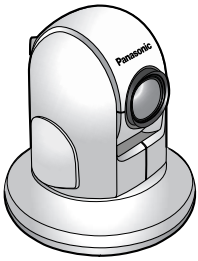

Panasonic

Network Camera

Operating Instructions

Model No. **KX-HCM280**

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

Introduction

Thank you for purchasing a Panasonic Network Camera.

Check the following items when unpacking.

Network Camera	— 1 pc.
Operating Instructions	— 1 pc.
Getting Started	— 1 pc.
AC Adaptor	— 1 pc.
AC Cord	— 1 pc.
Ceiling Mounting Cover	— 1 pc.
Ceiling Plate A	— 1 pc.
Ceiling Plate B	— 1 pc.
Setup CD-ROM	— 1 pc.
Screws A	— 2 pcs.
Screws B	— 4 pcs.

For operation assistance:

- Call **1-800-272-7033**
- Refer to the Panasonic Network Camera Site **http://www.panasonic.com/netcam**

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Network Camera Memo

Attach your purchase receipt here.

For your future reference

Date of purchase

Serial Number
(Found on the bottom side of the main unit)

MAC Address

Name and address of dealer

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 dust on the lens, wipe the lens with lens cleaning paper.
6. Do not install near any heat sources such as radiators, heat registers, stoves, or other devices (including amplifiers) that produce heat.
7. Protect the AC adaptor cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the unit.
8. Only use attachments/accessories such as cover and plates specified by the manufacturer.
9. Do not touch the unit or the AC adaptor during lightning storms.
10. Unplug the unit when unused for long periods of time.
11. Refer all servicing to qualified service personnel. Servicing is required when the unit has been damaged in any way, such as AC adaptor cord or plug is damaged, the unit does not operate normally, or has been dropped.

SAVE THESE INSTRUCTIONS

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Section 1

Product Introduction

1.1 Getting to Know Network Camera

1.1.1 Main Features

Easy installation

Setup CD-ROM simplifies the installation. Insert the Setup CD-ROM and autorun program should start the application automatically. This program automatically finds Network Camera on the network.

High-Speed Motion JPEG

Network Camera employs a 380,000 pixel CCD image sensor, and has an integrated web server. Motion JPEG displays up to 30 frames per second, if the network provides enough bandwidth. To conserve bandwidth, **JPEG - Regularly Refresh** can be selected from Top Page. Image Resolution, Image Quality, Refresh interval, **Limit time of Continuous Motion JPEG** and **On the Air time** features can control the image field.

Remote Pan/Tilt/Zoom/Focus

The following features allow you to operate Network Camera from web browser on your PC. High speed Pan/Tilt operation can move the lens horizontally from -175° to +175° and vertically from -120° to 0° in mounting on the table and from 0° to +90° in mounting on the ceiling. This movable lens allows you to view a wide range of perspective from a distant place. Network Camera has **21x Zooming** and **Automatic and Manual Focusing** features to provide you with detailed and distinct images. It also has **Preset Positioning** and **Home Positioning** features to register fixed positions. Clicking the preset buttons moves the lens to registered preset positions. Single Camera screen has **Click to Center** feature too. The object on Single Camera screen can be centered by clicking on the image directly.

Multi-Camera Screen

Using **Multi-Camera screen** you can simultaneously view up to four Network Cameras at various locations. Clicking on each Camera Name switches to the Single Camera screen from the Multi-Camera screen.

Multi-Client Access

Network Camera allows up to 30 users to view Motion JPEG image simultaneously. Users can access the Top View Image screen (Single Camera/ Multi-Camera screen) from their own locations. Note that as the number of users simultaneously connected to Network Camera increases, the overall motion performance will decrease.

Video Output

Network Camera has an analog composite output terminal. You can view images from Network Camera on TV and record them on videotapes.

External I/O (Input/Output)

The external sensors/devices such as a door sensor can be connected via the **External Sensor Input**. The external sensors/devices are customer provided. The alarm/timer trigger can activate the Image Transfer feature, which can send the images via e-mail or FTP (File Transfer Protocol).
External Device Control Output can send a signal to activate the external devices such as a light around Network Camera.

Update Firmware

If new firmware is released, you can download the latest program from the Network Camera Technical Support Site. Installation is easy and fast. Refer to page 93 for details.

Authentication

Authentication window requires you to enter the administrator/general user ID and password. Password security can prevent unregistered users/intruders from accessing your image from their web browsers. Refer to Section 1.1.3 Authentication—System Security Feature for details.

Multi-Language Display

Top Page, Single Camera screen and Multi-Camera screen can be displayed in English (US), English (UK), French, German, Italian, Spanish or Japanese. All Setup windows are also changed when selecting English (US), English (UK) or Japanese.

1.1.2 System Requirements

The PC (Personal Computer) and the network must meet the following technical specifications for Network Camera to work properly.

Item	Description
Operating System	Microsoft® Windows® 95, Microsoft Windows 98/SE Microsoft Windows 2000, Microsoft Windows Me Microsoft Windows NT® 4.0, Microsoft Windows XP
Network Protocol	TCP/IP network protocol installed. (HTTP, TCP, UDP, IP, DNS, ARP, ICMP)
Interface	10/100 Mbps Ethernet® card for your network connection
Web browser*[1]	Internet Explorer 5.0 or later/Netscape Navigator® 4.7x. (Not included on the Setup CD-ROM).

*[1] Network Camera image is not displayed correctly in the Netscape® v6.x. Use Netscape Navigator v4.7x.

Refer to Panasonic Network Camera Site **http://www.panasonic.com/netcam** for the latest information on the web browser.

Note

Pentium® II 300 MHz or greater CPU is recommended to prevent performance degradation.

The display color quality

To insure the images you are viewing are the best they can be, set the Display property setting (color quality) to 24 bit or higher. Follow the next steps.

1. Close all applications so that you are looking at the Windows desktop.
2. Right-click an open portion of the desktop.
3. Select [Properties], [Setting] tab, and set [Color Quality] (Colors/Color Pallet) to the highest selection possible.

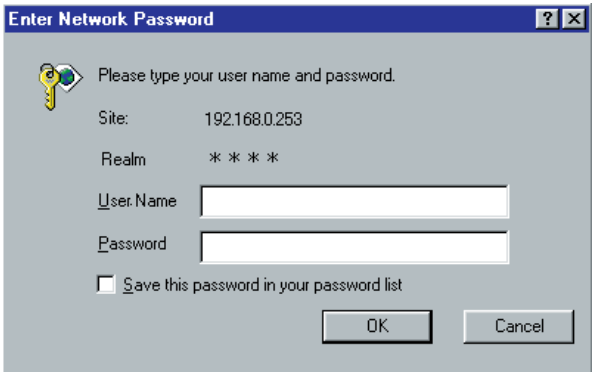
   Note

   Optimum video viewing will be seen when the color quality is set to 24bit or higher. This change should not cause any problems with other applications on your PC.

1.1.3 Authentication—System Security Feature

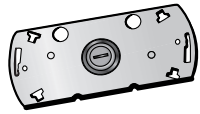
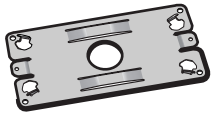
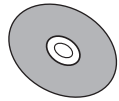
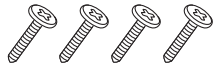
Authentication window requires you to enter the administrator/general user ID and password for security. Password security can prevent unregistered users/ intruders from accessing your image from their web browsers. Authentication windows are not displayed in the default. Refer to page 66 for setting up Authentication window, the administrator ID and the password. Refer to page 68 for setting up the general user ID and the password.

Authentication window



1.2 Included Accessories

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

AC Adaptor—1 pc. Order No. PSLP1242Z 	**AC Cord**—1 pc. Order No. PSJA1069Z
Ceiling Mounting Cover—1 pc. Order No. PSKL1023Z 	**Ceiling Plate A**—1 pc. Order No. PSZMHCM280M 
Ceiling Plate B—1 pc. Order No. PSMD1045Z 	**Setup CD-ROM**—1 pc. Order No. PSQX2904ZCD 
Screws A—2 pcs. Order No. XYN3+J6FY 	**Screws B**—4 pcs. Order No. XTB4+20AFY 

Notes

- If any items are missing, contact the dealer immediately.
- 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.

Setup CD-ROM

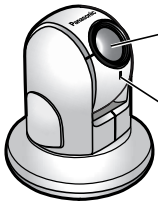
The setup program simplifies Network Camera installation. Adobe® Acrobat® Reader 4.05 or later enables you to see the Operating Instructions on the Setup CD-ROM. If Adobe Acrobat Reader is not installed on the PC, double-click "ar405eng.exe". Refer to "ReadmeEng.txt" for the directory and file structure of the Setup CD-ROM.

Notes

- Do not scratch, smudge, write or label either surfaces of the Setup CD-ROM. Setup CD-ROM may have a scratch on the surface.
- Do not leave the Setup CD-ROM in direct sunlight, near a heat source or in a hot automobile as the Setup CD-ROM may become unreadable.
- Do not use chemicals or cleanser to clean the Setup CD-ROM as the Setup CD-ROM may become unreadable.

1.3 Camera Feature Locations

1.3.1 Front View



Lens (Power Focus/Zoom Lens)
Wide: 5 mm (0.2 inches)—Infinity
Tele: 1 m (40 inches)—Infinity
(Refer to page 45.)

Indicator
(Refer to page 90 for the setup.)

Indicator

Indicator can be controlled on **Indicator Control window** on page 90. Color indications are shown below.

Power on	Not on the LAN	Orange → Orange blinking*1 → Orange
	On the LAN	Orange → Green blinking → Green
Normal Operation		Green
Using DHCP	Getting IP address	Green blinking
	Finish getting IP address	Green
Updating Firmware		Orange blinking
Pushing FACTORY DEFAULT RESET button		Orange blinking twice
Internal Failure of Network Camera		Red blinking*2

*1 Orange indicator will continue blinking in the DHCP setting.
*2 Refer to page 122 for the red blinking.

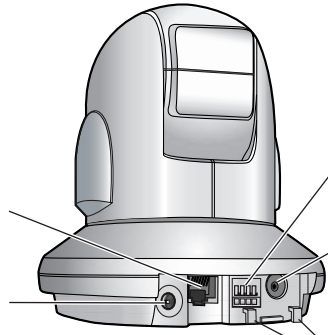
Lens and Pan/Tilt operation

Operation bar on the Single Camera screen can operate the Pan/Tilt. The Pan/Tilt moves the lens horizontally from -175° to +175° and vertically from -120° to 0° in mounting on the table and from 0° to +90° in mounting on the ceiling. Refer to page 43 for the Pan/Tilt operation.

Notes

- When the power is on, do not manually revolve the Pan/Tilt. Revolving it forcedly or moving it manually by some mistake may damage the Pan/Tilt operation, or change the registered Pan/Tilt positions from actual ones. Restart Network Camera when the latter case happens.
- Do not touch the lens. Touching it can remove the protective coating from the lens. Fingerprints, dust, stains, etc. on the lens can also degrade the performance of the Automatic Focusing feature.

1.3.2 Rear View



Ethernet port (10/100 Base-TX) (Refer to page 20.)

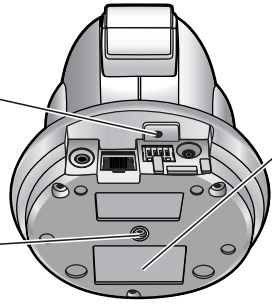
Analog Video Output terminal (VIDEO OUT) (Refer to page 54.)

External I/O (I/O) (Refer to page 103.)

DC IN jack (Refer to page 20.)

Hook for AC Adaptor Cord (Refer to page 20.)

1.3.3 Bottom View



FACTORY DEFAULT RESET button (Refer to page 109.)

Hole for Ceiling Plate A (Refer to page 100.)

MAC Address and **Serial Number** are indicated on the label. Record both of them on the Network Camera Memo on page 3. They are indispensable for setting network parameters after mounting Network Camera and for future customer servicing. (Refer to page 29.)

Section 2

Network Camera Setup

2.1 Installation Procedure

Select the Network Camera configuration type. (Page 18—Page 19)

Connect Network Camera for installation. (Page 20)

Prepare the network parameters for Network Camera. (Page 21—Page 22)

Check the proxy server setting. (Page 26—Page 27)

Set up Network Camera with Setup CD-ROM. (Page 28—Page 31)

Confirm the Network Camera Access from the Internet. (Page 32—Page 33)

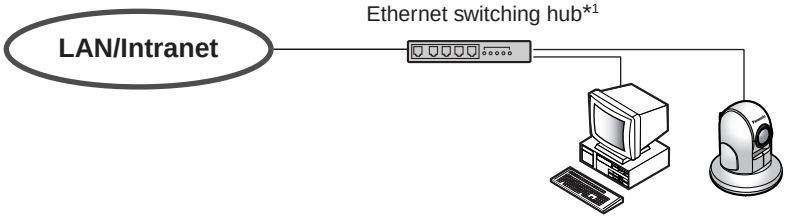
Mount Network Camera. (Page 98—Page 102)

2.2 Network Camera Configuration Type

Network Camera can be connected over the LAN/Intranet and the Internet. Select from the four Network Camera configuration types. Network parameters differ depending on the Network Camera configuration type.

[Type 1]—LAN/Intranet Connection with an Ethernet Switching Hub

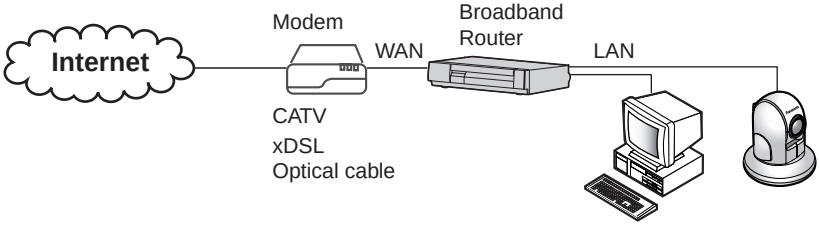
Network Camera can be installed on the LAN/Intranet.



*1 Network traffic can be improved by using the Ethernet switching hub.

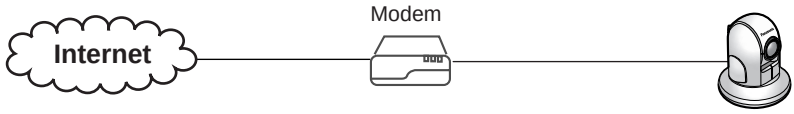
[Type 2]—Internet Connection with a Broadband Router

Network Camera can be accessed from the Internet. The broadband router needs Port Forwarding (IP Masquerade) feature on page 32.



[Type 3]—Internet Direct Connection with a Modem

Network Camera can be installed alone without PC on the network. When you set up Network Camera in **[Type 3]**, connect Network Camera temporarily in **[Type 1]**, **[Type 2]** or **[Type 4]**.

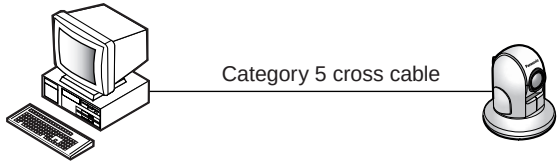


Note

Some xDSL services use PPPoE. Network Camera does not support PPPoE. If the Internet connection requires PPPoE, connect with the broadband router supporting PPPoE like **[Type 2]**.

[Type 4]—Direct Connection with a PC

Network Camera can be connected to a PC directly.

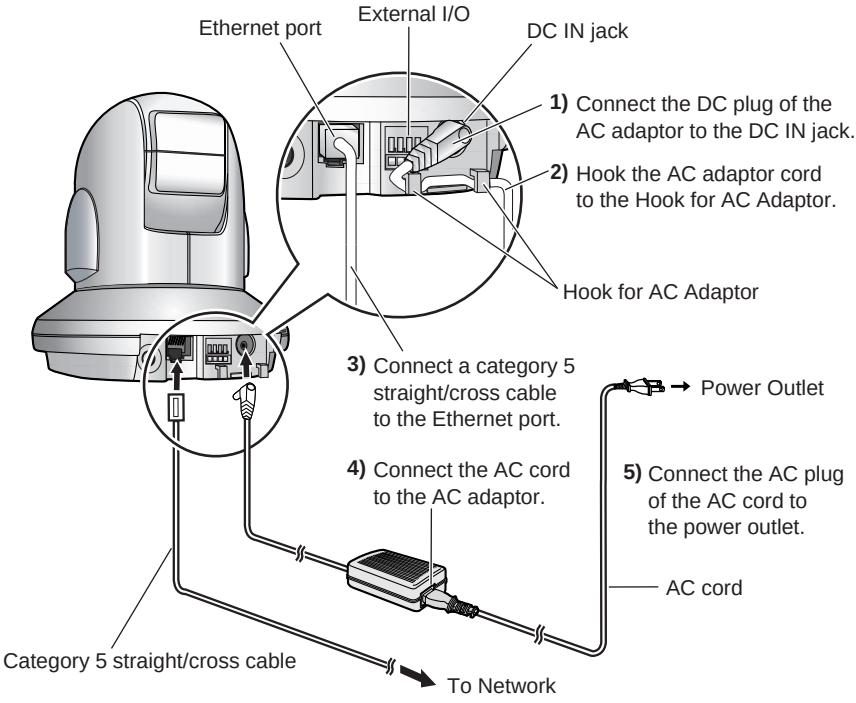


Note

Use a category 5 cross cable when connecting directly with the cable to the PC.

2.3 How to turn on Network Camera for Installation

Network Camera powers up when connecting AC plug to the power outlet.



Notes

- Do not hold or touch the Pan/Tilt as it starts moving when connecting AC plug to the power outlet.
- AC adaptor is used as the main disconnect device, so ensure that the power outlet is located/installed near the equipment and is easily accessible.
- Use only specified Panasonic AC adaptor PSLP1242 (Order No. PSLP1242Z).
- When you set up Network Camera in **[Type 3]**, connect it temporarily in **[Type 1]**, **[Type 2]** or **[Type 4]**.
- When Indicator is orange, confirm that the Ethernet cable is properly connected, or PC, Ethernet hub or broadband router is properly working.

2.4 Network Parameters

2.4.1 Preparing the Network Parameters for Network Camera

Before starting to set up the network parameters of Network Camera, make note of corresponding network parameters.

[Type 1] Ask your network administrator for the network parameters.

[Type 2] Refer to the broadband router's manual for the network parameters.

[Type 3] Ask your ISP (Internet Service Provider) for the network parameters.

[Type 4] Install Network Camera in the default condition. Set the PC "192.168.0.250" (IP address) and "255.255.255.0" (Subnet Mask). Refer to page 24.

Refer to page 22 and page 23 for network parameters.

Network parameters memo for Network Camera

The devices on the network may not be assigned the same IP address. Each device must have its own IP address. Overlapped IP addresses can cause other network devices to stop working and may result in widespread network problems.

✎ IP Address . . .

✎ Subnet Mask . . .

✎ Default Gateway . . .

✎ DNS Server 1 . . .

✎ DNS Server 2 . . .

Network Parameters Table

Parameters	Network Camera Configuration Type			
	[Type 1]	[Type 2]	[Type 3]	[Type 4]
Port No.	80 (default)	80 (default)*1 *2	80 (default)*1	80 (default)
IP address	Check [Static], and set the static private IP address.	Check [Static], and set the static private IP address.*3	Check [Static], and set the static global IP address.*4	192.168.0.253 (default)
Subnet Mask	Set the Subnet Mask fitted to your network.			255.255.255.0 (default)
Default Gateway	Set Default Gateway address.	Set the private IP address of the broadband router (on your network), not of the gateway of your ISP. *3	Set Default Gateway address.*4	You do not need to set up.
DNS Server 1, 2	Set DNS server address.		Set DNS server address.*4	
DDNS	You do not need to setup.	*5	*5	You do not need to setup.
Max. Bandwidth Usage	It can restrict the transmit bandwidth. Select from 0.1 to Unlimited Mbit/s.			

*1 Many ISP's intentionally block port number 80 to guard against network viruses. If your ISP blocks port number 80, substitute it to another unused port number.

*2 When you use more than one Network Camera with a broadband router, each Network Camera needs its own port number. The broadband router needs the Port Forwarding feature. Refer to page 32.

*3 Refer to the broadband router's manual for the Port Forwarding feature.

*4 When you use Network Camera in DHCP feature, check [DHCP] and enter the Host Name if your ISP requires. If you automatically get the address of Default Gateway and DNS server from DHCP server, you do not need to set up.

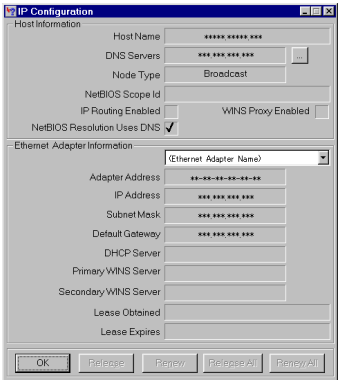
*5 Verify that your ISP supports DHCP. If your ISP supports DHCP, or if you assign a domain name to Network Camera, you need to contract and register for DDNS service. Refer to the included leaflet for DDNS service. If you set static global IP address to Network Camera and the broadband router, you do not need to register DDNS service.

How to refer the network parameters from the PC

If you cannot get the network parameters, you can refer to the network parameters except for IP address from the PC on the same network in the following procedure.

- **When using Windows 95, Windows 98 or Windows Me**

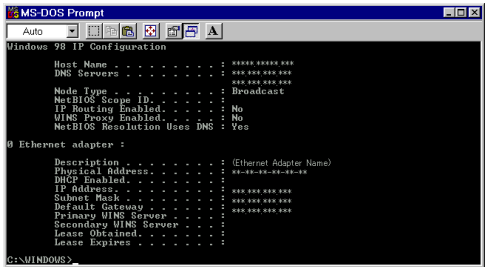
1. Click **[Start]** –> **[Run...]**. **Run window** appears.
   These steps are slightly different depending on the operating system.
2. Enter "**winipcfg**" and click **[OK]**. **IP configuration window** appears.
3. Select the proper Ethernet adaptor and click **[More Info]**.



4. Click **[OK]** to close IP Configuration window.

- **When using Windows NT, Windows 2000 or Windows XP**

1. Click **[Start]** –> **[Program]** (–> **[Accessories]**) –> **[MS-DOS® (Command) Prompt]**. **MS-DOS Prompt window** opens. These steps are slightly different depending on the operating system.
2. Enter "**ipconfig /all**" and press **[Enter]**.



3. Enter "**exit**" and press **[Enter]** to close the window.

2.4.2 Setting IP Address of the PC in [Type 4] Configuration Type

Your PC needs to have a static private IP address to access Network Camera in **[Type 4]** configuration.

1. Follow the steps below, appropriate for your operating system to open **TCP/IP Properties window** on the PC.

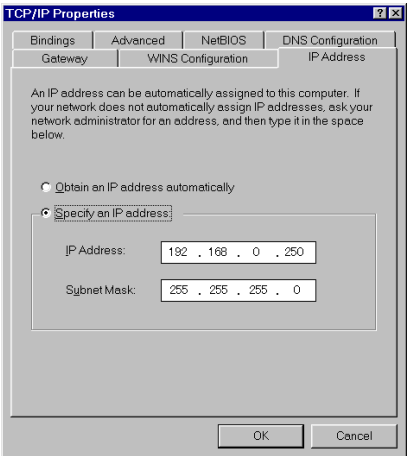
TCP/IP Properties Table

Operating System	Steps
Windows 95 Windows 98 Windows Me	**[Start]** –> **[Settings]** –> **[Control Panel]** –> **[Network]** –> **Select [TCP/IP] with adaptor in use** –> **[Properties]** –> **[Specify an IP address]**
Windows NT	**[Start]** –> **[Settings]** –> **[Control Panel]** –> **[Network]** –> **[Protocols] tab** –> **[TCP/IP Protocol]** –> **[Properties]** –> **Select [Adaptor] in use** –> **[Specify an IP address]**
Windows 2000	**[Start]** –> **[Settings]** –> **[Control Panel]** –> **[Network and Dial-up Connections]** –> **[Local Area Connection Icon] in use** –> **[Properties]** –> **Select Internet Protocol [TCP/IP]** –> **[Properties]** –> **[Use the following IP address]**
Windows XP	**[Start]** (–> **[Settings]**) –> **[Control Panel]** –> **[Network and Internet Connections]** –> **[Network Connections]** –> **[Local Area Connection Icon] in use** –> **[Properties]** –> **Select Internet Protocol [TCP/IP]** –> **[Properties]** –> **[Use the following IP address]**

Note

When using Windows NT, Windows 2000 and Windows XP, log on as an administrator to access **TCP/IP Properties window**.

2. **TCP IP Properties window** appears. Set "192.168.0.250" in the IP address data field and "255.255.255.0" in the Subnet Mask data field.



3. Click **[OK]**.

Private IP address

Private IP address is the network ID that is not used on the Internet. They are classified into Class A, Class B and Class C, as shown in the next table. 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

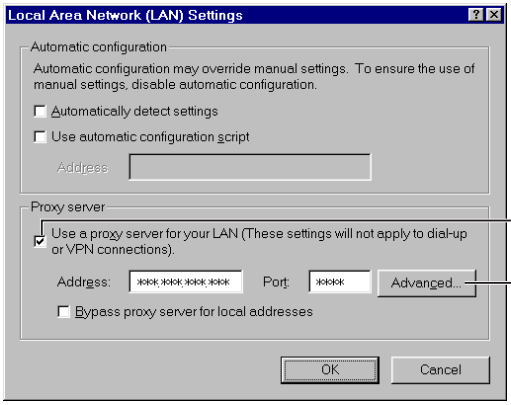
2.5 Proxy Server Setting

A proxy server may prevent you from connecting directly to Network Camera in some corporate environments. The web browser can set up the IP address communication without using a proxy server. Consult your ISP or network administrator.

Note

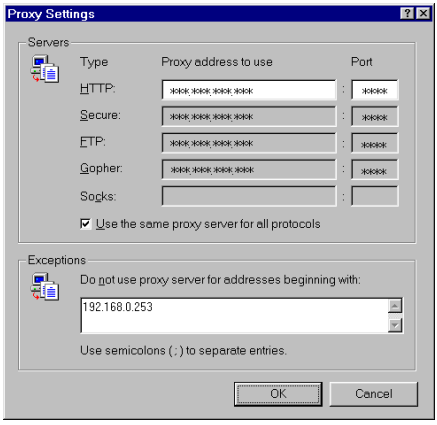
A proxy server is generally used to maintain security on a network that offers an Internet connection. The network of Network Camera with the proxy server may cause some problems to the image quality such as taking much time in refresh interval. Consult your ISP or network administrator for details.

1. Start up the Internet Explorer. (The window is Internet Explorer 5.50.)
2. Select **[Tools]** –> **[Internet Options...]** –> **[Connections] tab** and click **[LAN Settings]**. See if the **Use a proxy server** check box is checked or not in the next window. When checked, click **[Advanced...]**.



When not checked, click **[Cancel]**. Your proxy settings are causing no problems.

3. Enter the IP address of Network Camera assigned from your ISP or network administrator into the **Do not use proxy server for addresses beginning with** data field.

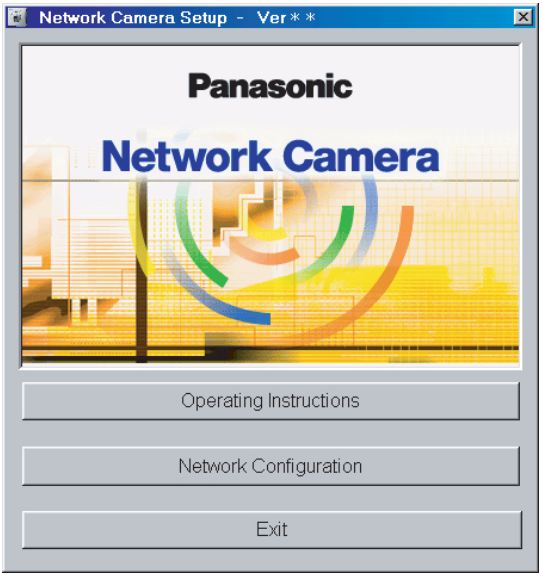


4. Click **[OK]** on all of the opening windows.

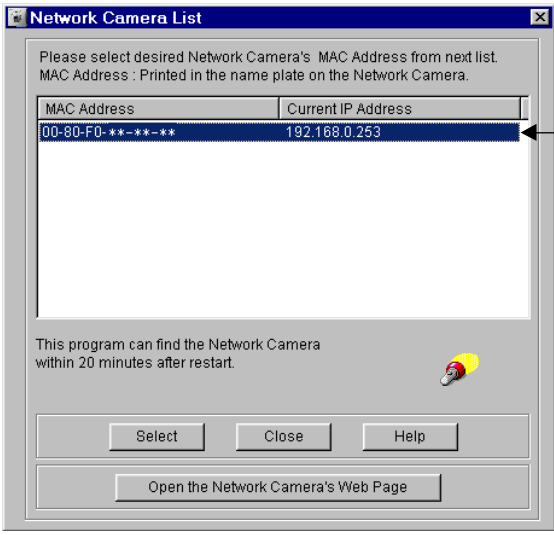
2.6 Simple Installation using the Setup CD-ROM

After finishing cabling, turn on Network Camera and insert the Setup CD-ROM in the CD-ROM drive of the PC. Setup CD-ROM should start the application automatically. This program automatically finds Network Cameras on the network.

1. Turn on Network Camera.
2. Insert the Setup CD-ROM in the CD-ROM drive of the PC.
   (If **Network Camera Setup window** does not appear, click "setup.exe" on the Setup CD-ROM.)



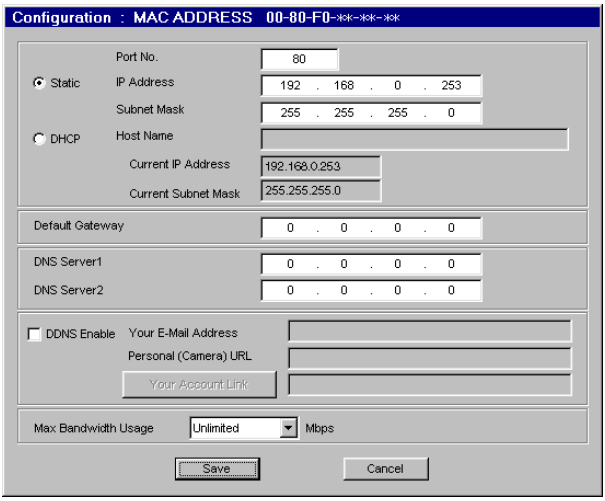
3. Click **[Network Configuration]. Network Camera List window** appears. Setup program finds all Network Cameras connected on your local network. It lists all of MAC addresses and IP addresses of Network Cameras. Network Cameras that are isolated by the use of a home gateway or broadband router will not be detected. Record MAC address on the Network Camera Memo on page 3. It is useful for customer servicing.



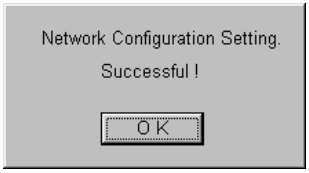
Notes

- The setup program finds and identifies Network Camera by listening for data, which Network Camera sends out for the first 20 minutes after powering up. If the installation is not completed within 20 minutes, disconnect temporarily the AC adaptor to restart this operation.
- Each Network Camera has a unique MAC address labeled on the back. Refer to page 15.
- Network Cameras that are isolated by the use of a home gateway or broadband router will not be detected.

4. Select your target Network Camera from the list as shown in example **(A)** on **Network Camera List window** on page 29 and click **[Select]**. **Configuration window** appears. Refer to page 21 and page 22 and enter the correct network parameters. Refer to page 61 for details of each parameter.



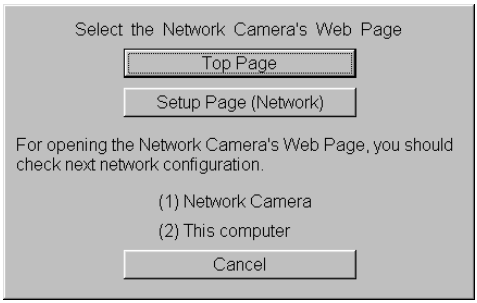
5. Click **[Save]** when finished. The "Successful!" message box appears.



Notes

- Network Camera automatically restarts after saving the network configuration.
- Overlapped IP address displays the next box. If you cannot set up, ask your ISP or the administrator.

6. Click **[OK]**.



Refer to page 60 for **Setup Page (Network window)**.

7. Click **[Top Page]**. Top Page appears.

Click the language to change the display.

Refer to page 37 for **Top Page**.

Notes

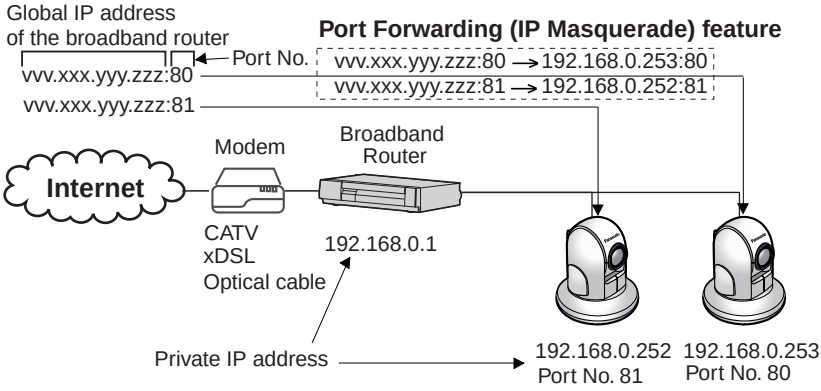
- When viewing images for the first time in the Internet Explorer, a pop-up **Security Warning window** may appear. The window requests your permission to download ActiveX® Controls (OCX file) used to display Motion JPEG. Refer to page 39.
- If you are configuring in **[Type 3]**, Top Page may not appear at this point. After Network Camera is directly connected with the modem, confirm the Network Camera Access from the Internet on page 32.

2.7 Network Camera Access from the Internet

[Type 2] and **[Type 3]** of the Network Camera configuration type allow Network Camera to be accessed from the Internet.

Port Forwarding (IP Masquerade) feature

Set up the Port Forwarding feature to the broadband router if the **[Type 2]—Internet Connection with the Broadband Router** on page 18 is configured. Port Forwarding feature translates a global IP address to a private IP address and assign a unique port number for each Network Camera. Refer to the broadband router's manual for details.

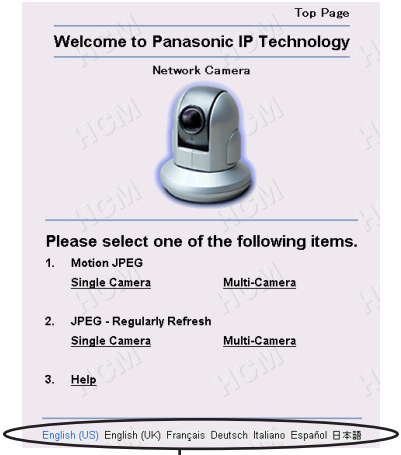


1. Start up the web browser of the PC on the Internet side.
2. Enter "**http://IP address**:Port No." in the address field and press **[Enter]**. Top Page appears.
   - When port number is 80 (default), you do not need to enter port number.

[Type 2] Enter "**http://Global IP address of Broadband Router**:Port No." in the address field.

[Type 3] Enter "**http://Global IP address of Network Camera**:Port No." in the address field.

Top Page



Click the language to change the display.

Refer to page 37 for Top Page.

Note

When viewing images for the first time in the Internet Explorer, a pop-up **Security Warning window** may appear. The window requests your permission to download ActiveX Controls (OCX file) used to display Motion JPEG. Refer to page 39.

If Top Page does not appear

Confirm the network parameters and the connections of Network Camera through page 18—page 32.

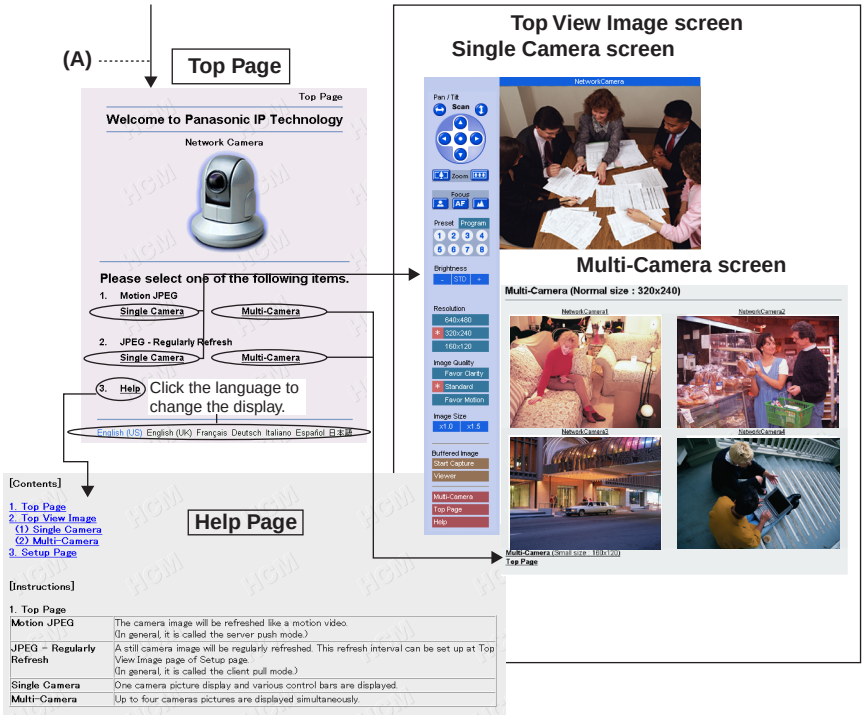
Section 3

Network Camera Screen and Setup Window

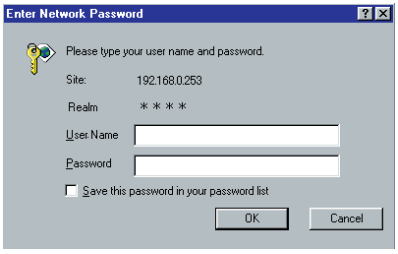
3.1 Network Camera Flow Chart

Top Page enables you to access Top View Image screen (Single Camera/Multi-Camera screen). Authentication window can set password for the link at **(A)**.

Enter **"http://IP Address (or URL)**:Port No." on the web browser.
When port number is 80 (default), you do not need to enter port number.



(A) Authentication window



Authentication window can be set up for the security. The password can keep the security of your network. Authentication windows are not displayed in the default. Authentication window can be set on Administrator window. "User Name" and "Password" are case sensitive. Refer to page 66 for details.

3.2 Top Page

Top Page allows you to select the Single/Multi-Camera screen in Motion JPEG or JPEG - Regularly Refresh. Motion JPEG enables you to view the image like a motion video, and JPEG - Regularly Refresh can be set the refresh interval.

Enter "**http://IP Address (or URL)**:Port No." on the web browser.
When port number is 80 (default), you do not need to enter port number. Then Top Page appears.

Example

- Accessing Top Page using port number 80 (default)
  http://192.168.0.253
- Accessing Top Page using port number 81
  http://192.168.0.253:81
- Accessing Top Page with Global IP address from outside network in **Internet Connection** on page 18.
  http://Global IP address of Broadband Router:PortNo.

Top Page

Top Page title and Network Camera picture can be changed and the link can be set on the picture. Refer to page 70.

Click the language to change the display. Top Page, Single Camera and Multi-Camera screens also display the selected language.

Note

The initial language displayed at the first access can be selected on Top View Image Setting window on page 70.

Notes

- If a port number is specified in the IP address, "**http://**" must precede the IP address, otherwise the port number will not be recognized.
- When viewing images for the first time in the Internet Explorer, a pop-up **Security Warning window** may appear. The window requests your permission to download ActiveX Controls (OCX file) used to display Motion JPEG. Refer to page 39.

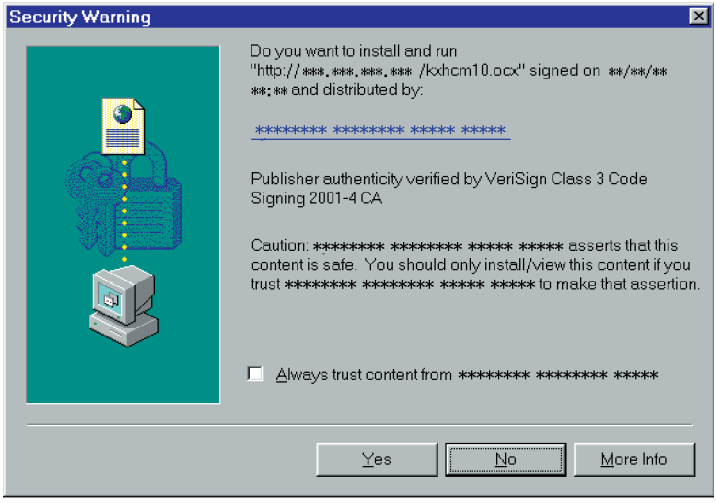
Motion JPEG	The image refreshes continuously (up to 30 frames per second) like a motion video.
JPEG - Regularly Refresh	The image refreshes periodically. The refresh interval can be set up at **Top View Image Setting window** on page 70. JPEG - Regularly Refresh is suggested when using dial-up Internet connections or network connections offering limited bandwidth.
Single Camera	Selecting this link in either Motion JPEG or JPEG - Regularly Refresh can display images of the individual Network Camera you are currently connecting to. Refer to page 40.
Multi-Camera	Selecting this link in either Motion JPEG or JPEG - Regularly Refresh can display images of four separate Network Cameras if configured. Information on this feature can be found on page 53 and page 87.
Help	Help page appears.

Note

Network Camera is designed to work with 10/100 Mbps networks, cable modems or xDSL Internet connections. 56K dial-up connection may prevent the Motion JPEG to view smoothly. On some networks the available bandwidth may be intentionally restricted to lock out streaming video services. JPEG - Regularly Refresh solves the problem in the restricted bandwidth.

ActiveX Controls

When viewing images for the first time in the Internet Explorer, a pop-up **Security Warning window** may appear. The window requests your permission to download ActiveX Controls (OCX file) used to display Motion JPEG. Allow the file to be installed. It is required and will not cause any problems with other applications on the PC. If **Security Warning window** appears, click **[Yes]**. When using Windows NT, Windows 2000 or Windows XP, log on with an appropriate account that is authorized to install applications.

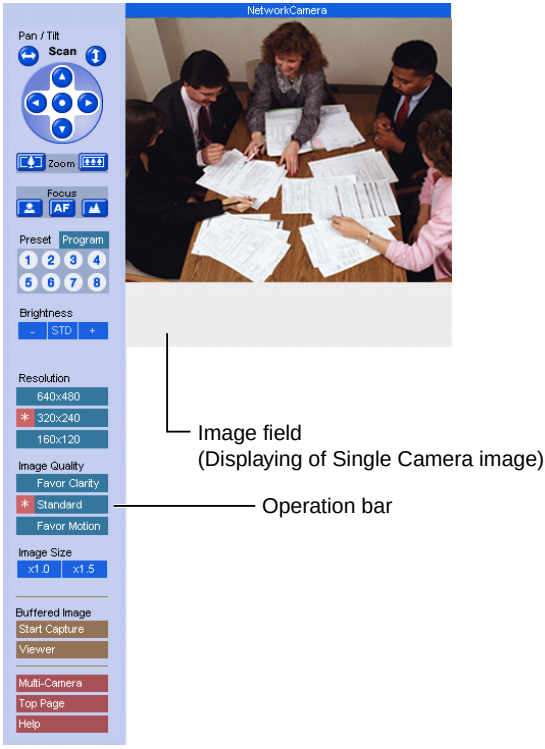


If you cannot download ActiveX Controls or you cannot see the image in the Internet Explorer

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

3.3 Single Camera Screen

Single Camera can move the lens by the **Pan/Tilt operation**, **Preset Positioning** and **Click to Center.** Single Camera screen can be set eight preset positions. **Zoom** and **Focus** Buttons provide you with detailed and distinct images. **[Viewer]** links to the Buffered Image screen.



Notes

- The Screen Saver can prevent the PC monitor from burning in displaying the same image.
- Selecting a resolution of 640 x 480 will result in a slight loss of speed when viewing Motion JPEG. Selecting 320 x 240 offers the good compromise between speed and resolution.
- Scan lines may deviate when viewing moving objects with resolution at 640 x 480 because of the interlace-type CCD. Selecting 320 x 240 offers the good compromise between speed and resolution.

Click to Center

When you click the certain point on the Single Camera screen, the point is centered on the image.

1. Put the cursor on the point which should be centered and click it.

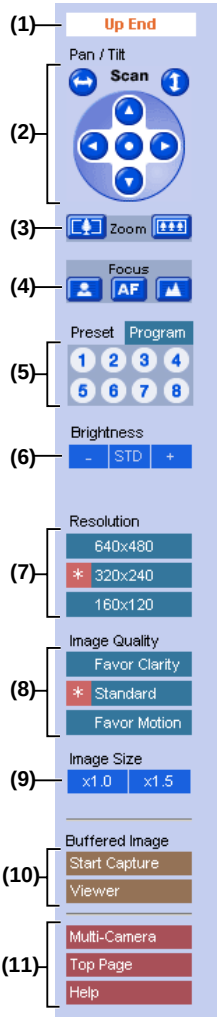
2. The clicked point is centered.

Notes

- **Click to Center** does not move over the end of corner when the Pan/Tilt range reaches the end. The Pan/Tilt operation can be locked by Pan/Tilt control on page 84.
- The position you click may deviate from the center, depending on the direction of the lens.

3.3.1 Using Operation Bar

Operation bar controls the general use of Network Camera. The following sections describe the general way of using it.



(1) **End Display:** When Pan/Tilt operation has reached the end, **Left End**, **Right End**, **Up End** or **Down End** appears. When Zoom/Focus operation has reached the end, **Wide End**, **Tele End**, **Near End** or **Far End** appears. **Locked Display:** Pan/Tilt/Preset, Brightness Control, Preset program, Zooming and Focusing can be locked. **Locked** appears when the operation bar is clicked. **Preset Display:** Preset name appears when clicking Preset Button.

(2) **Pan/Tilt Scan, Pan/Tilt and Home Position:** Refer to page 43.

(3) **Zoom Buttons:** Refer to page 45.

(4) **Focus Buttons:** Refer to page 46.

(5) **Preset Buttons:** Refer to page 48.

(6) **Brightness:** Brightness control has nine steps including **[STD]** (Standard). Clicking **[-]** and **[+]** buttons changes the brightness of image. Brightness can be locked on Camera Setup window on page 84.

(7) **Resolution: [640 x 480]**, **[320 x 240]** (default) or **[160 x 120]**

(8) **Image Quality: [Favor Clarity]** optimizes the image for good clarity. **[Standard]** keeps the standard quality. **[Favor Motion]** optimizes the image for motion display.

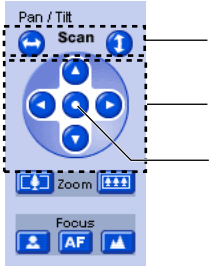
(9) **Image Size:** The default image size is x 1. **[x 1.5]** expands only the size. The resolution does not change.

(10) **Buffered Image: [Start Capture]** starts buffering the image. **[Viewer]** links to the Buffered Image screen on page 51. Each button changes to **[Primary]** and **[Secondary]** button when using Image Transfer feature.

(11) **Link Buttons:** Each buttons link to Multi-Camera screen, Top Page and Help Page.

3.3.2 Using Pan/Tilt Operation

Pan/Tilt scan buttons automatically move the lens horizontally from -175° to +175° and vertically from -120° to 0° in mounting on the table and from 0° to 90° in mounting on the ceiling, and the lens returns to the current position. Use Click to Center feature to stop scanning. Each surrounding arrow of Pan/Tilt moves the lens Up, Down, Right, Left, and the home position button moves it to Home Position.



Pan/Tilt Scan button

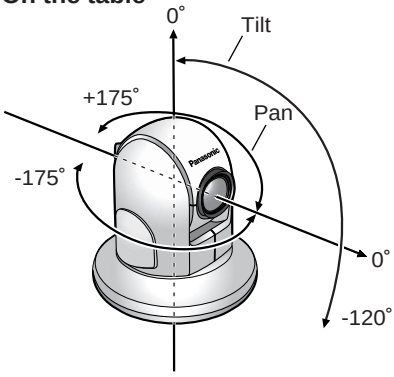
Pan/Tilt button

Home position button. Refer to page 48.

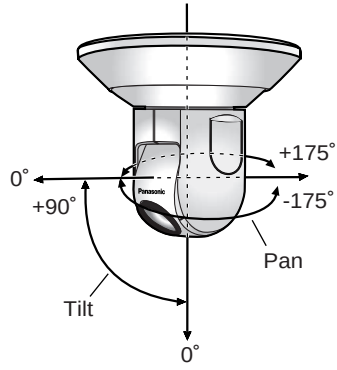
Note

Pan/Tilt operation can be locked on Camera Setup window on page 84.

On the table



On the ceiling

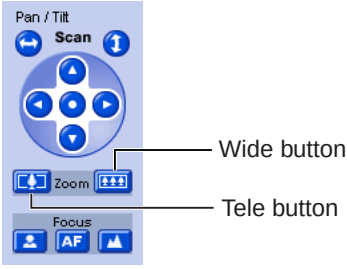


Notes

- Pan/Tilt Range can be selected on Camera Setup window on page 84.
- When the power is on, do not manually revolve the Pan/Tilt. Revolving it forcedly or moving it manually by some mistake may damage the Pan/Tilt operation, or change the registered Pan/Tilt positions from actual ones. Restart Network Camera when the latter case happens.
- Do not touch the lens. Touching it can remove the protective coating from the lens. Fingerprints, dust, stains, etc. on the lens can also degrade the performance of the Automatic Focusing feature.

3.3.3 Zooming in and out

Zoom button increases or decreases the size of the object on the Single Camera screen. Tele button zooms in, and Wide button zooms out. Zooming feature has 10 steps. The magnifying capacity of the optical lens is 21x.

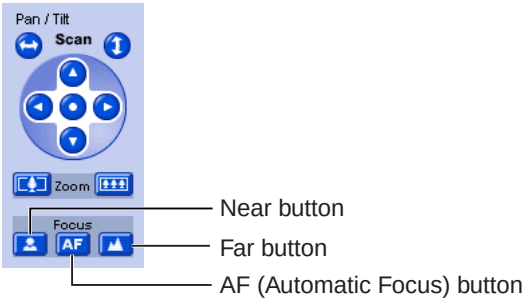


Note

Zooming can be locked on Camera Setup window on page 84.

3.3.4 Automatic and Manual Focusing

Focus button adjusts the focus. Network Camera has Automatic and Manual Focusing features. AF (Automatic Focus) button automatically allows the lens to focus on objects. Manual focusing starts by pressing Near or Far button. Near button enables the lens to shorten the focal distance, and Far button lengthens it, manually. Manual focusing feature has 40 steps.

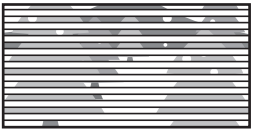


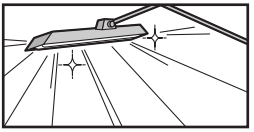
Notes

- Automatic Focusing can be locked on Camera Setup window on page 84.
- Fingerprints, dust, stains, etc. on the lens can degrade the performance of the Automatic Focusing feature. Clean the lens with lens cleaner.
- Some objects are difficult to focus on by auto focusing. In the objects shown below, it may take a while to focus on, or may not focus on them. Press the AF button and put it into operation again. When the objects are still out of focus, adjust the focus using manual focusing, or change the objects using Pan/Tilt operation or Zooming features. Manual focusing starts by pressing Near or Far button. Press AF button for turning it into Automatic Focusing.

The objects that are difficult to focus on by AF button

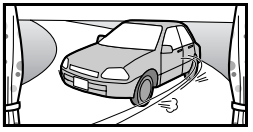
Objects without contrast (e.g., White wall)


Horizontally striped objects


High-luminance objects (e.g., fluorescent lights)

Light-dotted object in the dark (e.g., night view)

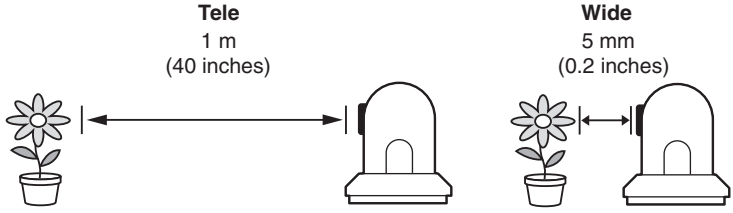
Objects viewed through glass


Objects moving fast

Notes

- Check [Enable] for Active scripting of web browser when Near or Far button does not work in manual focusing. Refer to page 124.
- The image may be out of focus, if it is too near, or depending on the zoom position. Move the object off Network Camera, or adjust the zoom position.

Minimum object distance



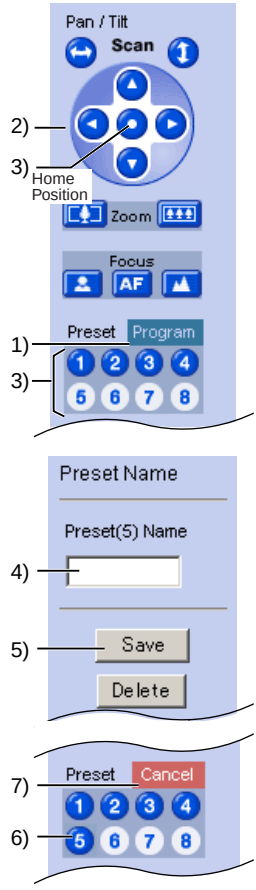
3.3.5 Setting Preset Positioning and Home Positioning

Preset Positioning and **Home Positioning** allow you to fix the lens on a specific point. Lens moves to the preset/home position when clicking each registered button. Blue/White buttons mean Registered/Not registered. Camera Setup window on page 84 can lock the Preset/Home Positioning features. Once preset buttons and home positioning button are registered in manual focusing, they will be registered in manual focusing. Pan/Tilt/Zoom keeps working in manual focusing after registering a preset or home positioning button in manual focusing. Press AF button to switch it to automatic focusing. Preset buttons and home positioning button register the following items.

- Pan/Tilt positions
- Magnifying capacity of zoom
- Focus (Auto/Manual)
- Brightness (Auto/Manual)
- White Balance (Auto/Manual/Hold)

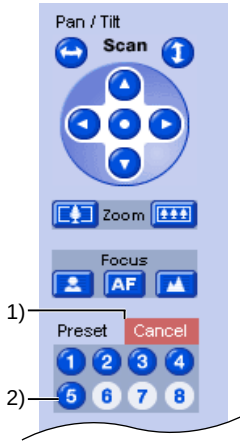
Registering or modifying the preset buttons or home position button

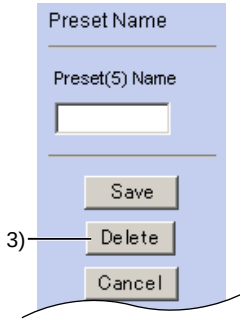
1) Click **[Program]**. Red cancel button appears.
   - **[Cancel]** returns to the Single Camera screen.
2) Move the lens to a desired position using Pan/Tilt operation.
3) Select the preset number or home position button to register or modify.
   - After registering or modifying the home position button, "Success!" appears on the display. Go to step 7.
4) Enter the name of the preset button.
   - Max. 15 characters
   - Refer to unavailable character set 1 on page 105.
   - Refer to displayable character set on page 106.
5) Click **[Save]**.
   - **[Cancel]** returns to the Single Camera screen without saving.
6) Registered preset button turns blue.
   - Go back to step 2 to register or modify other preset buttons.
7) Click **[Cancel]** when finished.

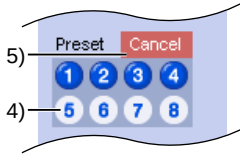


Deleting the preset buttons

1) Click **[Program]**. Red cancel button appears.
   - **[Cancel]** links to the Single Camera screen without deleting.
2) Select the preset number to delete.
3) Click **[Delete]**.
   - **[Cancel]** links to the Single Camera screen without deleting.
4) Deleted preset button turns white.
   - Go back to step 2 to delete other preset buttons.
5) Click **[Cancel]** when finished.

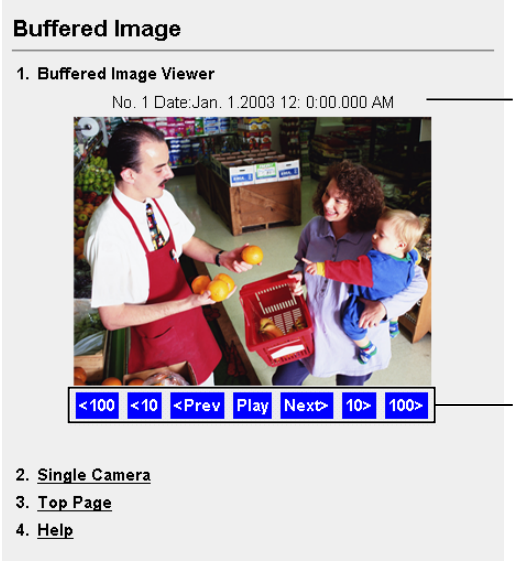






3.3.6 Viewing Buffered Image Screen

Buffered Image screen can be viewed by clicking **[Viewer]** on the operation bar. Buffered Image is saved in the internal memory of Network Camera by clicking **[Start Capture]**. Alarm/Timer mode in the Image Transfer on page 72 can also buffer the image. Buffered Image is erased by power off, restarting, Update Firmware, resetting to Factory Default and when Image Transfer or Name/Time window is saved and clicking **[Start Capture]**.



The image number, date and time are displayed.
(The example shows 12h 0min 0s 000ms on January 1st, 2003)

[Play]
The buffered images are displayed continuously.

[<Prev] & **[Next>]**
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.

Operation bar of the Single Camera screen changes in the Image Transfer mode.
[Start Capture] and **[Viewer]** are displayed in the Non Transfer mode.
[Primary] and **[Secondary]** are displayed in the Alarm/Timer mode.
Refer to page 72 about the Image Transfer feature.

Non Transfer mode	Alarm/Timer mode

[Start Capture] : **[Start Capture]** saves the individual images to the internal memory. Network traffic, PC performance, image quality and image resolution influence **[Play] mode** time and the refresh interval of the image. The resolution is the same as the current image settings. At a resolution of 320 x 240 in standard, Network Camera stores approximately 560 frames.

[Viewer] : **[Viewer]** enables you to view the buffered image by clicking **[Start Capture]**.

[Primary] : **[Primary]** enables you to view the buffered image in the primary time in the Alarm/Timer mode.

[Secondary] : **[Secondary]** enables you to view the buffered image in the secondary time in the Alarm/Timer mode.

Notes

- The refresh interval becomes longer as more clients access Network Camera.
- The image resolution, image quality and object situation affect the number of frames in the Buffered Image.
- If internal memory is filled after clicking **[Start Capture]**, the image buffering will stop automatically.

To save still images on your PC

The PC can save still images taken by JPEG - Regularly Refresh and Buffered Image. The refresh interval of JPEG - Regularly Refresh should be 30 seconds or more in saving the image.

To save the image, place the cursor on the image and click the right button of the mouse. Then select "Save Picture As...". Enter a picture name and save.

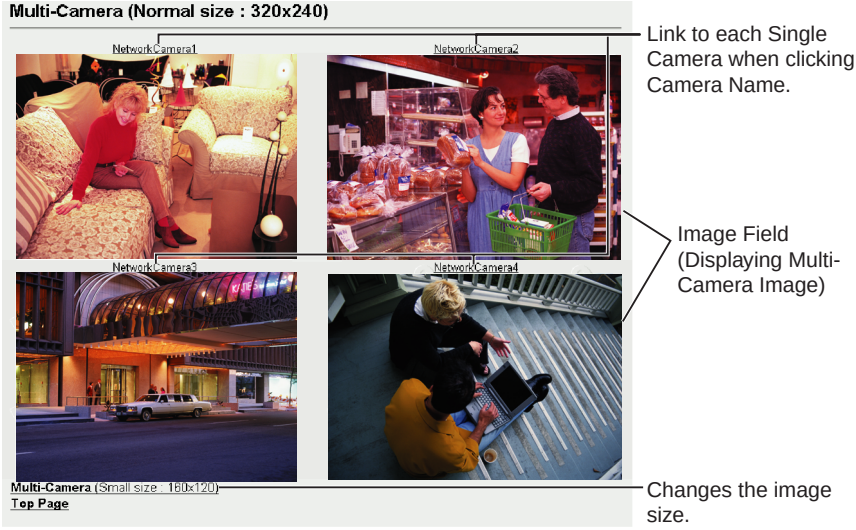
Note

The PC cannot save Motion JPEG and **[Play] mode** images of Buffered Image.

3.4 Multi-Camera Screen

Four separate Network Camera images can be displayed in both Motion JPEG and JPEG - Regularly Refresh. The Pan/Tilt operation cannot be operated on the Multi-Camera screen. You can jump to each individual Network Camera by clicking Camera Name. The Single Camera screen has the Pan/Tilt operation, which can reflect on the Multi-Camera screen.

Refer to page 87 for how to configure each Network Camera.

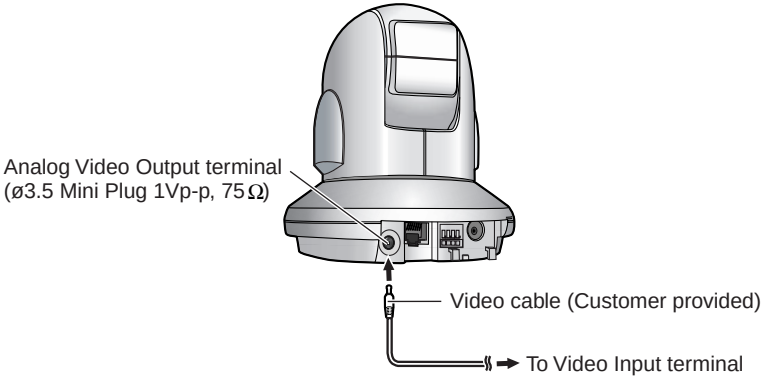


Notes

- On the Multi-Camera screen, the maximum image resolution is limited to 320 x 240.
- Motion JPEG stops on the Multi-Camera screen if Limit time of Continuous Motion JPEG is set up at a Network Camera.
- When refresh interval is slow, it can be improved by using an Ethernet switching hub instead of the repeater hub or restricting the Max. Bandwidth Usage on **Network window** on page 60. Refer to page 126 for other solutions.
- Multi-Camera screen can also display the images of Panasonic Network Cameras (KX-HCM series).

3.5 Viewing Images from Network Camera on TV

You can view images from Network Camera on TV and to record them on videotapes.



3.6 Setup Page

Setup Page controls all features of Network Camera. Authentication window protects the Network Camera security. It enables only administrator to access Setup Page by entering ID and Password.

Enter "**http://IP Address (or URL)** :Port No./**config.html**" on the web browser and press **[Enter]**. When port number is 80 (default), you do not need to enter port number. Then Setup Page appears.

Example

- Accessing Setup Page using port number 80 (default)
  http://192.168.0.253/config.html
- Accessing Setup Page using port number 81
  http://192.168.0.253:81/config.html
- Accessing Setup Page with Global IP address from outside network in **Internet Connection** on page 18.
  http://Global IP address of Broadband Router:Port No./config.html

Setup Page

Note

Firmware Version number indicated on Setup Page is important for your future support of Network Camera.

Item	Description
(1) Go to Top Page	Links to Top Page. You can access Single/Multi-Camera screen in Motion JPEG/JPEG - Regularly Refresh. Refer to page 59.
(2) Network	Configures the network setting (Static/DHCP, Default Gateway, Port Number, DNS, DDNS and Bandwidth). Refer to page 60.
(3) Name/Time	Sets the Camera Name on the Single Camera screen. Date and Time is used in the Alarm/Timer mode in the Image Transfer feature and On the Air time setting on Top View Image Setting window. NTP automatically adjusts the internal clock of Network Camera. Refer to page 64.
(4) Security: Administrator	Sets administrator ID and password. Authentication window can be enabled. Administrator should control Network Camera. Refer to page 66.
(5) Security: General User	Sets general user ID and password. General user is the registered user. Refer to page 68.
(6) Top View Image	Sets the initial language, Title, Image URL, Link URL, the image resolution, image quality, refresh interval and the Limit time of Continuous Motion and On the Air time. Top View Image screen consists of Single Camera and Multi-Camera screen. Refer to page 70.
(7) Image Transfer	Enables the Alarm/Timer mode in the Image Transfer feature. Network Camera can transfer the image via E-mail or FTP. The alarm/timer trigger can be set on Image Transfer window. Refer to page 72.
(8) Camera Setup	Sets White Balance and Power Line Frequency. You can lock the Brightness, Pan/Tilt/Preset, Preset Program Control, Zoom Control and Focus Control features. You can also select Pan Range and Tilt Range. Refer to page 84.

Item	Description
(9) Multi-Camera	The Multi-Camera screen needs to set up these parameters. Enter the Camera Names and IP addresses of each Network Camera. The Multi-Camera can display up to four images in a window. Refer to page 87.
(10) External Output Control	Sets the External Device Control Output setting to attach external sensors/devices. (Open or Short to GND) Refer to page 89 and page 103.
(11) Indicator Control	Sets Indicator operation. Indicator will be turned on in the default. Refer to page 90.
(12) Status	Displays general information of Network Camera. Refer to page 91.
(13) Restart	Restarts Network Camera retaining any settings you entered. If any operational issues are changed, try this option first. Refer to page 92.
(14) Update Firmware	Updates the program to operate Network Camera on the latest version of the system. Refer to page 93.
(15) Reset to Factory Default	Initializes all the parameters to the factory default. Note that all customer-applied settings will be lost, requiring you to reconfigure Network Camera. Refer to page 96.
(16) Help	Provides you with detailed instructions of the terms and functions of Network Camera.

3.6.1 Go to Top Page

Click **[Go to Top Page]** on Setup Page. You can access the Single Camera and Multi-Camera screen in Motion JPEG/JPEG-Regularly Refresh.

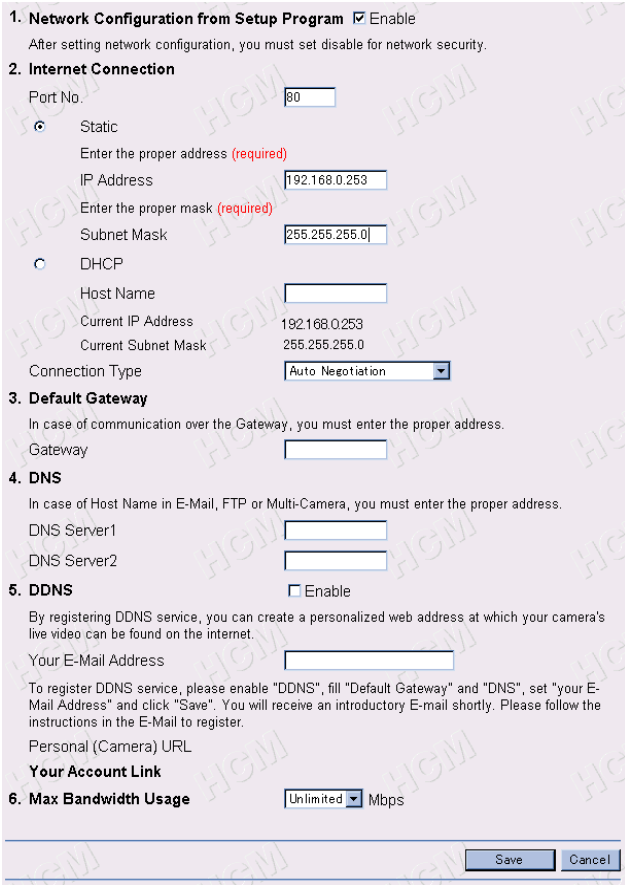
Click the language to change the display.

3.6.2 Network

Network window configures network parameters. Restart Network Camera to make the parameters effective.

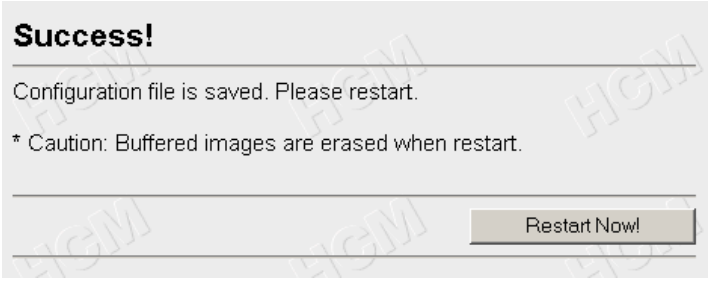
- You can set disable Configuration window from the Setup CD-ROM for the security by clearing the check.

1. Click **[Network]** on Setup Page.



2. Enter each parameter in the proper data field. Click **[Save]** when finished.

- Click **[Cancel]** to quit the current settings. The window returns to Setup Page without saving the parameters.



3. Click **[Restart Now!]** to restart to make the changed parameters effective.

Instructions for the data fields

Port No.	• You can set up the port number of Network Camera. (Default is 80.) If you use more than one Network Camera with a broadband router on the network, each Network Camera must be assigned its own port number. • Refer to Port Forwarding feature on page 32. • Many ISP's intentionally block port number 80 to guard against certain network viruses. If your ISP blocks port number 80, substitute another unused port number. • Enter only the number. (1—65535) **Note** Certain port numbers assigned on the network devices, and the network protocol are not available e.g., FTP: 20, 21, Telnet: 23, SMTP: 25, DNS: 53, POP3: 110, HTTPS: 443, ICQ: 4000 and IRC: 6661—6667. The port numbers between 50000 and 59999 are recommended to use. To assign port numbers on a large network, consult and work with your ISP or administrator.

Instructions for the data fields

Static • IP Address • Subnet Mask	• Check [Static] when having specified IP address assigned to Network Camera from your ISP or administrator. Enter the specified IP address and Subnet Mask. • If you use Network Camera on the LAN, set up in the same class as your PC is in. Refer to page 25 for the class. • Refer to page 105 for the IP addressing.
DHCP • Host Name	• Check [DHCP] (Dynamic Host Configuration Protocol), when your ISP uses the DHCP server function which assigns an IP address to Network Camera automatically. Enter the Host name. Follow the instructions of your ISP or administrator for the Host name. • Refer to unavailable character set 1 in page 105 for the Host name.
Connection Type	• Use [Auto Negotiation] normally. • When you cannot access Network Camera, refer to page 120.
Default Gateway*[a]	• If you have the specified Default Gateway address from your ISP or administrator, enter it in this data field. • Refer to page 105 for the IP addressing.
DNS Server*[a]	• Set DNS server address when you use Host Name to register Network Camera on Multi-Camera window on page 87. • If you have the specified DNS server address from your ISP or administrator, enter it in this data field. You can set up two DNS server addresses. • Refer to page 105 for the IP addressing.

Instructions for the data fields

DDNS • Your E-mail Address • Personal (Camera) URL • Your Account Link	• If your ISP specified IP address of Cable/xDSL modem is not static, you need to contract to DDNS (Dynamic Domain Name System) service. Check DDNS Enable, enter Your E-Mail Address and refer to an attached leaflet for DDNS service. • By enabling DDNS service **viewnetcam.com**, you can create a personalized web address (for example, bob.viewnetcam.com) at which your camera's live video can always be found on the Internet. The E-Mail address you entered will be automatically informed to **viewnetcam.com** for managing and supporting your account, improving services, and for marketing and promotional purposes. • Refer to unavailable character set 2 in page 105 for the e-mail address.
Max. Bandwidth Usage	• It can restrict the transmit bandwidth. • Select the max bandwidth usage from 0.1 Mbit/s to Unlimited Mbit/s. • Refer to the next File size of the image.

*a If you automatically get the address from DHCP server, you do not need to set up.

File size of the image

The internal memory, image resolution, image quality and object situation determine the maximum number of frames. File sizes change depending on the image quality and object situation. (Brightness, etc.)

For example, the image size per frame in the image resolution is as follows. (When the image quality is Standard)

160 x 120: about 3.5 Kbytes (28 Kbits)

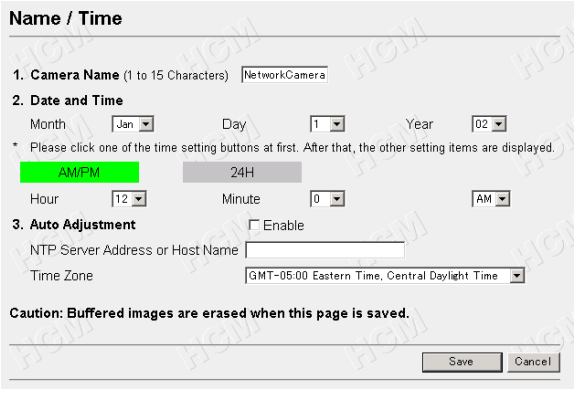
320 x 240: about 10 Kbytes (80 Kbits)

640 x 480: about 18 Kbytes (144 Kbits)

3.6.3 Name/Time

Name/Time window is used to assign a name to each Network Camera. Date and Time entered on Name/Time window are used for the Alarm/Timer mode in the Image Transfer feature and on the Buffered Image screen. NTP automatically adjusts the internal clock of Network Camera.

1. Click **[Name/Time]** on Setup Page.



2. Enter the Camera Name and Date and Time. Click **[Save]** when finished.

- Click **[Cancel]** to quit the current settings. The window returns to Setup Page without saving the parameters.

Instructions for the data fields

Camera Name	The Camera Name appears on the Single Camera screen. • Refer to unavailable character set 1 on page 105. • Refer to displayable character set on page 106.
Date and Time	First click **[AM/PM]** or **[24H]**. The display changes in each time mode. **Note** Time setting will be affected by the temperature. Time setting may lose one minute per month in 25 °C (77 °F) condition. Use **Auto Adjustment** feature.

Instructions for the data fields

Date and Time	• Time stamp on the Buffered Image screen can be changed **[AM/PM]** or **[24H]**. • Only 24 h time mode is used in the Alarm/Timer mode in the Image Transfer feature.
Auto Adjustment	NTP (Network Time Protocol) Server synchronizes the Network Camera internal clock. It adjusts automatically every day. Check the box to enable NTP. • NTP Server Address or Host Name Ask your ISP or the network administrator for the NTP Server. • Select your Time Zone. **Note** Daylight-saving Time (Daylight Time) is not set automatically. Select it manually.

Time Zone

GMT-10:00 Hawaii
GMT-09:00 Alaska, Hawaii Daylight Time
GMT-08:00 Pacific Time, Alaska Daylight Time
GMT-07:00 Mountain Time, Pacific Daylight Time
GMT-06:00 Central Time, Mountain Daylight Time
GMT-05:00 Eastern Time, Central Daylight Time **(default)**
GMT-04:00 Eastern Daylight Time
GMT 00:00 Western Europe Time
GMT+01:00 Central Europe Time, Middle Europe Time
GMT+02:00 Eastern Europe Time, Middle Europe Daylight Time
GMT+03:00 Baghdad
GMT+08:00 China Time, Western Australia Time
GMT+09:00 Japan Time
GMT+09:30 Central Australia Time
GMT+10:00 Eastern Australia Time
GMT+10:30 Central Australia Daylight Time
GMT+11:00 Eastern Australia Daylight Time

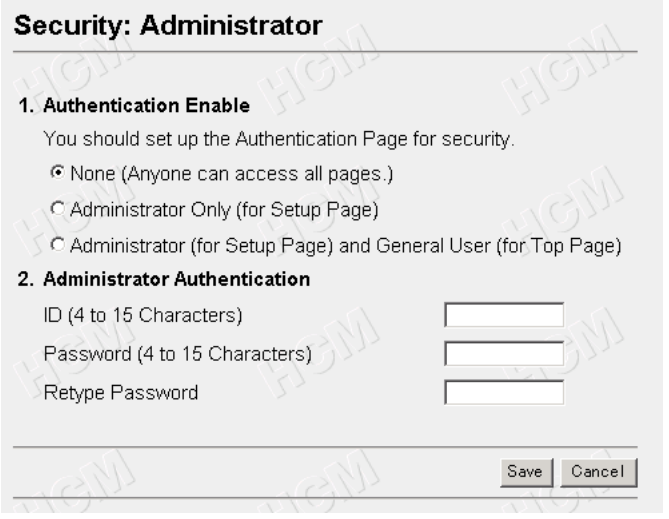
3.6.4 Security: Administrator

Security: Administrator window allows the administrator to limit or exclude access to the selected Network Camera. Individual levels of access can be defined for multiple users.

Notes

- If Network Camera is to be accessed via the Internet, use authentication window for security. It will prevent your unauthorized person from changing your Network Camera parameters.
- Refer to page 67 for details about authentication security.

1. Click **[Security: Administrator]** on Setup Page.



2. Enter each parameter in the proper data field. Click **[Save]** when finished.

- Click **[Cancel]** to leave the current settings unchanged. The window returns to Setup Page without saving the parameters.
- Restart to make **Security: Administrator window** settings effective to all Motion JPEG viewers.

Instructions for the data fields

<table>
<tr><td>Authentication Enable</td><td>Authentication window can be set in the three patterns.
None: No authentication window appears. Anyone can access all screens (Single Camera/Multi-Camera screen) and pages (Top Page and Setup Page).
Administrator only: Authentication window appears when accessing Setup Page. Authentication window does not appear when accessing Top Page.
<table>
<tr><th></th><th>Administrator</th><th>General User</th><th>Unregistered User</th></tr>
<tr><td>Top Page</td><td>✔</td><td>✔</td><td>✔</td></tr>
<tr><td>Setup Page</td><td>✔</td><td>—</td><td>—</td></tr>
</table>
✔: Accessible —: Not accessible
Administrator and General User: Authentication window appears when accessing Setup Page for the administrator and Top Page for the general user.
<table>
<tr><th></th><th>Administrator</th><th>General User</th><th>Unregistered User</th></tr>
<tr><td>Top Page</td><td>✔</td><td>✔</td><td>—</td></tr>
<tr><td>Setup Page</td><td>✔</td><td>—</td><td>—</td></tr>
</table>
✔: Accessible —: Not accessible</td></tr>
<tr><td>Administrator Authentication for Setup Page</td><td>ID: Enter the administrator ID.
ID and Password are case sensitive.
Password:
Enter the administrator password. The password should be difficult to guess and confidential.
Refer to unavailable character set 1 on page 105.
Note
Assign the ID and password to meet your specific security requirements. To maximize its effectiveness, keep the following contents.
• Be sure the ID and password are different.
• Make the ID and password as long and random as possible.
• Periodically change the password.
Retype:
Reenter the password to confirm. Do not copy the text.</td></tr>
</table>

3.6.5 Security: General User

Security: General User window allows the administrator to create the general user ID and password for the security level defined as general user. Up to 30 individual user names can be defined. The various security levels are explained on page 67.

1. Click **[Security: General User]** on Setup Page.

2. Enter each parameter in the proper data field. Click **[Save]** when finished.

- Click **[Cancel]** to lease the current settings unchanged. The window returns to Setup Page without saving the parameters.
- Restart to make **Security: General User window** settings effective to all Motion JPEG viewers.

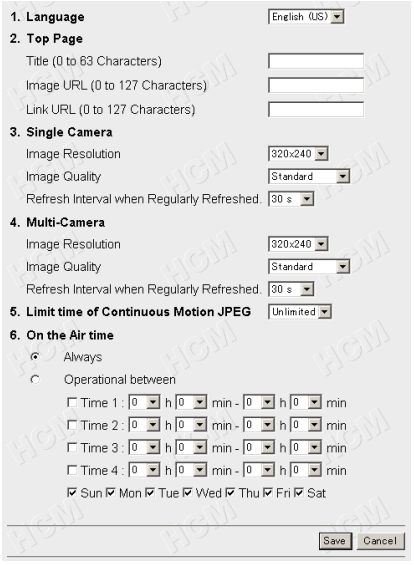
Instructions for the data fields

General User Authentication	The General User can be up to 30. Each of them can have their own ID and password.
(1) User ID List	• User ID List displays the registered user name. • **[Delete]** and **[Modify]** deletes/modifies the general user in the list. Select the desired user and click **[Delete]** or **[Modify]**.
(2) New User	Enter the general user ID, password and reenter the password to confirm. The password should be difficult to guess and confidential. **[Save]** registers the new user in the User ID List. ID and Password are case sensitive. Refer to unavailable character set 1 on page 105. **Note** Assign the ID and password to meet your specific security requirements. To maximize its effectiveness, keep the following contents. • Be sure the ID and password are different. • Make the ID and password as long and random as possible. • Periodically change the password.

3.6.6 Top View Image

Top View Image Setting window can change settings for Top Page, Single Camera and Multi-Camera screen such as the initial language, the image resolution, image quality, refresh interval as the initial setting, **Limit time of Continuous Motion JPEG** and **On the Air time**.

1. Click **[Top View Image]** on Setup Page.



2. Select the each parameter. Click **[Save]** when finished.

- Click **[Cancel]** to quit the current settings. The window returns to Setup Page without saving the parameters.
- Restart to make **Limit Time of Continuous Motion JPEG** settings effective to all Motion JPEG viewers.

Instructions for the data fields

Language	Select the initial language from the list: English (US), English (UK), French, German, Italian, Spanish or Japanese. The selected language is displayed as the initial language on Top Page, Single Camera screen and Multi-Camera screen. All Setup windows are also changed when selecting English (US), English (UK) or Japanese. English (UK) is displayed on Setup windows when selecting French, German, Italian and Spanish.

Instructions for the data fields

Top Page	• Top Page title can be changed. Enter the new title.
	  • Refer to unavailable character set 1 on page 105 but [space] is available.
	  • Refer to displayable character set on page 106.
	• Network Camera picture on Top Page can be changed. Enter the URL (http://) to display the picture on the specified web site.
	  • Only [space] and ["] are unavailable in the ASCII character table on page 105.
	• Network Camera picture on Top Page can be set the link to the specified web site. Enter the URL (http://).
	  • Only [space] and ["] are unavailable in the ASCII character table on page 105.

Image Resolution	• **640 x 480** (cannot set on the Multi-Camera screen.) • **320 x 240** (default) • **160 x 120**
Image Quality	• **Favor Clarity**: Image is optimized for good clarity. • **Standard**: Image quality is standard. (default) • **Favor Motion**: Image is optimized for enhanced motion display.
Refresh Interval	The refresh interval of JPEG - Regularly Refresh can be selected. Select the desired interval. • 10 seconds to 5 minutes
Limit time of Continuous Motion JPEG	To make the network traffic smooth, select the duration time to display Motion JPEG. When the timer expires, the image changes to JPEG - Regularly Refresh. • 10 seconds to Unlimited

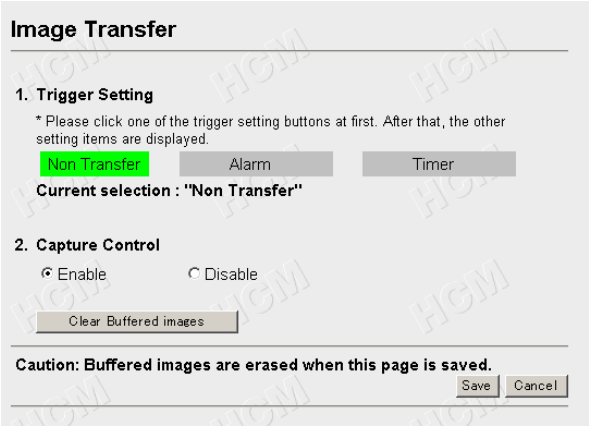
On the Air time	Specifies the timetable to allow users to access Top View Image screen. When you access the image except the specified time, blue screen appears.
	  • **Always:** Always allows users to access.
	  • **Operational between:**
	Specifies the date and time to access the image.

3.6.7 Image Transfer

Image Transfer window can set the Image Transfer feature. Network Camera can buffer images and send the images via e-mail or FTP. The request to send the image is initiated by a contact closure from the external sensors/devices connected to the External I/O using the Alarm mode. The external sensors/ devices are customer provided. The images can also be sent in the interval of time using the Timer mode. Make sure Date and Time has been configured. Refer to page 64 about Date and Time.

Note

When you use FTP or e-mail in transferring the image, you need to set Default Gateway and DNS Server address.



Non Transfer : Image Transfer feature is not in use.

Alarm mode : The alarm trigger activates transferring the image. Refer to page 74.

Timer mode : The timer trigger activates transferring the image. Refer to page 80.

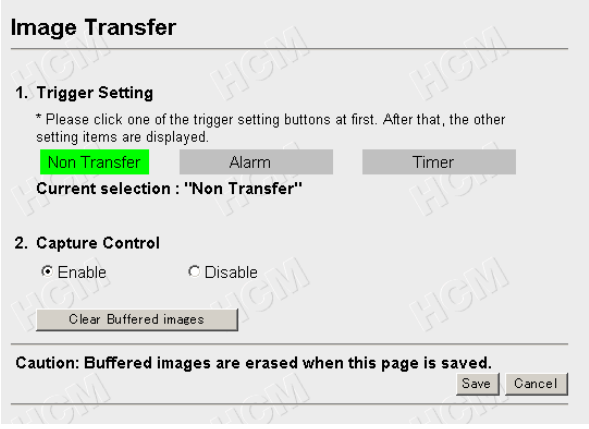
Note

The Alarm and Timer mode cannot be set at the same time.

Non Transfer mode

Non Transfer mode enables **[Start Capture]** on the operation bar to buffer the image on the Single Camera screen. Refer to page 51. Capture Control can lock **[Start Capture]** on the operation bar to prevent the user from capturing the Buffered Image. Click **[Clear Buffered images]** to clear the buffered image. **[Clear Buffered images]** does not save the parameters.

1. Click **[Image Transfer]** on Setup Page.



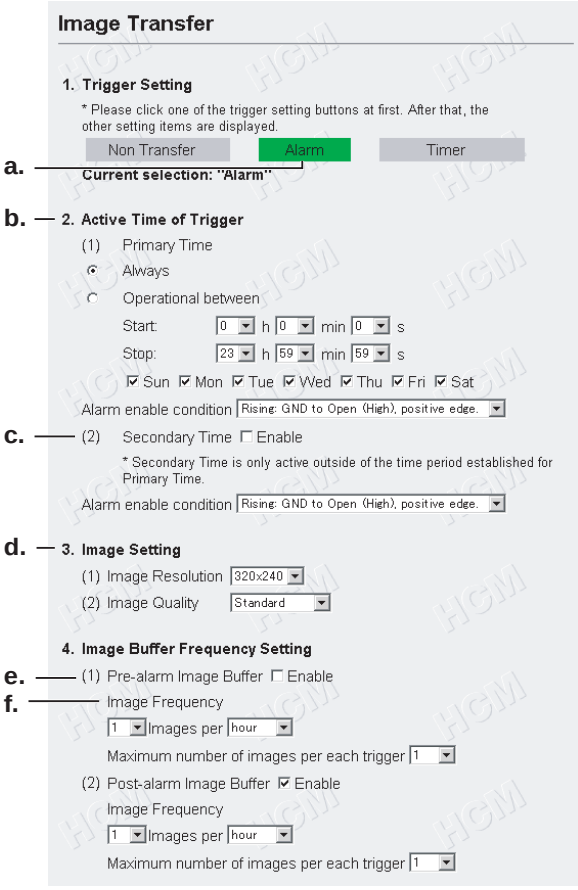
2. Select the each parameter. Click **[Save]** when finished.

- Click **[Cancel]** to quit the current settings. The window returns to Setup Page without saving the parameters.

Transfer in the Alarm Mode

The Alarm mode can transfer an image via e-mail or FTP when the alarm trigger is active. To activate the alarm trigger, the External Sensor Input of External I/O must be connected with the external sensors/devices. The Alarm mode can send the e-mail without transferring the image. The Alarm mode uses the Network Camera internal clock. Make sure Date and Time has been configured. Refer to page 64 about Date and Time.

1. Click **[Alarm]** on **Image Transfer window**.



Instructions for the data fields

a. External Sensor Input of External I/O activates the alarm trigger. Refer to page 103.

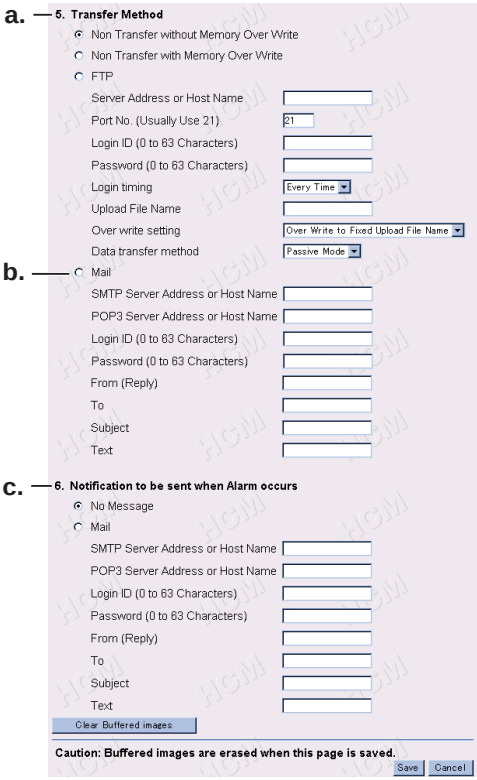
b. **Active Time of Trigger**
The active trigger time can be set in the primary time and the secondary time. The secondary time is the supplement of the primary time.
Always: always activates the alarm trigger.
Operational between: Sets the start and stop time of the primary time. The day of the week can be set by checking. Start and stop time is set only in 24 h time mode.
Alarm enable condition:
Select the [Rising] (GND to Open High) or [Falling] (Open High to GND) of External Sensor Input of the External I/O.

c. **Secondary time** is active trigger time except the primary time.
Alarm enable condition:
Select the [Rising] (GND to Open High) or [Falling] (Open High to GND) of External Sensor Input of the External I/O.

d. Sets the **image resolution** and **image quality**.
Image resolution: 640 x 480/320 x 240/160 x 120
Image quality: Favor Clarity/Standard/Favor Motion

e. The Pre or Post trigger or both can be set on the Buffered Image. Check the box.

f. **Image Frequency**: Sets the interval to send the image.
Maximum number of images per each trigger:
Selects the number of buffering frames from numbers 1 to 3000.



a. Selects **Transfer Method**.

Non Transfer without Memory Over Write:
Image buffering will stop when the internal memory is full.

Non Transfer with Memory Over Write:
Buffered image will overwrite the older image data when the internal memory is full.

FTP: Enters the server address*1 or Host Name*2, Port number (1—65535), Login ID*2 and password*2 to access the FTP server and upload file name*2 including full path. Time in 24 h mode is attached on the upload file name.

Login timing:
[Every Time] or [One Time] can be selected. When selecting [Every Time], Network Camera repeats logging in and out with each transfer of one image. When selecting [One Time], Network Camera stays logged in until the transfer of all images is completed. Select [One Time] when transferring many images in short duration time.

Over write setting:

Selects [Over Write...] to overwrite the transferred image or [Add time...] to save each transferred image.
Data transfer method:
Use [Passive Mode] normally. If FTP does not work properly, ask your ISP or network administrator about the transferring mode of FTP server. [Passive Mode] or [Active Mode] is available.

b. **Mail**: Sets the SMTP and POP3 server address*1 or Host Name*2, Login ID*2 and Password*2.
From (Reply)*3: Enter the e-mail address of [Reply-to]. [To] can be the same address as From (Reply).
To *3: Enter the e-mail address of receiver.
Subject & Text *4: Sets the subject and text of the e-mail.
Time in 24 h mode is attached on the subject.

Notes
- Set POP3 server address or Host Name, Login ID and Password if you need POP authentication to send the e-mail. Ask your ISP or administrator.
- Network Camera will only operate correctly with SMTP (Simple Mail Transfer Protocol) server. It is not available with Internet-accessed mail servers like "Hotmail®" or other mail accounts accessed via web browser.

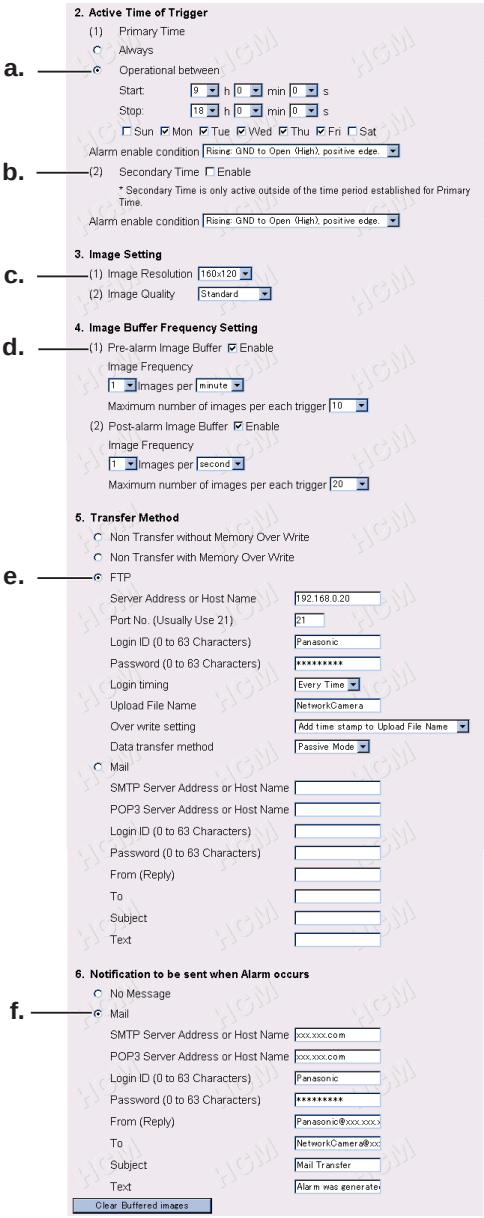
c. Select [No Message] or [Mail]
Mail: Only the notification e-mail is sent when the alarm trigger is active. Refer to **b. Mail** for each parameter.

*1 Refer to IP addressing on page 105.
*2 Refer to unavailable character set 1 on page 105.
*3 Refer to unavailable character set 2 on page 105.
*4 Only ["] is unavailable in the ASCII character table on page 105 and refer to displayable character set on page 106.

2. Select/Enter the each parameter. Click **[Save]** when finished.

- Click **[Cancel]** to quit the current settings. The window returns to Setup Page without saving the parameters.
- Click **[Clear Buffered images]** to clear the buffered image. **[Clear Buffered images]** does not save the parameters.

Setting Example



Setting explanation

a. The active time of trigger is set between 9:00 AM to 6:00 PM from Monday to Friday.
When the alarm occurs in the setting time, the images are transferred to FTP server, and the notification is sent to the specified user via e-mail.
The alarm trigger is on when the sensor signal is changed to the [Rising] (GND to Open High) of External Sensor Input of External I/O.

b. The secondary time is set inactive.

c. The transferring image size is 160 x 120, and the image quality is standard.

d. Enables the Pre-alarm and Post-alarm Image Buffering:
Network Camera will transfer Pre-alarm 10 images by one image per minute and Post-alarm 20 images by one image per second when detecting the alarm trigger.

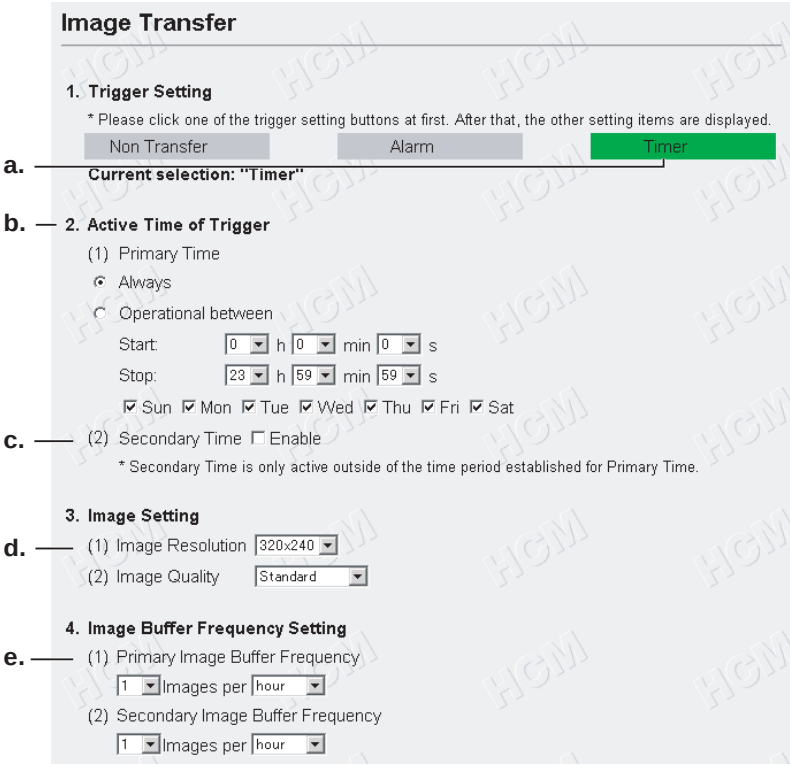
e. Setting of FTP server:
IP Address — 192.168.0.20
Port No. — 21
Login ID — Panasonic
Password — ********
Login timing: Every Time
Upload File name — NetworkCamera
File name and time stamp is named to the file.
(Example: NetworkCamera20030101093000000.jpg)
Underlined numbers are "9 h 30 min 00 s 000 ms on January 1, 2003".
Data transfer method — Passive Mode

f. SMTP server address — xxx.xxx.com
POP3 server address — xxx.xxx.com
Login ID — Panasonic
Password — ********
Mail is sent to "NetworkCamera@xxx.xxx.com" from "Panasonic@xxx.xxx.com".
Subject is [Mail Transfer].
Text is [Alarm was generated].

Transfer in the Timer Mode

The timer mode can be activated by entering the active time, the image setting, frequency setting and the transfer method on **Image Transfer window**. Buffered Image can also be transferred via e-mail or FTP. The timer mode uses the Network Camera internal clock. Make sure Date and Time has been configured. Refer to page 64 about Date and Time.

1. Click **[Timer]** on Image Transfer window.



Instructions for the data fields

a. Buffers or transfers by the timer trigger.

b. **Active Time of Trigger**
Always: always activates the timer trigger. The timer trigger interval can be set in **e. Image Buffer Frequency Setting**.
Operational between: Sets the start and stop time of the primary time. The day of the week can be set by checking. If the setting time passes over midnight, check the check box of only the day of start time. Start and stop time is set only in 24 h time mode.

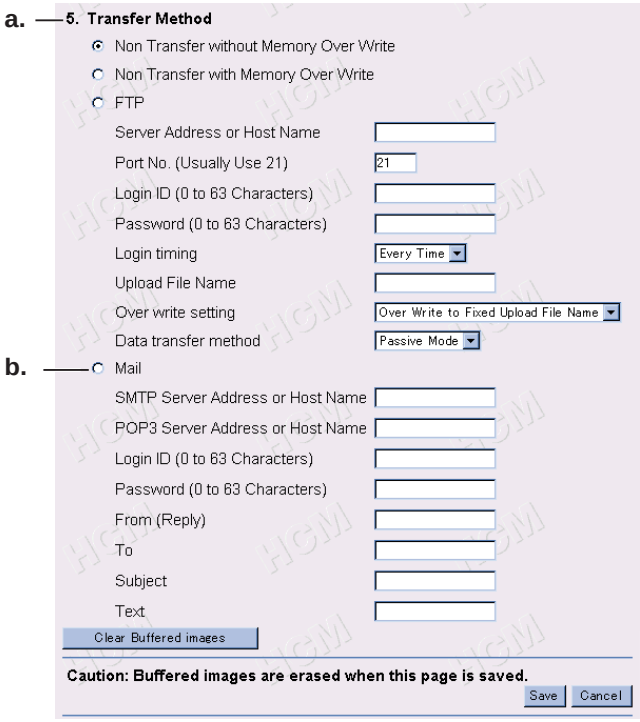
Note
The first image is buffered or transferred at the start time. The later images are buffered or transferred at the interval of the **e. Image Buffer Frequency Setting**.

c. **Secondary time** is active except the primary time.
The timer trigger interval in the secondary time can be set in **e. Image Buffer Frequency Setting**.

d. Sets the **image resolution** and **image quality**.
Image resolution: 640 x 480/320 x 240/160 x 120
Image quality: Favor Clarity/Standard/Favor Motion

e. **Image Frequency**: Sets the interval to send the image.

Note
Short interval of Image Buffer Frequency makes Network Camera transfer the older images. Set the interval long enough to transfer the images. Buffered Image screen enables you to check this setting.



a. Selects **Transfer Method**.

Non Transfer without Memory Over Write:
Image buffering will stop when the internal memory is full.

Non Transfer with Memory Over Write:
Buffered image will overwrite the older image data when the internal memory is full.

[Primary] or **[Secondary]** on the operation bar can be displayed to view the Buffered Image screen in Non Transfer setting.

FTP: Enters the server address*1 or Host Name*2, Port number (1—65535), Login ID*2 and password*2 to access the FTP server and upload file name*2 including full path. Time in 24 h mode is attached on the upload file name.

Login timing:
[Every Time] or [One Time] can be selected. When selecting [Every Time], Network Camera repeats logging in and out with each transfer of one image. When selecting [One Time], Network Camera stays logged in until the transfer of all images is completed. Select [One Time] when transferring many images in short duration time.

Over write setting:
Selects [Over Write...] to overwrite the transferred image or [Add time...] to save each transferred image.
Data transfer method:
Use [Passive Mode] normally. If FTP does not work properly, ask your ISP or network administrator about the transferring mode of FTP server. [Passive Mode] or [Active Mode] is available.

b. **Mail**: Sets the SMTP and POP3 server address*1 or Host Name*2, Login ID*2 and Password*2.
From (Reply)*3: Enter the e-mail address of [Reply-to]. [To] can be the same address as From (Reply).
To *3: Enter the e-mail address of receiver.
Subject & Text *4: Sets the subject and text of the e-mail.
Time in 24 h mode is attached on the subject.

Notes

- Set POP3 server address or Host Name, Login ID and Password if you need POP authentication to send the e-mail. Ask your ISP or administrator.
- Network Camera will only operate correctly with SMTP (Simple Mail Transfer Protocol) server. It is not available with the Internet accessed mail servers like "Hotmail" or others accessed via the web browser.

*1 Refer to IP addressing on page 105.
*2 Refer to unavailable character set 1 on page 105.
*3 Refer to unavailable character set 2 on page 105.
*4 Only ["] is unavailable in the ASCII character table on page 105 and refer to displayable character set on page 106.

2. Select/Enter the each parameter. Click **[Save]** when finished.

- Click **[Cancel]** to quit the current settings. The window returns to Setup Page without saving the parameters.
- Click **[Clear Buffered images]** to clear the buffered image. **[Clear Buffered images]** does not save the parameters.

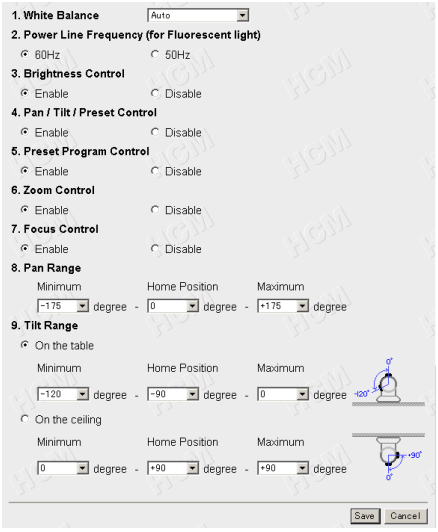
Note

Refer to page 51 for the Buffered Image.

3.6.8 Camera Setup

Camera Setup window sets White Balance and Power Line Frequency. You can lock the Brightness, Pan/Tilt/Preset, Preset Program, Zoom and Focus features. You can also select the Pan Range and Tilt Range.

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



2. Select the each parameter in the proper data field. Click **[Save]** when finished.

- The lens moves to the home position you have registered.
- Click **[Cancel]** to quit the current settings. The window returns to Setup Page without saving the parameters.

Instructions for the data fields

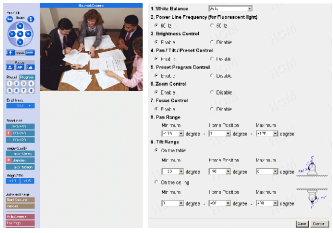
White Balance	**Auto** (default)	—	Auto White Balance
	Fixed Indoor	—	Color Temperature: 2800K, Electric Bulb
	Fixed Fluorescent_1	—	Color Temperature: 3600K, Natural fluorescent light
	Fixed Fluorescent_2	—	Color Temperature: 4000K, Natural fluorescent light
	Fixed Outdoor	—	Color Temperature: 6000K, Solar light
	Hold	—	Holds the current White Balance

Instructions for the data fields

White Balance	**Notes** • The wrong White Balance setting will cause Network Camera to display colors improperly. In most cases **Auto** is suggested. • White Balance is also registered in preset programming.
Power Line Frequency	It can select Flicker Correction by power line frequency. • 60 Hz (default) • 50 Hz Select 60 Hz in the United States.
Brightness Control	Brightness Control can be locked. **Locked** appears on the operation bar on page 42 when clicking.
Pan/Tilt/ Preset Control	Pan/Tilt/Preset Control can be locked. **Pan/Tilt/Preset Control** also disables **Click to Center** operation. **Locked** appears on the operation bar on page 42 when clicking.
Preset Program Control	Preset Program Control can be locked. **Program button** disappears on the operation bar on page 42.
Zoom Control	Zoom Control can be locked. **Locked** appears on the operation bar on page 42 when clicking.
Focus Control	Focus Control can be locked. **Locked** appears on the operation bar on page 42 when clicking.
Pan Range	Pan Range can be selected. Refer to page 86 on specifying the Pan/Tilt range. **Right/Left End** appears on the operation bar on page 42 when having reached the selected end.
Tilt Range	**[On the table]** or **[on the ceiling]** can be selected. Tilt Range can be selected. Refer to page 86 on specifying the Pan/Tilt range. **Up/Down End** appears on the operation bar on page 42 when having reached the selected end.

Specifying the Pan/Tilt range

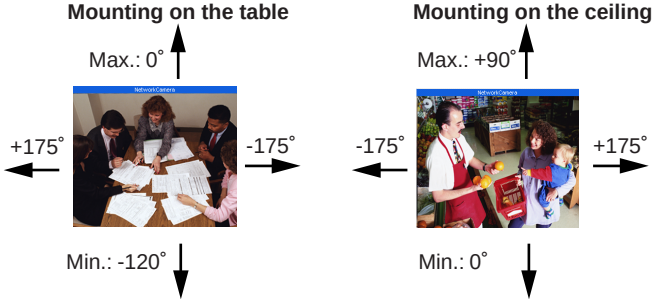
1. Start up the web browser and access the Single Camera screen.
2. Start up another web browser and access Camera Setup window.
3. Align the Single Camera screen and Camera Setup window from side to side.



4. Adjust the Pan operation on the Single Camera screen and select **[Current]** in the minimum value data field of the Pan range on Camera Setup window. The data field refreshes to read the current value of the Pan range.
5. Specify the each home position/maximum value of the Pan range and each minimum/home position/maximum value of the Tilt range following the instruction shown in the step 4.

   Note

   The available minimum/maximum values will be different depending on mounting on the table or mounting on the ceiling. Minimum value must be lower than maximum value. Home position value must be in the range between minimum and maximum values.



6. Click **[Save]** when finished.

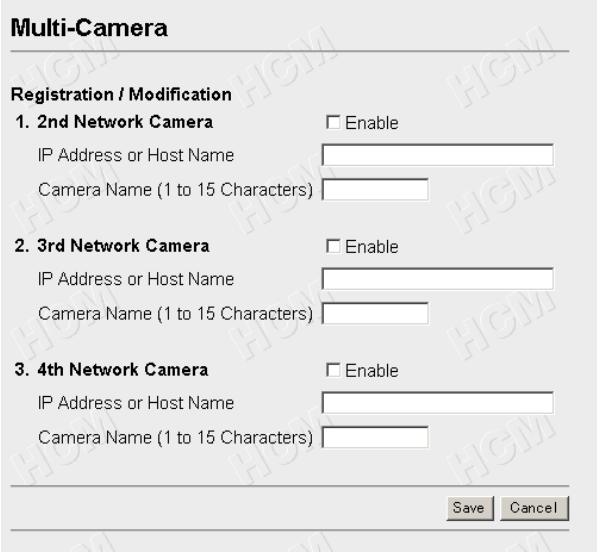
3.6.9 Multi-Camera

Multi-Camera window enables the setting of Multi-Camera screen. Camera Name and IP address of each Network Camera must be entered to view the Multi-Camera screen. Registering IP addresses of the other Network Camera enables you to view on the Multi-Camera screen. Clicking Camera Name of Network Camera on the Multi-Camera screen accesses the Single Camera screen to control the image. First Network Camera is named on **Name/Time window** on page 64. 2nd to 4th Network Cameras are named on this **Multi-Camera window**.

Notes

- When using the Multi-Camera screen, all additional Network Cameras must be defined on each Multi-Camera window. This will allow all Network Cameras to be seen and selected from each Network Camera in the entire network.
- Global IP address is required to view the image over the Internet.

1. Click **[Multi-Camera]** on Setup Page.



2. Select/Enter the each parameter. Click **[Save]** when finished.

- Click **[Cancel]** to quit the current settings. The window returns to Setup Page without saving the parameters.

Instructions for the data fields

Enable check box	The checked camera image can be seen on the Multi-Camera screen.
IP Address (or URL)*1 or Host Name*2	Enter the desired IP address of Network Camera or Host Name and Port Number. (You do not need to enter port number 80 [default].)
Camera Name*3	Enter the desired Camera Name displayed only for the Multi-Camera screen.

*1 Refer to IP addressing on page 105.

*2 Refer to unavailable character set 1 on page 105 but [:] is available.

*3 Refer to unavailable character set 1 on page 105 and refer to displayable character set on page 106.

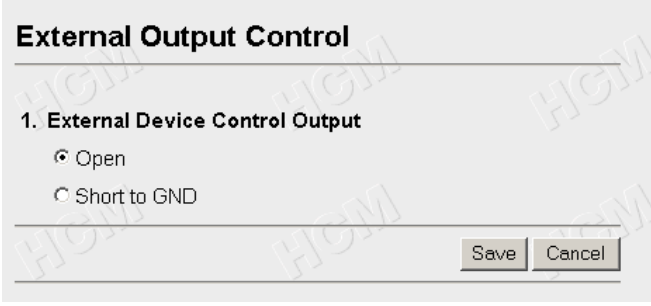
3.6.10 External Output Control

External Output Control window enables the External Device Control Output signal to activate the external sensors/devices. (Open or Short to GND) The network administrator should set up this setting.

Note

Refer to page 103 for Interfacing to the External I/O.

1. Click **[External Output Control]** on Setup Page.



2. Check **[Open]** means the External Device Control Output becomes high impedance (open collector).
   Check **[Short to GND]** means the External Device Control Output becomes low (0V).
3. Click **[Save]** to send the signal.
   - Click **[Cancel]** to quit the current settings. The window returns to Setup Page without saving the parameters.

3.6.11 Indicator Control

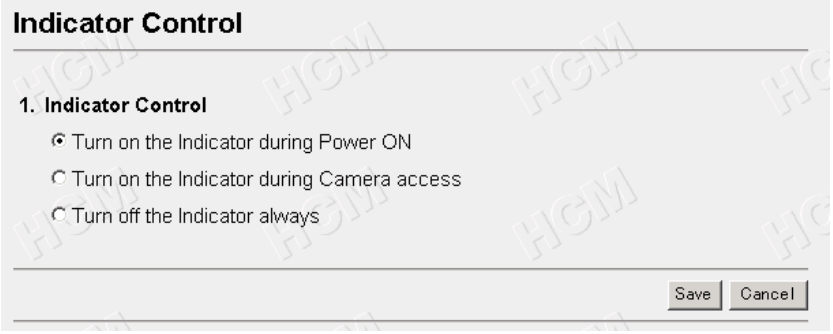
Indicator Control window allows you to select Indicator operation. Indicator operation has three patterns.

- Always on
- Turns on when accessing Network Camera
- Always off

Notes

- Indicator can be controlled in case the administrator does not want to draw attention to Network Camera. This may be desirable when used for security applications.
- Refer to page 14 for the Indicator color indication.

1. Click **[Indicator Control]** on Setup Page.

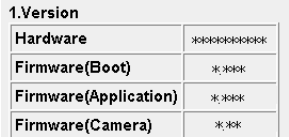


2. Select the Indicator on/off. Click **[Save]** when finished.

- Click **[Cancel]** to quit the current settings. The window returns to Setup Page without saving the parameters.

3.6.12 Status

Status window displays general information about Network Camera.



1.Version

Hardware	**********
Firmware(Boot)	*.***
Firmware(Application)	*.***
Firmware(Camera)	*.**

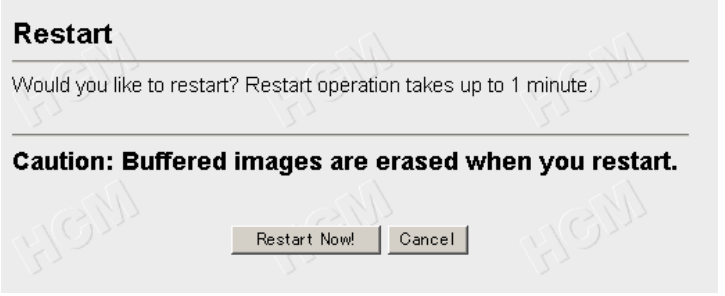
Note

When some trouble occurs, the information is useful.

3.6.13 Restart

Restart window restarts Network Camera with the parameters saved. Restarting is required when the network parameters are changed.

1. Click **[Restart]** on Setup Page.



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

- Click **[Cancel]** to quit. The window returns to Setup Page.

3.6.14 Update Firmware

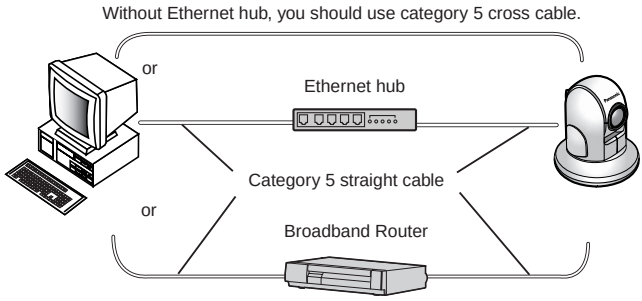
Update Firmware window allows the user to install the latest version of the Network Camera internal operating system (Application and Camera firmware). In most cases, this will never be necessary. Changes may be necessary to accommodate new operating systems or new web browsers that are not shown on page 10. In those cases, Update Firmware would be available from the Network Camera Technical Support Site at **http://panasonic.co.jp/pcc/en/**. Check the current firmware version on Setup Page on page 56.

Notes

- Do not turn off the power during Update Firmware. If the operation of Update Firmware is stopped, refer to page 123.
- Buffered Images are erased when performing Update Firmware.

1. Download the proper firmware from the Network Camera Technical Support Site mentioned above.

2. If Network Camera is accessible from the Internet, temporarily disable access and connect Network Camera to the PC as the following figure. This will eliminate any interruption during the Update Firmware.



Note

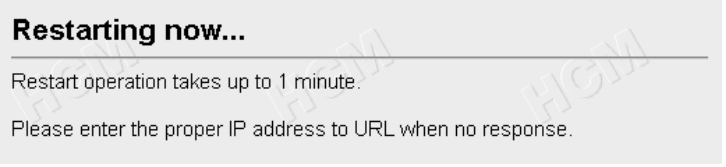
When Network Camera uses the DHCP function, change the Internet connection from DHCP to Static in **Network window**. Refer to page 60 for the network parameters.

3. Access **Setup Page** by entering "**http://IP Address (or URL)**:Port No.**/config.html**" on the web browser and press **[Enter]**.

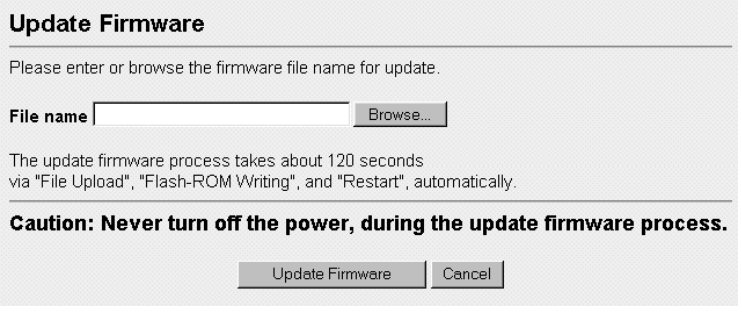
- When port number is 80 (default), you do not need to enter port number.

4. Click **[Update Firmware]** on Setup Page.

5. Click **[Update Firmware]**.



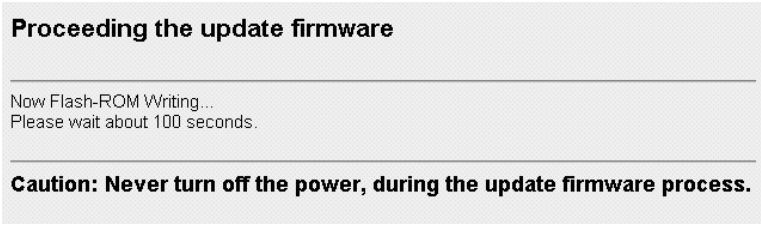
Wait about one minute.



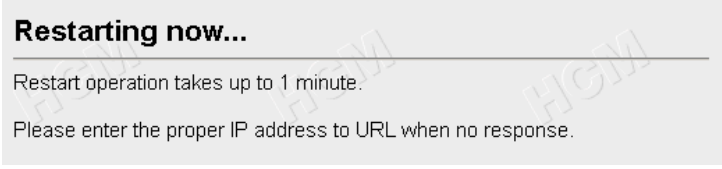
Note

If you click **[Update Firmware]**, operation cannot be canceled. If canceled, refer to page 123.

6. Click **[Browse...]** to select the firmware from the file selector.
   - A dialog box appears to choose the file.
7. Select a desired Firmware file for Application or Camera (including the path information) and click **[Open]**.
8. Make sure the desired firmware file name is selected correctly, and click **[Update Firmware]**.



Restarting window is displayed, and Network Camera restarts automatically.



Restart operation takes about one minute.
Confirm that the Update Firmware Version number is the latest number on Status window on Setup Page.

3.6.15 Reset to Factory Default

Reset to Factory Default window initializes all the parameters including the ID, Password, IP address and Subnet Mask except Date and Time setting to the factory default. Reconfirm the settings before doing the Reset to Factory Default operation.

1. Click **[Reset to Factory Default]** on Setup Page.

2. Click **[Execute]**.

- Indicator changes such as **Orange blinking twice** –> **Turning off about 15 seconds**. Initializing takes about one minute.
- Click **[Cancel]** to quit. The window returns to Setup Page.

Notes

- Do not turn off the power during the Reset to Factory Default. It may interrupt the Network Camera operation.
- IP address and Subnet Mask should be set again after Resetting to Factory Default.
- FACTORY DEFAULT RESET button can also reset Network Camera to the Factory Default. Refer to page 109.
- Internal clock will not be reset, however, time mode will return to **AM/PM mode** and **Auto adjustment** will be disabled.
- If Reset to Factory Default is used, all user settings will be lost, and you will have to reconfigure the entire Network Camera.

Section 4

Technical Guides

4.1 Mounting

Two ways of mounting are shown in the following figures. MAC Address and Serial Number are indicated on the bottom label of the main unit of Network Camera. Record both of them on the Network Camera Memo on page 3. They are indispensable for setting network parameters after mounting Network Camera and for future customer servicing.

Note

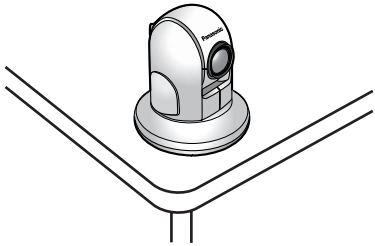
Mounting and cabling instructions described in this Operating Instructions follow generally accepted guidelines suitable for residential installations. In some areas, commercial and industrial installations are regulated by local or state ordinances. For such installations, contact your local building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

4.1.1 Mounting on the Table

Mount Network Camera at an even place where vibrations etc. are few.

Note

Network Camera is available between ±15° based on level line for mounting on the ceiling.



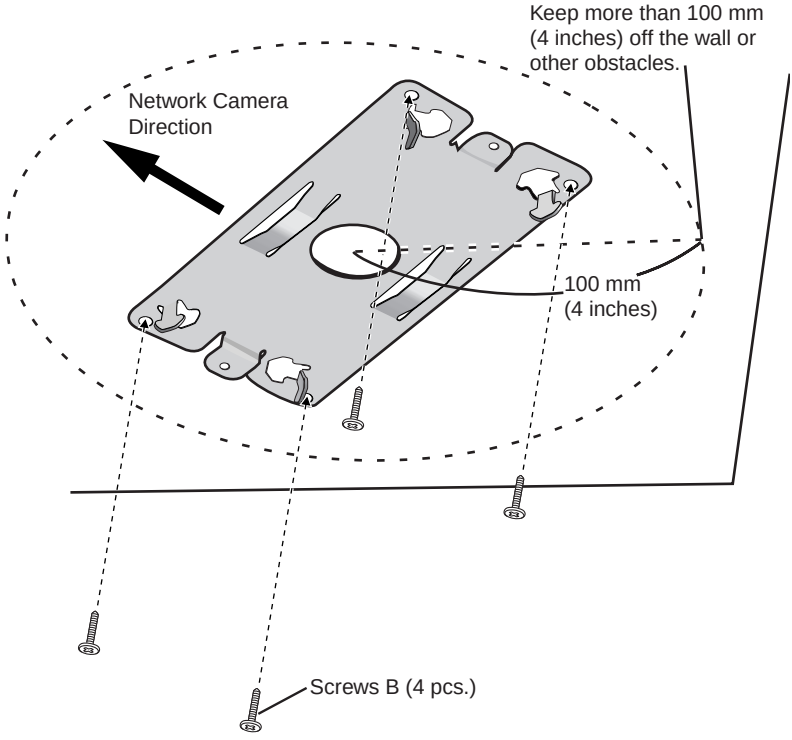
4.1.2 Mounting on the Ceiling

Mount Network Camera at an even place where vibrations etc. are few. Set the Tilt range to **[On the ceiling]** on Camera Setup window on page 84. Two ways of wiring can be considered; wiring through a hole made in the ceiling or wiring without making a hole for a cable in the ceiling. Select either one of the two.

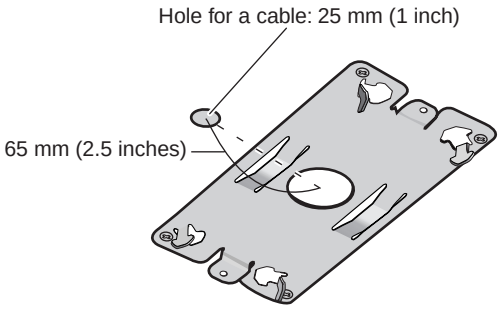
Wiring through a hole made in the ceiling

1. Fix the Ceiling Plate B on the ceiling with Screws B.

- Fix the Ceiling Plate B more than 100 mm (4 inches) off the wall or other obstacles from its center.
- Make sure Network Camera is firmly mounted on a beam of wood etc. When there is no beam, apply a board on the other side of the ceiling to make sure Network Camera does not drop.

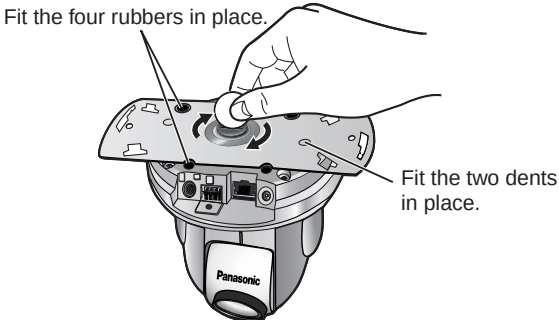


2. Make a hole for a cable.

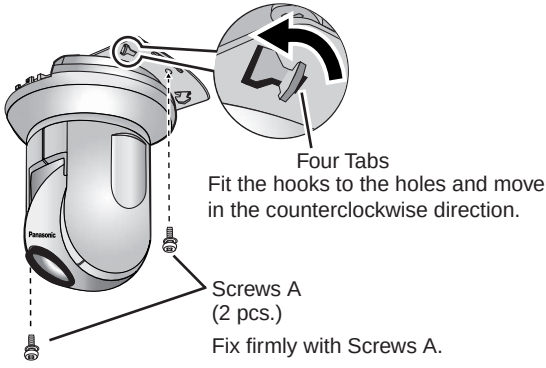


3. Fix the rubbers and dents of Network Camera to the Ceiling Plate A and fix them firmly.

- Make sure Network Camera, using coins etc., is firmly fixed.



4. Fix the Ceiling Plate A to the Ceiling Plate B and fix them firmly with Screws A.

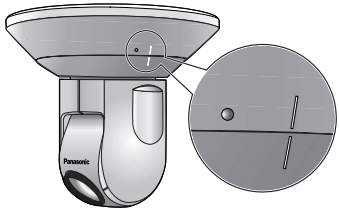


Note

Install Network Camera so that the connecting part comes to the front.

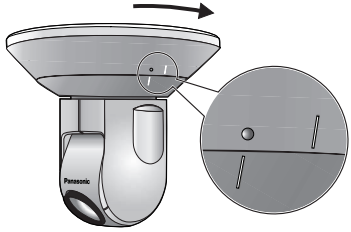
5. Connect the cable and fix the Ceiling Mounting Cover. Adjust the "l" of the main unit to the "l" of the Ceiling Mounting Cover.

- Be careful not to nip the cable etc.



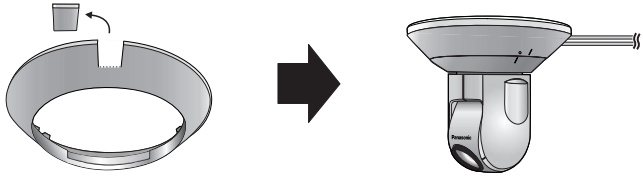
6. Move the Ceiling Mounting Cover in the clockwise direction until the "l" of it fits to the "•" of the main unit.

- When removing the Ceiling Mounting Cover, move it in the counterclockwise direction. Adjust both "l" and let down the main unit.



Wiring without making a hole for a cable in the ceiling

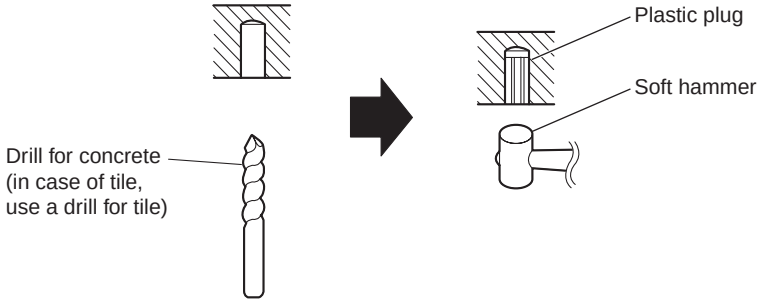
- Follow the steps 1), 3), 4), 5) and 6). Making a hole is not necessary.
- Remove the tab of Ceiling Mounting Cover and wire through the notch.



A Ceiling Mounting example (Making holes on mortar wall)

1. Fit the Ceiling Plate B to the mounting position and put marks.

2. Make holes at the marks and put plastic plugs (customer provided) into them.



Note

Mortar wall is easy to come off in drilling.

3. Mount Network Camera.

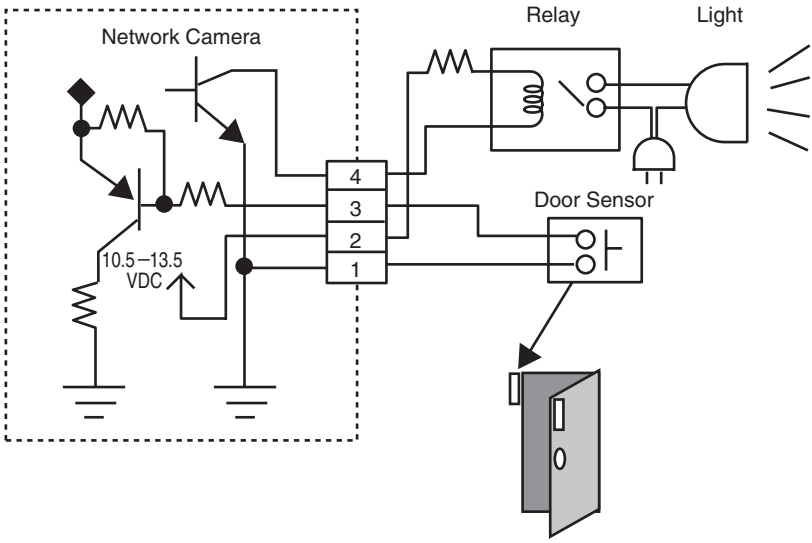
4.2 Interfacing to the External I/O

The Alarm mode in the Image Transfer feature requires the external sensors/ devices to be connected to the External Sensor Input of the External I/O. Certain features of this Network Camera can be activated by an external sensor that senses physical changes in the area Network Camera is monitoring. These changes can include motion detection or a physical change in the monitored area. The external sensor can also be a door switch or an infrared motion detector. These devices are customer provided, and are available from dealers who carry surveillance and security products. Electrically, they must be able to provide a momentary contact closure.

Explanation of External I/O

Pin	Function
1	GND
2	DC Power Output Terminal • 10.5—13.5 V DC • Maximum of 100 mA load drive is possible.
3	**External Sensor Input** • External Sensor Input receives the signal produced by the alarm sensors, (e.g., door sensor, infrared ray sensor). Those signals can activate Image Transfer in the Alarm mode feature on page 74. • Use it by opening or GND short-circuit.
4	**External Device Control Output** • External Device Control Output sends the electric current to activate the external devices, (e.g., light, buzzer). • **External Output Control window** can set the External Device Control Output. Refer to page 89. • It is an open collector circuit, and the maximum drawing-in current is 100 mA. Prevent the maximum voltage from exceeding DC Power Output voltage of pin 2.

Circuit Diagram Example



CAUTION

- THE EXTERNAL I/O IS NOT CAPABLE OF CONNECTING DIRECTLY TO DEVICES THAT REQUIRE LARGE AMOUNTS OF CURRENT. IN SOME CASES, A CUSTOM INTERFACE CIRCUIT (CUSTOMER PROVIDED) MAY HAVE TO BE USED. SERIOUS DAMAGE TO NETWORK CAMERA MAY RESULT IF A DEVICE IS CONNECTED TO THE EXTERNAL I/O THAT EXCEEDS ITS ELECTRICAL CAPABILITY.
- THE LOW VOLTAGE/CURRENT CIRCUITS AND HIGH VOLTAGE/ CURRENT CIRCUITS ARE IN THE NETWORK CAMERA CIRCUIT. THE QUALIFIED ELECTRICIAN SHOULD DO THE WIRING NOT BY YOURSELF. INCORRECT WIRING COULD DAMAGE NETWORK CAMERA. YOU COULD RECEIVE THE FATAL ELECTRIC SHOCK.
- External I/O (Input/Output) are independent. Output terminal is controlled only by External Output Control window on page 89.

4.3 ASCII and ISO-8859-1 Character Table

The characters of the ASCII character table are available for use in the various setup windows.

IP addressing (Assignment of the IP address)

Address consists of one to four numbers (0—255). By far most common form is four decimal numbers, (e.g., 192.168.0.253).
("0.0.0.0" and "255.255.255.255" are not available.)

Unavailable character set 1

[Space], ["], ['], [#], [&], [%], [=], [+], [?], [<], [>] and [:] are not available.

Unavailable character set 2

[Space], ["], ['], [#], [&], [%], [=], [+], [?], [<], [>] and [:] are not available.
Character set is like [text] + [@] + [text] + [.] + [text].

ASCII Character Table

(space)
!
"
#
$
%
&
'
(
)
*
+
,
-
.
/
	0
	1
	2
	3
	4
	5
	6
	7
	8
	9
	:
	;
	<
	=
	>
	?
		@
		A
		B
		C
		D
		E
		F
		G
		H
		I
		J
		K
		L
		M
		N
		O
			P
			Q
			R
			S
			T
			U
			V
			W
			X
			Y
			Z
			[
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				a
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					p
					q
					r
					s
					t
					u
					v
					w
					x
					y
					z
					{
					|
					}
					~

Displayable character set

Network Camera can display ISO-8859-1 character set for West European languages and the Shift-JIS character set for Japanese. Network Camera screen may display the unreadable characters if the operating system or the entered character set is different from the language selected on Top View Image Setting window.

ISO-8859-1 Character Table

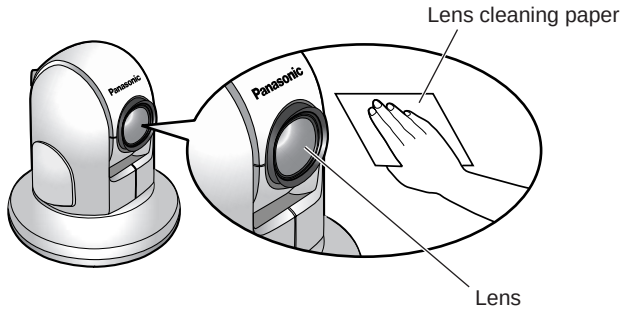
¡ ¢ £ ¤ ¥ ¦ § ¨ © ª « ¬ - ® ¯	° ± ² ³ ´ µ ¶ · ¸ ¹ º » ¼ ½ ¾ ¿	À Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï	Ð Ñ Ò Ó Ô Õ Ö × Ø Ù Ú Û Ü Ý Þ ß	à á â ã ä å æ ç è é ê ë ì í î ï	ð ñ ò ó ô õ ö ÷ ø ù ú û ü ý þ ÿ

4.4 Maintenance

To keep Network Camera functioning in good condition, maintenance plays an important part. Keep maintenance when using Network Camera. After removing dust from the lens with an air blower, wipe the lens with lens cleaning paper. Turning off the power is recommended when cleaning.

Lens

- When the power is on, do not manually revolve the Pan/Tilt. Revolving it forcedly or moving it manually by some mistake may damage the Pan/Tilt operation, or change the registered Pan/Tilt positions from actual ones. Restart Network Camera when the latter case happens.
- Do not touch the lens. Touching it can remove the protective coating from the lens. Fingerprints, dust, stains, etc. on the lens can also degrade the performance of the Automatic Focusing feature.
- Clean the lens with lens cleaning paper.



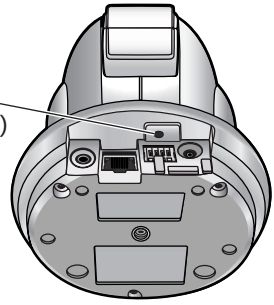
Section 5

Specifications and Troubleshooting

5.1 Network Camera Reset Procedure—Default Settings

If the user forgets settings or passwords, Network Camera can be easily reset to the default settings. The FACTORY DEFAULT RESET button initializes all the parameters except Date and Time setting.
With power on, press the **FACTORY DEFAULT RESET button** for about one second. Indicator changes such as **Orange blinking twice** –> **Turning off about 15 seconds**. Initializing takes about one minute. Pan/Tilt motors will set to the home position.

FACTORY DEFAULT RESET button
(Press the button with a pointed object)



Note

When pressing the **FACTORY DEFAULT RESET button**, all buffered images are cleared.

5.2 Default Settings List

No	Items	Factory Default value	Indispensable setting	Note
1	**Network**			
	1. Network Configuration	Checked	-	-
	2. Port No.	80	-	1–65535
	Static : IP Address	192.168.0.253	If necessary	(*1)
	Static : Subnet Mask	255.255.255.0	If necessary	(*1)
	DHCP : Host Name	[Blank]	If necessary	(*3) 0 to 63 Characters
	Connection Type	Auto Negotiation	-	-
	3. Default Gateway	[Blank]	Required when using Gateway	(*1)
	4. DNS Server1 & DNS server 2	[Blank]	Required when using DNS	(*1)
	5. DDNS	No check	-	-
	Your e-mail address	[Blank]	Required when using DDNS	(*4) 5 to 255 Characters
	6. Max Bandwidth usage (Mbps)	Unlimited	-	0.1, 0.2, 0.3, 0.5, 1.0, 2.0, 3.0, 5.0 Unlimited
2	**Name/Time**			
	1. Camera Name	NetworkCamera	-	(*3) and (*7) 1 to 15 Characters
	2. Date and Time (AM/PM, 24H)	AM/PM	-	-
	2. Date and Time (Year/Month/Day/Hour/Minute)	No changing	-	-
	3. Auto Adjustment	No check	-	-
	NTP Server Address or Host Name	[Blank]	-	(*1) or (*3) 1 to 255 Characters
	Time Zone	GMT-05:00	-	-
3	**Security: Administrator**			
	1. Authentication Enable	None	-	-
	2. ID	[Blank]	Required when setting Authentication	(*3) 4 to 15 Characters
	Password	[Blank]	Required when setting Authentication	(*3) 4 to 15 Characters
	Retype Password	[Blank]	Required when setting Authentication	(*3) 4 to 15 Characters
4	**Security: General User**			
	(1.) User ID List	No entry	-	-
	(2.) New User: ID	[Blank]	Required when setting General User	(*3) 4 to 15 Characters
	New User: Password	[Blank]	Required when setting General User	(*3) 4 to 15 Characters
	New User: Retype Password	[Blank]	Required when setting General User	(*3) 4 to 15 Characters
5	**Top View Image Setting**			
	1. Language	English (US)	-	French, German, Italian, Spanish, Japanese, etc.
	2. Top Page title	[Blank]	-	(*6) and (*7) 0 to 63 Characters
	Image URL	[Blank]	-	(*8) 0 to 127 Characters
	Link URL	[Blank]	-	(*8) 0 to 127 Characters

No	Items		Factory Default value	Indispensable setting	Note
5	**Top View Image Setting**	3. Single Camera Image Resolution	320 x 240	-	160 x 120, 320 x 240, 640 x 480
		Image Quality	Standard	-	Favor Clarity, Standard, Favor Motion
		Refresh Interval	30 s	-	10, 15, 20, 25, 30,45 s, 1, 2, 3, 5 min
		4. Multi-Camera Image Resolution	320 x 240	-	160 x 120,320 x 240
		Image Quality	Standard	-	Favor Clarity, Standard, Favor Motion
		Refresh Interval	30 s	-	10, 15, 20, 25, 30,45 s, 1, 2, 3, 5 min
		5. Limit time of Continuous Motion JPEG	Unlimited	-	10 s—Unlimited
		6. Always/Operational between	Always	-	-
		Time 1 — 4	0h 0min — 0h 0min	-	-
		Day-of-the-week setting	All checked	-	-
6	**Image Transfer**	1. Trigger Setting	Non transfer	-	-
	1. Non transfer	2. Capture Control	Enable	-	-
	1. Alarm	2. (1) Always/Operational between	Always	-	-
		Start time	00:00:00	-	-
		Stop time	23:59:59	-	-
		Day-of-the-week setting	All checked	-	-
		Alarm enable condition	Rising	-	-
		(2)Secondary Time	No check	-	-
		Alarm enable condition,	Rising	-	-
		3. (1) Image Resolution	320 x 240	-	160 x 120, 320 x 240, 640 x 480
		(2) Image Quality	Standard	-	Favor Clarity, Standard, Favor Motion
		4. (1)Pre-alarm Image Buffer	No check	-	-
		Image Frequency	1 Image/Hour	-	1—30
		Maximum number of image per each trigger	1	-	1—3000
		(2)Post-alarm Image Buffer	Checked	-	-
		Image Frequency	1 Image/Hour	-	1—30
		Maximum number of image per each trigger	1	-	1—3000

No	Items		Factory Default value	Indispensable setting	Note
6	1. Alarm	5. Non Transfer without Memory Over Write	Selected	-	-
		Non Transfer with Memory Over Write	Not-selected	-	-
		FTP	Not-selected	-	-
		Server Address or Host Name	[Blank]	Required when using FTP	(*1) or (*3) 1 to 255 Characters
		Port No. (Usually Use 21)	21	Required when using FTP	1—65535
		Login ID	[Blank]	If necessary	(*3) 0 to 63 Characters
		Password	[Blank]	If necessary	(*3) 0 to 63 Characters
		Login timing	Every Time	-	Every Time, One Time
		Upload File Name	[Blank]	Required when using FTP	(*3) 1 to 234 Characters
		Over write setting	Over Write to Fixed Upload File Name	-	-
		Data transfer method	Passive Mode	-	Passive Mode, Active Mode
		Mail	Not-selected	-	-
		SMTP Server Address or Host Name	[Blank]	Required when using Mail	(*1) or (*3) 1 to 255 Characters
		POP3 Server Address or Host Name	[Blank]	Required when using POP authentication	(*1) or (*3) 1 to 255 Characters
		Login ID	[Blank]	Required when using POP authentication	(*3) 0 to 63 Characters
		Password	[Blank]	Required when using POP authentication	(*3) 0 to 63 Characters
		From (Reply)	[Blank]	Required when using Mail	(*4) 5 to 63 Characters
		To	[Blank]	Required when using Mail	(*4) 5 to 63 Characters
		Subject	[Blank]	-	(*2) and (*7) 0 to 44 Characters
		Text	[Blank]	-	(*2) and (*7) 0 to 63 Characters
		6. No Message	Selected	-	-
		Mail	Not-selected	-	-
		SMTP Server Address or Host Name	[Blank]	Required when using Mail	(*1) or (*3) 1 to 255 Characters
		POP3 Server Address or Host Name	[Blank]	Required when using POP authentication	(*1) or (*3) 1 to 255 Characters
		Login ID	[Blank]	Required when using POP authentication	(*3) 0 to 63 Characters
		Password	[Blank]	Required when using POP authentication	(*3) 0 to 63 Characters
		From (Reply)	[Blank]	Required when using Mail	(*4) 5 to 63 Characters
		To	[Blank]	Required when using Mail	(*4) 5 to 63 Characters
		Subject	[Blank]	-	(*2) and (*7) 0 to 63 Characters
		Text	[Blank]	-	(*2) and (*7) 0 to 63 Characters

No	Items		Factory Default value	Indispensable setting	Note
	1. Timer	2. (1) Always/Operational between	Always	-	-
		Start time	00:00:00	-	-
		Stop time	23:59:59	-	-
		Day-of-the-week setting	All checked	-	-
		(2) Secondary Time	No check	-	-
		3. (1) Image Resolution	320 x 240	-	160 x 120, 320 x 240, 640 x 480
		(2) Image Quality	Standard	-	Favor Clarity, Standard, Favor Motion
		4. (1) Primary Image Buffer Frequency	1 Image/Hour	-	1—30
		(2) Secondary Image Buffer Frequency	1 Image/Hour	-	1—30
		5. Non Transfer without Memory Over Write	Selected	-	-
		Non Transfer with Memory Over Write	Not-selected	-	-
		FTP	Not-selected	-	-
		Server Address or Host Name	[Blank]	Required when using FTP	(*1) or (*3) 1 to 255 Characters
		Port No. (Usually Use 21)	21	Required when using FTP	1—65535
		Login ID	[Blank]	If necessary	(*3) 0 to 63 Characters
		Password	[Blank]	If necessary	(*3) 0 to 63 Characters
		Login timing	Every Time	-	Every Time, One Time
		Upload File Name	[Blank]	Required when using FTP	(*3) 1 to 234 Characters
		Over write setting	Over Write to Fixed Upload File Name	-	-
		Data transfer method	Passive Mode	-	Passive Mode, Active Mode
		Mail	Not-selected	-	-
		SMTP Server Address or Host Name	[Blank]	Required when using Mail	(*1) or (*3) 1 to 255 Characters
		POP3 Server Address or Host Name	[Blank]	Required when using POP authentication	(*1) or (*3) 1 to 255 Characters
		Login ID	[Blank]	Required when using POP authentication	(*3) 0 to 63 Characters
		Password	[Blank]	Required when using POP authentication	(*3) 0 to 63 Characters
		From (Reply)	[Blank]	Required when using Mail	(*4) 5 to 63 Characters
		To	[Blank]	Required when using Mail	(*4) 5 to 63 Characters
		Subject	[Blank]	-	(*2) and (*7) 0 to 44 Characters
		Text	[Blank]	-	(*2) and (*7) 0 to 63 Characters

No	Items		Factory Default value	Indispensable setting	Note
7	Camera Setup	1. White Balance	Auto	-	Auto, Fixed (Indoor/Fluorescent_1/ Fluorescent_2/Outdoor), Hold
		2. Power Line Frequency	60 Hz	-	60 Hz, 50 Hz
		3. Brightness Control	Enable	-	-
		4. Pan/Tilt/Preset Control	Enable	-	-
		5. Preset Program Control	Enable	-	-
		6. Zoom Control	Enable	-	-
		7. Focus Control	Enable	-	-
		8. Pan Range (Minimum)	-175 degree	-	-175 — +175 degree, current
		(Home Position)	0 degree	-	-175 — +175 degree, current
		(Maximum)	+175 degree	-	-175 — +175 degree, current
		9. Tilt Range (On the table)	Selected	-	-
		(Minimum)	-120 degree	-	-120 — 0 degree, current
		(Home Position)	-90 degree	-	-120 — 0 degree, current
		(Maximum)	0 degree	-	-120 — 0 degree, current
		Tilt Range (On the ceiling)	Not-selected	-	-
		(Minimum)	0 degree	-	0 — +90 degree, current
		(Home Position)	+90 degree	-	0 — +90 degree, current
		(Maximum)	+90 degree	-	0 — +90 degree, current
8	Multi-Camera	1. 2nd Network Camera	No check	-	-
		IP Address or Host Name	[Blank]	Required when using Multi-Camera	(*1) or (*5) 1 to 255 Characters
		Camera Name	[Blank]	Required when using Multi-Camera	(*3) and (*7) 1 to 15 Characters
		2. 3rd Network Camera	No check	-	-
		IP Address or Host Name	[Blank]	Required when using Multi-Camera	(*1) or (*5) 1 to 255 Characters
		Camera Name	[Blank]	Required when using Multi-Camera	(*3) and (*7) 1 to 15 Characters
		3. 4th Network Camera	No check	-	-
		IP Address or Host Name	[Blank]	Required when using Multi-Camera	(*1) or (*5) 1 to 255 Characters
		Camera Name	[Blank]	Required when using Multi-Camera	(*3) and (*7) 1 to 15 Characters
9	External Output Control	1. Open/Short to GND	Open	-	-

No	Items		Factory Default value	Indispensable setting	Note
10	**Indicator Control**	1. Turn on the Indicator during Power ON	Selected	-	-
		1. Turn on the Indicator during Camera access	Not-selected	-	-
		1. Turn off the Indicator always	Not-selected	-	-
11	**Update Firmware**	File Name	[Blank]	Required when using Update Firmware	-

(*1): Address must be composed of four numeral characters (0 to 255) and divided with 3 dots, such as 192.168.0.253. (Cannot use "0.0.0.0" and "255.255.255.255")
(*2): Only ['] is unavailable in the ASCII characters.
(*3): [Space], ["], ['], [#], [&], [%], [=], [+], [?], [<], [>] and [:] are not available in the ASCII characters.
(*4): [Space], ["], ['], [#], [&], [%], [=], [+], [?], [<], [>] and [:] are not available in the ASCII characters and the character set is like [text] + [@] + [text] + [.] + [text]
(*5): [Space], ["], ['], [#], [&], [%], [=], [+], [?], [<] and [>] are not available in the ASCII characters.
(*6): ["], ['], [#], [&], [%], [=], [+], [?], [<], [>] and [:] are not available in the ASCII characters.
(*7): ISO-8859-1 character set for West European language and Shift-JIS character set for Japanese are available.
(*8): Only [space] and ["] are unavailable in the ASCII characters.

5.3 Specifications

Network Camera Specifications

Item	Description
Pan/Tilt Angle	Pan: -175° to +175°, Tilt: -120° to 0° (On the table)/ 0° to +90° (On the ceiling)
Sensor Type	1/4-inch CCD (Interlace type)
Number of Pixels	380,000 pixels (Effective Pixels)
Illumination	3—100,000 lx
White Balance	Auto/Manual/Hold
Focus	Auto/Manual (40 steps)
Zoom	21x Optical Zoom (10 steps)
Minimum Object Distance	Wide: 5 mm (0.2 inches) Tele: 1 m (40 inches)
Caliber Ratio (F No.)	F1.6—3.6
Horizontal Viewing Angle	Tele: 2.6°, Wide: 51°
Exposure	Auto

Other Specifications

Item	Description
Video Compression	JPEG/3 Levels
Video Resolution	640 x 480, 320 x 240 (default), 160 x 120
Buffered Image*[1]	About 560 frames (320 x 240) with time display
Magnification	100% or 150%
Frame rate*[2]	Max. 10 frames/second (640 x 480*[4]) Max. 30 frames/second (320 x 240) Max. 30 frames/second (160 x 120)
Supported Protocols	TCP, UDP, IP, HTTP, FTP, SMTP, POP3, DHCP, DNS, DDNS, ARP, ICMP, NTP

Item	Description
Message Transferring Condition	When detecting the alarm
Message Transferring Method	SMTP
Image Transferring Condition	Timer: Day of the Week/Hour/Minute/Second Alarm: External Sensor Input
Image Transferring Method	SMTP, FTP
Interface	10Base-T/100Base-TX Ethernet RJ-45 connector x 1
External I/O*3	External Sensor Input x 1 External Device Control Output x 1
Indicator Display	Power/Network Communication/Network Camera operation/Ethernet link
Video Output	Analog Composite
Dimension (HWD)	140 mm (5.51 inches) x 123 mm (4.47 inches) x 123 mm (4.47 inches)
Weight	645 g (1.42 lb.) (Only the unit)
Power Supply	AC adaptor: Input 120 V AC Output 12 V DC Consumption: 12 W
Condition	Operation temperature: 0 °C to +40 °C (+32 °F to +104 °F) Storage temperature: 0 °C to +50 °C (+32 °F to +122 °F) Humidity: 20% to 80% (No Condensation)
Setting Angle	Available between ±15° based on level line for mounting both on the table and on the ceiling.

*1 The maximum number of frames depends on the image quality and the object situation in Buffered Image.

*2 Frame rate varies with the network condition, the PC performance, the image quality and the object situation.

*3 A sensor must be attached to Network Camera in order to utilize the alarm trigger.

*4 Scan lines may deviate when viewing moving objects with resolution at 640 x 480 because of the interlace-type CCD. Selecting 320 x 240 offers the good compromise between speed and resolution.

5.4 Troubleshooting

About Network Camera Setup

Problem	Cause and Remedy
When Setup CD-ROM cannot find Network Camera.	• Reconnect the AC adaptor if installation is not completed within 20 minutes. • Do not connect Network Camera over a broadband router. Setup program cannot detect Network Camera. • If IP address is not assigned to the PC, setup program cannot find Network Camera. Confirm that IP address is assigned to the PC in the way shown on page 23. IP address of the PC can be assigned on **TCP/IP Properties window** to access through the steps in the **TCP/IP Properties Table** on page 127. • Confirm that the Network Configuration from setup program is enabled on **Network window** on page 60. • When you set up Network Camera in **[Type 3]**, connect temporarily Network Camera in **[Type 1]**, **[Type 2]** or **[Type 4]**. • Antivirus software on the PC may interfere with the setup program. Disable the firewall of the antivirus software only when setting up Network Camera.
When Setup program fails to save the network parameters.	• Reconnect the AC adaptor if installation is not completed within 20 minutes. • Network may have the trouble. Confirm the parameters and the connections of Network Camera through page 18—page 31.

About Network Camera Setup

<table>
<tr><th>Problem</th><th>Cause and Remedy</th></tr>
<tr><td>When Top Page does not appear.</td><td>

Enter the correct IP address on the web browser.
IP address and Subnet Mask of the PC and the Network Camera must be in the same class of the private IP address on the LAN. Refer to page 25.
The network congestion prevents Top Page from appearing quickly. Wait for a while.
A proxy server may prevent you from connecting directly to Network Camera, set up not to use the proxy server. Refer to page 26 for details.
When Top Page does not appear, port number 80 might not be available. Ask your ISP for the available port number.
When you use DDNS, you need to set Default Gateway and DNS server address. Refer to page 60 for Network window.
When the connection type of the connected Ethernet hub or Ethernet jack of the PC is manually set at Full Duplex, set the connection type of Network Camera manually at Full Duplex. Connection may not be realized depending on the combination of transmission speed (10M/100M) of ports and connection type (Full Duplex/Half Duplex). Follow the table below on the combination of transmission speed of ports and connection type.
<table>
<tr><th colspan="2">Network Camera / Router hub etc.</th><th>Auto Negotiation</th><th colspan="2">100Base-TX</th><th colspan="2">10Base-TX</th></tr>
<tr><th colspan="2"></th><th></th><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>

If Top Page does not appear in the above procedure, press the FACTORY DEFAULT RESET button and set up with the Setup CD-ROM again.
The procedure on page 127 can establish if Network Camera has a defect.

</td></tr>
</table>

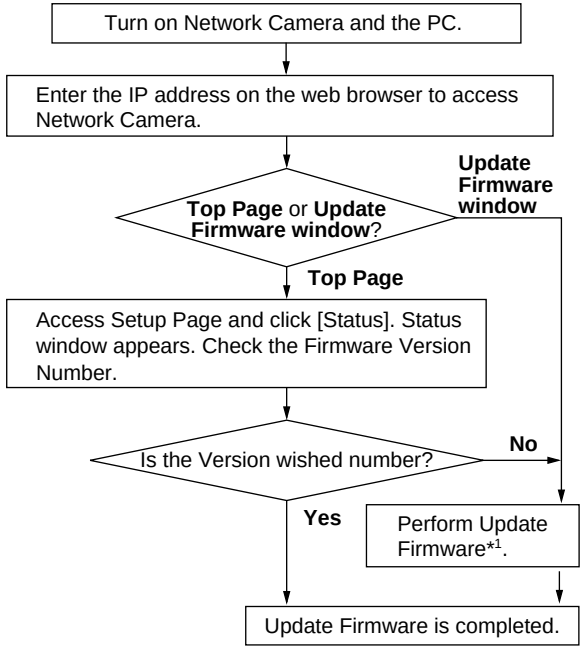
About Network Camera Setup

Problem	Cause and Remedy
Top Page does not appear in the Internet Connection.	• Confirm that Default Gateway address is correct on **Network window** on page 60. • The broadband router needs Port Forwarding (IP Masquerade) feature. Refer to the broadband router's manual for details. • Packet Filtering of the broadband router may prohibit access from an external network. Refer to the broadband router's manual for details. • Access Network Camera from the Internet with the global IP address of the broadband router and port number of Network Camera. • Some broadband routers reject the global IP address to access Network Camera on the same LAN. Access with the private IP address of Network Camera.
When forgetting the IP address of the Network Camera.	Check an IP address by using the Setup CD-ROM. **Network Camera List window** on page 29 can tell you the IP address of Network Camera.
When forgetting the password to access Setup Page.	Follow the steps below. **1.** Initialize Network Camera by pressing the FACTORY DEFAULT RESET button. **2.** Reconfigure Network Camera.
Indicator does not light up.	• Confirm that the standard AC adaptor PSLP1242 (Order No. PSLP1242Z) is used. • Confirm that the Indicator Control is disabled. Refer to page 90 for **Indicator Control window**.
Indicator is orange.	• Ethernet cable is not connected properly. • PC, Ethernet hub or broadband router is not working.
Green indicator continues blinking.	Internal Failure of the server or the congestion on the network traffic when using DHCP may prevent Network Camera from getting the IP address. Ask the network administrator or your ISP.
Orange indicator continues blinking.	Orange indicator blinks when updating firmware on page 93. When the Update Firmware failed, refer to page 123.

About Network Camera Setup

Problem	Cause and Remedy
Red indicator continues blinking.	If you cannot access Network Camera, the Network Camera hardware may be defective. Call our customer call center.
Image Transfer on e-mail or FTP does not work.	• Default Gateway and DNS server address should be set up on **Network window** on page 60. • If FTP does not work properly, ask your ISP or network administrator about the transferring mode of FTP server. [Passive Mode] or [Active Mode] is available. • Select [One Time] for Login Timing when transferring images by FTP in short duration time.
Timer mode transfers older images.	Short interval of Image Buffer Frequency makes Network Camera transfer the older images. Set the interval long enough to transfer the images. Buffered Image screen enables you to check this setting.

About Network Camera Setup

Problem	Cause and Remedy
Update Firmware has not finished.	When Update Firmware is interrupted by power off, or for network troubles and other problems, follow the procedure below.  *1 Refer to page 93 for the Update Firmware.

About Top View Image screen

Problem	Cause and Remedy
The Top View Image screen (Single Camera/ Multi-Camera) does not appear.	• If you are using Internet Explorer, the first time the PC connects to Network Camera, a pop-up **Security Warning window** will appear to download ActiveX Controls. When using Windows NT, Windows 2000 or Windows XP, log on with an appropriate account that is authorized to install applications. Refer to page 39 for ActiveX Controls. • On the Air time setting on page 70 may restrict the access to Top View Image screen. Blue screen appears. • Maximum 30 users can view the Motion JPEG simultaneously on the network. The 31st user views the blue screen on the Network Camera screen. Blue screen appears. • Network congestion may prevent the Top View Image screen from appearing quickly. Wait for a while. • The proxy server may prevent you from connecting directly to Network Camera, set up not to use the proxy server. Refer to page 26 for details.
Pan/Tilt, Zoom and Focus do not work. (including Click to Center and Preset Positioning)	• Click **[Refresh]** on the web browser when the communication stops with Network Camera. The image will refresh. • Other clients may be operating Pan/Tilt. • Pan/Tilt operation has reached the end of corner. Confirm End Display appears on operation bar on page 42. • The Pan/Tilt operation may be locked. Refer to page 84 for **Camera Setup window**. • Pan/Tilt Range values may have been specified. Assign appropriate Pan/Tilt Range values. Refer to page 84 for Camera Setup window. • [Disable] may have stayed checked for Active scripting of web browser. Checking [Enable] for Active scripting is necessary. Following the next steps, change a Security setting and access Network Camera again. **1.** Click **[Tools]** –> **[Internet Options]** –> **[Security] tab** and click **[Custom level]** in Security level for this zone. **2.** Check [Enable] for Active scripting on Security Settings window.

About Top View Image screen

Problem	Cause and Remedy
Registered Pan/Tilt positions noticeably deviate from actual ones.	When moving Pan/Tilt not using the operation bar, e.g. revolving it manually, restart Network Camera.
Image is out of focus.	• The lens is dirty or dust is attached. Fingerprints, dust, stains, etc. on the lens can degrade the performance of the Automatic Focusing feature. Clean the lens with lens cleaner. • Manual focusing may be set. Press appropriate one of the Focus buttons at the operation bar. Refer to page 46 for Focus buttons. • Blurred images may have been registered when registering or modifying the preset button or home position button. Adjust the focus in manual focusing again, or press the AF button. • The image may be out of focus, if the object is too near, or depending on the zoom position. Move the object off Network Camera, or adjust the zoom position. • Some objects are difficult to focus on by AF button. Press the AF button and put it into operation again. When the objects are still out of focus, adjust the focus using manual focusing, or change the objects using Pan/Tilt operation or Zooming features. Refer to page 46.
The color of the image is strange.	• Adjust White Balance by **Camera Setup window**. Refer to page 84. • To insure the images you are viewing are the best they can be, set the Display property setting (color quality) to 24 bit or higher. Refer to page 10.
Image flickers.	• If the object is dark, the image will flicker. Make the condition around Network Camera brighter. • Wrong power line frequency makes images flicker. Refer to page 84.

About Top View Image screen

Problem	Cause and Remedy
Refresh interval is longer than the setup.	• The traffic of the network, PC performance and the object of the image affect the refresh interval. The network congestion causes refresh interval slower than the set up. • When more than one client were viewing, the refresh interval becomes slower. • Ethernet switching hub can smooth the refresh interval especially in viewing on the Multi-Camera screen. • Restrict the Max. Bandwidth Usage to improve network traffic in viewing on the Multi-Camera screen. Refer to page 63.
Scan lines deviate on the screen.	Scan lines may deviate when viewing moving objects with resolution at 640 x 480 because of the interlace-type CCD. Selecting 320 x 240 offers the good compromise between speed and resolution.
Suddenly image changes to JPEG - Regularly Refresh.	The duration time to display Motion JPEG is limited on **Top View Image Setting window** on page 70.
Only half of the image is displayed.	If using Internet Explorer 4.0, use Internet Explorer 5.0 or later.
The unreadable characters are displayed.	• Use the operating system of the selected language. • Set the Encoding or the Character Set of the selected language on the web browser.

About Other Troubles

Problem	Cause and Remedy
When 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)

5.5 Confirmation of Network Camera Operation

This procedure checks the Network Camera operation. IP address of the PC has to be on the same network to be able to access Network Camera. If Top Page appears, Network Camera has no defect.

1. Push the **FACTORY DEFAULT RESET button** as illustrated on page 109. All settings on Network Camera will be set to default.
2. Connect locally between the PC and Network Camera like **[Type 1]** or **[Type 4]** configuration type shown on page 18 and page 19.
3. Follow the next steps distinguished by the operating system in the next table to open **TCP/IP Properties window**.

TCP/IP Properties Table

Operating System	Steps
Windows 95 Windows 98 Windows Me	**[Start]** –> **[Settings]** –> **[Control Panel]** –> **[Network]** –> **Select [TCP/IP] with adaptor in use** –> **[Properties]** –> **[Specify an IP address]**
Windows NT	**[Start]** –> **[Settings]** –> **[Control Panel]** –> **[Network]** –> **[Protocols] tab** –> **[TCP/IP Protocol]** –> **[Properties]** –> **Select [Adaptor] in use** –> **[Specify an IP address]**
Windows 2000	**[Start]** –> **[Settings]** –> **[Control Panel]** –> **[Network and Dial-up Connections]** –> **[Local Area Connection Icon] in use** –> **[Properties]** –> **Select Internet Protocol [TCP/IP]** –> **[Properties]** –> **[Use the following IP address]**
Windows XP	**[Start]** (–> **[Settings]**) –> **[Control Panel]** –> **[Network and Internet Connections]** –> **[Network Connections]** –> **[Local Area Connection Icon] in use** –> **[Properties]** –> **Select Internet Protocol [TCP/IP]** –> **[Properties]** –> **[Use the following IP address]**

Note

When using Windows NT, Windows 2000 and Windows XP, log on as an administrator to access **TCP/IP Properties window**.

4. Record the current **TCP/IP properties** of the PC. They are important in the later procedure to set the TCP/IP properties of the PC back.
5. Enter "192.168.0.250" in the IP address field and "255.255.255.0" in the Subnet Mask field and click **[OK]**.
   (Windows 95, Windows 98 and Windows Me must restart to activate the entered TCP/IP properties.)
   - Set up the unique IP address which does not overlap other IP addresses on the network. Overlapped IP addresses on the network cause the disorder of the network.
6. Start up the web browser. Enter **"http://192.168.0.253"** in the address field and press **[Enter]**. If Top Page appears, Network Camera has no defect.

Click the language to change the display.

Note

The proxy server may prevent you from connecting directly to Network Camera. Refer to page 26.

7. Set the TCP/IP properties of the PC back to the previous settings recorded in step 4.

5.6 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.

Environment: Do not install Network Camera where the temperature is less than 0 °C (+32 °F) or greater than +40 °C (+104 °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, unplug the AC adaptor from the outlet.

If there is any trouble: Consult an authorized Panasonic Factory Service Center.

CAUTION:
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 or the damage or both of Network Camera.

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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.
- 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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