

**x10 IP PTZ**  
**In/Outdoor Camera**

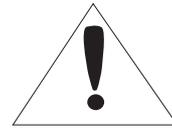
*User's Manual*

# Safety Information



## CAUTION

RISK OF ELECTRIC SHOCK.  
DO NOT OPEN.



## CAUTION:

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK) NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



### Warning

This symbol indicates that dangerous voltage consisting a risk of electric shock is present within this unit.



### Precaution

This exclamation point symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## WARNING

To prevent damage which may result in fire or electric shock hazard, do not expose this appliance to rain or moisture.

## WARNING

2. Be sure to use only the standard adapter that is specified in the specification sheet. Using any other adapter could cause fire, electrical shock, or damage to the product.
3. Incorrectly connecting the power supply or replacing battery may cause explosion, fire, electric shock, or damage to the product.
4. Do not connect multiple cameras to a single adapter. Exceeding the capacity may cause abnormal heat generation or fire.
5. Securely plug the power cord into the power receptacle. Insecure connection may cause fire.
6. When installing the camera, fasten it securely and firmly. A falling camera may cause personal injury.
7. Do not place conductive objects (e.g. screw drivers, coins, metal things, etc.) or containers filled with water on top of the camera. Doing so may cause personal injury due to fire, electric shock, or falling objects.
8. Do not install the unit in humid, dusty, or sooty locations. Doing so may cause fire or electric shock.
9. If any unusual smells or smoke come from the unit, stop using the product. In such case, immediately disconnect the power source and contact the service center. Continued use in such a condition may cause fire or electric shock.
10. If this product fails to operate normally, contact the nearest service center. Never disassemble or modify this product in any way.
11. When cleaning, do not spray water directly onto parts of the product. Doing so may cause fire or electric shock.

## Precautions

### Operating

- Before using, make sure power supply and others are properly connected.
- While operating, if any abnormal condition or malfunction is observed, stop using the camera immediately and then
- contact your Special dealer.

### Handling

- Do not disassemble or tamper with parts inside the camera.
- Do not drop or subject the camera to shock and vibration as this can damage camera.
- Care must be taken when you clean the clear dome cover. Especially, scratch and dust will ruin your quality of camera.

### Installation and Storage

- Do not install the camera in areas of extreme temperature, which exceed the allowable range.
- Avoid installing in humid or dusty places.
- Avoid installing in places where radiation is present.
- Avoid installing in places where there are strong magnetic fields and electric signals.
- Avoid installing in places where the camera would be subject to strong vibrations.
- Never expose the camera to rain and water.

# Important Safety Instructions

1. **Read these instructions.** - All these safety and operating instructions should be read before the product is operated.
2. **Keep these instructions.** - The safety, operating and use instructions should be retained for future reference.
3. **Heed all warnings.** - All warnings on the product and in the operating instructions should be adhered to.
4. **Follow all instructions.** - All operating and use instructions should be followed.
5. **Do not use this apparatus near water.** - For example: near a bath tub, wash bowl, kitchen sink, laundry tub, in a wet basement; near a swimming pool; etc.
6. **Clean only with dry cloth.** - Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners.
7. **Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.** - Slots and openings in the cabinet are provided for ventilation, to ensure reliable operation of the product, and to protect it from over-heating. The openings should never be blocked by placing the product on bed, sofa, rug or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided and the manufacturer's unstructions have been adhere to.
8. **Do not install near any heat sources such as radiators, heat registers, or other apparatus (including amplifiers) that produce heat.**
9. **Do not defeat the safety purpose of the polarized or grounding-type plug.** A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. **Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.**
11. **Only use attachments/accessories specified by the manufacturer.**
12. **Use only with cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.**
13. **Unplug this apparatus during lightning storms or when unused for long periods of time.**
14. **Refer all servicing to qualified service personnel.** Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.





#### Disposal of Your Old Appliance

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1. When this crossed-out wheel bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC.
2. All electrical and electronic products should be disposed of separately from the municipal waste stream via designated by the government or the local authorities.
3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.
4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product.



This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

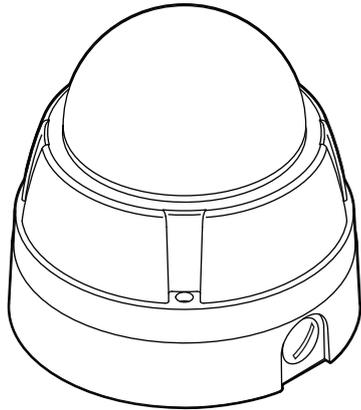
This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

# Contents

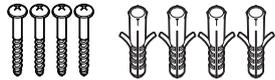
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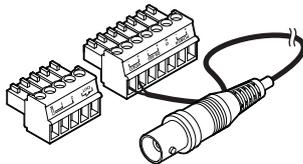
# 1 Introduction - Product & Accessories



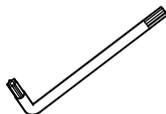
1 Main Body + 2 Surface Mount Bracket



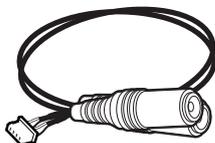
3 Screw & Plastic Anchor-4pcs



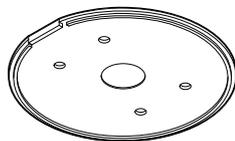
4 Terminal Block x2: 5P, 7P+BNC Cable



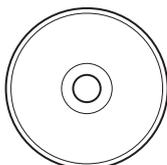
5 Torx Wrench



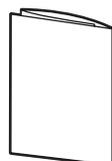
6 Audio Cable



7 Rubber Gasket



8 Manual CD



9 Quick Manual

✳ Please check if all the camera and accessories are included in the package.

1 Main Body

Camera module, screws, terminal block slot and DIP switches are included.

2 Surface Mount Bracket

- It is used when installing the camera right on to the ceiling.

- To install the camera with the surface mount bracket, the bracket needs to be separated from the main body, then needs to be re-assembled the bracket and the main body according to the order.

3 Screw & Plastic Anchor

- Screws are used to fix the surface mount bracket to the ceiling.

- Plastic anchors are used to tighten the screws to the hole by inserting them into the holes in advance.

4 Terminal Block

Power, video, communication and alarm input cables are connected through the terminal blocks.

5 Torx Wrench

It is used to screw/unscrew the fixed screws on the main body.

6 Audio Cable

Audio in/out cable.

7 Rubber Gasket

It is installed between the surface mount bracket and wall/wall mount bracket to prevent the water leakage.

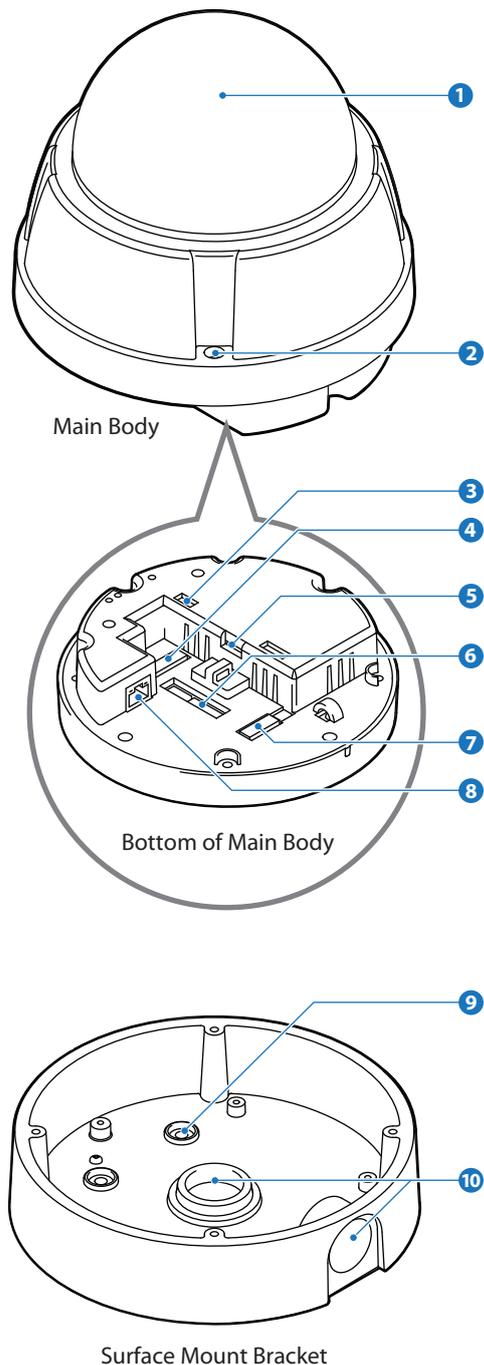
8 Manual CD

It is included Manual and 'IP Search' program.

9 Quick Manual

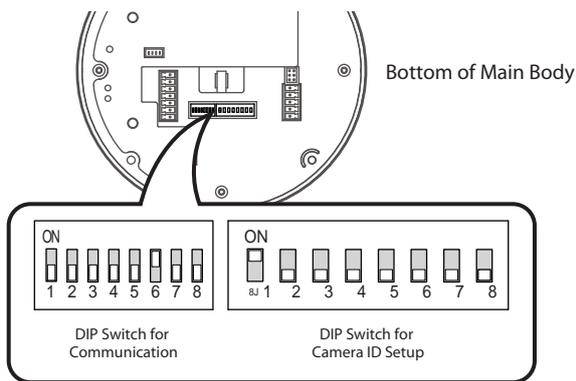
It gives a concise explanation of the installation of Camera.

# 1 Introduction - Part Name & Functions



- 1 Dome Cover**
  - Protects the camera module from outside environment.
  - Do not detach protection film from the dome cover before finishing all installation processes to protect dome cover from scratches or dust.
- 2 Lockup Screw**
  - Fixes main body to the surface mount bracket.
- 3 Audio Connector**
  - Connect the audio cable.
  - See the section 2 'Installation - Cabling the Audio Cable' for details.
- 4 7P Terminal Block Slot**
  - Power, keyboard controller/DVR video device are connected to this terminal block.
  - See the section 2 'Installation - Cabling the 7P Terminal Block' for details.
- 5 Micro SD Memory Card Slot**
- 6 DIP Switch**
  - Adjusts camera ID and protocols.
  - See the section 2 'Installation - DIP Switch Setup' for details.
- 7 5P Terminal Block Slot**
  - Alarm input and relay out cables are connected to this terminal block.
  - See the section 2 'Installation - Cabling the 5P Terminal Block' for details.
- 8 RJ-45 Connector**
  - Connect the crossover cable.
- 9 Mounting Hole**
  - This is used to attach the surface mount bracket to the ceiling.
- 10 3/4" Pipe Mounting Hole**
  - This is used to pass the cables to the cameras.
  - When water protection is needed, connect the 3/4" pipe through this hole, then pass the cables through the pipe.

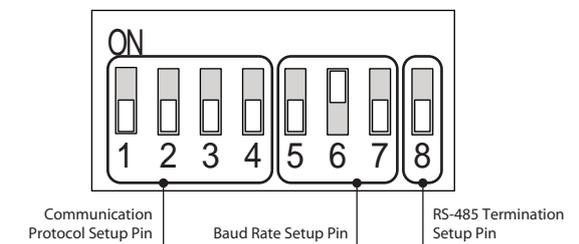
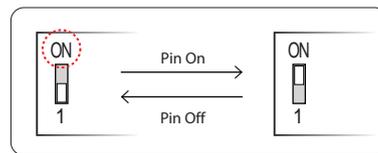
# 2 Installation - DIP Switch Setup



⚠ Before installing the camera, you should set the DIP switch to configure the camera ID, communication protocol.

### Pin On/Off

If the pin is located 'ON' side of the printed label, it means on. In reverse, means off.

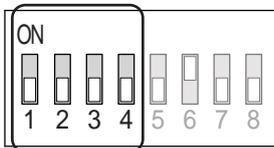


### 1. DIP Switch for Communication

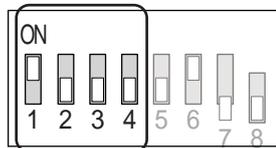
- It is consist of communication protocol, baud rate and RS-485 termination setup pins.
- If you change the camera protocol by changing the DIP switch, the change will be effective after rebooting the camera.

Choose the appropriate communication protocol by setting the DIP switch.

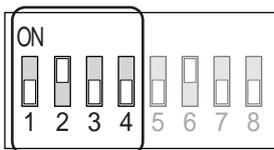
#### 1 Auto Protocol



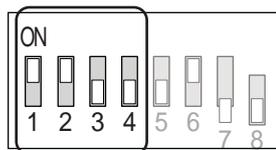
#### 2 PELCO-D



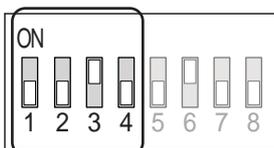
#### 3 PELCO-P



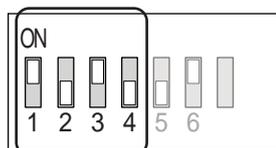
#### 4 SAMSUNG-E



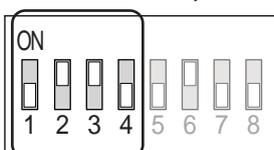
#### 5 Panasonic



#### 6 GE(Kalatel)



#### 7 AD(American Dynamics)



### 2. Communication Protocol Setup

- If you want to control using DVR or keyboard controller, their protocol must be identical to the camera's protocol. Otherwise, you cannot control the camera.
- The factory default is auto protocol.

#### 1 Auto Protocol

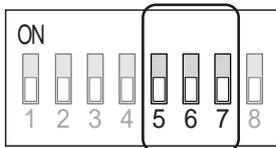
If you set the protocol as auto protocol, camera will automatically recognize PELCO-D, PELCO-P or SAMSUNG-E protocol.

⚠ If there is other combination of pins from above, it will be recognize as auto protocol.

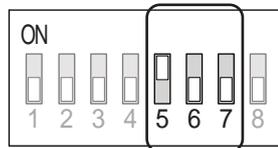
# 2 Installation - DIP Switch Setup

Choose the appropriate baud rate protocol by setting the DIP switch

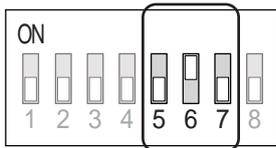
### 1 2400 BPS



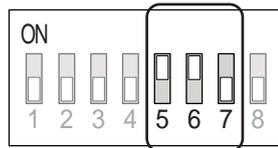
### 2 4800 BPS



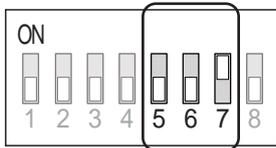
### 3 9600 BPS



### 4 19200 BPS



### 5 38400 BPS

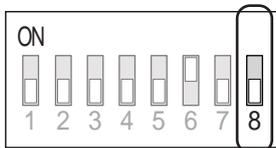


### 3. Baud Rate Setup

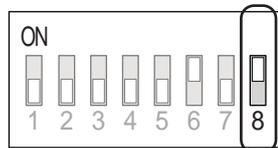
The factory default is 2400BPS.

Choose the termination resistor on/off to notify the last camera.

### 1 Normal



### 2 Last Camera



### 4. RS-485 Termination Setup

- Pin 8 is use for on/off of RS-485 termination. Normally, it must be off state.
- Especially, when you have trouble with long daisy chain style connection, turn on this termination switch of the last camera.

### Camera ID Setup

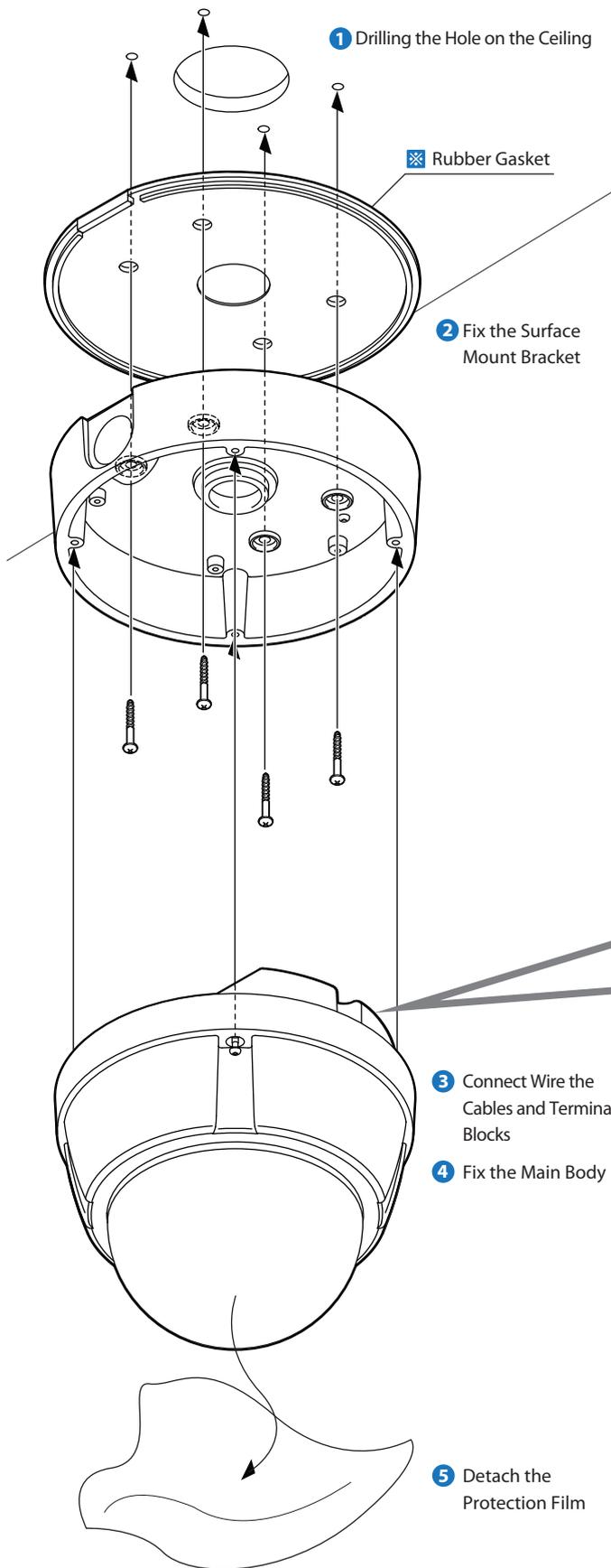
ID number of camera is set using binary number. The example is shown below.

Pin	1	2	3	4	5	6	7	8
ID Value	1	2	4	8	16	32	64	128

### 5. DIP Switch for Camera ID Setup

- If you want to control a certain camera, you must match the camera ID with 'CAM ID, setting of DVR or keyboard controller.
- ID number of the camera is set using binary number.
- The range of ID is 0~255. Factory default of camera ID is 1.
- Camera ID will be effective without rebooting the camera.

# 2 Installation - Installation Using Surface Mount Bracket



## **1** Drilling the Hole on the Ceiling

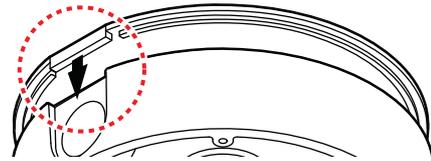
To pass cables through the ceiling, drill a hole (30mm diameter) on the ceiling panel.

## **2** Fix the Surface Mount Bracket

Pass the cables to the  $\frac{3}{4}$ " pipe hole, and screw the surface mount bracket to the ceiling.

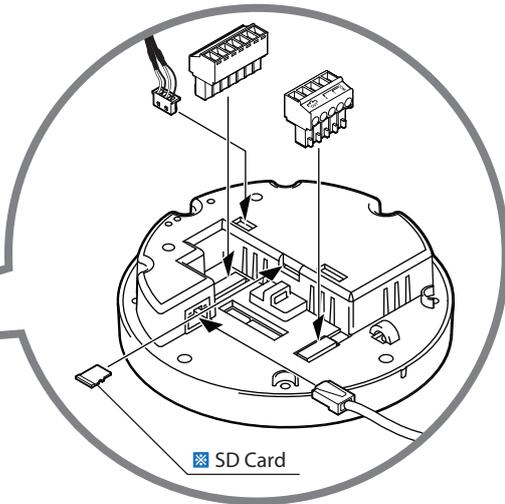
### ※ Rubber Gasket

- Before installing the gasket, the hole in the center is to be cut by knife when only necessary.
- When installing gasket, the protrusion of the gasket should be matched with the groove joint of the bottom of the surface mount bracket.



## **3** Connect Wire the Cables and Terminal Blocks

- Connect the terminal blocks, audio cable and crossover cable to the main body.
- See the section 2 'Installation - Cabling the 5P/7P Terminal Block and the Audio Cable'.



※ See the section 2 'Installation - Inserting/Removing an SD Memory Card' for 'SD Card'.

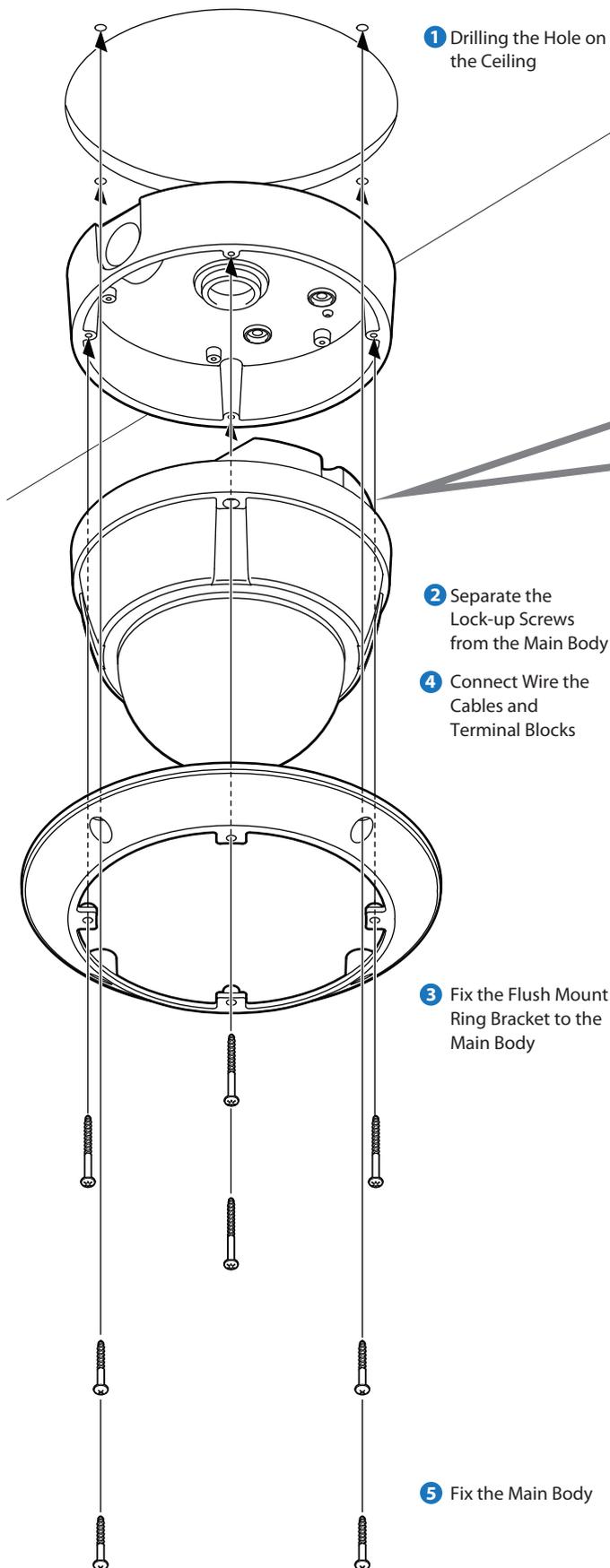
## **4** Fix the Main Body

Screw the main body to the surface mount bracket by screwing 4 lock-up screws.

## **5** Detach the Protection Film

Detach the protection film from the dome cover.

# 2 Installation - Installation Using Flush Mount Ring Bracket (Option)



1 Drilling the Hole on the Ceiling

**1 Drilling the Hole on the Ceiling**

To pass cables through the ceiling, drill a hole(70mm diameter) on the ceiling.

**2 Separate the Lock-up Screws from the Main Body**

Separate the 4 lock-up screws from the main body in advance.

2 Separate the Lock-up Screws from the Main Body

4 Connect Wire the Cables and Terminal Blocks

**3 Fix the Flush Mount Ring Bracket to the Main Body**

Fix the flush mount ring bracket to the main body using torx screws.

**4 Connect Wire the Cables and Terminal Blocks**

Connect the terminal blocks, audio cable and crossover cable to the main body.

**5 Fix the Main Body**

Screw the main body with the surface mount bracket to the ceiling using the screws on the surface mount bracket.

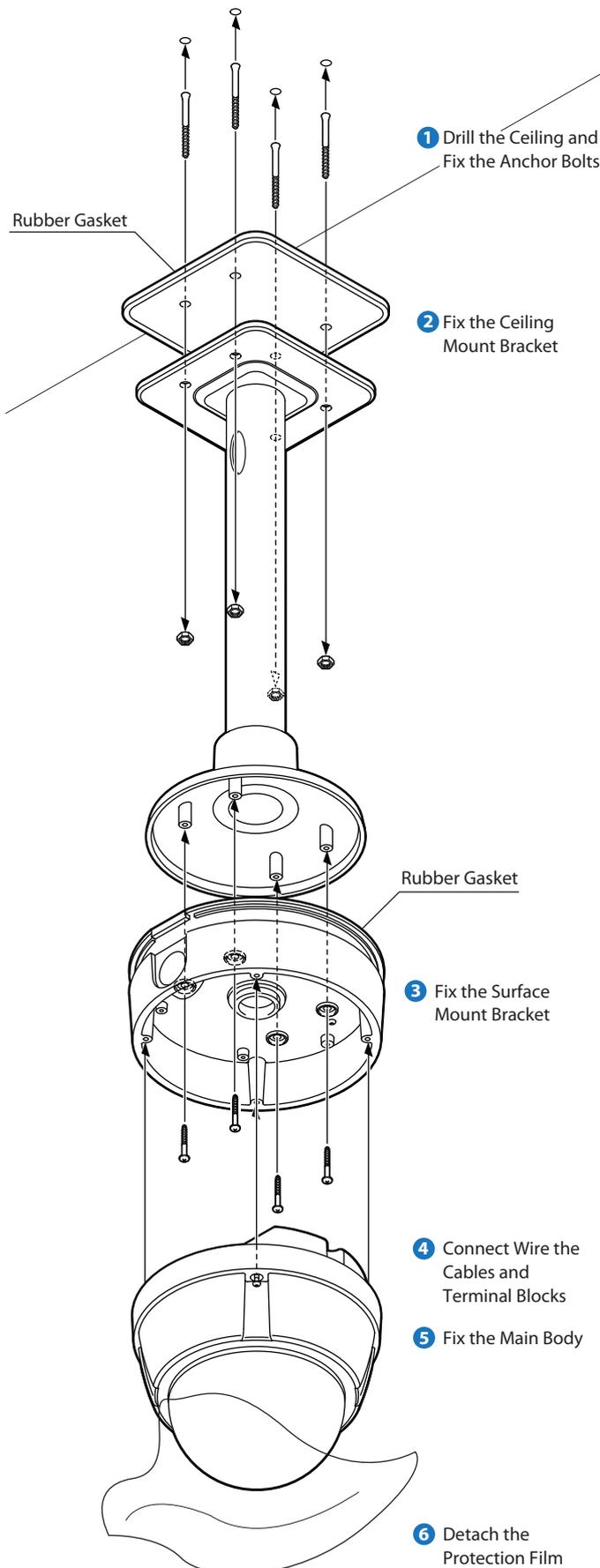
**6 Detach the Protection Film**

Detach the protection film from the dome cover.

3 Fix the Flush Mount Ring Bracket to the Main Body

5 Fix the Main Body

# 2 Installation - Installation Using Ceiling Mount Bracket (Option)



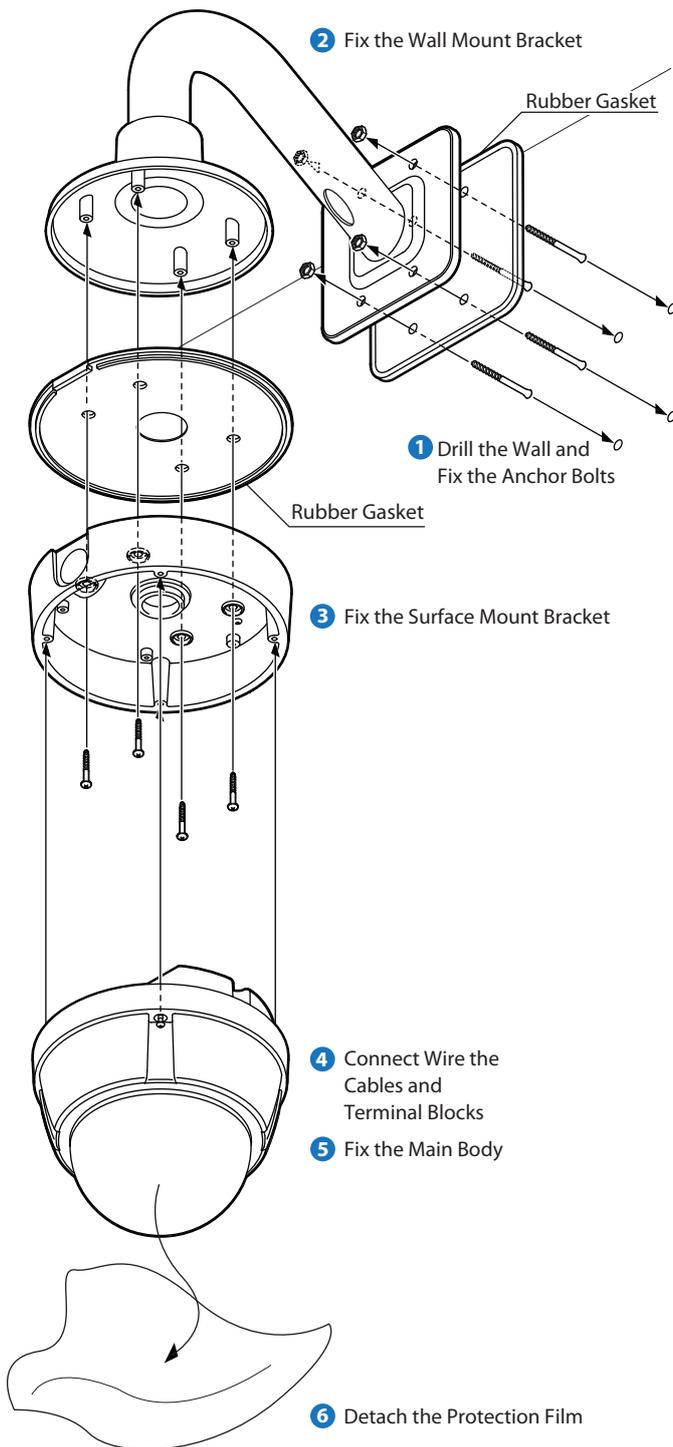
## 1. Installing on the Concrete Ceiling

- 1 Drill the Ceiling and Fix the Anchor Bolts**  
On the ceiling, drill a hole (6mm diameter/ 50mm depth), and fix the anchor bolts.
- 2 Fix the Ceiling Mount Bracket**  
1. Drill a hole (20mm diameter) on the pipe of the bracket to pass the cables.  
2. On the fixed anchor bolts, attach the rubber gasket and screw the ceiling mount bracket.

## 2. Installing on the Wooden Ceiling

- 1 Drill the Ceiling**  
To pass cables to upside of ceiling, drill a hole (30mm diameter) on the ceiling.
- 2 Fix the Ceiling Mount Bracket**  
Pass the cables into the ceiling mount bracket, and screw the ceiling mount bracket to the ceiling.
- 3 Fix the Surface Mount Bracket**  
Pass the cables through the hole of the surface mount bracket, screw the surface mount bracket to the ceiling mount bracket.
- 4 Connect the Wire Cables and Terminal Blocks**  
Connect the terminal blocks, audio cable and crossover cable to the main body.
- 5 Fix the Main Body**  
Screw the main body to the surface mount bracket. (Screws are included in the main body.)
- 6 Detach the Protection Film**  
Detach the protection film from the dome cover.

# 2 Installation - Installation Using Wall Mount Bracket (Option)



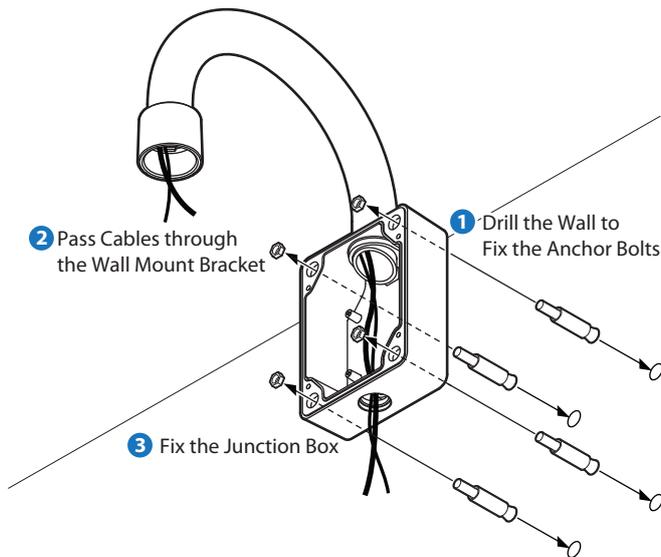
## 1. Installing on the Concrete Wall

- 1 Drill the Wall and Fix the Anchor Bolts**  
On the wall, drill a hole (6mm diameter/ 50mm depth), and fix the anchor bolts.
- 2 Fix the Wall Mount Bracket**
  1. Drill a hole (20mm diameter) on the pipe of the bracket to pass the cables.
  2. On the fixed anchor bolts, attach the rubber gasket and fix the wall mount bracket with nuts and screws.

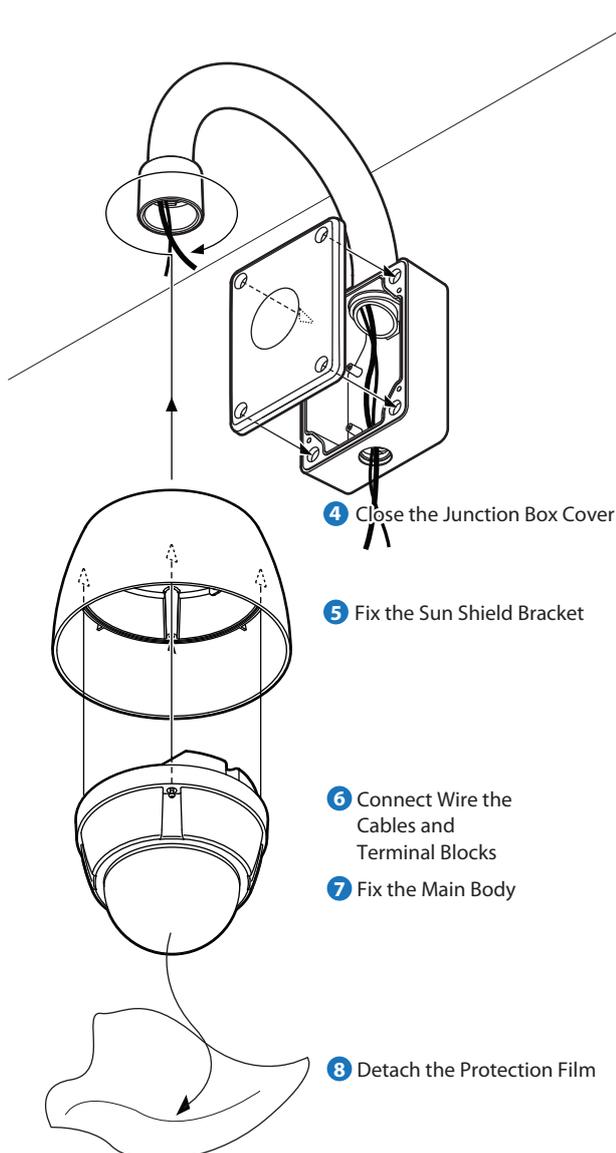
## 2. Installing on the Wooden Wall

- 1 Drill the Wall**  
To pass cables to the wall, make a hole about 30 mm on the wall.
- 2 Fix the Wall Mount Bracket**  
Pass the cables into the wall mount bracket, and screw the wall mount bracket to the wall.
- 3 Fix the Surface Mount Bracket**  
Pass the cables through the hole of the surface mount bracket, screw the surface mount bracket to the wall mount bracket.
- 4 Connect the Wire Cables and Terminal Blocks**  
Connect the terminal blocks, audio cable and crossover cable to the main body.
- 5 Fix the Main Body**  
Screw the main body to the surface mount bracket. (Screws are included in the main body.)
- 6 Detach the Protection Film**  
Detach the protection film from the dome cover.

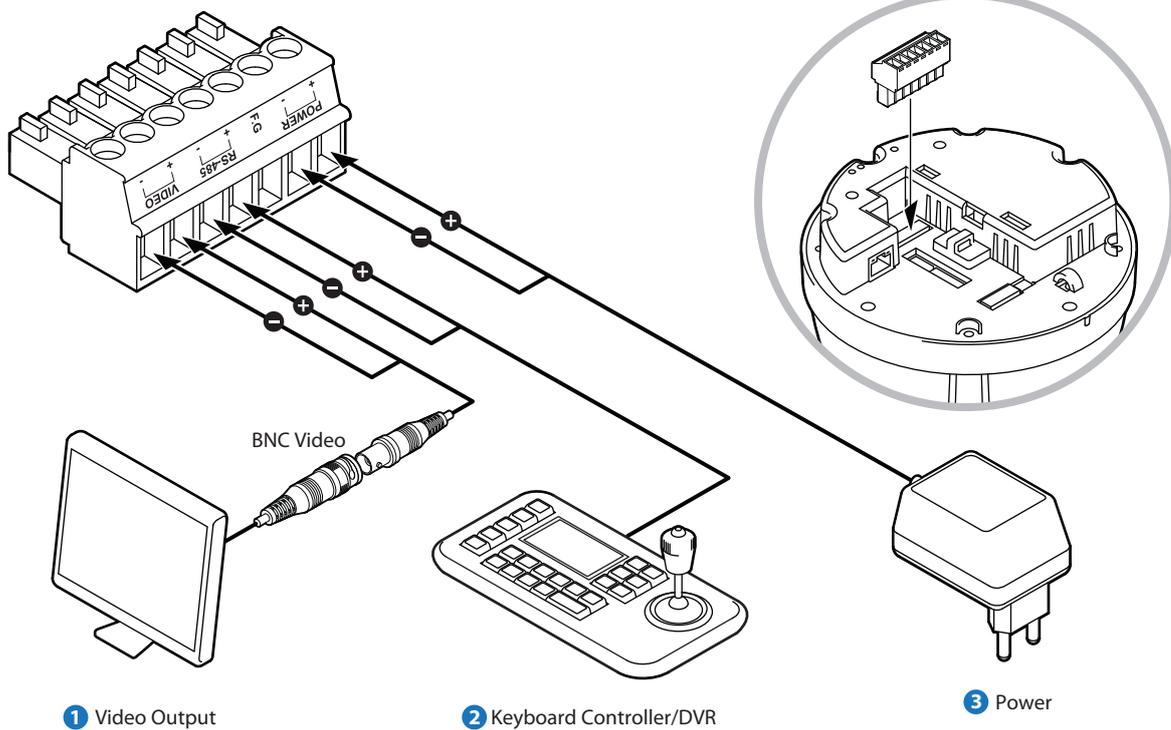
# 2 Installation - Installation Using Wall Mount Bracket with Junction Box (Option)



- 1 Drill the Wall to Fix the Anchor Bolts**  
On the wall, drill a hole (6mm diameter/50mm depth) for fix the anchor bolts.
- 2 Pass Cables through the Wall Mount Bracket**  
Pass cables before fixing the wall mount bracket.
- 3 Fix the Junction Box**  
Fix the junction box to anchor bolts on the wall.
- 4 Close Junction Box Cover**  
Close cover to the junction box using the torx driver.
- 5 Fix the Sun Shield Bracket**  
Fix the sun shield bracket to the wall mount bracket.
- 6 Connect the Wire Cables and Terminal Blocks**  
Connect the terminal blocks, audio cable and crossover cable to the main body.
- 7 Fix the Main Body**  
Screw the main body to the surface mount bracket. (Screws are included in the main body.)
- 8 Detach the Protection Film**  
Detach the protection film from the dome cover.

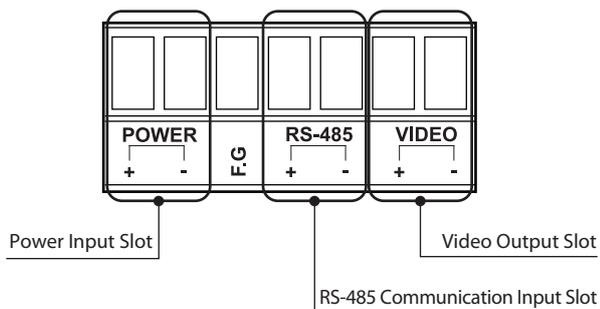


# 2 Installation - Cabling the 7P Terminal Block



## 7P Terminal Block

7p terminal block connects the power, keyboard controller/ DVR or video device and etc to the camera's main body. (See the section 2 'Installation - Installation Using Surface Mount Bracket' for the connection of the terminal block.)

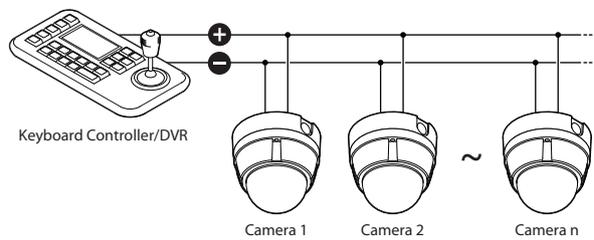


### 1 Video Output

Video out check the screen during installation.

### 2 RS-485 Communication (DVR/Keyboard)

Controls PTZ by connecting with keyboard controller or DVR using RS-485 communication standards.

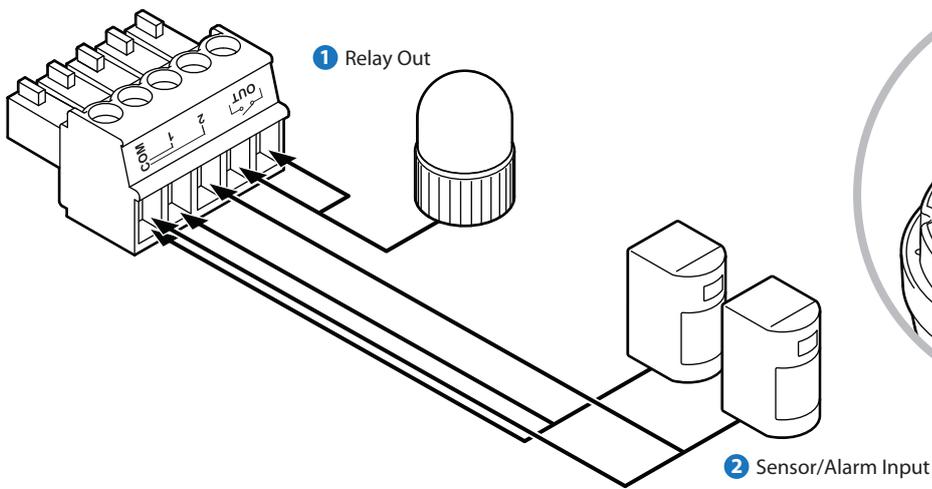


### 3 Power

- Please check the correct rated power.
- The rated power is marked on the bottom of the camera.

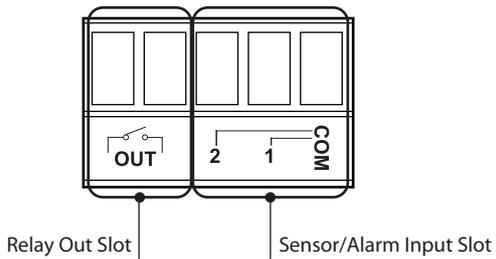
Heater	Power	Power Consumption	PoE
None Heater Model	DC 12V	12W	IEEE802.3af Class 0
Heater Model		22W	

# 2 Installation - Cabling the 5P Terminal Block



## 5P Terminal Block

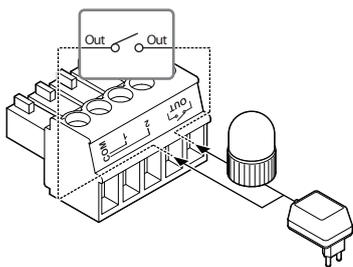
5p terminal block connects the sensor/alarm input and the relay out device to the camera's main body. (Refer 'Installation Using Surface Mount Bracket' for the connection of the terminal block.)



### 1 Relay Out

- It connects to the alarm lights, siren or lamps, and it is activated according to the OSD menu setting.
- If you want to use relay out, the types of sensor must be selected in OSD menu (ROOT MENU>SYSTEM SETUP>RELAY TYPE). The sensor types are normal open and normal close.

Normal Open (N.O)	Output voltage is high state when sensor is activated.
Normal Close (N.C)	Output voltage is high state when sensor is not activated.

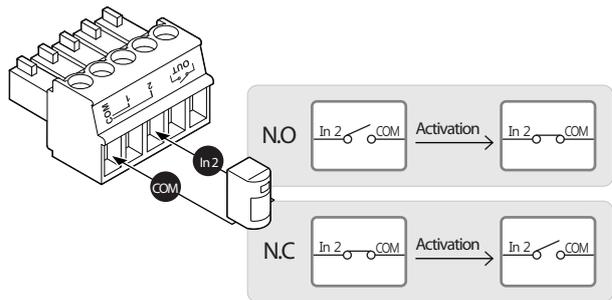


<Inside of terminal block: Activation type of relay out N.O.>

### 2 Sensor/Alarm Input

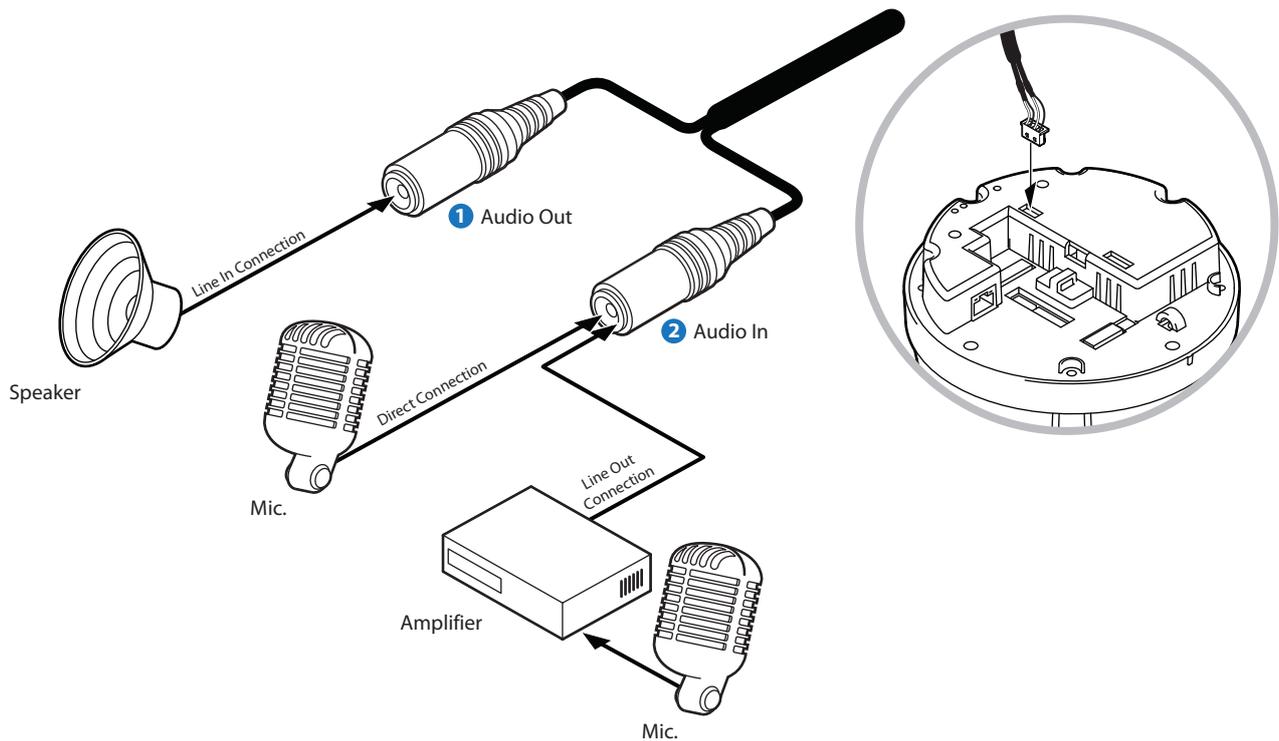
- It connects to IR sensor, IrDA sensor or door switch. If the sensor is activated, it can activate to move camera to the specific angle and to connect the alarm device.
- A cable of the sensor should connect to input 1 or 2, and the other should be connected to 'COM' slot.
- If you want to use alarm input, the types of sensor must be selected in SETUP(See the section 5 'Setup - Alarm Input 1 / 2 Setup). The sensor types are normal open and normal close.

Normal Open (N.O)	Output voltage is high state when sensor is activated.
Normal Close (N.C)	Output voltage is high state when sensor is not activated.



<Inside of terminal block: Activation type of alarm input N.O. / N.C.>

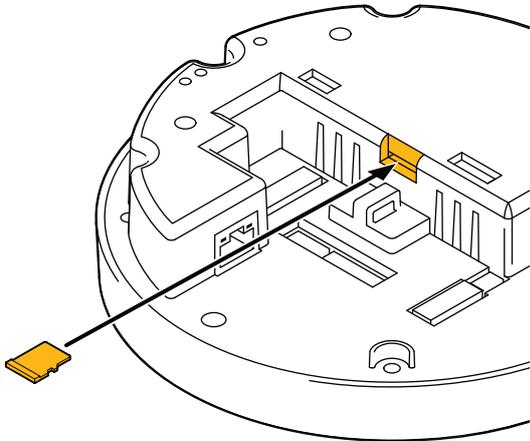
# 2 Installation - Cabling the Audio Cable



- 1 Connect the 'Audio Out' port of the camera to the 'Line In' port of the speaker.
  - ⊠ If the speaker without the amplifier is connected to Audio Out port, it doesn't work properly. Therefore, the speaker with the amplifier or the separate amplifier is needed.

- 2 Connect the 'Audio In' port of the camera to the microphone directly or 'Line Out' port of the amplifier connected with microphone.
  - ⊠ If the microphone is connected directly, the microphone with the embedded amplifier such as condenser mic. needs to be used.

# 2 Installation - Inserting/Removing an SD Memory Card



The memory card is an external data storage device that has been developed to offer an entirely new way to record and share video, audio, and text data using digital devices.



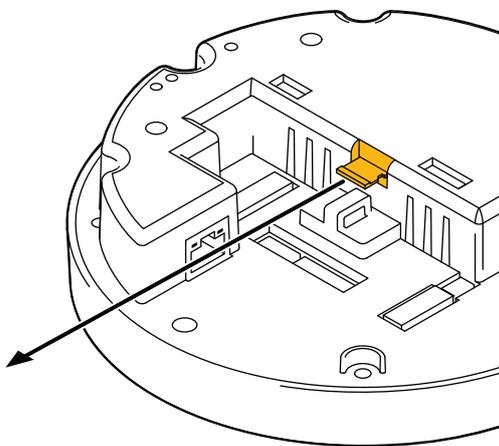
#### ⊠ Recommended SD Card Specification *(Not Included)*

- Type: Micro SD (SDHC)
- Manufacturer: Transcend, Kingston, Toshiba, Sanddisk
- Capacity: 4~16G
- Class: over Class 6

#### 1 Inserting an SD Memory Card

Insert the SD card in the arrow direction.

- ⊠ Don't insert the SD memory card while it's upside down by force. Otherwise, it may damage the SD memory card.



#### 2 Removing an SD Memory Card

Removing an SD Memory Card Gently press down on the exposed end of the memory card as shown in the diagram to eject the memory card from the slot.

- ⊠ Pressing too hard on the SD memory card can cause the card to shoot out uncontrollably from the slot when released.
- ⊠ If you have saved data in the SD memory card, removing the SD memory card prior to setting record to OFF will cause damage to the data stored in the card.

# 3 Network Setup - Quick Start of Network Connection

Please follow the steps below to complete the initial setup of the network function.

- Please do not power on the IP Camera until instructed.
- Temporarily disable any proxy servers configured in internet Explorer.
- If connecting the IP Camera directly to a modem, power down and reset the modem. Leave the modem powered down until configurations are finalized with the IP Camera and the IP Camera has been correctly connected to the modem.

- In order to communicate with the IP Camera, access to PC/laptop and configure the PC. Keep a record of TCP/IP properties of the PC. (IP address, subnet mask, gateway, DNS, etc.)

Current TCP/IP Settings	
IP Address	
Subnet Mask	
Default Gateway	
Primary DNS Server	
Secondary DNS Server (Option)	

- If your PC obtains its IP address automatically, there is no need to record any information.

- Change the IP address of the host PC to 192.168.1.11 and subnet mask to 255.255.255.0 (leave all other entries blank)
- Connect the IP Camera to your PC's Ethernet port via the supplied crossover cable. (It does not matter what end is used for the PC)
- Power on the IP camera using the supplied power adapter.
- After 1 minute of power, verify a flashing ACTIVE indicator and a flashing or solid LINK indicator. After the corresponding indicator lights are properly displayed, open Internet Explorer.
- Type - <http://192.168.1.80> (the default IP of the IP Camera) into your address bar.
- Default ID/Password to access IP Camera are both the word: **admin**.
- Familiarize yourself with the Viewer Interface Screen.
- Locate the TCP/IP configuration under Setup. Supply the same ID and Password to enter Setup. (**admin : admin**)
- Select STATIC under 'Network Type'. You will select Dynamic only if you are connecting the IP Camera directly to your cable/DSL/Broadband modem and your Internet Service Provider is supplying a dynamic address.

- If you have a network with other devices (such as PC/laptop, etc.) or a router, you will NEVER select Dynamic.

- Configure the IP Camera's TCP/IP settings as you normally do any other PCs on your network by providing a proper IP address, subnet mask, default gateway, and DNS server.

- If this is a stand-alone unit with a direct connection to cable/DSL/Broadband modem, input the addresses you have received from your ISP. If you have received no IP address from your ISP, select Dynamic and choose the proper settings.

- The IP Camera utilizes five TCP ports - a Web Port, a Video Port, a Control Server Port, Audio ports. A Web Port is to utilize Internet Explorer, a Video Server port is to support the streaming video, a Control Control Port is to transmit to control commands and Audio Ports are to transmit and receive Audio data. If the IP Camera will be directly attached to a cable/DSL/Broadband modem or it has been assigned a static IP from your ISP, then leave the default port settings. If you are installing the IP Camera on a network, you must define a Web Port other than 80. The other ports, a Video Port, a Control Port, Audio Ports can remain unchanged.

- If the IP Camera is connected to a network which utilizes a router, you must have Port Forwarding configured on your personal router to forward all ports to the IP address you have assigned the IP Camera.

- After configuring Port Forwarding on your router (if necessary), you may access your IP Camera on your local network by opening Internet Explorer and specifying the IP address and Web Server Port that you have assigned to the IP Camera.

- Example: <http://192.168.0.200:8888>

- If you leave your Web Port set to 80, you don't need to specify the port in the Address Bar to access to your IP Camera.

- Access your IP Camera via the Internet :

*If you use a static IP address assigned by your ISP*

- Open Internet Explorer.
- Type the IP of the IP Camera.
- If you use a router, type the routers' static IP and the web port number of the IP Camera.

*If you have a dynamic address provided by your ISP*

- Open Internet Explorer and visit the DDNS website.
- Register the IP Camera.
- Reboot the IP Camera.
- Give the DDNS server 10 minutes to locate your IP Camera's IP information.
- Click the refresh button in the Internet Explore.
- After your camera is connected, select your camera.

# 3 Network Setup - Initial Setup via a Crossover Cable

This section provides a guide on how to connect the IP Camera to your PC/Laptop for initial setup.

Please follow the instructions in the order below without skipping steps. Do not supply power to the IP Camera until instructed.

In order to access the IP Camera's firmware you will need to connect the Video Server to a PC or Laptop directly via the supplied crossover cable.

1. Before you begin, you must determine the current network/INTERNET (TCP/IP) settings on the PC or laptop. Write down your entries below for quick reference.

Current TCP/IP Settings	
IP Address	
Subnet Mask	
Default Gateway	
Primary DNS Server	
Secondary DNS Server (Option)	

- For information on how to determine your current settings, see Appendix A.
- If you are obtaining an IP Address automatically, there is no need to write down the information.

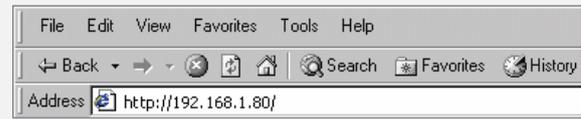
2. To make the IP Camera to communicate with your PC, change your PC's IP address and subnet mask.

- You should change your IP address to 192.168.1.11 and change the subnet mask to 255.255.255.0  
Leave all other entries (Default Gateway, DNS Servers, etc.) blank.
- For information on how to change your IP address and subnet mask, see Appendix B.

3. After you have made the changes to your IP address and subnet mask, you may attach the IP Camera to your PC via the supplied crossover cable. Plug-in either end of the crossover cable into the PC's network card and the other end into your IP Camera.
4. After connecting the PC and IP Camera using the crossover cable, power on the IP Camera by plugging in the power supply shipped with the IP Camera.
5. No longer than 1 minute after powering on the IP Camera, verify that the ACTIVE indicator light is flashing, and the LINK indicator light is flickering or solid. No longer than 1 minute after power on the IP Camera, verify that the ACTIVE indicator light is flashing and the LINK indicator light is flickering or solid. If they are not, read the FAQ.

6. Now you will be able to access the viewer software within the IP Camera.

- Open Internet Explorer and type the IP address of 192.168.1.80 (default IP of the IP Camera from the factory) into the Address Bar of the web browser (as seen below). Press Enter.



- If a message box similar to the image below appears, choose 'Try Again'. The message will vary depending on the operating system.



7. Now you will be able to see the login screen for the IP Camera.

- The 3 authorities are available :  
Administrator, Operator and Viewer. The authority setup is available in Setup.
  - Viewer : Only monitoring is allowed.
  - Operator : Most of the functions are allowed except 'Setup'.
  - Administrator : All functions are allowed.

8. The default ID and Password are both the word 'admin' (without the " ")

9. At any time if you are prompted to download ActiveX controls, Click 'Yes' as all contents are safe.

- You will have to click 'Yes' twice to two individual prompts. This allows your video to be displayed in Internet Explorer.

# 3 Network Setup - DDNS Registration

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If you have DYNAMIC IP service from your Internet Service Provider (ISP), you can't tell the current IP address of the IP Camera. To solve this problem, you have to register to our DDNS service.

At first, you have to check if you are using dynamic addressing. If so, register your IP Video Server on our DDNS website before you configure, setup, or install the IP Camera.

Even though your IP is not dynamic, you will get benefit if you register to DDNS. In this case, just remember 'alex.net4c.net/gate1' instead of complicated series of numbers like <http://201.23.4.76:8078>.

For more details, contact our Support Center.

※ To register IP Camera to DDNS, 'Serial No.' of the IP Camera should be known. The 'Serial No.' can be found in section 6 'Setup - DDNS' menu.

※ To use a public DDNS called 'dyndns' or 'no-ip', refer to the detail information on how to use the service.  
(Visit the web site : <http://www.dyndns.com> or <http://www.no-ip.com>)

# 3 Network Setup - Guide to Network Environment

Please configure the IP Camera at the installation site. You must determine your network scenario in order to configure the IP Camera with the proper TCP/IP settings. This tutorial will guide you through the process. Before actually configuring the IP Camera, determine settings to be applied. Record those settings to be used to configure your IP Camera for reference.

When configuring your IP Camera, treat the IP Camera as another PC on your network. You will assign it several addresses and other TCP/IP properties to match your current network.

This step-by-step tutorial will teach what IP addresses and network configurations should be assigned based on the network scenario.

5. The following descriptions are several basic network scenarios. Determine which scenario describes your network. If your network does not match one of the scenarios below and you are unsure how to setup your IP Camera, contact your network administrator and then call our Support Center.

**i** You cannot control the rectangular gray areas and only the ISP has access to the devices.

1. Before you begin, locate any information and settings received from your Internet Service Provider (ISP). You may need to refer to these IP addresses at a later time during the configuration.

Current TCP/IP Settings	
IP Address	
Subnet Mask	
Default Gateway	
Primary DNS Server	
Secondary DNS Server (Option)	

Static     Dynamic

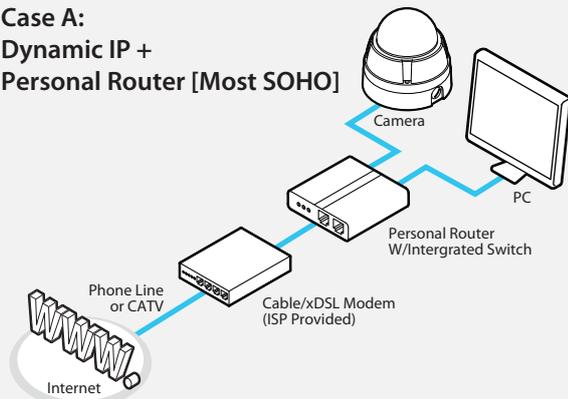
**i** If you were not given any IP addresses or the ISP was responsible for the setup and installation of your Internet connection, go to step 2.

**i** If you are not using a router on your network, your 'Current TCP/IP Settings' (from the previous section) and 'Assigned IP Addresses from My ISP' will be exactly the same.

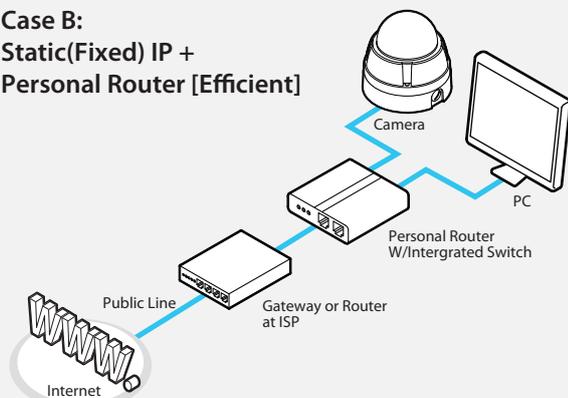
2. You must determine whether the IP address is STATIC or DYNAMIC. At this moment, you are only concerned about the ISP. Did they provide you with a STATIC or DYNAMIC address? If you are unsure, contact your ISP.
3. Configure your IP Camera's TCP/IP settings for network connectivity by selecting Setup from the main interface and selecting TCP/IP located on the left of the Setup screen.
4. If prompted for ID and Password, use 'admin' for both entries.  
The default web port number is 80. If port 80 is blocked by the ISP, a value between 1025 ~ 60000 should be used. If TCP port 80 is blocked, consult the ISP

# 3 Network Setup - Setup Case A, B

## Case A: Dynamic IP + Personal Router [Most SOHO]



## Case B: Static(Fixed) IP + Personal Router [Efficient]



## Configure your IP Camera's TCP/IP properties as follows :

**1. Network Type :** STATIC (even though you have Dynamic IP from your ISP, use STATIC on the IP Camera)

**2. Internet Address :** A private IP address such as 192.168.0.200 (Example)

**i** You need to assign an IP address to the IP Camera just as you do with PC.

**i** The IP address you assign must be unique to your network and match your network as well. For information on how to choose a unique IP and match your network, read the FAQ.

**i** The IP address you assign must be a private IP. For information on how to choose a private IP please, read the FAQ.

**3. Subnet Mask :** 255.255.255.0 (Example)

**i** You must use the same subnet mask as the one you noted under 'Current TCP/IP Settings'.

**4. Default Gateway :** 192.168.0.1 (Example)

**i** This IP address must be the IP address of your router. (private or LAN side)

**i** Use the same Default Gateway you noted under 'Current TCP/IP Settings'.

**5. Preferred DNS Server :** Use the 1st DNS Server from 'Assigned IP Address from My ISP'.

**i** If you did not receive any IP addresses from your ISP, contact the ISP and acquire the IP address of their DNS server.

**6. DDNS Server :** Use the DDNS server.

**i** This is the same site you will register later to accommodate dynamic IP from your ISP.

**7. Web Port :** 8888

**i** Do not use the default port 80 as this number must be changed.

**i** You may select any number between 1025 ~ 60000.

**8. Control Port :** 7777

**i** You may select any number between 1025 ~ 60000.

**9. Video Port :** 7778

**i** You may select any number between 1025 ~ 60000.

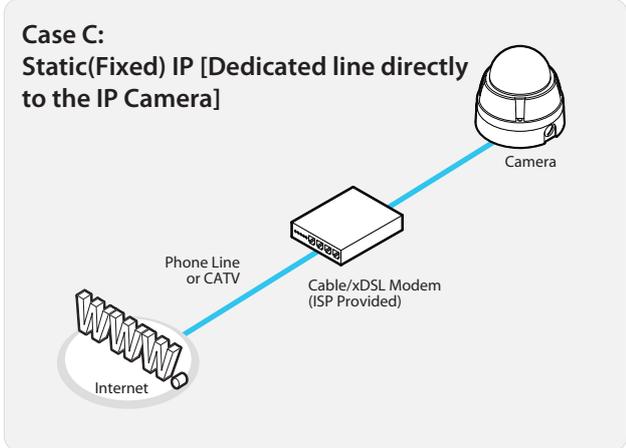
**10. Audio Transmit Port :** 7779

**i** You may select any number between 1025 ~ 60000.

**11. Audio Receive Port :** 7780

**i** You may select any number between 1025 ~ 60000.

# 3 Network Setup - Setup Case C, D



**Configure your IP Camera's TCP/IP properties as follows :**

1. **Network Type :** STATIC
2. **Internet Address :** A static IP address received from your ISP such as 24.107.88.125 (Example)

**i** You need to assign an IP address to the IP Camera just as you do with PC.

3. **Subnet Mask :** Subnet mask assigned from your ISP such as 255.255.255.240 (Example)
4. **Default Gateway :** 24.107.88.113 (Example)

**i** Use the assigned default gateway from your ISP

5. **Preferred DNS Server :** Use the 1st DNS Server from 'Assigned IP Address from My ISP'

**i** If you have not received any IP addresses from your ISP, contact them to acquire the IP address of their DNS server.

6. **DDNS Server :** Use the DDNS server

**i** This is the same site you will register later to utilize our DDNS service.

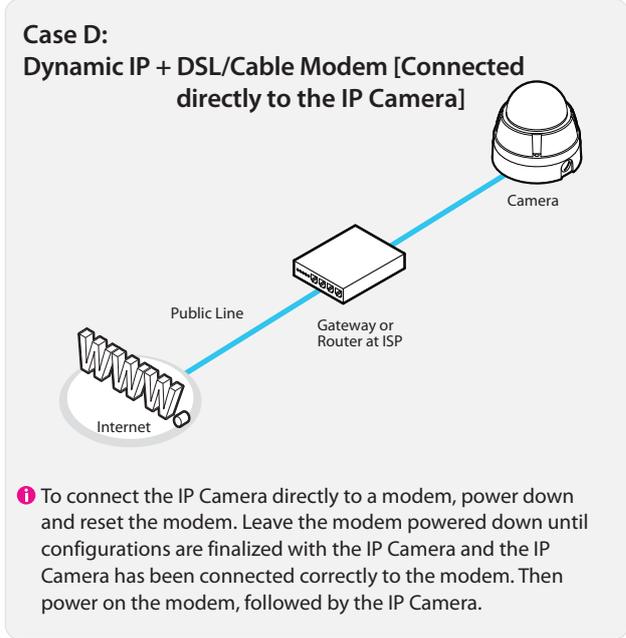
7. **Web Port :** 80
- i** You may select any number between 1025 ~ 60000.

8. **Control Port :** 7777
- i** You may select any number between 1025 ~ 60000.

9. **Video Port :** 7778
- i** You may select any number between 1025 ~ 60000.

10. **Audio Transmit Port :** 7779
- i** You may select any number between 1025 ~ 60000.

11. **Audio Receive Port :** 7780
- i** You may select any number between 1025 ~ 60000.



**Configure your IP Camera's TCP/IP properties as follows :**

1. **Network Type :** DYNAMIC
2. **DDNS Server :** Use the DDNS server

**i** This is the same site you will register later to accommodate dynamic IP from your ISP.

3. **Web Port :** 80
- i** You may select any number between 1025 ~ 60000.

4. **Control Port :** 7777
- i** You may select any number between 1025 ~ 60000.

5. **Video Port :** 7778
- i** You may select any number between 1025 ~ 60000.

6. **Audio Transmit Port :** 7779
- i** You may select any number between 1025 ~ 60000.

7. **Audio Receive Port :** 7780
- i** You may select any number between 1025 ~ 60000.

# 3 Network Setup - Port Forwarding

After entering the correct TCP/IP settings, you are ready for 'Port Forwarding'(Cases A, B).

1. Please record the TCP/IP settings of your IP Camera for future reference. You may need this information to access your IP Camera and to configure 'Port Forwarding'.

IP Camera TCP/IP Settings	
IP Address	
Subnet Mask	
Default Gateway	
Preferred DNS Server	
DDNS Server	
Web Port	
Control Port	
Video Port	
Audio Transmit Port	
Audio Receive Port	

2. After clicking 'Apply', the system will prompt for a reboot. Please allow the system 50 seconds to reboot and accept the changes. After 50 seconds, close the configuration screen. The view will display 'Trying to Reconnect'. If the ACTIVE light on the IP Camera has gone off and is now back on again flashing, the IP Camera has rebooted. After the system reboots completely, remove the power supply from the unit and close Internet Explorer.
3. Return your PC/Laptop TCP/IP properties to their original settings.
4. Before installing the IP Camera, you must use 'Port Forwarding' on your personal router (Cases A, B).

You will need to forward 5 ports:

- Web Port
- Control Port
- VideoPort
- Audio Transmit Port
- Audio Receive Port

All the ports will be forwarded to the IP address you assigned to the IP Camera.

In the example above, you would forward:

- 8888 → 192.168.0.200
- 7777 → 192.168.0.200
- 7778 → 192.168.0.200
- 7779 → 192.168.0.200
- 7780 → 192.168.0.200

**i** For information on how to use 'Port Forwarding', please read Appendix C.

# 3 Network Setup - Starting IP Camera

---

**After forwarding correctly the Web Port, Video Port, Control Port and two Audio Ports through your router (if applicable), install the IP Camera in a proper location.**

1. Locate the serial number located on the label attached to the bottom of the IP Camera, you will need this for DDNS registration.
2. Connect the IP Camera to your router or cable/DSL modem (per your network scenario) via a Cat5/5e UTP Ethernet network cable.
3. Supply power to the IP Camera.
4. After 1 minute, verify the IP Camera indicators:
  - ACTIVE : Flashing
  - LINK : Flickering/Solid
5. After configuring Port Forwarding on your computer (if necessary), access your IP Camera on your local network by opening Internet Explorer and specifying the IP address and Web Port assigned to the IP Camera.

**i** Examples: <http://192.168.0.200:8888> or <http://24.106.88.123>

**i** If you left your Web Port set to 80, do not need to specify the port in the Address Bar to access the IP Camera.

6. Access your IP Camera via the Internet :

---

***If you use Case B, C***

- 1) Open Internet Explorer.
- 2) Type the IP of the IP Camera.

---

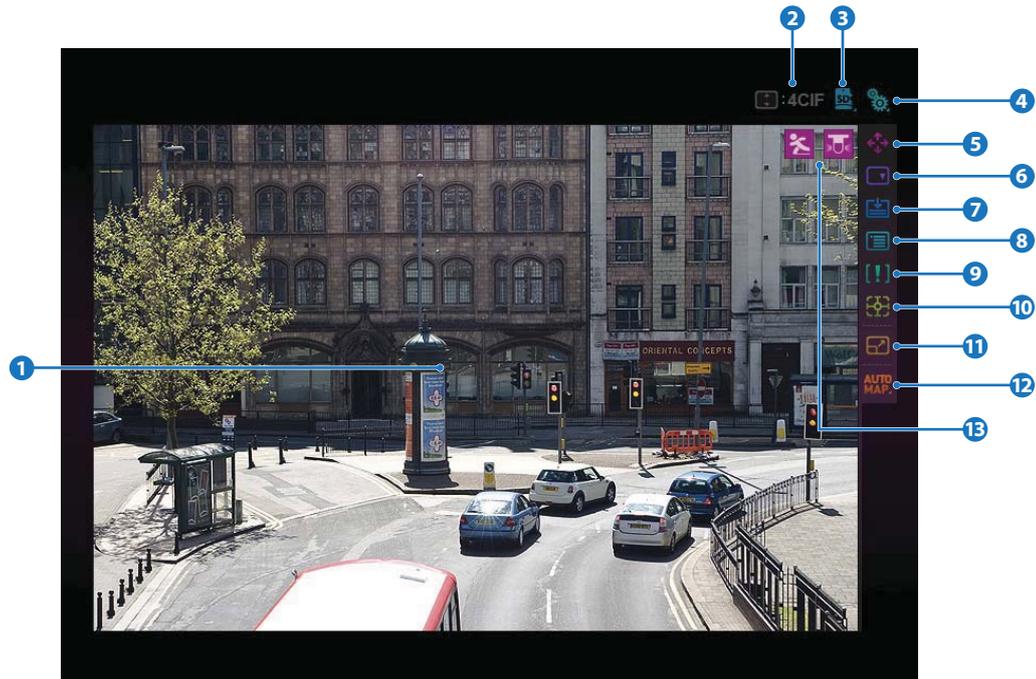
***If you use Case A, D***

- 1) Open Internet Explorer.
  - 2) Visit the DDNS website.
  - 3) Register the IP Camera.
  - 4) Give the DDNS server 10 minutes (MAX) to locate your IP Camera's IP information. You may reboot the server to send an immediate request to our DDNS server.
  - 5) After your camera is connected, select your camera.
- 

**i** The difference between B and C is that B needs to set the port forwarding.

**i** Since the type of DDNS differs from the service type, refer to the related service site.

# 4 Web Viewer Screen - Basic Screen



⚡ Web viewer is optimized with Windows XP or above version and explorer browser.

- 1 Live video display. This is the region for live video stream from the camera.
- 2 Resolution. The resolution of video that displays currently on the screen.
- 3 SD Card Search. Searching or Playing the Image which stored in the SD Card.
- 4 Setup popup button. Click it to open the Setup page to setup details of IP camera like Video, Network, Events, System and etc. See the section 6 'Setup'.
- 5 PTZ control tab button. Click it to extend the panel for Pan, Tilt, Zoom, Focus, IRIS, Video Format control. See the next section 4 'Web Viewer Screen - PTZ Control'.
- 6 Aux Function control tab button. Click it to extend the Aux Function Panel. Here, you can handle followings; 1) Preset, Pattern, Scan function, 2) Alarm input and Relay out, 3) OSD menu in Camera. See the section 4 'Web Viewer Screen - Aux Function Control'.
- 7 Backup control tab button. Click it to extend the panel for the Backup, and Audio Control. See the section 4 'Web Viewer Screen - Backup Control'.

8 OSD setup tab button. Click it to extend the panel to setup camera using OSD menu. See the section 4 'Web Viewer Screen – OSD Setup'.

9 Etc setup tab button. Click it to extend the panel to setup 1) Alarm Input and Relay Output, 2) Audio setup selection. See the section 4 'Web Viewer Screen – Etc. Setup'.

10 Motion Detection tab button. Click it to extend the panel to setup 1) Motion detection, 2) Auto Tracking setup. See the section 4 'Web Viewer Screen – Motion Detection Setup'.

11 Full screen button. Click it to extend the live video to full screen. To return to normal mode, press 'Esc' or 'Enter' key.

12 Auto-map popup button. Click it to pop up the Auto-Map window.

13 Event alert icon. If Alarm in and Motion detection are detected, below icons will appear.



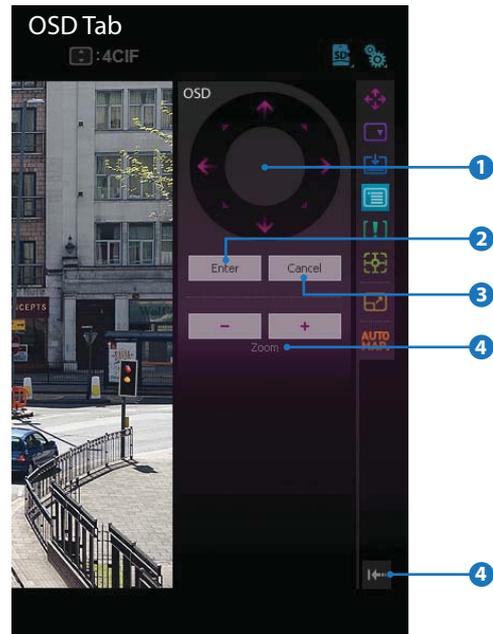
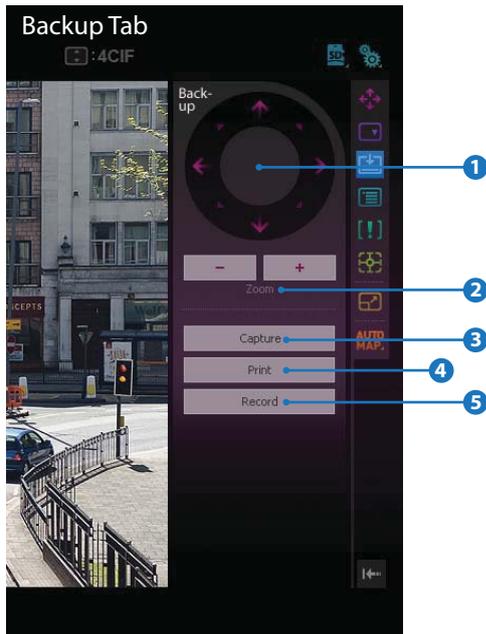
# 4 Web Viewer Screen - PTZ Control & Aux Function Control



- 1 The Pan-tilt wheel button. The Pan-tilt wheel enables to move the camera for 8 directions by pressing the corresponding arrow button. If you release the button pressed, the camera motion will stop immediately.
- 2 Zoom control button. The zoom ratio of the camera can be controlled by clicking ' + ' or ' - ' button.
  - ⊠ The speed of the zoom operation can be setup in the Camera Menu.
- 3 Focus control button. The focus of the camera can be controlled by clicking ' + ' or ' - ' button.
  - ⊠ If Focus mode in the Camera OSD Menu is 'Auto', the Focus cannot be changed manually.
- 4 Iris control button. The iris of the camera can be controlled by clicking ' + ' or ' - ' button.
  - ⊠ If Iris mode in the Camera OSD Menu is 'Auto', the Iris cannot be changed manually.
- 5 Pan-tilt Speed Slider. Pan/Tilt speed can be controlled by clicking ' + ' or ' - ' button. Also, you can adjust it by dragging the red-lined slider in the center.
- 6 Video stream button. Select a stream produced from the camera between Stream 1 ~ 5 to display it in the live view screen.
  - ⊠ Refer the 'Setup > Basic > Video' to setup the Video Stream.
- 7 Hide Button. Hide all control panels extended.

- 1 The Pan-tilt wheel button. Enables to move the camera for 8 directions to adjust live view.
- 2 Zoom control button. The zoom ratio of the camera can be controlled by clicking ' + ' or ' - ' button.
- 3 Group Button. Shows Group numbers in the list. Range of numbers is 1 to 8.
- 4 Scan Button. Shows Scan numbers in the list. Range of numbers is 1 to 8.
- 5 Pattern Button. Shows Pattern numbers in the list. Range of numbers is 1 to 4.
- 6 Preset Button: Shows Preset numbers in the list. Range of numbers is 1 to 255.
- 7 Run Button. Run selected contents of Preset, Pattern, Scan or Group function.
- 8 Delete Button. Delete selected contents of Preset number. Pattern, Scan and Group list can delete in OSD menu.
- 9 Save Button. Save current view to the Preset as a selected number.
  - ⊠ Pattern, Scan, Group function can be created in OSD menu.
  - ⊠ If you run a Preset, Pattern, Scan or Group function number not defined before, the message 'undefined' will be shown for 3 sec. on the upper right side of the screen.

# 4 Web Viewer Screen - Backup Control & OSD Setup



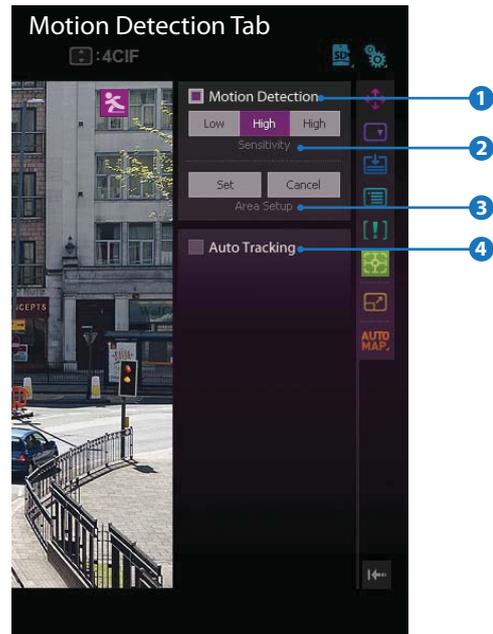
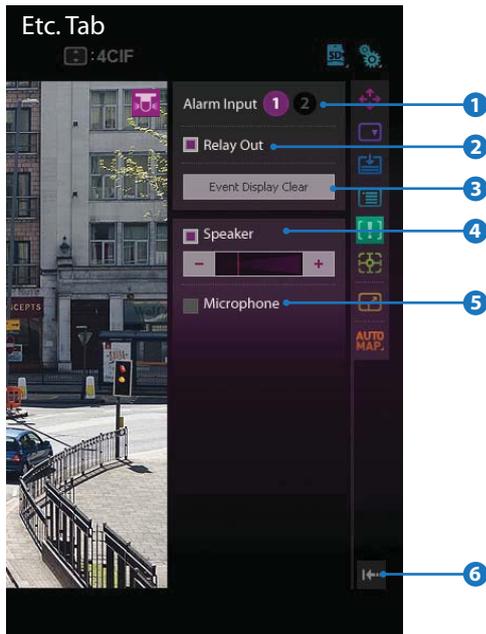
- 1 The Pan-tilt wheel button. Enables to move the camera for 8 directions to adjust live view.
- 2 Zoom control button. The zoom ratio of the camera can be controlled by clicking ' + ' or ' - ' button.
- 3 Capture button. Capture the live video in the form of BMP or JPG file. The location and file name of image can be decided after clicking this button.
  - ☒ Refer the 'Setup > Basic > Backup' to setup the type of Image.
- 4 Print Button. Print current live image to the printer connected to PC.
- 5 Record Button. If you click this button, the current live video will be stored as AVI format file in your PC. During the recording, you cannot change the Video Format. If you change the Video Format, the recording will be stopped automatically.
  - ☒ If remained disk space of the HDD drive where the video is recorded is less than 1GByte, a warning message box regarding the disk space will be shown and the recording will be stopped automatically.
  - ☒ Recorded files folder

Windows Vista & Windows 7	c:\user\(username)\AppData\LocalLow\IP Network Camera\RECORD
Windows xp, 2000 & Windows me, 98	:\My Documents\IP Network Camera\RECORD\((MAC Address)\Stream1(or 2, 3, 4, 5)\(Date)\Date,Time_Filename.avi'

  - ☒ To play the recorded video in the Windows Media Player, H.264 codec must be installed.

- 1 The Pan-tilt wheel button. Enables to move the camera for 8 directions to adjust live view. In OSD menu mode it is used to move the cursor up, down, left, right as well as to change the values of a parameter selected.
- 2 Enter button. Use to confirm selected item.
- 3 Cancel button. Use to cancel selected item or exit to upper menu.
- 4 Zoom control button. The zoom ratio of the camera can be controlled by clicking ' + ' or ' - ' button.
  - ☒ To exit from OSD menu mode, click other tab buttons.  
If the OSD menu does not disappear when other tabs are being clicked, click the tab button of OSD again and click other tab buttons.
  - ☒ During setup 'BLC Area', 'Day/Night Area Masking', 'Privacy Zone Masking', you have to use other functions after completing or canceling their setup. (See the section 7 for detail of OSD setup)

# 4 Web Viewer Screen - Etc. Setup & Motion Detection Setup



- 1 Alarm Input Status. It shows the Alarm Input status. If an alarm is fired, the color of corresponding input number will be changed to bright purple from dark gray and event alert icon (🚨) is displayed on the 'Live video display'. If alarm is removed, the alarm input status is reset.
  - ⊠ Regardless of alarm status, the Alert Icon will remain unless 'Event Display Clear' button is clicked.
- 2 Relay Out Button. Using these buttons, you can read status of Relay Out and also set or reset it manually. If the status of Relay out becomes On state, the color of the button will be changed to bright purple.
- 3 Event Display Clear Button. Remove Event Alert Icons result from Alarm Input or Motion detection.
- 4 Speaker Control. Enable/Disable Audio stream received from the camera and Volume control of the speaker in the computer.
- 5 Mic Control. Enable/Disable the Audio stream to the camera.
- 6 Hide Button. Hide all control panel extended.

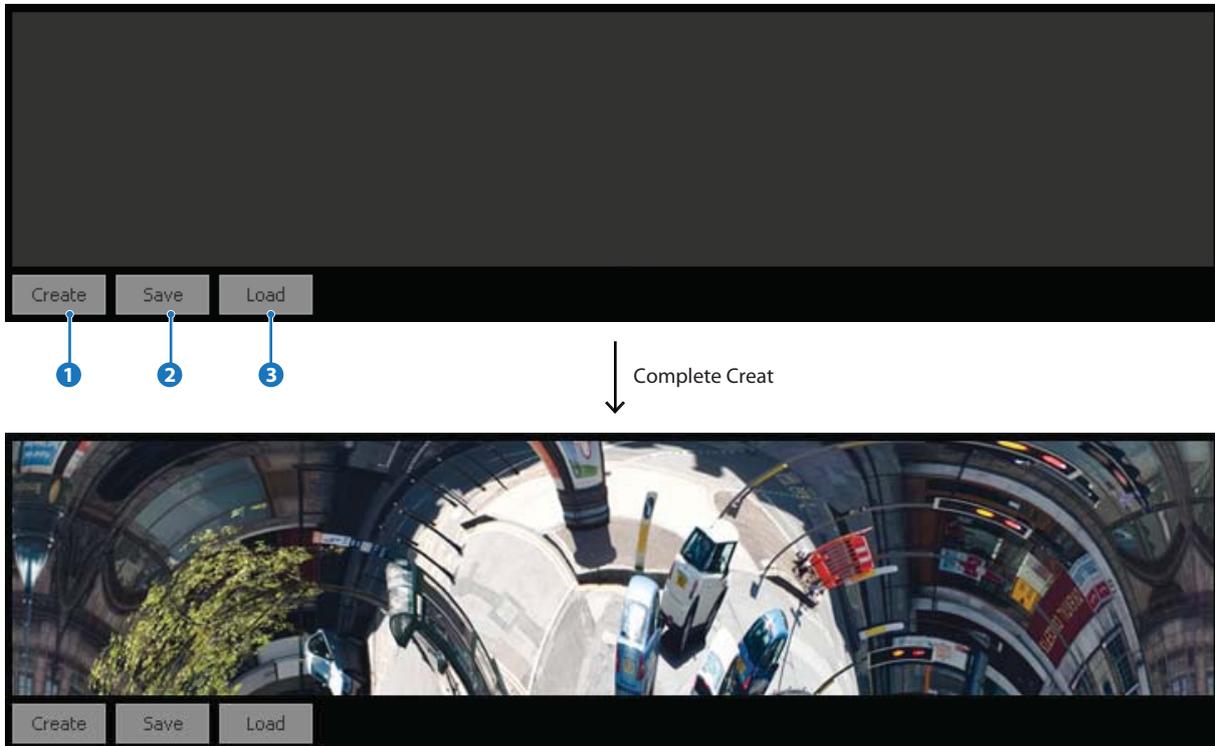
- 1 Motion Detection. Enable or Disable motion detection function. 'Detection Area setting' below must be done in advance.
  - Event Alert Icon (🚨) appears on the screen if 'Motion Detection' is activated. Icon will remain unless 'Event Display Clear' button is clicked.
- 2 Sensitivity. Define the sensitivity of motion detection. If High is selected, it will detect very small motion while it becomes relatively insensitive when Low is selected.
- 3 Area Setup. Setup the target area of motion detection.
  - <How To Setup>
  - 1) If 'Set' button is clicked, Live screen shows grids to help area setup.
  - 2) By clicking or dragging mouse on the grids, create or erase the masks on the main view.
  - 3) Motion detection is effective in the masked Area.
  - 4) Save setting by clicking 'Save' button.
  - ⊠ Area Setup is possible only on the Ch.No.1 in the 'Video Format'. If you change the video format, motion detection area will return the setup to the default.



- 4 Auto Tracking. Enable or Disable Auto Tracking function.
  - ⊠ Auto Tracking will be automatically off when PTZ, Auto-map, Aux Function, OSD menu, Motion Detection are runned.
  - ⊠ Auto Tracking and Motion Detection cannot be run at the same time.
  - Ex) If you run 'Auto Tracking' while running 'Motion Detection', 'Motion Detection' would be off automatically. Since then, although you make 'Auto Tracking' off, 'Motion Detection' cannot be back 'ON'.

# 4 Web Viewer Screen - Auto-map

The Auto-map is the easiest way to control the PTZ in an intuitive manner. If you click the Auto-map popup button in the web viewer, the auto map window will appear as shown in the picture below.



## 1 Create Map

To create an Auto Map, Pan Tilt angle of camera is changed step-by-step all over the PT range and several photos are taken in each step. The photos are mathematically transformed and stitched into a big rectangular picture so called Auto Map.

< How to Create Auto Map >

- 1) It is recommended to draw the map when moving objects in the coverage of camera are as small as possible
- 2) To locate the most important object in the center of Map, move the camera view to that object before creating the map.
- 3) It is recommended to set 'AE Mode' to 'Manual' for further settings depends on the environment and make sure that the brightness of the auto map image is not different from here and there.
- 4) It is recommended to set all the menu items of 'OSD > DISPLAY SETUP' to 'OFF' to make sure that OSD does not appear on the auto map image
- 5) Press the 'Create' button to start.
- ⊠ During the map creating, the current on-screen image is being saved so other functions such as opening OSD menu or Pan/Tilt commands are not recommended.
- 6) To cancel the map creating, press the 'Create' button again.
- 7) After creating the auto map, the temporary OSD setting for the auto map creation needs to go back to its original setting.

## 2 Save Map

If you click 'Save' button, the current Map will be saved to the camera. The map data stored can be used in the future operation and shared it with other Clients.

## 3 Load Map

If you click 'Load' button, the Map data stored previously will be downloaded from the camera. If there is no map data stored in it, you will see only black map in the Auto Map window.

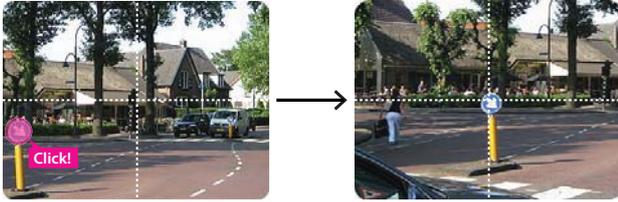
## ⊠ Basic Map Operation.

Left click	If you click a point of interested on the map, camera will move to make that point be the center of screen while zoom ratio is maintained.
Draw box	If you draw the box by clicking and dragging the mouse, PTZ will move to match the live video in your box drawn to viewer screen.

# 4 Web Viewer Screen - Viewer Interface

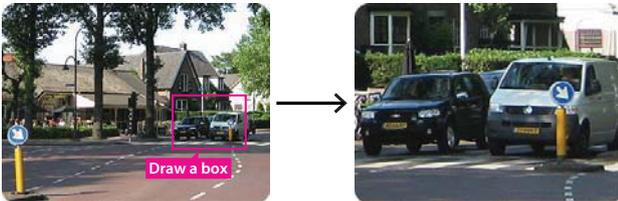
## 1. Click & Go

By clicking a target in main view, PTZ camera will move to locate the center of view to the target.



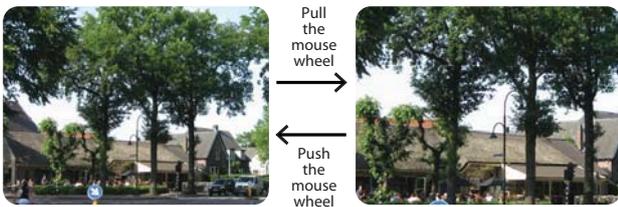
## 2. Box & Go

By drawing a box on the target in main view, PTZ camera will move the camera view to the center of the box and change zoom ratio to match the view size with that of the box surrounding the target.



## 3. Zoom In/Out by Wheel Mouse

After click the screen, if you turn mouse wheel toward the monitor, it result in Zoom out. When turn reversely, Zoom In.



Since in the full screen mod, all GUIs are hidden, you can control PTZ using powerful Virtual joy stick functions instead. This functions can be used simultaneously.

## 1. Right Click & Drag

When you want to move PT as smoothly as real joystick does, you can use virtual joystick function using mouse in the full screen mode.



If you right click a position on a screen, red line is displayed.

Drag



If you drag the mouse to desired direction, the view will follow your direction by moving the camera while a red line from the center shows direction and speed.

Drag further



If you drag further, the PT speed will be increased as red line becomes longer.

## 2. Zoom In/Out by Wheel Mouse

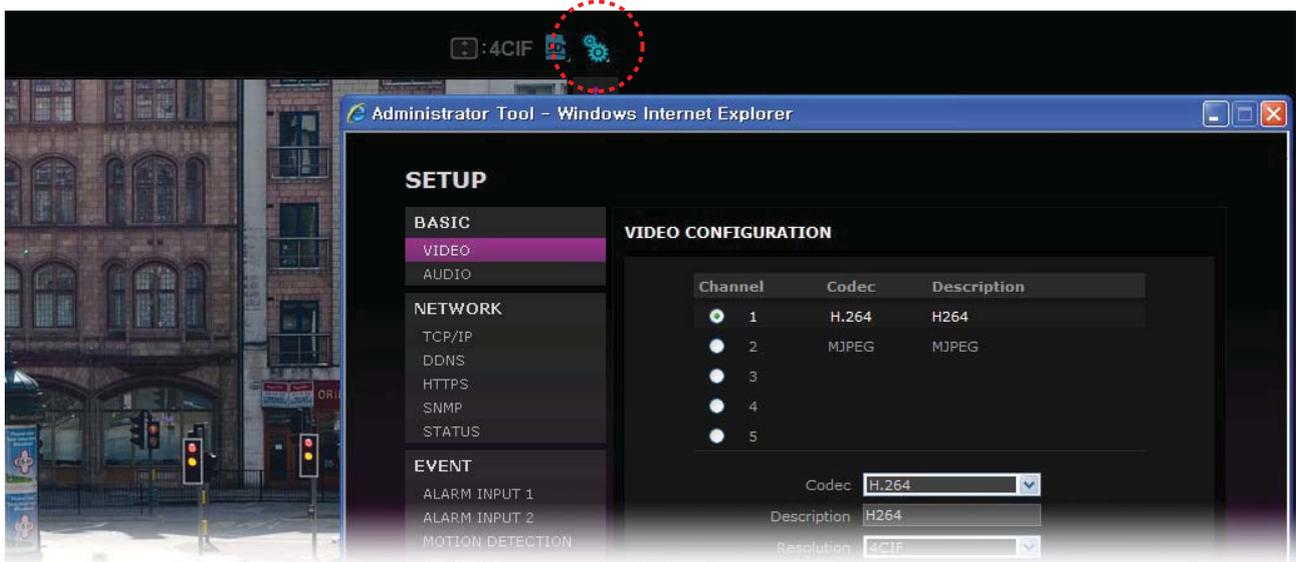
Same with left.

# 5 Setup - Setup Screen

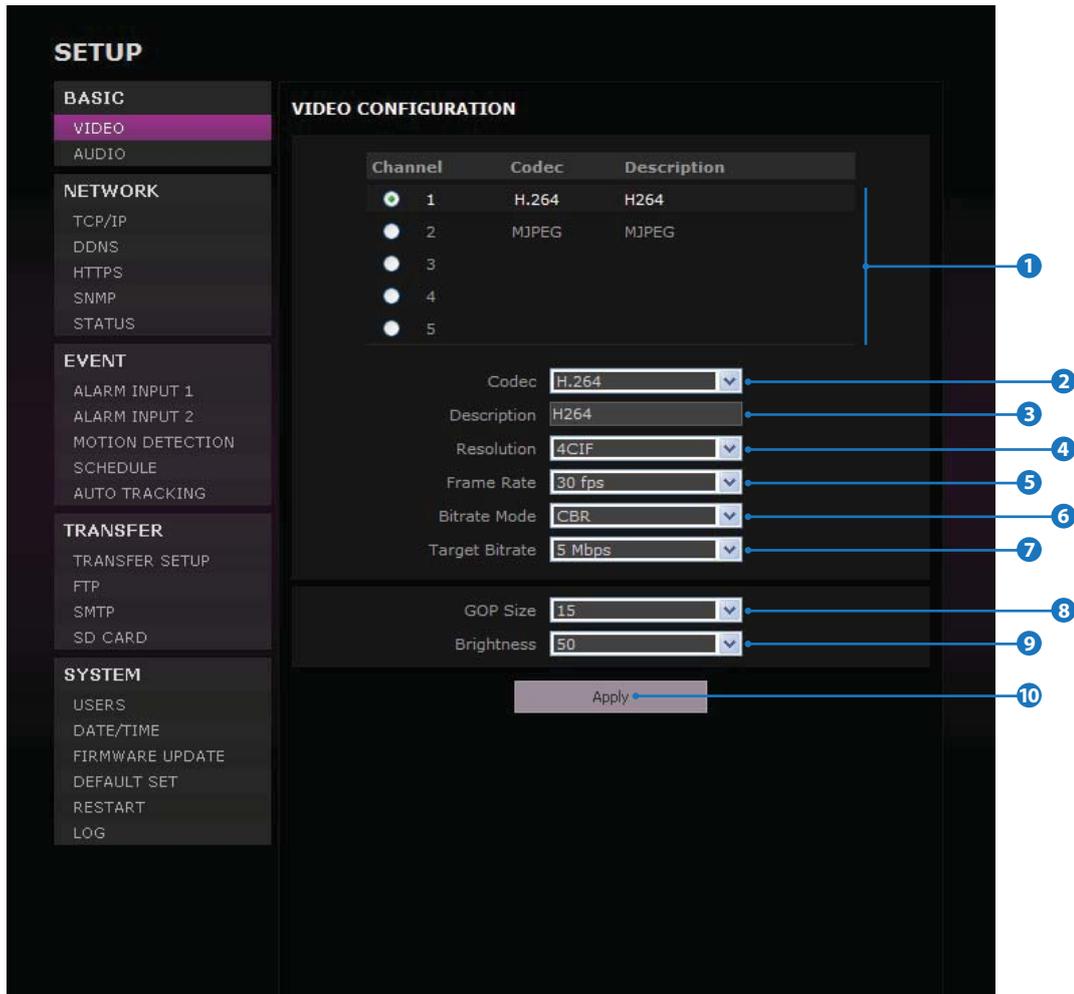
This section is provided to familiarize the user with the setup. Intuitive options are not explained in detail.

All the changes on Setup take the effect immediately. These settings will be global, affecting the view of all users currently logged on. However, OSD items changed are effective only after you refresh the viewer windows or restart the internet Explorer.

All settings are always saved in the video server even when you close the viewer program or you turn off the Power of the video server. If you lost your password, you must press the reset button to return all setting to its factory defaults.



# 5 Setup - Video Setup



## 1 Live Video Channel Setup

Setup the multiple codec and Video according to the environment of installed camera. Using selected channel on the 'Web-Viewer > PTZ Control > Video Format'. CH No.1 and No.2 are the default CH, so they can't be changed. However, detailed category of default codec can be setup. CH No.3,4,5 are the user channel, and codec and detailed category of codec can be setup.

ⓘ If CH No.1, 2 and some of channel are setup to High Performance (High Resolution and Frame Rate), remainder of channels can not be setup. Also, when the CH No.4,5 are already setup, there can be some restriction of setting up the resolution and fps when you try to setup the detailed category of remained channel.

## 2 Codec

Choose the video compression method preferred among H.264, MJPEG, MPEG4. According to the selected codec, the subcategories can be changed automatically.

## 3 Description

Input the additional description about the selected channel. Max. 15 alphabets are allowed(Including space). For the description, English Alphabets, numbers and special characters (/ ~ ^ ! @ \$ ^ ( ) \_ - { } [ ] ; , ) can be used.

## 4 Resolution

Select the resolution between 4CIF, CIF, QCIF.

ⓘ Available resolution can be depends on the codec setup between the channels.

	NTSC	PAL
4CIF	704 x 480	704 x 576
CIF	352 x 240	352 x 288
QCIF	176 x 128	176 x 144

<Resolution of Video Format>

H.264	4CIF, CIF
MPEG4	4CIF, CIF
MJPEG	4CIF, CIF, QCIF

<Support Resolution of Codec>

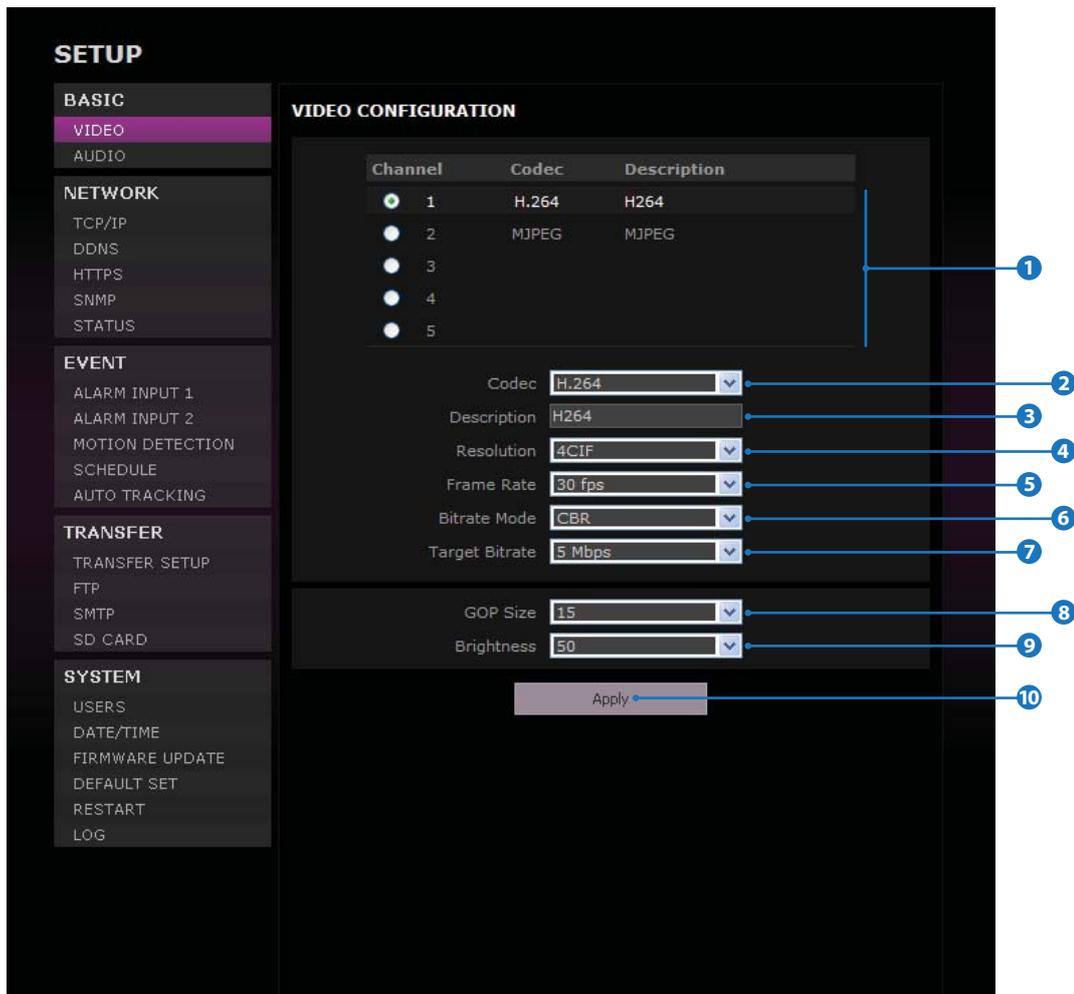
## 5 Frame Rate

Select the maximum Frame Rate.

ⓘ Available Frame Rate can be different although same codecs were set up.

NTSC	PAL
30 / 25 / 20 / 15 / 10 / 5 / 1	25 / 20 / 15 / 10 / 5 / 1

# 5 Setup - Video Setup



## 6 Bitrate Mode

Select the bit rate control scheme of video compression from CBR (Constant Bit Rate) or VBR (Variable Bit Rate).

### CBR

To guarantee the designated constant bit rate, the quality of video are controlled in this mode. Therefore, the quality of video is likely to be varying when network traffic is changing.

### VBR

To guarantee the designated quality, the bit rate of video stream is changed in this mode. Therefore, the frame rate of video is likely to be varying when network traffic is changing

⊠ This category won't be appear if you select the codec.

## 7 Target Bitrate

If Bitrate Control is set to be CBR, you can set the Target Bitrate by 5 steps from 1Mbps to 5Mbps.

### Quality

For VBR control mode, The Target Quality of video can be setup from 1~5. Value 1 is the best quality while 5 is the normal quality.

## 8 GOP(Group of Pictures) Size

Set up the number of frames (P-frame) which contain only changed information based on basic frame (I-frame). Regarding videos with lots of movement, if you set GOP size bigger, only the number of P-frames is bigger. As a result, video resolution will be low but 'File size' and 'Bit-rate' can be decreased.

### ⊠ GOP(Group of Pictures) Size is..

I-frame and P-frame can be created for MPEG4 and H.264 video compression. I-frame(=key-frame) means the whole image data for one specific scene of video. P-frame is image data which has been changed information compared to I-frame GOP is made up of one I-frame and corresponding several P-frames. To improve video quality, set the number of P-frames smaller and to decrease image size, set the number of P-frames bigger.

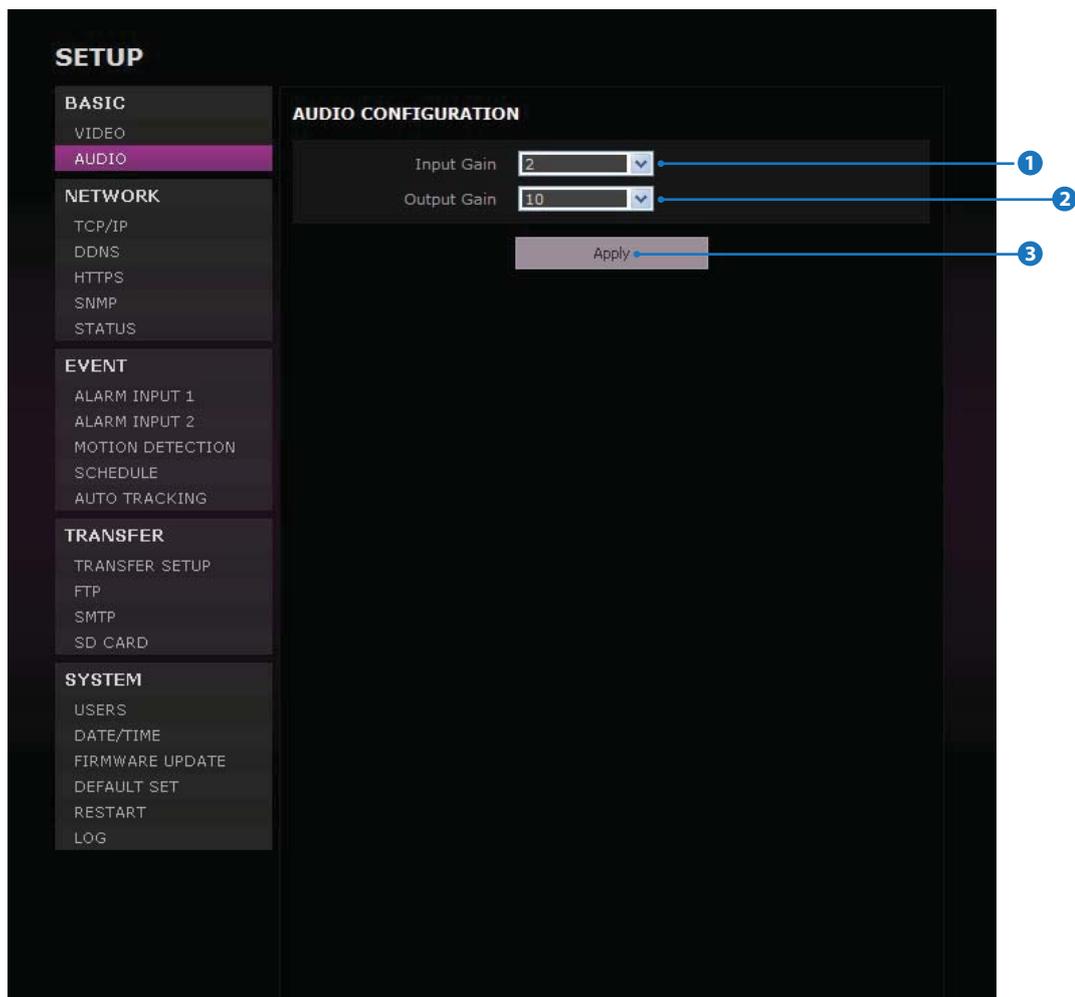
## 9 Brightness

Adjust the brightness of image. The range of brightness is 1 ~ 100. The max. value of brightness is 100.

## 10 Click 'Apply' to make above setting effective.

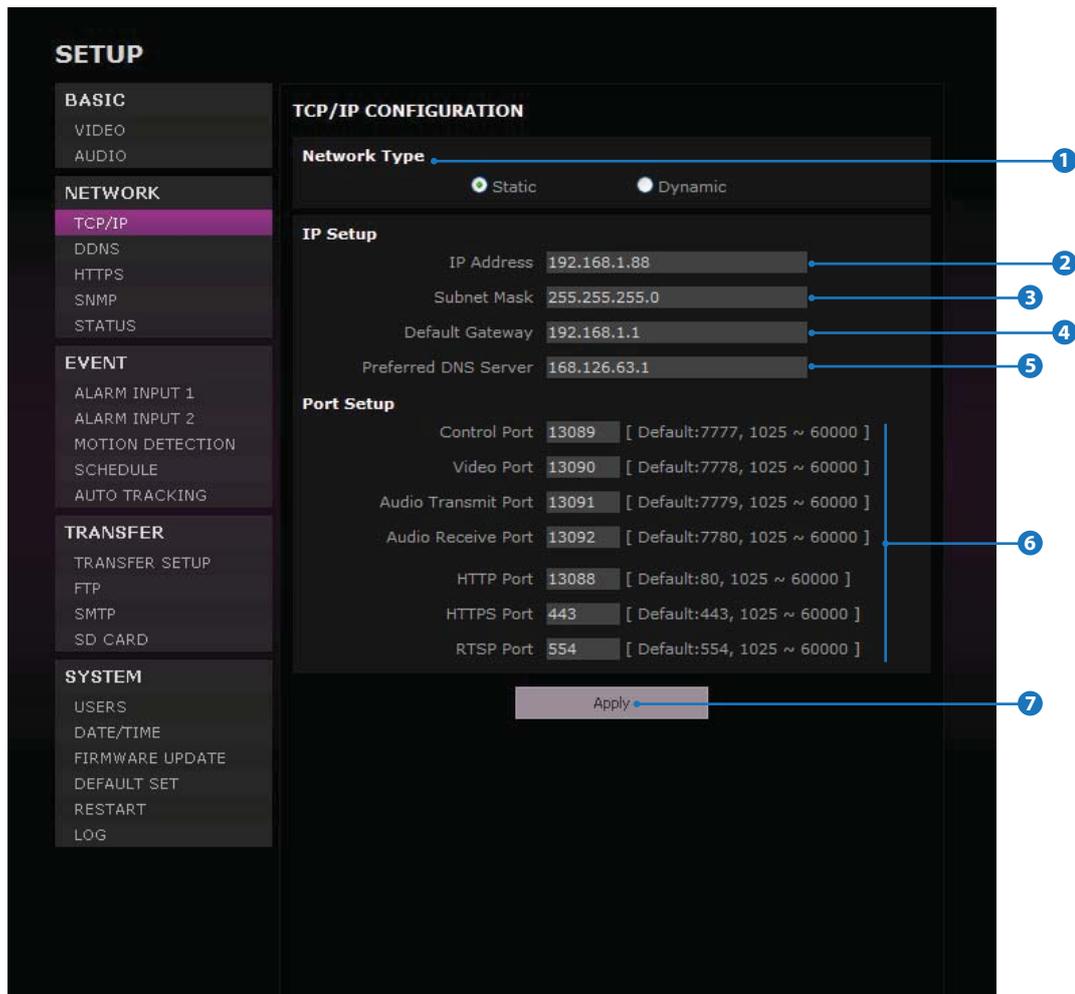
⊠ Click this button when completed setup each channels.

# 5 Setup - Audio Setup



- 1 Input Gain**  
Adjust the input gain of audio 1 ~ 4.
- 2 Output Gain**  
Adjust the output gain of audio 0 ~ 10. Output gain 0 is mute.
- 3** Click 'Apply' to make above setting effective.

# 5 Setup - TCP/IP Setup



## 1 Network Type

Define network IP address type from the Static Mode for the fixed IP or the Dynamic Mode by the dynamic IP address. If you select the Static Mode, you must fill out IP Address, Subnet Mask, Gateway, DNS Server and all ports. If you select the Dynamic Mode, the IP address will be allocated automatically by DHCP equipment. If you click the Apply button to update changes, the system will be re-booted. In this case, you have to reconnect the camera using new IP address.

## 2 IP Address

Define the IP address. The address is consisted of four numbers separated by dots and the range of each number is from 0 to 255.

## 3 Subnet Mask

Define the Subnet Mask. Format is same as the IP address.

## 4 Default Gateway

Default the Gateway IP Address. Format is same as the IP address.

## 5 Preferred DNS Server

Define the DNS server IP address. Format is same as the IP address.

## 6 Port

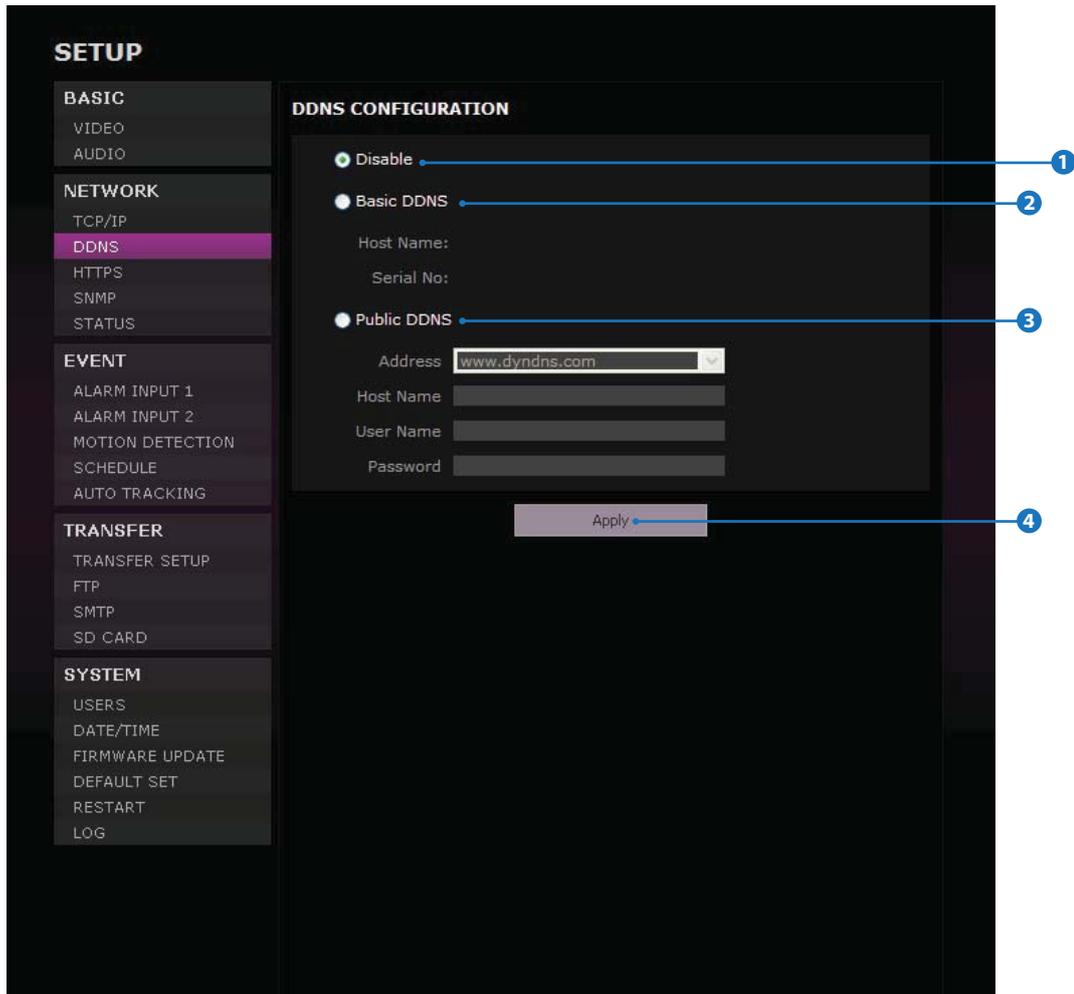
There are five ports in the camera providing different services. To get those services separately, unique port number must be assigned to each servers.

## 7 Click 'Apply' to make above setting effective.

⚠ If the network type is dynamic, the IP address is changed in below cases. Therefore, the IP address needs to be searched again, and the camera needs to be reconnected in these cases.

- When the camera power is on/off.
- After Firmware update, Default set and reboot.

# 5 Setup - DDNS Setup



## 1 DDNS Disable

If it is selected, DDNS service does not work.

## 2 Basic DDNS

Please register the camera in net4c site so as to use net4c DDNS. Insert the serial number shown on the screen in the serial entry field.

## 3 Public DDNS

To use public DDNS service, select a site address listed in the list. After filling out the Host Name of the site, the setup is completed by entering User Name and Password registered in that DDNS site.

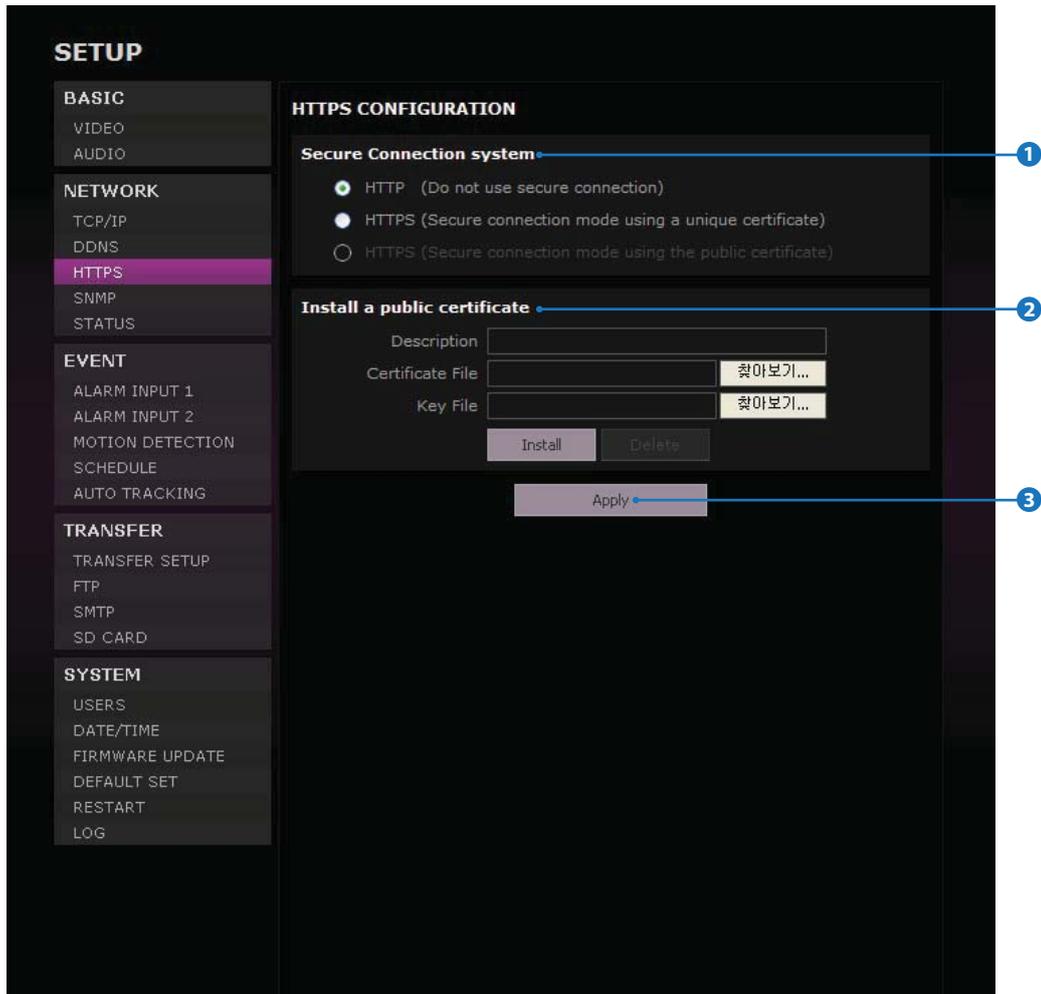
DDNS Provider	Site Address
DynDNS	www.dyndns.com
No-IP	www.no-ip.com

⌘ If you setup DDNS properly, the IP address of your camera will be updated automatically whenever IP address is changed or system is rebooted.

⌘ If IP updating to DDNS site is failed, camera will keep retrying in 1 min. interval.

## 4 Click 'Apply' to make above setting effective.

# 5 Setup - HTTPS Setup



## 1 Secure Connection System

Secure Connection System chooses a method of security connection.

### HTTP

HTTP mode does not use a security connection method.

### HTTPS (Secure connection mode using a unique certificate)

This mode is a security connection method which uses the (temporary) certificate in the camera.

### HTTPS (Secure connection mode using the public certificate)

This mode is a security connection method which uses a certificate issued by certificate authority.

※ HTTPS (Secure connection mode using the public certificate) method can be selected only if a certificate has been already installed.

※ When HTTPS mode is chosen, input `https://<IP Address>` to connect to the camera.

## 2 Install a public certificate

A certificate issued by Certificate Authority can be installed to the camera and the installed certificate can be deleted.

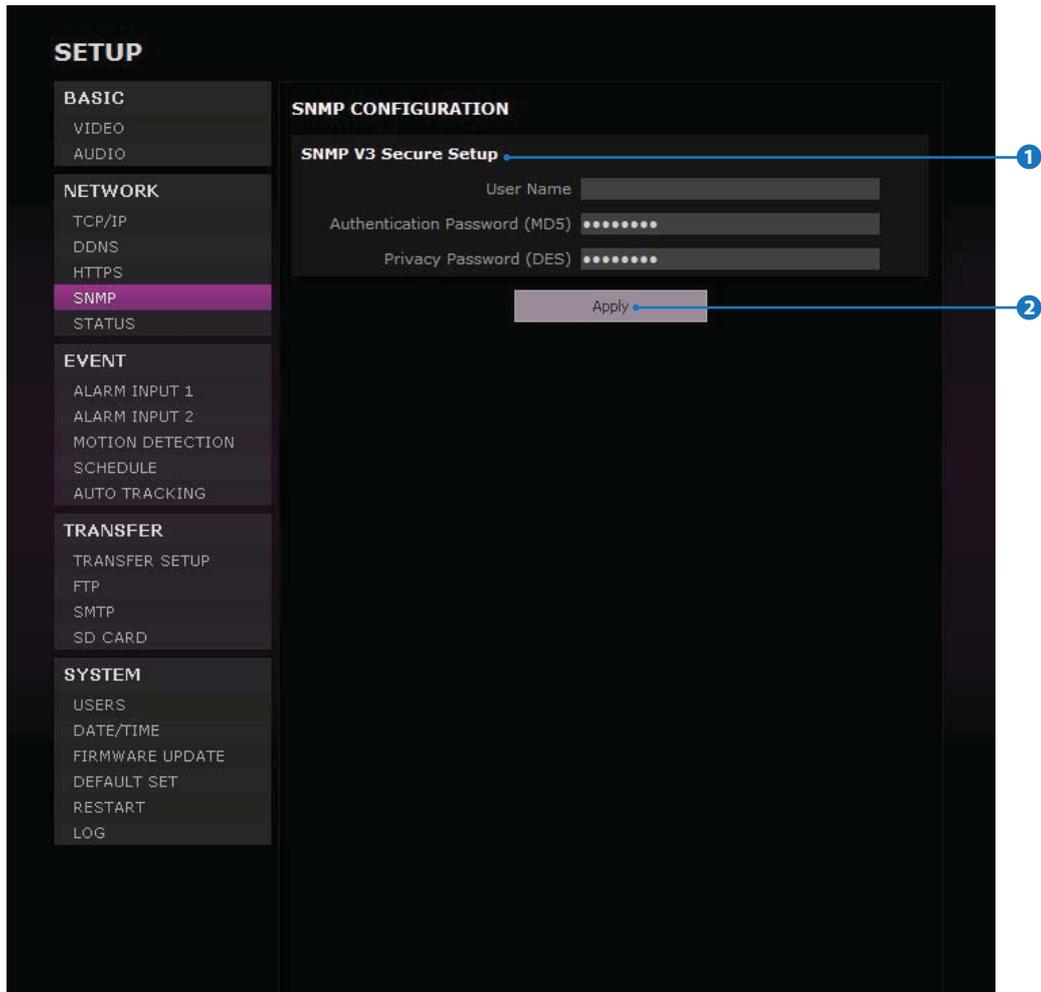
<How to install or delete the certificate>

- 1) Input the description(name) of a certificate.
- 2) Click 'Install' button after selecting the certificate files and key file to be installed.
- 3) To remove the certificate files, click 'Delete' button.

※ While using HTTPS (Secure connection mode using the public certificate) method, the certificate cannot be deleted.

## 3 Click 'Apply' to make above setting effective.

# 5 Setup - SNMP Setup



## 1 SNMP V3 Secure Setup

- The information of camera system can be known and configured with SNMP.
- The changes for configuration use version 3 and username and password should be certified at that time.

---

### Username

Username is the information of user account for user authentication.

---

### Authentication Password(MD5)

The Authentication Password (MD5) is an encryption for authentication and they are at least 8 digits and up to 30 digits allowed.

---

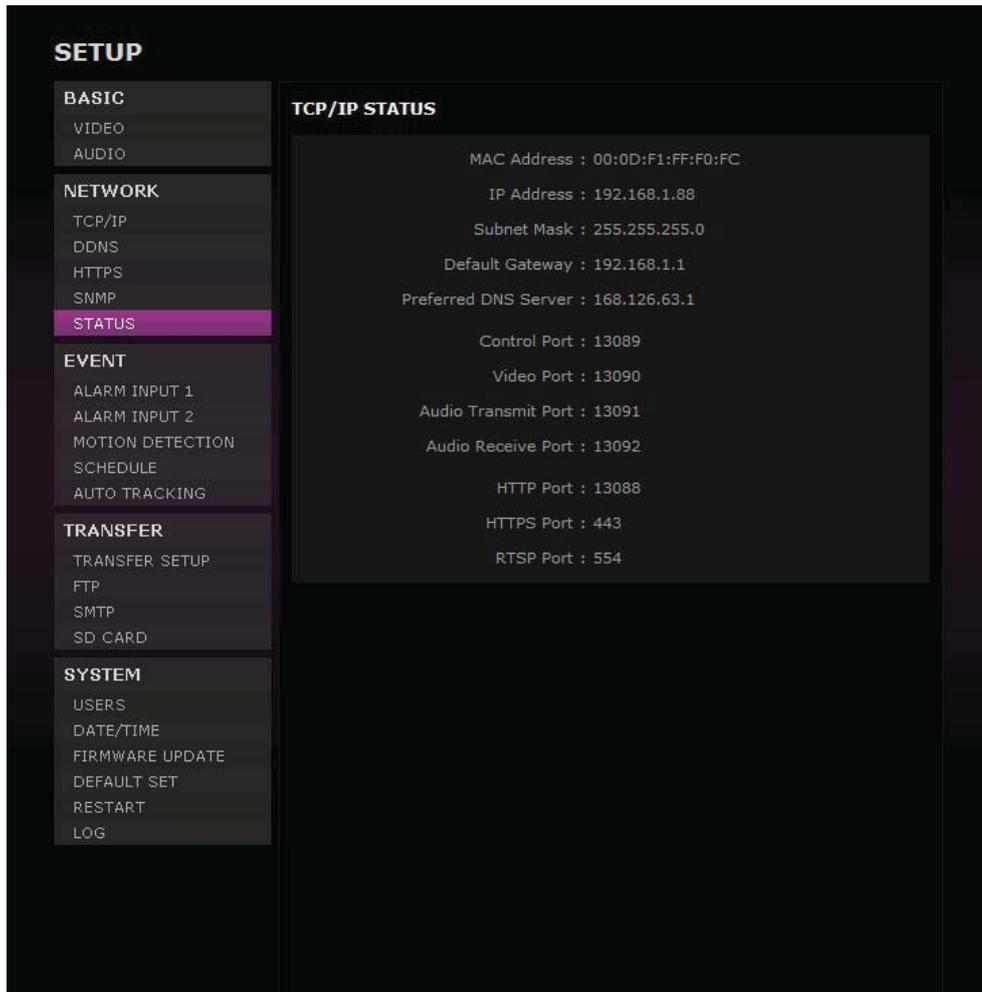
### Privacy Password(DES)

Information protection password is a private encryption and they are at least 8 digits and up to 30 digits allowed.

---

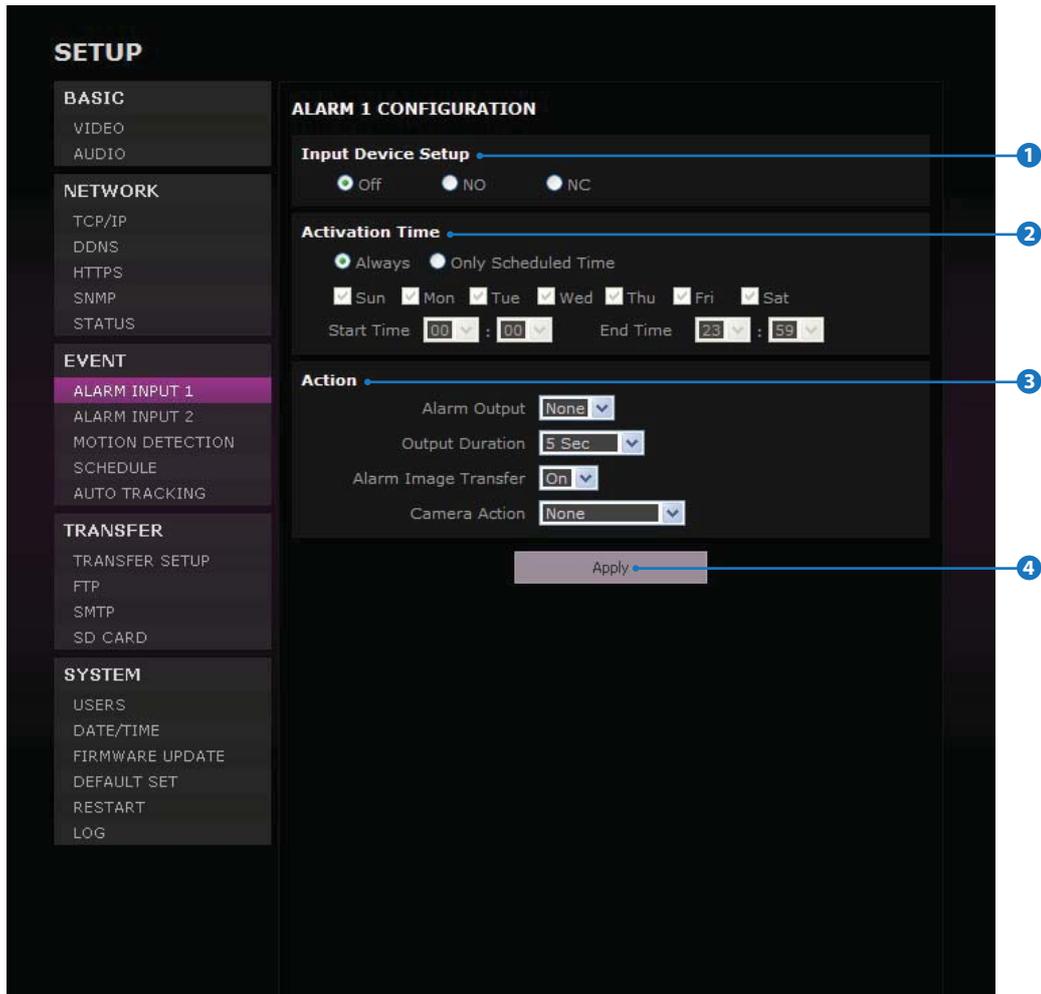
- ## 2
- Click 'Apply' to make above setting effective.

# 5 Setup - Status



This menu will show you all the information of Network setting in the camera. However, you cannot change those here.

# 5 Setup - Alarm Input 1 Setup



## 1 Input Device Setup

Select input device type from OFF / N.O. / N.C.

	Operation
<b>Off</b>	Ignore this Input sensor.
<b>NO</b>	The contact is normally open and closed when activated.
<b>NC</b>	The contact is normally closed and open when activated.

## 2 Activation Time

Select activation time from Always / Only Scheduled Time.

<b>Always</b>	An alarm event is activated whenever sensor Input is detected.
<b>Only Scheduled Time</b>	An alarm event is activated only when sensor input is detected during the scheduled time.

※ To setup the schedule, you need to define Start time and End time followed by selecting Days.

※ If End time is earlier than Start time, End time is regarded as next day.

Ex) Assume you select Tue. If you set Start time as 16:00 and End Time as 09:00, Alarm Input will work from 4:00pm Tue to 9:00am Wed.

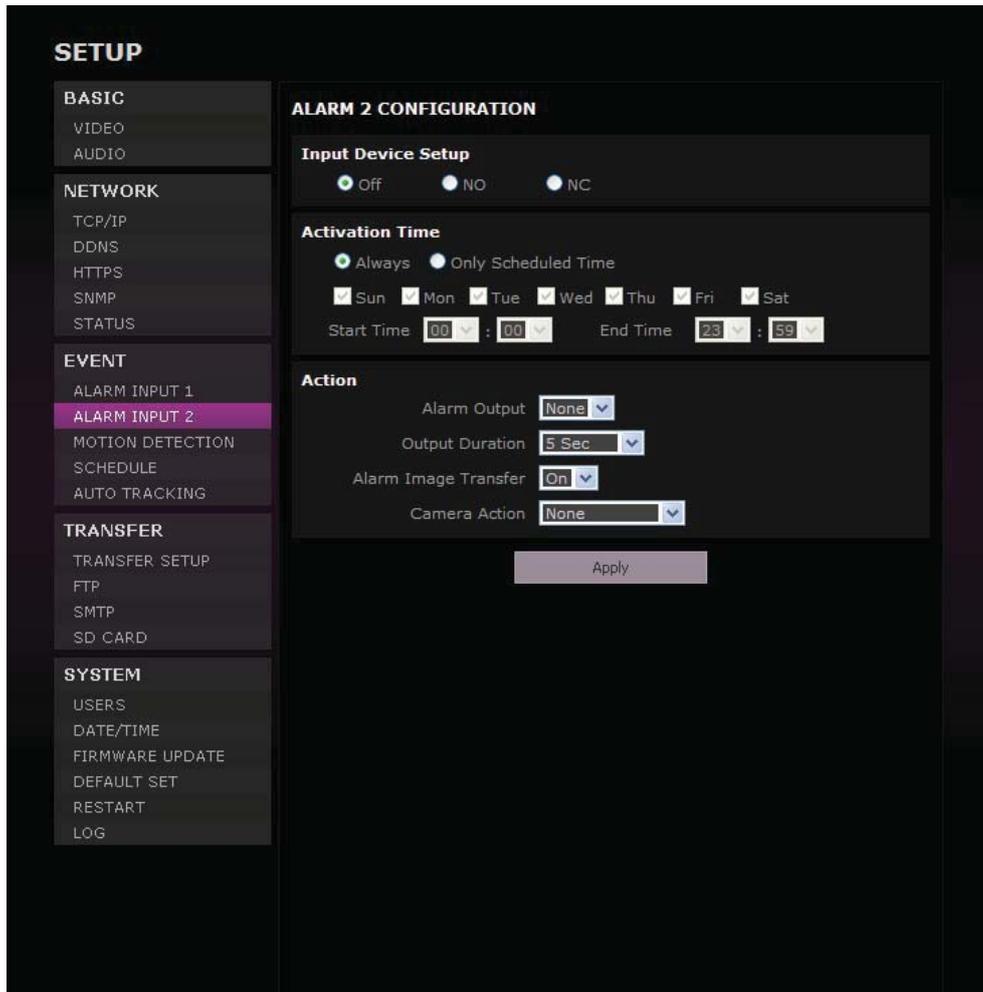
## 3 Action

Define a counter action from Alarm Output / Alarm Image Transfer / Camera Action when Alarm Input is detected.

Action	Description
<b>Alarm Output</b>	Activate alarm out (relay). None or 1.
<b>Output Duration</b>	Select time duration to maintain output form 3 / 5 / 10 / 20 / 30 sec. or Continue
<b>Alarm Image Transfer</b>	Turn ON / OFF Image Transfer. Send image via E-mail or FTP server. (For more detail see Transfer Setup in this chapter)
<b>Camera Action</b>	Setup the Camera Action when Alarm in. Select among the None / Preset(1 ~ 255) / Scan(1 ~ 8) / Pattern(1 ~ 4) / Group(1 ~ 8) / Home Position.

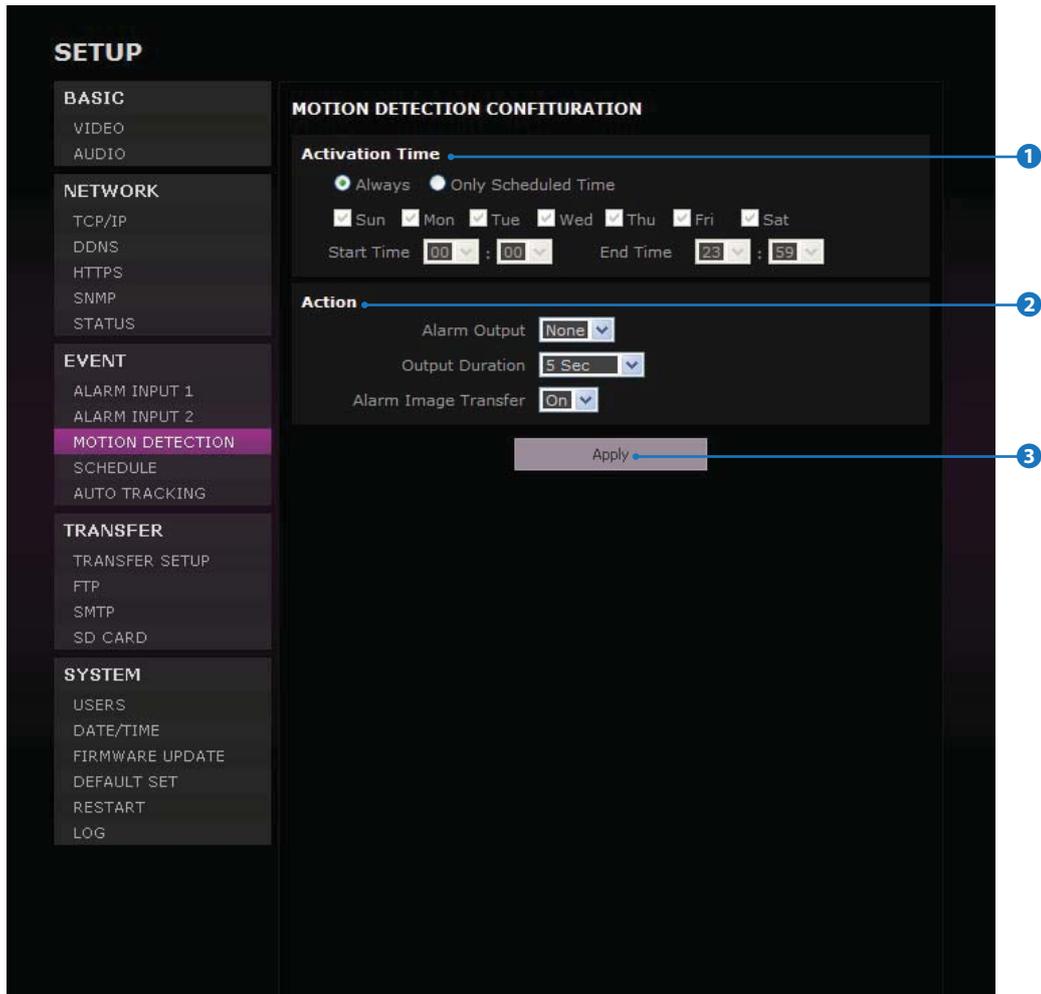
## 4 Click 'Apply' to make above setting effective.

# 5 Setup - Alarm Input 2 Setup



You can setup the 2 type of Alarm Input.

# 5 Setup - Motion Detection Setup



## 1 Activation Time

Select activation time from Always / Only Scheduled Time.

<b>Always</b>	An alarm is activated whenever motion is detected.
<b>Only Scheduled Time</b>	An alarm event is activated only when motion is detected during the scheduled time.

⊠ To setup schedule, you need to define Start time and End time followed by selecting Days.

⊠ If End time is earlier than Start time, End time is regarded as next day.

Ex) Assume you select Tue. If you set Start time as 16:00 and End Time as 09:00, Alarm Input will work from 4:00pm Tue to 9:00 am Wed.

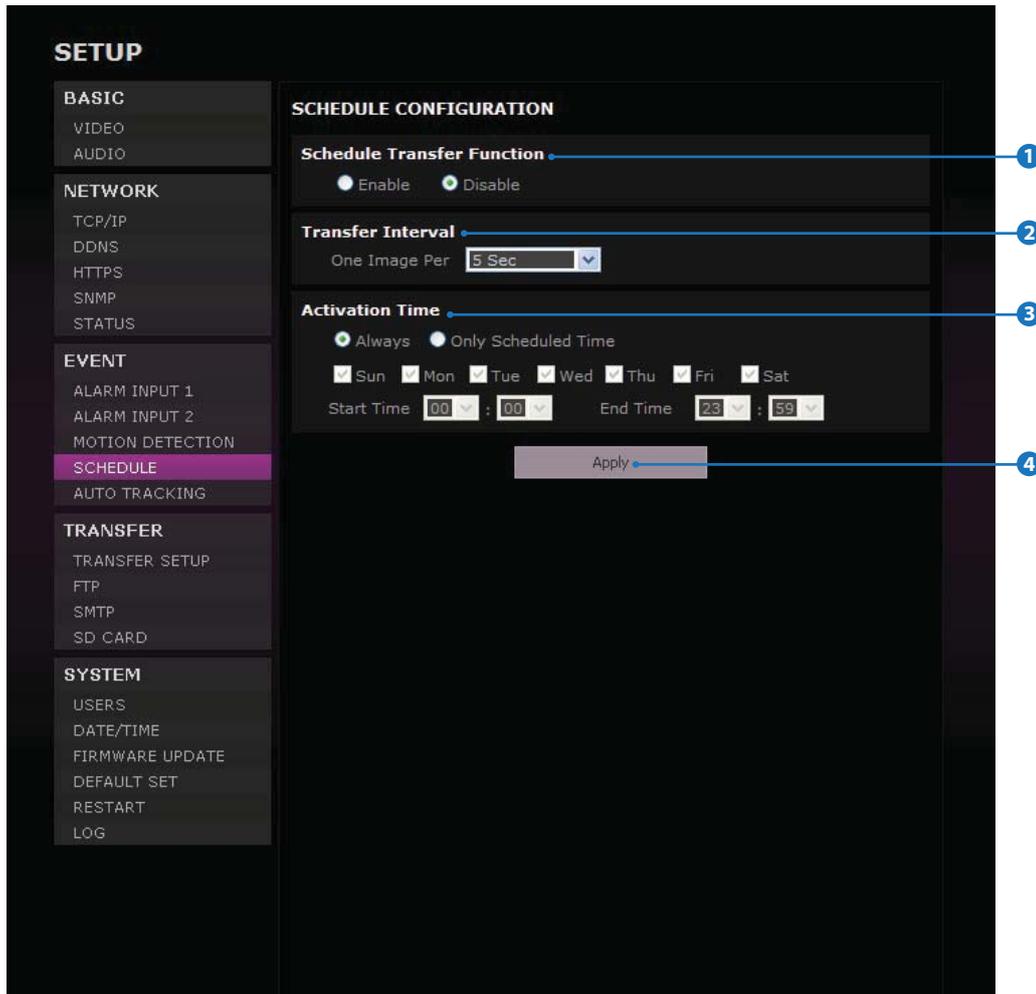
## 2 Action

Define a counter action from Alarm Output / Alarm Image transfer when motion is detected.

Action	Description
<b>Alarm Out</b>	Activate alarm out (relay). None or 1.
<b>Output Duration</b>	Select time duration to maintain output form 3 / 5 / 10 / 20 / 30 sec. or Continue.
<b>Alarm Image Transfer</b>	Send image to E-mail or FTP server Select from ON / OFF ( see 'Transfer Setup' Menu)

3 Click 'Apply' to make above setting effective.

# 5 Setup - Schedule Setup



Schedule function enables to transfer series of still images in a time interval specified via E-mail or FTP. (For more detail, see 'Transfer Setup' in this chapter)

## 1 Enable / Disable

Set Schedule function to be enabled or disabled. Schedule function enables to transfer series of still images in a time interval specified.

## 2 Transfer Interval

Define time interval of image transfer from 5 / 15 / 30 / 45 / 60 sec. and 5 / 15 / 30 / 45 / 60 min.

## 3 Activation Time

Select activation time from Always / Only Scheduled Time.

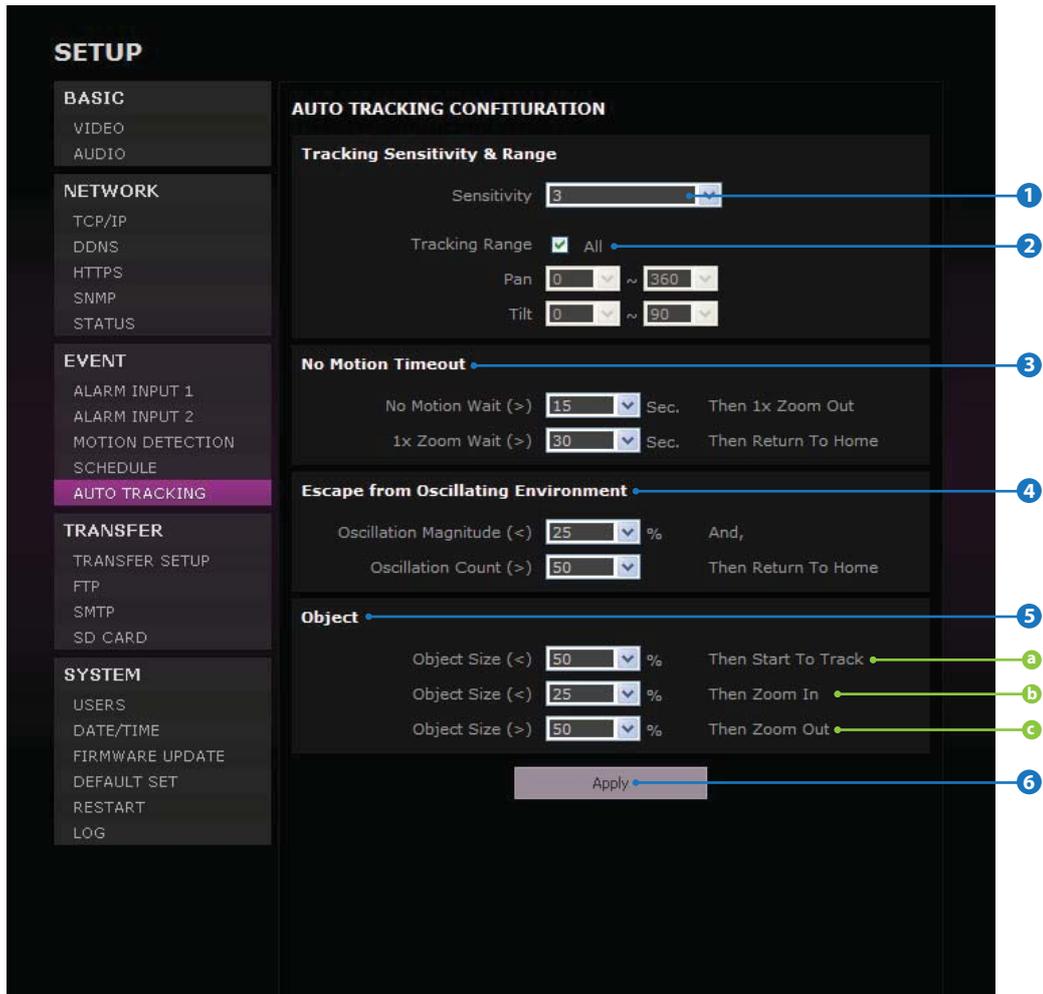
Always	Transfer image at all times.
Only Scheduled Time	Transfer image during the scheduled time.

⚠ To setup 'Only Scheduled Time', you need to define Start time and End time followed by selecting Days. The setup schedule is repeated every week.

⚠ If End time is earlier than Start time, End time is regarded as next day.  
Ex) Assume you select Tue. If you set Start time as 16:00 and End Time as 09:00, Alarm Input will work from 4:00pm Tue to 9:00am Wed.

## 4 Click 'Apply' to make above setting effective.

# 5 Setup - Auto Tracking Setup



## 1 Sensitivity

Setup the sensitivity of tracking motion. Higher numeric values will make the camera more sensitive when tracking the motion.

## 2 Tracking Range

Setup the range of angle for the camera tracking the motion. Each angles of Pan/Tilt can be setup. Camera will track the motion in the entire range when you check the ALL.

## 3 No Motion Timeout

No Motion Wait	Camera will Zoom Out when there is no motion has detected during the selected time.
1x Zoom Wait	After Zooming out following the 'No Motion Wait Function', camera will go back to home position(Where the camera starts tracking the motion) when there is no motion has detected during the selected time.

## 4 Escape from Oscillating Environment

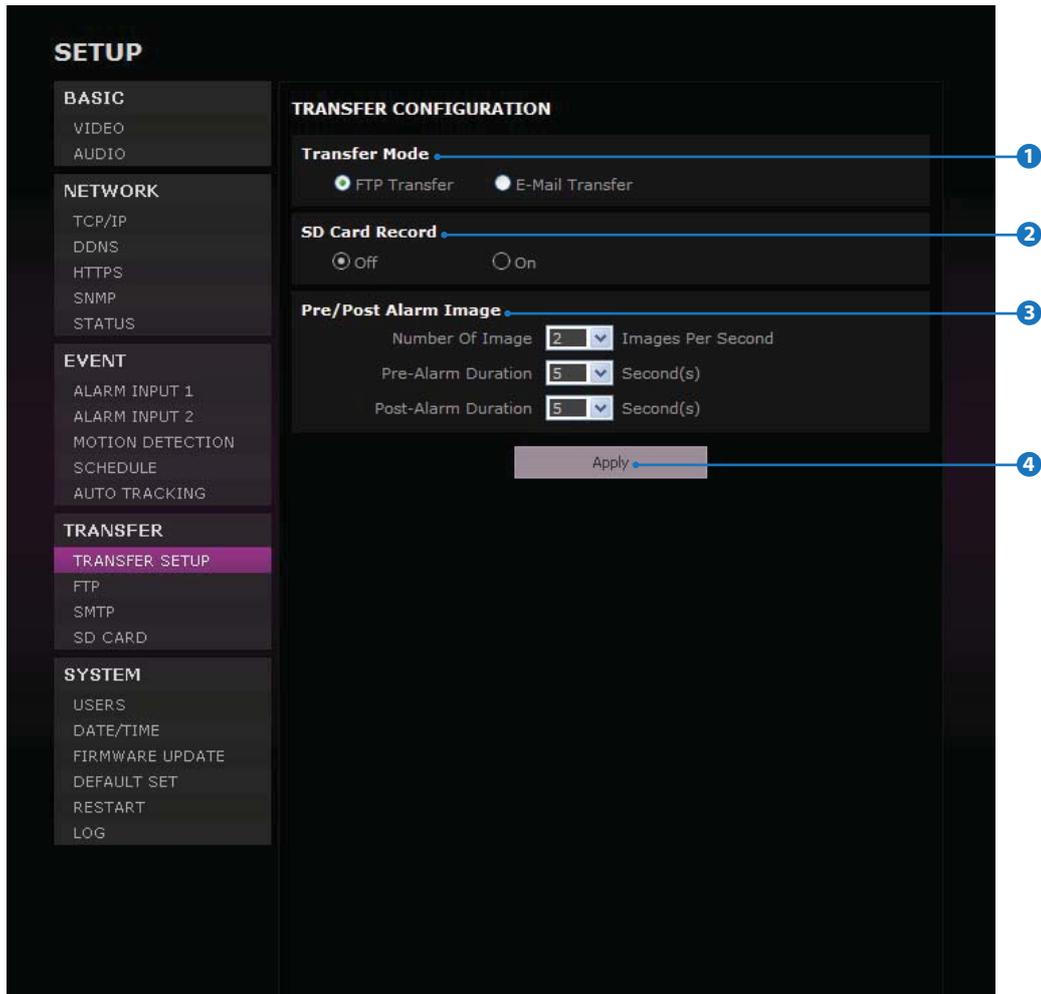
Camera will go back to home position (where the camera starts tracking the motion) when it detects motion constantly more than setting up in the 'Oscillation Count' in the smaller area than setting up in the 'Oscillation Magnitude'.

## 5 Object

- a Camera will start tracking the motion when the detected object is smaller than you setup.
- b Camera will Zoom In when the detected object is smaller than you setup.
- c Camera will Zoom Out when the detected object is smaller than you setup.

## 6 Click 'Apply' to make above setting effective.

# 5 Setup - Transfer Setup



## 1 Transfer Mode

Image Transfer method is selected from FTP and E-Mail (SMTP).

※ To use image transfer, FTP and SMTP in the next sections must be configured properly.

## 2 SD Card Record

If it is set to On, the image is saved into the SD card as well.

※ It will setup OFF automatically when SD card doesn't applied. The SD card setting can be configured on the SD CARD section.

## 3

### Pre/Post Alarm Image

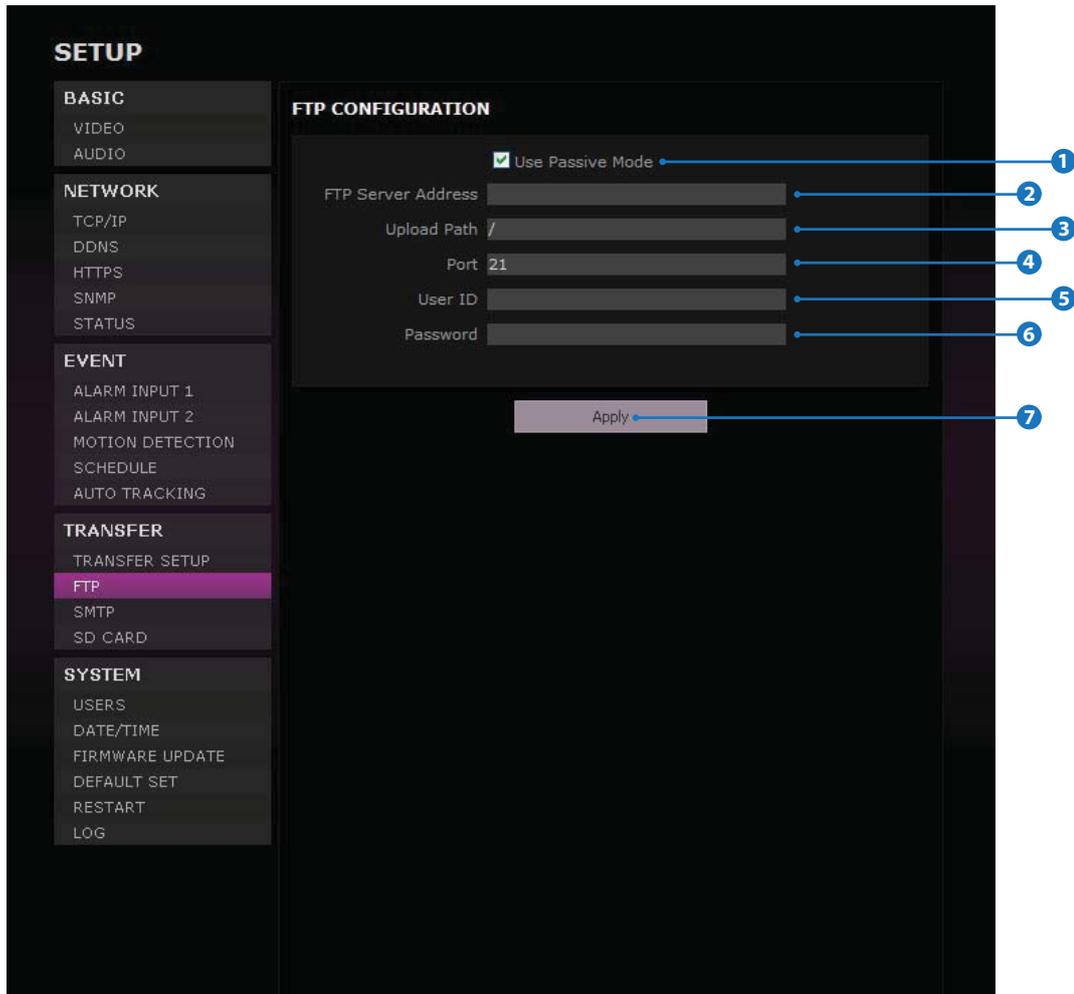
Image Transfer due to event is configured by setting Image transfer rate and Pre/Post alarm duration.

	Descriptions	Range
<b>Number of Image</b>	Define Number of image transferred per second.	1 ~ 5
<b>Pre-alarm Duration</b>	Define duration of image transfer before an event.	1 / 10 / 15 / 30
<b>Post-alarm Duration</b>	Define duration of image transfer after an event.	1 / 10 / 15 / 30

※ Range of Pre/Post alarm duration can be changed according to Number of image setting.

## 4 Click 'Apply' to make above setting effective.

# 5 Setup - FTP Setup



To transfer/save the image to the relevant sites through FTP, then FTP needs to be setup.

### 1 Use Passive Mode

Check it to use Passive mode for FTP transfer. If it is not checked, the transfer becomes Active Mode. However, if you select active mode, it is possible that there might be problems due to the firewall. Consult with your network manager.

⊗ In Active mode, the FTP transfer might not work due to the firewall. In this case, ask to the network administrator.

### 2 FTP Server Address

Define FTP Server IP Address. If IP Address form is incorrect, a Message box will be shown to try again.

### 3 Upload Path

Define a path in FTP server to store video. For the path name, English Alphabets, numbers and special characters ( / ~ ` ! @ \$ ^ ( ) \_ - { } [ ] ; , ) can be used.

### 4 Port

Define the FTP Server Port. If Port is not appropriate, it is impossible to access to FTP Server.

### 5 User ID

Define User ID to access to the FTP Server. Fill out the correct User ID registered in the FTP Server.

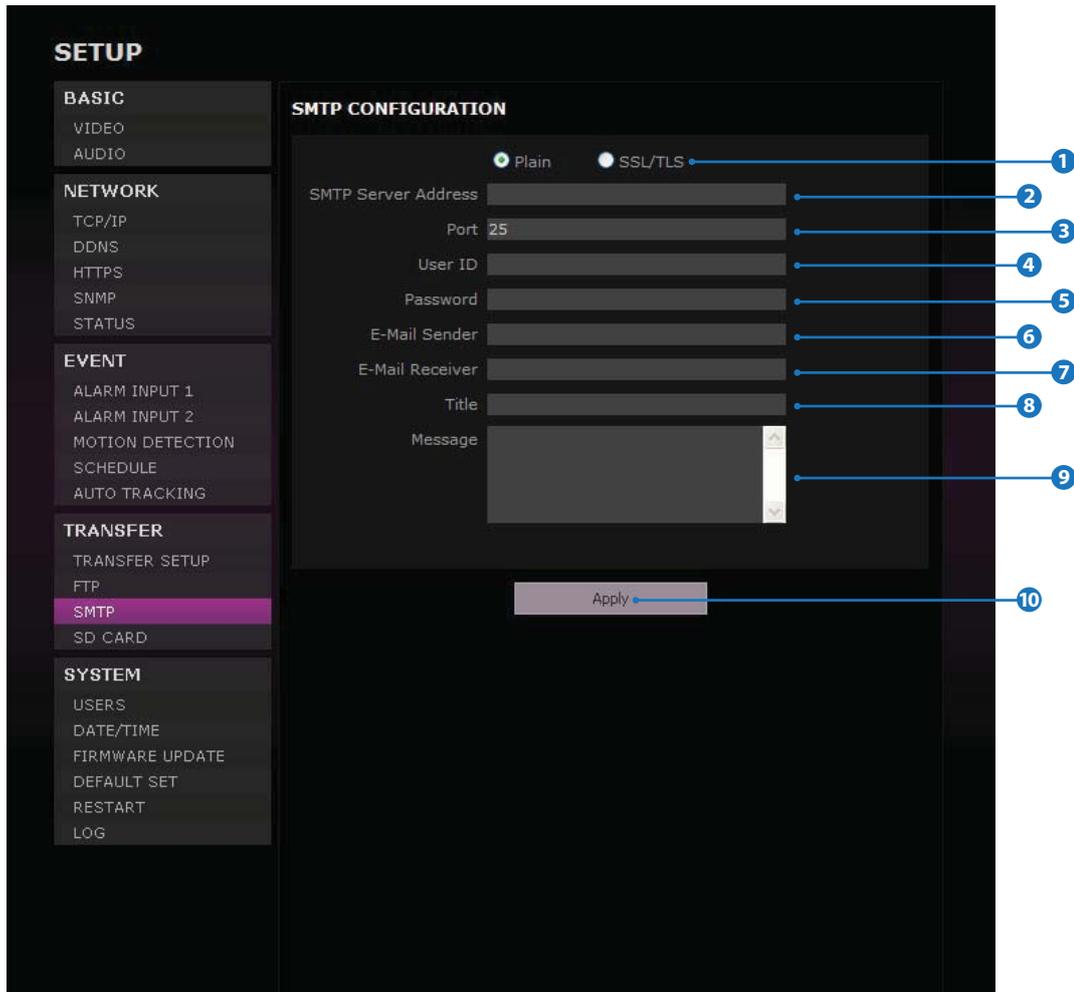
### 6 Password

Define Password to access to the FTP Server. Fill out the correct Password registered in the FTP Server.

### 7 Click 'Apply' to make above setting effective.

⊗ Refer the above screen image for the example.

# 5 Setup - SMTP Setup



To send/save the image to the relevant sites by Email, SMTP needs to be setup.

## 1 Plain, SSL/TLS

Select Security mode of SMTP from Plain or SSL/TLS. After checking account setup of your SMTP Server, you may select one.

## 2 SMTP Server Address

Define the SMTP Server Address. If the IP Address form is incorrect, a Message box will be shown to try again.

## 3 Port

Define the Port used in the Plain or SSL/TLS security mode in the above.

## 4 User ID

Define the User ID to access to SMTP Server. Fill out the correct User ID registered in the SMTP Server.

## 5 Password

Define the Password to access to SMTP Server. Fill out the correct Password registered in the SMTP Server.

## 6 E-Mail Sender

Define the e-mail address of E-Mail Sender. It will be displayed as the sender when the camera sends an E-mail.

## 7 E-Mail Receiver

Define the e-mail address of E-Mail Receiver. It will be displayed as the Receiver when the camera sends an E-mail.

## 8 Title

Define the title of the E-Mail when the camera sends an E-mail.

- ✘ The title of the Email is limited to 40 characters including the spaces.

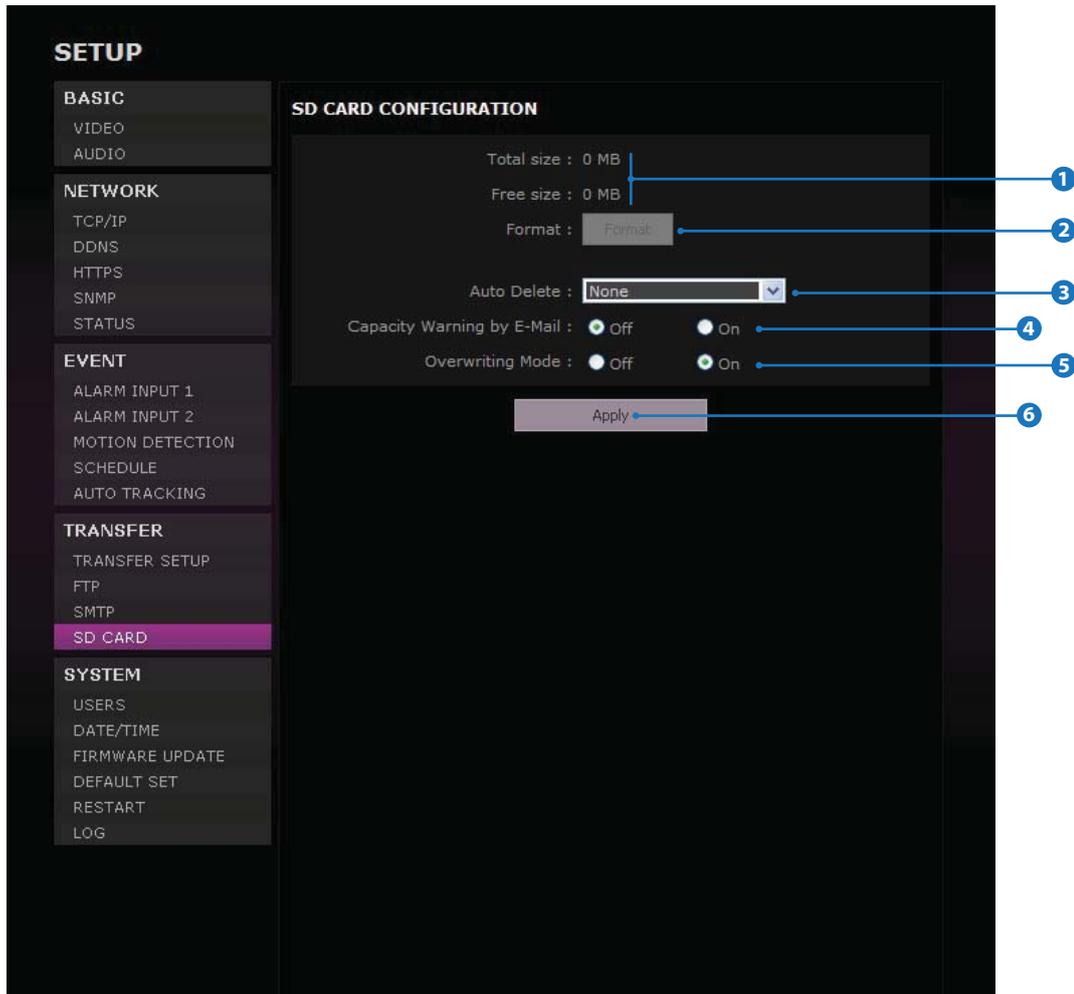
## 9 Message

Define the contents of E-Mail when camera sends an E-mail.

- ✘ The message of the Email is limited to 40 characters including the spaces.

## 10 Click 'Apply' to make above setting effective.

# 5 Setup - SD CARD Setup



## 1 Total size / Free size

Total capacity of SD card and the remainder of it are displayed.

## 2 Format

Delete the all contents that stored in SD card.

⊗ If the SD card doesn't applied, 'Format' button will be deactivated.

## 3 Auto Delete

Select the period for Auto delete. The image data stored before period will be deleted automatically.

NONE	Do not use 'Auto Delete'.
1 Week	Delete all stored image older than 1 week from 00:00 today.
1 Month	Delete all stored image older than 1 Month from 00:00 today.
1 Year	Delete all stored image older than 1 Year from 00:00 today.

⊗ It is noted that this function will be executed everyday to delete data before designated period.

## 4 Capacity Warning E-mail

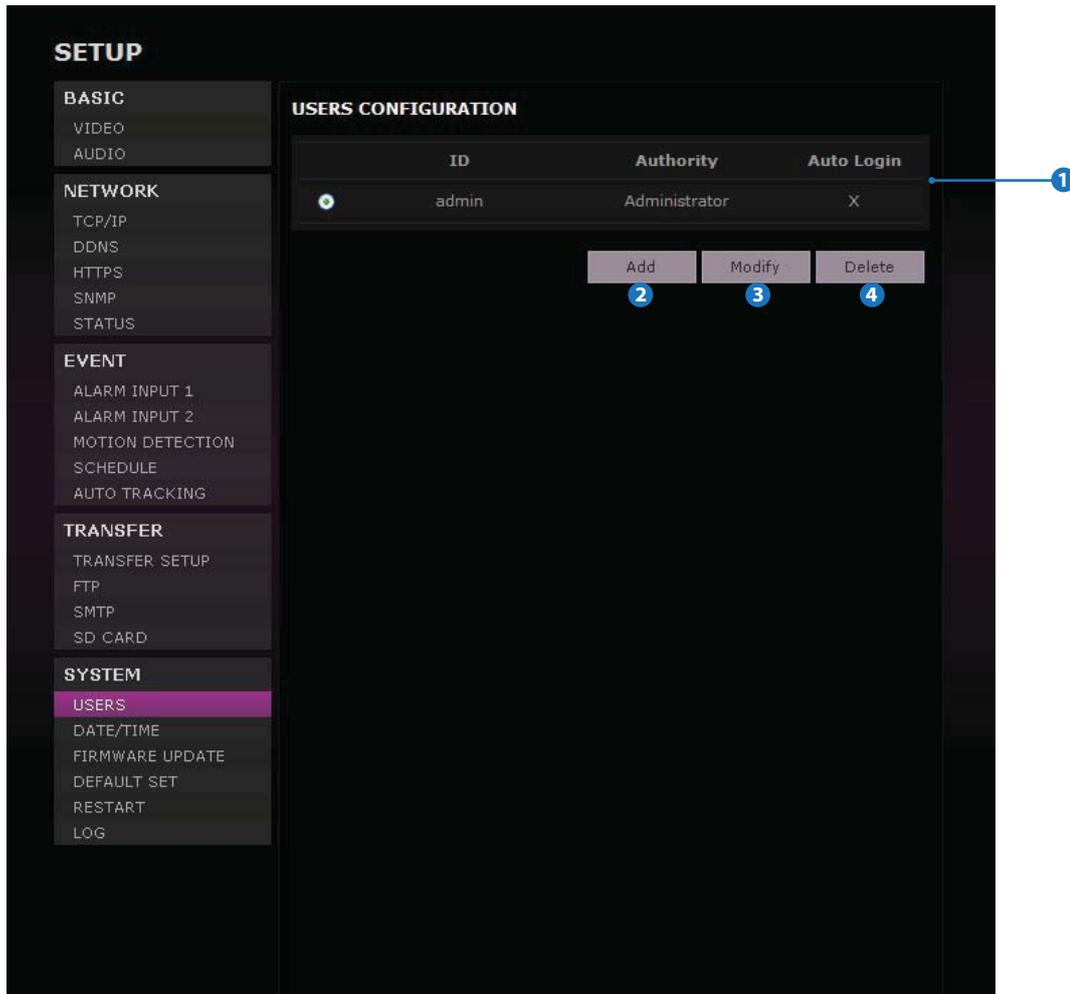
If it is set ON and remained space of SD card reach to less than 8MB, a warning e-mail will be sent to the e-mail account set in SMTP menu.

## 5 Overwriting Mode

If it is set ON and remained space of SD card reach to less than 8MB, new data will start to be overwritten on the oldest data. However, if it is set OFF and remained space of SD card reach to less than 8MB, image recording will be stopped.

## 6 Click 'Apply' to make above setting effective.

# 5 Setup - Users Setup



## 1 Users

List all the user accounts for authentication.

## 2 Add

Register a new user

<b>ID</b>	Enter a new user ID except Admin since it exists.
<b>Password</b>	Enter the user Password.
<b>Verify</b>	Enter the user Password again for verification.
<b>User Level</b>	Select Operator or Viewer. <ul style="list-style-type: none"> <li>• Viewer : Only monitoring is allowed.</li> <li>• Operator : Most of the functions are allowed except 'Setup'.</li> <li>• Administrator: All functions are allowed.</li> </ul>
<b>Auto Login</b>	If you check the auto login for an account, this account becomes the public account. From the next login, everybody can access the camera using this account without authentication. Only one account can have the Auto Login.

⊗ The ID and Password are limited to 10 characters.

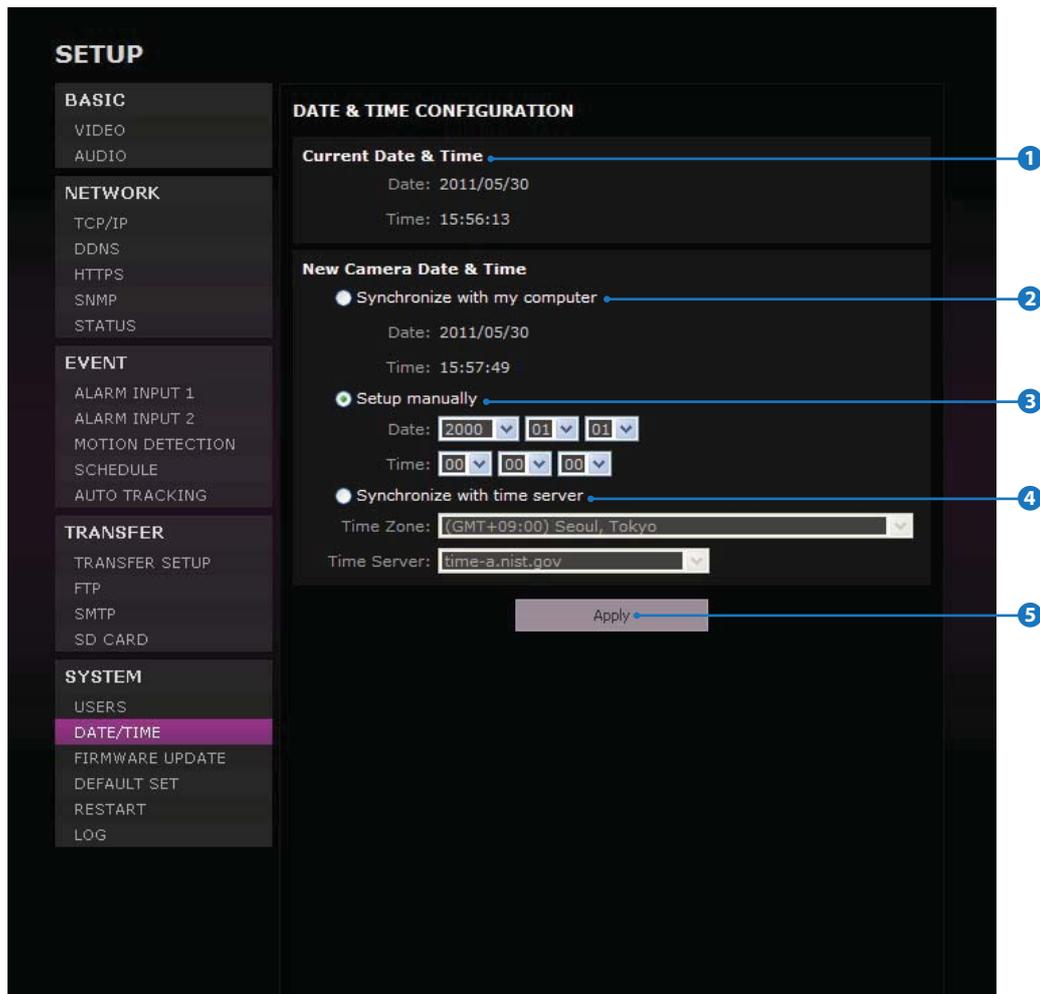
## 3 Modify

Modify the information of the user accounts registered. For admin account, only Password and Auto Login function can be modified.

## 4 Delete

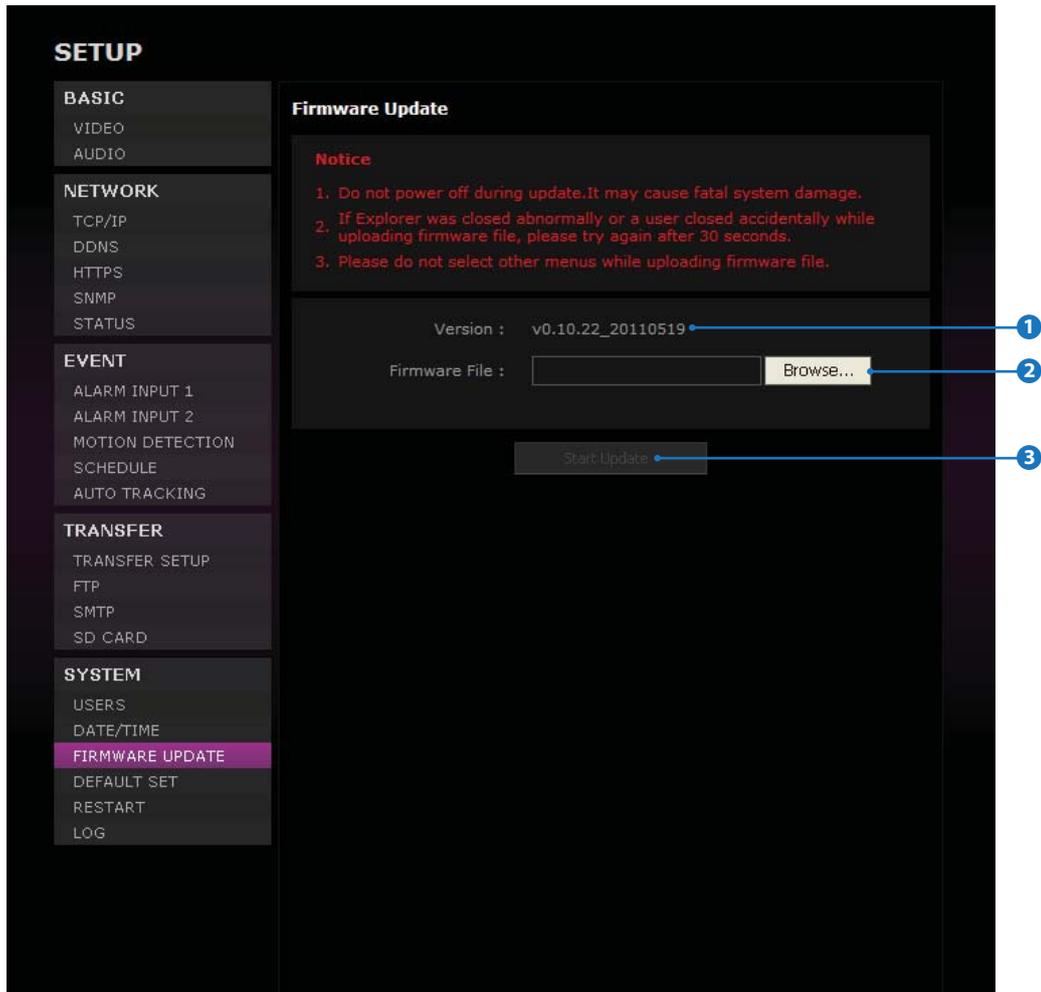
Delete the selected user account. Admin account cannot be deleted.

# 5 Setup - Date/Time Setup



- 1 Current Date & Time**  
Shows the current date and time setting in the Camera.
- 2 Synchronize with my computer**  
Set the date/time using those of PC currently connected.
- 3 Setup manually**  
Set the date/time by typing manually.
- 4 Synchronize with the time server**  
In this mode, date/time is automatically updated using the Time Server selected. After selecting the Time Zone properly, Time Server must be selected. However, if you want to assign a time server not in the list, select Manual. Once synchronization is configured successfully, the time and date will be updated every 1 hour automatically.
- 5 Click 'Apply' to make above setting effective.**

# 5 Setup - Firmware Update



## 1 Firmware Version

It shows the current Firmware Version in the system.

## 2 Firmware Filename

Designate the Firmware file name in your computer by clicking [Browse...] button.

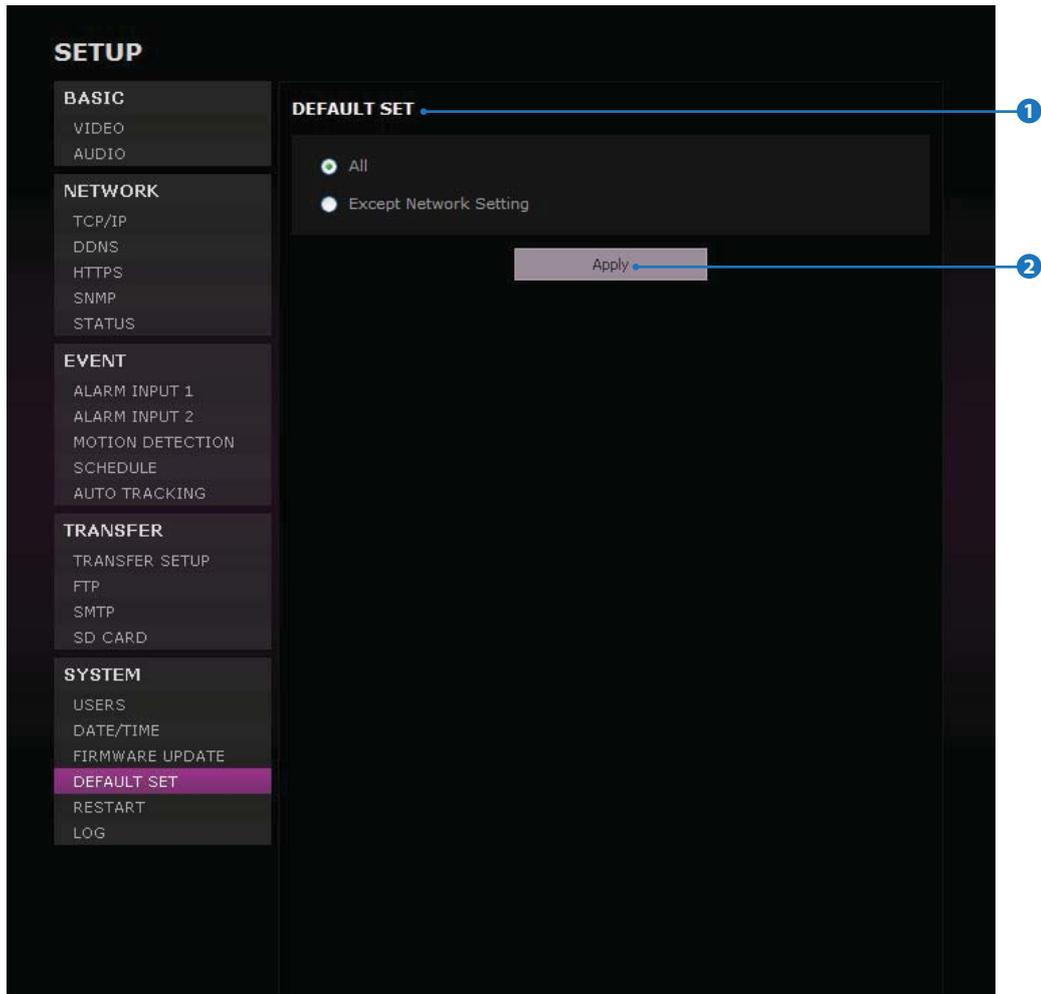
## 3 Start Update

Click this button to start update. Progress of uploading will be displayed using Progress Bar. If you assign the wrong file name, an error message will be shown.

## ⚠ Warning:

1. Do not turn off the power of camera during the Firmware update. Otherwise, the system can be stuck to be unstable. If updating is finished, the system will be rebooted automatically.
2. Please make sure to check the 'Notice' shown on screen. If firmware update is completed, the camera will reboot automatically and 'Setup window' will be closed

# 5 Setup - Default Set



## 1 Reset to the Factory Defaults

Return the setup to the Factory Default.

All	Reset all Settings to the Factory Defaults.
Except Network Settings	Except Network related settings, reset all others to the Factory Defaults.

### ⚠ Warning:

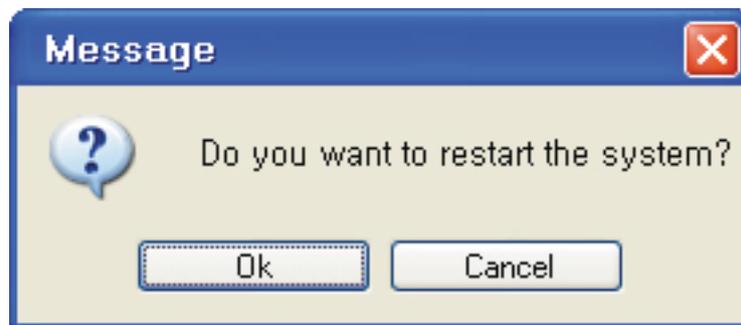
If you click 'Apply', you will lose all setting data. If needed, please, make a note for further installation.

## 2 Click 'Apply' to make above setting effective.

⚠ It takes approximated 4 minutes after clicking 'Apply' for the Default Set.

# 5 Setup - Restart

---



If you click the 'RESTART' menu, a message box will be shown to confirm. Click the 'Ok' button to restart.

# 5 Setup - Log

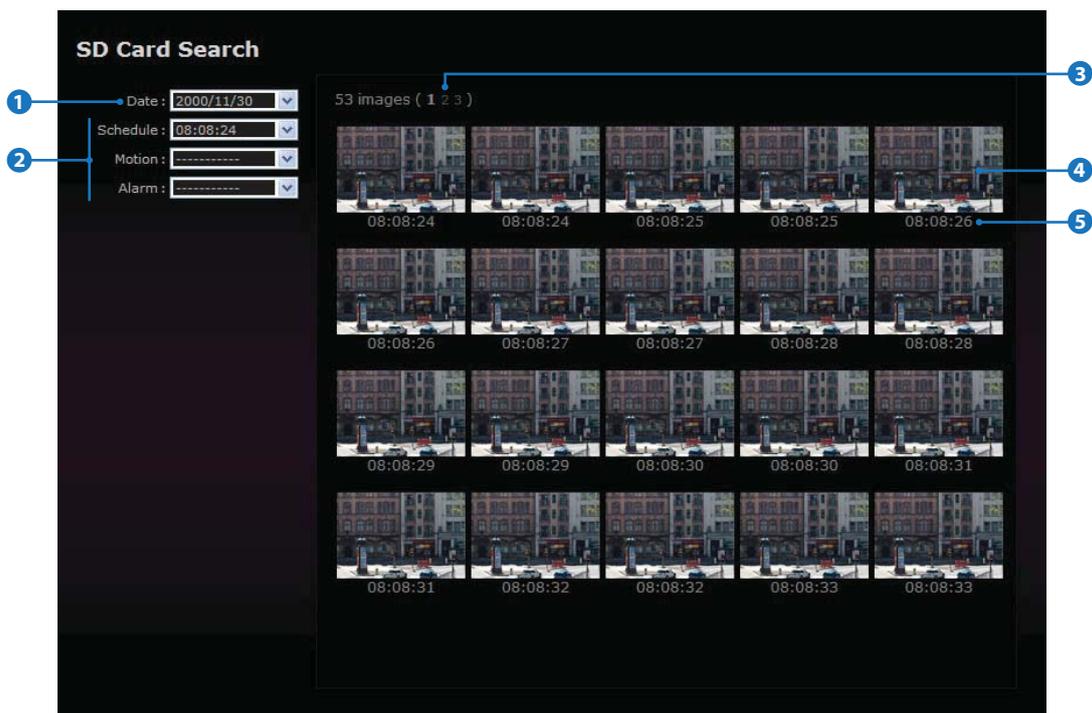
The screenshot displays the 'SETUP' interface with a sidebar menu on the left and a 'LOG' section on the right. The sidebar menu includes categories: BASIC (VIDEO, AUDIO), NETWORK (TCP/IP, DDNS, HTTPS, SNMP, STATUS), EVENT (ALARM INPUT 1, ALARM INPUT 2, MOTION DETECTION, SCHEDULE, AUTO TRACKING), TRANSFER (TRANSFER SETUP, FTP, SMTP, SD CARD), and SYSTEM (USERS, DATE/TIME, FIRMWARE UPDATE, DEFAULT SET, RESTART, LOG). The 'LOG' section shows a table with columns 'Date & Time' and 'Description'. The table contains 15 entries, all dated 2011/05/30, with descriptions such as 'Motion occurrence.' and 'System reset.'.

Date & Time	Description
2011/05/30 15:49:01	Motion occurrence.
2011/05/30 15:48:20	Motion occurrence.
2011/05/30 15:47:35	Motion occurrence.
2011/05/30 15:47:14	Motion occurrence.
2011/05/30 15:47:13	Motion occurrence.
2011/05/30 15:47:03	Motion occurrence.
2011/05/30 15:46:48	Motion occurrence.
2011/05/30 15:47:19	Motion occurrence.
2011/05/30 15:47:17	System reset.
2011/05/30 15:47:14	Motion occurrence.
2011/05/30 15:47:09	Motion occurrence.
2011/05/30 15:47:04	Motion occurrence.
2011/05/30 15:46:44	Motion occurrence.
2011/05/30 15:46:29	Motion occurrence.
2011/05/30 15:46:22	Motion occurrence.
2011/05/30 15:46:15	Motion occurrence.
2011/05/30 15:46:07	Motion occurrence.

System Start, Network Connection Status(Including IP Address), Changing System Time, Changing Video Setup, Network Setup and Event(Alarm / Motion) Alert will be recorded.

1000 PCS of Log can be stored and the recorded data won't be deleted.

# 6 SD Card Search - Search



- 1 Date of stored image**  
Choosing the date to find the stored events.
- 2 Stored Events(Schedule / Motion / Alarm)**  
The interval of stored time and number of stored images in the Event Setup can be different.
- 3 Page No. of searched Images**  
The latest page will be loaded at the head.
- 4 Stored Images**  
Image will be stored by value at CH No. 2 in 'Setup>Video configuration'. By clicking the image, see the image on the larger screen.
- 5 Stored Time of Images**  
The interval of stored image can be setup depending on the each Events.

# 7 OSD - Check Points before Operation

---

✘ The OSD menu in this manual is based on the control of Web-Viewer. Some of the menu items (Date/Time Setup, Alarm Input Setup, etc.) might be different when analog base is used.

## Check Points before Operation

1. Before power is applied, please check the cables carefully.
2. The camera ID of the controller must be identical to that of the camera to be controlled. The camera ID can be check in the system information of OSD menu.
3. If your controller supports multi-protocols, the protocol must be changed to match to that of the camera.
4. If you changed camera protocol by changing DIP switch, the change will be effective after you reboot the camera.
5. Since the operation method can be different for each controller available, refer to the manual for your controller if camera cannot be controlled properly.

### 1 Preset and Pattern Function Pre-check

- Check how to operate preset, pattern, scan and group function with keyboard controller/DVR in advance to operate camera function using them.  
(Refer to your system keyboard manual)

### 2 Auto Calibration

- If the camera is continuously subjected to very high temperature (over 50°C or 122°F) environment for a long time, it is possible for the camera to lose focus. As a result, you will get blurry image. In this case, it is recommended to turn on 'AUTO CALIBRATION'.
- If you execute 'AUTO CALIBRATION', camera will calibrate its focus at every 6 hours.

### 3 Start OSD Menu

- Using the OSD menu, preset, pattern, scan, group and alarm input function can be configured for each application.  
Enter 'Preset key + 0' or 'Pattern + 30'.

# 7 OSD - Aux Functions

## 1 Preset

- Max. 255 positions can be stored as preset positions. The preset number can be assigned from 1 to 255.
- See the section 'ROOT MENU>FUNCTION SETUP>PRESET SETUP' for more detailed information.

### 1. Set Preset

Method 1) Use keyboard controller:  
☒ Refer to keyboard controller manual.

Method 2) Use OSD menu.

### 2. Run Preset

Method 1) Use keyboard controller:  
Preset key + Number key(1~255)

### 3. Delete Preset

To delete preset, use OSD menu.

## 2 Scan

- By using scan function, you can make camera to move between 2 preset positions repeatedly.
- See the section 'ROOT MENU>FUNCTION SETUP>SCAN SETUP' for more detailed information.

### 1. Set Scan

To set scan, use OSD menu.

### 2. Run Scan

Method) Pattern key + Scan number(1~8) + 10  
Ex) Run scan 2 = Pattern key + [12] + Enter key

### 3. Delete Scan

To delete scan, use OSD menu.

## 3 Pattern

- Pattern function is that a camera memorizes the path (mostly curve path) by joystick of controller for assigned time and revives the path exactly as it memorized.
- See the section 'ROOT MENU>FUNCTION SETUP>PATTERN SETUP' for more detailed information.

### 1. Set Pattern

To set pattern, use OSD menu.

### 2. Run Pattern

Method 1) Pattern key + Pattern number(1~4) + Enter key  
Ex) Run pattern 2 = Pattern key + [2] + Enter key

### 3. Delete Pattern

To delete pattern, use OSD menu.

- ☒ When the pattern is saved/executed, the pan/tilt is operated with 'AUTO FLIP-OFF'.

## 4 Group

- The group function allows running sequence of presets, pattern and/or scans.
- See the section 'ROOT MENU>FUNCTION SETUP>GROUP SETUP' for more detailed information.

### 1. Set Group

To set group, use OSD menu.

### 2. Run Group

Method) Pattern key + [Group number(1~8) + 20]  
Ex) Run group 2 = Pattern key + [22] + Enter key

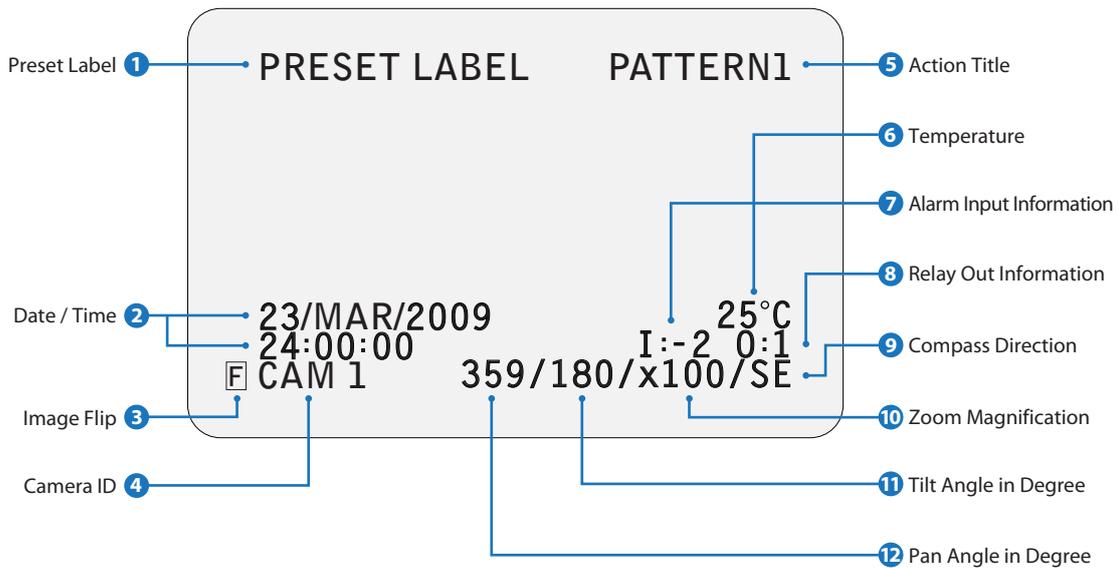
### 3. Delete Group

To delete group, use OSD menu.

## 5 Schedule

- The schedule function allows running an appropriate function like preset, scan, group, pattern, home move at the designated day and time.
- See the section 'ROOT MENU>FUNCTION SETUP>SCHEDULE SETUP' for more detailed information.

# 7 OSD - OSD Information



## 1 Preset Label

- The label stored for specific preset.
- See the section 'ROOT MENU>FUNCTION SETUP>PRESET SETUP>LABEL'.

## 2 Date / Time

- Shows the current date/time.
- See the section 5 'Setup - Date/Time Setup'.

## 3 Image Flip

- Shows that images are currently reversed by auto flip function.
- See the section 'ROOM MENU>CAMERA SETUP>IMAGE FLIP'.

## 4 Camera ID

- The current camera ID(Address).
- See the section 'ROOT MENU>SYSTEM INFORMATION'.

## 5 Action Title

Followings are possible action titles and their meanin

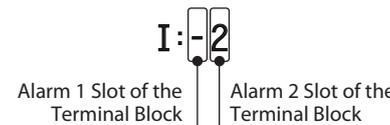
Action Title	Means
SET PRESET 123	Means to store preset 123.
PRESET 123	Means it reached preset 123.
PATTERN 1	Means the camera is running pattern 1.
SCN 1/PRESET 123	Means the camera is running scan 1.
RANGE OVER	Means the action received is not within the range supported.
UNDEFINED	Means the action received is not defined.

## 6 Temperature

- Current temperature: Boxed 'C' and 'F' means celsius and fahrenheit respectively.
- See the section 'ROOM MENU>DISPLAY SETUP>TEMPERATURE'.

## 7 Alarm Input Information

This information shows current state of alarm input. If an input is on state it will show the number of input. If an input is off state, '-' will be displayed.



## 8 Relay Out Information

This information shows the current state of relay out. If the output is on state it will show the number of output. If an output is off state, '-' will be displayed.

Relay Out On	Relay Out Off
0:1	0:-

## 9 Compass Direction

- Shows the current compass direction of the camera.
- The direction is shown as N(North), S(South), E(East), W(West), NE(Northeast), NW(Northwest), SE(Southeast), SW(Southwest).
- See the section 'ROOT MENU>SYSTEM SETUP>SET NORTH DIRECTION'.

## 10 Zoom Magnification

Shows the current zoom magnification.

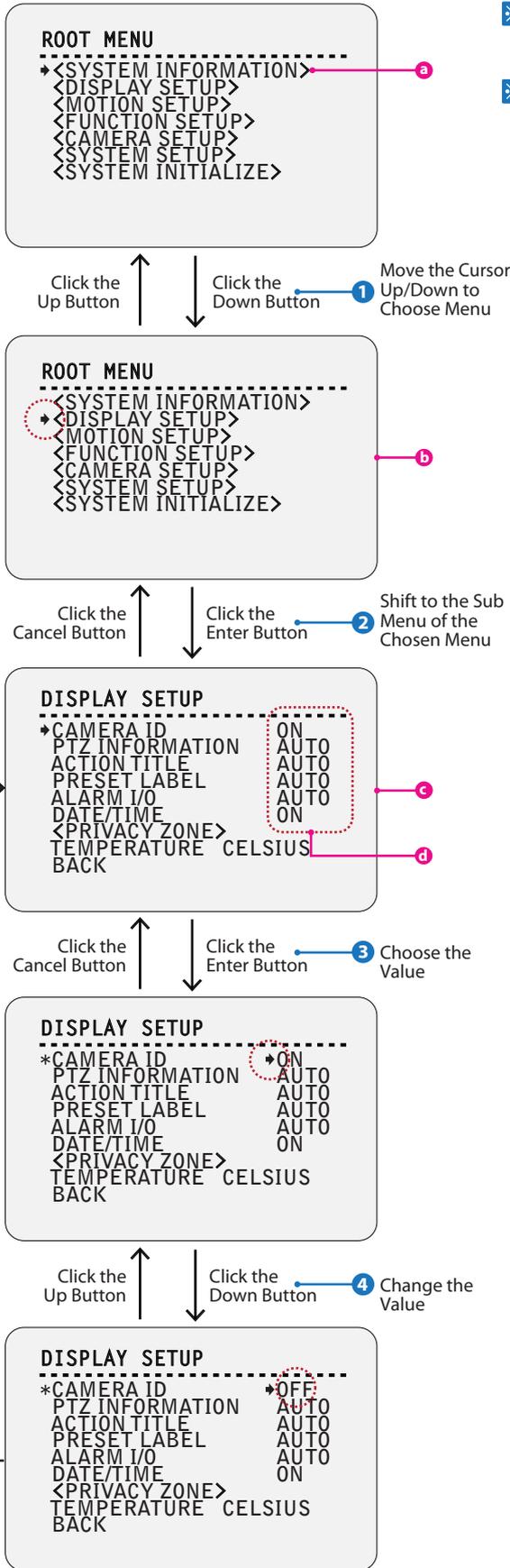
## 11 Tilt Angle in Degree

Shows the current tilt(0 ~ 180) angle.

## 12 Pan Angle in Degree

Shows the current fan(0 ~ 359) angle.

# 7 OSD - General Rules of Menu Operation



⊠ This page explains how to operate the OSD menu using Web-viewer control.

⊠ When controlling the camera using a keyboard controller, please refer the manual of the keyboard controller.

**1 Move the Cursor Up/Down to Choose Menu**  
To move from items to item in the menu, click up/down button.

**2 Shift to the Sub Menu of the Chosen Menu**  
For all menu level, to go into sub menu, click the enter button.

**3 Choose the Value**  
To change the value, click the enter button to move the cursor to the value.

**4 Change the Value**  
click up/down button to change the value.

**5 Move to the Previous Screen**  
Click the enter button to save values and click the cancel button to cancel values, then go to the previous screen.

**a**: The menu items surrounded with < > always have its sub menu. To move to the sub menu, click the enter button.

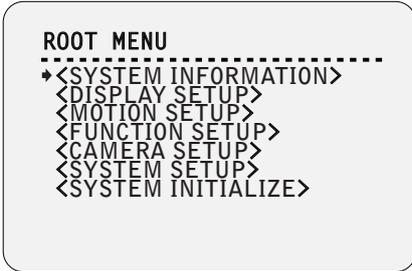
**b**: This screen is the main menu of the **c** (DISPLAY SETUP).

**c**: This screen is the sub menu of 'DISPLAY SETUP' on the screen **b**.

**d**: **d** is the value of the each content.

# 7 OSD - ROOT MENU & SYSTEM INFORMATION

1



1 ROOT MENU

---

## <SYSTEM INFORMATION>

Shows information and current configuration.

---

## <DISPLAY SETUP>

Enable/Disable of OSD display on main screen.

---

## <MOTION SETUP>

Setup for motion related settings.

---

## <FUNCTION SETUP>

Setup for various functions such as preset, scan, pattern, group and schedule.

---

## <CAMERA SETUP>

Configure camera related functions and data.

---

## <SYSTEM SETUP>

Configure for basic system setup.

---

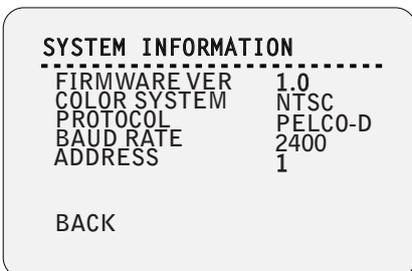
## <SYSTEM INITIALIZE>

Initializes system configuration and sets all data to factory default configuration.

---

⊠ To exit from OSD menu mode, click another tab button on the Web-viewer.

1



1 SYSTEM INFORMATION

---

## FIRMWARE VER

Shows the current firmware version.

---

## COLOR SYSTEM

Shows the current analog video system.

---

## PROTOCOL

Shows the current PTZ control protocol.

---

## BAUD RATE

Shows the current baud rate of the PTZ control.

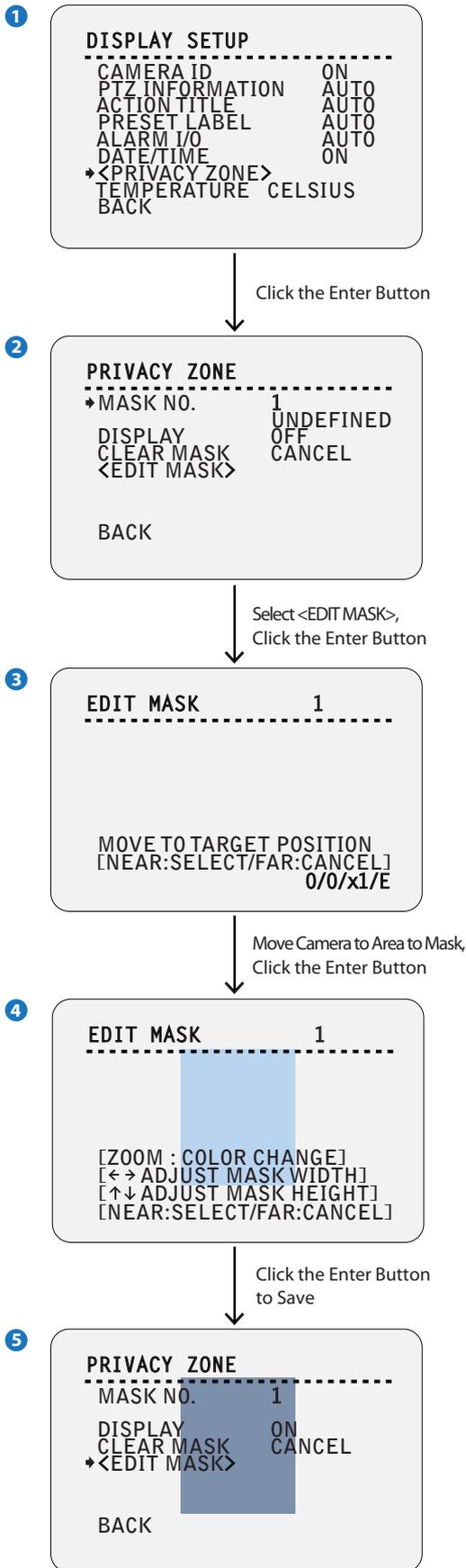
---

## ADDRESS

Shows the current camera ID of the PTZ control.

---

# 7 OSD - DISPLAY SETUP



## 1 DISPLAY SETUP

This menu defines to enable/disable of OSD display on main screen.

CAMERA ID	ON / OFF
-----------	----------

PTZ INFORMATION	ON / OFF / AUTO
-----------------	-----------------

If an item is set to be 'AUTO', the item is displayed only when the value of it is changed.

ACTION TITLE	ON / OFF / AUTO
--------------	-----------------

PRESET LABEL	ON / OFF / AUTO
--------------	-----------------

ALARM I/O	ON / OFF / AUTO
-----------	-----------------

DATE/TIME	ON / OFF
-----------	----------

<PRIVACY ZONE>

Moves to the privacy zone setup.

TEMPERATURE	CELSIUS / FAHRENHEIT / OFF
-------------	----------------------------

## 2 PRIVACY ZONE

- Selects area in image to mask.

- It selects the area to mask, and setup various function of the mask.

MASK NO.	1 ~ 8
----------	-------

Select mask number. If the selected mask has data already, camera moves as it was set. Otherwise, 'UNDEFINED' will be displayed under 'MASK NO.'.

DISPLAY	ON / OFF
---------	----------

Sets if the camera makes mask shows or not on images.

CLEAR MASK	CANCEL / OK
------------	-------------

Deletes data in the selected mask no.

<EDIT MASK>

Moves to setup the mask no.

## 3 EDIT MASK - Select Mask Location

1. Move camera to area to mask.

2. Click the enter button to complete the location.

☒ If the tilt angle is located in the range between 90° to 90°, you can not set up privacy zone mask.

☒ If tilt angle over 90° (image flipped region) is designated, camera will automatically move to identical position by changing tilt angle less than 90° and moving pan angle 180° relatively.

## 4 EDIT MASK - Color Change & Adjust Mask Size

Adjust mask size. Use up/down/right/left buttons to adjust mask size.

- Zoom In/Out: Change Color of Mask.

- Click Left/Right Button(← →): Adjust Mask Width.

- Click Up/Down Button(↑ ↓): Adjust Mask Height.

## 5 MASK SETTING - Completion Screen

- Run the mask no. marked on the screen.

- The value of 'DISPLAY' is set to 'ON' automatically.

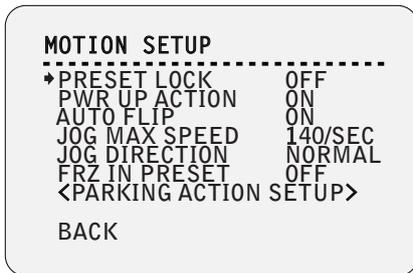
- Can set mask 2 ~ 4 continuously.

☒ To hide a certain zone completely regardless of high speed pan/tilt motions, it is recommended that the size of mask must be 20% bigger than original target size.

☒ It is noted that during pan/tilt control like jog action, the object behind the privacy mask can be disclosed in a short period of time.

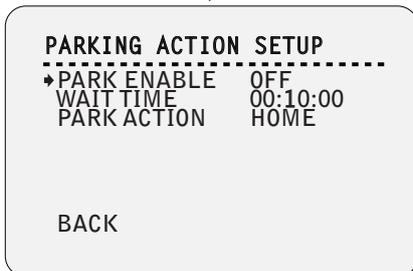
# 7 OSD - MOTION SETUP

1



Click the Enter Button

2



## 1 MOTION SETUP

Setup the general functions of pan/tilt motions.

**PRESET LOCK** ON / OFF

If motion lock is set to on, it is impossible to set up and delete preset, scan, pattern and group. It is possible only to run those functions. To set up and delete those functions, enter into OSD menu.

**PWR UP ACTION** ON / OFF

This function enables to resume the last action executed before power down. Most of actions such as preset, pattern, scan and group are available for this function but jog actions are not available to resume.

**AUTO FLIP** ON / OFF

In case that tilt angle arrives at the top of tilt orbit (90°), zoom module camera keep moving to opposite tilt direction (180°) to keep tracing targets. As soon as zoom module camera passes through the top of tilt direction(90°), images should be reversed automatically and [F] appears in screen. If this function is set to 'OFF', tilt movement range is 0° ~ 90°.

**JOG MAX SPEED** 2/SEC ~ 200/SEC

Sets maximum jog speed. Jog speed is inversely proportional to zoom magnification. As zoom magnification goes up, pan/tilt speed goes down.

**JOG DIRECTION** INVERSE / NORMAL

If you set this to 'NORMAL', the view in the screen is moving same direction with jog tilting. If 'INVERSE' is selected, the view in the screen is moving reversely.

**FRZ IN PRESET** ON / OFF

At start point of preset movement, camera starts freezing the image of start point. Camera keeps displaying the image of start point during preset movement and does not display the images which camera gets during preset movement. As soon as camera stops at preset end point, camera starts displaying live images which it gets at preset end point. This function availability should be different by models.

**<PARKING ACTION SETUP>**

Moves to 'PARKING ACTION SETUP' screen.

## 2 PARKING ACTION SETUP

If 'PARK ENABLE' is set to 'ON', camera runs assigned function automatically if there is no PTZ command during assigned 'WAIT TIME'.

**PARK ENABLE** ON / OFF

**WAIT TIME** 00:00:05 ~ 04:00:00

The time is displayed with "hh:mm:ss" format and you can change this by 1 sec. unit.

1. To place the cursor on the time marked as below, click the enter button.

**00:10:00**

2. Click left/right button to adjust hours, minutes and seconds.

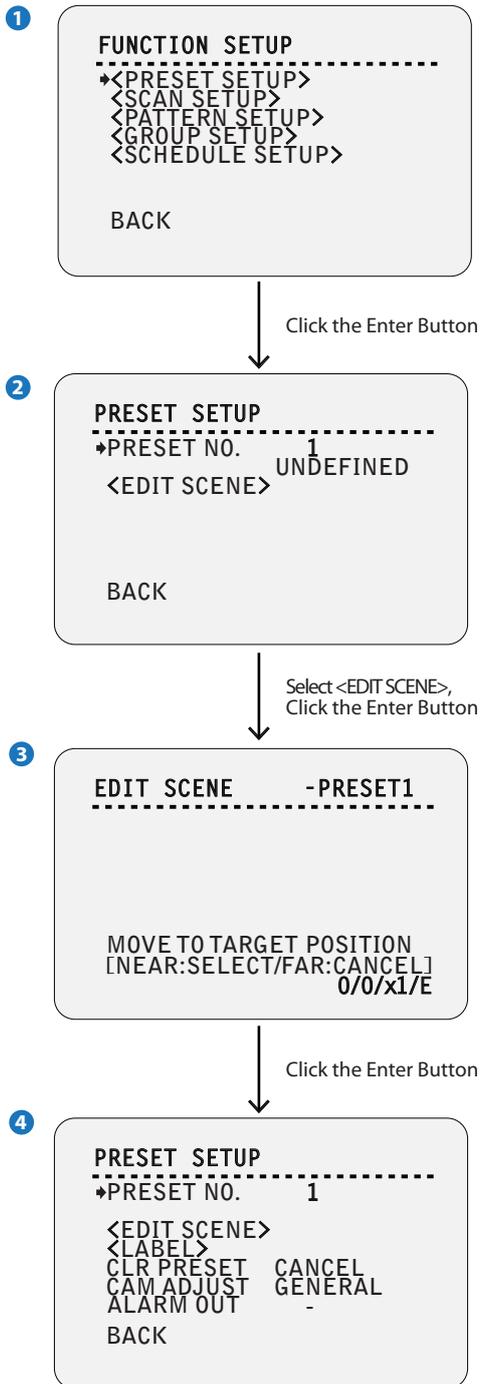
3. Click right/left button to select the digit.

4. By clicking enter button, save current setting.

**PARKING ACTION** HOME / PRESET 1~128 / SCAN 1~8 / PATTERN 1~4 / GROUP 1~8

Ex) If 'HOME' is selected for park action, camera will move to home position when there is no PTZ command during the assigned 'WAIT TIME.'

# 7 OSD - FUNCTION SETUP > PRESET SETUP



## 1 FUNCTION SETUP

Configure 5 special functions with this menu.

## 2 PRESET SETUP - Undefined

255 presets from the number 1 to 255 can be assigned.

PRESET NO. 1 ~ 255

If a selected preset is already defined, camera moves to pre-defined position and preset characteristics such as label and relay outputs show on monitor. (Refer screen 4) If a selected preset is not defined, 'UNDEFINED' shows on monitor.

<EDIT SCENE>

Redefine the current preset scene position (i.e. PTZ).

## 3 EDIT SCENE

1. Using pan-tilt wheel button, move camera to the desired position.
2. By clicking the enter button, save the current PTZ data.
3. Click the cancel button to cancel.

## 4 PRESET SETUP

If the preset is defined, the information will be shown on the OSD menu with the setting, and the alarm device (if defined) will be activated.

PRESET NO. 1 ~ 255

<EDIT SCENE>

<LABEL>

Edits Label to show on monitor when preset runs. If the preset is not defined, this is not shown. Max. 10 alphabets are allowed.

CLR PRESET CANCEL / OK

Deletes current preset data. If the preset is not defined, this is not shown.

CAM ADJUST GENERAL / SPECIAL

- WB(White Balance) and AE(Auto Exposure) can be set up independently for each preset.

- **GENERAL:** WB or AE can be set up totally and simultaneously for all presets in 'ROOT MENU>CAMERA SETUP' menu.

- **SPECIAL:** WB or AE can be set up independently or separately for each preset in each preset setup menu.

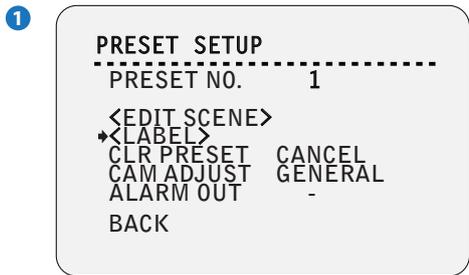
- Each special WB/AE value should be activated correspondingly when camera arrives at each preset location. During jog operation, general WB/AE value should be applied.

- All special WB/AE value should not be changed although general WB/AE value is changed. If 'SPECIAL' is selected, the menu to set WB/AE is shown on monitor.

ALARM OUT - / 1

Relay output can be linked with preset run. ' - ' means off, '1' means on.

# 7 OSD - FUNCTION SETUP > PRESET SETUP



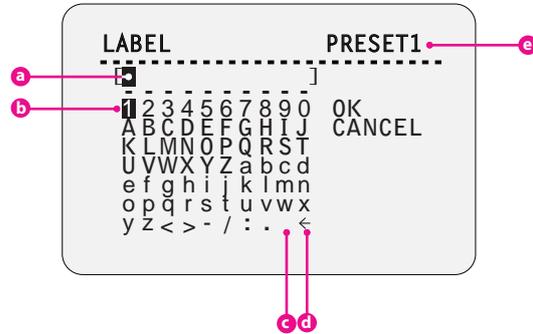
Click the Enter Button



Click the Enter Button

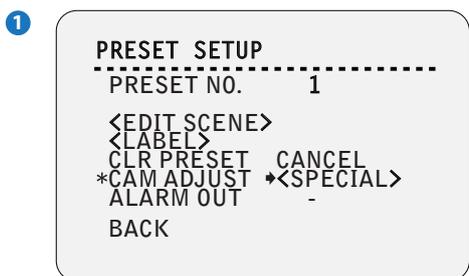


- 2 LABEL
- Edits label to show on monitor when camera arrives at preset.
  - Max. 10 alphabets are allowed(Including space).

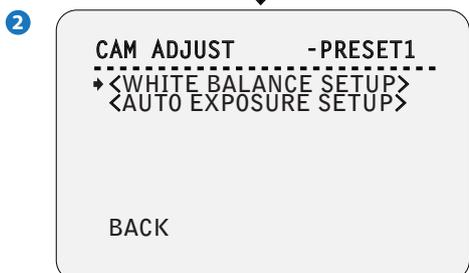


- a Current Cursor Position:** In edit label menu, a reverse rectangular is cursor. As soon as finishing selecting alphabet, cursor moves to the next digit.
- b Selecting Alphabet:** Using left/right/up/down button, move to an appropriate character from the character set. To choose the character, click the enter button.
- c Space:** If you want to use blank, choose space character (' ').
- d Back-Space:** If you want to delete a character in front, use back space character ('←').
- e Preset NO. for Label**

- 3 LABEL – Complete Editing
- If you complete the label editing, move cursor to 'OK' and click the enter button to save completed label. To abort current change, move cursor to 'CANCEL' and click the enter button.



Click the Enter Button

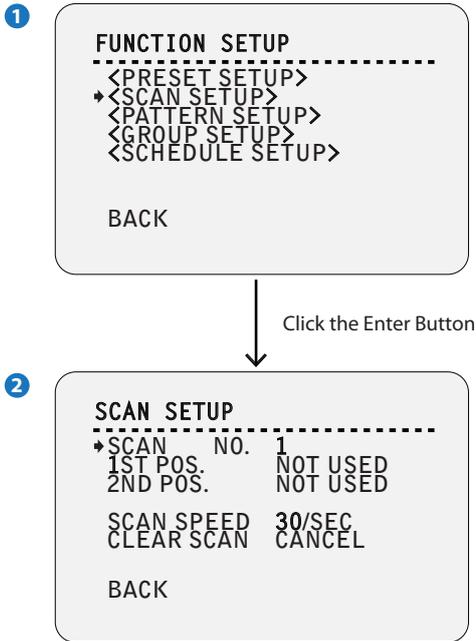


- 2 CAM ADJUST
- Edits label to show on monitor when the camera arrives at presets.

<WHITE BALANCE SETUP>  
See the section 'ROOT MENU>CAMERA SETUP>WB SETUP'.

<AUTO EXPOSURE SETUP>  
See the section 'ROOT MENU>CAMERA SETUP>AE SETUP'.

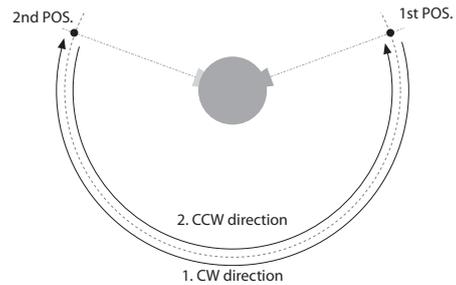
# 7 OSD - FUNCTION SETUP > SCAN SETUP



## 2 SCAN SETUP

Up to 8 scans are available, which makes the camera to move slowly between two preset positions.

When scan function runs, the camera moves from the preset assigned as the 1st pos. to the preset assigned as the 2nd pos. in CW(Clockwise) direction. Then camera moves from the preset assigned as the 2nd pos. to the preset assigned as the 1st pos. in CCW(Counterclockwise) direction. Then, it continues to move from the 1st pos. to the 2nd pos. back and forth.



### If the 1st POS. = the 2nd POS.

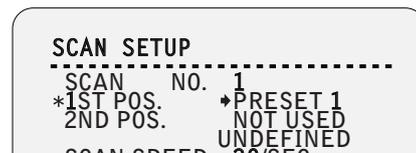
In case that the preset assigned as the 1st pos. is same as the preset assigned as the 2nd pos., camera turns on its axis by 360° in CW direction and then it turns on its axis by 360° in CCW direction.

### If one preset is not defined between the 1st POS. and the 2nd POS.

If case that a position assigned is 'NOT USED', camera turns on its axis by 360° in CW direction from the preset which is 'NOT USED' and then it turns on its axis by 360° in CCW direction.

**SCAN NO.** 1 ~ 8  
Selects the scan number to edit. If a selected scan has not defined, 'NOT USED' is displayed in 1st position and 2nd position.

**1ST POS. / 2ND POS.** PRESET 1 ~ 255 / NOT USED  
Set up the 2 position for scan function. If a selected preset is not defined, 'UNDEFINED' will be displayed as shown below.



⚠ Undefined preset cannot be assigned as position. If you click the enter button when the selected preset is 'UNDEFINED', the preset will returned to previous position(Available preset or 'NOT USED').

**SCAN SPEED** 1/SEC ~ 180/SEC  
Sets the scan speed.

**CLEAR SCAN** CANCEL / OK  
Deletes the current scan data.

# 7 OSD - FUNCTION SETUP > PATTERN SETUP

1

```

FUNCTION SETUP
-----
<PRESET SETUP>
<SCAN SETUP>
+ <PATTERN SETUP>
<GROUP SETUP>
<SCHEDULE SETUP>

BACK
    
```

Click the Enter Button

2

```

PATTERN SETUP
-----
+ PATTERN NO. 1
  CLEAR PATTERN UNDEFINED
  <EDIT PATTERN> CANCEL

BACK
    
```

Select <EDIT PATTERN>, Click the Enter Button

3

```

EDIT PATTERN 1
-----

MOVE TO START POSITION
[NEAR:START/ FAR:CANCEL]
0/0/x1/E
    
```

Move Camera to Area, Click the Enter Button

4

```

EDIT PATTERN 1
████████████████████████████████████████

[NEAR:SAVE / FAR:DELETE]
0/0/x1/E
    
```

Record the Path of the Pattern by Camera Control

5

```

EDIT PATTERN 1
██████-----

[NEAR:SAVE / FAR:DELETE]
0/0/x1/E
    
```

**2 PATTERN SETUP**  
 Pattern function is that a camera memorizes the path (mostly curve path) by the pan-tilt wheel button for assigned time and revives the path exactly as it memorized.  
 4 patterns are available and max. 1000 communication commands can be stored in a pattern.

**PATTERN NO.** 1 ~ 4  
 Select pattern number to edit. If a selected pattern number is not defined, 'UNDEFINED' will be displayed under selected pattern number.

**CLR PATTERN** CANCEL / OK  
 Deletes data in the current pattern.

**<EDIT PATTERN>**  
 Starts editing pattern.

**3 EDIT PATTERN - Select the Position**  
 1. By using the pan-tilt wheel button, move to the start position with appropriate zoom.  
 2. To start the pattern recording, click the enter button.  
 3. To exit this menu, click the cancel button.

**4 EDIT PATTERN - Records the Path**  
 1. Move camera with the pan-tilt wheel button or run preset function to memorize the path (mostly curve path) in a selected pattern.  
 2. The total memory size and the rest memory size is displayed in the form of bar. (Refer screen 5)

⊗ If bar is full as below, the camera does not record any more paths.

```

EDIT PATTERN 1
TIME LIMITE...-----
    
```

⊗ The pattern path includes the zoom magnification.  
 3. To save data and exit, click the enter button.  
 4. To cancel recording and delete the recorded data, click the cancel button.

⊗ When pattern is edited or ok, pan/tilt will turn to 'AUTO FLIP> OFF' temporarily.

# 7 OSD - FUNCTION SETUP > GROUP SETUP

1

```

FUNCTION SETUP
-----
<PRESET SETUP>
<SCAN SETUP>
<PATTERN SETUP>
* <GROUP SETUP>
<SCHEDULE SETUP>

BACK
    
```

Click the Enter Button

2

```

GROUP SETUP
-----
* GROUP NO.          1
CLEAR GROUP         UNDEFINED
<EDIT GROUP>       CANCEL

BACK
    
```

Select <EDIT GROUP>, Click the Enter Button

3

```

EDIT GROUP          1
-----
* NO. ACTION NO. DWELL OPT
  1 NONE
  2 NONE
  3 NONE
  4 NONE
  5 NONE
-----
SAVE
CANCEL [NEAR:EDIT]
    
```

Click the Enter Button

4

```

EDIT GROUP          1
-----
NO. ACTION NO. DWELL OPT
*  1 NONE
  2 NONE
  3 NONE
  4 NONE
  5 NONE
-----
SAVE [NEAR:EDIT ACT]
CANCEL [FAR :EDIT END]
    
```

Click the Enter Button

5

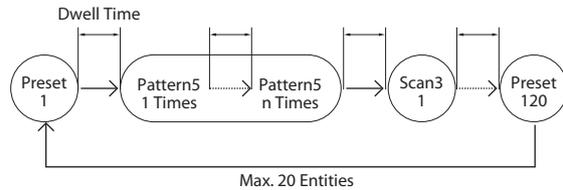
```

EDIT GROUP          1
-----
NO. ACTION NO. DWELL OPT
*  1 NONE
  2 NONE
  3 NONE
  4 NONE
  5 NONE
-----
SAVE [←→:MOVE CURSOR]
CANCEL [↑↓:CHANGE VAL.]
    
```

## 2 GROUP SETUP SCREEN

The group function allows running sequence of presets, pattern and/or scans. Max. 8 group can be stored. Each group can have max. 20 action entities which can be preset, pattern or scan.

Preset speed can be set up and the repeat number of pattern & scan can be set up in group setup. Dwell time between actions can be set up also.



**GROUP NO.** 1 ~ 8

Selects group number to edit. If a selected group number is not defined, 'UNDEFINED' will be displayed under the selected group number.

**CLEAR GROUP** CANCEL / OK

Deletes data in the current group.

**<EDIT GROUP>**

Starts editing group.

## 3 EDIT GROUP - Initial Screen

Click the enter button in 'NO' list to start group setup.

**NO.** 1 ~ 20

Means the sequence of the function in a group.

The functions will be run from lower no. to higher no. by sequence.

**ACTION NO.** NONE / PRESET 1~255 / PATTERN 1~4 / SCAN 1~8

**DWELL TIME** 00:03 ~ 04:00 (min:sec)

Sets dwell time between function by clicking up/down button.

**OPT** PRESET: 2~360 / PATTERN & SCAN: 1~255

It represents preset speed (2~360) when preset is selected. It should be the number of repetition (1~255) when pattern or scan is selected for 'ACTION'.

## 4 EDIT GROUP - Select Function Sequence

Note that max. 20 functions are allowed in a group.

Move cursor up/down and click the enter button to set up.

## 5 EDIT GROUP - Assign Function

Move cursor to the 'NO.' to assign the function, click the enter button to set up. Select the function by clicking up/down button.

# 7 OSD - FUNCTION SETUP > GROUP SETUP

```

6 EDIT GROUP 1
-----
NO. ACTION NO. DWELL OPT
-----
▶ 1 PATTERN 1 00:03 1
  2 NONE
  3 NONE
  4 NONE
  5 NONE
-----
SAVE [←→:MOVE CURSOR]
CANCEL [↑↓:CHANGE VAL.]
  
```

Click the Enter Button

```

7 EDIT GROUP 1
-----
NO. ACTION NO. DWELL OPT
-----
▶ 1 PATTERN 1 00:03 1
  2 NONE
  3 NONE
  4 NONE
  5 NONE
-----
SAVE [NEAR:EDIT ACT]
CANCEL [FAR :EDIT END]
  
```

Click the Cancel Button

```

8 EDIT GROUP 1
-----
NO. ACTION NO. DWELL OPT
-----
  1 PATTERN 1 00:03 1
  2 NONE
  3 NONE
  4 NONE
  5 NONE
-----
▶ SAVE
  CANCEL
  
```

**6 EDIT GROUP - Assign Function**  
Move cursor Left/Right to select items and move cursor Up/Down to change each value.

**7 EDIT GROUP - Select Function Sequence**  
e.g.) If 'PATTERN 1' is not defined at 'ROOT MENU>FUNCTION SETUP>PATTERN SETUP', then the 'ACTION 1' will be automatically changed to 'NONE'.

```

EDIT GROUP 1
-----
NO. ACTION NO. DWELL OPT
-----
▶ 1 PATTERN 1 00:03 1
  2 NONE
  
```

Click the Enter Button

```

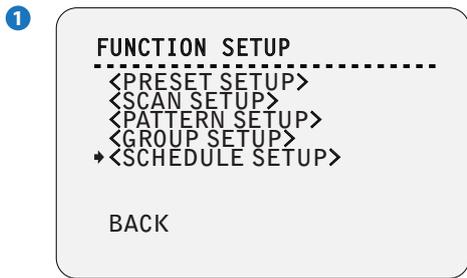
EDIT GROUP 1
-----
NO. ACTION NO. DWELL OPT
-----
▶ 1 NONE
  2 NONE
  
```

<In case that 'PATTERN 1' is not defined.>

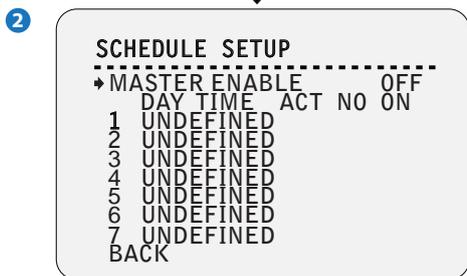
⊠ The function undefined cannot be set as action.

**8 EDIT GROUP - Saves the Setting**  
After finishing setting up all actions, place cursor on 'SAVE'. Then, click the enter button to save data.

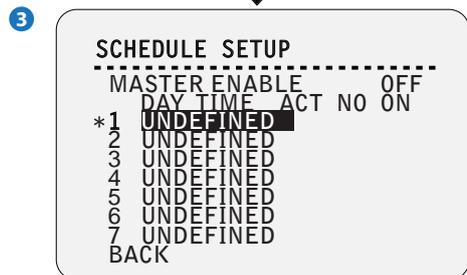
# 7 OSD - FUNCTION SETUP > SCHEDULE SETUP



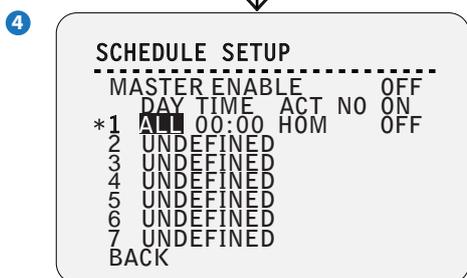
Click the Enter Button



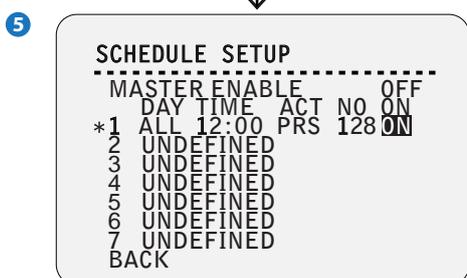
Click the Down Button,  
Click the Enter Button



Click the Down Button



Assign Value



## 2 SCHEDULE SETUP SCREEN

The schedule function allows running an appropriate function like preset, scan, pattern, group, home move at designated day and time.

EX) If you setup a rule 'Tuesday at 9:00AM' and 'Preset 1(say main gate)', the camera will move to main gate every Tuesday at 9:00 AM. If you choose weekday, camera will move to main gate everyday except weekend.

It is noted that due to the real time clock(ROOT MENU> SYSTEM SETUP>DATA/TIME SETUP), the time data will be kept regardless of blackout. The initial time and day setup is essential to proper schedule function.

---

**MASTER ENABLE** ON / OFF

Decide whether schedule function is active or not.

---

**DAY** UNDEFINED / ALL / WKD / SUN ~ MON

Set the day for scheduling.

- **Undefined:** Inactivate

- **All:** Applies to every day

- **WKD:** Applies to every day except Saturday and Sunday

- **SUN-MON:** Applies to designated day only

---

**TIME** 00:00 ~ 23:59 (hour:min)

Set the time.

---

**ACT NO** HOM(HOME) / PRS(Preset) 1~255  
/ SCN(Scan) 1~8 / PTN(Pattern) 1~4  
/ GRO(Group) 1~8

Set the function and no.

⊗ Unlike the group, the undefined function can be assigned in schedule. However, no action is taken at the schedule.

---

**ON** ON / OFF

Decide to make this rule effective or not.

## 4 5 SCHEDULE SETUP - Assign Value

Each field (DAY, TIME, ACT, NO., ON) can be selected by left/right buttons and the values in the field are changed using up/down buttons.

# 7 OSD - FUNCTION SETUP > SCHEDULE SETUP

6

```

SCHEDULE SETUP
-----
MASTER ENABLE      ON
DAY TIME           ACT NO ON
1 MON 01:20 HOM    12 ON
2 WED 07:00 PRS    12 ON
3 THU 11:40 SCN    3  ON
4 ALL 12:00 SCN    1  ON
5 UNDEFINED
6 UNDEFINED
7 UNDEFINED
BACK
    
```

## 6 SCHEDULE SETUP - Save Edited Setting

To save data and exit, click the enter button.

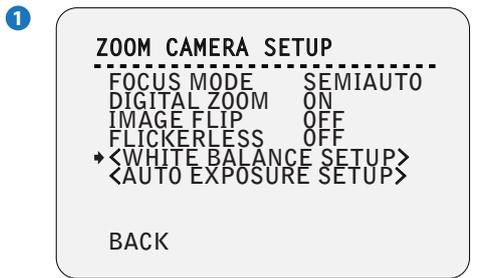
- ⊗ If there are rules conflicts to each other, the higher number is the higher priority has.
- ⊗ If you assign undefined function, there will be no action.
- ⊗ Using reserved preset, you can make various schedules. For example, PRS179 and PRS178 are 'DAY' and 'NIGHT' mode respectively.

EX) The camera will move to 'Preset 127' at 12:00 on every Wednesday although 'Preset 128 and 127' were set at 12:00 on every Wednesday.

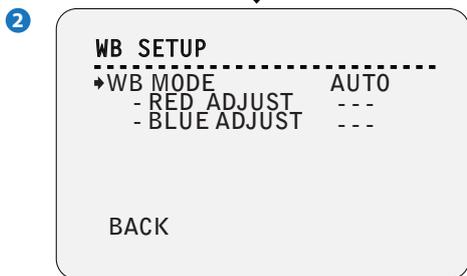
```

SCHEDULE SETUP
-----
MASTER ENABLE      OFF
DAY TIME           ACT NO ON
1 ALL 12:00 PRS 128 ON
2 WED 12:00 PRS 127 ON
3 UNDEFINED
4 UNDEFINED
5 UNDEFINED
    
```

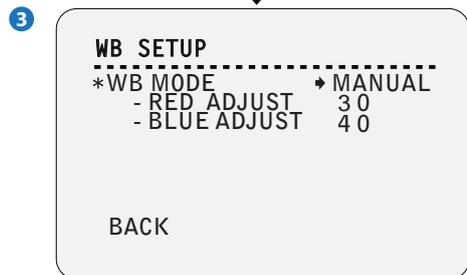
# 7 OSD - CAMERA SETUP > WB SETUP



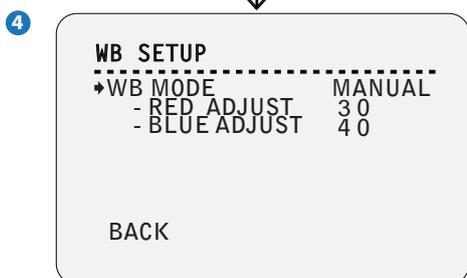
Click the Enter Button



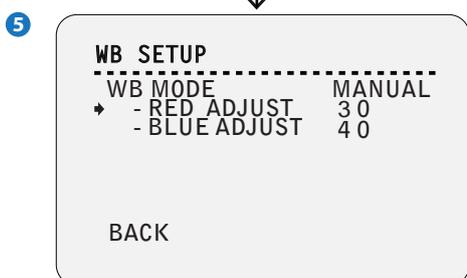
Click the Enter Button,  
Click the Down Button



Click the Enter Button



Click the Down Button



## 1 ZOOM CAMERA SETUP

Setup the general functions of zoom camera module.

**FOCUS MODE** AUTO / MANUAL / SEMIAUTO

Sets the camera focus mode.

- **SEMIAUTO:** This mode exchanges the focus mode automatically between manual focus mode and auto focus mode. Manual focus mode activates in preset operation and auto focus mode activates when jog operation starts.

- **MANUAL:** With manual mode at presets, focus data is memorized in each preset in advance and camera calls focus data in correspondence with presets as soon as camera arrives at a preset.

**DIGITAL ZOOM** ON / OFF

Sets digital zoom function to 'ON' or 'OFF'. If this is set to 'OFF', optical zoom function runs but zoom function stops at the end of optical zoom magnification.

**IMAGE FLIP** ON / OFF

Sets if the image should be reversed or not.

**FLICKERLESS** ON / OFF

Turns on or off the flickerless function. In this function, AE mode becomes shutter priority mode and shutter speed value will be fixed to 1/100 sec.

<WHITE BALANCE SETUP>

Starts 'WHITE BALANCE SETUP' setup screen.

<AUTO EXPOSURE SETUP>

Starts 'AUTO EXPOSURE SETUP' setup screen.

## 2 WB SETUP

**WB MODE** AUTO / MANUAL / ATW / AWC / OUTDOOR / INDOOR

- **AUTO:** Camera perform white balance automatically.

- **Manual:** R/B gain level can be set up manually.

- **ATW:** Auto White Balance is performed in the wider range of color temperature than that of the 'AUTO' mode.

- **AWC:** When right direction key is clicked, one time white balance is performed for current illumination condition and the value is kept.

- **INDOOR:** WB will be done under assumption of Indoor illumination.

- **OUTDOOR:** WB will be done under assumption of Sun light.

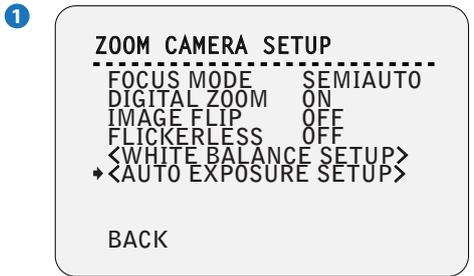
**RED ADJUST** 0 ~ 255

**BLUE ADJUST** 0 ~ 255

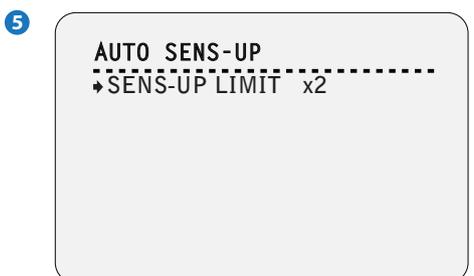
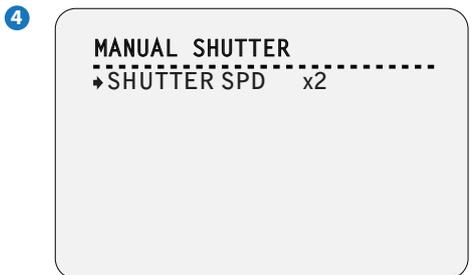
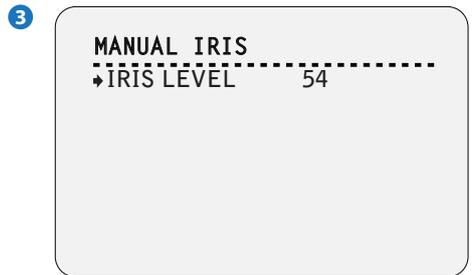
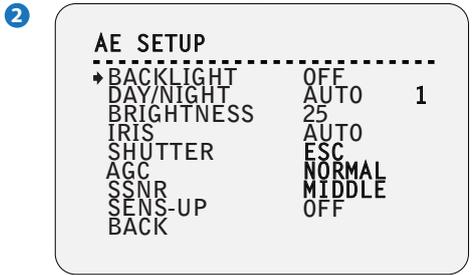
## 3 WB SETUP - Set WB Mode to Manual

If WB mode changes to 'MANUAL', the value of 'RED ADJUST' and 'BLUE ADJUST' shows on the screen.

# 7 OSD - CAMERA SETUP > AE SETUP



Click the Enter Button



2 AE SETUP  
Set up the video related function of zoom camera module.

**BACKLIGHT** HIGH / MIDDLE / LOW / OFF  
Using this function, the backlight effect, which the object displays dark on the monitor when there is intensive backlight, can be improved.

**DAY/NIGHT** AUTO1 / AUTO2 / DAY / NIGHT  
'AUTO' exchanges day/night. 'AUTO1' exchanges day/night mode faster than 'AUTO2'.

**BRIHGTHNESS** 0~100 (101 steps)  
Adjusts the brightness of images.

**IRIS** AUTO / MANUAL  
- If iris is set to 'AUTO', iris should have highest priority in adjusting AE and shutter speed should be fixed.  
- If iris is set to 'MANUAL', iris should be fixed and iris has lower priority in adjusting AE, in comparison with others.

**SHUTTER** A.FLICKER / MANUAL / ESC  
- If iris is set to 'MANUAL' and shutter speed is set to 'ESC', shutter speed should have highest priority.  
- Shutter speed is set to 'A. FLICKER', to remove flicker, shutter speed should be set to 1/100 sec. for NTSC and 1/120 for PAL.

**AGC** HIGH / NORMAL / OFF  
Enhances the image brightness automatically in case that luminance level of image signal is too low.

**SSNR** HIGH / MIDDLE / LOW / OFF  
Enhances the images by deducting noises when gain level of images is too high.

**SENS-UP** AUTO / OFF  
- Activates the slow shutter function when luminance of image (signal) is too dark.  
- It is possible to set up the maximum number of frames piled up one on another by Slow Shutter function.

3 MANUAL IRIS SCREEN

**IRIS LEVEL** 0 ~ 100 (101 steps)

4 MANUAL SHUTTER SCREEN

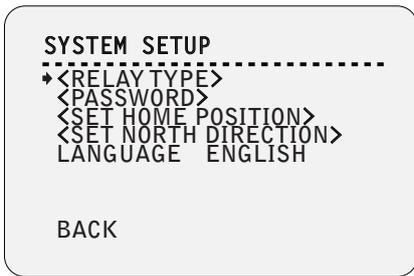
**SHUTTER SPD** x128 / x64 / x32 / x24 / x16 / x24 / x12 / x10 / x8 / x6 / x4 / x2 / 1/60 / 1/120 / 1/250 / 1/500 / 1/700 / 1/1000 / 1/1600 / 1/2500 / 1/5000 / 1/7000 / 1/10000 / 1/30000 / 1/60000 / 1/120000 (26 steps)

5 AUTO SENS-UP SCREEN

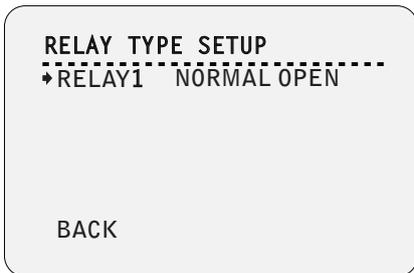
**SENS-UP LIMIT** x2 / x4 / x6 / x10 / x12 / x14 / x16 / x24 / x32 / x64 / x128 (11 steps)

# 7 OSD - SYSTEM SETUP

1



2



3



1 SYSTEM SETUP

<RELAY TYPE>  
Start 'RELAY TYPE' setup.

<PASSWORD>  
Start 'PASSWORD' setup.

<SET HOME POSITION>  
Starts 'SET HOME POSITION' setup.

<SET NORTH DIRECTION>  
Starts 'SET NORTH DIRECTION' setup.

LANGUAGE ENGLISH / ESPAÑOL / FRANÇAIS / DEUTSCH  
/ ITALIANO / РУССКИЙ / PORTUGUÊS

You can select a preferred Language of OSD display from 7 choices.  
After selecting a language, click the enter button.

2 RELAY TYPE SETUP

RELAY 1 NORMAL OPEN(N.O) / NORMAL CLOSE(N.C)  
Select type.

3 EDIT PASSWORD

Sets the 4 characters long password. If this function is set to 'ENABLE', the password is required whenever you enter OSD menu.

⊠ The default password is '4321' and the master password is '- - - g'.

# 7 OSD - SYSTEM SETUP

5

## SET HOME POSOTION

MOVE TO TARGET POSITION  
[NEAR:SELECT/FAR:CANCEL]  
0/0/x1/E

6

## SET NORTH DIRECTION

MOVE TO TARGET POSITION  
[NEAR:SELECT/FAR:CANCEL]  
0/0/x1/N

### 5 SET HOME POSITION

Home position means the origin of pan angle calculation. The value of pan angle displayed on the screen is based on this home position.

By using the pan-tilt wheel button, move the camera to the desired position and click the enter button.

Home is not effective to tilt angle.

If you change the location of the home position, all horizontal location of functions such as preset, scan, pattern, group and privacy zone mask will be shifted based on the changed home position.

If there are no setup for those functions like preset, pattern, scan, group camera will automatically move to home position after rebooting.

If power up action is set to be on, camera will continue the function which is executed lastly after rebooting.

#### ⊠ Set Home Position?

When you replace the camera block or the orientation of camera is changed due to maintenance operations, it is very difficult to maintain the same pan orientation. Therefore, all function data maintain on pan orientation such as preset, scan, pattern, group and privacy zone mask are not useful any more accordingly.

However, even in this case, you can reuse the data if you redefine set home position on the previous home position.

### 6 SET NORTH DIRECTION

By using the pan-tilt wheel button, move the camera to the desired north position and click the enter button.

Direction will be displayed on the right-bottom of the screen, pan is '0' and direction is 'N'.

[NEAR:SELECT/FAR:CANCEL]  
0/0/x1/N

Direction will be displayed from:

N(North) / S(South) / E(East) / W(West) / NE(Northeast) /  
NW(Northwest) / SE(Southeast) / SW(Southwest).

# 7 OSD - SYSTEM INITIALIZE

SYSTEM INITIALIZE	
◆ CLEAR ALL DATA	NO
■ CLR DISPLAY SET	NO
■ CLR CAMERA SET	NO
■ CLR MOTIOM SET	NO
■ CLR FUNCTION SET	NO
REBOOT CAMERA	NO
REBOOT SYSTEM	NO
BACK	
EXIT	

## SYSTEM INITIALIZE

<b>CLEAR ALL DATA</b>	YES / NO	
Deletes all configuration data such as display, camera, motion setup and so on.		
<b>CLR DISPLAY SET</b>	YES / NO	
Initializes display configuration.		
<b>CLR CAMERA SET</b>	YES / NO	
Initializes camera configuration.		
<b>CLR MOTION SET</b>	YES / NO	
Initializes motion configuration.		
<b>CLR FUNCTION SET</b>	YES / NO	
Deletes preset data, scan data, pattern data, group data and schedule data.		
<b>REBOOT CAMERA</b>	YES / NO	
Reboots zoom camera module.		
<b>REBOOT SYSTEM</b>	YES / NO	
Reboots speed dome camera.		

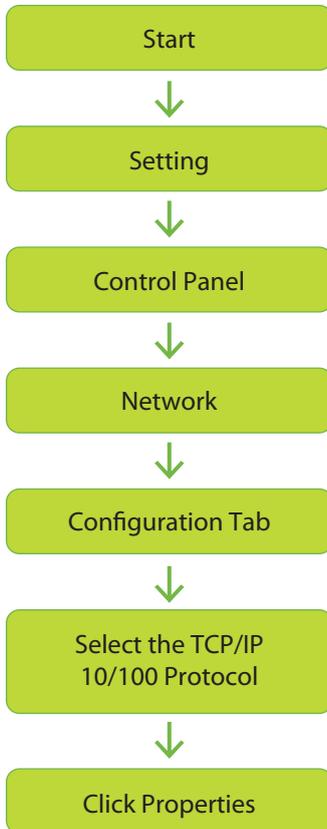
## ※ Initial Configuration Table

<b>Camera ID</b>	ON	
<b>PTZ Information</b>	AUTO	
<b>Action Title</b>	AUTO	
<b>Preset Label</b>	AUTO	Display
<b>Alarm I/O</b>	AUTO	
<b>Date/Time</b>	ON	
<b>Privacy Zone</b>	Undefined	
<b>Preset Lock</b>	OFF	
<b>Power Up Action</b>	ON	
<b>Auto Flip</b>	ON	
<b>Jog Max Speed</b>	140°/sec	Motion
<b>Jog Direction</b>	NORMAL	
<b>Freeze In Preset</b>	OFF	
<b>Park Action</b>	OFF	
<b>Alarm I/O Action</b>	OFF	
<b>Preset 1~255</b>	Undefined	
<b>Auto Pan 1~8</b>	Undefined	
<b>Pattern 1~4</b>	Undefined	Function
<b>Scan 1~8</b>	Undefined	
<b>Schedule 1~7</b>	Undefined	
<b>Focus Mode</b>	SEMIAUTO	
<b>Digital Zoom</b>	OFF	
<b>Image Flip</b>	OFF	
<b>Flickerless</b>	OFF	
<b>White Balance</b>	AUTO	
<b>Backlight</b>	OFF	
<b>Day/Night</b>	AUTO 1	Camera
<b>Brightness</b>	25	
<b>IRIS</b>	AUTO	
<b>Shutter</b>	ESC	
<b>AGC</b>	NORMAL	
<b>SSNR</b>	MIDDLE	
<b>Sens-up</b>	OFF	
<b>Protocol</b>	AUTO	Communication
<b>Baud Rate</b>	2400	

# 8 Appendix A : Current TCP/IP Settings

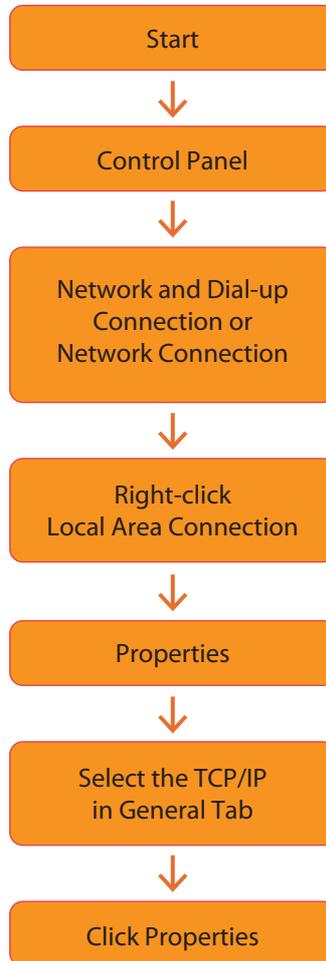
**i** If your IP settings are obtained automatically, you could use the MS-DOS prompt (or Command Prompt) to determine your IP address. For information on how to do this, please read the FAQ.

## 1. Windows 98 / ME Users



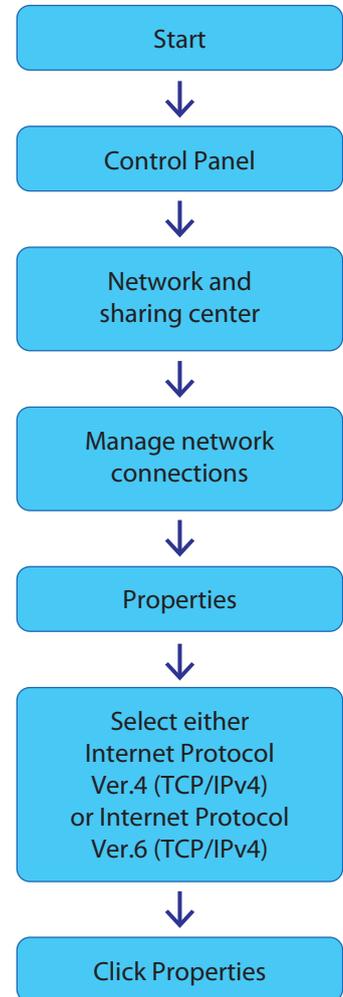
Note the settings under the IP Address, DNS Configuration, and Gateway tabs

## 2. Windows 2000 or XP Users



Under the 'General' tab of the TCP/IP Properties you will see your IP address information.

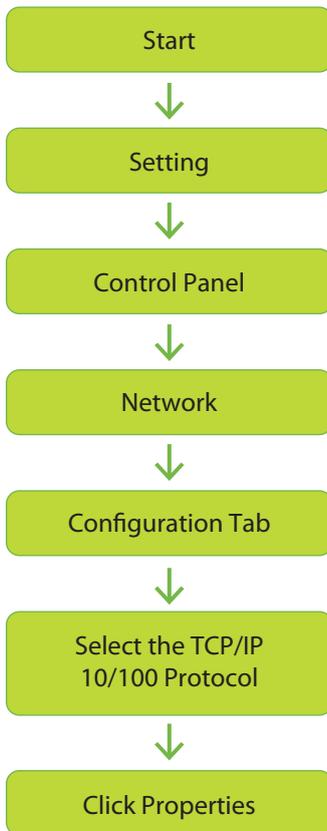
## 3. Windows Vista or 7 Users



Under the 'General' tab of the TCP/IP Properties you will see your IP address information.

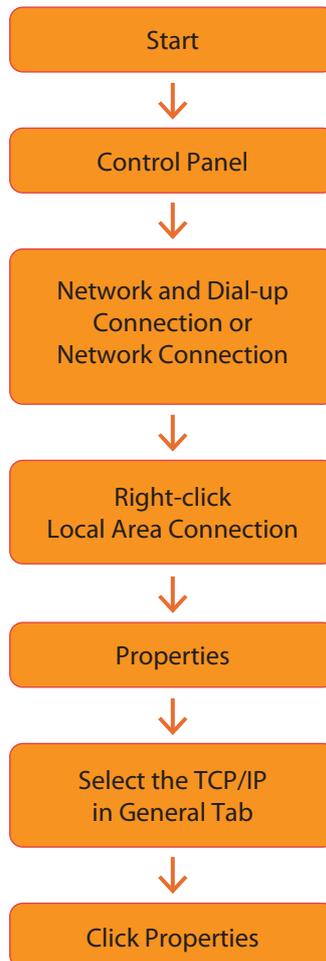
# 8 Appendix - 8 B : Changing IP address and subnet mask

## 1. Windows 98 / ME Users



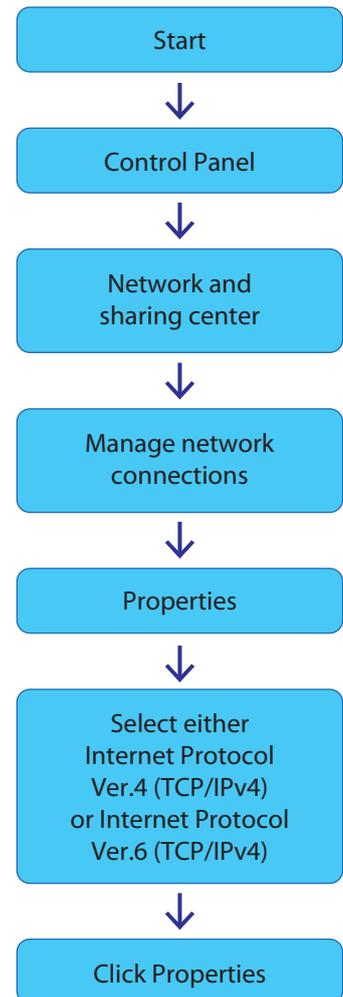
Select 'Use the following IP address' and change the IP address and Subnet Mask.

## 2. Windows 2000 or XP User



Select 'Use the following IP address'

## 3. Windows Vista or 7 Users



Select 'Use the following IP address'

# 8 Appendix - C : Port Forwarding

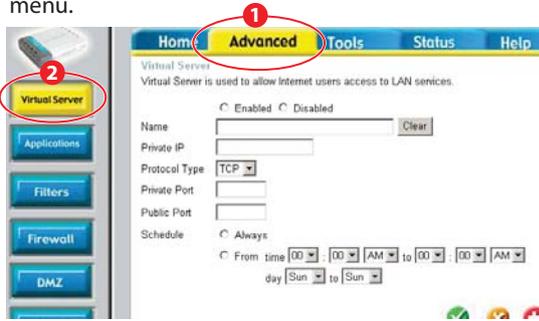
After assigning the IP Speed Dome a web server port and video server port you must use Port Forwarding (for cases A, B)

Please consult your router's user guide on how to correctly configure Port Forwarding.

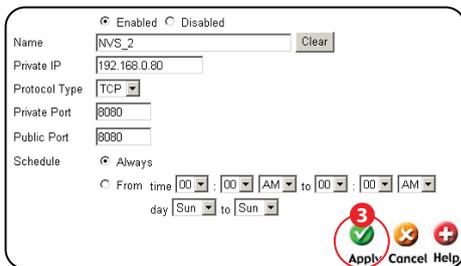
For your convenience, we have provided two example configurations.

## 1. For D-Link DI-604 broadband routers:

- 1) Open a web browser and type http://192.168.0.1 into your Address bar. (the default IP address to access the router)
- 2) You will have to supply your User Name and Password to log onto the router. Default from factory. (User Name: admin Password: [leave blank])
- 3) Select the "1 Advanced" tab and click "2 Virtual Server" menu.



- 4) Click "3 Apply" button after inputting proper values. The example is as below



Enabled / Disabled	Select "Enabled".
Name	Input IVS name.
Private IP	Input IVS address.
Protocol Type	Select "TCP".
Private Port / Public Port	Input IVS Web Server Port.
Schedule	Select "Always"

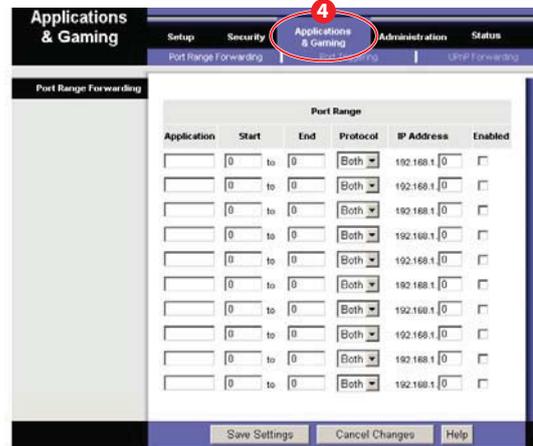
- 5) If 'Setting Saved' shows, click [Continue] button.
- 6) With the same method as above, add Video Server Port.
- 7) The Web Server Port, Video Server Port and 2 Audio Ports shows in "Virtual Server List" as below.

Virtual Servers List

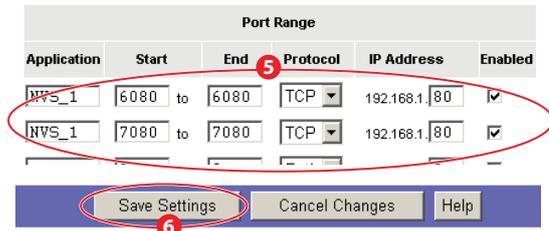
Name	Private IP	Protocol	Schedule
✓ NVS_2	192.168.0.80	TCP 8080/8080	always
✓ NVS_2	192.168.0.80	TCP 7777/7777	always
✓ NVS_2	192.168.0.80	TCP 7778/7778	always
✓ NVS_2	192.168.0.80	TCP 7779/7779	always
✓ NVS_2	192.168.0.80	TCP 7780/7780	always

## 2. For Linksys BEFSR41 Cable/DSL routers:

- 1) Open a web browser and type http://192.168.1.1 into you Address bar (the default IP address to access the router)
- 2) You will have to supply your User Name and Password to log onto the router. Default from factory (User Name:[leave blank] Password: admin)
- 3) Select "4 Applications & Gaming" from the menu bar.



- 4) Input port numbers in "5 Port Range" as below and click "6 Save Setting" button. Both of Web Server Port and Video Server Port should be added. The example is as below.



Application	Input IP Speed Dome name.
Start / End	Input IP Speed Dome Web Server Port and Video Server Port. Start should be same as End. Both of Web Server Port and Video Server Port should be added.
Protocol	Select "TCP" in Protocol option.
IP Address	Input IP Speed Dome IP Address.
Enabled	Check the square.

# 8 Appendix - C : Port Forwarding

### 3. For Netgear RP614 routers:

- 1) Input http://192.168.0.1 in address bar of web browser.  
http://192.168.0.1 is the default IP address.
- 2) If it asks ID and password, input admin as ID and password as password.
- 3) Click "Port Forwarding" in "Advanced".
- 4) Click "➊ Add Custom Service" button in Port Forwarding page.

#### Port Forwarding

Service Name: SERVICES | Server IP Address: 192.168.0.1 | Add

#	Enabled	Service Name	Start Port	End Port	Server IP Address
	<input type="checkbox"/>				

Buttons: Add Custom Service (circled with 1), Edit Service, Delete Service

Buttons: Apply, Cancel

- 5) Input proper values in "Ports - Custom Services" page as below.

#### Ports - Custom Services

Enable

Service Name:

Starting Port:  (1 ~65535)

Ending Port:  (1 ~65535)

Server IP Address: 192.168.0.1

Buttons: Add (circled with 2), Cancel

Enable	Check it.
Service Name	Input IP Speed Dome name.
Starting/ Ending Port	Input IP Speed Dome Web Server port. Starting Port should be same as Ending Port.
Server IP Address	Input IP Speed Dome IP Address.

- 6) Click "➋ Add" button.
- 7) With the same method as above, add Video Server Port.
- 8) Click "Apply" button to finish Port Forwarding.

## 1. My POWER light is not on?

Power is not being supplied to the unit. Please use the power supply shipped with the unit and verify that a power source is active from the attached power outlet used to connect the adapter. You can test this by plugging in any other electrical device and verify its operation. After using the power supply shipped with the product, checking the power source, and reinserting the power connector into the IP Camera, please call our Support Center. The power supply may be defective.

## 2. My ACTIVE light is not flashing?

Verify the power supply to the unit. Power off the unit and back on again, wait 1 minute, if the ACTIVE light still does not begin to flash, you will have to set the unit to its factory default (THIS WILL DELETE ANY CONFIGURATION AND SET THE UNIT TO THE FACTORY DEFAULTS). Power on the unit and insert the end of a paper clip into the small recessed opening on the back of the unit. Use the clip to press the button located within that opening.

## 3. My LINK light is not flashing or solid?

Verify the cable connection. 99% of the time the cable's connection to the unit is causing this problem. Try using a different network cable or crossover cable (for PC connection only). Try reinserting the cable, if this still doesn't solve the problem call our Support Center.

## 4. I can access the video server on my LAN, but not from the Internet.

Verify that your router (if applicable) has port forwarding properly configured. If accessing from our DDNS service, verify correct serial number. Firewall issues may prevent user access.

## 5. How do I open an MS-DOS or Command Prompt?

- Windows 98 / ME Users :  
Start > Programs > Accessories > MS-DOS prompt
- Windows 2000 / XP Users :  
Start > (All) Programs > Accessories > Command Prompt

## 6. How do I find out my IP address information if my settings were automatically detected?

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### Windows 98 / ME Users

- 1) Open an MS-DOS Prompt
- 2) At the prompt type: "winipcfg" (without the quotation marks)
- 3) Use the drop down list to select your 10/100 Ethernet Adapter (not a PPP adapter)
- 4) Now you will see your IP Address, Subnet Mask, and Default Gateway information
- 5) For DNS information contact your Internet Service Provider

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### Windows 2000 / XP Users

- 1) Open a Command Prompt
  - 2) At the prompt type - "ipconfig /all" (without the quotes)
  - 3) Near the end of the information supplied, should be your current IP address, subnet mask, default gateway and DNS servers
- 

## 7. I can't connect!!

In the case of a connection failure.

Modem Reboot > Modem Reboot Finished > Router Reboot > Router Reboot Finished > IP Camera Reboot > IP Camera Reboot Finish > Verify DDNS and IP Camera connection, if applicable.

## 8. How do I "PING" an IP address?

- 1) Open an MS-DOS (or Command) prompt
- 2) At the prompt type - "ping xxx.xxx.xxx.xxx" (without the quotes and replace the "x"s with an IP address)
- 3) Press Enter

## 9. I'm accessing my video server remotely over the Internet and the video stream is choppy, is this normal?

Yes. The frames per second received remotely are determined by your bandwidth capabilities both at your site where the IP Camera is installed and your remote location. The lower of the two sites will determine how fast your video stream is received. It is recommended to have at least a 256Kb/sec upstream connection from the site where the IP Camera is installed. Lower speeds will operate properly, but provide poor remote performance. The Faster the Internet connection at both ends, the faster the video stream.

## 10. How do I enable or check ActiveX on my browser

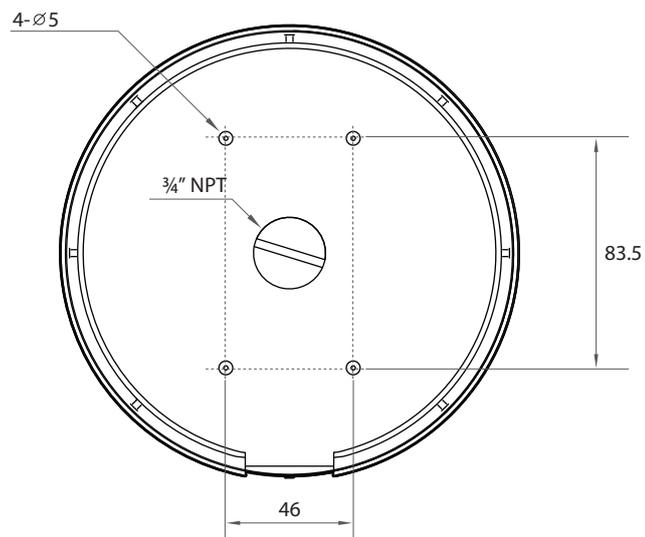
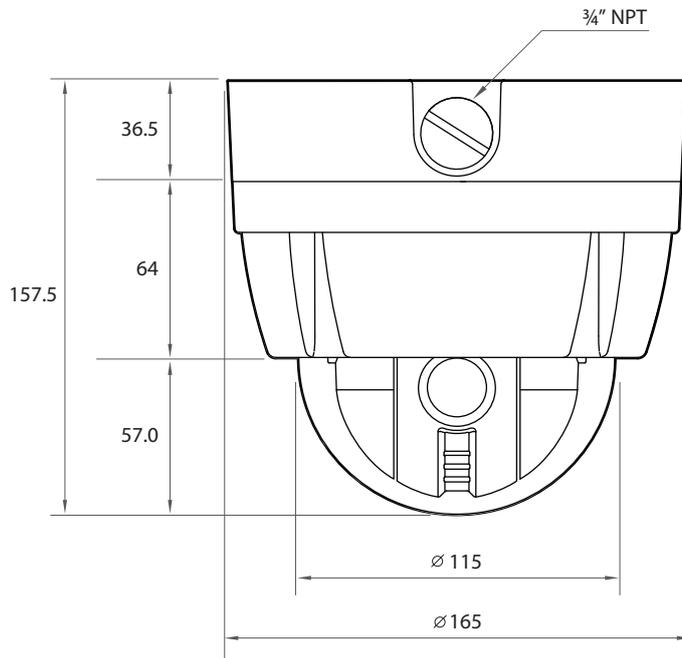
Open Internet Explorer > Tools on the menu bar > Internet Options > Security Tab > Custom Level > Scroll down and verify that you are prompted or have enabled ActiveX controls and plug-ins to be downloaded and executed. > click OK > restart browser.

## 11. How do I reset the unit to factory defaults?

On the underside of the unit you will find a recessed opening located near the top-left side of the label. Power ON the unit and use a paper clip to push the reset button within that opening. You should then see the ACTIVE light turn off and after a few seconds the ACTIVE light will begin to flash, signifying a successful reboot. If the ACTIVE light does not turn off after depressing the reset button, please try holding the button in for a few seconds and releasing. YOU WILL LOSE ALL DATA THAT HAD BEEN ENTERED PREVIOUSLY AND THE IP CAMERA WILL BE SET TO ITS FACTORY RESETS.

# 10 Specifications - Dimension

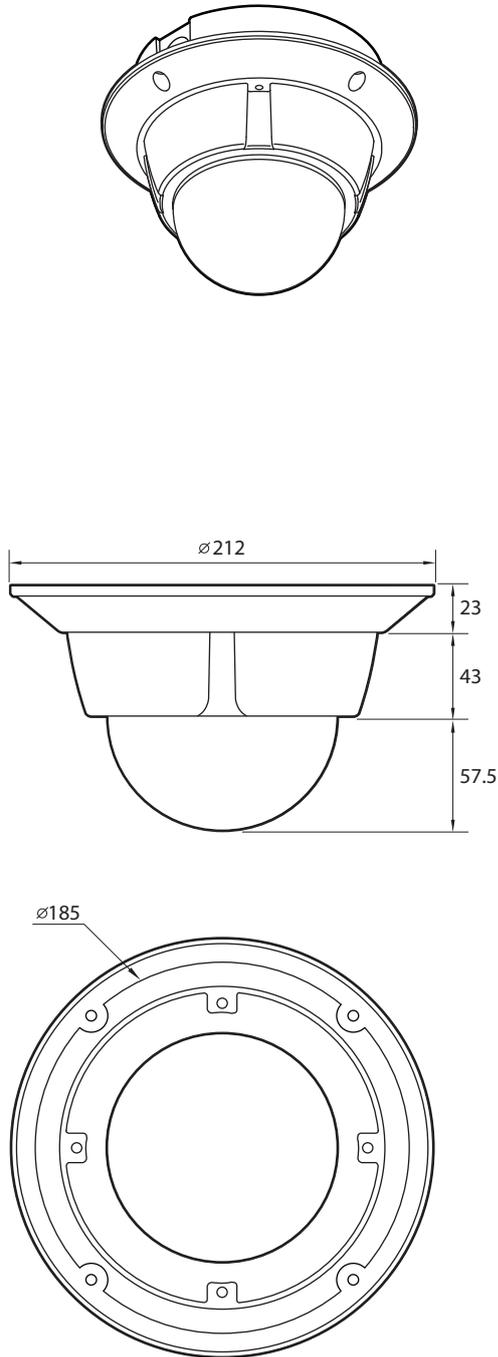
Unit: mm



# 10 Specifications - Dimensions of Option Brackets

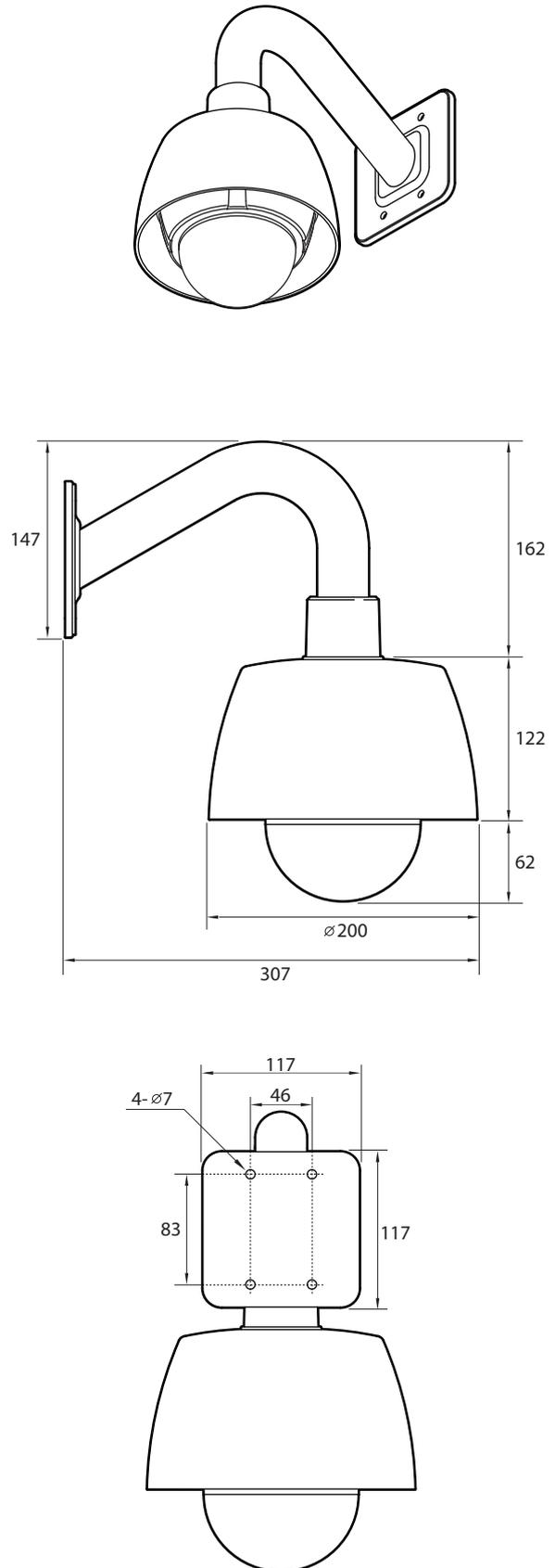
1. Flush Mount Ring Bracket

Unit: mm



2. Sun Shield Mount Bracket

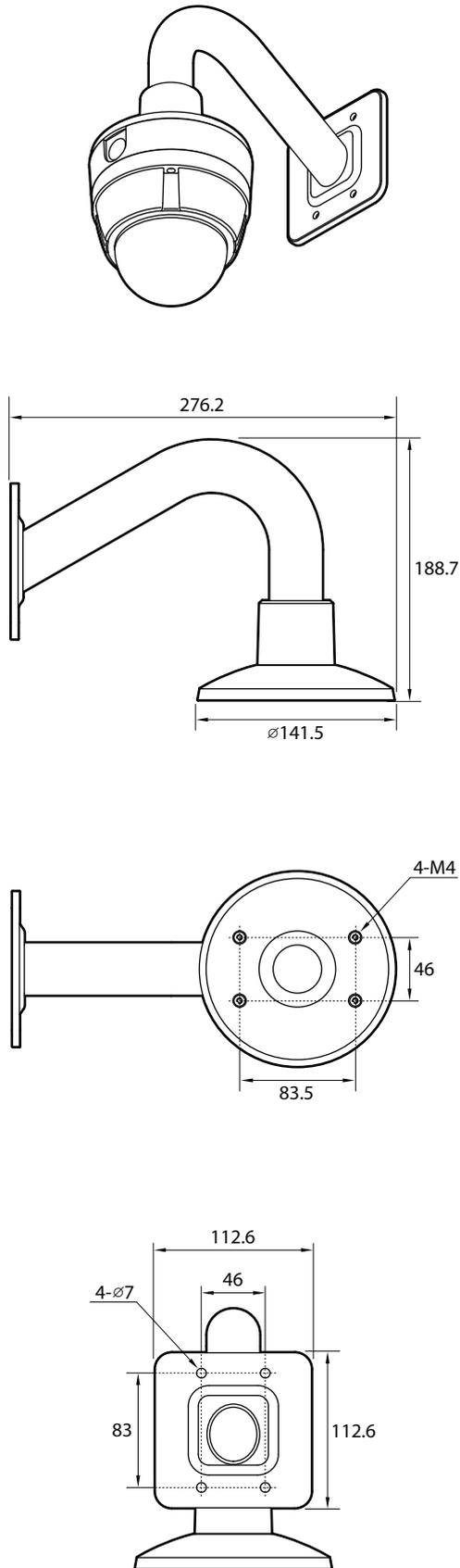
Unit: mm



# 10 Specifications - Dimensions of Option Brackets

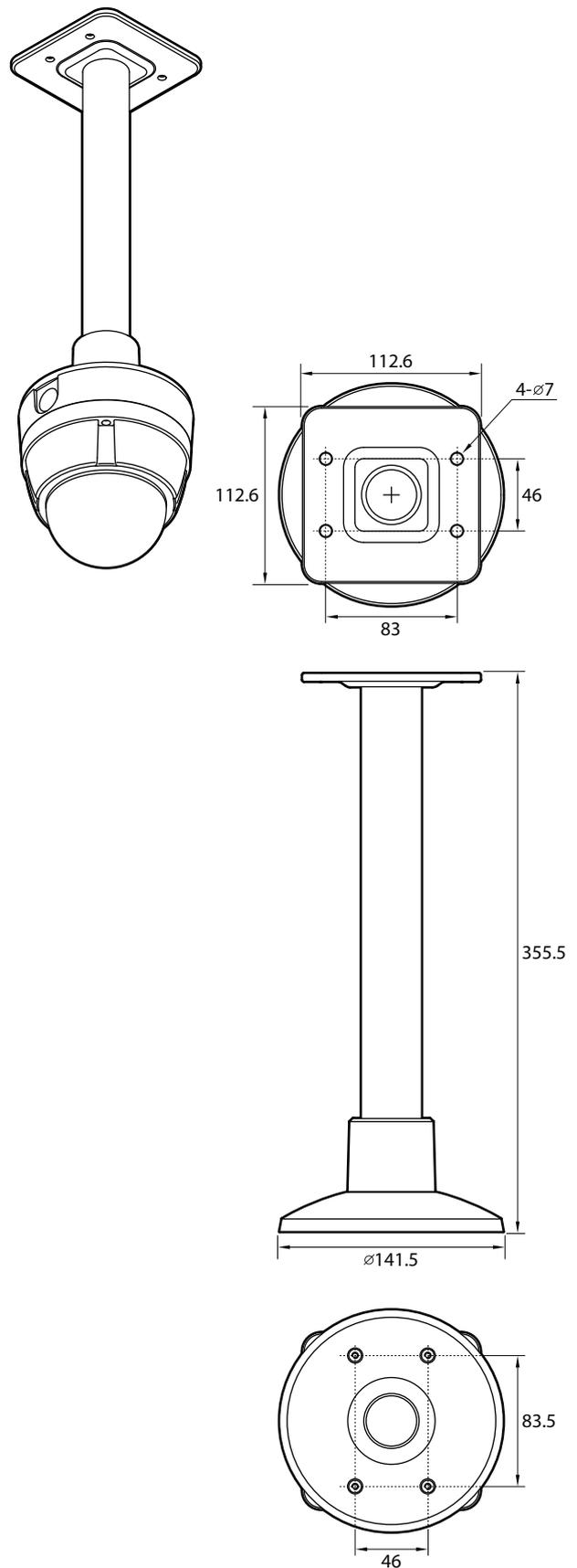
3. Wall Mount Bracket

Unit: mm



4. Ceiling Mount Bracket

Unit: mm



# 10 Specifications - Specification

## Camera

Image Device	1/4" Sony Ex-View CCD
Total Pixel	<b>NTSC</b> : 811 (H) × 508 (V) 410K Pixels • <b>PAL</b> : 795 (H) × 596 (V) 470K Pixels
Effective Pixel	<b>NTSC</b> : 768 (H) × 494 (V) 380K Pixels • <b>PAL</b> : 752 (H) × 582 (V) 440K Pixels
H. Resolution	Color: 500 TV Lines • B/W: 570TV Lines
S/N Ratio	50dB (AGC Off)
Zoom	x10 Optical Zoom & x10 Digital Zoom (Total x100)
Focal Length	f = 3.8 (W) ~ 38 (T) mm, F1.8 (W) ~ 2.1 (T)
Angle of View	H: 51.2° (W) ~ 5.58° (T) • V: 39.3° (W) ~ 4.27° (T)
Min. Illuminance	Color: 0.7 Lux (Sens up Off), 0.0055 Lux (Sens up x128) @ 50 IRE B/W: 0.02 Lux (Sens up Off), 0.00016 Lux (Sens up x128) @ 50 IRE
Shutter Speed	<b>NTSC</b> : x128 ~ x2, 1/60 ~ 1/120,000 sec. • <b>PAL</b> : x128 ~ x2, 1/50 ~ 1/120,000 sec.
Day & Night	Auto1 / Auto2 / Day / Night (ICR)
Focus	Auto / Manual / Semi-Auto
Iris	Auto / Manual
White Balance	AUTO / ATW / AWC / OUTDOOR / INDOOR / Manual(Red&Blue Gain adjustable)
AGC	High / Normal / Off
SSNR(DNR)	High / Middle / Low / Off
Backlight	High / Middle / Low / Off
Other Functions	Frame Freeze Function, System Image Flip by Installation Type

## Pan/Tilt

Pan Range	360° (Endless)
Tilt Range	0° ~ 180° (Auto-Flip On) • 0° ~ 90° (Auto-Flip Off)
Pan/Tilt Speed	Preset: 360° Scan: 1° ~ 180°/sec. Manual: 0.05° ~ 360°/sec. (Zoom Proportional)
Preset	255 Presets with Labels / Independent Camera Setup
Pattern	4 Patterns
Scan	8 Scans
Group	8 Groups (Max. 20 Entities per Group)
Schedule	7 Rules (Condition: Day, Time → Action: Preset, Scan, Group, Pattern)
Other Functions	Image Auto Flip, Auto Parking, Power-up Action & etc.

## General

Video Out	VBS 1.0 V p-p / 75Ω / BNC
Communication	RS-485
Protocol	Auto, Pelco-D/P, Samsung, Panasonic, GE(Kalatel), AD(American Dynamics) Selectable
Privacy Zone	8 Zones
Sensor In/Out	Built-in 2 Input / 1 Relay Output
OSD	Menu, PTZ Information, etc., Support 7 Languages: ENGLISH / ESPAÑOL / FRANÇAIS / DEUTSCH / ITALIANO / РУССКИЙ / PORTUGUÊS
Power	DC12V/12W(Fan&Heater models:22W), PoE IEEE802.3af Class 0
Approvals	FCC, CE, IP66, RoHS
Outdoor Housing	Weather Proof, Vandal Proof Structure, White Pearl Color
Material	Body: Aluminum Die-casting • Clear Bubble: Polycarbonate
Weight	1.9Kg
Operating Temp.	-10° ~ 50° C (14° ~ 122° F)

# 10 Specifications - Network Specification

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<b>OS</b>	Embedded Linux
<b>Video Compression</b>	H.264 / MPEG4 / MJPEG
<b>Video Streaming</b>	VBR / CBR (Controllable Bandwidth)
<b>Resolution</b>	<b>NTSC</b> : 4CIF (704 × 480) / CIF (352 × 240) / QCIF (176 × 128) <b>PAL</b> : 4CIF (704 × 576) / CIF (352 × 288) / QCIF (176 × 144)
<b>Frame Rate</b>	<b>NTSC</b> : Max. 30 fps for all Resolutions. 30, 25, 20, 15, 10, 5, 1 Selectable <b>PAL</b> : Max. 25 fps for all Resolutions. 25, 20, 15, 10, 5, 1 Selectable
<b>Image Settings</b>	Quality, Brightness
<b>Audio Streaming</b>	Two-way, G.711 PCM, 16 kHz
<b>Local Storage</b>	SDHC Memory Card (Card Not Included)
<b>Motion Detection</b>	Notification: FTP, E-mail, Alarm out, JPEG Recording on SD
<b>Alarm</b>	Pre-Post Alarm
<b>Number of Clients</b>	Max. 5
<b>IPv4 Protocol</b>	TCP/IP, UDP/IP, RTP(UDP), RTSP, NTP, HTTP,HTTPS, SSL, DNS, DDNS, DHCP, FTP, SMTP, ICMP, SNMPv1/v2c/v3(MIB-2)
<b>IPv6 Protocol</b>	TCP/IP, HTTP, HTTPS, SSL, DHCP
<b>Security Protocol</b>	HTTPS(SSL), Digest Authentication (ID/PW)
<b>OS Supported</b>	Windows 7, Vista, XP, 2000