

## Seeking Realistic Sensations of Communication – The Sony High Definition PCS-HG90 Bringing in a New Generation of Visual Communication

As the quality of IP networks advances and videoconferencing technology evolves, we can communicate more effectively and efficiently regardless of location or the distance separating us. But for top-end professional applications demanding the highest image quality such as with live interview broadcasts, product design conferences, and distance learning including medical teaching, standard videoconferencing systems will have limitations. To meet these demanding professional needs, Sony introduces an exceptional high definition (HD) visual communication system, the PCS-HG90. Sony is a leader in the AV industry and has produced a number of high-quality HD systems. And by inheriting this HD technology, the PCS-HG90, is sure to prove itself as a major player in the HD visual communications market. For the first time in this industry, a high definition video format of 1280 x 720 at 60P and a maximum video transfer rate of 8Mb/s over an IP network has been achieved. With its advanced H.264 HD video codec and its high-resolution and high frame rate of 1280 x 720 60P/30P, the PCS-HG90 boasts realistic and lifelike images even on large-screen displays. In addition to high-quality images, the PCS-HG90 features clear and natural-sounding audio, with its wide frequency range of up to 22 kHz using MPEG-4 AAC (Advance Audio Coding). What's more, when using audio AUX inputs, the unit supports a wider frequency range of up to 44 kHz, to provide superb-quality audio from a number of different sound sources. Also, what makes the PCS-HG90 unique is that it can accept analog or digital video signals, from SD to HD, as well as PC signals. And because the PCS-HG90 accepts standard video

# PCS-HG90



signals via its BNC connectors and stereo audio via XLR connectors, the system is ideal for configuring with professional Audio/Video equipment. An optional PCSA-CHG90 camera unit can be used with the system to provide high quality HD video and a PTZ (Pan/Tilt/Zoom) capability. Additional features of the PCS-HG90 include a four site multi-point videoconferencing capability, site-name display, and ITU-T H.235 encryption.

For customers demanding effective communication with lifelike audio and video, the PCS-HG90 Visual Communication System can provide a reality never before achieved and it is the ideal choice to meet these demands.

Connect Your Vision

# IPELA™

## FEATURES

### High-quality HD Video

1280 x 720, 60P/30P, ITU-T H.264 HD Codec

### Superb Sound

MPEG-4 AAC Stereo or Mono: 44 kHz (Aux In), 22 kHz (Mic In)

### Professional A/V Interfaces

BNC (for video), and XLR (for audio)

### Versatile Video Inputs/Outputs

Maximum Bandwidth of 8 Mb/s with an IP Connection

### Optional HD Camera (PCSA-CHG90)

### Multi-Point Videoconferencing at up to 4 Sites

Broadcast or Voice Switching Mode, Site-Name Function

### Enhanced Intelligent QoS (Quality of Service) Functions for HD video

- "Harmonious" QoS Management for adapting to Network Conditions
  - Adaptive FEC (Forward Error Correction)
  - Real-time ARQ™ (Automatic Repeat reQuest)
  - ARC (Adaptive Rate Control)
- High-performance Error Correction and Fast Data Throughput

### Advanced Encryption Standard (AES)

ITU-T H.235 Standard Mode

### Memory Stick™ Media Support\*1

Private Phone Book, etc.

\*1 In addition to Memory Stick, Memory Stick PRO™, and Memory Stick Duo™/PRO Duo™ with an adaptor, can be used.

### Intuitive GUI and Supplied User-Friendly Remote Commander™ Unit



Rear Panel

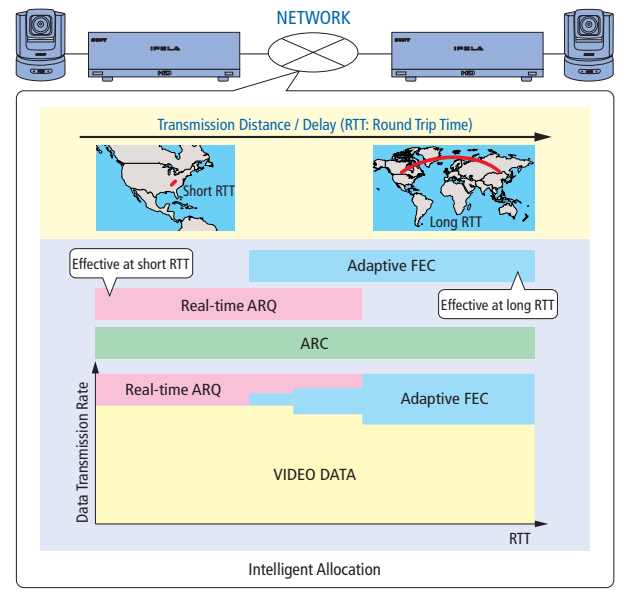
# SPECIFICATIONS

PCS-HG90 (TERMINAL)	
<b>Video</b>	
Standard	H.264
Compression Formats	1280 x 720p at 60 frames/s, 1280 x 720p at 30 frames/s
Bit rate	512 kb/s to 8 Mb/s (8192kb/s) in H.323 (Incl. audio)
Input format	1080 x 60i, 1080 x 50i, 720 x 60p, 480 x 60i, 576 x 50i, XGA (1024 x 768)
Output format	1080 x 60i, 1080 x 50i, 720 x 60p
<b>Audio</b>	
Bandwidth and coding	MPEG4 AAC Stereo: 44 kHz (Aux In) / 22 kHz (Mic In) at 192 kb/s (Fs = 96 kHz) MPEG4 AAC Mono: 44 kHz (Aux In) / 22 kHz (Mic In) at 96 kb/s (Fs = 96 kHz) G.711: 3.4 kHz at 56 kb/s, 64 kb/s G.722: 7.0 kHz at 48 kb/s, 56kb/s, 64kb/s G.728: 3.4 kHz at 16 kb/s
Echo Cancellation	Stereo Echo-canceling supported for audio frequency up to 22 kHz Noise Suppressor included Automatic Gain Control included
<b>Screen Layout</b>	
	Full screen, Picture-in-Picture, Picture-and-Picture including Side-by-Side split screen
<b>ITU-T Standards (excludes audio/video standards)</b>	
	H.323 (HD video only), H.225, H.281 FECC, H.245, H.235
<b>Network Protocol</b>	
	TELNET (Server), HTTP (Server), FTP (Server), SNMP (Agent) DNS (Client), DHCP (Client), RTP/RTCP, TCP/UDP, ARP
<b>Control Port</b>	
	LAN (Ethernet), RS-232C
<b>Multipoint Capability</b>	
Internal MCU	Up to 4 sites of video and audio with an IP connection Full Screen Display only (Broadcast or Voice Activated Mode)
<b>Lip Synchronization</b>	
	Manual (On/Off)
<b>Security</b>	
	H.235 AES Encryption
<b>Network Features</b>	
QoS (Quality of Service)	Adaptive FEC (Forward Error Correction), Real-time ARQ (Auto Repeat reQuest), ARC (Adaptive Rate Control)
Others Network Features	SNMP, NAT, UDP Shaping, TCP/UDP Port Setting Support, Auto Gatekeeper Discovery
<b>Camera Control</b>	
Preset Position	6 points via GUI, Remote Commander, Telnet and Web
<b>Interface</b>	
Video Input	HD-SDI x1, Main (HD Camera/HD Video Player) HD-SDI x1, Sub (HD Camera/HD Video Player) Y/Pb/Pr x1, Sub (HD Camera/HD Video Player) S-Video x1, Sub (SD Camera/SD Video Player) RGB (D-sub 15) x1, Sub (PC: XGA)
Video Output	HD-SDI x1, Main (Far Video) Y/Pb/Pr x1, Sub (Far Video) Y/Pb/Pr x1, Sub (Near Video)
Audio Input	XLR x2 (L/R) Main (Line Level, to Audio Mixer) XLR x2 (L/R), Aux1 (Line Level, to Audio Mixer) RCA x2 (L/R), Aux2 (Line Level, to VCR, DVD, etc) Plug-in-power x2 (L/R), PCSA-A1, A3 (Mic Level) Dedicated Digital x2, PCSA-A7P4
Audio Output	XLR x2 (L/R), Main (Far, Line Level) XLR x2 (L/R), Mix (Far+Near for Rec, Line Level) RCA x2 (L/R), Mix (Far, Line Level) RCA x2 (L/R), Mix (Far+Near for Rec, Line Level)
Network	10Base-T/100Base-TX x 1
Control	Wired SIRC In x1 for Remote Commander Unit, RS-232C x1 D-Sub 9pin
Memory Stick	Memory Stick Slot x 1
<b>General</b>	
Operating temperature	5 to 35 °C (41 to 95 °F)
Operating humidity	20% to 80% (non condensing)
Storage temperature	-20 to 60 °C (-4 to 140 °F)
Storage humidity	20% to 80% (non condensing)
Power requirements	AC 100 to 240 V, 50/60 Hz
Power consumption	1.8 A
Dimensions (W x H x D)	440 x 150 x 450 mm (17 3/8 x 6 x 17 3/4 inches), excl. projections (including feet)
Mass	Approx. 13 kg (28 lb 11 oz)
<b>Supplied Accessories</b>	
	PCSA-RG1 (Remote Commander Unit) x1, Remote Control Receiver x1, Power Cord x1, Manganese Battery for Remote Commander Unit x2, Operation Instructions CD-ROM x1, Operation Guide x1, Quick Connection Guide/Remote Control Guide x1, Connection Sheet x1, Worldwide Warranty Booklet x1

PCSA-CHG90 (OPTIONAL CAMERA)	
Image device	1/3-type IT CCD x3
Effective pixels	1440 pixel (Horizontal) x 1080 line (Vertical)
Focal length	4.5 to 54 mm (F1.6 to F2.8)
Focus	Auto / Manual
Iris	Auto / Manual (F1.6 to close)
Horizontal image angle	6.94° (tele) to 65.56° (wide)
Vertical image angle	4.48° (tele) to 40.44° (wide)
Zoom ratio	x12 optical zoom (x4 with digital zoom)
Pan angle/speed	+/-170° (Max 60° /sec)
Tilt angle/speed	-25° to +90° (Max 60° /sec)
S/N	50 dB or more
Video Out	HD-SDI x2 (BNC connector) Y/Pb/Pr x1 (15P D-sub connector) for service use
Control In	VISCA RS-232C x1 (8pin Mini DIN)
Control In/Out	VISCA RS-422 x1 (9pin connector)
Operating temperature	5 to 40 °C (41 to 104 °F)
Operating humidity	20% to 80% (non condensing)
Storage temperature	-20 to 60 °C (-4 to 140 °F)
Storage humidity	20% to 95% (non condensing)
Power requirements	DC 12V
Power consumption	Max. 29 W
Dimensions (Diameter x H)	208 x 267 mm (8 1/4 x 10 5/8 inches), excl. projections
Mass	Approx. 4.4 kg (9 lb 11 oz)
Others	Auto White Balance
Supplied accessories	AC Power Adaptor (MPA-AC1) x1, AC Power Code x1, Ceiling Bracket (A) x1, Ceiling Bracket (B) x1, Wire Rope x1, Wire Rope x1, Screws (+M3x8) x7, Screws (+M4x8) x1, RS-422 Connector Plug x1, VISCA Cable (3.0m) x1, BNC Cable (3.0m) x1, Operating Instructions x1, Worldwide Warranty Booklet x1

## Technical Note – Intelligent QoS Functions

Sony has implemented a number of QoS functions in all of its currently available videoconferencing systems. However, conventional QoS methods are inadequate when handling large amounts of data associated with high-definition video. Therefore, Sony has designed and implemented intelligent QoS functions in its high-definition PCS-HG90. Two major changes have been made as compared to existing methods. First, the system intelligently allocates the amount of ARQ, FEC, and video data based on the bandwidth available, which is determined by the ARC function. Second, FEC is performed with larger FEC blocks and the number of parity packets are adjusted as required. This combination is both efficient and effective for transmitting large amounts of data over IP networks to help maintain high-picture quality.



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