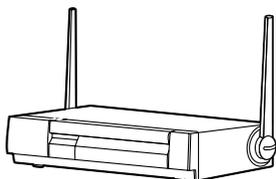# Panasonic

Network Camera Management System

Operating Instructions

Model No. **KX-HGW600**

Network Camera Management System

Please read this manual before using and save this manual for your future reference.
Panasonic Web Site: http://www.panasonic.com
for customers in the USA or Puerto Rico

SD Logo is
a trademark.

Introduction

Thank you for purchasing the Panasonic Network Camera Management System.

Please check the following items when unpacking.

Operating Instructions	— 1 pc.
AC adaptor	— 1 pc.
Ethernet cable (Category 5 straight cable)	— 1 pc.
Cable clamper	— 1 pc.
Screws and Washers	— 2 pcs.

Before using

Please read Important Safety Instruction on Page 4 before using.

Read and understand all instructions.

For Operation Assistance

- Call **1-800-272-7033**
- Refer to
  the Panasonic web site
  http://www.panasonic.com

Trademarks

- Netscape and Netscape Navigator are registered trademarks of Netscape Communications Corporation in the U.S. and other countries.
- Ethernet is a registered trademark of Xerox Corporation in the United States and/or other countries.
- Microsoft, Windows, Windows NT and MS-DOS are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Screen shots reprinted with permission from Microsoft Corporation.
- SD mark is a trademark of the SD Card Association.

All other trademarks identified herein are the property of their respective owners.

Network Camera Management System Memo

Attach your purchase receipt here.

For your future reference

Date of purchase

Serial No.   MAC address
(found on the rear side of the unit)

Name and address of dealer

<u>IMPORTANT SAFETY INSTRUCTION</u>

When using this unit, basic safety precautions should always be followed to reduce the risk of fire, electric shock, or personal injury.

1. Read and understand all instructions.

2. Keep these instructions.

3. Heed all warnings.

4. Follow all instructions.

5. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

6. Protect the AC adaptor cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

7. Do not touch the unit or the AC adaptor during lightning storms.

8. Unplug this apparatus when unused for long periods of time.

9. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as AC adaptor cord or plug is damaged, the apparatus does not operate normally, or has been dropped.

SAVE THESE INSTRUCTIONS

Table of contents

Section 1

Product Introduction

1.1 Getting to know the KX-HGW600

1.1.1 Main Features

Automatic Setup function (Max. 16 Network Cameras)

Just connect your Panasonic Network Cameras (KX-HCM series) to the KX-HGW600. This function automatically configures the network settings such as IP address, port no., etc. (☞ Page 34 and Page 48).
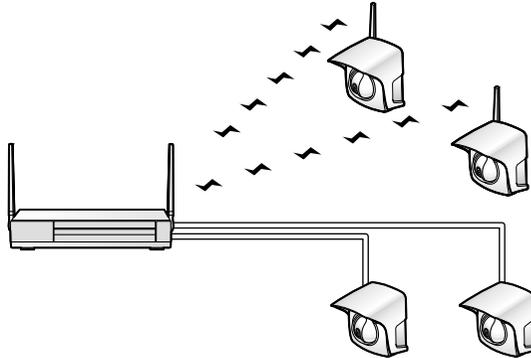
Camera Portal page

Camera Portal page allows you to view simultaneously up to 16 Network Cameras at various locations. You can jump to each Network Camera screen by clicking the desired image field (☞ Page 36 and Page 50).
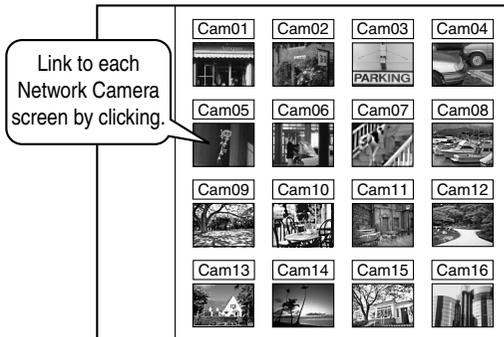
Recording/Playback function

Recording/Playback function allows you to record and play back the selected Network Camera screen using an SD memory card (customer provided) (☞ Page 54).

11 Mbps Data Transmission via Wireless Network

The KX-HGW600 corresponds to the wireless system based on IEEE 802.11b.

Internet
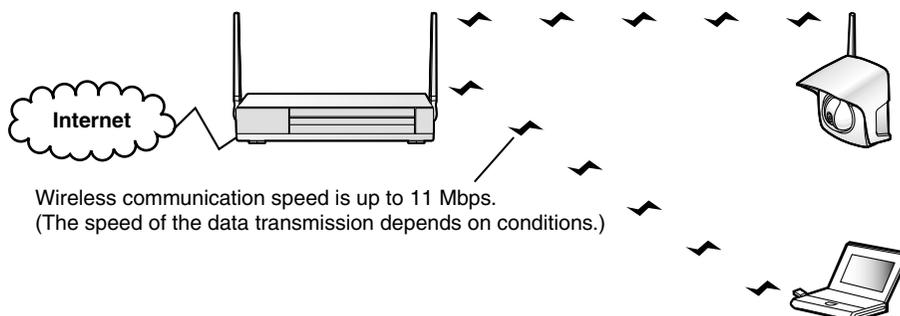
Wireless communication speed is up to 11 Mbps.
(The speed of the data transmission depends on conditions.)

High Security

The KX-HGW600 is equipped with the following security functions.
Router: Access Control (☞ Page 78), Address Translation (☞ Page 93) and
Packet Filtering (☞ Page 101)
Wireless Network: SSID (ESSID) (☞ Page 83), Encryption (WEP) (☞ Page 86) and
MAC Address Filtering (☞ Page 91)

Protection from an invalid access

Hacking

Internet

Intrusion

You can view the Network Camera screen by setting the security functions.
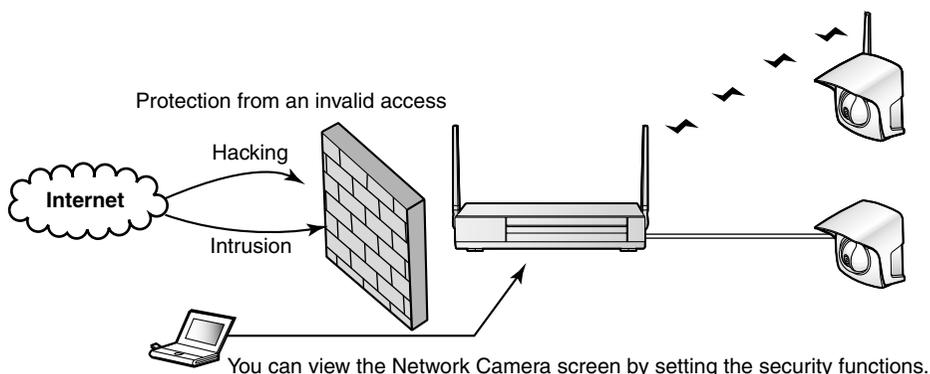
PPPoE Support

The KX-HGW600 supports PPPoE connection (method used mostly by ADSL
providers) (☞ Page 17, Page 29 and Page 31).

Fully configurable through a web browser

The KX-HGW600 can be set up from a Microsoft ® Windows® operating system using
a web browser.

1.1.2   System Requirements

The PC (Personal Computer) and the network must meet the following technical specifications for the KX-HGW600 to work properly.

Item	Description
Operating System	Microsoft Windows 95, Microsoft Windows 98 Microsoft Windows Me, Microsoft Windows NT® 4.0 Microsoft Windows 2000, Microsoft Windows XP
Interface	10/100 Mbps Ethernet® card and Ethernet cables for your network connection
RAM	16MB or more
Network Protocol	TCP/IP network protocol installed
Web browser*	Internet Explorer 5.0 or later Netscape Navigator® 4.7

* The Network Camera screen is not displayed correctly on the Netscape® v6.x.
  Please use Netscape Navigator v4.7.
Please refer to Panasonic web site
http://www.panasonic.com/ about the latest information of the web browser.

Supported Network Camera
The KX-HGW600 supports the following models of Panasonic Network Cameras (August, 2002):
KX-HCM8 (Indoor use)
KX-HCM10 (Indoor use; remote pan & tilt)
KX-HCM230 (Indoor/outdoor use; remote pan & tilt)
KX-HCM250 (Wireless; indoor use; remote pan & tilt)
KX-HCM270 (Wireless; indoor/outdoor use; remote pan & tilt)

1.2 Included Accessories

The following items are provided with the KX-HGW600. Additional pieces can be ordered by calling **1-800-332-5368**.

AC adaptor — 1 pc.
Order No. PQLV12Y
(☞ Page 21 and Page 41)
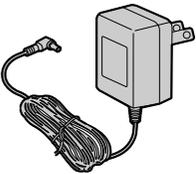
Screws — 2 pcs.
Order No. PQHE5004Z
Washers — 2 pcs.
Order No. XWG3E16
(☞ Page 125)
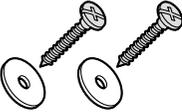
Ethernet cable — 1 pc.
(Category 5 straight cable)
Order No. PQJA10138Z
(☞ Page 19 and Page 39)

Cable clamper — 1 pc.
Order No. PQHR10788ZA
(☞ Page 21 and Page 41)

Notes

- If any items are missing or damaged, check with the place of purchase or contact our customer call center.
- The order numbers listed above are subject to change without notice.
- Save the original carton and packing materials for future shipping and transportation of the unit.

1.3   Part Names

1.3.1   Front View

Diversity antenna

SD memory card slot
(☞ Page 54)

POWER indicator (☞ Page 13)

WIRELESS indicator
(☞ Page 13)

WAN indicator (☞ Page 13)

LAN1—4 indicators (☞ Page 13)

1.3.2   Rear View

DC IN jack
(☞ Page 21 and Page 41)

WAN jack
(☞ Page 19 and Page 39)

FACTORY DEFAULT RESET button
(☞ Page 124)

RESTART button (☞ Page 124)

LAN 1—4 jacks (☞ Page 20 and Page 40)
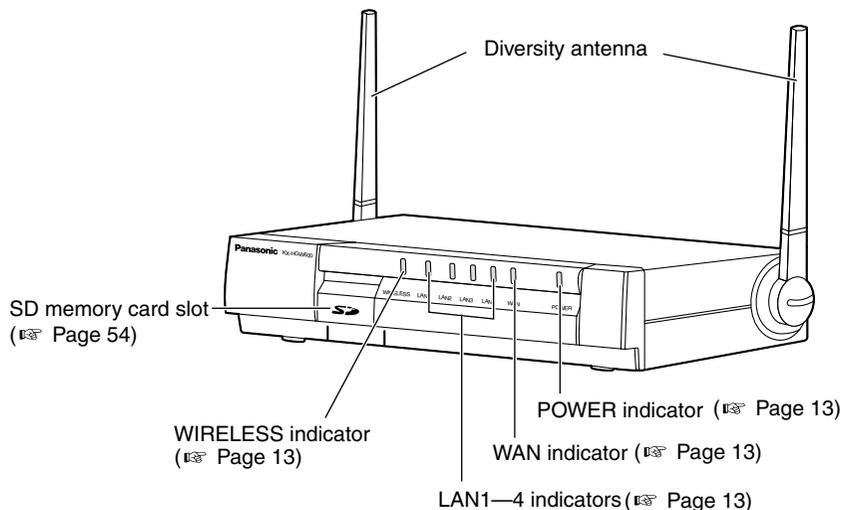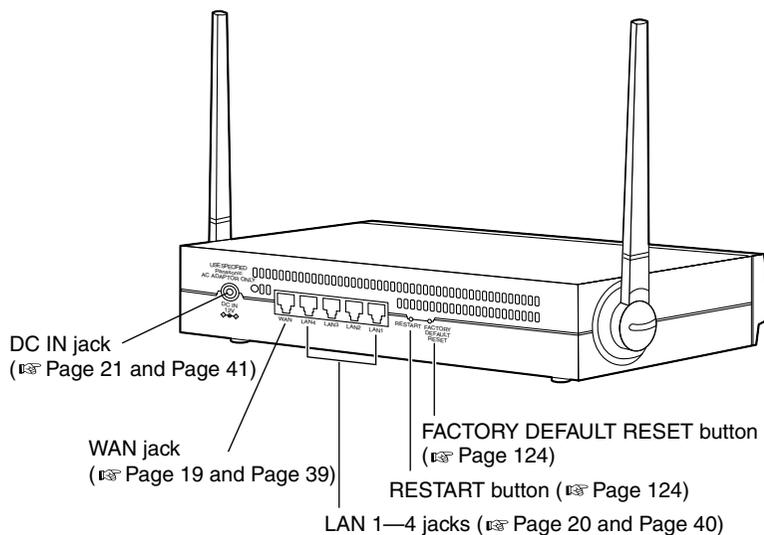
1.3.3 Indicators

LED	Light Color	Description
POWER	▭ Green	The KX-HGW600 is turned on.
	▭ Red	The KX-HGW600 is in a bad state. Push the RESTART button (☞ Page 124) on the KX-HGW600.
WAN	▭ Green	The KX-HGW600 is successfully connected to a modem or an Ethernet hub.
	☼ Green (Blinking)	The KX-HGW600 is sending or receiving data through this jack.
LAN 1—4	▭ Green	The KX-HGW600 is successfully connected to an Ethernet hub, Network Camera or a PC.
	☼ Green (Blinking)	The KX-HGW600 is sending or receiving data through this jack.
WIRELESS	▭ Green	The KX-HGW600 is successfully connected to a wireless Network Camera or a wireless PC.
	☼ Green (Blinking)	The KX-HGW600 is sending or receiving data in a wireless network.

Section 2

Setup

Setup

2.1 Configuration Types

The KX-HGW600 is available on a small or large scale network. The main configuration types are as follows. Make sure which configuration type is required and set up the KX-HGW600.

Internet Configuration—[Type 1] (☞ Page 17)
The KX-HGW600 can establish a LAN by connecting to the Internet.
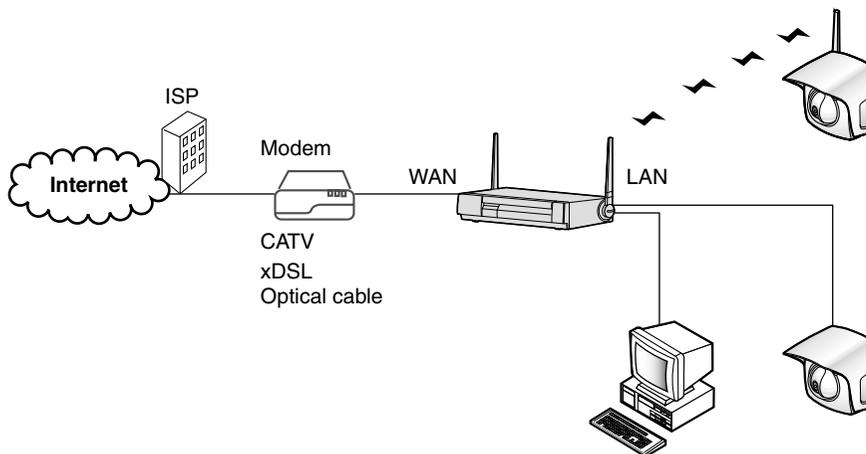
LAN (Intranet) Configuration—[Type 2] (☞ Page 38)
The KX-HGW600 can establish a LAN by connecting to the other LAN (Intranet).
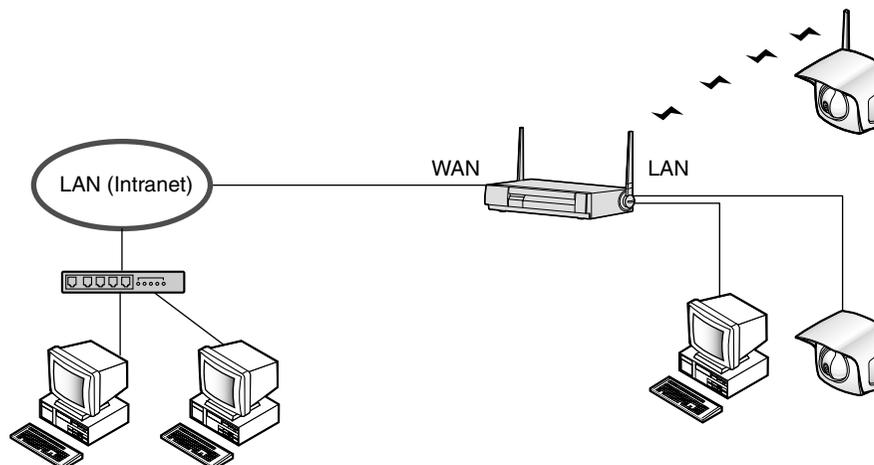
Notes

- The KX-HGW600 is a device with two sides: One side is made up of your LAN (Local Area Network) of each device in your home or office. The other side is the WAN (Wide Area Network) outside of your home or office.
- In this manual the CATV/xDSL/optical cable modem is called "Modem".

2.2 Internet Configuration

2.2.1 Connecting to the Internet

Preparation

Before starting to install the KX-HGW600, make sure you have everything below.

- A Windows PC with a network card (Ethernet card or IEEE 802.11b wireless card) installed
- Account information for Internet access (provided by your ISP)
- A CATV/xDSL/optical cable modem

  Notes
  - Some modems may store only the initial network information. They cannot communicate with the other devices. Turn them off. After a while, turn them on again.
  - Some modems may need to be turned off for a few hours or even a whole day.
  - Some ISPs prohibit you to turn off the modems. Please ask your ISP.

To collect information on the Internet access

Depending on the ISP, you can connect the following four types of Internet configuration.

- DHCP Connection
- Static Connection
- PPPoE (Point to Point Protocol over Ethernet) Connection
- PPPoE Connection (IP unnumbered)

Check the information provided by the ISP and make sure which type of configuration is required. For more information, please ask your ISP.

To make note of corresponding account information for your future reference

1. **DHCP Connection** (using a DHCP server)

   The DHCP server of your ISP assigns the IP addresses to the KX-HGW600 automatically. When the ISP uses the DHCP server function, enter **Device Name***, **Gateway Address**, **DNS Server 1**, **DNS Server 2** and **Domain Name** in the following data fields.

✎ Device Name	✎ Gateway Address . . .
✎ DNS Server 1 . . .	✎ DNS Server 2 . . .
✎ Domain Name	

   * Some ISPs may call Device Name differently. Please ask your ISP about Device Name.

Setup

2. Static Connection (using static IP address)

When the ISP requires you to use static IP address, enter **IP Address, Subnet Mask, Gateway Address, DNS Server 1** and **DNS Server 2** in the following data fields. If specified by the ISP, enter **Domain Name**.

✎ IP Address . . .	✎ Subnet Mask . . .
✎ Gateway Address . . .	✎ DNS Server 1 . . .
✎ DNS Server 2 . . .	✎ Domain Name

3. PPPoE Connection (using a single global IP address)

It is a connection method used mostly by ADSL providers. When the ISP requires you to use a single global IP address, enter **User Name** and **Password** in the following data fields. If specified by the ISP, enter **Service Name**, **Access Concentrator Name**, **DNS Server 1**, **DNS Server 2** and **Domain Name**.

✎ User Name	✎ Password
✎ Service Name	✎ Access Concentrator Name
✎ DNS Server 1 . . .	✎ DNS Server 2 . . .
✎ Domain Name	

4. PPPoE Connection (IP unnumbered) (using multiple global IP addresses)

When the ISP requires you to use the multiple global IP addresses, enter the same data fields as the above PPPoE Connection. Then enter one of the global IP addresses provided by the ISP in the **IP address of KX-HGW600**.

✎ User Name	✎ Password
✎ Service Name	✎ Access Concentrator Name
✎ DNS Server 1 . . .	✎ DNS Server 2 . . .
✎ Domain Name	

IP address of KX-HGW600

✎ IP Address . . .	✎ Subnet Mask . . .

Connecting the KX-HGW600 to a modem

To access the Internet using a CATV/xDSL/optical cable modem, follow the steps below.

1. Connect the Ethernet cable (with 8-pin RJ-45 connector) to the Ethernet jack of the modem.

2. Connect the other end of the Ethernet cable to the WAN jack of the KX-HGW600.

Setup

Ethernet jack of the modem

WAN jack

Ethernet cable
(included accessory)
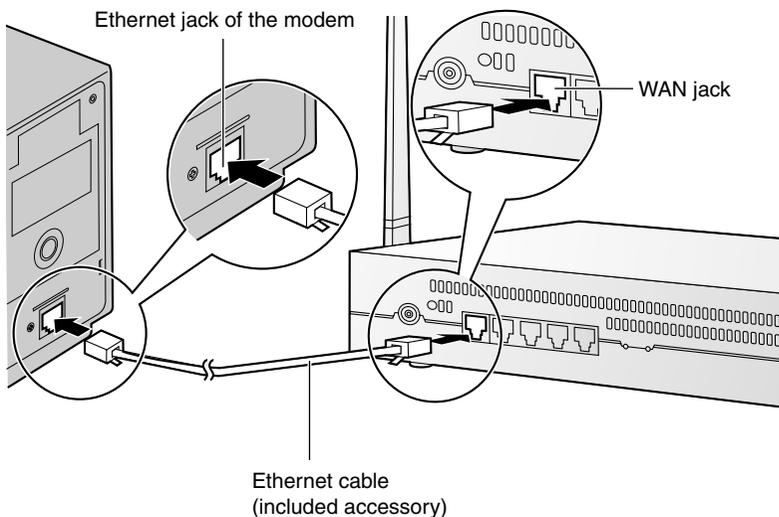
Note

Some modems may have a polarity switch or need category 5 cross cable instead of category 5 straight cable. Please refer to the modem's manual for more information.

Connecting a PC to the KX-HGW600

Before connecting a PC to the KX-HGW600, make sure **Obtain an IP address automatically** is checked in the TCP/IP Properties window on the PC (☞ Page 129) and follow the steps below.

1. Turn off the PC.

2. Connect the Ethernet cable (customer provided) to one of the LAN 1—4 jacks of the KX-HGW600.

3. Connect the other end of the Ethernet cable to the Ethernet jack of the PC.

LAN1—4 jacks

Ethernet jack

Ethernet cable

Note

All Ethernet jacks have an automatic MDI/MDIX feature, which means either a "straight" or "cross" cable can be used to connect to any jack.
The KX-HGW600 will automatically detect which cable has been inserted.

Turning on the Devices

After completing the connection between the PC and the KX-HGW600, make sure the PC is turned off and follow the steps below.

1. Insert the cable clamper into the cable clamper hole of the KX-HGW600 until you hear a click.

Cable clamper
(included accessory)

2. Connect the DC plug of the AC adaptor to the DC IN jack and the AC plug of the AC adaptor to the power outlet.

DC IN jack

DC plug

Power Outlet
(AC 120V)

AC adaptor
(included accessory)

Notes
- AC adaptor is used as the main disconnect device, ensure that the socket-outlet is located/installed near the equipment and is easily accessible.
- Use Only with specified Panasonic AC adaptor PQLV12Y.

3. Fix the AC adaptor cord with the cable clamper.

AC adaptor cord

Thread the AC adaptor
cord through the cable clamper.

Close the cable clamper firmly.

4. Turn on the PC connected to the KX-HGW600.

Note

Make sure the indicators light green (☞ Page 13).

2.2.2   Setting up the KX-HGW600

Confirming the KX-HGW600 Setup

The KX-HGW600 has an integrated web server. If you can access the Camera Portal page, the network configuration between the KX-HGW600 and the PC has been successfully made.

1. Confirm the setup of the TCP/IP properties window on the PC.
For more information, please refer to Page 129.

2. Start up your web browser.

3. Enter "**http://192.168.0.254(:Port No.)**" in the address field of your web browser.
The Camera Portal page appears.

- When port no. is 80 (default setting), you do not need to enter port no.
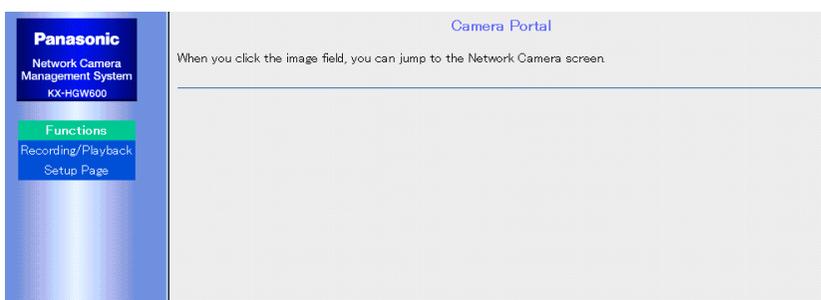
If the Camera Portal page does not appear (☞ Page 141**)**

- Make sure "**http://192.168.0.254(:Port No.)**" has been correctly entered into the address field.
- Make sure the indicators light green.
- Make sure the KX-HGW600 is turned on first, then the PC.
- The proxy server setting of your web browser may be needed to access the Camera Portal page. For more information, please refer to Page 126.

4. Click **[Setup Page]**.
The authentication window appears.

5. Enter "**KX-HGW**" in the **Password** data field.
Leave the **User Name** data field blank.

6. Click **[OK]**.
The Basic Setup window appears.
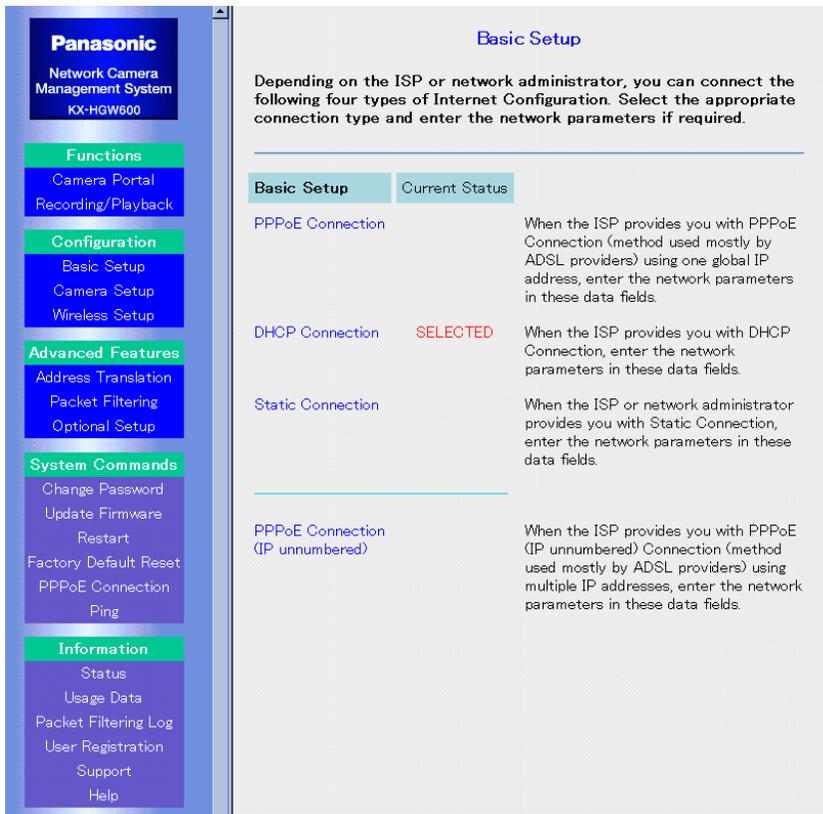
Notes

- You can change the password on the Setup Page. Please refer to "Change Password" on Page 110.
- For more information about the Setup Page, please refer to Page 68.

Setting up Internet Configuration

Depending on the ISP, you can connect the following four types of Internet configuration.

- DHCP Connection (Follow the steps from this page)
- Static Connection (☞ Page 27)
- PPPoE Connection (☞ Page 29)
- PPPoE Connection (IP unnumbered) (☞ Page 31)

DHCP Connection (using a DHCP server)

When the ISP provides you with DHCP Connection, follow the steps below.
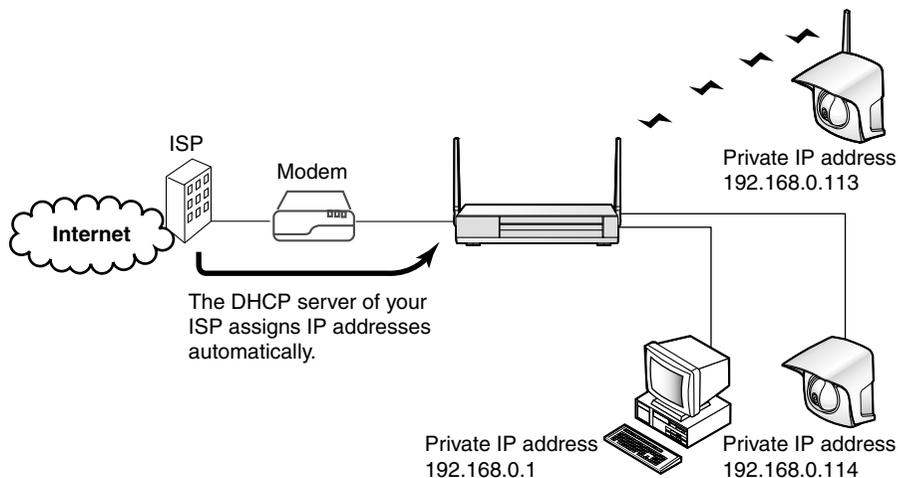
ISP
Modem
Internet
Private IP address
192.168.0.113

The DHCP server of your
ISP assigns IP addresses
automatically.

Private IP address
192.168.0.1

Private IP address
192.168.0.114

1. Click **[Basic Setup]** on the Setup Page.
   SELECTED is displayed next to the configuration type which is currently
   selected. (The default setting is "DHCP Connection".)
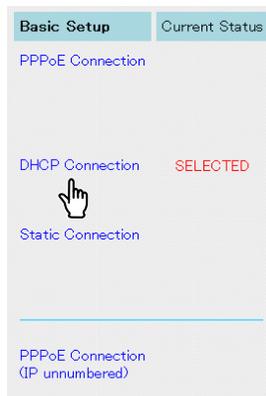
2. Click **[DHCP Connection]**.

3. Enter **Device Name**, **Gateway**, **DNS Server 1**, **DNS Server 2** and **Domain Name** if requested by your ISP.
For each input value, please refer to the account information on Page 17.

• To clear the current settings, click **[Clear]**.

Notes
• Do not enter the space in each data field.
• Some ISPs may call Device Name differently. Please ask your ISP about Device Name.

4. When you have finished, click **[Save]**. The settings will be saved.

5. Click **[Restart Now!]**.
Next, confirm the Internet Configuration (☞ Page 33).

Static Connection (using static IP address)
When the ISP provides you with Static Connection, follow the steps below.

ISP

Modem

Internet

Static IP address

Your ISP assigns static
IP address based on the
account information.

Private IP address
192.168.0.113

Private IP address
192.168.0.114

Private IP address
192.168.0.1

1. Click **[Basic Setup]** on the Setup Page.
SELECTED is displayed next to the configuration type which is currently
selected.

Basic Setup | Current Status
PPPoE Connection
DHCP Connection   SELECTED
Static Connection
PPPoE Connection
(IP unnumbered)

2. Click **[Static Connection]**.

3. Enter **IP Address**, **Subnet Mask**, **Gateway**, **DNS Server 1** and **DNS Server 2**. If requested by your ISP, enter **Domain Name**. For each input value, please refer to the account information on Page 17.

- To clear the current settings, click **[Clear]**.

Basic Setup

IP Address	
Subnet Mask	
Gateway	
DNS Server 1	
DNS Server 2	

If requested by your ISP, you need to enter the following parameters.

Domain Name	

Save   Clear   Cancel
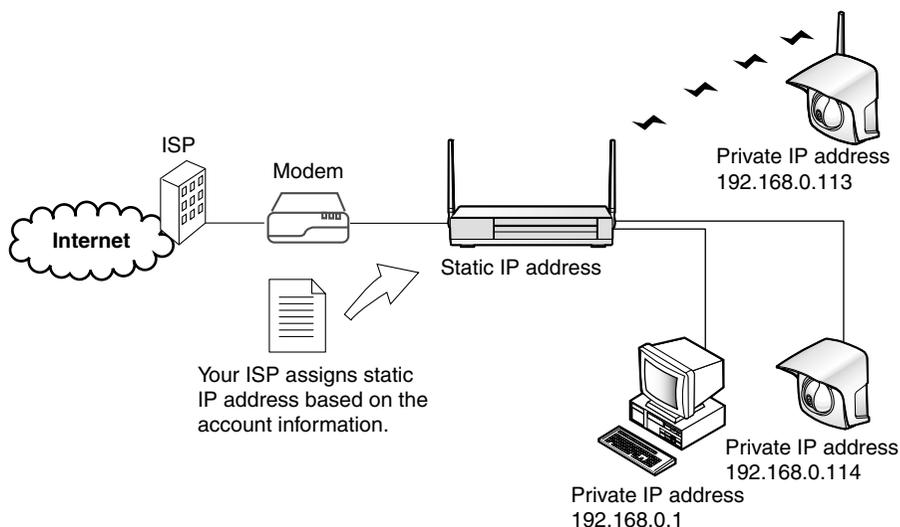
Note

Do not enter the space in each data field.

4. When you have finished, click **[Save]**. The settings will be saved.

5. Click **[Restart Now!]**.
Next, confirm the Internet Setup (☞ Page 33).

PPPoE Connection (using a single global IP address)
When the ISP provides you with PPPoE Connection, follow the steps below.
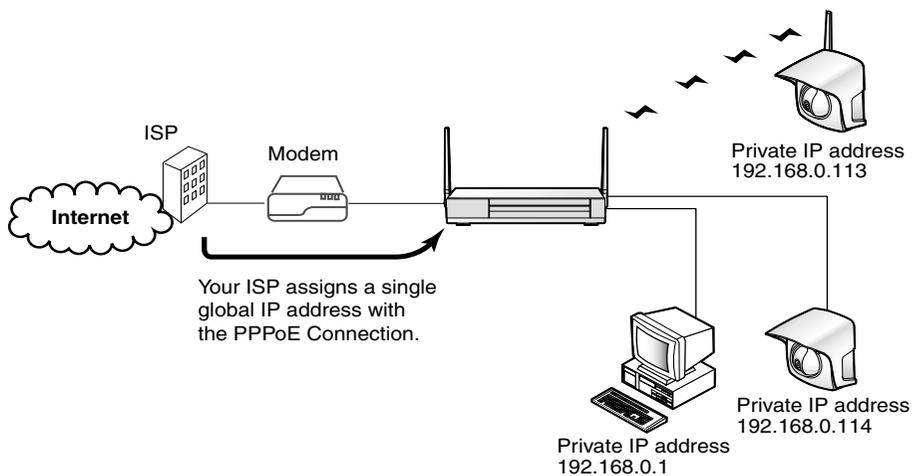
1. Click **[Basic Setup]** on the Setup Page.
   SELECTED is displayed next to the configuration type which is currently selected.
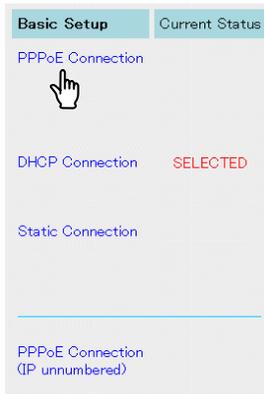
2. Click **[PPPoE Connection]**.

3. Enter **User Name** and **Password**.
If requested by your ISP, enter **Service Name**, **Access Concentrator Name** (sometimes specified as "AC Name"), **DNS Server 1**, **DNS Server 2** and **Domain Name**.
For each input value, please refer to the account information on Page 17.

- To clear the current settings, click **[Clear]**.

Note

Do not enter the space in each data field.

4. When you have finished, click **[Save]**. The settings will be saved.

5. Click **[Restart Now!]**.
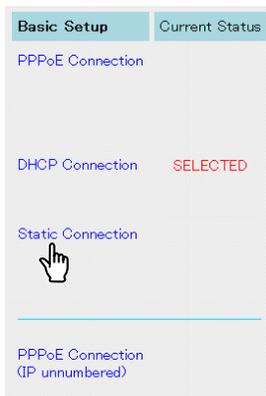Next, confirm the Internet Configuration (☞ Page 33).

PPPoE Connection (IP unnumbered) (using multiple global IP addresses)
When the ISP provides you with PPPoE Connection (IP unnumbered), follow the steps below.
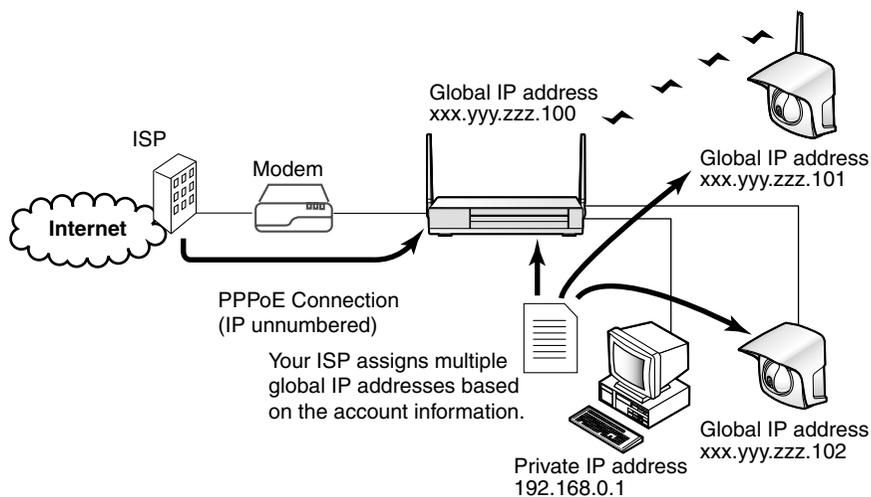
1. Click **[Basic Setup]** on the Setup Page.
SELECTED is displayed next to the configuration type which is currently selected.
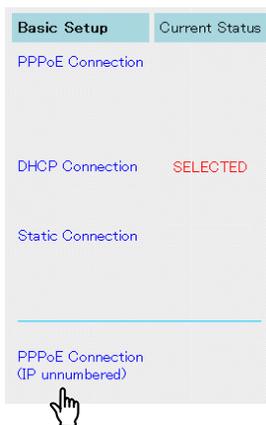
2. Click **[PPPoE Connection (IP unnumbered)]**.

3. Enter **User Name** and **Password**.
If requested by your ISP, enter **Service Name**, **Access Concentrator Name** (sometimes specified as "AC Name"), **DNS Server 1**, **DNS Server 2** and **Domain Name**. Enter **IP Address** and **Subnet Mask** in the **IP address of KX-HGW600**.
For each input value, please refer to the account information on Page 17.

<IP address of KX-HGW600>
You need to enter one of the global IP addresses provided by the ISP as the IP address of the KX-HGW600.

• To clear the current settings, click **[Clear]**.

Note
Do not enter the space in each data field.

4. When you have finished, click **[Save]**. The settings will be saved.

**5.** Click **[Restart Now!]**.
Next, confirm the Internet Configuration (☞ Page 33).

Confirming the Internet Configuration

If you can access the WWW site from your PC, the connection between the Internet and the KX-HGW600 has been successfully made.

1. Start up your web browser.

2. Enter the address of a WWW site (e.g., http://www.panasonic.com) in the address field of your web browser.
A WWW site appears.

If a WWW site does not appear (☞ Page 140**)**
- Make sure the address of a WWW site has been correctly entered in the address field of the web browser.
- Make sure "Confirming the KX-HGW600 Setup" on Page 23 has been successfully made.
- Make sure the indicators light green.
- Make sure the modem is turned on first, next the KX-HGW600, then the PC.
- The proxy server setting of your web browser may be needed to access a WWW site (☞ Page 126).

Setup

2.2.3   Connecting your Network Camera

Setting up your Network Camera automatically

Once you connect your Panasonic Network Cameras (KX-HCM series) to the KX-HGW600 and turn them on, the network settings such as IP address, port no. are configured automatically by the Automatic Setup function. After completing the Internet configuration, make sure the target Network Camera is turned off and follow the steps below.

1. a) To connect the KX-HGW600 and Network Camera with an Ethernet cable, connect the Ethernet cable to one of the LAN 1—4 jacks of the KX-HGW600 and the other end to the Ethernet jack of the Network Camera.

b) To connect the KX-HGW600 and Network Camera in the wireless network, locate the wireless Network Camera near the KX-HGW600.

Note
All Ethernet jacks have an automatic MDI/MDIX feature, which means either a "straight" or "cross" cable can be used to connect to any jack. The KX-HGW600 will automatically detect which cable has been inserted.

2. Turn on the Network Camera.

3. Push **CLEAR SETTING** button on the Network Camera.
The Network Camera starts to communicate with the KX-HGW600 that control transmission paths on the network. After that, the Network Camera screen is registered on the Camera Portal page.

- The Automatic Setup function automatically configures the following network settings.

KX-HGW600	Port Forwarding Camera Entry Screen Assignment
Network Camera	Port No. IP Address Subnet Mask Default Gateway DNS Server Address

- The Automatic Setup function assigns each port number and IP address in the following order.

Camera Name	Port No.	IP Address
Cam 01	60001	192.168.0.113
Cam 02	60002	192.168.0.114
Cam 03	60003	192.168.0.115
•	•	•
•	•	•
•	•	•
Cam 16	60016	192.168.0.128

Setting up your Network Camera manually

- To set up your Network Camera manually, please refer to Page 75.
- To set up the specific Network Camera manually, clear **Enable** check box on the Network window of Network Camera **([Network] → 1. Network Configuration from the Setup Program)**. For more information, please refer to the Network Camera's manual.

Setup

2.2.4   Viewing the Network Camera screen

You can view the Network Camera screen on the Camera Portal page.

1. a) Enter "**http://192.168.0.254(:Port No.)**" in the address field of your web browser. The Camera Portal page appears.

   • When port no. is 80 (default setting), you do not need to enter port no.

Image field

b) Enter the IP address(:Port No.) on the WAN in the address field of your web browser. The Camera Portal page appears.

   • When port no. is 80 (default setting), you do not need to enter port no.

Note

To view the Network Camera screen over the Internet, please refer to "To access the Camera Portal page from the WAN side" on Page 79.

2. Click the desired image field.
The Network Camera screen appears on another web page.
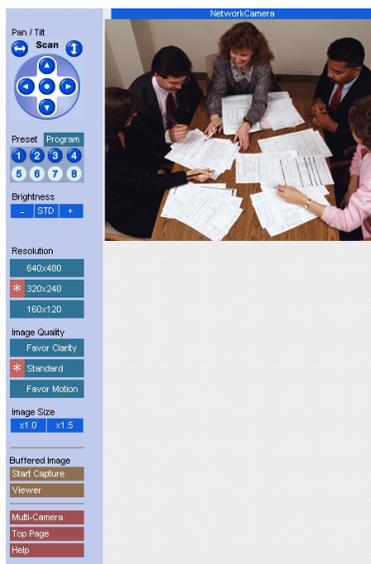
If the image field on the Camera Portal page does not appear

• Make sure the indicators light green.
• The proxy server setting of your web browser may be needed to access the Camera Portal page (☞ Page 126).
• Make sure the modem is turned on first, next the KX-HGW600, then the PC.

2.3   LAN (Intranet) Configuration

2.3.1   Connecting to the LAN (Intranet)

Preparation

Before starting to install the KX-HGW600, make sure you have everything below.
- A Windows PC with a network card (Ethernet card or IEEE 802.11b wireless card) installed
- An Ethernet hub on the LAN (Intranet)
- Network information for LAN (Intranet) configuration

To make note of network information for your future reference

When the network administrator requires you to use static IP address, enter **IP Address**, **Subnet Mask**, **Gateway Address**, **DNS Server 1** and **DNS Server 2** in the following data fields. If requested by your network administrator, enter **Domain Name**.

✎ IP Address . . .	✎ Subnet Mask . . .
✎ Gateway Address . . .	✎ DNS Server 1 . . .
✎ DNS Server 2 . . .	✎ Domain Name

Connecting the KX-HGW600 to an Ethernet hub

To connect the KX-HGW600 to an Ethernet hub on the LAN (Intranet), follow the steps below.

1. Connect the Ethernet cable to the WAN jack of the KX-HGW600.

2. Connect the other end of the Ethernet cable to one of the jacks of the Ethernet hub.

Setup

WAN jack

Ethernet hub

Ethernet cable
(included accessory)
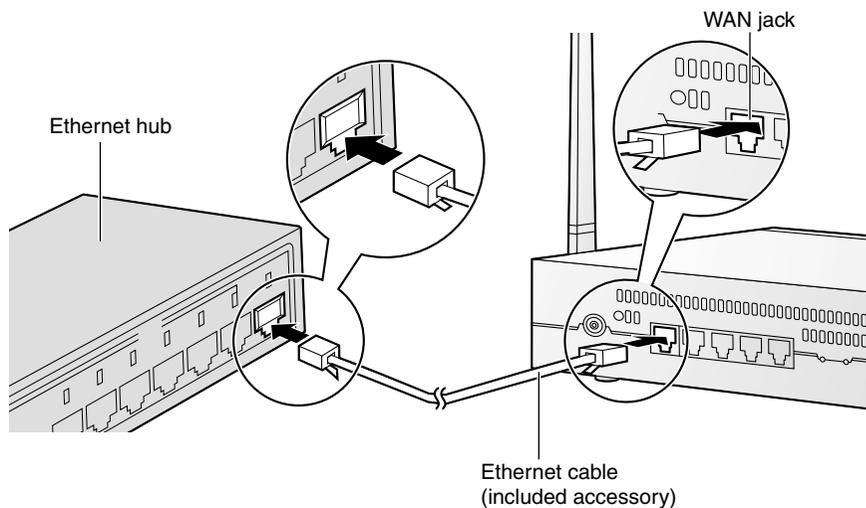
Note

Some Ethernet hubs may have a polarity switch or need category 5 cross cable instead of category 5 straight cable. Please refer to the Ethernet hub's manual for more information.

Connecting a PC to the KX-HGW600

Before connecting a PC to the KX-HGW600, make sure **Obtain an IP address automatically** is checked in the TCP/IP Properties window on the PC (☞ Page 129) and follow the steps below.

1. Turn off the PC.

2. Connect the Ethernet cable (customer provided) to one of the LAN 1—4 jacks of the KX-HGW600.

3. Connect the other end of the Ethernet cable to the Ethernet jack of the PC.

LAN1—4 jacks

Ethernet jack

Ethernet cable

Note

All Ethernet jacks have an automatic MDI/MDIX feature, which means either a "straight" or "cross" cable can be used to connect to any jack. The KX-HGW600 will automatically detect which cable has been inserted.

Turning on the Devices

After completing the connection between the PC and the KX-HGW600, make sure the PC is turned off and follow the steps below.

1. Insert the cable clamper into the cable clamper hole of the KX-HGW600 until you hear a click.

Cable clamper
(included accessory)

Setup

2. Connect the DC plug of the AC adaptor to the DC IN jack and the AC plug of the AC adaptor to the power outlet.

DC IN jack

DC plug

Power Outlet
(AC 120V)

AC adaptor
(included accessory)

Notes

- AC adaptor is used as the main disconnect device, ensure that the socket-outlet is located/installed near the equipment and is easily accessible.
- Use Only with specified Panasonic AC adaptor PQLV12Y.

3. Fix the AC adaptor cord with the cable clamper.

AC adaptor cord

Thread the AC adaptor
cord through the cable clamper.

Close the cable clamper firmly.

4. Turn on the PC connected to the KX-HGW600.

Note
Make sure the indicators light green (☞ Page 13).

2.3.2   Setting up the KX-HGW600

Confirming the KX-HGW600 Setup

The KX-HGW600 has an integrated web server. If you can access the Camera Portal page, the network configuration between the KX-HGW600 and the PC has been successfully made.

1. Start up your web browser.

2. Enter "**http://192.168.0.254(:Port No.)**" in the address field of your web browser. The Camera Portal page appears.
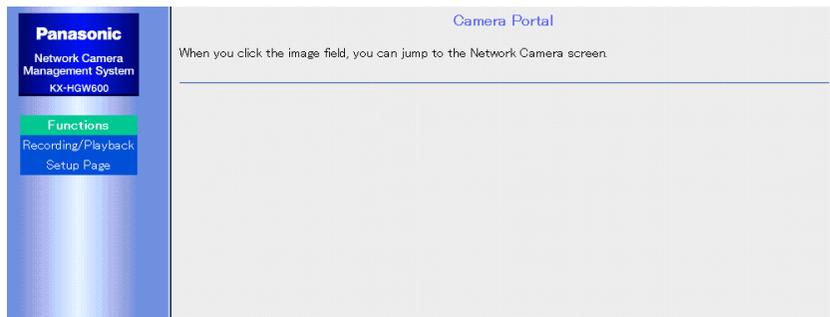
If the Camera Portal page does not appear (☞ Page 141**)**

- Make sure the indicators light green.
- Make sure the KX-HGW600 is turned on first, then the PC.
- The proxy server setting of your web browser may be needed to access the Camera Portal page. For more information, please refer to Page 126.

3. Click **[Setup Page]**.
The authentication window appears.

4. Enter "**KX-HGW**" in the **Password** data field.
Leave the **User Name** data field blank.

5. Click **[OK]**.
The Basic Setup window appears.
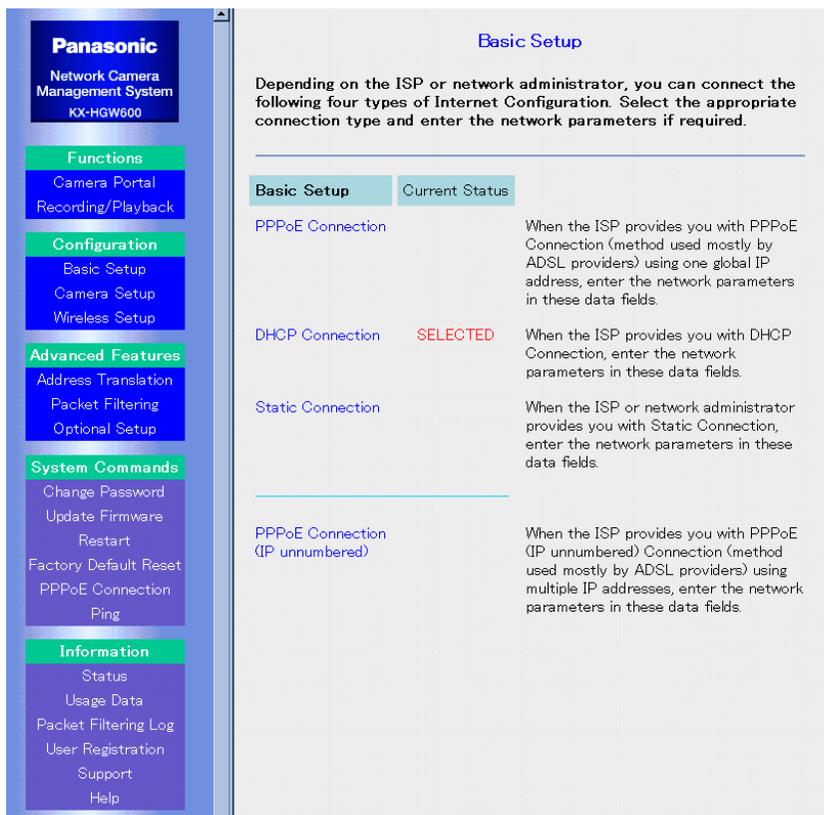
Notes

- You can change the password on the Setup Page. Please refer to "Change Password" on Page 110.
- For more information about the Setup Page, please refer to "Setup Page" on Page 68.

Setting up LAN (Intranet) Configuration

To connect the KX-HGW600 to the LAN (Intranet), static IP address is needed.
When your network administrator provides you with Static Connection, follow the steps below.
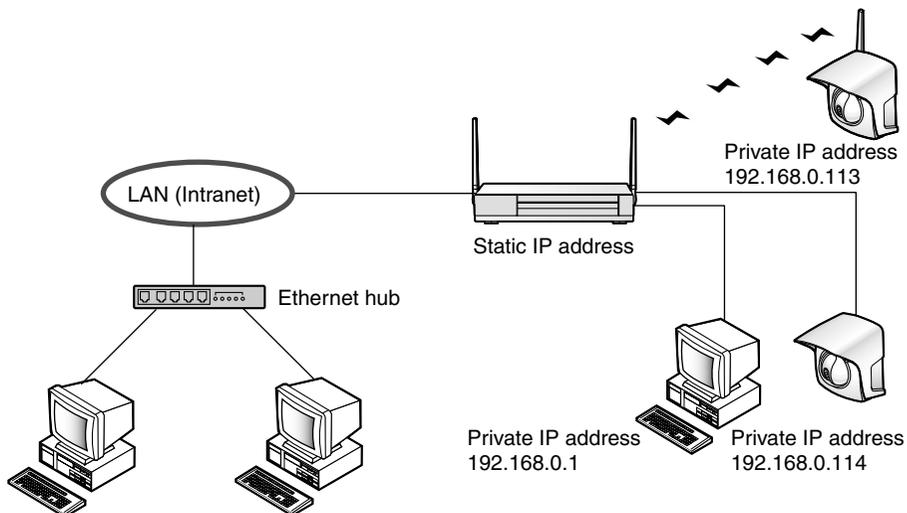
1. Click **[Basic Setup]** on the Setup Page.
   SELECTED is displayed next to the configuration type which is currently selected.

2. Click **[Static Connection]**.

3. Enter **IP Address**, **Subnet Mask**, **Gateway**, **DNS Server 1** and
DNS Server 2. If requested by your network administrator, enter **Domain Name**.
For each input value, please refer to network information on Page 38.

- To clear the current settings, click **[Clear]**.

Note

Do not enter the space in each data field.

4. When you have finished, click **[Save]**. The settings will be saved.

5. Click **[Restart Now!]**.
Next, confirm the LAN (Intranet) Configuration (☞ Page 47).

Confirming the LAN (Intranet) Configuration

After completing your LAN (Intranet) configuration, if you can access the Camera Portal page from the PC on the LAN (Intranet), the connection between the LAN (Intranet) and the KX-HGW600 has been successfully made.

1. From the PC on the LAN (Intranet), start up your web browser.

2. Enter the IP address(:Port No.) assigned on the Basic Setup window (☞ Page 38) in the address field of your web browser. The Camera Portal page appears.

- When port no. is 80 (default setting), you do not need to enter port no.

If the Camera Portal page does not appear (☞ Page 141)
- Make sure the IP address assigned on the Basic Setup window has been correctly entered in the address field of the web browser.
- Make sure the connection between the KX-HGW600 and the Ethernet hub has been successfully made.
- Make sure the WAN indicator on the KX-HGW600 and the indicator on the Ethernet hub light green.
- The proxy server setting of your web browser may be needed to access the Camera Portal page (☞ Page 126).

Setup

2.3.3 Connecting your Network Camera

Setting up your Network Camera automatically

Once you connect your Panasonic Network Cameras (KX-HCM series) to the KX-HGW600 and turn them on, the network settings such as IP address, port no. are configured automatically by the Automatic Setup function. After completing the LAN (Intranet) configuration, make sure the target Network Camera is turned off and follow the steps below.

1. a) To connect the KX-HGW600 and Network Camera with an Ethernet cable, connect the Ethernet cable to one of the LAN 1—4 jacks of the KX-HGW600 and the other end to the Ethernet jack of the Network Camera.

b) To connect the KX-HGW600 and Network Camera in the wireless network, locate the wireless Network Camera near the KX-HGW600.

Note
All Ethernet jacks have an automatic MDI/MDIX feature, which means either a "straight" or "cross" cable can be used to connect to any jack. The KX-HGW600 will automatically detect which cable has been inserted.

2. Turn on the Network Camera.

3. Push **CLEAR SETTING** button on the Network Camera.
The Network Camera starts to communicate with the KX-HGW600 that control transmission paths on the network. After that, the Network Camera screen is registered on the Camera Portal page.

- The Automatic Setup function automatically configures the following network settings.

KX-HGW600	Port Forwarding Camera Entry Screen Assignment
Network Camera	Port No. IP Address Subnet Mask Default Gateway DNS Server Address

- The Automatic Setup function assigns each port number and IP address in the following order.

Camera Name	**Port No.**	**IP Address**
Cam 01	60001	192.168.0.113
Cam 02	60002	192.168.0.114
Cam 03	60003	192.168.0.115
•	•	•
•	•	•
•	•	•
Cam 16	60016	192.168.0.128

Setting up your Network Camera manually

- To set up your Network Camera manually, please refer to Page 75.
- To set up the specific Network Camera manually, clear **[Enable]** check box on the Network window of Network Camera **([Network] → 1. Network Configuration from the Setup Program)**. For more information, please refer to the Network Camera's manual.

2.3.4   Viewing the Network Camera screen

You can view the Network Camera screen on the Camera Portal page.

1. a) Enter "**http://192.168.0.254(:Port No.)**" in the address field of your web browser. The Camera Portal page appears.

  • When port no. is 80 (default setting), you do not need to enter port no.

Image field
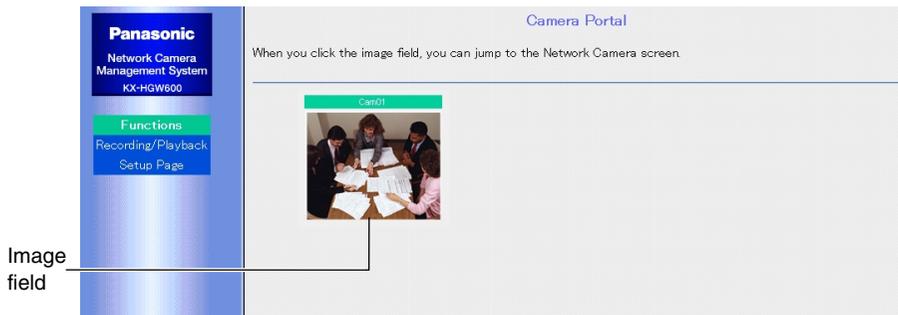
b) Enter the IP address(:Port No.) on the WAN in the address field of your web browser. The Camera Portal page appears.

  • When port no. is 80 (default setting), you do not need to enter port no.
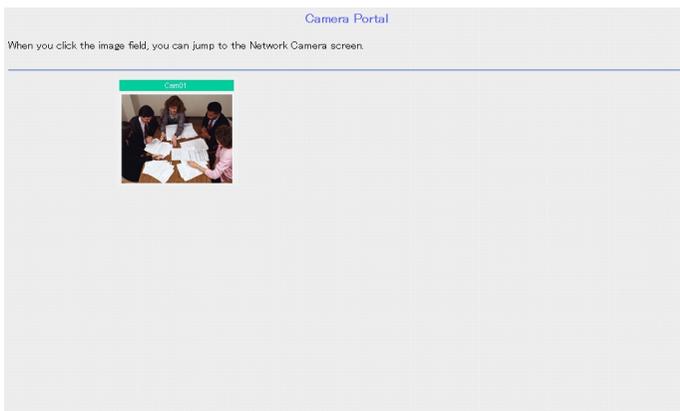
Note

To view the Network Camera screen from the WAN side, please refer to "To access the Camera Portal page from the WAN side" on Page 79.

2. Click the desired image field.
The Network Camera screen appears on another web page.
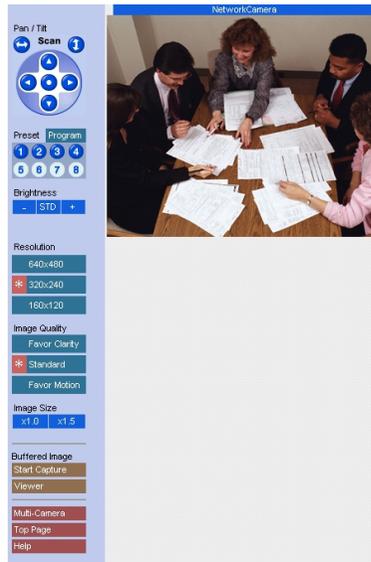
If the image field on the Camera Portal page does not appear
- Make sure the indicators light green.
- The proxy server setting of your web browser may be needed to access the Camera Portal page (☞ Page 126).
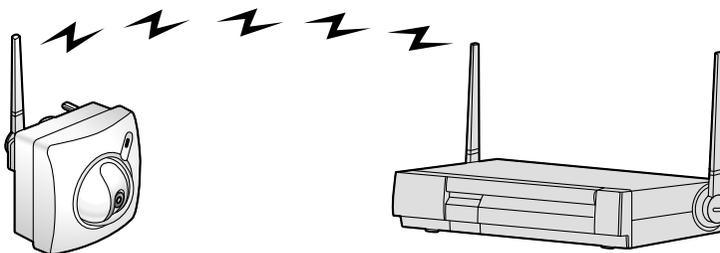- Make sure the modem is turned on first, next the KX-HGW600, then the PC.

Section 3
Recording/Playback

Recording
/Playback

3.1　Recording/Playback

Recording/Playback function allows you to record and play back the selected Network Camera screen using an SD memory card (customer provided).
The Recording/Playback function is designed for a single user.
For the operation by multiple users, this function may not work properly.

3.1.1　Preparing for recording

1. Pushing the cover, open the SD memory card slot.

Tab
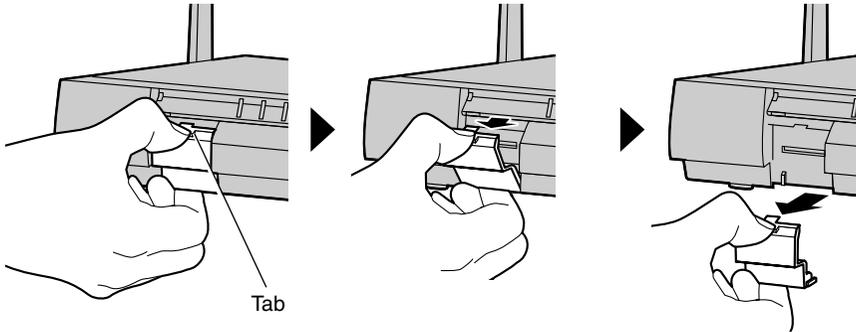
2. Insert the SD memory card into the SD memory card slot and close the cover.

Insert the SD memory card until you hear a click. To remove, push it gently.

Align a tab with a groove.

Press it until you hear a click.
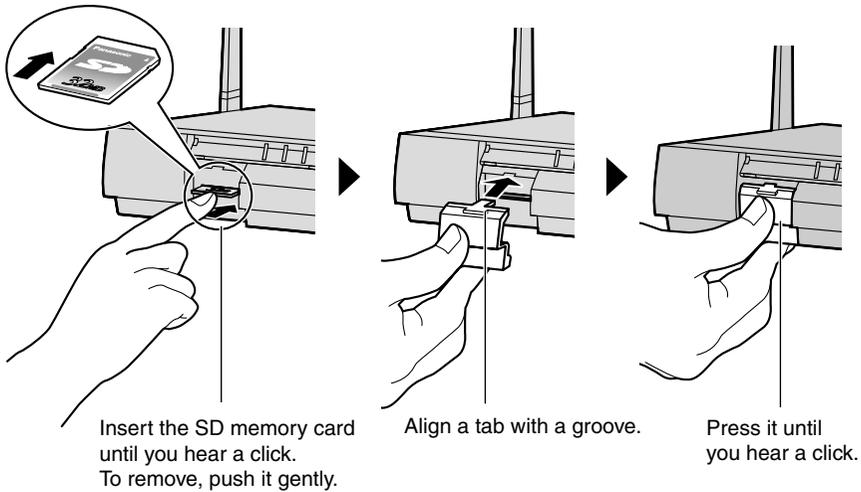
Note
When you remove the SD memory card, stop recording or playing back.

3. Access the Camera Portal page from the PC accessible to the KX-HGW600.
For more information about the access to the Camera Portal page, please refer
to Page 36, Page 50 and Page 78.
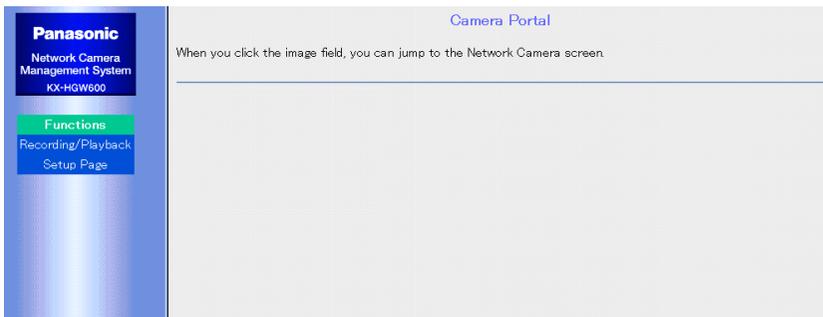
4. Click **[Recording/Playback]**.
The authentication window appears.

5. Enter "**KX-HGW**" (default setting) in the **Password** data field.
Leave the **User Name** data field blank (default setting).

Note

You can change the user name and password on the Setup Page. Please refer
to "Change Password" on Page 110.

6. Click **[OK]**.
The Recording window appears (☞ Page 56).

Note

Please refer to Page 65 to format the SD memory card.

3.1.2   Recording/Playback page

Recording/Playback page allows you to view and record the Network Camera screen registered on the Camera Portal page.

Notes

- The Recording/Playback function is designed for a single user.
  For the operation by multiple users, this function may not work properly.
- To access the Recording/Playback page from the WAN (Internet) side, please refer to "To access the Setup Page or Recording/Playback page from the WAN side" on Page 81.

1. Click **[Recording/Playback]** on the Setup Page or the Camera Portal page.
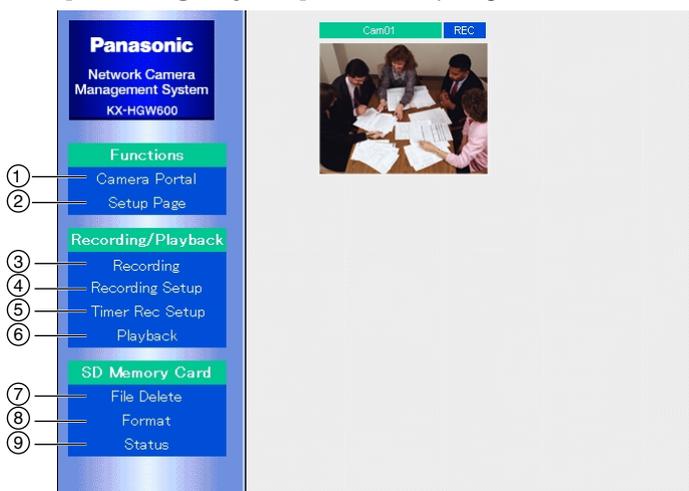
Functions:

(1) Camera Portal: Jumping to the Camera Portal page
                            (☞ Page 36 and Page 50)
(2) Setup Page: Jumping to the Setup Page (☞ Page 68)

Recording/Playback:

(3) Recording: Recording the Network Camera screen registered on the
                            Camera Portal page (☞ Page 57)
(4) Recording Setup: Setting the Image Resolution, Image Quality and Frame
                            rate of the recorded image (☞ Page 58)
(5) Timer Rec Setup: Setting the camera name and the recording time
                            (☞ Page 59)
(6) Playback: Playing back the recorded image (☞ Page 61)

SD Memory Card:

(7) File Delete: Deleting the files in your SD memory card (☞ Page 64)
(8) Format: Formatting your SD memory card (☞ Page 65)
(9) Status: Checking the status of your SD memory card
                            (☞ Page 65)

3.1.3   Recording

Recording window allows you to record the Network Camera screen on the Camera Portal page.

Note

If the ID and password are set on the Security: Administrator window of Network Camera, you have to enter the same ID (user name) and password on the Camera Setup window of the KX-HGW600 (☞ Page 73).

1. Click **[Recording]** on the Recording/Playback page.

2. Click **[REC]** on the Recording window.
The recording starts. To stop recording, click **[Stop]**.

Recording /Playback

3.1.4   Recording Setup

Recording Setup window allows you to set the Image Resolution, Image Quality and Frame rate of the recorded image.

1. Click **[Recording Setup]** on the Recording/Playback page.
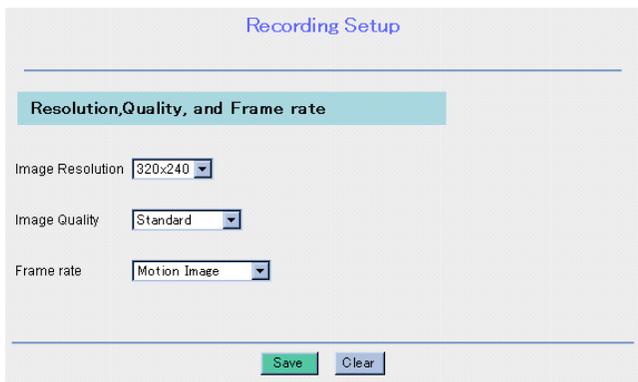
2. Select **Image Resolution**, **Image Quality** and **Frame rate** from each drop-down menu.

3. When you have finished, click **[Save]**. The settings will be saved and a "Success" message appears on the display.

Instructions for the data fields

Image Resolution	Select 640 x 480, 320 x 240 or 160 x 120.
Image Quality	Select Favor clarity, Standard or Favor motion. • Favor clarity: Optimized for good clarity • Standard: Standard performance • Favor motion: Optimized for motion display
Frame rate*	Select Motion Image or Still Images (60 frames per minute [1 frame per second] to 1 frame per hour). • Motion Image: Recording the motion image • Still Images: Recording the still images Please refer to "Recording Duration Information" on Page 137 for more information.

* Frame rate changes with the condition of a network.

3.1.5 Timer Recording Setup

Timer Recording Setup window allows you to set the camera name and the recording time.

Notes
- When you change the timer recording settings, disable the previous settings and save. Then set the new timer settings.
- Timer Recording settings are available only for a single Network Camera.
- The date and time of recorded images synchronize the Network Camera internal clock. Confirm the date and time settings of the Network Camera.

1. Click **[Timer Rec Setup]** on the Recording/Playback page.

2. Select **Camera Name** from the drop-down menu.
For confirmation, the image appears.
The image resolution differs from the settings on the Recording Setup window.

3. Select **Enable** or **Disable**.

Note

The KX-HGW600 has two timer settings.

4. Check the desired day of the week.
If the setting time passes over midnight, please check the day of start time.
The start and end time is set only in 24h time mode.

5. Set the start and end time.

6. When you have finished, click **[Save]**. The settings will be saved and a "Success" message appears on the display.

When the Network Camera is reserved for the timer recording, the **[REC]** button is changed to **[Reserved]**. The **[REC]** buttons of the other Network Cameras are displayed as **[Timer]**.

Note

Do not overlap the timer settings between **Timer 1** and **Timer 2**.
Overlapped timer settings cause you to stop recording.
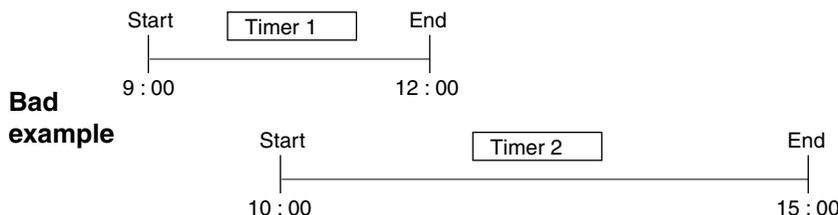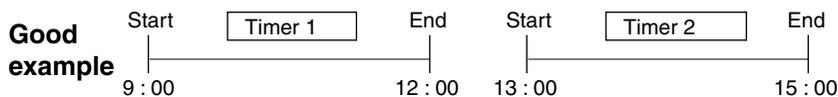
3.1.6 Playback

Playback window allows you to play back the recorded image.

1. Click **[Playback]** on the Recording/Playback page.

2. Select **File Name** from each drop-down menu.
The recorded image, date and time, camera name, Image Resolution, Image Quality and Frame rate appear on the Playback window.

**Year/Month/Day
Hour:Minute:Second
✳✳ images**
(Current number of sheets)

3. Click the following buttons to play back the recorded image.

[Motion Play]	The buffered images are displayed continuously.
[<Prev. Image] & [Next Image>]	The previous image or next image is displayed.
[<10] & [10>]	The 10th image before or after the image is displayed.
[<100] & [100>]	The 100th image before or after the image is displayed.

Notes

• The Recording/Playback function is designed for a single user.
  For the operation by multiple users, this function may not work properly.
• The image resolution of playback is the same as setting on the Recording
  Setup window.
• The motion play speed differs from the Frame rate set on the Recording
  Setup window.
• The recorded image cannot be played back during the normal recording or
  timer recording.
• When you play back the still image, the recording time is displayed.
• If the date and time of Network Camera is changed during the recording, the
  recording date and time on the Playback window may not be displayed
  correctly.

File Name
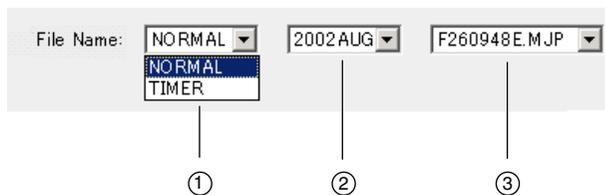
①	Select the recording mode. • NORMAL: the file recorded by clicking **[REC]** on the Recording window • TIMER: the file recorded by setting up on the Timer Recording Setup window
②	Select the year and month of the recorded image
③	Select the file name of the recorded image

<File name and the stored place>

The file name consists of the 8 unique symbols based on the Camera Setup window (Camera No.: the letters A to P) and the data and time of the recorded image. The place of the created files depends on the recording mode. When clicking **[REC]** on the Recording window, the files are saved in the "NORMAL" folder. When setting up timer recording, the files are saved in the "TIMER" folder.

<Example>

When the camera name (Cam06) is timer-recorded at 9:48:14, August 26, 2002, the file name "F260948E.MJP" is created in the "TIMER" and "2002AUG" folders.

```
<File Name>

F   26   09   48   E.MJP
                   │
                   Second (A – T)*
              Minute (00 – 59)
         Hour (00 – 23)
    Day (01 – 31)
Camera No. (A – P)
```

```
┌── NORMAL – 2002 JAN
│              :
└── TIMER   – 2002 JAN
               :
            2002 AUG – F260948E.MJP
```

* The information of second(s) is alphabetized every 3 seconds.

Recording /Playback

3.2   SD Memory Card

3.2.1   File Delete

File Delete window allows you to delete the files in an SD memory card (customer provided).

1. Click **[File Delete]** on the Recording/Playback page.

Note

The files cannot be deleted during the normal recording or timer recording. Please delete the files after disabling the recording.

2. Select **File Name** from each drop-down menu.
The selected image, the file information and **[Delete]** button appear on the File Delete window.

3. Click **[Delete]**.

3.2.2　Format

Format window allows you to format your SD memory card.

1. Click **[Format]** on the Recording/Playback page.
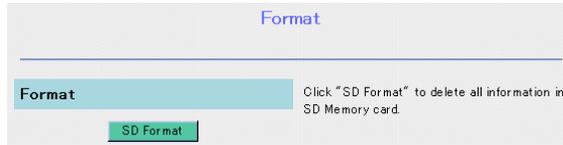
2. Click **[SD Format]**.
A "Confirmation" message appears. Click **[Yes]** to format.
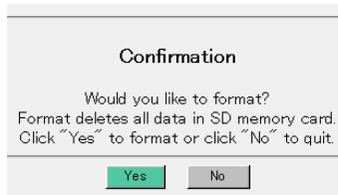
Note
This function is useful when you want to delete all the files in your SD memory card.

3.2.3　Status

Status window allows you to check the status of your SD memory card.

1. Click **[Status]** on the Recording/Playback page.
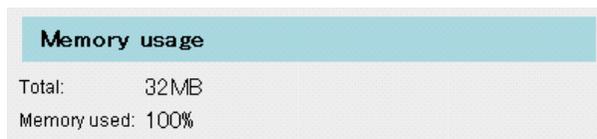
Section 4
System Features

System
Features

4.1 Setup Page

Setup Page allows you to program the KX-HGW600 easily from your PC and to access other helpful information.

Note

To access the Setup Page from the WAN (Internet) side, please refer to "To access the Setup Page or Recording/Playback page from the WAN side" on Page 81.

Functions:

① Camera Portal: Jumping to the Camera Portal page (☞ Page 70)
② Recording/Playback: Jumping to the Recording window on the Recording/
                           Playback page (☞ Page 71)

Configuration:

③ Basic Setup: Setting the basic network parameters for the WAN (Internet) access (☞ Page 72)

④ Camera Setup: Setting up the Network Cameras connected to the KX-HGW600 (☞ Page 73)

⑤ Wireless Setup: Setting up the network parameters for wireless communication and for security (☞ Page 83)

Advanced Features:

⑥ Address Translation: Translating the global IP address on the WAN (Internet) to private IP address that is sent out to the LAN (☞ Page 93)

⑦ Packet Filtering: Analyzing the incoming and outgoing packets and lets them pass or not based on the information such as Source IP Address, Destination IP Address, Source Port, Destination Port, Protocol, etc. (☞ Page 101)

⑧ Optional Setup: Setting the optional settings for the access to the LAN or WAN (Internet) (☞ Page 105)

System Commands:

⑨ Change Password: Changing the user name and password to access the Setup Page (☞ Page 110)

⑩ Update Firmware*:   Upgrading new firmware (☞ Page 112)

⑪ Restart: Restarting the KX-HGW600 with all the settings preserved (☞ Page 114)

⑫ Factory Default Reset: Initializing the KX-HGW600, resetting all the settings to the default setting (☞ Page 114 and Page 134)

⑬ PPPoE Connection: Initiating/stopping your PPPoE Connection manually (☞ Page 115)

⑭ Ping: Confirming if a device with an IP address is successfully linked to your KX-HGW600 (☞ Page 117)

Information:

⑮ Status: Checking the status of the KX-HGW600 (☞ Page 118)

⑯ Usage Data: Checking the statistics of the KX-HGW600 (☞ Page 118)

⑰ Packet Filtering Log: Checking the log information applied by the rules on the Packet Filtering window (☞ Page 119)

⑱ User Registration*:   Jumping to the Panasonic web site for your registration (☞ Page 120)

⑲ Support*:   Jumping to the Panasonic web site for helping you with the KX-HGW600 (☞ Page 121)

⑳ Help: Providing you with instructions about the commands and functions of the Setup Page (☞ Page 122)

* These functions require an Internet configuration.

System Features

4.2 Functions

4.2.1 Camera Portal

Camera Portal allows you to access the Camera Portal page.

1. Click **[Camera Portal]** on the Setup Page. The Camera Portal page appears.
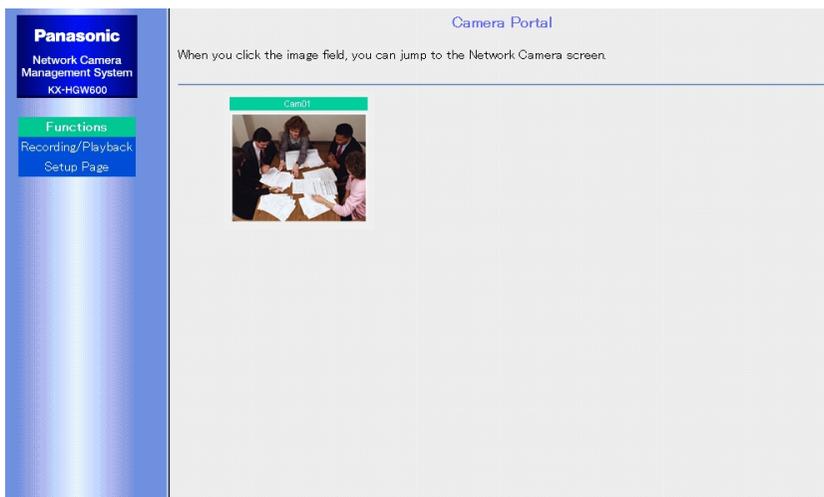
Note

For more information about the Camera Portal page, please refer to Page 36 or Page 50.

4.2.2 Recording/Playback

Recording/Playback allows you to access the Recording window on the Recording/Playback page.

1. Click **[Recording/Playback]** on the Setup Page. The Recording window appears.
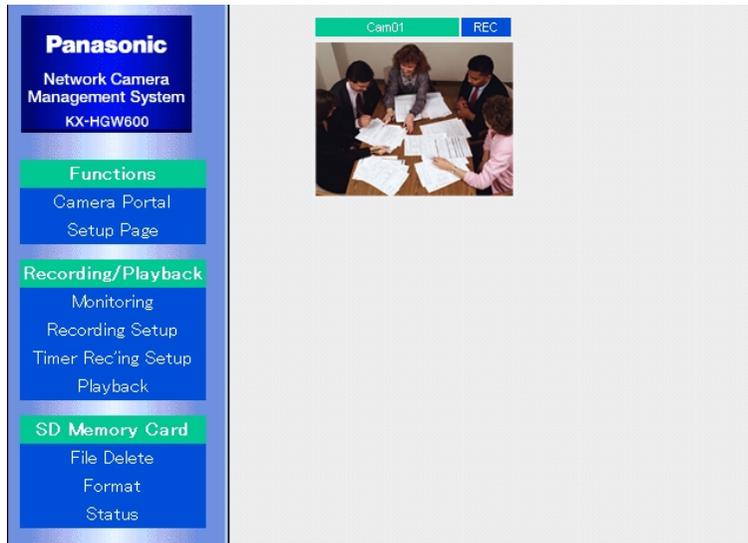
Note

For more information about the Recording window, please refer to Page 56.

4.3 Configuration

4.3.1 Basic Setup

Basic Setup window allows you to set the basic network parameters for the WAN (Internet) access. To set the network parameters, follow the steps below.

1. Click **[Basic Setup]** on the Setup Page.

2. Check the information for network connection and select the appropriate configuration type.

3. Enter each network parameter in the appropriate data fields.
   - To clear the current settings, click **[Clear]**.

4. When you have finished, click **[Save]**. The settings will be saved.

5. Click **[Restart Now!]**.

Note

For instructions about each data field, please refer to "Connecting to the Internet" on Page 17 or "Connecting to the LAN (Intranet)" on Page 38.

4.3.2 Camera Setup

Camera Setup window allows you to set up the Network Cameras connected to the KX-HGW600. Since the network settings such as camera name, port no., and IP address are automatically configured by the Automatic Setup function, normally you do not need to set up any further. To change the camera name, follow the steps below. To configure the network settings of Network Camera manually, follow the steps on Page 75.

To change the Camera Name

1. Click **[Camera Setup]** on the Setup Page.

Note

You can jump to the Network Camera screen by clicking **[Confirm]** in the **Registration/Modification** table.

2. Click the entry number of the Network Camera in the **Registration/Modification** table.

3. Enter **Camera Name** and click **[Change]**.

- To delete the registered Network Camera, click **[Delete]**.

Note

If the ID and password are set on the Security: Administrator window of Network Camera, you have to enter the same ID (user name) and password. For more information, please refer to Network Camera's manual.

4. When you have finished, click **[Save]**. The settings will be saved.

5. Click **[Restart Now!]**.

Instructions for the data fields

Camera Name	It is displayed on the Camera Portal page. Enter the camera name up to 16 alphanumeric characters.
User Name	Enter the ID (user name) registered on the Security: Administrator window of Network Camera.
Password	Enter the password registered on the Security: Administrator window of Network Camera.

To set up your Network Camera manually

To set up your Network Camera manually, follow the steps below.

1. Check **Do Not Use** in the **Automatic Setup**.

2. Click **[Add]** in the **Registration/Modification** table.

3. Enter **Camera Name**, **Port No.** and **IP Address** and click **[Add]**.

Note

If the ID and password are set on the Security: Administrator window of Network Camera, you have to enter the same ID (user name) and password. For more information, please refer to Network Camera's manual.

4. When you have finished, click **[Save]**. The settings will be saved.

5. Click **[Restart Now!]**.

Notes

- When you set up your Network Camera manually, the Network Camera also needs the setting of the static IP address on the Network window. Please refer to the Network Camera's manual for more information.
- When you set up your Network Camera manually, the KX-HGW600 needs the settings on the Screen Assignment window (☞ Page 77) and Port Forwarding window (☞ Page 94).
- The IP addresses and port numbers used by the Automatic Setup function are not available when you add Network Cameras. Please refer to "Connecting your Network Camera" on Page 34 and Page 48 for the IP addresses and port numbers used by the Automatic Setup function.

Instructions for the data fields

Camera Name	Enter the camera name up to 16 alphanumeric characters.
Port No.	Enter the port number of the Network Camera.
IP Address	Enter the IP address of the Network Camera.
User Name	Enter the ID (user name) registered on the Security: Administrator window of Network Camera.
Password	Enter the password registered on the Security: Administrator window of Network Camera.

Screen Assignment

Screen Assignment window allows you to set the screen format and the location of the image fields on the Camera Portal page.

1. Click **[Screen Assignment]** on the Camera Setup window.

Screen Format

- ⊙ Camera Name and Still Image(refreshing)
- ○ Camera Name and Still Image
- ○ Camera Name Only

Screen Assignment

The following tables shows the Network Camera screen located on the Camera Portal site. Click the target screen frame and select the camera name from the pull-down menu. Then click [Select]. If you want to remove the Network Camera screen, select [Remove].

Cam01	Not Registered	Not Registered	Not Registered
Not Registered	Not Registered	Not Registered	Not Registered
Not Registered	Not Registered	Not Registered	Not Registered
Not Registered	Not Registered	Not Registered	Not Registered

Choose Screen Frame ▾

Save   Clear

2. Check **Camera Name and Still Image (refreshing), Camera Name and Still Image** or **Camera Name Only** in the **Screen Format**.

3. Click the screen frame in the **Screen Assignment**.

4. Select the desired camera name from the drop-down menu and click **[Select]**.

- To remove the Network Camera from the Camera Portal page, select **[Remove]**.
- To quit the current setting of Screen Assignment, click **[Cancel]**.

5. When you have finished, click **[Save]**. The settings will be saved.

- To clear the current settings, click **[Clear]**.

6. Click **[Restart Now!]**.

Instructions for the data fields

Screen Format	Select the display style on the Camera Portal page according to your network condition.
Screen Assignment	Change the location of the image fields or register the target Network Cameras on the Camera Portal page. Up to 16 Network Cameras can be displayed on the Camera Portal page.

System Features

Access Control

Access Control window allows you to control the access to the Camera Portal page from the WAN side of the KX-HGW600.
This setting is not for the access control to the Setup Page or Recording/Playback page.

1. Click **[Access Control]** on the Camera Setup window.

2. Check **None**, **Administrator Only** or **Restricted Access**.

- When you check **Administrator Only**, the following window appears.
  Enter the user name and password to access the Camera Portal page.

3. When you have finished, click **[Save]**. The setting will be saved.

4. Click **[Restart Now!]**.
When you check **Administrator Only**, the authentication window appears. Enter the registered user name and password and click **[OK]**.

Instructions for the data fields

None	Anyone can access the Camera Portal page from the WAN side. To access the Setup Page, the password for Setup Page (☞ Page 110) is required.
Administrator Only	Only administrator can access the Camera Portal page from the WAN side by entering the password for Camera Portal. To access the Setup Page, the password for Setup Page (☞ Page 110) is required.
Restricted Access	No one can access the Camera Portal page from the WAN side.

To access the Camera Portal page from the WAN side

1. From the PC on the LAN side, click **[Access Control]** on the Camera Setup window.

2. Check **Administrator Only**.

System Features

3. Enter the user name and password (e.g., Panasonic) to access the Camera Portal page.

4. When you have finished, click **[Save]**.

5. Click **[Restart Now!]**.
The authentication window appears.

6. Enter the user name and password registered on the authentication window and then click **[OK]**.

7. From the PC on the WAN side, enter the IP address on the WAN in the address field of your web browser.
The authentication window appears.

8. Enter the user name and password registered on the Access Control window.
The Camera Portal page appears.
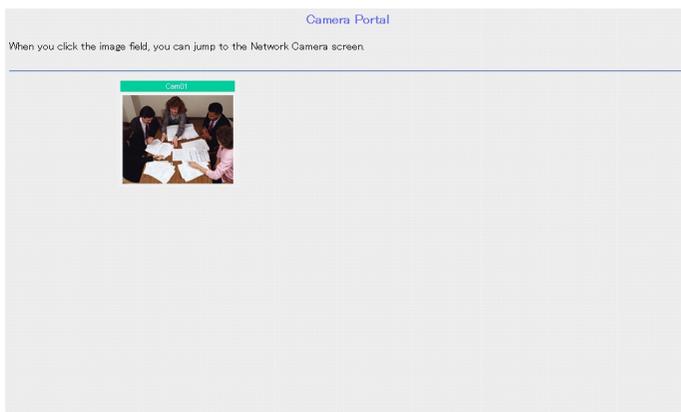
To access the Setup Page or Recording/Playback page from the WAN side

1. (a) Enter "**http://IP address**(:Port No.)**/config.html**" on the web browser to access the Setup Page. When port no. is 80 (default setting), you do not need to enter port no. Then the Setup Page appears.

System Features
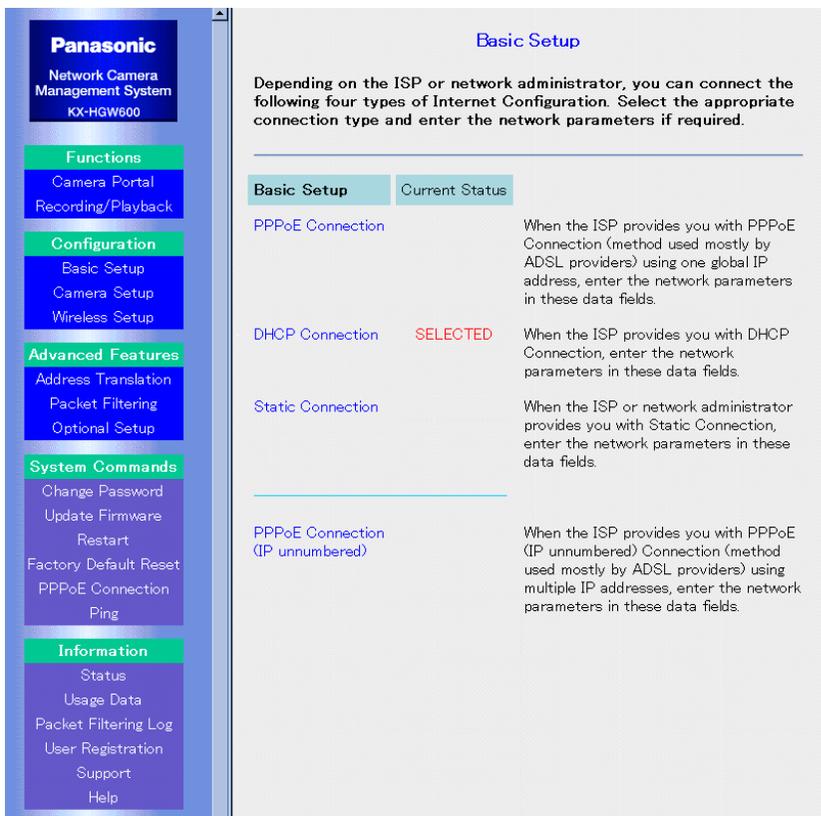
(b) Enter "**http://IP address**(:Port No.)**/record.html**" on the web browser to access the Recording/ Playback page. When port no. is 80 (default setting), you do not need to enter port no. Then the Recording/Playback page appears.

Panasonic

Network Camera
Management System
KX-HGW600

Functions
Camera Portal
Setup Page

Recording/Playback
Monitoring
Recording Setup
Timer Rec'ing Setup
Playback

SD Memory Card
File Delete
Format
Status

Cam01   REC
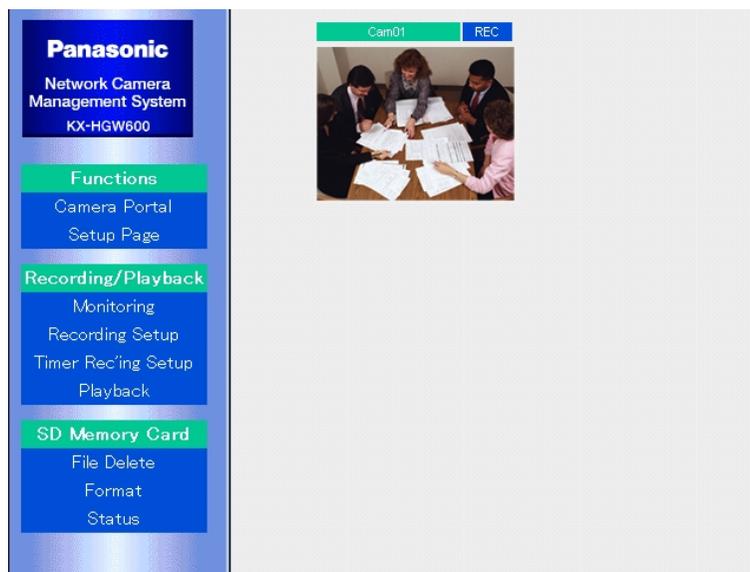
4.3.3   Wireless Setup

Wireless Setup window allows you to set up the network parameters for wireless communication and for security. SSID (Service Set IDentifier) is a unique network name shared among all the wireless devices. To communicate, all the wireless devices must be set the same SSID and channel.

SSID : HGW600
Channel: 1

SSID : HGW600
Channel: 1

Not accessible

SSID : EARTH
Channel: 6

SSID : HGW600
Channel: 1
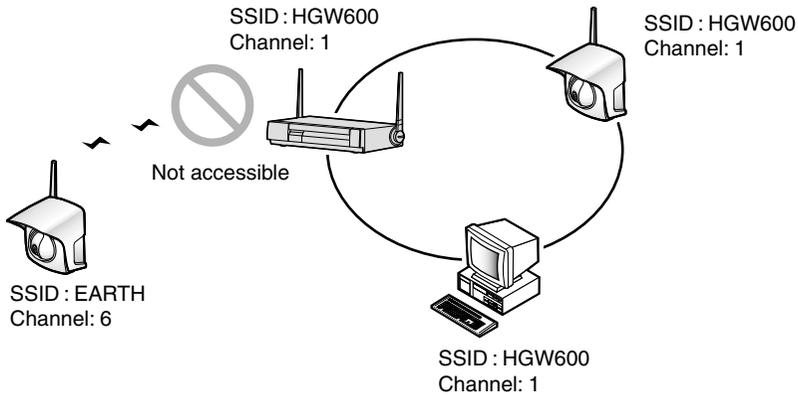
Notes

• If the KX-HGW600 and wireless devices are set the same SSID, the channel is automatically adjusted to the KX-HGW600 and wireless communication can be performed.
• To prevent an invalid access to the wireless devices, security settings are strongly recommended (☞ Page 128).

1. Click **[Wireless Setup]** on the Setup Page.

SSID

SSID   HGW600

Blanked SSID connection

⊙ Permit   ○ Do Not Permit

Channel

Channel   1 ▾

Save   Clear

2. Set **SSID**, **Blanked SSID connection** and **Channel**.

• To clear the current settings, click **[Clear]**.
• Enter the same SSID to the wireless devices connected to the KX-HGW600.

System Features

3. When you have finished, click **[Save]**. The settings will be saved.

4. Click **[Restart Now!]**.

Notes
- Do not enter the space in the **SSID**.
- After setting up your Network Camera and PC, enter the same SSID to the wireless devices for security and check **Do Not Permit** in the **Blanked SSID connection**.

Instructions for the data fields

SSID	SSID (Service Set IDentifier) is a wireless network name. For security, the wireless devices require the same SSID in the wireless communication. Enter the SSID as follows: (The default setting is "HGW600".) • The SSID is case-sensitive. • The SSID can be up to 32 alphanumeric characters.
Blanked SSID connection	When you check **Permit**, the wireless devices which are set to "**ANY**" or blank in the **SSID** can communicate. After completing the SSID setting, check **Do Not Permit** for security.
Channel	You can set the number of the channel on which wireless devices communicate. This channel can be selected from 1 to 11 using the drop-down menu. (The default setting is "1".) If one or more wireless devices are communicating each other, the communication speed may be reduced due to the same bandwidth being used. In this case, change to a different channel for good communication. 1 Channel 6 Channel 11 Channel 2 Channel 7 Channel 3 Channel 8 Channel 4 Channel 9 Channel 5 Channel 10 Channel 2400MHz 2500MHz
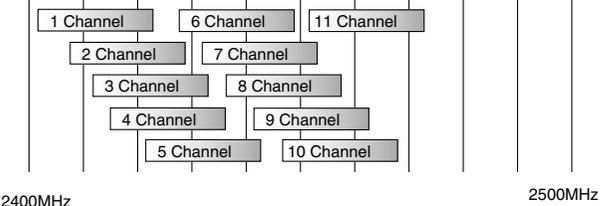
Notes
- Set Encryption or MAC Address Filtering if necessary. To encrypt the data that is transmitted over your wireless network, click **[Encryption]** on the Wireless Setup window (☞ Page 86).
- If you want to limit the connections from the wireless devices to the KX-HGW600, click **[MAC Address Filtering]** on the Wireless Setup window. (☞ Page 91).

High performance for wireless communication

The performance of wireless communication will change under the condition where you install Network Camera and the KX-HGW600.

Notes
- Please install the KX-HGW600 2 m (8 feet) away from electrical appliances such as TVs or cordless telephones.
- Metal or steel framework, such as refrigerators, can hinder radio communications. Open areas offer better performance.
- Microwave ovens and some cordless telephones (2.4 GHz) may interfere with wireless frequencies the KX-HGW600 uses. For better results, install as far away from these devices as possible.
- Many wireless devices on the same channel make the communication speed slower. Please set 5 channels apart to prevent the bandwidth from overlapping. If another wireless network use Channel 6, you may use Channel 1 or 11.
- Do not put excessive weight or pressure on the antenna as it can be damaged.

System Features

Encryption

Encryption window allows you to encrypt the data that is transmitted over your wireless network. By setting a WEP key in the KX-HGW600, you can prevent wireless network data from being decrypted externally. To read an encrypted data, all the wireless devices must set the same WEP key.
The KX-HGW600 supports not only Shared Key but Open System as the encryption system and switches automatically to the encryption system corresponding to each wireless device.
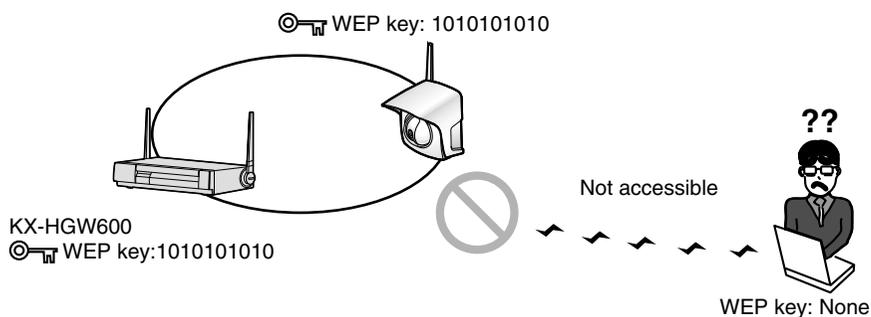
Note

The WEP key is created by the passphrase. There are two types of WEP keys: 40(64) bit and 128 bit.
128 bit encryption is more secure than 40(64) bit encryption.

1. Click **[Encryption]** on the Wireless Setup window.

2. Select **Enabled (40(64) bit)** or **Enabled (128 bit)** from the drop-down menu.

\<When you select Enabled (40(64) bit)\>
The following window appears.

Encryption	
Encryption	Enabled (40(64)bit) ▼

WEP Key	
Manual/Passphrase	Passphrase ▼

Passphrase	
Passphrase	[ ]

Default Key	
Default Key	1 ▼

Save   Clear

3. Select **Passphrase** or **Manual** from the drop-down menu.

4. a) When you select **Passphrase**, enter the passphrase and select one of four default keys.
   b) When you select **Manual**, the following window appears.
      Enter 10 digits of hexadecimal values in each key (1 to 4) and select one of the default keys (☞ Page 90).

- To clear the current settings, click **[Clear]**.

Manual WEP key(40(64)bit)

Key1 : ☐ ☐ ☐ ☐ ☐
Key2 : ☐ ☐ ☐ ☐ ☐
Key3 : ☐ ☐ ☐ ☐ ☐
Key4 : ☐ ☐ ☐ ☐ ☐

System Features

Notes
- After restarting the KX-HGW600, the passphrases and WEP keys are displayed with "✱". Please record and save the wireless setup for your future reference.
- Decimal numbers (numbers in base-10) consist of 10 unique symbols: the numbers 0 to 9.
  Hexadecimal numbers (numbers in base-16) consist of 16 unique symbols: the numbers 0 to 9 and the letters A to F. For example, the decimal number 15 is represented as F in the hexadecimal numbering system as follows:

Decimal	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Hexadecimal	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F

<When you select Enabled (128 bit)>
The following window appears.

3. Select **Passphrase** or **Manual** from the drop-down menu.

4. a) When you select **Passphrase**, enter the passphrase.
   b) When you select **Manual**, the following window appears.
      Enter 26 digits of hexadecimal values.

   • To clear the current settings, click **[Clear]**.

Note
After restarting the KX-HGW600, the passphrases and WEP keys are
displayed with "✱". Please record and save the wireless setup for your future
reference.

5. When you have finished, click **[Save]**. The settings will be saved.

6. Click **[Restart Now!]**.

Instructions for the data fields

Encryption	The KX-HGW600 allows you to select between 40(64) bit and 128 bit encryption. When you select **Disabled**, the encryption does not work. When the bit number is higher, the encryption is more secure but the communication speed is slower.
WEP Key	Depending on the types of wireless devices, the KX-HGW600 may create the different WEP key regardless of the same passphrase. In this case, select **Manual** and enter the same WEP key as that of the corresponding wireless device and select one of the default keys. It is recommended that you select **Passphrase**.
Passphrase	The passphrase can be up to 31 alphanumeric characters. The passphrase is case sensitive.
Default key	When you select **Enabled (40(64) bit)**, select one of four default keys.
Manual WEP key • **40 (64) bit** • **128 bit**	When you select **Manual**, enter the WEP key manually. Enter 10 digits of hexadecimal values in each key (1 to 4) and select one of the default keys. Enter 26 digits of hexadecimal values.

System Features

Manual WEP key

Depending on the types of wireless devices, the KX-HGW600 may create the different WEP key regardless of the same passphrase. In this case, select **Manual** and enter the same WEP key as that of the corresponding wireless device and select one of the default keys.
For 40(64) bit WEP key, enter the same 10 digits of hexadecimal values in each key (1 to 4) and select one of the default keys. Set the same 40(64) bit WEP key as the KX-HGW600 to the corresponding wireless device and select one of the default keys.
For 128 bit WEP key, enter the same 26 digits of hexadecimal values.

<Example>

• When the same four WEP keys are entered on the KX-HGW600 and the wireless devices, the KX-HGW600 can communicate with the wireless devices.

	WEP Key (KX-HGW600) 40 (64) bit	**Default Key**	**WEP Key (Wireless device)** 40 (64) bit	**Default Key**
Key 1	A1 A1 A1 A1 A1		A1 A1 A1 A1 A1	
Key 2	B1 B1 B1 B1 B1	**Good example**	B1 B1 B1 B1 B1	
Key 3	12 34 56 78 9A		12 34 56 78 9A	
Key 4	AB CD EF 01 23		AB CD EF 01 23	

• When the different WEP keys are entered on the wireless devices, the KX-HGW600 cannot communicate with the wireless devices.

	WEP Key (KX-HGW600) 40 (64) bit	**Default Key**	**WEP Key (Wireless device)** 40 (64) bit	**Default Key**
Key 1	A1 A1 A1 A1 A1		44 44 44 44 44	
Key 2	B1 B1 B1 B1 B1	**Bad example**	00 00 00 00 00	
Key 3	12 34 56 78 9A		12 34 56 78 9A	
Key 4	AB CD EF 01 23		AB CD EF 01 23	

Note

If the different Default Keys are selected but the same four WEP keys are entered on the KX-HGW600 and the wireless devices, the KX-HGW600 can communicate with the wireless devices.

MAC Address Filtering

MAC Address Filtering window allows you to limit the wireless devices including the Network Camera and PCs connected to the KX-HGW600. Each network card has MAC address which is assigned as a unique physical address in the world. Only the wireless devices that have MAC addresses entered in the **MAC Address** can communicate.
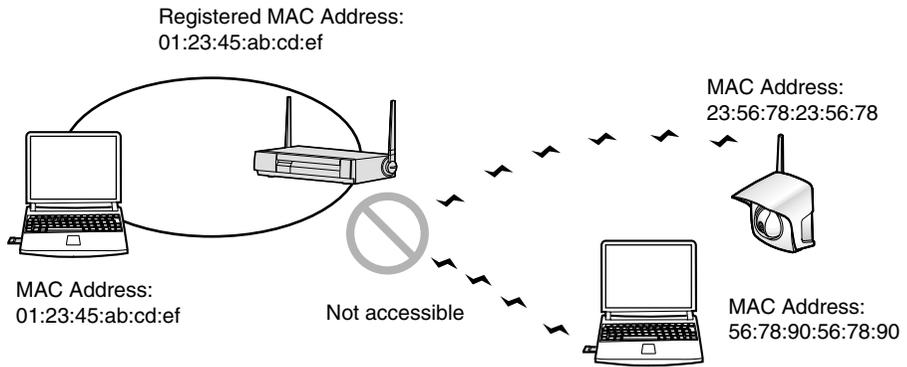
1. Click **[MAC Address Filtering]** on the Wireless Setup window.
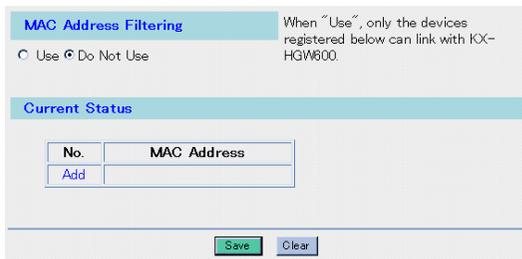
2. Check **Use** in the **MAC Address Filtering**.

3. Click **[Add]** in the **Current Status** table.

MAC Address

Add   Cancel

4. Enter **MAC Address** and click **[Add]**.
Separate each two-digit group (0—9, A—F or a—f) by entering a colon ":"
between them.

5. When you have finished, click **[Save]**. The settings will be saved.

6. Click **[Restart Now!]**.

Note
To confirm the MAC address of your Network Camera, please refer to the
Network Camera's manual.

4.4 Advanced Features

4.4.1 Address Translation

Address Translation window translates the global IP address on the WAN to the private IP address that is sent out to the LAN.

1. Click **[Address Translation]** on the Setup Page.

> **Address Translation**
>
> Address Translation   ⊙ Use ○ Do Not Use
>
> Note: When Address Translation is set to "Do not use" and DNS Relay is set to "Use", please set that the DNS server address for the devices is same as the home network side IP address of KX–HGW600(default value : 192.168.0.254).
>
>   Save   Clear

2. Check **Use** or **Do Not Use** in the **Address Translation**.
(The default setting is "Use".)

- When you set Port Forwarding function using a single global IP address on the WAN (Internet), click **[Port Forwarding]**.
- When you set NAT (IP unnumbered) function using multiple global IP addresses on the WAN (Internet), click **[NAT (IP unnumbered)]**.

Note

When **Auto** is displayed in the **Current Status** table, you cannot change the settings because the KX-HGW600 has set up Network Camera automatically.

3. When you have finished, click **[Save]**. The settings will be saved.

4. Click **[Restart Now!]**.

Note

When you change the setting of Address Translation, configure the network settings of Network Camera and PC connected to the KX-HGW600.

System Features

Port Forwarding

Port Forwarding allows you to view the Network Camera screen on the LAN side from the PC on the WAN (Internet) side. Enter the port number and the IP address of the corresponding Network Camera in the **Forwarding Port No.** and **Forwarding IP Address** respectively.
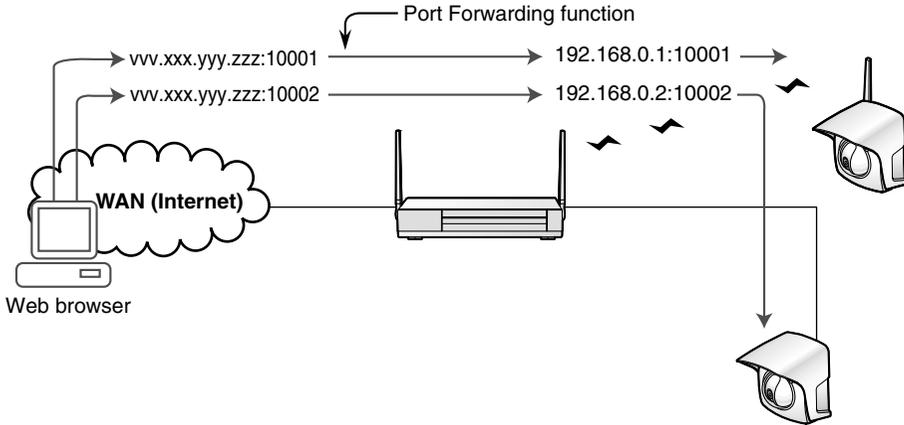
<Example> To set up Network Cameras manually

No.	Entry	Protocol	Forwarding Port No.	Forwarding IP Address
1	Enabled	TCP	10001	192.168.0.1
2	Enabled	TCP	10002	192.168.0.2

To change the priority
When you add two or more entries, **Change of priority** appears. Port Forwarding is processed from the lower entry number to the higher entry number. To change the priority of the entry number, enter the source entry number in the left data field and the destination entry number in the right data field. Then click **[Move]** and **[Save]**. Click **[Restart Now!]** on the Setup Page**.**

Instructions for the data fields

Entry	Check **Enabled** or **Disabled**. When you check **Enabled**, the entry works as specified. When you check **Disabled**, the entry does not work but will work when you check **Enabled** later.
Protocol	Select the protocol(s) to send or receive data to/from the WAN side. **TCP**, **UDP**, **TCP&UDP**, **ICMP** or **PPTP** are available.
Forwarding Port No.	Set the port number(s) to send or receive data to/from the WAN side. Do not enter the space. • When a single port is desired, set the port number. • When a range of port is desired, enter the range using "-". For example, to set the port numbers from 2000 to 3000, enter as "2000-3000". The starting port number must be lower in value than ending port number. The port numbers from 60000 to 60016 are only available for the KX-HGW600.
Forwarding IP Address	Enter the private IP address of each device connected to the KX-HGW600. A data from the Internet is forwarded to the IP address entered in this data field. In this case, set the IP address of the corresponding Network Camera to this value.

Note

When **Auto** is displayed in the **Current Status** table, you cannot change the settings because the KX-HGW600 has set up Network Camera automatically.

System Features

NAT (IP unnumbered)

When your ISP assigns multiple global IP addresses to the WAN (Internet) side of the KX-HGW600, NAT (IP unnumbered) function translates the global IP address to the private IP address.
NAT (IP unnumbered) consists of Static NAT, Port Forwarding and IP Masquerade in this manual.

Static NAT

This function translates a single global IP address on the WAN (Internet) to a private IP address on the LAN statically.

<Example>
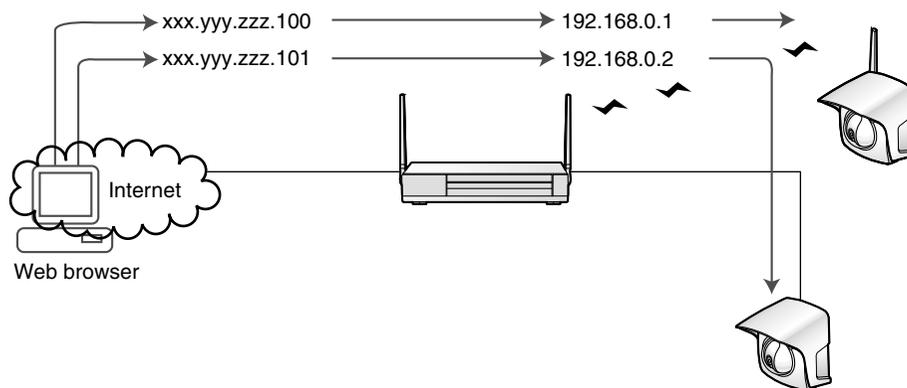
To translate a single global IP address "xxx.yyy.zzz.100" ("xxx.yyy.zzz.101") to a private IP address "192.168.0.1" ("192.168.0.2") statically, enter as follows:
Select "✱" in the **Protocol** and enter "✱" in the **Forwarding Port No.** Then, **0-65535** is displayed in the **Forwarding Port No.**

No.	Entry	IP Address (WAN)	Protocol	Forwarding Port No.	IP Address (LAN)
1	Enabled	xxx.yyy.zzz.100	✱	0-65535	192.168.0.1
2	Enabled	xxx.yyy.zzz.101	✱	0-65535	192.168.0.2

Port Forwarding

This function connects each Network Camera with a single global IP address and its port number. This way, you can view the Network Camera screen from the PC on the WAN (Internet) side.

<Example>
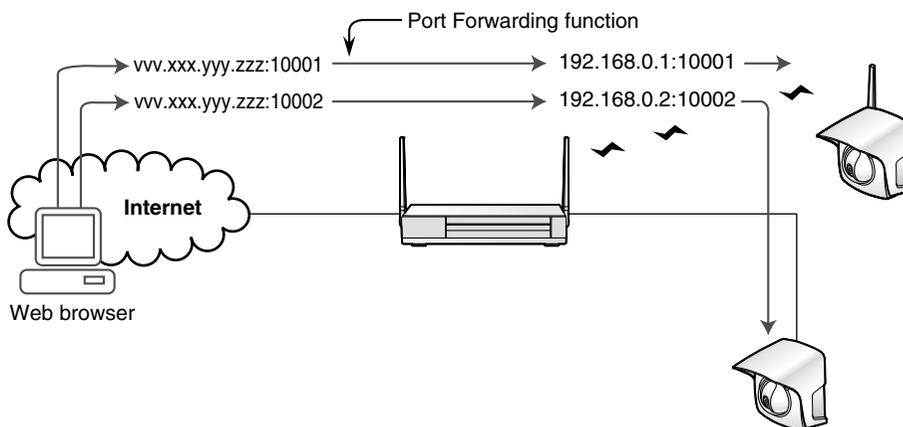
To assign a single global IP address "vvv.xxx.yyy.zzz" to multiple private IP addresses "192.168.0.1" and "192.168.0.2", enter as follows:

No.	Entry	IP Address (WAN)	Protocol	Forwarding Port No.	IP Address (LAN)
1	Enabled	vvv.xxx.yyy.zzz	TCP	10001	192.168.0.1
2	Enabled	vvv.xxx.yyy.zzz	TCP	10002	192.168.0.2

To change the priority

When you add two or more entries, **Change of priority** appears. Address Translation is processed from the lower entry number to the higher entry number. To change the priority of the entry number, enter the source entry number in the left data filed and the destination entry number in the right data filed. Then click **[Move]** and **[Save]**. Click **[Restart Now!]** on the Setup Page.

System Features

IP Masquerade

This function shares a single global IP address with multiple private IP addresses.
This way you can access the WAN (Internet) from multiple PCs on the LAN side using
a single global address.
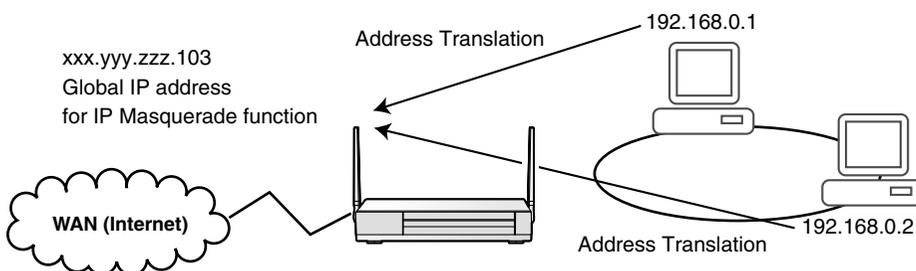
<Example>

	No.	Entry	IP Address (WAN)	Protocol	Forwarding Port No.	IP Address (LAN)
Address Translation	Add					
IP Masquerade			xxx.yyy.zzz.103	–	–	(Note)

Instructions for the data fields

Entry	Check **Enabled** or **Disabled**. When you check **Enabled**, the entry works as specified. When you check **Disabled**, the entry does not work but will work when you check **Enabled** later.
IP Address (WAN)	Enter the global IP address to send or receive data to/from the WAN side.
Protocol	Select the protocol(s) to send or receive data to/from the WAN side. **TCP**, **UDP**, **TCP&UDP**, **ICMP**, **PPTP** or �'s are available.
Forwarding Port No.	Set the port number(s) to send or receive data to/from the WAN side. Do not enter the space. • When a single port is desired, set the port number. • When a range of port is desired, enter the range using "-". For example, to set the port numbers from 2000 to 3000, enter as "2000-3000". The starting port number must be lower in value than ending port number. The port numbers from 60000 to 60016 are only available for the KX-HGW600. • When you select ✻ in the **Protocol**, be sure to enter "✻" in this data field.
IP Address (LAN)	Enter the private IP address of each device connected to the KX-HGW600. A data from the WAN side is forwarded to the IP address entered in this data field. In this case, set the IP address of the corresponding Network Camera to this value.
IP Masquerade	When multiple global IP addresses are assigned by the ISP, enter one of them as the IP address for IP Masquerade function. When it is set to blank, the IP address assigned on the Basic Setup window or the IP address assigned by the ISP is used.

System Features

Notes for NAT (IP unnumbered) Setup

• When each IP address on the WAN is different in the **IP Address (WAN)**, each IP address on the LAN cannot overlap in the **IP Address (LAN)**.

No.	Entry	IP Address (WAN)	Protocol	Forwarding Port No.	IP Address (LAN)
1	Enabled	xxx.yyy.zzz.100	TCP	10	192.168.0.2
2	Enabled	xxx.yyy.zzz.101	TCP	20	192.168.0.2
3	Enabled	xxx.yyy.zzz.102	TCP	30	192.168.0.2

Do not enter the same IP address.

• Setting "✴" in the both **Protocol** and **Forwarding Port No.** overrides the previous settings. For example, when the data from a specific port number (10, 20, 30) is sent to the IP addresses (192.168.0.1-3) and the other is sent to the IP address (192.168.0.4), the fourth IP addresses (192.168.0.4) is given priority over the IP address (192.168.0.1-3). That is, the previous settings (192.168.0.1-3) do not work.

No.	Entry	IP Address (WAN)	Protocol	Forwarding Port No.	IP Address (LAN)
1	Enabled	xxx.yyy.zzz.100	TCP	10	192.168.0.1
2	Enabled	xxx.yyy.zzz.100	TCP	20	192.168.0.2
3	Enabled	xxx.yyy.zzz.100	TCP	30	192.168.0.3
4	Enabled	xxx.yyy.zzz.100	*	0-65535	192.168.0.4

These settings do not work.
Static NAT function works.

In this case, change the fourth setting as follows so that the other settings work in the order of entry number.

No.	Entry	IP Address (WAN)	Protocol	Forwarding Port No.	IP Address (LAN)
1	Enabled	xxx.yyy.zzz.100	TCP	10	192.168.0.1
2	Enabled	xxx.yyy.zzz.100	TCP	20	192.168.0.2
3	Enabled	xxx.yyy.zzz.100	TCP	30	192.168.0.3
4	Enabled	xxx.yyy.zzz.100	TCP	40	192.168.0.4

Select **TCP**.

4.4.2   Packet Filtering

Packet Filtering window allows you to control the access to a network by letting the incoming and outgoing packets pass or not based on the information (Source IP Address, Destination IP Address, Source Port, Destination Port, Protocol, etc.).
Used properly, Packet Filtering is a tool for improving network security. It is processed from the lower entry number to the higher entry number. For more information about default settings or instructions about each entry number, please refer to Page 134.

To add new entries

1. Click **[Packet Filtering]** on the Setup Page.

Current Status

No.	Type	Direction	Source IP Address	Source Port	Destination IP Address	Destination Port	Protocol	Log Output
1	Permit	W->L	*	*	KX-HGW600	80	TCP	Y
53	Permit	W->L	10.0.0.0 – 10.255.255.255	*	*	*	TCP&UDP	Y
54	Permit	W->L	172.16.0.0 – 172.31.255.255	*	*	*	TCP&UDP	Y
55	Permit	W->L	192.168.0.0 – 192.168.255.255	*	*	*	TCP&UDP	Y
56	Permit	L->W	*	*	10.0.0.0 – 10.255.255.255	*	TCP&UDP	Y
57	Permit	L->W	*	*	172.16.0.0 – 172.31.255.255	*	TCP&UDP	Y
58	Permit	L->W	*	*	192.168.0.0 – 192.168.255.255	*	TCP&UDP	Y
59	Permit	W->L	*	*	KX-HGW600	*	TCPEST	Y
60	Permit	W->L	*	*	*	*	TCPEST	Y
61	Permit	W->L	*	*	*	137 – 139	TCP&UDP	Y
62	Permit	W->L	*	137 – 139	*	*	TCP&UDP	Y
63	Permit	L->W	*	*	*	137 – 139	TCP&UDP	Y
64	Permit	L->W	*	137 – 139	*	*	TCP&UDP	Y
Add								

If ˝ Add ˝ is clicked, each setting screen will open and an addition will be possible.
If ˝ No ˝ is clicked, each setting screen will open and updating/deletion can be performed.
˝KX-HGW600˝ is Camera Portal , in ˝*˝, all address/ports are applicable.

Change of Priority

Move No. [   ] to No. [   ] . [Move]

[Save] [Cancel]

System Features

2. Click **[Add]** in the **Current Status** table.

No.	Type	Direction	Source		Destination		Protocol	Log Output
			IP Address	Port	IP Address	Port		
			–	–	–	–		□

Add   Clear   Cancel

3. Enter the appropriate data fields and click **[Add]**.

Note

Do not enter the space in each data field.

4. When you have finished, click **[Save]**. The settings will be saved.

5. Click **[Restart Now!]**.

Instructions for the data fields

No.	Set the entry number (1-64). Packet Filtering is processed from the lower entry number to the higher entry number. A newly assigned entry number overwrites the previous one.
Type	Select **Permit** or **Do Not Permit**. When a packet meets all the conditions specified, whether to pass (Permit) or not (Do Not Permit) the packet is carried out.
Direction	Select **W→L** or **L→W**. Specify whether the packet is inbound from (W→L) or outbound to (L→W) WAN.
Source IP Address	Enter the source IP address(es) of Packet Filtering. • When a single IP address is desired, enter the IP address in the upper data field. • When a range of IP address is desired, enter the lower number of IP address in the upper data field and the higher number of IP address in the lower data field. For example, to enter the IP address from "192.168.0.3" to "192.168.0.10", enter "192.168.0.3" in the upper data field and "192.168.0.10" in the lower data field. • "✶" in the upper data field substitutes all the IP addresses.
Source Port	Set the source port number(s) of Packet Filtering. • When a single port is desired, enter the port number in the upper data field. • When a range of port is desired, enter the lower port number in the upper data field and the higher port number in the lower data field. For example, to set the port numbers from 2000 to 3000, enter "2000" in the upper data field and "3000" in the lower data field. • "✶" in the upper data field substitutes all the port numbers.
Destination IP Address	Enter the destination IP address(es) of Packet Filtering. The input rules are the same as those of "Source IP Address".
Destination Port	Set the destination port number(s) of Packet Filtering. The input rules are the same as those of "Source Port". The port numbers from 60000 to 60016 are only available for the KX-HGW600.
Protocol	Select the protocol(s) to send or receive data. **TCP, UDP, TCP&UDP, TCPEST** or **TCPFIN** are available.
Log Output	Store temporarily the record of packet information and specify whether or not to display the log on the Packet Filtering Log window. To view the log information, check the check box.

System Features

To change or delete entries

1. Click **[Packet Filtering]** on the Setup Page.

2. Click the entry number you want to change or delete in the **Current Status** table.

3. Change the settings and click **[Change]**. To delete, click **[Delete]**.

• To clear the current settings, click **[Clear]**.

Note

Do not enter the space in each data field.

4. When you have finished, click **[Save]**. The settings will be saved.

5. Click **[Restart Now!]**.

To change the priority

Packet Filtering is processed from the lower entry number to the higher entry number. To change the priority of the entry number, enter the source entry number in the left data filed and the destination entry number in the right data filed. Then click **[Move]** and **[Save]**. Click **[Restart Now!]** on the Setup Page.

<Example>

To prevent the outside network from accessing the communications between Windows NT and Windows 2000 PCs.

Type	Direction	IP Address	Port	IP Address	Port	Protocol	Log Output
Do Not Permit	L→W	∗	∗	∗	135	TCP&UDP	Y
Do Not Permit	L→W	∗	135	∗	∗	TCP&UDP	Y
Do Not Permit	W→L	∗	∗	∗	135	TCP&UDP	Y
Do Not Permit	W→L	∗	135	∗	∗	TCP&UDP	Y
Do Not Permit	L→W	∗	∗	∗	445	TCP&UDP	Y
Do Not Permit	L→W	∗	445	∗	∗	TCP&UDP	Y
Do Not Permit	W→L	∗	∗	∗	445	TCP&UDP	Y
Do Not Permit	W→L	∗	445	∗	∗	TCP&UDP	Y

4.4.3 Optional Setup

Optional Setup window allows you to set the optional settings for the access to the LAN or WAN (Internet). Change the setup only when necessary. To change the optional settings, follow the steps below.

1. Click **[Optional Setup]** on the Setup Page.

2. Click the setting window and enter the appropriate data fields.
Please refer to Page 106—Page 109 for instructions about each data field.

- To clear the current settings, click **[Clear]**.

Notes
- Do not enter the space in each data field.
- When you change the settings of Optional Setup, restart all the devices connected to the KX-HGW600.

3. When you have finished, click **[Save]**. The settings will be saved.

4. Click **[Restart Now!]**.

<Instructions for the data fields>
IP Address (LAN)

IP Address (LAN)	Enter the IP address on the LAN. (The default setting is "192.168.0.254".) The IP address must be entered out of the **Available Address Range** in the **DHCP** setting.
Subnet Mask	Enter the Subnet Mask on the LAN. (The default setting is "255.255.255.0".)
Port No. of WWW Server	Enter the port number of the web server. (The default setting is "80".)

DHCP

When you use the DHCP server function, the KX-HGW600 can assign an IP address automatically to each device on the LAN side.

DHCP Server	This function enables the KX-HGW600 to assign an IP address automatically to each device on the LAN side. (The default setting is "Use".) To assign the IP address manually to each device on the LAN side, check **Do Not Use**. In this case, the Automatic Setup function does not work.
Available Address Range	When you use the DHCP server function, enter the range of the private IP addresses, 32 to 128 addresses. Change them only when necessary. The last 16 addresses (default setting: 192.168.0.113-192.168.0.128) of 128 addresses are reserved for Network Camera. Enter the value greater than "192.168.0.32".

Static DHCP

When you use the DHCP server function, the KX-HGW600 can assign static IP address to each device by registering its MAC address.

1. Click **[Add]** in the **Static DHCP** table.

Enabled/Disabled	Check **Enabled** or **Disabled**. When you check **Enabled**, the KX-HGW600 assigns static IP address to each device which has a specified MAC address. When you check **Disabled**, the entry does not work but will work when you check **Enabled** later.
IP Address (LAN)	Enter the static IP address of the corresponding Network Camera and PCs.
MAC Address	Enter the MAC address of the corresponding Network Camera and PCs. Separate each two-digit group (0-9, A-F or a-f) by entering a colon ":" between them (e.g., 01:23:45:ab:cd:ef).

PPPoE

When PPPoE Connection is used to connect to the ISP, you can select how to initiate/stop the PPPoE Connection. First, select how to connect from the **Connection**. If your payment plan with your ISP is not the unlimited Internet access and you are charged according to your usage, it is recommended that you check **Automatic** or **Manual.**

System Features

Connection • **Always**	The PPPoE Connection is online as long as the KX-HGW600 is turned on. This is the default setting. This allows you to stop the PPPoE Connection manually on the PPPoE Connection window (☞ Page 115). To initiate the PPPoE Connection again, restart the KX-HGW600.
• **Automatic**	The PPPoE Connection is online only when data is being sent to the Internet from each device on the LAN side. This allows you to initiate/stop the PPPoE Connection on the PPPoE Connection window. (☞ Page 115)
• **Manual**	The PPPoE Connection is online only when you click **[Connect]** on the PPPoE Connection window (☞ Page 115). To stop the PPPoE Connection, click **[Disconnect]** on the PPPoE Connection window.
Disconnection on Idle	If **Enabled** is checked, the KX-HGW600 detects when the PPPoE Connection is idle and will automatically disconnect it when the length of idle time exceeds the user-specified limit. When you use this function, check **Enabled** and specify the time (1-99 minute). When you check **Always**, the timer does not work.

Note

When you access the Camera Portal page from the WAN side, PPPoE Connection cannot be disconnected.

DNS Relay

DNS Relay function frees you from setting up the DNS server address in each device on the LAN side, even though it is set up with static IP address. This function distributes the DNS server address to the Network Camera and the PC on the LAN side.

Note

When the DNS server is connected to the LAN side, do not use this function.

Use	The KX-HGW600 communicates with the Network Camera and PCs on the LAN side as a substitute for the DNS server. (The default setting is "Use".) When static IP address is assigned to each device on the LAN side, enter the IP address of the KX-HGW600 (192.168.0.254) in the network or TCP/IP properties window of each device.
Do Not Use	This function does not work. When static IP address is assigned to each device on the LAN side, enter the IP address of the specified DNS server in the network.

MTU size
MTU (Maximum Transmission Unit) specifies the maximum size of a packet that can be transferred in one frame over a network. Any messages larger than the MTU are divided into smaller packets before being sent, which slows down transmission speed.
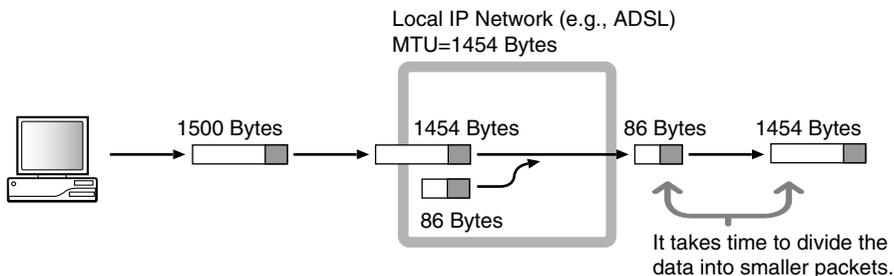
Normally, the KX-HGW600 optimizes the MTU size automatically. Change the MTU size only when necessary.

Note
Depending on the MTU setting, the communication speed may be extremely slow.

Dynamic Routing
The KX-HGW600 can automatically adjust to physical changes in the network's layout. You can specify whether or not to send the RIP information from WAN (LAN) side to LAN (WAN) side.

WAN	When the RIP information is sent to the WAN (Internet) side, the network information on the LAN may be seen by the unauthorized users. For security, check **Do Not Send**.
LAN	Normally check **Send**. When the KX-HGW600 exists on the LAN with other routers and they are sending the RIP information, check **Do Not Send**. When the KX-HGW600 exists with no other routers and hosts your network's connection to the Internet, all information is sent to the Internet through the KX-HGW600.

System Features

4.5   System Commands

4.5.1   Change Password

Change Password window allows you to change the common password to access from the Camera Portal page to the Setup Page or Recording/Playback page.
For security, specify a unique password for the Setup Page and avoid "KX-HGW" (default setting). It will prevent any unauthorized user from changing any settings from the WAN (Internet) side.

1. Click **[Change Password]** on the Setup Page.

2. Enter a new user name in the **User Name** (up to 15 alphanumeric characters).

3. Enter a new password in the **Password** (up to 15 alphanumeric characters) and retype the new password in the **Retype Password** for confirmation.

4. When you have finished, click **[Save]**.
   - If completed, the dialog box appears.

   - If not completed, the dialog box appears.
   - Your new password is different from the retyped one. Try retyping the new password again.

Notes
- Do not copy and paste the password when entering retyping the new password in the **Retype Password**.
- The user name and passwords are case-sensitive.

5. When the authentication window appears, enter the new user name and password, then click **[OK]**.

Enter Network Password	? X

Please type your user name and password.

Site: 192.9.200.170

Realm   Administrator

User Name

Password

☐ Save this password in your password list

| OK | Cancel |

Note

If you forget the user name and the password after changing them, initialize the KX-HGW600 to reset them to the default setting (☞ Page 124).

System Features

4.5.2   Update Firmware

Update Firmware window allows you to install new firmware. To update the latest firmware, download from the Panasonic web site **(http://panasonic.co.jp/pcc/en/)**. For more information, please follow the instructions of the Panasonic web site.

1. Click **[Update Firmware]** on the Setup Page.
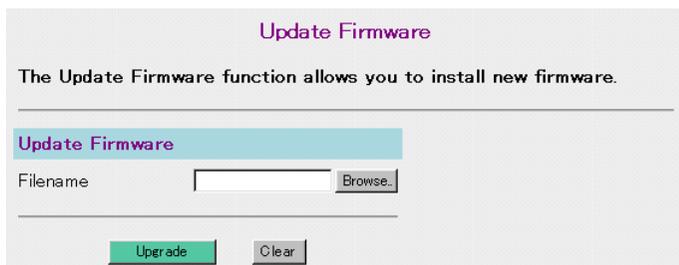
2. Click **[Browse...]** to select the firmware.
The **Choose file** dialog box appears.
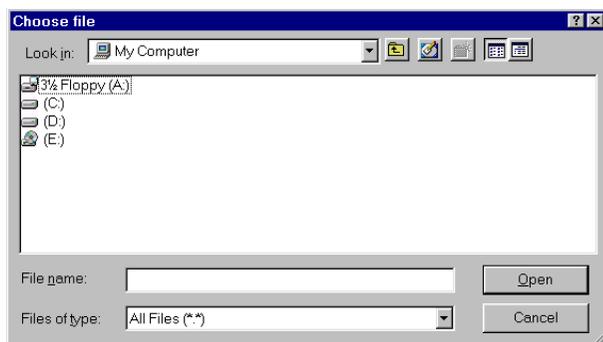
3. Select the desired firmware file from the file list and click **[Open]**.
The selected file name appears in the **File name**.

4. Click **[Upgrade]**. The firmware is updated.

- If completed, the dialog box appears.

- If not completed, an error message appears. For more information, please refer to "Error Messages" below.

Success!

Firmware is saved. Please restart.

Restart Now!

5. Click **[Restart Now!]**.

Notes

- After updating, initialize the KX-HGW600 by pushing the FACTORY DEFAULT RESET button (☞ Page 124) if required. For more information, please refer to the Panasonic web site.
- When you use the DHCP server function (☞ Page 106), restart all the devices on the LAN side.

Error Messages

Error Messages	Cause and Remedy
File size is invalid CRC error occurred	Your selected firmware file is damaged. If the firmware file was downloaded from the Panasonic web site, download it again.
Selected file is invalid Update it again.	Your selected firmware file is not for the KX-HGW600. Reselect the proper file. OR Make sure your hardware version matches the firmware file by reading the readme file that comes with the firmware file (☞ Page 118). If not, download the latest firmware from the Panasonic web site.
Not enough memory	The KX-HGW600's internal memory has been depleted. Restart the KX-HGW600 and update it again.

System Features

4.5.3 Restart

Restart window allows you to restart the KX-HGW600. All the settings are preserved.

1. Click **[Restart]** on the Setup Page.
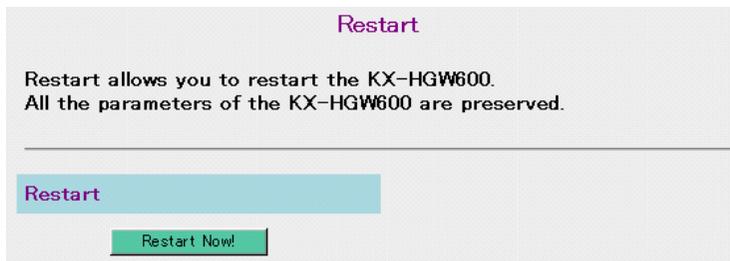
2. Click **[Restart Now!]**.
The KX-HGW600 restarts.

Note

When you use the DHCP server function (☞ Page 106), restart all the devices on the LAN side.

4.5.4 Factory Default Reset

Factory Default Reset window allows you to initialize all the settings of the KX-HGW600. All the settings return to their default settings (☞ Page 134).

1. Click **[Factory Default Reset]** on the Setup Page.
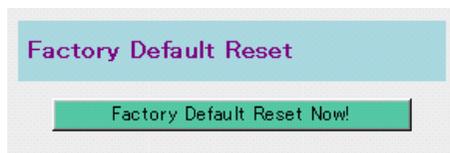
2. Click **[Factory Default Reset Now!]**.
All the settings are initialized to the preset default settings.

Note

When you use the DHCP server function (☞ Page 106), restart all the devices on the LAN side.

4.5.5   PPPoE Connection

PPPoE Connection window allows you to manually initiate/stop your PPPoE connection to the ISP.

To initiate the PPPoE Connection

1. Click **[PPPoE Connection]** on the Setup Page.
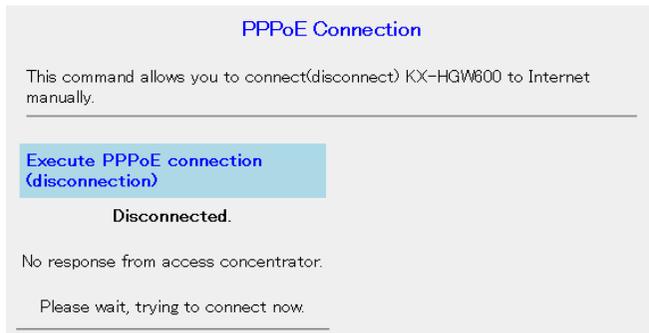
2. To initiate the PPPoE Connection, click **[Connect]**.

To stop the PPPoE Connection

1. Click **[PPPoE Connection]** on the Setup Page**.**
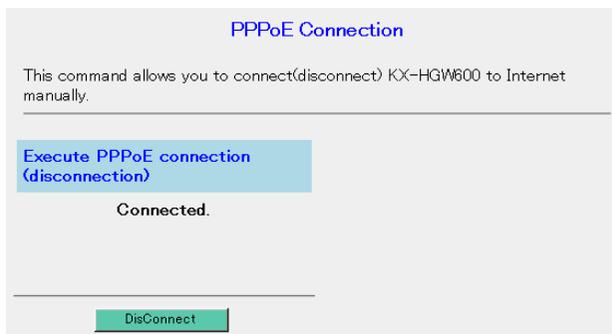
2. To stop the PPPoE Connection, click **[Disconnect]**.

Notes
* This function can be used regardless of the types of PPPoE Connection (Always, Automatic, Manual).
* You cannot disconnect the PPPoE Connection from the WAN side.

System Features

Keep Alive Option

The KX-HGW600 has a Keep Alive Option function. When the server of your ISP disconnects for some reason, this function keeps your PPPoE Connection alive automatically. The main features are as follows.

• This function is only available when you check **Always** on the PPPoE Connection window.

• It tries to recover the connection by sending a few data packets in this sequence:
  1) After 1 minute, 3 minutes, 6 minutes.
  2) Thereafter, once every ten minutes.

Operating Instructions

4.5.6 Ping

Ping window allows you to confirm if each device on the WAN (Internet) or LAN side is successfully linked to your KX-HGW600 on the TCP/IP network. When the device is connected correctly and the power to the device is on, a "Success!" message appears on the display.

1. Click **[Ping]** on the Setup Page.
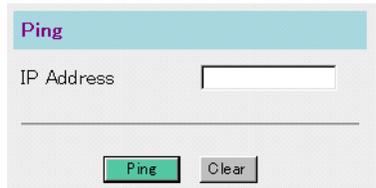
2. Enter the IP address of the device (e.g., 192.168.0.1) you want to ping.

- To clear the **IP Address**, click **[Clear]**.

3. Click **[Ping]**.
- If completed, the dialog box appears.

- If not completed, the dialog box appears.
- The IP address might be invalid or some other reasons might be considered.

System Features

footer[For assistance, please call: 1-800-272-7033]   117
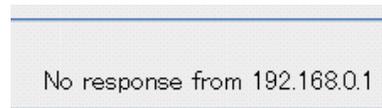
4.6   Information

4.6.1   Status

Status window allows you to check the current IP address, the hardware and software version information. This information may be helpful if you need to contact our customer call center for assistance with the KX-HGW600.

1. Click **[Status]** on the Setup Page.

System Setting	
Serial No:	0
CPU Card ID:	1
Interface Card ID:	0
PC Card ID:	0
ROM Version:	1
ROM Level:	2
Firmware #1:	Ver1.00
	Created at ″ ∗∗∗∗∗∗∗∗∗∗∗∗∗∗∗∗∗∗∗∗∗∗∗∗∗∗∗∗∗∗ ″
	Target config file Ver1.00

4.6.2   Usage Data

Usage Data window allows you to check the KX-HGW600 statistics.
This information may be helpful if you need to contact our customer call center for assistance with the KX-HGW600.

1. Click **[Usage Data]** on the Setup Page.

Ethernet(WAN)	
totalFramesTransmitted:	58
totalBytesTransmitted:	20188
txLossOfCarrier:	0
txNoCarrier:	0
txLateCollision:	0
txExcessiveCollisions:	0
totalFramesReceived:	149
totalBytesReceived:	15662
rxHardwareOverflowFrame:	0

4.6.3 Packet Filtering Log

Packet Filtering Log window allows you to check up to 4000 latest information consisting of entry number, type, direction, the source or destination port number and so on. If you enable logging on the Packet Filtering window, the KX-HGW600 will keep a record of the packet information.

1. Click **[Packet Filtering Log]** on the Setup Page.

				Source		Destination		
No.	Filter Number	Status	Direction	IP Address	Port	IP Address	Port	Protocol
1	1	PASS	W->L	192.9.200.105	1941	192.9.200.170	80	TCP
2	1	PASS	W->L	192.9.200.105	1941	192.9.200.170	80	TCP

Result 1 – 79 of 79

2. Click **[Reload]** to view the latest information.

- To delete the recorded log, click **[Delete Log]**.

Note

When you restart the KX-HGW600, the information of Packet Filtering Log is deleted.

System Features

4.6.4   User Registration

User Registration window allows you to jump to the Panasonic web site for registration. To help you register, the KX-HGW600 collects and displays the hardware and software information of your KX-HGW600. You do not have to register the information of a particular item if you do not want to.

1. Click **[User Registration]** on the Setup Page.

- If you do not want to register the information of an item, select **Do not send** from the drop-down menu.
- To clear the current settings, click **[Clear]**.

Model No:	KX-HGW600
CPU Card ID:	1
Interface Card ID:	0
PC Card ID:	0
ROM Version:	1
ROM Level:	2
MAC Address(WAN):	00:80:f0:**:**:**
MAC Address(LAN):	00:80:f0:**:**:**
Firmware:	1.00

2. Click **[Submit]** to register your KX-HGW600.
You will connect to the Panasonic web site. For more information, please follow the instructions of the Panasonic web site.

4.6.5 Support

Support window allows you to jump to the Panasonic web site and to transmit the KX-HGW600's hardware and software information to the support team for assistance. You do not have to register the information of a particular item if you do not want to.

1. Click **[Support]** on the Setup Page.

- If you do not want to register the information of an item, select **Do not send** from the drop-down menu.
- To clear the current settings, click **[Clear]**.

Model No:	KX-HGW600
CPU Card ID:	1
Interface Card ID:	0
PC Card ID:	0
ROM Version:	1
ROM Level:	2
MAC Address(WAN):	00:80:f0:** :**:**
MAC Address(LAN):	00:80:f0:** :**:**
Firmware:	1.00

Note

It is recommended that you register all the information for your future assistance with the KX-HGW600 from our customer call center.

2. Click **[Submit]** to register your KX-HGW600.
You will connect to the Panasonic web site. For more information, please follow the instructions of the Panasonic web site.

System Features

4.6.6   Help

Help window provides you with instructions for each function of the Setup Page.

1. Click **[Help]** on the Setup Page.
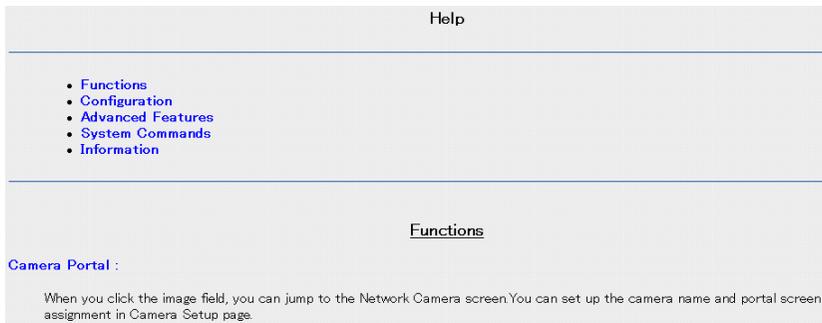
2. Select the text you want to explore.

Note
You can also link to Help window by clicking each text on the Setup Page.

Section 5

Technical Guides

Technical Guides

5.1 Reset procedure—default settings

The KX-HGW600 has two buttons on the rear side of the unit. These two buttons are used to initialize or restart the KX-HGW600.

Push the button with a pointed object.

RESTART button

FACTORY DEFAULT RESET button
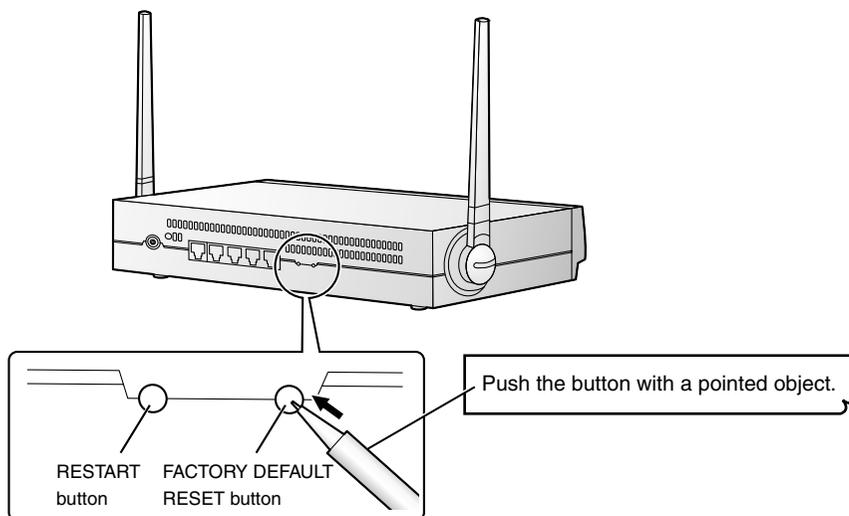
To initialize the KX-HGW600

When you forget the KX-HGW600 password (☞ Page 110) or when you need to clear all the settings of the KX-HGW600, push and hold the FACTORY DEFAULT RESET button for a few seconds.
The settings are cleared and initialized to the default settings (☞ Page 134).

To restart the KX-HGW600

When the POWER indicator on the KX-HGW600 lights red (☞ Page 13), push the RESTART button. The KX-HGW600 restarts with all the settings preserved.

Note

When you use the DHCP server function (☞ Page 106), restart all the devices on the LAN side.

5.2 Wall mounting

The KX-HGW600 can be mounted on a wall.

1. Install the two-paired screws and washers (included accessories) into the wall using the wall template.

2. Mount the unit on the screws, then slide it down.

Technical Guides
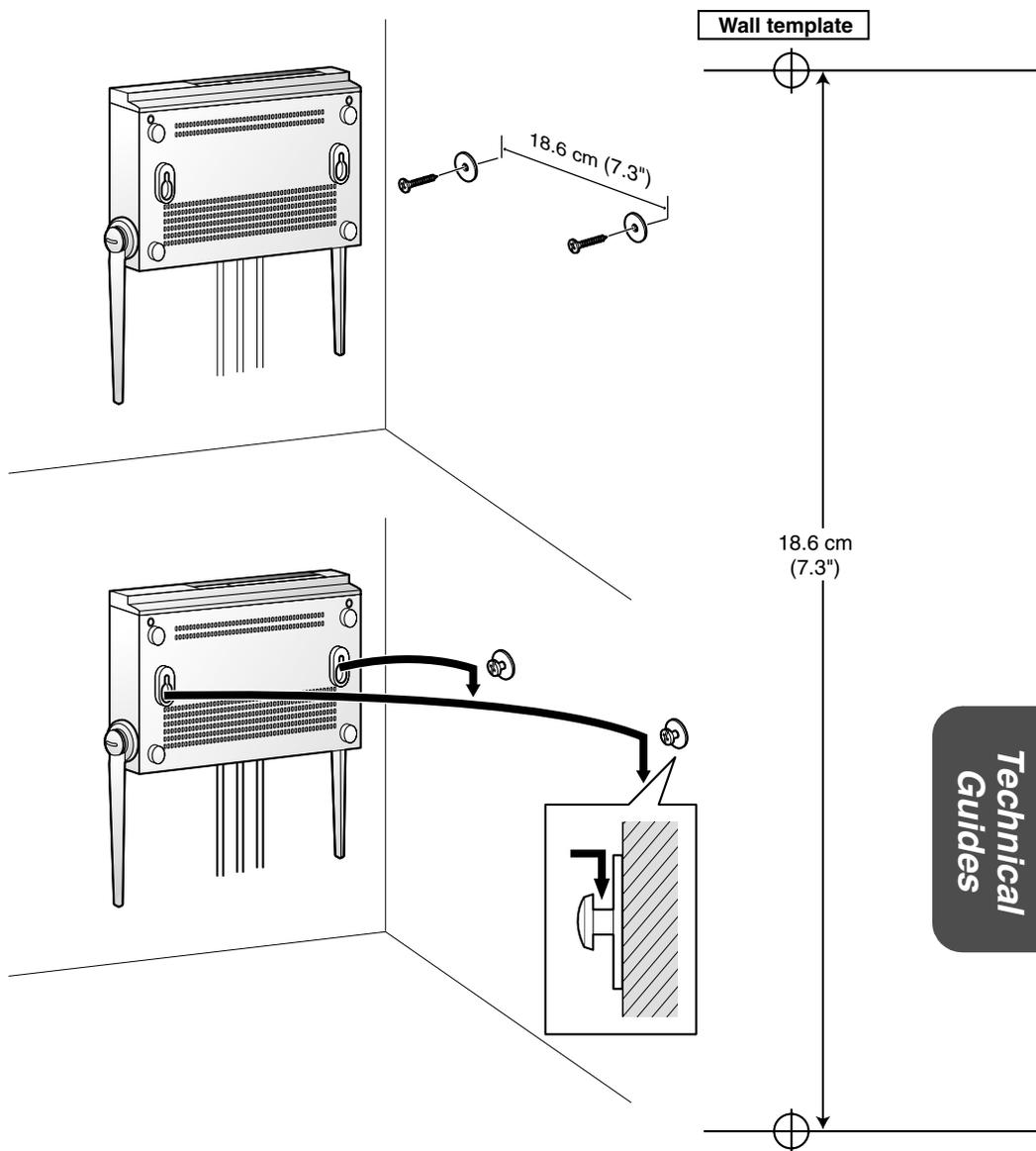
5.3　Proxy Server Setting

Some ISP's WWW sites are connected to the web browser via a proxy server.
The Setup Page cannot be connected to the web browser via the proxy server.
In this case, change the web browser setting as follows.

1. Start up the Internet Explorer. (The window is for Internet Explorer 6.)

2. Click **[Tools]** → **[Internet Options...]** → **[Connections tab]**.
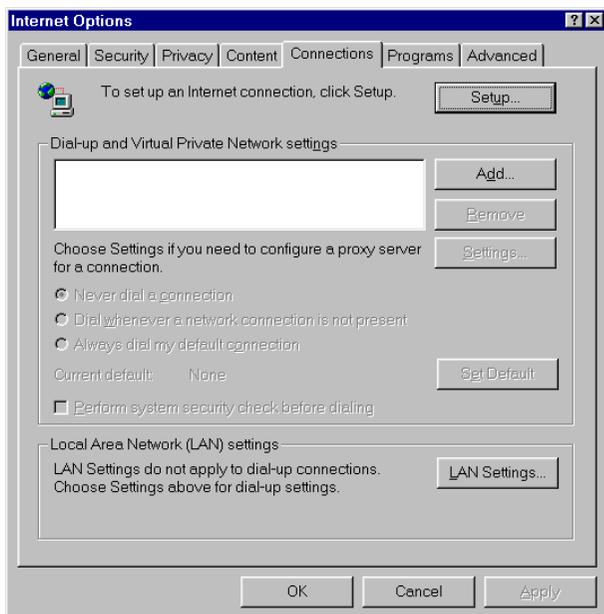
3. Click **[LAN Settings...]**.
Confirm the **Use a proxy server for your LAN** check box.

Confirm if
the check box
is not checked.
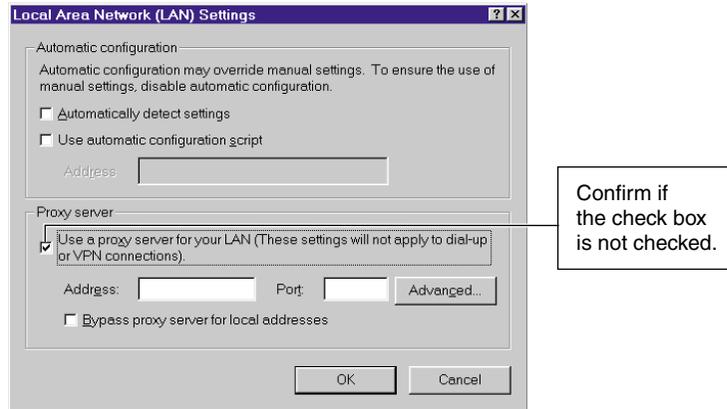
- • **When checked**, clear the check box, and click **[OK]**.
- • **When not checked**, click **[Cancel]**. Your proxy server settings are causing no problems.

Note

When you connect the KX-HGW600 to the LAN (Intranet), please ask your network administrator and change your setting.

Technical Guides

5.4 Security on the Wireless Network

In a wireless network, data security is maintained using the following three functions. According to your security needs, use any combination of these security options and strengthen your security.

SSID (☞ Page 83)	SSID (Service Set IDentifier) is a wireless network name. SSID setting must be same among the wireless devices. For security, specify a unique SSID that others cannot guess for a wireless network. Avoid an obvious SSID (your name, birthday, etc.), since the communication may be interfered with the neighbor wireless network. **Advantage:** It is easy to set the SSID into each wireless device. **Disadvantage:** If an unauthorized user steals the SSID, he may break into wireless networks.
Encryption (☞ Page 86)	This setup allows you to encrypt the data that is transmitted over your wireless network. By setting a WEP key in the KX-HGW600, you can prevent wireless network data from being decrypted externally. To read an encrypted file, the same WEP key must be set into each wireless device. There are two types of WEP key, 40(64) bit and 128 bit versions. **Advantage:** The higher the bit number, the more secure the encryption. **Disadvantage:** The higher the bit number, the slower the communication speed.
MAC Address Filtering (☞ Page 91)	If the MAC address on each wireless network card has not been registered on the MAC Address Filtering window, the wireless devices cannot link to the KXHGW600. **Advantage:** Even if SSID or WEP key is stolen by an unauthorized user, the wireless devices with unregistered MAC address cannot communicate with the KX-HGW600. **Disadvantage:** The greater the scale of wireless network is, the more vexatious the administration of MAC addresses may be.

5.5 TCP/IP Properties Setup

To access the Camera Portal page using a web browser, you must set the TCP/IP network protocol in each PC and enable the DHCP server function. Follow the steps below and set up the PC.

For Windows 95, 98 and Me

1. Click **[Start]** → **[Settings]** → **[Control Panel]** → **[Network]** →
Select **[TCP/IP]** associated with your network card → **[Properties]** →
[Obtain an IP address automatically] → **[DNS Configuration tab]** →
[Disable DNS] → **[OK]**.

2. Click **[OK]** → The **System Settings Change** dialog box appears.

3. Click **[Yes]** → Restart the PC.
Your PC will be able to obtain an IP address from the KX-HGW600.

For Windows 2000

1. Click **[Start]** → **[Settings]** → **[Control Panel]** → **[Network and Dial-up Connections]** → **[Local Area Connection Icon]** in use → **[Properties]** →
Select **[Internet Protocol (TCP/IP)]** → **[Properties]** → **[Obtain an IP address automatically]** → **[Obtain DNS server address automatically].**

2. Click **[OK]** several times if required.

For Windows XP

1. Click **[Start]** → **[Settings]** →**[Control Panel]** → **[Network and Internet Connections]** → **[Network Connections]** → **[Local Area Connection icon]** in use → **[Properties]** → Select **[Internet Protocol (TCP/IP)]** → **[Properties]** → **[Obtain an IP address automatically]** → **[Obtain DNS server address automatically].**

2. Click **[OK]** several times if required.

Note
Log on with the administrator ID when using Windows 2000 and Windows XP to access the TCP/IP Properties window.

Technical Guides

5.6   Confirmation of private IP address

Private IP address is the network ID which is not used on the Internet. It is classified into Class A, Class B and Class C shown in the following table. Please set the IP address in the range of the number specified in the class meeting to your local network scale.

Class	Subnet Mask				Private IP address (It can be set freely within the range in your group.)								
Class A	255.	0.	0.	0	10.	0.	0.	1	—	10.	255.	255.	254
Class B	255.	255.	0.	0	172.	16.	0.	1	—	172.	31.	255.	254
Class C	255.	255.	255.	0	192.	168.	0.	1	—	192.	168.	255.	254

Confirming IP addresses of the PC on the network using the MS-DOS® Prompt (Command Prompt)

1. Click **[Start]** → **[Program]** → **[MS-DOS Prompt]** → **MS-DOS Prompt window** opens (Windows 98).
These steps are slightly different depending on the OS.

2. Enter **ipconfig /all** → Push **[Enter]**. → Subnet Mask and IP addresses of the PC, Default Gateway and DNS Servers appear on the window.

5.7   PPPoE Connection (IP unnumbered)

When PPPoE Connection (IP unnumbered) using multiple global IP addresses is used
to connect to the Internet , the KX-HGW600 assigns each private IP address to the
Network Camera and PC on the LAN side. NAT (IP unnumbered) function translates the
global IP address to the private IP address.

To translate the global IP addresses "xxx.yyy.zzz.100/29" (xxx.yyy.zzz.100-
xxx.yyy.zzz.107) to the private IP address:

Internet

xxx.yyy.zzz.101
192.168.0.254
IP address (LAN)

Web server
xxx.yyy.zzz.102
192.168.0.41

xxx.yyy.zzz.103
192.168.0.42

xxx.yyy.zzz.104
192.168.0.43

xxx.yyy.zzz.106
Global IP address for
IP Masquerade function
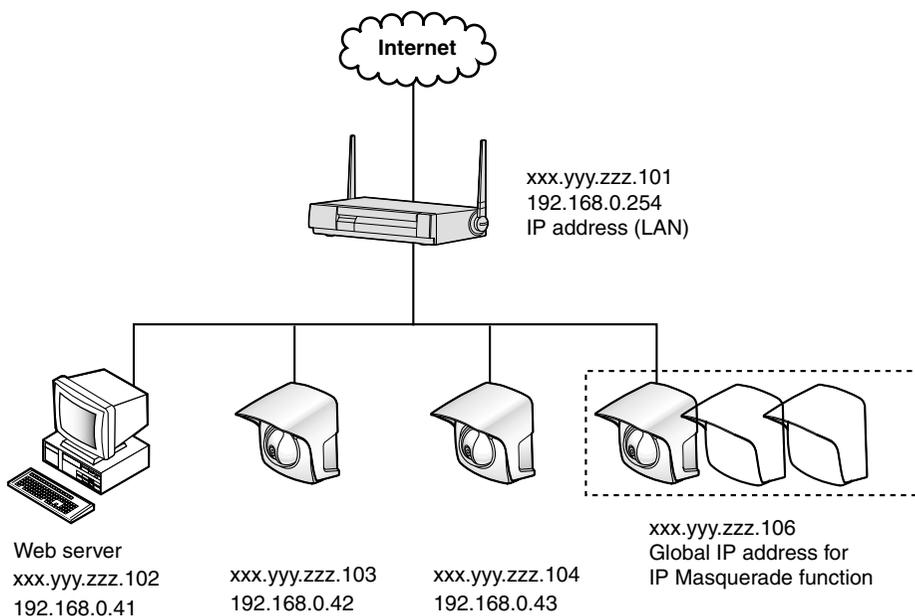
	PPPoE Connection (IP unnumbered)
IP Address (WAN)	None
IP Address (LAN)	192.168.0.254
IP Address (KX-HGW600)	xxx.yyy.zzz.101
Network Address	192.168.0.100
Network Camera or PC	xxx.yyy.zzz.102 → 192.168.0.41 xxx.yyy.zzz.103 → 192.168.0.42 xxx.yyy.zzz.104 → 192.168.0.43 xxx.yyy.zzz.106 → Use IP Masquerade function to connect the Network Camera to the KX-HGW600
Broadcast Address	xxx.yyy.zzz.107

Technical Guides

Setting items	Description

Basic Setup
   IP address of
   KX-HGW600
Address Translation
NAT (IP unnumbered)
	xxx.yyy.zzz.101
	
	Use
	Translate the global IP address to the private IP address according to the network condition.

Optional Setup
   IP Address (LAN)
   DHCP
	192.168.0.1
	When you build a web server on the LAN side, set the IP address of the corresponding server manually or check **Use** check box of the DHCP Server and then enter the static IP address in the **Static DHCP** setting.

<Example> Address Translation → NAT (IP unnumbered)

	No	Entry	IP Address (WAN)	Protocol	Forwarding Port No.	IP Address (LAN)
Address Translation	1	Enabled	xxx.yyy.zzz.102	*	0-65535	192.168.0.41
	2	Enabled	xxx.yyy.zzz.103	*	0-65535	192.168.0.42
	3	Enabled	xxx.yyy.zzz.104	*	0-65535	192.168.0.43
	Add					
IP Masquerade			xxx.yyy.zzz.106	–	–	(Note)

Section 6

Specification and Troubleshooting

*Specification and
Troubleshooting*

6.1 Default setting list

Authentication window (Password for Setup Page and Recording/Playback page)

User Name **Password**	None KX-HGW

Basic setup

Internet Configuration	DHCP Connection
Other setting items	[Blank]

Camera Setup

Camera Entry **Automatic Setup**	Use
Screen Assignment **Screen Format**	Camera Name and Still Image (refreshing)
Access Control	Restricted Access

Wireless Setup

Basic
    SSID
    Blanked SSID connection
    Channel
	HGW600
	Permit
	1

Encryption	Disabled
MAC Address Filtering	Do Not Use

Address Translation

Enabled/Disabled	Use
Port Forwarding	[Blank]
NAT (IP unnumbered)	[Blank]

Packet Filtering

No.	Type	Direction	Source		Destination		Protocol	Log Output
			IP Address	Port	IP Address	Port		
1	Permit	W→L	✳	✳	KX-HGW600	80	TCP	Y
53	Permit	W→L	10.0.0.0 - 10.255.255.255	✳	✳	✳	TCP&UDP	Y
54	Permit	W→L	172.16.0.0 - 172.31.255.255	✳	✳	✳	TCP&UDP	Y
55	Permit	W→L	192.168.0.0 - 192.168.255.255	✳	✳	✳	TCP&UDP	Y
56	Permit	L→W	✳	✳	10.0.0.0 - 10.255.255.255	✳	TCP&UDP	Y
57	Permit	L→W	✳	✳	172.16.0.0 - 172.31.255.255	✳	TCP&UDP	Y
58	Permit	L→W	✳	✳	192.168.0.0 - 192.168.255.255	✳	TCP&UDP	Y
59	Permit	W→L	✳	✳	KX-HGW600	✳	TCPEST	Y
60	Permit	W→L	✳	✳	✳	✳	TCPEST	Y
61	Permit	W→L	✳	✳	✳	137 - 139	TCP&UDP	Y
62	Permit	W→L	✳	137 - 139	✳	✳	TCP&UDP	Y
63	Permit	L→W	✳	✳	✳	137 - 139	TCP&UDP	Y
64	Permit	L→W	✳	137 - 139	✳	✳	TCP&UDP	Y

No.	Description
1	Prohibit the access from the WAN side to the Camera Portal page on the KX-HGW600.*
53-55	Drops the invalid packet from the WAN side. (When the packet from the WAN side has a source private IP address)
56-58	Prevents the invalid access to the WAN side. (When the packet from the LAN side has a destination private IP address)

Specification and Troubleshooting

59	Prevents the invalid access from the WAN side to the KX-HGW600. (When TCP packet from the WAN side cannot communicate with the KX-HGW600)
60	Prevents the invalid access from the WAN side to the LAN side. (When TCP packet from the WAN side cannot communicate with the device on the LAN side)
61-64	Prevents the intrusion and leak of NBT (NetBIOS over TCP/IP) packet.

* You cannot change, delete and move the entry number 1 because it is used on the Access Control Window.

Optional Setup

IP Address (LAN)	
IP Address (LAN)	192.168.0.254
Subnet Mask	255.255.255.0
Port No. of WWW server	80
DHCP	
DHCP Server	Use
Available Address Range	192.168.0.1-192.168.0.128
Static DHCP	Disabled
PPPoE	
Connection	Always
Disconnection on Idle	Enabled (30 min.)
DNS Relay	Use
Dynamic Routing	
WAN	Do Not Send
LAN	Send

Recording/Playback

Recording Setup	
Image Resolution	320x240
Image Quality	Standard
Frame rate	Motion Image
Timer Recording Setup	Disable

6.2 Recording Duration Information

For the Frame rate setup (☞ Page 58), please refer to the table below.

Recording Duration of Motion Images (5 frames/second, Image Quality: Standard)

Card Type	Image Resolution		
	Approx. time 640 X 480 26KB/frame	Approx. time 320 X 240 13KB/frame	Approx. time 160 X 120 4KB/frame
512MB	67 min	134 min	436 min
256MB	33 min	67 min	218 min
128MB	16 min	33 min	109 min
64MB	8 min	16 min	54 min
32MB	4 min	8 min	27 min
16MB	2 min	4 min	13 min

Recording Duration of Still Images

Frame Rate	Card Type	Image Resolution		
		640 X 480 26KB/frame	320 X 240 13KB/frame	160 X 120 4KB/frame
6 frames/ minute (1 frame/ 10 seconds)	512MB	3360 min	6720 min	21850 min
	256MB	1680 min	3360 min	10920 min
	128MB	840 min	1680 min	5460 min
	64MB	420 min	840 min	2730 min
	32MB	210 min	420 min	1370 min
	16MB	110 min	210 min	680 min
1 frames/ hour	512MB	840 days	1680 days	5460 days
	256MB	420 days	840 days	2730 days
	128MB	210 days	420 days	1370 days
	64MB	110 days	210 days	680 days
	32MB	50 days	110 days	340 days
	16MB	30 days	50 days	170 days

Specification and Troubleshooting

6.3   Specification

KX-HGW600 Specification

Item	Description
Ethernet Interface (WAN)	Port: 10Base-T Ethernet RJ-45 connector x 1 Protocol: IEEE 802.3 (10Base-T) Speed: 10 Mbps Data communications mode: Half duplex/Full duplex (automatic identification)
Ethernet Interface (LAN)	Ports: 10Base-T/100Base-TX Ethernet RJ-45 connector x 4 Protocol: IEEE 802.3 (10Base-T), IEEE 802.3u (100Base-TX) Speed: 10/100 Mbps (automatic negotiation) Data communications mode: Half duplex/Full duplex (automatic identification) MDI/MDI-X: automatic detection
Wireless LAN Interface	Data communications mode: DS-SS, Half duplex Protocol: IEEE 802.11b Speed: 11/5.5/2/1 Mbps Frequency: 2412-2462 MHz (Center Frequency) Channel: 11channels Security: 40(64)/128 bit (WEP) Communications distance (depending on ambient conditions): The following values provide an indication of the communication with the KX-HCM270. 120 m (400 feet) indoors, 600 m (2000 feet) outdoors at 1 Mbps
LED Display	POWER, WAN, LAN 1—4, WIRELESS
Button	FACTORY DEFAULT RESET, RESTART
Environmental	Operation temperature: +5°C to +40°C (+41°F to +104°F) Humidity: 45% to 85% (No Condensation)
Dimension (HWD)	42 mm (1.65″) × 260 mm (10.2″) × 150 mm (5.9″) (Folding the antenna)
Weight	515 g (1.1 lb.)
Power	AC adaptor: Input 120 V AC, 60 Hz Output 12 V DC, 1A Consumption: 8W (Max.)

Other Specifications

Item	Description
Router	Protocol: PPPoE/DHCP/Static/PPPoE (IP unnumbered) PPP Authentication: Automatic PPPoE Connection: Manual/Automatic/Always RIP: RIPv1 DHCP Server: Up to 128 clients DNS Relay Packet Filtering: Up to 64 entries Address Translation: IP Masquerade, Port Forwarding, Static NAT
Wireless Network	Security: Encryption (WEP 40(64)/128 bit)/SSID/MAC Address Registration
Simultaneous number of access	Camera Portal page: Multiple users* Recording/Playback page: Single user
Access Control	User Name/Password
Recording/ Playback*	Image Resolution: 160 x 120, 320 x 240, 640 x 480 Image Quality: Favor motion, Standard, Favor clarity Frame rate: Motion Image, Still Image (60 frames per minute [1 frame per second] — 1 frame per hour)
Others	• Web browser configuration • Update Firmware feature

* These settings change with the condition of a network.

Specification and Troubleshooting

6.4   Troubleshooting

About KX-HGW600 Connection

Problem	Cause and Remedy
The POWER indicator lights red.	• The KX-HGW600 hardware is in a bad status. Push the RESTART button (☞ Page 124) or contact our customer call center.
The CATV/xDSL/optical cable modem network does not work and the WAN indicator does not light.	• Make sure the connection between the KX-HGW600 and the modem has been successfully made. • Make sure the KX-HGW600 and the modem have been turned on.
The Ethernet network does not work and the LAN 1—4 indicators do not light.	• Make sure the connection between the PC and the KX-HGW600 have been successfully made. • Make sure the KX-HGW600 is turned on first, then the PC. • Install a network card and software properly on the PC.

About WWW Site

Problem	Cause and Remedy
A WWW site does not appear.	• Make sure the address of the WWW site has been correctly entered in the address field of the web browser. • Make sure the KX-HGW600 is connected properly to the modem or PC. • Confirm the information on your Internet configuration provided by your ISP. If you are required to enter some network parameters, refer to "Setting up Internet Configuration" on Page 25 and set the network parameters to the KX-HGW600. • Check the Status window (☞ Page 118) on the Setup Page. From the Status window, make sure the KX-HGW600 is assigned an IP address from the ISP. If it isn't, refer to "Setting up Internet Configuration" on Page 25 and set the network parameters to the KX-HGW600. • Check the proxy server use (☞ Page 126). • If you turn off the KX-HGW600 while accessing the Internet with PPPoE Connection and then trying to access again, it may take for about 5 to 20 minutes. Wait for a second. • If the switch of the modem is set to 100 Mbps, the communication between the modem and the KX-HGW600 (WAN jack) may not be made properly. Change the switch of the modem to 10 Mbps.

About Setup Page

Problem	Cause and Remedy
The Camera Portal page and Setup Page do not appear.	• Make sure the LAN 1—4 indicators and WIRELESS indicator light green. Make sure the indicators on the Ethernet card and wireless card is on. If any indicator is off, check the Ethernet cable on the LAN. • The PC on the LAN side may not be assigned an IP address by the KX-HGW600. Make sure **Obtain an IP address automatically** is checked on the PC and restart. • When you change the IP address(:Port No.) of the KX-HGW600 (☞ Page 106), enter the new IP address(:Port No.) in the address field of the web browser. (When port no. is 80 [default setting], you do not need to enter port no.) • When you use the proxy server setting, setup of your web browser may be needed to access the Setup Page. For more information, please refer to Page 126 and check your setting. • JavaScript is used on the Setup Page. If JavaScript is invalid on the setup of the web browser, access the Setup Page after enabling JavaScript. Click **[Tools menu]** → **[Internet Options]** → **[Security tab]** → **[Custom Level]** → check **[Enable]** in "**Active Scripting**" of JavaScript.
The Setup Page does not appear after entering a password.	• Ask your network administrator for the user name and password.
The wireless devices cannot communicate with the KX-HGW600.	• Make sure a PC in a wireless network is set as follows: Wireless mode: Infrastructure SSID: HGW600 Encryption: None • The wireless devices or the KX-HGW600 may be out of radio waves. Or there may be an obstacle such as the wall of concrete. Locate the wireless devices near this unit. • Make sure **Permit** is checked in the **Blanked SSID connection** on the Wireless Setup window.

Specification and Troubleshooting

About Network Camera Setup

Problem	Cause and Remedy
The Automatic Setup function does not work.	• Make sure the connection between the device and the KX-HGW600 have been successfully made. • The Automatic Setup function is only available for 20 minutes after the Network Camera is turned on. Restart the Network Camera. • Make sure **Enable** is checked on the Network window of Network Camera (**[Network]** → **1. Network Configuration from the Setup Program**). • If you connect the KX-HGW600 to the wireless devices, make sure the wireless devices are not connected to the other wireless routers. In this case, turn off the other routers and restart the Network Camera. Then, set the same SSID to the KX-HGW600 and the Network Camera. • The IP addresses "**192.168.0.113 - 192.168.0.128**" are used for the Automatic Setup function. If the other devices use the corresponding IP addresses, change the other IP addresses.
The authentication window appears when you access the Camera Portal page.	• **Administrator Only** is checked on the Access Control window. Enter the registered user name and password. • If the authentication of the Network Camera is set **Administrator and General User** on the Security: Administrator window, please change the setting to **Administrator Only**.
The automatically set up Network Camera is removed from the Camera Portal page.	• If you check **Do Not Use** on the Setup Page of the KX-HGW600 (**[Optional Setup]** → **DHCP**), set up the Network Camera manually.
You cannot set up the Network Camera manually.	• The IP addresses "**192.168.0.113 - 192.168.0.128**" and the port numbers "**60001 - 60016**" are used for the Automatic Setup function. If you use the corresponding IP addresses or port numbers, change to the other IP addresses or port numbers.

About Network Camera Setup

Problem	Cause and Remedy
You cannot view the manually registered Network Camera.	• To set up your Network Camera manually, please set up the Screen Assignment (☞ Page 77) window and Port Forwarding (☞ Page 94)/NAT (IP unnumbered) (☞ Page 96) window for the IP address of the Network Camera. • If you restart the manually registered Network Camera, the setting may be changed by the Automatic Setup function. Check **Do Not Use** on the Setup Page of the KX-HGW600 (**[Optional Setup]** → **DHCP**) or clear **Enable** check box on the Network window of Network Camera (**[Network]** → **1. Network Configuration from the Setup Program**).
You cannot access the Camera Portal page and Setup Page from the WAN side.	• The network traffic may not be smooth. Wait for a while and try again. • Make sure the WAN indicator lights green. If it is off, check the connections on the WAN. • When you use the proxy server setting, setup of your web browser may be needed to access the Setup Page. For more information, please refer to Page 126 and check your setting. • JavaScript is used on the Setup Page. If JavaScript is invalid on the setup of the web browser, access the Setup Page after enabling JavaScript. Click **[Tools menu]** → **[Internet Options]** → **[Security tab]** → **[Custom Level]** → check **[Enable]** in "**Active Scripting**" of JavaScript. • If you check **Restricted Access** on the Setup Page of the KX-HGW600 (**[Camera Setup]** → **[Access Control]** window), check **None** or **Administrator Only**. • Packet Filtering function may prevent you from accessing the Camera Portal page. Enter the appropriate settings checking Packet Filtering Log information.

Specification and Troubleshooting

About Recording/Playback function

Problem	Cause and Remedy
You cannot record the Network Camera screen.	• Make sure the connection between the Network Camera and the KX-HGW600 have been successfully made. • Make sure the SD memory card has been inserted firmly into the SD memory card slot. • **Administrator Only** is checked on the Security: Administrator window of Network Camera (**[Security: Administrator] → 1. Authentication Enable**). In this case, enter the ID (user name) and password of the Network Camera on the Camera Setup window. Please refer to Page 73 for the ID (user name) and password setting. • Your SD memory card is full. Delete the recorded files or replace it with another SD memory card. • Your SD memory card exceeds the maximum number of files (150 files) available for one month (Day 1st to 31st). Delete the recorded files or replace it with another SD memory card. • Your SD memory card is write-protected. Take the write-protect away. • The Network Camera is being recorded. Stop recording it and try again. • The Network Camera is reserved for the timer recording. Disable the timer recording settings.
You cannot set up timer recording.	• Do not overlap the timer settings between **Timer 1** and **Timer 2**.
You cannot record with the specified Frame rate.	• Frame rate changes with the network congestion. Set up the lower Frame rate and try again.
You cannot play back the recorded image.	• Make sure the SD memory card has been inserted firmly into the SD memory card slot. • The Network Camera is being recorded or reserved for the timer recording. Stop recording or disable the timer recording settings and try again.
The time stamp of recorded files is wrong.	• The time stamp of recorded files synchronizes the Network Camera internal clock. Adjust the date and time setting of the Network Camera. For more information, please refer to the Network Camera's manual.
You cannot delete the recorded files or format your SD memory card.	• Your SD memory card is write-protected. Take the write-protect away. • The Network Camera is being recorded or reserved for the timer recording. Stop recording or disable the timer recording settings and try again.

About Other Troubles

Problem	Cause and Remedy
"The system has detected a conflict for IP address with the system having hardware address XX:XX:XX:XX:XX:XX" or "Another device on your TCP/IP Internet, which has the physical address XX:XX:XX:XX:XX:XX, is currently using the same IP address (XXX.XXX.XXX.XXX). Your TCP/IP network interface has been shut down". is displayed in the dialog box.	• Turn off all the devices, and next turn on the KX-HGW600, then PC. • Make sure **Obtain an IP address automatically** is checked on the PCs. Use the DHCP server function. • Make sure the address of the DHCP Available Address Range (☞ Page 106) does not overlap with those of other devices. • Make sure the IP address on the WAN does not overlap with those of other devices on the LAN (Intranet).
The Basic Setup window does not appear after clicking **[Restart]** on the Setup Page.	• Restart the PC and access the Setup Page again. • Click **[Refresh]** on the web browser.
You forget the password to access the Setup Page.	• Initialize the KX-HGW600 (☞ Page 124) by pushing the FACTORY DEFAULT RESET button. All the settings return to their default settings. Then, reconfigure the KX-HGW600.
LAN (Intranet) does not work correctly.	• The Ethernet cable on the LAN (Intranet) is connected to the one of the LAN 1—4 jacks. Connect the Ethernet cable to the WAN jack of the KX-HGW600 and restart the PC. • If the security software is installed on the PC, the connection between the PC and the LAN (Intranet) may not be successfully made. Assign the static IP address to the PC using the Static DHCP function.
The KX-HGW600 establishes PPPoE Connection.	• The PC may request the PPPoE Connection using the network services. Please disable the network sharing protocols or services such as "Client for Microsoft Networks" or "File and printer sharing for Microsoft Networks".
If you cannot solve your problem	• Call our customer call center at 1-800-272-7033. • After the limited warranty, call our Continued Services Technical Support Line at 1-900-555-PANA (1-900-555-7262).

Specification and Troubleshooting

6.5   FCC and Other Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

This unit operates at frequencies that may cause interference to nearby TVs and VCRs. To minimize or prevent such interference, the base of this unit should not be placed near or on top of a TV or VCR. If interference is experienced, move this unit further away from the TV or VCR. This will often reduce or eliminate interference.

Operating near 2.4 GHz electrical appliances may cause interference. Move away from the electrical appliances.

- **Environment** — do not place the unit in a room where the temperature is less than +5° C (+41° F) or greater than +40° C (104° F). Allow 10 cm (4″) clearance around the unit for proper ventilation.

  Avoid excessive smoke, dust, mechanical vibration, shock, or direct sunlight.

- **Routine care** — wipe the unit with a soft cloth. Do not use benzine, thinner, or any abrasive powder. When you leave the unit unused for a long period of time, unplug the AC adaptor from the outlet.

- **If there is any trouble** — consult an authorized Panasonic Factory Service Center.

CAUTION

- To comply with FCC RF exposure requirements in uncontrolled environment:
  - This equipment must be installed and operated in accordance with provided instructions and a minimum 20 cm (8″) spacing must be provided between antenna and all person's body (excluding extremities of hands, wrist and feet) during wireless modes of operation.
  - This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.
- **Medical**
  Consult the manufacturer of any personal medical devices, such as pacemakers, to determine if they are adequately shielded from external RF (radio frequency) energy. (The unit operates in the frequency range of 2400 MHz to 2483.5 MHz, and the power output level is 0.1 watts.) Do not use the unit in health care facilities if any regulations posted in the area instruct you not to do so. Hospitals or health care facilities may be using equipment that could be sensitive to external RF (radio frequency) energy.
- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this device.

> No responsibility will be taken by our company with respect to consequences resulting from the use and/or the damage of the Network Camera Management System.

Specification and Troubleshooting

Index

For product service

- Panasonic Servicenters are listed in the servicenter directory.
- Call 1-800-272-7033 for the location of an authorized servicenter.
- After the limited warranty, please contact our Continued Services Technical Support Line at 1-900-555-PANA (1-900-555-7262). If you have difficulty reaching this number, it may be blocked by your phone company. Please contact your local phone company to correct this.

When you ship the product

- Carefully pack your unit, preferably in the original carton.
- Attach a letter, detailing the problem, to the outside of the carton.

Symptom _____

_____

- Send the unit to an authorized servicenter, prepaid and adequately insured.
- Do not send your unit to the Panasonic Consumer Electronics Company listed below or to executive or regional sales offices. These locations do not repair consumer products.

Operating Instructions are subject to change without notice.

Panasonic Consumer Electronics Company,
Division of Matsushita Electric Corporation of America

One Panasonic Way,
Secaucus, New Jersey 07094

Panasonic Sales Company,
Division of Matsushita Electric of Puerto Rico, Inc.

Ave. 65 de Infantería, Km. 9.5, San Gabriel Industrial Park
Carolina, Puerto Rico 00985

Copyright: