

Panasonic®



Installation/Troubleshooting

Network Camera

Model No. **BB-HCM371A**



Please read this manual before using and save this manual for future reference.

Panasonic Network Camera Website: <http://www.panasonic.com/netcam>
for customers in the USA or Puerto Rico

Introduction

How to Use This Documentation

The camera includes the following 2 manual types.

- **Installation/Troubleshooting (This manual)**
Installation/Troubleshooting provides explanations for accessories included with the camera, the initial configuration, and troubleshooting tips. The Installation/Troubleshooting helps you to easily configure the camera.
- **Operating Instructions (Included on the Setup CD-ROM)**
Operating Instructions explains about operations, settings, features and the cleaning method when using the camera.

Abbreviations

- UPnP is the abbreviation for Universal Plug and Play.
- "Network Camera" is called "Camera" in this Installation/Troubleshooting.

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System Requirements for your PC

Your PC (Personal Computer) and network must meet the following technical specifications for the camera to work properly.

For IPv4 Connection

Item	Description
Operating System	Microsoft® Windows® XP, Microsoft® Windows® 2000 Microsoft® Windows® Me, Microsoft® Windows® 98SE
CPU	• For viewing single camera Pentium® III (800 MHz or greater is recommended.) • For viewing multiple cameras Pentium 4 (1.8 GHz or greater is recommended.)
Protocol	TCP/IP protocol (HTTP, TCP, UDP, IP, DNS, ARP, ICMP)
Interface	10/100 Mbps network card installed
Web Browser	Internet Explorer 6.0 or later (Not included on the Setup CD-ROM)
Audio	Audio input/output feature (Microphone or speaker)

For IPv6 Connection

Item	Description
Operating System	Microsoft® Windows® XP Service Pack 1 or later
CPU	• For viewing single camera Pentium III (800 MHz or greater is recommended.) • For viewing multiple cameras Pentium 4 (1.8 GHz or greater is recommended.)
Protocol	TCP/IP protocol (HTTP, TCP, UDP, IP, DNS, ICMPv6, NDP)
Interface	10/100 Mbps network card installed
Web Browser	Internet Explorer 6.0 or later (Not included on the Setup CD-ROM)
Audio	Audio input/output feature (Microphone or speaker)

Note

See Panasonic Network Camera support website at <http://panasonic.co.jp/pcc/products/en/netwkcaml/> for details about network environment.

What is IPv6?

- IPv6 is short for "Internet Protocol Version 6".
- IPv6 was created to address the additional IP addresses that will be needed as the Internet continues to expand.
- IPv6 is expected to gradually replace IPv4, with the 2 coexisting for a number of years during a transition period.
- Though most ISPs (Internet Service Providers) do not yet support IPv6, many local networks already use it. When your ISP supports IPv6, your Panasonic Network Camera will be ready!
- For more information you wish to visit <http://www.ipv6.org/>.

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1 Before Using

1.1 IMPORTANT SAFETY INSTRUCTIONS

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. After taking away the sand or the dust on the lens cover, wipe the lens cover with a dry cloth.
6. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
7. Do not install near any heat sources such as radiators, heat registers, stoves, or other devices (including amplifiers) that produce heat.
8. Protect the AC adaptor cord and AC cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the unit.
9. The AC cord is used as the main disconnect device, ensure that the socket-outlet is located/installed near the equipment and is easily accessible.
10. Only use attachments/accessories such as stand specified by the manufacturer.
11. Do not touch the unit or the AC adaptor cord and AC cord during lightning storms.
12. Unplug the unit when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the unit has been damaged in any way, such as the AC adaptor, AC cord or plug is damaged, the unit does not operate normally, or has been dropped.
14. The attached AC adaptor and AC cord is intended for indoor use only. Both AC adaptor and AC cord must be waterproofed for outside use.
15. Keep the SD memory card (customer-provided) out of reach of children to prevent swallowing.

SAVE THESE INSTRUCTIONS

1.1.1 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.

Some wireless Cameras operate at frequencies that may cause interference to nearby TVs and VCRs. To minimize or prevent such interference, the base of the wireless Camera should not be placed near or on top of a TV or VCR. If interference is experienced, move the wireless Camera 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 install the camera where the temperature is less than -20 °C (+42 °F) or greater than +50 °C (+122 °F). Allow 10 cm (4 inches) 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, disconnect the power cord from the outlet.

If you have any problems:

Consult an authorized Panasonic Factory Service Center.

FCC RF Exposure Warning

- 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 inches) 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 2.412 GHz to 2.462 GHz, and the power output level is 0.14 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, damage or both of the camera.

Audio and Video Recording Notice

PLEASE NOTE that under certain circumstances, audio/video recording may be PROHIBITED by law. This device should be used only in compliance with all applicable federal, state and local statutes.

1.1.2 Security Cautions

When using this product, take appropriate measures to avoid the following security breaches.

- Leaks of private information via this product
- Illegal use of this product by a third party
- Interference or suspension of the use of this product by a third party

Take the following measures to avoid security breaches:

- To prevent illegal access, keep the update firmware (If you do not have the latest version of firmware, this can lead to blocked access or information leaks).
- You are responsible for the security settings, such as user name and password, to access this product. This information should not be made available to any third parties outside the user group.
- Mount the camera where the camera will not be stolen.
- You are responsible for this product's user information, such as videos, still images and internet contents etc. This information should not be made available to any third parties outside the user group.
- When sending this product to be repaired with a company not related to Panasonic, make back-up copies of files, if necessary, and reset this product to factory default.
- When transferring this product to another party, make back-up copies of files, if necessary, and reset this product to factory default.
- Recorded files stored on the SD memory card can lead to private information leaks. When sending this product to be repaired or transferring it to another party, ensure that the SD memory card is removed.
- When disposing of this product, reset this product to factory default, or erase information by means of electrical deletion or physical dismantlement.

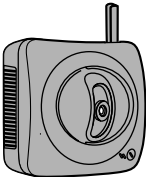
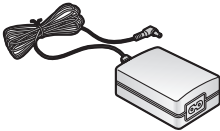
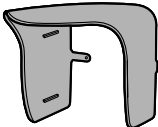
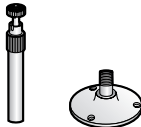
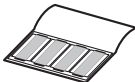
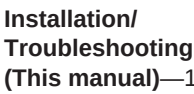
Panasonic Communications Co., Ltd.

1.1.3 User Name and Password Protection

The use of a unique User Name and secret Password is an important tool that will help limit unauthorized individuals from accessing the camera. If you choose to disable this tool, and choose not to limit access by use of a User Name and Password, this may result in access to the camera by unauthorized individuals. (see page 75 of the Operating Instructions in the Setup CD-ROM)

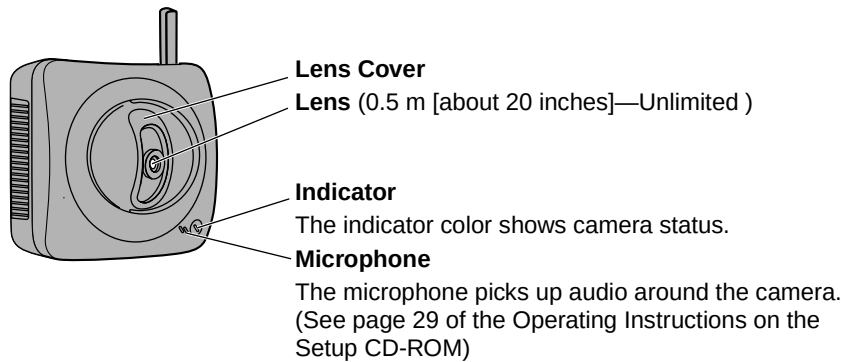
1.2 Included Accessories

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

Main Unit —1 pc. 	AC Adaptor —1 pc. Order No.: PQLV202W 	AC Cord —1 pc. Order No.: PSJA1069Z 
Connector Cover —1 pc. Order No.: PSKV1052Z1 	Sunshade —1 pc. Order No.: PSKV1051Z1 	Stand A (Left) —1 pc. Stand B (Right) —1 pc. 
Screws —4 pcs. Order No.: XTN26+10GVW 	Screws for Flexible Stand —3 pcs. Order No.: PQHE5004Z 	Putties —1 set (4 pcs.) Order No.: PSHG1259Z 
Self Bonding tape —1 pc. Order No.: PSHG1235Z 	Setup CD-ROM —1 pc. Order No.: PSQX3242ZCD 	Installation/ Troubleshooting (This manual) —1 pc. 

1.3 Camera Feature Locations

1.3.1 Front View



Indicator Display

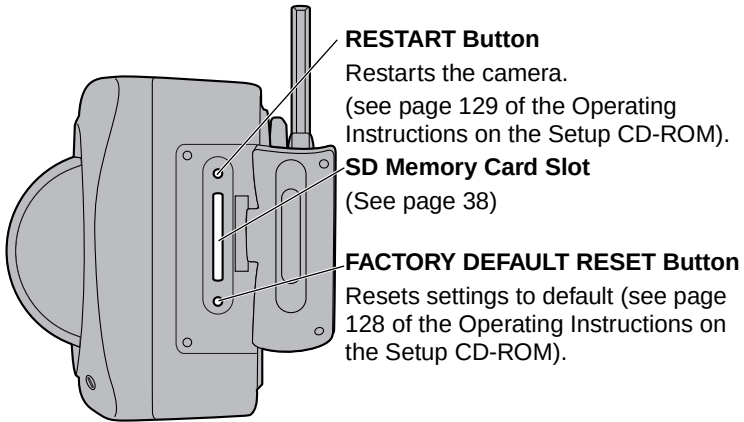
Power on	Not on the LAN	Orange blinking
	On the LAN	Orange blinking → Green blinking → Green
Normal Operation*1		Green
Automatic Setup	Setting	Green blinking
	Finished setting	Green blinking → Green
Using DHCP	Getting IP address*2	Green blinking
	Got IP address	Green
Updating Firmware		Orange blinking
Pressing FACTORY DEFAULT RESET button		Orange blinking → Turning off (The camera restarts after that.)
UPnP™ Failure		Orange blinking (About a 2-second interval)
Internal Failure		Red blinking*3

*1 The indicator turns orange if the camera is not connected to the LAN.

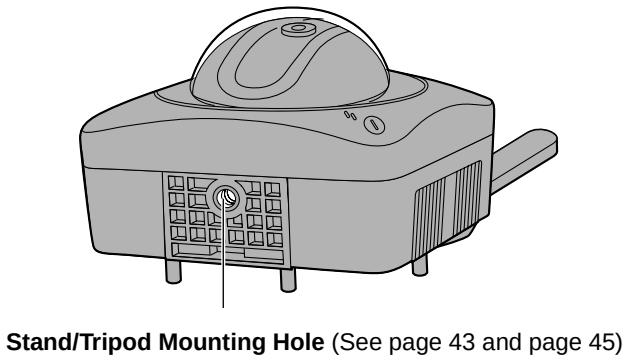
*2 The indicator blinks orange if the camera is not connected to the LAN.

*3 See page 48.

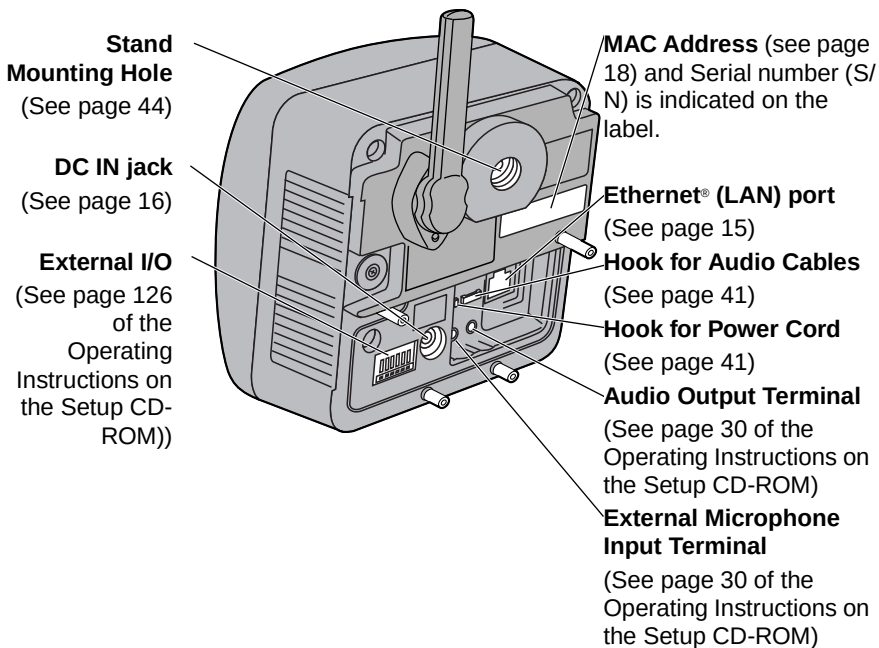
1.3.2 Side View



1.3.3 Bottom View



1.3.4 Rear View



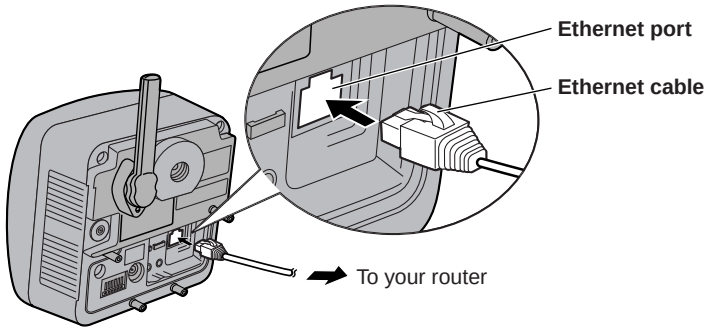
Note

To listen to audio from the camera, an external amplified speaker (customer-provided) must be connected to the camera. The connector used is a stereo type, similar to that used by amplified PC speakers. Though the connector is stereo, the audio is not.

1.4 Connecting the Camera to Your Router

Connect the camera to your router with an Ethernet cable to set up the camera.

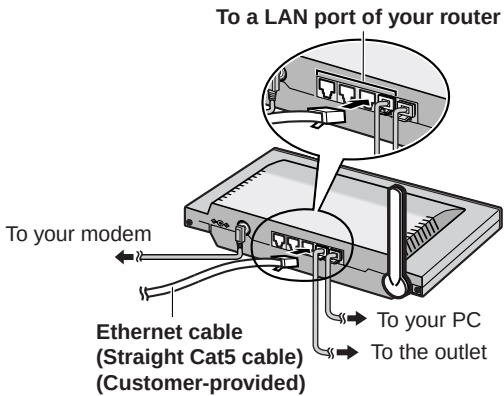
1. Connect the Ethernet cable (customer-provided) to the camera.



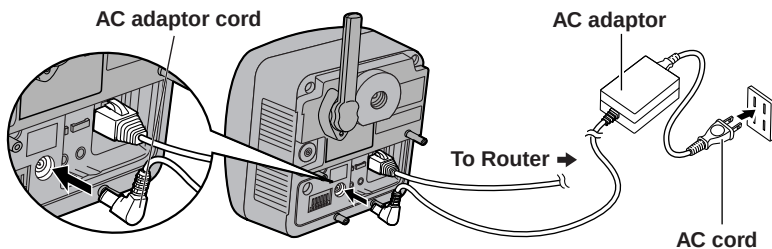
Note

These instructions assume your PC is already connected to the Internet and your network includes a router.

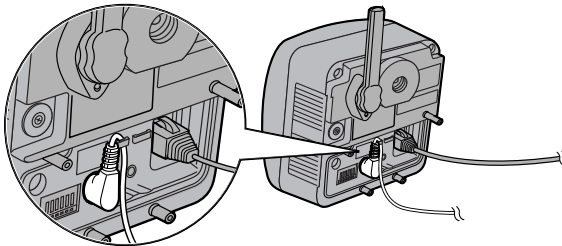
2. Connect the Ethernet cable to your router.



- 3.** Connect the AC adaptor cord to the DC In jack, and plug the AC cord into the outlet.
- The AC cord is used as the main disconnect device, ensure that the socket-outlet is located/installed near the equipment and is easily accessible.
 - Use only specified Panasonic AC adaptor PQLV202 (Order No. PQLV202W).
 - If the indicator does not light green, see page 47 and page 48.
 - A noise can be heard during pan/tilt operation. This is normal.



- 4.** Hook the AC adaptor cord to the Hook for Power Cord.



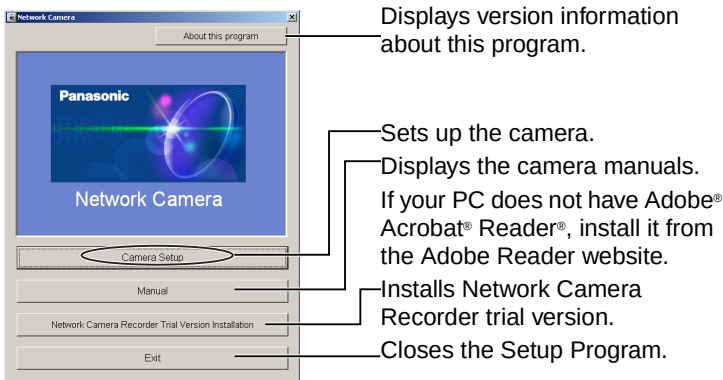
1.5 Setting up the Camera to View on the LAN

Setup CD-ROM allows you to easily set up the camera.

Notes

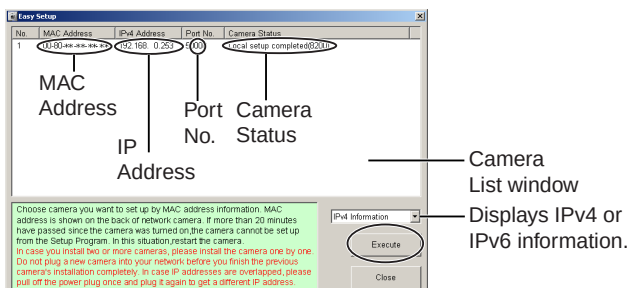
- To avoid any possible problems, temporarily disable any firewall or antivirus software.
- This procedure explains installation of the camera on the same network that your PC is part of.
- Before proceeding, close your web browser.
- See page 140 of the Operating Instructions on the Setup CD-ROM for details.
- To set the Wireless Configuration, the wireless LAN settings of your router—SSID, communication mode and encryption etc.—are required. (See your wireless router's manual for your reference to the wireless LAN settings.)
- When there are some cameras or PCs that are communicating wirelessly, the IP addresses may overlaps and the camera may not be able to communicate. See page "" of the Operating Instructions on the Setup CD-ROM.

1. Insert the Setup CD-ROM into the CD-ROM drive of the PC.
 - The window is automatically displayed.
(If the Network Camera Setup window is not displayed automatically, double-click "Setup.exe" file on the Setup CD-ROM.)
2. Click [Camera Setup].



3. Select the camera to set up and click [Execute].

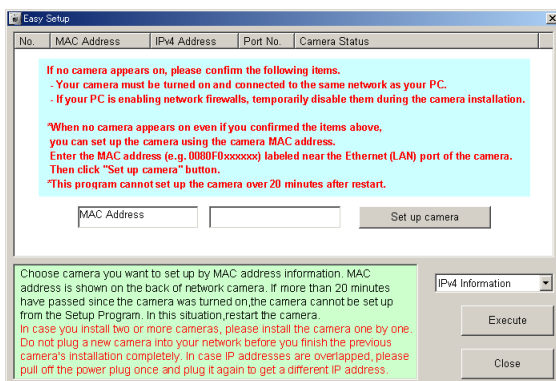
- This program searches for the cameras that are connected to the router and displays the MAC Addresses, IP addresses and Port Numbers.



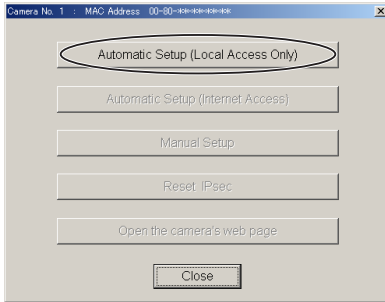
- The MAC Address on the rear side (see page 14) of the camera shows which camera you select on the Camera List window.

Notes

- If more than 20 minutes have passed since the camera was turned on, the camera cannot be set up from the Setup Program. In this situation, disconnect the AC cord from the outlet, and reconnect it again.
- The Setup Program may not list any cameras due to your firewall or antivirus software settings on your PC. If you cannot disable your firewall or antivirus software, you can set up the camera entering the camera MAC address on the following window. The camera's MAC address can be found on the label affixed to the back of each camera. See page 32 for details.



4. Click [Automatic Setup (Local Access Only)].



- For the first time installation or after pressing the FACTORY DEFAULT RESET button, only [Automatic Setup (Local Access Only)] can be selected. To set up the camera with Static or DHCP settings, after performing the [Automatic Setup (Local Access Only)], run the Setup Program again and select [Manual Setup].

5. Enter the user name and password you wish to use, and click [Save].

 A screenshot of a window titled "Security: Administrator". It contains three input fields: "New User Name (6 to 15 characters)", "New Password (6 to 15 characters)", and "Retype new password". Below these fields is a red note: "Note : (1) You'll be asked for User name and password to open camera's web page. Please keep your User Name and Password securely. (2) Alphabet and number only. [Space], ['], [&], [,], [<] or [>] are not allowed. (3) A capital letter/small letter is distinguished. (4) User Name and Password must be different from each other. (5) It is strongly recommended to change password regularly for security." At the bottom right is a "Save" button, which is circled.

6. Enter the name and password that were entered above, and click [OK].

 A screenshot of a window titled "Enter Network Password". It contains a key icon and the text "Please type your user name and password." Below this are four input fields: "Site:" (with masked characters), "Realm:" (with masked characters), "User Name", and "Password". There is a checkbox labeled "Save this password in your password list" which is unchecked. At the bottom are "OK" and "Cancel" buttons. The "OK" button is circled.

7. To set the Wireless Configuration, check [Enable] and click [Next>].
 - When [Disable] was selected, skip to step 9.

The image shows a 'Wireless Configuration' dialog box. It has two radio buttons: 'Enable' (which is selected) and 'Disable'. At the bottom right, there is a button labeled 'Next>'.

- The Wireless Configuration can also be set at **Wireless** in the Setup Page. (See page "" of the Operating Instructions in the Setup CD-ROM.)
8. Set the Wireless Configuration according to the wireless settings of the router and click [Next>].
 - For more information about wireless setting, see http://panasonic.co.jp/pcc/products/en/netwkc/technic/wireless/cam_set.html

The image shows a 'Wireless Configuration' dialog box with several sections. Numbered steps point to specific fields:

- 1 points to the 'SSID' text field.
- 2 points to the 'Communication mode' section, which has three radio buttons: '802.11b', '802.11b/g' (selected), and '802.11g exclusive'.
- 3 points to the 'Encryption' section, which has a 'Cipher' dropdown menu set to 'No encryption'.
- 4 points to the 'WEPKey' section, which contains four rows, each with a radio button (all are unselected) and a text field for the key. Each text field has a dropdown menu set to 'ASCII13characters 128bit'.

 At the bottom, there are '<Back' and 'Next>' buttons.

1. Set the SSID.

Set the name of the wireless network.

2. Select the Communication mode.

They are IEEE Communication modes. Select the same Communication mode as that of the router to which the camera is connected.

802.11b (IEEE802.11b)

: Only 802.11b wireless router can be connected.

802.11b/g (IEEE802.11g)

: Either 802.11b or 802.11g router can be connected.

802.11g exclusive (IEEE802.11g)

: Only 802.11g router can be connected.

3. Select encrypting or not encrypting.

Selecting WEP can encrypt data within the wireless LAN.

WEP : Encrypting (setting WEP) makes it difficult for unauthorized users to read data within the wireless LAN, even if they can receive it. To encrypt data, set the same encryption key to every terminal within the wireless LAN. There are 3 kinds of encryption key: 64 bit, 128 bit and 152 bit. Security level of encryption increases in order of length as follows: 64 bit, 128 bit and 152 bit.

No encryption : select when not using encryption.

4. Set the WEPKey1-4.

Selecting [WEP] at Cipher enables you to set WEPKey1-4. One or all of the four keys can be set. Check the same key number as set to the router, and set the same key as at the router.

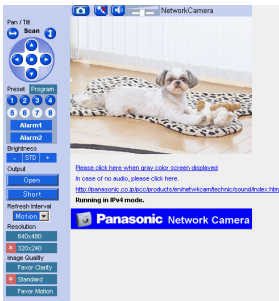
***** : The entered WEPKey will be displayed as "*"s regardless of the key type selected.

<Example>

HEX, 10 characters 64 bit : 012345abcd
HEX, 26 characters 128 bit : 0123456789abcdef012345abcd
HEX, 32 characters 152 bit : 0123456789abcdef0123456789abcdef
ASCII 5 characters 64 bit : 012yz
ASCII 13 characters 128 bit : 0123456uvwxyz
ASCII 16 characters 152 bit : 0123456789uvwxyz

9. When the Single Camera page is displayed, the setup is completed.

- When Security Warning window is displayed, click [Yes]. (See page 37)



- When having set the wireless configuration, follow "1.7 Confirming the Wireless LAN Setup" on page 27.

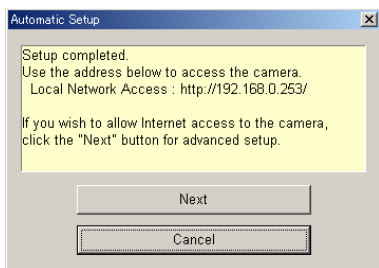
Note

To insure that the most current image is displayed, Internet Explorer should be configured as follows. This will not have any negative result on normal use.

1. While viewing any website, Click [Tools]→[Internet Options].
2. In the section "Temporary Internet Files", click [Settings] and check [Every visit to the page].

To enable Internet access to the camera

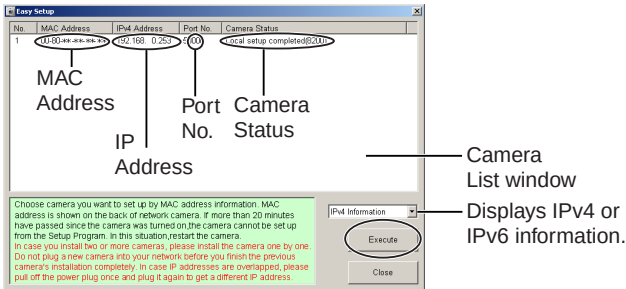
Click [Next] to set up the Internet access to the camera and go to step 3 on the page 24.



- If you do not allow the Internet access, click [Cancel], and go to page 35 to confirm the camera image.

1.6 Setting up Internet Access to the Camera

1. Display the Camera List window (see page 17—page 18).
2. Select the camera to set up and click [Execute].
 - This program searches for the cameras that are connected to the router and displays the MAC Addresses, IP addresses and Port Numbers.

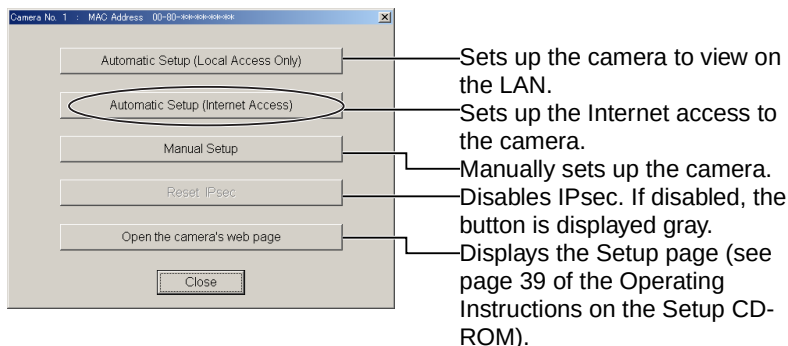


- The MAC Address on the rear side (see page 14) of the camera shows which camera you select on the Camera List window.

Note

If more than 20 minutes have passed since the camera was turned on, the camera cannot be set up from the Setup Program. In this situation, restart the camera.

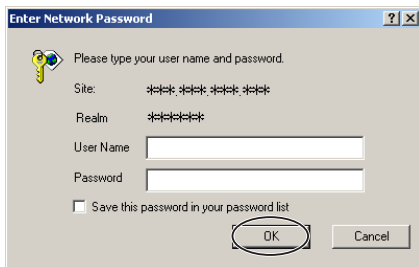
3. Click [Automatic Setup (Internet Access)].



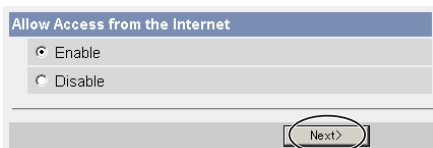
Note

In order for Internet access to be properly enabled, your routers UPnP™ feature should be enabled. Most router manufacturers disable this feature. See http://panasonic.co.jp/pcc/products/en/netwcam/technic/rtr_setup for more information.

4. Enter the user name and password that were set, and click [OK].

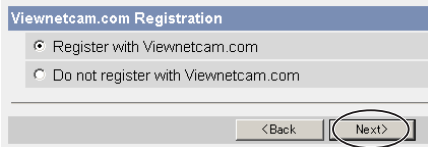


5. To enable Internet access, select [Enable]. Choose [Disable] if you wish to restrict access to your local network.



- If you use a router not supporting UPnP™, click [Disable]. If you select [Disable], skip to step 9.

6. To register with the "Viewnetcam.com FREE DDNS service", check [Register with Viewnetcam.com] and click [Next].



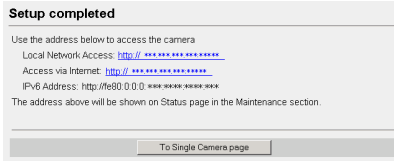
Viewnetcam.com FREE DDNS service

See page 28 for Viewnetcam.com information. For detailed information, access at <http://www.viewnetcam.com>.

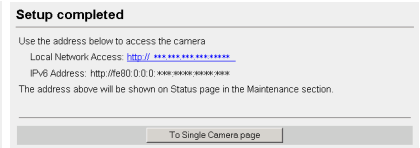
- If you have multiple cameras, you can use Viewnetcam.com service registering it only for a camera.
 - If you select [Disable], skip to step 9.
7. The Enter Network Password window is displayed, and enter the user name and password that were set, and click [OK].
8. After a while, the "Viewnetcam.com FREE DDNS service" website is displayed. Follow the displayed instructions for registration.
- If the message "Failed to configure the router's Port Forwarding by UPnP" is displayed, your router may not support UPnP™ or UPnP™ is not enabled. Enable your router's UPnP™ or set Port Forwarding manually following the router's manual and try Automatic Setup again. For more information about setting up a router, refer to the Panasonic Network Camera support website at http://panasonic.co.jp/pcc/products/en/netwkcam/technic/rtr_setup.
 - If the message "Failed to register with Viewnetcam.com." is displayed, confirm that the router is connected to the Internet.

9. When "Setup complete" is displayed, and click [To Single Camera page].

- When [Enable] was selected at step 5



- When [Disable] was selected at step 5



- The port number must be specified at the end of camera URL.

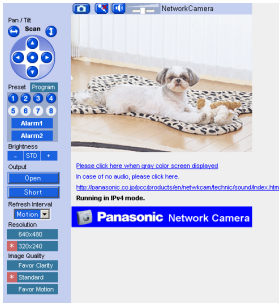
Using port 80:

**http://(Cameraname).viewnetcam.com
or http://IP Address**

Using any other port:

**http://(Cameraname).viewnetcam.com:Port Number
or http://IP Address:Port Number**

10. When the Single Camera page is displayed, the setup is completed.



Notes

- The banner is displayed only when Internet access is allowed on the camera.
- To insure that the most current image is displayed, Internet Explorer should be configured as follows. This will not have any negative result on normal use.
 1. While viewing any website, Click [Tools]→[Internet Options].
 2. In the section "Temporary Internet Files", click [Settings] and check [Every visit to the page].

1.7 Confirming the Wireless LAN Setup

After setting each item for the wireless LAN, confirm that the camera works correctly.

1. Start up the web browser on the PC.
2. Enter "http://IP address (or URL):Port No." in the address field and press [Enter].
(When port number is 80 (default), you do not need to enter port number.)
3. When the following Top Page is displayed, the wireless LAN setup is successful.



- If the Top Page was not displayed, the settings for the camera are not identical with those for the router. Check the settings by using wired connection.
If the settings are correct and you use a proxy server, set the web browser not to access the proxy server.
If the Top Page is not displayed even after trying these methods, contact the retailer.
- It takes about 1 minute for the new settings to be effective.
- It is not possible to access the camera simultaneously by both wired and wireless connection.

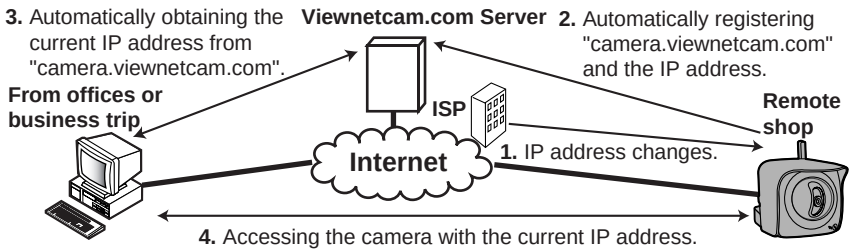
1.8 Viewnetcam.com Service (IPv4/IPv6)

Viewnetcam.com is the **free** dynamic DNS (DDNS) service offered by Panasonic. It allows you to assign an easy-to-remember name to your camera, similar to your favorite website. Many ISPs use a "dynamic" IP address that reassigns a new IP address to your account monthly, weekly or sometimes each time you log on. Viewnetcam.com automatically tracks these changes and associates them to a name you choose.

- Domain Name Service such as Viewnetcam.com
The camera can be accessed with a static domain name (e.g. camera.viewnetcam.com), even if your ISP offers a dynamic global IP address. Domain name service is required for IPv6 connection.
- Static IP Address Service offered by your ISP
The camera can be accessed with a static global IP address.

See the website at <http://www.viewnetcam.com> for details.

How the Viewnetcam.com service works



1. Your ISP assigns a global IP address dynamically to a router or a camera. The IP address changes regularly. If you view the camera from the Internet, the global IP address is required.
2. If you register with the Viewnetcam.com service, a unique domain name is assigned to the camera. The camera automatically send your global IP address to the Viewnetcam.com server, and the Viewnetcam.com server manages Internet access comparing your registered domain name with a global IP address.
3. The Viewnetcam.com server looks up the global IP address that matches to your domain name, and automatically finds your camera.
4. You can access the camera with your domain name without considering the dynamic global IP address.

Notes

- Ask your ISP about what type of IP address you are using.
- Some ISPs assign you a local IP address. In this case, you cannot use the Viewnetcam.com service. Ask you ISP about what type of IP address you are using.
- If the camera is using a port number other than 80, the port number must be specified at the end of the Viewnetcam URL. For example:
Using port 80: **[http://\(Cameraname\).viewnetcam.com](http://(Cameraname).viewnetcam.com)**
Using any other port: **[http://\(Cameraname\).viewnetcam.com:Port Number](http://(Cameraname).viewnetcam.com:Port Number)**

1.9 Connecting the Camera to a Router Supporting UPnP™ (IPv4 Only)

To allow access from the Internet with a router supporting UPnP™, follow the procedures shown in the Getting Started.

Notes

- In some routers, the UPnP™ feature is disabled by default. Enable your router's UPnP™ feature following the router manual before you set up the camera. See the Panasonic Network Camera support website at **http://panasonic.co.jp/pcc/products/en/netwkc/technic/rtr_setup** for details.
- If the maximum idle time is set in PPPoE or PPTP connection with your ISP, disable it on the router. See the router manual for details.

1.10 Connecting the Camera to a Router Not Supporting UPnP™ (IPv4 Only)

To allow access from the Internet with a router not supporting UPnP™, follow the procedures below.

1. Select [Static] on the Network (IPv4) page.

- (1) Access the camera (see page 13 of the Operating Instructions on the Setup CD-ROM).
- (2) Click [Setup] tab at the top of the page.
- (3) Select [Static] on the Network page.
 - The Static IP Address Configuration page is displayed. Make a note of the IP address and port number, since they are required to enable port forwarding on the router.
- (4) Click [Save] without changing the settings.
- (5) Click [Restart].

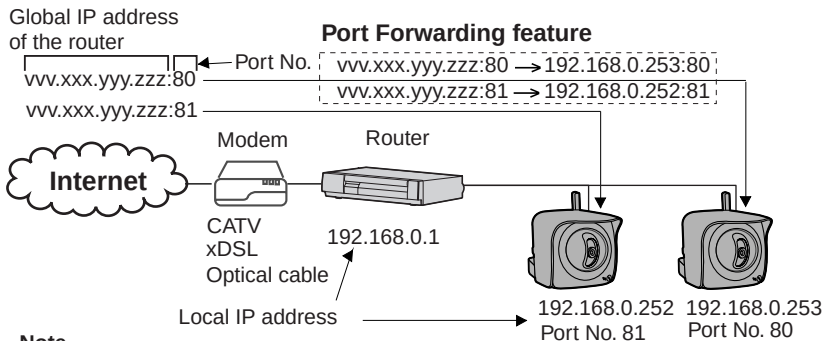
2. Enable port forwarding on the router.

Using the IP address and port number note written on step 1-(3), enable port forwarding on the router. See the router manual for how to enable port forwarding.

3. Register with the Viewnetcam.com service.

Port Forwarding feature^{*1} (IPv4 Only)

The port forwarding feature is required to allow access from the Internet with a router not supporting UPnP™. It exchanges a local IP address to a global one. Each camera must be assigned a unique port number.



Note

The IP addresses shown above may differ from those offered on your home network.

^{*1} "Port forwarding" may be called "Address translation", "Static IP Masquerade", "Virtual server" or "Port mapping" in other products.

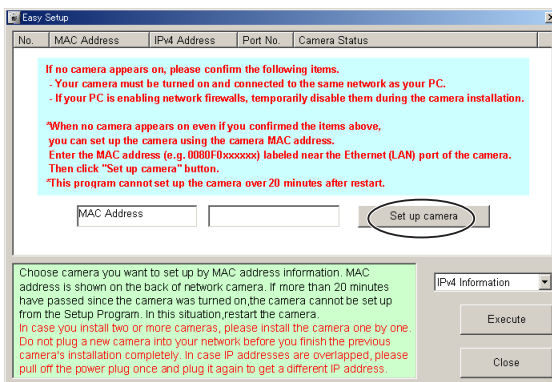
1.11 Setting up the Camera Using the MAC Address on the Setup Program

The Setup Program may not list any cameras due to your firewall or antivirus software settings on your PC. If you cannot disable your firewall or antivirus software, you can set up the camera using the camera MAC address as shown below.

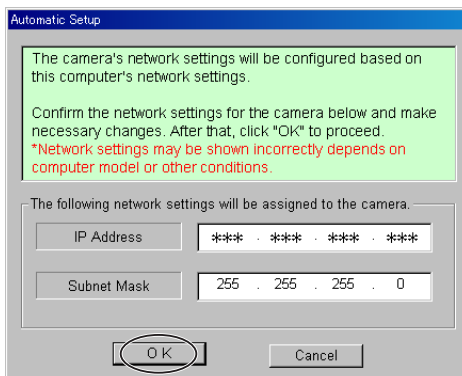
1. Enter the camera MAC address in the data field, and click [Set up camera].

Note

The camera's MAC address can be found on the sticker affixed to the back of the camera (see page 14).



2. After confirming the network settings, click [OK].



- After about a minute, the Security: Administrator page is displayed.

3. Enter the user name and password, and click [Save].

Security: Administrator

New User Name (6 to 15 characters)	
New Password (6 to 15 characters)	
Retype new password	

Note : (1) You'll be asked for User name and password to open camera's web page.
 Please keep your User Name and Password securely.
 (2) Alphabet and number only. [Space], ["], ['], [&], [:], [<] or [>] are not allowed.
 (3) A capital letter/small letter is distinguished.
 (4) User Name and Password must be different from each other.
 (5) It is strongly recommended to change password regularly for security.

4. The Enter Network Password window is displayed. Enter the user name and password that were set, and click [OK].

Enter Network Password

Please type your user name and password.

Site: *:*:*:*:*:*:*:*:*:*

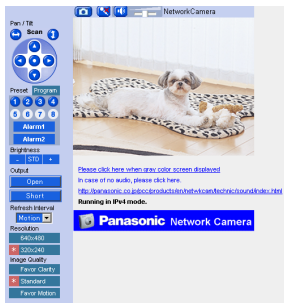
Realm: *:*:*:*:*:

User Name:

Password:

☐ Save this password in your password list

5. When the Single Camera page is displayed, the setup is completed.
 - If Security Warning window is displayed, click [Yes] (see page 37).



Notes

- See page 17 of the Operating Instructions on the Setup CD-ROM for the Single Camera page.
- If you enable the Internet access to the camera, follow the procedures below.
 - **When you are using a router supporting UPnP™**
 1. Enable the Auto Port Forwarding feature on the UPnP page (see page 63 of the Operating Instructions on the Setup CD-ROM).
 2. Register with the Viewnetcam.com service on the Viewnetcam.com page (see page 65 of the Operating Instructions on the Setup CD-ROM).
 3. Confirm the Internet access to the camera (see page 35).
 - **When you are using a router not supporting UPnP™**
Follow the procedures shown on page 31.

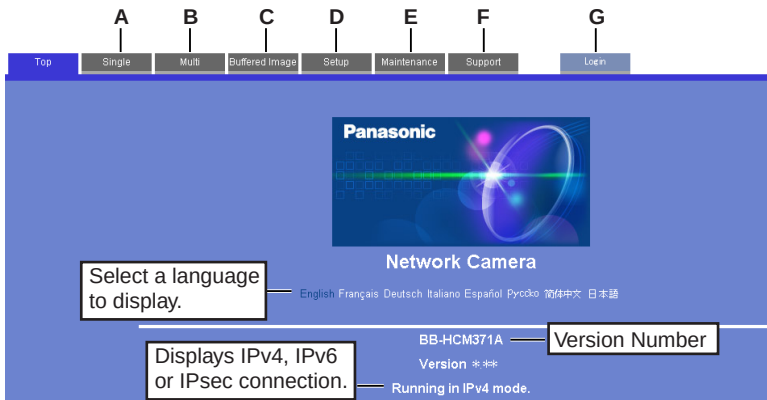
1.12 Confirming the Camera Image

1. Start up the web browser on your PC.
2. Enter "**http://IPv4 Address (or URL):Port Number**" on the address bar, and press [Enter] on the keyboard.
 - When port number is 80 (default), you do not need to enter port number. See page 44 of the Operating Instructions on the Setup CD-ROM for details about port number.
 - For IPv6 connection, see page 15 and page 16 of the Operating Instructions on the Setup CD-ROM and prepare the requirements. Enter the "**http://(IPv6-registered URL):Port Number**" on the address bar.
 - If the camera image is not displayed, see page 52.
3. The Enter Network Password window is displayed, and enter the user name and password that were set, and click [OK].

Note

When [Permit access from guest users] is set on the Security: Administrator page, authentication window will not be displayed.

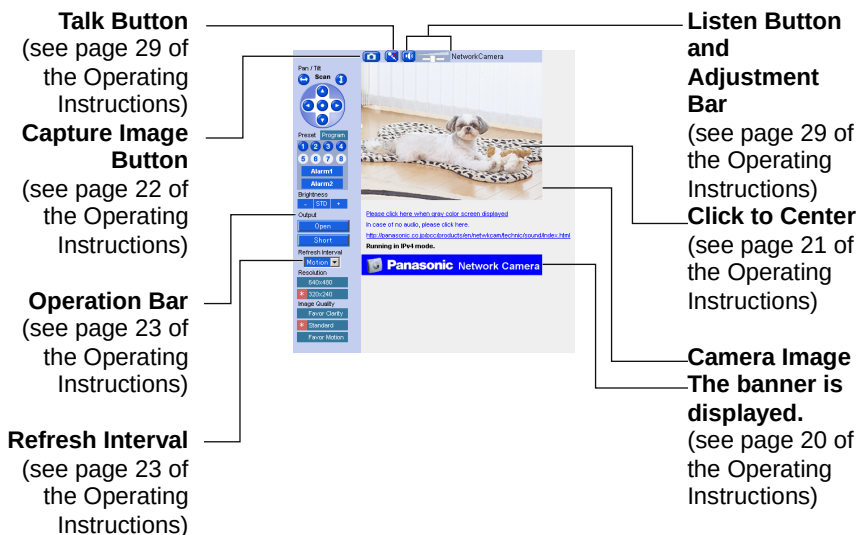
4. Click the following tabs to display each page.



- | | |
|---|--|
| A To Single Camera page
(page 17 of Operating Instructions) | B To Multi-Camera page
(page 32 of Operating Instructions) |
| C To Buffered Image page
(page 34 of Operating Instructions) | D To Setup page
(page 39 of Operating Instructions) |
| E To Maintenance page
(page 114 of Operating Instructions) | F To Support page
(page 123 of Operating Instructions) |
| G To log in to the camera
(page 78 of Operating Instructions) | |

Notes

- When users other than an administrator are accessing the camera, [Setup] and [Maintenance] tab will not be displayed. Additionally, When [Do not permit access from guest users] is set on the Security: Administrator page, [Login] tab will not be displayed.
 - If [View Multi-Camera page] or [View Buffered Image page] is not permitted on the General User page, [Multi-Camera] or [Buffered Image] tab will not be displayed.
5. Click [Single] tab on the above.
- When Security Warning window is displayed, click [Yes]. (See page 37)



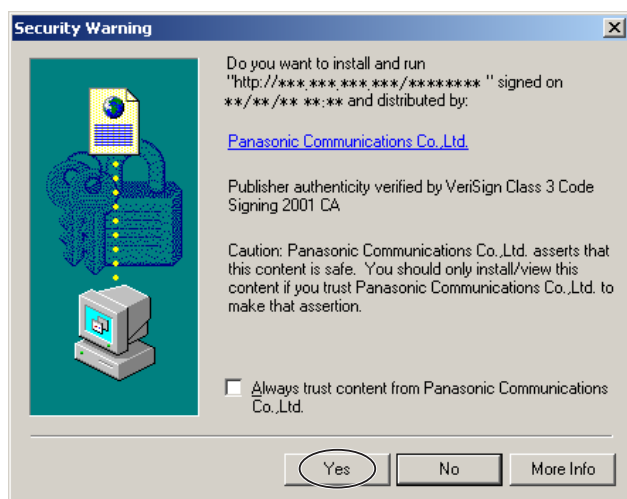
Note

For IPv6 connection, see page 15 and page 16 of the Operating Instructions on the Setup CD-ROM.

6. Close the web browser.

Security Warning window

To view a video (Motion JPEG) or to use audio feature, ActiveX® Controls must be installed. When trying to display a video for the first time, Security Warning window will be displayed. When using Windows 2000 or Windows XP, log in as an administrator to install it.



If you cannot install ActiveX Controls or you cannot see the video in the Internet Explorer

- Click [Tools]→[Internet Options]→[Security] tab and click [Custom level] on the web browser.
 - (1) Check "Prompt" in "Download signed ActiveX Controls".
 - (2) Check "Enable" in "Run ActiveX Controls and plug-ins".
- ActiveX Controls can be installed from the file on the Setup CD-ROM.
 - (1) Restart the PC.
 - (2) Confirm that Internet Explorer is closed.
 - (3) Double-click "ocx\ActiveXInst.exe" on the Setup CD-ROM.

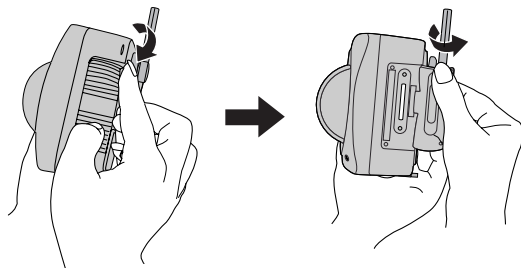
Notes

- Video may not be displayed quickly or audio may not be listened immediately. Wait for a while.
- If you use a proxy server, set the web browser not to access the proxy server (see page 143 of the Operating Instructions on the Setup CD-ROM).
- In some corporate network environments a firewall may be used for security purposes. It is possible that this may prevent motion video from being displayed. In this situation we suggest:
 - Contact your network administrator.
 - Try using regularly refreshed images.

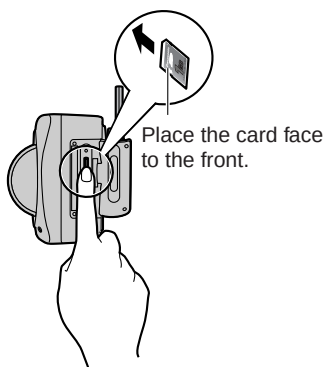
1.13 Using the SD Memory Card

The SD memory card (customer-provided) can store image data and replay them. Follow the instructions below to insert the SD memory card into the camera.

1. Open the cover on the side of the camera.



2. Insert the SD memory card, and push with your finger until it clicks. Or push the card lightly to remove.



Notes

- Ensure that recording has been stopped, before removing the SD memory card. (see page 87 of Operating Instructions on the Setup CD-ROM) If the SD memory card is removed while recording, the image file will most likely become unreadable. In this case, format the SD memory card again. (Files will be deleted.)
- Insert or remove the SD memory card after removing the sunshade.

3. Replace the cover firmly.

Note

Format the SD memory card, before you record the image data. (see page 86 of Operating Instructions on the Setup CD-ROM)

1.14 Installing the Camera

The camera has a splash resistant body. The splash resistant body allows the camera to be used indoors and outdoors. Waterproof cabling is necessary for outdoor mounting. Check the camera operation before installing (cabling and mounting) the camera.

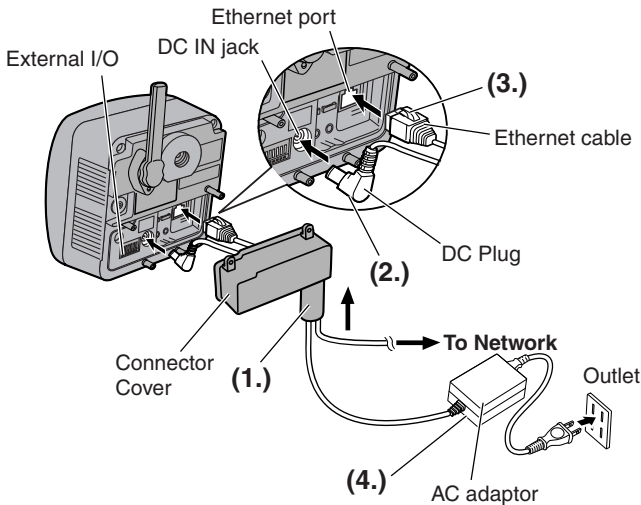
Notes

- Install the camera under eaves to protect it from direct sunlight. Prolonged exposure to direct sunlight or halogen light may damage the CCD sensor.
- Use the sunshade in any conditions.
- Do not install the camera in the location where sea breezes may hit the unit directly.
- Avoid laying Ethernet cable underground or stringing it in the air. Lightning may cause serious damage to the camera or the connected devices.
- AC adaptor and AC cord are not waterproofed. Put them inside the outdoor power equipment near the camera and protect them from the rain. Ask the authorized electric wiring dealer.
- AC adaptor, AC cord and Ethernet cable should be waterproofed. Do the waterproof electric wiring work.
- Do not expose the AC adaptor to the temperatures below -20 °C (-4 °F) or above +50 °C (122 °F). AC adaptor cannot be operated under these circumstances.

1.14.1 Wiring the Camera

Check the location where the camera should be installed. Select the proper cable suited to the camera location. Consult an authorized wiring electrician for cabling. The camera can be mounted in the following ways.

1. Put the cables through the connector cover (1.). Connect the DC plug of the AC adaptor to the DC IN jack (2.) and Ethernet cable to the Ethernet port (3.). Connect the AC plug of the AC cord to the outlet (4.).
 - If you use External I/O, external speaker or external microphone, put the cables through the connector cover.



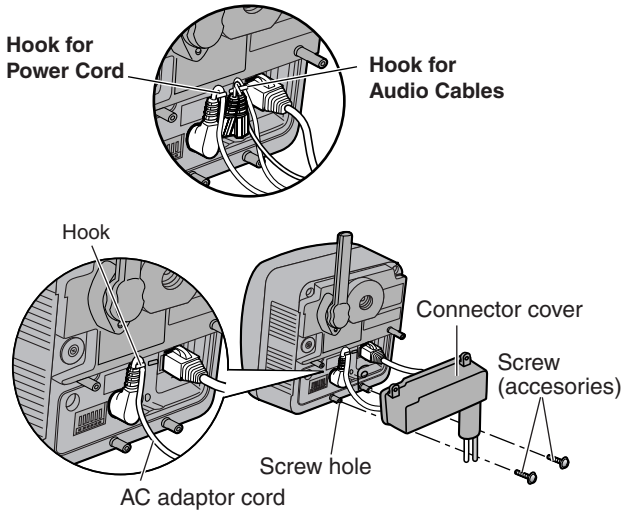
Notes

- Confirm that the indicator lights green.
- Check the location of the camera, the type and the length of the Ethernet cable (Max. 100 m [330 feet]). Use an Ethernet cable as short as possible for outdoor use. Lightning may cause serious damage to the camera or the connected devices.

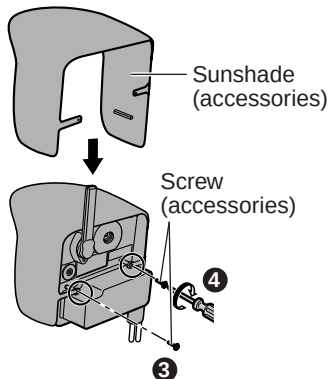
2. Thread the AC adaptor cord through the hook. Put the connector cover by fastening the two screws in numerical order. The remaining screw hole on the connector cover is used for attaching sunshade.

Note

When you mount the camera, always hook the AC adaptor cord and audio cables to the hooks.



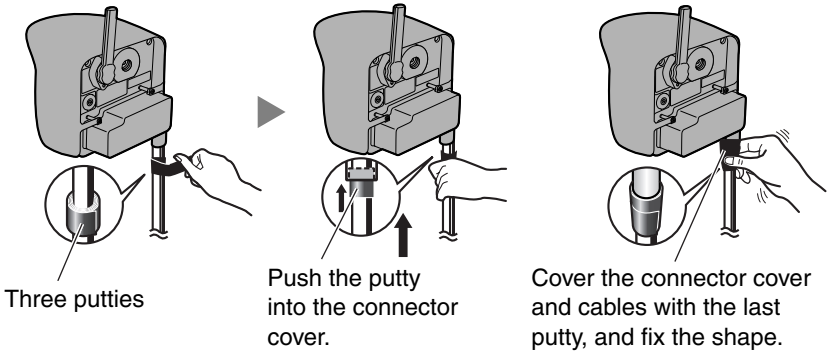
3. Attach the sunshade by fastening the two screws.



4. Roll up putty around the cables and fit them into the holes to prevent water from getting inside the camera.

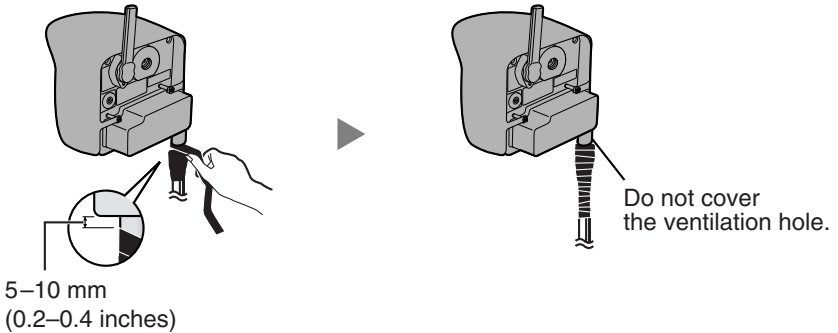
Notes

- Confirm the camera is functioning before putting the cables. Putties and self bonding tape cannot be used twice.
- Check the length and the type of the Ethernet cable before fixing with putty.



5. Cover the putty by rolling.

- Self bonding tape is used to fix the cables in a mount. Keep at least 20 cm (about 8 inches) of it for cable fixing.



6. Connect the Ethernet cable to the Ethernet port of hub, router and PC.

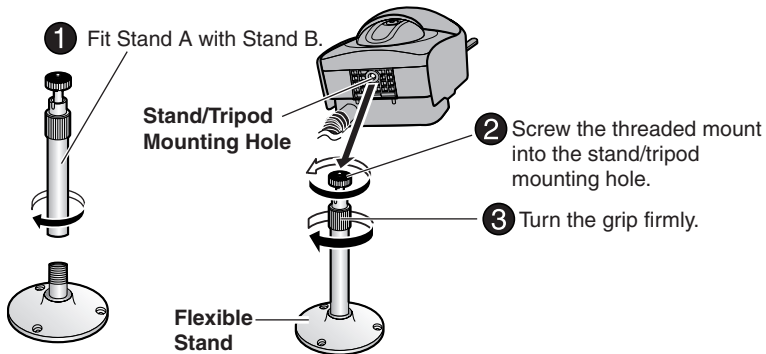
1.14.2 Mounting the Camera

Four mounting methods are shown in the following figures. Confirm the top and bottom of the camera when mounting. Ask the authorized dealer for mounting.

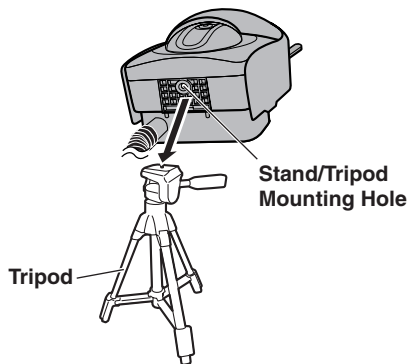
Note

Mounting and cabling instructions described in this Installation/Troubleshooting follow generally accepted guidelines suitable for residential installations. In some areas, commercial and industrial installations are regulated by local or state ordinances. For such installations, contact your local building department or building inspector for more details.

Flexible Stand Mount



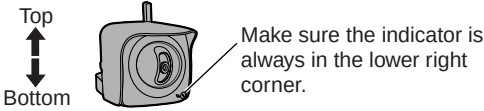
Tripod Mount



Ceiling Mount

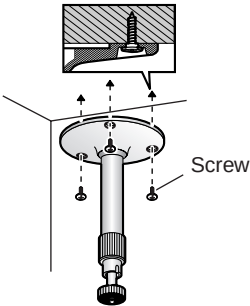
Notes

- Do not mount the camera upside down. The image may be displayed upside down.



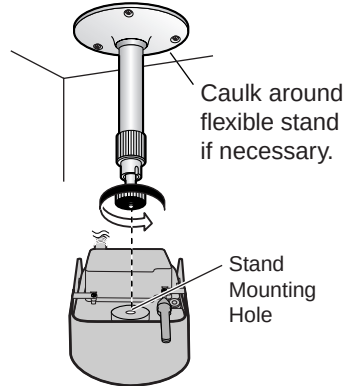
- When mounting, we suggest using the hardware we provide. Mounting in any other manner may cause the camera to fall, causing personal injury or damage to the camera.
- To reduce the load on the mounting hardware, dress the cables neatly and secure with tape.

- 1** Mount the flexible stand firmly to the ceiling with the three screws (accessories).

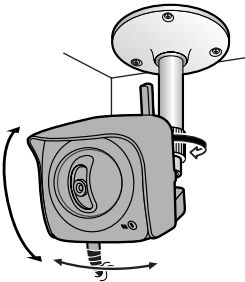


- Do not mount the camera on a soft material. The camera may fall and break down.
- Use appropriate screws suited for the material of the ceiling.

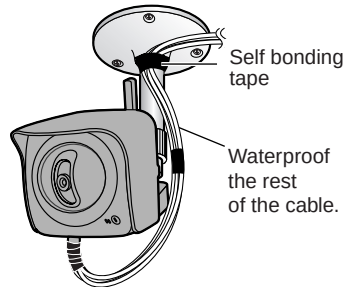
- 2** Attach the camera screwing the threaded mount into the stand mounting hole.



- 3** Adjust the camera position and secure the flexible stand firmly.



- 4** Roll up the cables and flexible stand with the self bonding tape (accessories).

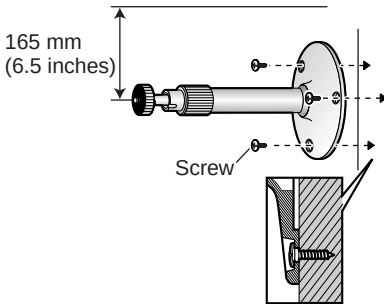


Wall Mount

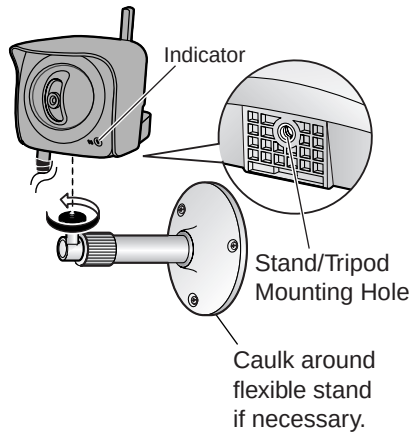
Notes

- Drive mounting screws into the wall. Be careful to avoid touching any metalwork (metal/wire laths etc.), conduits or electrical cables buried in the wall.
- Do not mount the camera upside down. The image may be displayed upside down.
- When mounting, we suggest using the hardware we provide. Mounting in any other manner may cause the camera to fall, causing personal injury or damage to the camera.
- To reduce the load on the mounting hardware, dress the cables neatly and secure with tape.

- 1** Mount the flexible stand firmly to the wall with the three screws (accessories).

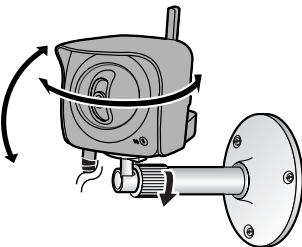


- 2** Attach the camera screwing the threaded mount into the stand/tripod mounting hole.

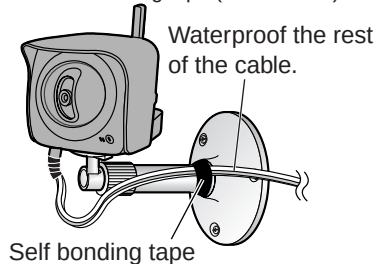


- Do not mount the camera on a soft material. The camera may fall and break down.
- Use appropriate screws suited for the material of the ceiling.

- 3** Adjust the camera position and secure the flexible stand firmly.

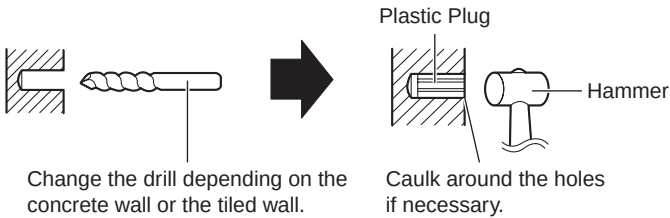


- 4** Roll up the cables and flexible stand with the self bonding tape (accessories).



Making holes on mortar or concrete wall

1. Put flexible stand on the wall where you plan to install the camera and mark the points where you are going to make holes.
2. Make holes with an electric drill. Insert plastic plugs (customer-provided) into the holes and push them inside the holes with the hammer.



Note

Mortar wall is easy to come off in drilling.

3. Mount the flexible stand by using the screws (accessories).

2 Troubleshooting

The Panasonic Network Camera support website "<http://panasonic.co.jp/pcc/products/en/netwkcaml/>" includes various technical information other than the contents in this troubleshooting section. Access it if problems occur.

2.1 Indicator Error Codes

Problem	Cause and Remedy
Indicator lights or blinks orange.	- Ethernet cable is not connected properly. → Connect the Ethernet cable properly. - PC, Ethernet hub or router is not working. → Confirm that PC, Ethernet hub and router is working. - The wireless settings are not identical with those of the router. → Set the same SSID, Communication mode and WEP as those of the router.
Indicator continues blinking orange.	Indicator blinks orange when updating firmware. → If you access the camera on the web browser, Update Firmware page will be displayed. Update the firmware following the procedure (see page 117 of the Operating Instructions on the Setup CD-ROM). If you fail to update the firmware, see page 64.
Indicator continues blinking orange (2-second interval).	- The router on your network is turned off. → Turn the router on, and wait for a while until the ADSL line is connected. - An error occurs in UPnP™ port forwarding. → Set up the camera again in [Automatic Setup] by the Setup Program following the Getting Started.
Indicator continues blinking green.	- Automatic setup is not complete. → Complete the setup following this Installation/Troubleshooting. - The camera did not get its IP address from the DHCP server. → When setting [Automatic Setup] or [DHCP Setup], the camera may not get its IP address due to network failures. Ask your ISP or network administrator for more information.

Problem	Cause and Remedy
Indicator does not light in green in communicating by using the wireless LAN.	• The status of radio wave is unfavorable. (To check the Wireless information on the Wireless Status, see page "" of the Operating Instructions on the Setup CD-ROM.) → Start the communication after changing the location of the camera or getting rid of the obstacle around the camera.
Indicator does not light up.	• Indicator display is disabled. → Check if the indicator control is disabled (see page 113 of the Operating Instructions on the Setup CD-ROM). • Confirm that the standard AC adaptor PQLV202 (Order No. PQLV202W) is being used.
Indicator continues blinking red.	• The camera may be malfunctioning. → If you cannot access the camera, the camera may be malfunctioning. Call our customer call center.

2.2 Camera Setup Difficulties

Note

If you are experiencing any problems, it is recommended that you temporarily disable all firewall, pop-up killer, and virus detection software. Once the problem is identified and corrected, you can restart the Setup Program.

Problem	Cause and Remedy
Automatic Setup fails using Setup Program.	• More than 20 minutes have passed, after turning the camera on. → Disconnect the plug of the AC cord from the outlet, and reconnect it again. Set up the camera again following the Getting Started. • Multiple camera IP addresses are overlapping. → If you install multiple cameras, turn the camera on one by one.
Viewnetcam.com registration fails using Setup Program.	• Your PC is not connected to the Internet through the router. → Configure the router for the Internet connection from your PC following the router manual. And register with the Viewnetcam.com service. • If you do not receive an E-mail from the Viewnetcam.com service, your registered E-mail address may be incorrect. → Register your correct E-mail address again at the Viewnetcam.com website at http://www.viewnetcam.com.

Problem	Cause and Remedy
Setup Program does not list any cameras.	• Your firewall or antivirus software is blocking the connection. → To avoid any possible problems, temporarily disable any firewall or antivirus software, and set up the camera again. If you cannot disable your firewall or antivirus software, you can set up the camera using the MAC address (see page 32). • The camera is connected over a different network. → Set up the camera from a PC under the same router. • Confirm that an IP address is assigned to your PC. → If the IP address is not assigned to your PC, assign it to your PC (see page 139 of the Operating Instructions on the Setup CD-ROM).
Setup Program fails to complete successfully.	• Network problems may occur during setup. → Confirm that your network is working. Disconnect the plug of the AC cord from the outlet, and reconnect it again. Then set up the camera again following the Getting Started. • More than 20 minutes have passed, after turning the camera on. → Disconnect the plug of the AC cord from the outlet, and reconnect it again. Set up the camera again following the Getting Started.
UPnP™ port forwarding setup fails.	• UPnP™ is disabled on the router. → Enable UPnP™ on the router following the router manual. • The camera is turned on before the router is turned on. → Turn the router on first, and then turn the camera on. • The default gateway is not set, or the settings are wrong. → Set the default gateway correctly (see page 42 of the Operating Instructions on the Setup CD-ROM). • The router does not support UPnP™. → Enable port forwarding on your router following the router manual.

Problem	Cause and Remedy
The camera IP address and port number have been forgotten.	Clicking [Camera Setup] on the Setup Program displays the camera list. The camera list shows the MAC address labeled beside the Ethernet (LAN) port. The camera IP address and port number are shown next to the MAC address.
The password has been forgotten.	Press the FACTORY DEFAULT RESET button to reset the camera to default. Set up the camera again.
Error is displayed on the camera status by the Setup Program.	- The Setup Program causes the error message. → Disconnect the plug of the AC cord from the outlet, and reconnect it again.

2.3 About Wireless Communication

Problem	Cause and Remedy
Wireless communication does not work.	- Signal strength is weak. → Change the location of the camera or get rid of the obstacle around the camera. - SSID and Encryption setting of the camera are different from those of the wireless router or the wireless LAN card of PC. → SSID and Encryption setting must be identical between the camera and wireless router.
Wireless communication is unstable.	- The channel for communication is identical with another wireless network. → The wireless communication may be improved by changing the channel of the router. - Another nearby wireless device may be causing interference or the distance between the wireless camera and your wireless network may be too great. → Temporarily disable other wireless devices to identify the source of the interference. → Try repositioning the camera or moving it closer to your wireless router.

2.4 Camera Image/Page Display

Problem	Cause and Remedy																																												
The Top page is not displayed.	• The camera IP address has changed. → Enter the new IP address in the address bar of the web browser. • Wrong IP address class is assigned to the camera. → IP addresses of the PC and the camera must be in the same local IP address class. Set the IP address correctly (see page 139 of the Operating Instructions on the Setup CD-ROM). • Router does not have a loopback feature. → Access the camera with the local network IP address. • You entered IPv6 address in the Internet Explorer. → Internet Explorer does not support IPv6 address access. Use DDNS services like Viewnetcam.com service. • The network is congested. → Pages may not be displayed immediately. Wait for a while. • The web browser is accessing the proxy server. → Set the web browser to access the Internet directly (see page 143 of the Operating Instructions on the Setup CD-ROM). • The connection type is wrong (see page 45 of the Operating Instructions on the Setup CD-ROM). → If the camera is not connected to the network in the [Auto Negotiation] setting, set up the camera and the router seeing the following table.																																												
<table><tr><th colspan="2" rowspan="2">Network Camera Router or hub</th><th rowspan="2">Auto Negotiation</th><th colspan="2">100Base-TX</th><th colspan="2">10Base-TX</th></tr><tr><th>Full Duplex</th><th>Half Duplex</th><th>Full Duplex</th><th>Half Duplex</th></tr><tr><td colspan="2">Auto Negotiation</td><td>✓</td><td>—</td><td>✓</td><td>—</td><td>✓</td></tr><tr><td rowspan="2">100Base-TX</td><td>Full Duplex</td><td>—</td><td>✓</td><td>—</td><td>—</td><td>—</td></tr><tr><td>Half Duplex</td><td>✓</td><td>—</td><td>✓</td><td>—</td><td>—</td></tr><tr><td rowspan="2">10Base-T</td><td>Full Duplex</td><td>—</td><td>—</td><td>—</td><td>✓</td><td>—</td></tr><tr><td>Half Duplex</td><td>✓</td><td>—</td><td>—</td><td>—</td><td>✓</td></tr></table>		Network Camera Router or hub		Auto Negotiation	100Base-TX		10Base-TX		Full Duplex	Half Duplex	Full Duplex	Half Duplex	Auto Negotiation		✓	—	✓	—	✓	100Base-TX	Full Duplex	—	✓	—	—	—	Half Duplex	✓	—	✓	—	—	10Base-T	Full Duplex	—	—	—	✓	—	Half Duplex	✓	—	—	—	✓
Network Camera Router or hub					Auto Negotiation	100Base-TX		10Base-TX																																					
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10Base-T	Full Duplex	—	—	—	✓	—																																							
	Half Duplex	✓	—	—	—	✓																																							

Problem	Cause and Remedy
The Top page is not displayed.	• The default gateway or DNS server addresses may be wrong. The correct IP addresses are required especially when you are using the Viewnetcam.com service. → Assign the correct default gateway and DNS server addresses (see page 42 of the Operating Instructions on the Setup CD-ROM).
The Top page is displayed on the LAN, but not displayed from the Internet.	• The default gateway address may be wrong. → Assign the correct default gateway address (see page 42 of the Operating Instructions on the Setup CD-ROM). • UPnP™ is disabled on the router. → Enable UPnP™ on the router following the router manual. • Port forwarding is not enabled on the router (see page 31). → Enable port forwarding seeing the router manual for details. • Firewalls such as packet filtering on the router is blocking camera access. → Set the router to allow access to the camera seeing the router manual for details. • You are accessing the camera with an IP address for local camera access. → Access the camera with the global IP address of the router and port number of the camera. • The router does not allow access to the camera under the router with the global IP address. → If you access the camera on the LAN, access with the address for local camera access.
Authentication windows are consequently displayed.	• User name and password for the administrator or general users are changed. → Close the web browser, and access the camera again.
Only half of the image is displayed.	• You are using Internet Explorer 4.xx or lower. → Upgrade Internet Explorer to version 6.0 or greater.

Problem	Cause and Remedy
Camera image is not displayed.	• ActiveX Controls are not installed in Internet Explorer. → ActiveX Controls should be installed to display video (Motion JPEG) (see page 37). • The network is congested. → Pages may not be displayed immediately. Wait for a while. • The web browser is accessing the proxy server. → Set the web browser to access the Internet directly (see page 143 of the Operating Instructions on the Setup CD-ROM).
A gray screen is displayed.	• There are currently more than 30 simultaneous accesses to the video (Motion JPEG). → Reduce the number of access to below 30, or change the video to still images. • Operation time has been specified. → A gray screen is displayed outside the operation time. This is normal.
Video suddenly changes to still images.	• The video (Motion JPEG) display period is set on the General User page. → When you view video continuously, set [Unlimited] for the limit continuous motion JPEG (see page 79 of the Operating Instructions on the Setup CD-ROM).
Image is out of focus.	• The lens cover has dust, dirt, fingerprints or droplets on it. → Clean the lens cover with a dry cloth (see page 138 of the Operating Instructions on the Setup CD-ROM). • The object is too close to the camera. → The camera cannot focus at short distances (less than 0.5 m [about 20 inches]). Locate the object more than 0.5 m (about 20 inches) away from the camera.

Problem	Cause and Remedy
The color on the image is strange.	• White balance does not work well. → Adjust the white balance on the Camera page (see page 69 of the Operating Instructions on the Setup CD-ROM). • The color display setting on your PC is set lower than 16 bits. → Set the color display 16 bits or higher.
Image flickers.	• The object is dark. → Make the area around the camera brighter. • A bright object may cause horizontal flickers on the image. → Changing the object improves the flickers. Or adjusting brightness to the [+] side on the operation bar eases the flickers.
An old image is displayed.	• The old image is temporarily stored on the web browser. → Set [Every visit to the page] on the web browser to check for temporary Internet files (see page 146 of the Operating Instructions on the Setup CD-ROM).
The image refreshes very slowly.	• Multiple users are accessing the camera. → If multiple users are accessing the camera, the image refreshes slowly. • You are not using an Ethernet switching hub. → If you view multiple cameras on the Multi-Camera page, the image refreshes slowly. Use an Ethernet switching hub. • The image may refresh slowly, depending on image resolution, image quality, network traffic, PC performance, enabling IPsec, SD memory recording or what object you view. • The Max. bandwidth usage is limited. → Increase the max. bandwidth usage on your network (see page 42 of the Operating Instructions on the Setup CD-ROM). • The camera is in color night view mode. → The image refreshes slowly in color night view mode. Make the area around the camera brighter.

Problem	Cause and Remedy
The image stops refreshing during the wireless communication with the camera.	- The image may stop refreshing because the wireless communication can be disconnected depending on the environment. → Click [Refresh] at the tool bar on the web browser.

2.5 Operation Bar

Problem	Cause and Remedy
Pan/tilt, click to center and preset features do not work.	- Your PC is not connected to the camera. → Click [Refresh] on the web browser. Confirm that the image refreshes, and operate the pan/tilt functions. - The camera is not turned on. → Confirm that the camera is turned on. - Multiple users are operating the camera simultaneously. → Wait for a while, and access the camera again. - The pan/tilt reaches its end. → Confirm that the end display is displayed on the operation bar. - The pan/tilt range is restricted. → Adjust the pan/tilt range settings (see page 72 of the Operating Instructions on the Setup CD-ROM).
Part of the buttons on the operation bar are not displayed.	- The feature is not permitted on the General User page. → Permit the feature to be used (see page 79 of the Operating Instructions on the Setup CD-ROM). Or log in to the camera as an administrator.

2.6 Audio Problems

Problem	Cause and Remedy
The audio buttons are not displayed.	• The [Output] or [Input] settings are set to [Disable] on the Audio page. → Change them to [Enable]. (See page 73 of the Operating Instructions on the Setup CD-ROM) • In the access level settings on the General User page, [Listen] and [Talk] are not permitted. → Permit [Listen] and [Talk]. (See page 79 of the Operating Instructions on the Setup CD-ROM)
Neither Listen or Talk button can be used.	• When accessing a camera on a LAN, the web browser settings are going through a proxy server. → Change the settings so that they do not go through a proxy server. (see page 143 of Operating Instructions on the Setup CD-ROM)
Audio cannot be heard on the computer.	• The Listen button appears like this:  → Click the Listen button. (It will change to ) • The audio operation toolbar display is gray. → [Listen] is not permitted on the General User page. Permit it. (see page 79 of Operating Instructions on the Setup CD-ROM) • The volume is set to minimum. → Adjust the volume on the volume adjustment toolbar. • The computer volume is set to mute or minimum volume. → Open the PC's Volume Control window, and clear the output master and Wave/MP3's Mute checkbox, then adjust the volume. •  appears in the audio toolbar. → There are too many simultaneous audio connections. Wait for a while, and try to access again.

Problem	Cause and Remedy
Audio is not produced from an external speaker connected to the camera.	• The Talk button appears like this:  → Click the Talk button. (It will change to ) • The Talk button is gray. → [Talk] is not permitted on the General User page. Permit it (see page 79 of Operating Instructions on the Setup CD-ROM). • Microphone is not selected on your PC's volume control screen. → Click [Options] → [Properties] →, and check [Recording] on the Volume Control window. In the "Show the following volume controls" column, check [Microphone], and click [OK]. Check [Select] on the Recording Control window. • The PC's microphone input setting is set to mute. → Open the PC's Volume Control window, check the microphone checkbox and then adjust the volume controls. • A speaker is not connected to the camera. → Connect an external speaker to the camera. • An amplifier is not connected to the camera. → The camera's audio output terminal is a line output. Connect it to an external speaker with a built-in amplifier (see page 30 of Operating Instructions on the Setup CD-ROM). • Audio can only be received for short periods of time. → Change the settings to extend the PC Audio Input Timeout (see page 73 of Operating Instructions on the Setup CD-ROM). • The camera speaker volume settings are set to minimum. → Adjust the volume settings to an appropriate volume. • The camera access is going through a proxy server. → The audio feature cannot be used when going through a proxy server.

Problem	Cause and Remedy
Noise can be heard.	• The plug of the external microphone or speaker is dirty. → Wipe the connection terminal of the microphone or speaker. • The external microphone or speaker is not connected properly. → Correctly connect the external microphone or speaker. • The audio from your PC speaker is being caught by your PC microphone, then the camera is transmitting the audio as the noise. → Check [mute] for the microphone column on the volume control screen. Then the PC will stop transmitting audio to the camera.
Audio is interrupted.	• Other applications are being run on the computer. → Close other applications on your computer. • The max. bandwidth is set to [Unlimited] on the Network page. → Reduce the max. bandwidth (see page 45 or page 49 of Operating Instructions on the Setup CD-ROM). • The mute for pan/tilt is set to [Enable] on the Audio page. → This is not a problem. • The input from the external microphone or speaker is small. → When the audio is interrupted in listening, change sensitiveness to [Maximum] on the Audio page. When the audio is interrupted in talking, adjust the microphone volume on the PC's Volume Control window.

2.7 Image Buffer/Image Transfer

Problem	Cause and Remedy
The camera does not transfer the image by E-mail or FTP.	• Errors have occurred on the way to the E-mail or FTP server. → See the Protocol column on the Status page (see page 115 of the Operating Instructions on the Setup CD-ROM), and check if the error is displayed. • The default gateway and DNS server addresses are not assigned correctly. → Assign them correctly (see page 42 of the Operating Instructions on the Setup CD-ROM). • Login ID and password for E-mail or FTP are invalid. → Make sure that you enter your correct login ID and password.
The camera does not transfer the image to a mobile phone.	• The image quality is not set to [Mobile Phone] on the Image Buffer/Transfer page. → Set the resolution to [160 x 120] and the image quality to [Mobile Phone]. Some mobile phones do not support 320 x 240 resolution.
The image is slowed down on the Buffered Image page. Or the camera transfers the old image.	• The transfer interval is too short. → Set the transfer interval longer than the current setting (see page 90 or page 100 of the Operating Instructions on the Setup CD-ROM).

2.8 SD Memory Recording

Problem	Cause and Remedy
Cannot write onto the SD memory card.	• It is writing protected. → Cancel the writing protection.
It takes time to record.	• Sometimes it takes time when it is formatted on a PC. → Format it on the camera (see page 86 of Operating Instructions on the Setup CD-ROM).

2.9 IPv6

Problem	Cause and Remedy
The Top page is not displayed with the IPv6 address.	• The IPv6 address is not set on the camera. → Check if the IP address and default gateway are displayed in the network (IPv6) column of the status page (see page 115 of Operating Instructions on the Setup CD-ROM). If neither or only one is displayed, it is possible that the connection is incorrect or that the IPv6 router is not set properly. Set them correctly. • The IPv6 has not been set up on your PC. → IPv6 is not set up in Windows XP when purchased. Change the settings to enable it. (see page 16 of Operating Instructions on the Setup CD-ROM) • Router filtering is enabled. → Permit camera access from the WAN side in router settings. • Your network or ISP may not support IPv6 at this time.

2.10 IPsec

Problem	Cause and Remedy
The camera cannot be accessed in transport mode.	• IPsec policy settings are restricted. → Decrease the number of computers connected simultaneously, and wait for a while, or shorten the lifetime in the PC's IPsec settings. • IPsec settings have not been set on your PC. → Set IPsec settings on your PC. See the Panasonic Network Camera support website (http://panasonic.co.jp/pcc/products/en/netwkcaml/) for how to do this. • The pre-shared key is not set correctly. → Set the same pre-shared key for the camera and your PC (see page 53 of Operating Instructions on the Setup CD-ROM). • On the VPN router within the network, tunnel mode has been set. → Transport mode and tunnel mode can not be used at the same time. Cancel the PC's IPsec settings, and communicate using tunnel mode. • Either PC's SA or Camera's SA is not established. → Disable the PC's IPsec settings, and enable it again.
The camera cannot be accessed on tunnel mode.	• The pre-shared key is not set correctly. → Set the same pre-shared key for the camera and the VPN router (see page 56 of Operating Instructions on the Setup CD-ROM). • The VPN router is not set correctly. → Set the IKE and IPsec policy on the VPN router correctly (see page 56 of Operating Instructions on the Setup CD-ROM). • Either VPN router's SA or camera's SA is not established. → Restart the VPN router and the camera.

Problem	Cause and Remedy
E-mail or FTP transfer cannot be sent in transport mode.	• The network settings are not set correctly. → Cancel the IPsec settings on the server, PC and camera, and check that the camera images can be transferred. If they can be transferred, the IPsec settings were not set correctly. Set them correctly (see page 53 of Operating Instructions on the Setup CD-ROM). • The pre-shared key is not set correctly. → Set the same pre-shared key for the camera, and server (see page 53 of Operating Instructions on the Setup CD-ROM). • There is a e-mail server or FTP server within the tunnel mode network. → Transport mode and tunnel mode cannot be used at the same time. Cancel the e-mail server or FTP server's IPsec settings, and communicate using tunnel mode. • Either server's SA or camera's SA is not established. → Restart the camera.

2.11 Miscellaneous

Problem	Cause and Remedy
ActiveX cannot be installed.	Security software disables the ActiveX installation. → Close the security software, and install the ActiveX again.
The firmware is not updated.	The firmware updating is not completed due to power off, network failure or other causes. → Update the firmware again following the next procedures. Disconnect the plug of the AC cord of the camera from the outlet, and reconnect it again. ↓ Enter the IP address on the web browser to access the camera. ↓ Is the Top page displayed? No Yes ↓ Access the Setup page and click [Status]. Check the firmware version on the Status page. Is the version updated? No Yes Update the firmware*₁. The firmware update is completed. *₁ See page 117 of the Operating Instructions on the Setup CD-ROM about updating firmware.
Shortcut icon is not displayed in the My Network Places folder.	UPnP™ Windows component is not installed in Windows XP or Windows Me. → Install UPnP™ Windows component in Windows XP or Windows Me (see page 146 of the Operating Instructions on the Setup CD-ROM).
You cannot solve problems.	Call our customer call center at 1-800-272-7033.

Memo

For product service

- Panasonic Servicenters are listed in the servicenter directory.
- Call 1-800-272-7033 for the location of an authorized servicenter.
- This Network Camera is designed for use in the United States of America. Sale or use of this product in other countries/areas may violate local laws.

When you ship the product

- Carefully pack your unit, preferably in the original carton.
- Attach a letter, detailing the symptom, 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

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