SAMSUNG TECHWIN

# NETWORK CAMERA

User Manual

SNO-7082R

CE

SAMSUNG

# Network Camera

User Manual

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- **Design and specifications are subject to change without prior notice.**
- **The initial administrator ID is "admin" and the password should be set when logging in for the first time. Please change your password every three months to safely protect personal information and to prevent the damage of the information theft.**
  **Please, take note that it's a user's responsibility for the security and any other problems caused by mismanaging a password.**

## IMPORTANT SAFETY INSTRUCTIONS



1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings, Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, 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 the 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 lighting 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.

## WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECT THROUGH THE VENTILATION GRILLS OR OTHER OPENNINGS ON THE EQUIPMENT.

Apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

To prevent injury, this apparatus must be securely attached to the Wall/ceiling in accordance with the installation instructions.

## CAUTION

**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.**

## EXPLANATION OF GRAPHICAL SYMBOLS

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

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

## Battery

Batteries(battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.

## Disconnection Device

Disconnect the main plug from the apparatus, if it's defected. And please call a repair man in your location.

**When used outside of the U.S., it may be used HAR code with fittings of an approved agency is employed.**

## CAUTION

Risk of explosion if battery is replaced by an incorrect type.
Dispose of used batteries according to the instructions.

These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

The BNC Out terminal of the product is provided for easier installation, and is not recommended for monitoring purposes.
If you keep the BNC cable connected, a risk of lightening may cause damage or malfunction to the product.

Please use the input power with just one camera and other devices must not be connected.

**The ITE is to be connected only to PoE networks without routing to the outside plant.**

# overview

Please read the following recommend safety precautions carefully.

- Do not place this apparatus on an uneven surface.
- Do not install on a surface where it is exposed to direct sunlight, near heating equipment or heavy cold area.
- Do not place this apparatus near conductive material.
- Do not attempt to service this apparatus yourself.
- Do not place a glass of water on the product.
- Do not install near any magnetic sources.
- Do not block any ventilation openings.
- Do not place heavy items on the product.

User's Manual is a guidance book for how to use the products.

The meaning of the symbols are shown below.

- Reference : In case of providing information for helping of product's usages
- Notice : If there's any possibility to occur any damages for the goods and human caused by not following the instruction

※ Please read this manual for the safety before using of goods and keep it in the safe place.

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# PRODUCT FEATURES

- **Dustproof/Waterproof (IP66)**
  The dustproof and waterproof design makes you feel at ease when installing the product outdoors or exposing it to rain.
- **SSNR3 (Samsung Super Noise Reduction)**
  The high-performance DSP chip effectively removes the GAIN noise of low light level and shows a clear and sharp image even in dark places.
- **Day & Night (ICR)**
  It automatically detects the time change of the day to switch to a mode that is appropriate to the current scene. In a daylight scene, it switches to the color mode for maintaining the optimal color tones while it, at night, switches to B/W mode for identifying the low contrast scene.
- **IR mode**
  If the IR indicator turns on, the product switches to the IR mode for preventing an object from being too bright, which helps you identify the object in near distance.
- **Visibility: 30m**
  In B/W mode, the IR indicator turns on with the effective visibility of 30m at 0 Lux.
- **SSDR (Samsung Super Dynamic Range)**
  For a scene showing a great contrast difference such as backlight scene, the product maintains the bright areas while selectively making the dark areas brighter to balance the overall contrast.
- **Others**
  Other features include: HLC (High Light Compensation), SENS-UP, V-REV, H-REV, D-ZOOM, SHARPNESS, Motion Detection, PRIVACY.
- **Full HD Video Quality**
- **Multi-Streaming**
  This network camera can display videos in different resolutions and qualities simultaneously using different CODECs.
- **Web Browser-based Monitoring**
  Using the Internet web browser to display the image in a local network environment.
- **Alarm**
  If an event occurs, the event-related video will be transferred to the FTP/email specified by the user or saved to the SD memory, or the event signal will be sent to the Alarm Out port.
- **Built-in SD Memory**
  This product is equipped with an internal 4GB memory card.
- **Tampering Detection**
  Detects tempering attempts on video monitoring.

- **Motion Detection**
  Detects motion from the camera's video input.
- **Intelligent Video Analysis**
  Analyzes video to detect logical events of specified conditions from the camera's video input.
- **Face Detection**
  Detects faces from the camera's video input.
- **Audio Detection**
  Detects sound louder than a certain level specified by user.
- **Auto Detection of Disconnected Network**
  Detects network disconnection before triggering an alarm.
- **ONVIF Compliance**
  This product supports ONVIF.
  For more information, refer to www.onvif.org.

Driving network video through global standardization

## RECOMENDED PC SPECIFICATIONS

- CPU : Intel Core 2 Duo 2.4GHz or higher
  - Web Plug-in is optimized to SSE 4.1 Instruction Set.
- Operating System : Windows XP, VISTA, 7, Mac OS
- Resolution : 1280X1024 pixels or higher (32 bit color)
- RAM : 2GB or higher
- Web Browser : Internet Explorer 7.0 or Higher, Firefox 9.0 or Higher, Chrome 15.0 or Higher, *Safari 5.1 or Higher
  - Neither a beta test version unlike the version released in the company website nor the developer version will be supported.
  - It is recommended to connect to IPv6 in Windows 7.
  - For Mac OSX, only the Safari browser is supported.
- Video Memory : 256MB or higher

- If the driver of the video graphic adapter is not installed properly or is not the latest version, the video may not be played properly.
- For a multi-monitoring system involving at least 2 monitors, the playback performance can be deteriorated depending on the system.

## RECOMENDED SD/SDHC MEMORY CARD SPECIFICATIONS

- 4GB ~ 32GB
- For your camera, we recommend you use a memory card from the following manufacturers:
  SD/SDHC Memory Card : Sandisk, Transcend
- It is recommended to use memory cards of at least class 6 speed.

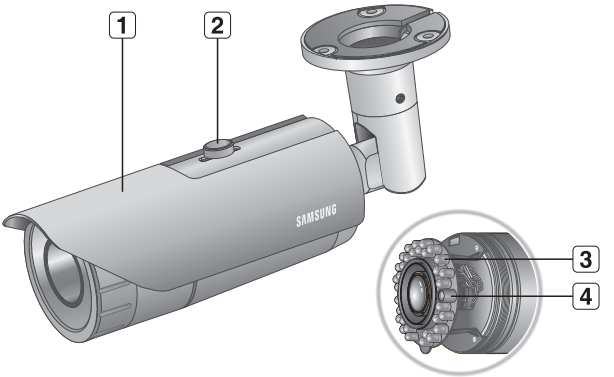
## WHAT'S INCLUDED

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

| Appearance | Item Name | Quantity | Description |
|---|---|---|---|
| | Camera | 1 | |
| | Instruction book, Installer S/W CD | 1 | |
| | Quick Guide (Optional) | 1 | |
| | Warranty card (Optional) | 1 | |
| | Tapping Screw | 3 | Used for installation on the wall or ceiling |
| | L Wrench | 1 | Used to adjust the camera orientation |
| | Sunshield | 1 | It protects the camera from the direct sunlight. |
| | Sunshield Hold | 1 | It fixes the sunshield with the camera. |

## AT A GLANCE

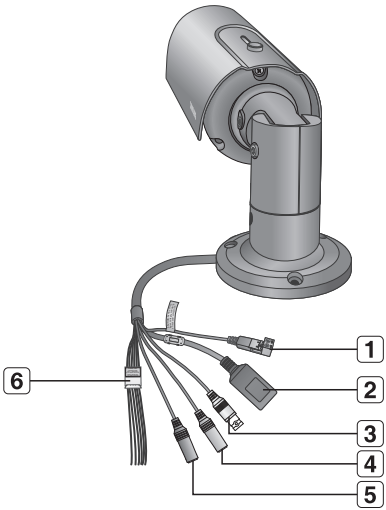
### Front Side




| Item | Description |
|---|---|
| 1 Sunshield | It protects the camera from the direct sunlight. |
| 2 Sunshield Hold | It fixes the sunshield with the camera. |
| 3 IR LED | These infrared LED's are controlled by the illumination sensor. |
| 4 Illumination Sensor | Detects incoming light to control the IR LED. |

- Wipe out a dirty surface of the lens softly with a lens tissue or cloth to which you have applied ethanol.

## Rear Side




| Item | Description |
|---|---|
| 1 Power Port | Used to plug the power cable. |
| 2 Network Port | Used to connect a PoE or LAN cable. |
| 3 Video Output Port | Connected to the monitor so that you can check the video from the camera. (for installation) |
| 4 Audio In Jack | Used to connect to a microphone. |
| 5 Audio Out Jack | Used to connect to speakers. |

| Item | Description | |
|---|---|---|
| 6 I/O Port | BROWN (ARM-IN) | Used to connect the alarm input sensor. |
| | SKY-BLUE (GND) | Earth-grounding port for external signal. |
| | YELLOW (ARM-OUT) | Used to connect the alarm output signal. |
| | ORANGE (A-COM) | Common port where the alarm output signal is connected. |
| | WHITE/GRAY (RESET) | Resets the camera settings to the default.<br>■ To perform the factory reset, peel off the white and gray wire, and then touch the two wires together for approximately 10 seconds. |

## INSTALLATION



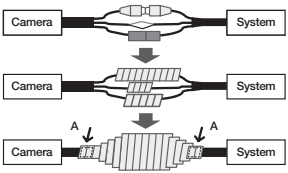
- This camera is waterproof and in compliance with the IP66 spec, but the jack connected to the external cable is not. You are recommended to install this product below the edge of eaves to prevent the cable from being externally exposed.



### Outdoor installation

When you install it outside of the building, please waterproof it with waterproof butyl rubber tape (can be purchased in stores) so that water does not leak from the gap of the cable connected to the outside.

1. Connect the power, I/O, BNC, and LAN cables.
2. Wrap the black cable jacket (Area A) and the cable connection area with waterproof (butyl rubber) tape so that more than half of the butyl rubber tape is overlapped.



- If the cable jacket is not waterproofed properly, then it can directly cause leakage. Make sure to protect the cable with a dense layer of taping.
- Waterproof butyl tape is made of butyl rubber that can be stretched to twice its normal length.

## MEMORY CARD INFORMATION

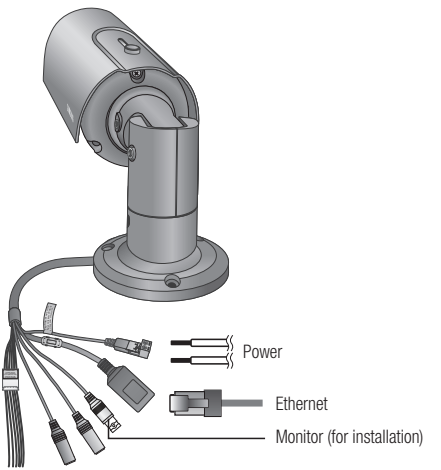
### What is a memory card?

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.

### Memory Card Instructions

- This product is equipped with an internal 4GB memory card.
  Do not dismantle this product by yourself for a reason such as waterproofing.
- If you encounter a problem with the installation, contact the manufacturer for technical assistance.

## CONNECTING WITH OTHER DEVICE



- The BNC Out terminal of the product is provided for easier installation, and is not recommended for monitoring purposes.
  If you keep the BNC cable connected, a risk of lightening may cause damage or malfunction to the product.

## Ethernet Connection

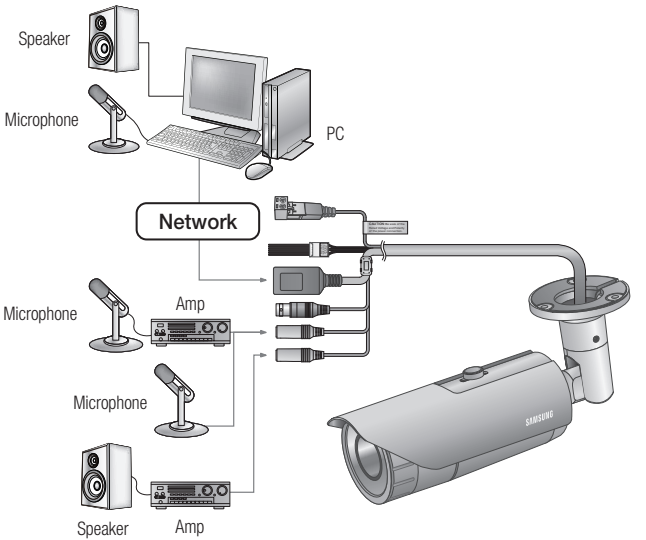
Connect the Ethernet cable to the local network or to the Internet.

## Power Supply

Use the screwdriver to connect each line (+, –) of the power cable to the corresponding power port of the camera.

- Be careful not to reverse the polarity when you connect the power cable.
  You can also use a router featuring PoE (Power over Ethernet) to supply power to the camera.
- If PoE and DC12V power or PoE and AC 24V are supplied simultaneously, the product will operate with the first applied power source.
- If using PoE and DC 12V adaptor, the heater will not operate at all.
  If the heater must be operated due to the installation environment, please use the AC 24V adaptor. The adaptor is sold separately.
- AC 24V can be applied in non-polarity.
- Use AC 24V in a low-temperature place of less than -10°C.
- Please make sure the monitor and camera are turned off when connecting them.

## Connecting to Audio Input/Output

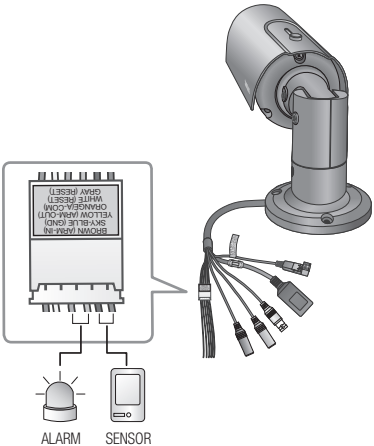



1. Connect the AUDIO IN port of the camera with the microphone directly or LINE OUT port of the amplifier that the microphone is connected to.
2. Connect the AUDIO OUT port of the camera with the LINE IN port of the speaker.
3. Check the specifications for audio input.

- **Audio Codec**
  Audio In: G.711 PCM (Bit Rate: 64kbps / Sampling Frequency: 8kHz), G.726 ADPCM (Bit Rate: 16Kbps, 24Kbps, 32Kbps, 40Kbps / Sampling Frequency: 8kHz)
  Audio Out: G.711 PCM (Bit Rate: 64kbps / Sampling Frequency: 8kHz)
- **Full duplex Audio**
- **Audio in**
  Used for mono signal line input (Max.2.4 Vpp)
- **Audio out**
  Used for mono signal line output (Max.2.4 Vpp)
- **Line out impedance**
  600Ω

## Connecting the alarm I/O signal

Connect the alarm input/output signal using the I/O ports of the cable.




| Port | Description | Port | Description |
|---|---|---|---|
| **ARM-IN** | Alarm Input Sensor Port | **GND** | Earth-grounding Port |
| **ARM-OUT** | Alarm out | **A-COM** | Alarm Out (common) |

## To connect the alarm input signal

Connect one strand of each signal line (2-strand) of the sensors to the [**ARM-IN**] port, and connect the other strand to the [**GND**] port.

## To connect the alarm output signal

Connect one strand of each signal line (2-strand) of an external device to the [**ARM-OUT**] port, and connect the other stand to the [**A-COM**] port.

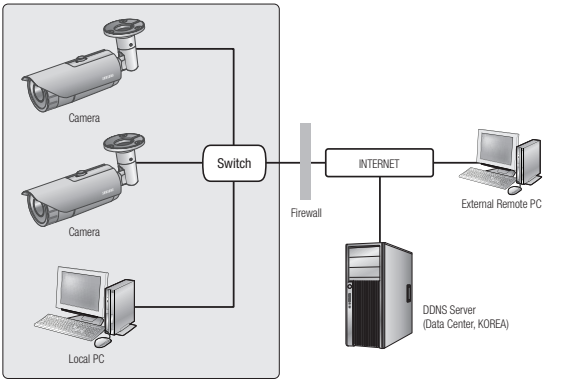
# network connection and setup

You can set up the network settings according to your network configurations.

## CONNECTING THE CAMERA DIRECTLY TO LOCAL AREA NETWORKING

### Connecting to the camera from a local PC in the LAN

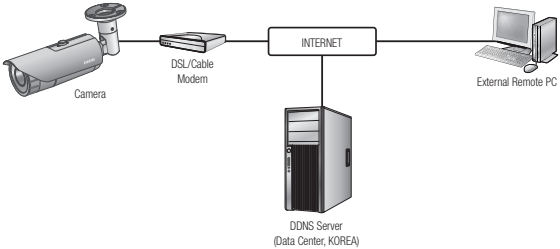
1. Launch an Internet browser on the local PC.
2. Enter the IP address of the camera in the address bar of the browser.




<Local Network>

- A remote PC in an external Internet out of the LAN network may not be able to connect to the camera installed in the intranet if the port-forwarding is not properly set or a firewall is set.
  In this case, to resolve the problem, contact your network administrator.
- In the IP installer, you can use the initial password, "**4321**" to set IP Address, Subnet Mask, Gateway, HTTP Port, VNP Port, IP type. After changing the network interface, for better security, access the web viewer and change the password.
- By factory default, the IP address will be assigned from the DHCP server automatically. If there is no DHCP server available, the IP address will be set to 192.168.1.100.
  To change the IP address, use the IP Installer.
  For further details on IP Installer use, refer to "**Static IP Setup**". (Page 25)

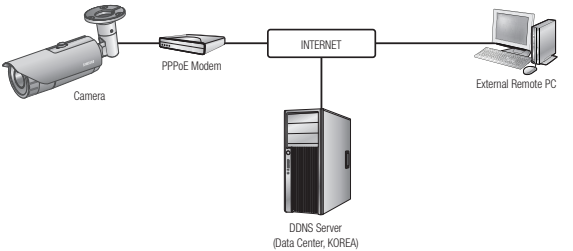
# CONNECTING THE CAMERA DIRECTLY TO A DHCP BASED DSL/CABLE MODEM




1. Use the cross LAN cable to connect the network cable directly to your PC.
2. Run the IP Installer and change the IP address of the camera so that you can use the web browser on your desktop to connect to the Internet.
3. Use the Internet browser to connect to the web viewer.
4. Move to [**Setup**] page.
5. Move to [**Network**] – [**DDNS**] and configure the DDNS settings.
6. Move to [**Network**] – [**Interface**], and set the network type to [**DHCP**].
7. Connect the camera, which was removed from your PC, directly to the modem.
8. Restart the camera.

- For registering the DDNS settings, refer to "**Registering with DDNS**". (page 67)
- For configuring the DDNS settings, refer to "**DDNS**". (page 66)
- For setting the network type, refer to "**Interface**". (page 64)

## CONNECTING THE CAMERA DIRECTLY TO A PPPoE MODEM

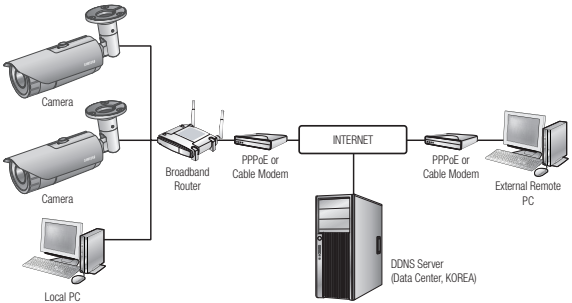



1. Use the cross LAN cable to connect the network cable directly to your PC.
2. Run the IP Installer and change the IP address of the camera so that you can use the web browser on your desktop to connect to the Internet.
3. Use the Internet browser to connect to the web viewer.
4. Move to [**Setup**] page.
5. Move to [**Network**] – [**DDNS**] and configure the DDNS settings.
6. Move to [**Network**] – [**Interface**], and set the network type to [**PPPoE**].
7. Connect the camera, which was removed from your PC, directly to the modem.
8. Restart the camera.

- For registering the DDNS settings, refer to "**Registering with DDNS**". (page 67)
- For configuring the DDNS settings, refer to "**DDNS**". (page 66)
- For setting the network type, refer to "**Interface**". (page 64)

# CONNECTING THE CAMERA TO A BROADBAND ROUTER WITH THE PPPoE/CABLE MODEM

This is for a small network environment such as homes, SOHO and ordinary shops.




## Configuring the network settings of the local PC connected to a Broadband Router

Configuring the network settings of the local PC connected to a Broadband Router, follow the instructions below.

- Select : <**Network Neighborhood**> → <**Properties**> → <**Local Area Connection**> → <**Properties**> → <**General**> → <**Internet Protocol (TCP/IP)**> → <**Properties**> → <**Obtain an IP address automatically**> or <**Use the following IP address**>.
- Follow the instructions below if you select <**Use the following IP address**>:

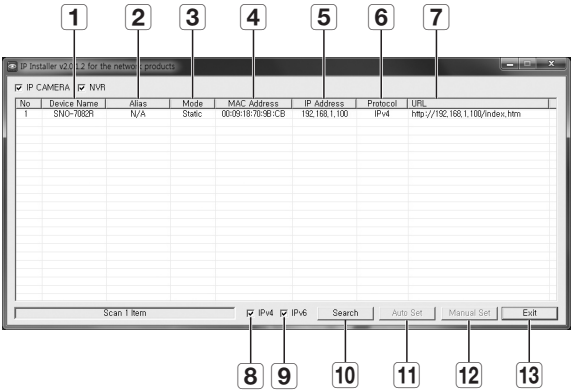
  ex1) If the address (LAN IP) of the Broadband Router is 192.168.1.1
  IP address : 192.168.1.100
  Subnet Mask : 255.255.255.0
  Default Gateway : 192.168.1.1

  ex2) If the address (LAN IP) of the Broadband Router is 192.168.0.1
  IP address : 192.168.0.100
  Subnet Mask : 255.255.255.0
  Default Gateway : 192.168.0.1

  ex3) If the address (LAN IP) of the Broadband Router is 192.168.xxx.1
  IP address : 192.168.xxx.100
  Subnet Mask : 255.255.255.0
  Default Gateway : 192.168.xxx.1

- For the address of the Broadband Router, refer to the product's documentation.
- For more information about port forwarding of the broadband router, refer to "**Port Range Forward (Port Mapping) Setup**". (Page 30)

## BUTTONS USED IN IP INSTALLER




| Item | Description |
|---|---|
| 1 **Device Name** | Model name of the connected camera.<br>Click the column to sort the list by model name.<br>However, search will be stopped if clicked during the search. |
| 2 **Alias** | This function is not currently implemented. |
| 3 **Mode** | Displays either <**Static**>, <**Dynamic**> or <**PPPoE**> for the current network connection status. |
| 4 **MAC(Ethernet) Address** | Ethernet address for the connected camera.<br>Click the column to sort the list by Ethernet address.<br>However, search will be stopped if clicked during the search. |
| 5 **IP Address** | IP address.<br>Click the column to sort the list by IP address.<br>However, search will be stopped if clicked during the search. |
| 6 **Protocol** | Network setting for the camera.<br>The factory default is “IPv4”.<br>Cameras with the IPv6 setting will be displayed “IPv6”. |

| Item | Description |
|---|---|
| 7 URL | DDNS URL address enabling access from the external Internet.<br>However, this will be replaced with the <**IP Address**> of the camera if DDNS registration has failed. |
| 8 IPv4 | Scans for cameras with the IPv4 setting. |
| 9 IPv6 | Scans for cameras with the IPv6 setting.<br>Activated in an IPv6 compliant environment only. |
| 10 Search | Scans for cameras that are currently connected to the network.<br>However, this button will be grayed out if neither IPv4 nor IPv6 is checked. |
| 11 Auto Set | The IP Installer automatically configures the network settings. |
| 12 Manual Set | You should configure the network settings manually. |
| 13 Exit | Exits the IP Installer program. |

- For the IP installer, use only the installer version provided in the installation CD or use the latest one if available. You can download the latest version from the Samsung web site (www.samsungcctv.com).

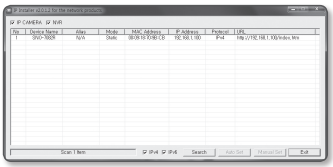
# STATIC IP SETUP

## Manual Network Setup

Run <**IP Installer_v2.XX.exe**> to display the camera search list.
At the initial startup, both [**Auto Set**] and [**Manual Set**] will be grayed out.

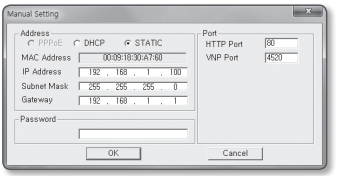


- For cameras found with the IPv6 setting, these buttons will be grayed out as the cameras do not support this function.




1. Select a camera in the search list.
   Check the MAC address of the camera on the camera's label.
   Both the [**Auto Set**] and [**Manual Set**] buttons will be activated.
2. Click [**Manual Set**].
   The Manual Setting dialog appears.
   The default values of <**IP Address**>, <**Subnet Mask**>, <**Gateway**>, <**HTTP Port**> and <**VNP Port**> of the camera will be displayed.

3. In the <**Address**> pane, provide the necessary information.
   - MAC (Ethernet) Address : The MAC address imprinted on the camera label is automatically displayed and requires no user setting.

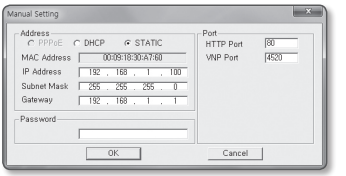


- You can configure the static IP settings only if the DHCP checkbox is unchecked.

### If not using a Broadband Router

For setting <**IP Address**>, <**Subnet Mask**>, and <**Gateway**>, contact your network administrator.

4. In the <**Port**> pane, provide necessary information.
   - HTTP Port : Used to access the camera using the Internet browser, defaulted to 80.
   - VNP Port : Used to control the video signal transfer, defaulted to 4520.



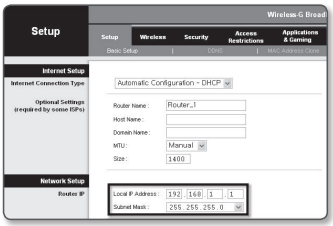

5. Enter the password.
   Enter the password of "**admin**" account, which was used to access the camera.



- For the security purposes, you are recommended to use a combination of numbers, alphabets uppercase and lowercase and special characters for your password.
- If you want to change the password, refer to "**Administrator password change**" of the user setup. (page 91)

6. Click [**OK**].
   Manual network setup will be completed.

### If using a Broadband Router




- IP Address : Enter an address falling in the IP range provided by the Broadband Router.
  ex) 192.168.1.2~254,
  192.168.0.2~254,
  192.168.XXX.2~254
- Subnet Mask : The <**Subnet Mask**> of the Broadband Router will be the <**Subnet Mask**> of the camera.
- Gateway : The <**Local IP Address**> of the Broadband Router will be the <**Gateway**> of the camera.



- The settings may differ depending on the connected Broadband Router model.
  For more information, refer to the user manual of the applicable router.
- For more information about port forwarding of the broadband router, refer to "**Port Range Forward (Port Mapping) Setup**". (Page 30)

### If the Broadband Router has more than one camera connected

Configure the IP related settings and the Port related settings distinctly with each other.

ex)

| Category | | Camera #1 | Camera #2 |
|---|---|---|---|
| **IP related settings** | IP Address<br>Subnet Mask<br>Gateway | 192.168.1.100<br>255.255.255.0<br>192.168.1.1 | 192.168.1.101<br>255.255.255.0<br>192.168.1.1 |
| **Port related settings** | HTTP Port<br>VNP Port | 8080<br>4520 | 8081<br>4521 |

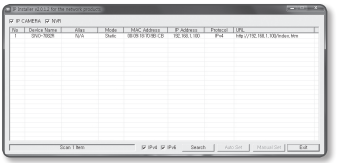
- If the <**HTTP Port**> is set other than 80, you must provide the <**Port**> number in the address bar of the Internet browser before you can access the camera.
  ex) http://IP address : HTTP Port
  http://192.168.1.100:8080

## Auto Network Setup

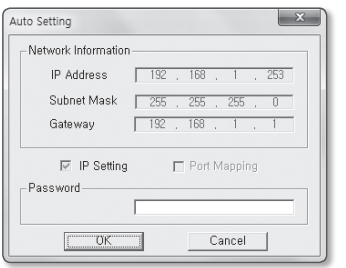
Run <**IP Installer_v2.XX.exe**> to display the camera search list.
At the initial startup, both [**Auto Set**] and [**Manual Set**] will be grayed out.



- For cameras found with the IPv6 setting, these buttons will be grayed out as the cameras do not support this function.




1. Select a camera in the search list.
   Check the MAC address of the camera on the camera's label.
   Both the [**Auto Set**] and [**Manual Set**] buttons will be activated.
2. Click [**Auto Set**].
   The Auto Setting dialog appears.
   The <**IP Address**>, <**Subnet Mask**>, and <**Gateway**> will be set automatically.




3. Enter the password.
   Enter the password of "**admin**" account, which was used to access the camera.



- For the security purposes, you are recommended to use a combination of numbers, alphabets uppercase and lowercase and special characters for your password.
- If you want to change the password, refer to "**Administrator password change**" of the user setup. (page 91)

4. Click [**OK**].
   Auto network setup will be completed.

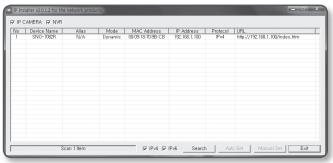
# DYNAMIC IP SETUP

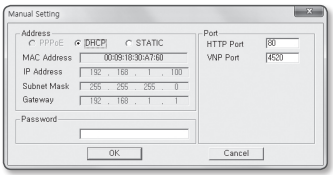
## Dynamic IP Environment Setup

- Example of the Dynamic IP environment
  - If a Broadband Router, with cameras connected, is assigned an IP address by the DHCP server
  - If connecting the camera directly to modem using the DHCP protocols
  - If IPs are assigned by the internal DHCP server via the LAN

### Checking the Dynamic IP

1. Run the IP Installer on the user's local computer.
   Cameras allocated with <**Dynamic IP**> address are shown in the list.
2. Select a camera from the search result.
3. Click the [**Manual Set**] button and check the camera's <**Dynamic IP**> address.
   If you uncheck <**DHCP**>, you can change IP to <**Static**>.

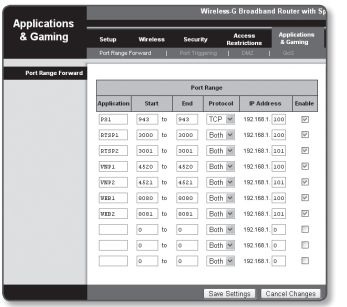


## PORT RANGE FORWARD (PORT MAPPING) SETUP

If you have installed a Broadband Router with a camera connected, you must set the port range forwarding on the Broadband Router so that a remote PC can access the camera in it.

### Manual Port Range Forwarding




1. From the Setup menu of the Broadband Router, select <**Applications & Gaming**> - <**Port Range Forward**>. For setting the port range forward for a third-party Broadband Router, refer to the user guide of that Broadband Router.
2. Select <**TCP**> and <**UDP Port**> for each connected camera to the Broadband Router.
   Each port number for the Broadband Router should match that specified in <**Setup**> - <**Network**> - <**Port**> from the camera's web viewer menu.
3. When done, click [**Save Settings**].
   Your settings will be saved.



- Above sample instructions are based on the CISCO's Broadband Router.
- The settings may differ depending on the connected Broadband Router model.
  For more information, refer to the user manual of the applicable router.

## Setting up Port Range Forward for several network cameras

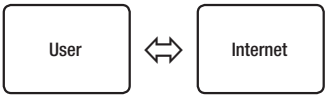
When several network cameras are connected to one Broadband Router device, you should forward the TCP 943 port of the router to the TCP 943 port of a connected camera.



- If you don't set properly the TCP 943 port of the router, you cannot get any video stream from the web page of the camera.

- TCP 943 port is a port for the Silverlight policy server of a camera.
- You can set a rule of Port Forwarding on the Broadband Router device through its configuration web page.
- You cannot change the Silverlight policy server port of a camera.
- You can change the ports of the camera except the policy server port through its configuration web pages.

When Camera1 and Camera2 are connected to a router :



| Broadband Router | | | |
|---|---|---|---|
| Start | End | Protocol | IP Address |
| 943 | 943 | TCP | 192.168.1.100 |
| 3000 | 3000 | TCP/UDP | 192.168.1.100 |
| 3001 | 3001 | TCP/UDP | 192.168.1.101 |
| 4520 | 4520 | TCP/UDP | 192.168.1.100 |
| 4521 | 4521 | TCP/UDP | 192.168.1.101 |
| 8080 | 8080 | TCP/UDP | 192.168.1.100 |
| 8081 | 8081 | TCP/UDP | 192.168.1.101 |



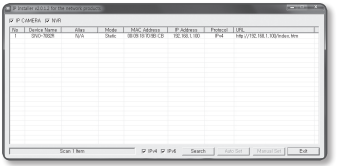
| Camera1 (192.168.1.100) | |
|---|---|
| HTTP Port | 8080 |
| Device port | 4520 |
| RTSP Port | 3000 |
| Policy Server Port | 943 |



| Camera2 (192.168.1.101) | |
|---|---|
| HTTP Port | 8081 |
| Device port | 4521 |
| RTSP Port | 3001 |
| Policy Server Port | 943 |

## CONNECTING TO THE CAMERA FROM A SHARED LOCAL PC

1. Run the IP Installer.
   It will scan for connected cameras and display them as a list.
2. Double-click a camera to access.
   The Internet browser starts and connects to the camera.






- Access to the camera can also be gained by typing the camera's IP address in the address bar of the Internet browser.

## CONNECTING TO THE CAMERA FROM A REMOTE PC VIA THE INTERNET

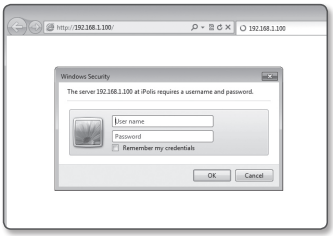
Since using the IP Installer on a remote computer that is not in the Broadband Router's network cluster is not allowed, users can access cameras within a Broadband Router's network by using the camera's DDNS URL.

1. Before you can access a camera in the Broadband Router network, you should have set the port range forward for the Broadband Router.
2. From the remote PC, launch the Internet browser and type the DDNS URL address of the camera, or the IP address of the Broadband Router in the address bar.
   ex) http://www.samsungipolis.com/Product ID

- For registering the DDNS settings, refer to "**Registering with DDNS**". (page 67)

## CONNECTING TO THE CAMERA

### Normally, you would




1. Launch the Internet browser.
2. Type the IP address of the camera in the address bar.
   ex) • IP address (IPv4) : 192.168.1.100
   ➜ http://192.168.1.100
   - the Login dialog should appear.
   • IP address (IPv6) : 2001:230:abcd:ffff:0000:0000:ffff:1111
   ➜ http://[2001:230:abcd:ffff:0000:0000:ffff:1111] - the Login dialog should appear.

### If the HTTP port is other than 80

1. Launch the Internet browser.
2. Type the IP address and HTTP port number of the camera in the address bar.
   ex) IP address : 192.168.1.100:HTTP Port number(8080)
   ➜ http://192.168.1.100:8080 - the Login dialog should appear.

### Using URL

1. Launch the Internet browser.
2. Type the DDNS URL of the camera in the address bar.
   ex) URL address : http://www.samsungipolis.com/Product ID
   - the Login dialog should appear.

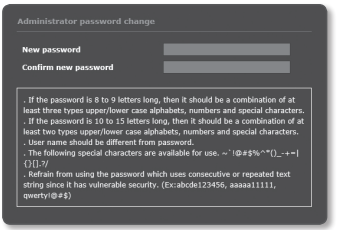
### ▪ To check the DDNS address

If the camera is connected directly to the DHCP cable modem, DSL modem, or PPPoE modem, the IP address of your network will be changed each time you try to connect to the ISP (Internet Service Provider) server.
If this is the case, you will not be informed of the IP address changed by DDNS.

Once you register a dynamic IP-based device with the DDNS server, you can easily check the changed IP when you try to access the device.
To register your device to the <**DDNS**> server, visit www.samsungipolis.com and register your device first, and then set the Web Viewer's <**Network**> - <**DDNS**> to <**Samsung DDNS**>, as well as providing <**Product ID**> that had been used for DDNS registration.

## PASSWORD SETTING

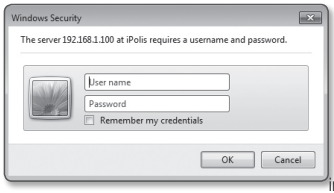
When you access the product for the first time, you must register the login password.
When the "**Password change**" window appears, enter the new password.




- For a new password with 8 to 9 digits, you must use at least 3 of the following: uppercase/lowercase letters, numbers and special characters. For a password with 10 to 15 digits, you must use at least 2 types of those mentioned.
  - Special characters that are allowed. : ~`!@#$%^*()_-+=|{}[].?/
- For higher security, you are not recommended to repeat the same characters or consecutive keyboard inputs for your passwords.
- If you lost your password, you can press the [**RESET**] button to initialize the product. So, don't lose your password by using a memo pad or memorizing it.

# LOGIN

Whenever you access the camera, the login window appears.
Enter the User ID and password to access the camera.




1. Enter "**admin**" in the <**User name**> input box.
   The administrator ID, "**admin**", is fixed and can not be changed.
2. Enter the password in the <**Password**> input field.
3. Click [**OK**].
   If you have logged in successfully, you will the Live Viewer screen.



- When you access the camera web viewer, pay special attention to the security by checking whether the image data is encrypted.

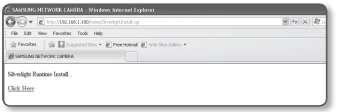
- If you check the "**Remember my credentials**" option when your input is done, in future you will be logged in automatically without being prompted to enter the login information.
- You will experience the best video quality if the screen size is 100%. Reducing the ratio may cut the image on the borders.

## INSTALLING SILVERLIGHT RUNTIME

If your PC has not installed Silverlight Runtime or has just installed an old runtime version, you will be redirected to the Silverlight Runtime installation page automatically when accessing the web viewer.

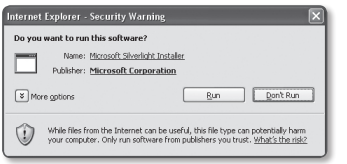
- **To install on Windows OS**

1. Click <**Click Here**>.

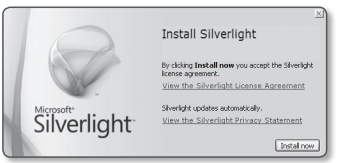



2. When the file download dialog pops up, click <**Run**>.

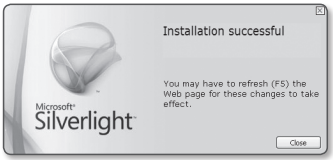
3. When the download is completed, click <**Run**>.




4. The Silverlight Runtime installation page will be displayed. <**Install now**> to proceed with the installation.



5. When done, click <**Close**>.

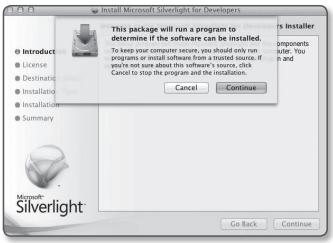



■ **To install on MAC OS**

1. Run the file trailing with ".dmg".

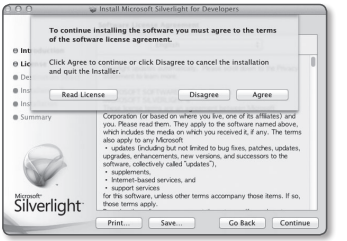
2. Run the install package file automatically created, ending with ".pkg".

3. Click <**Continue**>.

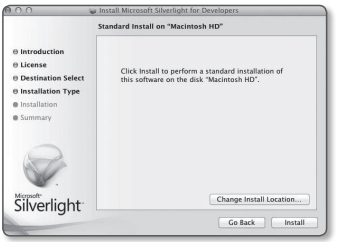


4. Select your language on the language selection screen, and click <**Continue**>.

5. Click <**Agree**>.

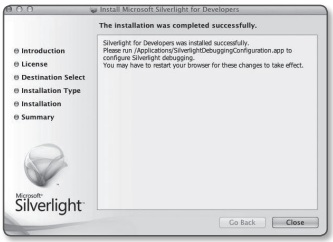



6. Click <**Install**>.



7. Enter the password of the account currently logged in, and click <**Install Software**> and continue.

8. Once completed, click <**Close**>.



## INSTALLING STW WebViewer PLUGIN

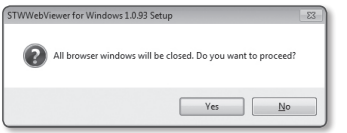
If connecting to a camera for the first time, you will see the installation message. Then, install the required WebViewer Plugin to access the camera and control the video from it in real time.

1. When the monitoring page is accessed for the very first time, the installation page is displayed. Click [**Click Here**] to begin installation.

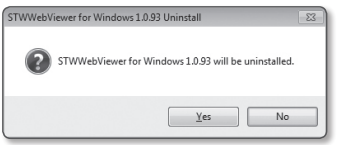
- If the plug-in installation file download status is suspended at 99% in the Internet Explorer browser, retry it after selecting "Release SmartScreen filter" in "Tool → SmartScreen filter".

2. Click [**Run**] in the message window.

3. Click [**Yes**] when the notice window saying that all browser windows will be closed.

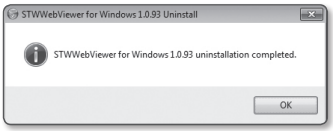



4. When the old version of the Web Viewer Plug-in is installed, a notice window saying the old version will be deleted is displayed.
   Click [**Yes**] when the notice window is displayed.

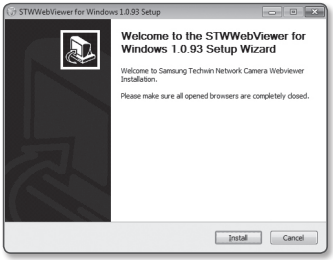



- Steps 4 and 5 will be skipped if no Web Viewer Plug-in is installed.

5. Click [**OK**].
The old version of Web Viewer Plug-in is deleted.




6. Click [**Install**] to begin installation of the Web Viewer Plug-in.




7. Click [**Finish**].
STW Web Viewer Plug-in installation is completed.

- In your internet explorer, if you need to move to the installation screen after installing the STW webviewer plugin, check whether webviewer_activexplugin_lib.control in the "Tool → Additional Function Management" menu is "Activated". If not, and if there is a persisting problem, then select "Tools → Internet Options → General" and delete all the search records.

## USING THE LIVE SCREEN

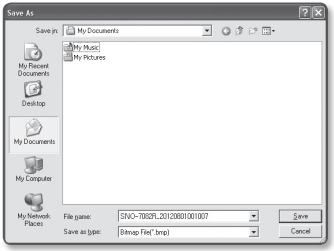
| Item | Description |
|---|---|
| 1 Monitoring | Move to the monitoring screen. |
| 2 Playback | Switch to the monitoring screen that plays recording data in the SD memory. |
| 3 Setup | Move to the Setup screen. |
| 4 Viewer Screen | Displays the Live video on the screen.<br>■ You can use the mouse wheel to activate the digital zooming in Viewer screen. |
| 5 Profile type | You can select a profile type in <**Video profile**> under the <**Video & Audio**> setup menu.<br>■ When the Web Viewer is connected, the profile information currently using is displayed. |
| 6 Screen Optimization | The video size of the camera will switch to as big as the Web browser. |
| 7 Fix the resolution | Regardless of the resolution setup configured in the camera, it sets the resolution to 640x480. Press it again to switch back to the default resolution. |

| Item | Description |
|---|---|
| 8 Full Screen | Switch the current video to the maximum size of the monitor. |
| 9 Capture | Saves the snapshot as an image file in the .bmp or .jpg format. |
| 10 Audio/Microphone Control | Enable/disable audio and microphone, and controls volume. |
| 11 Alarm output | Activate the Alarm Out port. |
| 12 Hide the context menu | The left-corner context menu will disappear but only the menu icon. |



## To capture the snapshot

1. Click [**Capture (** )] on the scene to capture.
   The Capture dialog should appear.
2. Confirm the save path and click [**Save**] button.
   The screenshot will be saved in the specified path.






- If you encounter an interrupted video when capturing the image with IE8 on a Windows 7-based PC, deselect "**Turn On Protected Mode**" from "**Tools – Internet Options – Security**".

## To fit the full screen

1. Click the [**Full Screen (** )] button.
2. This will fit the Viewer to the full screen.
3. To exit the full screen mode, press [**Esc**] on the keyboard.

- For the Internet Explorer and Google Chrome browser, you can switch to the full screen.

## To control the audio sound

1. Click [**Audio (** )] icon to activate audio communication.
2. Use [ ] bar to control the volume.

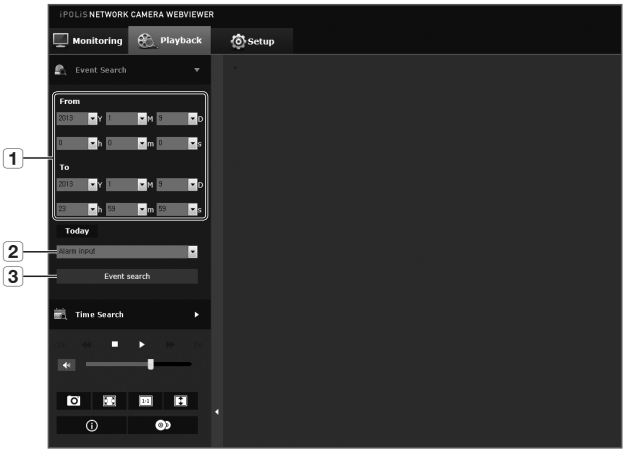
## To control microphone

Click [**Mic** ( )] icon to activate the microphone.

# PLAYING THE RECORDED VIDEO

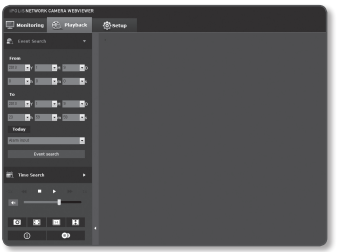
- Before you can play the video, you must configure the record settings. For details on record settings, refer to "**Storage**". (page 75)

## Name of event search screen and its function




| Item | Description |
|---|---|
| 1 Search range setting | Set the search date and time from the data saved in the SD memory card. |
| 2 Search event setting | Set the event type to search within the search period. |
| 3 Event search | Run the event search. |

## To play the content after searching by event



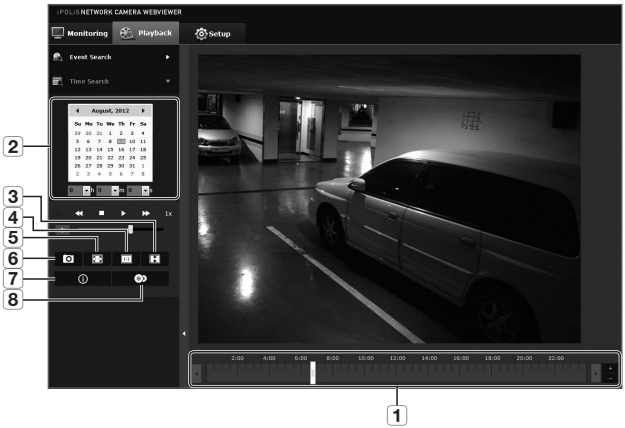

1. Click the [**Playback (** )] button.
2. Specify the start time and end time of your search.
3. Select an event type for your search within the specified period.
4. Click the [**Event search**] button.
   The search results will be displayed in the list.



- If more than 500 events are recorded within the search period, your search will be limited up to the date when the 500th event is recorded.
  For instance, if the search period is between 10th and 15th day of the month, and more than 500 events were recorded 10th through 11th, your search will be limited up to 11th day with a total of 500 events, and events after then (from 12th) will not be found.

5. Select a data item to play in the search list.
6. Click the [**Play (** )] button.
7. To stop playing the video, click [**Stop (** )].
8. To return to the search screen, click [**Exit (** )].

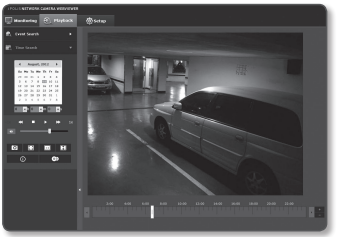
## Name of time search screen and its function




| Item | Description |
|---|---|
| 1 Time bar | The section in the specific period is played by moving the time bar. |
| 2 Search date setting | Set the search date using the calendar.<br>■ Dates for which there is video in the SD memory card are displayed within the boxes on the calendar. |
| 3 Screen optimization | The camera image is converted to fit the Web browser window. |
| 4 Fix the resolution | Regardless of the resolution setup configured in the camera, it sets the resolution to 800x600. Press it again to switch back to the default resolution. |
| 5 Full screen | The current image is converted to cover the maximum size of the monitor. |
| 6 Capture | The current image is saved as a .jpg or .bmp image file. |

| Item | Description |
|---|---|
| 7 Video information | Time data of the replayed video is displayed on the screen. |
| 8 Backup | Time zone is set to back up the video saved in the SD memory card.<br>■ Can be set as up to 5 minutes. |

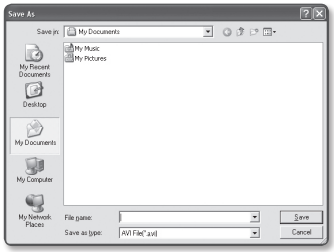
## To play after searching by time




1. Click [**Time Search (** )].
2. Click a desired date in the calendar.
   The video on the specified date will be played.
3. If the video playback is stopped, select a time and click [**Play (** )].
   The video on the selected time will be played.
4. While the video is being played, the recording time for the current video will be shown.
5. Search for the video forward or backward, and control the play speed.
   - To control the play speed
     If selecting ▶▶, the button will switch to x1, x2, x4, x8, and the play speed will increase accordingly.
     When the ◀◀ button is selected, the playing speed is decreased to -1x, -2x, -4x, -8x and the playing speed slows down gradually. Subsequently the quick playing speed is returned to the normal speed and the reverse playing speed increases.
   - To control the playback direction
     If you see the ▶▶ button with the play speed displayed, the video will be played forward; Whereas, if you see the ◀◀ button with the play speed displayed, the video will be played backward.
6. Move [**Time bar (** )] to a desired time point of the video before playing it.
   The time containing a normal recoding file will be highlighted in blue; the time with the event recording will be highlighted in red.

## To back up the searched video

1. During playback, click [ ] on the scene to back up.
   The scheduling window for backup start and end time appears.
2. Click [ ] button.
   The Save As window appears.
3. Confirm the save path and click [Save] button.
   The screenshot will be backed up to the specified path.




## To play the backup video

The backup video will be saved in .avi format. The backup video can be played with any media player supporting the format on your PC.

# setup screen

## SETUP

You can configure the video & audio, network, event and system settings of the camera in the network.

1. In the Live screen, click [**Setup (** Setup **)**].
2. The Setup screen appears.

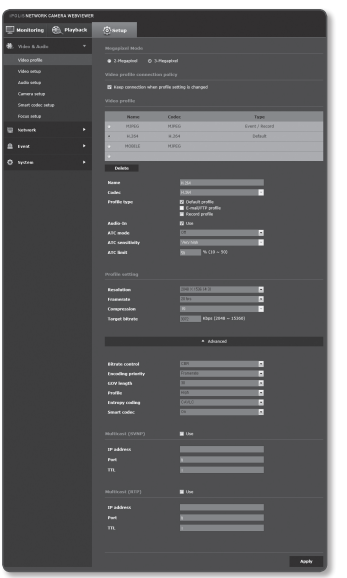


- The setting page for preview video requires the STW web viewer plug-in to be installed on the PC. If not installed already, automatically moves to the Silverlight setup.

## VIDEO & AUDIO SETUP

### Video profile

1. From the Setup menu, select the <**Video & Audio (** **)**> tab.
2. Click <**Video profile**>.
3. Set the <**Megapixel Mode**>.
   Changing the mode selection displays a confirmation message regarding the resetting the video configurations.
   Click [**OK**] to confirm the changing video settings.
4. Set the <**Video profile connection policy**>.
   - Keep connection when profile setting is changed : Changing profile properties that is used by existing connection does not affect such connection and remains with old profile setup.
     If not selected, changing a profile used by an existing connection resets such connection.
5. Select each profile properties.



6. Click the input box of each item and enter / select a desired value.
   - The context menu may differ depending on the selected codec type.
   - Default profile : If no profile is selected when using the Web Viewer, the default video profile is applied.
   - E-mail/FTP profile : Video profile to be transferred to the specified email or FTP site.
     - Only the MJPEG codec can be set as the E-mail/FTP profile.
   - Record profile : This is the profile that is applied to video recording.
   - Audio-In : Sets whether to use audio for video recordings.
7. According to your situation, set ATC (Auto Transmit Control) mode.
   - ATC mode : It adjusts the video properties according to the variance in the network bandwidth, controlling the bit rate. Adjusting the bit rate depends on the ATC mode.

     - Control framerate : Reduce the frame rate if the network bandwidth drops down.
     - Control compression : Control the compression rate if the network bandwidth drops down.
       Compression adjustment can cause deterioration of the image quality.
     - If <**Bitrate control**> is set to <**CBR**>, the encoding priority according to the ATC mode will be fixed as below:

| Bitrate control / ATC mode | Control framerate | Control compression |
|---|---|---|
| CBR | Framerate | Compression |

   - ATC sensitivity : Affect the transfer rate according to the variance in the network bandwidth.
     The transfer rate will be adjusted to the fastest if the bandwidth is <**Very high**>, and adjusted to the latest if the bandwidth is <**Very low**>.
   - ATC limit : If the quality or frame rate is adjusted, the property will be changed to the applied value (%) against the previous setting value (100%).
     Note that if you reduce the property value too much, you may encounter flickering on the screen. So it is advisable to adjust the value within the threshold.

- It is recommended to apply ATC control only for cameras supporting ATC.
- Set the ATC sensitivity to <**Very low**> in a network environment with high variance in the network bandwidth.
- If the network connection is unstable, you may encounter flickering on the screen.

8. When done, click [**Apply (** Apply **)**].

## To add a video profile

You can add as many codecs as necessary so that a variety of profiles can be applied according to the recording condition.

1. Select one from the <**Video profile**> options.
2. Provide the name and select a codec.
3. Specify the conditions under which the codec will be applied.
4. Specify the details of the selected codec including resolution and frame rate. Click <**Advanced**> to display the context menu.
   - Resolution : Set the video size of the H.264 and MJPEG files.
   - Framerate : Specify the frame rate.
   - Compression : Specify the compression rate of the video.
   - Maximum bitrate : Specify the maximum bit rate of the video.

- As the bit rate can be adjusted limitedly according to the resolution, frame rate and screen complexity, the actual bit rate can be greater than the maximum bit rate. So you must consider the use conditions when setting the value.

   - Target bitrate : Specify the bit rate at which you will transfer the video.
   - Bitrate control : You can select one from constant bit rate and variable bit rate for compression. Constant bit rate (CBR) varies the video quality and fixes network transfer bit rate, while variable bit rate emphasizes the quality by varying network transfer bit rate.

- If the bit-rate control is set to the Constant Bit Rate, the actual transmission frame rate may be less than the set frame rate because the Frame Rate First Mode is changed to the Compression Rate First Mode to ensure the highest image quality at a bit rate which is set depending on the complexity of the screen.

   - Encoding priority : You can set the video transfer method to Framerate or Compression.
   - GOV length : You can select the length of GOV. (2Mega mode : 1~150, 3Mega mode : 1~100)
   - Profile : You can select the H.264 profiling method.
   - Entropy coding : Reduce the possible compression loss due to encoding.
   - Smart codec : Specify the use of Smart codec.

- The Smart Codec will be active only if the codec is of H.264 and the compression system is CBR.

- Multicast(SVNP) : Specify the use of the SVNP protocol.
  - IP address : Enter an IPv4 address with which you can connect to the IPv4 network.
  - Port : Specify the video communication port.
  - TTL : Set the TTL for the SVNP packet.
- Multicast(RTP) : Specify the use of the RTP protocol.
  - IP address : Enter an IPv4 address with which you can connect to the IPv4 network.
  - Port : Specify the video communication port.
  - TTL : You can set the TTL for the RTP packet.



■ If you set the Multicast address to 224.0.0.0~224.0.0.255, multicast may not work properly in all environments. In that case, we recommend you change the multicast address.

## What is GOV length?

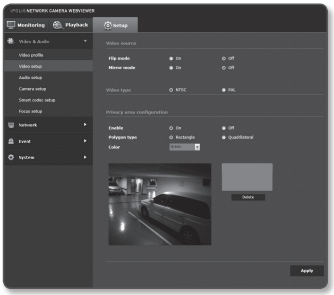
GOV(Group of Video object planes) is a set of video frames for H.264 compression, indicating a collection of frames from the initial I-Frame (key frame) to the next I-Frame. GOV consists of 2 kinds of frames: I-Frame and P-Frame.

I-Frame is the basic frame for the compression, also known as Key Frame, which contains one complete image data. P-Frame contains only the data that has changed from the preceding I-Frame.

H.264 codec can set a GOV length value between 1 and 150 for the 2 Mega mode, and H.264 codec can set a GOV length value between 1 and 100 for the 3 Mega mode.

## Video setup

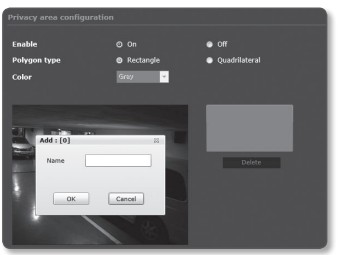
1. From the Setup menu, select the <**Video & Audio (** **)**> tab.
2. Click <**Video setup**>.
3. Select a <**Video source**> mode.
   - Flip mode : Turn upside down the image that is captured by the camera.
   - Mirror mode : Flip horizontal the image that is captured by the camera.



4. Select the video type.
5. Specify the privacy zone.
6. When done, click [**Apply** ( Apply )].

### To set the privacy zone

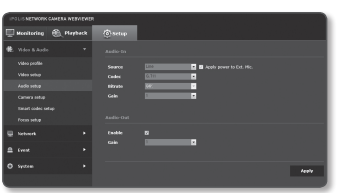
You can specify a certain area of the camera video to be protected for your privacy.




1. Select the <**On**> and click the [**Apply** ( Apply )] button. Region selection becomes available.
2. Select the type and color masking of desired privacy area.
   - Rectangle : Place the cursor at a point in the video and drag it to whatever you need.
     You can overlap rectangles for privacy area setup.
   - Quadrilateral : Select 4 vertices (forming a quadrilateral) on the video.
3. Click on the video screen and drag to set the desired area.
4. Provide a name and press [**OK**].
5. If you want to delete an area in the list, select one and click [**Delete** ( Delete )].

## Audio setup

You can configure the I/O settings of the audio source from the camera.




1. From the Setup menu, select the <**Video & Audio** ( )> tab.
2. Click <**Audio setup**>.
3. Set the audio input value.
   - Source : Sets the audio input.
     - Line : Line In audio input.
     - External microphone : 3.5mm jack type, powered active external microphone.

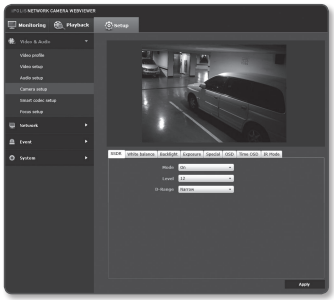
- Apply power to Ext. Mic. : If the external microphone connected has no separate power supply, check this option to set camera to supply power to the connected external microphone. The option is enabled if <**External microphone**> is selected.
- Codec : Sets the codec to be used.
  - G.711 : A audio codec standard, it uses 64 Kbps PCM (Pulse Code Modulation) encoding.
    ITU standard audio codec that is adequate for digital voice transfer in PSTN network or through a PBX.
  - G.726 : ITU standard audio codec applying ADPCM (Adaptive Differential Pulse Code Modulation) for variable bit rates of 40/32/24/16 Kbps to 64 Kbps PCM encoding.
- Bitrate : Set the bit rate to differentiate compression ratio if using G.726 codec.
- Gain : Sets the input audio gain.

4. Set the audio output level.
   - Enable : Sets whether to use audio output.
   - Gain : Sets the output audio gain.
5. When done, click [**Apply (** Apply **)**].

## Camera setup

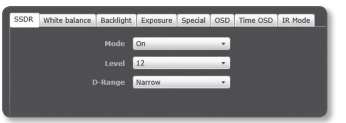
You can change the camera settings according to the environment where the camera is located.

1. From the Setup menu, select the <**Video & Audio (** **)**> tab.
2. Click <**Camera setup**>.
3. Configure the settings as necessary of : SSDR, White balance, Backlight, Exposure, Special, OSD, Time OSD, IR Mode
4. When done, click [**Apply (** Apply **)**].
   - If a certain time (timeout: 240s) is elapsed with your not pressing the [**Apply (** Apply **)**] button after changing the settings, your changes will not be applied.



### SSDR (Samsung Super Dynamic Range) Setup

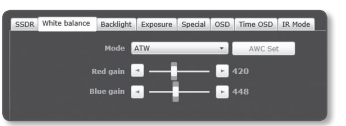
In a scene where the difference between bright and dark is severe, you can increase the brightness of the dark area alone to regulate the overall brightness.




1. Select <**SSDR**>.
2. Set <**Mode**> to <**On**>.
3. Configure the <**Level**> and <**D-Range**> settings as necessary.
   - Level : Adjust the level of the dynamic range.
   - D-Range : Select the amplitude area of the dynamic range.

### White balance Setup

You can correct the image colors based on white under any lighting conditions.




1. Select <**White balance**>.
2. Select <**Mode**>.
   - ATW : Corrects the colors of the camera video automatically.
   - Manual : You can adjust the red and blue gains of the camera video manually.
   - AWC : Corrects the colors of the camera video to be optimized to the current lighting condition and screen mode.
     To obtain the optimal condition for the current lighting, put the focus of the camera to a white paper and press the [**AWC Set**] button. If the lighting environment is changed, you should readjust the settings accordingly.
   - Outdoor : Automatically corrects the video colors of the camera to be optimized to the outdoor environment.
   - Indoor : Automatically corrects the video colors of the camera to be optimized to the indoor environment.

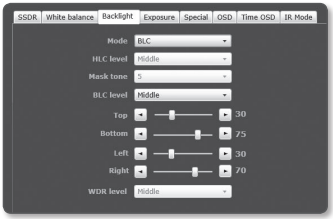
- In AWC mode, click the [**AWC Set**] button if you want to keep the white balance level of the current image.

- The white balancing may not work properly in the following conditions:
  If this is the case, switch to AWC mode.
  - If the surrounding condition of the object is out of the temperature correction range
    ex) Clear sky, sunset
  - If the surrounding of the object is dark
  - If the focus of the camera directly faces the florescent lighting or if the camera is installed in a place of variable illumination, the white balancing operation may be unstable.

## BLC Setup

You can specify a desired area on the video manually and set the area to be displayed more clearly.

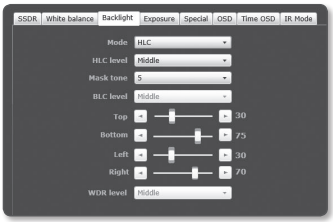
1. Select <**Backlight**>.
2. Set <**Mode**> to <**BLC**>.
3. Set <**BLC level**>.
   You can change the level to adjust the brightness of the monitoring area.
4. Set the <**Top, Bottom, Left, Right**> levels to specify the target area.




## HLC (Highlight Compensation) Setup

When a strong light such as streetlamp or headlight faces forward to the camera, you can mask that exposed area in order to protect it from being saturated.

1. Select <**Backlight**>.
2. Set <**Mode**> to <**HLC**>.
3. Set the <**HLC level**> and the <**Mask tone**>.
   - HLC level : Adjust the brightness level so as to remove the incoming highlight from a specific condition.
   - Mask tone : Adjust the mask tone of the highlighted area.

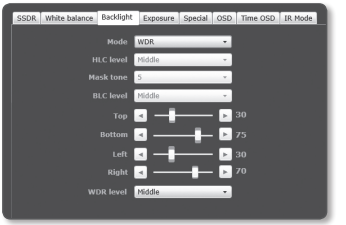


- At night operation, this function will be activated only if the incoming highlight exceeds a certain area in a low contrast environment.
- At night, HLC will not function if the scene is either too bright or too dark.

### WDR Setup

It displays a sharp image of the objects in a scene where both bright and dark areas exist.

1. Select <**Backlight**>.
2. Set <**Mode**> to <**WDR**>.
3. Specify the <**WDR level**>.



- If applied with WDR, noise may be found on the border between the brighter and darker areas.

Ex)

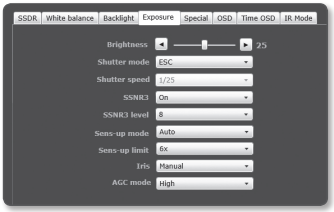


<WDR OFF>

<WDR ON>

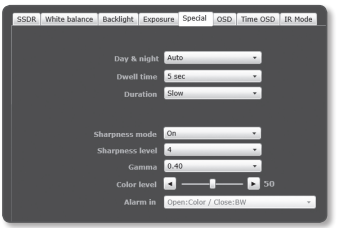
## Exposure Setup

You can adjust the exposure level of the camera.




1. Select <**Exposure**>.
2. Select each item and set it properly.
   - Brightness : Adjust the screen brightness.
   - Shutter mode : Adjust the electronic shutter of the camera.
     - ESC (Electronic shutter control) : Adjust the shutter speed automatically according to the ambient brightness.
       - This will be activated if <**Iris**> is set to <**Manual**>.
     - Manual : Adjust the shutter speed of the camera manually.
       - You can select one between 1/30 and 1/12000sec in 2 mega mode, and select one between 1/20 and 1/12000sec in 3 mega mode.
     - A.FLK (Anti flicker) : Select this feature if you encounter a flickering screen due to a frequency mismatch with the ambient lighting.
   - Shutter speed : Control the shutter speed manually.
   - SSNR3 : Specify the use of noise reduction.
   - SSNR3 level : Adjust the noise reduction level.
   - Sens-up mode : Automatically senses the darkness level at night or in a low contrast scene and extends the accumulation time accordingly for a bright and sharp image.
     - If you set the shutter mode to Manual/A.FLK, SENS-UP mode will be deactivated.
     - The greater the Sens-Up factor is, the brighter the screen becomes but it may result in an afterimage or video delay.
   - Sens-up limit : Set the work condition to Auto mode in a low contrast scene.
   - Iris : You can set the camera iris to Auto or Manual to your preference.
     - Auto : Automatically sets the iris adaptively to the ambient lighting and shutter speed.
     - Manual : Sets the iris to its maximum aperture.
   - AGC mode : Select AGC Control mode.
     Adjust the gain value of the video (that, in particular, was recorded at a low contrast scene and had a lower brightness level than normal) to control the video brightness.

### Special Setup

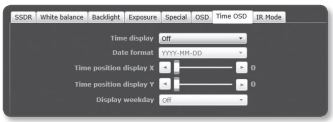



1. Select <**Special**>.
2. Select each item and set it properly.
   - Day & night : You can switch the mode to adjust the black and white level as well as the colors.
     - Color : Always displays the video in colors.
     - B/W : Always displays the video in black and white.
     - Auto : Displays in color mode during normal daytime and switches to black and white mode in a low contrast scene at night.
       - ■ If you set the AGC mode to <**Off**> from <**Exposure**>, the AUTO DAY/NIGHT mode will be disabled accordingly.
     - External B/W : Control the image modes of Color and B/W when an external IR is synchronized via the Alarm In port.
   - Dwell time : This is the time while each applicable lighting condition is kept in order to enable the switch between day and night modes.
   - Duration : Specify the time interval of lighting at which the sequence operation is triggered.
   - Sharpness mode : Adjust the overall sharpness of the image.
     If selecting <**On**>, you can adjust the sharpness of the image.
   - Sharpness level : The higher the level is, the sharper and clearer the outline of the image becomes.
   - Gamma : Adjust the contrast of the image.
   - Color level : Adjust the color level of the image.
   - Alarm in : Set the image to Color or B/W depending on the Open/Close state of the alarm sensor.
     - ■ If the Day & Night mode is set to External B/W, the alarm-in function of the event-alarm input page will be disabled.

## OSD Setup

1. Select <**OSD**>.
2. Select each item and set it properly.
   - Camera title : Specify whether or not to display the camera title on the screen.
     - You can enter up to 15 characters for the title.
   - Camera title position X, Y : Specify the coordinates where the camera title is displayed on the screen.

## Time OSD Setup




1. Select <**Time OSD**>.
2. Select each item and set it properly.
   - Time display : Specify the use of time display on the screen.
   - Date format : Specify the date format that will be displayed on the screen.
   - Time position display X, Y : Specify the position of time display on the screen.
   - Display weekday : Specify the use of date display date on the screen.

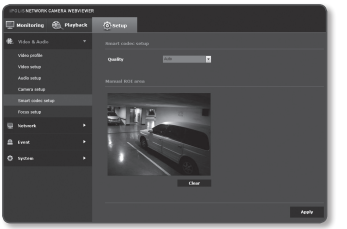
## IR Mode Setup

1. Select <**IR Mode**>.
2. Select each item and set it properly.
   - IR Mode : When the IR indicator turns on in B/W mode, the screen will be protected from saturation on the center area so that you can identify a short-distant object.
     - Off : IR mode will be disabled.
     - Auto : Adjust the IR brightness according to the brightness of the object on the center screen.
     - Manual : Adjust the IR brightness manually.
   - Level : If you set IR mode to Manual, you can adjust the brightness level of the IR indicator to between 0 and 32.

- IR mode will be activated when <**Day & night**> is set to <**Auto**> or <**B/W**>.

## Smart codec setup

Set a desired area of the video incoming from the camera as ROI area and specify the detection sensitivity for the area.




1. From the Setup menu, select the <**Video & Audio (** **)**> tab.
2. Click <**Smart codec setup**>.
3. Set the image quality.
   The ROI area will be displayed in the specified quality.
4. Select a desired area with the mouse pointer and drag it as much as you want.
   - You can specify up to 5 distinct areas.
5. To cancel all the settings for the area, click the [**Clear (** Clear **)**] button.
6. When done, click [**Apply (** Apply **)**].

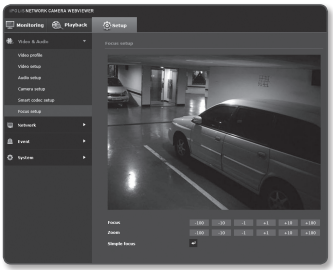


- The Smart codec will not be active if it is set to <**Off**> in <**Video profile**>. (page 50)

## Focus setup

You can adjust the focus and zoom ratio of video image.

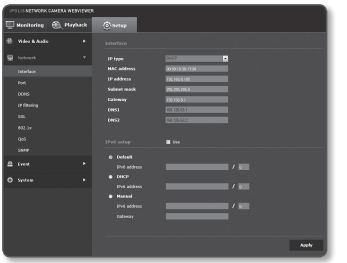
1. From the Setup menu, select the <**Video & Audio (** **)**> tab.
2. Click <**Focus setup**>.
3. Set the focus and zoom.
   - Focus : Manually adjusts the lens focus (Far <-> Near).
   - Zoom : Manually adjusts the zooming (Wide <-> Tele).
   - Simple focus : Click [ ↵ ] button to fit the focus automatically.




- The Simple focus mode may not fit correctly in the following cases:
  - Sudden change to the object in Simple focus mode (sudden movement, appearance or disappearance)
  - Radical change to the brightness in Simple focus mode
  - Image of a low contrast
  - If the camera is exposed to a strong light source in the front or surroundings
- In case the focus is inappropriate apart from mentioned above, use [ -100 , -10 , -1 , +1 , +10 , +100 ] button to manually adjust the focus.
- In a situation where Simple focus is hardly applied, try to use the manual focus mode.

## NETWORK SETUP

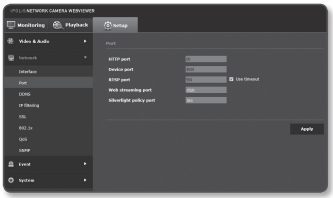
### Interface




1. From the Setup menu, select the <**Network ( )**> tab.
2. Click <**Interface**>.
3. Set the <**Interface**> and <**IPv6 setup**> as necessary.
   - IP type : Select an IP connection type.
     - Manual : Specify the IP address, Subnet mask, Gateway, DNS1, and DNS2.
     - DHCP : Specify the DNS1 and DNS2.
     - PPPoE : Specify the DNS1, DNS2, ID and Password.
     - ■ If you set it to <**Manual**>, you should specify the IP, Subnet mask, Gateway, DNS 1 & 2 manually.
   - MAC address : Shows the MAC address.
   - IP address : Displays the current IP address.
   - Subnet mask : Displays the <**Subnet mask**> for the set IP.
   - Gateway : Displays the <**Gateway**> for the set IP.
4. Set the <**IPv6 setup**>.
   - ■ Set to <**Use**> to use IPv6 address.
   - DNS1/DNS2 : Displays the DNS(Domain Name Service) server address.
   - Default : Use the default IPv6 address.
   - DHCP : Display and use the IPv6 address obtained from the DHCP server.
   - Manual : Enter IP address and gateway manually and use it.
5. When done, click [**Apply ( Apply )**].

- ■ The IP addressing system will be defaulted to DHCP. If no DHCP server is found, the previous settings will be restored automatically.
- ■ Once completed with editing, click [**Apply ( Apply )**] to apply changes and the browser exits. After a while, connect again with the changed IP.

## Port



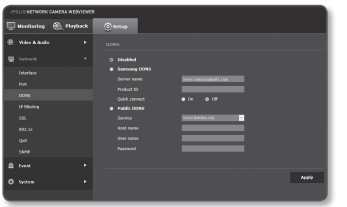

1. From the Setup menu, select the <**Network (** **)**> tab.
2. Click <**Port**>.
3. Type in each item in the Port menu as necessary.
   - Neither the port range between 0 and 1023 nor port 3702 is available.
   - HTTP port : HTTP port used to access the camera via the web browser. The default is 80(TCP).
     - Setting the HTTP port for Safari and Google Chrome browsers to 65535 is not allowed by security policy.
   - Device port : Set a port used to transfer video signals with the Samsung protocols.
   - RTSP port : Used to transfer videos in the RTSP mode; the default is 554.
   - Web streaming port : Used to transfer videos to the Web Viewer; the default is 4520.
   - Silverlight policy port : Silverlight is used to permit to acquire a network connection; the default is 943.

- If changed the HTTP port, the browser exits.
  Afterwards, address should contain the newly assigned HTTP port trailing the IP.
  ex) IP address: 192.168.1.100, HTTP port : Assigned 8080 → http://192.168.1.100:8080
  (If HTTP port is set to 80, no need to specify the port number)
- The port range of the Web Streaming is between 4502 and 4534. If the Device port is with this effective range, the Web Streaming port should be specified the same as the Device port.
- You cannot change the Web Streaming/Silverlight policy server port of a camera.
- Using RTSP and HTTPS is recommended in order to prevent the image information from being restored.

4. When done, click [**Apply (** **)**].

## DDNS

DDNS is an abbreviation of Dynamic Domain Name Service that converts the IP address of a camera into a general Host Name so that the user can easily remember it.




1. From the Setup menu, select the <**Network (** **)**> tab.
2. Click <**DDNS**>.
3. Select the <**DDNS**> connection type.
4. Type in the DDNS items according to the selected type.
   - Samsung DDNS : Select this if you use the DDNS server provided by Samsung Techwin.
     - Product ID : Enter the product ID that is registered with the Samsung DDNS service.
     - Quick connect : It sets port forwarding automatically when used with a UPnP (Universal Plug and Play) supporting router.
   - Public DDNS : Select one of provided public DDNS servers when you use a public DDNS server.
     - Service : Select desired public DDNS service server.
     - Host name : Enter the name of the host that is registered with the DDNS server.
     - User name : Enter the user name for the DDNS service.
     - Password : Enter the password for the DDNS service.
5. When done, click [**Apply (** Apply **)**].

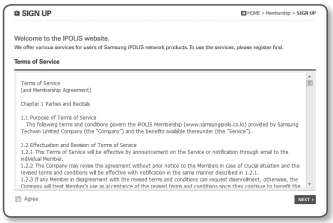


- If selected <**Quick connect**>, be sure to select Samsung DDNS service.

## Registering with DDNS

### To register your product with the Samsung DDNS

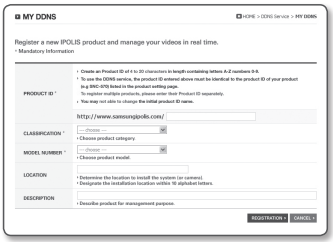
1. Visit the iPOLiS web site (www.samsungipolis.com) and sign in with a registered account.




2. From the top menu bar, select <**DDNS SERVICE**> - <**MY DDNS**>.

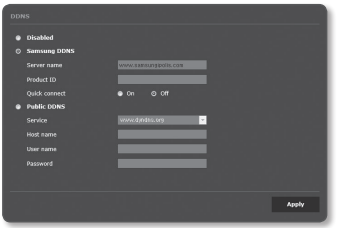
3. Click [**PRODUCT REGISTRATION**].
4. Enter the product ID.
   - You must perform the duplicate check for the ID that you entered.

5. Select a <**CLASSIFICATION**> and specify the <**MODEL NUMBER**>.
6. Specify the product location with a description if necessary.
7. Click [**REGISTRATION**].
   The product will be added to the product list that you can check.



### To connect to the Samsung DDNS in camera setup

1. From the DDNS setup page, set <**DDNS**> to <**Samsung DDNS**>.
2. Provide the <**Product ID**> that you registered product ID with the DDNS site.
3. Click [**Apply (** Apply **)**].
   When the connection is successfully made, you will see the message of <**(Success)**> on the screen.




### Configuring public DDNS in Camera Settings

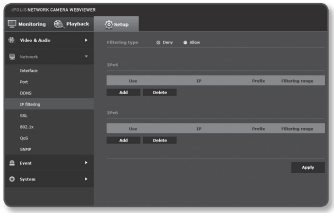
1. Open the DDNS settings page and select <**Public DDNS**> for <**DDNS**>.
2. Enter the corresponding site's host name, user name and password.
3. Click [**Apply (** Apply **)**] button.
   If the connection properly establishes, <**(Success)**> appears.
4. When done, click [**Apply (** Apply **)**].



- To use DDNS service properly, both DDNS setup and the router's port forwarding setup are required.
  For port forwarding setup, refer to "**Port Range Forward (Port Mapping) Setup**" (page 30)

## IP filtering

You can create a list of IPs that you want to grant or deny access to them.




1. From the Setup menu, select the <**Network (** )> tab.
2. Click <**IP filtering**>.
3. Select <**Filtering type**>.
   - Deny : If selecting this, access from those IPs that are added to the filtering will be restricted.
   - Allow : If selecting this, access from only those IPs that are added to the filtering will be accepted.
4. Click the [**Add (** Add **)**] button.
   The IP list will be created.
5. Provide the IP that you want to grant or deny access from.
   When you enter an IP address and a Prefix, the list of IP addresses available will appear in the right-side filter range column.

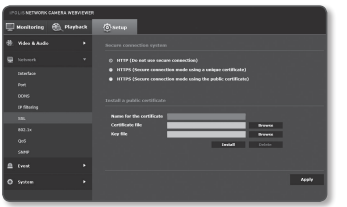


- If selected <**Allow**> for IP Filtering and <**IPv6 setup**> of <**Interface**> is set to <**Use**>, both IPv4 and IPv6 addresses of the computer currently configuring should be assigned.
- The IP address of the computer used for the current setup cannot be added to <**Deny**>, it should be added to <**Allow**>.
- Only the IP addresses that are set to <**Use**> will be displayed in the filter column.

6. Select an IP to delete from the list.
   Click the [**Delete (** Delete **)**] button.
7. When done, click [**Apply (** Apply **)**].

## SSL

You can select a secure connection system or install the public certificate for this purpose.




1. From the Setup menu, select the <**Network (** )> tab.
2. Click <**SSL**>.
3. Select a secure connection system.
   - To access the camera using HTTPS mode, you have to type the IP address for the camera in the form of “https://<Camera_IP>”.
     If you failed to configure the Web viewer settings in HTTPS mode with Internet Explorer, edit the Internet options as follows: <Menu → Tools → Internet Options → Advanced → Security → Uncheck TLS 1.0, and check TLS 1.1, TLS 1.2>
4. Search for the public certificate that you want to install on the camera.
   To install the certificate on the camera, you need to provide a certificate name (it can be arbitrarily assigned by the user), certificate file issued from the certification authority and a key file.
   - The <**HTTPS (Secure connection mode using the public certificate)**> item will be active only if there exists a public certificate installed.
5. When done, click [**Apply (** Apply **)**].

### Installing the certificate

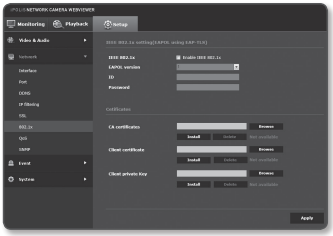
1. Enter the certificate name.
2. Select the certificate file to be installed and certificate key, and click [**Install (** Install **)**] button.

### Deleting the certificate

1. Click [**Delete (** Delete **)**] button.
2. To delete a public certificate, you should access the network video decoder in the mode of <**HTTP (Do not use secure connection)**> or <**HTTPS (Secure connection mode using a unique certificate)**>.

## 802.1x

When connecting network, you can choose whether using 802.1x protocol, and then install the certification.




1. From the Setup menu, select the <**Network (** **)**> tab.
2. Click <**802.1x**>.
3. Set the <**IEEE 802.1x setting(EAPOL using EAP-TLS)**>.
   - Enable IEEE 802.1x : Specify the use of the 802.1x protocol.
   - EAPOL version : Select version 1 or 2.
   - ID : Enter the client certificate ID.
   - Password : Enter the client private key password. If the key file used is not encrypted, you don't need to enter it.

- If the connected network device does not support the 802.1x protocol, the protocol will not operate properly even if you set it.

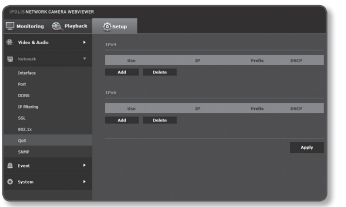
4. Install/remove the certificate.
   - CA certificates : Select a public certificate that contains the public key.
   - Client certificate : Select a public certificate that contains the client certificate key.
   - Client private key : Select a public certificate that contains the client private key.
5. When done, click [**Apply (** **)**].

### To install/remove 802.1x related certificates

1. Press the [**Browse (** **)**] button for each item and select a certificate to install.
2. If no certificate is installed, you will see "Not Available" appearing next to the selected item.
3. Press the [**Install (** **)**] button to start installation with a message of "Installed" next to the item.
4. Press the [**Delete (** **)**] button to remove the certificate.

## QoS

You can specify the priority to secure a stable transfer rate for a specific IP.



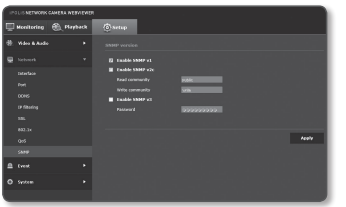

1. From the Setup menu, select the <**Network (** )> tab.
2. Click <**QoS**>.
3. Click the [**Add (** Add )] button.
   The IP list will be created.
4. Enter an IP address to which you will apply QoS.

- The default prefix for IPv4 is 32;
  For DSCP, the default is set to 63.
- Only the IP addresses that are set to <**Use**> can be prioritized.

5. Select an IP to delete from the list.
   Click the [**Delete (** Delete )] button.
6. When done, click [**Apply (** Apply )].

## SNMP

With the SNMP protocols, the system or network admin can monitor the network devices on a remote site, and configure the environment settings.




1. From the Setup menu, select the <**Network (** )> tab.
2. Click <**SNMP**>.
3. Specify the <**SNMP**>.
   - Enable SNMP v1 : SNMP version 1 will be active.
   - Enable SNMP v2c : SNMP version 2 will be active.
     - Read community : Provide the name of the read community where you can access to the SNMP information. The default name is <**public**>.
     - Write community : Provide the name of the write community where you can access to the SNMP information. The default name is <**write**>.

- Enable SNMP v3 : SNMP version 3 will be active.
  - Password : Specify the default password for SNMP version 3. The default password is <**admin4321**>.
    - The default password can be exposed to a hacking thread so it is recommended to change the password after installing the product.
      Note that the security and other related issues caused by the unchanged password shall be responsible for the user.
    - Password should be longer than 8 characters, no more than 16 characters.

4. When done, click [**Apply (** Apply **)**].

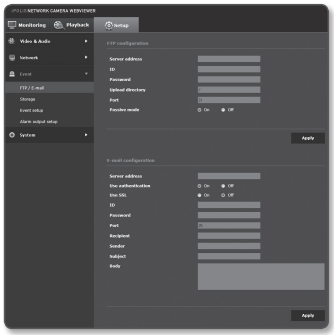
- SNMP v3 is only able to be set when the secure connection mode is HTTPS.
  Refer to "**SSL**". (page 70)
- If you don't use SNMP v3, there may be a security issue.

# EVENT SETUP

## FTP / E-mail

You can configure the FTP/E-mail server settings so that you can transfer the images taken with camera to your PC if an event occurs.

1. From the Setup menu, select the <**Event (** **)**> tab.
2. Click <**FTP / E-mail**>.
3. Select <**FTP configuration**> or <**E-mail configuration**> and enter / select a desired value.
   - FTP configuration
     - Server address : Enter the IP address of the FTP server that you transfer the alarm or event images to.
     - ID : Enter the user ID with which you will log in to the FTP server.



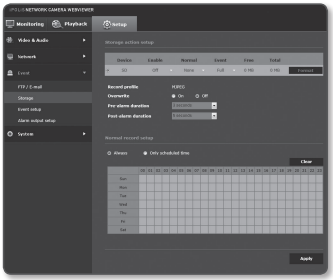
- Password : Enter the user account password for logging into the FTP server.
- Upload directory : Specify the FTP path where you will transfer the alarm or event images.
- Port : The default port of the FTP server is 21; however, you can use a different port number according to the FTP server settings.
- Passive mode : Select <**On**> if you need to connect in passive mode due to the firewall or the FTP server settings.

• E-mail configuration
- Server address : Enter the IP address of the email server that you transfer the alarm or event images to.
- Use authentication : Select whether to use authorization.
- Use SSL : Specify the use of SSL.
- ID : Enter the user ID for logging into the email server.
- Password : Enter the user account password for logging into the email server.
- Port : The default port of the email server is 25; however, you can use a different port number according to the email server settings.
- Recipient : Enter the address of the email recipient.
- Sender : Enter the address of the email sender. If the sender address is incorrect, the email from the sender may be classified as SPAM by the email server and thus may not be sent.
- Subject : Enter a subject for your email.
- Body : Provide the text for the massage. Attach the alarm or event images to the email that you are preparing.

**4.** When done, click [**Apply** ( Apply )].

## Storage

You can set the record conditions or the use of recording for the SD memory, check the size of stored data, or format the SD memory itself.



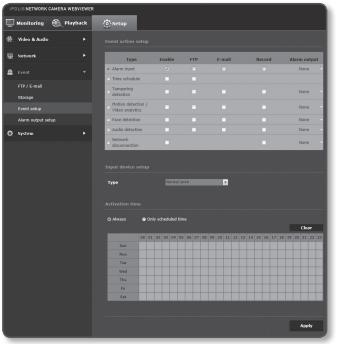

1. From the Setup menu, select the <**Event (** **)**> tab.
2. Click <**Storage**>.

### To make recording on the SD memory

1. Check the memory card's <**Free**> size and <**Total**> size.
2. If there are sufficient free space, set the device to <**On**>.
   Otherwise, check the stored data and if you find them not important, then click <**Format**> to format the SD memory.
   - If your SD memory card writes slowly, only one frame per second will be stored.
   - For a SD memory card with a large capacity, the formatting will be slowed down accordingly.
   - Setting to higher options of resolution, bit rate and frame rate increases the amount of data produced. As the size of data grows, transferred video can be stored only at 1 fps even if you set the record quality to full frames.
3. Specify the storage action.
   - Record profile : Shows recording profile's codec type.
   - Overwrite : If the SD memory is full, this will delete old data and store new data in replacement.
   - Pre-alarm duration : Specify the time point before the occurrence of the alarm; starting from the time point, the images will be transferred. You can specify up to 5 seconds before the occurrence of the alarm.
   - Post-alarm duration : Specify the time point after the occurrence of the alarm; to the specified time point, the images will be transferred. You can specify up to 120 seconds after the occurrence of the alarm.
   - Normal : Make recording at a certain frame rate.
   - Event : Set the recording type for a certain event that occurs.
4. Specify the <**Normal record setup**>.
   - Always : Always save recorded video in the SD memory card.
     - If set to Always, the activation time cannot be changed.
   - Only scheduled time : Records only on the specified time of the specified day of week.
   - [Clear ( **Clear** )] : Reset all settings.
5. When done, click [**Apply (** **Apply** **)**].

## Alarm input

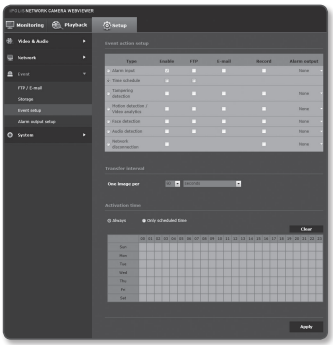
You can set the alarm input type, activation time, and operation mode.




1. From the Setup menu, select the <**Event (** )> tab.
2. Click <**Event setup**>.
3. Select <**Alarm input**> from <**Event action setup**>.
4. Set whether or not to <**Enable**>.
5. Specify an input device.
   - Type
     - Normal open : It is normally open, but if it is closed, an alarm will be triggered.
     - Normal close : It is normally closed, but if it is open, an alarm will be triggered.
6. Specify the <**Activation time**>.
   - Always : Always check if an alarm occurs. It activates in operated mode when the alarm occurs.
     - If set to <**Always**>, the activation time cannot be changed.
   - Only scheduled time : Check if an alarm occurs at a specified day of the week for a specified time period. It activates in operated mode when the alarm occurs.
   - [Clear ( Clear )] : Reset all settings.
7. Specify an operation that will perform if an alarm occurs.
   - FTP : Specify the use of FTP transfer in the alarm input setup.
   - E-mail : Specify the use of email transfer in the alarm input setup.
   - Record : Specify the use of recording in the alarm input setup.
   - Alarm output : Select whether to set the alarm output if an alarm is incoming, and specify the alarm output time.
8. When done, click [**Apply (** Apply **)**].

## Time schedule

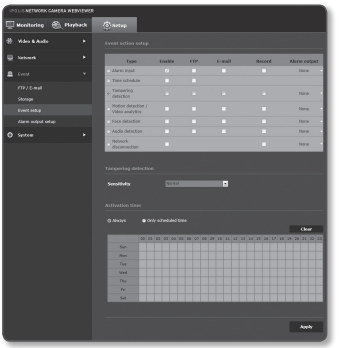
You can set to save the video data at a certain interval as scheduled regardless of the actual occurrence of the event.




1. From the Setup menu, select the <**Event (** **)**> tab.
2. Click <**Event setup**>.
3. Select <**Time schedule**> from <**Event action setup**>.
4. Set whether or not to <**Enable**>.
5. Specify the <**Transfer interval**>.
6. Specify the <**Activation time**>.
   - Always : Always activates in operated mode at the set interval.
   - Only scheduled time : Periodically activates in operated mode at a specified time and date.
7. Specify the activation conditions.
   - FTP : Specify the use of the FTP transfer if an event occurs.
8. When done, click [**Apply (** Apply **)**].

## Tampering detection

You can set to detect tampering attempts and trigger events, such as sudden change of camera's framing direction, blocked lens and other overall change of scenes from the video.

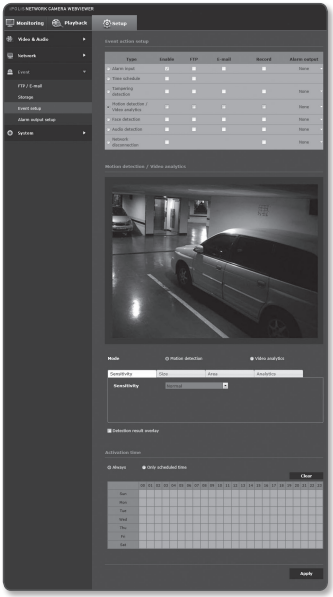



1. From the Setup menu, select the <**Event (** )> tab.
2. Click <**Event setup**>.
3. Select <**Tampering detection**> from <**Event action setup**>.
4. Set whether or not to <**Enable**>.
5. Set the tampering detection sensitivity. The higher the sensitivity, detects the minutest tampering attempts.
6. Specify the activation time and activation condition.
   - For more information about <**Activation time**> and <**Action**>, refer to "**Alarm input**". (page 76)
7. When done, click [**Apply (** Apply **)**].

- The default tampering detection function may not work properly in the following cases:
  - Under circumstances of simple background or low illumination and night time may lower the detection sensitivity.
  - A severe shaking of the camera or a drastic change to the illumination can be considered a tampering by mistake.
  - Detection of the tampering may take some time (maximum 5 seconds) right after the tampering was made.
  - Once a tampering is detected, the camera will resume a normal operating after a certain stability time (approx. 5 seconds) during which no detection will be performed.

## Motion detection / Video analytics

Events of motion detection and video analysis can be set to trigger event signal output.



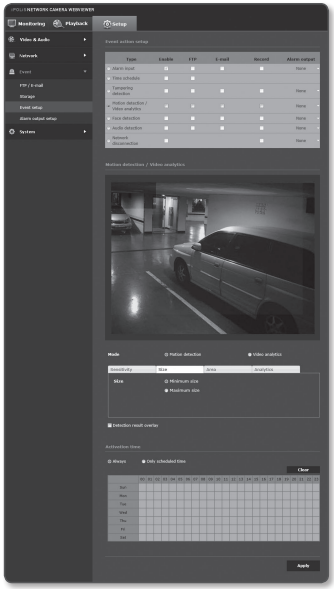

1. From the Setup menu, select the <**Event (** 🔔 **)**> tab.
2. Click <**Event setup**>.
3. Select <**Motion detection / Video analytics**> from <**Event action setup**>.
4. Set whether or not to <**Enable**>.
5. According to your purpose, select from motion detection and intelligent video analysis.
6. Set <**Sensitivity**>, <**Size**> and <**Area**>. When selected Intelligent Video Analysis, set <**Analytics**> too.
7. Set whether to use <**Detection result overlay**>.
   When a motion is detected, its size and position is marked with a rectangle on the screen.
   - Green : All targets detected as moving.
   - Red : All targets detected as passing, entering or exiting.
     (Colored marking remains for 1 ~ 2 seconds.)
   - Blue: All targets detected as Appear/Disappear event.
     (Colored marking remains for 3 ~ 5 seconds.)
8. Specify the activation time and activation condition.
   - For more information about <**Activation time**> and <**Action**>, refer to "**Alarm input**". (page 76)
9. When done, click [**Apply (** Apply **)**].

- Motion detection and Video analytics cannot be used simultaneously.
- Before using, set the minimum and maximum motion sizes to suit desired motion range to be detected.
- Detected size of an object may have difference with the actual size according to its shape.
- Up to 16 objects from the top side of the screen can be displayed.
- If camera is capturing a close object, the video analysis capability may degrade.
- In the following cases, motion detection and intelligent video analysis function may be degraded or cause improper detection.
  - The object color or brightness is similar to the background.
  - Small activities around the border area of the camera's field of view.
  - Multiple movements continue occurring at random due to a scene change, rapid lighting changes or other reasons.
  - A fixed object continues moving in the same position.
  - Motions of less position changing such as approaching to the camera or fading away from the camera.
  - Moving object approaches to the camera too close
  - An object hides other objects behind.
  - Two or more objects overlap or one object divides in multiple portions.
  - Too fast object (for a proper detection, one object should be found overlapping between contiguous frames).
  - Reflection / blur / shadow due to a strong light such as direct sunlight, illumination, or headlamp.
  - In severe snow, rain, wind or in dawn / dusk.

## To use Motion detection

It detects a motion that meets all conditions specified by sensitivity, size and area.

1. Select a motion detection mode.
2. Select <**Sensitivity**> tab to set the sensitivity level. You can set the sensor's sensitivity to detect a motion out of the background from the monitoring video.




3. Select <**Size**> tab.
   You can limit the minimum/maximum size of motion to be detected.
   - Minimum Size : To set the minimum size of detected motions, select <**Minimum Size**> and then point and drag to the desired size on the screen using the mouse.
   - Maximum Size : To set the maximum size of detected motions, select <**Maximum Size**> and then point and drag to the desired size on the screen with your mouse.

- In a situation that definitely distinguishes objects out of backgrounds, set this to a low sensitivity level. For opposite case that is hard to distinguish objects like low illuminated situation, set this to a high level.

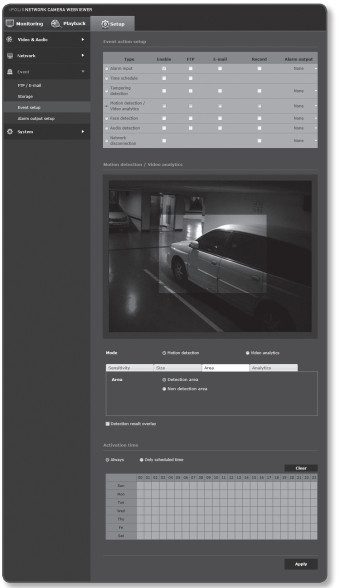
- Motions smaller than the specified minimum size or bigger than the maximum size are not detected. To avoid unintended detections caused by great and small noises, set minimum/maximum motion sizes appropriately in accordance to your environments.
  Note that same motions on the same location can be differently detected in their detection size; it is recommended to consider and include the tolerable difference when setting the minimum/maximum detection sizes.

4. Select <**Area**> tab.
   You can specify an area on the screen to include or exclude the area to/from detection.
   You can specify up to 4 areas.
   - Detection area: Sets the entire screen as excluded from detection, and adds specified area as motion detection area. Use your mouse to drag to specify preferred area as the motion detection area.
   - Non detection area: Sets the entire screen as motion detection area, and excludes specified area as not to be detected. Use your mouse to drag to specify preferred area as the non detection area.
5. To delete an area, right click on the screen to open popup context menu and select Delete, and [**OK**] button.



- All areas defined are deleted.

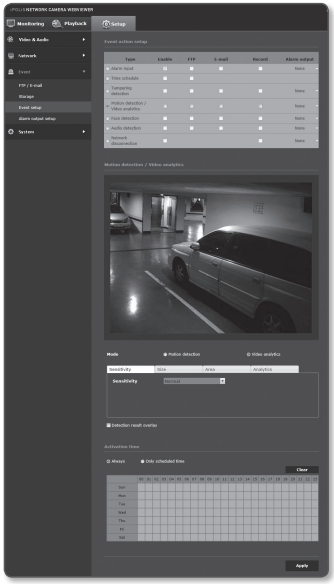
6. When done, click [**Apply** ( Apply )].



## To use Video analytics

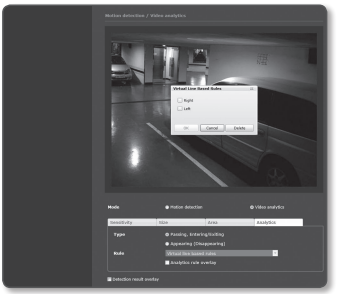
It detects event that meets all conditions specified by sensitivity, size and area and the event condition rules.

1. Select the video analysis mode.
2. Set <**Sensitivity**>, <**Size**> and <**Area**>. For further details on settings, refer to "**To use Motion detection**". (Page 81~82)
3. Select <**Analytics**> tab.
4. Select the video analysis type.
   - Passing, Entering/Exiting : Detects motions of passing, entering into or exiting from a virtual line specified by the user.
   - Appearing (Disappearing) : Detects motions of appearing on or disappearing from the user-defined area or the entire screen area.
5. Set the video analysis rules. For further details on settings, refer to "**To set the video analysis rules**". (page 84~85)
6. Set whether to use <**Detection result overlay**>. Specified rules of virtual lines and areas are displayed on the monitoring page.
7. When done, click [**Apply (** Apply **)**].



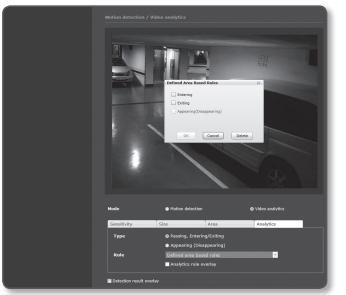
## To set the video analysis rules

### ▪ Passing




1. Set the type to <**Passing, Entering/ Exiting**>.
2. Set the event rule to <**Virtual line based rules**>.
3. On the screen, click on preferred starting and ending point of the virtual line, then a popup window appears.
4. Select the desired rule:
   - Right: Detects motions of moving from the left to the right, over the virtual line.
   - Left: Detects motions of moving from the right to the left, over the virtual line.
5. Click [**OK**].
6. To remove a defined rule, right click on the displayed virtual line to open popup context menu and select [**Delete**] button.

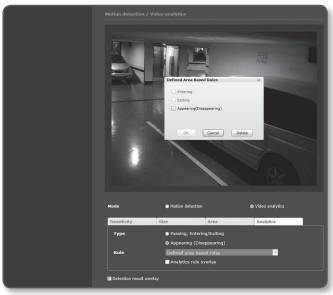
### ▪ Entering/Exiting

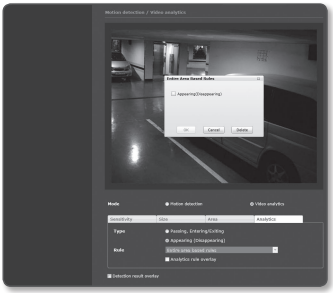



1. Set the type to <**Passing, Entering/ Exiting**>.
2. Set the event rule to <**Defined area based rules**>.
3. On the screen, click four vertices to define detection area and a popup window appears.
4. Select the desired rule:
   - Entering : Detects motions of moving object whose center point entering into the defined area, from outside of the area.
   - Exiting : Detects motions of moving object whose center point exiting from the defined area, from inside of the area to outside.
5. Click [**OK**].
6. To remove a defined rule, right click on the displayed side lines of the area to open popup context menu and select [**Delete**] button.

## ■ Appearing (Disappearing)

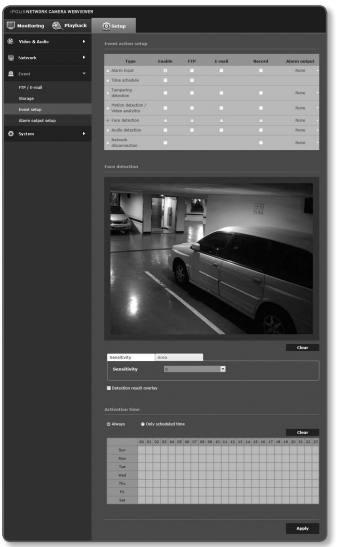
1. Set the analysis type to <**Appearing (Disappearing)**>.
2. Select the desired event rule:
   - Defined area based rules : It detects event of appearing object that appears in the area and remaining for a certain time period while not passing through the area borders, and opposite case of disappearing of objects existed in the area.
     On the screen, click four vertices to define detection area.
     Select the [**Appearing (Disappearing)**] from the popup.
   - Entire area based rules : It detects event of appearing object that appears in the entire screen and remaining for a certain time period, and opposite case of disappearing of objects existed in the screen.
     Right click on the screen to open the popup context menu and select [**Appearing(Disappearing)**].
3. Click [**OK**].
4. To remove a defined rule, right click on the displayed side lines of the area or on the screen to open popup context menu and select [**Delete**] button.



## Face detection

You can set to detect recognized face and trigger an event accordingly.




1. From the Setup menu, select the <**Event (** )> tab.
2. Click <**Event setup**>.
3. Select <**Face detection**> from <**Event action setup**>.
4. Set whether or not to <**Enable**>.
5. Select <**Sensitivity**> tab to set the sensitivity level.
   - As the sensitivity grows, face detection becomes more close and detailed.
6. Select <**Area**> tab and drag on the screen to define the desired detection area. You can specify up to 4 detection areas.

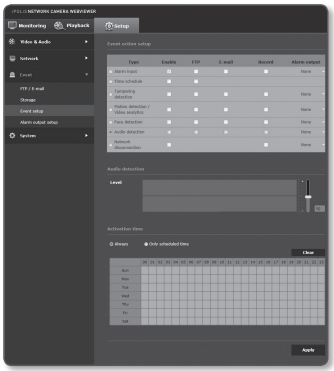


- Conditions for face detection are as below:
- Face detection can be applied to videos having the QVGA (320x240) resolution only.
- For detection, the face area should be bigger than 20~40 pixels at least.
- Up to 35 faces within one frame image can be recognized in maximum, unable to detect more.

7. To delete a defined area, click [**Clear**] button while the Area tab is selected.
8. Set whether to use <**Detection result overlay**>.
   When faces are detected, their positions and sizes are marked with rectangles on the screen.
9. Specify the activation time and activation condition.
   - For more information about <**Activation time**> and <**Action**>, refer to "**Alarm input**". (page 76)
10. When done, click [**Apply (** Apply **)**].

## Audio detection

You can set to detect sound over the specified level and trigger an event accordingly.

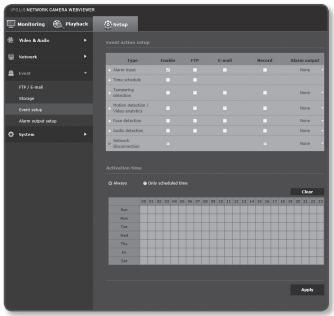



1. From the Setup menu, select the <**Event (** 🔔 **)**> tab.
2. Click <**Event setup**>.
3. Select <**Audio detection**> from <**Event action setup**>.
4. Set whether or not to <**Enable**>.
5. Set the audio detection's sound level. The lower the level, the smaller the sound change is detected.
6. Specify the activation time and activation condition.
   - For more information about <**Activation time**> and <**Action**>, refer to "**Alarm input**". (page 76)
7. When done, click [**Apply (** Apply **)**].

- If detected audio level is too low, set the audio input gain to a higher level in <**Audio setup**>.
- Please use the audio detection function when connecting to an external audio input device.

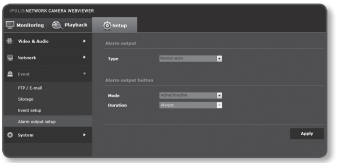
## Network disconnection

You can receive and save events of a physically disconnected network.




1. From the Setup menu, select the <**Event (** 🔔 **)**> tab.
2. Click <**Event setup**>.
3. Select <**Network disconnection**> from <**Event action setup**>.
4. Set whether or not to <**Enable**>.
5. Specify the activation time and activation condition.
   - For more information about <**Activation time**> and <**Action**>, refer to "**Alarm input**". (page 76)
6. When done, click [**Apply (** Apply **)**].

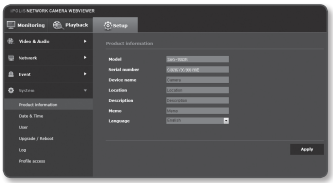
## Alarm output setup




1. From the Setup menu, select the <**Event (** )> tab.
2. Click <**Alarm output setup**>.
3. Set the camera's type of alarm output.
   - ■ If you change the alarm output type, the alarm out button on the monitoring page and alarm output type displayed on Event Setup page will be changed accordingly.
   - Type
     - Normal open : Considers "Open circuit" status of the sensor or alarm input device as normal, and triggers alarm event if becomes "Closed circuit" status.
     - Normal close : Considers "Closed circuit" status of the sensor or alarm input device as normal, and triggers alarm event if becomes "Open circuit" status.
4. Set the alarm output button.
   - Mode: Sets the alarm output method.
     - ■ There is difference between operations when clicked alarm output button while disabled.
     - Pulse : It is activated during the time period specified by the duration (switching interval) and then becomes inactive automatically.
     - Active/Inactive : It maintains as activated until the user clicks the button again to make it inactive.
   - Duration : Set the alarm duration that maintains activated if the mode is set to pulse, from 1 to 15 seconds.
5. When done, click [**Apply (** Apply **)**].

# SYSTEM SETUP

## Product information

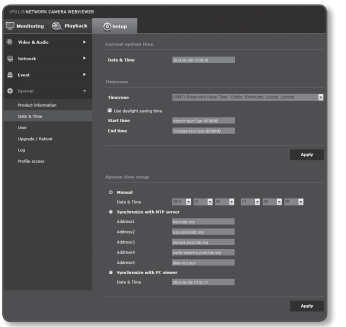



1. From the Setup menu, select the <**System (** **)**> tab.
2. Click <**Product information**>.
3. Check the camera information, or provide details according to your network environment.
   - Model : Model name of the product.
   - Serial number : Product serial number.
   - Device name : Provide a device name that will be displayed on the Live screen.
   - Location : Specify the location where the camera is installed.
   - Description : Provide detailed information about the camera location.
   - Memo : Provide an explanation about the camera for better understanding.
   - Language : Select a preferred language for the Web Viewer OSD.

- The default language is set to <**English**>.

4. When done, click [**Apply (** Apply **)**].

## Date & Time

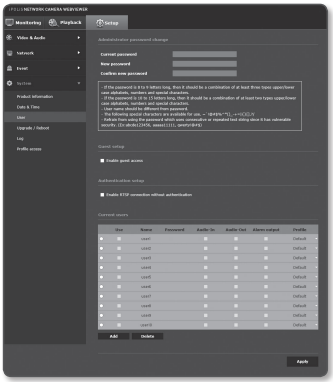



1. From the Setup menu, select the <**System (** )> tab.
2. Click <**Date & Time**>.
3. Specify the time and date that will be applied to the camera.
   - Current system time : Displays the current time settings of your system.
   - Timezone : Specify the local time zone based on the GMT.
   - Use daylight saving time :
     If checked, the time will be set one hour before the local time zone for the specified time period.
     This option will be displayed only in areas where DST is applied.
   - System time setup : Specify the time and date that will be applied to your system.
     - Manual : Specify the time manually.
     - Synchronize with NTP server : Sync with the time of the specified server address.
     - Synchronize with PC viewer : Sets to the time of the computer connected.
4. When done, click [**Apply (** Apply **)**].

- If you select the <**Synchronize with PC viewer**>, the standard timezone should be set the same as the current timezone in PC.

## User

1. From the Setup menu, select the <**System ( )**> tab.
2. Click <**User**>.
3. Provide the necessary user information.
   - Administrator password change : Change the password for the administrator.






- For the security purposes, you are recommended to use a combination of numbers, alphabets uppercase and lowercase and special characters for your password.
- It is recommended to change your password once every three months.
- The password length and limits are shown as follows.
  - A combination of at least three types of upper case, lower case, numeric, and special characters: 8 to 9 characters.
  - A combination of at least two types of upper case, lower case, numeric, and special characters: 10 to 15 characters.
  - Should be different from the ID.
  - For higher security, you are not recommended to repeat the same characters or consecutive keyboard inputs for your passwords.
  - Special characters that are allowed. : ~`!@#$%^*()_-+=|{}[].?/
  - When you access the camera web page for the first time or access it after the initialization, you will be moved to the admin password setting menu.
  - In this menu, you need to login again with the new password before using the camera web page menus.

- If the existing password is not matched, when you change the admin password, you cannot change the password.
- After changing your password, if there is a camera connected to a CMS or NVR client, then you need to re-register it with the newly changed password. If the camera is still connected with the same password, then the account may be locked because a client uses the previous password.

■ If you try to login with the registered account, 5 or more consecutive password authentication has failed, and then the account may be locked for thirty seconds.

■ When the password is changed while multiple connections are active from a PC, the browser may malfunction. In that case, reconnect to the server.

- Guest setup : If you select <**Enable guest access**>, the guest account can access the Web viewer screen but can only view the live Viewer screen.
  ■ The ID/password for the guest account is <**guest/guest**>, which cannot be changed.
- Authentication setup : If you select <**Enable RTSP connection without authentication**>, you can access RTSP without logging in and view the video.
- Current users : If you select <**Use**>, you can set or change the user permissions.
  ■ The administrator can set the audio input, audio output and alarm output permissions.
  ■ Profile : If you select <**Default**>, you can only see the default profile video; if selecting <**All**>, you can see the full profile videos.

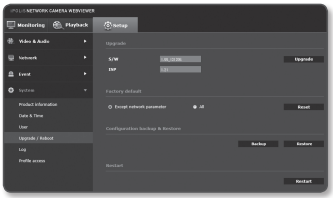
■ ONVIF functions available to a registered user allowed to use ONVIF functions are limited to those of granted with permission.

■ Video Transfer and Changing Video Information: Set the profile to <**All**>, and set Audio Input and Audio Output.

■ Video Transfer, Changing Video Information, Alarm Output : Set the profile to <**All**>, and select at your preference for the rest.

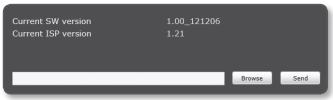
**4.** When done, click [**Apply (** Apply **)**].

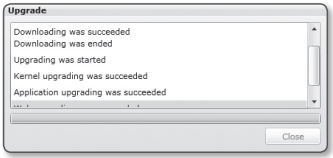
## Upgrade / Reboot




1. From the Setup menu, select the <**System (** **)**> tab.
2. Click <**Upgrade / Reboot**>.
3. Select a desired item and set it appropriately.
   - Upgrade : Performs upgrading the system.
   - Factory default : Resets the system to the factory default.
     - Except network parameter : Reset the other settings except for Network settings.
     - All : Resets all settings including the camera settings. (however, the log information will not be reset)
       - The IP addressing system will be defaulted to DHCP if you reset the camera. If no DHCP server is found, the previous settings will be restored automatically.
   - Configuration backup & Restore : Backs up the current system settings before performing the restoration process. The system is automatically restarts after backup or restoration.
   - Restart : Restarts the system.

### To perform the upgrade



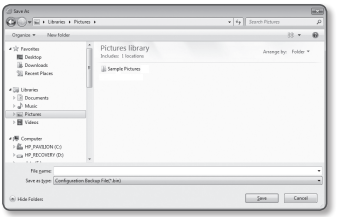




1. Click [**Upgrade**].
2. Click [**Browse**] and specify a file to upgrade.
3. Click [**Send**].
4. The "**Upgrade**" dialog appears where the progression will be shown in the bottom.
5. Once completed upgrading, the browser exits and the camera restarts.

- It may take a max of 20 minutes for the upgrade process.
  If you forcibly terminate the upgrade process, upgrade will not be completed properly.
- During restarting the system, accessing with web viewer will not be made.
- You can download the latest version from the Samsung web site (www.samsungcctv.com).

### To back up the current settings

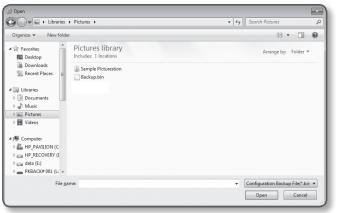
1. Click [**Backup**].
   The Save As dialog should appear.
2. Specify the backup path with a proper file name, and click [**Save**].
   The backup file will be saved to the specified path in the format of "**.bin**".




### To restore the backup settings

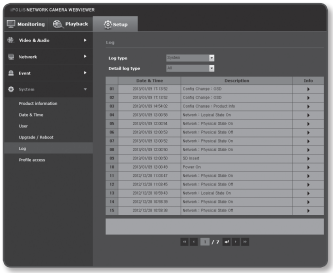
1. To restore the backup settings, click [**Restore**].
2. Select a backup file and click [**Open**].

- If you perform the backup or restoration, the web browser will be closed and the camera will reboots.



## Log

You can check the system log or event log.

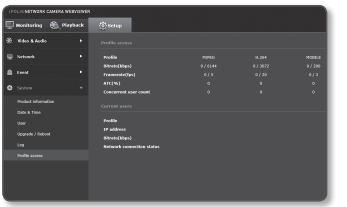



1. From the Setup menu, select the <**System ( )**> tab.
2. Click <**Log**>.
3. Select a log type.
   - System : You can check the system logs where any system changes are recorded including the time information.
   - Event : You can check the event logs including the time information.
4. From the right log list, select an item to search for.
   - If you select <**All**> in the top left dropdown list, all logs for the applicable log type will be displayed.
5. If one page can not display all the logs available, use the bottom buttons to move to the previous, next, or the last item.

- If you want to view the details of a log, click [**Info ( )**] in the right column of the log; the log information will be shown in the bottom pane.
- Each page displays 15 logs with the latest one displayed at the top.
- The event/system log list can contain up to 1000 logs; after that, the existing logs will be deleted from the oldest one each time a new log is created.

## Profile access

You can check the profile information.




1. From the Setup menu, select the <**System (** )> tab.
2. Click <**Profile access**>.
   - Profile access : Show the information of the newly added profile.
     - Profile : Show the information of the newly added codec.
     - Bitrate(kbps) : Show both the actual bit rate and the set bit rate.
     - Framerate(fps) : Show both the actual frame rate and the set frame rate.
     - ATC(%) : Show the ATC status.
     - Concurrent users count : Show the number of concurrent users who access the profile.
   - Current users : Shows information on users accessing web viewer and displaying monitoring video.
     - Profile : Show the name of the profile accessed by the user.
     - IP address : Show the IP address of the current user.
     - Bitrate(kbps) : Show the current bit rate.
     - Network connection status : You can check the network connection status.

■ To check information on the profile currently used, click <**Profile access**> again to refresh it.

## SPECIFICATION

| Items | | Description |
|---|---|---|
| Video | Imaging Device | 1/3" 3.1M PS CMOS |
| | Total Pixels | 2,064(H) X 1,578(V) |
| | Effective Pixels | 2,052(H) X 1,536(V) |
| | Scanning System | Progressive |
| | Min. Illumination | Color : 0.7 Lux (F1.2, 50IRE), 0.011 Lux (Sens up 60X)<br>B/W : 0 Lux (F1.2, 50IRE, IR LED ON) |
| | S / N Ratio | 50dB |
| | Video Out | CVBS : 1.0 Vp-p / 75Ω composite, 704x480(N), 704x576(P), for installation |
| Lens | Focal Length (Zoom Ratio) | 3~8.5mm (2.8X) Motorized Vari-focal |
| | Max. Aperture Ratio | F1.2 |
| | Angular Field of View | H : 87.3°(Wide)~ 31.2°(Tele), V : 64.5°(Wide)~ 23.4°(Tele) |
| | Min. Object Distance | 0.5 m |
| | Focus Control | Manual, Simple focus, Day&Night |
| | Lens Type | DC Auto Iris |
| | Mount Type | Board-in type |
| Operational | IR LED | 32 ea |
| | Viewable Length | 30m |
| | Camera Title | Off / On (Displayed up to 15 characters) |
| | Day & Night | Auto (ICR) / Color / B/W / External |
| | Backlight Compensation | Off / BLC / HLC |
| | Wide Dynamic Range | Off / On (96dB)<br>3M Mode : 20fps, 2M Mode : 30fps |
| | Contrast Enhancement | SSDR (Samsung Super Dynamic Range) (Off / On) |
| | Digital Noise Reduction | SSNRIII (2D+3D Noise Filter) (Off / On) |
| | Digital Image Stabilization | - |

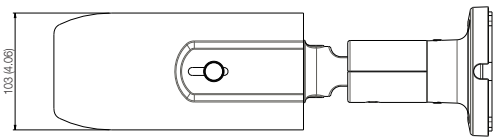
| Items | | Description |
|---|---|---|
| Operational | Motion Detection | Off / On (4 Rectangular zones) |
| | Privacy Masking | Off / On (1ea 4 Point Polygonal + 16ea Rectangular zones) |
| | Sens-up (Frame Integration) | Off / Auto (2X ~ 60X) |
| | AGC (Auto Gain Control) | Off / Low / Medium / High |
| | White Balance | ATW / AWC / Manual / Indoor / Outdoor |
| | Electronic Shutter Speed | Auto / A.FLK / Manual (1/30 ~ 12,000sec) |
| | Digital Zoom | - |
| | Flip / Mirror | Off / On |
| | Intelligent Video Analytics | Audio Detection, Face Detection, Tampering, Virtual Line, Enter / Exit, Appear / Disappear |
| | Alarm I/O | Digital Input 1ea / Output 1ea |
| | Remote Control Interface | - |
| | RS-485 Protocol | - |
| | Alarm Triggers | Motion detection, Video Analytics, Sensor Input |
| | Alarm events | • File upload via FTP, E-Mail<br>• Notification via E-Mail, TCP<br>• local storage(SD/SDHC) recording at Network disconnected |
| Network | Ethernet | RJ-45 (10/100BASE-T) |
| | Video Compression Format | H.264(MPEG-4 Part 10/AVC), Motion JPEG |
| | Resolution | <3M Mode><br>2048x1536 / 1920x1080 /1600x1200/ 1280x1024 /1280x960 / 1280x720 /1024x768/ 800x600 / 800x450 / 640x480 / 640x360 / 320x240 / 320x180<br><2M Mode><br>1920x1080 / 1280x1024 / 1280x960 / 1280x720 /1024x768/ 800x600 / 800x450 / 640x480 / 640x360 / 320x240 / 320x180 |

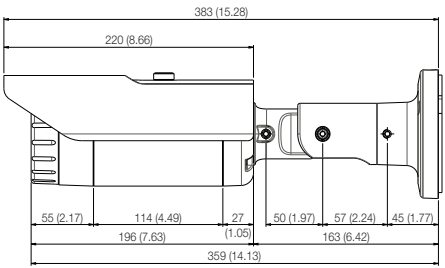
| Items | | Description |
|---|---|---|
| Network | Max. Framerate | <3M Mode><br>* H.264 : Max 20 fps at all resolutions<br>* MJPEG : 800x600 ~ 320x180 - 20 fps, 1024x768 ~ 1920x1080 - 15 fps, 2048x1536 - 10 fps<br><2M Mode><br>* H.264 : Max 30 fps at all resolutions<br>* MJPEG : 800x600 ~ 320x180 - 30 fps, 1024x768 ~ 1920x1080 : 15 fps |
| | Smart Codec | Yes (Area Based Method) |
| | Video Quality Adjustment | H.264 : Compression Level, Target Bitrate Level Control<br>MJPEG : Quality Level Control |
| | Bitrate Control Method | H.264 : CBR or VBR<br>MJPEG : VBR |
| | Streaming Capability | Multiple Streaming (Up to 6 Profiles) |
| | Audio I/O | Mic./Line in , Line out |
| | Audio Compression Format | G.711, G.726 |
| | Audio Communication | Bi-directional |
| | IP | IPv4, IPv6 |
| | Protocol | TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTSP, NTP, HTTP, HTTPS, SSL, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, UPnP |
| | Security | HTTPS(SSL) Login Authentication<br>Digest Login Authentication<br>IP Address Filtering<br>User access Log<br>802.1x Authentication |

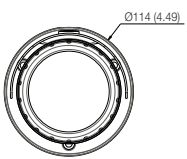
| Items | | Description |
|---|---|---|
| Network | Streaming Method | Unicast / Multicast |
| | Max. User Access | 10 users at Unicast Mode |
| | Memory Slot | SD/SDHC Memory Slot (4GB included) |
| | ONVIF Conformance | Yes |
| | Webpage Language | English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Swedish, Denish, Portuguese, Czech, Polish, Turkish, Rumanian, Serbian, Dutch, Croatian, Hungarian, Greek, Norway, Finland |
| | Web Viewer | Supported OS : Windows XP / VISTA / 7, MAC OS X 10.7 or higher<br>Supported Browser : Internet Explorer 7.0 or higher,<br>Firefox 9.0 or higher, Chrome 15.0 or higher,<br>Safari 5.1 or higher |
| | Central Management Software | NET-i viewer, Samsung Security Manager |
| Environmental | Operating Temperature / Humidity | AC24V : -50°C ~ +55°C (-58°F ~ +131°F) / Less than 90% RH<br>DC12V, PoE : -10°C ~ +55°C (+14°F ~ +131°F) / Less than 90% RH<br>* Heater works at AC power input. |
| | Storage Temperature / Humidity | -30°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH |
| | Ingress Protection | IP66 Grade (Waterproof) |
| | Vandal Resistance | IK10 |
| Electrical | Input Voltage / Current | DC 12V, AC 24V, PoE(IEEE802.3af, Class3) |
| | Power Consumption | Max. 12.95W (DC 12V, AC 24V, PoE - Heater Off)<br>Max. 18.5W (AC 24V - Heater On) |
| Mechanical | Color / Material | Dark Gray / Metal |
| | Dimension (WxHxD) | W114.0 X H114.0 X D383.0mm |
| | Weight | 1.83kg (America : 1.73kg) |

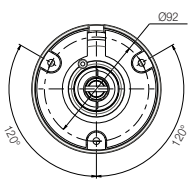
# PRODUCT OVERVIEW

Unit : mm (inch)



## TROUBLESHOOTING

| PROBLEM | SOLUTION |
|---|---|
| I can't access the camera from a web browser. | • Check to make sure that the camera's Network settings are appropriate.<br>• Check to make sure that all network cables have been connected properly.<br>• If connected using DHCP, verify that the camera is able to acquire dynamic IP addresses without any problem.<br>• If the camera is connected to a Broadband Router, verify that port forwarding is properly configured. |
| Viewer got disconnected during monitoring. | • Connected Viewers become disconnected upon any change to camera or network configurations.<br>• Check all network connections.<br>• If the camera is connected over an PPPoE network, it' s possible for Viewer to disconnect under poor network conditions. |
| I cannot connect to the system using a tab browser of Internet Explorer 7.0. | • An error may be generated when connecting with a new window or tab since the cookie data are shared. Do not use a new window or tab, select "File → New session". |
| The camera connected to the network is not detected in the IP installer program. | • Turn off the firewall settings on your PC and then search the camera again. |
| Images overlap. | • Check whether two or more cameras are set to a single multicast address instead of different addresses. If a single address is used for multiple cameras, the images may overlap. |
| No image appears. | • If the transmission method is set to multicast, check whether there is a router that supports multicast in the LAN the camera is connected to. |

| PROBLEM | SOLUTION |
|---|---|
| <Motion detection / Video analytics> of <Event setup> is set to <Enable>, but no notification e-mail reaches me even when an analysis event had occurred. | • Verify the settings in the following sequence:<br>A. Check <Data & Time> settings.<br>B. The <Motion detection / Video analytics> should be set to <Enable>.<br>C. Check if the <E-mail> option of <Event action setup> menu is checked to use. |
| Can I define event rules even when I don't use <Motion detection / Video analytics>? | • Yes, it can be. You can set rules for events despite of the intelligent video analysis setting. |
| No signal is found at the Alarm Output port even when an intelligent video analysis event is generated. | • Check alarm output port settings. |
| Cannot record into the SD memory card. | • Check if the memory card is defective.<br>• Check if the write protection tab of the memory card is set to "LOCK". |
| SD memory card is inserted but the camera does not operate properly. | • Check if the memory card is inserted in the proper direction. Operation of memory card that is formatted by other devices is not guaranteed with this camera unit<br>• Format the memory card again in <Setup> → <Event> → <Storage> menu. |
| Cannot format the SD memory card. | • Check if the write protection tab of the memory card is set to "LOCK". |

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Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

**Correct disposal of batteries in this product**

(Applicable in the European Union and other European countries with separate battery return systems.)

This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste at the end of their working life. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66. If batteries are not properly disposed of, these substances can cause harm to human health or the environment.

To protect natural resources and to promote material reuse, please separate batteries from other types of waste and recycle them through your local, free battery return system.

MEMO

## SALES NETWORK

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