HD Visual Communications System

KX-VC1600
KX-VC1300
KX-VC300

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Important
– Safety Precaution: carefully read the operating instructions and installation manual before using this product.

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*This image shows the KX-VC1600
Connects multiple sites to allow for flexible, stress-free videoconferences for all participants.

The new HD Visual Communications (HDVC*) System connects to multiple sites for videoconferences with minimal installation costs. You can also use a mobile device to take part in a videoconference from a location away from your company. The HDVC System realises effective visual communication without restrictions on time or place. It flexibly responds to a wide range of communication needs in various fields, such as education, manufacturing, healthcare, finance and sales.

* HD Visual Communications System is abbreviated as HDVC hereafter.

Connection to Multiple Sites

The HDVC System can connect up to 10 sites without any optional equipment. It can connect via intranet or Internet, thus enabling multi-site videoconferencing with a client or with people in distant locations via mobile devices.

* Connection of up to 10 sites is supported only by the KX-VC1600. The indicated number of connection sites includes the home location.
* Option must be purchased.

Clear Communication

The HDVC System incorporates Panasonic’s high-quality image and sound technologies cultivated in the development of various AV products over the years. The system conveys facial expressions and nuances of voices to facilitate discussions and remote lectures.

* The function to display on three monitors is supported only by the KX-VC1600. The KX-VC1300 can display images on two monitors.

Easy to Use

The Triple Monitor function displays a PC document and the images of distant sites and the home location on three monitors. The sub camera function displays fine details in a close-up view. Various convenient functions help to make communication smooth and accurate.

* The function to display on three monitors is supported only by the KX-VC1600. The KX-VC1300 can display images on two monitors.
The KX-VC1600 lets you hold a multi-site videoconference with people at up to 10 sites*1 without requiring the purchase of expensive MCUs (Multi-point Connection Units). When combined with Panasonic’s NAT Traversal Service or HD Visual Communication Mobile (HDVC Mobile) software that enables the use of mobile devices for participating in a videoconference, you can have effective visual communication without restrictions on time or place.

*1 Option must be purchased. (Refer to “Activation Key” on page 16.)

Connection to offices and clients

Because the HDVC System can connect via intranet/VPN and Internet simultaneously, it is easy to configure a videoconference system connected to sites inside and outside your company. The HDVC System can be used to hold videoconferences with clients without a large investment in equipment.

Participation in videoconferences using mobile devices

You can join a videoconference from a location outside of the office, while you are on the go, or from your own home using a Windows/iOS/Android™ mobile device. The HDVC System provides effective visual communication without restrictions on time or place.

Optimum screen layout

The HDVC System comes with a function that lets you choose a screen layout from a variety of options. For instance, you can select a screen layout to show all participating sites or to display the site with a high voice level in a large window (Window 1 in the layouts shown below). The most suitable screen layout can be selected according to the type of videoconference held.

The screen layout changes automatically according to the number of connection sites.

- For Discussion mode, designated sites can be displayed at the preset screen positions.

Multicast (one-way video transmission) is possible for up to 30 sites

If the KX-VC1600 or KX-VC1300 is used as the video transmission device, transmission is possible for up to 30 sites without having to use an expensive control server or MCU. Images can be easily transmitted depending on your needs, such as regular morning meetings or seminars. By sending camera images sequentially, access concentration can be prevented at the image transmission site. This enables a comfortable line environment for multi-site transmission.

- Multicast (one-way video transmission) is possible for up to 30 sites.
- Cannot be used with NAT Traversal Service.
- A Multicast Activation Key (KX-VCS302) is required for the video transmission device and all receiving HDVC System sites. See page 16.
- The KX-VC1600, KX-VC1300, KX-VC600, and KX-VC300 can be used as the video transmission device. However, when the KX-VC1600 or KX-VC300 is used as the video transmission device, a separate server is required.
- The KX-VC1600 and KX-VC1300 can be used as the reception site device.
- A mesh-type network is required.

How to get HDVC Mobile

HDVC Mobile is required for participating in a videoconference using an iOS/Windows™/Android™ mobile device or Windows PC. HDVC Mobile can be downloaded from the following URL.


* An Activation Key is required to use the software. For details, see page 16.

Other screen layout functions

- Display of a selected site (home location, distant location) at the upper left corner (Priority 1 position) (Site Selection)
- Display of the master location at Priority 1 position and display of the site with the highest sound level at Priority 2 position (Voice Activated Changeover 2)
Clear Communication

Full-HD 1080/60p

Conveys even facial expressions and gestures

The HDVC System delivers high-resolution Full-HD 1080/60p images. Displayed images are as clear as Full-HD TV images and allow for effective visual communication. The HDVC System shows even small changes in facial expressions for high-quality communication. HD images can be displayed with a bandwidth of 256 kbps or higher. **

** A device setting change is required. *2 The frame rate depends on the network environment.

Digital Boundary Microphone
KX-VDCA001 (Sold Separately)

High-image-quality 1080/60p HD Communication Camera

When combined with the GP-VD151/GP-VD131, the HD Communication Camera delivers smooth, high-resolution 1080/60p Full-HD images.

GP-VD151 (Sold Separately) HDMI cable sold separately
- Full-HD
- 12x Optical zoom/10x digital zoom
- Pan range: ±100°/tilt range: ±30°
- Can be controlled from the remote control of HDVC System

GP-VD131 (Sold Separately) HDMI cable sold separately
- Full-HD
- 6x Optical zoom/4x digital zoom
- Pan range: ±100°/tilt range: ±20°
- Can be controlled from the remote control of HDVC System

Easy to hear even when two people talk simultaneously

Full-duplex audio in wideband stereo allows high-quality sound to fill the room with clarity. A unique Echo Canceller prevents echoes and howling, and there are hardly any delays or interruptions even when two people speak at the same time. You can enjoy smooth, natural conversations as if you were all in the same room.

High-quality Boundary Microphone

The HDVC System has four compact built-in microphones. A direction recognition function reflects the direction and position of the speaker’s voice to the listener’s side speakers.

Comparison of communication quality with congested network connection

The generation of packet losses for the HDVC System and HDVC Mobile is prevented by the rate control (AV-QoS), and lost packets are restored by the combined use of the forward error correction and automatic repeat request control. Even if the bandwidth decreases after communication starts, clear communication is maintained according to the communication line condition. Because video and audio communication is maintained at 256 kbps per site, there are minimum image disruptions and audio interruptions, and the connection stays stable.

Stress-free conference

The other party’s voice might be difficult to hear depending on the room conditions, built-in speaker of Television. In order to utilize videoconference with good sound, it is recommended to use external speakers.

To be used appropriate sound quality

AV-QoS is also supported for mobile devices.

The rate control accurately estimates the congestion of the network and controls the amount of data to be transferred to prevent packet losses. It suppresses image disruptions and audio interruptions even when using Internet connection whose available bandwidth changes according to the increases and decreases of network traffic.
Easy to use

The HDVC System supports H.239 dual streaming to simultaneously transmit the home location image and a PC document image and to simultaneously receive the image of a distant site and a PC document image. The KX-VC1600 features a Triple Monitor function*, which can display a PC document, the image of a distant site and the image of the home location separately on three monitors. Display of a PC document on a large screen facilitates understanding and provides effective visual communication.

* The KX-VC1300 supports Dual Monitor.

Easy-to-understand remote lectures and seminars are conducted at multiple sites

The remote control of the HDVC System lets you control the pan, tilt and zoom operations of dedicated cameras mounted at the home location and a distant site. A PC and sub camera can be easily switched with a single press of the button. The remote control features a user-friendly button layout just like that on a TV remote control, thus allowing intuitive operation.

Intuitive operation

The HDVC System can be turned ON/OFF from the remote control and also from the external device connected to the serial interface.

* When power is supplied to the main unit of the HDVC System from the AC adaptor, the system enters standby status.
* The HDVC System can be turned ON/OFF using the Power switch on the main unit or on the remote control.

External control of Power ON/OFF

The main unit of the HDVC System can be turned ON/OFF from the remote control and also from the external device connected to the serial interface.

* If the main power switch has turned off due to a power outage or by manual operation (example, disconnection of extension cord), the HDVC System starts up in the previous status (Ready or Stand-by) next time power is supplied.

<table>
<thead>
<tr>
<th>Status</th>
<th>Power ON LED</th>
<th>Status LED</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supplied from AC adaptor</td>
<td>Blue light</td>
<td>Light OFF</td>
<td>–</td>
</tr>
<tr>
<td>Power ON - Standby</td>
<td>Green flashing light</td>
<td>Green light</td>
<td>Blue flashing light</td>
</tr>
<tr>
<td>Communicating</td>
<td>Green light</td>
<td>Blue light</td>
<td>–</td>
</tr>
<tr>
<td>standby</td>
<td>Blue flashing light</td>
<td>Light OFF</td>
<td>Press the Power button on remote control.</td>
</tr>
<tr>
<td>Shutting down</td>
<td>Green flashing light</td>
<td>–</td>
<td>Press the Power button on remote control.</td>
</tr>
<tr>
<td>Forced shutdown</td>
<td>Green flashing light</td>
<td>Blue flashing light</td>
<td>Press and hold the Power button on main unit.</td>
</tr>
</tbody>
</table>

Accurate communication of information

The lecturer can proceed with the lecture while watching the conditions of the people attending at multiple sites, and the attendants can display reference materials and the image of the lecturer on separate screens. The easy-to-see screens make it easier to understand the content of the lecture.

Presentation Mode

This mode is suited to lectures where the main site displays composite images of the sub-sites, and the sub-sites display only the main site image.

Dual Monitor/Dual Stream Operation Example

Lecturer (main site) Document (PC data) Attendants (sub-sites) Students (Site B)

Lecturer (Site A) Document (PC data) Instructor (Site A)

Lecturer (Site A) Document (PC data) Instructor (Site A)

Lecturer (Site A) Document (PC data) Instructor (Site A)

KX-VC1600 KX-VC1300

HD Communication Camera lens rotates ±100° in horizontal direction. Applicable model: GP-VD151, GP-VD131

HD Communication Camera lens rotates ±30° in vertical direction. Applicable model: GP-VD151 (±20° in GP-VD131)

Optical zoom enlarges images up to 12 times. Applicable model: GP-VD151 (3x optical zoom in GP-VD131)

Accurate communication of information

Easy-to-understand remote lectures and seminars are conducted at multiple sites

The HDVC System supports H.239 dual streaming to simultaneously transmit the home location image and a PC document image and to simultaneously receive the image of a distant site and a PC document image. The KX-VC1600 features a Triple Monitor function*, which can display a PC document, the image of a distant site and the image of the home location separately on three monitors. Display of a PC document on a large screen facilitates understanding and provides effective visual communication.

* The KX-VC1300 supports Dual Monitor.

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* The KX-VC1300 supports Dual Monitor.

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* The KX-VC1300 supports Dual Monitor.

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* The KX-VC1300 supports Dual Monitor.
Software for multi-site connection of up to 16 locations

HD Visual Communications Multi-Point Connection Software*

* HD Visual Communications Multi-Point Connection Software is abbreviated as HDVC-MPCS hereafter.

HDVC-MPCS (multi-point connection software) allows 6-site, 8-site, 12-site or 16-site configuration to meet the user’s multi-site videoconferencing need. The number of connection sites can be increased from 8 to 12 or from 12 to 16 after the product purchase.

* A server is required for multi-site connection.

* In the case of 8-point connection software, the number of connection sites cannot be increased after the product purchase.

Easy-to-see images even in multi-site connection setup

The HDVC System supports H.264 High Profile to display HD images at low bandwidths (512 kbps).

* HDVC Mobile (for iOS/Android™) displays SD images.

Multi-speed communication for display of images with optimum image quality

HD images and SD images are transmitted separately. Each of the sites can use the image quality that is optimal for the available communication speed, rather than having to match to the lowest speed.

Features of HDVC-MPCS

Choose the Screen Layout to Match Your Situation

The screen layout can be selected to match the user’s need, thus allowing flexible videoconferencing.

- Auto Layout Change
- Manual Layout Change
- Fixed Layout
- Voice Switching

Examples of screen layout

1 Window Screen

4 Window Screen

6 Window Screen

8 Window Screen

10 Window Screen

12 Window Screen

16 Window Screen

Participation in the videoconference from an outside location

A tablet, smartphone or PC installed with HDVC Mobile, an application developed exclusively for the HDVC System, lets you participate in a videoconference while you are on the go.

* An Activation Key is required to use the software. For details, see page 16.

Main Specifications

Server Specifications (8 sites or more)

<table>
<thead>
<tr>
<th>Item Details</th>
<th>Item Details</th>
<th>Item Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS</td>
<td>Red Hat Enterprise Linux Server release 6.4 64-bit</td>
<td>Windows Server 2012 R2 Standard Edition 64-bit</td>
</tr>
<tr>
<td>Amount of free HD space</td>
<td>128 GB or more (Not including OS space)</td>
<td>128 GB or more (Not including OS space)</td>
</tr>
<tr>
<td>Memory</td>
<td>6/12 GB</td>
<td>8 GB or more</td>
</tr>
<tr>
<td>CPU</td>
<td>Intel Xeon X5690</td>
<td>Intel Core i7 or Xeon E3-1280</td>
</tr>
<tr>
<td>Clock (GHz)</td>
<td>3.46 GHz</td>
<td>3.46 GHz</td>
</tr>
</tbody>
</table>

Server Specifications (8 sites or more)

<table>
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<tr>
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<th>Item Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS</td>
<td>Red Hat Enterprise Linux v6 64bit</td>
<td>CentOS6.4 64-bit</td>
</tr>
<tr>
<td>Amount of free HD space</td>
<td>32 GB or more</td>
<td>32 GB or more</td>
</tr>
<tr>
<td>Memory</td>
<td>8 GB or more</td>
<td>8 GB or more</td>
</tr>
<tr>
<td>CPU</td>
<td>Intel Xeon X5690</td>
<td>Intel Core i7 or Xeon E3-1280</td>
</tr>
<tr>
<td>Clock (GHz)</td>
<td>3.46 GHz</td>
<td>3.46 GHz</td>
</tr>
</tbody>
</table>

Server Specifications (4 sites)

<table>
<thead>
<tr>
<th>Item Details</th>
<th>Item Details</th>
<th>Item Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS</td>
<td>CentOS6.4 64-bit</td>
<td>CentOS6.4 64-bit</td>
</tr>
<tr>
<td>Amount of free HD space</td>
<td>HDD 32 GB or more *13</td>
<td>HDD 32 GB or more *13</td>
</tr>
<tr>
<td>Memory</td>
<td>8 GB or more</td>
<td>8 GB or more</td>
</tr>
<tr>
<td>CPU</td>
<td>Intel Xeon X5690</td>
<td>Intel Core i7 or Xeon E3-1280</td>
</tr>
<tr>
<td>Clock (GHz)</td>
<td>3.46 GHz</td>
<td>3.46 GHz</td>
</tr>
</tbody>
</table>

License Management

By software license *12

Language

Japanese / English

Log

Log Acquisition/Display

Operations

Meeting Start (Dial-Out Transmission) / End / Layout Control/ Display Position

Profile Settings) / Static NAT Settings / NAT Traversal Settings

Web User

Settings Management

Basic Device Settings / Meeting Room Management (Status / Reservations / Users)

Network Interface

Display Interface (LAN, WAN, WAP)

E-mail Interface

Display Interface (LAN, WAN, WAP)

RTP/Transmittance Interval

20 msec

Audio Codec Profile

G.722 / G.722.1c

Compatible Profile

H.264 Baseline Profile Level 1.3~3.1 / H.264 High Profile Level 3.1

Capacity

PC Resolution VGA / SVGA / XGA / 720p

Video Transmission Profile

H.264 Baseline Profile Level 3.1 / H.264 High Profile Level 3.1

QoS

ARQ (Automatic Repeat-Request) Video, audio

Call

Standard

SIP

Connection Modes

IP mode, NAT Traversal Service *2

Number of Simultaneous Conferences

1 conference

Main Specifications

HDVC System includes multi-point connection software (HDVC-MPCS)

System Image

Intranet

IP-VPI

Multi-Point Connection Software

HDVC-MPCS

Away from the office

Client

Foreign site

Infranet

HDVC Mobile

Head Office

Factory

Branch Office

Home

HDVC Mobile for Windows

HDVC Mobile for iOS/Android™
NAT Traversal Service

NAT Traversal Service is a network service offered exclusively for use by the HDVC System. It can be used to establish a videocall between your company and other sites. It enables easy-establishment of a communication environment without complex router settings, and uses Internet line for economical operation.

Advantages of NAT Traversal Service

- Connection from a location outside the company such as a business trip destination
- Use of Internet line instead of a VPN facilitates the connection from an office in the company, a customer’s site or a client.

Excellent cost-performance

Use of Internet line means no initial investment for the construction of a VPN. Furthermore, there is no need to obtain a fixed global IP address, so the running costs can be reduced significantly.

How to Use the Service

- To connect the HDVC-MPCS to the NAT Traversal Service, the NAT Traversal Service must be registered.
- Use of a router that suits the usage conditions. For details, consult your nearest dealer.
- Connections for an internet service provider are recommended.
- Usage restrictions on the communication data amount and the bandwidth may apply depending on the network service provider.
- Please do not connect multiple HD Visual Communications Systems to a single router.
- Customers using an HD Visual Communications System that is compatible with the NAT Traversal Service may try the service free of charge.
- Some restrictions may exist due to network and router conditions. Customers using an HD Visual Communications System that is compatible with the NAT Traversal Service may try the service free of charge.
- To ensure security in the event that you lose a smartphone or tablet, be sure to set the Screen Lock number.
- The 3G bandwidth may be insufficient for HDVC Mobile, making it unusable.
- HDVC Mobile cannot be used with 3G devices because the bandwidth is likely to be insufficient.
- Use of HDVC Mobile, an application developed exclusively for the HDVC System, an iOS/AndroidTM or Windows “Mobile Activation Key is required.
- HDVC Mobile is available on the AndroidTM terminal with software version 3.0 or newer.
- HDVC Mobile cannot be used with 3G devices because the bandwidth is likely to be insufficient.

NAT Traversal Service Area

- Japan, Asia, China, Middle East, Africa, North America, Europe
- The NAT Traversal Service is a global service, but some restrictions need to be noted when using the router settings. Customers using an HD Visual Communications System that is compatible with the NAT Traversal Service may try the service free of charge.

Device (As of December 2014)

 Useful of HDVC Mobile, an application developed exclusively for the HDVC System, lets you take part in a videocall from a business trip destination using a tablet, smartphone or PC. Dual Stream reception is also supported, and the screen can display an easy-to-see image of documents only.

<table>
<thead>
<tr>
<th>Device for iOS</th>
<th>HDVC Mobile for Windows</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirements</td>
<td>Requirements</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>HDVC Mobile</td>
<td>Operating System:</td>
</tr>
<tr>
<td>for iOS</td>
<td>iPad, iPhone, iPad mini</td>
</tr>
<tr>
<td></td>
<td>OS: iOS 4.0.1 - 8.3</td>
</tr>
<tr>
<td></td>
<td>Memory: 0.5 GB or over</td>
</tr>
<tr>
<td></td>
<td>Processor: A5 or over</td>
</tr>
<tr>
<td></td>
<td>Memory: 1 GB or over</td>
</tr>
<tr>
<td></td>
<td>Processor: Cortex A9 or over NEON supported</td>
</tr>
<tr>
<td></td>
<td>Camera: 5 Megapixels or over, 8 Megapixels (optional)</td>
</tr>
<tr>
<td></td>
<td>Microphone: Built-in microphone</td>
</tr>
<tr>
<td></td>
<td>Display Resolution:</td>
</tr>
<tr>
<td></td>
<td>HD: 1280 x 720, WQHD: 2560 x 1440, 4K: 3840 x 2160</td>
</tr>
<tr>
<td></td>
<td>HDVC Mobile for Android</td>
</tr>
<tr>
<td></td>
<td>Operating System:</td>
</tr>
<tr>
<td></td>
<td>Android 2.1 (Eclair) or over</td>
</tr>
<tr>
<td></td>
<td>Memory: 0.5 GB or over</td>
</tr>
<tr>
<td></td>
<td>Processor: Cortex A9 or over NEON supported</td>
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<td></td>
<td>HDVC Mobile for Windows</td>
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<tr>
<td></td>
<td>Operating System:</td>
</tr>
<tr>
<td></td>
<td>Windows 7 / Windows 8 / Windows 10</td>
</tr>
<tr>
<td></td>
<td>Memory: 1 GB or over</td>
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<tr>
<td></td>
<td>Processor: A5 or over</td>
</tr>
<tr>
<td></td>
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</tr>
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</tbody>
</table>

For communications using a provider service, the communication speed may be limited by the packet amount. For details, please contact your provider.

Easy operation and management

Since complex network settings are not required, the HDVC System can be operated and managed without a dedicated personnel. Connection is as easy as entering a 7-digit number just like dialing a phone number.

Easy mobile connection

If you set a “Mobile Connection Expansion” Activation Key in the HDVC System, you can connect the desired number of mobile devices simultaneously without having to purchase an Activation Key for each mobile device. Maximum of 9 devices for the KX-VC1600, and 3 devices for the KX-VC1300. If you are connecting a small number of devices, you can set an Activation Key in each mobile device.

- HDVC Mobile must be installed in the mobile devices being used.
- Standard mode can be used. When using the NAT Traversal Service, an iOS/AndroidTM or Windows “Mobile Activation Key is required.
- The HDVC System requires software version 4.2, and the device requires software version 3.1 or higher.

HDVC Mobile cannot be simultaneously connected.

Even if you have 100 mobile devices within the company, there is no need to purchase 100 Activation Keys. This reduces costs.

Network service for connecting your company to other sites

With NAT Traversal Service Area

- Japan, Asia, China, Middle East, Africa, North America, Europe
- The NAT Traversal Service is a global service, but some restrictions need to be noted when using the router settings. Customers using an HD Visual Communications System that is compatible with the NAT Traversal Service may try the service free of charge.

NAT Traversal Service

- Japan, Asia, China, Middle East, Africa, North America, Europe
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Head Office

- Panasonic:KX-NT700N
- ELECOM:HS-EP02USV
- Microsoft:LifeCam Studio / Cinema 500 HD
- Logicool (Logitech):C920t
- Display Resolution: 1366 x 768 or over
- OS: Windows 7 / Windows 8 / Windows 8.1  / Windows 10

Branch Office

- SAMSUNG:Galaxy S6 SC-05G, Galaxy S6 Edge SC-02G
- Apple:iPhone 6 Plus, iPhone 6, iPhone 6s, iPad Air 2, iPad mini 3, iPad mini 2
- Display Resolution: 1080 x 1920, 1920 x 1080, 1366 x 768, 720 x 1280
- OS: iOS 7.0 - 9.1. iPhone, iPad, iPad mini, and iPod touch are available.
- Apple A5 or over

Intranet

- Speaker / Camera
- Data sharing computer

NAT Traversal Service Area

- Japan, Asia, China, Middle East, Africa, North America, Europe
- The NAT Traversal Service is a global service, but some restrictions need to be noted when using the router settings. Customers using an HD Visual Communications System that is compatible with the NAT Traversal Service may try the service free of charge.

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Product Line-up

Enhanced Model
KX-VC1600
[Remote control included. HD Communication Camera, Boundary Microphone and HDMI cable sold separately.]

- 10-Site*1 Connection
- Multicast*1
- Dual Network
- Multi Device
- Triple Monitor
- Profile Registration
- Broadband Stereo Full Duplex Audio
- Full-HD 1080/60p
- AV-QoS
- Camera Control
- Rec terminal

*1 Option must be purchased. (Refer to “Activation Key” on page 16.)

Basic Model
KX-VC1300
[Remote control included. HD Communication Camera, Boundary Microphone and HDMI cable sold separately.]

- 4-Site Connection
- Multicast*1
- Multi Device
- Dual Monitor
- Profile Registration
- Broadband Stereo Full Duplex Audio
- Full-HD 1080/60p
- AV-QoS
- Camera Control
- Rec terminal

*1 Option must be purchased. (Refer to “Activation Key” on page 16.)

KX-VC300
[Remote control included. HD Communication Camera, Boundary Microphone, HDMI cable sold separately.]

- 4-site*1 connection
- Multicast*1
- HD 720p video quality
- Connection of product of different manufacturer
- MCU connection
- PC connection
- Sub Camera connection
- Analogue Boundary Microphone (1 unit)

*1 Activation Key (sold separately, see page 16) expands the function to enable 4-site connection.

Function Comparison List

<table>
<thead>
<tr>
<th>Model</th>
<th>Maximum Conference Points</th>
<th>Image Resolution</th>
<th>Monitor</th>
<th>Other-brand Device Compatibility</th>
<th>MCU Interoperability*2</th>
<th>Computer Connection</th>
<th>Digital Boundary Microphone</th>
<th>Analogue Boundary Microphone</th>
</tr>
</thead>
<tbody>
<tr>
<td>KX-VC1600</td>
<td>10*1</td>
<td>4* HD 1080/60p</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>KX-VC1300</td>
<td>4*3</td>
<td>4* Full HD 1080/60p</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>KX-VC300</td>
<td>2*4</td>
<td>HD 720p*5</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*1 Please ask your nearest dealer about other-brand devices that can be connected.
*2 Please ask your nearest dealer about other-brand devices that can be connected.
*3 The optional Activation Key lets you expand the KX-VC1600’s maximum conference points to up to 10 locations. (Refer to “Activation Key” on page 16.)
*4 The KX-VC300 also allows a connection of 3 or 4 locations when it is as the receiving end of a call. The optional Activation Key lets you expand the KX-VC300’s maximum conference points to up to 4 locations. (Refer to “Activation Key” on page 16.)
*5 The optional Activation Key lets you expand the maximum resolution of the KX-VC300 system to 1080p. (Refer to “Activation Key” on page 14.)
**Options**

### HD Communication Camera

<table>
<thead>
<tr>
<th>Camera Model</th>
<th>Description</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP-VD151</td>
<td>Full-HD Camera</td>
<td>HD camera with optical zoom</td>
</tr>
<tr>
<td>GP-VD131</td>
<td>Full-HD Camera</td>
<td>HD camera with optical zoom</td>
</tr>
<tr>
<td>AW-VC2</td>
<td>Digital Camera</td>
<td>Digital camera with optical zoom</td>
</tr>
</tbody>
</table>

### Boundary Microphone

<table>
<thead>
<tr>
<th>Microphone Model</th>
<th>Type</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>KX-VCA001</td>
<td>Digital</td>
<td>12x Optical zoom</td>
</tr>
<tr>
<td>KX-VC300</td>
<td>Analog</td>
<td>10x Optical zoom</td>
</tr>
</tbody>
</table>

### System Configuration Examples

#### Example of standard 6-site connection with the KX-VC1600

This 6-site connection can be used with the KX-VC1600 to increase the number of connection sites to a maximum of 10 sites including home location.

#### Example of standard 4-site connection with the KX-VC1300

This 4-site connection can be used with the KX-VC1300 to increase the number of connection sites to a maximum of 8 sites including home location.

### Activation Key

**For HD Visual Communications Unit**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>KX-VC1300</td>
<td>HD Visual Communications</td>
<td>HD visual communications with HD camera</td>
</tr>
<tr>
<td>KX-VC1600</td>
<td>HD Visual Communications</td>
<td>HD visual communications with HD camera</td>
</tr>
</tbody>
</table>

**For NAT Traversal Service**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>KX-VC1600</td>
<td>HD Visual Communications</td>
<td>HD visual communications with HD camera</td>
</tr>
<tr>
<td>KX-VC1300</td>
<td>HD Visual Communications</td>
<td>HD visual communications with HD camera</td>
</tr>
</tbody>
</table>

### Software License Card for HDVC-MPCS

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPCS Ver. 2.0</td>
<td>HDVC-MPCS</td>
<td>HDVC-MPCS for 2.0 upgrade</td>
</tr>
<tr>
<td>MPCS Ver. 2.0</td>
<td>HDVC-MPCS</td>
<td>HDVC-MPCS for 2.0 upgrade</td>
</tr>
</tbody>
</table>

### Note

- The diagram is intended only as a layout example. It is not intended to show the maximum number of people that can be covered.
- * This is the pick-up capacity when using the Digital/Audio Boundary Microphone. The capacity varies when using another microphone.
- ** This is the pick-up capacity when using the Digital/Audio Boundary Microphone. The capacity varies when using another microphone.
- # This is the pick-up capacity when using the Digital/Audio Boundary Microphone. The capacity varies when using another microphone.
- *1 In the case of 6-point connection software, the number of connection sites cannot be increased after the product purchase.
- # This license card is for upgrade from HDVC-MPCS Ver. 1.0 to Ver. 2.0.
### Specifications

**Main Unit**

<table>
<thead>
<tr>
<th>Model</th>
<th>KX-VC1600</th>
<th>KX-VC1300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Supply Voltage</td>
<td>DC 24 V, 2.5 A</td>
<td>DC 16 V, 2.5 A</td>
</tr>
<tr>
<td>Dimensions (width x depth x height)</td>
<td>Approx. 8.5 m (radius), 300°</td>
<td>Approx. 2.0 kg</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 80 g</td>
<td>Approx. 120 mm (diameter) x 25 mm</td>
</tr>
<tr>
<td><strong>Video Input</strong></td>
<td>HDMI main x 1, HDMI sub x 1</td>
<td>HDMI main x 1, HDMI sub x 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Video Input x 1 (RS-232, Handshake)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RGB x 1 (Mini D-sub 15pin)</td>
</tr>
<tr>
<td><strong>Audio Input</strong></td>
<td></td>
<td>Audio Input x 1, Audio Input x 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unidirectional ECM microphone parts x 4</td>
</tr>
<tr>
<td><strong>Audio Output</strong></td>
<td>HDMI</td>
<td>HDMI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stereo mini-plug x 1 (ø3.5 mm), RCA x 1 (Stereo)</td>
</tr>
<tr>
<td><strong>Network</strong></td>
<td></td>
<td>IP mode, NAT Traversal Service</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SIP, H.323</td>
</tr>
<tr>
<td><strong>Power Consumption</strong></td>
<td>Maximum: approx. 23 W, Standby: 17 W</td>
<td>Maximum: approx. 43 W, Standby: 0.6 W</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DC 24 V, 2.5 A</td>
</tr>
<tr>
<td><strong>Communication Bandwidth</strong></td>
<td>H.264 High Profile, H.264 Baseline Profile</td>
<td>H.264 High Profile, H.264 Baseline Profile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>256 kbps to 9 Mbps</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td>MPEG-4 AAC-LD Mono: 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MPEG-4 AAC-LD Stereo: 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MPEG-4 AAC-LD Stereo: 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SRTP (AES 128 bit), H.235 (AES 128bit)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G.722.1 Annex C (14.0 kHz@48 kbps/24 kbps)</td>
</tr>
<tr>
<td><strong>Operating Temperature</strong></td>
<td>0 °C to 40 °C</td>
<td>0 °C to 40 °C</td>
</tr>
<tr>
<td><strong>Operating Humidity</strong></td>
<td>10 % to 90 % (non-condensing)</td>
<td>10 % to 90 % (non-condensing)</td>
</tr>
</tbody>
</table>

**Boundary Microphone**

<table>
<thead>
<tr>
<th>Model</th>
<th>KX-VC300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Supply Voltage</td>
<td>DC 24 V, 2.5 A</td>
</tr>
<tr>
<td>Dimensions (diameter x length)</td>
<td>Approx. 75 mm (diameter) x 32 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 8.5 m (radius), 300°</td>
</tr>
<tr>
<td><strong>Microphone Unit</strong></td>
<td></td>
</tr>
<tr>
<td><strong>No. of Terminals for Microphone Connection</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Maximum Input Sound Pressure</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Terminal Method</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

* Specifications are subject to change without notice. *1 With i.Zoom 2x. *2 If either of the following conditions is met, the output sent to the other party will be stereo; otherwise, monaural: • the unit and no Analogue Boundary Microphone connected to the unit at the same time. • The MIC position is set manually to "Center stereo", or the MIC position is set automatically with a Digital Boundary Microphone connected to the unit. *3 If an incoming call is received as a reception site, participation is possible with 3-4 site connection. An optional Activation Key allows expansion to a maximum of 4 connection sites. When HDVC Mobile is connected, or when another-brand device or another-brand MCU is connected, the maximum is 2 connection sites. *4 If either of the following conditions is met, the output sent to the other party will be stereo; otherwise, monaural: • the unit and no Analogue Boundary Microphone connected to the unit at the same time. • The MIC position is set manually to "Center stereo", or the MIC position is set automatically with a Digital Boundary Microphone connected to the unit. *5 When HDVC Mobile is connected, or when another-brand device or another-brand MCU is connected, the maximum is 2 connection sites.