

Installation Manual

HD Visual Communication Unit

Model No. **KX-VC300CN**
KX-VC600CN



Thank you for purchasing this Panasonic product.
Please read this manual carefully before using this product and save this manual for future use.

KX-VC300/KX-VC600: Software File Version 3.01 or later

In this manual, the suffix of each model number (e.g., KX-VC600**CN**) is omitted unless necessary.

Introduction

Feature Highlights

Simple Installation

If you have a network connection and an HDMI-compatible display, you can simply connect these, along with the Boundary Microphone (proprietary cable included) and video camera, to the unit using 2 HDMI cables and 1 LAN cable.

Lifelike Visual Communication

You can experience lifelike visual communication^{*1} with smooth, high-quality video and clear stereo^{*2} sound.

^{*1} If you are using the KX-VC300, sending images in Full HD can only be done by purchasing an activation key card (KX-VCS401) to activate this feature.

^{*2} If using 2 or more Digital Boundary Microphones, stereo output can be enabled through system settings. For details, refer to the User Manual. When using Digital Boundary Microphones and an Analogue Boundary Microphone together, stereo output may be unavailable depending on the connection configuration (Page 21, Page 23).

Home Electronics-style Remote Control Operation and Simple, Easy to Understand Graphical User Interface

You can make settings and perform operations using familiar remote control operations and a simple, easy to understand interface.

Stabilised Communication Quality

In periods of network congestion, automatic packet transmission rate quality control prevents packet loss to maintain a video conference call's image and sound quality. This allows visual communication with stabilised communication quality even over an intranet connection.

Remote Video Camera Operation via Remote Control

You can move your own video camera up, down, left, and right as well as zoom in and out. You can also register up to 9 preset patterns of video camera direction and zoom level which allows you to easily change the video camera's direction and zoom level by selecting a preset. Additionally, you can also use your remote control to control the other party's video camera.^{*1} For details, refer to the User Manual.

^{*1} To be able to control another party's video camera, settings must be configured on the other party's unit. For details, refer to the User Manual.

Selectable Video Source

By connecting your computer or video camera to the unit, you can show your computer's screen or video camera image to video conference call participants.

Making Video Conference Calls via SIP Server

By using a SIP server, you can establish video conference calls not just by IP address, but also by specifying a SIP URI (SIP user name@SIP domain name) instead. If the other party uses the same SIP domain name

as you, you can make a video conference call by specifying only the SIP user name.^{*1} For information about supported SIP servers, contact your dealer.

^{*1} To make a video conference call using a SIP URI or SIP user name, you must first configure SIP settings. For details about SIP settings, refer to the User Manual.

Enhanced Features through the Use of Activation Keys

By using an activation key (sold separately), you can upgrade the features of the KX-VC300 (Page 14). After you upgrade the features, the KX-VC300 can initiate 3-party/4-party video conference calls and send images in Full HD resolution. Features enabled through activation keys are available even after performing a system initialisation.

Connection to non-Panasonic Video Conference Systems

You can connect to a non-Panasonic video conference system and have a 2-party video conference call.^{*1}

^{*1} For details about the types of non-Panasonic video conference systems you can connect to, contact your dealer.

MCU Connection

By connecting to an MCU (multipoint control unit), you can make multiple-party video conference calls with 5 or more parties, rather than the normal maximum of 4 parties.^{*1}

^{*1} For details about the types of MCUs you can connect to, contact your dealer.

Notations

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- Windows XP refers to the Microsoft Windows XP operating system.
- Windows 7 refers to the Microsoft Windows 7 operating system.

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Contact Information

http://www.panasonic.net/corporate/global_network/

Miscellaneous

About the Screen Shots and Illustrations in this Manual

The screen shots, illustrations and descriptions in this manual are based on using the KX-VC600. If you are using the KX-VC300, please note that some displayed features will not be available for your model.

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1 For Your Safety

To prevent personal injury and/or damage to property, be sure to observe the following safety precautions.

The following symbols classify and describe the level of hazard and injury caused when this unit is operated or handled improperly.



WARNING

Denotes a potential hazard that could result in serious injury or death.



CAUTION

Denotes a hazard that could result in minor injury or damage to the unit or other equipment.

The following types of symbols are used to classify and describe the type of instructions to be observed. (The following symbols are examples.)



This symbol is used to alert users to a specific operating procedure that must not be performed.



This symbol is used to alert users to a specific operating procedure that must be followed in order to operate the unit safely.



WARNING

General



Follow all warnings and instructions marked on the unit.

Power



The power source voltage of this unit is listed on the nameplate. Only plug the unit into an AC outlet with the proper voltage. If you use a cord with an unspecified current rating, the unit or plug may emit smoke or become hot to the touch.



Do not connect the unit to the AC outlet, AC extension cords, etc., in a way that exceeds the power rating of, or does not comply with the instructions provided with, the AC outlet, AC extension cords, etc.



Connect the AC adaptor firmly to the power cord, and plug the power cord firmly into an AC outlet. Otherwise, it can cause fire or electric shock.



Do not pull, bend, rest objects on, or chafe the power cord, plug, and AC adaptor. Damage to the power cord or plug can cause fire or electric shock.



To prevent fires, electric shock, injury, or damage to the unit, be sure to follow these guidelines when performing any wiring or cabling:

- a. Before performing any wiring or cabling, unplug the unit's power cord from the outlet. After completing all wiring and cabling, plug the power cord back into the outlet.
- b. Do not place any objects on top of the cables connected to the unit.
- c. When running cables along the floor, use protectors to prevent the cables from being stepped on.
- d. Do not run any cables under carpeting.



Do not attempt to repair the power cord, plug, or AC adaptor. If the power cord or plug is damaged or frayed, contact an authorised service representative for a replacement.



Stop operation immediately if the unit emits smoke, excessive heat, abnormal smell or unusual noise. These conditions can cause fire or electric shock. Immediately turn the unit off, and unplug the power cord, and contact your dealer for service.



Never touch the plug or AC adaptor with wet hands. Danger of electric shock exists.



When disconnecting the unit, grasp the plug instead of the cord. Pulling on a cord forcibly can damage it, and cause fire or electric shock.



During thunderstorms, do not touch the unit, plug and AC adaptor. It may cause an electric shock.

Operating Safeguards



Do not alter the AC adaptor or modify any parts. Alteration or modification can cause fire or electric shock.



If metal fragments or water gets into the unit, turn the unit off and unplug the unit immediately. Contact your dealer for service. Operating the contaminated unit can cause fire or electric shock.



Do not use a unit in the vicinity of a gas leak to report the leak.



Do not place the remote control in microwave ovens or on induction cookware.



Do not use the supplied power cord with any other device. It may cause fire or electric shock.



A headset's earpiece is magnetised and may retain small ferrous objects.



Unplug the unit from the AC outlet and have it serviced by qualified service personnel in the following cases:

- a. If the unit does not operate according to the operating instructions. Adjust only the controls that are explained in the operating instructions. Improper adjustment of other controls may result in damage and may require service by a qualified technician to restore the unit to normal operation.
- b. If the unit has been dropped or the cabinet has been damaged.
- c. If unit performance deteriorates.



If damage to the unit exposes any internal parts, disconnect the power cord immediately and return the unit to your dealer.



Do not use your headset at a high volume. The use of excessive sound volume through a headset may cause hearing loss.

Installation



Do not install the unit in any other way than described in relevant manuals.



Do not touch the unit, AC adaptor, AC adaptor cord, or power cord during a lightning storm.



Only connect the unit to the type of electric power specified on the label affixed to the unit. Confirm the type of electric power supplied to the installation site if necessary.

Battery



The battery contains diluted sulfuric acid, a very toxic substance. If the battery leaks and the liquid inside spills on the skin or clothing, immediately wash it off with plenty of clean water. If the liquid splashes into eyes, immediately flush the eyes with plenty of clean water and consult a doctor. Sulfuric acid in the eyes may cause loss of eyesight and acid on the skin will cause burns.



Do not charge, short, heat, break or throw in a fire, as it may result in the battery leaking, generating heat, or bursting.



Do not connect the positive terminal and the negative terminal of the battery to each other with any metal object (such as wire).



Do not carry or store the batteries together with necklaces, hairpins, or other metal objects.



Do not mix old and new batteries or different types of batteries.



Batteries that seem worn down or damaged should not be used. Using worn down or damaged batteries may result in leaking.



Do not use rechargeable batteries.



Take the depleted batteries out of the remote control. Otherwise, the batteries may leak.



CAUTION

Power



When the unit is not used over an extended period of time, take the batteries out of the remote control. Otherwise, the batteries may leak. Do not use the leaked batteries.



When the unit is not used over an extended period of time, switch it off and unplug it. If an unused unit is left connected to a power source for a long period, degraded insulation may cause electric shock, current leakage, or fire.



The unit should be used only with the power cord and AC adaptor enclosed with the unit.

Installation



The unit should be kept free of dust, moisture, high temperature (more than 40 °C) and vibration, and should not be exposed to direct sunlight.



Place this unit on a flat surface. Serious damage and/or injury may result if the unit falls.



Allow 10 cm clearance around the unit for proper ventilation.



Do not place the unit in an area close to fire. Doing so may cause fire.

Battery



Be sure to use the specified type of batteries only.



Ensure that batteries are installed with correct polarity. Incorrectly installed batteries can burst or leak, resulting in spillage or injuries.

1 For Your Safety



This product contains batteries. Replace only with the same or equivalent type. Improper use or replacement may cause overheating, rupture or explosion resulting in injury or fire. Dispose of used batteries according to the instructions of your local solid waste officials and local regulations.



When replace the batteries for the remote control, use R6 (AA) type dry cell.



Do not install the battery backwards so that the polarity is reversed.

2 Before Operation

2.1 Notes about Operation

Please pay attention to the following points when using this device:

1. **Please contact your dealer for installing, upgrading, or repairing this device.**
2. **Do not forcefully hit or shake this device.**
Dropping or bumping this device can damage or break this device.
3. **Do not place this device in a freezer or other location where it is exposed to cold temperatures.**
Doing so may result in damage or malfunctions.
4. **Place this device at least 2 m away from radios, office equipment, microwave ovens, air conditioning units, etc.**
Noise from electronic devices can cause static and interference in other devices.
5. **Do not place this device in a location where it is exposed to hydrogen sulfide, phosphorous, ammonia, sulfur, carbon, acid, dirt, toxic gas, etc.**
Doing so may result in damage, and the usable life-span of the device may decrease.
6. **Do not apply insecticides or other volatile liquids to the device, nor leave rubber bands or vinyl objects on the device for extended periods of time.**
Doing so may result in alterations to the material or paint peeling off the device.
7. **Do not bring cards with magnetic strips, such as credit cards and telephone cards, near the microphone.**
Cards might become unusable.
8. **Do not bring the device near items that emit electromagnetic waves or that are magnetised (high-frequency sewing machines, electric welders, magnets, etc.).**
Doing so may result in static noise or damage.

9. **Keep the device at least 10 cm away from all walls.**
If placed against a wall, the device may not be able to ventilate properly, which may lead to a system malfunction due to overheating.
10. **Avoid placing the device in areas with high humidity, and exposing it to rain.**
Neither the main unit nor the power plug is water resistant.
11. **The power outlet should be near the product and easily accessible.**

About the Operating Environment

This device includes a feature that automatically adjusts voice transmissions to improve clarity. After beginning a video conference call, adjustments to the call environment may not complete immediately, and as a result voices may cut out or echo. In such cases, at the beginning of the video conference call, be sure to speak in turn with other parties.

About Moving the Device

Do not move this device while cords are still connected. Doing so may result in damage to the cords.

Other

- The unit may not operate in the event of a power failure.
- After unpacking the product, dispose of the power plug cap and packing materials appropriately.

WARNING

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

2.2 Data Security

We recommend observing the security precautions described in this section, in order to prevent the disclosure of sensitive information.

Panasonic is not responsible for any damages caused by improper use of this device.

Preventing Data Loss

Keep a separate record of all information stored in the contact list.

Preventing Data Disclosure

- Do not place this device in a location that can be accessed or removed without authorisation.
- If important information is saved on this device, store it in an appropriate location.
- Do not store sensitive personal information in the unit.
- In the following situations, make a record of the information stored in the contact list and return the unit to the state it was in when purchased.
 - Before lending or disposing of the unit
 - Before handing the unit over to a third party
 - Before having the unit serviced
- Make sure the unit is serviced by only a certified technician.

This device can register and store personal data (the contact list, connection history, etc.). In order to prevent the disclosure of data stored on this device, make sure to delete all data that is registered and stored on this device prior to disposing of, lending, or returning this device.

Preventing Data Disclosure over the Network

- To ensure the security of private conversations, only connect the unit to a secure network.
- To prevent unauthorised access, only connect the unit to a network that is properly managed.
- Make sure all computers connected to the unit employ up-to-date security measures.

2.3 Privacy and Right of Publicity

By installing and using this device, you are responsible for maintaining the privacy and usage rights of images and other data (including sound picked up by the microphone). Use this device accordingly.

- Privacy is generally said to be, "A legal guarantee and right not to have the details of one's personal life unreasonably publicised, and the right to be able to control information about oneself. In addition, right of publicity is a right not to have a likeness of one's face or figure photographed and publicised without consent".
- When the Automatic Answer feature is enabled, transmission begins as soon as a video conference call is received. The receiver of the video conference call will begin transmitting as soon as the video conference call is received at any time, from any caller. Please be aware when the Automatic Answer feature is enabled, there is a risk that due to an unexpected, automatically answered video conference call, privacy rights may be violated or sensitive information may be transmitted to unauthorised parties.

3 Included and Optional Accessories

3.1 Accessory Information

The following accessories are included:

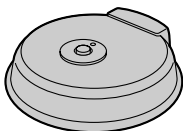
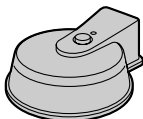
Included Accessories

| Accessories | Quantity |
|---|----------|
| AC adaptor (Part No.: PNLV6506) | 1 |
| Power cord | 1 |
| Remote control (Part No.: N2QAYB000674) | 1 |
| Batteries (R6 [AA] dry cell) | 2 |

3.2 Optional Accessories

The following accessory can be bought separately:

Boundary Microphone

| | |
|---|--|
| Boundary Microphone (Digital Interface Type) (Proprietary cable included. Cable length: approx. 8.5 m) | Boundary Microphone (Analogue Interface Type) (Proprietary cable included. Cable length: approx. 7 m) |
|  |  |
| Model No.: KX-VCA001 | Model No.: KX-VCA002 |

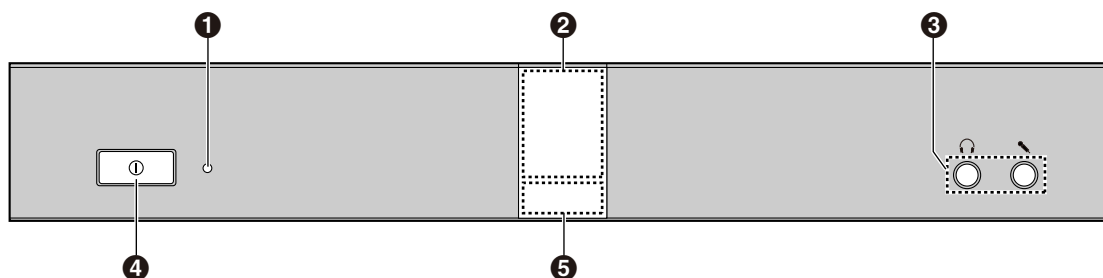
Activation Key

You can enhance the following types of features with an activation key. For details about the settings, refer to the User Manual.

| Model No. | Product Name | Activation Key Type | Target Model | Description |
|-----------|---|---------------------|--------------|---|
| KX-VCS301 | Activation Key Card (4-Point Connection) | 4-Point Connection | KX-VC300 | Enables the feature for making multiple-party video conference calls. |
| KX-VCS401 | Activation Key Card (1080 Full HD) | 1080 Full HD | KX-VC300 | Enables the feature for sending images in Full HD resolution. |

4 Part Names and Usage

4.1 Main Unit (Front)



❶ Power LED

Shows the power status. The LED is green when the power is on and off when the power is off.

❷ Remote Control Signal Receiver

Receives Remote Control signals. The maximum range of reception is approximately 8 m from front of the unit, and approximately 3 m from 20° on each side, total 40°.

❸ Headset Input-Output Terminal

Used to connect a headset to the unit (Page 23).

Note

- If a headset is connected, audio from the other party can be heard through the headset. Audio is not played through the display or speakers.
- If a headset is connected, how audio is sent to the other party differs depending on the type of devices connected as follows:

| Connected Device | Audio Sent to Other Party |
|--|---|
| Boundary Microphone | Audio is picked up only by the headset microphone. Audio is not picked up by the Boundary Microphones. |
| General-purpose microphone | Both the general-purpose microphones and the headset microphone pick up audio. |
| Boundary Microphone and general-purpose microphone | Both the general-purpose microphones and the headset microphone pick up audio. The Boundary Microphones do not pick up audio. |

❹ Power button

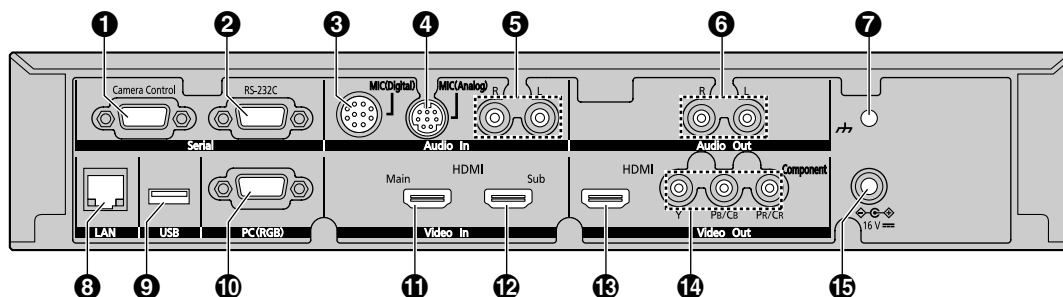
Turns the power on and off (Page 26).

❺ Status LED

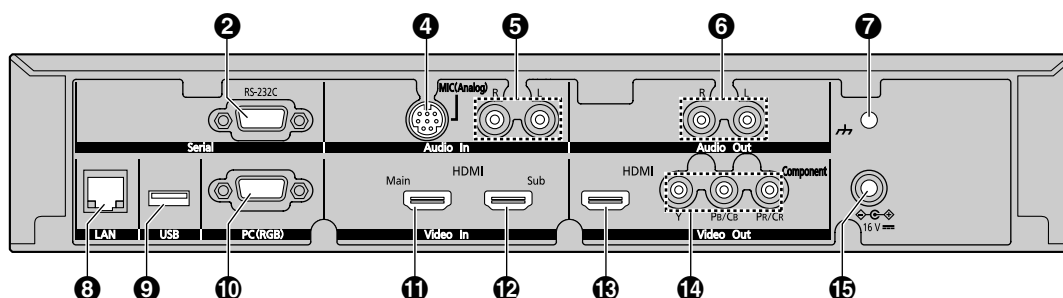
Shows the operational status of the unit.

4.2 Main Unit (Back)

KX-VC600



KX-VC300



① Camera Control terminal (KX-VC600 only)

Not used.

② RS-232C terminal (Page 37)

Used to connect a computer for maintenance.

③ MIC (Digital) jack (KX-VC600 only) (Page 20)

Used to connect the Digital Boundary Microphone (optional) (Page 14).

④ MIC (Analog) jack (Page 20)

Used to connect the Analogue Boundary Microphone (optional) (Page 14).

⑤ Audio In L/R jack (Page 20)

Used to connect general-purpose microphones (not for the Boundary Microphone).

⑥ Audio Out L/R jack

Used to connect an amplifier or active speaker (Page 25). Also used to connect the speakers of a display without an HDMI terminal for audio output (Page 26).

⑦ Functional Earth terminal

Used to connect an earthing wire for when there is a lot of noise over the connection.

⑧ LAN jack (Page 21)

Connect a LAN cable.

LED Explanation

The colour of the LEDs indicate the status of the network, as follows:

| LED | | Status |
|----------|-------------|---------------------------|
| Position | Colour | |
| Left | Green (on) | Link is being established |
| | Green (off) | Link is disconnected |

| LED | | Status |
|----------|------------------|---------------------------|
| Position | Colour | |
| Right | Amber (flashing) | Data is being transmitted |

9 USB jack (Page 35)

Used to connect a USB memory device for saving the operation log and for updating the software.

10 RGB terminal (Page 25)

Used to connect a computer for sending screens to participants.

11 Main Camera terminal (Page 20)

Connect the main video camera with an HDMI cable.

12 Sub Camera terminal (Page 24)

Used to connect a second, sub video camera with an HDMI cable for sharing video contents apart from the main video camera.

13 HDMI terminal (Page 20)

Used to connect to the display with an HDMI cable.

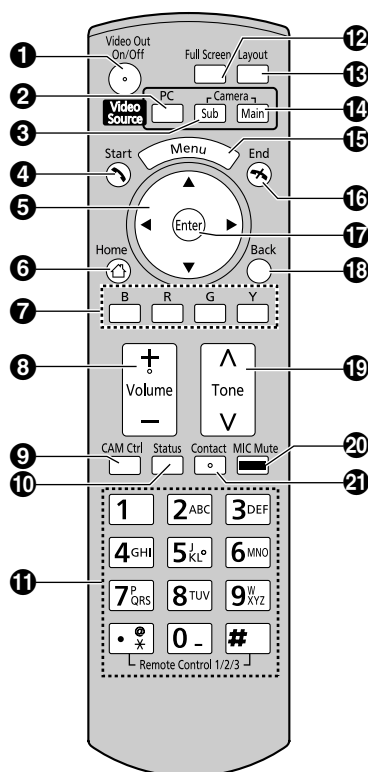
14 Component terminal (Page 26)

Used to connect to the display with a component video cable.

15 DC IN (Page 21)

Connect the AC adaptor's DC cord.

4.3 Remote Control



- 1** Press to enter screen standby mode.

- ② Press to show your computer's screen on your and the other party's display during a video conference call. When not on a video conference call, the computer screen is shown on your display only.
- ③ Press to show the sub video camera's images on your and the other party's display during a video conference call. When not on a video conference call, the sub video camera's images are shown on your display only.
- ④ Press to make or manually answer video conference calls.
- ⑤ Press to move the cursor and select items.
- ⑥ Press to display the Home screen.
- ⑦ Press to select the feature assigned to each colour. Available features are displayed in the guide area.
- ⑧ Press to adjust the volume during a video conference call. Press **[+]** to increase and **[-]** to decrease the volume.
- ⑨ Used for controlling a PTZ (Pan, Tilt, Zoom) camera or a FIX camera either at your end or the other party's end.
- ⑩ Press to display the connection status of the network and peripheral devices.
- ⑪ Press to dial or perform settings where inputting digits/characters is required.
- ⑫ Press to display/hide information about the other party, guide area and duration, during a video conference call.
- ⑬ Press to change the layout of the screen during a video conference call.
- ⑭ Press to return to the main video camera after showing images from a computer or sub video camera.
- ⑮ Press to display the Menu screen.
- ⑯ Press to end a video conference call.
- ⑰ Press to confirm the selected item or entered information.
- ⑱ Press to return to the previous screen.
- ⑲ Press to select a tone (equaliser) setting during a video conference call.
- ⑳ Press to mute the microphone during a video conference call, so that the other party cannot hear your voice.
- ㉑ Press to display your contact list. This can be pressed while the following screens are displayed:
 - Home screen
 - Menu screen
 - Computer's screen/sub video camera's image (when not on a video conference call)

5 Connection and Preparation

5.1 Device and Network Connection

In addition to the unit, you will need a video camera, a display, a microphone (Boundary Microphone or general-purpose microphone) and connection cables for visual communication.

Apart from the Boundary Microphone, the other devices must meet the following conditions:

| Device | Condition |
|----------------------------|---|
| Video Camera | HDMI output required (resolution: 1080i) |
| Display | HDMI/component/D terminal (component/D terminal conversion) input required |
| General-purpose microphone | Line level output required (In case of microphone level output, microphone amplifier also required) |

Cables

Prepare the following commercially available cables:

HDMI cable:

Category 2 (high speed) recommended

Note

- Use cables with the HDMI logo (certified HDMI cables) for HDMI connection. Using non-certified cables may adversely affect operation.

LAN cable:

100BASE-TX (full duplex)

Category 5 or greater

VGA cable (for computer connection when using the secondary video source):

15-pin mini D-Sub

Note

- Ensure that the cables match the sockets of both the unit and your computer.

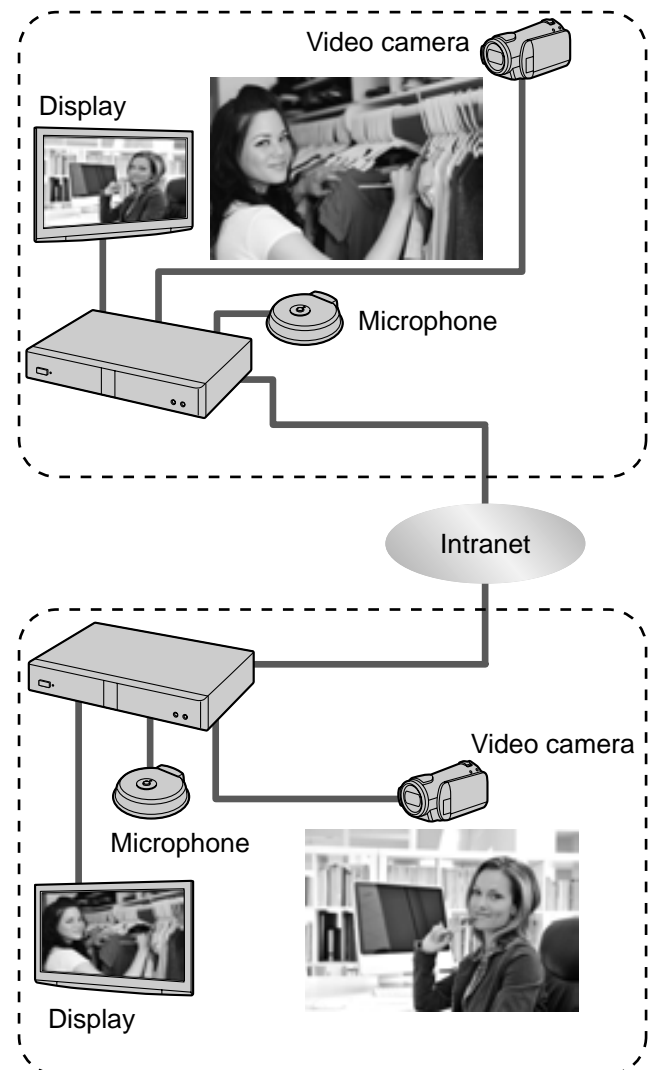
Stereo pin plug cable (for connecting a general-purpose microphone/amplifier/active

speaker/display [without an HDMI terminal and with speakers]):

RCA plug

Network Environment

The unit can be used over an intranet. The following is an example of network layout.



5.2 Connecting the Unit

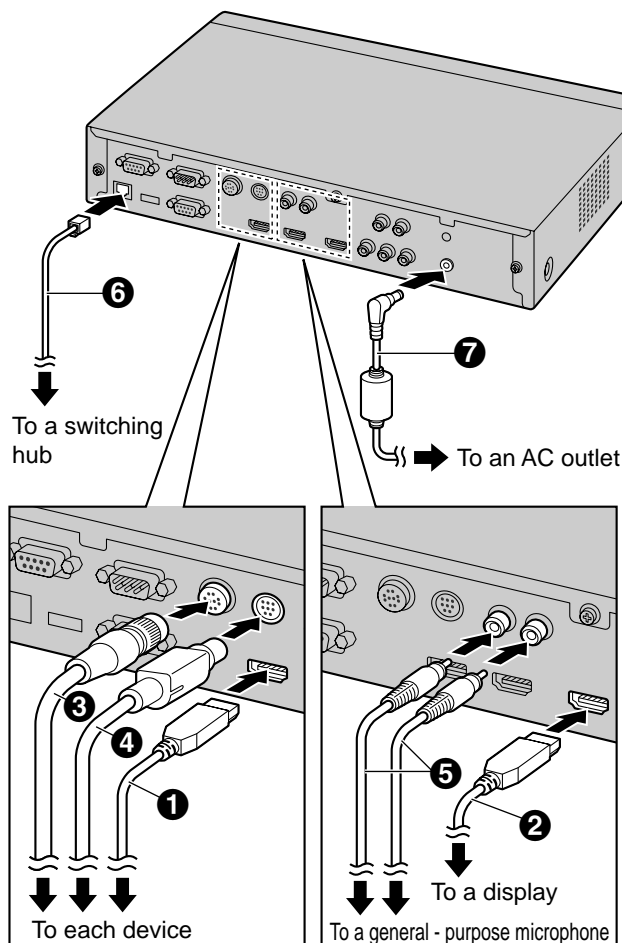
This section describes how to connect the main video camera, display, microphone, LAN cable, AC adaptor and power cord.

Notice

- Panasonic assumes no responsibility for injuries or property damage resulting from failures arising out of improper installation or operation inconsistent with this documentation.
- Use only the included power cord.

Note

- Make sure to read the instruction manuals for all devices being connected.



1. Connect the main video camera.

- Connect the main video camera to the Main Camera terminal on the back of the unit using an HDMI cable (1).

2. Connect the display.

- Connect the display to the HDMI terminal on the back of the unit using an HDMI cable (2).

Note

- If your display is not compatible with HDMI, use a component cable (Page 26). Since sound signals are not transmitted when using a component cable, connect an amplifier/active speaker (Page 25), or use the display's speakers (Page 26).

3. Connect a microphone.

Digital Boundary Microphone (optional) (KX-VC600 only)

Connect the Digital Boundary Microphone to the MIC (Digital) jack on the back of the unit using the proprietary cable (3).

- Use only the included cable.
- Push and turn the connector of the proprietary cable until it clicks. If the connector does not click, try reconnecting the cable with the top and bottom of the connector reversed.

Analogue Boundary Microphone (optional)

Connect the Analogue Boundary Microphone to the MIC (Analog) jack on the back of the unit using the proprietary cable (4).

- Use only the included cable.
- Ensure that the arrow on the connector of the proprietary cable is facing up when you insert the cable. When you disconnect the cable, grip the connector securely and pull it out.

General-purpose microphone

Connect the microphone to the Audio In L/R jack on the back of the unit using the stereo pin plug cable (5) after amplifying the signal to line level using a device such as a microphone amplifier.

- Connect the microphone correctly, as follows:
 - Left channel → L
 - Right channel → R

Note

- When connecting both the Boundary Microphone and a general-purpose microphone, both microphones can be used simultaneously.
- When connecting a headset, refer to "About Headset (Page 23)".

4. Connect to the network.
 - Connect a switching hub to the LAN jack on the back of the unit using a category 5 or greater LAN cable (6).

Note

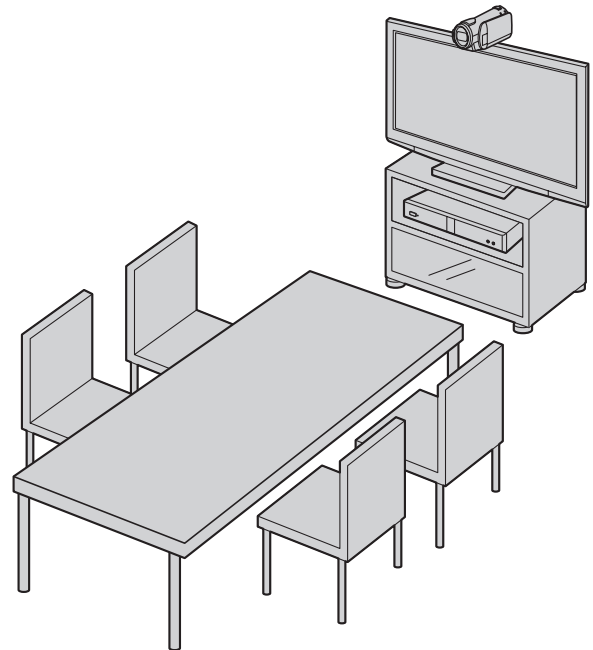
- Set the switching hub to Auto Negotiation mode.
- If the system is set to 100M Full Duplex, it is necessary to change the system setting (Page 38).
- Do not connect to a switching hub set to Half Duplex.
- For more details about switching hubs, refer to the documentation for the switching hubs.

5. Connect the power cord to the AC adaptor.
 - Use only the power cord included with the unit.
6. Insert the AC adaptor's DC cord (7) into the DC IN terminal on the back of the unit.
 - Use only the AC adaptor included with the unit.
7. Plug in the power cord into the power outlet.
 - Choose an outlet that is convenient for plugging/unplugging.

System Layout Examples

Display and Main Video Camera

Place the display and main video camera at the same side of the room.

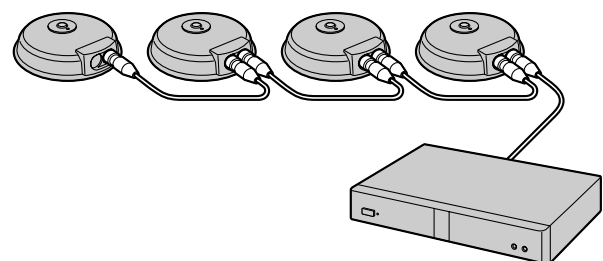


Note

- If you use speakers, refer to "Amplifier/Active Speaker Connection" (Page 25).

Digital Boundary Microphones (KX-VC600 only)

Up to 4 Digital Boundary Microphones can be connected in cascade. There are no separate terminals for input and output on the Boundary Microphones. Also, an Analogue Boundary Microphone and general-purpose microphones can be used simultaneously.



Note

- Make sure that the microphones are placed at least 1 m away from the display and speakers.

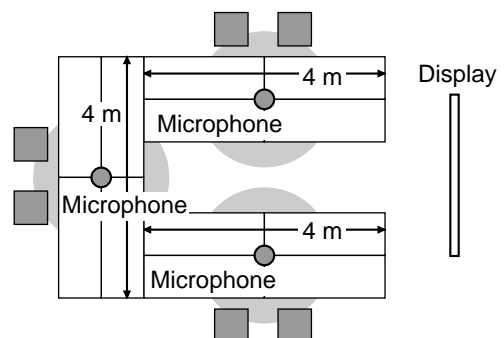
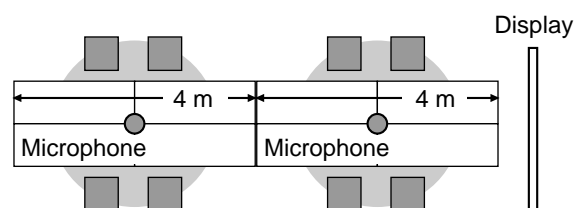
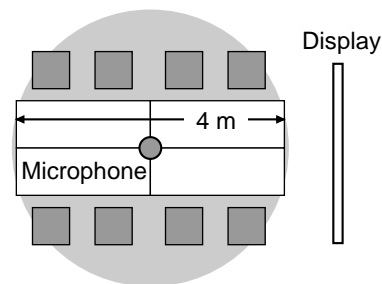
5 Connection and Preparation

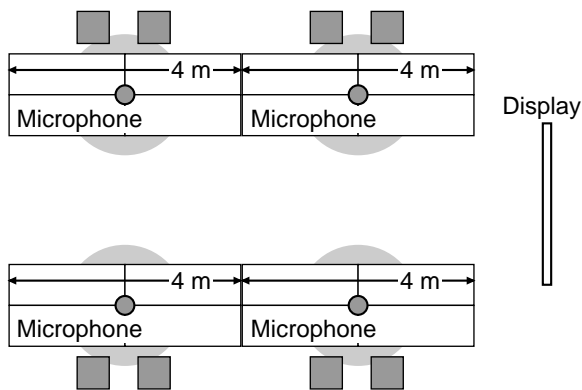
- Do not connect more than 4 Digital Boundary Microphones. Doing so will cause all Digital Boundary Microphones to stop working. If an Analogue Boundary Microphone is also connected, all audio input from the Analogue Boundary Microphone will also stop working.
- If both of the following conditions are met, the output sent to the other party will be stereo; otherwise, monaural:
 - The bandwidth is higher than approximately 1.8 Mbps in a 2-party video conference call with the HD Visual Communication Unit using SIP.
 - The MIC position is set automatically or manually to collect a sound in stereo. (For details about setting the MIC position, refer to the User Manual.)
- If a headset is connected, audio from the headset microphone is given priority, and audio from Digital Boundary Microphones is no longer picked up.

The range of each microphone (the radius of the circle with a microphone at the centre) varies according to the level of surrounding and the number of microphones being used. Place microphones accordingly, referring to the following table.

| Noise level/ Microphone | A quiet room (40 dBsplA) | A regular room (45 dBsplA) | A noisy room (50 dBsplA) |
|----------------------------|-----------------------------|-------------------------------|-----------------------------|
| 1 | approx. 3 m | approx. 2.2 m | approx. 1.2 m |
| 2 | approx. 2.8 m | approx. 1.5 m | approx. 1 m |
| 3 | approx. 2.3 m | approx. 1.3 m | — |
| 4 | approx. 2 m | approx. 1.1 m | — |

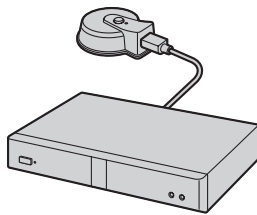
Layout examples (a regular room)
(the grey circle indicates the microphone's range):





Analogue Boundary Microphones

You can connect 1 Analogue Boundary Microphone. Also, Digital Boundary Microphones and general-purpose microphones can be used simultaneously.



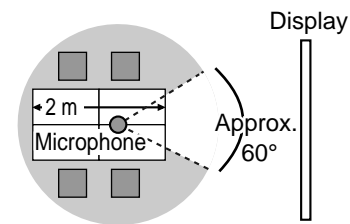
Note

- Make sure that the microphone is placed at least 1 m away from the display and speakers.
- Make sure that the microphone is placed with its connector facing the display.
- If both of the following conditions are met, the output sent to the other party will be stereo; otherwise, monaural:
 - The bandwidth is higher than approximately 1.8 Mbps in a 2-party video conference call with the HD Visual Communication Unit using SIP.
 - You are not using Digital Boundary Microphones and an Analogue Boundary Microphone together.
- If a headset is connected, audio from the headset microphone is given priority, and audio from Analogue Boundary Microphones is no longer picked up.

The range of the microphone (the radius of the circle with a microphone at the centre) varies according to the level of surrounding noise. Place the microphone accordingly, referring to the following table.

| Noise level/ Microphone | A quiet room (40 dBsplA) | A regular room (45 dBsplA) | A noisy room (50 dBsplA) |
|----------------------------|-----------------------------|-------------------------------|-----------------------------|
| 1 | approx. 2 m | approx. 1.5 m | approx. 1 m |

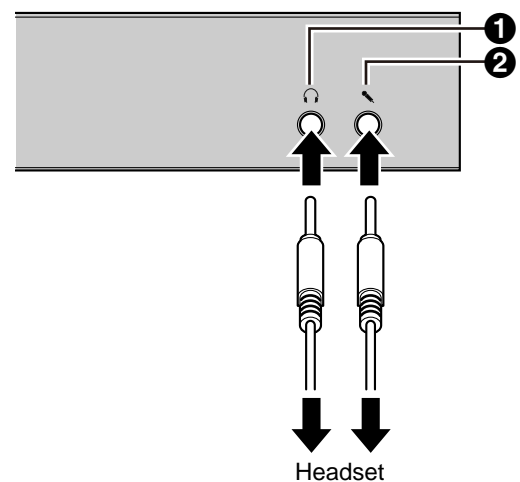
Layout examples (a regular room)
(the grey circle indicates the microphone's range):



About 60° around the connector side is outside the microphone's range.

About Headset

You can connect a headset to the headset jack on the front of the unit.



Note

- Check the headphone connector (①) and the microphone connector (②), and then connect the headset.
- If a Boundary Microphone and a headset are connected at the same time, audio from the headset microphone is given priority, and audio from Boundary Microphones is no longer picked up.

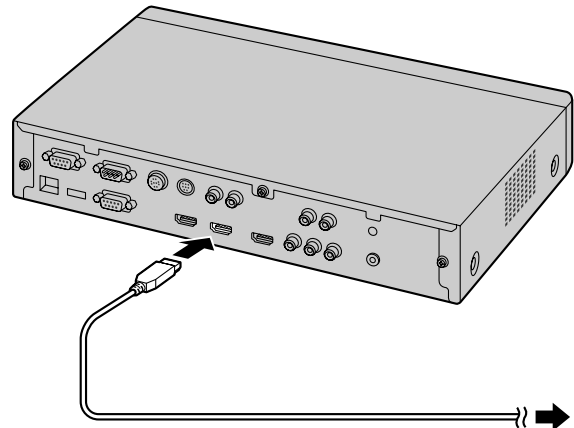
- If a general-purpose microphone and a headset are connected at the same time, audio from both sources is picked up.
- If a headset is connected, audio will not be played through the display or speakers.

Sub Video Camera Connection

This section describes how to connect a sub video camera. You can transmit images taken with the sub video camera to all parties.

1. Connect the sub video camera.

- Connect the sub video camera to the Sub Camera terminal on the back of the unit using an HDMI cable.



Note

- You can connect/disconnect the sub video camera during a video conference call.
- Only video cameras that are HDMI-compatible (output resolution: 1080i) can be connected.
- For details on how to use the sub video camera for visual communication, refer to the User Manual.

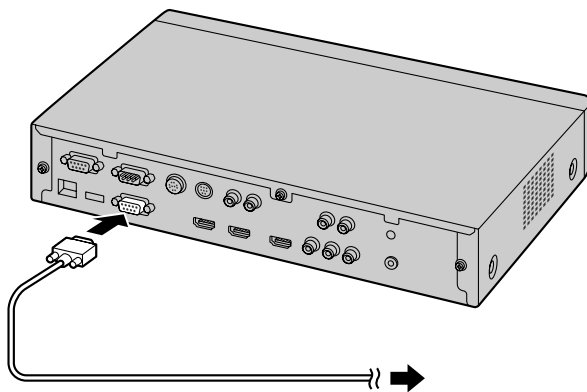
Computer Connection

This section describes how to connect a computer. Connecting a computer allows you to show the computer screen's images on the display and transmit them to other parties.

You can transmit the computer's images to all parties.

1. Connect the computer.

- Prepare a VGA cable making sure that it matches your computer's connector.
- Connect the computer to the RGB terminal on the back of the unit using a VGA cable.



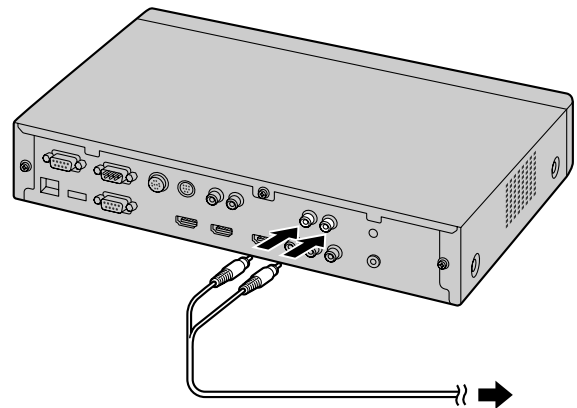
Note

- You can connect/disconnect the computer during a video conference call.
- For details on how to use the computer for visual communication, refer to the User Manual.
- One of the following resolutions is required for transmitting computer images: VGA (640 × 480), SVGA (800 × 600), XGA (1024 × 768), HD (1280 × 720), or WXGA (1280 × 768, 1280 × 800). SXGA (1280 × 1024) is not supported. For more details on supported resolutions, see the following table.

| Resolution | Refresh rate (Hz) |
|------------|-------------------------|
| VGA | 60/72/75/85 |
| SVGA | 60/72/75/85 |
| XGA | 60/70/75/85 |
| HD | 49.827/50/59.855/59.941 |
| WXGA | 60/75 |

Amplifier/Active Speaker Connection

This section describes how to connect an amplifier/active speaker.



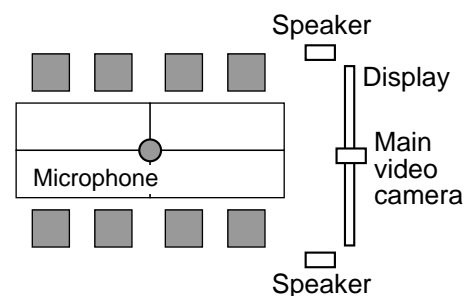
1. Connect the amplifier/active speaker to the Audio Out L/R jack on the back of the unit using a stereo pin plug cable.

Note

- Connect the amplifier/active speaker correctly, as follows:
 - Left channel → L
 - Right channel → R
- For more details about the amplifier or active speaker, refer to the documentation for the corresponding device.

Layout example:

Place the speakers either side of the display, as follows:

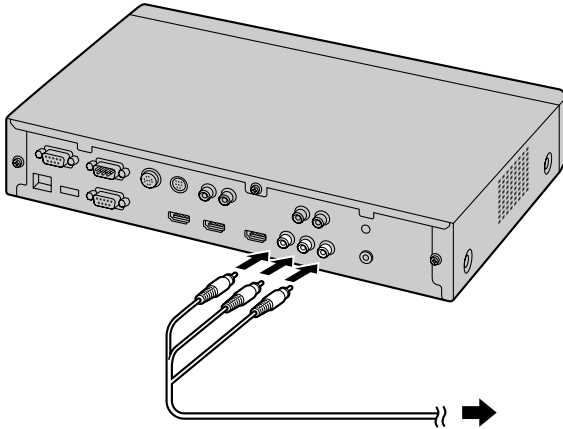


Notice

- Place the speakers either side of the display. If you place the display at the front of the room and the speakers at the back, the microphone's left/right spatial direction may be reversed, and the orientation of the image and sound will not match on the other party's side.

Connecting the Display with a Component Cable

If your display does not have an HDMI terminal, use a component cable for connection.



1. Connect the display to the Component terminal on the back of the unit using a component cable.

Note

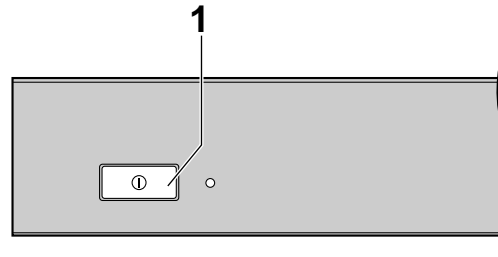
- To use the display's speakers to output audio, connect the display to the Audio Out L/R jack (Page 16) on the back of the unit using a stereo pin plug cable.

5.3 Preparing the Unit

Turning on the Power

Note

- Confirm that the power of all peripheral devices (e.g., display, main video camera) is on.

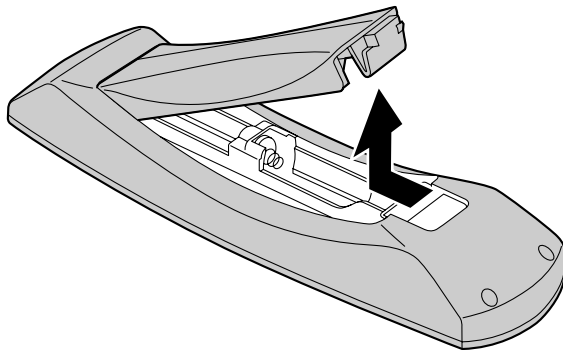


1. Press the Power button on the front of the unit.
 - The Power LED turns on. Then, the Status LED starts flashing blue slowly, and the Home screen is displayed.
 - When you turn the power on for the first time, the Initial Settings screen is displayed (Page 32).

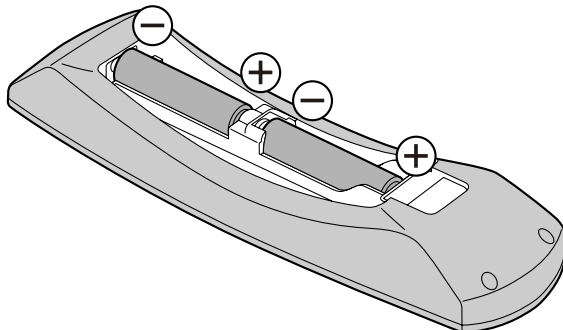
5.4 Preparing Remote Control

Inserting Batteries

1. Open the cover.



2. Insert the included batteries (R6 [AA] dry cell), minus side first, then close the cover.



6 Settings and Confirmation

6.1 Inputting Letters and Numbers

You can use the remote control to input letters and numbers. The following tables detail the characters and numbers that can be input. The language that can be input depends on which language is selected through system settings.

Press the indicated button repeatedly to cycle through the characters and numbers assigned to that button until the character you want to input is displayed. If you want to input another character using the same button, press [▶] to move the input cursor to the right.

Table 1 Chinese

| Button | Latin Mode | | Number Mode |
|---------------------------------------|---|---|---|
| | Uppercase-preferred Mode | Lowercase-preferred Mode | |
| 1 | 1 | 1 | 1 |
| 2 ^{ABC} | ABCabc2 | abcABC2 | 2 |
| 3 ^{DEF} | DEFdef3 | defDEF3 | 3 |
| 4 ^{GHI} | GHIghi4 | ghiGHI4 | 4 |
| 5 ^{JKL°} | JKLjkl5 | jklJKL5 | 5 |
| 6 ^{MNO} | MNOmno6 | mnoMNO6 | 6 |
| 7 ^{PQRS} | PQRSpqrs7 | pqrsPQRS7 | 7 |
| 8 ^{TUV} | TUVtuv8 | tuvTUV8 | 8 |
| 9 ^{WXYZ} | WXYZwxyz9 | wxyzWXYZ9 | 9 |
| 0 _ | 0 (Normal space) | 0 (Normal space) | 0 |
| • [@] [*] | . @ : ; " = * + < > | . @ : ; " = * + < > | . @ : ; " = * + < > |
| # | # _ - & \$ \% ~ ^ ! ? / ' () , [] { } ' | # _ - & \$ \% ~ ^ ! ? / ' () , [] { } ' | # _ - & \$ \% ~ ^ ! ? / ' () , [] { } ' |

Table 2 English

| Button | Latin Mode | | Number Mode | Extended Character 1 (Western Europe) Mode | | Extended Character 2 (Eastern Europe) Mode | |
|-------------------------------------|---|---|---|---|---|---|---|
| | Uppercase -preferred Mode | Lowercase -preferred Mode | | Uppercase -preferred Mode | Lowercase -preferred Mode | Uppercase -preferred Mode | Lowercase -preferred Mode |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2 ^{ABC} | ABCabc2 | abcABC2 | 2 | AÀÁÂÃÄÅ ÆBCÇaàá âãäåæbcç 2 | aáâãäåæ bcçAÀÁÂ ÃÄÅÆBC Ç2 | AÁÂÃBCĆ Čaáâabcć AÁÂÃBCĆ Č2 | aáâabcć AÁÂÃBCĆ Č2 |
| 3 ^{DEF} | DEFdef3 | defDEF3 | 3 | DEĚÉÊĚF deěéěěf3 | deěéěěfD EĚÉĚĚF3 | DĎĚĚĚF dďěěěěf3 | dďěěěěfD ĎĚĚĚĚF3 |
| 4 ^{GHI} | GHIghi4 | ghiGHI4 | 4 | GĜHIİİİİİ İgĝhiııııı 4 | gĝhiııııı GĜHIİİİİİ 4 | GHIÍghií4 | ghiÍGHIÍ4 |
| 5 ^{J_{KL}°} | JKLjkl5 | jklJKL5 | 5 | JKLjkl5 | jklJKL5 | JKLĹĹĹjkl Íı5 | jklÍıJKLĹ ĹĹ5 |
| 6 ^{MNO} | MNOmno6 | mnoMNO6 | 6 | MNÑOÒÓ ÔÕÖØŒ mnñoòóô õöøœ6 | mnñoòóô öøœMNÑ OÒÓÔÕÖ ØŒ6 | MNÑŃOÓ ŎŎmnńño óôö6 | mnńñoóô MNÑŃOÓ ŎŎ6 |
| 7 ^{P_{QRS}} | PQRSpqr s7 | pqrsPQR S7 | 7 | PQRSŞßp qrsşß7 | pqrsşßP QRSŞß7 | PQRŔŖŞŞ Şpqrŕŕşş 7 | pqrŕŕşşP QRŔŖŞŞŞ 7 |
| 8 ^{TUV} | TUVtuv8 | tuvTUV8 | 8 | TUÚÚÚÚÚ Vtuúúúúú v8 | tuúúúúú TUÚÚÚÚÚ V8 | TŤUÚÚÚÚ Vtťuúúúú 8 | tťuúúúú ŤUÚÚÚÚV 8 |
| 9 ^{W_{XYZ}} | WXYZwxy z9 | wxyzWXY Z9 | 9 | WŴXIJYŶ Zwŵxijyŷ Z9 | wŵxijyŷ WŴXIJYŶ Z9 | WXYŶŶZŽ ŽŽwxyŷŷ žžž9 | wxyŷŷžž WXYŶŶZŽ ŽŽ9 |
| 0 _ | 0 Space | 0 Space | 0 | 0 Space | 0 Space | 0 Space | 0 Space |
| . @ * * | . @ : ; " = * + < > | . @ : ; " = * + < > | . @ : ; " = * + < > | . @ : ; " = * + < > | . @ : ; " = * + < > | . @ : ; " = * + < > | . @ : ; " = * + < > |
| # | # _ - & \$ \% ~ ^ ! ? / ' () , [] { } ' | # _ - & \$ \% ~ ^ ! ? / ' () , [] { } ' | # _ - & \$ \% ~ ^ ! ? / ' () , [] { } ' | # _ - & \$ \% ~ ^ ! ? / ' () , [] { } ' | # _ - & \$ \% ~ ^ ! ? / ' () , [] { } ' | # _ - & \$ \% ~ ^ ! ? / ' () , [] { } ' | # _ - & \$ \% ~ ^ ! ? / ' () , [] { } ' |

Table 3 Japanese

| Button | Katakana Mode (Full-Width) | Latin Mode (Normal) | | Number Mode (Normal) |
|-------------------------------------|--|--|--|--|
| | | Uppercase -preferred Mode | Lowercase -preferred Mode | |
| 1 | アイウエオアイウエオ | 1 | 1 | 1 |
| 2 ^{ABC} | カキクケコ | ABCabc2 | abcABC2 | 2 |
| 3 ^{DEF} | サシスセソ | DEFdef 3 | defDEF3 | 3 |
| 4 ^{GHI} | タチツテトツ | GHIghi4 | ghiGHI4 | 4 |
| 5 ^{J_{KL}°} | ナニヌネノ | JKLjkl5 | jklJKL5 | 5 |
| 6 ^{MNO} | ハヒフヘホ | MNOmno6 | mnoMNO6 | 6 |
| 7 ^{P_{QRS}} | マミムメモ | PQRSpqrs7 | pqrsPQRS7 | 7 |
| 8 ^{TUV} | ヤユヨヤユヨ | TUVtuv8 | tuvTUV8 | 8 |
| 9 ^{W_{XYZ}} | ラリルレロ | WXYZwxyz9 | wxyzWXYZ9 | 9 |
| 0 _ | ワヲンワー (Full-width space) | 0 (Normal space) | 0 (Normal space) | 0 |
| • [@] * | ゛ (Voicing mark) ゜ (Half-voicing mark) | . @ : ; " = * + < > | . @ : ; " = * + < > | . @ : ; " = * + < > |
| # | . @ : ; " = * + < > # _ - & \$ ¥ % ~ ^ ! ? / ` ' () , [] { } ' | # _ - & \$ \% ~ ^ ! ? / ` () , [] { } ' | # _ - & \$ \% ~ ^ ! ? / ` () , [] { } ' | # _ - & \$ \% ~ ^ ! ? / ` () , [] { } ' |

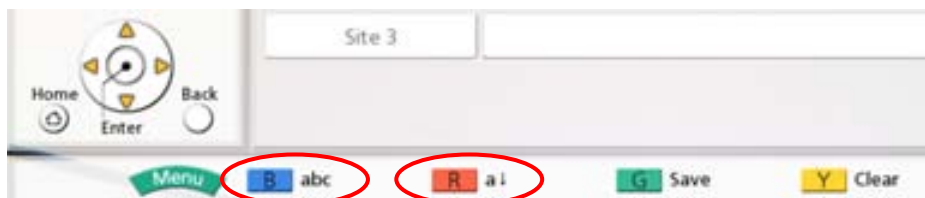
Switching the Input Mode

Each time [B] or [R] is pressed, the input mode will be switched in the following cycle:

- **[B]:**
(When Chinese is selected)
 Latin mode → number mode
(When English is selected)
 Latin mode → number mode → extended character 1 mode → extended character 2 mode
(When Japanese is selected)
 Katakana mode → Latin mode → number mode
- **[R]:**
(When Latin mode/extended character 1 mode/extended character 2 mode is selected)
 lowercase-preferred mode → uppercase-preferred mode

The current input mode is displayed in the guide area.

Example: Latin mode and lowercase-preferred mode currently selected



Deleting an Input Character

Press [Y] to delete an input character. The character deleted depends on the position of the cursor:

- If the cursor is to the right of the last character in the line, the last character will be deleted.
- If the cursor is within a line of characters, the character to the right of the cursor will be deleted.

Inserting Characters

Use [◀][▶] to move the cursor to the position where you want to insert characters, and then begin input. The characters will be inserted at the location of the cursor.

6.2 Initial Settings

After turning the unit on, you need to set the language, device name, date and time, and network settings. These settings can be changed later.

1. Press the Power button to turn on the unit.
 - The language settings screen is displayed.

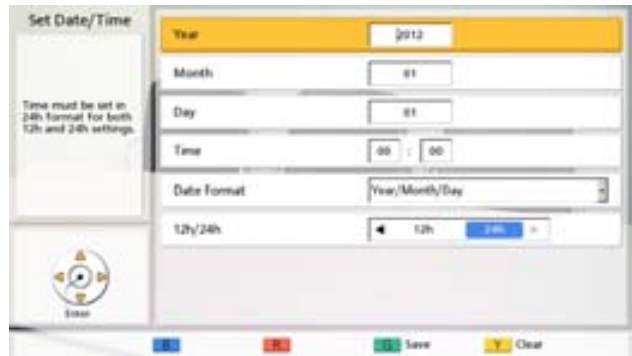


2. Press [Enter] and use [▲][▼] to select the desired language ("简体中文" [default], "English", "日本語").
3. Press [Enter].
4. Press [G].
5. Use [◀][▶] to select "是" and press [Enter].
 - The device name setting screen is displayed.
6. Enter a name for the device (up to 24 characters) (Page 28).



7. Press [G].
8. Select "Yes" using [◀][▶], then press [Enter].
 - The date and time setting screen is displayed.

9. Select the item using [▲][▼], then input information.
 - Enter the year (4 digits), month (1–2 digits), day (1–2 digits), time (24 hour display), and select the date format (Month/Day/Year, Day/Month/Year, Year/Month/Day) and the hour display format (12h/24h).



10. Press [G].
11. Select "Yes" using [◀][▶], then press [Enter].
 - The network settings screen is displayed.
12. Use [▲][▼] to select the following items for input:



"IP Address": Use [◀][▶] to select whether the IP address information for this unit ("IP Address", "Subnet mask", "Default Gateway") will be obtained automatically from a DHCP server or will be set manually.

- **"Auto"** (default): Obtain the IP address information automatically.
- **"Manual"**: Set the IP address information manually.

Note

- Even if you have selected **"Auto"**, you still may not be able to acquire an IP address due to problems such as network congestion. In this case, **"Address is not assigned"** is displayed in the upper right of the Home screen. Contact your network administrator.

"IP Address": Enter the IP address of the unit.

"Subnet mask": Enter the subnet mask.

"Default Gateway": Enter the IP address of the default gateway.

Note

- **"IP Address"**, **"Subnet mask"**, and **"Default Gateway"** can be entered only if **"IP Address"** is set to **"Manual"**.
- If the value for **"IP Address"**, **"Subnet mask"**, or **"Default Gateway"** contains 1 or 2 digits numbers, enter these numbers as they are. Do not enter like [.001].
Example: The IP address is [192.168.0.1].
 - Correct entry: [192.168.0.1]
 - Wrong entry: [192.168.000.001]

13. Press **[G]**.

14. Select **"Yes"** using **[◀][▶]**, then press **[Enter]**.

- Settings become effective after the automatic restart.

Note

- If the IP address or subnet mask contains an invalid value, a message will appear requiring you to enter a valid IP address or subnet mask.
- A multicast address or broadcast address cannot be used for the IP address.

6.3 Displaying the Connection Status

You can confirm the connection status of the network and peripheral devices.

1. Press [Status].

- The connections status screen is displayed. An "X" mark is displayed next to any network or peripheral devices connection that is not in normal operation or not connected.

Example: The Boundary Microphone connection is not normally operating.



- "MIC" displays the connection status of the Boundary Microphone or headset only. The connection status of general-purpose microphones is not displayed.
 - If the MIC detection setting has been disabled through system settings, the connection status of the Boundary Microphone or headset will not be displayed. For details on how to change MIC detection settings, refer to the User Manual.
- 2. Press [Back].**
- The display returns to the screen in use before the connections status screen was viewed.

6.4 Software Update with a USB Memory Device

Note

- Contact your dealer for more information on obtaining the latest firmware and User Manual.
- To update the software, make sure you are using a version later than 3.00 (not including 3.00).
- A mass storage class (FAT16 or FAT32 format) compatible USB memory device can be used with this unit.
- The following types of USB memory devices cannot be used:
 - U3 smart drives (USB memory devices compatible with the U3 platform)
 - USB memory devices with security features
 - USB memory devices formatted using NTFS
 - USB memory devices with multiple LUNs (Logical Unit Numbers)
 - USB memory devices formatted with multiple partitions
- USB memory devices are not guaranteed to fully operate. For details, contact your dealer.
- Do not store files in the USB memory device other than the one for updating the software.
- Store the file for updating the software in the top-most directory of the USB memory device.
- To re-connect a USB memory device, make sure to fully remove the USB memory device before connecting it again.
- To prevent data leakage from the USB memory device, make sure to erase all data from the USB memory device before disposing of, lending, or returning it.

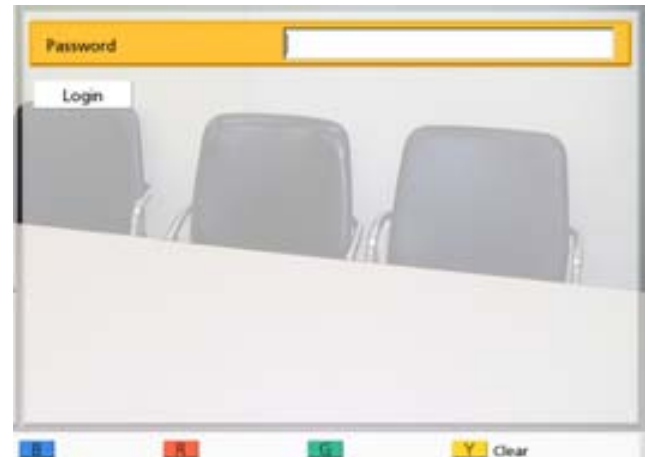
1. Connect the USB memory device to the USB jack on the back of the unit (Page 17).

Note

- Make sure that the USB memory device is connected correctly.

2. Press **[Menu]**.
 - The Menu screen is displayed.
3. Use **[▲][▼]** to select "**Settings**" and press **[Enter]**.
 - The system settings screen is displayed.

4. Press **[▶]** three times.
 - The fourth page is displayed.
5. Use **[▲][▼]** to select "**Admin login**" and press **[Enter]**.
 - The login screen is displayed.

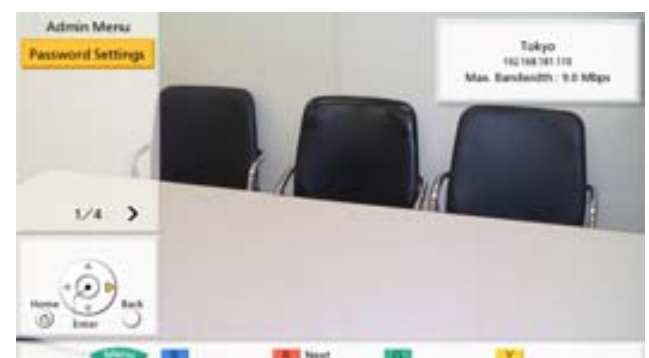


6. Use **[▲][▼]** to select "**Password**", then enter the administrator password (4–10 digits).

Note

- Please enter the administrator password that was set during installation.

7. Use **[▲][▼]** to select "**Login**" and press **[Enter]**.
 - The admin menu screen is displayed.



8. Press **[▶]** three times.
 - The fourth page is displayed.

9. Use [▲][▼] to select **"Software update"** and press [Enter].
 - The software update screen is displayed.



10. Use [▲][▼] to select **"Software updates"** and press [Enter].
 - The system checks for version updates. The latest software version will be displayed next to **"Available Software version :"**. Proceed to step 11 if there is an update available.
11. Use [▲][▼] to select **"Update Software Now"** and press [Enter].
 - A dialogue box to confirm the updating of your software is displayed.

Note

- Please carefully read and confirm the cautions in the dialogue box before proceeding to the next step.

12. Use [◀][▶] to select **"Yes"** and press [Enter].
 - The update is automatically downloaded and installed.

Note

- While the software is being updated, do not remove the USB memory device. This could damage the unit or corrupt the data.
- To complete the update, the system will automatically restart twice. Before each restart, a message will be displayed as detailed below.

The message displayed before the first restart



The message displayed before the second restart



After the second restart, the system will start up with the latest software.

13. Remove the USB memory device.

6.5 System Settings

Operating Environment

Operating System

- Windows XP (X86/X64) Home/Professional SP2 or later
- Windows 7 (X86/X64) Ultimate/Professional/Home Premium

Compatible Web Browsers/Operating Systems

- Windows Internet Explorer® 7/Windows XP
- Windows Internet Explorer 8/Windows XP
- Windows Internet Explorer 8/Windows 7

6.5.1 How to Perform System Settings Using a Computer

This section describes how to perform system settings, such as method of receiving video conference calls, using a computer.

Note

- If you want to configure system settings using a computer, make sure to complete initial settings using the remote control first. If the initial settings are not complete, you may not be able to make settings for some parameters.

Starting and Operating a Terminal Emulator

1. Connect a computer to the RS-232C terminal on the back of the unit using an RS-232C cable.
 - Prepare an RS-232C cable making sure that it matches your computer's connector.
 - Use a straight cable for the RS-232C cable.
2. Start a terminal emulator using the computer.
3. Select Serial as the connection method.
4. Set the serial port as follows:

| Terminal parameters | Value |
|--|--------|
| Baud rate (data transmission speed) | 38400 |
| Data (character bit length) | 8 bits |

| Terminal parameters | Value |
|-------------------------|-------|
| Parity (parity bits) | none |
| Stop (stop bits) | 1 bit |
| Flow control | none |

5. Enter the login user name, then press [Enter].
 - The login user name is "admin".
6. Enter the login password, then press [Enter].
 - The default login password is "HDVC_admin".
 - For details on changing the login password, see Page 39.
7. Enter "service stop", then press [Enter].
 - "Can not use during maintenance." is displayed on the display.
8. Enter a command, then press [Enter] (Page 38).
 - Enter a space between commands and parameter values.

Example:

```
lanmode set 0
```

①
②
③

 - ① Command name
 - ② set: Change the setting.
get: Display the current value.
 - ③ Value
9. Enter "sys save", then press [Enter].
 - The value is saved as configuration data.
10. Turn the power off, then back on, to restart the unit.

Note

- You will be automatically logged out if there is no activity for 5 minutes while logged in.
- Settings cannot be changed during a video conference call.
- Using the [Ctrl] key when entering commands may unintentionally activate other computer features.
- Some settings cannot be displayed by entering terminal emulator commands.

6.5.2 Changing the Settings

You can change the following settings by entering terminal emulator commands.

| Setting | Command | Value |
|---------------------------|---------------|--|
| Default maximum bandwidth | defaultiprate | <p>Set an upper limit of the maximum bandwidth that can be set by customers.</p> <ol style="list-style-type: none"> 1. Log in to the terminal emulator, enter "service stop", and then press [Enter]. 2. Enter "defaultiprate set max XXXX", then press [Enter]. <ul style="list-style-type: none"> • For XXXX, enter a string between 3–5 digits. You can enter any of the following values: 512, 768, 1000, 1200, 2000, 3000, 4000, 5000, 6000, 7000, 8000, 9000, 10000 • The default value is 9000 (9 Mbps). <p>Note</p> <ul style="list-style-type: none"> • 3-party video conference calls are not possible if 512 kbps is selected. 4-party video conference calls are not possible if 512 kbps or 768 kbps is selected. Keep this in mind when selecting the maximum bandwidth setting if the customer will participate in multiple-party video conference calls. <ol style="list-style-type: none"> 3. Enter "sys save", press [Enter], then turn the power off and back on to restart the unit. |
| LAN mode | lanmode | <p>"0" (default): Sets Auto Negotiation. "2": Sets 100M Full Duplex.</p> <p>Note</p> <ul style="list-style-type: none"> • Match this setting with the setting of the switching hub. |

| Setting | Command | Value |
|-----------------------------------|-----------|--|
| Login password | passwd | <p>Set the login password.</p> <ol style="list-style-type: none"> Log in to the terminal emulator, enter "service stop", and then press [Enter]. Enter "passwd set XXXX", then press [Enter]. <ul style="list-style-type: none"> For XXXX, enter a string between 4–15 characters. Only ASCII code characters 0x20–0x7e can be used. When entering spaces or single quotation marks ('), enclose the whole string in double quotation marks ("). Example: "AAA BBB'CCC" When entering double quotation marks ("), enclose the whole string in single quotation marks ('). Example: 'AAA"BBB' Double quotation marks (") and single quotation marks (') cannot be used in the same string. Enter "syssave", press [Enter], then turn the power off and back on to restart the unit. <p>Note</p> <ul style="list-style-type: none"> For security purposes, change the default login password the first time you install the unit. Choose a password that cannot be easily guessed by a third party. Keep a record of your password to avoid forgetting it. The password should be kept safe to prevent unauthorised access. |
| Administrator menu login password | guipasswd | <p>Change the login password for the administrator menu for when the system administrator has forgotten their password.</p> <ol style="list-style-type: none"> Log in to the terminal emulator, enter "service stop", and then press [Enter]. Enter "guipasswd set normal XXXXXXXXX", then press [Enter]. <ul style="list-style-type: none"> For XXXXXXXXX, enter a string between 4–10 digits (default: 00000000). Enter "syssave", press [Enter], then turn the power off and back on to restart the unit. |

| Setting | Command | Value |
|-------------------------|-------------|---|
| Web port status setting | httplenable | <p>Set the permanent status of the Web port to open or closed. The default setting is "0" (the Web port is closed).</p> <ol style="list-style-type: none"> 1. Log in to the terminal emulator, enter "service stop", and then press [Enter]. 2. When setting the Web port status to open: Enter "httplenable set defenable 1", then press [Enter]. <p>Notice</p> <ul style="list-style-type: none"> • Setting the Web port status to always be open presents a possible security risk, such as an increased possibility of unauthorised access. Please gain permission from the customer before performing the network settings. <p>When setting the Web port status to closed: Enter "httplenable set defenable 0", then press [Enter].</p> <ol style="list-style-type: none"> 3. Enter "sys save", press [Enter], then turn the power off and back on to restart the unit. <p>Note</p> <ul style="list-style-type: none"> • Even if the Web port status is set to closed, it is possible to open the Web port for 60 minutes by entering "webport open" then pressing [Enter]. The Web port will close automatically after 60 minutes. |

6.5.3 Adding to the Contact List

This section describes how to download, edit and upload contact list data.

Example of Contact List Data

```
<?xml version="1.0" encoding="UTF-8"?>
<Book>
  <AddressVersion>1.03</AddressVersion>
  <NormalMode>
    <Address>
      <AddressNumber>1</AddressNumber>
      <AddressType>0</AddressType>
      <AddressName>London</AddressName>
      <AddressKana>London</AddressKana>
      <AddressURI>192.168.181.103:5065</AddressURI>
      <SpeedDial>1</SpeedDial>
      <Link1>-1</Link1>
      <Link2>-1</Link2>
      <Link3>-1</Link3>
      <CallType>0</CallType>
    </Address>
    <Address>
      .
      .
    </Address>
  </NormalMode>
  <NGNMode>
    <Address>
```

1. Perform steps 1–7 in "Starting and Operating a Terminal Emulator" (Page 37).
2. Enter "webport open", then press [Enter].
 - The Web port is opened and the System Operation screen can be accessed using a browser.
 - The Web port will close automatically after 60 minutes.
3. Connect a computer to the network containing the unit.
 - Change the computer's IP address.
Example: If the IP address of the unit is "192.168.0.1", change the computer's IP address to "192.168.0.2".

4. Start a Web browser, then enter the IP address of the unit in the URL field.
 - An authentication screen is displayed.
5. Enter the login user name and login password.
 - The login user name is "admin" and the default password is "HDVC_admin".
 - The Language Selection screen is displayed.
6. Click [English] on the Language Selection screen.
 - The System Operation screen is displayed.
7. Click [download] under **[Data Download From Main Unit]** → [Download contact list] on the System Operation screen.



- The contact list data is downloaded to the computer.
8. Edit the downloaded contact list data on the computer.

Note

- The downloaded contact list data is a XML-format text file. Save the file using UTF-8 encoding. If you do not use UTF-8 encoding, you may not be able to upload the contact list data or characters may become garbled.
- If undisplayable characters are saved in the file, they will not be displayed on the screen.
- If you are using the KX-VC300 and have not used an activation key card (KX-VCS301) to enable the multiple-party video conference feature, you cannot use contact list data that contains 3-party/4-party contacts.

- You cannot use a contact list whose version is older than 1.03 (not including 1.03). The version of the contact list is displayed in the <AddressVersion> field of the downloaded contact list data. If the version of the contact list is older than 1.03, update the software of the unit to update the version of the contact list to 1.03, and then download the contact list.
9. Click [Browse...] for [Select a file to upload:] under **[Data Upload To Main Unit]** → [Upload contact list] on the System Operation screen, then navigate to the edited data.
10. Click [upload] under **[Data Upload To Main Unit]** → [Upload contact list] on the System Operation screen.
- The data is uploaded to the unit and [file upload success] is displayed on the Web browser.
 - If [upload file commit error] is displayed on the Web browser, the uploaded data may contain an error. Refer to the error message and correct the error.

Or, you may be trying to upload a contact list whose version is older than 1.03. Check the <AddressVersion> field in the contact list data that you are trying to upload. If the version of the software is not 1.03, contact your dealer.

11. Turn the power off and back on to restart the unit.

Note

- Make sure you do not access any Web sites while performing settings on the System Operation screen.
- Make sure to close the browser after finishing performing settings.

6.5.4 Entering the Device Name

When entering data apart from that which can be entered using the remote control, follow the procedure below.

1. Perform steps 1–7 in "Starting and Operating a Terminal Emulator" (Page 37).
2. Enter "devinfo set name XXXX", then press [Enter].
 - For XXXX, enter a device name.
 - The following number of characters can be displayed on the screen:
 - When using Alphabet: Up to 24 characters
 - When using Kanji (Chinese characters): Up to 18 characters
 - Make sure to set the terminal emulator to use UTF-8 encoding. If UTF-8 is not set, the entered information may not be recognised and the initial screen will be displayed after restart.
 - If undisplayable characters are set, they will not be displayed on the screen.
3. Enter "sys save", then press [Enter].
 - The value is saved as configuration data.
4. Turn the power off and back on to restart the unit.

6.6 Remote Access Settings

It is possible to change the settings of the unit from a separate location via remote access using an intranet. The following network settings are required to enable remote access.

Notice

- Please gain permission from the customer before performing the network settings.

Note

- To perform the remote access settings, the unit must be turned on.
- The unit cannot be operated while the remote access settings are being performed.

Making the Web Port Status Open

1. Perform steps 1–7 in "Starting and Operating a Terminal Emulator" (Page 37).
2. Enter "httpenable set defenable 1", then press [Enter].
3. Enter "syssave", then press [Enter].
 - The value is saved as configuration data.
4. Turn the power off, then back on, to restart the unit.

Allowing HTTP Access

Perform network settings so that the unit allows external HTTP access for maintenance.

6.6.1 Updating Software

Note

- Contact your dealer for more information on obtaining the latest firmware and User Manual.

1. From an external maintenance computer, start a Web browser, then enter the IP address of the unit in the URL field.
 - An authentication screen is displayed.

2. Enter the login user name and login password.
 - The login user name is "admin" and the default password is "HDVC_admin".
 - The Language Selection screen is displayed.
3. Click [English] on the Language Selection screen.
 - The System Operation screen is displayed.
4. Click [stop] under **[Remote Maintenance Commands]** → [Communication service] on the System Operation screen.



5. Confirm that [OK] is displayed on the screen, then click [Back] on the Web browser.
 - The System Operation screen is displayed.

Note

- If [command not available] is displayed, the unit is on a video conference call. Perform the settings again after the video conference call has finished.
- If anything else is displayed, follow the procedure below to restart the system, then perform the settings again.
 1. Click [Back] on the Web browser.
 2. Click [restart] under **[System Restart]** → [System restart] on the System Operation screen.

6. Click [view] under **[Remote Maintenance Commands]** → [Check system status] on the System Operation screen.

7. Confirm that [outOfService] is displayed on the screen, then click [Back] on the Web browser.
 - The System Operation screen is displayed.

Note

- If [active] is displayed, start again from step 4.

- If [majorAlarm] or [fatal] is displayed, follow the procedure below to restart the system, then perform the settings again.
 1. Click [Back] on the Web browser.
 2. Click [restart] under **[System Restart]** → [System restart] on the System Operation screen.
- 8. Click [view] under **[Firmware Update]** → [Check installed firmware version] on the System Operation screen.
 - Confirm the version of the software you are using.
- 9. Click [Back] on the screen.
 - The System Operation screen is displayed.
- 10. Click [Browse...] under **[Firmware Update]** → [Select a file to upload:] on the System Operation screen, then navigate to the latest firmware.
- 11. Click [start] under **[Firmware Update]** → [Execute firmware update] on the System Operation screen.
 - The software update starts. It takes about 12 minutes. When the update is complete, the unit will automatically restart.
- 12. Perform steps 1–8 to confirm that the software has been updated.
- 13. Click [Back] on the screen.
 - The System Operation screen is displayed.
- 14. Click [restart] under **[System Restart]** → [System restart] on the System Operation screen.

Note

- Make sure you do not access any Web sites while performing settings on the System Operation screen.
- Make sure to close the browser after finishing performing settings.

6.6.2 Updating the Contact List

1. Perform steps 1–7 in "6.6.1 Updating Software" (Page 43).
2. Perform steps 7–11 in "6.5.3 Adding to the Contact List" (Page 41).

Note

- Make sure you do not access any Web sites while performing settings on the System Operation screen.
- Make sure to close the browser after finishing performing settings.
- Make sure to set the Web port status to closed after finishing performing settings. For details, refer to "When setting the Web port status to closed: (Page 40)".

7 After Installation

7.1 Confirming the Settings and Connection

You can perform the following checks before making a video conference call:

- Network test to check your network connection
- Self diagnosis to check image and sound

You can also confirm the connection by making a video conference call to the Panasonic HD Visual Communication test site.

Follow the steps below to check the settings and connection:

Performing a Network Test

You can confirm whether a network connection can be established with a particular IP address.

Note

- You cannot perform a network test from the contact list screen or the call history screen.

1. Press **[Menu]**.
 - The Menu screen is displayed.
2. Use **[▲][▼]** to select "**Settings**" and press **[Enter]**.
 - The system settings screen is displayed.
3. Press **[▶]** three times.
 - The fourth page is displayed.

4. Use **[▲][▼]** to select "**Network Test**" and press **[Enter]**.
 - The network test screen is displayed.



5. Enter an IP address.

Note

- If the IP address contains 1 or 2 digit numbers, enter these numbers as they are. Do not enter like [.001].
Example: The IP address is [192.168.0.1].
 - Correct entry: [192.168.0.1]
 - Wrong entry: [192.168.000.001]

6. Press **[R]**.
 - The network test starts. After the network test is finished, if the network test was successful or timed out, the details of the results are displayed. If the network test failed, a message indicating the failure is displayed.
7. Press **[Home]**.
 - The Home screen is displayed.

Performing Self Diagnosis

You can check how your image will be displayed and how your voice will be heard to the other party before starting a video conference call, using your own display and speakers.

Note

- Self diagnosis can be performed even when a headset is connected.

1. Press **[Menu]**.
 - The Menu screen is displayed.
2. Use **[▲][▼]** to select **"Settings"** and press **[Enter]**.
 - The system settings screen is displayed.
3. Press **[▶]** three times.
 - The fourth page is displayed.
4. Use **[▲][▼]** to select **"Self Diag."** and press **[Enter]**.
 - The self diagnosis screen is displayed with the dialogue box.



Note

- You can hide or display the dialogue box by pressing **[B]**.
- Set the microphone at least 1 m away from the speakers.

5. Press **[R]**.
 - The self diagnosis starts.

Note

- Check the image that is displayed from the main video camera.
- To avoid feedback, slowly raise the volume using the remote control's **[+]** button.
- When someone speaks into the microphone, confirm whether the sound plays back through the speakers.
- During self diagnosis, all Boundary Microphones will be set to "Center stereo".
- During self diagnosis, the tone will be set to "Standard".

6. Press **[R]**.
 - The self diagnosis ends.

Note

- If you do not press **[R]**, the self diagnosis will automatically end after about 10 minutes.

7. Press **[Home]**.
 - The Home screen is displayed.

Making a Video Conference Call to the Panasonic HD Visual Communication Test Site

You can make a video conference call to the Panasonic HD Visual Communication test site by entering the IP address using the remote control.

1. Press **[Menu]**.
 - The Menu screen is displayed.
2. Select **"Manual Dial"** using **[▲][▼]**, then press **[Enter]**.
 - The Input screen is displayed.



3. Select **"Multi-Point"** using **[▲][▼]**.
4. Select **"No"** using **[◀][▶]**.
5. Select **"Site 1"** using **[▲][▼]**.
6. Enter the IP address.
7. Use **[▲][▼]** to select **"Call Type"**.
8. Use **[◀][▶]** to select **"SIP"** or **"H.323"**.

9. Press **[Start]** to start the video conference call.
 - You can also start the video conference call by pressing **[Enter]**.
10. When you want to end the video conference call, press **[End]**.
 - The Home screen is displayed.

7.2 Adjusting Conditions in Call Environment

For optimum performance, it may be necessary to make the following adjustments.

Adjusting the Image Quality of the Video Camera

Follow the procedure below to adjust the image quality of the video camera.

Note

- Make sure that display and main video camera are turned on.
1. Press the Power button to turn on the unit.
 - The Home screen is displayed. The Home screen displays the video from the main video camera.
 2. Operate the video camera to perform the following adjustments:
 - Disable automatic face recogniser
 - Enable image stabiliser
 - Disable Intelligent Auto (iA)
 - Adjust white balance and Iris

Adjusting the Volume

The volume on the unit is related to the volume of the display. Select the volume level of the unit through system settings, and then adjust the volume level of the display to a desired level. If the volume of the display is not set to an appropriate level, it may be too loud when using the display for other purposes, such as watching TV. For details on how to change the volume level of the unit, refer to the User Manual.

Adjusting the Location of the Microphone(s)

If the other party cannot hear you well during a video conference call, move the microphone(s) accordingly.

8 Troubleshooting

If a problem is occurring with the operation of the unit, check here for possible solutions. Before proceeding check all connections to make sure they are secure (Page 20), and that power is flowing from the outlet that the unit is plugged into.

8.1 Basic Operation

| Problem | Cause and Solution |
|---|---|
| The power does not turn on. | <ul style="list-style-type: none"> The power cord is not plugged into the outlet. <p>→ Plug the power cord into the outlet.</p> |
| There is no display. | <ul style="list-style-type: none"> A cable or cord is not properly connected. <p>→ Check that all cables to the unit are connected properly (Page 20). Perform self diagnosis, and check the performance of the video camera and the display that are connected to the unit (Page 45). <ul style="list-style-type: none"> The main video camera is not turned on. <p>→ Turn on the main video camera. <ul style="list-style-type: none"> The display is not turned on, or the input that the unit is connected to is not selected. <p>→ Turn on the display, and select the input that the unit is connected to. <ul style="list-style-type: none"> The unit is in screen standby mode. <p>→ Pushing a button on the remote control, or receiving a video conference call will end standby mode and the display will return.</p> <p>Note</p> <ul style="list-style-type: none"> The network administrator can set the length of time until the unit enters screen standby mode. For details, refer to the User Manual. When connecting a device equipped with HDCP (High-bandwidth Digital Content Protection), only a blue or blue/black screen may be displayed. <p>→ If an image is not correctly displayed, do not connect an HDCP-equipped device.</p> </p></p></p> |
| The area at the edges of the screen is not displaying properly. | <ul style="list-style-type: none"> The display is not set to show the full image. <p>→ Set the display to show images at full screen. For detailed procedure, read the instruction manual for the display. <ul style="list-style-type: none"> When connecting to an MCU or non-Panasonic video conference system, the other party's image may be trimmed, depending on the device used by the other party. <p>→ Contact your dealer.</p> <p>Note</p> <ul style="list-style-type: none"> In Layout 1 during a 3-party video conference call, the left and right edges of the image are trimmed. In Layout 2 during a 4-party video conference call, the edges of the image are trimmed and only the centre of the image is displayed. For details, refer to the User Manual. </p> |

| Problem | Cause and Solution |
|--|--|
| The aspect ratio of the image is not correct. | <ul style="list-style-type: none"> When connecting to an MCU or non-Panasonic video conference system, the aspect ratio of the image displayed on the other party's device may not be displayed correctly, depending on the device used. <p>→ Adjust the aspect ratio accordingly. For details, refer to the User Manual.</p> |
| Operation is unresponsive or incorrect. | <ul style="list-style-type: none"> Cables or cords may not be connected properly. <p>→ Check that all cables to the unit are connected properly (Page 20).</p> <ul style="list-style-type: none"> An error has occurred. <p>→ Turn off the unit and restart it.</p> <ul style="list-style-type: none"> There may be a problem with your communication lines. <p>→ Contact your dealer.</p> |
| The remote control is unresponsive. | <ul style="list-style-type: none"> The batteries are depleted. <p>→ Replace with new batteries.</p> <ul style="list-style-type: none"> The remote control is being used out of the signal reception range. <p>→ Make sure to use the remote control within the signal reception range.</p> <ul style="list-style-type: none"> The remote control ID differs between the unit and the remote control. <p>→ Change the settings so that the remote control ID of the unit and the remote control match. For details on how to change the remote control ID settings, refer to the User Manual.</p> <ul style="list-style-type: none"> The FIX camera is set to receive remote control signals. <p>→ When using the remote control, be sure to point it at the remote control signal receiver of the FIX camera.</p> <p>→ Change the "FIX Cam's Remote Ctrl Rcvr" setting to "OFF". For details, refer to the User Manual.</p> <ul style="list-style-type: none"> The unit is set to receive remote control signals. <p>→ When using the remote control, be sure to point it at the remote control signal receiver of the unit (Page 15).</p> <p>→ Change the "FIX Cam's Remote Ctrl Rcvr" setting to "ON". For details, refer to the User Manual.</p> |
| You cannot control your own video camera (main or sub video camera) with the remote control. | <ul style="list-style-type: none"> Your video camera is not a video camera supported by this unit. <p>→ Use a video camera that is supported by this unit. For details, contact your dealer.</p> <ul style="list-style-type: none"> You are trying to use a function that is not supported by your video camera. For example, you tried to use the pan function with a video camera that supports only the zoom function. <p>→ Check whether your video camera supports the function you are trying to use.</p> <ul style="list-style-type: none"> When you connect both the main video camera and sub video camera to your unit, you may become unable to control one or both of the video cameras. <p>→ Disconnect the HDMI cable of the video camera you cannot control, and then connect that video camera's HDMI cable again.</p> |

| Problem | Cause and Solution |
|---|---|
| You cannot control the other party's video camera (main or sub video camera) with the remote control. | <ul style="list-style-type: none">• The other party's video camera is not a video camera supported by this unit. → Ask the other party to use a video camera that is supported by this unit. For details, have the other party contact their dealer.• "CAM ctrl from remote site(s)" is set to "OFF" on the other party's unit. → Ask the other party to set "CAM ctrl from remote site(s)" to "ON" on their unit.• You are trying to use a function that is not supported by the other party's video camera. For example, you tried to use the pan function with a video camera that supports only the zoom function. → Check whether the other party's video camera supports the function you are trying to use.• When the other party connects both the main video camera and sub video camera to their unit, you may become unable to control one or both of their video cameras. → Ask the other party to disconnect the HDMI cable of the video camera you cannot control, and then connect that video camera's HDMI cable again.• One of the parties is using a unit with an incompatible software version. → Check the software version of all parties. Update the unit so that the versions match.• The other party is using a non-Panasonic video conference system. → If the other party uses a non-Panasonic video conference system, some operations may not be possible or some operations may not function as expected. |

| Problem | Cause and Solution |
|------------------------------------|--|
| Cannot connect with another party. | <ul style="list-style-type: none"> • The LAN cable is not connected properly. → Check that it is connected to the unit properly (Page 21). Perform a network test by entering a particular IP address (e.g., the other party or a switching hub), and then confirm the network connection (Page 45). • The maximum bandwidth setting is incorrect. → 3-party video conference calls are not possible if 512 kbps is selected. 4-party video conference calls are not possible if 512 kbps or 768 kbps is selected. Check your maximum bandwidth setting, and select a value that is appropriate for your network environment. → If you are trying to connect to a non-Panasonic video conference system, a connection might not be possible depending on either your or the other party's bandwidth settings. Either check your settings and change them, or have the other party do the same. If you change your own settings, you should register the new information as a local site. For details, refer to the User Manual. • The call type setting is incorrect. → Set the call type setting so that it is the same as the other party's. For details, refer to the User Manual. • The SIP settings are incorrect. → Check the SIP settings. For details about SIP settings, refer to the User Manual. After you check the SIP settings, if you still cannot connect to the other party, contact your network administrator. • The ID and password for digest authentication are incorrect. → Check that the values specified for "Authentication ID" and "Authentication Password" are correct. For details, refer to the User Manual. • The "SIP Transport Protocol" setting is different from the other party's. → Set the "SIP Transport Protocol" setting so that it is the same as the other party's. For details, refer to the User Manual. • The local site settings are incorrect. → Confirm the local site settings. Specify the settings that are appropriate for your usage environment. For details, refer to the User Manual. • The IP address is not entered correctly. → Confirm that the other party's IP address is correctly entered. • The SIP URI (or SIP user name), H.323 extension, or H.323 name is not entered correctly. → Check whether the SIP URI (or SIP user name), H.323 extension, or H.323 name of the other party is entered correctly or whether it conforms to the relevant standard. • The MCU's conference room number@IP address is not entered correctly. → Check whether the conference room number and IP address of the MCU is entered correctly. |

| Problem | Cause and Solution |
|---|---|
| | <ul style="list-style-type: none"> • When making a video conference call by entering an MCU's conference room number@IP address, "SIP Server" or "Gatekeeper" is set to "ON". → Change the "SIP Server" and "Gatekeeper" settings to "OFF". For details, refer to the User Manual. • A video conference call to a unit with an incompatible software version was attempted. → Check the software version of all parties. Update the unit so that the versions match. • There may be a problem with your communication lines. → Contact your dealer. • You are trying to make a video conference call by connecting to an MCU or non-Panasonic video conference system. → When connecting to an MCU or non-Panasonic video conference system, some operations may not function as expected, depending on the device used by the other party. In this case, contact your dealer. • You are trying to connect to an MCU or non-Panasonic video conference system that is not compatible. → Use the outgoing call history to confirm the name of the device, and then contact your dealer. |
| The image is distorted. | <ul style="list-style-type: none"> • The settings of the switching hub are different to those of the unit. → Check the settings of the switching hub and unit, and make sure that they match (Page 38). • Packet loss is occurring. (The network is congested.) → Check the display of the network status indication. For details, refer to the User Manual. If the icon shows only 0–1 bars continuously, check the transmission quality (network throughput, delay, packet loss rate etc.) of each party in a video conference call. • The maximum bandwidth setting is incorrect. → During a 3-party video conference call, at least 1 Mbps of bandwidth is required. Change the maximum bandwidth setting to a value of 1.0 Mbps or higher. For details, refer to the User Manual. → During a 4-party video conference call, at least 1.5 Mbps of bandwidth is required. Change the maximum bandwidth setting to a value of 1.5 Mbps or higher. For details, refer to the User Manual. → If you are trying to connect to an MCU or non-Panasonic video conference system, depending on the other party's device, the image may be distorted due to lack of bandwidth. In this case, contact your dealer. • There may be a problem with your communication lines. → Contact your dealer. |
| The maximum bandwidth changes during a video conference call. | <ul style="list-style-type: none"> • The maximum bandwidth during a video conference call adjusts to that of the party that has set the lowest bandwidth for the maximum bandwidth setting among all participating parties. → If there is a problem with the communication line, check the bandwidth of the communication line being used by the customer and the maximum bandwidth settings for a video conference call. |

| Problem | Cause and Solution |
|--|--|
| The computer or sub video camera's video is not displayed. | <ul style="list-style-type: none"> Cables or cords may not be connected properly. → Make sure all connections to the unit are correct (Page 25). On the Home screen, press [PC] or [Camera Sub] and then check the computer's screen or sub video camera's image. For details, refer to the User Manual. The computer's display resolution or refresh rate is incompatible with the unit. → Set your computer's resolution and refresh rate to a setting compatible with the unit (Page 25). |
| It takes a long time to display a clear image when displaying a still image from the sub video camera. | <ul style="list-style-type: none"> Sending a still image requires time. Packet loss is occurring. → Change the "Still image quality" setting to "HD". For details, refer to the User Manual. |

8.2 Audio

| Problem | Cause and Solution |
|---|--|
| The other party cannot hear your voice. | <ul style="list-style-type: none"> The microphone cable is not properly connected. → Check that the microphone is properly connected to the unit (Page 20). Perform self diagnosis, and check the performance of the microphones that are connected to the unit (Page 45). The microphone is muted. → Press [MIC Mute] on the remote control, or press the MIC Mute button on the Boundary Microphone to unmute the microphone. "Default MIC Mute set" is set to "ON". → The microphones are muted at the start of a received video conference call. Confirm the settings. For details, refer to the User Manual. The microphone is being obstructed. → During the video conference call, do not block the microphone with your hand or other object. You are too far from a microphone. → Speak close to a microphone. More than 5 Digital Boundary Microphones are connected in cascade. → Connect no more than 4 Digital Boundary Microphones at a time (Page 21). A headset is connected. → When a headset is connected, audio input from Boundary Microphones is disabled. To use the Boundary Microphones, disconnect the headset. There may be a problem with your communication lines. → Contact your dealer. |

| Problem | Cause and Solution |
|--|--|
| The sound cuts out. | <ul style="list-style-type: none"> You are too far from a microphone. → Speak close to a microphone. The microphone or the unit is being moved during a video conference call. → Do not move the unit or the microphone during a video conference call. The microphone is being obstructed. → During the video conference call, do not block the microphone with your hand or other object. There may be a problem with your communication lines. → Contact your dealer. |
| The sound volume is low or cannot be heard at all. | <ul style="list-style-type: none"> The volume settings of the unit are too low. → Increase the volume level (Page 17). <p>Note</p> <ul style="list-style-type: none"> You can set the volume level of a video conference call before starting the call. Confirm the settings. For details, refer to the User Manual. The other party's microphone has been muted. → Have the other party unmute their microphone. The display's volume settings are too low. → Increase the volume level of the display. A headset is connected. → When a headset is connected, audio output from the display or speakers is disabled. Disconnect the headset. |
| You hear audio feedback. | <ul style="list-style-type: none"> The microphone is too close to the display or to speakers. → Keep microphones at least 1 m away from any display or speaker. The display's volume settings are too high. → Decrease the volume level of the display. |
| Sound cuts out or echoes. | <ul style="list-style-type: none"> Adjustments to the environment immediately after a video conference call has begun may not yet have completed. → Immediately after a video conference call has begun, be sure to speak in turn with other parties. The unit will automatically adjust audio levels so that all parties can easily be heard. |
| The other party hears noise. | <ul style="list-style-type: none"> The Boundary Microphone cable is not properly connected. → Check that the Boundary Microphone is properly connected to the unit (Page 20). |

| Problem | Cause and Solution |
|---|--|
| The orientation of the image and sound do not match (the voice of a person on a side of the screen comes from the opposite side's speaker, etc.). | <ul style="list-style-type: none"> The speakers are not properly positioned. → Check that the speakers are properly positioned and the left/right wiring is correct (Page 25). <ul style="list-style-type: none"> The speakers of the other party are not properly positioned. → Ask the other party to position speakers on either side of the display. When the MIC position is set automatically, if the other party places the display at the front of the room and the speakers at the back, the microphone's left/right spatial direction may be reversed, and the orientation of the image and sound will not match. <ul style="list-style-type: none"> The MIC positions set manually by the other party are incorrect. → Ask the other party to confirm the manual settings of their MIC positions. When setting the MIC position manually, the left/right orientation should match the left/right channels as viewed from the side of the main video camera. When the MIC position is set to "Center stereo", make sure that it is placed with its connector facing the display. For details, refer to the User Manual. |

8.3 System Settings

| Problem | Cause and Solution |
|---|---|
| The settings of the unit cannot be changed. | <ul style="list-style-type: none"> A video conference call is in progress. → Make settings after ending the current video conference call. <ul style="list-style-type: none"> A video conference call is incoming. → A dialogue box will be displayed asking whether to answer the call. Press [End] to disconnect the incoming call, and then configure the setting on the unit. <ul style="list-style-type: none"> If a video conference call is received when editing settings on the unit, a dialogue box will be displayed asking whether to answer the call without saving the settings, and you will temporarily be unable to edit the settings. To continue editing, reject the call. |
| Changed settings do not become effective. | <ul style="list-style-type: none"> Some settings require a restart after being changed. → After saving (syssave) configuration data, turn the power off, then back on, to restart it (Page 37). |

8.4 If These Messages Appear

| Message | Cause and Solution | | | | | | | | | | | | |
|---|---|------------|-------------|-------------|----------------------------------|-------------|--------------------|-------------|------------------------------------|----------------------------|----------------------------------|-------------|----------------------------------|
| <p>Unable to connect to network. (XXXX XXXX)</p> <p>Note</p> <ul style="list-style-type: none"> An error code (consisting of numerals) is displayed in "XXXX XXXX". | <ul style="list-style-type: none"> The switching hub or the LAN cable is not connected correctly to the unit, and therefore you cannot make a video conference call. The following table explains the error codes: <table> <tr> <th>Error code</th><th>Description</th></tr> <tr> <td>(0100 0007)</td><td>DHCP network information invalid</td></tr> <tr> <td>(0100 0003)</td><td>DHCP lease expired</td></tr> <tr> <td>(0100 0006)</td><td>Change due to DHCP lease extension</td></tr> <tr> <td>(0500 0008) (0700 000b)</td><td>Failed to register to SIP server</td></tr> <tr> <td>(1000 0001)</td><td>Failed to register to Gatekeeper</td></tr> </table> <p>→ Check that the switching hub and/or LAN cable are correctly connected to the unit. (Directly connect the switching hub to the unit and check operation. Also try replacing the LAN cable, and then check operation.) If the devices are connected correctly, the switching hub's settings may be incorrect, or the unit may be malfunctioning. Contact your dealer.</p> <p>Note</p> <ul style="list-style-type: none"> When transmission between the unit and the switching hub is interrupted because the LAN cable is connected incorrectly, it may take up to 10 minutes before the IP address, SIP user name, etc., is displayed and video conference calls can be made after reconnecting the LAN cable. | Error code | Description | (0100 0007) | DHCP network information invalid | (0100 0003) | DHCP lease expired | (0100 0006) | Change due to DHCP lease extension | (0500 0008) (0700 000b) | Failed to register to SIP server | (1000 0001) | Failed to register to Gatekeeper |
| Error code | Description | | | | | | | | | | | | |
| (0100 0007) | DHCP network information invalid | | | | | | | | | | | | |
| (0100 0003) | DHCP lease expired | | | | | | | | | | | | |
| (0100 0006) | Change due to DHCP lease extension | | | | | | | | | | | | |
| (0500 0008) (0700 000b) | Failed to register to SIP server | | | | | | | | | | | | |
| (1000 0001) | Failed to register to Gatekeeper | | | | | | | | | | | | |

9 Specifications

| Main Unit | | |
|-------------------------------------|--|--|
| Dimensions (Width × Depth × Height) | | Approx. 320 mm × approx. 230 mm × approx. 60 mm |
| Weight | | Approx. 2.0 kg |
| Power Input | | AC 100–240 V, 1.2–0.6 A, 50/60 Hz |
| DC Power Input | | DC 16 V, 2.5 A |
| Power Consumption | | Maximum: approx. 23 W (KX-VC300), approx. 39 W (KX-VC600) |
| Operating Temperature | | 0 °C–40 °C |
| Operating Humidity | | 10 %–90 % (non-condensing) |
| Video Input | HDMI1 (Main video camera) | Input resolution: 1080i (image only) |
| | HDMI2 (Sub video camera) | Input resolution: 1080i (image only) Available devices: Video camera (blu-ray disc/DVD players cannot be connected) |
| | VGA 15-pin mini D-Sub (RGB IN) | Input resolution: VGA, SVGA, XGA, HD, or WXGA |
| Audio Input | Digital Boundary Microphone (KX-VC600 only) | Optional Boundary Microphone (Digital Interface Type) (model no.: KX-VCA001) only (up to 4 can be connected simultaneously) |
| | Analogue Boundary Microphone | Optional Boundary Microphone (Analogue Interface Type) (model no.: KX-VCA002) only |
| | Stereo mini-plug (audio input) | Diameter 3.5 mm Available devices: headset Input is the headset microphone level. Either the Boundary Microphone terminal or the microphone connector is active, but not both. |
| | RCA pin jack (audio input) | Maximum line level input: 1.2 Vrms Available devices: stand microphone (via microphone amplifier), audio mixer etc. Both enabled when using a Boundary Microphone and RCA microphone together. |
| Video Output | HDMI (display) | Resolution: 1080i |
| | Component (video output) | Resolution: 1080i |

| Main Unit | | |
|--|---------------------------------|--|
| Audio Output | (HDMI) | For connecting to a display (with speaker) |
| | Stereo mini-plug (audio output) | Diameter 3.5 mm Available devices: 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 |
| Network | RJ45 (LAN) | Full duplex 100BASE-TX only |
| Control (Serial) | RS-232C | For connecting to a computer for maintenance (use a straight cable) D-Sub 9 pin (male) |
| | USB | For connecting a USB memory device for saving the operation log or updating the software USB Mass Storage Class FAT16/FAT32 format |
| | Camera Control (KX-VC600 only) | Not used |
| Number of Parties in a Call (including one's own site) | | Up to 4 parties ^{*1} Up to 2 parties (For connections to non-Panasonic video conference systems or for using H.323) 5 parties or more (For connections to an MCU) |
| Alternative Video Sources | | PC (RGB terminal), sub video camera (sub HDMI video only) |
| 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) |
| Audio Codec | | MPEG-4 AAC-LD (LATM format), G.722, G.722.1, G.722.1 Annex C (For connections to MCUs and non-Panasonic video conference systems) |

^{*1} If you are using the KX-VC300, initiating video conference calls with 4 parties can only be done by purchasing an activation key card (KX-VCS301) to activate multiple-party video conference calls.

| Remote Control | |
|-------------------------------------|---|
| Dimensions (Width × Height × Depth) | Approx. 50 mm × approx. 35 mm × approx. 190 mm |
| Weight | Approx. 145 g (including batteries) |
| Power Input | DC 3 V (2 R6 [AA] dry cell batteries) |
| Operating Temperature | 0 °C–50 °C |
| Operating Humidity | 10 %–95 % (non-condensing) |
| Operational Distance | Maximum approx. 8 m (distance from front of main unit when using DC 3 V) |

9 Specifications

Remote Control

| | |
|-------------------|---|
| Operational Range | Angular range: approx. 20° on each side, total 40° (when distance is 3 m) |
|-------------------|---|

Digital Boundary Microphone (Optional Accessory)

| | |
|---|---|
| Dimensions | Diameter 120 mm × 25 mm |
| Power Input | Supplied from main unit via proprietary cable |
| Weight | Approx. 280 g |
| Operating Temperature | 0 °C–40 °C |
| Operating Humidity | 10 %–90 % (non-condensing) |
| Standard Pickup Range | Radius approx. 2 m, 360° |
| Maximum Pickup Range | Radius approx. 3 m, 360° |
| Sound Pickup Method | Stereo/Monaural ^{*1} |
| Microphone Unit | Unidirectional ECM microphone parts × 4 |
| Bandwidth | 150 Hz–10 kHz |
| Maximum Input Sound Pressure | 110 dBspl |
| Sampling Frequency | 48 kHz |
| Delay Time | 1 ms or less |
| Number of Terminals for Microphone Connection | 2 |
| Length of Included Cable | Approx. 8.5 m |
| MIC 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 being used (e.g., when not transmitting or when a headset is connected). |

^{*1} If both of the following conditions are met, the output sent to the other party will be stereo; otherwise, monaural:

- The bandwidth is higher than approximately 1.8 Mbps in a 2-party video conference call with the HD Visual Communication Unit using SIP.
- The MIC position is set automatically or manually to collect a sound in stereo. (For details about setting the MIC position, refer to the User Manual.)

Analogue Boundary Microphone (Optional Accessory)

| | |
|-----------------------|---|
| Dimensions | Diameter 75 mm × 32 mm |
| Power Input | Supplied from main unit via proprietary cable |
| Weight | Approx. 80 g |
| Operating Temperature | 0 °C–40 °C |

| Analogue Boundary Microphone (Optional Accessory) | |
|---|---|
| Operating Humidity | 10 %–90 % (non-condensing) |
| Standard Pickup Range | Radius approx. 1.5 m, 300° |
| Maximum Pickup Range | Radius approx. 2 m, 300° |
| Sound Pickup Method | Stereo/Monaural ^{*1} |
| Microphone Unit | Unidirectional ECM microphone parts × 2 |
| Bandwidth | 200 Hz–10 kHz |
| Maximum Input Sound Pressure | 110 dBspl |
| Delay Time | 1 ms or less |
| Number of Terminals for Microphone Connection | 1 |
| Length of Included Cable | Approx. 7 m |
| MIC 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 being used (e.g., when not transmitting or when a headset is connected). |

^{*1} If both of the following conditions are met, the output sent to the other party will be stereo; otherwise, monaural:

- The bandwidth is higher than approximately 1.8 Mbps in a 2-party video conference call with the HD Visual Communication Unit using SIP.
- You are not using Digital Boundary Microphones and an Analogue Boundary Microphone together.

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