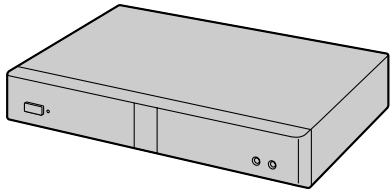# Panasonic®

User Manual

HD Visual Communication Unit
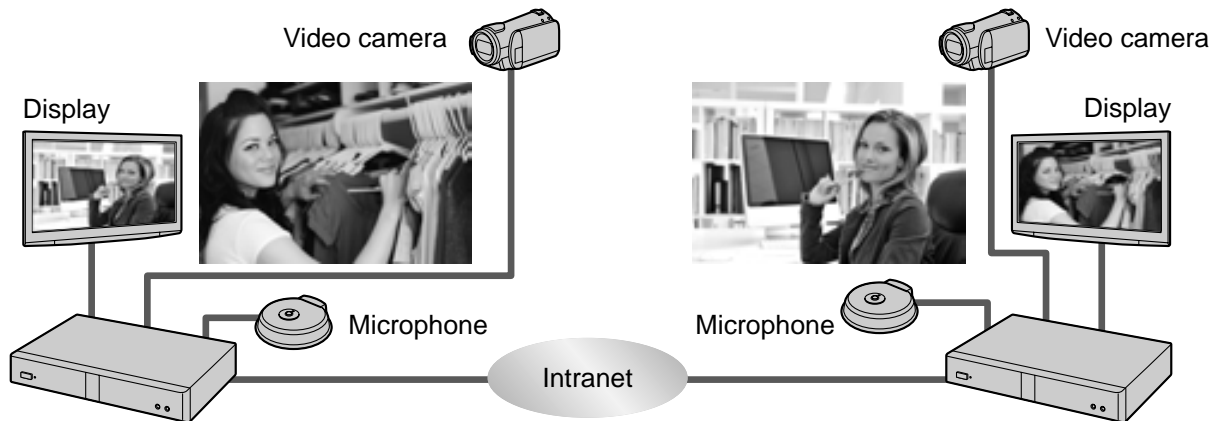
Model No. KX-VC300CN
KX-VC600CN

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

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 (Page 108).

[2]   If using 2 or more Digital Boundary Microphones, stereo output can be enabled through system settings (Page 92). When using Digital Boundary Microphones and an Analogue Boundary Microphone together, stereo output may be unavailable depending on the connection configuration (Page 22, 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 (Page 53). 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 (Page 55, Page 57). Additionally, you can also use your remote control to control the other party's video camera.[1]

[1]   To be able to control another party's video camera, settings must be configured on the other party's unit (Page 96).

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 (Page 68, Page 74).

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 (Page 102). For information about supported SIP servers, contact your dealer.

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 81). 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 (Page 108). For details about the activation key, contact your dealer.

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 (Page 42).[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 (Page 43).[1]

[1] For details about the types of MCUs you can connect to, contact your dealer.

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- Polycom® is a trademark owned by Polycom, Inc. in the US and other countries.
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- This product is licensed under the AVC Patent Portfolio License. This license permits the end user to perform, for personal and non-commercial use, only the following actions:
  – Encode video in compliance with the AVC Standard (below, "AVC Video").
  – Decode AVC Video that was encoded by a consumer engaged in both personal and non-commercial activity.
  – Decode AVC Video obtained from a video provider licensed to provide AVC Video.
  Additional information may be obtained from MPEG LA, LLC. See http://www.mpegla.com.
- This product incorporates G.722.1 and G.722.1 Annex C licensed by Polycom®.
- This product incorporates Qt library licenced by Digia Plc. Please read **"EULA"** of system settings of this product.

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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.

Copyright

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Table of Contents

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.

Ensure that the plug connection is free of dust. In a damp environment, a contaminated connector can draw a significant amount of current that can generate heat, and eventually cause fire if left unattended over an extended period of time.

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.

Clean the AC plug periodically with a soft, dry cloth to remove dust and other debris.

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

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.

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

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.

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.

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.
*   The illustrations and screenshots in this manual are for reference only and may vary from the actual product.

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.

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 information stored in the contact list and return the unit to the state it was in when purchased (Page 111).
  – 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 (Page 111).

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.

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.

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

Part Names and Usage

Main Unit (Front)
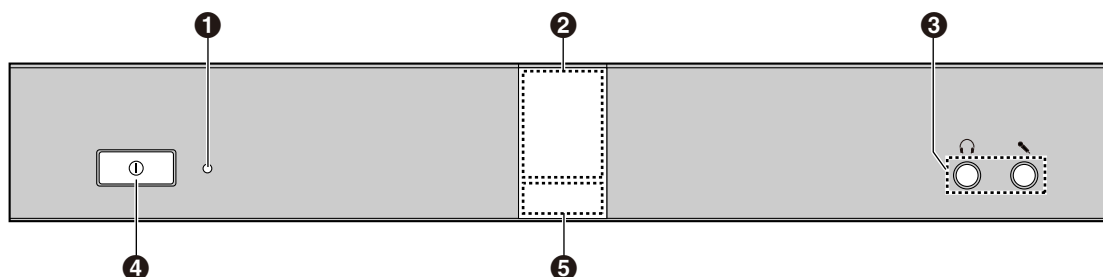
❶ **Power LED**

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 24).

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 (Page 20).

Main Unit (Back)

KX-VC600
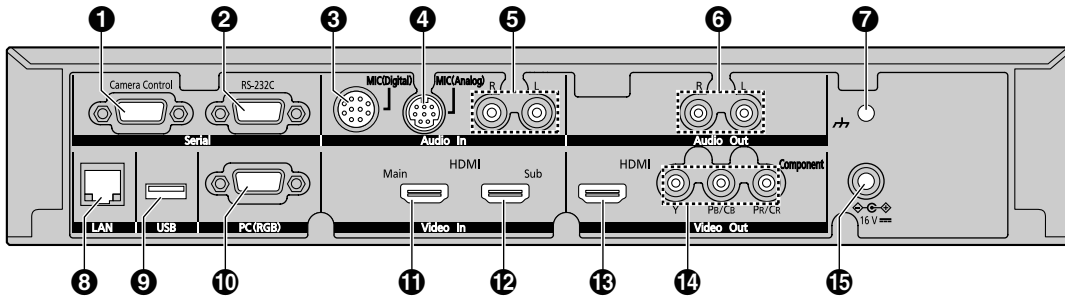
KX-VC300
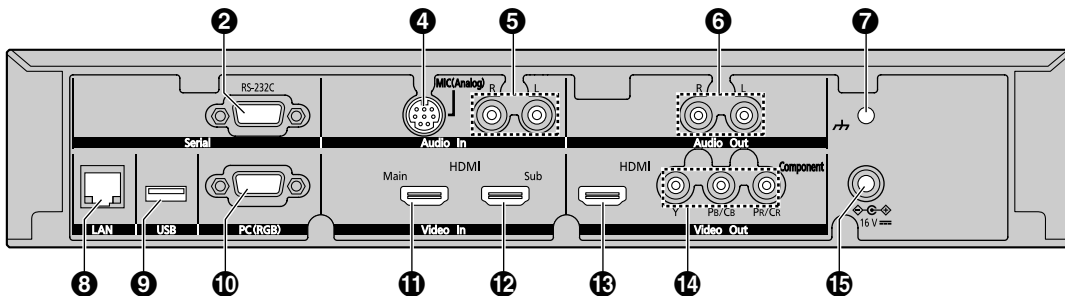
❶ **Camera Control terminal (KX-VC600 only)**

Not used.

❷ **RS-232C terminal**

Not used.

❸ **MIC (Digital) jack (KX-VC600 only) (Page 21)**

Used to connect the Digital Boundary Microphone (optional) (Page 19).

❹ **MIC (Analog) jack (Page 21)**

Used to connect the Analogue Boundary Microphone (optional) (Page 19).

❺ **Audio In L/R jack (Page 21)**

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

❻ **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 25).

❼ **Functional Earth terminal**

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

❽ **LAN jack (Page 21)**

Connect a LAN cable.

❾ **USB jack (Page 107, Page 109)**

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

❿ **RGB terminal (Page 68)**

Used to connect a computer for sending screens to participants.

⓫ **Main Camera terminal (Page 21)**

Connect the main video camera with an HDMI cable.

⓬ **Sub Camera terminal (Page 74)**

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 21)**
   Used to connect to the display with an HDMI cable.
⑭ **Component terminal (Page 25)**
   Used to connect to the display with a component video cable.
⑮ **DC IN (Page 22)**
   Connect the AC adaptor's DC cord.

Remote Control

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 (Page 75).

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 (Page 69).

Press to enter screen standby mode (Page 20).

Press to make or manually answer video conference calls (Page 32, 41).

Press to move the cursor and select items.

Press to display the Home screen (Page 27).

Press to select the feature assigned to each colour. Available features are displayed in the guide area (Page 27).

Used for controlling a PTZ (Pan, Tilt, Zoom) camera or a FIX camera either at your end or the other party's end (Page 53).

Press to display the connection status of the network and peripheral devices (Page 78).

Press to display/hide information about the other party, guide area and duration, during a call (Page 30).

Press to change the layout of the screen during a call (Page 45).

Press to return to the main video camera after showing images from a computer or sub video camera (Page 72, 76).

Press to display the Menu screen (Page 28).

Press to end a call.

Press to confirm the selected item or entered information.

Press to return to the previous screen.

Press to adjust the volume during a call. Press [+] to increase and [–] to decrease the volume (Page 63).

Press to select a tone (equalizer) setting during a call (Page 67).

Press to mute the microphone during a call, so that the other party cannot hear your voice (Page 64).
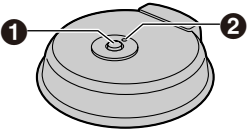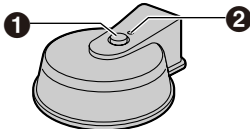
Press to display your contact list. This can be pressed while the following screens are displayed:
• Home screen
• Menu screen
• Computer's screen/sub video camera's image (when not on a video conference call)
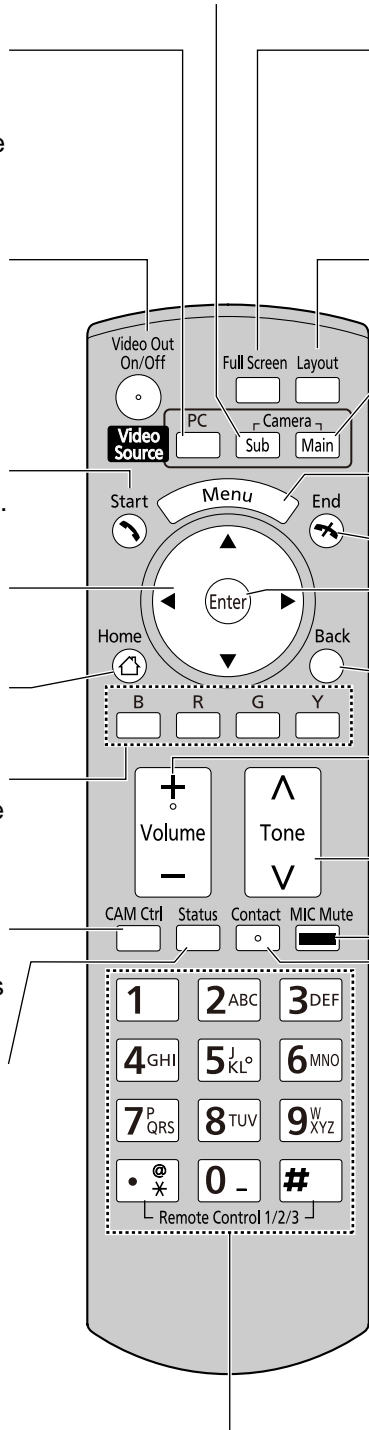
Press to dial or perform settings where inputting digits/characters is required (Page 116).

Boundary Microphone (Optional Accessory)

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)
❶ ❷	❶ ❷
Model No.: KX-VCA001	Model No.: KX-VCA002

❶ **MIC Mute button**

Press to mute your own voice so that other video conference call participants cannot hear you (Page 64).

❷ **LED**

Indicate the operational status of the Boundary Microphone.

Red (on): Microphone is muted.

Green (on): Transmitting

Orange (blinking in 1 second intervals): Starting up

Off: No transmission in progress or microphone disabled because headset is connected, etc.

Note

- Up to 4 Digital Boundary Microphones can be connected in cascade.
- Analogue Boundary Microphones cannot be connected in cascade.
- Contact your dealer for purchase information.

LED Patterns

LEDs indicate the operational status of the unit, as follows:

LED pattern	Status
Light blue on	• Starting up
Slow blue flashing	• Idle state
Blue on	• In a video conference call (including when dialling, receiving a video conference call, and being disconnected)
Orange on	• Self diagnosis is being performed.
Orange flashing	• Mismatch of field frequency[1] between the unit and display. (After 30 seconds the flashing will stop and the unit will restart in safe mode.)
Red on	• An error has occurred. • Maintenance is being performed.
Red flashing	• A serious error has occurred.
Off	• Power is off. • In screen standby mode

[1] Devices such as the display or video camera operate with a particular field frequency, depending on their video format. For details on the field frequency, contact your dealer.

Screen Standby

When there is no video conference call transmission, and the remote control is not operated for more than 10 minutes (default), or when the remote control's **[Video Out On/Off]** button is pressed, the unit enters screen standby mode. Video out to the display is suspended and the status LED turns off.
Screen standby mode ends when the remote control is operated, or when a video conference call is received.

Notice

• If screen standby mode ends and no image is visible, check to see if the display or video camera's power saving settings are enabled. Check each device's manual for more information about its power saving settings.

Note

• You can change the length of time until the unit enters screen standby mode (Page 91).
• The unit will not enter screen standby mode while displaying a computer's screen or a sub video camera's image, even if the remote control is not operated for a period of time.
• When the remote control is operated and screen standby mode ends, the Home screen will be displayed.
• If a button is pressed on the remote control to end screen standby mode, that button's operation is not performed in that case.
• If screen standby mode begins while editing information in the contact list or other screen, any unsaved changes will be lost.
• It takes about 7 seconds to return from screen standby mode. (The length of time may vary depending on the type of display you are using.)

Connecting the Unit

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

To a switching hub

To an AC outlet

To each device

To a general - purpose microphone
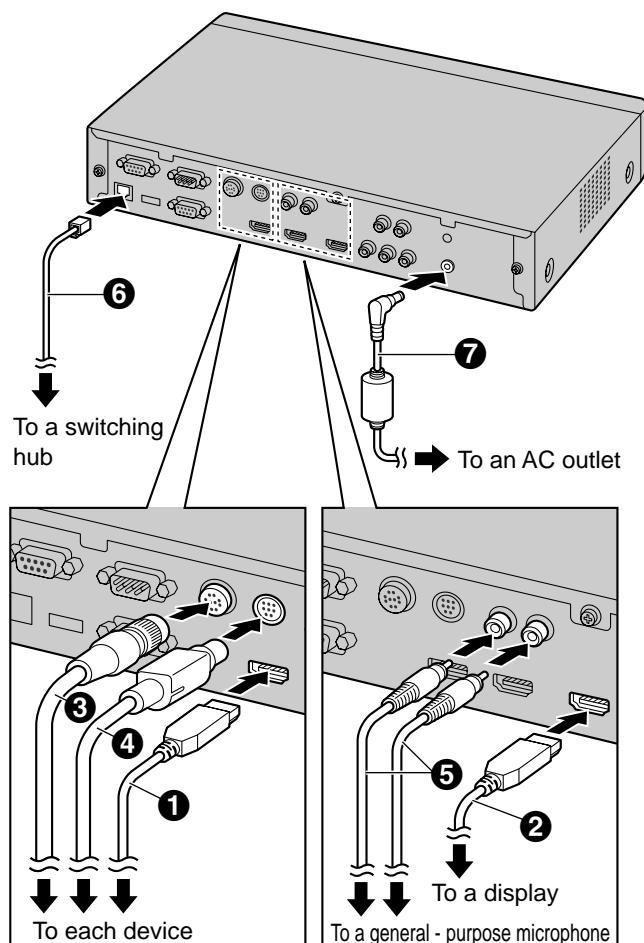
Notice

- 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 (❶).

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

Note

- If your display is not compatible with HDMI, use a component cable (Page 25). 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 25).

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 (❸).
   - 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 (❹).
   - 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 (❺) 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 24)".

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 (❻).

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. For details, contact your dealer.
- 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 (❼) 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.
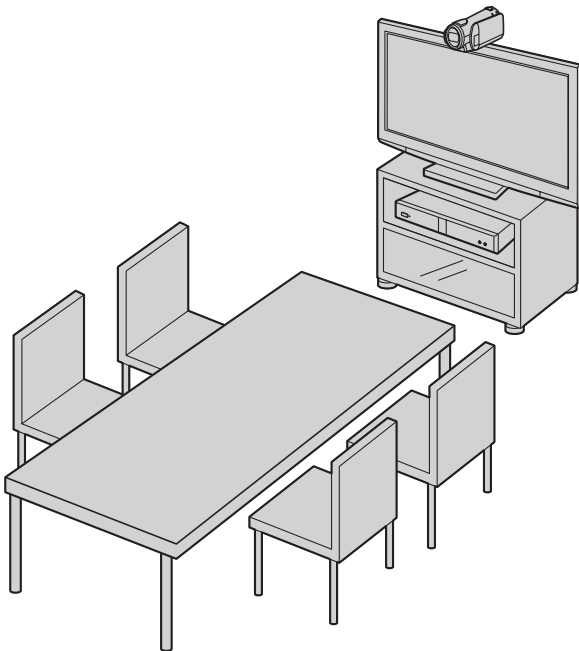
Note

- 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.
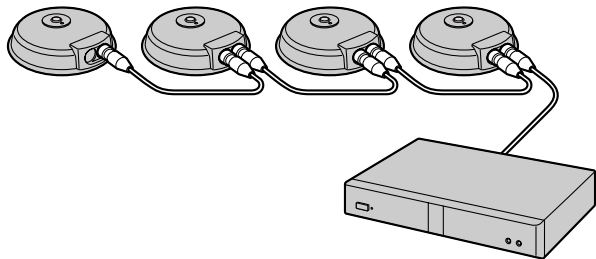
Note

- Make sure that the microphones are placed at least 1 m away from the display and speakers.
- 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 (Page 92, Page 92).
- 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/ Micro– phone	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):
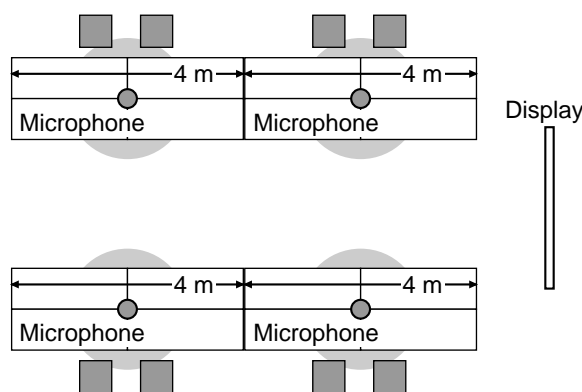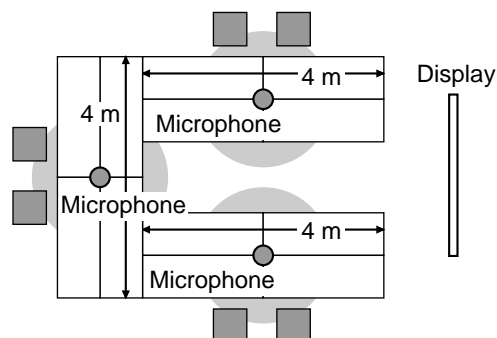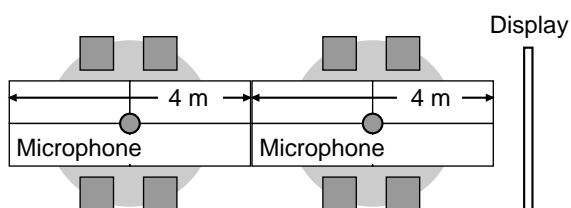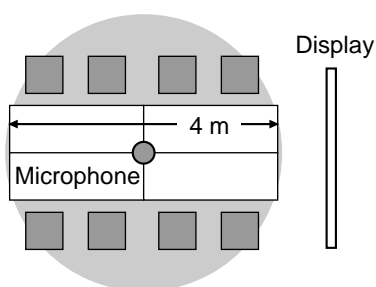
Analogue Boundary Microphones

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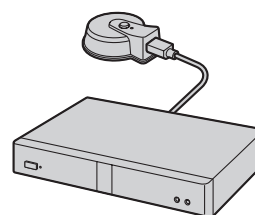
Note

- 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 it's 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/ Micro– phone	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):
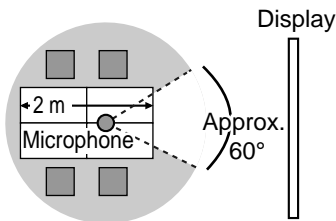
About 60° around the connector side is outside the microphone's range.

About Headset

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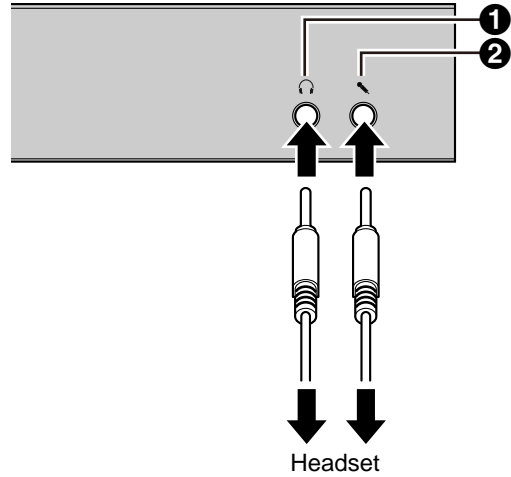
Headset

Note

• Check the headphone connector (❶) and the microphone connector (❷), 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.

Amplifier/Active Speaker Connection

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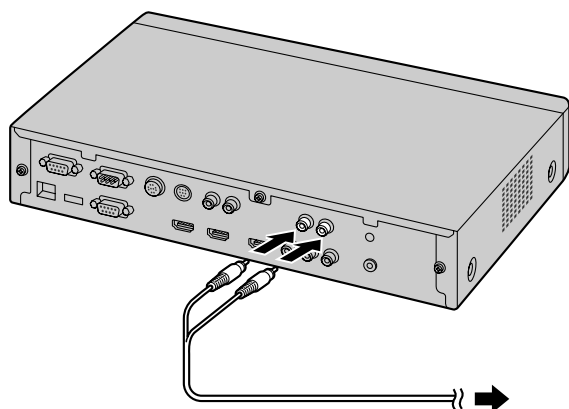
1. Connect the amplifier/active speaker to the Audio Out L/R jack on the back of the unit using a stereo pin plug cable.

   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:
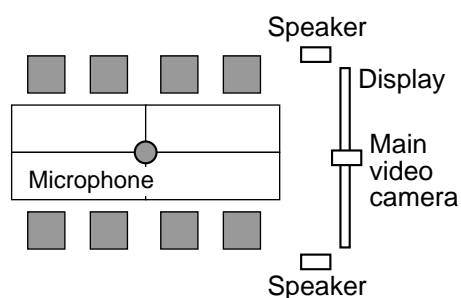
Notice

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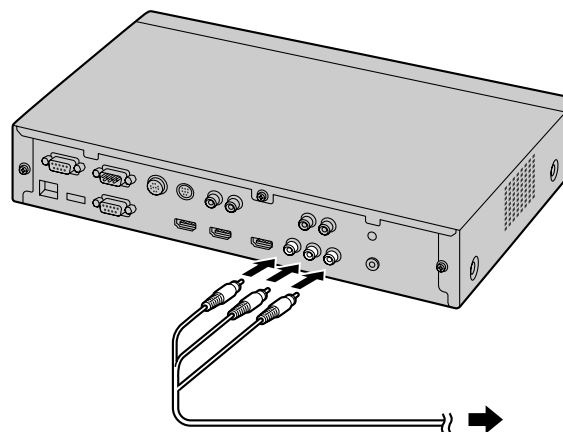
1. Connect the display to the Component terminal on the back of the unit using a component cable.

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.

Turning the Power On/Off

<u>**Note**</u>

- Make sure that peripheral devices (e.g., display, main video camera) are turned 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.
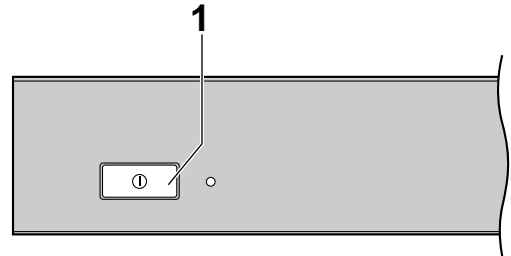
- When the power is turned off, the Power LED turns off.

Screen Display

Home Screen (Idle Screen)

Displayed when the power is turned on. Also displayed when the **[Home]** button is pressed on the remote control.
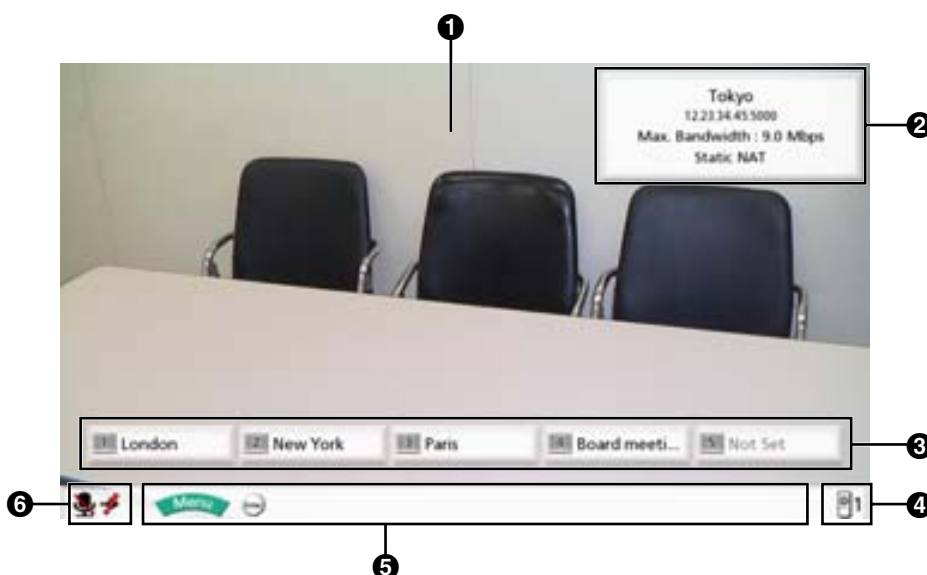
❶ **Main Video Camera Image**

Displays the video from the main video camera.

❷ **Unit Information**

Displays the unit's name, IP address (the SIP user name [if using a SIP server]/H.323 extension, H.323 name [if using a gatekeeper]), maximum bandwidth, and Static NAT status (if using the Static NAT feature).

Note

- When selecting a local site (Page 114), the selected local site's information is displayed. The local site name is displayed instead of the unit's name.
- If the local site name, SIP user name, H.323 extension, or H.323 name is too long to display, it will be shortened and ended with "...".

❸ **Group/Site**

Displays the name/group name assigned to One-Touch Connection number 1 through 5. If the name is too long to display, it will be shortened and ended with "...".

❹ **Remote Control ID**

Displays the remote control ID of the unit when it is set (Page 94).

❺ **Guide**

Displays operations you can perform with the remote control.

❻ **Status Indication**

The status of the unit is indicated by icons.

Icon	Status
	Microphone is muted. **Note** • If the MIC detection setting has been disabled through system settings (Page 90), the icon will not be displayed even if the Boundary Microphone or headset microphone is muted.
	Network, server (any kind), or peripheral connection error (no connection, device error, etc.). **Note** • If the MIC detection setting has been disabled through system settings (Page 90), the icon will not be displayed even if the Boundary Microphone or headset is disconnected. However, if there are no connections, or there is a device error in other devices such as the LAN cable, the icon will be displayed.

Menu Screen (Idle Screen)

Displayed when **[Menu]** is pressed on the remote control. Displays operations you can perform and settings you can change.

❶ **Menu List**
   Displays the various functions you can use and settings available to change.
❷ **Guide**
   Displays operations you can perform with the remote control when performing features or changing settings.

Video Conference Call Screen

❶ **Other party's information**

When registered in the contact list: The other party's name/group name is displayed.
When not registered in the contact list: The other party's IP address, SIP URI (SIP user name@SIP domain name), host name (e.g., www.example.com), H.323 extension, H.323 name, MCU's conference room number@IP address, or MCU's SIP user name@IP address is displayed. If the other party uses the same SIP domain as you, only the SIP user name, and not the SIP URI, is displayed.

❷ **Video Image**

Displays the other party's video, your own video, or video from the secondary video input such as a computer display or a sub video camera (Page 68, Page 74).

❸ **Subscreen**

Depending on the screen layout, your own video or the other party's video is displayed here (Page 45, Page 47, Page 50).

❹ **Duration**

Displays the duration of the current video conference call.

> **Note**
>
> • 99h59m is displayed for the duration even if the length of the video conference call exceeds 100 hours.

❺ **Guide**

Displays operations you can perform with the remote control.

❻ **Network Status Indication**

The number of antennas in the icon indicates differing levels of network congestion.
The icon changes as follows:

0 bars ( ): The network is very congested.

1 bar ( ): The network is congested.

2 bars ( ): The network is slightly congested.

3 bars ( ): The network is not congested.

> **Note**
>
> • If the icon shows only 0–1 bars continuously, contact your network administrator.
> • During multiple-party video conference calls, the icon is displayed on each site screen, but not on your own image.

- You can set whether to display the icon. This setting affects all displayed images (excluding your own image) (Page 90). For example, if icon display has been enabled, the icon will be displayed on the image of all other parties, but not on your own image. However, if icon display has been disabled, the icon will not be displayed on any of the images. Regardless of icon display settings, the icon is not displayed while the combined computer/video feed screen is being displayed (Page 69).

❼ **Status Indication**

The status of the unit is indicated by icons (Page 27).

<u>Note</u>

- Pressing **[Full Screen]** on the remote control will hide or unhide the other party's information, duration, network status indication[1], and guide displays.

[1] If the network status indication has been set to not be displayed, pressing **[Full Screen]** will not show the icon.

Making a Video Conference Call

You can make a video conference call using one of the following methods.

Note

- During a video conference call, you cannot perform the following operations:
  – Pressing **[Menu]** to display the Menu screen.
  – Pressing **[Contact]** to display the contact list screen.
- Make sure that peripheral devices (e.g., display, main video camera) are turned on.
- If a called party does not answer a video conference call within approximately 60 seconds, the call will be terminated automatically.
- If you are using the KX-VC300, 3-party/4-party video conference calls can only be made after purchasing an activation key card (KX-VCS301) to activate multiple-party video conference calls (Page 108). For details about the activation key, contact your dealer.
- 2-party/3-party/4-party video conference calls can be made using the outgoing call history.
- Only 2-party video conference calls can be made using the incoming call history.
- You cannot add parties to an existing video conference call.
- During a 3-party/4-party video conference call, even if only one party ends the video conference call, the rest of the parties will also be disconnected.
- A video conference call will start with only the parties that answered the call. For example, if only one party answers a 4-party video conference call, the video conference call will start as a 2-party video conference call.
- 3-party/4-party video conference calls may not be possible depending on bandwidth settings (Page 88, Page 112).
- Video conference calls can be made using a SIP URI through a SIP server only if SIP settings have been made correctly.
- Video conference calls can be made using an H.323 extension or H.323 name only if the gatekeeper settings have been made correctly.
- Video conference calls cannot be made if the call type programmed in the speed dial (SIP or H.323) has been set to **"OFF"** on the call type settings screen.
- When connecting to non-Panasonic video conference systems or using H.323, you can make only 2-party video conference calls.

Calling Using Speed Dial (2-party Conference/3-party Conference/ 4-party Conference)

Note

- To call using speed dial, you need to have a speed dial number programmed in **"Speed Dial"** in the contact list (Page 82).

Calling from the Home Screen

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

2   With the dial keys, enter a One-Touch Connection number
       (**1** to **5**).
  - The information registered in the selected One-Touch
    Connection number is displayed.

3   Press **[Start]** to start the call.
  - You can also start the call pressing **[Enter]**.

4   When you want to end the call, press **[End]**.
  - The Home screen is displayed.
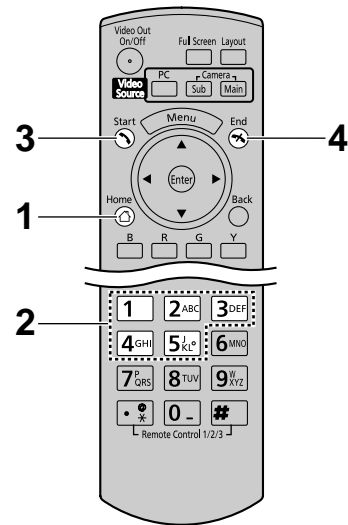
Calling from the Menu Screen

Note

- From the Menu screen, you can make a video conference call using up to 300 speed dial numbers (**1** to **300**). (From the Home screen, you can make a video conference call using up to 5 One-Touch Connection numbers [**1** to **5**].)

1 Press **[Menu]**.
- The Menu screen is displayed.

2 Select **"Contact List"** using **[▲][▼]** and press **[Enter]**.
- The contact list screen is displayed.

  Note

  - If you press **[G]**, the contact list modification screen will be displayed and the entry can be modified (Page 83).

3 Press **[Y]**.
- The speed dial screen is displayed. Entries are displayed in speed dial number order.

4 With the dial keys, enter a speed dial number (**1** to **300**).

5 Press **[Start]** to start the call.

6 When you want to end the call, press **[End]**.
- The Home screen is displayed.
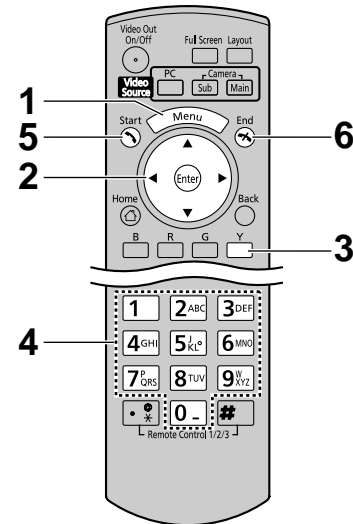
Calling from the Contact List (2-party Conference/3-party Conference/4-party Conference)

Note

- To make a video conference call from the contact list, you must first register contacts in the contact list (Page 82).
- If **"IP Address"** is set to **"Auto"** on the network settings screen (Page 87), the unit's IP address will be automatically obtained using a DHCP server, and therefore may change to a different IP address from the one registered in the other party's contact list. In such cases, when the other party tries to call you by selecting a registered IP address from their contact list, the call will not be connected. For details, contact your network administrator.

1 Press **[Menu]**.
- The Menu screen is displayed.

2 Select **"Contact List"** using **[▲][▼]** and press **[Enter]**.
- The contact list screen is displayed. The entries are grouped in the index tabs and displayed in alphabetical order of **"Group/Site"**.
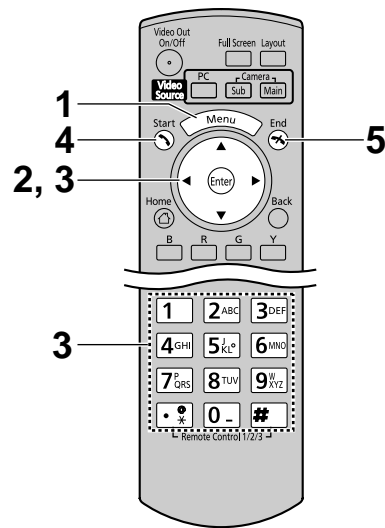
Note

- You can also open the contact list screen by pressing **[Contact]** 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)

3 Select the entry you want to call using **[▲][▼]**.
- You can switch the index tab back and forth using **[◀][▶]**. (Index tabs in which no entries exist will be skipped.)
- Press a numeric button on the remote control to switch to the index tab assigned to that button, as shown below.

Numeric button	Index Tab
1	–
2	ABC
3	DEF
4	GHI
5	JKL
6	MNO
7	PQRS
8	TUV
9	WXYZ
0	0-9
✳	-&!/
#	–

4 Press **[Start]** to start the call.

5 When you want to end the call, press **[End]**.
- The Home screen is displayed.

Calling by Entering an Address Directly

You can make a video conference call by entering the IP address, SIP URI (or SIP user name), H.323 extension, H.323 name, or MCU's conference room number@IP address.

1 Press **[Menu]**.
  • The Menu screen is displayed.

2 Select **"Manual Dial"** using **[▲][▼]** and press **[Enter]**.
  • The input screen is displayed.
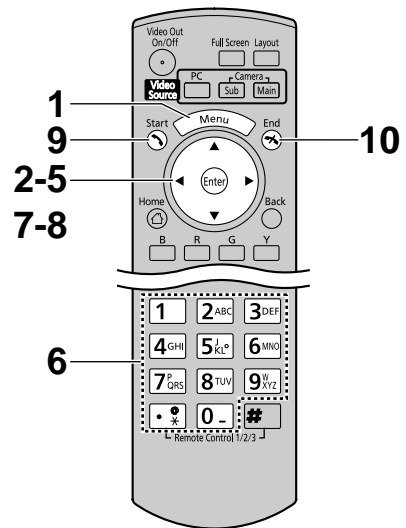
3 Select **"Multi-Point"** using **[▲][▼]**.

  Note
 • If you are using the KX-VC300, you can select **"Multi-Point"** after purchasing an activation key card (KX-VCS301) to activate multiple-party video conference calls (Page 108). For details about the activation key, contact your dealer.

4 Select one of the following values using **[◀][▶]**.
2-party video conference call: **"No"**
3-party video conference call: **"2 sites"**
4-party video conference call: **"3 sites"**

  Note
  • When connecting to an MCU or non-Panasonic video conference system, you cannot make 3-party/4-party video conference calls.
  • **"H.323"** cannot be selected for **"Call Type"** if 2 or more sites are selected for **"Multi-Point"**.

5 Select **"Site 1"**, **"Site 2"**, **"Site 3"** using **[▲][▼]**.

6 Enter the IP address, SIP URI (or SIP user name), H.323 extension, H.323 name, or MCU's conference room number@IP address.

7 Use **[▲][▼]** to select **"Call Type"**.

8 Use **[◀][▶]** to select **"SIP"** or **"H.323"**.

9 Press **[Start]** to start the call.
  • You can also start the call by pressing **[Enter]**.

10   When you want to end the call, press **[End]**.
   •   The Home screen is displayed.

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]
•   To initiate a video conference call by entering a SIP URI (SIP user name@SIP domain name), you must set **"SIP Server"** to **"ON"** and specify **"SIP Server Address"**, **"SIP Username"**, and **"SIP Domain Name"**. Also, specify **"Digest Authentication"**, **"Authentication ID"**, and **"Authentication Password"** as necessary (Page 102). For details, contact your network administrator.
•   When making a video conference call within your own SIP domain, you can make the call by entering the other party's SIP user name. When the other party is not within your SIP domain, you must also include their SIP domain name in addition to their SIP user name.

    When a SIP domain name is not specified, your own SIP domain name is automatically appended to the address and the call is made. Be careful as this may result in calling the wrong party.
•   The characters that can be input for address entry are as follows:

    SIP user name/H.323 name/MCU's conference room number: alphanumeric characters, symbols **. = * + _ - $ ~ ! ? / ' ( )** (up to 60 characters)

    SIP domain name: alphanumeric characters, symbols **. -** (up to 128 characters)

    H.323 extension: numeric characters, symbols **# *** (up to 20 characters)

    Enter a standards-compliant value. For details, contact your network administrator.
•   To initiate a video conference call by entering an MCU's conference room number@IP address, **"SIP Server"** and **"Gatekeeper"** must be set to **"OFF"** (Page 102, Page 104).
•   If the other party is using a software version older than 3.00 (not including 3.00), you cannot make a video conference call using H.323. You must set **"SIP"** to **"ON"** on the call type settings screen (Page 102).
•   You can refer to the contact list when entering the IP address, SIP URI (or SIP user name), H.323 extension, H.323 name, or MCU's conference room number@IP address, by following the procedure below (You cannot enter a destination using the call history.):
    1.   Press **[G]**.
       •   The contact list screen is displayed.
    2.   Use **[▲][▼]** to select the contact you want to refer to.
       •   You can use **[◀][▶]** or the numeric buttons of the remote control to select the displayed tab (Page 35).
    3.   Press **[Enter]**.
       •   The display returns to the input screen.

Calling from the Call History

You can make a video conference call from the call history. The call history is divided into outgoing and incoming calls. The last 30 video conference calls made and received are stored in the outgoing and incoming call history. Information such as the contact name or IP address (or host name)/SIP URI/H.323 extension/H.323 name/ MCU's conference room number@IP address/MCU's SIP user name@IP address, the date and time, the duration of the call, the result of the call, and the call type is displayed for each call on the outgoing call history screen and incoming call history screen. If the IP address/SIP URI/H.323 extension/H.323 name/MCU's conference room number@IP address of an entry in the call history is deleted from or edited in the contact list, the contact name in the call history entry will be replaced by the IP address/SIP URI/H.323 extension/H.323 name/MCU's conference room number@IP address.

Note

- If the other party uses the same SIP domain name as you, only the SIP user name, and not the SIP URI (SIP user name@SIP domain name) will be displayed in the call history.

Outgoing Call History:
- 2-party/3-party/4-party video conference calls can be made using the outgoing call history.
- When connecting to non-Panasonic video conference systems or using H.323, you can make only 2-party video conference calls using the outgoing call history.
- For video conference calls made using the contact list, the contact name is displayed. For video conference calls made by entering the IP address/SIP URI/H.323 extension/H.323 name/MCU's conference room number@IP address directly (Page 36), that information is displayed instead of the contact name. (That information is displayed even if a matching entry exists in the contact list.)
- If consecutive video conference calls are made to the same destination, only the latest call will appear in the outgoing call history.

Incoming Call History:
- Only 2-party video conference calls can be made using the incoming call history.
- If the calling party's IP address/SIP URI/H.323 extension/H.323 name/MCU's conference room number@IP address is registered in the contact list, the contact name is displayed. Otherwise, the IP address (or host name)/SIP URI/H.323 extension/H.323 name/MCU's conference room number@IP address/MCU's SIP user name@IP address is displayed.
- Depending on the type of MCU, a video conference call may be received from the MCU's SIP user name@IP address rather than the MCU's conference room number@IP address. In that case, you directly cannot call the MCU's conference room from this incoming call history.
- If consecutive unanswered video conference calls are received from the same party, only the latest call will appear in the incoming call history.
- You cannot make a video conference call to a host name displayed in the incoming call history.
- You may not be able to initiate video conference calls with SIP URIs (or SIP user names)/H.323 extension/ H.323 name in the incoming call history for reasons such as non-compliance with the relevant standards. In this case, contact your network administrator.

1 Press **[Menu]**.

    • The Menu screen is displayed.

2 Select **"Call History"** using **[▲][▼]** and press **[Enter]**.

    • The outgoing call history screen is displayed.

Note

    • The result of the video conference call is displayed in the **"Call result"** column as follows:

      – ○: The video conference call was established.

      – ✕: The video conference call was not established.

    • To move to the incoming call history screen, press **[G]**. You can switch between the outgoing call history screen and the incoming call history screen by pressing **[G]**.

    • In the incoming call history, if a party is not registered in your contact list, their IP address (or host name)/SIP URI (or SIP user name)/H.323 extension/H.323 name will be displayed.

    • In the outgoing call history, if a party is registered in your contact list, the contact name is displayed. However, when calling by entering an IP address, SIP URI (or SIP user name), H.323 extension, H.323 name, or MCU's conference room number@IP address (Page 36), even if the party is registered in your contact list, the entered information is displayed instead of the contact name.

- When a contact in the incoming call history is newly added to your contact list, the incoming call history will be updated to display the contact's information from the contact list.
- When a party that is not registered in your contact list is selected, if you press **[B]**, the contact list registration screen will be displayed and a new contact can be registered (Page 84). If a host name is displayed in the **"Site"** column, the party cannot be registered in your contact list. Also, you may not be able to register a SIP URI (or SIP user name), H.323 extension, or H.323 name from the incoming call history to the contact list for reasons such as non-compliance with the relevant standards. In this case, contact your network administrator.

3 Select the party you want to call using **[▲][▼]**.

<u>**Note**</u>
- If you press **[Enter]**, the call history details screen is displayed.

- When not selecting a local site (Page 114), **"Local site name"** will be blank.
- The lowest bandwidth for the maximum bandwidth setting among all participating parties is displayed in **"Bandwidth"**. If the video conference call was not established, the maximum bandwidth will be blank.
- Depending on the other party, **"Device type"** may be blank.

4 Press **[Start]** to start the call.

5 When you want to end the call, press **[End]**.
- The Home screen is displayed.

Answering a Video Conference Call

Depending on your setting, you can either respond to a request to participate in a video conference call manually (manual answer) or automatically (automatic answer) (Page 88).

Note

- Make sure that peripheral devices (e.g., display, main video camera) are turned on.

When Manual Answer is Set

When a video conference call is incoming there will be an incoming call ring, and a dialogue box is displayed.

When the caller is registered in the contact list, the caller's group/site is displayed.
When the caller is not registered, the caller's IP address (or host name)/SIP-URI/H.323 extension/H.323 name is displayed.

Note

- If the other party uses the same SIP domain name as you, only the SIP user name, and not the SIP URI (SIP user name@SIP domain name) is displayed.
- If the caller's group/site name, SIP URI (or SIP user name), H.323 extension, or H.323 name is too long to display, it will be shortened and ended with "..." .

Operation

1   Press **[Start]**.
- The video conference begins.
- You can also answer the video conference call by pressing **[Enter]**.
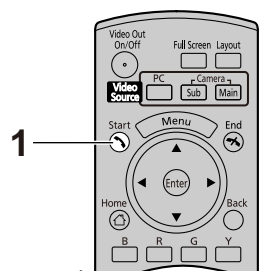
Note

- If you do not answer a video conference call within approximately 60 seconds, the call will be terminated automatically.

When Automatic Answer is Set

When a video conference call is incoming the call will be automatically answered after one ring, and transmission then begins.

Connecting to a Non-Panasonic Video Conference System

You can connect to a non-Panasonic video conference system and have a 2-party video conference call.

Note

- Non-Panasonic video conference systems you want to connect to must meet the following criteria. Confirm the settings of the non-Panasonic video conference system.
    – Supports SIP or H.323 communication
    – Supports communication with the H.264 Baseline Profile
    – Supports communication with the G.722, G.722.1, and G.722.1 Annex C voice codecs
- For details about the types of non-Panasonic video conference systems you can connect to, contact your dealer.
- Video conference calls to a non-Panasonic video conference system through a SIP server using a SIP URI are not guaranteed (Page 102). IP addresses must be specified to make calls.
- The connection specifications (e.g., resolution) and available functions (e.g., content sharing) differ depending on the model type you connect to. For details, contact your dealer.
- When connecting to non-Panasonic video conference systems, only 2-party video conference calls are possible.
- Audio sent to the other party is monaural.
- While you are displaying a sub video camera's image, you cannot send a still image from the sub video camera.
- The maximum bandwidth specified in the settings at the beginning of the connection is applied for the duration of the connection to a non-Panasonic video conference system. Depending on the network conditions, you must specify an appropriate bandwidth setting (Page 88, Page 112).
- It may be necessary to change your maximum bandwidth depending on the non-Panasonic video conference system you are connecting to. If this is necessary, you can register a maximum bandwidth in local site settings (Page 112).

Connecting to an MCU

Connecting to an MCU allows you to have a video conference call with 5 or more parties.
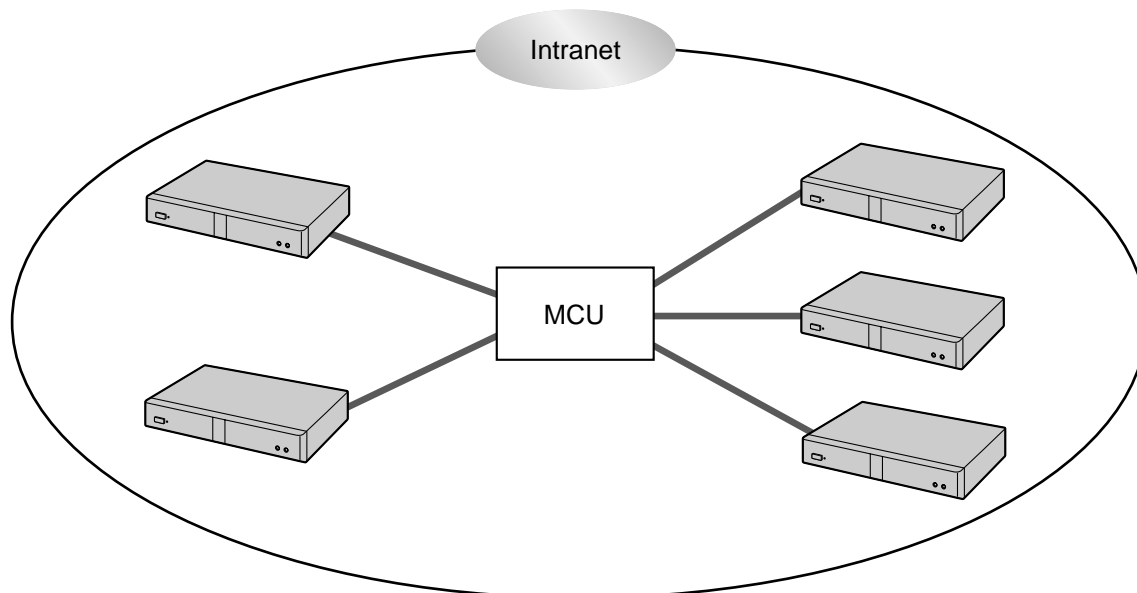
Note

- MCUs you want to connect to must meet the following criteria. Confirm the settings of the MCU.
  - Supports SIP or H.323 communication
  - Supports communication with the H.264 Baseline Profile
  - Supports communication with the G.722, G.722.1, and G.722.1 Annex C voice codecs
- For details about the types of MCUs you can connect to, contact your dealer.
- Video conference calls to an MCU through a SIP server using a SIP URI are not guaranteed (Page 102). IP addresses must be specified to make calls.
- The connection specifications (e.g., resolution) and available functions (e.g., content sharing) differ depending on the MCU you connect to. For details, contact your dealer.
- The procedure for connecting to an MCU differs depending on the MCU. For details, contact your dealer.
- Audio sent to the other party is monaural.
- While you are displaying a sub video camera's image, you cannot send a still image from the sub video camera.
- The maximum bandwidth specified in the settings at the beginning of the connection is applied for the duration of the connection to an MCU. Depending on the network conditions, you must specify an appropriate bandwidth setting (Page 88, Page 112).

Operating an MCU Remotely using Tone Signals

When connecting to an MCU, you can send tone signals by pressing buttons (0–9, #, or ✳) on the remote control. Doing so allows you to operate (e.g., change the screen layout) the MCU remotely.

Note

- Tone signals can only be sent when connecting to an MCU. They cannot be sent between Panasonic HD Visual Communication Units.
- Features and operations that can be performed remotely will vary depending on the MCU.
- If the MCU you are connecting to does not support tone signals, an error message is displayed.
- If the other party sends tone signals to you, sound may be interrupted or a ringing noise may occur.

1   Enter a tone signal (0–9, #, or ✳).
- The input field (❶) is displayed.

Note

- The input field can only contain up to 16 characters. If you input 17 characters, the first character input will not be displayed in the input field but all tone signals will be sent.
- The input field is not displayed until a tone signal is entered.
- If a tone signal is not entered for about 3 seconds, the input field disappears.
- If you enter further tone signals after the input field has disappeared, the tone signals entered the previous time are also displayed.
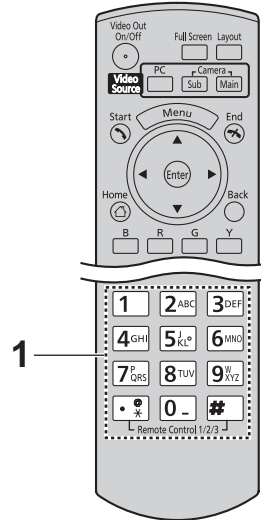
Changing the Screen Layout during a 2-party Video Conference Call

You can choose from 3 different screen layouts when taking part in a 2-party video conference call.

1 Press **[Layout]**.
- The screen will cycle through the available layouts each time you press **[Layout]**.
  - **Layout 1**: The other party's image is displayed full screen.
  - **Layout 2**: The other party's image is displayed full screen, and your own image is displayed in the upper right subscreen.
  - **Layout 3**: Your own image is displayed full screen.

Layout 1   Layout 2

A

B
A

Layout 3

B
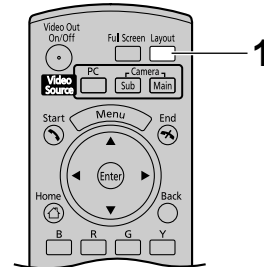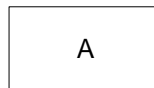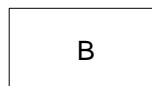
A: Other Site
B: This Site

Note

- You can press **[B]** or **[R]** to switch the screen layout to that button's pre-assigned layout. The layout displayed by each button depends on the screen layout currently in use.

Display	Screen Layout
Other Site	Layout 1
Both Sites	Layout 2
This Site	Layout 3

Example: When using Layout 2

[B]: The screen layout will be switched to Layout 3.
[R]: The screen layout will be switched to Layout 1.

- When connecting to an MCU or non-Panasonic video conference system, images received from the other party may not be displayed in the correct aspect ratio (the ratio of the width of the image to its height). In this case, perform the following operation during the video conference call. (When the video conference call ends, the aspect ratio will return to **"Auto"** [default].)

  1. Press **[G]**.
     - The aspect ratio dialogue box is displayed.
  2. Use **[▲][▼]** to select **"Auto"** (default), **"16:9"**, or **"4:3"**.
     - A dialogue box showing the selected aspect ratio is displayed for about 3 seconds.

- When connecting to an MCU, the MCU's screen will be displayed as the other party's image. You can change the MCU's screen layout remotely using tone signals (Page 44).

Changing the Screen Layout during a 3-party Video Conference Call

You can choose from 7 different screen layouts when taking part in a 3-party (This Site, Site 1, Site 2) video conference call.

Note

- You cannot perform this operation when using H.323 or connecting to an MCU or non-Panasonic video conference system.

1 Press **[Layout]**.
- The screen will cycle through the available layouts each time you press **[Layout]**.
    - **Layout 1**: Image of Site 1 on the left and image of Site 2 on the right.
    - **Layout 2**: The images are displayed as follows:
      Site 1: upper left
      Site 2: upper right
      This Site: bottom middle
    - **Layout 3**: Image of Site 1 is displayed full screen and image of Site 2 is displayed in the upper right subscreen.
    - **Layout 4**: Image of Site 2 is displayed full screen and image of Site 1 is displayed in the upper left subscreen.
    - **Layout 5**: The image of Site 1 is displayed full screen.
    - **Layout 6**: The image of Site 2 is displayed full screen.
    - **Layout 7**: Your own image is displayed full screen.
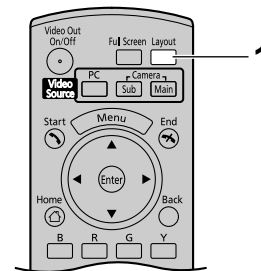
Layout 1

A | B

Layout 7

C

Layout 6

B

Layout 2

A | B
C

Layout 3

B
A

Layout 4

A
B

Layout 5

A

A: Site 1
B: Site 2
C: This Site
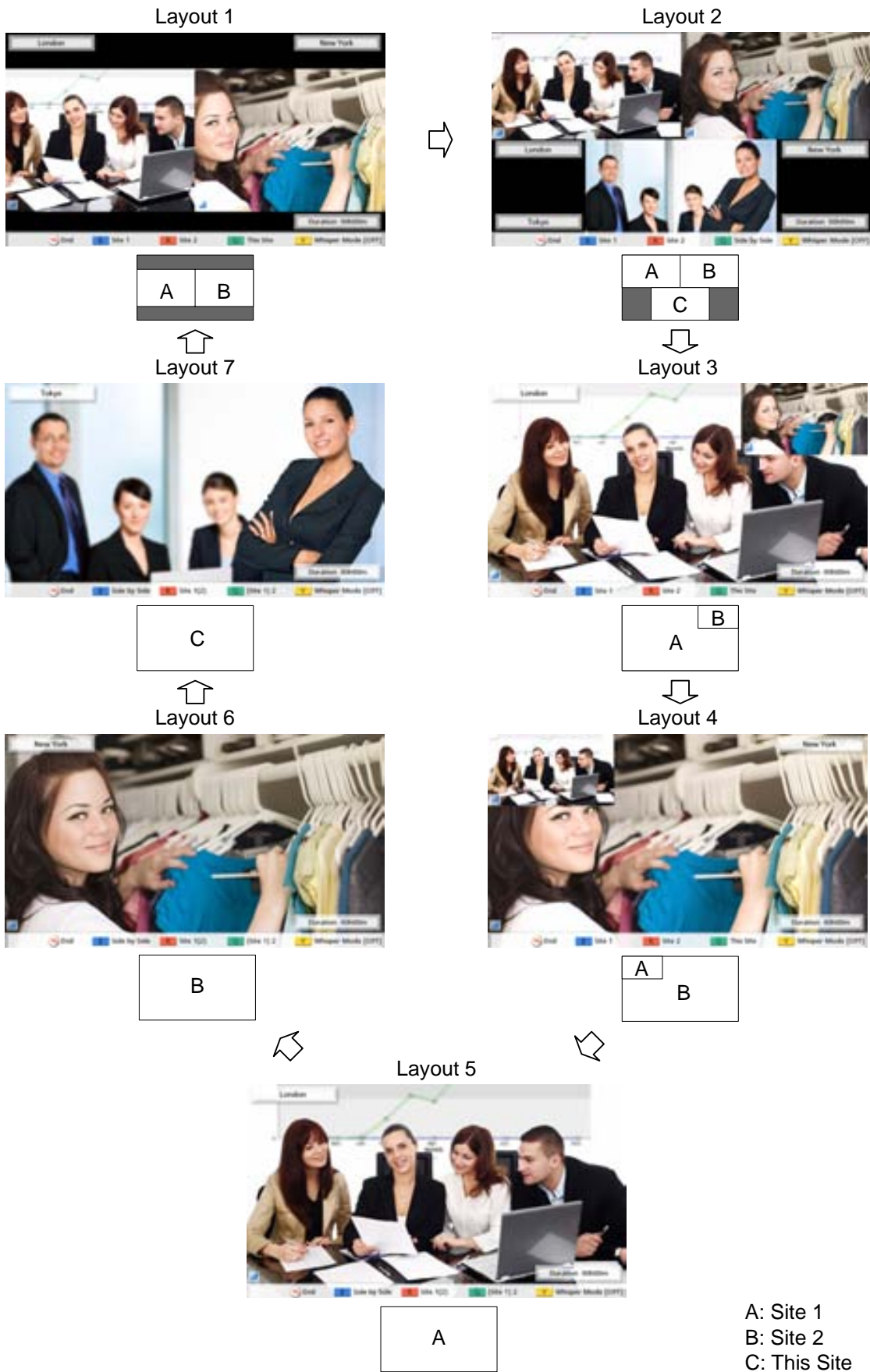
Note

- You can press **[B]**, **[R]**, or **[G]** to switch the screen layout to that button's pre-assigned layout.[1] The layout displayed by each button depends on the screen layout currently in use.

  [1] You cannot switch the screen layout to **Layout 2** directly. However, you can switch to **Layout 2** if you press **[Layout]** first (Page 47).

Display	Screen Layout
Side by Side	Layout 1
Site 1(2)	Layout 3
(Site 1) 2	Layout 4
Site 1	Layout 5
Site 2	Layout 6
This Site	Layout 7

Example: When using Layout 3

[B]: The screen layout will be switched to Layout 5.
[R]: The screen layout will be switched to Layout 6.
**[G]**: The screen layout will be switched to Layout 7.

Changing the Screen Layout during a 4-party Video Conference Call

You can choose from 6 different screen layouts when taking part in a 4-party (This Site, Site 1, Site 2, Site 3) video conference call.

Note

- You cannot perform this operation when using H.323 or connecting to an MCU or non-Panasonic video conference system.

1　Press **[Layout]**.
- The screen will cycle through the available layouts each time you press **[Layout]**.
  - **Layout 1**: The images are displayed as follows:
    Site 1: upper left
    Site 2: bottom middle
    Site 3: upper right
  - **Layout 2**: The images are displayed as follows:
    Site 1: upper left
    Site 2: lower left
    Site 3: upper right
    This Site: lower right
  - **Layout 3**: The image of Site 1 is displayed full screen.
  - **Layout 4**: The image of Site 2 is displayed full screen.
  - **Layout 5**: The image of Site 3 is displayed full screen.
  - **Layout 6**: Your own image is displayed full screen.

Layout 1

A	C
	B	

Layout 6

D

Layout 5

C

Layout 2*1

A	C
B	D

Layout 3

A

Layout 4

B

A: Site 1
B: Site 2
C: Site 3
D: This Site
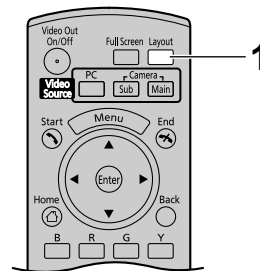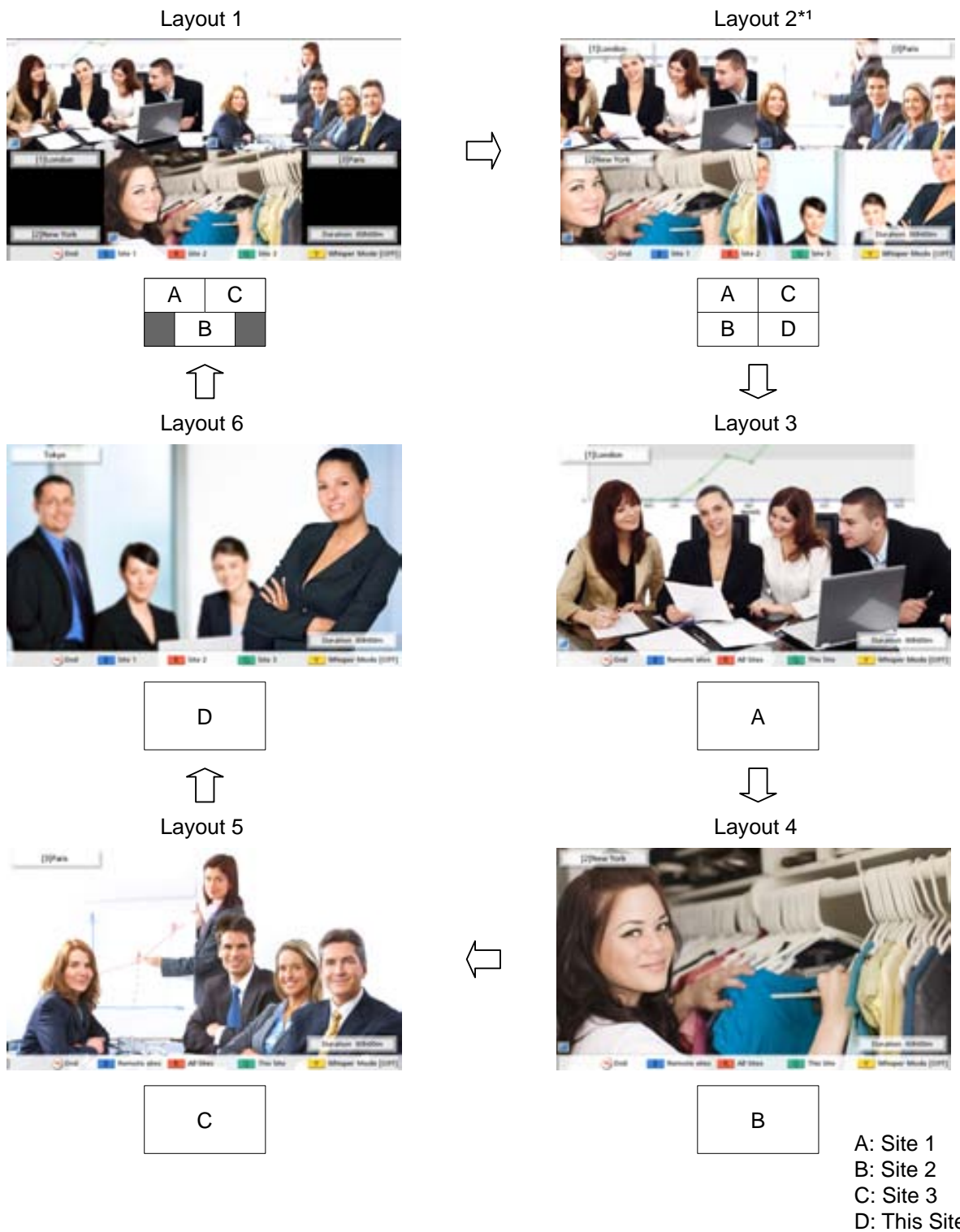
*1 Image edges are trimmed and the image is centred.

Note

- You can press **[B]**, **[R]**, or **[G]** to switch the screen layout to that button's pre-assigned layout. The layout displayed by each button depends on the screen layout currently in use.

Display	Screen Layout
Remote sites	Layout 1
All Sites	Layout 2
Site 1	Layout 3
Site 2	Layout 4
Site 3	Layout 5
This Site	Layout 6

Example: When using Layout 3

[B]: The screen layout will be switched to Layout 1.
[R]: The screen layout will be switched to Layout 2.
[G]: The screen layout will be switched to Layout 6.

Controlling a Video Camera

If a PTZ (pan, tilt, zoom) camera or a FIX camera is connected to your unit or the other party's unit, you can control the pan (side-to-side movement), the tilt (up-down movement), and the zoom of the video camera during a video conference call. You can perform this operation with the main video camera or a sub video camera.

Note

- In this manual, "PTZ camera" indicates a video camera whose moving parts will rotate when the direction of the video camera is changed. "FIX camera" indicates a video camera that has no moving parts and does not rotate.
- If the other party is using a KX-VC500, you will not be able to control their video cameras. The other parties will be able to control your video camera.
- If any of the other parties is using a software version older than 2.30 (not including 2.30), you will not be able to control any of the other party's video cameras. You will only be able to control your own video camera.
- In order for other parties to be able to control your video camera, you must set **"CAM ctrl from remote site(s)"** in your settings to **"ON"** (by default, it is set to **"OFF"**) (Page 96).
- For details about compatible video camera models, contact your dealer.
- The features that can be used may be limited depending on your video camera model. (e.g., A video camera with only a zoom feature)
- When the other party is using a non-Panasonic video conference system, some operations may not be available, or unintended operations may occur.

1 Press **[CAM Ctrl]**.
- The site selection dialogue box is displayed.
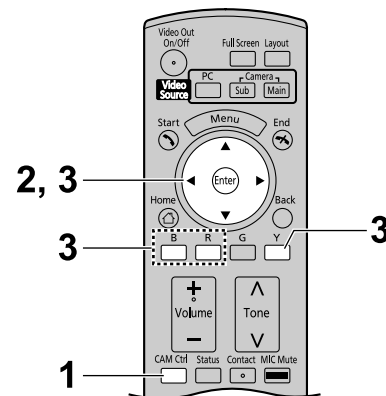
Note

- After the site selection dialogue box is displayed, if no operations are performed within approximately 3 seconds, the dialogue box will disappear.

2 Use **[▲][▼]** to select the site to display and press **[Enter]**.
- The camera control screen is displayed.

3 Press the buttons on the remote control to operate the video camera.
[B]: Zoom out
[R]: Zoom in
[◀][▶]: Pan the video camera left/right.
[▲][▼]: Tilt the video camera up/down.

- The movement continues as long as you hold down the button, and stops when you release the button. For finer control of the movement, press the button and immediately release it, and repeat this in succession.
- To control another site's video camera, press **[Y]**. Each time **[Y]** is pressed, the order of the sites listed in the site selection dialogue box will change.

  Example: During a 4-party video conference call

  Site 1 → Site 2 → Site 3 → Local Site

- To return to the video conference call screen, press **[Back]**.

Note
- You can press **[Full Screen]** on the remote control to display/hide the guide area.
- In the following cases, you will not be able to control a video camera, even if you press **[CAM Ctrl]**.
  – While displaying the computer's screen.
  – While displaying the unit information screen or the connections status screen.
  – While displaying a dialogue box.

Registering a Preset

When you are not on a video conference call, you can register up to 9 presets (pan, tilt, zoom position, etc.) of the video camera connected as the main or sub video camera on your side.

Note
- Preset registration can only be performed when using video cameras that support preset functions. For details, contact your dealer.
- The features that can be used may be limited depending on your video camera model. (e.g., A video camera with only a zoom feature)

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

  Note
  - If you are registering presets for the sub video camera, press **[Camera Sub]**.

2 Press **[CAM Ctrl]**.
- The camera control screen for your own video camera is displayed.

3 Press **[G]**.
- The preset screen is displayed.
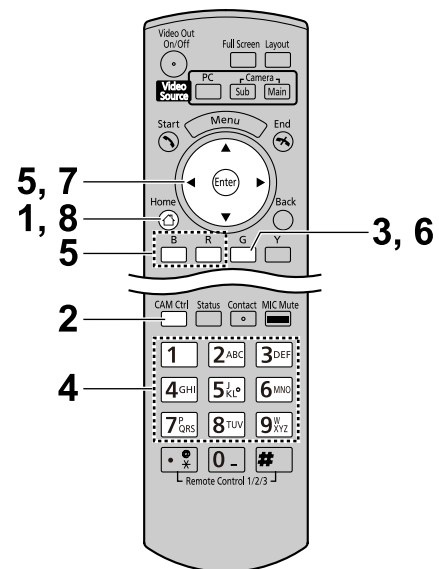
4 Press a numeric button (1–9) to select the preset number to use.
- The selected preset number is displayed in the upper right corner of the screen.

Note
- When a preset number that has already been registered is selected and preset registration is performed, that preset's registered information will be overwritten.

5 Press the buttons on the remote control to adjust the video camera's preset.
[B]: Zoom out
[R]: Zoom in
[◀][▶]: Pan the video camera left/right.
[▲][▼]: Tilt the video camera up/down.

6 Press **[G]**.
- A dialogue box to confirm the saving of settings is displayed.

7 Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
- The preset screen is displayed.

Note
- To continue making settings, repeat steps **4**–**7**.

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

Note
- Preset registration information for a video camera is saved in that video camera. If a video camera is initialised, its preset registration information will be lost. In such cases, preset registration must be performed on the unit again.

Recalling a Registered Preset

During a video conference call, you can set your own video camera's direction, zoom and magnifier settings, etc., to the desired state by selecting a registered preset.

Note

- For details about compatible video camera models, contact your dealer.
- You can recall a preset that was set by the other party for the other party's video camera during a video conference call.

1 Press **[CAM Ctrl]**.

- The site selection dialogue box is displayed.
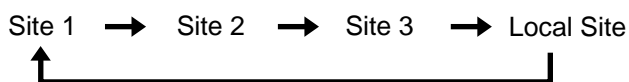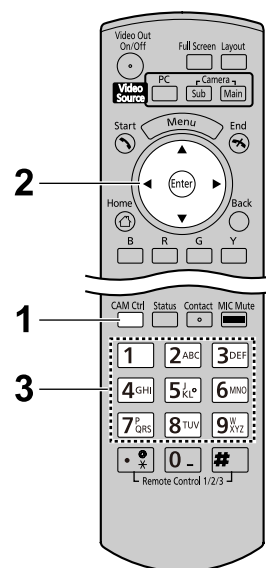

Note

- After the site selection dialogue box is displayed, if no operations are performed within approximately 3 seconds, the dialogue box will disappear.

2 Use **[▲][▼]** to select **"Local Site"** and press **[Enter]**.

- The camera control screen is displayed.

3 Press a numeric button (1–9) to select the preset number that you want to recall.

- The direction and zoom of your video camera will change to that of the registered preset.

Changing Video Camera Settings

Whether or not you are on a video conference call, you can set the brightness and white balance, etc., of the video camera connected as the main or sub video camera on your side.

Note

- You may not be able to change the settings depending on your video camera model. For details about compatible video camera models, contact your dealer.

1 Press **[CAM Ctrl]**.

- The site selection dialogue box is displayed.
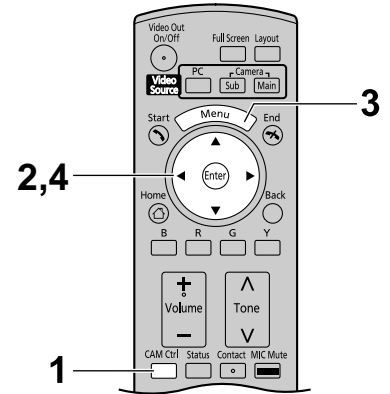
Note

- After the site selection dialogue box is displayed, if no operations are performed within approximately 3 seconds, the dialogue box will disappear.

2 Use **[▲][▼]** to select **"Local Site"** and press **[Enter]**.

- The camera control screen is displayed.

3   Press **[Menu]**.
  •   The camera menu screen is displayed.

4   Use **[▲][▼]** to select the item you want to set, and press **[Enter]**.
  •   The setting screen for the selected item is displayed.

Note

  •   Some items may not be displayed depending on your video camera model.
  •   While you are configuring settings on the camera menu screen, other parties cannot control your video camera.

"Brightness" screen
"Brightness Mode": Press **[Enter]** and use **[▲][▼]** to select **"Auto"** or **"Manual"**.

Note

  •   When **"Manual"** is selected, you can adjust the brightness by pressing the buttons on the remote control.
       [B]: Dark
       [R]: Light

"White Balance" screen
This function adjusts the colour so that white colours always appear white under various types of light sources.

"White Balance": Press **[Enter]** and use **[▲][▼]** to select the desired value for the white balance (**"Auto"**, **"Indoor 1"**, **"Indoor 2"**, **"Outdoor (Sunny)"**, **"Outdoor (Cloudy)"**, or **"Calibrate"**).

<u>**Note**</u>

- Unless the colour is unnatural due to the light source, for instance, select **"Auto"**.
- **"Indoor 1"** is recommended if the light source is an incandescent lamp, etc. **"Indoor 2"** is recommended if the light source is a warm, white fluorescent lamp, sodium vapour lamp, etc.
- When **"Calibrate"** is selected, you can adjust the white balance. Perform the following procedure:

  1. Press **[Enter]**.
     - If the white balance had been set before by selecting **"Calibrate"**, that previously set state will be recalled.
  2. Turn a piece of white paper toward the video camera.
  3. Press **[G]**.

"Focus" screen: Use **[▲][▼]** to select the following items for input:

"Focus Position": Press **[Enter]** and use **[▲][▼]** to select **"Center"** or **"Sides (Wide)"**.
"Focus Mode": Press **[Enter]** and use **[▲][▼]** to select **"Auto"** or **"Manual"**.

<u>**Note**</u>

- When **"Manual"** is selected, you can adjust the focus by pressing the buttons on the remote control.
  [B]: Near
  [R]: Far

"Backlight" screen
This function adjusts the colour so that backlit objects do not appear dark.

"Backlight Compensation": Press **[Enter]** and use **[▲][▼]** to select **"ON"** or **"OFF"**.

"Digital Zoom" screen
This function crops the centre part of the video image and enlarges
it through digital processing.

"Digital Zoom": Press **[Enter]** and use **[▲][▼]** to select **"ON"** or
"OFF".

"Magnifier Settings" screen
This function crops a part of the video image and displays it in the
four corners of the screen.

"Magnifier": Press **[Enter]** and use **[▲][▼]** to select **"ON"** or
"OFF".

<u>**Note**</u>
- If you want to use the magnifier function, perform the following procedure:
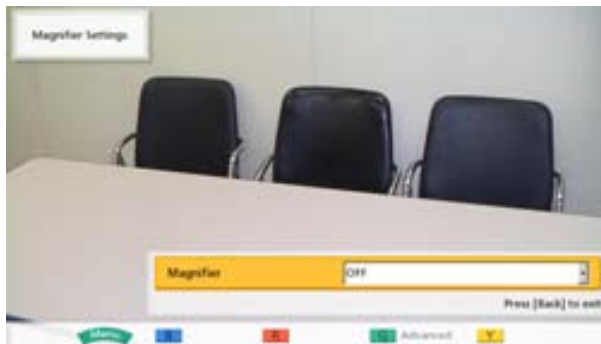
1. Select **"ON"** and press **[Enter]**.
    - Your own image is displayed in full screen, and a magnified image of your own is
      displayed in the upper right subscreen.
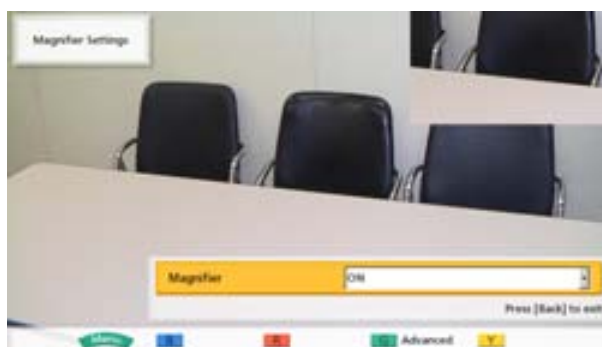
2. Configure the advanced settings of the magnifier by pressing the **[G]** button on the remote control.

Note

- The magnifier settings can be registered as a preset (Page 55).

(To change which position to magnify):
If you want to change which content to magnify, adjust the magnification position by pressing **[▲][▼][◀][▶]** to move the frame that indicates the area to magnify.

(To change the zoom level of the magnified image):
If you want to change the size of the magnified image displayed in the subscreen, press **[R]** to zoom in, and press **[B]** to zoom out.

(To change the screen layout):
If you want to change the position of the magnified image on the screen, press **[Y]**. Each time you press **[Y]**, the position of the magnified image will change in the following order:

upper right ➡ lower right ➡ lower left ➡ upper left
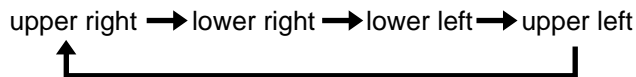
Example: When the dotted-line part is magnified and displayed in the upper left subscreen.

3. To return to the magnifier settings screen, press **[Back]**.
To return to the camera menu screen, press **[Menu]**.

Note

- After completing settings on each settings screen, press **[Enter]**. After that, pressing **[Menu]** or **[Back]** will display the camera menu screen.

Adjusting the Volume

You can adjust the volume during a video conference call.

1   Press **[Volume (+/–)]**.
  • The volume level bar is displayed at the bottom of the screen.

2   Adjust the volume using **[Volume (+/–)]**.
  • Pressing **[+]** will increase the volume of the other party's voice.
  • Pressing **[–]** will decrease the volume of the other party's voice.

  After about 3 seconds, the volume level bar disappears.
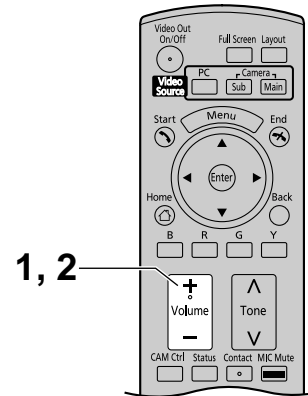
1, 2

Note

  • You can set the volume level of a video conference call before starting the call (Page 92).
  • After ending a video conference call, the volume level returns to the volume level set before starting the call.
  • You cannot adjust the display's volume.

Muting the Microphone

During a video conference call, you can mute the microphone so that your voice cannot be heard by the other party. You will be able to hear the other party's voice, but they will not be able to hear you.

Note

- You can set the microphone(s) to be mute at the start of a received video conference call (Page 90).

Muting the Microphone (Operation with the Remote Control)

1 Press **[MIC Mute]**.

- An icon appears in the status display area of the screen (Page 27), and the LED light on the Boundary Microphone (Page 19) becomes red. Make sure the colour of the LED changes.
- Pressing **[MIC Mute]** again will unmute the microphone. The LED light on the Boundary Microphone (Page 19) becomes green. Make sure the colour of the LED changes.
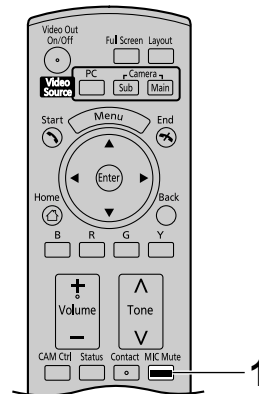
Muting the Microphone (Operation with the Boundary Microphone)

1 Press the MIC Mute button.
   • An icon appears in the status display area of the screen (Page 27), and the LED light on the Boundary Microphone (Page 19) becomes red. Make sure the colour of the LED changes.
   • Pressing the MIC Mute button again will unmute the microphone. The LED light on the Boundary Microphone (Page 19) becomes green. Make sure the colour of the LED changes.

   Note
   • When multiple Digital Boundary Microphones are connected, pressing the MIC Mute button of one Digital Boundary Microphone will mute all Digital Boundary Microphones (KX-VC600 only).
   • When using Digital Boundary Microphones and an Analogue Boundary Microphone together, pressing the MIC Mute button on one Boundary Microphone will mute all Boundary Microphones (KX-VC600 only).
   • If a headset is connected, the MIC Mute button on a Boundary Microphone will not work.
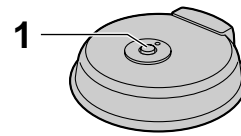
Digital Boundary
Microphone
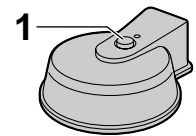
Analogue Boundary
Microphone

Reducing Microphone Noise (KX-VC600 only)

You can reduce the amount of ambient noise picked up by the microphone (shuffling of papers, etc.) during a video conference call. When noise reduction is in effect, the volume level of voices may also be reduced.

1 Press **[Y]**.

- **"Whisper Mode [ON]"** is displayed, and noise reduction is enabled.
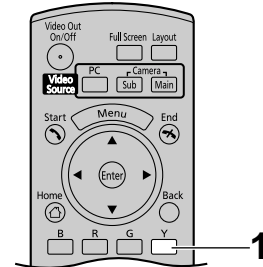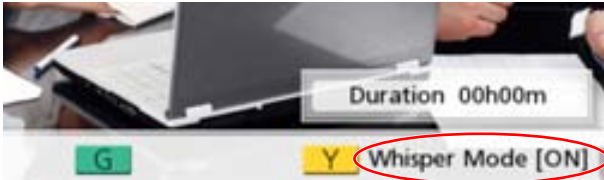
- Pressing **[Y]** again will display **"Whisper Mode [OFF]",** and noise reduction is disabled.
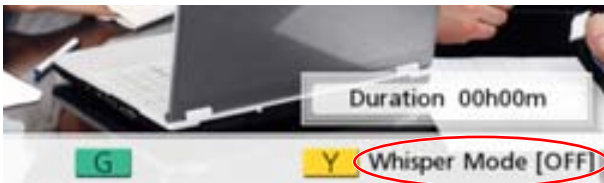
<u>**Note**</u>

- Noise reduction is available only when Digital Boundary Microphones are connected.
- You can set whether to enable noise reduction for a video conference call before starting the call (Page 90).
- After a video conference call is finished, the noise reduction setting returns to the value set before starting the call.

Adjusting the Tone

You can adjust the tone during a video conference call.

1   Press **[Tone (∧/∨)]**.
- The tone control dialogue box appears, and the current tone setting is displayed.

Tone (EQ) Control

More Highs

Standard

More Lows

Voice

Music

1, 2
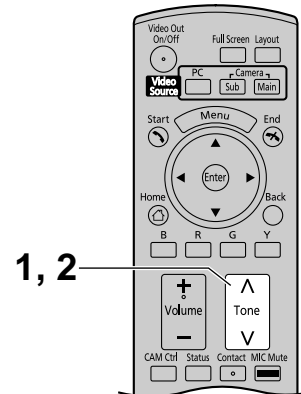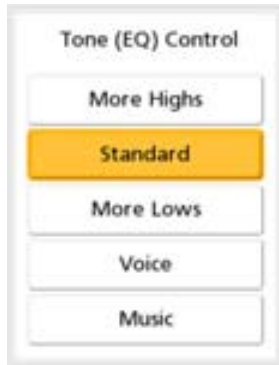
2   Press **[Tone (∧/∨)]** to select a tone setting.
- **"More Highs"**: high-pitched sounds are amplified.
- **"Standard"**: regular (default) sound.
- **"More Lows"**: low-pitched sounds are amplified.
- **"Voice"**: makes voices easier to hear when there is a high level of ambient noise.
- **"Music"**: makes sounds with a broad frequency, such as music, easier to hear.

After about 3 seconds, the tone control dialogue box disappears.

<u>**Note**</u>

- You can set the tone of a video conference call before starting the call (Page 92).
- After a video conference call is finished, the tone setting returns to the value set before starting the call.

Displaying a Computer's Screen

You can display a computer's screen on your display and to other parties by connecting the computer to the unit.
This is convenient when explaining something on the computer's screen while showing it to others, for example.
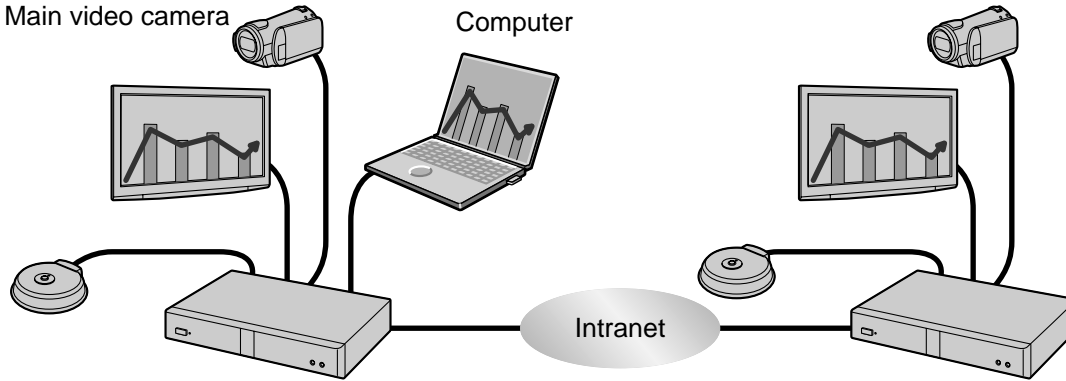
Connecting the Computer
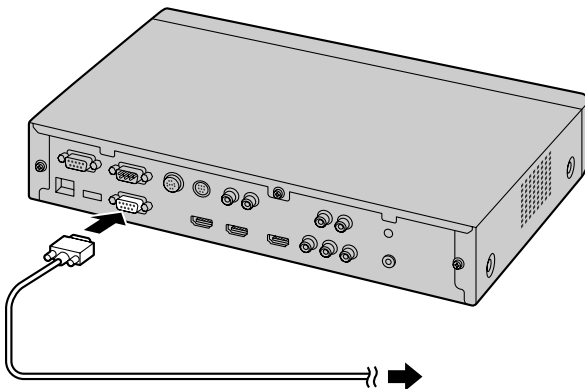
- Connect your computer's monitor output to the back of the unit using a VGA cable (Page 16).
- Make sure the cable used has the correct connector shapes to connect to both your computer and to the unit.
- You can connect or disconnect the computer during a video conference call.
- You can only display one computer's screen at a time.
- The computer screen resolutions supported by the unit are VGA (640 × 480), SVGA (800 × 600), XGA (1024 × 768), HD (1280 × 720), and WXGA (1280 × 768, 1280 × 800).
  SXGA (1280 × 1024) is not supported. For each resolution, the following settings are supported:

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

Resolution	Refresh Rate (Hz)
WXGA	60/75

Displaying the Computer's Screen

You can switch the display from the main video camera to the computer screen during a video conference call.

Note

- In this manual, "displaying a computer's screen" indicates showing your computer's screen to video conference call participants by connecting your computer to the unit.

  When using the KX-VC300, you can display the computer's screen only. When using the KX-VC600, you can switch the display between the combined screen (the computer's screen, and the video feeds from both you and the other party) and the computer-only screen. Regardless of the difference, "displaying a computer's screen" can indicate either state.

1   Press **[PC]**.

When using the KX-VC600:

- The computer's screen, and the video feeds from both you and the other party are displayed together. The video feeds of you and the other party are displayed, from the upper-right of the screen with the other party's image above your own image. The combined screen (the computer's screen, and the video feeds from both you and the other party) is displayed both on your and the other party's displays.
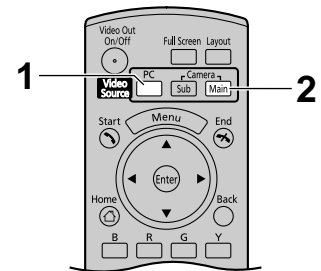
Example: During a 4-party video conference call

Computer's Screen	Site 1
	Site 2
	Site 3
	This Site

Note

(When using the KX-VC600)

* In the combined screen display, the computer's screen, your own screen, and the other party's screen are scaled and displayed at 95 % of their original sizes.
* You can press **[Full Screen]** to change between displaying/ hiding the guide area. (The guide area is initially hidden when displaying the computer's screen.)
* Press **[R]** to display only the computer's screen. Each time you press **[R]**, the display switches between the combined screen and the computer-only screen.
  (You can switch the display regardless of the guide area display state.)
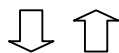
* In the following cases, only the computer screen's image will be shown, even if **[PC]** is pressed.
  – You are using H.323 or connected to an MCU or non-Panasonic video conference system.
  – **"Displays combined screen"** (Page 90) is set to **"OFF"** on the connection settings screen.
  – One or more other parties in the video conference call is using a software version older than 2.30 (not including 2.30).

When using the KX-VC300:
- The computer's screen is shown on the display. The other party's display also shows the same screen.
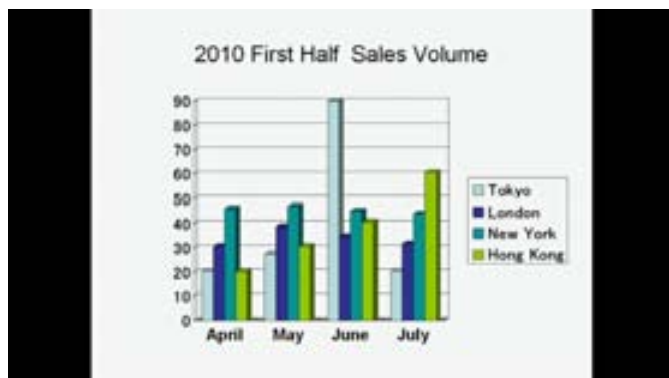
Note

(When using the KX-VC300/KX-VC600)
- When using H.323 or connecting to an MCU or non-Panasonic video conference system, the same screen may not be shown on the other party's display depending on the other party's screen layout. Ask the other party to change their screen layout to display your computer's screen.
- When using H.323 or connecting to an MCU or non-Panasonic video conference system, you may not be able to display the computer's screen on the other party's display. An error message is displayed. To return to displaying your main video camera's image, press **[Enter]**.

- Pressing **[Full Screen]** on the remote control will hide or unhide the other party's information, duration, and guide displays.

- When connecting to another Panasonic HD Visual Communication Unit:
  – While displaying your computer's screen, the other party cannot press **[PC]** to display their own computer's screen.

  – If a sub video camera is connected, you can also switch to the sub video camera's image by pressing **[Camera Sub]** (Page 74). Only the party that pressed **[PC]** can perform this operation. To return to displaying your computer's screen, press **[PC]**.

  – While displaying your computer's screen, you can switch to displaying the other party's image in **Layout 1** by pressing **[B]** (Page 45, Page 47, Page 50). However, the other party cannot perform this operation, and the other party cannot confirm if you are viewing your computer's screen or the other party's image. When viewing the other party's image, the screen layout is fixed to **Layout 1**. To return to displaying your computer's screen, press **[B]**.

- When using H.323 or connecting to an MCU or non-Panasonic video conference system:
  – Even while displaying your computer's screen, it is also possible for the other party to start sharing their computer's screen. In this case, note that the other party's computer screen will be displayed as the other party's image on your screen.

  – If a sub video camera is connected, you can also switch to the sub video camera's image by pressing **[Camera Sub]** (Page 74). To return to displaying your computer's screen, press **[PC]**. It is also possible for the other party to start sharing their sub video camera's image. In this case, note that the other party's sub video camera's image will be displayed as the other party's image on your screen.

  – While displaying your computer's screen, you can switch to displaying the other party's image in **Layout 1** by pressing **[B]** (Page 45). To return to displaying your computer's screen, press **[R]**.

2 Press **[Camera Main]** to return to showing the main video camera's image.

Note

- Only the party that pressed the **[PC]** button can perform this operation.

Note

- On the Home screen, you can also display the computer's screen on your display by pressing **[PC]**. While the computer's screen is displayed, the unit will not enter screen standby mode.
  To return to the Home screen, press **[Camera Main]**.

Displaying the computer's screen using the dual stream ability

When **"Receive H.239 Call"** is set to **"ON"** on the connection settings screen (Page 90), the video feeds and computer screen sent from the other party can be combined and displayed together on your display using the dual stream ability (H.239).

Note

- Dual stream is available only when you are using H.323 and connected to an MCU or non-Panasonic video conference system.
- You can switch the display by pressing the buttons on the remote control.
  – Press **[R]** to display only the computer's screen. Each time you press **[R]**, the display switches between the combined screen and the computer-only screen.

  Receiving a dual stream (combined screen)
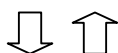
Receiving a dual stream (computer-only screen)

– Press **[B]** to display the other party's image in full screen.
Each time you press **[B]**, the display switches between the
other party's image and the dual stream reception screen.

Displaying the Sub Video Camera's Image

When a sub video camera is connected to the unit, you can display the sub video camera's image on your display and to other parties. You and the other party can control the displayed image (Page 53).
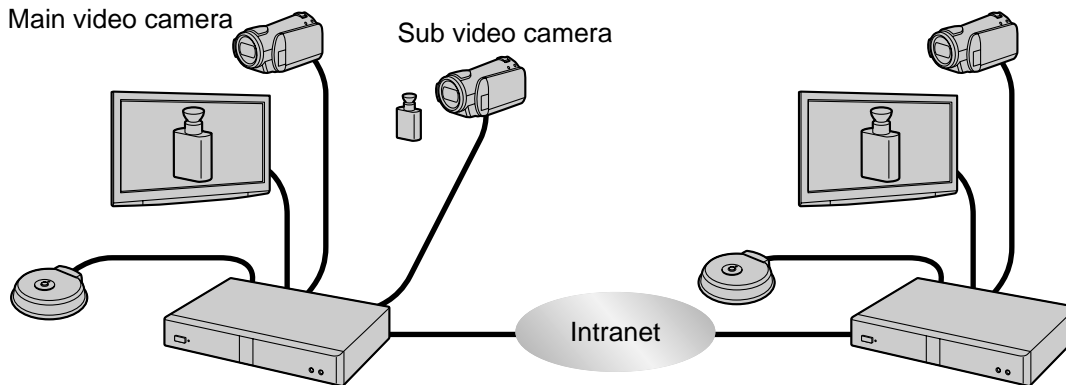
Connecting the Sub Video Camera
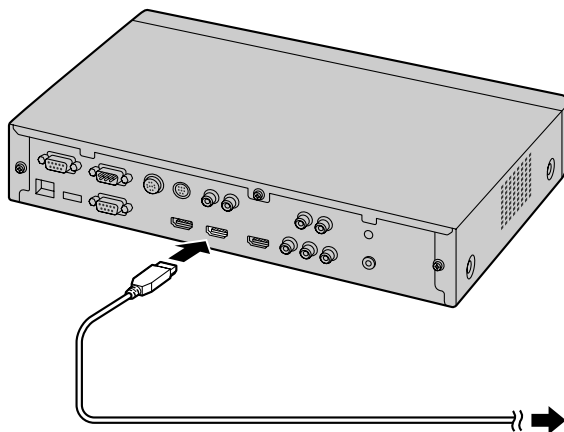
- Connect a video camera to the back of the unit using an HDMI cable (Page 16).
- You can connect or disconnect the sub video camera during a video conference call.
- You can only display the image of one sub video camera at a time.
- Only video cameras that can output 1080i resolution using HDMI can be used.

Displaying the Sub Video Camera's Image

You can switch the display from the main video camera to a sub video camera during a video conference call.

1 Press **[Camera Sub]**.
- The sub video camera's image is displayed. The image is also visible on the other party's display.

    Note
    - When using H.323 or connecting to an MCU or non-Panasonic video conference system, the same image may not be shown on the other party's display depending on the other party's screen layout. Ask the other party to change their screen layout to display your sub video camera's image.
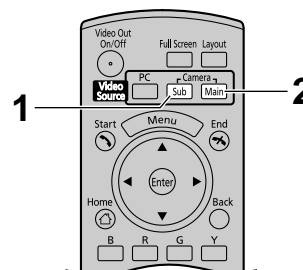
    Note
    - Pressing **[Full Screen]** on the remote control will hide or unhide the other party's information, duration, and guide displays.
    - When connecting to another Panasonic HD Visual Communication Unit:
        – While displaying your sub video camera's image, the other party cannot press **[Camera Sub]** to display their own sub video camera's image.
        – If a computer is connected you can also switch to the computer screen's image by pressing **[PC]** (Page 68). Only the party that pressed **[Camera Sub]** can perform this operation. To return to displaying your sub video camera's image, press **[Camera Sub]**.
        – While displaying your sub video camera's image, you can switch to displaying the other party's image in **Layout 1** by pressing **[B]** (Page 45, Page 47, Page 50). However, the other party cannot perform this operation, and the other party cannot confirm if you are viewing your sub video camera's image or the other party's image. When viewing the other party's image, the screen layout is fixed to **Layout 1**. To return to displaying your sub video camera's image, press **[B]**.

- When using H.323 or connecting to an MCU or non-Panasonic video conference system:
  – Even while displaying your sub video camera's image, it is also possible for the other party to start sharing their sub video camera's image. In this case, note that the other party's sub video camera's image will be displayed as the other party's image on your screen.
  – If a computer is connected, you can also switch to the computer screen's image by pressing **[PC]** (Page 68). To return to displaying your sub video camera's image, press **[Camera Sub]**. It is also possible for the other party to start sharing their computer's screen. In this case, note that the other party's computer screen will be displayed as the other party's image on your screen.
  – While displaying your sub video camera's image, you can switch to displaying the other party's image in **Layout 1** by pressing **[B]** (Page 45). To return to displaying your sub video camera's image, press **[R]**.

2 Press **[Camera Main]** to return to showing the main video camera's image.

   Note
   - Only the party that pressed **[Camera Sub]** can perform this operation.

Note
- On the Home screen, you can also display the sub video camera's image on your display by pressing **[Camera Sub]**. While the sub video camera's image is displayed, the unit will not enter screen standby mode. To return to the Home screen, press **[Camera Main]**.

Displaying a Still Image from the Sub Video Camera

You can display a still image from the sub video camera during a video conference call.

Note

- Fix your sub video camera and the object so that the image is not blurred.
- You cannot perform this operation when using H.323 or connecting to an MCU or non-Panasonic video conference system.

1 Press **[Camera Sub]**.
- The sub video camera's image is displayed.

2 Press **[R]**.
- The still image from your sub video camera is displayed on your display and the other party's display.
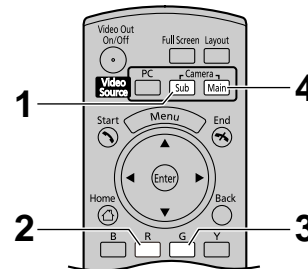
  Note

  - The image becomes gradually clear after a black screen is displayed for about 1 second.
  - If you press **[R]** while the still image is being sent, the image taken when you pressed **[R]** the second time is sent to other party's display again.
  - If the network has low bandwidth and a high rate of packet loss, either it will take a long time to display a clear image, or a blurred image will be displayed.

3 Press **[G]**.
- The display switches from the still image back to the normal sub video camera image.

  Note

  - A black screen is displayed for about 1 second after you press **[G]**.

4 Press **[Camera Main]**.
- The screen returns to the main video camera's image.

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.
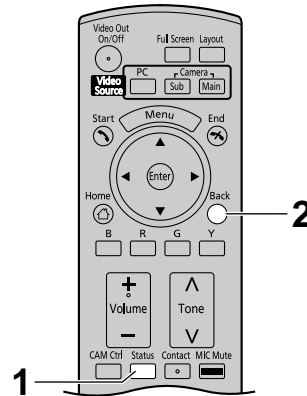
   Note

   - **"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 (Page 90).

2 Press **[Back]**.
   - The display returns to the screen in use before the connections status screen was viewed.

Displaying Unit Information

1 Press **[Status]** twice.
  • The unit information screen is displayed.

Name	: Tokyo
MAC address	: █████████
SIP Username	:
IP Address	: 192.168.181.110
Subnet mask	: 255.255.255.0
Default Gateway	: 192.168.181.1
SIP Domain Name	:
Static NAT Addr.	:
Max. Bandwidth	: 9.0 Mbps
Resolution (send)	: 1024x768
Software version	: █.█.█
Frequency	: 50 Hz

| **B** | | **R** Next | | **G** | | **Y** Whisper Mode [OFF] |
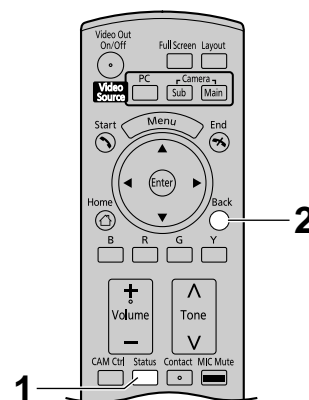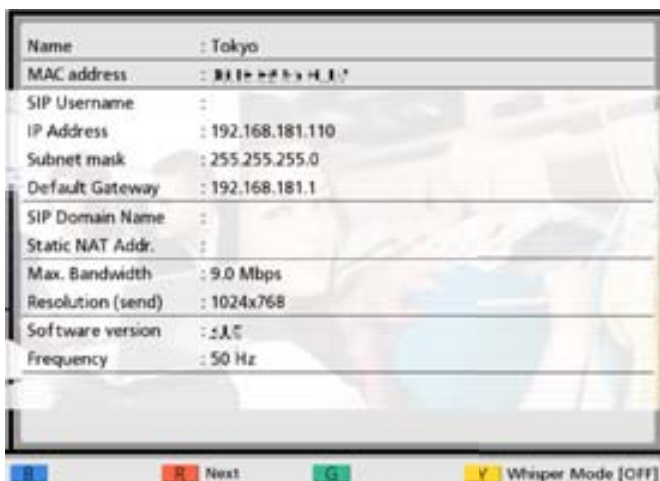
Note

  • When you are not using a SIP server, **"SIP Username"** and **"SIP Domain Name"** will be blank.
  • The resolution for sending images is displayed under **"Resolution (send)"**. This information is not displayed when communication is not occurring.

  • When you are not on the video conference call and both **"SIP"** and **"H.323"** are set to **"ON"** (Page 102), you can switch the unit information screen between SIP and H.323 by pressing **[G]**.
  • If **[Status]** is pressed twice during a video conference call, you can press **[R]** to switch to the next screen. That screen displays the unit name, IP address/SIP URI (or SIP user name)/MCU's conference room number@IP address/MCU's SIP user name@IP address/H.323 extension/H.323 name, packet loss rate, connection bandwidth, resolution, frame rate and field frequency for the 3 parties displayed under **"Site 1"**, **"Site 2"** and **"Site 3"**.[*1][*2]
    [*1] **"Frequency"** is not displayed when using H.323 or connecting to an MCU or non-Panasonic video conference system.
    [*2] Depending on the other party, **"Name"** may be blank.

  • When using H.323, and **"Receive H.239 Call"** is set to **"ON"** (Page 90), the information for one site may include the information about multiple received images.

2 Press **[Back]**.
- The display returns to the screen in use before the step
  1 was performed.

Activating Enhanced Features

Overview of Activation Keys

You can enhance the following types of features with an activation key (sold separately). For details about the settings, refer to Page 108.

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.

Note

- Once you have activated new features (Page 108), they remain activated even after software updates or a system initialisation.
- Features can be activated only one at a time (Page 108). To activate multiple features, you must perform activation multiple times. A restart is necessary for each activation.
- If the hardware changes, for example if you exchange the unit, you must reacquire the registration key and activate the features again. In this case, the registration key can be reacquired free of charge.

Enabling Multiple-Party Video Conference Calls (KX-VC300 only)

If you are using the KX-VC300, you cannot make 3-party/4-party video conference calls unless the multiple-party video conference call feature has first been enabled by purchasing an activation key card (KX-VCS301) (Page 108). For details about the activation key, contact your dealer.

Enabling the Sending of Images in Full HD Resolution (KX-VC300 only)

If you are using the KX-VC300, you can only send images in HD (1280 × 720) unless the feature for sending images in Full HD (1920 × 1080) has first been enabled by purchasing an activation key card (KX-VCS401) (Page 108). To enable images to be sent at Full HD resolution, change the maximum resolution setting (Page 89, Page 112). For details about the activation key, contact your dealer.

Adding Contacts to the Contact List

You can register the information of up to 300 contacts in the contact list.

Note

- If a video conference call is received while data is being entered, a dialogue box to confirm if you answer a video conference call is displayed. Use **[◄][►]** to select **"Yes"** or **"No"** and press **[Enter]**.
  - When **"Yes"** is selected, you can answer a video conference call while any unsaved data is lost.
  - When **"No"** is selected, you can continue entering the data.

Registering a New Contact

Registering a Single-party Contact

1. Press **[Menu]**.
   - The Menu screen is displayed.

2. Use **[▲][▼]** to select **"New Contact"** and press **[Enter]**.
   - The contact list registration screen is displayed.
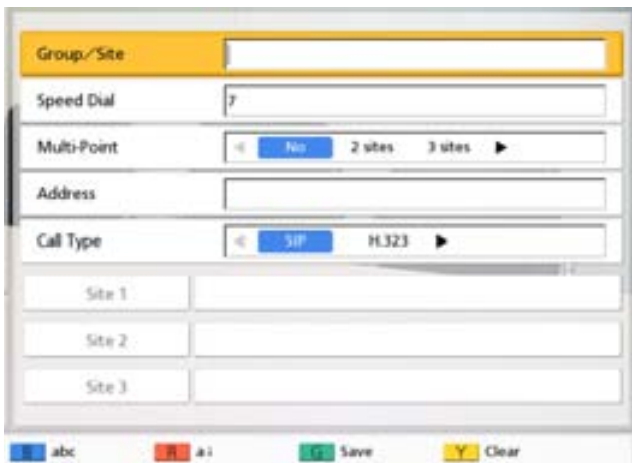
3. Use **[▲][▼]** to select the following items for input:
   "Group/Site": Enter a name for the contact (up to 24 characters) (Page 116).
   "Speed Dial": Enter a speed dial number (**1–300**).
   "Multi-Point": Use **[◄][►]** to select **"No"**.
   "Address": Enter an IP address, SIP URI (or SIP user name), H.323 extension, H.323 name, or MCU's conference room number@IP address.
   "Call Type": Use **[◄][►]** to select the call type (SIP or H.323).

Note

- When entering an IP address, 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]
- The characters that can be input are as follows:
  SIP user name/H.323 name/MCU's conference room number: Alphanumeric characters and the symbols **. = * + _ - $ ~ ! ? / ' ( )** (up to 60 characters)
  SIP domain name: Alphanumeric characters and the symbols **.** and **-** (up to 128 characters)
  H.323 extension: Numeric characters and the symbols **#** and ***** (up to 20 characters)
- If the other party has the same SIP domain name as yours, you can register only their SIP user name. If the other party has a different SIP domain name from yours, their SIP domain name must be entered along with their SIP user name.
- If the SIP domain name is not entered, your own SIP domain name is automatically appended to the registered contact. This may result in a different, unintended party being registered as a contact, so be careful when entering a contact's information.
- Enter a standards-compliant value. For details, contact your network administrator.

4. Press **[G]**.
   - A dialogue box to confirm the saving of settings is displayed.

5. Use **[◄][►]** to select **"Yes"** and press **[Enter]**.
   - The contact list screen is displayed.

Note

- To continue entering another contact, press **[B]** and repeat steps **3**–**5**.

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

Registering a Multiple-party Contact

Note

- When using H.323, you cannot register a multiple-party contact.
- If you are using the KX-VC300, registering a multiple-party contact can only be done after purchasing an activation key card (KX-VCS301) to activate multiple-party video conference calls (Page 108). For details about the activation key, contact your dealer.

1. Press **[Menu]**.
- The Menu screen is displayed.

2. Use **[▲][▼]** to select **"New Contact"** and press **[Enter]**.
- The contact list registration screen is displayed.
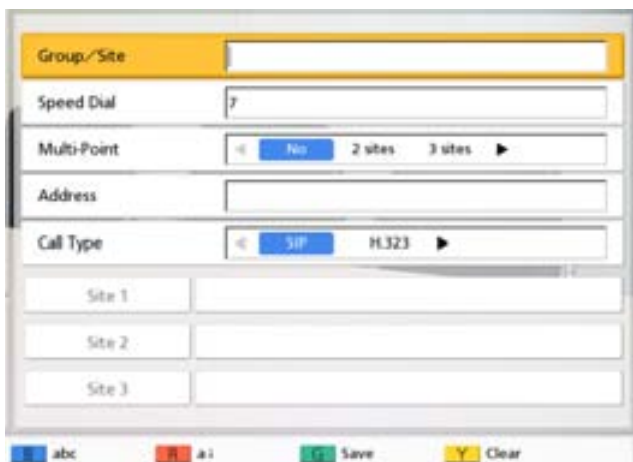
3. Use **[▲][▼]** to select the following items for input:
"Group/Site": Enter a name for the video conference call (up to 24 characters) (Page 116).
"Speed Dial": Enter a speed dial number (**1**–**300**).
"Multi-Point": Use **[◀][▶]** to select **"2 sites"** or **"3 sites"**.
For **"Site 1"/"Site 2"/"Site 3"**: Use the following procedure to select these from the contact list screen.
   1. Use **[▲][▼]** to select **"Site 1"**, **"Site 2"** or **"Site 3"**.

2. Press **[Enter]**.
- The contact list screen is displayed.
3. Select a contact using **[▲][▼]**.
- You can use **[◀][▶]** or the numeric buttons of the remote control to select the displayed tab (Page 35).
4. Press **[Enter]**.
- The contact list registration screen is displayed.

4. Press **[G]**.
- A dialogue box to confirm the saving of settings is displayed.

5. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
- The contact list screen is displayed.

Note

- To continue entering another contact, press **[B]** and repeat steps **3**–**5**.

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

Editing Contact Information

1. Press **[Menu]**.
- The Menu screen is displayed.

2. Use **[▲][▼]** to select **"Contact List"** and press **[Enter]**.
- The contact list screen is displayed.

3. Use **[▲][▼]** to select the contact you want to edit.
- You can use **[◀][▶]** or the numeric buttons of the remote control to select the displayed tab (Page 35).

4. Press **[Enter]**.
- The contact list details screen is displayed.

5. Press **[G]**.
- The contact list edit screen is displayed.
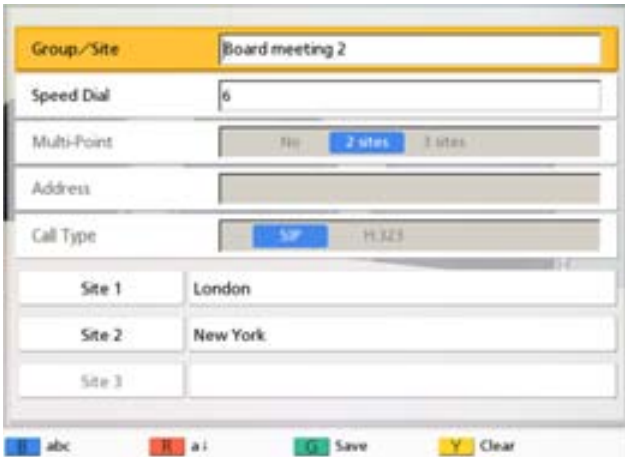
6. Use **[▲][▼]** to select the item you want to edit and make any changes (Page 116).

7. Press **[G]**.
- A dialogue box to confirm the saving of settings is displayed.

8. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
- The contact list details screen is displayed.

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

Deleting a Contact

1. Press **[Menu]**.
- The Menu screen is displayed.

2. Use **[▲][▼]** to select **"Contact List"** and press **[Enter]**.
- The contact list screen is displayed.

3. Use **[▲][▼]** to select the contact you want to delete.
- You can use **[◀][▶]** or the numeric buttons of the remote control to select the displayed tab (Page 35).

4. Press **[R]**.
- A dialogue box to confirm the deletion is displayed.

5. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
- The contact list screen is displayed.

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

Registering a Contact from the Call History

Registering a Single-party Contact

You can register a contact to the contact list from the call history.

Note
- If a host name is displayed in the **"Site"** column of the call history, the party cannot be registered in your contact list.
- Also, you may not be able to register a SIP URI (or SIP user name), H.323 extension, or H.323 name from the incoming call history to the contact list for reasons such as non-compliance

with the relevant standards. In this case, contact your network administrator.

1. Press **[Menu]**.
   - The Menu screen is displayed.

2. Use **[▲][▼]** to select **"Call History"** and press **[Enter]**.
   - The outgoing call history screen is displayed.

   > **Note**
   > - To refer to the incoming call history, press **[G]**.

3. Use **[▲][▼]** to select the single-party entry you want to add as a contact, and press **[B]**.
   - The contact list registration screen is displayed.

4. Use **[▲][▼]** to select the necessary items and input information (Page 116).

5. Press **[G]**.
   - A dialogue box to confirm the saving of settings is displayed.

6. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
   - The outgoing or incoming call history screen is displayed, depending on which of the screens you displayed in step **2**.

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

Registering a Multiple-party Contact

You can register a multiple-party contact to the contact list from the outgoing call history.

Note
- When you register a multiple-party contact to the contact list from the call history, each party is also registered automatically as a single-party contact and each IP address/SIP URI (or SIP user name) is registered in **"Group/Site"**.
- When using H.323, you cannot register a multiple-party contact.
- If a host name is displayed in the **"Site"** column of the call history, the party cannot be registered in your contact list.
- Also, you may not be able to register a SIP URI (or SIP user name) from the incoming call history to the contact list for reasons such as non-compliance with the relevant standards. In this case, contact your network administrator.
- If you are using the KX-VC300, registering a multiple-party contact can only be done after purchasing an activation key card (KX-VCS301) to activate multiple-party video conference calls (Page 108). For details about the activation key, contact your dealer.

1. Press **[Menu]**.
   - The Menu screen is displayed.

2. Use **[▲][▼]** to select **"Call History"** and press **[Enter]**.
   - The outgoing call history screen is displayed.

3. Use **[▲][▼]** to select the multiple-party entry you want to add as a multiple-party contact, and press **[B]**.
   - The contact list registration screen is displayed.
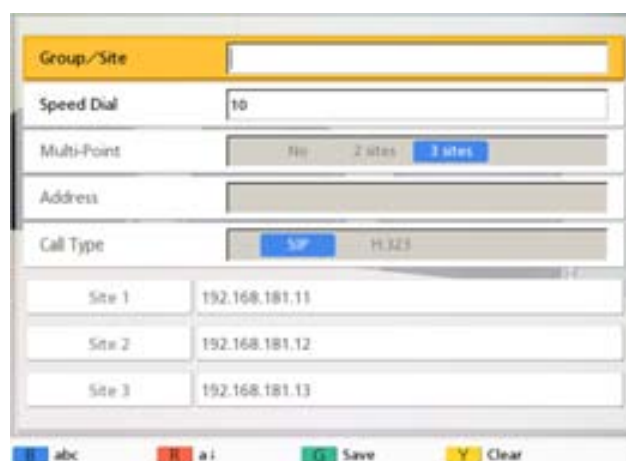
4. Use **[▲][▼]** to select the necessary items and input information (Page 116).

5. Press **[G]**.
   - A dialogue box to confirm the saving of settings is displayed.

6. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
   - The call history screen is displayed.

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

Changing System Settings

Note
- If a video conference call is received while data is being entered, a dialogue box to confirm if you answer a video conference call is displayed. Use **[◀][▶]** to select **"Yes"** or **"No"** and press **[Enter]**.
  - When **"Yes"** is selected, you can answer a video conference call while any unsaved data is lost.
  - When **"No"** is selected, you can continue entering the data.

Setting the Unit Name

1. Press **[Menu]**.
   - The Menu screen is displayed.

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

3. Use **[▲][▼]** to select **"System Settings"** and press **[Enter]**.
   - The unit name setting screen is displayed.
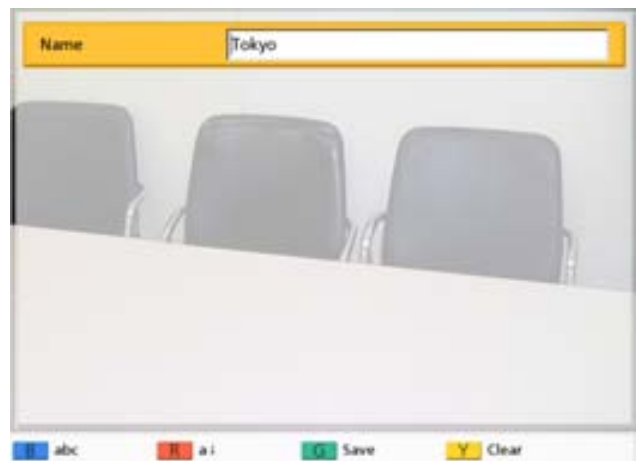
4. Enter a unit name (up to 24 characters) (Page 116).

5. Press **[G]**.
   - A dialogue box to confirm the saving of settings is displayed.

6. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
   • The system settings screen is displayed.

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

Setting the Date and Time

1. Press **[Menu]**.
   • The Menu screen is displayed.

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

3. Use **[▲][▼]** to select **"Set Date/Time"** and press **[Enter]**.
   • The date/time settings screen is displayed.

4. Use **[▲][▼]** to select the item and 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 hour display format (12h/24h).

5. Press **[G]**.
   • A dialogue box to confirm the saving of settings and system restart after saving is displayed.

6. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
   • The system will automatically restart to reflect changes to system settings.

Making Network Settings

1. Press **[Menu]**.
   • The Menu screen is displayed.

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

3. Use **[▲][▼]** to select **"Network Settings"** and press **[Enter]**.
   • The network settings screen is displayed.
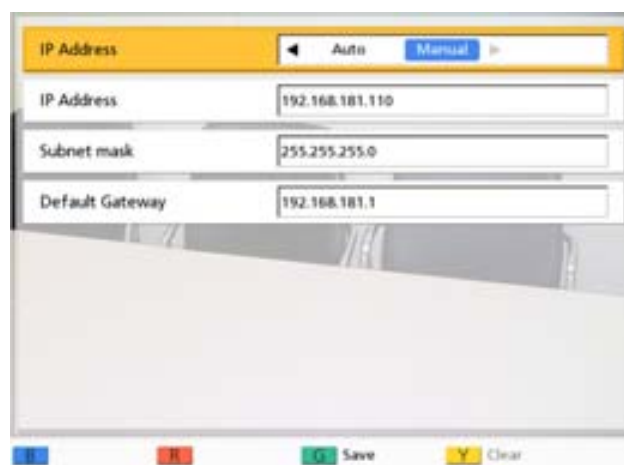
4. Use **[▲][▼]** to select the following items for input:
   "IP Address": Use **[◀][▶]** to select whether the IP address information for this unit (**"IP Address"**, **"Subnet mask"**, **"Default Gateway"**) will be obtained automatically from a DHCP server or will be set manually.
   – **"Auto"** (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]

5. Press **[G]**.
   - A dialogue box to confirm the saving of settings is displayed.

6. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
   - The system settings screen is displayed.

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

Making Connection Settings

1. Press **[Menu]**.
   - The Menu screen is displayed.

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

3. Use **[▲][▼]** to select **"Call set up"** and press **[Enter]**.
   - The connection settings screen is displayed.

4. Use **[▲][▼]** to select the following items for input:
   - The following items are displayed over 3 pages. To view all the items, press **[R]** to move to the next page, and press **[B]** to move to the previous page.

   Note

   - You must save the settings separately for each screen on which you changed the settings.
   - When **"SIP"** is set to **"OFF"** on the call type settings screen (Page 102), **"Video Quality"**, **"Max Resolution"**, **"Quality of Service"**, **"Audio only mode"**, **"Still image quality"**, and **"Displays combined screen"** cannot be set.
   - When **"H.323"** is set to **"OFF"** on the call type settings screen (Page 102), **"Receive H.239 Call"** cannot be set.

"Answer Mode": Use **[◀][▶]** to select how to answer video conference calls (**"Manual"** [default] or **"Auto"**) (Page 41).

"Max. Bandwidth": Press **[Enter]** and use **[▲] [▼]** to select the maximum allowed bandwidth to be used (**512 kbps**, **768 kbps**, **1.0 Mbps**, **1.2 Mbps**, **1.5 Mbps**, **2.0 Mbps**, **2.5 Mbps**, **3.0 Mbps**, **3.5 Mbps**, **4.0 Mbps**, **4.5 Mbps**, **5.0 Mbps**, **5.5 Mbps**, **6.0 Mbps**, **6.5 Mbps**, **7.0 Mbps**, **7.5 Mbps**, **8.0 Mbps**, **8.5 Mbps**, **9.0 Mbps** [default], **10.0 Mbps**).

Note

- 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.
- You cannot select a value that is higher than the maximum bandwidth set by the dealer. For details, contact your dealer.
- When you make a 3-party video conference call, select a value of **"1.0 Mbps"** or higher. Otherwise, the image quality and the sound quality cannot be guaranteed.
- When you make a 4-party video conference call, select a value of **"1.5 Mbps"** or higher. Otherwise, the image quality and the sound quality cannot be guaranteed.

"Video Quality": Use **[◀][▶]** to select between prioritising smooth movement or image quality for video.

– **"Motion"** (default): Prioritise smooth movement.
– **"Sharpness"**: Prioritise image quality.

Note

- If you are using the KX-VC300, **"Sharpness"** can only be selected after purchasing an activation key card (KX-VCS401) to enable sending images in Full HD resolution (Page 108).
- If one of the other parties is using a software version older than 2.30 (not including 2.30), **"Motion"** will be selected.
- If **"Max Resolution"** is set to **"HD"**, and **"Video Quality"** is changed from **"Motion"** to **"Sharpness"**, the setting for **"Max Resolution"** is automatically changed to **"Auto"**.
- The value that you select here does not influence the unit's operation when you connect to an MCU or non-Panasonic video conference system.

"Max Resolution": Press **[Enter]** and use **[▲]** **[▼]** to select the maximum display resolution of the main video camera and sub video camera used during a video conference call.

– **"Full HD"**: Maximum resolution: 1920 × 1080 (This mode switches the display resolution according to the condition of the network.)
– **"HD"** (default [for KX-VC300]): Maximum resolution: 1280 × 720 (This mode switches the display resolution according to the condition of the network.)
– **"Auto"** (default [for KX-VC600]): This mode selects either **"Full HD"** or **"HD"** according to the available bandwidth.

Note

- Selecting **"Auto"** or **"HD"** is recommended.
- If you are using the KX-VC300, **"Auto"** or **"Full HD"** can only be selected after purchasing an activation key card (KX-VCS401) to enable sending images in Full HD resolution (Page 108).
- When **"Full HD"** is selected, if the other party has a low bandwidth, the display resolution may be lower than when **"HD"** or **"Auto"** is selected.
- When making a 3-party video conference call, the main video camera will be automatically set to **"HD"**, even if you have specified **"Full HD"**.

- When making a 4-party video conference call, the main video camera and sub video camera will be automatically set to **"HD"**, even if you have specified **"Full HD"**.
- When **"Video Quality"** is set to **"Sharpness"**, only **"Full HD"** and **"Auto"** can be selected.
- The value that you select here does not influence the unit's operation when you connect to an MCU or non-Panasonic video conference system.

"Quality of Service": Use **[◄][►]** to select between prioritising sound or images when bandwidth is low or the network is congested.

– **"Audio"** (default): When bandwidth is low sound quality is prioritised, and when the network is congested sound disturbance is reduced.
– **"Video"**: Even when bandwidth is low or the network is congested, image quality is prioritised.

Note

- The value that you select here does not influence the unit's operation when you connect to an MCU or non-Panasonic video conference system.
- If one of the other parties is using a software version older than 2.30 (not including 2.30), **"Audio"** will be selected.

"Audio only mode": Use **[◄][►]** to select whether to use only audio communication (Audio-only mode) in periods of network congestion. When in Audio-only mode, your image is not sent to the other party. Instead, a blue screen is sent.

– **"ON"**: Communication will become audio only if there is network congestion.
– **"OFF"** (default): Communication will not become audio only, even if there is network congestion.

Note

- To select **"ON"**, **"Quality of Service"** must be set to **"Audio"**.
- Contents cannot be shared while in Audio only mode.
- The value that you select here does not influence the unit's operation when you connect to an MCU or non-Panasonic video conference system.
- When one of the other parties is using a software version older than 2.30 (not

including 2.30), communication will not become audio only even if **"Audio only mode"** is set to **"ON"**.

• When changing to Audio-only mode, it may take some time for the blue screen to be displayed. Until the blue screen is displayed, the image may become distorted.

"Still image quality": Use **[◀][▶]** to select the display resolution to use when you send still images from the sub video camera to other parties.

– **"Full HD"** (default [for KX-VC600]): The resolution of still images is Full HD.
– **"HD"** (default [for KX-VC300]): The resolution of still images is HD.

Note

• The value that you select here does not influence the unit's operation when you connect to an MCU or non-Panasonic video conference system.
• If the network has low bandwidth and a high rate of packet loss, selecting **"HD"** is recommended. For details, contact your dealer.
• If you are using the KX-VC300, **"Full HD"** can only be selected after purchasing an activation key card (KX-VCS401) to enable sending images in Full HD resolution (Page 108).
• During a 4-party video conference call, the display resolution will be **"HD"**, even if you have specified **"Full HD"**.

"Default MIC Mute set": Use **[◀][▶]** to select whether to mute the microphone(s) at the start of a received video conference call.

– **"ON"**: Mutes the microphone(s).
– **"OFF"** (default): Does not mute the microphone(s).

"Call Limit time": Enter the maximum length of time for the duration of a video conference call (in hours and minutes).

Note

• If you set 0 hours 0 minutes (default), the call time is unlimited.
• If the duration of a video conference call exceeds the specified length of time, the call will be automatically disconnected.

"MIC detection": Use **[◀][▶]** to select whether to enable the detection of the connection status of the Boundary Microphones or headset.

– **"ON"** (default): Enables the detection of Boundary Microphones or headset.
– **"OFF"**: Disables the detection of Boundary Microphones or headset.

Note

• When not using Boundary Microphones or headset, set this to **"OFF"**.

"Network Connection Status": Use **[◀][▶]** to select whether to display the network status indication.

– **"ON"** (default): Displays the network status indication.
– **"OFF"**: Hides the network status indication.

"Active call Menu": Use **[◀][▶]** to select whether to display the guide when a video conference call begins.

– **"ON"** (default): Displays the guide.
– **"OFF"**: Hides the guide.

"Noise reduction" (KX-VC600 only): Use **[◀] [▶]** to select whether to enable noise reduction when a video conference call begins.

– **"ON"**: Enables noise reduction.
– **"OFF"** (default): Disables noise reduction.

"Displays combined screen" (KX-VC600 only): Use **[◀][▶]** to select whether to enable the combined screen function when displaying a computer's screen.

– **"ON"** (default): Enables the combined screen function.
– **"OFF"**: Disables the combined screen function.

"Receive H.239 Call": Use **[◀][▶]** to select **"ON"** (default) or **"OFF"**.
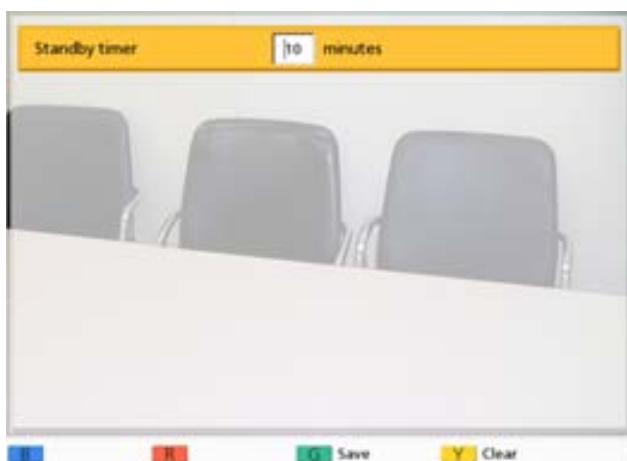
Note

• To select **"ON"**, **"H.323"** must be set to **"ON"** (Page 102).

5. Press **[G]**.
   • A dialogue box to confirm the saving of settings is displayed.

6. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
   • The system settings screen is displayed.

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

Making Screen Standby Settings

When the remote control is not operated or a video conference call is not received for a specified length of time, the unit enters standby mode. You can set the length of time here.

1. Press **[Menu]**.
   • The Menu screen is displayed.

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

3. Use **[▲][▼]** to select **"Standby Setting"** and press **[Enter]**.
   • The screen standby settings screen is displayed.

4. Enter the length of time (**0**–**99**) in minutes until the unit enters screen standby mode (default: **10**).

   Note
   • If you set **"0"**, the unit will not enter screen standby mode automatically. However, if you press the remote control's **[Video Out On/Off]** button, the unit will enter screen standby mode even if **"0"** is set.

5. Press **[G]**.
   • A dialogue box to confirm the saving of settings is displayed.

6. Use **[◄][►]** to select **"Yes"** and press **[Enter]**.
   • The system settings screen is displayed.

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

Making Sound Settings

1. Press **[Menu]**.
   • The Menu screen is displayed.

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

3. Press **[►]**.
   • The second page is displayed.

4. Use **[▲][▼]** to select **"Sound Settings"** and press **[Enter]**.
   • The sound settings screen is displayed.

5. Use **[▲][▼]** to select the following items for input:
   "Welcome Screen Vol.": Press **[Enter]** and use **[▲][▼]** to select the volume level (**"OFF"**, **"Low"**, **"Medium"** [default] or **"High"**) played at the start-up.
   "Ringback Tone Vol.": Press **[Enter]** and use **[▲][▼]** to select the volume level (**"OFF"**, **"Low"**, **"Medium"** [default] or **"High"**) of an outgoing call ring.

   Note
   • The volume level of the busy tone will be the same level as the ring back tone.

   "Ring Tone Vol.": Press **[Enter]** and use **[▲][▼]** to select the volume level (**"OFF"**, **"Low"**,

"Medium" [default] or **"High"**) of an incoming call ring.

"Default Sound Lev.": Use **[◀][▶]** to select the volume level (**0**–**20**) at the start of a video conference call (default: **16**).

"Sound Pre-sets": Press **[Enter]** and use **[▲]** **[▼]** to select the tone (**"More Highs"**, **"Standard"** [default], **"More Lows"**, **"Voice"** or **"Music"**) at the start of a video conference call (Page 67).

Note

- You can listen to a sample of the following items by pressing **[R]**.
  - **"Welcome Screen Vol."**
  - **"Ringback Tone Vol."**
  - **"Ring Tone Vol."**

6. Press **[G]**.
   - A dialogue box to confirm the saving of settings is displayed.

7. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
   - The system settings screen is displayed.

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

Setting the MIC Position (KX-VC600 only)

You can specify where a Digital Boundary Microphone is conceptually positioned relative to the display. When sounds are transmitted to another party, they are played in accordance with the specified positions, which creates a stereo environment.

Setting the MIC Position automatically

1. Press **[Menu]**.
   - The Menu screen is displayed.

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

3. Press **[▶]**.
   - The second page is displayed.

4. Use **[▲][▼]** to select **"MIC Setting"** and press **[Enter]**.
   - The auto settings screen is displayed.

Note

- If the manual settings screen is displayed, press **[B]** to return to the auto settings screen.

5. Press **[G]**.
   - A dialogue box to confirm the saving of settings is displayed.

6. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
   - The system settings screen is displayed.

Note

- Depending on how many Digital Boundary Microphones are connected, the output settings differ as follows:
  - 2 or more Digital Boundary Microphones: Monaural output
  - 1 Digital Boundary Microphone: Stereo output
- When using Digital Boundary Microphones and an Analogue Boundary Microphone together, the output for all Boundary Microphones will be monaural.

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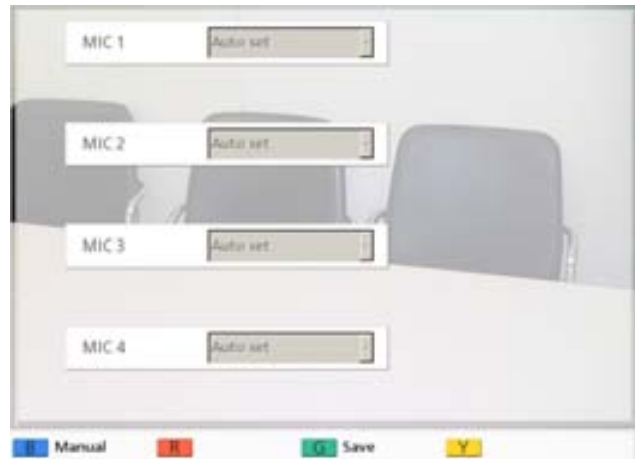   - The Home screen is displayed.

Setting the MIC Position manually

1. Press **[Menu]**.
   - The Menu screen is displayed.

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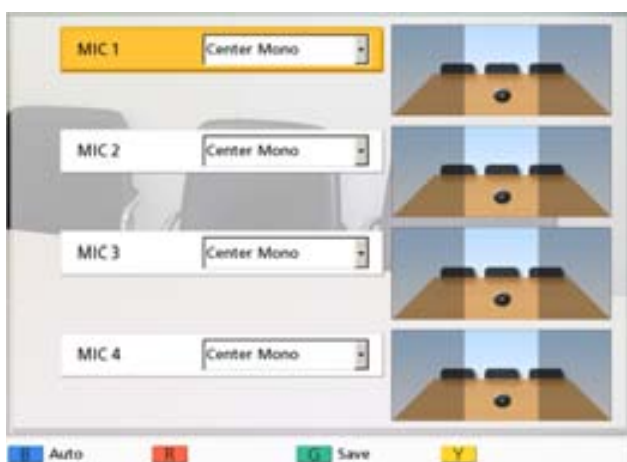   • The system settings screen is displayed.

3. Press **[▶]**.
   • The second page is displayed.

4. Use **[▲][▼]** to select **"MIC Setting"** and press **[Enter]**.
   • The auto settings screen is displayed.

   Note
   • If the manual settings screen is displayed, proceed to step **6**.

5. Press **[B]**.
   • The manual settings screen is displayed.

6. Use **[▲][▼]** to select the Digital Boundary Microphone you want to configure and press **[Enter]**.

7. Use **[▲][▼]** to select the Digital Boundary Microphone's relative position.
   "Left side": Sounds on left side are played.
   "Right side": Sounds on right side are played.
   "Center Mono": All sounds are played through both the left and right speakers at the same volume.
   "Center stereo": Sounds centred on the microphone are played through both the left and right speakers at the same volume.

   Note
   • When a Digital Boundary Microphone is set to **"Center stereo"**, make sure that it is placed with its connector facing the display.

   • When using Digital Boundary Microphones and an Analogue Boundary Microphone together, the output settings differ as follows:
     – Digital Boundary Microphones: Manually set output
     – Analogue Boundary Microphone: Monaural output
   • For the settings shown in the following diagrams, the left/right channels are displayed as viewed from the side of the main video camera.

Here are examples of the relative position of Digital Boundary Microphones.
When setting Digital Boundary Microphones in a row perpendicular to the display:
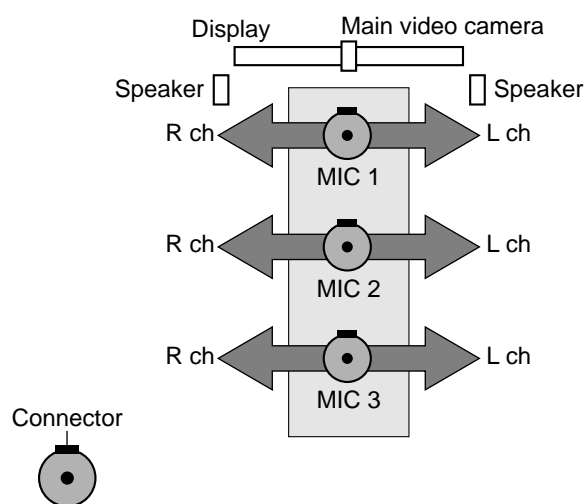
MIC 1: **"Center stereo"**
MIC 2: **"Center stereo"**
MIC 3: **"Center stereo"**

When setting Digital Boundary Microphones parallel with the display:
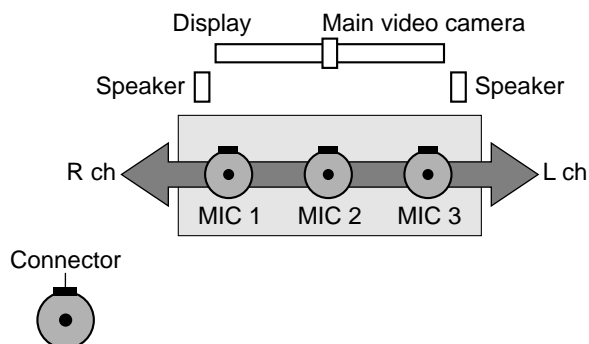
MIC 1: **"Right side"**
MIC 2: **"Center Mono"**
MIC 3: **"Left side"**

When setting Digital Boundary Microphones as follows:
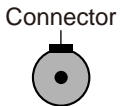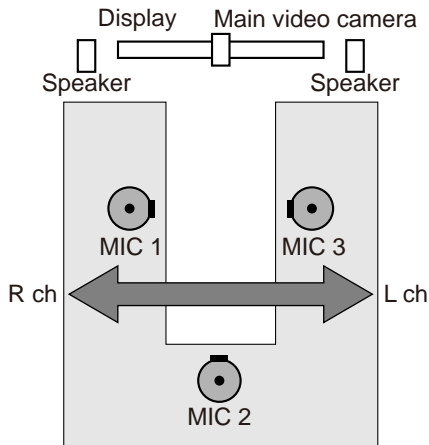
MIC 1: **"Right side"**
MIC 2: **"Center Mono"**
MIC 3: **"Left side"**

<u>Note</u>

- Make some noise near the Digital Boundary Microphone. "▶" is displayed to indicate which Digital Boundary Microphone picks up the noise.
- "▶" is not displayed when the Digital Boundary Microphone is mute.
- "▶" is not displayed when multiple Digital Boundary Microphones pick up the sound at the same time.
- When the Digital Boundary Microphone is mute, the sound made by pressing the MIC Mute button might make "▶" appear.

8. Press **[G]**.
   - A dialogue box to confirm the saving of settings is displayed.

9. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
   - The system settings screen is displayed.

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

<u>Note</u>

- Do not move Digital Boundary Microphones after completing settings. Otherwise the

settings will not match the location of the Digital Boundary Microphone.

Making Remote Control Settings

You can specify a remote control ID from 1, 2, or 3 for both the remote control and the unit. The unit responds to signals from any remote control with the same remote control ID as itself. If you do not specify an ID, the unit responds to signals from all remote controls. You can confirm the remote control ID for the unit on the Home screen (Page 27).

1. Press **[Menu]**.
   - The Menu screen is displayed.

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

3. Press **[▶]**.
   - The second page is displayed.

4. Use **[▲][▼]** to select **"Remote Ctrl ID"** and press **[Enter]**.
   - The remote control settings screen is displayed.

5. Use **[▲][▼]** to select the following items for input:
   "Remote ID enable": Use **[◀][▶]** to select **"ON"** or **"OFF"** (default).
   - When **"ON"** is selected, you can set a specific remote control ID for the unit.
   - When **"OFF"** is selected, the unit will respond to all remote controls.

**"Remote control ID"**: Use **[◀][▶]** to select a remote control ID (**"ID1"** [default]/**"ID2"**/**"ID3"**) for the unit.
"Check ID mismatch": Use **[◀][▶]** to select **"ON"** (default) or **"OFF"**.

- When **"ON"** is selected, if the unit receives a signal from a remote control that has an ID different from the one specified on the Home screen, a warning is displayed. Follow the procedures on the screen to change the remote control ID.
- When **"OFF"** is selected, even if the unit receives a signal from a remote control that has an ID different from the one specified, no warning is displayed on the Home screen.

Note

- If multiple remote controls with assigned IDs are being used close together, it is recommended that you select **"OFF"** for **"Check ID mismatch"**.

6. Press **[G]**.
   - A dialogue box to confirm the saving of settings is displayed.

7. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.

8. **When "Remote ID enable" is set to "ON" (Page 94):**
   The dialogue box for changing the ID of the remote control is displayed. Proceed to step **9**.
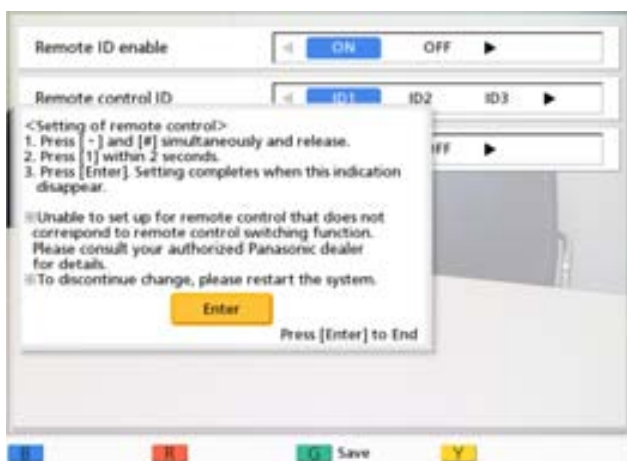
Note

- While the dialogue box is displayed, video conference calls cannot be received.

When "Remote ID enable" is set to "OFF" (Page 94):
The system settings screen is displayed. Press **[Home]** to return to the Home screen.

9. Use the following procedure to change the ID of the remote control.
   1. Press and hold **[·]** and **[#]** at the same time.
   2. Within 2 seconds after you release the buttons, press the number (**1** to **3**) corresponding to the ID that you specified for **"Remote control ID"** in step **4**.
      - **1**: ID1
      - **2**: ID2
      - **3**: ID3

10. Press **[Enter]**.
    - The dialogue box disappears and the remote control ID of the unit will be saved.

Note

- If the dialogue box does not disappear, repeat the procedure above, several times if necessary. If the dialogue box still does not disappear, turn the power off and then back on to cancel the settings. For details, contact your dealer.

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

Making Language Settings

1. Press **[Menu]**.
   - The Menu screen is displayed.

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

3. Press **[▶]**.
   - The second page is displayed.

4. Use **[▲][▼]** to select **"Language Setting"** and press **[Enter]**.
   • The language settings screen is displayed.
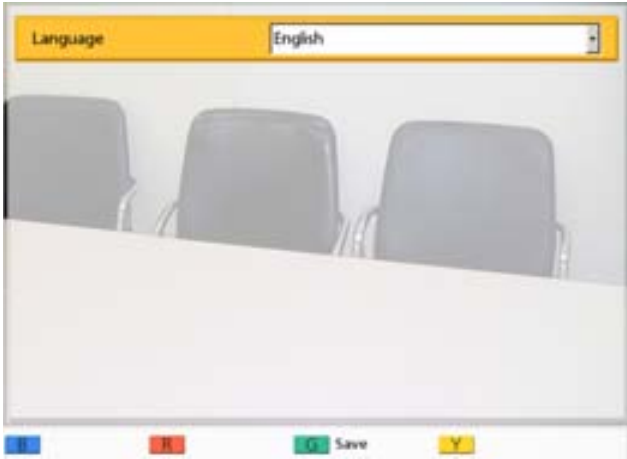
5. Press **[Enter]** and use **[▲][▼]** to select the desired language (**"简体中文"** [default], **"English"**, **"日本語"**).

6. Press **[Enter]**.

7. Press **[G]**.
   • A dialogue box to confirm the saving of settings is displayed.

8. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
   • The system settings screen is displayed in the selected language.

   Note
   • If you accidentally choose the wrong language, follow the steps below to change the language setting.
     1. Press **[Home]**.
     2. Press **[Menu]**.
     3. Press **[▼]** four times to select the fifth item from the top, press **[Enter]**.
     4. Press **[▶]**.
        • The second page is displayed.
     5. **For KX-VC300:**
        Press **[▼]** twice to select the third item from the top, press **[Enter]**.
        For KX-VC600:
        Press **[▼]** three times to select the fourth item from the top, press **[Enter]**.
        • The language settings screen is displayed.
     6. Repeat the procedure from step **5**.

9. Press **[Home]**.
   • The Home screen is displayed.

Making Multicast Setting

Note
   • This setting should not be changed by the user.

Changing Video Camera Settings

1. Press **[Menu]**.
   • The Menu screen is displayed.

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

3. Press **[▶]** twice.
   • The third page is displayed.

4. Use **[▲][▼]** to select **"Camera Settings"** and press **[Enter]**.
   • The video camera settings screen is displayed.
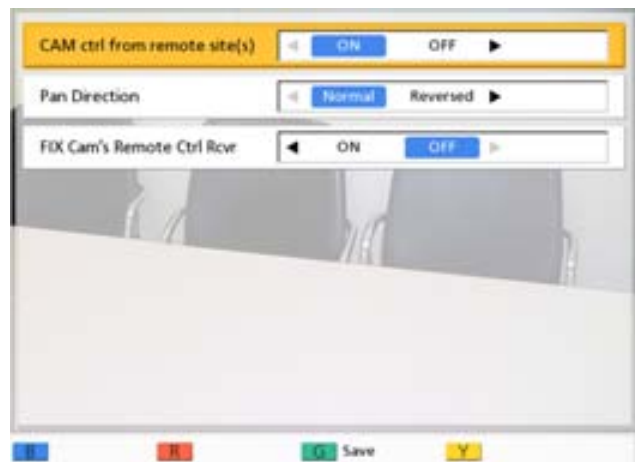
5. Use **[▲][▼]** to select the following items for input:
   "CAM ctrl from remote site(s)": Use **[◀][▶]** to select whether to allow the other party to control your video camera.
   – **"ON"**: Allows the other party to control your video camera.
   – **"OFF"** (default): Prevents the other party from controlling your video camera.

"Pan Direction": Use **[◀][▶]** to select the direction in which the video camera will move when the buttons on the remote control are pressed.

– **"Normal"** (default): The video camera will move in the left/right direction, as viewed from the video camera.
– **"Reversed"**: The video camera will move in the left/right direction, as viewed from the subject.

"FIX Cam's Remote Ctrl Rcvr": Use **[◀][▶]** to select whether the FIX camera or the unit will receive commands from the remote control.

– **"ON"**: The FIX camera will receive commands from the remote control.
– **"OFF"** (default): The unit will receive commands from the remote control.

Note

• If a FIX camera is not connected or depending on the model of the FIX camera, the unit will receive commands from the remote control even if **"ON"** is selected.

Performing System Maintenance

Display Unit Information

You can view the setting information for the unit.

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 **"System Info."** and press **[Enter]**.
   • The unit information screen is displayed (Page 79).

5. Press **[Home]**.
   • The Home screen is displayed.

Checking Enhanced Features

You can check which features have been activated due to software enhancement (Page 108).

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 **"Enhancement"** and press **[Enter]**.
   - The enhanced feature confirmation screen is displayed.

MPR ID	: 1234-5678-90AB-CDEF
Activated Features	: None

Note
   - For details about **"Activated Features"**, refer to Page 109.

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

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.

IP Address	

| | R Start | G | Y Clear |

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.

Performing Remote Maintenance

The following operation is for performing remote maintenance by your dealer. After performing the operation, you cannot use the unit until remote maintenance is finished. However, turning the power off and then back on cancels remote maintenance, and you can use the unit. For details, contact your dealer.

1. Press **[Menu]**.
   - The Menu screen is displayed.

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

3. Press **[▶]** four times.
   - The fifth page is displayed.

4. Use **[▲][▼]** to select **"Remote access"** and press **[Enter]**.
   - The dialogue box confirming whether you want to start remote maintenance is displayed.

5. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
   - The remote maintenance screen is displayed.
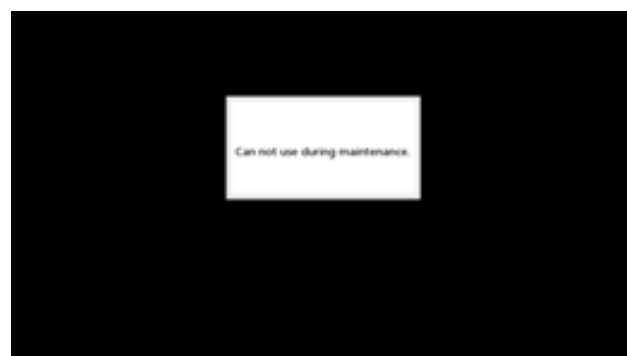
Displaying the Licence Information

You can display information about the licence and Open Source Software.
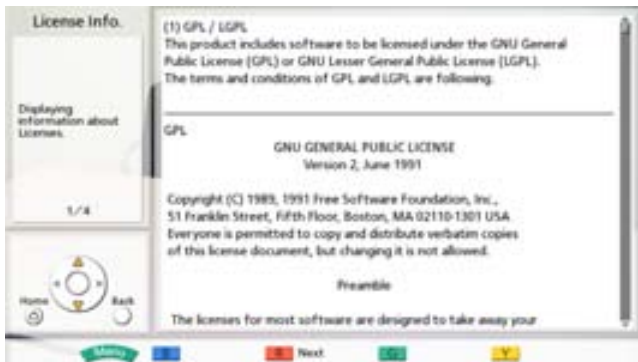1. Press **[Menu]**.
   • The Menu screen is displayed.

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

3. Press **[▶]** four times.
   • The fifth page is displayed.

4. Use **[▲][▼]** to select **"License Info."** and press **[Enter]**.
   • The licence information display screen is displayed.

   • Press **[Back]** to return to the menu screen.

Displaying the End-User Licence Agreement

You can display information about the End-User Licence Agreement.
1. Press **[Menu]**.
   • The Menu screen is displayed.

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

3. Press **[▶]** four times.
   • The fifth page is displayed.

4. Use **[▲][▼]** to select **"EULA"** and press **[Enter]**.
   • The End-User Licence Agreement display screen is displayed.

   • Press **[Back]** to return to the menu screen.

Making Administrator Menu Settings

Note

- If a video conference call is received while data is being entered, a dialogue box to confirm if you answer a video conference call is displayed. Use **[◀][▶]** to select **"Yes"** or **"No"** and press **[Enter]**.
  - When **"Yes"** is selected, you can answer a video conference call while any unsaved data is lost.
  - When **"No"** is selected, you can continue entering the data.

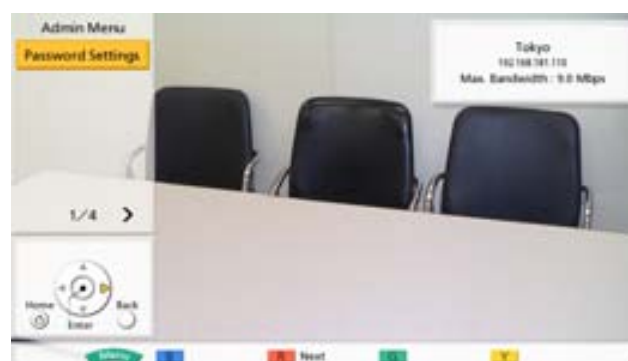## Logging in to the Administrator Menu

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 **"Admin login"** and press **[Enter]**.
   - The login screen is displayed.
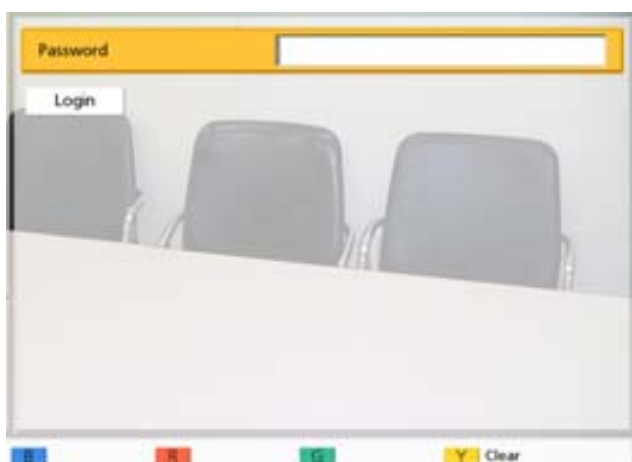
5. Use **[▲][▼]** to select **"Password"**, then enter the administrator password (4–10 digits).

   Note

   - Please enter the administrator password that was set during installation.
   - If you forget the administrator password, please contact your dealer.

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

Making Administrator Password Settings

1. Login to the administrator menu (Page 101).
   - The admin menu screen is displayed.

2. Use **[▲][▼]** to select **"Password Settings"** and press **[Enter]**.
   - The password settings screen is displayed.

3. Use **[▲][▼]** to select the following items and enter a password (4–10 digits):
"Current password": Enter the current password (default: 00000000).
"New password": Enter the new password.
"Retype new password": Enter the new password again.

Note

- Please change the default login password the first time the unit is installed.
- Be sure to keep the password safe.

4. Press **[G]**.
- A dialogue box to confirm the changing of settings is displayed.

5. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
- The admin menu screen is displayed.

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

Making Call Type Settings

1. Login to the administrator menu (Page 101).
- The admin menu screen is displayed.

2. Press **[▶]**.
- The second page is displayed.

3. Use **[▲][▼]** to select **"Call Type Settings"** and press **[Enter]**.
- The call type settings screen is displayed.

4. Use **[▲][▼]** to select the following items for input:
"SIP": Use **[◀][▶]** to select **"ON"** (default) or **"OFF"**.

Note

- When **"OFF"** is selected, you cannot use a SIP server even if **"ON"** is set to **"SIP Server"** (Page 103).
- If the other party is using a software version older than 3.00 (not including 3.00), you cannot make a video conference call using H.323. You must select **"ON"**.

"H.323": Use **[◀][▶]** to select **"ON"** (default) or **"OFF"**.

Note

- When **"OFF"** is selected, you cannot use a gatekeeper and H.460 even if **"ON"** is selected for **"Gatekeeper"** and **"H.460"** (Page 104).

"Default Call Type": Use **[◀][▶]** to select **"SIP"** (default) or **"H.323"**.

Note

- The call type that you select here will be reflected in the information displayed on the Home screen and in the default value of the call type when making a video conference call.

Making SIP Settings

When using a SIP server over an intranet, video conference calls can be made using SIP URIs (SIP user name@SIP domain name).

Note

- These settings can only be made when **"SIP"** is set to **"ON"** on the call type settings screen.
- Video conference calls to an MCU or a non-Panasonic video conference system through a SIP server using a SIP URI are not guaranteed.
- When connecting to an MCU by entering the MCU's conference room number@IP address, **"SIP Server"** and **"Gatekeeper"** (Page 104) must be set to **"OFF"**.
- If video conference calls cannot be made because there is a problem with the SIP server, the SIP settings are incorrect (on the server, or on the unit), etc., **"Not registered"** will be displayed on the Home screen instead of the

SIP user name. In this case, you cannot make calls using either IP addresses or SIP. Contact your network administrator.

1. Login to the administrator menu (Page 101).
   - The admin menu screen is displayed.

2. Press **[▶]**.
   - The second page is displayed.

3. Use **[▲][▼]** to select **"SIP Settings"** and press **[Enter]**.
   - The SIP setting screen is displayed.
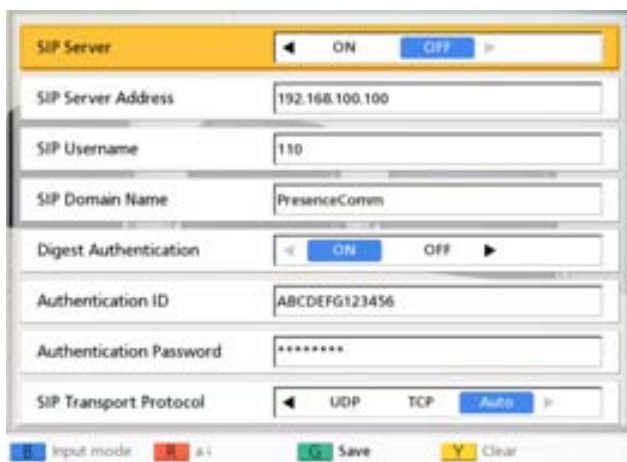
4. Use **[▲][▼]** to select the following items for input:
   "SIP Server": Use **[◀][▶]** to select **"ON"** or **"OFF"** (default).

   Note
   - To communicate using a SIP server, **"ON"** must be selected and **"SIP Server Address"**, **"SIP Username"**, and **"SIP Domain Name"** must be set.
   - To select **"ON"**, **"Gatekeeper"** (Page 104) must be set to **"OFF"**.

   "SIP Server Address": Enter the SIP server's 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]

   "SIP Username": Enter the SIP user name. Alphanumeric characters and the symbols **. = * + _ - $ ~ ! ? / ' ( )** can be entered (up to 60 characters).

"SIP Domain Name": Enter the SIP domain name. Alphanumeric characters and the symbols **.** and **-** can be entered (up to 128 characters).

Note
- Enter a standards-compliant value. For details, contact your network administrator.

"Digest Authentication": Use **[◀][▶]** to select whether to enable digest authentication.
– **"ON"**: Enables digest authentication.
– **"OFF"** (default): Disables digest authentication.

"Authentication ID": Enter an authentication ID (1–60 characters [alphanumeric, space, symbols]) (Page 116). **&**, **<**, **>**, comma (**,**), double quotation mark (**"**) cannot be entered.

"Authentication Password": Enter an authentication password (0–60 characters [alphanumeric, space, symbols]) (Page 116). **&**, **<**, **>**, comma (**,**), double quotation mark (**"**) cannot be entered.

Note
- To communicate using a SIP server, **"ON"** must be selected and **"SIP Server Address"**, **"SIP Username"**, and **"SIP Domain Name"** must be set. For details, contact your network administrator.
- **"Authentication ID"** and **"Authentication Password"** can only be set when **"Digest Authentication"** is set to **"ON"**.
- While being entered, the characters of the authentication password are displayed, but once the settings are saved, all the characters will be displayed as asterisks (*), and you will no longer be able to check the authentication password on the screen. Record the authentication password beforehand, and store it in a safe location.
- When the authentication password is displayed as asterisks (*), pressing **[Y]** deletes the entire authentication password.

"SIP Transport Protocol": Use **[◀][▶]** to select between protocols (**UDP**, **TCP**, or **Auto** [default]) used when communicating via SIP.

Note
- When **"Auto"** is selected, if using a SIP server, TCP will be used for communication, and if using an IP address or MCU's conference room number@IP address, UDP will be used for communication. Normally, select **"Auto"**.

5. Press **[G]**.
- A dialogue box to confirm the saving of settings is displayed.

6. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
- The admin menu screen is displayed.

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

Making H.323 Settings

Note
- These settings can only be made when **"H.323"** is set to **"ON"** on the call type settings screen.
- When connecting to an MCU by entering the MCU's conference room number@IP address, **"SIP Server"** (Page 103) and **"Gatekeeper"** must be set to **"OFF"**.
- If video conference calls cannot be made because there is a problem with the gatekeeper and H.460 server, the H.323 settings are incorrect (on the gatekeeper and the H.460 server, or on the unit), etc., **"Not registered"** will be displayed on the Home screen instead of the H.323 extension/H.323 name. In this case, you cannot make calls using either IP addresses or the gatekeeper and H.460 server. Contact your network administrator.

1. Login to the administrator menu (Page 101).
- The admin menu screen is displayed.

2. Press **[▶]**.
- The second page is displayed.

3. Use **[▲][▼]** to select **"H.323 Settings"** and press **[Enter]**.
- The H.323 settings screen is displayed.

4. Use **[▲][▼]** to select the following items for input: **"Gatekeeper"**: Use **[◀][▶]** to select **"ON"** or **"OFF"** (default).

Note
- This setting is available only when **"ON"** is selected for **"H.323"** (Page 102) and **"OFF"** is selected for **"SIP Server"** (Page 103).

"Gatekeeper Address": Enter the gatekeeper's 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]

"H.323 Name": Enter the H.323 name. Alphanumeric characters and the symbols **. = * + _ - $ ~ ! ? / ' ( )** can be entered (up to 60 characters).
"H.323 Extension": Enter the H.323 extension. Numeric characters and the symbols **#** and ***** can be entered (up to 20 characters).

Note
- Enter a standards-compliant value. For details, contact your network administrator.

"Authentication": Use **[◀][▶]** to select whether to enable authentication.
– **"ON"**: Enables authentication.
– **"OFF"** (default): Disables authentication.

"Authentication ID": Enter an authentication ID (1–60 characters [alphanumeric, space, symbols]) (Page 116). **&**, **<**, **>**, comma (**,**), double quotation mark (**"**) cannot be entered.
"Authentication Password": Enter an authentication password (0–60 characters [alphanumeric, space, symbols]) (Page 116). **&**, **<**, **>**, comma (**,**), double quotation mark (**"**) cannot be entered.

Note

- **"Authentication ID"** and **"Authentication Password"** can only be set when **"Authentication"** is set to **"ON"**.
- While being entered, the characters of the authentication password are displayed, but once the settings are saved, all the characters will be displayed as asterisks (*), and you will no longer be able to check the authentication password on the screen. Record the authentication password beforehand, and store it in a safe location.
- When the authentication password is displayed as asterisks (*), pressing **[Y]** deletes the entire authentication password.

"H.460": Use **[◄][►]** to select **"ON"** or **"OFF"** (default).

- This setting is available only when **"OFF"** is selected for **"Static NAT"** (Page 105) and **"ON"** is selected for **"Gatekeeper"**.
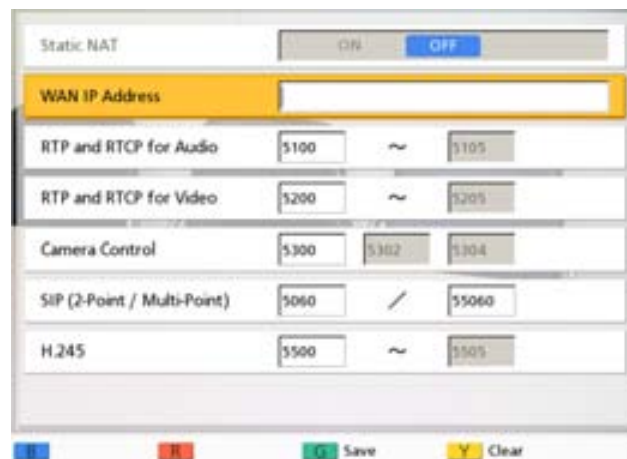
Making Static NAT Settings

Note

- To change the static NAT settings, it is necessary to configure system settings, including the port number settings. For details, contact your dealer.
- This setting is available only when **"IP Address"** is set to **"Manual"** in **"Network Settings"** (Page 87).

1. Login to the administrator menu (Page 101).
   - The admin menu screen is displayed.

2. Press **[►]**.
   - The second page is displayed.

3. Use **[▲][▼]** to select **"Static NAT Settings"** and press **[Enter]**.
   - The Static NAT settings screen is displayed.

4. Use **[▲][▼]** to select the following items for input:
   "Static NAT": Use **[◄][►]** to select **"ON"** or **"OFF"** (default).

Note

- To select **"ON"**, **"H.460"** must be set to **"OFF"** on the H.323 settings screen (Page 105).
- When **"ON"** is selected, the IP address of the WAN side will be displayed for the unit information on the Home screen (Page 27).

"WAN IP Address": Enter the WAN IP address of the router.

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]

"RTP and RTCP for Audio": Enter the initial port number (**5100**–**5194**) for RTP and RTCP for Audio (default: **5100**).
"RTP and RTCP for Video": Enter the initial port number (**5200**–**5294**) for RTP and RTCP for Video (default: **5200**).
"Camera Control": Enter the initial port number (**5300**–**5394**) for controlling a video camera (default: **5300**).
"SIP (2-Point)": Enter the port number for 2-party video conference calls (**5000**–**5099**) for communication using a SIP server (default: **5060**).

Note

- If the port number is changed, the IP address and the changed port number (IP address: port number) will be displayed for the unit information on the Home screen (Page 27).

"SIP (Multi-Point)": Enter the port number for multiple-party video conference calls (**55000**–**55099**) for communication using a SIP server (default: **55060**).

Note

- This setting cannot be changed when **"SIP"** is set to **"OFF"** on the call type settings screen (Page 102).

"H.245": Enter the initial port number for H.245 (**5500–5595**) (default: **5500**).

Note

- This setting cannot be changed when **"H. 323"** is set to **"OFF"** on the call type settings screen (Page 102).
- For the following items, a number will be automatically added to the initial port number that you enter. The total number indicates the range and values of available port numbers for the items.
  - **"RTP and RTCP for Audio"**
  - **"RTP and RTCP for Video"**
 - **"Camera Control"**
  - **"H.245"**

Making Audio Input Settings

Note

- These settings are for adjusting the input audio handling.
- Changing either of these settings to **"OFF"** may result in degradation of the sound quality during a video conference call.

1. Login to the administrator menu (Page 101).
   - The admin menu screen is displayed.

2. Press **[▶]** twice.
   - The third page is displayed.

3. Use **[▲][▼]** to select **"Audio Input"** and press **[Enter]**.
   - The audio input settings screen is displayed.
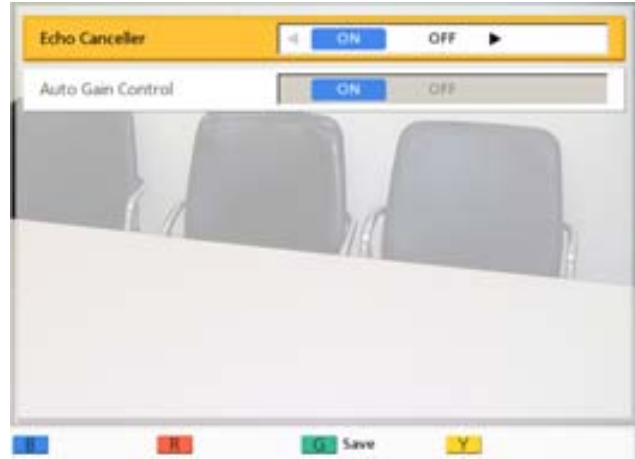
4. Use **[▲][▼]** to select the following items for input:
   "Echo Canceller": Use **[◀][▶]** to select whether to enable the echo canceller feature.
   - **"ON"** (default): Enables the echo canceller feature.
   - **"OFF"**: Disables the echo canceller feature.
   "Auto Gain Control": Use **[◀][▶]** to select whether to enable the auto gain control feature.
   - **"ON"** (default): Enables the auto gain control feature.
   - **"OFF"**: Disables the auto gain control feature.

5. Press **[G]**.
   - A dialogue box to confirm the saving of settings is displayed.

6. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
   - The admin menu screen is displayed.

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

Making HDMI Settings

1. Login to the administrator menu (Page 101).
   - The admin menu screen is displayed.

2. Press **[▶]** twice.
   - The third page is displayed.

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

4. Use **[▲][▼]** to select the following items for input:
"One Touch Play": Use **[◀][▶]** to select **"ON"** or **"OFF"** (default).

Note
- Normally, select **"OFF"**. Changing this settings to **"ON"** may cause the image to change automatically depending on the model of the connected video camera.

"Standby": Use **[◀][▶]** to select **"ON"** or **"OFF"** (default).

Note
- Depending on the connected video camera, changing this settings to **"ON"** may cause the video camera (Main, Sub) to synchronise and enter screen standby mode when the unit enters screen standby mode. Since operation may differ depending on your video camera model, contact your dealer for details.

Saving the Operation Log

The operation log is saved on a USB memory device. The saved operation log can be used to specify the cause when problems occur. For details, contact your dealer.

Note
- 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.
- To re-connect a USB memory device, make sure to fully remove the USB memory device before connecting it again.
- Confirm the USB memory device has sufficient free space (at least 5 MB) before using it.

1. Connect the USB memory device to the USB jack on the back of the unit (Page 16).

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

2. Login to the administrator menu (Page 101).
- The admin menu screen is displayed.

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

4. Use **[▲][▼]** to select **"Save Log"** and press **[Enter]**.
- The save operation log screen is displayed.

5. Press **[Enter]**.
- The operation log will begin saving.

Note

- While the operation log is being saved, do not remove the USB memory device. This could damage the unit or corrupt the data.
- The file saved to the USB memory device will be named "hdvclogall_XXXX.tar". The software version you are using is displayed as "XXXX".

  The file name of the operation log is always the same: "hdvclogall_XXXX.tar". Therefore, each time you save the operation log, previous data on the USB memory device will be overwritten. To keep previously saved data, make a backup of that data before saving the new data.

6. Check the result (successful/failed) and press **[Enter]**.
   - The admin menu screen is displayed.

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

8. Remove the USB memory device.

Note

- 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.

Activating Enhanced Features

You can activate features by enhancing the unit's software. To activate the feature, you must obtain a registration key from your dealer. First, provide your dealer with the Activation Key No. and Registration ID written on the activation key card, and the unit's MPR ID. The dealer will enter this information into the Key Management System and then issue you with the registration key.

To Confirm the MPR ID

1. Login to the administrator menu (Page 101).
   - The admin menu screen is displayed.

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

3. Use **[▲][▼]** to select **"Enhancement"** and press **[Enter]**.
   - The software enhancement screen is displayed. Check the field **"MPR ID"** (❶).

To Register the Registration Key
Registering the registration key you acquired activates the enhanced features.

1. Login to the administrator menu (Page 101).
   - The admin menu screen is displayed.

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

3. Use **[▲][▼]** to select **"Enhancement"** and press **[Enter]**.
   - The software enhancement screen is displayed.
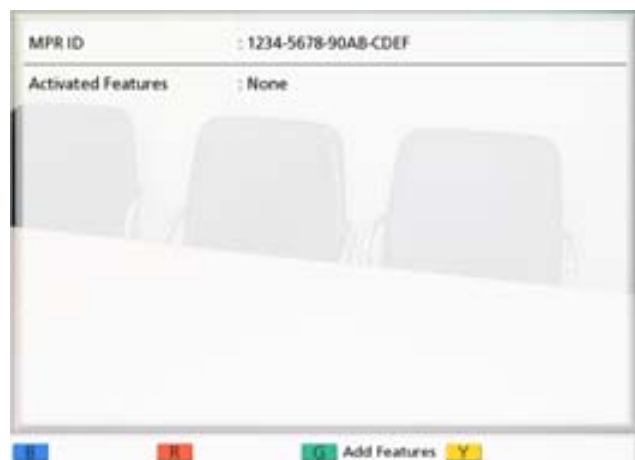
Note

- Features that have already been activated are displayed in **"Activated Features"**, as follows:
  – **"4-Point Connection"**: The feature for making multiple-party video conference calls is enabled (KX-VC300 only).
  – **"1080 Full HD"**: The feature for sending images in Full HD resolution is enabled (KX-VC300 only).
  – **"None"**: No features have been activated.

4. Press **[G]**.
- The registration key input screen is displayed.
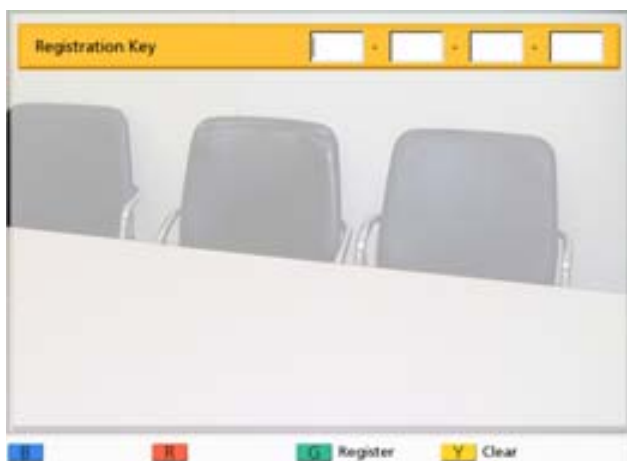
5. Enter the 16-digit registration key.

6. Press **[G]**.
- A dialogue box to confirm the saving of settings and system restart after saving is displayed.

7. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
- The system will automatically restart to reflect changes to system settings.

Note

- If the registration key you entered is invalid, **"Failed Registration Key code authentication."** is displayed. Repeat the procedure from step **5**. If this message is displayed even when you have correctly input the registration key that was issued, contact your dealer.
- Only one registration key can be registered at once. To register multiple registration keys for enabling multiple features, a restart is necessary for each registration.

- Activated features can also be checked on the enhanced feature confirmation screen (Page 97).

Updating Software

Note

- If you want to update software using a USB memory device, connect the USB memory device to the USB jack on the back of the unit in advance (Page 16).
- To update the software, make sure you are using a version later than 3.00 (not including 3.00).

1. Login to the administrator menu (Page 101).
- The admin menu screen is displayed.

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

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

Note

- Contact your dealer for the details.

4. 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 **5** if there is an update available.

5. 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.

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

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

Initialising a Video Camera

Note
• Initialisation is available only for video cameras connected to your unit and only when you are not on a video conference call.
• For details about compatible video camera models, contact your dealer.

1. Login to the administrator menu (Page 101).
   • The admin menu screen is displayed.

2. Press **[▶]** three times.
   • The fourth page is displayed.

3. Use **[▲][▼]** to select **"Camera Initialize"** and press **[Enter]**.
   • The video camera initialisation screen is displayed.
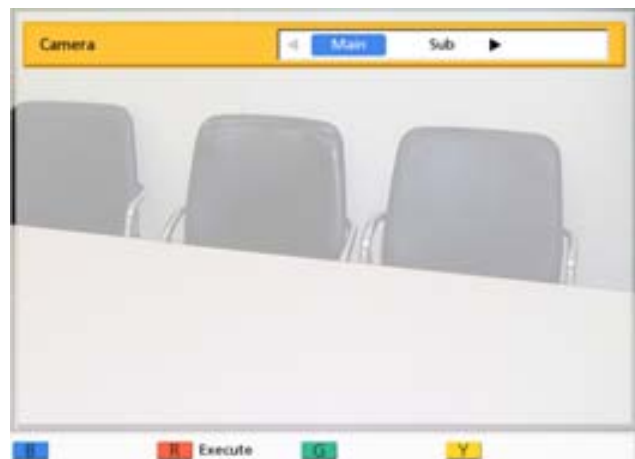
4. Use **[◀][▶]** to select the video camera to be initialised (**"Main"** [default] or **"Sub"**).

5. Press **[R]**.
   • A dialogue box confirming whether you want to start the video camera initialisation is displayed.

6. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
   • After the initialisation is complete, the admin menu screen is displayed.

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

Performing System Initialisation

1. Login to the administrator menu (Page 101).
   - The admin menu screen is displayed.

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

3. Use **[▲][▼]** to select **"System Initialize"** and press **[Enter]**.
   - A dialogue box confirming whether you want to start the system initialisation is displayed.
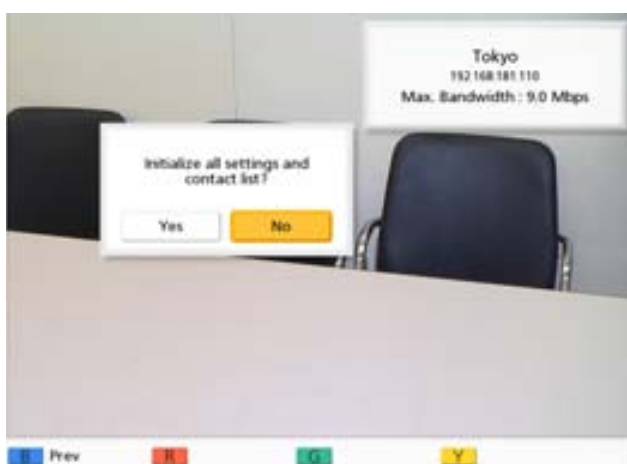
4. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
   - The system will automatically restart to complete the system initialisation.

   Note
   - After initialisation, all system settings previously made and information stored in the contact list and call history are cleared.
   - Features activated due to software enhancement (Page 108) are not cleared.

Making Local Site Settings

You can register up to 10 local sites. The same unit can be used in multiple meeting rooms without the need to change the network settings.

Registering a Local Site

1. Press **[Menu]**.
   - The Menu screen is displayed.

2. Use **[▲][▼]** to select **"Select local site"** and press **[Enter]**.
   - The select local site screen is displayed.

3. Use **[▲][▼]** to select **"Not Registered"** and press **[B]**.
   - The local site settings screen is displayed.
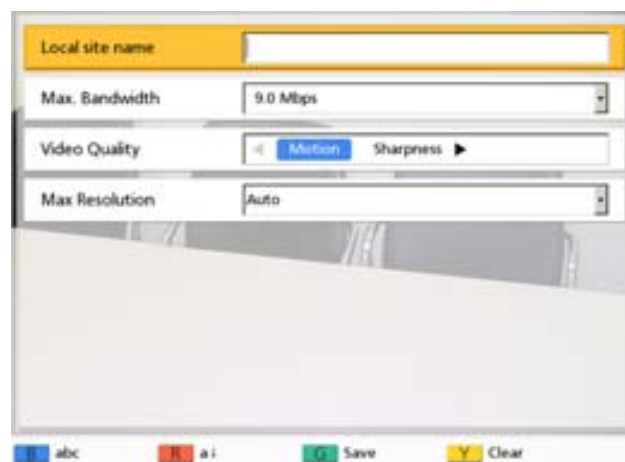
4. Use **[▲][▼]** to select the following items for input:
   - The following items are displayed over 3 pages. To view all the items, press **[R]** to move to the next page, and press **[B]** to move to the previous page.
   - If you press **[G]** on any of three pages, the settings for all the three screens will be saved.

   Note
   - If the required settings are not specified on all of the screens, pressing **[G]** on any of the screens will not save the settings. Save the settings only after you have specified all the required settings. The following settings are required:

– **"Local site name"**
– **"IP Address"** (when **"Manual"** is selected for **"IP Address"**)
– **"Subnet mask"** (when **"Manual"** is selected for **"IP Address"**)
• If you are currently entering **"Local site name"**, the next screen will not be displayed even if you press **[R]**.

"Local site name": Enter a name for the local site.
"Max. Bandwidth": Press **[Enter]** and use **[▲]** **[▼]** to select the maximum allowed bandwidth to be used (**512 kbps**, **768 kbps**, **1.0 Mbps**, **1.2 Mbps**, **1.5 Mbps**, **2.0 Mbps**, **2.5 Mbps**, **3.0 Mbps**, **3.5 Mbps**, **4.0 Mbps**, **4.5 Mbps**, **5.0 Mbps**, **5.5 Mbps**, **6.0 Mbps**, **6.5 Mbps**, **7.0 Mbps**, **7.5 Mbps**, **8.0 Mbps**, **8.5 Mbps**, **9.0 Mbps**, **10.0 Mbps**).

Note

• 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.
• You cannot select a value that is higher than the maximum bandwidth set by the dealer. For details, contact your dealer.
• When you make a 3-party video conference call, select a value of **"1.0 Mbps"** or higher. Otherwise, the image quality and the sound quality cannot be guaranteed.
• When you make a 4-party video conference call, select a value of "**1.5 Mbps**" or higher. Otherwise, the image quality and the sound quality cannot be guaranteed.

"Video Quality": Use **[◄][►]** to select between prioritising smooth movement or image quality for video.
– **"Motion"**: Prioritise smooth movement.
– **"Sharpness"**: Prioritise image quality.

Note

• If you are using the KX-VC300, **"Sharpness"** can only be selected after purchasing an activation key card (KX-VCS401) to enable sending images in Full HD resolution (Page 108).
• If one of the other parties is using a software version older than 2.30 (not including 2.30), **"Motion"** will be selected.
• If **"Max Resolution"** is set to **"HD"**, and **"Video Quality"** is changed from **"Motion"** to **"Sharpness"**, the setting for

"Max Resolution" is automatically changed to **"Auto"**.
• The value that you select here does not influence the unit's operation when you connect to an MCU or non-Panasonic video conference system.

"Max Resolution": Press **[Enter]** and use **[▲]** **[▼]** to select the maximum display resolution of the main video camera and sub video camera used during a video conference call.
– **"Full HD"**: Maximum resolution: 1920 × 1080 (This mode switches the display resolution according to the condition of the network.)
– **"HD"**: Maximum resolution: 1280 × 720 (This mode switches the display resolution according to the condition of the network.)
– **"Auto"**: This mode selects either **"Full HD"** or **"HD"** according to the available bandwidth.

Note

• Selecting **"Auto"** or **"HD"** is recommended.
• If you are using the KX-VC300, **"Auto"** or **"Full HD"** can only be selected after purchasing an activation key card (KX-VCS401) to enable sending images in Full HD resolution (Page 108).
• When **"Full HD"** is selected, if the other party has a low bandwidth, the display resolution may be lower than when **"HD"** or **"Auto"** is selected.
• When making a 3-party video conference call, the main video camera will be automatically set to **"HD"**, even if you have specified **"Full HD"**.
• When making a 4-party video conference call, the main video camera and sub video camera will be automatically set to **"HD"**, even if you have specified **"Full HD"**.
• When **"Video Quality"** is set to **"Sharpness"**, only **"Full HD"** and **"Auto"** can be selected.
• The value that you select here does not influence the unit's operation when you connect to an MCU or non-Panasonic video conference system.

"IP Address": Use **[◄][►]** to select whether the IP address information for the local site (**"IP Address"**, **"Subnet mask"**, **"Default Gateway"**) will be obtained automatically from a DHCP server or will be set manually.
– **"Auto"**: Obtain the IP address information automatically.

– **"Manual"** (default): 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.
- To select **"Auto"**, **"Static NAT"** must be set to **"OFF"**.

"IP Address": Enter the IP address for the local site.
"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]

"SIP Server": Use **[◀][▶]** to select **"ON"** or **"OFF"** (default).
– **"ON"**: You can communicate using a SIP server.
– **"OFF"**: You cannot communicate using a SIP server.

Note

- If SIP settings have not been configured on the SIP settings screen, you cannot select **"ON"** (Page 102). For details, contact your network administrator.
- To select **"ON"**, **"Gatekeeper"** must be set to **"OFF"**.
- If video conference calls cannot be made because there is a problem with the SIP server, the SIP settings are incorrect (on the server, or on the unit), etc., **"Not registered"** will be displayed on the Home screen instead of the SIP user name. In this case, you cannot make calls using either IP addresses or SIP. Contact your network administrator.

"SIP Transport Protocol": Use **[◀][▶]** to select between protocols (**UDP**, **TCP**, or **Auto** [default]) used when communicating via SIP.

Note

- When **"Auto"** is selected, if using a SIP server, TCP will be used for communication, and if using an IP address or MCU's conference room number@IP address, UDP will be used for communication. Normally, select **"Auto"**.

"Gatekeeper": Use **[◀][▶]** to select **"ON"** or **"OFF"** (default).

Note

- To select **"ON"**, **"SIP Server"** must be set to **"OFF"**.
- **"ON"** cannot be selected unless the gatekeeper settings have been made on the H.323 settings screen (Page 104). For details, contact your network administrator.
- If video conference calls cannot be made because there is a problem with the gatekeeper and H.460 server, the H.323 settings are incorrect (on the gatekeeper and the H.460 server, or on the unit), etc., **"Not registered"** will be displayed on the Home screen instead of the H.323 extension/H.323 name. In this case, you cannot make calls using either IP addresses or the gatekeeper and H.460 server. Contact your network administrator.

"H.460": Use **[◀][▶]** to select **"ON"** or **"OFF"** (default).

Note

- To select **"ON"**, **"Gatekeeper"** must be set to **"ON"** and **"Static NAT"** must be set to **"OFF"**.
- **"ON"** cannot be selected unless the gatekeeper settings have been made on the H.323 settings screen (Page 104). For details, contact your network administrator.

"Static NAT": Use **[◀][▶]** to select **"ON"** or **"OFF"** (default).

Note

- To select **"ON"**, **"IP Address"** must be set to **"Manual"** and **"H.460"** must be set to **"OFF"**.
- **"ON"** cannot be selected unless the WAN IP address of the router has been set on the

static NAT settings screen (Page 105). For details, contact your network administrator.

5. Press **[G]**.
   • A dialogue box to confirm the saving of settings is displayed.

6. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
   • The select local site screen is displayed.

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

Selecting a Local Site

1. Press **[Menu]**.
   • The Menu screen is displayed.

2. Use **[▲][▼]** to select **"Select local site"** and press **[Enter]**.
   • The select local site screen is displayed.

Selected	Local site name
	room 1
	room 2
	room 3
	"Not Registered"
	"Not Registered"
	room 6
	room 7
	room 8
	"Not Registered"
	"Not Registered"

| B Edit | R Delete | G Set | Y Release |

3. Use **[▲][▼]** to select the local site you want to use.

   Note
   • For the currently selected local site, **"➡"** is displayed in **"Selected"**.
   • **"Not Registered"** is displayed for sites that have not been registered.
   • When **"SIP"** is set to **"OFF"** on the call type settings screen (Page 102), you cannot select a local site whose SIP server settings have been enabled. You also cannot select a local site whose gatekeeper settings have been enabled if **"H.323"** is set to **"OFF"**.

4. Press **[G]**.
   • A dialogue box to confirm the temporary use of the selected local site is displayed.

5. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
   • The Home screen is displayed.

Note
   • When you select a local site, the name entered in **"Local site name"** is displayed instead of the unit name in the unit information.
   • If you turn the power off and then back on, the local site is returned to the site set on the system settings screen.
   • To return to the site set on the system settings screen, turn off the power and then turn it back on, or use the following procedure:
     1. Repeat steps **1**–**2**.
     2. Use **[▲][▼]** to select the currently selected local site.
     3. Press **[Y]**.
        • A dialogue box to confirm whether you want to return to the site set on the system settings screen is displayed.
     4. Use **[◀][▶]** to select **"Yes"** and press **[Enter]**.
        • The Home screen is displayed.

Editing Local Site Information

1. Press **[Menu]**.
   • The Menu screen is displayed.

2. Use **[▲][▼]** to select **"Select local site"** and press **[Enter]**.
   • The select local site screen is displayed.

3. Use **[▲][▼]** to select the local site you want to edit.

4. Press **[B]**.
  • The local site edit screen is displayed.

Local site name	room 1
Max. Bandwidth	9.0 Mbps
Video Quality	◄ **Motion** Sharpness ►
Max Resolution	Full HD

B abc　　**R** a i　　**G** Save　　**Y** Clear
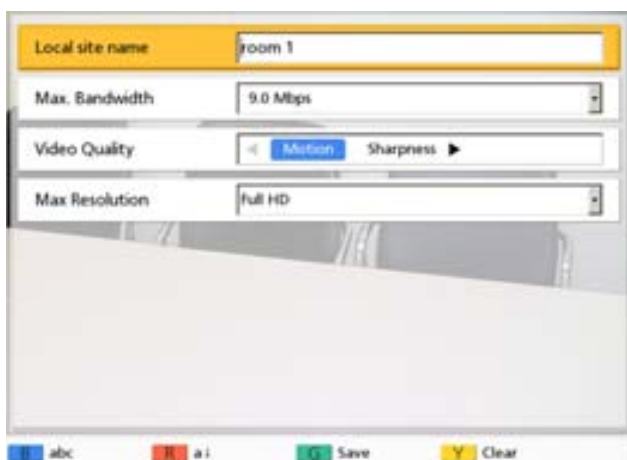
5. Use **[▲][▼]** to select the item you want to edit, and then make any changes.

6. Press **[G]**.
  • A dialogue box to confirm the saving of settings is displayed.

7. Use **[◄][►]** to select **"Yes"** and press **[Enter]**.
  • The select local site screen is displayed.

8. Press **[Home]**.
  • The Home screen is displayed.

Deleting Local Site Information

1. Press **[Menu]**.
  • The Menu screen is displayed.

2. Use **[▲][▼]** to select **"Select local site"** and press **[Enter]**.
  • The select local site screen is displayed.

Selected	Local site name
	room 1
	room 2
	room 3
	"Not Registered"
	"Not Registered"
	room 6
	room 7
	room 8
	"Not Registered"
	"Not Registered"

B Edit　　**R** Delete　　**G** Set　　**Y** Release

3. Use **[▲][▼]** to select the local site you want to delete.

Note
  • When **"SIP"** is set to **"OFF"** on the call type settings screen (Page 102), you cannot select a local site whose SIP server settings have been enabled. You also cannot select a local site whose gatekeeper settings have been enabled if **"H.323"** is set to **"OFF"**.

4. Press **[R]**.
  • A dialogue box to confirm deletion is displayed.

5. Use **[◄][►]** to select **"Yes"** and press **[Enter]**.
  • The select local site screen is displayed.

6. Press **[Home]**.
  • The Home screen is displayed.

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	A B C a b c 2	a b c A B C 2	2
3 DEF	D E F d e f 3	d e f D E F 3	3
4 GHI	G H I g h i 4	g h i G H I 4	4
5 J KL°	J K L j k l 5	j k l J K L 5	5
6 MNO	M N O m n o 6	m n o M N O 6	6
7 P QRS	P Q R S p q r s 7	p q r s P Q R S 7	7
8 TUV	T U V t u v 8	t u v T U V 8	8
9 W XYZ	W X Y Z w x y z 9	w x y z W X Y Z 9	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	aàáâãäåæ bcçAÀÁÂ ÃÄÅÆBC Ç2	AÁÄĄBCĆ Čaáäąbcć č2	aáäąbcćč AÁÄĄBCĆ Č2
3 DEF	DEFdef3	defDEF3	3	DEÈÉÊËF deèéêëf3	deèéêëfD EÈÉÊËF3	DĎEÉĘĚF dďeéęěf3	dďeéęěfD ĎEÉĘĚF3
4 GHI	GHIghi4	ghiGHI4	4	GĞHIÌÍÎÏĨĬ İgğhiìíîïĩĭ 4	gğhiìíîïĩĭı GĞHIÌÍÎÏĨĬİ 4	GHIÍghií4	ghiíGHIÍ4
5 JKL°	JKLjkl5	jklJKL5	5	JKLjkl5	jklJKL5	JKLĹĽŁjkl ĺľł5	jklĺľłJKLĹ ĽŁ5
6 MNO	MNOmno6	mnoMNO6	6	MNÑOÒÓ ÔÕÖØŒ mñńoòóô õöøœ6	mnñoòóôõ öøœMNÑ OÒÓÔÕÖ ØŒ6	MNŃŇOÓ ÖŐmnńňo óöő6	mnńňoóöő MNŃŇOÓ ÖŐ6
7 PQRS	PQRSpqrs7	pqrsPQRS7	7	PQRSŞßp qrsşß7	pqrsşßP QRSŞß7	PQRŔŘSŚ Špqrŕřsśš 7	pqrŕřsśšP QRŔŘSŚŠ 7
8 TUV	TUVtuv8	tuvTUV8	8	TUÙÚÛÜŨ Vtuùúûüũ v8	tuùúûüũv TUÙÚÛÜŨ V8	TŤUÚÜŮŰ Vtťuúüůűv 8	tťuúüůűvT ŤUÚÜŮŰV 8
9 WXYZ	WXYZwxyz9	wxyzWXYZ9	9	WŴXIJYÝ Zwŵxijyŷz 9	wŵxijyŷz WŴXIJYÝ Z9	WXYÝŶZŻ ŽŽwxyŷýz źżž9	wxyỳýzźżž WXYÝŶZŻ 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	アイウエオァィゥェォ	1	1	1
2 ABC	カキクケコ	ABCabc2	abcABC2	2
3 DEF	サシスセソ	DEFdef3	defDEF3	3
4 GHI	タチツテトッ	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	ヤユヨャュョ	TUVtuv8	tuvTUV8	8
9 ᵂ XYZ	ラリルレロ	WXYZwxyz9	wxyzWXYZ9	9
0 ₋	ワヲンヮー（Full-width space）	0（Normal space）	0（Normal space）	0
· @ *	゛（Voicing mark） ゜（Half-voicing mark）	. @ : ; " = * + < >	. @ : ; " = * + < >	. @ : ; " = * + < >
#	. @ : ; " = * + < > # ＿ ー & $ ¥ % ～ ‾ ! ? ／ ‘ ( ) , [ ] { | } '	# _ - & $ \ % ~ ^ ! ? / ` ( ) , [ ] { | } '	# _ - & $ \ % ~ ^ ! ? / ` ( ) , [ ] { | } '	# _ - & $ \ % ~ ^ ! ? / ` ( ) , [ ] { | } '

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
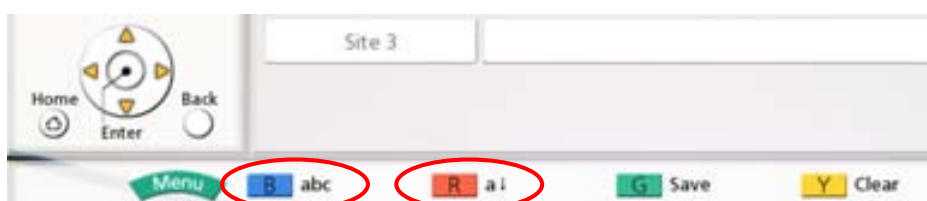
Deleting an Input Character

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.

Changing the Remote Control Batteries

1. Open the cover.
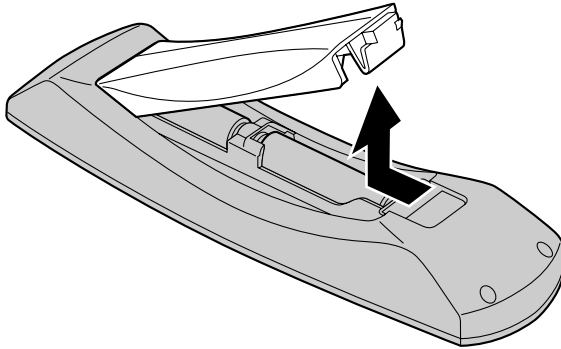
2. Take out the R6 (AA) batteries.
3. Insert new batteries (R6 [AA] dry cell), minus side first, then close the cover.
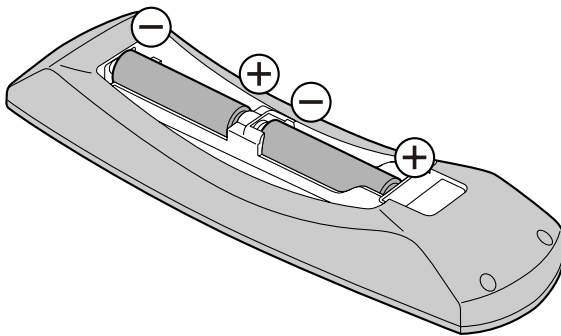
Cleaning the Unit

When cleaning the unit, make sure the power is off and all cables are unplugged. Cleaning the unit while the power is on may cause a malfunction.
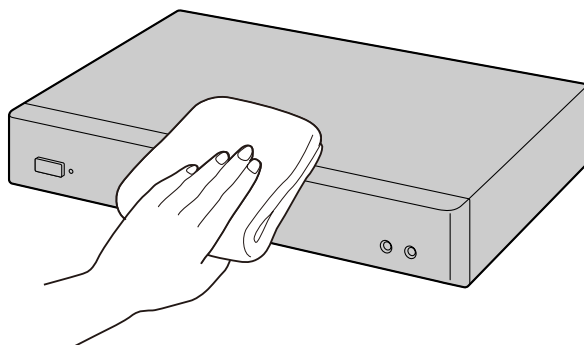
- Wipe the unit with a dry, soft cloth.
  When the unit is very dirty, first clean it with a neutral, household cleaning agent using a well-wrung, damp cloth. Then, wipe down the unit with a dry, soft cloth.
- Do not use the following when cleaning the unit. They may cause unit discolouration or damage.
  - Petroleum
  - Scouring powder
  - Alcohol
  - Thinner
  - Benzine
  - Wax
  - Hot water
  - Powder soap
- If using a chemically treated cleaning cloth, be sure to follow all accompanying directions and warnings.

Troubleshooting

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

Basic Operation

Problem	Cause and Solution
The power does not turn on.	• The power cord is not plugged into the outlet. → Plug the power cord into the outlet.
There is no display.	• A cable or cord is not properly connected. → Check that all cables to the unit are connected properly (Page 16). Perform self diagnosis, and check the performance of the video camera and the display that are connected to the unit (Page 98). • The main video camera is not turned on. → Turn on the main video camera. • The display is not turned on, or the input that the unit is connected to is not selected. → Turn on the display, and select the input that the unit is connected to. • The unit is in screen standby mode. → Pushing a button on the remote control, or receiving a video conference call will end standby mode and the display will return. **Note** • The network administrator can set the length of time until the unit enters screen standby mode (Page 91). • When connecting a device equipped with HDCP (High-bandwidth Digital Content Protection), only a blue or blue/black screen may be displayed. → If an image is not correctly displayed, do not connect an HDCP-equipped device.
The area at the edges of the screen is not displaying properly.	• The display is not set to show the full image. → Set the display to show images at full screen. • 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. → Contact your dealer. **Note** • In **Layout 1** during a 3-party video conference call, the left and right edges of the image are trimmed (Page 47). 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 (Page 50).
The aspect ratio of the image is not correct.	• 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. → Adjust the aspect ratio accordingly (Page 46).

Problem	Cause and Solution
Operation is unresponsive or incorrect.	• Cables or cords may not be connected properly. → Check that all cables to the unit are connected properly (Page 16). • An error has occurred. → Turn off the unit and restart it. • There may be a problem with your communication lines. → Contact your dealer.
The remote control is unresponsive.	• The batteries are depleted. → Replace with new batteries. • The remote control is being used out of the signal reception range. → Make sure to use the remote control within the signal reception range (Page 15). • The remote control ID differs between the unit and the remote control. → Change the settings so that the remote control ID of the unit and the remote control match. Perform the following procedure: **1.** Turn off the unit and restart it. • The Home screen is displayed. Check the remote control ID of the unit (Page 27). **Note** • If the remote control ID is not displayed on the Home screen, contact your dealer. **2.** Press and hold **[·]** and **[#]** at the same time. **3.** Within 2 seconds after you release the buttons, press the number (**1** to **3**) corresponding to the ID displayed on the Home screen. **Note** • If the remote control is still unresponsive after performing the procedure above, contact your dealer. • The FIX camera is set to receive remote control signals. → When using the remote control, be sure to point it at the remote control signal receiver of the FIX camera. → Change the **"FIX Cam's Remote Ctrl Rcvr"** setting to **"OFF"** (Page 97). • The unit is set to receive remote control signals. → When using the remote control, be sure to point it at the remote control signal receiver of the unit (Page 15). → Change the **"FIX Cam's Remote Ctrl Rcvr"** setting to **"ON"** (Page 97).

Problem	Cause and Solution
You cannot control your own video camera (main or sub video camera) with the remote control.	• Your video camera is not a video camera supported by this unit. → Use a video camera that is supported by this unit. For details, contact your dealer. • 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. → Check whether your video camera supports the function you are trying to use. • 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. → Disconnect the HDMI cable of the video camera you cannot control, and then connect that video camera's HDMI cable again.
You cannot control the other party's video camera (main or sub video camera) with the remote control.	• 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 the dealer. • **"CAM ctrl from remote site(s)"** is set to **"OFF"** on the other party's unit (Page 96). → 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.	• The LAN cable is not connected properly. → Check that it is connected to the unit properly (Page 16). Perform a network test by entering the IP address of the other party, and then confirm the connection to the other party (Page 98). • 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 (Page 88, Page 112). If you change your own settings, you should register the new information as a local site (Page 111). • The call type setting is incorrect. → Set the call type setting so that it is the same as the other party's (Page 102). • The SIP settings are incorrect. → Check the SIP settings (Page 102). 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 (Page 103). • 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 (Page 103, Page 113). • The local site settings are incorrect. → Confirm the local site settings. Specify the settings that are appropriate for your usage environment (Page 111). • 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
	• 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"** (Page 102, Page 104). • 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.	• The settings of the switching hub are different to those of the unit. → Contact your dealer. • Packet loss is occurring. (The network is congested.) → Check the display of the network status indication (Page 29). If the icon shows only 0–1 bars continuously, press **[Status]** twice and check the fields **"Loss"** and **"Bandwidth"**, then contact your network administrator or dealer (Page 79). • The maximum bandwidth setting is incorrect. → During a 3-party video conference call, at least 1 Mbps of bandwidth is required. Change the **"Max. Bandwidth"** setting to a value of **"1.0 Mbps"** or higher (Page 88, Page 112). → During a 4-party video conference call, at least 1.5 Mbps of bandwidth is required. Change the **"Max. Bandwidth"** setting to a value of **"1.5 Mbps"** or higher (Page 88, Page 112). → 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.	• 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 your communication lines, contact your dealer.

Problem	Cause and Solution
The computer or sub video camera's video is not displayed.	• Cables or cords may not be connected properly. → Make sure all connections to the unit are correct (Page 68, Page 74). On the Home screen, press **[PC]** or **[Camera Sub]** and then check the computer's screen or sub video camera's image (Page 68, Page 74). • 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 68).
It takes a long time to display a clear image when displaying a still image from the sub video camera.	• Sending a still image requires time. Packet loss is occurring. → Change the **"Still image quality"** setting to **"HD"** (Page 90).

Audio

Problem	Cause and Solution
The other party cannot hear your voice.	• The microphone cable is not properly connected. → Check that the microphone is properly connected to the unit (Page 16). Perform self diagnosis, and check the performance of the microphones that are connected to the unit (Page 98). • 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 (Page 64). • **"Default MIC Mute set"** is set to **"ON"**. → The microphones are muted at the start of a received video conference call. Confirm the settings (Page 90). • 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. • 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.	• You are too far from a microphone. → Speak close to a microphone. • The microphone or 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.	• The unit's volume settings are too low. → Increase the volume level (Page 63). **Note** • You can set the volume level of a video conference call before starting the call. Confirm the settings (Page 92). • 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.	• 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.	• 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.	• The Boundary Microphone cable is not properly connected. → Check that the Boundary Microphone is properly connected to the unit (Page 21).

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.).	• The speakers are not properly positioned. → Position speakers on either side of the display and check that the left/right wiring is correct. 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. • 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. • 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 (Page 92).

System Settings

Problem	Cause and Solution
The settings of the unit cannot be changed.	• A video conference call is in progress. → Make settings after ending the current video conference call. • 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. → 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.

If These Messages Appear

Message	Cause and Solution
Call FAILED. Please change the encryption setting from "On" to "Off" on the other party and try again.	• The encryption settings do not match those of the other party in a video conference call. → Have the other party change the encryption setting from **"ON"** to **"OFF"**.
Check the Main Camera connection.	• A cable or cord is not properly connected. → Check that all cables to the unit are connected properly (Page 16). • The signal input from the main video camera is invalid. → A valid signal cannot be received from the connected main video camera. Contact your dealer.

Message	Cause and Solution
Unable to register, the contact list is full.	• The contact list has reached its maximum capacity. → Delete unneeded contacts (Page 84).
Invalid IP Address.	• The format of the IP address that you entered is invalid. → Enter the IP address correctly, in the format XXX.XXX.XXX.XXX (decimal values separated by periods). For values of only 1 or 2 digits, 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] Multicast or broadcast addresses cannot be used.
Invalid Subnet mask.	• The input subnet mask is invalid. → Enter a valid subnet mask. For values of only 1 or 2 digits, enter these numbers as they are. Do not enter like [.000]. Example: The subnet mask is [255.255.255.0]. – Correct entry: [255.255.255.0] – Wrong entry: [255.255.255.000]
Invalid Default Gateway.	• The input default gateway is invalid. → Enter a valid default gateway. For values of only 1 or 2 digits, enter these numbers as they are. Do not enter like [.001]. Example: The default gateway is [192.168.0.1]. – Correct entry: [192.168.0.1] – Wrong entry: [192.168.000.001]
Invalid Date/Time.	• Enter a date within the valid parameters. → Enter a date between January 1, 2012, and December 31, 2035.
PC is not connected. Check the connection.	• A cable or cord is not properly connected. → Check that all cables to the unit are connected properly (Page 68). • The computer is not turned on. → Turn on the computer. • The computer is not set to output from its external monitor video out port. → Change the computer's settings so that video is output from the external monitor port.
Sub-Camera is not connected. Check the connection.	• A cable or cord is not properly connected. → Check that all cables to the unit are connected properly (Page 74). • The sub video camera is not turned on. → Turn on the sub video camera.
Sub-Camera source is not compatible.	• A cable or cord is not properly connected. → Check that all cables to the unit are connected properly (Page 74). • The signal input from the sub video camera is invalid. → A valid signal cannot be received from the connected sub video camera. Contact your dealer.

Message	Cause and Solution
Check display resolution.	• 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 68). • If any of the other parties is using a software version older than 3.00 (not including 3.00), you cannot use HD or WXGA for PC input resolutions. → Set your computer's resolution to VGA, SVGA, or XGA (Page 68).
n is already in use. **Note** • The IP address is represented by **n**.	• On the network you are using, another device is already using the IP address you have input for the unit. → Make sure that all devices on the network have unique IP addresses assigned.
Cooling Fan Malfunction. Please turn off the system and call for service.	• The CPU cooling fan within the device has stopped. → Quickly turn off the power. Contact your dealer.
Check main camera setting. <Check camera> Set the main camera HDMI output to 1080i. <Safe Mode> If [#] is pressed, the system enters safe mode after restart.	• A standard definition (640 × 480p, 720 × 480p) video camera signal has been detected. → Change the video camera's resolution to HD (1920 × 1080i). **Note** • If you enter Safe Mode during a video conference call, the call will be disconnected.
Check main camera setting. <Check camera> Set camera operating frequency to **n**Hz. <Safe Mode> If [#] is pressed, the system enters safe mode after restart. **Note** • The field frequency setting of the unit (**50** or **60**) is represented by **n**.	• A video camera with a different field frequency to the unit has been detected. → Use a video camera with the same field frequency as the unit. **Note** • If you enter Safe Mode during a video conference call, the call will be disconnected.
Check sub camera setting. <Check camera> Set the sub camera HDMI output to 1080i. <Safe Mode> If [#] is pressed, the system enters safe mode after restart.	• A standard definition (640 × 480p, 720 × 480p) video camera signal has been detected. → Change the video camera's resolution to HD (1920 × 1080i). **Note** • If you enter Safe Mode during a video conference call, the call will be disconnected.

Message	Cause and Solution

Check sub camera setting. <Check camera> Set sub camera operating frequency to **n**Hz. <Safe Mode> If [#] is pressed, the system enters safe mode after restart.
 	
Note
   • The field frequency setting of the unit (**50** or **60**) is represented by **n**.
	• A video camera with a different field frequency to the unit has been detected.
	→ Use a video camera with the same field frequency as the unit.
	
	Note
	   • If you enter Safe Mode during a video conference call, the call will be disconnected.

Call failed due to software version mismatch.	• 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.
Call Failed due to combination mismatch.	• In a multiple-party video conference call, one or more of the parties is incompatible. → Check the software version of all parties. Update the unit so that the versions match.
Call Failed due to unsupported product or other error.	• An unsupported feature was used. → Check the software version of all parties. Update the unit so that the versions match. For details about supported versions and features, contact your dealer. • Connection to an unsupported MCU or non-Panasonic video conference system was attempted. → For details about supported MCUs and non-Panasonic video conference systems, contact your dealer.
Call disconnected due to incompatible device or unexpected error.	• The other party's device uses an unsupported codec. → Have the other party check their settings.

Message	Cause and Solution
Received remote control ID (**n1**). The unit current setting is (**n2**). Press [Home] button using the correct remote control, or setup remote control as follows. 1. Press [.] and [#] at the same time. 2. Within 2 seconds, press [**n2**]. 3. Press [Home] to finish, this message will disappear. If this message will not disappear, please check the batteries in your remote control and try again. **Note** 　• The remote control ID of the remote control (**1**/**2**/**3**) is represented by **n1**. 　• The remote control ID of the unit (**1**/**2**/**3**) is represented by **n2**.	• The remote control IDs of the unit and remote control do not match. → Follow the on-screen instructions to change the remote control ID of the remote control to match that of the unit. → If you cannot change the remote control ID of the remote control, contact your dealer. → If multiple remote controls with assigned IDs will be used close together or if you do not want this message to be displayed, select **"OFF"** for **"Check ID mismatch"** (Page 95).
The address is invalid.	• The IP address contains an invalid value. → Enter the IP address correctly. The correct format is XXX.XXX.XXX.XXX (dotted format decimal notation). 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] Multicast or broadcast addresses cannot be used. • The MCU's conference room number@IP address contains an invalid value. → Enter the MCU's conference room number@IP address correctly.
Check the address.	• The IP address of the other party is the same as your own IP address. → Register the correct IP address. • In a multiple-party video conference call, one or more of the parties is using the same IP address. → Register the correct IP address.

Message	Cause and Solution
Connection will be closed in **n** seconds. Press "YES" to continue. **Note** • The message first appears when one minute remains and **"60"** is displayed for **n**. Then, the remaining time starts to decrease.	• The time set for **"Call Limit time"** has one minute remaining (Page 90). → If you select **"Yes"**, you can extend the call limit time for the amount set for **"Call Limit time"**. If you select **"No"**, the call is disconnected.
Unable to connect to network. (XXXX XXXX) **Note** • An error code (consisting of numerals) is displayed in "XXXX XXXX".	• The LAN cable is not connected properly, and therefore you cannot make a video conference call. → Check that the LAN cable is connected to the unit properly. Try making a call again, after confirming that the IP address, SIP user name, etc., is displayed on the Home screen. If transmission still fails, make a note of the error code and contact your dealer. **Note** • If transmission fails due to the LAN cable not being connected properly, 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.
Disconnected.	• When connecting to an MCU or non-Panasonic video conference system, the video conference call was disconnected. → 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. • When connecting to an MCU or non-Panasonic video conference system, the video conference call was disconnected for an unknown reason. → Wait a while and then try making the video conference call again. If video conference calls get disconnected repeatedly, contact your dealer.
Call failed due to insufficient bandwidth setting on called site.	• The other party's maximum bandwidth is set to a value that cannot support 3-party/4-party video conference calls. → Ask the other party to change their maximum bandwidth setting.
Feature is not available with current connection.	• The other party cannot display the computer's screen because their display does not support the selected resolution. → Change the resolution setting to a resolution that is supported by the other party. → Contact your network administrator. • Tone signals could not be sent because the other party's device does not support tone signals. → Ask the other party to check their configuration.

Message	Cause and Solution
Invalid Operation.	• Your video camera is not a video camera supported by this unit. → Use a video camera that is supported by this unit. For details, contact your dealer. • 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. → Check whether your video camera supports the function you are trying to use. • You are trying to change the call type during a video conference call using the selected local site. → Stop the video conference call using the selected local site, and then change the call type.
Invalid SIP Server Address.	• The format of the SIP server address that you entered is invalid. → Enter the SIP server address correctly, in the format XXX.XXX.XXX.XXX (decimal values separated by periods). For values of only 1 or 2 digits, 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] Multicast or broadcast addresses cannot be used.
Invalid SIP Domain Name.	• The format of the SIP domain name that you entered is invalid. → Enter a standards-compliant value. For details, contact your network administrator.
Invalid WAN IP Address.	• The format of the router's WAN IP address that you entered is invalid. → Enter the WAN IP address correctly, in the format XXX.XXX.XXX.XXX (decimal values separated by periods). For values of only 1 or 2 digits, 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] Multicast or broadcast addresses cannot be used.
Invalid Gatekeeper Address.	• The format of the gatekeeper's IP address that you entered is invalid. → Enter the gatekeeper IP address correctly, in the format XXX.XXX.XXX.XXX (decimal values separated by periods). For values of only 1 or 2 digits, 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] Multicast or broadcast addresses cannot be used.

Message	Cause and Solution
Saving log failed.	• You are using a USB memory device that is not compatible with the unit. → Use a USB memory device compatible with the unit (Page 107). • There is not enough free space on the USB memory device you are using. → Confirm the USB memory device has sufficient free space (at least 5 MB) before using it.
System Error! Please restart the system. If error message appears again, please contact Installer or Service Administrator.	• The unit's internal software failed to start up. • The unit failed to write data to the internal flash memory. → Reset the unit by turning off its power, then turning it back on. If the same message is displayed after resetting the unit, contact your dealer.

Miscellaneous

Problem	Cause and Solution
"Safe Mode" is displayed on the screen. **Note** • When "Safe Mode" is displayed on the screen, you cannot connect to the network, make video conference calls, or perform certain settings (self diagnosis, performing a network test, etc.).	• A standard definition (640 × 480p, 720 × 480p) video camera signal has been detected. → Disconnect the video camera from the unit, and reset the unit by turning off its power, then turning it back on. Check to make sure the video camera's resolution is set to HD (1920 × 1080i), and then connect the video camera to the unit again. • A standard definition (640 × 480p, 720 × 480p) display signal has been detected. → Disconnect the display from the unit, and reset the unit by turning off its power, then turning it back on. Make sure to connect a HD (1920 × 1080i) display to the unit. • The field frequency of the video camera or display you are using is different from the field frequency setting of the unit. → Use a video camera or display that has the same field frequency as the unit. For details, contact your dealer.

System Specifications

Video	Compression Method		H.264
		Compatible Resolutions	• 1920 × 1080p • 1920 × 1080i • 1280 × 720p • 1280 × 540p • 960 × 540p • 704 × 480p • 352 × 240p
	Camera Input Resolution		1920 × 1080i
	PC Input Resolutions		VGA, SVGA, XGA, HD, WXGA
Audio	Compression Method		MPEG-4 AAC LD, G.722, G.722.1/G.722.1 Annex C
		Frequency Range	• MPEG-4 AAC LD: Approx. 200 Hz–Approx. 14 kHz (KX-VC300), Approx. 200 Hz–Approx. 20 kHz (KX-VC600) • G.722, G.722.1: Approx. 200 Hz–Approx. 7 kHz • G.722.1 Annex C: Approx. 200 Hz–Approx. 14 kHz
		No. of Channels	• MPEG-4 AAC LD: 2 • G.722, G.722.1, G.722.1 Annex C: 1
		Bitrate	• MPEG-4 AAC LD: 32 kbit/s (Monaural only), 64 kbit/s, 96 kbit/s (per channel) • G.722: 64 kbit/s • G.722.1: 32 kbit/s • G.722.1 Annex C: 48 kbit/s
	Sound Processing Function		Stereo Echo Canceller
	Microphone		Boundary Microphone (Digital Interface Type) KX-VCA001 (Option) (for use with the KX-VC600 only) Boundary Microphone (Analogue Interface Type) KX-VCA002 (Option)
		Pickup Range	KX-VCA001: 2 m radius, 360° coverage KX-VCA002: 1.5 m radius, 300° coverage
		Cascade Connections	Up to 4 Boundary Microphones (KX-VCA001 only)
		Sound Pickup Method	KX-VCA001: Stereo/Monaural[1] KX-VCA002: Stereo/Monaural[2]
Transmission	Call Control		SIP, H.323
External Interface	Video Inputs		HDMI (Camera) × 2, RGB (PC) × 1 (Switchable 3 inputs)
	Video Output		HDMI × 1, RCA (Component) × 1

	Audio Input	KX-VC300: Analogue Boundary Microphone port × 1, RCA (Stereo) × 1, Stereo mini-plug (Headset) × 1 KX-VC600: Analogue Boundary Microphone port × 1, Digital Boundary Microphone port × 1, RCA (Stereo) × 1, Stereo mini-plug (Headset) × 1
	Audio Output	RCA (Stereo) × 1 (Audio output to display is via HDMI), Stereo mini-plug (Headset) × 1
	Network	RJ45 port × 1
	Other	• Camera Control RS-232C Serial Port × 1 (KX-VC600 only) (Not used) • Maintenance RS-232C Serial Port × 1 (Not used) • USB × 1 (USB Mass Storage Class, FAT16/FAT32 format)
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)

[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 (Page 92, Page 92).

[2]   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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Content of poisonous/noxious substance or elements in product

Part Name	Poisonous/noxious substance or element					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr(VI))	Polybrominated biphenyls (PBB)	Polybrominated diphenylether (PBDE)
Cabinet	✕	○	○	○	○	○
Assembly electric circuit board	✕	○	○	○	○	○
Packing	○	○	○	○	○	○
Accessory	✕	○	○	○	○	○
Documents	○	○	○	○	○	○

○ : The content of poisonous/noxious substance for all homogeneous materials regarding all corresponding parts is less than the industrial standard of SJ/T11363-2006.

✕ : The content of poisonous/noxious substance for at least 1 type of homogeneous material regarding all corresponding parts is more than the industrial standard of SJ/T11363-2006.

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