

# SONY®

Video Communication System

## PCS-G70N

## PCS-G70NP



## The Flagship Sony PCS-G70\*1 – Quality Videoconferencing with the Utmost in Flexibility

*Videoconferencing systems continue to evolve as we enter a new era of visual communication. Sony is leading this evolution by staying ahead of the latest technological trends in videoconferencing and developing systems that meet our customers' demands. The flagship PCS-G70 video communication system is our latest solution to meet the needs of our high-end customers.*

*The PCS-G70 boasts a maximum video transfer rate of 4 Mb/s over an IP network, and it provides the highest resolution video of all models in the PCS Series. By adopting the H.263 video codec/4CIF format, the PCS-G70 produces image resolution comparable to that of standard TV broadcasts. It can also be used with the H.264 video codec for higher throughput and with previous versions of the ITU-T videoconferencing codecs to maintain compatibility with legacy systems.*

*As with other PCS Series models, the PCS-G70, with its internal MCU (Multi-Control Unit) capability, supports simultaneous multi-point videoconferences with six (6) endpoints, and a maximum of 10 endpoints when two PCS-G70 units are cascaded. The PCS-G70 bridges mixed calls between an ISDN network and an IP network, and speed matches (by connecting at the endpoint respective speeds) without lowering the performance of the entire system.*

*Other key features of the PCS-G70 include a site-name display function, support for up to five monitors that display far-end sites in addition to the main monitor, and a dual-camera input, which can be used to provide more video coverage. The PCS-G70 also incorporates features such as data sharing, QoS support functions, an encryption function, and digital whiteboard support, which are all available in other PCS Series models.*

*As we enter a new era of visual communication, the feature-rich PCS-G70 will meet user needs for high-end and large-venue videoconferencing applications.*

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\*1 Unless otherwise noted, "PCS-G70" in the following text refers to both the PCS-G70N and PCS-G70NP.



# FEATURES

## High-Quality Video/High-Speed Network Connection

The PCS-G70 provides excellent picture quality over both ISDN (H.320) and IP (H.323) networks and fully supports the latest non-proprietary ITU-T H.264 video codec standard for maximum customer confidence and flexibility. When video encoding is in accordance with the H.263 protocol, the PCS-G70 supports the 4CIF format at a maximum frame rate of 30 fps, and when in H.264 protocol, it supports the interlaced SIF format at 60 fields per second.<sup>\*2</sup> In addition, the PCS-G70 can achieve a maximum bandwidth of 4 Mb/s with an IP connection, and up to 2 Mb/s with an ISDN connection using an optional PCSA-PRI ISDN unit. This combination of high-quality codec and high-speed network support provides video quality comparable to standard TV broadcasts.

Moreover, in addition to the supplied PCSA-CG70 camera unit, the PCS-G70 supports a range of Sony camera options, including the BRC-300, which is a 16:9/4:3 switchable 3CCD camera providing exceptional quality video.

<sup>\*2</sup> The PCS-G70NP supports a maximum of 50 fields per second in interlaced SIF format.

## Superb Sound

The PCS-G70 reproduces clear and natural-sounding audio using MPEG-4 AAC (Advanced Audio Coding) at 14 KHz. A built-in echo cancellation system minimizes unwanted echoes during a videoconference.

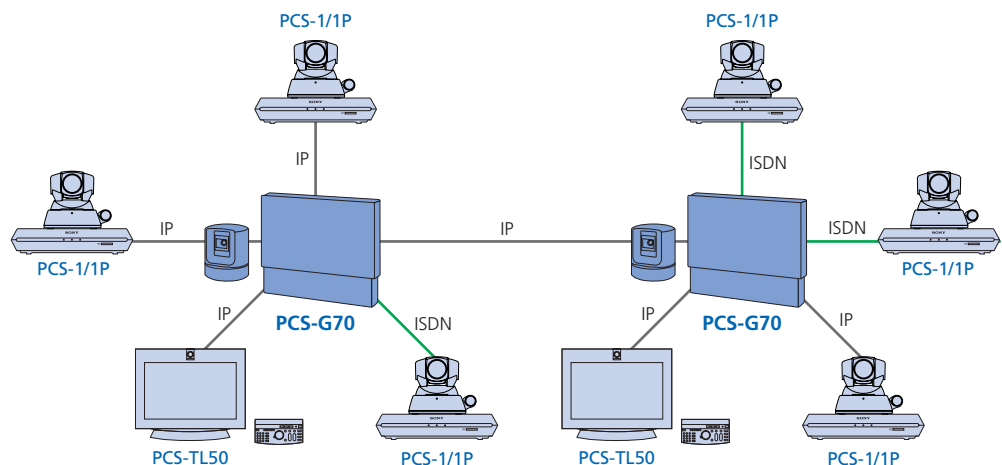
The PCS-G70 is also compatible with a number of SONY external microphones and speakers, including directional and omnidirectional models. Professional AV integrators will particularly appreciate the power and flexibility of this system to be customized for best application match.

To ensure clear sound quality in meeting rooms with as many as 20 participants, the optional CTE-600 Communication Transducer is ideal. The CTE-600 is comprised of six radially arranged unidirectional microphones and one omnidirectional speaker. The system is designed to pick up the active speaker's voice while minimizing background noise, and to project clear sound quality in all directions.

## Multi-Point Videoconferencing at up to 10 Sites

Using optional MCU software, the PCS-G70 can be configured to communicate with up to 5 remote videoconferencing sites (6 sites total) simultaneously using either an IP (H.323 protocol) or ISDN (H.320 protocol) connection. It can also support videoconferences in which the connections are a combination of IP and ISDN using a unique bridging function. And because the PCS-G70 has a "speed-matching" function, it maximizes performance by not reducing the higher speed connection to match the lower speed connection, as is done with some videoconferencing systems. Moreover, two PCS-G70 units - each installed with the optional MCU (H.323) software - can be cascaded with an IP connection to support a maximum of 10 simultaneous sites. What is unique about the PCS-G70 is that it provides high-quality, H.264 CIF video and clear MPEG-4 AAC audio, even in a multi-point videoconference. And of course, the PCS-G70 allows users to expand from a peer-to-peer videoconference to a multi-point videoconference by simply dialing up new connections.<sup>\*3</sup>

<sup>\*3</sup> When adding a new endpoint on the same network (IP or ISDN), the system will default to the lowest resolution video standard of all endpoints.



Multi-point Videoconferencing at up to 10 Sites



Multiple Display Output and Site-Name Display



simulated images

## Multiple Display Output

In addition to the main monitor output, the PCS-G70 can support up to five additional monitors that can be used to display the five other far-end sites in a 6-way videoconference.

## Site-Name Display

During multi-point videoconferences, it can be difficult to keep track of all of the participants; however, with the PCS-G70 site-name display function, this is no longer the case. The PCS-G70 can display anything from company or branch names to geographical locations on a monitor, allowing videoconference participants to keep track of all parties. This function is available both on a single monitor in continuous-presence mode and on multiple monitors.

## Flexible Display Patterns at all Sites

In addition to conventional patterns of display - such as showing the far-end site on a full screen or displaying near-end and far-end sites in picture-in-picture mode - a variety of other display patterns are available with the PCS-G70. Supporting both 4-screen and 6-screen continuous-presence modes, the PCS-G70 can display the most appropriate pattern to match the number of sites that are connected.

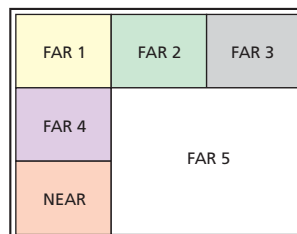
In both full-screen and continuous-presence modes, the following two display options are available:

## Voice Switching

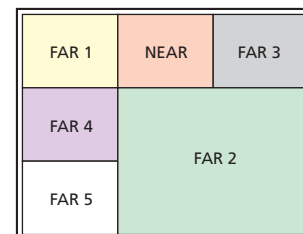
The PCS-G70 defaults to voice switching, which displays the far-end site that is actively talking on the monitor when the unit is in full-screen mode. In continuous-presence mode, the site that is actively speaking is displayed on the largest of the six sub screens, and the near-end site is displayed on the sub screen where the original far-end site was.

## Fixed Site

As its name suggests, the selected far-end site is continuously displayed on the monitor when the unit is in full-screen mode. In continuous-presence mode the selected far-end site is displayed in the largest of the six sub screens, and the other sites are fixed as well.



If FAR 5 is talking



If FAR 2 is talking

## Voice Switching in Continuous Presence Mode

## Dual Camera and Split Picture Support (H.239 Dual Stream)

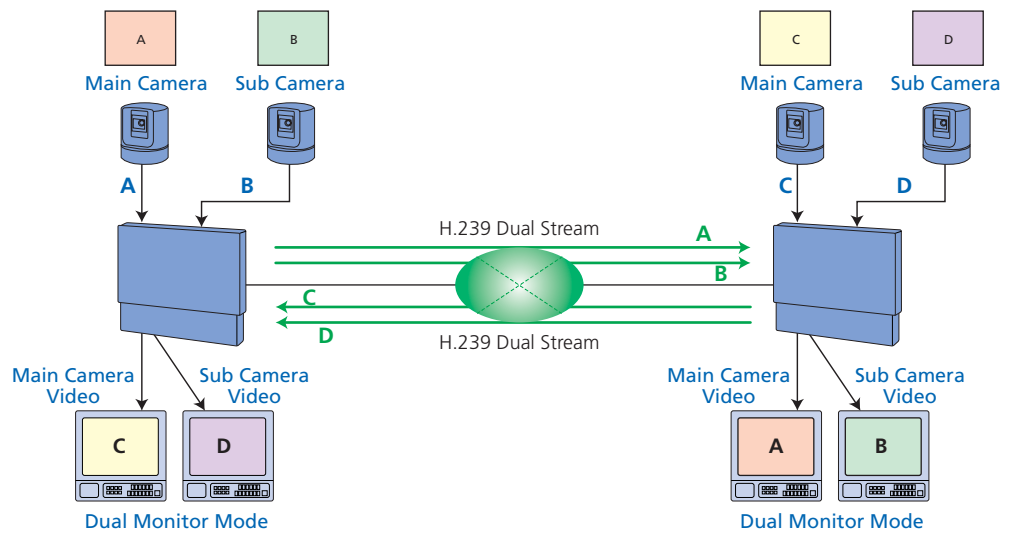
The PCS-G70 can be configured with two cameras, which is ideal for covering large conference rooms or for capturing video of a specific area of interest during a videoconference. Video data from each camera can be sent as separate streams and displayed on dual monitors, or the data can be combined to form a single stream and viewed on a single monitor.

## Data-Sharing Capabilities/Digital Whiteboard Support

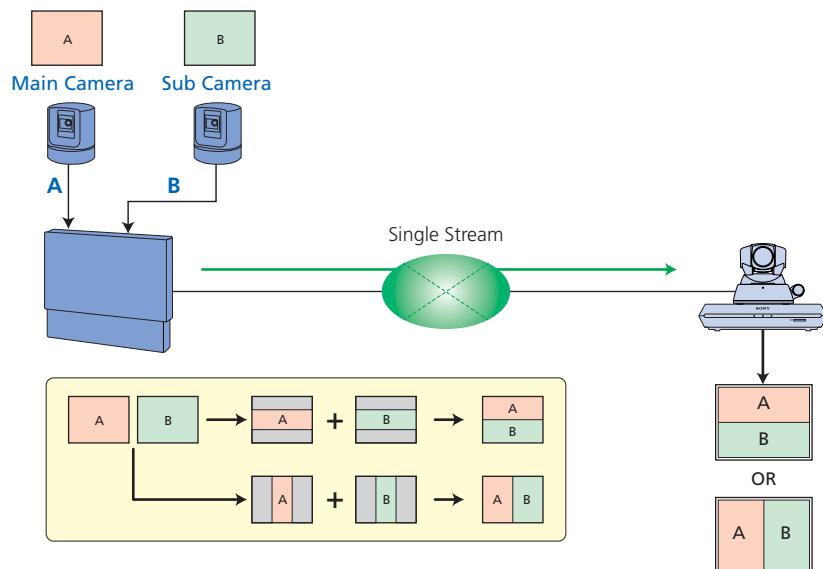
Data originated on your PC can be shared with your videoconferencing counterparts, making communication even more effective. Any image that can be displayed on a PC can be sent or received<sup>\*4</sup> in native XGA resolution, allowing all parties to share data during a videoconference. In addition, information drawn up on a digital whiteboard<sup>\*5</sup> can also be viewed in real time by all parties participating in a videoconference or captured and stored for later reference.

<sup>\*4</sup> Sending data requires the optional PCSA-DSB15 Data Solution Box (DSB); however, the DSB is not required for receiving data.

<sup>\*5</sup> Please contact your local Sony sales office for information on compatible digital whiteboards.



Dual Camera/Dual Stream



Dual Camera/Single Stream

## Easy-to-Use Remote Commander Unit/Intuitive GUI

The PCS-G70 has a number of features that make it easy to operate. The cursor keys on the Remote Commander unit can be used to select and call any one of three contacts, which are pre-programmed and displayed in the Launcher Menu. Up to 500 contacts can be stored in the PCS-G70 common address book for quick and easy dialing. In addition, the unit supports a call history log, which stores the last 32 incoming and outgoing calls so that the user can readily select and dial a recent contact.



Remote Commander Unit



Launcher Menu



Phone Book

## Stylish Design

With its elegant design and optional stands for both the camera unit and the codec unit, the PCS-G70 can fit into even the classiest of conference rooms.

## Memory Stick™ Support\*6

Private phone books can be created and stored on **Memory Stick** media. By simply inserting the **Memory Stick** media into the PCS-G70, the unit automatically recognizes and activates the private phone book, thereby eliminating the need to re-enter contact information to place a call.

**Memory Stick** media has a number of other uses, such as storing captured images, PC-generated data, and digital whiteboard drawings. The media can also be used for installing and updating software.

\*6 In addition to **Memory Stick**, **Memory Stick PRO™** and **Memory Stick DUO™** with an adaptor can be used.

## Secure Videoconferencing – Advanced Encryption Standard (AES)

Secure videoconferencing over a network is possible because the PCS-G70 supports AES Encryption, a NIST (National Institute of Standards and Technology) standard for encrypting electronic data used in commercial applications including telecommunications. When a videoconference is initiated with the AES feature active, video, audio, and graphics are encrypted for the duration of the videoconference. Because of this feature, companies can hold sensitive meetings, negotiations, and other similar interactions with confidence that they will not be compromised.

## QoS (Quality of Service) Enhancement Functions

When holding a videoconference over a network, a common concern is how to maintain video and audio quality when the performance of the network is changing. The PCS-G70 provides three advanced functions to enhance QoS over a network:

### Forward Error Correction (FEC)

The PCS-G70 employs an FEC function that corrects errors in transmission at the receiving end. If a transmission error occurs, the PCS-G70 can repair the data and accurately reproduce the original audio and video.

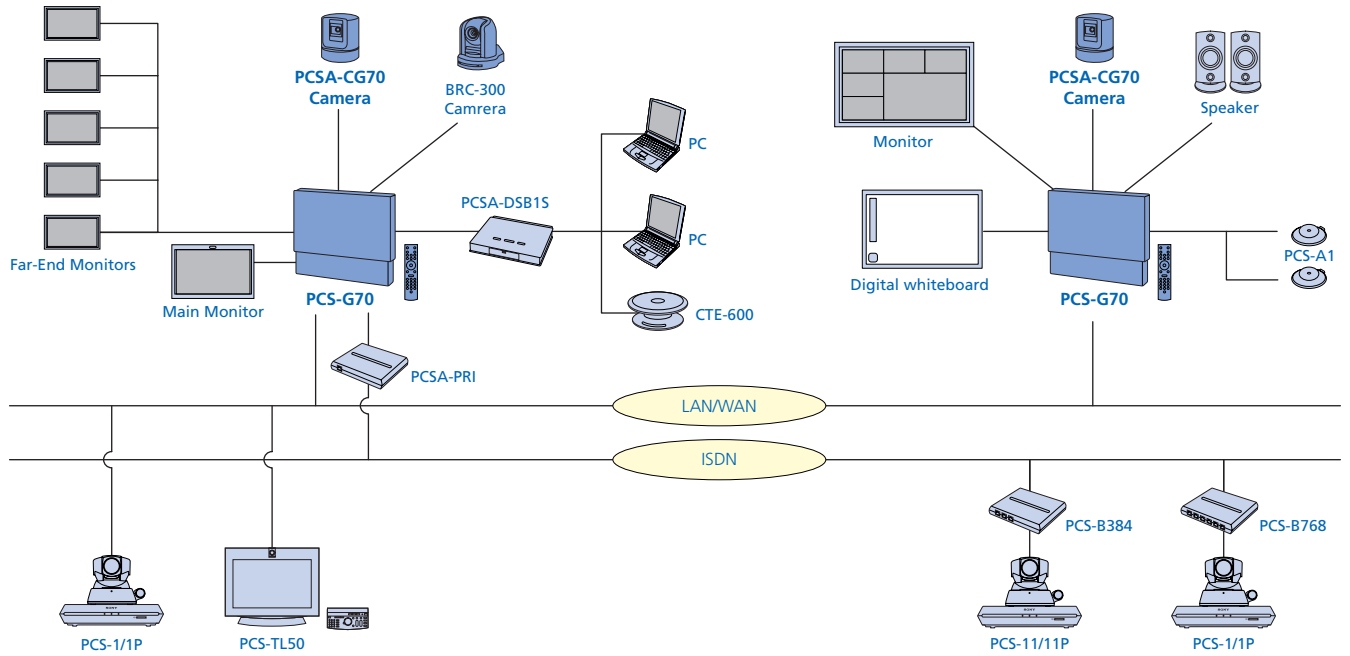
### Adaptive Rate Control (ARC)

The adaptive rate control function automatically varies the video data transfer rate to meet changing network conditions. It also selects the most appropriate frame rates, which helps prevent audio and video breakup.

### Auto Repeat Request (ARQ)

The ARQ function recovers lost IP packets. This is achieved by buffering the packets at the encoder and resending any that are lost. This feature helps maintain audio and video quality, and helps prevent picture collapse even under high network traffic conditions.

# SAMPLE SYSTEM CONFIGURATION



## OPTIONAL ACCESSORIES



**PCSA-CG70**  
**PCSA-CG70P**  
Standard Camera Unit



**PCSA-DSB15**  
Data Solution Box



**PCSA-PRI**  
ISDN Unit



**PCSA-B768S**  
ISDN Unit (6 BRI)



**PCSA-B384S**  
ISDN Unit (3 BRI)



**PCSA-STMG70**  
Codec Stand



**PCSA-STCG70**  
Camera Stand



**PCSA-M0G70**  
H.320 MCU Software  
**PCSA-M3G70**  
H.323 MCU Software



**PCS-A1**  
Omnidirectional  
Microphone



**PCS-A300**  
Unidirectional Microphone



**CTE-600**  
Communication Transducer



**BRC-300/BRC-300P**  
3 CCD Color Video Camera



**EVI-D70/EVI-D70P**  
Communication  
Video Camera (white)



**EVI-D70/EVI-D70P**  
Communication  
Video Camera (black)



**EVI-D100/EVI-D100P**  
Communication  
Video Camera

# SPECIFICATIONS

Video	
Signal system	PCS-G70N: NTSC PCS-G70NP: PAL
Standards	H.261, H.263, H.263+ (Annex L, F, T, I), H.263++, H.264, H.263 Annex W and H.264 Interlaced SIF, MPEG-4 SP@L3, H.239 Dual Stream Support
Resolution	SQCIF (128 x 96, reception only), QCIF (176 x 144), CIF (352 x 288), 4CIF (704 x 576, H.263 only), Interlaced SIF (H.263, H.264 only)
Frame rate	Max. 30 frames/s (H.261, H.263, H.263+, H.263++, H.264, and MPEG-4 SP@L3) Interlaced SIF Mode (PCS-G70N: 60 fields/s, PCS-G70NP: 50 fields/s)
Bit rate	Up to 4 Mb/s in H.323 (Incl. audio)* Up to 2 Mb/s in H.320 (Incl. audio) when configured with the PCSA-PRI Up to 768 Kb/s in H.320 (Incl. audio) when configured with the PCSA-B7685 Up to 384 Kb/s in H.320 (Incl. audio) when configured with the PCSA-B3845
Audio	
Bandwidth and coding	G.711: 3.4 kHz at 56/64 Kb/s G.722: 7.0 kHz at 48/56/64 Kb/s G.722.1: 7.0 kHz at 24/32 Kb/s (H.323) G.728: 3.4 kHz at 16 Kb/s G.723.1: 3.4 kHz at 5.3/6.3 Kb/s (H.323) G.729: 3.4 kHz at 8 Kb/s (H.323) MPEG-4 AAC (mono) 14 kHz at 64/96 Kb/s (H.323) at 48 Kb/s (H.320)
Echo cancellation	Noise Suppressor included Automatic Gain Control included
Graphics	
XGA	1024 pixels x 768 lines (H.263), with PCSA-DSB15
4CIF	704 pixels x 576 lines (H.261 Annex D and H.263)
Picture in Picture	
Sub screen size	4.3" (256 x 192), One of four corners
ITU-T Standards (excludes audio/video standards)	
	H.320, H.323 H.221 Bonding H.281 FECC H.225.0 H.242 H.243 H.245 T.120
Network Protocols	
	TELNET (Server) HTTP (Server) FTP (Server) SNMP (Agent) DNS (Client) DHCP (Client) RTP/RTCP TCP/UDP ARP
Multipoint Capabilities	
	Up to 6 sites (H.320/H.323)** Up to 10 sites (H.320/H.323)***
Lip Synchronization	
	Manual On/Off
Camera Unit	
Image device	1/4 type CCD
Horizontal resolution	PCS-G70N: 470 TV lines, PCS-G70NP: 460 TV lines
Focal length	3.1 to 31 mm (F1.8 to 2.9)
Focus	Auto/Manual
IRIS	Auto
Zoom ratio	x10 Optical zoom (x40 with digital zoom)
Pan angle	-100° to +100° (Max. 100°/sec)
Tilt angle	-25° to +25° (Max. 125°/sec)
Preset	Up to 6 positions
S/N	More than 50 dB
Others	Back light compensation Auto white balance

Remote Commander	
Format	Wireless SIRCS
Interfaces (PCS-G70/G70P)	
Video	D-Sub 15-pin Dedicated Camera I/F x2 S-video or Composite input x2 (switchable with conversion connector) S-video output x2 (for main/sub monitor) S-video output x5 (for individual sites in MCU) Composite output (AUX) RGB output
Audio	Line input RCA AUX input RCA (bypass echo cancellor) External analog microphone input, Mini-jack (Plug in power) x2 External digital microphone input x2 Line output RCA x2 (one mixed output)
Network	10Base-T/100Base-TX External ISDN Unit I/F
Control	SIRCS IR Out x2 Wired SIRCS In (Control-S) RS-232C
DSB I/F	Dedicated D-Sub 15
RGB I/F	RGB output
Memory Stick	Memory Stick slot
Digital whiteboard	Dedicated connector
Interfaces (PCSA-CG70/CG70P)	
Video	IR for DS150
Terminal	Dedicated 23-pin
AUX camera	8-pin Mini-DIN
General	
Operating temperature	5 °C to 35 °C
Operating humidity	30% to 70%
Storage temperature	-20 °C to +55 °C
Storage humidity	25% to 75%
Power Requirements	PCS-G70N: AC 120 V, 50/60 Hz, PCS-G70NP: AC 220 V to 240 V, 50/60 Hz
Power Consumption	DC 19.5 V, 5 A
Communication Terminal (PCS-G70/G70P)	420 x 70 x 256 mm (16 5/8 x 2 7/8 x 10 1/8 inches), excl. projections
Dimensions (W x H x D)	
Camera Unit (PCS-CG70/CG70P)	131 x 141 x 130 mm (5 1/4 x 5 5/8 x 5 1/8), excl. projections
Dimensions (W x H x D)	
Remote Commander (PCS-RG70)	47 x 43 x 195 mm (1 7/8 x 1 3/4 x 7 3/4 inches), excl. projections
Dimensions (W x H x D)	
Communication Terminal (PCS-G70/G70P) Mass	5.3 kg (11 lbs 11 oz)
Camera Unit (PCS-CG70/CG70P) Mass	1.0 kg (2 lbs 3 oz)
Remote Commander (PCS-RG70) Mass	180 g (6.3 oz), incl. batteries
System Components and Supplied Accessories	
	PCS-G70 Communication Terminal or PCS-G70P Communication Terminal PCS-CG70 Camera Unit or PCS-CG70P Camera Unit (includes dedicated 3 m camera cable) PCS-RG70 Remote Commander PCS-AC19V6 AC Adaptor/Power Cord IR Repeater x2 Manganese Battery for Remote Commander x2 Operation Manual CD-ROM (Japanese, English, French, Spanish, Italian, German, Portuguese, Simplified Chinese) Operation Guide Quick Connection Guide Cable Connection Guide Worldwide Warranty Booklet Audio Cable (1.0 m) S-Video Cable (1.5 m) Mini DIN 7-pin to RCA Conversion Connector

\* When the H.261 video standard is used, up to 2 Mb/s is supported.

\*\* Requires optional MCU software. IP/ISDN Bridging is possible.

\*\*\* Requires optional MCU software. Connections between base units must be IP (H.323).

IP/ISDN Bridging is possible.

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