@30fps</li> <li>◦ 1920x1080@25fps</li> <li>◦ 1280x720@60fps</li> <li>◦ 1280x720@50fps</li> <li>◦ 1280x720@30fps</li> <li>◦ 1280x720@25fps</li> </ul> </li> <li>• Automatic or manual focus/brightness/whitebalance</li> <li>• Far-end camera control</li> <li>• Daisy-chain support (Visca protocol camera)</li> <li>• Dual HDMI and HD-SDI output</li> <li>• Upside-down mounting with automatic flipping of picture</li> </ul>
<b>System Management</b>	<ul style="list-style-type: none"> <li>• Support for the Cisco TelePresence Management Suite</li> <li>• Total management via embedded SNMP, Telnet, SSH, XML, SOAP</li> <li>• Remote software upload: via web server, SCP, HTTP, HTTPS</li> <li>• 1 x RS-232 for local control and diagnostics</li> <li>• Remote control and on-screen menu system</li> </ul>
<b>Directory Services</b>	<ul style="list-style-type: none"> <li>• Support for Local directories (My Contacts)</li> <li>• Corporate Directory</li> <li>• Unlimited entries using Server directory supporting</li> <li>• LDAP and H.350</li> <li>• Unlimited number for Corporate directory (through Cisco TelePresence Management Suite)</li> <li>• 200 number local directory</li> <li>• Received Calls</li> <li>• Placed Calls</li> <li>• Missed Calls with Date and Time</li> </ul>
<b>Power</b>	<ul style="list-style-type: none"> <li>• Auto-sensing power supply</li> <li>• 100–240 VAC, 50/60 Hz</li> <li>• 175 watts max. for codec and main camera</li> </ul>
<b>Operating Temperature and Humidity</b>	<ul style="list-style-type: none"> <li>• 0°C to 35°C (32°F to 95°F) ambient temperature</li> <li>• 10% to 90% Relative Humidity (RH)</li> </ul>
<b>Storage and Transport Temperature</b>	<ul style="list-style-type: none"> <li>• -20°C to 60°C (-4°F to 140°F) at RH 10–90% (non -condensing)</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>• Length: 17.36"/44.1 cm</li> <li>• Height: 3.67"/9.3 cm</li> <li>• Depth: 11.8"/30 cm</li> <li>• Weight: 11.22 lbs/5.1 kg</li> </ul>

<sup>\*</sup> Requires option

## Regulatory Compliance

- Directive 2006/95/EC (Low Voltage Directive) – Standard EN 60950-1
- Directive 2004/108/EC (EMC Directive) – Standard EN 55022, Class B – Standard EN 55024 – Standard EN 61000-3-2/-3-3
- Approved according to UL 60950-1 and CSA 60950-1-07
- Complies with FCC15B Class B

## Ordering Information

To place an order, please contact your Cisco sales representative.

**Table 3.** Ordering Information

Product Name	Part Number
<b>Cisco TelePresence System Codec C90</b>	CTS-C90-K9
Codec C90 – Natural Presenter Package, Rack Mount Kit, Remote Control, HDMI and Power Cables	
<b>Ordering Options for the Cisco TelePresence System Codec C90</b>	
<b>Codec C90 Premium Resolution Option</b>	LIC-C90-PR
<b>Codec C90 Multi Site Option</b>	LIC-C90-MS

## Service and Support

Cisco and our partners provide a broad portfolio of intelligent, personalized services and support that can help you realize the full value of your Cisco TelePresence investment by increasing business agility and network availability. This portfolio of services accelerates business innovation through a network-based collaboration platform that enables businesses to collaborate anywhere, anytime. For more information about these services, visit: <http://www.cisco.com/go/telepresenceservices>.

## For More Information

For more information about the Cisco TelePresence Codec C90, visit <http://www.cisco.com/go/telepresence> or contact your local Cisco account representative or authorized Cisco partner. Product specifications are estimates and subject to change without notice.



**Americas Headquarters**  
Cisco Systems, Inc.  
San Jose, CA

**Asia Pacific Headquarters**  
Cisco Systems (USA) Pte. Ltd.  
Singapore

**Europe Headquarters**  
Cisco Systems International BV Amsterdam,  
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at [www.cisco.com/go/offices](http://www.cisco.com/go/offices).

Cisco and the Cisco Logo are trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and other countries. A listing of Cisco's trademarks can be found at [www.cisco.com/go/trademarks](http://www.cisco.com/go/trademarks). Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1005R)