Panasonic
ideas for life

THE WORLD –
JUST A
VIDEO CONFERENCE
AWAY

HD VISUAL COMMUNICATION (HDVC)
KX-VC600
KX-VC300

PANASONIC KX-VC300 & KX-VC600

The new Panasonic HD Visual Communication System. Enjoy smooth conversations with high-resolution video quality over the intranet and the Internet in a few simple steps. Connect and collaborate with colleagues and business partners all across the globe, in real time.

High Image Quality

- Panasonic's unique high-quality image technology gives you seamless and ultra-realistic video conferencing
- Digital home electronics platform Uniphier® system LSI makes it possible to display facial expressions and gestures in clear, full-HD images

UniPhier®

SD   Full HD

Excellent Sound Quality

- Unique echo canceller reduces feedback and background noise to achieve crystal clear sound quality even during 2-way conversations
- Full duplex audio in broadband stereo produces clear and dynamic sounds
- Up to 4 Digital Boundary Microphones* can be installed for larger rooms. Also features a direction recognition function that detects the direction and position of the speaker's voice

*The Digital Boundary Microphone is compatible with KX-VC600.

Stable Connection with Unique AV-QoS

- Rate control function accurately estimates network traffic and controls data transfer to reduce packet loss
- Forward Error Correction (FEC) and Automatic Repeat Request (ARQ) prevent image and sound disruptions on the Internet and intranet
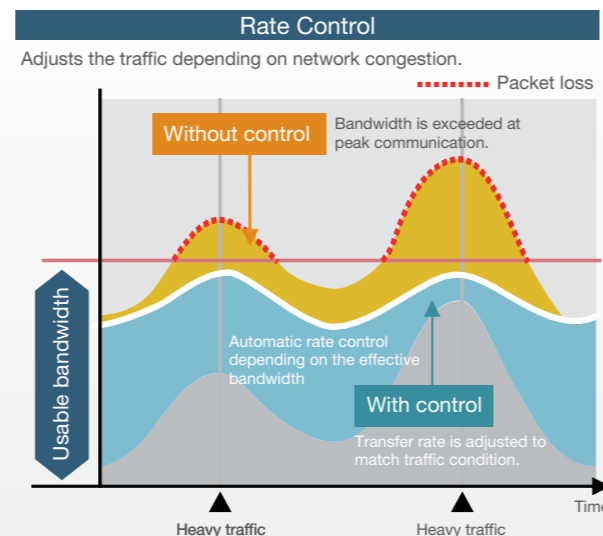
Comparison with a congested network connection.

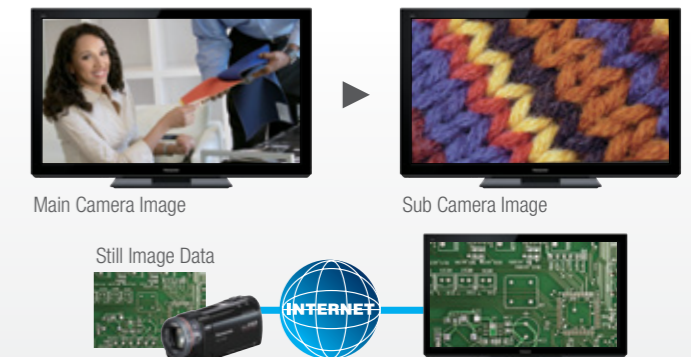Conventional Video Conference System   HD Visual Communication System

Rate Control
Adjusts the traffic depending on network congestion.

········· Packet loss

Without control — Bandwidth is exceeded at peak communication.

Automatic rate control depending on the effective bandwidth

With control — Transfer rate is adjusted to match traffic condition.

Usable bandwidth

Heavy traffic   Heavy traffic   Time

Share Content with Picture-in-Picture*

- Share both PC screen and camera view with all conferencing parties
- Changeable screen layout

Layout 1	Layout 2	Layout 3
Site A / Site C / Site B	Site A / Site C / Site B / Self Image	Site A

Layout 6	Layout 5	Layout 4
Self Image	Site C	Site B

*Available in version 2.3 only.

Close-up View with Sub Camera

- Display close-ups in super high detail
- Send high-resolution images using only a small amount of data

Main Camera Image   Sub Camera Image

Still Image Data

INTERNET

Compact Size for Easy Installation

- Considerably space-saving with a size approximately that of an A4 document
- Can be installed not only in large spaces such as conference rooms, but also in limited spaces like meeting booths and reception counters
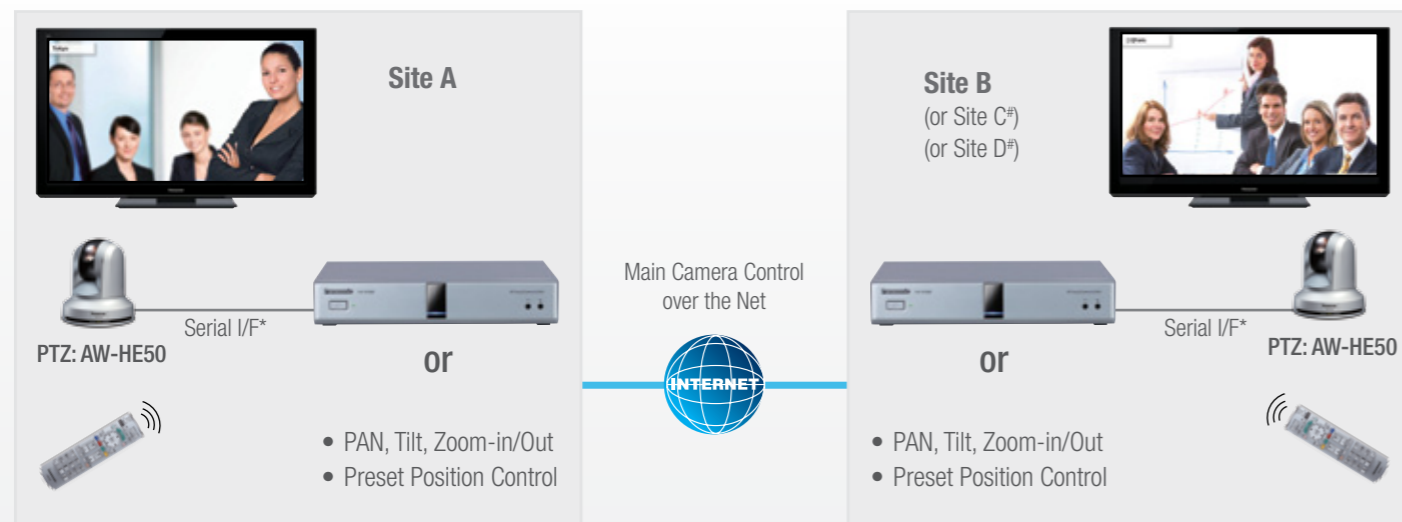
230 mm
60 mm
320 mm

2 kg

Interoperable with other-brand devices / Multipoint Control Unit (MCU)

- Allows smooth expansion into existing video conference systems
- MCU facilitates multipoint communication

Other-brand devices

MCU

Remote PTZ camera control

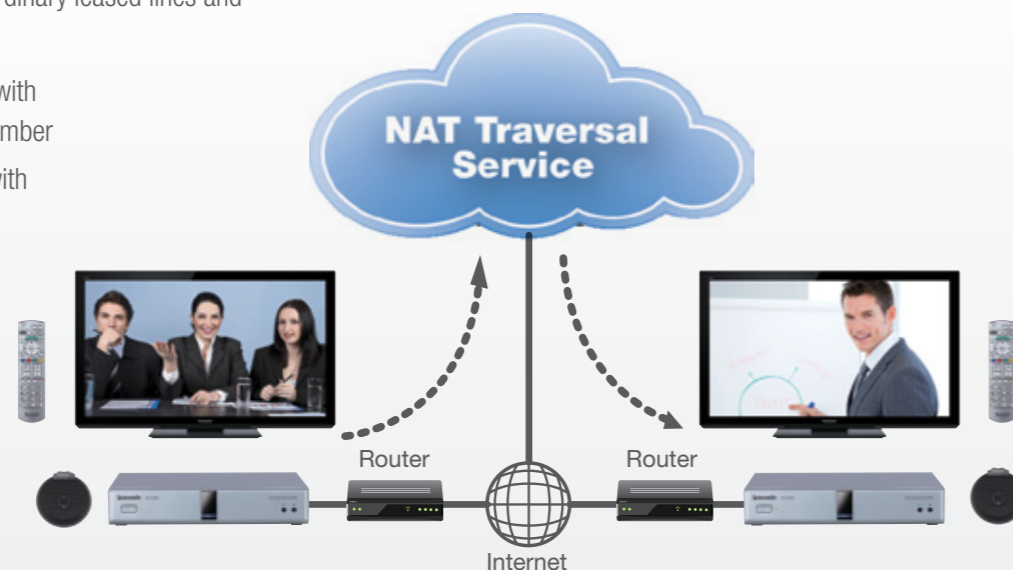- Conveniently operate both near-end and far-end cameras with a single remote control

Site A

Site B
(or Site C#)
(or Site D#)

Serial I/F*

PTZ: AW-HE50

or

Main Camera Control
over the Net

INTERNET

- PAN, Tilt, Zoom-in/Out
- Preset Position Control

or

Serial I/F*

PTZ: AW-HE50

- PAN, Tilt, Zoom-in/Out
- Preset Position Control

* RS-422/RS-232 Converter Required, for KX-VC600 only.
Available through CLI command, as shown in technical and CS materials.
Not explained in user manual and catalogue.

Upon Multipoint Connection, each far-end camera can be selected with the remote control.

NAT Traversal Service – Cloud Service

Cloud service using Panasonic servers. Provides smart visual communication without having to use ordinary leased lines and complicated router settings.

- Access a 7-digit terminal ID number with the same ease as dialling a phone number
- Connect securely using the Internet with encrypted communication
- Choice of 1- or 3-year subscription (optional)

NAT Traversal Service

Router

Router

Internet

CASE STUDIES

Manufacturing

Connect with different departments and collaborate with remote sites to reduce travelling time and cost while enhancing cooperation between your company and its partners.

Clients:
- ACTA Co., Inc
- Fujitsu Asia Pte Ltd
- Learning Resources®
- Rengo Co., Ltd

Education

Share knowledge and information across classrooms, research labs, other departments and even other schools. Reduces travelling between campuses and facilitates remote instruction.

Clients:
- Berlitz® & Brighter Choice Charter Middle School
- Kansai University Elementary School & Cromer Public School
- Nagoya Ohara Gakuen Colleges
- University of Tsukuba

Healthcare

Connect with other medical specialists across the globe or provide medical advice and training for doctors in remote areas. By linking sub cameras and sharing PC screens, even highly technical exchanges, such as viewing X-rays, can be conducted with ease.

Clients:
- Federation of Democratic Medical Institutions
- Yamagata University Faculty of Medicine

Other Industries

The high-quality HD Visual Communication System enables zero-distance communication for operations at construction sites, financial institutions, music rehearsals, retail businesses, storage inventory management, public services, and other events.
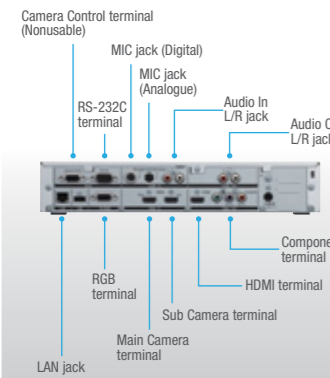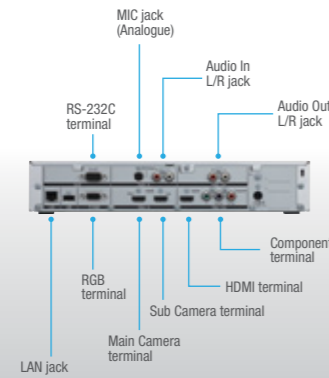
Clients:
- H.B Stubbs and many more

PANASONIC SOLUTIONS PORTFOLIO

A Solution for Any Office Size and Application

Medium to Large Room	Small Conference Room/ Executive Office	Recording & Streaming	Business Communications
KX-VC600	**KX-VC300**	**Media Master**	**KX-NT700**

• Connects up to 4 sites (Standard) • Real-time Full-HD 1080p video quality (Standard) • High-quality audio and smooth 2-way stereo conversation • Convenient sub camera and PC connection for real-time collaboration • Easy, user-friendly operation • Stable connection with Panasonic's AV-QoS	• 2-site connection (expandable up to 4 with option) • Real-time HD 720p video quality (expandable to 1080p with option) • High-quality audio and smooth 2-way stereo conversation • Convenient sub camera and PC connection for real-time collaboration • Easy, user-friendly operation • Stable connection with Panasonic's AV-QoS	• 4 HD Video/VGA or 6 SD signal processing • Live streaming – deliver up to 10 unicast streams to client • Record audio, video and VGA directly to application • 10 concurrent users for video-on-demand • Easy transfer of media file saved in Media Master to FTP server • Local playback (optional module)	• High-definition voice quality • Full duplex acoustic echo canceller • Supports USB audio from PC • Microphone noise reduction • Audio recording with SD memory card • Conferencing phone manager software for easy PC operation

Rear Panel View (KX-VC600)	Rear Panel View (KX-VC300)	Rear Panel View (Media Master)	Rear Panel View (NT700)

Rear Panel View (KX-VC600): Camera Control terminal (Nonusable), MIC jack (Digital), MIC jack (Analogue), RS-232C terminal, Audio In L/R jack, Audio Out L/R jack, Component terminal, HDMI terminal, Sub Camera terminal, RGB terminal, Main Camera terminal, LAN jack

Rear Panel View (KX-VC300): MIC jack (Analogue), Audio In L/R jack, Audio Out L/R jack, RS-232C terminal, Component terminal, HDMI terminal, Sub Camera terminal, RGB terminal, Main Camera terminal, LAN jack

Rear Panel View (Media Master): Line In, Line Out, USB, COM, DVI Out, LAN, DVI In, VGA In, VGA Loop, PWR

Other interfaces available as follows:
• 4 SD + 1 VGA + Decoding
• 2 HD SDI + 1 VGA + Decoding
• 4 DVi-I

Rear Panel View (NT700): External Mic 1, LAN, Line, DC In, External Mic 2

Feature Comparison List

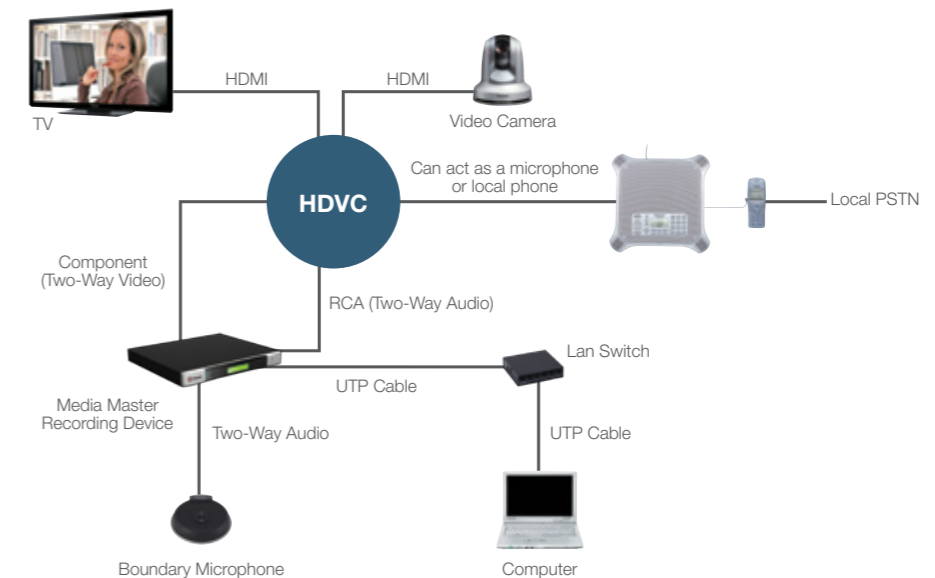|	Maximum Conference Points	Image resolution	Interoperable with other devices[1]	MCU interoperability[1]	Computer connection	Sub camera connection	Digital Boundary Microphone	Analogue Boundary Microphone	NAT Traversal Service
KX-VC600	4	Full HD 1080p	Yes	Yes	Yes	Yes	Up to 4 units	Yes	Yes
KX-VC300	2[2]	HD 720p[3]	Yes	Yes	Yes	Yes	No	Yes	Yes

[1] Only selected brands and models.
[2] Upgradable to 4 locations with optional activation key.
[3] Upgradable to 1080i with optional activation key.

SYSTEM CONFIGURATION EXAMPLE

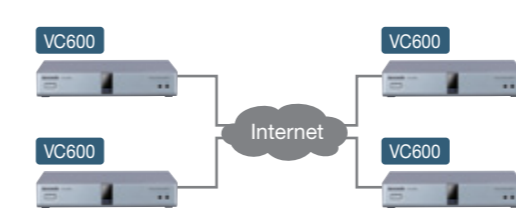## Panasonic HDTV solution with Recording and Conference Phone NT700

TV — HDMI — HDVC — HDMI — Video Camera
Can act as a microphone or local phone — Local PSTN
Component (Two-Way Video)
RCA (Two-Way Audio)
Lan Switch
Media Master Recording Device — UTP Cable
Two-Way Audio — UTP Cable
Boundary Microphone — Computer

Site Connection

KX-VC300
Designed for 2-site connection, scalable to 4-site connection.
VC300 — Internet — VC300

KX-VC600
Connects up to 4 locations.
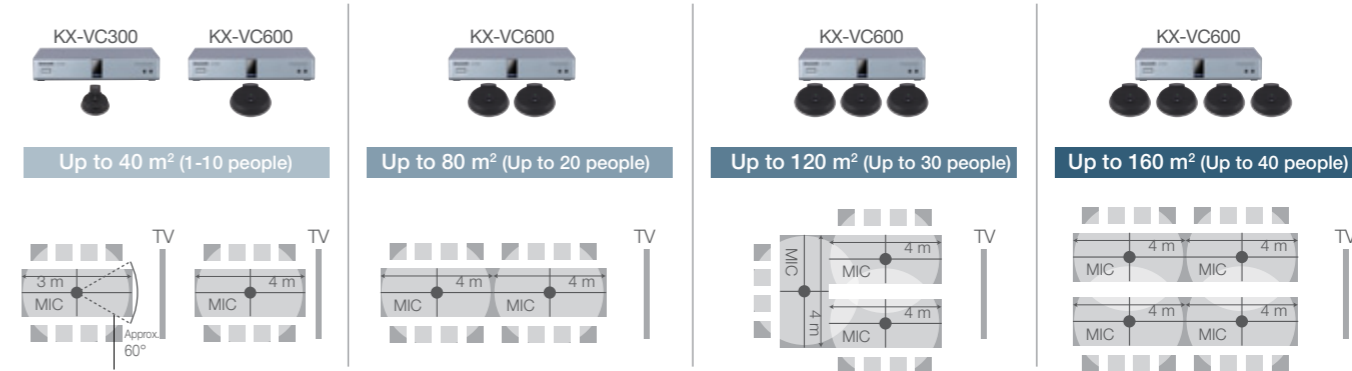VC600 — Internet — VC600
VC600 — VC600

KX-VC600 and KX-VC300 Connection
The KX-VC300 allows connection of up to 4 locations when it is on the receiving end of a call with the KX-VC600 set as the base unit.

VC600 — Internet — VC300, VC300, VC300
VC600 — Internet — VC600, VC300, VC300
VC600 — Internet — VC600, VC600, VC300

Microphone and Pickup Capacity

KX-VC300 / KX-VC600	KX-VC600	KX-VC600	KX-VC600
Up to 40 m² (1-10 people)	Up to 80 m² (Up to 20 people)	Up to 120 m² (Up to 30 people)	Up to 160 m² (Up to 40 people)

*The Analogue Boundary Microphone exceeds the sound-collecting range at an angle of about 60° on the connector side.

*This diagram is intended only as a layout example. It is not meant to show the maximum number of people that can be covered.
*This is the pickup capacity when using the Digital Boundary Microphone. The capacity varies when using another microphone.

Included Accessories

| Remote Control | Digital Boundary Microphone KX-VCA001 (For VC600) | Analogue Boundary Microphone KX-VCA002 (For VC300) |

Optional Accessories

Video Camera

| HD-PTZ Camera and Remote Control | HD Camcorder |

Display

Full-HD Plasma/ LCD Display

Display Stand

Display Stand

Activation Keys

Activation key for multipoint (4 parties)
KX-VCS301 (For VC300)

Activation key for Full-HD compatibility
KX-VCS401 (For VC300)

Activation key for NAT Traversal Service (1-year subscription)
KX-VCS701 (For VC300/VC600)

Activation key for NAT Traversal Service (3-year subscription)
KX-VCS703 (For VC300/VC600)

Specifications

Main Unit (KX-VC600/KX-VC300)		KX-VC600	KX-VC300
Communication protocol		SIP	
Communication rate (Min. to max.)	IP communication with 2 locations connected	256 Kbps to 9.0 Mbps	
	IP communication with 3 locations connected[*1]	512 Kbps to 9.0 Mbps	
	IP communication with 4 locations connected[*1]	768 Kbps to 9.0 Mbps	
Bandwidth (For different levels of resolution)		1.5 Mbps minimum[*2] for 1080p[*3]/30fps 768 Kbps minimum[*2] for 720p/30fps 512 Kbps minimum[*2] for 4SIF	
Video codec		ITU-T H.264 high profile level 4.0 (B picture is not supported), ITU-T H.264 baseline profile level 3.1 (For connections to MCUs and non-Panasonic video conference systems)	
Video input	HDMI 1 (main video camera)	Input resolution: 1080i (image only)	
	HDMI 2 (sub video camera)	Input resolution: 1080i (image only)	
		Supported device: Video camera (Blu-ray Disc/DVD players cannot be connected)	
	VGA 15P mini D-Sub (RGB IN)	Input resolution: XGA, SVGA, VGA	
Video output	HDMI (display)	Resolution: 1080i	
	Component (video output)	Resolution: 1080i	
Audio codec		MPEG-4 AAC-LD (LATM format), G.722 (For connections to MCUs and non-Panasonic video conference systems)[*4]	
Audio input	Digital boundary microphone	KX-VCA001 (Up to 4 microphones)	–
	Analogue boundary microphone	KX-VCA002 (1 microphone only)	
	Stereo mini-plug (audio input)	Diameter 3.5mm Supported device: headset	
		Input is the headset microphone level. HDMI/RCA input is inactive when the headphone connector is used.	
	RCA pin jack (audio input)	Maximum line level input: 1.2 Vrms Supported devices: stand microphone (via microphone amplifier), audio mixer etc.	
		Echo canceller enabled	
		Both enabled when using a Boundary Microphone and RCA microphone together.	
Audio output	(HDMI)	For connecting to a display (with speaker)	
	Stereo mini-plug (audio output)	Diameter 3.5mm Supported device: headset	
		Output is the headphone. Either the RCA terminal or the headphone connector is active, but not both.	
	RCA pin jack (audio output)	For connecting to a display (with speaker), amplifier or active speaker	
Maximum conference points		4[*4]	2[*1]
Alternative video sources		PC (VGA terminal), sub video camera (sub HDMI video only)	
Encryption method		AES-CM/unique	
Network Control (serial)	RJ45(LAN)	Full duplex 100BASE-TX only	
	RS-232C	For connecting to a computer for maintenance (use a straight cable) D-Sub 9 pin (male)	
Dimensions (W x H x D)		Approx. 320mm x 60mm x 230mm	
Weight		Approx. 2kg	
Voltage and frequency		AC 100-240V, 50/60Hz	
Power consumption		Maximum: approx. 39W	Maximum: approx. 23W
Operating temperature		0°C to 40°C	
Operating humidity		10% to 90% (non-condensing)	
Boundary Microphone (sold separately)		KX-VCA001	KX-VCA002
Standard pickup range		Approx. 2m (radius), 360°	Approx. 1.5m (radius), 300°
Maximum pickup range		Approx. 3m (radius), 360°	Approx. 2m (radius), 300°
Pickup method		Stereo (automatic left/right channel setting, with 1 unit connected) Monaural (with 2 to 4 units connected)[*5]	Stereo (fixed stereo sound pickup)
Microphone unit		Unidirectional ECM microphone parts x 4	Unidirectional ECM microphone parts x 2
Number of connections		Maximum 4 microphones	Maximum 1 microphone
Maximum input sound pressure		110dB SPL	
Number of terminals for microphone connection		2	1
Mute button		Spring-return Push Switch	
LED		Red: The microphone is muted. Green: The microphone is transmitting.	
		Orange: The microphone is starting up (flashes for approx. 1 second). Off: The microphone is not transmitting.	
Dimensions		Approx. 120mm (diameter) x 25mm	Approx. 75mm (diameter) x 32mm
Cable length		Approx. 8.5m	Approx. 7m
Power input		Supplied from main unit via proprietary cable	
Weight		Approx. 280g	Approx. 80g
Operating temperature		0°C to 40°C	
Operating humidity		10% to 90% (non-condensing)	

*1 The KX-VC300 also allows connection of 3 or 4 locations when it is on the receiving end of a call. The optional Activation Key Card lets you expand the KX-VC300's maximum conference points to up to 4 locations.

*2 AV quality below 512 Kbps might not be optimal. To achieve this low bandwidth capability (1080p mode, Sound-only mode), change value from default setting.

*3 The optional Activation Key Card lets you upgrade the maximum resolution of the KX-VC300 system to 1080i.

*4 Some restrictions apply when 3 or 4 locations are connected. For details, please consult your local dealer. When connecting to non-Panasonic video conference systems, connection is limited to 2 locations.

*5 Stereo sound can also be picked up from 2 to 4 units by changing the user settings.