

SONY



IPELA
INTEGRATED VISUAL COMMUNICATION

PCS-G70P
High-End
Videoconferencing System

www.sonybiz.net/vc



IPELA

Business is changing. The vision of integrated visual communication is becoming a reality with Sony IPELA – a suite of intelligent IP-based Network Video Monitoring and Videoconferencing products and solutions

Sony IPELA Videoconferencing solutions offer customers a complete range of great-looking, affordable and simple-to-use conferencing systems, from compact all-in-one systems to high-end solutions with advanced capabilities. All Sony IPELA Videoconferencing solutions enable groups and individuals to share high quality voice, video and PC data cost-effectively over IP.



PCS-G70P – Quality Videoconferencing with the Utmost in Flexibility

Videoconferencing is evolving. For use in corporate boardrooms, operating theatres or large-scale auditoria, today's professional conferencing users demand much more than sparkling picture and audio quality. They also need versatile multi-point operation, hassle-free set-up, reliability and easy expansion to meet future needs.

Teaming high performance and advanced features with friendly operation, the elegantly-styled PCS-G70P sets a new benchmark for voice, video and data communications. Supporting latest coding standards for smoother, more natural video images, the PCS-G70P delivers television quality pictures and crystal-clear wideband audio in point-to-point or multipoint calls. It's also designed as a smarter, more secure conferencing solution, allowing you to set up calls across any mix of IP, ISDN, DSL and (mobile) telephone connections. Advanced Quality of Service features ensure optimum call quality under all network conditions, while embedded encryption ensures that confidential information stays that way.

Effective multi-site conferencing is an increasingly vital aspect of modern business communications. The PCS-G70P can connect directly with up to five remote sites, which can be viewed on five individual video monitors, or with up to ten sites in cascade mode. In smaller rooms, multiple participants can be viewed on one screen in split-screen format with the name of each participant labelled on-screen so it's always clear who is speaking.

The dual-camera capability of the PCS-G70P enriches any conference where a second point of view is required. Video can be captured and transmitted simultaneously from two sources, with images viewed on separate monitors or on a 'split' display. It's even possible to capture widescreen 16:9 images to suit the latest plasma and LCD display screens using the Sony BRC-300 3-CCD colour camera.

Fuss-free, intuitive operation is a hallmark of the PCS-G70P. The customisable user interface offers a Quick Dial feature for rapid set-up of any conference without fiddly entry of phone numbers and user settings. Alternatively, slip in a Memory Stick and the PCS-G70P will auto-launch a conference, adjusting all necessary settings according to the contents of your personal address book.

Adding an optional data-sharing box turns the PCS-G70P into a powerful multimedia tool for distance learning, training and other knowledge-sharing applications. Augment every conference with sparkling graphs, charts and images from a connected notebook PC or make sketches and annotations in real-time using the Mimio Xi™ electronic whiteboard. For the largest rooms and venues, XGA data images can be viewed during a conference on a separate monitor or projector while two other monitors display a far-side view and self-view. If required, the PCS-G70P can be connected to up to eight monitors in total – displaying five independent sites during a multipoint conference, XGA data, a conference overview and a self-view.

Powerful, flexible and expandable yet supremely stylish and simple to use, the new Sony PCS-G70P brings people, images and ideas closer together than ever before.

FEATURES

■ High-Quality Video/High-Speed Network Connection

The high quality video codec and high-speed network support of the PCS-G70P deliver video quality comparable to standard TV broadcasts, offering 4CIF live video at bandwidths as high as 4 Mbps over IP networks or 2 Mbps over ISDN. In addition, the PCS-G70P offers full support for the recently-rated ITU-T H.264 video codec standard, supporting interlaced SIF with 50 fields per second for extremely smooth, natural images*.

In addition to the supplied PCSA-CG70P camera unit, the PCS-G70P supports a range of optional color Pan/Tilt/Zoom video cameras: the BRC-300, a 16:9/4:3 switchable 3-CCD camera that delivers exceptional quality video and that is an ideal complement to the latest generation of widescreen camera display; the EVI-D70PW, a white model of PTZ video camera; the EVI-D70P, a black model of PTZ video camera; the EVI-D100P, a PTZ video camera. A total of four video cameras can be connected to the PCS-G70P.

* The PCS-G70P supports a maximum of 50 fields per second in interlaced SIF format.

■ Multi-Point Videoconferencing at up to Ten Sites Fig 1

The PCS-G70P is unique in providing high quality video (H.264) and crisp, clear wideband audio (MPEG-4 AAC) – even in multipoint conferences. Using optional MCU software, the PCS-G70P can be configured to communicate with up to five remote sites simultaneously (six sites total) via any mix of IP, ISDN, DSL and (mobile) telephone connections. Moreover, the PCS-G70P can cascade with another PCS-G70P, PCS-1P or PCS-TL50P to link up to ten sites, again offering high bandwidth per connected site and supporting H.264 and MPEG4 standards. For even greater versatility, the 'speedmatching' function ensures, for instance, that higher speed connections over IP networks and lower speed ISDN connections can be brought together within one multipoint conference without reducing connection speeds to the lowest denominator. With 'MCU on the fly' support, users can start off with a peer-to-peer videoconference and expand into a multi-point meeting at any time by simply dialing additional contacts as required.

■ Site-Name Display Fig 2

It can be difficult keeping track of who's who in a multi-point conference. The PCS-G70P can display the name of each participant, their company or location on-screen.

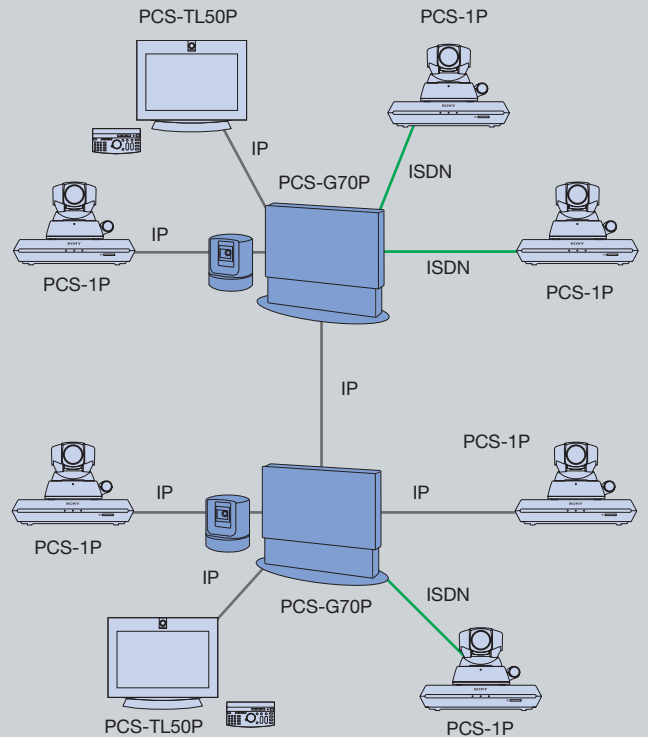


Fig 1 Multi-point Videoconferencing at up to 10 Sites



Fig 2 Site-Name Display

Flexible Display Patterns at all Sites

The PCS-G70P offers a range of flexible display options, allowing you to customize the look of any conference to suit your precise needs and the number and positioning of connected display monitors. It can show far side participants as a full-screen view, or alternatively display near-side and far-side sites simultaneously as a picture-in-picture mode. Four-screen and six-screen continuous presence modes are also supported for the most appropriate display format to match the number of connected sites that are. In both full-screen and continuous-presence modes, two display options are available:

Voice Switching

Voice switching mode in a six-screen (or 5+1 screen layout) displays the active speaker as the largest on-screen inset, with the other five participants grouped around them as smaller images. When the active speaker changes, they are automatically 'promoted' to be the largest displayed inset picture, while the previous speaker re-joins the other smaller picture insets.

Fixed Site Fig 3

The selected far-side participant is continuously displayed on the monitor when the unit is in full-screen mode. In continuous-presence mode, the selected far-side site is displayed in the largest of the six inset sub screens.

Multiple Display Output

In addition to its main monitor output, the PCS-G70P can support up to five additional monitors to display pictures from far-side sites in a six-way videoconference.

Dual Camera and Split Picture Support

The PCS-G70P can be configured to handle simultaneous video streams from two cameras, making it an ideal solution for providing coverage of large conference rooms or for capturing video of a specific area of interest during a videoconference, such as a closeup of a surgical procedure. Video from each camera can be displayed on dual monitors, or alternatively pictures can be combined and viewed on a single monitor as a 'split screen' image. A total of four cameras or other video sources such as a DVD player or VCR can be connected to the PCS-G70P. During a conference, users can switch dynamically between video sources and choose between sending either one or two sources at the same time to other participants.

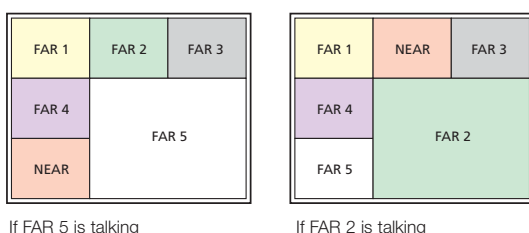


Fig 3 Voice Switching in Continuous Presence Mode

Data-Sharing Capabilities/Digital Whiteboard Support

With the optional PCSA-DSB1S Data Solution Box, two PC's or notebooks can be connected simultaneously to send graphics and documents for sharing with other conference participants. These powerful data sharing capabilities make communications more effective in wide range of business, education and scientific applications. Word processing documents, spreadsheets, presentations or digital artwork can be displayed* in native XGA resolution.

Further improving the natural interactivity of a face-to-face meeting, an optional Mimio Xi™** connected to the PCS-G70P turns your existing whiteboard into a digital one, allowing handwritten notes, drawings and diagrams to be displayed in real time. Notes and other annotations can also be captured by the PCS-G70P and stored to the Memory Stick™ for sharing, storage or wider distribution.

* Sending data requires the optional PCSA-DSB1S Data Solution Box which is however not required for receiving data.

** Please contact your local Sony sales office for information on compatible digital whiteboards.

Superb Sound Quality

The PCS-G70P provides exceptionally clear, natural-sounding audio. Wideband audio processing for point-to-point and multipoint conferences uses the MPEG-4 AAC (Advanced Audio Coding) standard, whether using IP, ISDN or mixed IP/ISDN networks. The built in echo cancellation and noise reduction system ensures improved intelligibility by minimizing the distraction of unwanted echoes during conferences. The PCS-G70P is also compatible with a wide range of Sony external microphones and speakers, speakers, for greater flexibility.

Stylish Design

The sleek, discreet lines of the main processor and camera units make the PCS-G70P an elegant complement to any boardroom or auditorium. The processor itself can be mounted horizontally or vertically (NB: vertical mounting requires optional Codec Stand). Each camera can be sited on a stylish eye-level stand, and cameras can respond to commands from the supplied IR Remote Commander.

QoS (Quality of Service) Enhancement Functions

Consistent audio and video performance in the face of changeable network conditions is a common concern with videoconferencing systems. The PCS-G70P offers three advanced functions to enhance Quality of Service over any network connection. These can be used in 'hybrid' mode, combining the strengths of each mechanism to assure the best possible audio and video quality, even under changing IP network conditions:

Forward Error Correction (FEC)

The powerful Forward Error Correction (FEC) function corrects transmission errors at the receiving end, repairing corrupted data to ensure that audio and video is accurately reproduced.

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, reducing the risk of audio and video breakup.

Auto Repeat Request (ARQ)

The ARQ function recovers 'lost' IP packets by buffering data at the encoder and resending any that are lost during transmission. This feature helps to maintain audio and video quality, reducing the danger of 'picture collapse' even under busy network traffic conditions.

Intuitive Interface and Easy-to-Use Remote Commander Unit

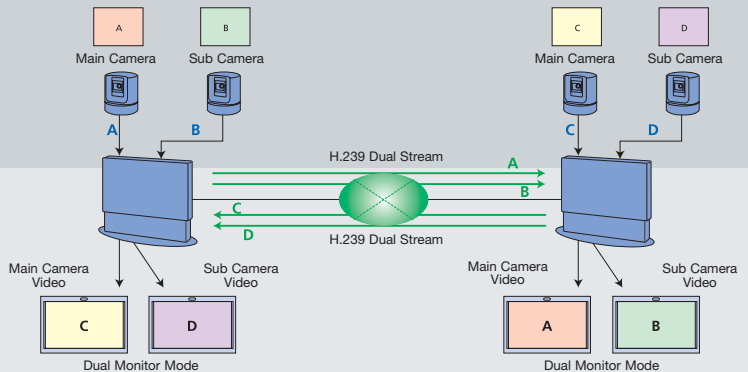
The PCS-G70P requires minimal user intervention to easily set up a video conference via the remote commander unit and the intuitive interface. The supplied ergonomic remote commander unit that allows quick, simple on-screen navigation.

Placing a call can be achieved either by pressing one of the three Quick Dial buttons or by typing in the number of the remote videoconference system via the remote commander and press "Connect". The PCS-G70P 'smartly' identifies whether the number is an IP or ISDN number for maximum user convenience, and the user does not have to worry about selecting the right network connection.

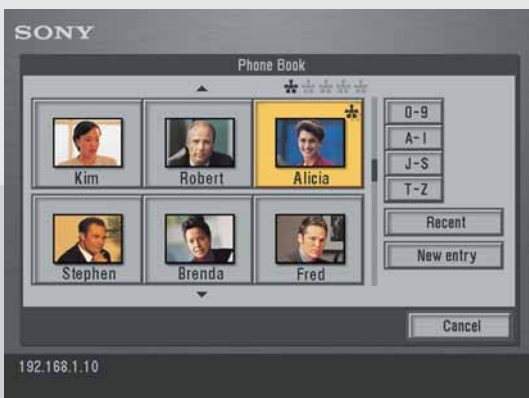
The system Phone Book stores up to 500 contacts for quick and easy dialing. A call history log stores the last 32 incoming and/or outgoing calls, making it quick and easy to contact a recently-called party.



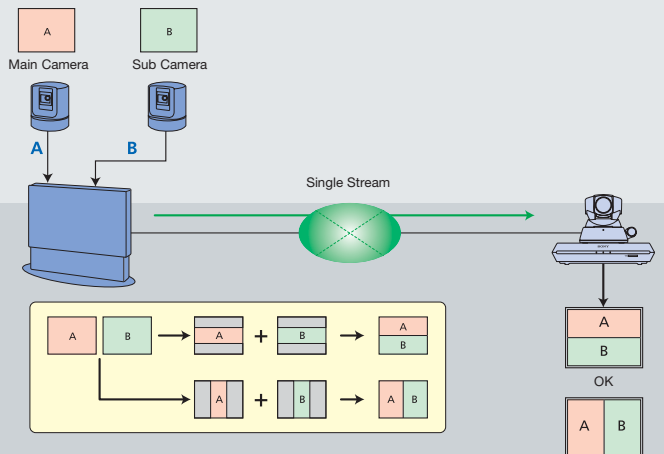
Launcher Menu



Dual Camera/Dual Stream



Phone Book



Dual Camera/Single Stream

■ Memory Stick™ Support*

'Private' phone books can be stored on handy, removable Memory Stick media. Simply insert a Memory Stick into the PCS-G70P and it will automatically activate the private phone book, making the user's personal contacts available and eliminating the need to manually re-enter contact information to place a call. Memory Stick media can also be used to store captured images, PC-generated data, digital whiteboard drawings and other data created during a conference. Software updates can also be performed simply using Memory Stick. Pictures from a Sony Cyber-shot camera can be shown in a slideshow during any videoconference simply by inserting the Memory Stick into the PCS-G70P and opening the Memory Stick directory.

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

■ AV recording on Memory Stick

The Memory Stick recording function allows you to record your videoconference simply onto a Memory Stick (normal and Memory Stick Pro). This feature is a real industry-first and will add great value to users of the PCS-G70P. Colleagues who could not participate in the videoconference can now play-back what was discussed and grasp the essence of the meeting. There's no need to write time-consuming minutes of the meeting, as it is now possible to play-back the last meeting on your PC before you have the next meeting to refresh topics. The Memory Stick recording feature uses MPEG-4 coding for audio and video to deliver high quality playback on a laptop or desktop computer using QuickTime.

The recording time obviously depends on the quality that is set from the PCS-G70P system (64 Kbps-512 Kbps). As an example, a 1-minute recording on 64 Kbps video quality resulted in a 1.6 MB file size. With this ratio, a 1-hour videoconference will therefore easily fit on a 128 MB Memory Stick.

■ Built-in Streaming over IP networks

Another great feature of the PCS-G70P is the built-in streaming application. Ideal in situations like large corporate press events, where large numbers of employees can witness the presentation of a new branding. Or perhaps for education purposes, where streaming allows groups of students to see and hear the lecture taking place via videoconference.

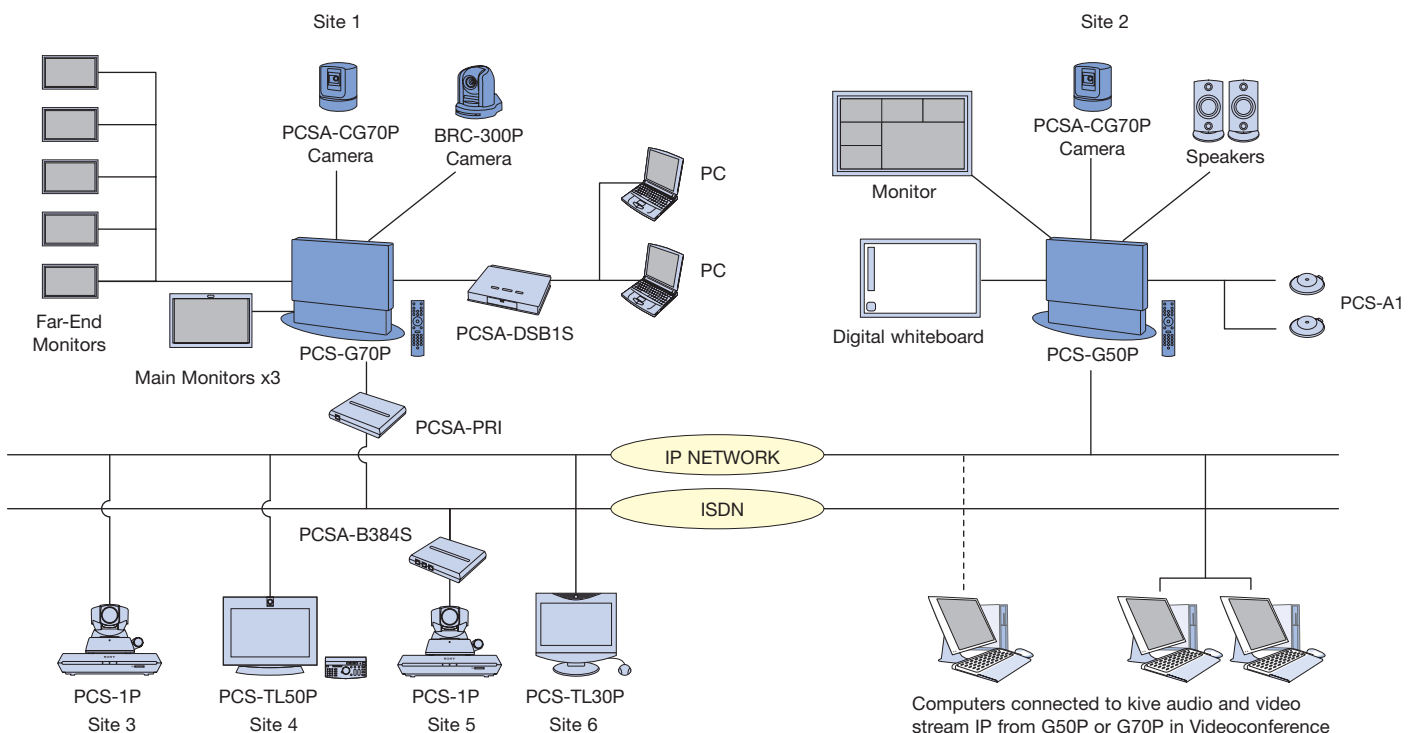
The streaming application uses MPEG4 coding for audio and video and is available in point-to-point, IP, ISDN and mixed multipoint connections. Play-out of the audio and video on a PC is handled using QuickTime.

Streaming connects 2 worlds: the actual videoconference, where all participants have 2-way real-time communication and desktop or laptop users, who see and hear the videoconference.

■ Advanced Encryption for More Secure Videoconferencing

The PCS-G70P supports the advanced Encryption Standard (AES) to safeguard video, audio and data against unauthorized interception, ensuring that confidential information remains confidential throughout the conference. This security feature makes the PCS-G70P an ideal solution for sensitive meetings and commercial negotiations where it's vital to ensure that the integrity of all communications is not compromised.

SAMPLE SYSTEM CONFIGURATION



Optional Accessories to further enhance your video communication



PCSA-DSB1S
Data Solution Box



PCSA-B768S
ISDN Unit (6 BRI)



PCSA-B384S
ISDN Unit (3 BRI)



PCSA-PRI
ISDN Unit



PCS-A1
Omnidirectional Microphone



PCSA-A3
Unidirectional Microphone



PCSA-A7P4
Communication Transducer
(4 x Microphones per pack)



PCSA-CG70P
Standard Camera Unit



PCSA-CTG70P
Intelligent tracking camera



BRC-300P
3 CCD Colour Video
Camera



EVI-D70P
Communication
Video Camera (white)



EVI-D70P
Communication
Video Camera (black)



EVI-D100P
Communication
Video Camera



PCSA-STMG70
Codec Stand



PCSA-GSTAND1
Monitor Stand excluding
displays, including
integrated speakers.



PCSA-GSTAND2
Monitor Stand excluding
displays, including
integrated speakers.



PCSA-STCG70
Camera Stand



PCSA-M0G70
H.320 MCU Software



PCSA-M3G70
H.323 MCU Software



PCSA-SP1
SIP Software

Case Studies

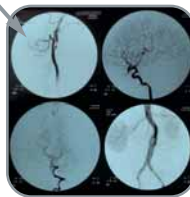
■ Operating Room

Surgeons in an operating theatre can share live audio and video links with doctors at remote location. Surgeons in the theatre see the far-end doctor on a video monitor as well as the live endoscopic images from the patient. The far-end doctor also sees the images from the patient, hears audio and views DICOM patient data - all in real time. He can thus give to the surgeons a second opinion.

Near End: Operating Room



Live endoscopic camera view



XGA patient data

Far End: Doctor for Second Opinion



Live view from "Far End" Doctor for Second Opinion

IP/ISDN

■ Education

Teachers can deliver a lecture from a remote location, appearing on a plasma screen while images from the remote teacher's own PC are shared with students via a classroom projector. Another classroom-based teacher can use the electronic whiteboard to make notes that can be seen by the remote teacher in real time. As many as ten sites can be linked simultaneously in a single multi-point conference.



Near End: Classroom



Far End: Teacher

IP/ISDN

■ Large Venues

Scenario 1 - Dual stream from large conference venue to boardroom:

Two cameras in the large conference venue capture both presenter and audience simultaneously. The people in the far end boardroom to see both camera views on 2 separate monitors.

Scenario 2 – Dual stream from large conference venue to boardroom

and vice versa: Two cameras in the large conference venue capture both presenter and audience simultaneously. The people in the far end boardroom to see both camera views on two separate monitors. This time, there are also two cameras in the boardroom capturing the speaker in front of the whiteboard and the people sitting around the table. The audience in the large venue can see both camera views on two separate monitors.

Near End



Large Venue hosting videoconference with Presenter and Audience

IP/ISDN

Far End



Boardroom joining the videoconference

■ Large Boardrooms

This boardroom is connected to five other sites, which can all be viewed on an individual monitor. Users can choose to display the site name of each participant.

Near End: Boardroom



Far End: Individual Site



IP/ISDN

PCS-G70P SPECIFICATIONS

VIDEO

Signal system Standards	PAL 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 (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-PR1 Up to 768 Kb/s in H.320 (Incl. audio) when configured with the PCSA-B768S Up to 384 Kb/s in H.320 (Incl. audio) when configured with the PCSA-B384S

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 included	Noise Suppressor included Automatic Gain Control

GRAPHICS

XGA	1024 pixels x 768 lines (H.263), with PCSA-DSB1S
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
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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)* in cascade mode
*Requires optional MCU software.

LIP SYNCHRONISATION

Manual On/Off

CAMERA UNIT

Image device	1/4 type CCD
Horizontal resolution	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

IR REMOTE COMMANDER

Format	Wireless SIRCS
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PCS-G70P INTERFACES

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 (bypasses echo canceller) 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

PCSA-CG70P INTERFACES

Video	IR to PCS-DS150P
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	AC 220 V to 240 V, 50/60 Hz
Requirements	
Power Consumption	DC 19.5 V, 5 A
Communication	5.3 kg (11 lbs 11 oz)
Terminal Mass (PCS-G70P)	
Camera Unit Mass (PCSA-CG70P)	1.0 kg (2 lbs 3 oz)

SYSTEM COMPONENTS

PCS-G70P	Communication Terminal
PCSA-CG70P	Camera Unit (includes dedicated 3 m camera cable)
PCSA-RG70P	Remote Commander
PCSA-AC19V6	AC Adaptor/Power Cord

SUPPLIED ACCESSORIES

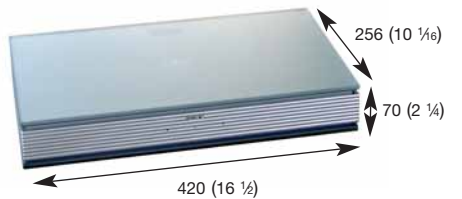
IR Repeater x2, Manganese Battery for Remote Commander x2, Operation Manual CD-ROM (Japanese, English, French, Spanish, Italian, German, Portuguese, Simplified Chinese), Operation Guide, Quick Connection Guide, Cable Connection Guide, Worldwide Warranty Booklet, Audio Cable (1.0 m), S-Video Cable (1.5 m), Mini DIN 7-pin to RCA Conversion Connector

OPTIONAL ACCESSORIES

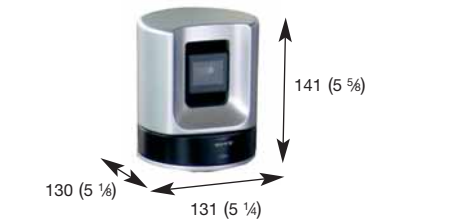
PCSA-CTG70P	Intelligent Tracking Camera
PCSA-GSTAND1	Single Screen stand
PCSA-GSTAND2	Dual Screen stand

Dimensions Unit: mm (inches)

Communication Terminal



Camera Unit



Rear Panel

