

NETWORK CAMERA

User Manual

QNP-6230/QNP-6230H



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 the contaminated area on the product surface with a soft, dry cloth or a damp cloth.
(Do not use a detergent or cosmetic products that contain alcohol, solvents or surfactants or oil constituents as they may deform or cause damage to the product.)
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.
15. This product is intended to be supplied by Power Unit marked "Class 2" or "LPS" and rated 24 Vac(50 or 60 Hz), min. 1.6 A or PoE(42.5V ~ 57V), min 0.7 A.(QNP-6230)
16. This product is intended to be supplied by Power Unit marked "Class 2" or "LPS" and rated 24 Vac(50 or 60 Hz), min. 2.9 A or PoE(42.5V ~ 57V), min 0.9 A. (QNP-6230H)
17. Do not install the camera vertically on a wall. This will cause Tilt step-out.
18. If you use excessive force when installing the product, the camera may be damaged and malfunction.
If you forcibly install the product using non-compliant tools, the product may be damaged.
19. Do not install the product in a place where chemical substances or oil mist exists or may be generated. As edible oils such as soybean oil may damage or warp the product, do not install the product in the kitchen or near the kitchen table.
This may cause damage to the product.



20. When installing the product, be careful not to allow the surface of the product to be stained with chemical substance.
Some chemical solvents such as cleaner or adhesives may cause serious damage to the product's surface.
21. If you install/disassemble the product in a manner that has not been recommended, the production functions/ performance may not be guaranteed.
Install the product by referring to "Installation & connection" in the user manual.
22. Installing or using the product in water can cause serious damage to the product.

WARNING

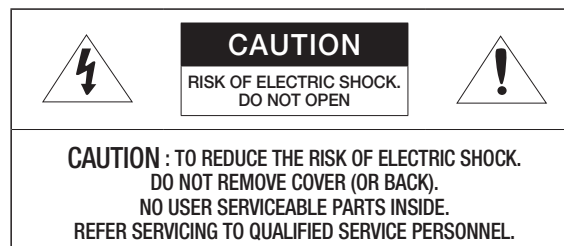
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECT THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

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.

Pan/Tilt/Zoom motors and slip ring are warranted for one year under continuous operation.

CAUTION



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.

Class I construction

An apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.

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.

ATTENTION

IL Y A RISQUE D'EXPLOSION SI LA BATTERIE EST REMPLACÉE PAR UNE BATTERIE DE TYPE INCORRECT.
METTRE AU REBUT LES BATTERIES USAGÉES CONFORMÉMENT AUX 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 CVBS out terminal of the product is provided for easier installation, and is not recommended for monitoring purposes.

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.

The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802-3af shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL60950-1.

Unit is intended for installation in a Network Environment 0 as defined in IEC TR 62102. As such, associated Ethernet wiring shall be limited to inside the building.

Please read the following recommended 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.
- Please wear protective gloves when installing/removing the camera.
The high temperature of the product surface may cause a burn.

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.

In particular installation environments, there might be interference in radio communications. When interference of electromagnetic waves occurs between the product and radio communication device, it is recommended to keep a certain distance between the two or change the direction of the receiving antenna.

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RECOMMENDED PC SPECIFICATIONS

- CPU : Intel(R) Core(TM) i7 3.4 GHz or higher
- RAM : 8G or higher
- Supported OS : Windows 7, 8.1, 10, Mac OS X 10.10, 10.11, 10.12
- **Plug-in free web viewer**
Supported web browsers : Google Chrome 63, MS Edge 41, Mozilla Firefox 57 (Window 64bit only) , Apple Safari 11 (Mac OS X only)
- **Plug-in Webviewer**
Supported web browsers : MS Explore 11, Apple Safari 11 (Mac OS X only)

RECOMMENDED MICRO SD/SDHC/SDXC MEMORY CARD SPECIFICATIONS

- Recommended capacity : 16GB to 256GB (MLC type)
- The following types of memory cards from the following manufacturers are recommended for this camera.
 - Manufacturer : SanDisk, Transcend
 - Product family : High endurance

NAS RECOMMENDED SPECS

- Recommended capacity : 200GB or higher is recommended.
- Simultaneous access : One unit of NAS can accept a maximum of sixteen camera accesses.
- For this camera, you are recommended to use a NAS with the following manufacturer's specs.

Recommended products	Available sizes
QNAP NAS	A maximum of 16 cameras can access simultaneously.
Synology NAS	A maximum of 16 cameras can access simultaneously.



- If you use NAS equipment for purposes other than video saving, the number of accessible cameras may be reduced.

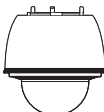
WHAT'S INCLUDED (QNP-6230)

Please check if your camera and accessories are all included in the product package.
(As for each sales country, accessories are not the same.)

Appearance	Item Name	Quantity	Description
	Camera	1	
	Quick Guide (Optional)	1	
	Warranty card (Optional)	1	
	Cable for the testing monitor	1	Used to test the camera connection to a portable display device
	Installation base	1	If installing it indoors or in a ceiling housing
	Tapping Screw	4	Used for installation on the ceiling
	Template	1	Product installation guide
	Insulation Sheet	1	Use when installing the camera at highly humid place

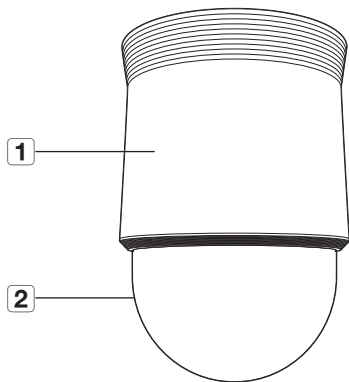
WHAT'S INCLUDED (QNP-6230H)

Please check if your camera and accessories are all included in the product package.
(As for each sales country, accessories are not the same.)

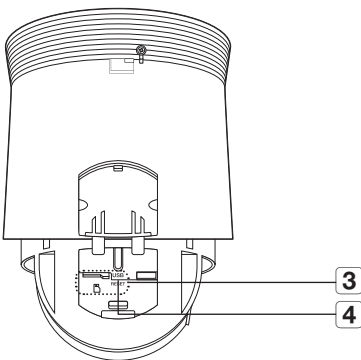
Appearance	Item Name	Quantity	Description
	Camera	1	
	Quick Guide (Optional)	1	
	Warranty card (Optional)	1	
	Cable for the testing monitor	1	Used to test the camera connection to a portable display device
	Hex wrench	1	Used for fixing the installation base after attaching it to the camera
	Hexagon screw	3	Used for attaching the installation base to the camera
	Installation base	1	Bracket for mounting outdoors
	Waterproofing accessory	1	Install and use where there is high humidity.

AT A GLANCE (QNP-6230)

Appearance

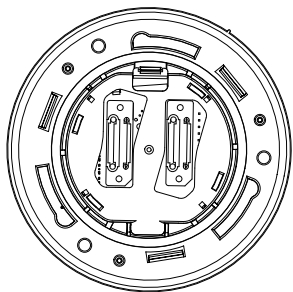


Inside

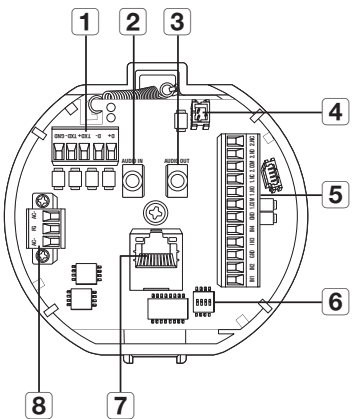


Item	Description
1 Main unit	Protects the internal PTZ mechanism from the direct sunlight or external impact.
2 Dome Cover	Dome cover for the lens and unit protection.
3 Micro SD Memory Card Compartment	Compartment for the Micro SD memory card.
4 Reset Button	Pressing and holding this button for about 5 seconds will reset all camera settings to the factory default.

Bottom View of Installation Base



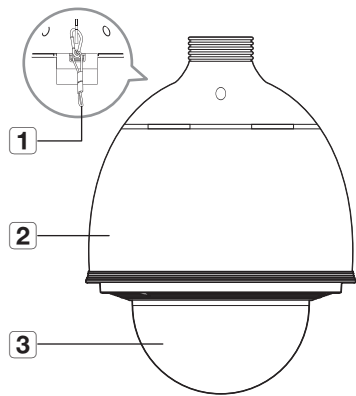
Inner View of Installation Base



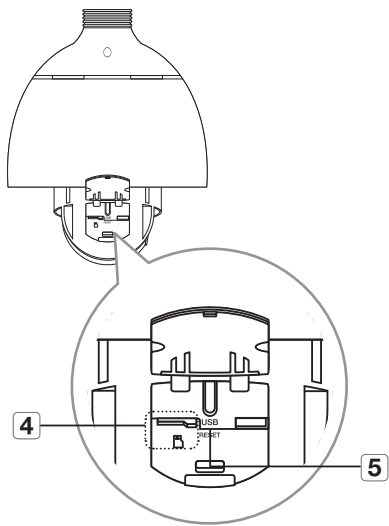
Item	Description
1 Communications Ports	Used for RS-485 communications.
2 Audio Input Port	Used to connect the audio input cable.
3 Audio Output Port	Used to connect the audio output cable.
4 Video Out Port	Analog video output port. (for installation)
5 Alarm I/O Port	Used to connect the alarm I/O cable.
6 Communications Setup Switch	Set communication protocol (RS-485) and indicate whether to terminate.
7 Network Connections	Port for connection with the network using an Ethernet cable.
8 Power Port	Used to connect the power.

AT A GLANCE (QNP-6230H)

Appearance

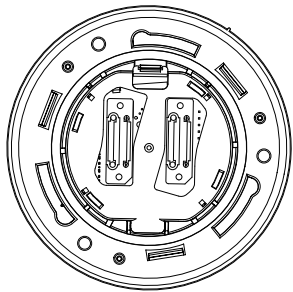


Inside

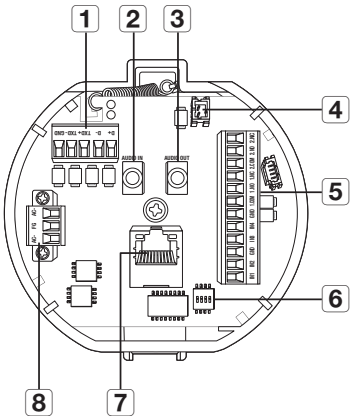


Item	Description
1 Safety Cable	The cable prevents the product from dropping during installation.
2 Housing	Protects the internal PTZ mechanism from the direct sunlight, rain or external impact.
3 Dome Cover	Dome cover for the lens and unit protection.
4 Micro SD Memory Card Compartment	Compartment for the Micro SD memory card.
5 Reset Button	Pressing and holding this button for about 5 seconds will reset all camera settings to the factory default.

Bottom View of Installation Base



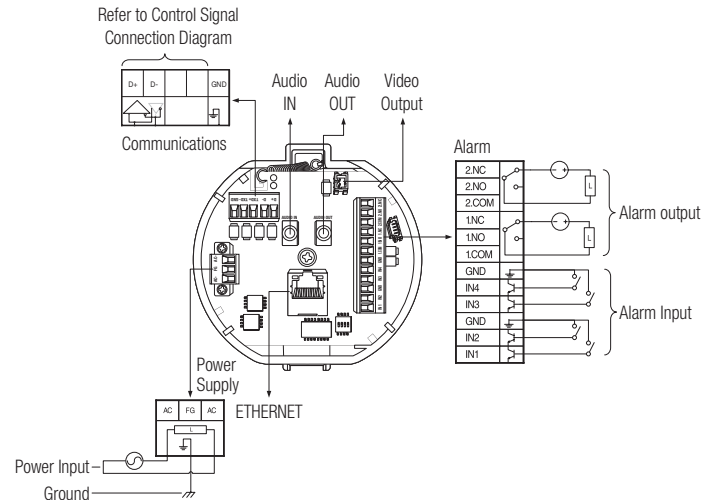
Inner View of Installation Base



Item	Description
1 Communications Ports	Used for RS-485 communications.
2 Audio Input Port	Used to connect the audio input cable.
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6 Communications Setup Switch	Set communication protocol (RS-485) and indicate whether to terminate.
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8 Power Port	Used to connect the power.

■ Camera Wiring Interface Board

For the camera wiring, please refer to the picture below.

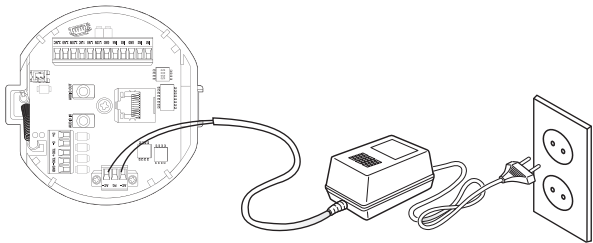


- Select Normal Open in the setup menu.
 - The sensor input is activated during a short for contact type, or when it is at "Low" level for the active type.
- Select Normal Close from the Setup menu.
 - The sensor input is activated when open for the contact type or when in high impedance state (open collector) for the active type.
- The maximum capacity of the alarm output terminal is 30V DC/2A, 125V AC/0.5A and 250V AC/0.25A.
- When connecting alarm input and output cables, be sure to connect one cable to each terminal respectively.
- To connect products over the camera's capacity, please use an additional relay device.
- If power and GND cables are connected inappropriately to the NC/NO or COM port, a fire or breakdown of equipment may occur.

CONNECTING WITH OTHER DEVICE

Preparing Adapter and Cable

- Connect the camera to the power adaptor. Then, plug the power cord of the adaptor to the wall outlet.



Check out the rated voltage and current before making connections.

Rated Power	Allowable Input Voltage
AC 24V	AC22V~26V
PoE+	42.5Vdc~57Vdc

- If applied with both PoE+ and AC 24V power supplies, the device is powered from the first engaged supply.
 - It is preferred to use single power supply of either one of PoE+ and AC 24V.
- If connected to a switch device that provides PoE+ power, you don't need to apply a power source of AC 24V supply.
- Make sure the PoE device suffices PoE+ (IEEE 802.3at) specifications.
 - If your device is connected to the switch with the standard of PoE (IEEE 802.3af), then go to the switch setup menu to "deactivate PoE".
For further information on switch device, refer to the manufacturer's manual.
 - It is recommended to use a cable that complies with the PoE+ spec.
- If you use a PoE+ as a power, the boot time may vary depending on a switch model (by channel) or a maker (as PoE+ connection time is included.).
- The heater doesn't work with the PoE+ power supply. (QNP-6230H)

Electrical Resistance of Copper Wire at [20°C (68°F)]

QNP-6230

Copper Wire Gauge (AWG)	#20	#19	#18	#17
Resistance (Ω/m)	0.0333	0.0264	0.021	0.0166
Recommended Distance (m)	Less than 20	Less than 25	Less than 30	Less than 30

QNP-6230H

Copper Wire Gauge (AWG)	#18	#17	#16	#15
Resistance (Ω/m)	0.021	0.0166	0.0132	0.0104
Recommended Distance (m)	Less than 15	Less than 20	Less than 25	Less than 30

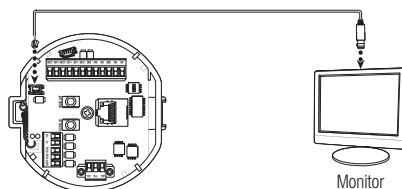
- As shown in the table above, you may encounter a voltage-sag depending on the wire length. If you use an excessively long wire for camera connection, the camera may not work properly.
 - Camera Operating Voltage: AC 24V±10%
 - Voltage drop measurements on the chart above may vary depending on the type and manufacture of the copper cable.

Ethernet Connection

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

Connecting the installation monitor

Connect the cable to the camera's rear video output terminal and the installation monitor's video input terminal.



- The wiring varies depending on your monitor type and peripheral devices; please refer to the user manual for each device.
- Please make sure the monitor and camera are turned off when connecting them.

- ! ■ This product is a network camera that transfers video over a network; the video output terminal is used to set the imaging range of the camera at installation.
 - Using the terminal for monitoring purposes may cause problems such as degradation in video quality.
 - It is not suitable for 24-hour monitoring using professional CRT monitors or TFT/LCD portable monitors.
 - Use the network transfer screen for 24-hour monitoring and storage.

INSTALLATION

Preparing & Installing Camera Bracket

For installation guidelines for brackets and housings, refer to the installation manual that is enclosed with the bracket or housing.

■ Available Bracket Models

Model	Item	QNP-6230	QNP-6230H
SHP-3701H	Outdoor Housing	Yes	-
SHP-3701F	Ceiling-mount Housing		
SBP-301HM3	Hanging Mount		
SBP-300WM1	Wall Mount		Yes
SBP-300WM			
SBP-300CM	Ceiling Mount		
SBP-300LM	Parapet Mount		
SBP-300KM	Corner Mount		
SBP-300PM	Pole Mount		

- ✍ ■ See "Optional Accessories for Installation" for the appearance of each bracket (unbundled). (page 15)

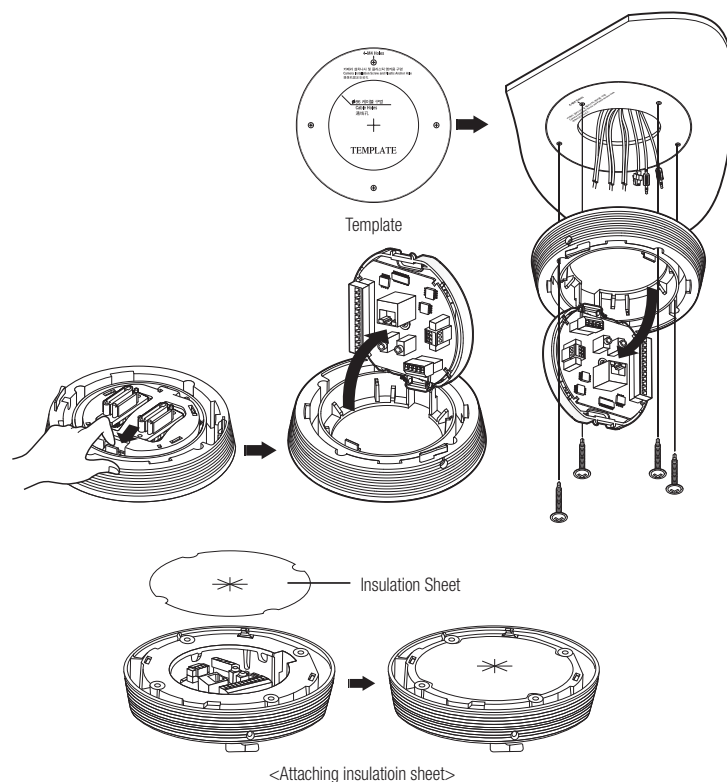
Installing by surface attachment (QNP-6230)

 QNP-6230H cannot be installed on the surface of a wall or ceiling.

■ Attaching Template & Installing installation base

1. Attach the provided template on the ceiling. Based on the template, drill a 86mm hole in the ceiling and arrange the wires through the hole.
2. Install installation base as shown.
3. Before installing the exposed bracket, open the hinged door at the bottom of the bracket as shown in the picture. Hold the knob on the hinged door to open it.

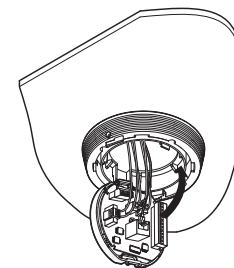
 In the case of installing the camera at highly humid place, install it on the ceiling after attaching the enclosed insulation sheet on the back of install base.



■ Connect Terminal Wires

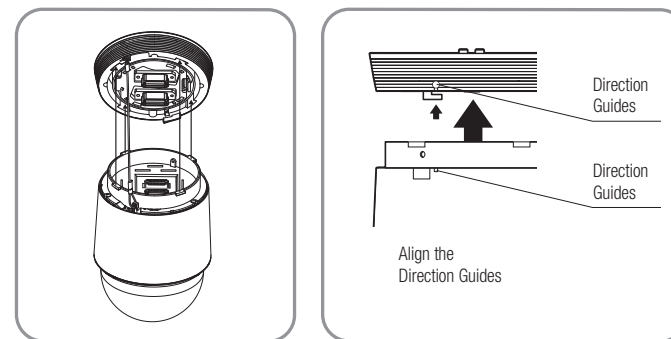
1. Connect the cables to the terminal block on the hinged door. Refer to "Camera Wiring Interface Board". (page 10)
2. Once the wiring is complete, close the hinged door.

 Do not connect the camera to a power outlet until the installation is complete. Supplying power while the installation is in progress may cause fire or damage the product.



■ Connecting Camera Safety Cable and Attaching Camera

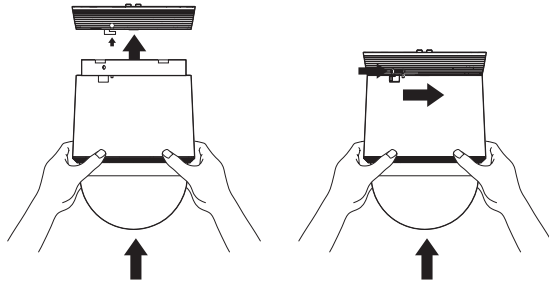
1. First, as shown in the left hand picture, pull out the safety cable from the base and then hook it to the mount. The safety cable is coiled inside the base.
 - To attach the camera to the mount, refer to the alignment guide marks as shown in the picture.
2. Carefully attach the camera to the mount following the alignment guide marks as shown in the picture.



 Make sure to hook the camera's safety cable to the mount before proceeding. Otherwise you may be exposed to serious injury caused by the camera falling.

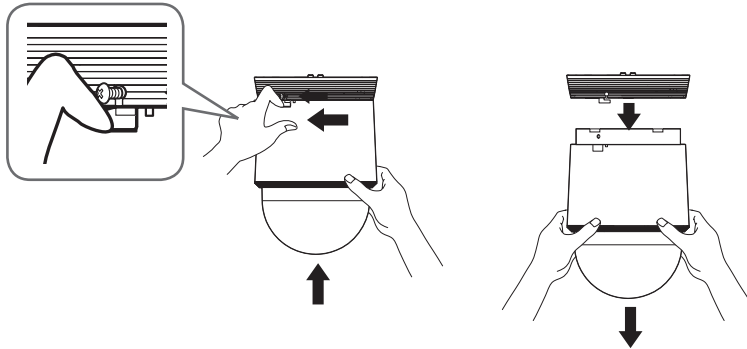
■ To attach or detach the camera, refer to the picture.

- Attaching the Camera : Push up the camera unit and rotate it clockwise until it cannot be rotated anymore, as shown in the figure. After rotation, fasten the screws assembled to the install base.



< To Attach the Camera >

- Detaching the Camera : Unfasten the screws as shown in the figure, push in the hook, and rotate it counterclockwise. (The screws are not completely disassembled.) When the hook does not rotate any more, pull down the camera unit and separate it.

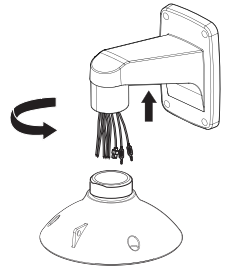


< To Detach the Camera >

Installing by wall mount (QNP-6230H)

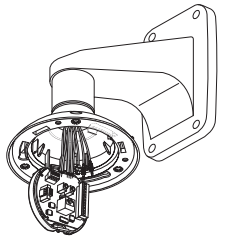
■ Fix the installation base with the bracket

1. Fix the base with the bracket by turning it clockwise.



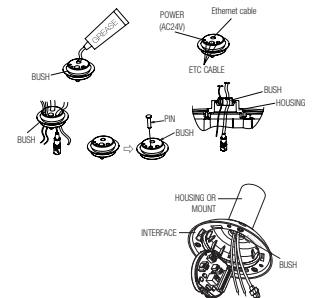
2. As shown in the picture below, gently press and lift up the handle of the hinged door on the bottom of the installation base. Please refer to the "Camera Wiring Interface Board" on page 10, connect the wires.

- ! ■ Do not connect the camera to a power outlet until the installation is complete. Supplying power while the installation is in progress may cause fire or damage the product.

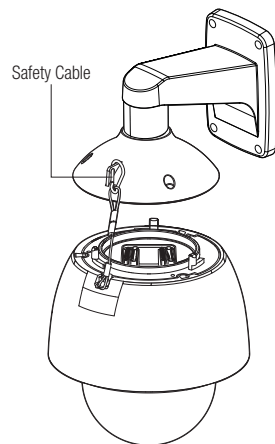


- ☑ Check cable connection method and install.

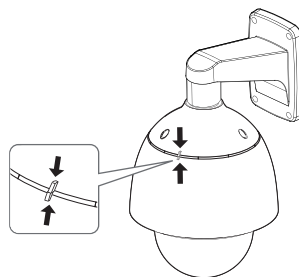
- Note that **BUSHINGS** are provided for outdoor installations where exposed to a moisture condition through the **PIPE** or **MOUNT**, install the **HOUSING** using the **BUSHING** to prevent moisture entering.
 - Apply grease of proper dose on the **BUSHING** before assembling, and run cables through each hole of the bushings. Use **PINS** to stop up empty holes having no cable running.
 - Assemble the **BUSHING** to the top side of **HOUSING**'s inside as shown in the diagram below. At the moment, apply pressure evenly on the **BUSHING** to secure it tightly to the **HOUSING** as shown in the diagram.



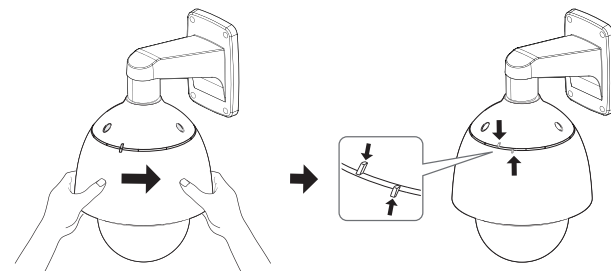
3. Connect the camera safety wire to the installation base.



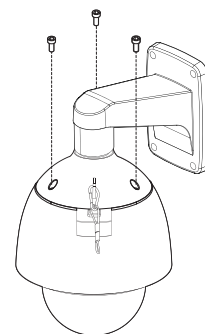
4. Assemble Camera and Installation Base
Assemble the installation base and camera by matching the installation direction guides.



5. Attach Camera
Rotate the mounted camera unit clockwise so that the reference indicators of top and bottom are as shown in the image on the right.



6. Secure Camera and Installation Base
As shown in the picture below, secure the installation base and camera using hexagon screw.

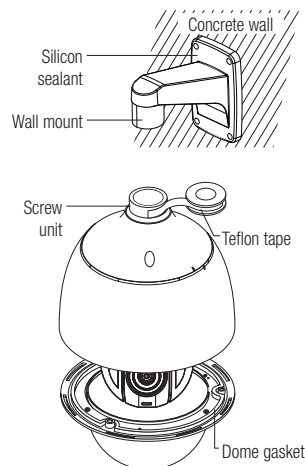


Notes for Waterproofing

■ Installing the unit on the wall by combining the outdoor housing and wall mount

1. Install the wall mount on the vertical wall. If the mount is installed on an inclined wall, moisture can penetrate inside the outdoor housing through the external cable.
2. Wrap the screw part of the housing with a sufficient amount of Teflon tape for assembly.
3. When separating the dome cover and fastening it to the housing frame, make sure that the gasket is not loosened to separate from the dome cover.
4. Install the wall mount adapter for waterproofing, and apply the silicon sealant between and around the wall and wall mount for sealing.

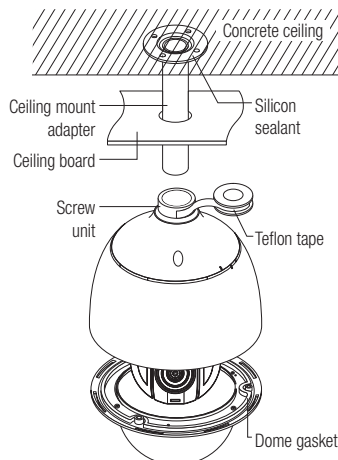
! ■ Take particular caution to ensure that there is proper sealing if the installed side is not flat.



■ Installing on the wall by combining the outdoor housing and ceiling mount adapter

1. Wrap the screw part of the housing with a sufficient amount of Teflon tape for assembly.
2. When separating the dome cover and fastening it to the housing frame, make sure that the gasket is not loosened to separate from the dome cover.
3. Install the ceiling mount adapter for waterproofing, and apply the silicon sealant between and around the wall and ceiling mount for sealing.

! ■ Take particular caution to ensure that there is proper sealing if the installed side is not flat.

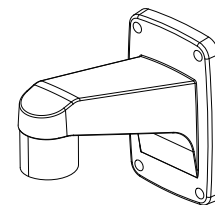


Optional Accessories for Installation

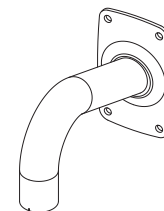
For your easier installation, you can purchase appropriate optional accessories available.

1. If installing the camera on the wall

- Wall mount (SBP-300WM1)

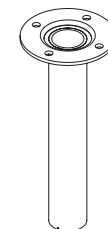


- Wall mount (SBP-300WM)



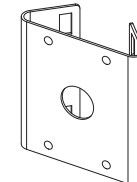
2. If installing the camera on the ceiling

- Ceiling Mount (SBP-300CM)

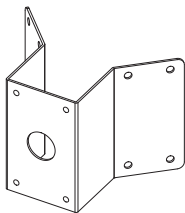


3. If installing the wall mount (SBP-300WM/SBP-300WM1) on an at least 80mm-long cylinder

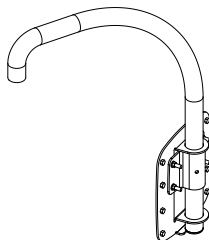
- Pole Mount (SBP-300PM)



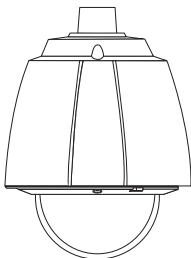
4. If installing the wall mount (SBP-300WM/SBP-300WM1) on a corner of the wall
- Corner Mount (SBP-300KM)



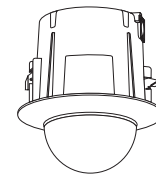
5. If installing on a building rooftop
- Parapet Mount (SBP-300LM)



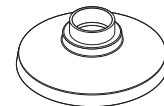
6. If installing QNP-6230 outdoors
- Outdoor Housing (SHP-3701H)



7. If installing QNP-6230 on a ceiling as built-in component
- Flush-Mount Indoor Housing for PTZ Dome Camera (SHP-3701F)



8. If installing QNP-6230 in the wall mount or ceiling mount
- Hanging Mount (SBP-301HM3)

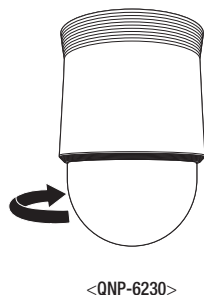


INSERTING/REMOVING A MICRO SD MEMORY CARD

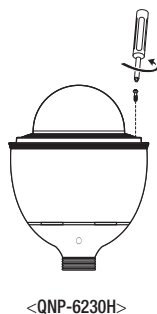
- ❗
 - Disconnect the power cable from the camera before inserting the Micro SD memory card.
 - Do not insert the Micro SD memory card while it's upside down by force. Otherwise, it may damage the Micro SD memory card.
 - When it rains or the humidity is high, insertion or ejection of a Micro SD card is not recommended.
 - Disassembly of the product cover should be finished within 5 minutes, or there will be the risk of internal dew condensation.

Inserting a Micro SD Memory Card

1. Open the cover in the rear of the camera.
(QNP-6230)

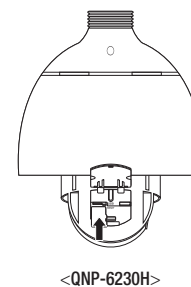
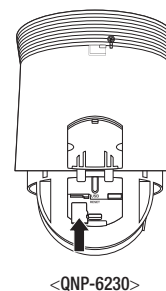


Using the screw driver, loosen screw by turning them counterclockwise and separate the dome cover. (QNP-6230H)



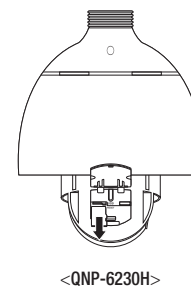
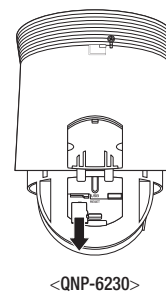
2. Push the Micro SD memory card in the direction of the arrow shown in the diagram.

- ❗
 - Do not insert the Micro SD memory card while it's upside down by force. Otherwise, it may damage the Micro SD memory card.



Removing a Micro SD Memory Card

Gently press down on the exposed end of the memory card as shown in the diagram to eject the memory card from the slot.



- ❗
 - Pressing too hard on the Micro SD memory card can cause the card to shoot out uncontrollably from the slot when released.
 - Before removing the micro SD memory card, turn off the camera or set the device to <Off> in <Storage> and press the [Apply] button.
 - If you turn off the camera or remove the Micro SD memory card that contains data from the product, the data may be lost or damaged.

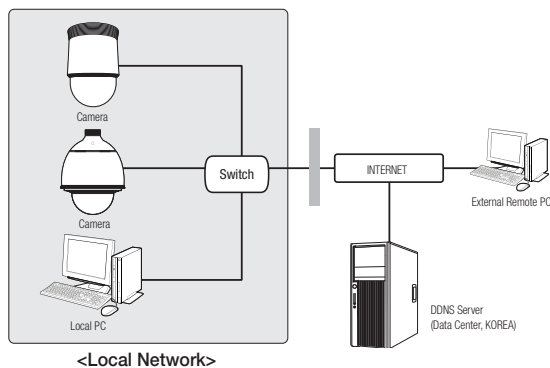
network connection and setup

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

CONNECTING THE CAMERA DIRECTLY TO LOCAL AREA NETWORKING

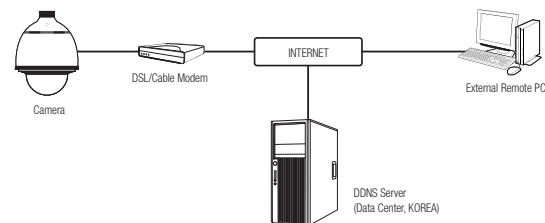
Connecting to the camera from a local PC in the LAN

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



- 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 Device Manager, 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 Device Manager. For further details on Device Manager use, refer to "Using Device Manager". (Page 20)

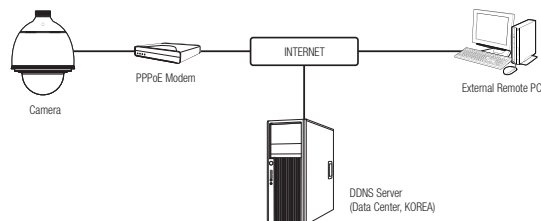
CONNECTING THE CAMERA DIRECTLY TO A DHCP BASED DSL/CABLE MODEM



1. Connect the user PC directly with the network camera.
2. Run the Device Manager 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 [Basic] – [IP & Port], and set the IP type to [DHCP].
7. Connect the camera, which was removed from your PC, directly to the modem.
8. Restart the camera.

- For information on how to set DDNS, refer to the online help of Web Viewer.
- For information on how to set the IP format, refer to the online help of Web Viewer.

CONNECTING THE CAMERA DIRECTLY TO A PPPoE MODEM

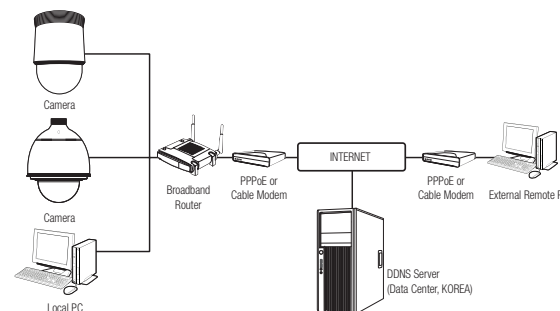


1. Connect the user PC directly with the network camera.
2. Run the Device Manager and change the IP address of the camera so that you can use the web browser on your desktop to connect to the Internet.
3. Use the Internet browser to connect to the web viewer.
4. Move to **[Setup]** page.
5. Move to **[Network] – [DDNS]** and configure the DDNS settings.
6. Move to **[Basic] – [IP & Port]** Setup Page, set the IP type to **[PPPoE]**, and enter the network service's ID and password.
7. Connect the camera, which was removed from your PC, directly to the modem.
8. Restart the camera.

- For information on how to set DDNS, refer to the online help of Web Viewer.
- For information on how to set the IP format, refer to the online help of Web Viewer.

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> → <Properties> → <Local Area Connection> → <General> → <Properties> → <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 22)

USING DEVICE MANAGER



- Device manager program can be downloaded from <Support>-<Online Tool> menu at Hanwha Vision website (<https://www.HanwhaVision.com>).
- More instructions of Device Manager can be found at <Help> menu of the main page.

AUTOMATICALLY SEARCHING CAMERA

If a camera is connected to the same network of the PC where device manager is installed, you can find network camera by using search function.

- Click <Search> at the main page of device manager.
- Check the camera from the list.
 - Check MAC address at the sticker attached to the camera.

CONFIGURING IP ADDRESS

If you want to change camera network setting, <Login OK> sign must be displayed at <Status>. Click <Authentication> at the main page to log in.

Configuring Static IP

Manually insert and configure IP address & port information.

- Click the camera from the list that you want the change the IP setting.
- Click <IP Assign> at the main page of device manager.
- Select <Assign the following IP address>.
 - IP information of the camera will be displayed as previously set.
- Fill in IP & Port related categories.

If not using a Broadband Router

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

- 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.
- RTSP Port : A port that controls real-time streaming. The initial value is 554.

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 22)

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	192.168.1.100	192.168.1.101
	Subnet Mask	255.255.255.0	255.255.255.0
	Gateway	192.168.1.1	192.168.1.1
Port related settings	HTTP Port	8080	8081
	VNP Port	4520	4521
	RTSP Port	554	555



- 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

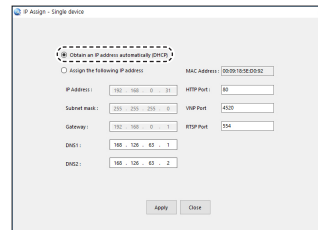
- Click [Apply] Button.
- If the success message is displayed, click [OK].

Configuring Dynamic IP

Receive IP address from DHCP

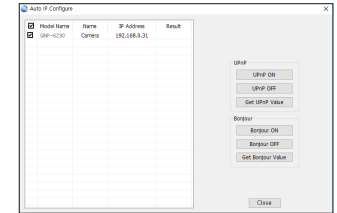
- Example of the Dynamic IP environment
 - If a Broadband Router, with cameras connected, is assigned an IP address by the DHCP server
 - If connecting the camera directly to modem using the DHCP protocols
 - If IPs are assigned by the internal DHCP server via the LAN

1. Click the camera from the list that you want to change the IP setting.
2. Click **<IP Assign>** at the main page of device manager.
3. Select **<Obtain an IP address automatically (DHCP)>**.
4. Click **[Apply]** button.
5. If the success message is displayed, click **[OK]**.



AUTOMATICALLY CONFIGURING IP

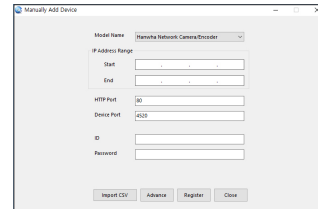
1. Click the camera from the list that you want to automatically configure the IP.
2. Click **<+>** at the main page of device manager.
 - Equipment Setting menu appears.
3. At the menu, click **<Auto IP Configure>**.
4. Click **[Close]** button.



MANUALLY REGISTERING CAMERA

If the camera cannot be found using search function, the camera can be registered remotely by manually inserting IP information, if the camera is connected to external network.

1. Click **<Add Devices>** - **<Manually Add Device>** at the main page of device manager.
2. Insert the range of IP address that you search.
3. Select the **<Model Name>** of the camera that you register, and insert HTTP port, VNP port, ID, and password.
4. Click **[Register]** button.
5. Check if camera is registered.
 - Check MAC address at the sticker attached to the camera.

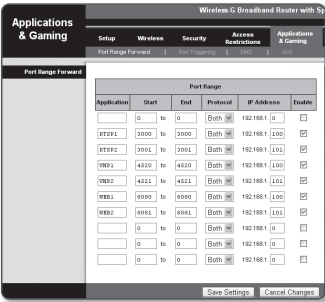


PORT RANGE FORWARD (PORT MAPPING) SETUP

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. The number of each port to be configured to the IP router should be set according to the port number designated in <Setup> - <Basic> - <IP & Port> on the camera web viewer.
- 3. When done, click [Save Settings]. Your settings will be saved.

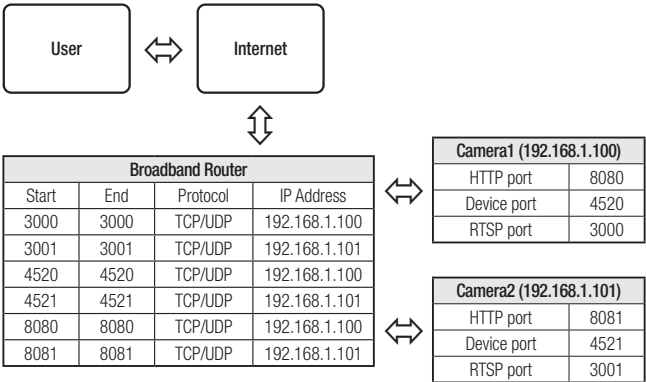


- Port forwarding setting is an example of setting CISCO IP router.
- The settings may differ depending on the connected Broadband Router model. For more information, refer to the user manual of the applicable router.

Setting up Port Range Forward for several network cameras

- You can set a rule of Port Forwarding on the Broadband Router device through its configuration web page.
- A user can change each port using the camera setting screen.

When Camera1 and Camera2 are connected to a router :



- Port forwarding can be done without additional router setup if the router supports the UPnP (Universal Plug and Play) function. After connecting the network camera, select the checkbox from the menu <Quick connect> in <DDNS> in "Settings -> Network -> DDNS".

CONNECTING TO THE CAMERA FROM A SHARED LOCAL PC

1. Run device manager.
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

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://ddns.hanwha-security.com/ID>

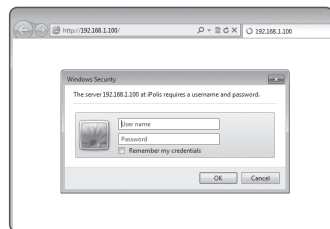


■ To use DDNS, sign up at the DDNS homepage (<http://ddns.hanwha-security.com>) and register the product at **[My DDNS]> [Register Product]**.

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://ddns.hanwha-security.com/ID
- the Login dialog should appear.



▪ Network connection is disabled in the LAN only environment.

Connecting via UPnP

1. Run the client or operating system in support of the UPnP protocol.
2. Click the camera name for search.
In the Windows operating system, click the camera name searched from the network menu.
- The login window is displayed.

Connecting via Bonjour

1. Run the client or operating system in support of the Bonjour protocol.
2. Click the camera name for search.
In the Mac operating system, click the camera name searched from the Bonjour tab of Safari.
- The login window is displayed.

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.

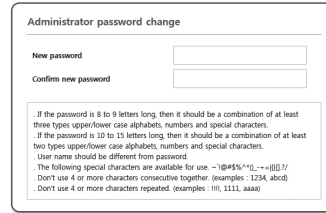
Once you register a dynamic IP-based device with the DDNS server, you can easily check the changed IP when you try to access the device.

To register your device to the <DDNS> server, visit <http://ddns.hanwha-security.com> and register your device first, and then set the Web Viewer's <Network> - <DDNS> to <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.



The image shows a window titled "Administrator password change". It contains two input fields: "New password" and "Confirm new password". Below these fields, there is a list of password requirements:

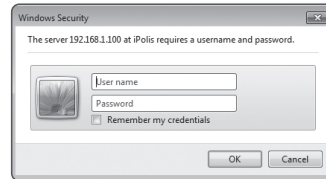
- . If the password is 8 to 9 letters long, then it should be a combination of at least three types: upper/lower case alphabets, numbers and special characters.
- . If the password is 10 to 15 letters long, then it should be a combination of at least two types: upper/lower case alphabets, numbers and special characters.
- . User name should be different from password.
- . The following special characters are available for use: ~!@#%&*^*_+=|[]{}?/
- . Don't use 4 or more characters consecutive together. (examples: 1234, abcd)
- . Don't use 4 or more characters repeated. (examples: 1111, aaaa)

- 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.



The image shows a "Windows Security" dialog box. It says "The server 192.168.1.100 at iPolis requires a username and password." It has input fields for "User name" and "Password", and a checkbox for "Remember my credentials". There are "OK" and "Cancel" buttons at the bottom.

- 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.

PLUG-IN SUPPORT SPECIFICATIONS FOR EACH BROWSER

The existing plug-in web viewer and a new plug-in free web view is embedded together.

This allows you to use the web viewer in newer browser environments that do not support plug-ins, such as Chrome, EDGE and FireFox (Windows 64-bit only). For browsers that allow the installation of plug-ins, such as IE and Safari, installing the plug-in is recommended.

According to the browser environment, the following differences may be observed.

- **Chrome, FireFox(Windows 64bit only), EDGE browser** : Although they don't support plug-ins, you can use a web viewer as a plug-in free web viewer is embedded.
- As the plug-in free webviewer has lower performance than the plug-in webviewer, it has a limit on the monitoring of high quality profiles and playback of saved videos.
To monitor high quality profiles and play saved videos, use either a plug-in webviewer or SmartViewer.
 - Plug-in free webviewer creation conditions: The selected profile exceeds MJPEG Full HD 10fps H.265 FullHD 10fps 2Mbps or higher
 - The plug-in free feature has been optimized for the Chrome browser.
 - Supports Adaptive Streaming
 - This is the feature that automatically lowers the profile if there is a delay of more than 5 seconds. It was made to prevent issues such as increased latency and no response from the browser when playing the video on a system with lower hardware specifications than recommended.
The video profile is reduced in the following sequence: 1920X1080(20fps) -> 1280X720(20fps) -> 640X480(20fps).
- **IE, Safari browser** : You can use a web viewer even if you don't install the existing plug-in web viewer.
- To monitor/play saved video seamlessly, you are required to install a plug-in.

INSTALLING WebViewer PLUGIN

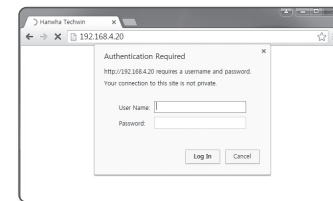
To access to the plug-in webviewer and play a live video (H.264/H.265) or a recorded video, an installation message will be prompted. At this time you need to install the webviewer plug-in to use the function properly.

1. When the monitoring page is accessed for the very first time, the installation page is displayed. Click **[Download plugin]** 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.
 - Steps 4 and 5 will be skipped if no Web Viewer Plug-in is installed.
 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.
 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]**.
 - Web Viewer Plug-in installation is completed.
- In your internet explorer, if you need to move to the installation screen after installing the webviewer plugin, check whether webviewer_activeplugin_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. If the problem persists, please register the IP or Domain of your camera in "Tools → Internet Options → Security → Trusted sites".

USING A PLUG-IN FREE WEBVIEWER

Although it is not possible to install plug-ins separately If you access the camera from Google Chrome, Mozilla Firefox, or the MS Edge web browser, you can view and control the camera video without installing plug-ins.

1. Enter your username and password to log in.
2. When you are logged in, a camera live view screen appears.



To set the camera

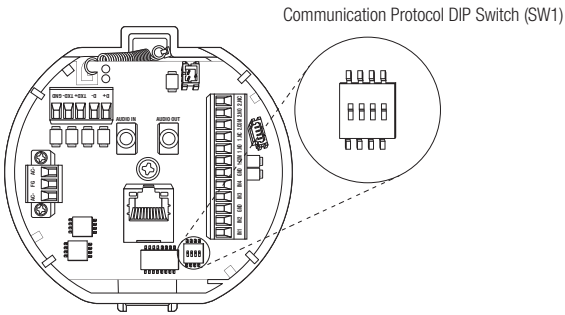
1. Click the **[Setup (⚙)]** icon.
2. The Settings window appears.
3. It is possible to manage the settings of the camera's basic information, PTZ, video and audio, network, event, analysis, system, and open platform via the network.
4. Click **<Help (?)>** to view detailed descriptions of each function.

DIP SWITCH SETTING

How to set up Protocols and ID DIP Switches

You can control various settings of the camera system using the Communication and ID DIP switches. Before installing the product, please set up the DIP switches according to the installation environment.

- 1. Set the switches according to your installation environment. For more detailed setup information, please refer to the chart on the next page.
- 2. The camera may malfunction if the switches are not fully turned On/Off; please double check the switches before finishing setup.
- 3. Be cautious that the switch can be damaged when it is operated with a sharp tool.
- 4. Be cautious that the switch can be damaged when it is operated with an excessive force.



Communication Protocol DIP Switch Settings (SW1)



SW1 Pin No.	Purpose
1	Set transmission protocol (RS-485)
2	Termination setting 1
3	Termination setting 2
4	Reserved

• Communication Method Settings

Select a communication method for the camera.

	Function	ON	OFF
SW1-#1	Transfer Mode Switch	-	RS-485(2Wire)

• Termination Settings

To prevent the attenuation of communication signals between the camera and controller, the items at the end of line must be set up with the termination settings.

Camera Input Position	SW1-#2	SW1-#3
Termination of Longest Path	ON	ON
On the Path	OFF	OFF

- The default value is shaded in each setting table.
- To use a third party controller with this product, please contact our After-Sales Service or Technology Department.

CAMERA WIRING

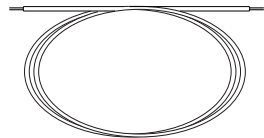
Control Signal Connection

- RS-485 Communications



Communications Cable

For the camera to communicate with the controller, a RS-485 communications line is required.



- ! A 30m or shorter length is recommended for the connection.
- The communication cable is not enclosed with the camera.

TROUBLESHOOTING

PROBLEM	SOLUTION
When an Windows 10 user accesses the web viewer through Chrome or Firefox, the sound volume of microphone changes periodically.	This is what happens when microphone driver has been set to Realtek driver. Install the High Definition Audio device (Windows Default Driver) or the third party driver as the microphone driver.
No video is displayed when accessing the plug-in free webviewer on Safari via HTTPS.	- On the authentication popup window prompted when initially accessing https, click "View Authentication Certificate" and select the "Always trust when connecting to the designated webviewer IP" check box. - If the webviewer continues failing to display a video after you select "Next" on the message window below, press the command key + Q to exit the Safari browser, access again and follow the procedures stated above.
I can't access the camera from a web browser.	- Check to make sure that the camera's Network settings are appropriate. - Check to make sure that all network cables have been connected properly. - If connected using DHCP, verify that the camera is able to acquire dynamic IP addresses without any problem. - 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. - Check all network connections. - If the camera is connected over an PPPoE network, it's possible for Viewer to disconnect under poor network conditions.
The camera connected to the network is not detected in the Device Manager 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
Voice is not recorded even though audio input settings are configured.	You must enable the <Audio In> check box in <Basic> - <Video Profile>.
<Motion detection> of <Analytics> 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: A. Check <Data & Time> settings. B. The <Motion detection> should be set to <Enable>. C. Check if the <E-mail> option of <Event setup> menu is checked to use.
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 Micro SD memory card.	Check if the memory card is defective.
Micro 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 - Format the memory card again in <Setup> → <Event> → <Storage> menu.
Cannot record in the NAS.	Confirm that the information registered in the NAS is correct.
It reports that NAS setting has failed.	- Confirm that the IP address of the NAS is valid. - Confirm that the ID/password of the NAS is valid. - Confirm that you can access the folder designated as the default folder using the ID of the NAS. - Confirm that the NAS SMB/CIFS items are unchecked. - Confirm that the NAS IP address and the camera IP address are in the same format. ex) The NAS & camera subnet mask initial value is 255.255.255.0. If the IP address is 192.168.20.32 then the NAS IP address should be in the range of 192.168.20.1~192.168.20.255. - Check whether you tried to access as another user without formatting the default folder saved or used. - Confirm that you used recommended NAS equipment.

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Component Name	License	URL
Base Kernel	GPL 2.0	
Busybox	GPL 2.0	http://www.busybox.net/downloads/snapshots
iproute2-4.3.0	GPL 2.0	
iptables-1.4.21	GPL 2.0	http://ftp.netfilter.org/pub/iptables
ethtool-4.2	GPL 2.0	
mtdd-1.5.2	GPL 2.0	ftp://ftp.infradead.org/pub/mtdd-utils
mi-diag-2.11	GPL 2.0	
rp-pppoe-3.11	GPL 2.0	http://www.roaringpenguin.com/pppoe/
wpa_supplicant-2.5	GPL 2.0	
bash-4.3.30	GPL 3.0	
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inetutils	LGPL 3.0	
neon-0.29.6	LGPL 2.0	http://www.webdav.org/neon/

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

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



Hanwha Vision cares for the environment at all product manufacturing stages, and is taking measures to provide customers with more environmentally friendly products. The Eco mark represents Hanwha Vision's devotion to creating environmentally friendly products, and indicates that the product satisfies the EU RoHS Directive.



Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

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.

