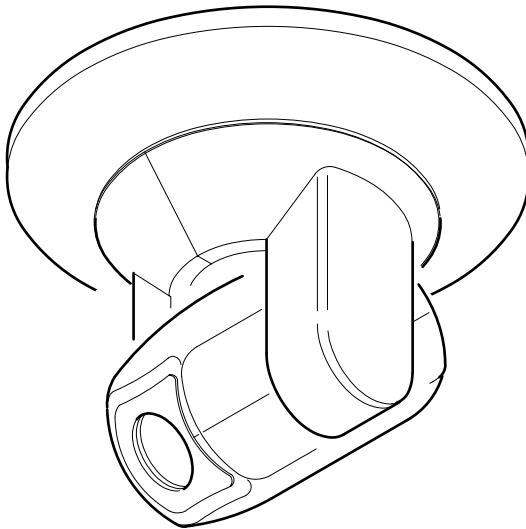# TOSHIBA

## NETWORK CAMERA

## Model: IK-WB21A

## Advanced User's Guide

For information on the latest products and peripheral devices, refer to
the following Web page.
■ http://www.netcam.toshiba.com

The above URL is subject to change without prior notice. If the URL
changes, refer to the Toshiba website
(http://www.toshiba.com).

# Introduction

FCC(US) Information

FC  Tested To Comply
With FCC Standards
FOR HOME OR OFFICE USE

Product Name : NETWORK CAMERA
Model Number(s) : IK-WB21A

FCC Notice "Declaration of Conformity Information"

This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions :
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

Toshiba America Information System, Inc.
Security & Network Video Products
9740 Irvine Boulevard,
Irvine, California 92618-1697
(877)696-3822

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.
Warning : Changes or modifications made to this equipment, not expressly approved by Toshiba or parties authorized by Toshiba could void the user's authority to operate the equipment.

Canadian Information
Industry Canada
This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à norme NMB-003 du Canada.

Thank you for purchasing the IK-WB21A Network Camera. Before you start using the camera, read this User's Guide carefully to ensure correct usage. Once you have finished reading this User's Guide, keep it in a convenient place for future reference. The design, specifications, software, and User's Guide contents are subject to change without prior notice.
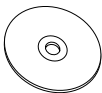This camera is for indoor use only. Do not install it outdoors.

## Terms and Trademarks

● The term "OS" is used in this manual to indicate operating systems compatible with this product.

  — Windows 2000: Microsoft® Windows® 2000 operating system

  — Windows XP: Microsoft® Windows® XP operating system

● The formal name of Windows® is Microsoft® Windows® Operating System.

● Microsoft® and Windows® are trademarks or registered trademarks of Microsoft® Corporation in the United States and other countries.

● Other product names appearing in this User's Guide may be trademarks or registered trademarks of their respective holders.
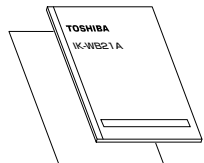
## Accessories

Confirm that all of the following accessories have been supplied with the network camera.

**CD-ROM (x1)**
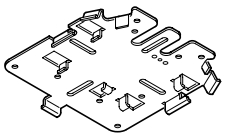The instruction manual and software Camera Finder are contained.
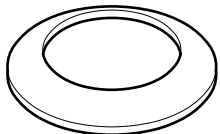
**Quick Start Guide (x1)**
**WARRANTY (x1)**

TOSHIBA
IK-WB21A

**AC adapter (x1)**
**Power cord (x1)**
**DC extension cable (x1)**

**Attachment for ceiling mounting (x1)**

**Cover for ceiling mounting (x1)**

**Ferrite core (x1)**
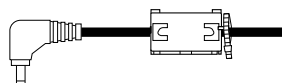See the following for ferrite core usage.

**Screw set**
Wood screws (x4)

Anchor (x4)

Using the ferrite core
One ferrite core is supplied with the camera. Use the core as illustrated below.
Non-use of the core generates undesired radio waves, potentially causing a system flaw.

Insert the DC power cable and fasten it with fastening bands.

# Table of Contents (Cont.)

# IMPORTANT SAFEGUARDS

### 1. Read Instructions

All the safety and operating instructions should be read before the product is operated.

### 2. Retain Instructions

The safety instructions and instruction manual should be retained for future reference.

### 3. Heed Warnings

All warnings on the product and in the instruction manual should be adhered to.

### 4. Follow Instructions

All operating and use instructions should be followed.

### 5. Cleaning

Disconnect this camera from the power supply before cleaning.

### 6. Attachments

Do not use attachments not recommended by the camera manufacturer as they may cause hazards.

### 7. Water and Moisture

Do not use this camera near water, for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool and the like.

### 8. Accessories

Do not place this camera on an unstable cart, stand, tripod, bracket or table. The camera may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with stand, tripod, bracket, or table recommended by the manufacturer, or sold with the camera. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

Viewing・Listening and Operation

Recording

Set up

Others

### 9. Ventilation

This camera should never be placed near or over a radiator or heat register. This camera should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

### 10. Power Sources

This camera should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your location, consult your product dealer.

### 11. Power-Cord Protection

Power-Supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, screws and the point where they exit from the product.

### 12. Installation

This camera should be installed on a firm and solid part of the ceiling or wall. If installed on a soft and weak place, the camera unit may fall. A person under it may be injured and things under it may be damaged.

### 13. Lightning

For added protection for this camera during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the outlet and disconnect the power supply and cable system. This will prevent damage to the camera due to lightning and power-line surges. If lightning occurs, do not touch the unit or any connected cables in order to avoid electric shock.

### 14. Overloading

Do not overload power supply and extension cords as this can result in a risk of fire or electric shock.

### 15. Object and Liquid Entry

Never push objects of any kind into this camera through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electrical shock. Never spill liquid of any kind on the camera.

### 16. Servicing

Do not attempt to service this camera yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

### 17. Damage Requiring Service

Disconnect this camera from the power supply and refer servicing to qualified service personnel under the following conditions.
a. When the power-supply cord or plug is damaged.
b. If liquid has been spilled, or objects have fallen into the camera.
c. If the camera has been exposed to rain or water.
d. If the camera does not operate normally by following the operating instructions in the instruction manual. Adjust only those controls that are covered by the instruction manual as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the camera to its normal operation.
e. If the camera has been dropped or the cabinet has been damaged.
f. When the camera exhibits a distinct change in performance-this indicates a need for service.

### 18. Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer with the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

### 19. Safety Check

Upon completion of any service or repairs to this camera, ask the service technician to perform safety checks to determine that the camera is in proper operating condition.

Introduction

Viewing • Listening
and Operation

Recording

Set up

Others

**CAUTION**
RISK OF ELECTRIC SHOCK
DO NOT OPEN

The CAUTION label, shown on the above part, is attached on the camera.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

FIELD INSTALLATION:
"THIS INSTALLATION SHOULD BE MADE BY A QUALIFIED SERVICE PERSON AND SHOULD CONFORM TO ALL LOCAL CODES."

· **Do not aim the camera at the sun**

Do not aim the camera at the sun or point it at sun even if you are not shooting.

· **Do not shoot intense light**

Intense light such as a spotlight may cause a bloom or smear. A vertical stripe may appear on the screen. However, this is not a malfunction.

· **Treat the camera with care**

Do not drop the camera or subject it to strong shock or vibration. Otherwise, the camera may malfunction.

· **Never touch internal parts**

Do not touch the internal parts of the camera other than the parts specified. Otherwise, the camera may malfunction.

· **Install the camera where no video noise appears**

If cables are wired near electric lighting wires or a TV set, noise may appear in images. In this event, relocate cables or reinstall equipment.

· **Check the ambient temperature and humidity**

Avoid using the camera where the temperature is hotter or colder than specified. Otherwise, the quality of images may deteriorate or internal parts may be affected. Special care is required to use the camera at high temperature and humidity.

· **Should you notice any trouble**

If any trouble occurs while you are using the camera, turn off the power and contact your dealer. Continued use in this state might cause fire or electric shock. For details on repair, consult the place of purchase, or please contact the technical support number.

Introduction

Viewing • Listening
and Operation

Recording

Set up

Others

# Precautions for Use

## SD Memory Card

● There is a limit to the number of rewrites that is possible with the SD memory card. Replacing the SD memory card when performing periodic maintenance of the camera is recommended.

● The camera supports the following SD memory cards. Do not use memory cards with other specifications.
SD memory card:     64, 128, 256, and 512 MB, 1 GB SD memory cards (3.3 V) supported.
Physical interface:    Part 1. Physical Layer Specification; Version 1.01

● Images may not be recorded or read correctly if an unsupported SD memory card is used with the camera.

● Carefully read the User's guide, precautions on use, and any other information supplied with a purchased memory card.

● An SD memory card can be used for the loop recording of images. The life-span (number of rewrites possible) of an SD memory card is greatly affected by the capacity of the SD memory card. The use of a 128, 256, or 512 MB, 1 GB large-capacity SD memory card is recommended for loop recording.

● To achieve maximum performance of the camera, the use of a Toshiba SD memory card is recommended. If a card of another company is used, the recording intervals may lengthen and the erasure time during overwriting may increase. As a result, the number of delivered frames of live video may decrease.

● Do not use a memory card containing the data recorded by another device with the camera as this may result in the camera not functioning correctly.

● Do not modify, overwrite the data, or change the folder name of an SD memory card. It may result in the camera not to function correctly.

● Data recorded with the camera do not comply with the image file format Exif and the DCF standard. If the SD memory card is to be removed to play images, use a personal computer to play the images. Other devices may not be capable of displaying the images.

# AC adaptor

Be sure to use only the supplied AC adaptor. Using a different AC adaptor may cause the camera to malfunction, heat up, or catch fire. Before using the AC adaptor, carefully read and observe the Important Safety Instructions (→page 7) and the notes below.

• Do not allow the connectors on the AC adaptor to come into contact with any other metal object as this may result in short circuit.

• To connect the AC adaptor, firmly insert the plug end of the cable into the AC adaptor jack. Do not insert the plug into other jacks as this may cause a malfunction.

• When removing the connection cable, disconnect the cable by holding its plug. Do not disconnect the cable by pulling on the cable.

• Do not drop the AC adaptor or subject it to strong impact.

• Do not use the AC adaptor in hot and humid places.

• Do not use the supplied AC adaptor with devices other than this camera.

• Temperature increasing on the surface of the adaptor is normal. Before moving the adaptor to another location, unplug it from the wall outlet, and wait until its temperature decreases.

• Buzzing noises may come from inside. This does not indicate malfunction.

• Using the AC adaptor near a radio, TV, or cellphone may cause interference. Use the adaptor at sufficient distances from these devices.

## Specifications

### AC adapter (ADPV16A)

| | |
|---|---|
| Power source | : AC 100-240V 50/60Hz 35W |
| Rated output | : DC 12V, 2A |
| Ambient temperature guaranteed for performance | : 23°F to 104°F |
| Storage temperature | : 23°F to 149°F |
| Maximum external dimensions (inch) | : 1.713 x 1.043 x 3.543 inch (Width x height x depth) |
| Cord length | : 47.244 inch |
| Length of DC extension cable | : 118.11 inch |

# Overview of the Network Camera

The IK-WB21A network camera can deliver video images and sound in real time using the Internet or an intranet. The camera is equipped with Ethernet (RJ-45) 10BASE-T/100BASE-TX network interfaces.
IK-WB21A can be used in various indoor environments.

IK-WB21A
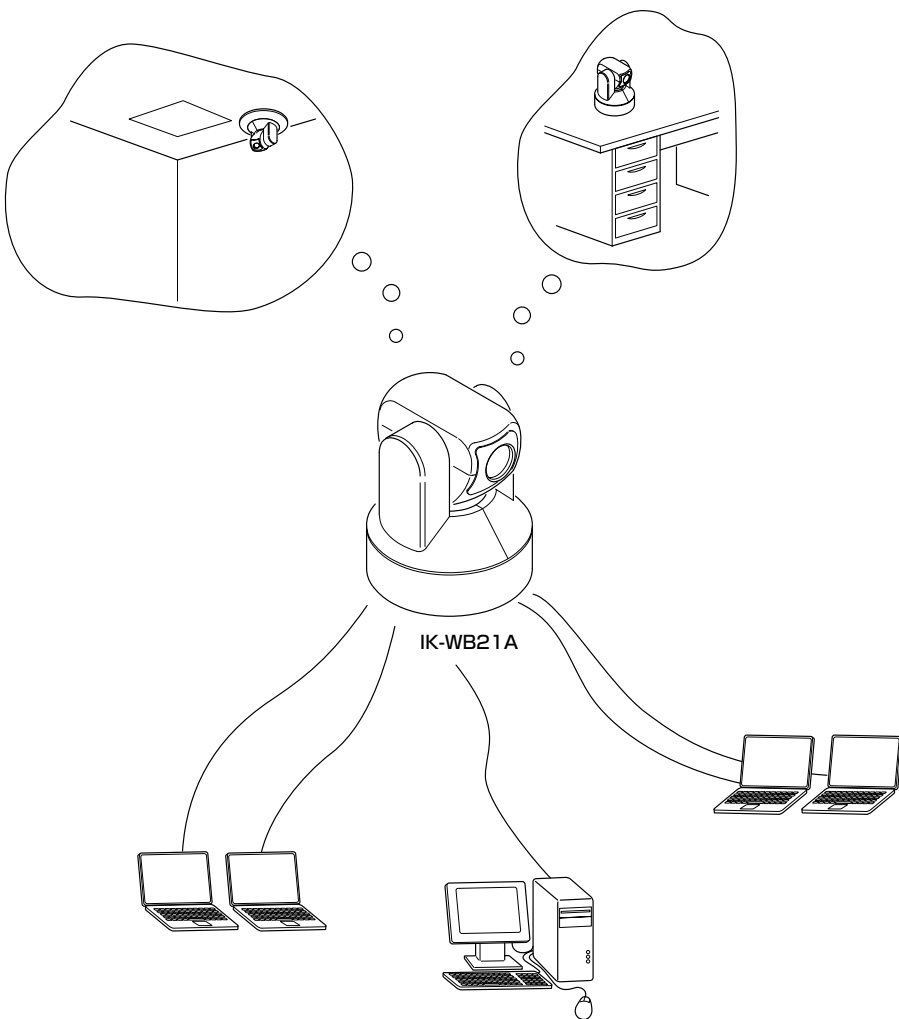
# Features of the Camera

● **Built-in pan/tilt mechanism**
A built-in pan (left/right) and tilt (up/down) mechanism enables you to use the Internet browser to change the direction of the camera lens. The camera also comes with Scan, Presets, Auto Patrol and various other monitoring features.

● **Motor powered 22x zoom lens**
Allows maximum magnification of 22 times.

● **A high-resolution picture element CCD packaged**
A high-resolution picture element progressive CCD (charge coupled device) built in the camera enables delivery of pictures maximum 1280 x 960 pixels. High-resolution pictures equal to those of a digital camera are delivered.

● **Supports multiple cameras**
Toshiba's original protocol, RNCP, allows Toshiba network cameras to identify each other on the same network. This enables images from automatically identified network cameras to be displayed in multi-view screen in the same browser window.
The number of windows in the multi-view display automatically changes (4 (2 x 2) or 9(3 x 3) windows) accordingly to the number of identified cameras. The cameras on other networks can be displayed on the same multi-view display screen by registering the cameras manually.

● **Interactive two-way audio communication equipment.**
Camera supports interactive two way audio communication.

● **Mailing function**
This feature allows you to receive mail messages with images when alarms go off.

● **Built-in SD memory card interface**
The use of SD memory cards enables the recording of images for long periods of time, as well as recordings when alarms go off.
SD memory card: 8, 16, 32, 64, 128, 256, and 512 MB, 1 GB SD memory cards (3.3 V) supported.
Physical interface: Part 1. Physical Layer Specification; Version 1.01

● **Motion detection**
The camera incorporates the motion detector to generate an alarm.

● **Slow-shutter function assures color images even at low illuminance**
The slow-shutter function enables high-sensitivity monitoring during the night.

# Names of Camera Parts

# Installing the Camera

### Front



Lens
(Focal range: 0.4 inch to infinity)
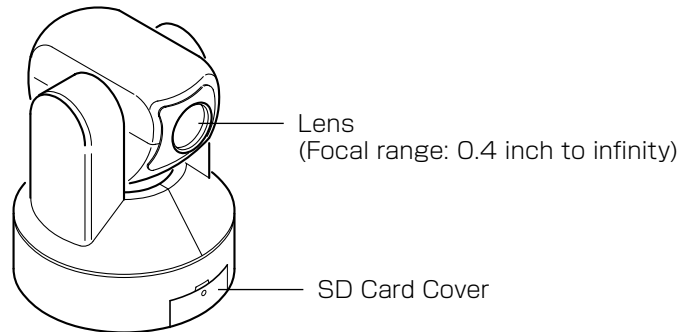
SD Card Cover

### Front

Unfasten the screw in the SD card cover.



SD Memory Card Slot
 Insert an SD memory card into the slot.

Reset button
Reset the settings to the defaults by using a thin, pointed object to press the button for at least 5 seconds. (The AC adaptor must be connected)(The log information is not returned to the default state. To return the log information to the default state, delete the log information in the settings screen.)

### Bottom



AUDIO OUT
· An audio output terminal.  Connect to an audio output device such as a speaker with an amplifier.

LAN Terminal
Connects a LAN cable.

MIC IN
· A microphone input terminal.
 Use a monaural plug microphone 3.5mm in diameter.

ALARM OUT
Alarm output terminal

GND

ALARM IN
Alarm input terminal

Hook

DC IN  12V
Power plug input terminal (→page 22)
· Be sure to use the AC adaptor included with the network camera.

■ When using on a desk

## 1 Remove the terminal cover.



Terminal cover

## 2 Connect the AC adapter cable and LAN cable to the camera.
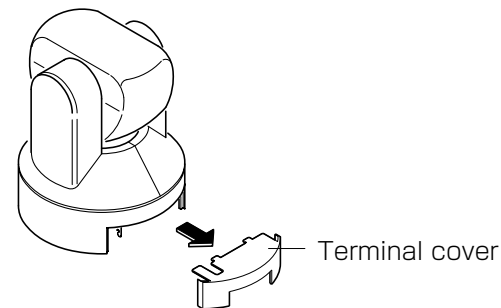


LAN cable

AC adapter cable
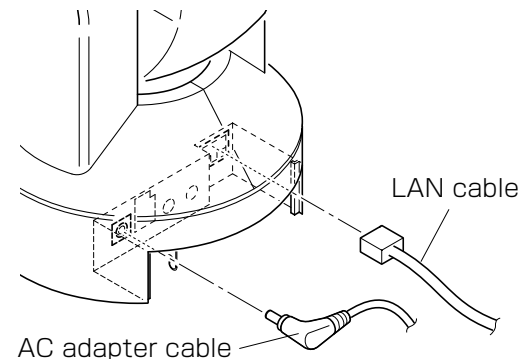
· See "Connecting Power Cord" on page 22 for connection of the power source.

## 3 Mount the terminal cover.



· The terminal cover has the function to prevent coming off of the AC adapter cable.  Be sure to mount the cover.
· Mount the terminal cover in the correct position and direction.  The terminal cover facing a wrong direction disables the function to prevent coming off of the AC adapter cable.  It also damages the cable.

Terminal cover
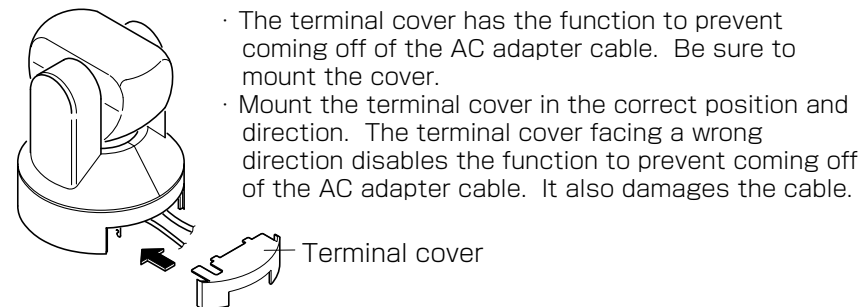
# Installing the Camera (Cont.)

Some provided parts are required for installing the camera.

● When installing on ceiling
 · Ceiling attachment
 · Cover for mounting on ceiling

**Important**

  • Improper installation may cause the camera to fall.

■ When installing on ceiling

**1** Make a hole in the ceiling where the camera is to be installed to insert the AC adapter cable, LAN cable and other cables.

**2** Feed the AC adapter cable, LAN cable and other cables through the hole.

**3** Mount the ceiling attachment below the drilled hole.

 · Mount on a ceiling or other structure by securely fastening the four corners of the attachment by four wooden screws.
 · Install securely on the ceiling where the ceiling is supported by a beam.
 · If a beam cannot be found, put a support behind the ceiling to prevent falling of the camera.
 · Mount the camera with the lens pointing in the direction of the arrow on the ceiling attachment.

Ceiling Attachment

Groove for passing the AC adapter cable and LAN cable.

Anti-falling stopper

Wood Screw

Anti-falling wire

**Important**

  • Check if the ceiling structure and material have a sufficient strength before installing the camera onto a ceiling.  If the amounting strength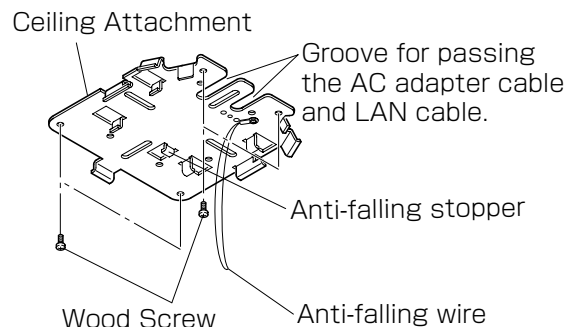 is inadequate, the camera will fall, potentially causing an injury or a camera failure.  The wooden screws supplied as accessories do not provide an adequate strength with some ceiling materials.  For example, special anchors are needed if the ceiling material is gypsum boards.
  Please consult the building architects regarding ceiling structure and strength.

**4** Tie the safety wire of the ceiling attachment onto the safety hook of the camera.

Hook
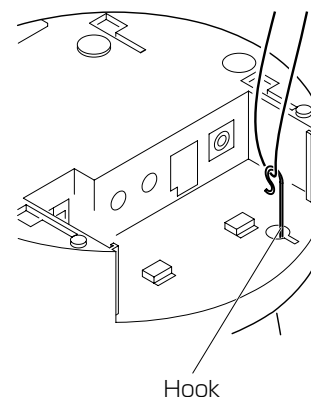
**5** Connect the AC adapter cable, LAN cable and other cables to the terminals on the camera.

AC adapter cable

LAN cable
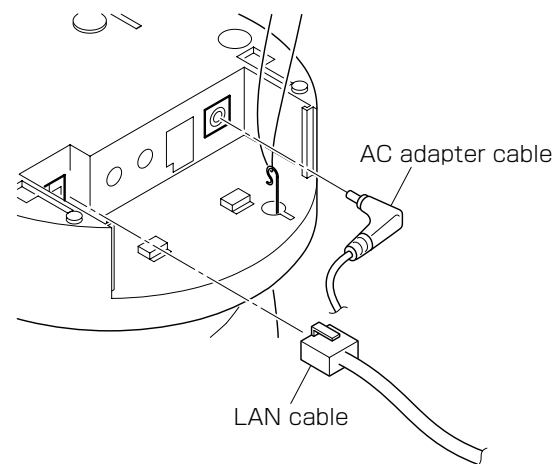
# Installing the Camera (Cont.)

## 6 Mount the camera on the ceiling attachment.

· Align the four camera grooves with the ceiling attachment.
· Push up on the camera firmly and slide the camera back until it is secure.
· Mount the terminal cover.
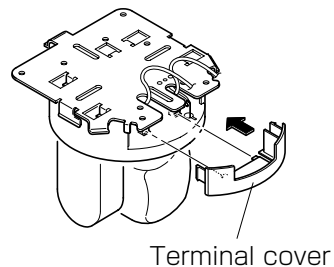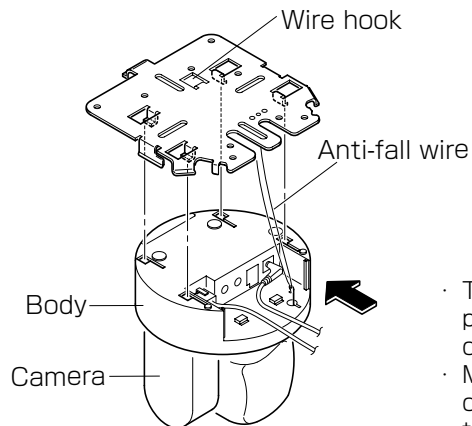
Wire hook

Anti-fall wire

Terminal cover

Body

Camera

· The terminal cover has the function to prevent coming off of the AC adapter cable. Be sure to mount the cover.
· Mount the terminal cover in the correct position and direction. The terminal cover facing a wrong direction disables the function to prevent coming off of the AC adapter cable. It also damages the cable.

## 7 Install the cover for mounting on a ceiling.

· Do not hold the camera when installing the product. (Install the product holding the body)
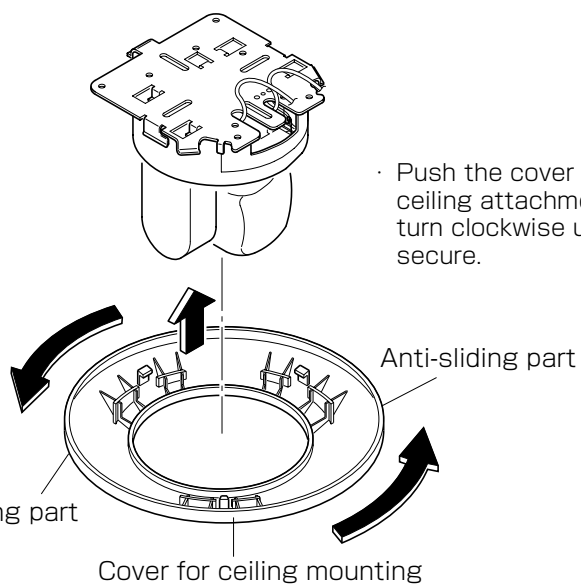
· Push the cover onto the ceiling attachment and turn clockwise until secure.

Anti-sliding part

Anti-sliding part

Cover for ceiling mounting

## ■ Removing the camera from the ceiling attachment

## 1 Remove the terminal cover.

Terminal cover

Anti-sliding part

Anti-sliding part

Cover for ceiling mounting

## 2 Slide the camera in the direction of the arrow.

Stopper
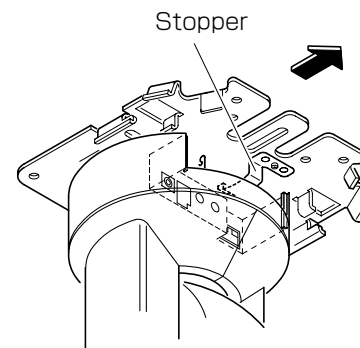
# Connecting the Power Cord

**1** Connect the power cord to the AC adaptor

## Turning on the Power

The camera has no main power switch or button. To turn the power on, insert the plug of the power cord into a power outlet.
Turn the power on after you have installed the camera.
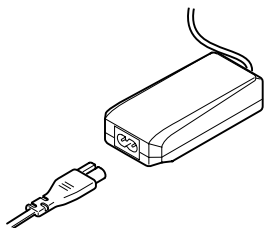
**2** Remove the terminal cover on the camera and plug in the AC adapter plug into the power input terminal on the camera.

AC adapter cable
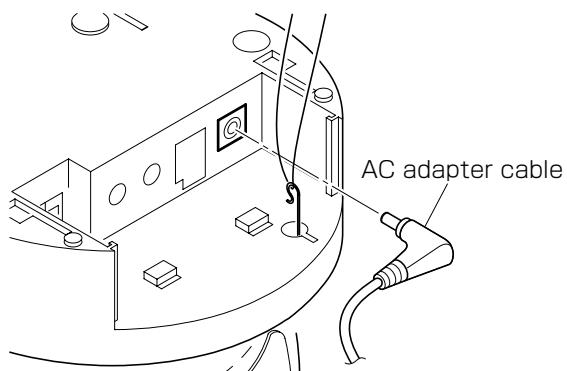
**Important**

- Due to the compact space of the power terminal, ensure that the plug is properly inserted.  The camera may not work properly if the plug is not inserted properly.
- The terminal cover has the function to prevent coming off of the AC adapter cable.  Be sure to mount the cover.
- Mount the terminal cover in the correct position and direction.  The terminal cover facing a wrong direction disables the function to prevent coming off of the AC adapter cable.  It also damages the cable.
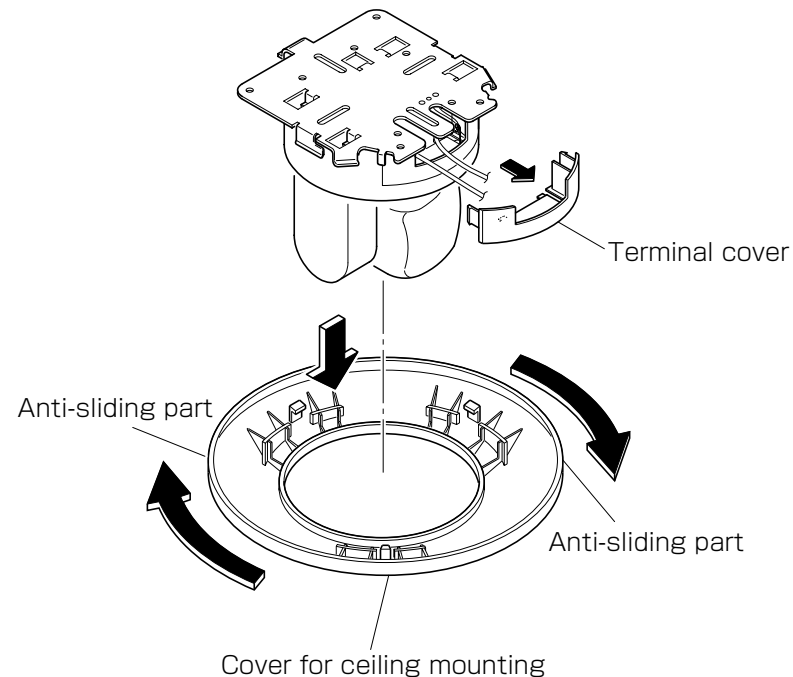
Introduction

Viewing · Listening
and Operation

Recording

Set up

Others

## Items needed for network camera monitoring system

● Administrator's personal computer

The personal computer that is given all authorities for setting, operating, monitoring and other functions with the network camera is called the "administrator's personal computer" in this manual.

* The terminal equipment only for viewing monitored images is called the "user's personal computer" in this manual.  More than one user's personal computer can view monitored images of one network camera.

Recommended personal computer operating conditions

· Windows® 2000 or XP as OS

· Internet Explorer Ver 6.0 or later

· CPU: Intel® Pentium® III 800MHz or higher

· Memory: 256MB or more

● Network camera (TOSHIBA network camera IK-WB21A)

· Please purchase the required and appropriate number of cameras corresponding to the desired camera installation locations.

● Connection equipment such as a hub and router suiting the network system environment and LAN cable

· The LAN cable type differs depending on the connection method.  For further information, see "Connection Configuration" on page 26.

● Camera search application "Camera Finder"

· Install this application from the CD-ROM supplied as an accessory.

(Double-click "Setup.exe" in the CD-ROM and install the application in accordance with the instructions in the screen)

## IP Address

To connect to the network, the administrator needs to set the network camera IP address.

There are two options to set the IP address.
· Obtaining an IP address automatically from the DHCP server
· Entering an IP address manually(→page 86)

● **Obtaining an IP address automatically from the DHCP server**
Your camera is set to get data automatically from the DHCP server (DHCP ON/OFF is set to ON in "Network/Basic Settings") by default. If your network is using DHCP server, you will not need to change the IP address of the camera.

● **Entering the IP address manually.**
· Manually enter the IP address when the DHCP server is not used or when the DHCP server is not utilized even though it is connected.
· The IP address of the network camera is sometimes updated or changed from time to time when the DHCP server is used.  For this reason, the network camera sometimes cannot be connected due to an IP address change if the network camera is accessed using the previously set IP address.
To enable accessing the network camera in this case, a fixed IP address needs be set with the network camera by setting an IP address through manual input.  Please read the instruction manuals of the network system equipment also carefully such as the router, hub and modem.
· When entering the IP address manually, set DHCP ON/OFF to OFF in "Network Basic Setting" on page 86 and enter the IP address, subnet mask, default gateway, primary DNS and secondary DNS.

Introduction

Viewing · Listening
and Operation

Recording

Set up

Others

## Connection Configuration

Two configurations are available for connection of network cameras.
· Crossover connection
· Connection via a hub, switch, or router

●Using a crossover cable to establish a connection (example)

Network camera                    Personal computer

IP address
192.168.0.30                              IP address
                                                   192.168.0.50

LAN cable (crossover)
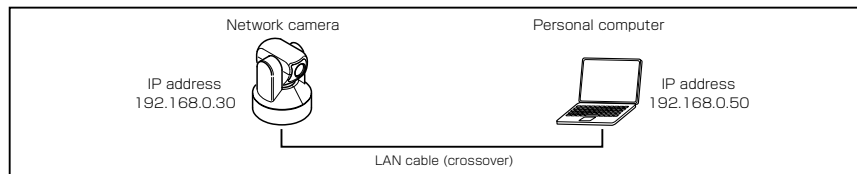
Crossover cable is not provided with the product.

●Establishing a connection via a hub (example)

Network camera

IP address
192.168.0.30                    Internet

                                          Personal computer

                          Hub, switch,
                          or router               IP address
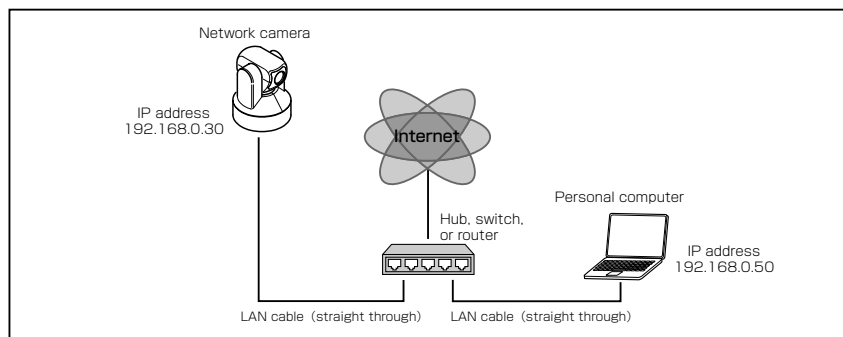                                                   192.168.0.50

LAN cable (straight through)   LAN cable (straight through)

LAN cable (straight through) and Hub is not provided with the product.

### ✎NOTE

- You do not need to assign an IP address to a hub.
- The IP address of your camera after purchasing from the store is automatically set to 192.168.0.30 in case DHCP is not used. Set the IP address of your personal computer in the same subnet. (The network segment must be the same segment when directly connecting using a cross cable or connecting through the hub)
  When connecting more than one camera, connect each camera using IP Address 192.168.0.30 and change the IP addresses of the second and subsequent cameras to other IP addresses, such as 192.168.0.31.
- You can also use the LAN port of your broadband router.
  However, when using the broadband router, if the DHCP server function is set to "ON", turn on the power after connecting the camera with the router. The camera gets the IP address from the router's DHCP server and it may not be 192.168.0.30.
  For more information, read your user's guide for broadband router.
  It is also recommended to set the computer's IP address from the router's DHCP server.
  For more information, read your computer's user's guide.

## Connecting Camera and Personal Computer

### 1 Connect LAN cable and turn the power on.

Connect the LAN cable (straight cable) connected to the camera to the hub. Or, connect the camera to a personal computer with the power turned on using the LAN cable (cross cable).
· Connect DC 12V to the power terminal.

### 2 Set the IP address of the personal computer.

· Set the IP address which you are not using other than 192.168.0.30 (camera's IP address).
· Set the IP address to 192.168.0.50 (and subnet mask to 255.255.255.0) as an example.
· For details on the procedure, refer to the user's guide of the personal computer.

### 3 Test the camera connection using ping.

· Start a command prompt. Type "ping 192.168.0.30" and press "Enter" key.
· If the "Reply from..." message appears, the connection is correctly established.

### 4 Search the camera by "Camera Finder" explained on page 28 and view a camera image.

1. Start "Camera Finder" and click the "Search" button.
   · Confirm that the camera name "nwcam 21" is displayed in the camera list.
2. Click "nwcam 21", to select.
   · Check that the camera name, IP address and HTTP port No. are displayed in the "Network Camera Log-in" field.
3. Click the Administrator button or the User button.
   · Clicking the Administrator button will display a screen for inputting the user name and password. Input the administrator log-in ID and password. (See "Administrator Log-in" on page 30)
4. A camera image screen of the network camera will appear.

### ✎NOTE

- To view images without using "Camera Finder," launch the Internet browser, enter URL http://192.168.0.30/ in the address box and press "ENTER."
- It takes about 30 seconds to activate the camera.
- If a port number other than "80" is set, designate the port number by suffixing it after ":" as in http://192.168.0.30:88/.

# Using the Camera Search Application "Camera Finder"

The "Camera Finder" is an application for searching network cameras, that can currently be viewed from the administrator's personal computer or a user's personal computer, and connecting to those cameras.

● Setting up "Camera Finder"

**1** Insert the CD-ROM in the CD-ROM drive of the personal computer.

**2** Double-click the "Setup" file in the CD-ROM and install "Camera Finder" in accordance with the instructions in the screen.

**Important**

• "Camera Finder" is compatible only with Windows 2000 and Windows XP. Glitches may occur with your personal computer if it is operated by other OS. Do not install "Camera Finder" with other OS.

●Using "Camera Finder" to Search for a Camera

**1** From the "Start" menu, point to "Programs" and "TOSHIBA Network Camera", and then select "Camera Finder".

**2** Start up "Camera Finder" and click "Search".

· All the cameras currently connected to the network will appear. To clear the results, click "Clear".

**3** Click the camera you want to login from the list of cameras.

· The chosen camera name and IP address is displayed in the Network camera log-in fields.
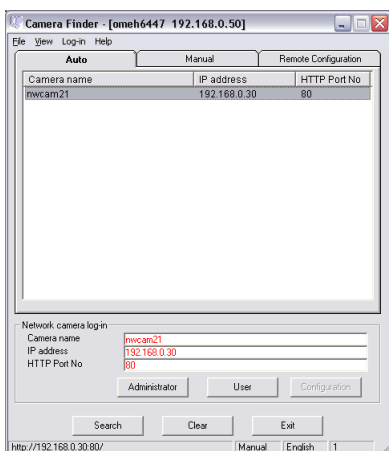


**4** Click the Administrator button or the User button.

· Click the Administrator button to log in as an administrator. (See "Administrator Log-in" on page 30)
· Click the User button to log in as a user. (See "User Log-in" on page 31)
· To exit without performing log-in, click the Exit button.

**NOTE**

• Operations that can be performed after log-in differ between administrator log-in and user log-in. (See page 30)
• Set the personal computer to "Administrator authorization" when using "Camera Finder."

**Important**

• Toshiba is not responsible for any damages caused by this software.

# Administrator Log-in and User Log-in

This product regards a person who has performed Administrator Log-in as an "administrator" and a person who has performed User Log-in as a "user." Administrator Log-in can perform all functions, while the functions performed by User Log-in are limited.

The following shows the different functions that are available for the administrator and the user.

| Function | | Administrator | User |
|---|---|:---:|:---:|
| Viewing images | Live images | ○ | ○ |
| | Recorded images | ○ | △※ |
| Listening to sound | | ○ | ○ |
| Operation | PAN (left/right)/TILT (up/down) operation | ○ | △※ |
| | Image playback, presets, starting scan/patrol, etc. | ○ | △※ |
| Recording | Recording on the camera | ○ | × |
| | Recording on the FTP server | ○ | × |
| Configuration | | ○ | △※ |

※Users can use some functions by setting administrator setting.
　See "Administrator Function/User Operation Enable Setup" on page 94.

## Administrator Log-in

**1** **Search the camera by "Camera Finder" explained on page 28 and click the Administrator button.**

· The screen for inputting the user name and password will appear.
· Launch the Internet browser, enter URL "http://192.168.0.30/admin.html" in the address box and click "OK." (Enter the same IP address set by you with the network camera, as the IP address)
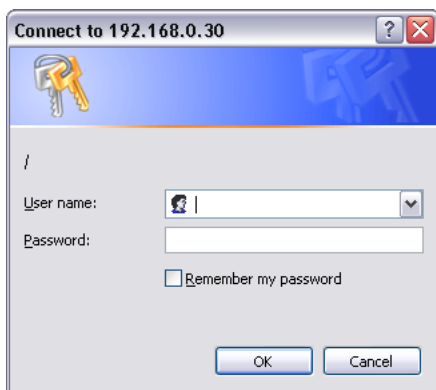


**2** **Input the administrator log-in ID and password in the user name and password fields and click the OK button.**

· The administrator log-in screen and camera image screen will appear.
· The administrator log-in ID and password are set to "root" and to "ikwb" respectively by default.

**Important**

● Administrator Log-in allows rewriting of all settings. Be certain to change the administrator log-in ID and password already set in the camera by default, to ensure camera security. Keep the new administrator log-in ID and password handy for future use. To change the administrator log-in ID and password, see "Administrator Function/Changing ID and Password" on page 92.

## User Log-in

**1** **Search the camera by "Camera Finder" explained on page 28 and click the User button.**

· The screen for user log-in and camera image screen will appear.
· The user login ID is set to "guest" and password, "guest," when the system is purchased.
· To perform user log-in without using "Camera Finder," launch the Internet browser, input URL "http://192.168.0.30/" in the address box and click "ENTER." (Use the same IP address set by you with the network camera, as the IP address)

**Important**

● By default, user log-in restrictions are set to ON. Set or reset user log-in restrictions as necessary. Setting log-in restrictions to ON will display a screen for inputting the user name and password prior to log-in. For setting, refer to "User Information" in "Administrator Function/Changing ID and Password" on page 92.

# Administrator Log-in and User Log-in (Cont.)

## Administrator Log-in Screen and User Log-in Screen

Administrator Log-in Screen
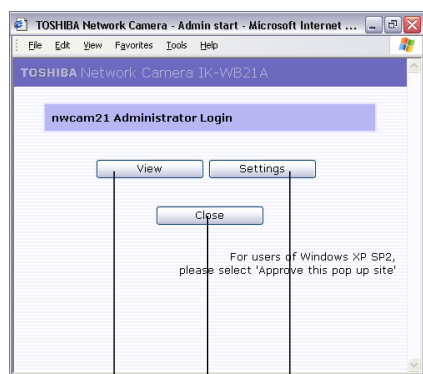


User Log-in Screen



Displays Camera
Image screen

Displays
Administrator
Setup Menu screen

Exits Administrator
Log-in screen
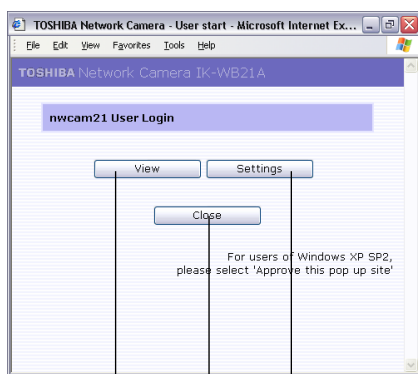
Displays
Camera
Image screen

Displays User
Setup Menu screen

Exits User Log-in screen

### When using Windows XP SP2

If clicking of the View button fails to display the Camera Image screen, operate as follows.
1) Choose "Pop-up Blocker" on the tool menu.
2) Choose "Always Allow Pop-ups from This Site...",
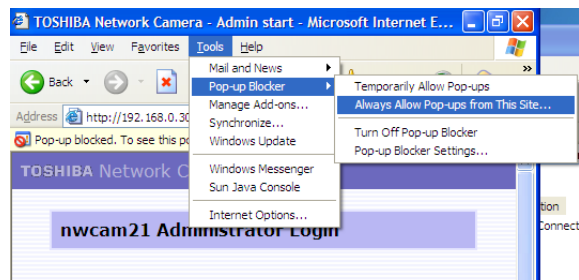


# Setup Screen

Clicking the Setup button in the Administrator Log-in screen or in the Camera Image screen.
See "Setting" on page 65 for the setting method.

Camera name

LIVE button
Displays the camera image screen.

exit button
Close the Setting screen.



Main Menu    Sub Menu

Default button
Resets settings
back to factory default.

Reset button
Resets to condition
before change

Save button
Saves changes

**Important**

- Performing user log-in does not display the Administrator Setup menu on the left and displays only setup items that can be used by the user (set by "Administrator Function/User Operation Enable Setting" on page 94).

# Viewing and listening

## Viewing images

Images of the network camera can be viewed through the Internet browser of your personal computer.

### ● Preparations before displaying

· Enable cookies

· Set "Browser setting when proxy server is used" on page 35 when a proxy server is used.

· Change "security" in Internet options as follows.

1) Click "Internet Option" on the tool menu.

2) Click the Security tab.

3) Click the "Intranet" icon if the camera to be operated is inside the intranet, clicking the "Internet" icon if the camera is on the Internet.

4) Click "Level customize."

5) Check the following radio buttons in the displayed list:

· "Enable" for "ActiveX control and plug in execute"

· "Enable" for "Execution of script of ActiveX control marked safe even when script is executed"

· "Enable" for "Download of signed ActiveX control"

6) Click "OK."

### 1 Log-in the camera.

· Your browser will launch and the Camera Image screen for the camera will pop up.

· See "Administrator Log-in and User Log-in" on pages 30 and 31 for the log-in method.

· When the security warning screen (VeriSign) appears on the first use of the system, click "Yes."

### 2 To close the camera image, click the ☒ button in the upper-right corner of the window.

---

### ✎ NOTE

● The single-view screen on the Camera Image screen is the same size as that of images sent by the camera.

● The Camera Image screen can freely enlarge or reduce sizes of windows.

● Reducing the size of delivered images may omit the camera name and clock indication, but these items can be displayed by enlarging the window.

● Use the software "Independent JPEG Group's JPEG software" for JPEG enlargement. "This software is based in part on the work of the independent JPEG Group."

● Administrator authorization is needed to install "Active-X control." Install "Active-X control" after changing the personal computer setting to "Administrator authorization."

### ● Browser setting when proxy server is used

In case a proxy server is used, setting of the browser to bypass the proxy server during communication with the network camera is recommended.

1) Launch the browser.

2) Choose "Internet option" on the tool menu.

3) Click "Connect" tab.

4) Click "LAN Setting."

· The screen for setting a local area network (LAN) will appear.

5) Check if the checkbox "Will use a proxy server" is checked..

· If the checkbox is not ticked

The browser is not set to use a proxy server. Click "Cancel" and quit setting.

· If the checkbox is checked.

Click "Detail setting." A proxy setup screen will appear.

6) Enter the IP addresses of the network cameras in the field marked "Do not use the proxy server with addresses started with the following.

7) Click "OK."

### When Windows XP SP2 is used:

Click "Install" for "Active-X control."



---
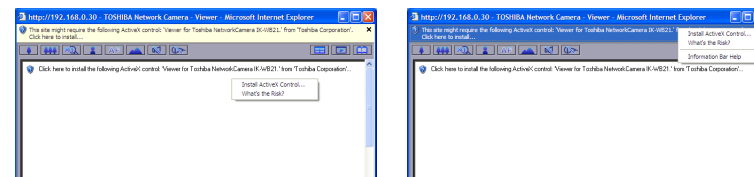
### ✎ NOTE

● A proxy server protected by an intracompany firewall sometimes cannot be connected to the network camera. Consult the network administrator so as to avoid impacts on network camera operations.

● Communication with the network cameras via a proxy server may cause some problem. Install the network cameras after consulting the network administrator.

● Using the network cameras via a proxy server sometimes takes a long time till images are displayed after log-in or reduces the frame rate of delivered images.

## ■ Audio

Audio In from the network camera can be heard through the Audio Out of the personal computer.
Set audio input to "ON" in "Camera/Audio setting" on page 79 and set the [🔇] button of the Camera Image button to [🔊].

## ■ Camera image screen

① nwcam21 (VGA) TOSHIBA Network Camera - IK-WB21A. - Microsoft Internet Explorer

| Number and Item | Description |
|---|---|
| ① **Camera name** | The name of the camera displaying live images. |
| ② **Operation Buttons** | [🔍-] : Clicking the [🔍-] button will zoom out. |
| | [🔍+] : Each clicking of the [🔍+] button will zoom in on the image. Can be zoomed in 22x at maximum.. |
| | [👤] : Each click of the [👤] button will adjust the near focus. |
| | [AF] : Clicking the [AF] button will set auto focusing. |
| | [⛰] : Each click of the [⛰] button will adjust the far focus. |
| | [🔇] : Clicking the [🔇] button will change the display to the [🔊] button and will output sound. |
| | Clicking the [🔊] button will change the display to the [🔇] button and will not output sound. |
| | [🔈] : Clicking the [🔈] button will change the display to the [🎤] button and will output sound from the personal computer microphone. |
| | Clicking the [🎤] button will change the display to the [🔈] button and will not output sound from the personal computer microphone. |
| ③ **Operation Buttons** | [100%] : Equal size button. Click [100%] to reset to a viewer size according to the resolution. |

| Number and Item | Description |
|---|---|
| ④ Screen changeover | Clicking the [⊞] button automatically displays a multi-view screen with split frames in accordance with the number of cameras set in Multi Screen setting (see page 90). Click the [□] button to return to the single-view screen. A multi-view screen will not be displayed if the Multi Screen Display function (see page 90) is set to OFF. |
| ⑤ Display controller [▣] | Clicking the [▣] button displays the controller in a separate window. |
| ⑥ Setup Menu Display [📖] | Clicking the [📖] button will display the Setup Menu screen in other window. |
| ⑦ Alarm notification [⚠Alarm] | This is displayed when "Motion Detection" ( page 74) or "Alarm In" (page 74) is activated. The [⚠Alarm] disappears if it is clicked. |
| ⑧Displayed images | When displaying present normal images, "LIVE" will be displayed, and when displaying images from the Alarm List or Record List, "PLAYBACK" will be displayed on the screen. You can switch these views using the controller. |
| ⑨ Time and date | The current time and date of the network camera are shown when "LIVE" is displayed, and the recorded time and date* are shown when "PLAYBACK" is displayed on the screen. When in PLAYBACK mode, S) or E) may be shown with the time and date. "S)" and "E)" are sometimes displayed in the PLAYBACK mode as date and time data. "S)" means start of playback images and "E)," end of playback images. In these modes, images or date and time cannot be updated. Operate playback on the controller. |

## ■ Moving the screen center.

**1** Click on any area in the Camera Image screen.

**2** The camera moves so that the clicked point becomes the center of the image.

## ■ Controller



① IKWB21A controller ... _ □ ☒
mwcam21                    Close  — ⑥
Zoom 🔍 🔍
Focus 👤 AF ⛰
Iris OPEN AUTO CLOSE  — ①
Audio 🔇 🔈
Save

② — ⭕  Auto Patrol  — ⑦
         Scan  — ⑧
③ — ◄◄ ◄I ► II I► ►► LIVE
④ — Preset  — ⑨
⑤ — Alarm  Record  Control  — ⑩

TOSHIBA

● Functions of components of Administrator basic controller

| Number and Item | Description |
|---|---|
| ① Operation Buttons | |
| Zoom | 🔍 : Zoom out button.  Click to zoom out. |
| | 🔍 : Zoom in button.  Click to zoom in. |
| Focus | 👤 : Near button.  For manual adjustment of the focus.  Focuses on a near object. |
| | AF : Auto focus button.  Clicking changes to auto focus operation.  If in Manual mode at present, automatically focuses and changes to auto focus mode.  The Auto Focus mode will then set.  If the Auto Focus mode is set at present, refocus. |
| | ⛰ : Far button.  Focusing is manually adjusted.  Focuses on a far object. |
| Iris | OPEN : Iris open button.  Manually adjusts the lens iris.  Opens the aperture.  (Becomes bright) |
| | AUTO : Iris auto button.  Sets the aperture to the auto mode. |
| | CLOSE : Iris close button.  Manually adjusts the lens iris.  Closes the aperture.  (Becomes dark) |
| Audio | 🔇 : Audio input button.  Plays sound that is input to the camera. |
| | 🔈 : Audio output button.  Transfers sound that is input to the personal computer microphone to the camera. |
| Save | 📼 : Image record button.  Continually records images. |
| | 🎵 : Audio record button.  Continually records audio input. |
| | 📷 : One-shot button.  Records one image. |

● Functions of components of Administrator basic controller

| Number and Item | Description |
|---|---|
| ② Controller | This feature adjusts the direction of the lens by panning (left/right) and tilting (up/down). |
| | 1. Each time you click the ▲ button, the lens moves up. You can move the lens in a range of four different vertical positions. When the camera lens reaches its upper limit, clicking on the button has no effect. |
| | 2. Each time you click the ◄ button, the lens moves left. You can move the lens in a range of four different horizontal positions. When the camera lens reaches its left most limit, clicking on the button has no effect. |
| | 3. Each time you click the ▼ button, the lens moves down. You can move the lens in a range of four different vertical positions. When the camera lens reaches its lower limit, clicking on the button has no effect. |
| | 4. Each time you click the ► button, the lens moves right. You can move the lens in a range of four different horizontal positions. When the camera lens reaches its right most limit, clicking on the button has no effect. |
| | 5. Clicking the ◆ button returns the lens to its center position. If an external impact or other force moves the lens from its preset position, click this button to correct the position. |
| ③ Control buttons for playing and recording  ◄◄ | Fast rewinds play images.  When "S)" is indicated in date and time display, recorded images have been rewound to the first image. |
| ◄I | Play images are played frame by frame in reverse direction. |
| ► | Plays images being selected. |
| II | Pauses an image being played. |
| I► | Play images are played frame by frame. |
| ►► | Fast rewinds play images.  When "E)" is indicated in date and time display, recorded images have been fed to the last image. |
| LIVE | Resets the play image mode to the current image mode. |
| ④ Preset | The Preset button.  The preset control panel will appear. |
| ⑤ Alarm | The Alarm List button.  The list of "Alarm In" will appear. |
| ⑥ Close | The Close button.  Exits the controller screen. |

# Viewing and listening (Cont.)

| Number and Item | Description |
|---|---|
| ⑦ [Auto Patrol] | The Auto Patrol feature moves the lens automatically to all the configured preset positions in order. Clicking the [Auto Patrol] button starts Auto Patrol. Clicking one of ⬦ buttons stops the action. |
| ⑧ [Scan] | The Scan feature automatically moves (swivels) the lens horizontally back and forth once. Clicking the [Scan] button starts Scan. Clicking one of ⬦ buttons stops the action. |
| ⑨ [Record] | "Continuous Recording" button.  The list of "Continuous Recording" will appear. |
| ⑩ [Control] | "EXT. Control In" button.  The list of "EXT. Control In" will appear. |

**✐ NOTE**

- Setting the Manual mode adjusts brightness only by the lens aperture.
- Zooming, PAN/TILT operation or moving to the screen center during manual focus adjustment automatically sets the Auto Focus mode.
- The value immediately before operation of the auto panning function will be maintained as the focus value during operation of the auto panning function. The Auto Focus mode will set after operation completes.
- A picture displayed by the [📷] button (one-shot button) should be saved using "Save Picture As..." with a mouse right button. However, depending on installation (Ceiling/Desktop) and its settings, the picture may be carrying out vertical reversal.

# Presetting of Camera Position by Administrator

The presets function enables you to assign up to ten different positions and names for the camera. Clicking the [Preset] button on the basic administrator controller opens the preset controller.
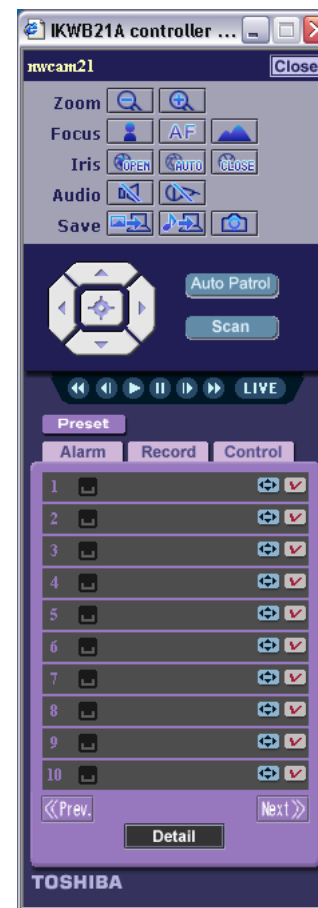
## Selecting a Preset

Selecting a preset from the list moves the camera to the preset position.

**1** In the list, click ⬌ (go to Preset) button on the left of the preset you want to select.



· The camera will only move to a preset that has been set. Selecting a blank preset will not move the camera. See "Configuring a Preset" on the next page.

## Configuring a Preset

Assign the camera position in the Preset list.

**1** Click the ⊕ button to move the camera to the position you want to set.

**2** In the list, click ✓ (set Preset) button on the right of the preset you want to configure.
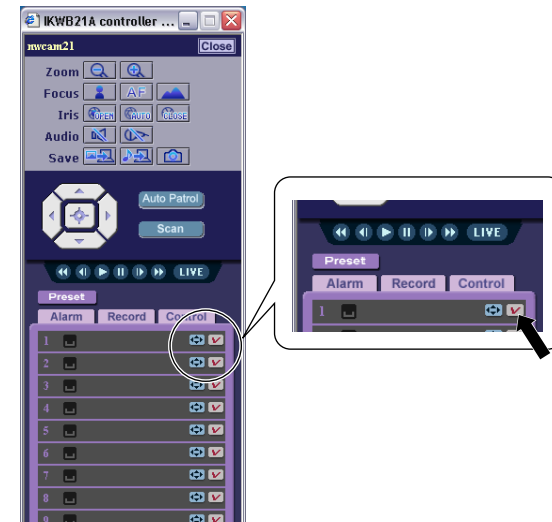


**3** Click the OK button to assign a preset position.

· Assign the current camera position in the selected preset.
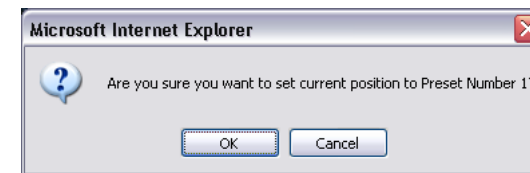


📝**NOTE**

● Any existing settings of a preset will be overwritten when you assign new settings to the preset.
● The brightness adjustment value, rear light correction setting and manual/auto focus setting are stored for each preset number.

# Presetting of Camera Position by Administrator (Cont.)

## Setup Preset Items

Set items in the detailed preset controller setup window that is displayed.

**1** Click [ Detail ] button on the preset controller.

**2** The PAN/TILT Preset Settings screen will appear.
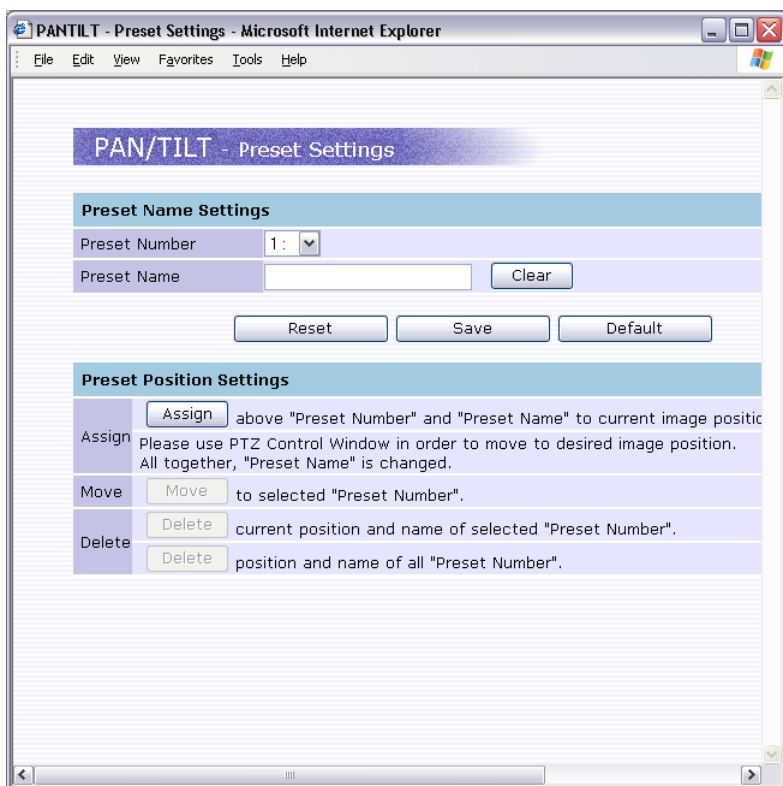
**3** Item setup.

■ **Preset Name Settings**

● **Preset Number**
Choose a number from the list. ("1" to "64" can be set)

● **Preset Name**
Choose preset numbers and name them. Naming numbers facilitates identification of preset registered items.

● **Clear button**
Click when changing a given name.

● **Reset button**
Chose a preset number and click the Reset button.

● **Save button**
Click when entering a new preset name or when changing a name.
· The changes will be saved.

● **Default**
Resets values back to factory default.

■ **Preset Position Settings**

● **Assign**
Assign the current position of a chosen preset number. (Cannot be assigned unless a preset name is entered and the Save button is clicked. Can be assigned without a prest name.)
Assign: Click

● **Move**
Move to the chosen position and name of a preset number.
Move: Click

● **Delete**
· Delete the current position of a chosen preset number.
Delete: Click
· Deleting positions and names of all preset numbers.
Delete: Click

**4** Clicking [ Preset ] button on the preset controller twice reflects set items.

· Clicking the Preset button on the preset controller once deletes the List window and Detail Setup window.

# Playing Recorded Alarm Images

You can play images which are recorded when an alarm is activated. The images play at a fixed speed regardless of the recording setting. Image settings such as "Picture Resolution" correspond to Alarm recording settings.

**1** Click 🖻 button while the Camera Image screen is displayed.

· The controller will appear.

**2** Click ⬚Alarm⬚ button on the controller.

· The Alarm List will appear.



**3** In the list, click the ▶ button on the right of the recording you want to play.

· The selected recording plays.

### 📝 NOTE

- Items in the Alarm list appear from left to right in the order of list number, alarm type, generation time/date, and play button.
- Clicking the ⟪Prev. button in the bottom of the screen will display the list on the previous page. Click Next⟫ to display the list on the next page.
- Entering a page number of the list and clicking the ⟦Jump⟧ button at the bottom of the screen will directly display the list on that page.
- Fast rewind, fast forward and other functions can be performed by operating the Recorded Image Play button on the controller.
- To return from the recorded image to the live image screen, click the (LIVE) button.
- Starting alarm recording or external control recording during play stops play.
- Normal recording is disabled during play.
- When new alarm has been generated while the alarm controller is displayed, the notification will not be added to the list right away. In that case, close the controller once and re-display it.
- If overwrite functions, close the list and display it again.
- You cannot use these characters: ' "

# Playing Recorded Normal Images

The administrator can play recorded normal images saved to an SD memory card. The images play at a fixed speed regardless of the recording setting. Image settings such as "Picture Resolution" correspond to Normal recording settings.

**1** Click 🖻 button while the Camera Image screen is displayed.

· The controller will appear.

**2** Click ⬚Record⬚ button on the controller.

· Displays the Record list.
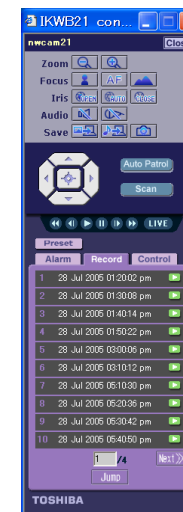


**3** In the list, click the ▶ button on the right of the recording you want to play

· The selected recording plays.

### 📝 NOTE

- Items in the Record list appear from left to right in the order of list number, generation time/date, and play button.
- Clicking the ⟪Prev. button in the bottom of the screen will display the list on the previous page. Click Next⟫ to display the list on the next page.
- Entering a page number of the list and clicking the ⟦Jump⟧ button at the bottom of the screen will directly display the list on that page.
- Fast rewind, fast forward and other functions can be performed by operatingthe Recorded Image Play button on the controller.
- To return from the recorded image to the live image screen, click the (LIVE) button.
- Normal images are recorded by the hour.
- Starting alarm recording or external control recording during play stops play.
- Normal recording is disabled during play.
- If overwrite functions, close the list and display it again.

# Playing External Control Recorded Images

External control recorded images recorded in an SD memory card can be replayed. (See page 52) The images play at a fixed speed regardless of the recording setting. Image settings such as "Picture Resolution" correspond to External Control recording settings.

**1** Click 📷 button while the Camera Image screen is displayed.

· The controller will appear.

**2** Click ⌈Control⌋ button on the controller.

· The external control recorded list will appear.



**3** In the list, click the ▶ button on the right of the recording you want to play

· The selected recording plays.

📝 **NOTE**

• Items in the external control recorded list appear from left to right in the order of list number, alarm type, generation time/date, and play button.
• Clicking the ⌈≪Prev.⌋ button in the bottom of the screen will display the list on the previous page. Click ⌈Next≫⌋ to display the list on the next page.
• Entering a page number of the list and clicking the ⌈Jump⌋ button at the bottom of the screen will directly display the list on that page.
• Fast rewind, fast forward and other functions can be performed by operating the Recorded Image Play button on the controller.
• To return from the recorded image to the live image screen, click the ⌈LIVE⌋ button.
• Starting alarm recording or external control recording during play stops play.
• Normal recording is disabled during play.
• When new alarm has been generated while the external controller is displayed, the notification will not be added to the list right away. In that case, close the controller once and re-display it.
• If overwrite functions, close the list and display it again.

# Audio Out

Audio from a personal computer microphone can be heard through the camera's Audio Out.

**1** Click "Camera Settings" on the Admin. menu. Then click "Audio" in the sub menu.

· The Camera/Audio Setup menu will appear.

**2** Set "Audio Output" to ON as detailed on page 79.

**3** Click the 🔊 button, one of the operation buttons of the Camera Image screen and set to display 🔊.

📝 **NOTE**

• Connect a speaker with a built-in amplifier to the Audio Out terminal of the camera. Sound cannot be output if connected to a speaker that does not contain an amplifier.
• See the instruction manual of the personal computer for a description of the microphone to be connected to the personal computer.
• Audio can be output from only one computer at a time.

# About Recording Images

Network camera can record images according to your need. Recordable media and its recordable contents are as follows.

| Recordable Media | Recordable Contents |
|---|---|
| SD Memory Card | · Alarm Recording images configured in "Alarm Recording" settings (→page 53).<br>· Continuous Recording images configured in "Continuous Recording" settings (→page 53). |
| FTP Server | · Recorded images by schedule<br>· Data of "When Alarm goes off"<br>· Recorded images by external control |
| PC | · One image (JPEG) recorded by operating the 📷 button.  (See page 63)<br><br>· Image (JPEG) recorded by operating the 🖳 button.  (See page 63)<br><br>· Voice (WAVE) recorded by operating the 🖳 button.  (See page 64) |

**✎NOTE**

- The SD memory card cannot perform Alarm recording, Continuous Recording, External Control recording and playing simultaneously.The priority is given in the order of external alarm recording - external control recording - recording activated by motion detection - playing - Continuous Recording.  Images are not recorded during replay.
- A picture displayed by the 📷 button (one-shot button) should be saved using "Save Picture As..." with a mouse right button. However, depending on installation (Ceiling/Desktop) and its settings, the picture may be carrying out vertical reversal.

# Recording Images in SD Memory Card

Images during "Alarm In", images during "Motion Detection", images during "Ext. Control In" and images of "Continuous Recording" can be stored in an SD memory card inserted in the network camera.
When recording alarm images, perform "Alarm Settings" first as explained on page 73 and set records in the following sequence.

## Record setting

### 1 Insert SD memory card to the camera.

- · Remove the SD card cover and insert an SD memory card as explained on page 16.  Then mount the SD card cover.
- · Click "SD In Out Wizard" and check "Mounting SD memory card" in the displayed SD Memory Card In and Out screen.  Then click the Execute button.
- · Clicking the Format button on the SD Memory Card In/Out screen will format the SD memory card.

**Important**

- Be certain to check "Removing SD memory card" in the SD Memory Card In and Out screen when removing the SD card.  Then click the Execute button. Removing SD Card without executing "Remove SD memory card" may destroy data.

### 2 Click "Camera Settings" on the Admin. Menu.

- · A sub menu for camera setup will appear.
- · Unless administrator log-in is made, the Administrator Setup Menu will not be displayed.  Perform administrator log-in.

### 3 Click "Recording" in the sub menu

- · The Camera/Recording screen will appear.

## 4 Configure each setting items.

### ■ Alarm Recording

● **Alarm In**
ON: Images are recorded when an external alarm occurs.
OFF: Images are not recorded when an external alarm occurs.

● **Ext. Control In**
ON: External control recording is performed.
OFF: External control recording is not performed.

● **Motion Detection**
ON: Images are recorded when motion is detected.
OFF: Images are not recorded when motion is detected.

● **Pre-Recording**
Set the number of images to be recorded immediately before an alarm occurs. Images of the moment when an alarm occurs are not included.

● **Post-Recording**
Set the number of images to be recorded immediately after an alarm occurs. Images of the moment when an alarm occurs are not included.

● **Recording cycle**
Set a time interval for alarm recording.

### ■ Continuous Recording

ON: Images are recorded in accordance with schedule and recording interval.
Setting to ON will set a recording schedule and interval.
OFF: Continuous recording is not performed.

### ■ Overwrite

ON: Records are overwritten beginning with old records when the capacity of the SD memory card becomes full during recording.
OFF: Recording is stopped when the capacity of the SD memory card becomes full during recording.

## 5 Click the Save button under the items.

· Changes are saved.

### ✎ NOTE

- Clicking the Reset button under each item resets to the setting last saved.
- Clicking the Default button resets settings back to factory default.
- The total number of recorded frames per alarm will be the number of pre-alarm images + One image when alarm occurs + Number of post-alarm images
- To enable "Alarm In", see the "Camera/Alarm Settings" on page 73.
- To enable "Ext. Control In", see the "Camera/Alarm Settings" on page 73.
- Setting the Overwrite mode to ON deletes files beginning with old files. If important data is to be saved, set the Overwrite mode to OFF.
- Getting a record list of the SD memory card sometimes takes more than 5 minutes after turning the power on. Data cannot be recorded while obtaining a record list.
- The camera recording period may not operate as set depending on the type of the SD memory card.

## Deleting Record File

Image files recorded in an SD memory card can be deleted.

## 1 Click "Camera Settings" in the Admin. Menu.

· A sub menu for Camera settings will appear.

## 2 Click "Recording" in the sub menu.

· A setup screen for Camera/Recording will appear.

## 3 Click "Delete all", "Delete from Alarm Recording list...", "Delete from Continuous Recording list..." or "Delete from Ext. Control In Recording list..." in Recorded Files.

· Clicking "Delete all" deletes all record files.
· Clicking "Delete from Alarm Recording list..." displays an alarm list. Specifying a range for deletion deletes alarm record files.
· Clicking "Delete from Continuous Recording list..." displays a normal list. Specifying a scope for deletion deletes normal record files.
· Clicking "Delete from Ext. Control In Recording list..." displays an external control record list. Specifying a scope for deletion deletes external control record files.

# Recording Images on FTP Server

By using FTP server, it becomes possible to manage periodic transferring and saving huge recorded image data. You can record images by "Scheduled Recording", "Alarm Recording" or "Ext. Control In Recording" on FTP server.

## Record setting

### 1 Click "Camera Settings" on the Admin. Menu

· A sub menu for camera settings will appear.
· Unless logged in as an administrator, the Admin. Menu will not be displayed.

### 2 Click "FTP Recording" in the sub menu.

· A screen of "Camera - FTP Records will appear.
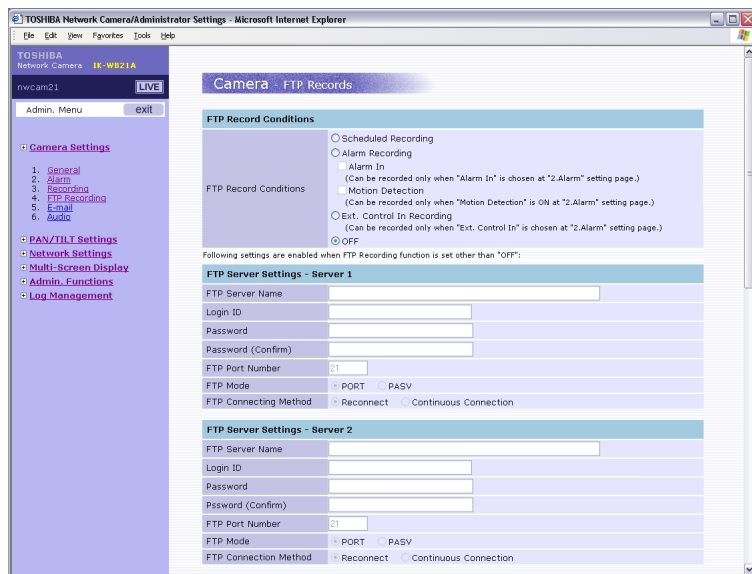


### 3 Configure each setting items.

· Follow the instructions in following page.

### 4 Click the Save button to save settings.

· Changes will be saved.
· Clicking the Reset button resets to settings last saved.
· Clicking the Default button resets values to factory default.

**✎ NOTE**

• In server name or recording server path you cannot use these characters: ' ""
• Maximum of 16 of the following characters can be entered in "E-mail login ID," "Password" and "Password (confirm)":
     . (dot), - (hyphen), @, 0 - 9, a to z and A to Z

---

■ **FTP Record Conditions**

Check "Schedled Recording," "Alarm Recording" or "Ext. Control In Recording"  If "Alarm Recording" is chosen, check both or one of "Alarm In" and "Motion Detection."

■ **FTP Server Settings - Server 1**

Make settings for connection to the FTP server.

● **FTP Server Name**
Input a server name or address correctly.
● **Login ID**
Limited only to users who have authority to access the server.
Ask your system administrator of the FTP server for more information.
● **Password**
Input the password registered during the above log-in ID session.
● **Password (Confirm)**
Re-enter the password.
● **FTP Port Number**
Set to "21" by default.

**✎ NOTE**

• Do not change the port number unless your provider or the network administrator tells you to do so.

● **FTP Mode:**
· PORT (active mode):  Choose this mode for most FTP applications.
· PASV (passive mode): If the camera's network environment is protected by Firewall, access from outside FTP server may not be possible with PORT  (active mode). In this case, chose PASV (passive mode).

● **FTP Connecting Method**
· Select "Continuous Connection" when transferring data frequently, such as "Scheduled Recording". This mode enables you to record images faster.
· Select "Reconnect" when data transfer is not so frequent.
In this case, network camera logs in/out for each file transfer.

**✎ NOTE**

• When selecting "Scheduled Recording" or "Ext. Control In Recording", network camera logs in to FTP server automatically before the scheduled recording starts. Even though the scheduled recording stops, when there are some unsent image data left in the camera, the camera will not log out from FTP server automatically until it transfers all the image data.
• When selecting "Alarm In" or "Ext. Control In Recording", network camera logs in/out automatically each time an alarm is detected. When there is more than one alarm at a time (receiving another alarm(s) while transferring a file) , the camera logs out from the server after transferring last image data.
• If the "Recording Cycle" is set longer than the connection timout period of the FTP server, FTP connection will be cut off by the server side even with selecting "Continuous Connection" in the FTP Connection Method. (See pages 56 and 57)

## ■ FTP Server Settings - Server 2

When using two servers for different purposes or on different occasions, enter the settings for the second server.

## ■ Transfer Image Size

The size of images transferred to the FTP server can be set.

### ✎NOTE

- The frame rate will be reduced if the "Transfer Image Size" differs from "Resolution" in the "Basic Settings" in "Camera Settings".

## ■ FTP Server Usage

OFF:   "Server 2" is not used.  (Always recorded in "Server 1")
Use different FTP Server in case of communication fault:
        Choose one of the followings.
        Normally recorded in Server 1.
        Recorded in Server 2 if Server 1 fails.
        Normally recorded in Server 2.
        Recorded in Server 1 if Server 2 fails.

## ■ Scheduled Recording
## (Displayed if "Scheduled Recording" is chosen as an FTP record conditions.)

Set if scheduled recording is desired.

**Scheduled Recording**

The following settings are valid when "schedule records" is set to "ON":

| day | Recording Schedule | | | |
|---|---|---|---|---|
| | OFF | All Day | Schedule 1 | Schedule 2 |
| Monday | ⦿ | ○ | ○ | ○ |
| Tuesday | ⦿ | ○ | ○ | ○ |
| Wednesday | ⦿ | ○ | ○ | ○ |
| Thursday | ⦿ | ○ | ○ | ○ |
| Friday | ⦿ | ○ | ○ | ○ |
| Saturday | ⦿ | ○ | ○ | ○ |
| Sunday | ⦿ | ○ | ○ | ○ |
| Schedule 1 | Start: 8 ▼ am ▼ - Stop: 5 ▼ pm ▼ | | | |
| Schedule 2 | Start: 8 ▼ am ▼ - Stop: 5 ▼ pm ▼ | | | |
| Recording Cycle | 1 ▼ seconds | | | |
| Record File Name | LV[＿＿＿＿] yyyymmddHHMMSS***N.JPG | | | |
| Server Path | Server 1: [＿＿＿＿] Server 2: [＿＿＿＿] | | | |

### 1) Configure "Recording Schedule"

· Select one of the setting items for each day of a week.
  "OFF":        No recording at all.
  "All Day":     Records images all day.
  "Schedule1":  Records images in a period you configured in "Schedule 1".
  "Schedule 2": Records images in a period you configured in "Schedule 2".

### 2) Configure Schedule
· You may configure both "Schedule 1" and "Schedule 2" and use them according to your need.
  Possible setting range is between 0 am and 11 pm for both "Start" and "Stop".

### 3) Setting a Recording Cycle

· Recording at a rate of one image per set time (seconds).
· Chose a time to set.
  1/30, 1/15, 1/10, 1/5, 1/3 1/2, 1, 2, 3, 5, 10, 30, 60, 120 or 180  second
· Configured recording cycle will be reflected to "All Day", "Schedule 1" and "Schedule 2".

### ✎NOTE

- The cycle may shift depending on image size and networking conditions.

### 4) Enter "Record File Name"

· Enter characters(no more than 16 characters) in the part described as (keyword).
  File name will be shown like this:
        e.g. LV (Keyword) yyyy mm dd HH MM SS ***N.JPG

### ✎NOTE

- You cannot use these characters: \ / : ; , ! ? * < > ' "

Followings are the meaning of each part.

| LV | Indicates this is the "Scheduled Recording" file. |
|---|---|
| (Keyword) | Enter user defined keyword. |
| yyyymmdd | Indicates date (Year, Month, Day). (e.g. January 1, 2004 → 2004 01 01) |
| HHMMSS | Indicates time (Hour, Minute, Second). (e.g. 23:59:00 → 23 59 00). Time is displayed in 24-hour time display. |
| *** | If the camera records more than one image at the same period, the order is indicated with 3-digit number. The bigger the number, the newer (later) the image. |
| N | Indicates Daylight Saving. N: Not in Daylight Time D: Daylight (Summer) Time |

### 5) Entering Server path

· Set a server path for recording of files.  Ask your FTP server administrator if you have a question.

# Recording Images on FTP Server (Cont.)

Introduction

Viewing・Listening
and Operation

Recording

Set up

Others

## ■ Recording by alarm

### (Displayed if "Alarm Recording" is chosen as an FTP record conditions.)

Set if recording by Alarm In/Motion Detection is desired.
· To detect external alarms or motion, set to enable "Alarm In" or "Motion Detection" in alarm setting (see page 73).

| Recording by Alarm | |
|---|---|
| Pre-Recording | 10 ▾ frames |
| Post-Recording | 10 ▾ frames |
| Recording Cycle | 1 ▾ seconds |
| Record File Name | External alarm : EX [____] yyyymmddHHMMSS***N--A.JPG |
| | Motion detection : MD [____] yyyymmddHHMMSS***N--A.JPG |
| Server Path | Server 1: [____] |
| | Server 2: [____] |

### 1) Setting number of pre-Recording

· Choose the number of images
  0, 3, 5 or 10 images

### 2) Setting number of post-Recording

· Choose the number of images
  0, 3, 5, 10, 20, 60 or 120 images

**⚑ NOTE**

• The number of recorded images may be decreased depending on the network condition, recording interval or other factor.

### 3) Setting a "Recording Cycle"

· Recording at a rate of one images per set time (seconds).
· Chose a time to set.
  1/30, 1/15, 1/10, 1/5, 1/3 1/2, 1, 2, 3, 5, 10, 30, 60, 120 or 180  second

**⚑ NOTE**

• The cycle may shift depending on image size and networking conditions.

### 4) Enter "Record File Name"

· Enter characters (no more than 16 characters) in the part described as (keyword).
  File name will be shown like this:
  e.g. EX (Keyword) yyyy mm dd HH MM SS ***N--A.JPG

**⚑ NOTE**

• You cannot use these characters: \ / : ; , | ? * < >  ' "

Followings are the meaning of each part.

| EX/MD | "EX" indicates this is the file for Alarm In.<br>"MD" indicates this is the file for Motion Detection. |
|---|---|
| (keyword) | Enter user defined keyword. |
| yyyymmdd | Indicates date (Year, Month, Day).<br>(e.g. January 1, 2004 → 2004 01 01) |
| HHMMSS | Indicates time (Hour, Minute, Second).<br>(e.g. 23:59:00 → 23 59 00).<br>Time is displayed in 24-hour time display. |
| *** | If the camera records more than one image at the same period, the order is indicated with 3-digit number. The bigger the number, the newer (latest) the image. |
| —— | Indicates total number of generated alarm(s). when the number reaches to 99, it returns to 00 and starts adding again. Reset to "00" also when the power is turned off. |
| A/B/C | A: Pre-Alarm Recording images.<br>B: Image when alarm has generated.<br>C: Post-Alarm Recording. |

### 5) Entering Server path

· Set a server path for recording of files.  Ask your FTP server administrator if you have a question.

Introduction

Viewing・Listening
and Operation

Recording

Set up

Others

## ■ Recording by Ext. Control In

### (Displayed if "Ext. Control In Recording" is chosen as an FTP record conditions.)

Set if recording by Ext. Control In is desired.
· Set to enable "Ext. Control In" in alarm setting (see page 73).

| Ext. Control In Recording | |
|---|---|
| Recording Cycle | 60 ☑ seconds |
| Record File Name | EC [ ] yyyymmddHHMMSS***N.JPG |
| Server Path | Server 1: [ ]<br>Server 2: [ ] |

#### 1) Setting a Recording Cycle
· Recording at a rate of one images per set time (seconds).
· Chose a time to set.
  1/30, 1/15, 1/10, 1/5, 1/3, 1/2, 1, 2, 3, 5, 10, 30, 60, 120 or 180  second

**NOTE**

● The cycle may shift depending on image size and Network conditions.

#### 2) Enter "Record File Name"
· Enter characters in the part described as (keyword).
  File name will be shown like this:
        e.g. LV (Keyword) yyyy mm dd HH MM SS ***N.JPG

**NOTE**

● You cannot use these characters: \/:;,l?*<>'"

Followings are the meaning of each part.

| EC | Shows a file that is recorded by "Ext. Control In Recording". |
|---|---|
| (Keyword) | Enter user defined keyword. |
| yyyymmdd | Indicates date (Year, Month, Day).<br>(e.g. January 1, 2004 → 2004 01 01) |
| HHMMSS | Indicates time (Hour, Minute, Second).<br>(e.g. 23:59:00 → 23 59 00).<br>Time is displayed in 24-hour time display. |
| *** | If the camera records more than one image at the same period, the order is indicated with 3-digit number. The bigger the number, the newer (latest) the image. |
| N | Indicates Daylight Saving.<br>N: Not in Daylight Time<br>D: Daylight (Summer) Time |

#### 3) Entering Server Path
· Set a server path for recording of files.  Ask your FTP server administrator if you have a question.

## ■ SD card back up

You can choose to store images in the SD card in case images cannot be recorded in the server due to a network failure, server shutdown or other trouble.  Stored images can be transferred to the FTP server when the network restores or trouble cause is removed.

| SD Card Back Up | |
|---|---|
| Function ON/OFF | ○ ON  ⊙ OFF |
| Accumulation Cycle | 60 ☑ seconds |
| Overwrite | ○ ON  ⊙ OFF |

#### 1) Setting ON/OFF of storage function
· Choose "ON" when wishing to store images in the SD memory card. Otherwise choose "OFF."

#### 2) Accumulation Cycle
· Set an interval in seconds for recording images to be stored.
· Choose a time to set.
  1, 2, 5, 10, 15, 30, 60, 120, 300, 600, 900, 1800 or 3600 seconds

#### 3) Setting overwrite function
Set whether or not to overwrite when the storage capacity of the SD memory card becomes full.
ON:  Overwrite beginning old stored images.
OFF: SD Card is not overwritten.

**NOTE**

● Set "Accumulation Cycle" and "Overwrite" after setting "Function ON/OFF" to "ON."
● Setting the Overwrite mode to "ON" deletes files beginning with old files. Set the mode to "OFF" if important data is stored.
● Do not change settings while storage files are stored in the SD memory card.  Otherwise, settings for the current recording conditions will be used for the server path.

### File Transfer Order (Scheduled Recording)

Files are transferred in recorded order. However, these cameras may take following steps depending on network conditions.

1) When networking condition causes the file transferring delay, the camera may transfer the old files in the file transfer intervals.
2) Regardless of file transferring schedule, the camera continue to transferes files until all files are transfered.

**NOTE**

- Files sometimes cannot be transferred depending on the status of the network and FTP server.  In this case, data can be stored in the SD memory card.  Set "SD card back up" for "FTP recording" in "Camera setup" (see page 61) to transfer data to the FTP server as described in 2) above).

Images (JPEG files) can be recorded in a personal computer.

### Recording 1-shot images in personal computer

**1** Click [ ] button, one of the operation buttons in the Camera Image screen.

· "JPEG file" will appear on the personal computer.

**2** Right-click in the screen, choose "Save as" and save in the personal computer.

### Recording images in the personal computer

**1** Click [ ] button, one of the operation buttons in the Camera Image screen.

· The setup screen for "Jpeg Local Saving" will appear.

**2** Set recording seconds or the number of files.  Click the Seconds button or the Files button.



Jpeg Local Saving - Microsoft In...

Jpeg File Save Folder:

C:\Documents and Settings\TOSHIBA\My Documents\ToshibaNetworkCamera

Time/Num:

80
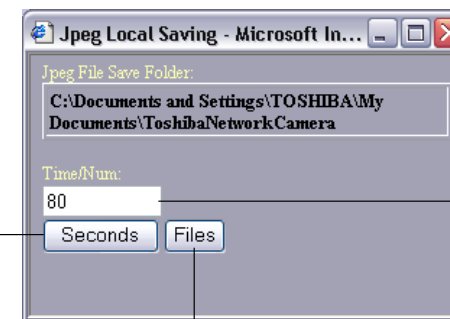
[Seconds] [Files]

Clicking will record for set seconds.

Clicking will record the set number of files.

Enter recording seconds or the number of files.

**NOTE**

- Recorded files will be saved in the folder "ToshibaNetworkCamera" in My Documents.
- The number of recorded images when the number of seconds is specified and recording interval when the number of files is specified depends on the set frame rate.  (See page 72)  The frame rate may be decreased depending on the network condition.
- The maximum number of seconds is 3600 seconds and the maximum number of recorded files is 1000.

# Recording Sound in Personal Computer

Sound can be recorded in a personal computer (wav file).

## 1 Click 🖳 button, one of the operation buttons in the Camera Image screen.

· The setup screen for "Wave Local Saving" will appear.

## 2 Set recording seconds or the number of files. Click the Seconds button or the Files button.
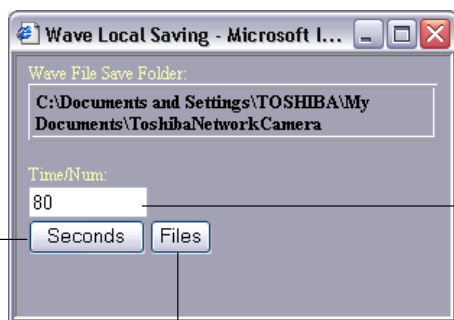
Clicking will record for set seconds.

Clicking will record the set number of files.

Enter recording seconds or the number of files.

### 🖋 NOTE

- Recording is disabled unless the Camera Image screen is set to the Audio Output mode (🔊 button displayed).
- Recorded files will be saved in the folder "ToshibaNetworkCamera" in My Documents.
- Recorded one second as one file.

# Setting

Only the system administrator can set all settings with the network camera. Clicking the menu on the left of the Administrator Setup menu selects set items.

## General setting method

## 1 Click "Camera Settings", "PAN/TILT Settings", "Network Settings", "Multi Screen Display", "Admin. Function" or "Log Management" in the Admin. Menu.

· The sub menu of the clicked setting will pop up.
· Unless logged in as an administrator, the Administrator Setup Menu will not be displayed.

## 2 Click an item in the sub menu desired to set.

· The setup screen for the clicked item appears on the right of the screen.

## 3 Configure each setting items.

· Click the Save button to save settings.
· Clicking the Reset button resets to settings last saved.
· Clicking the Default button resets settings back to factory default.

### 🖋 NOTE

- See "Recording Image" on page 50, instead of "Setting," to set "Records" and "FTP records" in "Camera setting."
- Clicking the Default button in the setup screen on "5. configuration Information" in "Admin. Functions" resets all settings back to factory default.

# Camera/Basic Settings

Basic items such as size and quality of delivered images of the camera can be set.

## 1 Click "Camera Settings" on the Admin. Menu.

· A sub menu for Camera Settings will appear.

## 2 Click "1. General" in the sub menu.

· The screen of "Camera - Basic Settings, Frame Rate" will appear.
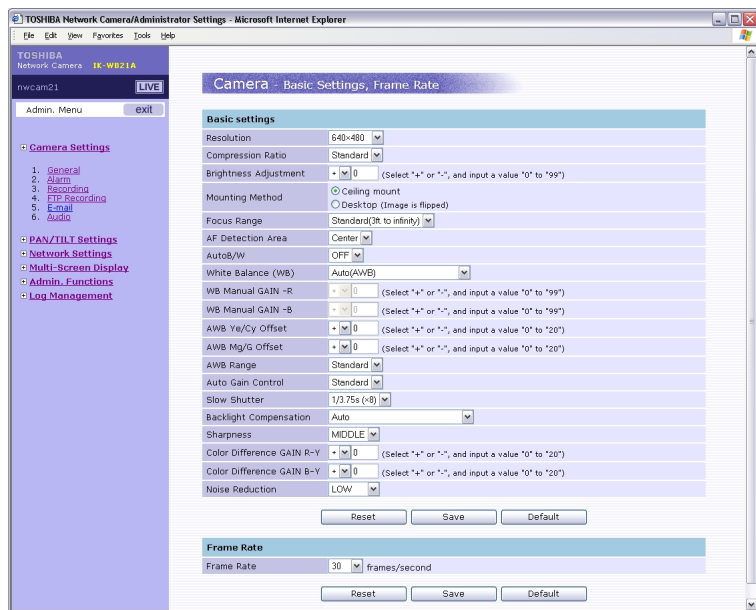


## 3 Configure each setting items.

· Click the Save button to save settings.
· The settings will not be reflected unless the Save button is clicked.

📝 **NOTE**

- This setting item can be set by user log-in also if the item is set correctly in the settings for "Admin. Functions/User Operation Restriction" (see page 94).

● **Resolution**
Configures resolution.  Higher Resolution results in larger image
Possible settings :   1280×960 (SXVGA)／640×480 (VGA)／320×240 (QVGA)／160×120 (QQVGA)

● **Compression Ratio**
Set quality of delivered images.  The size of image files (JPEG files) varies in accordance with compression ratio.
Low compression: This setting produces highest image quality.  The file size increases.
Mid-low compression:
Intermediate setting between standard and low compression rates.
Standard: Standard setting.
Mid-high compression:
Intermediate setting between standard and high compression.
High compression: This setting produces lowest image quality. The file size decreases.

📝 **NOTE**

- The picture quality and the file size change depending on the conditions of an object (splendor, resolution, movement).
- Size of the files affect the network and smaller file size may increase frame rate.

● **Brightness Adjustment**
The camera automatically adjusts the level of brightness of images.  Adjust so that the image level becomes optimum in accordance with conditions of the object.  Images become brighter higher the level is.  Images are dark lower the level is.

📝 **NOTE**

- The brightness level of images are controlled automatically by adjustment of  the lens, AGC and slow shutter.

● **Mounting Method**
Set to install the camera.
Ceiling mount: Suspended on a ceiling
Desktop: When used on a desk

● **Focus Range**
Set an focusing range.
Standard: Auto focus is in focus when the distance between the camera and object is more than 3 ft.
Macro: Auto focus is in focus when the distance between the camera and object is between 0.4 inch and 3ft.

📝 **NOTE**

- Auto focusing is sometimes not possible when shooting through a glass pane, a flat object such as a wall and moving object.  Achieve focusing of these objects by manual focusing.
- Auto focusing is sometimes disabled due to noise when the AGC function operates.  Then adjust focusing in the Manual mode.
- Auto focusing is sometimes not possible when the object is dark and camera sensitivity is not low enough.  Then adjust focusing in the Manual mode.
- Auto focusing is sometimes not possible with images that are output to a TV or a personal computer monitor.  Then adjust focusing in the Manual mode.
- Focusing to 0.4 inch in the macro mode is possible up to about 3.5 x zoom.  Focusing at a higher magnification will be possible only if the distance to the object is longer than 3ft.

● **AF Detection Area**
Center: Set a focus detection area in the center of the screen.
All: Set the focus detection area onto the entire screen.  Choose this oprion if focusing is difficult

# Camera/Basic Settings (Cont.)

● Auto B/W
Configures Auto black and white function. Auto B/W is the function to gain sensitivity by turning to B/W automatically when it becomes dark. The image may have some noise in B/W mode.
ON : Auto B/W takes action.
OFF : Auto B/W does not take action.

● White Balance (WB)
White balance adjustment is needed to obtain images of a correct color tone. The camera offers selection of a white balance mode - auto white balance (AWB), fixed (indoor and outdoor), hold or manual. In the Auto mode, the camera automatically accomplishes a white balance.

The auto operating color temperature range is approx. 2500K to approx. 7000K when "AWB Range" is set to standard and is approx. 2200K to approx. 9000K when "AWB Range" is set to wide. WB is automatically achieved in almost all situations, except when the object is dark or un-white, in which case a good balance sometimes cannot be achieved. In this case, set to the Fixed or Manual mode.

| Operation Mode | Overview | Characteristics | Remarks |
|---|---|---|---|
| Auto (AWB) | Camera automatically measures color temperature and sets white balance. | Camera automatically tracks color temperature variations and sets white balance. | Operating color temperature range varies within AWB control range. |
| Indoor (Incandescent light color) | Optimizes white balance under illumination of an incandescent lamp. | Effective in environment where illumination conditions are constant. | Optimum white balance is achieved at color temperature of approx. 3000K. |
| Indoor (Fluorescent light color) | Optimizes white balance under illumination of a fluorescent lamp. | Effective in environment where illumination conditions are constant. | Optimum white balance is achieved at color temperature of approx. 4000K. |
| Outdoor (Sun light) | Optimizes white balance under solar lights in outdoors. | Effective when incandescent lighting is not used. | Optimum white balance is achieved at color temperature of approx. 5200K. |
| Hold | Maintains current white balance. | Effective when wishing to fix in current status. | |
| Manual | Manually adjust R (red) and B (blue) levels while photographing a white object. | Artificially sets according to the object and is effective in environment where precision is high and color temperature varies less. | Adjust while checking on a monitor or a vector scope. |

✍ **NOTE**

• The Auto mode may not be effective if lighting is insufficient and the object is dark. In this case, increase the camera sensitivity (high limit values of AGC and slow shutter) or set white balance to the Fixed mode.
• White balance may not be optimal depending on the type of fluorescent lamp even when shooting indoors (fluorescent lamp), in which case change to other setting.
• White balance may not be optimal in the Auto mode under a sodium vapor lamp. In this case, set the AWB control range to wide or to the Manual mode referring to "AWB Control Range."

● WB Manual GAIN - R, WB Manual GAIN - B
Set a gain for a white balance in the Manual mode. Match the white balance by operating R gain and B gain.
Increase the value to increase the set gain and reduce the value to reduce the set gain.

● AWB Ye/Cy Offset, AWB Mg/G Offset
Set the white balance offset. In the Auto mode of white balance, offset the convergent point of white balance in the direction of a preset color, to obtain a desired color tone.
Ye/Cy Offset: The convergent point shifts to the yellow side when the value is increased toward the plus side, shifting to the cyan side when increased toward the minus side.
Mg/G Offset: The convergent point shifts to the magenta side when the value is increased toward the plus side, shifting to the green side when increased toward the minus side.

● AWB Range
Set the control range of white balance in the Auto mode.
Standard: The operating color temperature range is approx. 2500K to approx. 7000K.
Wide: The operating color temperature range is approx. 2200K to approx. 9000K.

✍ **NOTE**

• A wide setting may cause an unnatural hue of the image.

● Auto Gain Control
Set a maximum value for operational gain of the auto gain control circuit. Set to maximum if the object is too dark and camera sensitivity is low.
The camera sensitivity increases in the order of "OFF," "standard" and "Max" Noise also increases when Auto Gain Control is near maximum. Lighting is recommended to obtain good image quality.

✍ **NOTE**

• If sensitivity is still short after setting Auto Gain control, set the high limit value of the slow shutter and auto B/W function, to further increase sensitivity.

# Camera/Basic Settings (Cont.)

● **Slow Shutter**

Set a high limit value of the slow shutter. The camera sensitivity is maintained on an optimum image level between 1x and a set high limit value. Increasing the high limit value increases the camera sensitivity.

✎ **NOTE**

• Setting the high limit value of slow shutter other than to 1x automatically increases the camera sensitivity to the set high limit value as the object becomes dark. When the sensitivity is high, the exposure time becomes longer and frame rate becomes smaller. Blurred images sometimes are prominent with moving objects.

● **Backlight Compensation**

Set an area for backlight compensation. Backlight compensation is a function that achieves the brightness of a selected area to an optimum image level. This function is effective when the auto aperture lens tends to close due to an intense light that enters in areas other than those wished to view so that areas desired to see become dark and difficult to see. In this case, set the area so that the portion wished to see enters the selected area. The area size is roughly as follows.
(The image level of shaded parts is maintained appropriate)
When OFF, rear light correction is not performed.
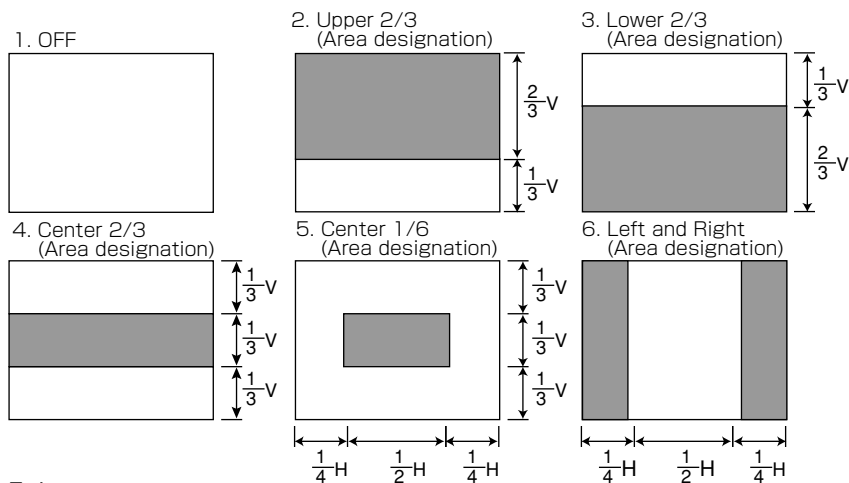


1. OFF
2. Upper 2/3 (Area designation)
3. Lower 2/3 (Area designation)
4. Center 2/3 (Area designation)
5. Center 1/6 (Area designation)
6. Left and Right (Area designation)
7. Auto
Areas 1 to 6 are combined and controlled depending on the condition of the object.

✎ **NOTE**

• The Auto mode controls to optimize brightness of a dark part of the screen by letting the camera to automatically decide such part. For this reason, part of an image of a bright part is sometimes washed out.

● **Sharpness**

Set image outline correction. Chose "HIGH" when wishing to make the outline clearer, choosing "LOW" to make the outline softer.
LOW: The contour becomes soft.
MIDDLE: Standard setting
HIGH: The contour becomes sharp.

● **Color Difference GAIN R-Y, Color Difference GAIN B-Y**

Set a color difference gain. Increase the value to increase the gain, reducing the value to reduce the gain.
Color difference GAIN R-Y: Sets a color gain of R-Y axis.
Color difference GAIN B-Y: Sets a color gain of B-Y axis.

● **Noise Reduction**

Set a noise reduction effect. The noise reduction effect increases in the order of "LOW" "MIDDLE," and "HIGH."
HIGH: Activates noise reduction strong.
MIDDLE: Standard setting
LOW: Activates noise reduction weak.

✎ **NOTE**

• Setting to "LOW" or "HIGH" increases the noise reduction effect. After images, however, sometimes become prominent when a moving object is photographed.

# Camera/Basic Settings, Frame Rate

Set a frame rate (transfer rate, frames/s) of image data delivered to the network.

## 1 Click "Camera Settings" on the Administrator Setup menu.

· A sub menu for Camera Settings will appear.

## 2 Click "1. General" in the sub menu.

· A screen for setting Camera - Basic Settings, Frame Rate will apper.
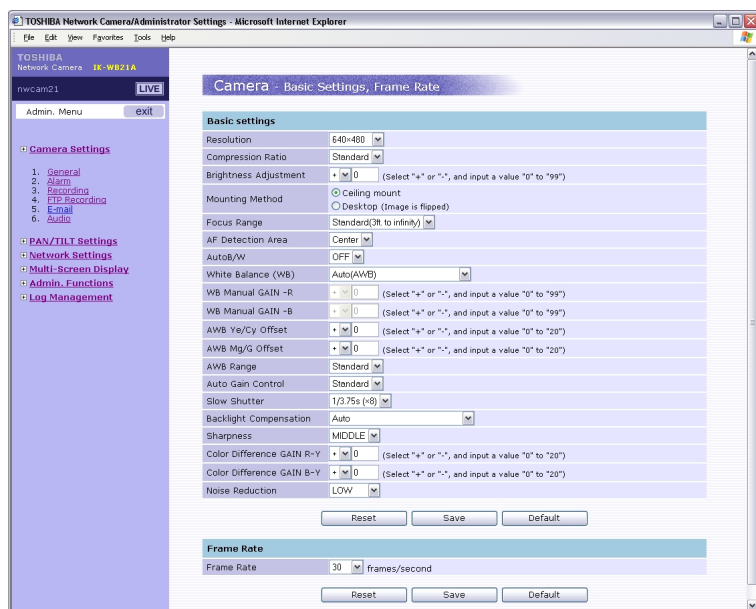


## 3 Item setting.

· Choose "Frame Rate" in the pull-down menu.
  30, 15, 7.5, 3, 2, 1, 1/2, 1/5 or 1/10 frame/s
· Click the Save button to save settings.
· The settings will not be reflected unless the Save button is clicked.

### ✎NOTE

- This setting sets the number of JPEG images the network camera delivers in one second. Set in accordance with the network bandwidth and size of JPEG images to be delivered.
- One image is delivered every 2 seconds in 1/2, one image every 5 seconds in 1/5 and one image every 10 seconds in 1/l0.
- Fewer images than a set frame rate are sometimes sent depending on the image size and network condition.
- Setting the delivery image size to 1280 x 960 sets the frame rate to 7.5 frames/second maximum.

# Camera/Alarm Settings

External alarms and motion sensors can be set. Connecting a sensor or other device to the alarm input terminal (see page 101) notifies an alarm when the sensor detects a trouble. For example, mounting a sensor on a door notifies an alarm each time the door is opened or closed. By setting the motion sensor to activate, an alarm is notified by detecting a change in a screen.

## 1 Click "Camera Settings" on the Admin. Menu.

· A sub menu for Camera Settings will appear.

## 2 Click "2. Alarm" in the sub menu.

· The screen of "Camera - Alarm Settings" will appear.
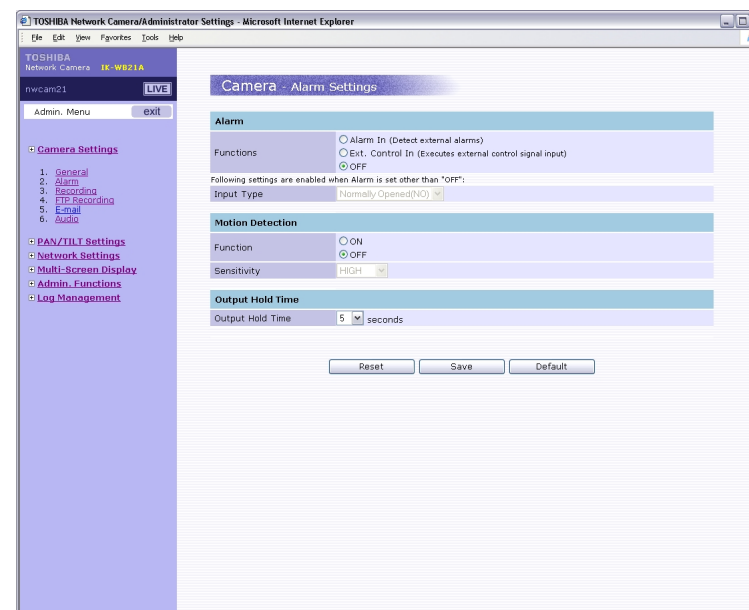


## 3 Configure each setting items.

· Click the Save button to save settings.
· The settings will not be reflected unless the Save button is clicked.

● **Alarm In/Ext. Control In**

1) Set an "alarm" to be detected.

    Alarm In:       Detects an external alarm.
    Ext. Control In: Performs external control.
    OFF:          Does not perform "Alarm In" or "Ext. Control In."

2) Set "Input type" for alarms if "Function" is set to other than "OFF."

    Normally Opened (NO): A no-voltage contact system. Set in case of normally open, closed in case of an alarm.
    Normally Closed (NC): A no-voltage contact system. Set in case of normally closed, open in case of an alarm.

> ✒ **NOTE**
>
> • Camera starts alarm recording when camera detects alarm signal. (Signal lenghth requires more than 100ms).
> • Camera starts "Ext. Control In Recording" when control signal comes in. (Control signal should be more than 1 second).

● **Motion Detection**

1) Function

    ON: Camera detects motion. (A change in the screen is detected and an alarm is sent)
    OFF: Camera does not detect motion.

2) Sensitivity

    Set "Sensitivity."
    HIGH:     It works with even a small change in brightness or motion is detected.
    MIDDLE: Intermediate between HIGH and LOW.
    LOW:      It works only when a large change in brightness or motion is detected.

> ✒ **NOTE**
>
> • Detection sometimes fails if the object is dark.
> • Incorrect detection is sometimes made due to noise if the object is dark and AGC gain is high. Set the sensitivity to low.

● **Output Hold Time**

    Set a time to hold alarm output.
    Choose from 1, 5, 10, 15, 30 and 60 seconds
    This function is used when connecting to alarm output terminals and activating a siren, buzzer or emergency light.

E-mail can be sent to a maximum of 11 destinations including the administrator e-mail address in case of Alarm In or Motion Detection.

## 1 Click "Camera Settings" on the Admin. Menu.

· A sub menu for Camera Settings will appear.

## 2 Click "5. E-mail" in the sub menu.

· The screen of "Camera - E-mail Settings" Settings will appear.
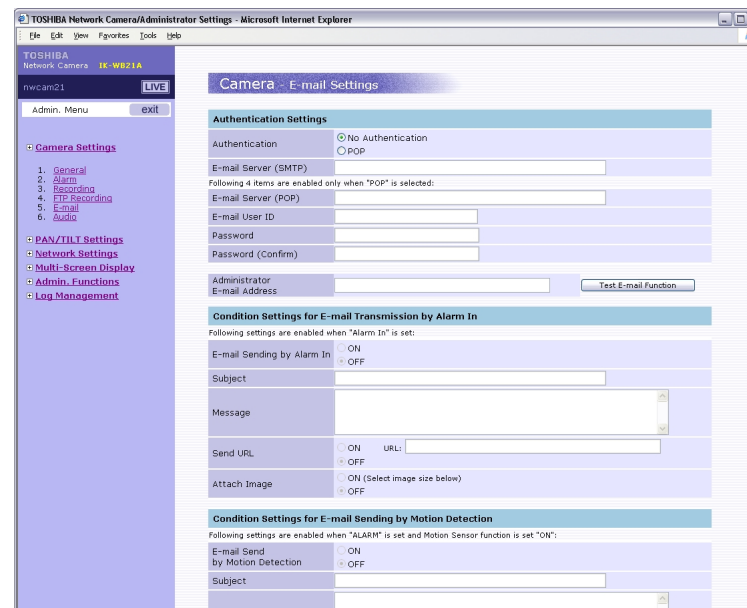


## 3 Configure each setting items.

· Click the Save button to save settings.
· The settings will not be reflected unless the Save button is clicked.

● **Authentication Settings**

1) Choose "SMTP" or "POP" as the authentication system.

2) Enter an SMTP IP address or server name in "E-mail Server (SMTP)."

3) Enter the following when "POP" is chosen in authentication.

"E-mail server (POP)": Enter an IP address or a server name of the POP server.

"E-mail User ID": Enter a login ID for authentication.

"Password": Input a password.

"Password (confirm)": Enter the same password again.

4) Enter the administrator e-mail address in "Administrator e-mail address."

· Clicking the "Test E-mail Function" button sends e-mail to the administrator as a test.

### ✐ NOTE

- You cannot use these characters: ' "
- Maximum of 16 of the following characters can be entered in "E-mail login ID," "Password" and "Password (confirm)":
  . (dot), - (hyphen), @, 0 - 9, a to z and A to Z
- If a server name is input instead of an IP address in "E-mail server (SMTP)" and "E-mail server (POP)," the DNS server must be input correctly. (See "Network/Basic Setting" on page 86)

● **Condition Settings for E-mail sending by Alarm In**

1) Set ON or OFF in "E-mail sending by Alarm In."

ON: E-mail is sent when Camera detects alarms.

OFF: E-mail is not sent when Camera detects alarms.

2) Enter a title in "Subject".

3) Enter a message in "Message."

4) Set ON or OFF in "Send URL."

ON: Adds server address information to message.

OFF: Does not add server address information to message.

Input address information such as network camera and FTP server if "ON" is selected.

5) Set "ON" or "OFF" in "Attach Image".

ON: Captured images are attached to e-mail.

OFF: Images are not attached to e-mail.

6) Choose "Attached Image Size" in the sizes shown below if "ON" is set for "Attach Image."

1280 x 960, 640 x 480, 320 x 240 and 160 x 120
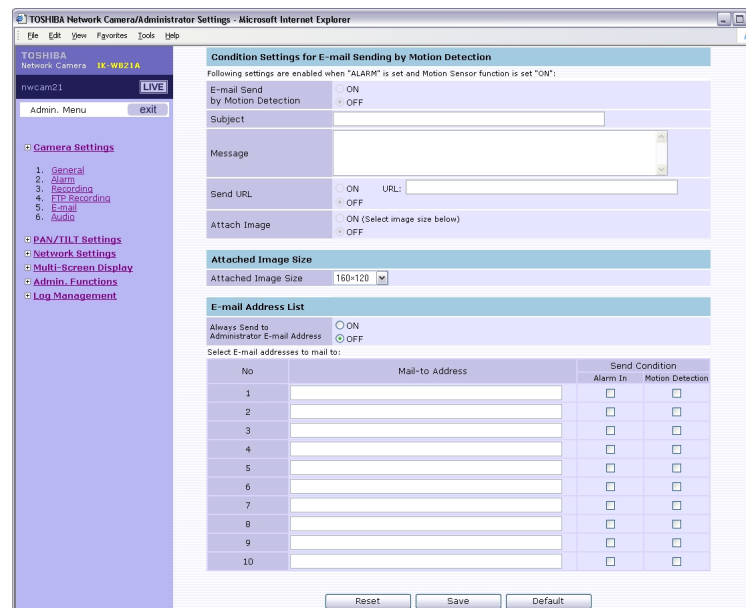


● **Condition Setting for E-mail Sending by Motion Detection**

1) Set ON or OFF in "E-mail Sending by Motion Detection."

ON: E-mail is sent when motion is detected.

OFF: E-mail is not sent when motion is detected.

2) Enter a title in "Subject".

3) Enter a message in "Message."

4) Set ON or OFF in "Send URL."

ON: Adds server address information to message.

OFF: Does not add server address information to message.

Enter address information such as network camera and FTP server if "ON" is selected.

5) Set ON or OFF for image attaching in "Attach Image."

ON: Captured images are attached to e-mail.

OFF: Images are not attached to e-mail.

6) Choose "Attached Image Size" in the sizes shown below if "ON" is set for "Attach Image."

1280 x 960, 640 x 480, 320 x 240 and 160 x 120

# Camera/E-mail Settings (Cont.)

● **E-mail Address List**

1) Set ON or OFF in "Always Sent to Administrator E-mail Address."

　ON: Always send to administrator E-mail address.

　OFF: Not send to administrator E-mail address.

2) Enter "Mail-to Address."  (Up to ten addresses)

3) Check send conditions.

　Alarm In:　　　　　E-mail is sent to checked addresses when camera detect alarms.

　Motion Detection: E-mail is sent to checked addresses when camera motion is detected.

### ✐ NOTE

- POP is a protocol for receiving e-mail from e-mail box.  As the network camera does not receive e-mail, e-mail in POP server will not be lost due to this setting.
- The e-mail function of the network camera is not compatible to "SMTP Auth."
- The frame rate deteriorates if resolution of "Attached Image Size" differs from "Resolution" in "1. General" of "Camera Settings".
- When wishing to send e-mail to administrator's address only in case of either "Alarm In" or "Motion Detectoin", set to "OFF" in "Always  Send to Administrator E-mail Address", add the Administrator E-mail address to "Mail-to Address" and check one of "Send Conditoins."

# Camera/Audio Settings

Set audio input to and output from the network camera.

## 1 Click "Camera Settings" on the Admin. Menu.

· A sub menu for Camera Settings will appear.

## 2 Click "6. Audio" in the sub menu.

· The screen of "Camera - Audio" will appear.
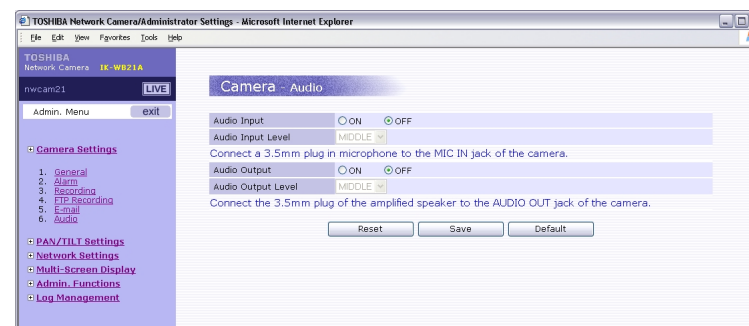


## 3 Configure each setting items.

· Click the Save button to save settings.
· The settings will not be reflected unless the Save button is clicked.

● **Audio Input**

Set audio input.

ON:  The camera receives audio.

OFF: The camera does not recieve audio.

· Set to "ON" when inputting audio from a microphone connected to the camera.

● **Audio Input Level**

An audio input level is set.

HIGH:　　　Increases the audio input level.

MIDDLE:　Adjusts the audio input level to a medium level.

LOW:　　　Reduces the audio input level.

● **Audio Output**

Set audio output.

ON:  The camera receives audio.

OFF: The camera does not recieve audio.

· Set to "ON" when outputting audio from a microphone connected to the camera.

● **Audio Output Level**

An audio output level is set.

HIGH:　　　Increases the audio output level.

MIDDLE:　Adjusts the audio output level to a medium level.

LOW:　　　Reduces the audio output level.

# PAN/TILT Basic Settings

Basic settings for PAN and TILT.

## 1 Click "PAN/TILT Settings" in the Admin. Menu.

· The sub menu for PAN/TILT Settings will appear.

## 2 Click "1. General" in the sub menu.

· A setup screen of "PAN/TILT - Basic Settings will appear.
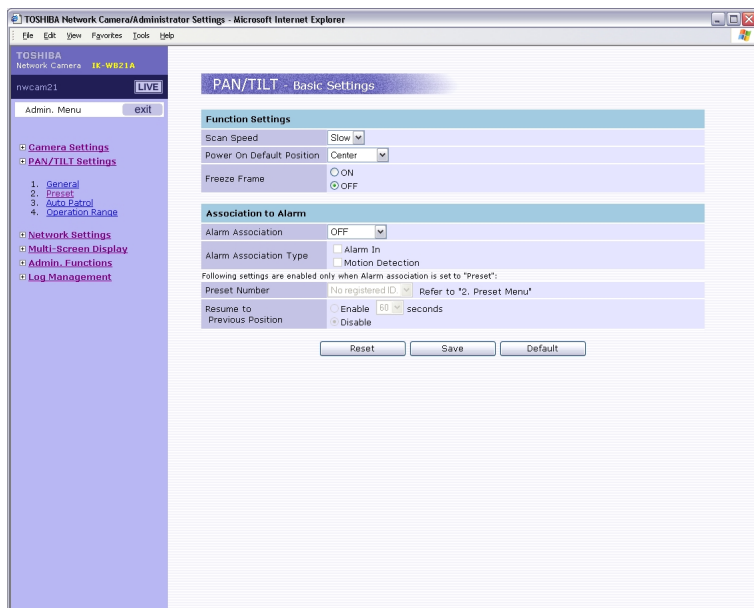


## 3 Configure each setting items.

· Click the Save button to save settings.
· The settings will not be reflected unless the Save button is clicked.

● **Function Settings**
1) Set a "Scan Speed."

Fast
Slow

2) Set "Power on Default Position"

This function designates where camera moves when camera is turned on.

Center:　　　　Moves to positions of 0° for PAN and 0° for TILT.
Home:　　　　 Moves to Preset Number 1.
Scan:　　　　　Starts auto panning.
Auto Patrol:　 Starts auto patrol.

3) Set "Freeze Frame."

ON: Under "Auto Patrol", images will not be shawn while camera moves from Preset Number to next Perset Number.
OFF: No "Freeze Frame".

● **Association to Alarm**
1) Set "Alarm Association."

OFF:　　　　　 Does nothing.  "Alarm Association Type" or "Preset Number" cannot be set.
Preset:　　　　Performs preset moving when an alarm occurs.
Auto patrol:　 Starts auto patrol when an alarm occurs.

2) Set "Alarm Association Type."

Alarm In:　　　　"Alarm In" will activate "Association to Alarm".
Motion Detection: "Motion Detection" will activate "Association to Alarm".

3) Set when "Alarm Association" is set to "Preset."

Preset Number:　Choose preset Number.
Resume to Previous Position: Camera moves back to position before "Assciation to Alarm" ocured.
　　　　　　　　Enable:　10, 30 and 60 seconds
　　　　　　　　Disable:　Stays in the position moved to "Association to Alarm."

# PAN/TILT Preset Settings

Name assignment, position assignment, moving, deletion and other functions related to PAN and TILT can be set.

## 1 Click "PAN/TILT Settings" in the Admin. Menu.

· The sub menu for PAN/TILT Settings will appear.

## 2 Click "2. Preset" in the sub menu.

· A setup screen of PAN/TILT - Preset Settings will appear.
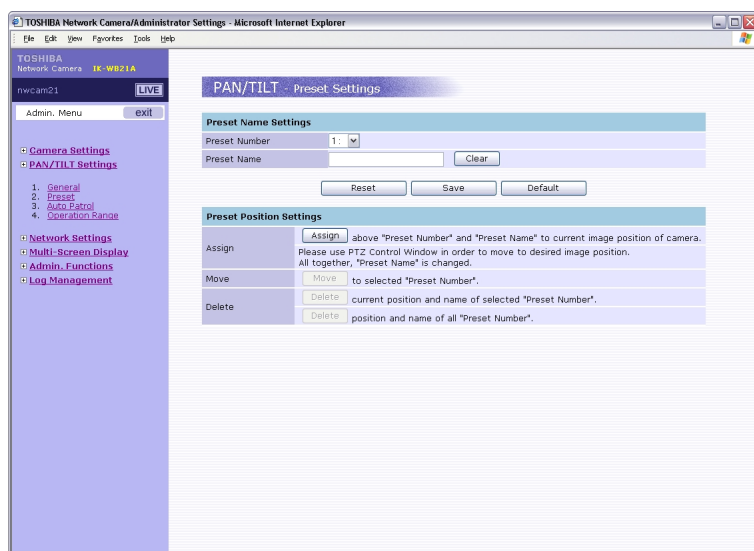


## 3 Configure each setting items.

· Click the Save button to save settings.
· The settings will not be reflected unless the Save button is clicked.

● **Preset name settings**

1) Choosing Preset Number

Choose a number during name assignment, position assignment, moving and deletion.
Numbers 1 to 64 can be choosen.

2) Position Name

Name the chosen Preset Number.  Click the Clear button if incorrect name is entered.
· Click the "Save" button under items to reflect the foregoing setting.
· Clicking the Reset button resets to the setting last saved.
· Clicking the Default button resets values to factory default.

● **Preset position settings**

1) If you would like to assign chosen "Preset Number" and "Position Name" to current position, click "Set" button.

If you would like camera to move to different postion, use the controller window.

2) Click "Move" button if you would like camera to move to selected "Preset Number" above.

3) current position and name of selected "preset Number".

position and name of all "Preset Number".
· Click each button on the right to reflect the foregoing settings.

---

**NOTE**

● Preset Name must have 12 characters or less in length.
● You cannot use these characters: ' "

# PAN/TILT Auto Patrol

Dwell time for Auto Patrol can be set.

## 1 Click "PAN/TILT Settings" in the Administrator Setup menu.

· The sub menu for PAN/TILT setting will appear.

## 2 Click "3. Auto Patrol" in the sub menu.

· A setup screen of "PAN/TILT - Auto Patrol" will appear.
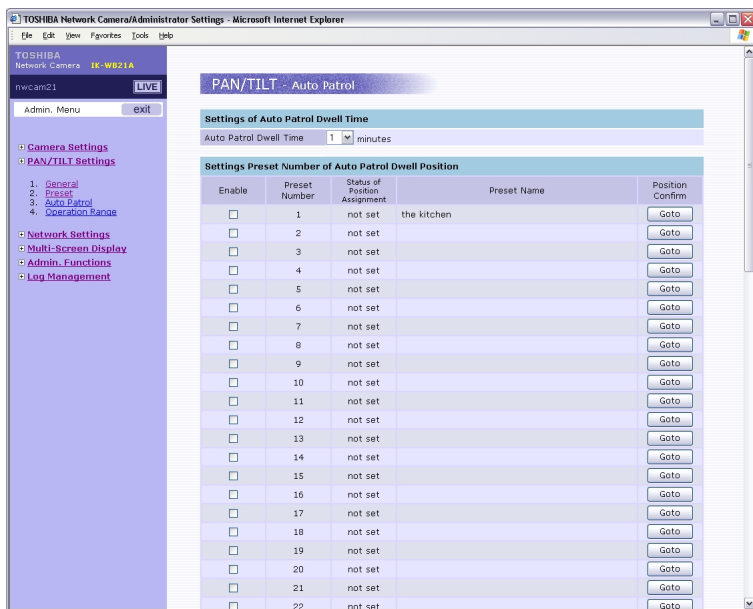


## 3 Configure each setting items.

· Click the Save button to save settings.
· The settings will not be reflected unless the Save button is clicked.

● **Setting of Auto Patrol Dwell Time**
Set a dwell time for Auto Patrol.
Choose from among 1, 2, 5 and 10 minutes.
This item sets the time to dwell in the position of each Preset Number.

● **Settings Preset Number of Auto Patrol Dwell Position**
Set whether or not to dwell at each Preset Number.

---

# PAN/TILT Operation Range

A PAN/TILT operation range of the camera can be set.

## 1 Click "PAN/TILT Settings" in the Administrator Setup menu.

· The sub menu for PAN/TILT setting will appear.

## 2 Click "4. Operation Range" in the sub menu.

· A setup screen of "PAN/TILT - Operation Range Settings" will appear.
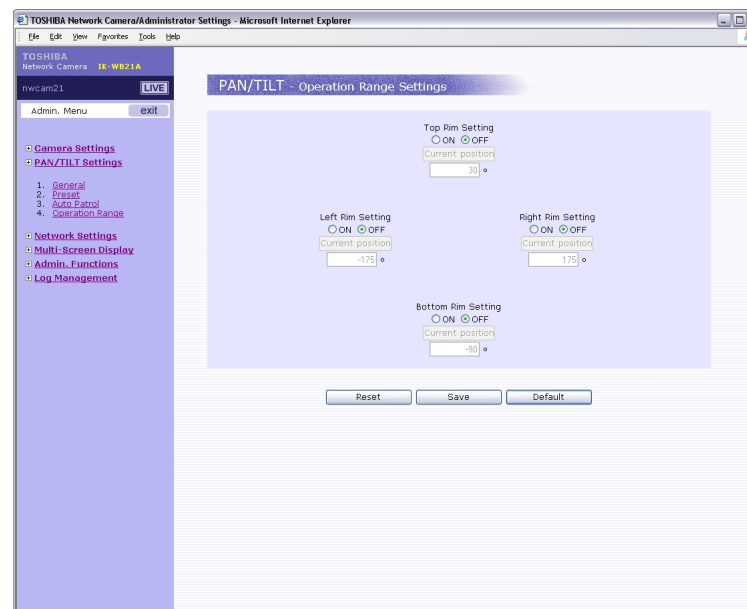


## 3 Configure each setting items.

· Click the Save button to save settings.
· The settings will not be reflected unless the Save button is clicked.

● **Setting Operation Range of Left, Right, Top and Bottom.**
Align the position by using Controller Window.
ON:                        Enables to limit Operation Range.
OFF:                       Disables to limit Operation Range.
Current position:  Set the current position as each limit.

### ✎ NOTE

• Moving to the preset position and in auto patrol operation has been restricted.

# Network Basic Settings

An IP address and other items for connection to the network are set.

## 1 Click "Network Settings" in the Admin. Menu.

· The sub menu for Network Settings will appear.

## 2 Click "1. General" in the sub menu.

· A setup screen of "Network - Basic Settings" will appear.
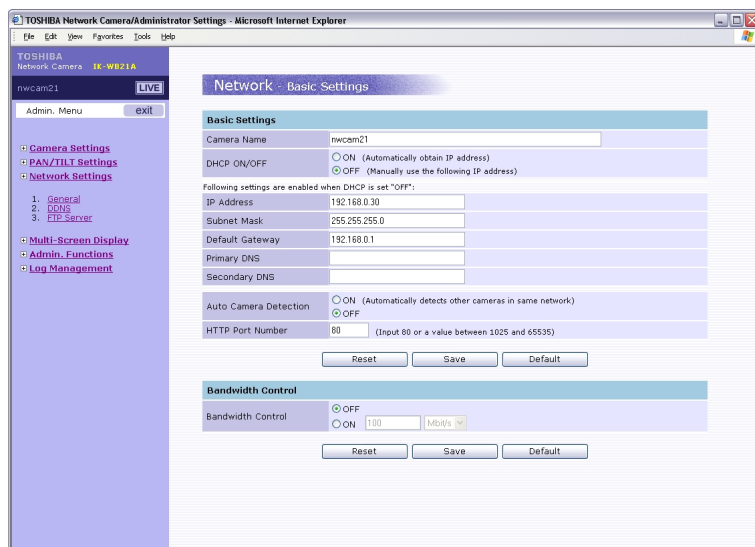


## 3 Configure each setting items.

· Click the Save button to save settings.
· The settings will not be reflected unless the Save button is clicked.

● **Camera name**
Enter maximum 18 alphanumeric characters as a name for the camera.
You cannot use these characters: ' "

● **DHCP ON/OFF**
1) Set ON or OFF for DHCP.

ON: An IP address is automatically obtained.
OFF: Sets an IP address by self.

2) When "OFF" is chosen, enter the "IP address", "Subnet Mask", "Default Gateway", "Primary DNS" and "Secondary DNS."

● **Auto Camera Detection**
Set ON or OFF for Auto Camera Detection.
The camera is equipped with a function to automatically detect and store other cameras (only cameras provided with RNCP) in the same network. This function is useful in the multi-view screen function. "ON" is recommended if there are other network cameras in the same network.

● **HTTP Port Number**
Enter an HTTP port number. Normally, "80" is default.

● **Bandwidth Control**
Set ON or OFF for bandwidth control.
OFF: The network Camera will display images maximum frame rate allowed by the network.
ON: The Network Camera displays images up to the set bandwidth using a lower bandwidth results in higher frame rates.

### ✎ NOTE

- Ask your system administrator for Subnet Mask information.
- It is not necessary to enter Default Gateway if it is not used. Ask your Network Administrator for Default Gateway information.
- When reconnecting Network Camera after changing the IP address and/or HTTP port number, be sure to check IP address and the HTTP port number in the browser are correct.
- Clicking the Save button displays the confirmation message "This sill save setting changes and reboot the camera. Do you want to continue? (Please type in the address in the browser after rebooting the camera.)" Click "Yes" save settings.
- You cannot use these characters: ' "

DDNS can be used.  Establish DDNS server connection.

## 1 Click "Network Settings" in the Admin. Menu.

· The sub menu for network setting will appear.

## 2 Click "2. DDNS" in the sub menu.

· A setup screen of "Network / DDNS Settings" will appear.
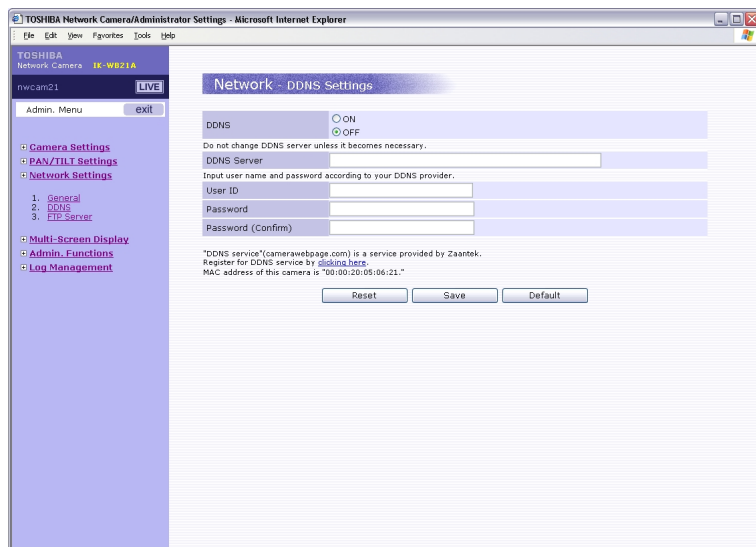


## 3 Configure each setting items.

1) Set ON or OFF for "DDNS use."
   ON:    Use DDNS.
   OFF:    Do not use DDNS.
2) When using DDNS, be sure to register with DDNS provider. Enter "DDNS Server", "User ID",  "Password" and "Password (confirm)".

· Click the Save button to save settings.
· The settings will not be reflected unless the Save button is clicked.

**NOTE**

* Enter only 6 to 12 lower-case alphanumeric characters as an User ID.
* Maximum of 16 characters can be used in "User ID," "Password" and "Password (confirm)"::
     . (dot), - (hyphen), @, 0 - 9, a to z and A to Z
* You cannot use these characters: ' "
* Be sure that the DDNS server information is entered correctly.  (See "Network/ Basic Setting" on page 86)

---

The network camera can be set as an FTP server for connection from a personal computer or other terminal.

## 1 Click "Network Settings" in the Admin. Menu.

· The sub menu for network setting will appear.

## 2 Click "3. FTP Server" in the sub menu.

· A setup screen of "Network / FTP Server Settings" will appear.
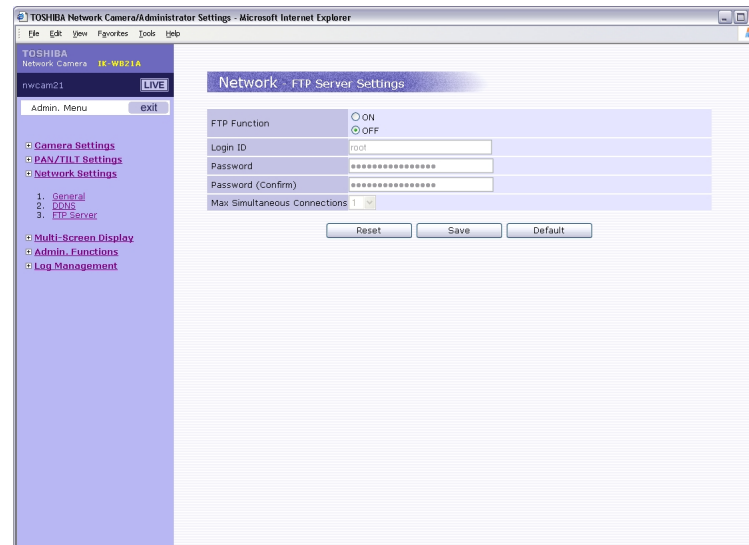


## 3 Configure each setting items.

1) Set ON or OFF for "FTP function."
   ON:  Used as an FTP server.
   OFF: Not used as an FTP server.
2) When using as an "FTP server," enter the user name in "Login ID" and the password in "Password."  Enter the same password in "Password (confirm)".  Choose the maximum number of connections in the pull-down menu in "Maximum number of simultaneous connections."

· Click the Save button to save the settings.
· The settings will not be reflected unless the Save button is clicked.

**NOTE**

* Maximum of 16 following characters can be used in "Login ID", "Password" and "Password (confirm)":
     . (dot), - (hyphen), @, 0 - 9, a to z and A to Z
* Only the contents of the SD memory card can be viewed when the network camera is logged in by FTP.  Therefore, the network camera cannot be logged in by FTP even though the FTP function is set to ON in case an SD memory card is not inserted.

# Multi-Screen Display/Adding and Removing Cameras

Cameras for displaying in the multi-view screen can be added.

## 1 Click "Multi Screen Display" in the Admin. Menu.

· The sub menu for multi screen display setting will appear.

## 2 Click "1. Adding and Removing Cameras" in the sub menu.

· A setup screen of "Multi Screen Display / Camera Addition and Deletion" will appear.
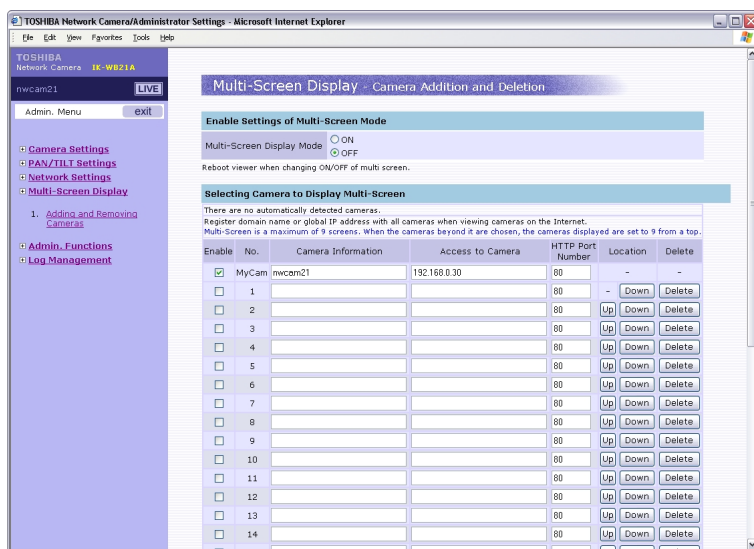


## 3 Configure each setting items.

· Click the Save button to save the settings.
· The settings will not be reflected unless the Save button is clicked.

● **Setting to Enable Multi Screen Display Settings Swiching**
Set ON or OFF for Multi Screen Display Mode.
ON: Enables the Multi Screen Display.
OFF: Disables the Multi Screen Display.

● **Selecting camera for multi screen display**
· Enter "Camera Information", "Access to Camera", and "HTTP Port Number", of the cameras for displaying in the multi-view screen. Up to 30 cameras can be entered.
Enter the information of own camera when displaying images of own camera in the multi-view screen.
Camera information: Enter the camera name.
Access to Camera: Enter the camera IP address or a domain name or other name.
HTTP port Number: Enter the HTTP port Number. "80" will be entered as a default value.
Click the Save button save the settings.

### ✍ NOTE

• Register a domain name or a global IP address with all cameras when viewing camera images on the Internet.
• Multi-Screen is a maximum of 9 screens.
• You cannot use these characters: ' "

# Administrator Function/Changing ID and Password

The administrator log-in name and password can be set.

## 1 Click "Admin. Function" in the Admin. Menu.

· The sub menu for administrator functions will appear.

## 2 Click "1. Changing ID/Password" in the sub menu.

· A setup screen of "Administrator Function / ID Password Change" will appear.
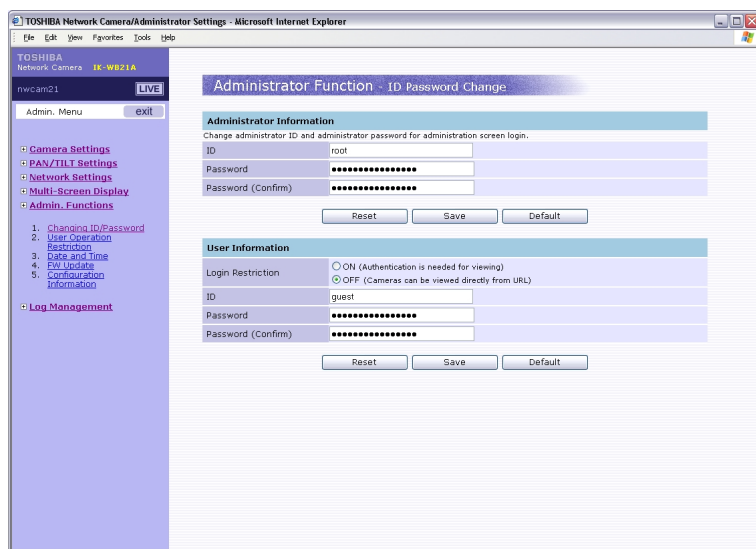


## 3 Configure each setting items.

· Click the Save button to save the settings.
· The settings will not be reflected unless the Save button is clicked.

● **Administrator information setting**
· Set (change) the administrator ID and administrator password for logging in the camera.
ID:                                    Enter an ID (administrator log-in name) for authentication.
Password:                      Enter the password.
Password (Confirm):  Enter the same password again.
Click the Save button save the settings.

### ✎NOTE

• Maximum of 16 following characters can be used in "ID", "Password" and "Password (confirm):
    . (dot), - (hyphen), @, 0 - 9, a to z and A to Z
• Clicking the Save button displays the confirmation message "This will save setting changes and reboot the camera. Do you want to continue? Clicking the OK button will automatically connect to the camera in 30 seconds. Please wait in this condition."  Click "OK" to save the settings and to automatically reboot the network camera.

● **User Information**
Set ON or OFF for "Login Restriction."
ON:  The user ID and Password are requested for authentication during login.
OFF: Can login without authentication.

Set user IDs and passwords of users who are authorized to login on the camera.
"ID":                              Enter an ID for authentication.
"Password":              Enter the password for authentication.
"Password (confirm)": Enter the same password again.
Click the Save button save the settings.

### ✎NOTE

• Maximum of 16 following characters can be used  in "ID", "Password" and "Password (confirm)":
    . (dot), - (hyphen), @, 0 - 9, a to z and A to Z
• Log-in restriction is set to on by default.  Change the login restriction according to your use.
• Clicking the Save button displays the confirmation message "This will save setting changes and reboot the camera. Do you want to continue? Clicking the OK button will automatically connect to the camera in 30 seconds. Please wait in this condition."  Click "OK" to reflect the settings and to automatically reboot the network camera.

# Admin Functions/User Operation Restriction Setting

Several setup items and operations can be made operable by users also.

**1** Click "Admin. Function" in the Admin. Menu.

· The sub menu for administrator function will appear.

**2** Click "2. User Operation Restriction" in the sub menu.

· A setup screen of "Administrator Function /User Operation Enable Settings" will appear.
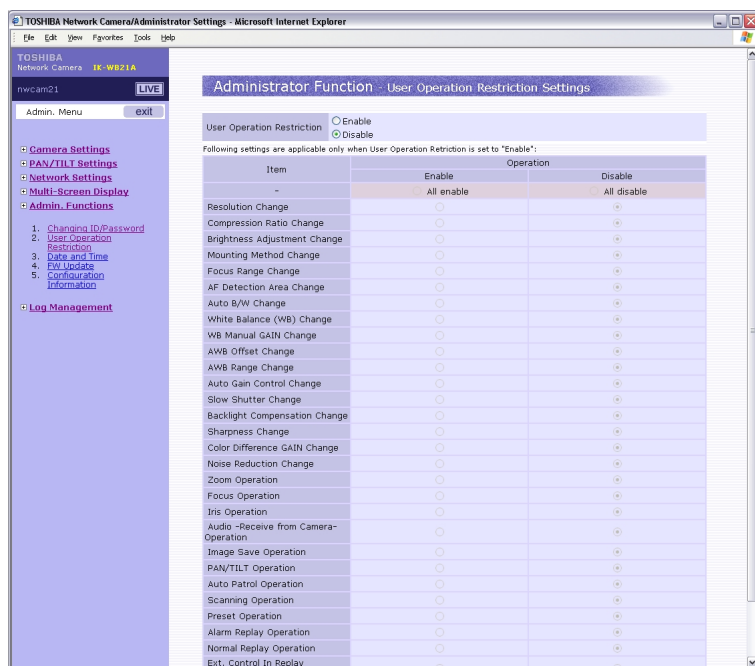


**3** Set "User Operation Restriction" to "Enable".

**4** Configure each setting items.

Set whether or not users also can set items in Camera/basic setting on page 66.
Check "Enable": Users also can set.
Check "Disable": Users cannot set.
· Click the Save button to save settings.

---

# Administrator Function/Date and Time

Administrator log-in name and password can be set.

**1** Click "Admin. Functions" in the Admin. Menu.

· The sub menu for administrator functions will appear.

**2** Click "3. Date and Time" in the sub menu.

· A setup screen of "Administrator Function /Date and Time" will appear.
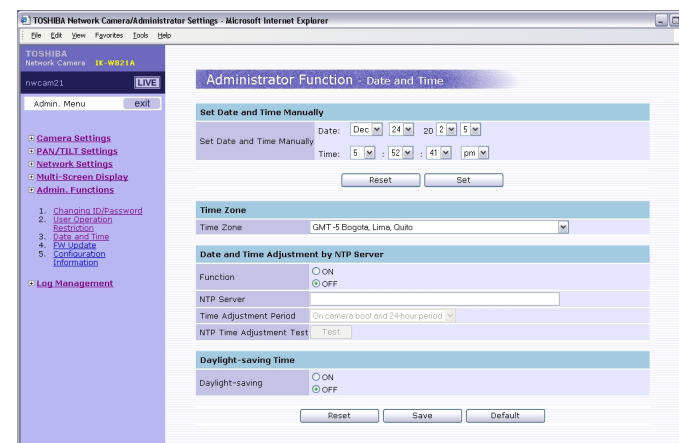


**3** Configure each setting items.

· Click the Save button to save settings.
· The settings will not be reflected unless the Save button is clicked.

● **Set Date and Time Manually**
The camera date and time can be set manually.
Select date and time.

● **Time Zone**
Select appropriate time zone.

● **Date and time adjustment by NTP server**
Time can be adjusted using the NTP server.
1) Select "ON" or "OFF" in function.

ON: Time is adjusted using the NTP server.

OFF: Time is not adjusted using the NTP server.

2) Enter a host name for the NTP server in "NTP server".(You cannot use these characters: ' ")

3) Choose from the pull-down menu in "Time Adjustment Period".

4) Click "Test" button to check date and time are correctly obtained.

# Version Updating (Administrator Function/FW Update)

The version of the camera firmware can be updated.

## ■ First step

Download the latest firmware.
- ● Create a folder to save the latest firmware.
- ● Access the following Toshiba web site on the Internet:
  URL: http://www.netcam.toshiba.com
- ● Download the latest firmware in accordance with the Website.

Do the following to update the firmware version.

## 1 Click "Admin. Function" in the Admin. Menu.

· The sub menu for administrator function will appear.

## 2 Click "4. FW Update" in the sub menu.

· A screen of "Administrator Function /FW Update" will appear.



## 3 Click the "Browse..." button.

· A screen for file selection will appear.

## 4 Select the file for the latest firmware saved in "First step."

· The selected file name will appear in the screen for Step 2.

## 5 Click the Upload button in the screen for Step 2.

· Start updating the firmware version in accordance with the instructions in the displayed screen.
· The camera automatically reboots as soon as firmware update is completed.

### Important

- • It is the customer's responsibility to update firmware.
- • All camera motions will shut down during firmware update.
- • Close any other screens before starting a firmware update.
- • Never power off the camera during firmware update.
- • Never disconnect the LAN cable during firmware update.  Camera may not operate.
- • Rebooting the camera after firmware update may take approx. 5 minutes.
- • After updating the firmware, delete Internet temporary files executing "Internet Options" on the tool menu - "General" - "File delete."

## Importing/Exporting Configuration Information (Administrator Function/Configuration Information)

Camera configuration information (setup information) can be exported and saved in a personal computer ("Export") and can be imported from the personal computer ("import").

### Exporting configuration information

**1** Click "Admin. Functions" in the Admin. Menu.

· The sub menu for administrator functions will appear.

**2** Click "Configuration Information" in the sub menu.

· A setup screen of "Administrator Function /Configuration Information" will appear.
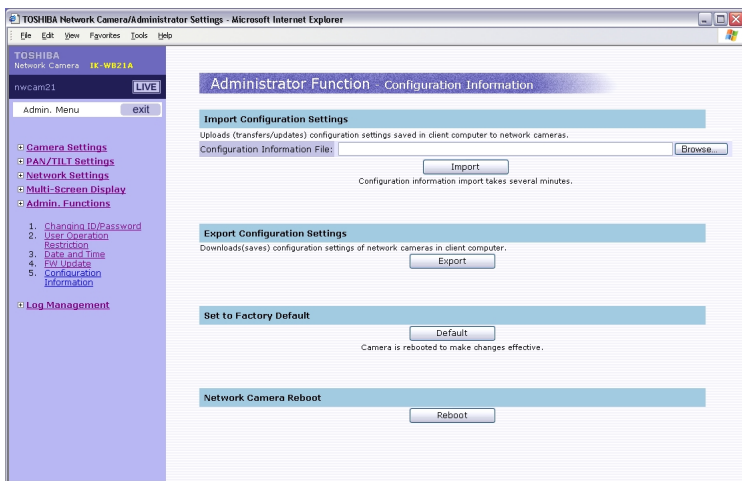


**3** Click the "Export" button.

· Click "Save" when file download Window appears.

**4** Choose a location to save the file.

· Assign a name and the saved screen will appear.
· A setup file will be saved in the personal computer. (Example of file name: ikwb21conf.ini)

### Importing configuration information

**1** Click the "Browse..." button in the setup screen for Administrator Function/Configuration Information.

· A screen for file selection will appear.

**2** Select a saved setup file.

· The selected file name will appear in the Administrator Function/ Configuration Information screen.

**3** Click the "Import" button.

· The settings for the network camera will change to the saved settings.

### Reset all set values to factory defaults

• Clicking the Default button in the setup screen for Administrator Function/ Configuration Information resets all values to factory default.

### Network Camera Rebooting

The camera is rebooted.
· Clicking the Reboot button displays the confirmation message "This will reboot the camera. Are you sure?" Click "OK" to reboot the network camera.

The log display can be viewed and managed.
See "Log display" on page 107 for data in log display.

## 1 Click "Log Management" in the Admin. Menu.

· The sub menu for Log Management will appear.

## 2 Click "1. Browse and Delete" in the sub menu.

· A setup screen of "Log Management /Browse and delete" will appear.
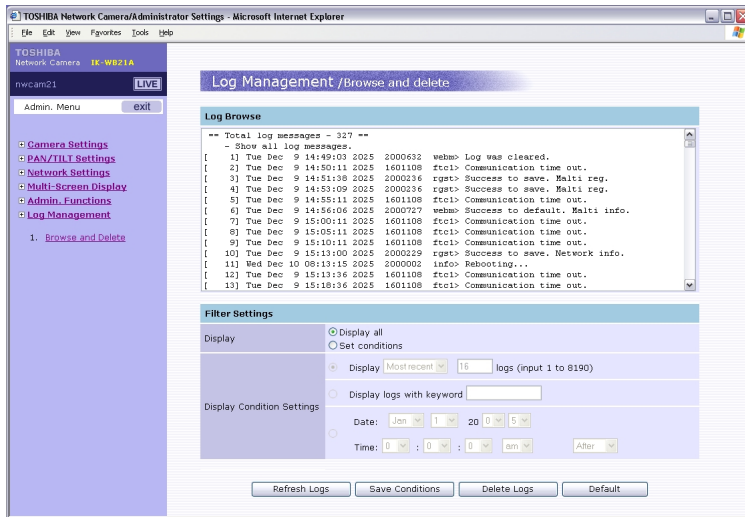


## 3 Looking up the log or setup items.

● **Log Browse**
The log is displayed.

● **Filter Settings**
To filter the log:
1) Select "Set Condition" in "Display."
2) Select appropriate option in "Display Condtion Settings".
3) Click the "Refresh Logs" button.
   Only logs of set conditions will appear.

### ✎NOTE

• Click the "Save Conditions" button to save conditions.
• Click the "Delete Logs" button to delete logs.
• In keyword you cannot use these characters: ' "

You can connect a variety of sensors to the camera by using alarm terminals.
See following table for functions of each terminal.

| Name | Function | Description |
|---|---|---|
| ALARM IN | Alarm Input | · Inputs External Alarm signal.<br>You can choose the type of input signal: Normal Opened (NO) or Normal Closed (NC). Connect a sensor or other devices to the camera. |
| ALARM OUT | Alarm Output | · Outputs open corrector.<br>Max.DC 24V, 50mA.<br>Output holding time follows the those of Alarm Settings/Alarm Output. (→page 84) |
| GND | GND | GND for a signal |



ALARM OUT
Alarm output terminal

GND

ALARM IN
Alarm input terminal
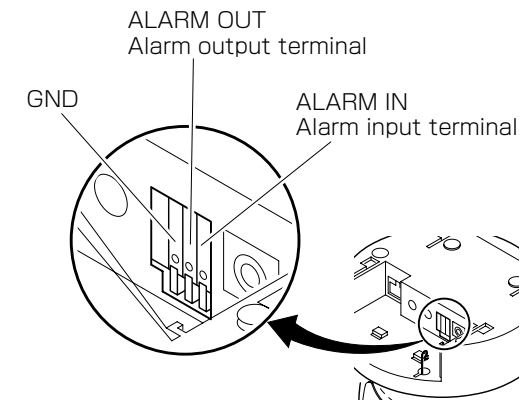
### ■ Connecting External Alarm Devices to the Alarm Input/ Output Terminals

· Be sure to connect cables of external alarm devices before connecting
AC adaptor cable and LAN cable to the camera.

## ■ Specifications of Alarm Signals

| Name | Internal Circuit | Signal Condition |
|---|---|---|
| Alarm Input | DC3.3V / 47kΩ / 220Ω / Inside the Camera / To CMOS input | Non-Voltage point signal, CMOS 3.3V-GND signal inputs<br>Normal Opened — 100ms or more — 3.3V / 0V<br>Normal Closed — 100ms or more — 3.3V / 0V |
| Alarm Output | 220Ω / Inside the Camera / To CMOS Output | Max. DC24V, 50mA |

## ■ Example Circuit Connection



Network Camera — ALARM IN / ALARM OUT / GND — Light Buzzer etc… — Door Sensor

Introduction | Viewing・Listening and Operation | Recording | Set up | Others

# Log Display

Logs are saved in the memory contained in the camera.
Up to about 8000 logs can be saved.

| ID | Output message | Message |
|---|---|---|
| 1110001 | webm> Reset to default configuration. | All settings are reset to configuration information at time of shipment from factory. |
| 1121001 | info> Battery is low. | Power of internal battery is low. |
| 1241001 | ctrl> SD memory card full. | Capacity of SD memory card is full. |
| 1240002 | ctrl> SD memory card formatted. | SD memory card has been formatted. |
| 1250001 | ctrl> Successfully mounted SD memory card. | SD memory card has been mounted correctly. |
| 1251002 | ctrl> Failed to mount SD memory card. | Failed in SD memory card mounting. |
| 1250003 | ctrl> Successfully unmounted SD memory card. | SD memory card has been unmounted correctly. |
| 1251004 | ctrl> Failed to unmount SD memory card. | Failed to unmount SD memory card. |
| 1260001 | ctrl> Successfully formatted SD memory card. | SD memory card has been formatted correctly. |
| 1261002 | ctrl> Failed to format SD memory card. | Failed in formatting SD memory card. |
| 1301001 | strm> Invalid parameter on streaming. | Error found in stream delivery request parameter. |
| 1301002 | strm> Unknown client ID on streaming. | Unclear client ID received in stream delivery request. |
| 1301003 | strm> Not permitted ID or password on streaming. | Invalid ID or password received in stream delivery request. |
| 1301004 | strm> Streaming could not carry on. | Stream delivery cannot be continued. |
| 1401011 | rncp> Failed remote configuration. | Failed in remote configuration by Camera Finder. |
| 1401012 | rncp> Failed remote configuration. | Failed in remote configuration by Camera Finder. |
| 1401013 | rncp> Failed remote configuration. | Failed in remote configuration by Camera Finder. |
| 1401014 | rncp> Failed remote configuration. | Failed in remote configuration by Camera Finder. |
| 1401015 | rncp> Failed remote configuration. | Failed in remote configuration by Camera Finder. |
| 1401016 | rncp> Failed remote configuration. | Failed in remote configuration by Camera Finder. |
| 1611001 | mail> Not found SMTP Server. | SMTP server cannot be found. |
| 1611002 | mail> Faile to connect SMTP Server. | Failed to connect to the SMTP server. |
| 1611021 | mail> Not found POP Server. | POP server cannot be found. |
| 1611022 | mail> Failed to connect POP Server. | Failed to connect to the POP server. |
| 1611023 | mail> Failed to authenticate POP Server. | Failed in authentication with the POP server. |
| 1601101 | ftc1> Failed to connect server. | Failed to connect FTP server. |
| 1601102 | ftc1> Failed to log into server. | Failed to log in FTP server. |
| 1601103 | ftc1> Could not change directory. | Could not move to specified directory. |
| 1601104 | ftc1> Could not change into binary mode. | Could not change to binary mode. |
| 1601105 | ftc1> Could not change into passive mode. | Could not change to passive mode. |
| 1601106 | ftc1> Could not change into active mode. | Could not change to active mode. |
| 1601107 | ftc1> Failed to send data. | Failed in JPEG data transfer. |
| 1601108 | ftc1> Communication time out. | Communication timeout between FTP server. |
| 1601100 | ftc1> Invalid ID or password. | Specified ID or password is illegal. |
| 1601111 | ftc1> Tried to login without account. | Charge information is needed for log-in. IK-WB21 is not supporting. |
| 1601112 | ftc1> Tried to transfer without account. | Charge information is needed for JPEG data transfer. IK-WB21 is not supporting. |
| 1601113 | ftc1> Server not available. | Server cannot be used. |
| 1601114 | ftc1> CWD error. | Directory moving (CWD) is prohibited by the server. |
| 1601115 | ftc1> Directory not found or no permissions. | Specified directory is not existing or is write disabled. |
| 1601116 | ftc1> Server error on binary mode. | Binary mode is prohibited by the server. |
| 1601117 | ftc1> Server error on passive mode. | Passive mode is prohibited by the server. |
| 1601118 | ftc1> Server resource not available. | Server does not have adequate vacant capacity. |
| 1601201 | ftc2> Failed to connect server. | Failed to connect FTP server. |
| 1601202 | ftc2> Failed to log into server. | Failed to log in FTP server. |
| 1601203 | ftc2> Could not change directory. | Could not move to specified directory. |
| 1601204 | ftc2> Could not change into binary mode. | Could not change to binary mode. |
| 1601205 | ftc2> Could not change into passive mode. | Could not change to passive mode. |
| 1601206 | ftc2> Could not change into active mode. | Could not change to active mode. |
| 1601207 | ftc2> Failed to send data. | Failed in JPEG data transfer. |
| 1601208 | ftc2> Communication time out. | Communication timeout between FTP server. |
| 1601200 | ftc2> Invalid ID or password. | Specified ID or password is illegal. |
| 1601211 | ftc2> Tried to login without account. | Charge information is needed for log-in. IK-WB21 is not supporting. |

| ID | Output message | Message |
|---|---|---|
| 1601212 | ftc2> Tried to transfer without account. | Charge information is needed for JPEG data transfer. IK-WB21 is not supporting. |
| 1601213 | ftc2> Server not available. | Server cannot be used. |
| 1601214 | ftc2> CWD error. | Directory moving (CWD) is prohibited by the server. |
| 1601215 | ftc2> Directory not found or no permissions. | Specified directory is not existing or is write disabled. |
| 1601216 | ftc2> Server error on binary mode. | Binary mode is prohibited by the server. |
| 1601217 | ftc2> Server error on passive mode. | Passive mode is prohibited by the server. |
| 1601218 | ftc2> Server resource not available. | Server does not have adequate vacant capacity. |
| 1620001 | ddns> Success to connect server. | Succeeded in connecting the DDNS server. |
| 1620002 | ddns> Activate communication ok. | Succeeded and responded in activate communication. |
| 1621001 | ddns> Failed to connect server. | Failed to connect to the DDNS server. |
| 1621002 | ddns> Activate communication failed. | Failed to connect to the DDNS server. Activate communication failed. |
| 1621003 | ddns> Received server error. | Received "Server error" response. |
| 1621004 | ddns> Received few informations. | Received response "Information inadequate or contract not signed yet." |
| 1621005 | ddns> Received unknown status. | Received unknown status. |
| 1621006 | ddns> Received unknown format. | Received unknown format. |
| 1621011 | ddns> Failed to resolve name. | Failed to resolve DDNS server name. |
| 1621012 | ddns> Failed to resolve name. | Failed to resolve DDNS server name temporarily. |
| 1621013 | ddns> Failed to resolve name. | Unclear error notified in DDNS server name solution. |
| 1621014 | ddns> Initializing error. | Failed to boot DDNS service program of the camera. |
| 1621015 | ddns> Error terminated. | DDNS functions are halted due to an error in DDNS service program of the camera. |
| 1631001 | ntpc> Failed to launch NTPc. | Failed to boot NTP. |
| 1630002 | ntpc> Successfully adjusted. | Succeeded in NTP time adjustment. |
| 1631003 | ntpc> Failed to adjust. | Failed to adjust time with NTP. |
| 1631004 | ntpc> NTP error. | NTP error has occurred. |
| 1631005 | ntpc> Unknown server name. | NTP server cannot be found. |
| 2000002 | info> Rebooting... | Camera reboot |
| 2000221 | rgst> Success to save. Camera info. | Camera setting has been made. |
| 2000223 | rgst> Success to save. Alarm info. | Alarm setting has been made. |
| 2000226 | rgst> Success to save. Recording info. | Record setting has been made. |
| 2000227 | rgst> Success to save. FTPc info. | FTP client setting has been made. |
| 2000228 | rgst> Success to save. Sound info. | Audio setting has been made. |
| 2000229 | rgst> Success to save. Network info. | Network setting has been made. |
| 2000230 | rgst> Success to save. Mail info. | E-mail setting has been made. |
| 2000231 | rgst> Success to save. DDNS info. | DDNS setting has been made. |
| 2000232 | rgst> Success to save. FTPs info. | FTP server setting has been made. |
| 2000233 | rgst> Success to save. Band Control. | Band control setting has been made. |
| 2000234 | rgst> Success to save. User restriction. | User setting has been made. |
| 2000235 | rgst> Success to save. User functions. | User utilization function setting has been made. |
| 2000236 | rgst> Success to save. Malti reg. | Multi-view screen camera registration setting has been made. |
| 2000237 | rgst> Success to save. Malti selection. | Multi-view screen camera selection setting has been made. |
| 2000238 | rgst> Success to save. Admin info. | Administrator function setting has been made. |
| 2000239 | rgst> Success to save. Syslog info. | Log setting has been made. |
| 2000240 | rgst> Success to save. PT info. | Pan/Tilt setting has been made. |
| 2000241 | rgst> Success to save. Preset info. | Preset setting has been made. |
| 2000242 | rgst> Success to save. Autopatrol info. | Auto patrol setting has been made. |
| 2000501 | upld> Start Uploading... | Started uploading configuration information file. |
| 2000502 | upld> - File type: ini file. | Started uploading configuration information file. |
| 2000503 | upld> - File type: firmware. | Started uploading firmware. |
| 2001504 | upld>  ...Uploading fail. | Failed in uploading. |
| 2000505 | upld>  ...Uploading done. | Succeeded in uploading. |
| 2001506 | upld> Invalid HTTP query. | Error experienced in HTTP query. Refused HTTP request. |
| 2001507 | upld> Invalid HTTP header. | Error experienced in HTTP header. Refused HTTP request. |
| 2000516 | upld>  ...Updating done. | Camera rebooting was executed. |

| ID | Output message | Message |
|---|---|---|
| 2000517 | upld>  ...Updating fail. | Camera rebooting was cancelled. |
| 2000632 | webm> Log was cleared. | Cleared logs. |
| 2000701 | webm> Success to default. Camera info. | Camera settings have been reset to factory preshipment inspection state. |
| 2000705 | webm> Success to default. Alarm info. | FTP client settings have been reset to factory preshipment inspection state. |
| 2000707 | webm> Success to default. Record info. | DDNS settings have been reset to factory preshipment inspection state. |
| 2000709 | webm> Success to default. FTPc info. | FTP server settings have been reset to factory preshipment inspection state. |
| 2000711 | webm> Success to default. Sound info. | Administrator function settings have been reset to factory preshipment inspection state. |
| 2000713 | webm> Success to default. Network info. | Network settings have been reset to factory preshipment inspection state. |
| 2000715 | webm> Success to default. Mail info. | E-mail settings have been reset to factory preshipment inspection state. |
| 2000717 | webm> Success to default. DDNS info. | DDNS settings have been reset to factory preshipment inspection state. |
| 2000719 | webm> Success to default. FTPs info. | FTP server settings have been reset to factory preshipment inspection state. |
| 2000721 | webm> Success to default. FrameRate info. | Frame rate settings have been reset to factory preshipment inspection state. |
| 2000723 | webm> Success to default. User ID/PW info. | User management settings have been reset to factory preshipment inspection state. |
| 2000725 | webm> Success to default. User Func info. | User utilization function settings have been reset to factory preshipment inspection state. |
| 2000727 | webm> Success to default. Malti info. | Multi-view screen settings have been reset to factory preshipment inspection state. |
| 2000729 | webm> Success  to default. Admin info. | Administrator information settings have been reset to factory preshipment inspection state. |
| 2000731 | webm> Success to default. NTP info. | Date and time NTP settings have been reset to factory preshipment inspection state. |
| 2000733 | webm> Success to default. ALL info. | All settings have been reset to factory preshipment inspection state. |
| 2000735 | webm> Success to default. log info. | Log management settings have been reset to factory preshipment inspection state. |
| 2000737 | webm> Success to default. PT info. | Pan/Tilt setting has been reset to the factory preshipment inspection condition. |
| 2000739 | webm> Success to default. PT Range info. | Pan/Tilt operation range setting has been reset to the factory preshipment inspection condition. |
| 2000741 | webm> Success to default. Preset info. | Preset setting has been reset to the factory preshipment inspection condition. |
| 2000743 | webm> Success to default. Autopatrol info. | Auto patrol setting has been reset to the factory preshipment inspection condition. |
| 2001300 | inif> Successfully completed 'Import'. | Succeeded in unfolding the configuration information file. |
| 2001304 | inif> Failed to import. | Failed in unfolding the configuration information file. |
| 2001305 | inif> Ini file syntax error. | Error has been found in format of configuration information file. |
| 2001306 | inif> Ini file syntax error. | Error has been found in format of configuration information file. |
| 2001307 | inif> Ini file syntax error. | Error has been found in format of configuration information file. |
| 2001308 | inif> Ini file syntax error. | Error has been found in format of configuration information file. |
| 2001309 | inif> Ini file syntax error. | Error has been found in format of configuration information file. |
| 2001310 | inif> Ini file syntax error. | Error has been found in format of configuration information file. |
| 2001311 | inif> Ini file syntax error. | Error has been found in format of configuration information file. |
| 2001312 | inif> Ini file syntax error. | Error has been found in format of configuration information file. |
| 2001313 | inif> Ini file syntax error. | Error has been found in format of configuration information file. |
| 2001101 | prsr> Invalid HTTP request. | Error found in format of HTTP request or in content of it. HTTP request was refused. |

| ID | Output message | Message |
|---|---|---|
| 2001102 | prsr> Invalid HTTP request. | Error found in format of HTTP request or in content of it. HTTP request was refused. |
| 2001103 | prsr> Invalid HTTP request. | Error found in format of HTTP request or in content of it. HTTP request was refused. |
| 2001104 | prsr> Invalid HTTP request. | Error found in format of HTTP request or in content of it. HTTP request was refused. |
| 2001105 | prsr> Invalid HTTP request. | Error found in format of HTTP request or in content of it. HTTP request was refused. |
| 3001001 | apim> Invalid HTTP request. | Received method other than HTTP GET during API booting. |
| 3001002 | apim> Invalid HTTP request. | Abnormal request received during API booting. |
| 3001006 | apim>  ...Failed. | Abnormally ended. |
| 3000101 | apim> Called wbsetcambasic.cgi. | API wbsetcambasic.cgi was booted. |
| 3000103 | apim> Called wbsetcamalarm.cgi. | API wbsetcamalarm.cgi was booted. |
| 3000104 | apim> Called wbsetcamrecord.cgi. | API wbsetcamrecord.cgi was booted. |
| 3000105 | apim> Called wbsetcamftprecord.cgi. | API wbsetcamftprecord.cgi was booted. |
| 3000106 | apim> Called wbsetcamsound.cgi. | API wbsetcamsound.cgi was booted. |
| 3000111 | apim> Called wbsetptbasic.cgi. | API wbsetptbasic.cgi has been booted. |
| 3000112 | apim> Called wbsetptpreset.cgi. | API wbsetptpreset.cgi has been booted. |
| 3000113 | apim> Called wbsetptautopatrol.cgi. | API wbsetptautopatrol.cgi has been booted. |
| 3000121 | apim> Called wbsetnwkbasic.cgi. | API wbsetnwkbasic.cgi was booted. |
| 3000122 | apim> Called wbsetcammail.cgi. | API wbsetnwkmail.cgi was booted. |
| 3000123 | apim> Called wbsetnwkddns.cgi. | API wbsetnwkddns.cgi was booted. |
| 3000124 | apim> Called wbsetnwkftpserver.cgi. | API wbsetnwkserver.cgi was booted. |
| 3000125 | apim> Called wbsetcamframerate.cgi. | API wbsetnwkframerate.cgi was booted. |
| 3000131 | apim> Called wbsetmultiscreen.cgi. | API wbsetmultisceen.cgi has been booted. |
| 3000141 | apim> Called wbsetadminuserinfo.cgi. | API wbsetsecuserrestrict.cgi was booted. |
| 3000142 | apim> Called wbsetadminuserrectrict.cgi. | API wbsetuserfunctions.cgi was booted. |
| 3000161 | apim> Called wbsetadmininfo.cgi. | API wbsetadmininfo.cgi was booted. |
| 3000162 | apim> Called wbsetadminTaD.cgi. | API wbsetadminTaD.cgi was booted. |
| 3000181 | apim> Called wbsetadmintime.cgi. | API wbsetadmintime.cgi was booted. |
| 3000182 | apim> Called wbsetlogconditions.cgi. | API wbsetlogconditions.cgi was booted. |
| 3000183 | apim> Called wbsetlogclear.cgi. | API wbsetlogclear.cgi was booted. |
| 2000184 | apim> Called wbsetnwkbandwidth.cgi | API wbsetnwkbandwidth.cgi has been booted. |
| 3000201 | apim> Called wbgetallinfo.cgi. | API wbgetallinfo.cgi was booted. |
| 3000221 | apim> Called wbgtcambasic.cgi. | API wbgetcambasic.cgi was booted. |
| 3000223 | apim> Called wbgetcamalarm.cgi. | API wbgetcamalarm.cgi was booted. |
| 3000224 | apim> Called wbgetcamrecord.cgi. | API wbgetcamrecord.cgi was booted. |
| 3000225 | apim> Called wbgetcamftprecord.cgi. | API wbgetcamftprecord.cgi was booted. |
| 3000226 | apim> Called wbgetcamsound.cgi. | API wbgetcamsound.cgi was booted. |
| 3000231 | apim> Called wbgetptbasic.cgi. | API wbgetptbasic.cgi has been booted. |
| 3000232 | apim> Called wbgetptpreset.cgi. | API wbgetptpreset.cgi has been booted. |
| 3000233 | apim> Called wbgetptautopatrol.cgi. | API wbgetptautopatrol.cgi has been booted. |
| 3000241 | apim> Called wbgetnwkbasic.cgi. | API wbgetnwkbasic.cgi was booted. |
| 3000242 | apim> Called wbgetcammail.cgi. | API wbgetnwkmail.cgi was booted. |
| 3000243 | apim> Called wbgetnwkddns.cgi. | API wbgetnwkddns.cgi was booted. |
| 3000244 | apim> Called wbgetnwkftpserver.cgi. | API wbgetftpserver.cgi was booted. |
| 3000245 | apim> Called wbgetcamframerate.cgi. | API wbgetnframerate.cgi was booted. |
| 3000251 | apim> Called wbgetmultiscreen.cgi. | API wbgetmultiscreen.cgi has been booted. |
| 3000261 | apim> Called wbgetadminuserinfo.cgi. | API wbgetsecuserrestrict.cgi was booted. |
| 3000262 | apim> Called wbgetadminuserrectrict.cgi. | API wbgetsecuserfunctions.cgi was booted. |
| 3000281 | apim> Called wbgetadmininfo.cgi. | API wbgetadmininfo.cgi was booted. |
| 3000282 | apim> Called wbgetadminTaD.cgi. | API wbgetadinTaD.cgi was booted. |
| 3000283 | apim> Called wbgetadmintime.cgi. | API wbgetadmintime.cgi was booted. |
| 3000301 | apim> Called wbgetlogconditions.cgi. | API wbgetlodconditions.cgi was booted. |
| 3000302 | apim> Called wbgetloglist.cgi. | API wbgetloglist.cgi was booted. |
| 2000303 | apim> Called wbgetnwkbandwidth | API wbgetnwkbandwidth.cgi has been booted. |
| 3000321 | apim> Called wblistalarm.cgi. | API wblistalarm.cgi was booted. |

| ID | Output message | Message |
|---|---|---|
| 3000322 | apim> Called wblistnormal.cgi. | API wblistnormal.cgi was booted. |
| 3000323 | apim> Called wblistextcontrol.cgi. | API wblistextcontrol.cgi was booted. |
| 3000341 | apim> Called wbstoragestatus.cgi. | API wbstragestatus.cgi was booted. |
| 3000342 | apim> Called wbstoragemount.cgi. | API wbstragemount.cgi was booted. |
| 3000343 | apim> Called wbstoragemountstatus.cgi. | API wbstragemountstatus.cgi was booted. |
| 3000344 | apim> Called wbstorageformat.cgi. | API wbstrageformat.cgi was booted. |
| 2000345 | apim> Called wbsetadminsetdefault.cgi. | API wbsetadmininsetdefault.cgi was booted. |
| 2000346 | apim> Called wbsetadmincamreboot.cgi. | API wbsetadmincamreboot.cgi was booted. |

| Symptom | Cause | How to Manage |
|---|---|---|
| There is no IP address of your network camera on The Camera Finder's Network Camera List. (Part 1) | ●Camera is not powered on. | ●Turn on the power. |
| | ●LAN cable is not connected. | ●Connect the LAN cable of the camera to a hub or router in the right way.<br>●Be sure to turn on the power of the hub and router. |
| | ●LAN cable is not connected to the PC. | ●Connect the LAN cable to the PC in the right way. |
| | ●IP address of the PC is not configured. | ●Configure the IP address of your PC correctly. (→ Basic User's Guide page 27) |
| Cannot display a browser from Camera Finder. | ●Installed directory of browser is wrong. | ●Assign the directory where you are going to install the browser. Start Camera Finder and go to "View"/ "Customize"/"Browser Selection." |
| The message, "The page cannot be displayed," shows up, and cannot login to the camera even if you start Camera Finder. | ●The IP addresses of the camera and your PC are wrong. | ●Set the correct IP address of the network camera.<br>●Set the correct IP address of your PC. |
| | ●Proxy server has been set in the browser settings. | ●When proxy is set to the browser, sometimes you may not able to login. Add Camera's IP address to bypass proxy server. |
| Cannot login to the camera even though entering the IP address of the camera directly to the browser, and "The page cannot be displayed" shows up. | This is the same cause as "The message ,"The page cannot be displayed," shows up, and cannot login to the camera even if you start Camera finder.<br>Please see "Cause" and "How to Manage" above. | |

| Symptom | Cause | How to Manage |
|---|---|---|
| Error message shows up when trying to login. | ●Entering wrong login ID and password. | ●Enter right login ID and password.<br>※The default login ID is "root," and the password is "ikwb." |
| | ●CapsLock of the PC is ON. | ●The camera discriminates between capital letter and lower-case letter. Enter your right login ID and password. |
| | ●You forget your login ID and the password. | ●You need to reset the camera. Remember that if you perform reset procedure of the camera, all the settings you have made will be deleted and the camera goes back to its default settings. |
| Cannot access to the camera from the Internet. | ●Default gateway is not configured. | ●Register your broadband router to the network camera as default gateway. (→ page 86) |
| | ●Port forwarding is not configured to the broadband router. | ●Configure port forwarding function (static IP masquerade, NAPT) to your broadband router. For details, read the user's guide of your broadband router. |
| | ●Setting access restriction from the Internet (WAN side), like IP filter, to the broadband router. | ●Change the restriction setting. For details, read the user's guide of your broadband router. |
| | ●Using local (private) IP address. | ●When accessing via the Internet, you need to set global IP address provided from your Internet provider to the broadband router. For details, read the user's guide of your broadband router.<br>※There are fixed IP address and IP address from DHCP server that an Internet provider provides as a global IP address. Ask your Internet provider for more information. |
| | ●The IP address which was provided from the DHCP server of the provider has been changed. | ●Confirm the new IP address and try to access again with the new IP address.<br>●Renew the information registered to the DDNS server. |

| Symptom | Cause | How to Manage |
|---|---|---|
| Cannot perform administrator settings. | ●Lost the power of the camera during the performance. | ●Make sure that the power of the network camera is ON. |
| | ●LAN cable of the camera has been pulled off during the performance. | ●Make sure that the LAN cable is connected to a hub or router in the right way. |
| | ●LAN cable of the PC has been pulled off during the performance. | ●Make sure that the LAN cable is connected to a hub or router in the right way. |
| | ●Lost the power of a hub or router during the performance. | ●Make sure that the power of a hub or router is ON. |
| | ●IP address in "Network Connection Settings" under "Network Settings" has been changed. | ●If you change the IP address, you cannot keep your settings in the setting screen with your old IP address. Search your camera with the application, Camera Finder, and try administrator login procedure again.<br>●When you enter IP address of the camera directly to the browser, enter the new IP address in URL like example below, and try login procedure again.<br>http://192.168.0.40/admin.htm |
| Images are upside down | ●Mounting method is not correct. | ●Set environment for installation on a ceiling or on a desk/wall. (See page 67) |
| Image colors are not correct. | ●The display monitor is not adjusted correctly. | ●Adjust the display monitor correctly. |
| | ●Color setting for the personal computer monitor is less than 16bits. | ●Set more than 16bits. |
| | ●Lighting is dark. | ●Make lighting brighter. |
| | ●White balance setting is not appropriate. | ●Set white balance in accordance with the object. (See page 68.) |
| | ●Setting for color difference gain is not appropriate. | ●Set color difference gain correctly. (See page 71) |

| Symptom | Cause | How to Manage |
|---|---|---|
| Images are not colored. | ●Auto B/W is set to ON. | ●Set auto B/W setting to OFF. (See page 68) |
| | ●Setting for color difference gain is small. | ●Increase color difference gain. (See page 71) |
| Cannot display images from the network camera. | ●The Internet line is busy. | ●Wait for a little while. Sometimes it takes time to display images. |
| | ●There are not enough resources (CPU power, RAM). | ●There are the recommended requirements of PC to view the images of the network camera. (See page 24) ●Close all applications other than the network camera browser. |
| | ●Cookie is not enabled. | ●Enable Cookie. |
| | ●Security settings for Internet options are not matching. | ●Change security settings for Internet options. (See page 34) |
| | ●Browser is set for "proxy." | ●Proxy setting with the browser sometimes disables camera image display. Reset proxy setting of the browser to setting of the IP address of the network camera or host name that bypasses a proxy. (See page 35) |
| Frame Rate of network camera images is too slow. | ●Picture size is too large. | ●The default setting of picture size is VGA(640x480). Go to "Camera Settings"/ "General Settings"/ "Resolution" and set smaller picture size to have faster Frame Rate. (See page 66) |
| | ●The "Picture Quality" is set to "HIGH." | ●Selecting a low compression rate in "Camera/Basic setting" increases the delivery speed, but lowers image quality. (See page 67) |
| | ●More than one users are accessing the camera at the same time. | ●When many users access to the camera at the same time, the frame rate of the image becomes slow. |
| | ●Browser is set for "proxy." | ●Proxy setting with the browser sometimes slows camera image updating. Reset proxy setting of the browser to setting of the IP address of the network camera or host name that bypasses a proxy. (See page 35) |

| Symptom | Cause | How to Manage |
|---|---|---|
| Cannot display the camera images in the dark. | ●Exposure is not enough. | ●Go to "Camera Settings"/ "General Settings"/"Auto B/W" and set the "Auto B/W" to ON. The images in the dark become black and white, but it enables to display the images to some point. If you still cannot display images, try using lights to have enough exposure. (See page 68) ●Images taken during the day are not affected. In addition to the auto B/W function, the camera is set with AGC (maximum value) and high limit for slow shutter. Set them in accordance with the environment. (See page 69 and 70) |
| Focus of the images is poor. | ●The lens cover of the camera is not clean, or some dusts are on it. | ●Wipe off the lens with dried cloth. |
| | ●Distance to an object is to close. | ●The camera cannot focus at close range. Change the "Focus Range" from "Stamdard" to "Macro." (See page 67) |
| No sound is output. | ●Sound volume on your PC is "0." | ●Adjust the sound volume of your personal computer. (See page 16) |
| | ●No microphone is installed. | ●Install commercial microphone to your network camera. |
| | ●The microphone you are using is not a supported microphone. | ●You can install only condenser typed monaural microphone. Plug type has to be monaural 3.5mm. |
| | ●Setting for audio input is mismatched. | ●Set "Audio input" in "Camera/Audio setting" to ON. (See page 79) |
| | ●The 🔊 button in Camera Image screen is set to 🔇. | ●Click the 🔇 button in Camera Image screen to set it to 🔊. (See page 38) |
| | ●Browser is set for "proxy." | ●Proxy setting with the browser sometimes disables camera audio output. Reset proxy setting of the browser to setting of the IP address of the network camera or host name that bypasses a proxy. (See page 35) |
| Sound sensitivity of your camera is poor | | ●Face the microphone of the camera where you want to gather sound. |

| Symptom | Cause | How to Manage |
|---|---|---|
| Cannot send mail. | ●Settings of SMTP, POP server may not be right. | ●Check your SMTP and POP server which are provided from your provider. (→ page 75) |
| | ●DNS server setting may not be right. | ●Set your DNS server from your provider to "Primary" and "Secondary" in "DNS Settings." (→ page 87)<br>※Sometimes "primary" is described as "master" and "secondary" is described as "slave," but these meanings are the same. |
| | ●Mail sending conditions are not configured. | ●To send mail, you need to perform mail sending settings of the camera. (→ page 76) |
| Cannot perform Auto Time Settings. | ●NTP server setting may not be right. | ●The NTP server released on the Internet may become invalid without notifying users. |
| Couldn't complete firmware updating. | ●Couldn't complete the updating because of network trouble, the power has cut off or other reasons. | ●Retry updating firmware by following steps of "Updating the Firmware" on page 96. |

| Symptom | Cause | How to Manage |
|---|---|---|
| Recorded images are not saved in FTP server. | ●FTP recording function is not set to ON. | ●Check your SMTP and POP3 ●Check the FTP recording function whether it is set to ON. (→ page 55) |
| | ●Log-in name and password of FTP server are incorrect. | ●Set the correct information in the setting screen. (→ page 55) |
| | ●Could not keep the communication with the server during file transfer using FTP. | ●The network camera watches the status of the FTP server all the time. If you leave that condition for approximately 5 minutes, the recording resumes.<br>●Setting storage function to ON (see page 61) stores record files, which could not be sent, in the SD memory card inside the network camera. All records that have been stored will be sent as soon as the line restored. |
| Pre-/Pos-Alarm recording files are not sent to the FTP server. | ●Pre-Alarm Recording data is the data before alarm has generated. Therefore, its data sending order is not necessarily in order. | ●Pre-Alarm Recording images will be sent after all the Post-Alarm Recording images are sent. Please wait for a while when Post-Alarm Recording images are not arrived. Also, depending on the conditions of your server, networking, image size and/or image quality settings, numbers of sent images may become fewer than your expectation. |
| Problem cannot be solved. | —————— | ●Press the Reset button to restore camera firmware settings to default condition.<br><Resetting camera setting information to initial status><br>1 Connect the camera and a hub with the power turned on using a LAN cable.<br>2 Connect power cable to the camera and outlet.<br>3 Wait about one minute.<br>4 Keep pressing the Reset button on the camera 5 to 10 seconds.<br>5 Wait about one minute.<br>Reset as soon as the camera reboots. See page 25 for initializing the network and other devices. |
| | —————— | Please contact the store at which purchase was made. |

# Specifications

## Others

· When very strong light strikes at the lens, you might see stripe patterns (smear) on the images, but these are not malfunctions. If this happens, reinstall the camera in another place, or try to change the direction of the lens.

· Audio may not always synchronize with the camera images.

· If mechanical parts, such as PAN/TILT, are moved by hand etc., unusual Audio may occur from the mechanical parts during operation after that. This is not a malfunction. In such a case, please push the ⬦ button of the controller and correct a gap.

| | |
|---|---|
| Model Name | IK-WB21A |
| Power supply | DC 12V ±10% (Use AC adapter supplied as an accessory) |
| Power consumption | Approx.10W |
| Image pickup device | 1/4.2" CCD |
| Effective picture elements | Horizontal 648, vertical 486 x 2  629,865 pixels (honeycomb array) |
| Effective pixel area size | Horizontal 3.4992mm, vertical 2.6244mm |
| Scanning system | Progressive scanning |
| Synchronization system | Internal synchronization |
| Minimum object illuminance | 16 lx (1/30s F1.6 AGC HIGH) 4 lx (1/75s F1.6 AGC HIGH) 0.13 lx (4sF1.6 AGC HIGH) |
| White balance | Auto (AWB) (2500 to 7000K), manual and 4 other fixed WBs |
| Rear light correction | OFF/auto.  5 areas can be designated. |
| Pan | -175° to +175° |
| Tilt | Desktop -30° to +90°, ceiling -90° to +30° |
| Rotation speed | PAN: 300°(maximum) / sec  TILT: 200°(maximum) / sec |
| Zoom lens | Optical 22x motor powered zooming (f = 4.0 to 88.0mm) |
| F value | F1.6 (F3.8 at telephoto end) |
| Picture angle | Wide end: Diagonal 56° 01', horizontal 46° 11', vertical 35°31' Telephoto end: Diagonal 2° 45', horizontal 2° 13', vertical 1°39' |
| Focus adjustment | Auto/manual |
| Minimum focal distance | Wide end 10mm (macro mode), telephoto end: 1m |
| Lens aperture | Auto/manual |
| Brightness adjustment | Available (-99 to 99, target value adjusted) |
| Electronic high sensitivity | OFF: 1/7.5s (x4),1/3.75s(x8),1/2.5s(x12),1/1.8s(x16),1s(x30),2s(x60),4s(x120) OFF:1/30s [1/33s when flicker is corrected]  In parentheses ( ) are magnifications of increased sensitivity to 1/30s |
| Alarm terminal | Input 1, output 1 |
| Image size | 1280 x 960 (SXVGA), 640 x 480 (VGA), 320 x 240 (QVGA) and 160 x 120 (QQVGA) pixels |
| Image compression system | JPEG      M-JPEG |
| Image quality setting | 5 levels |
| Output image size | SXVA/VGA/QVGA/QQVGA (SXVGA: 1280 x 960) |
| Maximum frame rate *1 | SXVGA 7.5fps (Network output VGA/QVGA/QAQVGA: 30fps) |
| Number of simultaneous deliveries for image or audio Image | 10 clients(maximum), Audio: 10 clients(maximum) |
| Audio *2 | MIC input terminal: 3.5mm monaural mini jack, plug-in power specification Line output terminal: 3.5mm monaural mini jack |
| Motion alarm function | Available |
| Image recording function | Available |
| Recording medium | SD memory card (option) |
| E-mail notification function | Available |
| Network interface | Standard: IEEE 802.3, type 10BASE-T, 100BASE-TX, connector RJ-45 |
| Protocols | TCP/IP, UDP/IP, HTTP, SMTP, DNS, FTPc, FTPs, DDNS, NTPc, DHCPc, ICMP, RNCP, ARP |
| OS and browser | Windows2000, Windows XP, InternetExplorwe6.0sp1 |
| Guaranteed operating temperature | 14°F to 104°F |
| Guaranteed operating humidity | 90% RH or less (no condensation) |
| Storage temperature | -4°F to 140°F |
| Mass | About 1.587lbs (camera only) |
| External dimensions | 114(W)x136(H)x114(D)mm, 4.448(W)x5.354(H)x4.488(D)inch, camera only |
| Accessories | AC adapter (1), power cord (1), DC extension cable, mount cover (1) , mount attachment (1), mounting screws (4), user's guide (CD-ROM), Anchor (4), quick guide, caution label, ferrite cores (1), warranty |

*1:   Varies in accordance with the object, image quality, network environment and performance of the personal computer used.
*2:   The sound may not be clear depending on the conditions of the lines.

● Designs and specifications may change without prior notice for better improvement.
● Screens, photos, illustrations and other diagrams contained in this user's guide may slightly change from actual ones.

Introduction

Viewing · Listening and Operation

Recording

Set up

Others

# Appearance Diagram

Installed on desk                                           Unit : mm (inches)          Installed on ceiling

56 (2.205)

24 (0.945)

56 (2.205)

φ172 (6.772)

φ114 (4.488)

104.5 (4.114)

173 (6.811)

114 (4.448)

104.5 (4.114)

105.2 (4.142)
127.2 (5.008)

111.5 (4.39)
133.5 (5.256)

136 (5.354)
(153 (6.024); maximum at the time of rotation)

142.5 (5.61)
72.5 (2.854)

56 (2.205)

66.5 (2.618)
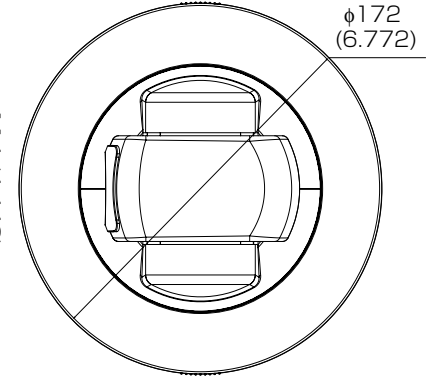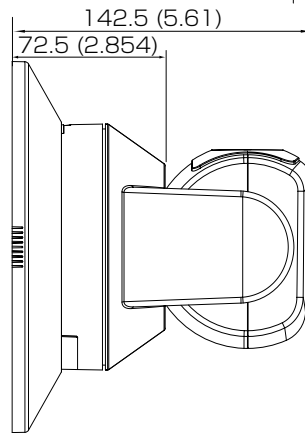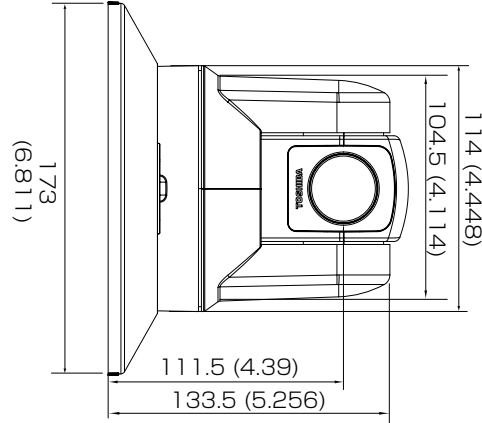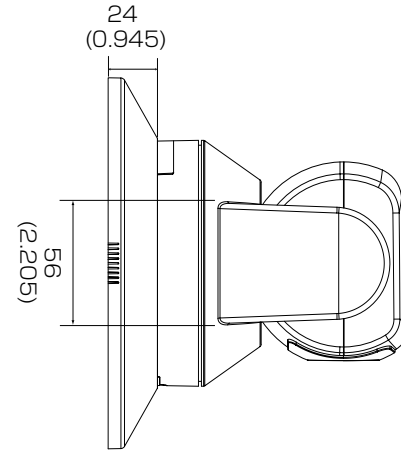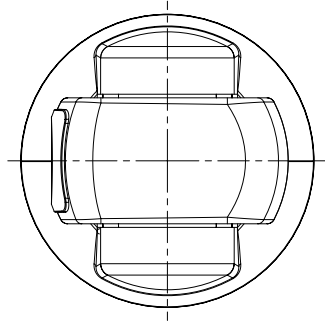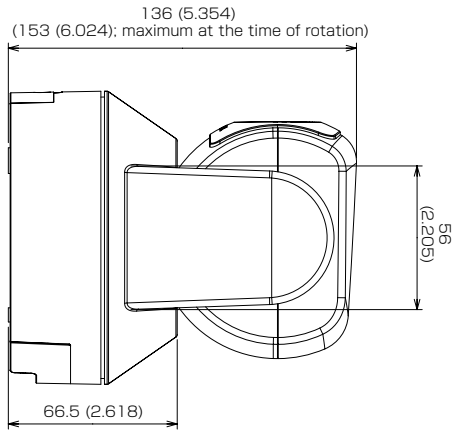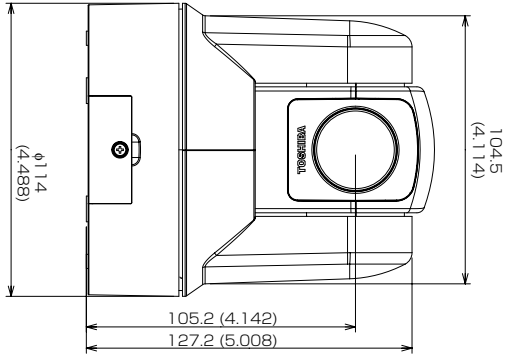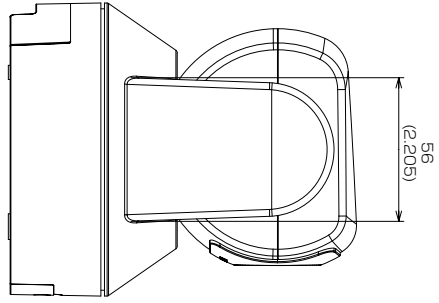
The software pre-installed in the TOSHIBA Network Camera consists of multiple, independent software components. Each software component is copyrighted by TOSHIBA or a third party.

The TOSHIBA Network Camera uses software components that are distributed as freeware under a third-party end-user license agreement or copyright notice (hereinafter referred to as a "EULA" ).

TOSHIBA provides a warranty for the TOSHIBA Network Camera you have purchased under conditions set forth by TOSHIBA.

However, some of the software components distributed under an EULA are made available for use by the user on the assumption that they are not copyrighted or warranted by TOSHIBA or any third party. These software components are licensed to the user free of charge and therefore not covered by any warranty within the scope of the applicable laws. These software components are not subject to any copyrights or other third-party rights and are provided in "as is" condition without any warranty, whether express or implied. "Warranty" here includes, but not limited to, an implied warranty for marketability or fitness for specific uses. All risks associated with the quality or performance of these software components are assumed by the user. TOSHIBA shall not be liable whatsoever for any cost of repair or correction or other incidental expense incurred in connection with a defect found in any of these software components. Unless specified under the applicable laws or in a written agreement, a party who changes or redistributes the software with consent from the copyright holders or based on the aforementioned licenses shall not be held liable whatsoever for any loss arising from the use of or inability to use such software components. The same applies even when the copyright holders or relevant third parties have been informed of the possibility of such loss. "Loss" here includes normal, special, incidental and indirect loss (including, but not limited to, the loss of data or its accuracy; loss incurred by the user or any third party; and interface incompatibility with other software). Please read each EULA for details on the use conditions and items that must be observed regarding these software components.

The table below lists the software components pre-installed in the TOSHIBA Network Camera, which are subject to EULAs. The user should read the applicable EULAs carefully before using these software components. In addition, each EULA is listed in the original text (English) because of written by a third party other than TOSHIBA.

| Applicable software module | |
|---|---|
| Axis SDK | It is a software component composed of software licensed by Axis Communications (referred to as "Axis" hereafter) and free software redistributed by Axis. Its source code can be obtained freely from the web site "http://developer.axis.com". If you wish the text of "EULA", contact Axis. |
| mkdosfs, lproute2 | Refer to Exhibit A. |
| login | Refer to Exhibit B. |

## Exhibit A

### GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

675 Mass Ave, Cambridge, MA 02139, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.  This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it.  (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.)  You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price.  Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have.  You must make sure that they, too, receive or can get the source code.  And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software.  If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents.  We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary.  To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

### GNU GENERAL PUBLIC LICENSE
### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which containsa notice placed by the copyright holder saying it may be distributedunder the terms of this General Public License.  The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".)  Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope.  The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

### END OF TERMS AND CONDITIONS

#### Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) 19yy  <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) 19yy name of author

Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.

This is free software, and you are welcome to redistribute itunder certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## Exhibit B

Copyright (c) 1980, 1987, 1988 The Regents of the University of California.

All rights reserved.

Redistribution and use in source and binary forms are permitted provided that the above copyright notice and this paragraph are duplicated in all such forms and that any documentation, advertising materials, and other materials related to such distribution and use acknowledge that the software was developed by the University of California, Berkeley. The name of the University may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS'' AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED

Free Manuals Download Website

[http://myh66.com](http://myh66.com)

[http://usermanuals.us](http://usermanuals.us)

[http://www.somanuals.com](http://www.somanuals.com)

[http://www.4manuals.cc](http://www.4manuals.cc)

[http://www.manual-lib.com](http://www.manual-lib.com)

[http://www.404manual.com](http://www.404manual.com)

[http://www.luxmanual.com](http://www.luxmanual.com)

[http://aubethermostatmanual.com](http://aubethermostatmanual.com)

Golf course search by state

[http://golfingnear.com](http://golfingnear.com)

Email search by domain

[http://emailbydomain.com](http://emailbydomain.com)

Auto manuals search

[http://auto.somanuals.com](http://auto.somanuals.com)

TV manuals search

[http://tv.somanuals.com](http://tv.somanuals.com)