

# NETWORK CAMERA

## User Manual

TNP-A9430RW/TNP-A9430RWB

TNP-A7430RW/TNP-A7430RWB

TNP-A6550RW/TNP-A6550RWB

# Network Camera

## User Manual

---

### Copyright

©2025 Hanuwa Vision Co., Ltd. All rights reserved.

### Trademark

Each of trademarks herein is registered. The name of this product and other trademarks mentioned in this manual are the registered trademark of their respective company.

### Restriction

Copyright of this document is reserved. Under no circumstances, this document shall be reproduced, distributed or changed, partially or wholly, without formal authorization.

### Disclaimer

Hanuwa Vision makes the best to verify the integrity and correctness of the contents in this document, but no formal guarantee shall be provided. Use of this document and the subsequent results shall be entirely on the user's own responsibility. Hanuwa Vision reserves the right to change the contents of this document without prior notice.

※ 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 lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. This product is intended to be supplied by a UL Listed Power Supply Unit marked "Class 2" or "LPS" or "PS2" and rated from PoE(55 Vdc), 1.29 A.
16. This product is intended to be supplied by isolation power.
17. 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.
18. 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.
19. 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.
20. 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.
21. Installing or using the product in water can cause serious damage to the product.



22. If your product works normal, the degree of preset precision is 0.07°. In the case of reboot due to outage, firmware upgrade, etc., its tolerance might have to be adjusted after checking for any changes in Preset setup.
23. The operating temperature of the product is -50°C to +60°C (-58°F ~ +140°F).
24. The heater turns on when the ambient temperature is below 10°C(50°F) and off when it is above 15°C(59°F)

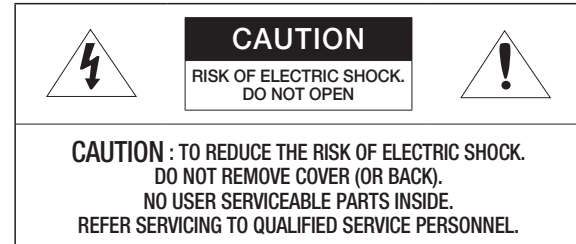
### WARNING

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.

### 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.

The battery cannot be replaced.

Prohibition of battery abuse

- Do not install and use the wrong type of battery.
- Do not leave the battery in a mechanically crush or cut it because it can explode.
- Do not leave the battery in a high temperature environment.
- Do not leave the battery in a low-pressure environment.

## 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.

## CAUTION

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.

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

Do not arbitrarily loosen or tighten the gore valve.

**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 802.3bt shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL60950-1 or PS2 as defined in UL62368-1.**

**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.
- When connecting the HPoE injector to the external Internet, use either one of network cable port (LAN) or fiber optic port (SFP) but not both.
- Waterproofing is not guaranteed when using cables other than those supplied with the included RJ45 push-pull kit or the SPP-C00402EP, SPP-C00405EP, or SPP-C00410EP cables, which are available separately.
- During the IR operation, only the center of the image may appear bright around the tilt angle range indicated below at a zoom ratio of 1 ~ 2x.
  - Upright (+35 ~ +50 degrees) / Canted (+65 ~ +75 degrees) / Inverted (-50 ~ -35 degrees)

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.

We do not guarantee the quality of third-party products (e.g. lenses, accessories) that you separately purchase.

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.

# CONTENTS

---

## OVERVIEW

3

- 3 Important Safety Instructions
- 6 Recommended PC Specifications
- 6 Recommended Micro SD/SDHC/SDXC Memory Card Specifications
- 6 NAS recommended specs
- 7 What's Included
- 7 Network I/O box - separately sold product
- 7 Optional Accessories for Installation
- 8 At a Glance

## INSTALLATION & CONNECTION

10

- 10 Installation
- 18 Powering and networking
- 19 Connecting audio and alarm I/O

## NETWORK CONNECTION AND SETUP

20

- 20 Connecting the Camera Directly to Local Area Networking
- 20 Connecting the Camera Directly to a DHCP Based DSL/Cable Modem
- 21 Using Device Manager
- 21 Setting up projects
- 21 Automatically searching camera
- 21 Configuring IP address
- 23 Manually registering camera
- 23 Automatically configuring IP
- 23 Port Range Forward (Port Mapping) Setup
- 24 Connecting to the Camera from a Shared Local PC
- 24 Connecting to the Camera from a Remote PC via the Internet

## WEB VIEWER

25

- 25 Connecting to the Camera
- 26 Password setting
- 26 Login
- 26 Camera Web Viewer Setup

## APPENDIX

27

- 27 Troubleshooting

## RECOMMENDED PC SPECIFICATIONS

---

- CPU : Intel(R) Core(TM) i7 3.4 GHz or higher
  - RAM : 8G or higher
  - Recommended browser: Chrome
  - Supported browsers: Chrome, Safari, Firefox, MS Edge(chromium based)
  - Supported OS : Windows, Mac, Linux, Android, iOS, Chrome
  - Verification environment
    - Windows 10: chrome Latest version, Firefox Latest version, MS edge Latest version
    - Mac latest version and version being supported  
ref.) <https://en.wikipedia.org/wiki/MacOS>
- ※ The video play performance of the web viewer depends on the performance of the user's CPU and GPU.

## RECOMMENDED MICRO SD/SDHC/SDXC MEMORY CARD SPECIFICATIONS

---

- Hanwha Vision Memory Card : SPP-E128G, SPP-E256G, SPP-E512G, SPP-E10T
- Recommended capacity : 16 GB ~ 1 TB (MLC type required)
- Recommended Manufacturers / Product Type :
  - SanDisk / High Endurance, MAX ENDURANCE
  - Western Digital / Purple QD101
  - Transcend / High Endurance


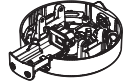



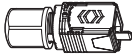


## NAS RECOMMENDED SPECS

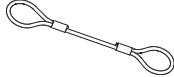
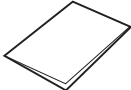
---

- Recommended capacity : 200GB or higher is recommended.
- For this camera, you are recommended to use a NAS with the following manufacturer's specs.  
Recommended products : QNAP NAS, Synology NAS

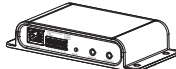
## WHAT'S INCLUDED

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
	Main Body	1	
	Install base	1	
	Quick Guide (Optional)	1	
 (SPO-8315)	HPoE injector ※ Not included in TNP-A****RW(RWB)/KEX	1	Connects power supply and network
	Power cord ※ Not included in TNP-A****RW(RWB)/KEX	1	Connects to HPoE injector
	Connector Housing	1	Used to prevent water, dust, and corrosion when connecting to Ethernet.
	Wire manager	1	
	Wire manager Shield	1	

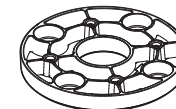
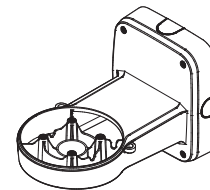
Appearance	Item Name	Quantity	Description
	Safety Cable	1	Connects the camera body and install base
	RJ45 Push-Pull Kit Assembly Guide	1	

## NETWORK I/O BOX - SEPARATELY SOLD PRODUCT

Appearance	Item Name	Description	Model Name
	Network I/O box	External connection device for camera's alarm and audio I/O	SPM-4210

## OPTIONAL ACCESSORIES FOR INSTALLATION

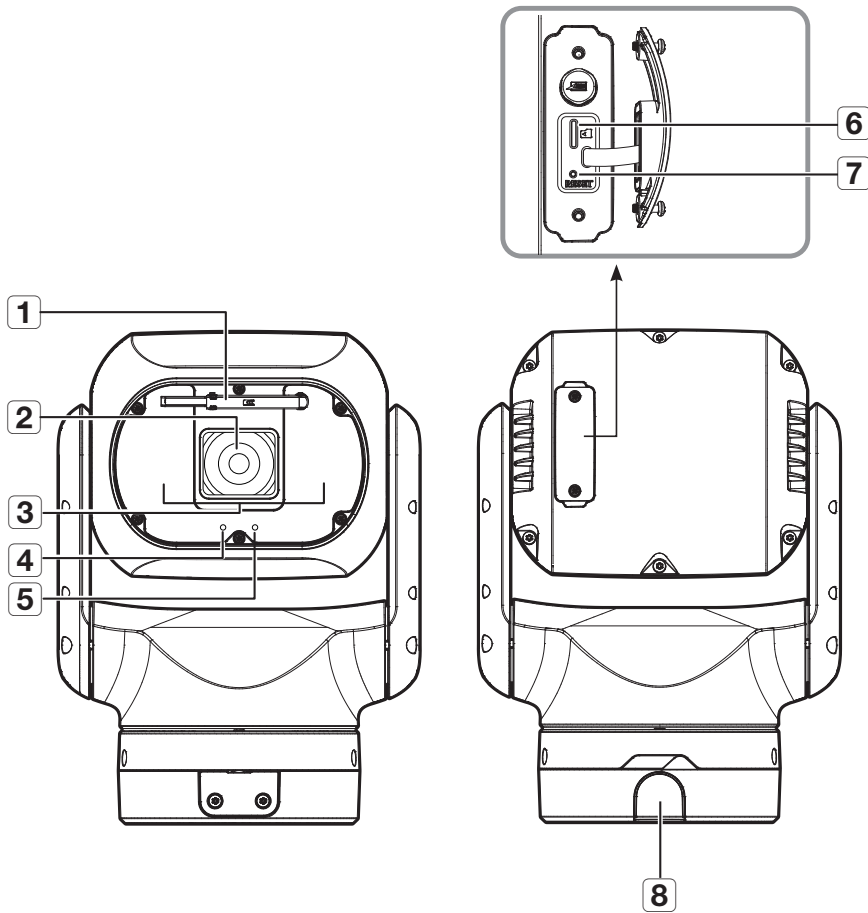
You can purchase appropriate optional accessories available.



Wall Mount	Converter
SBP-004WMW/SBP-004WMB	SBP-004PBW/SBP-004PBB

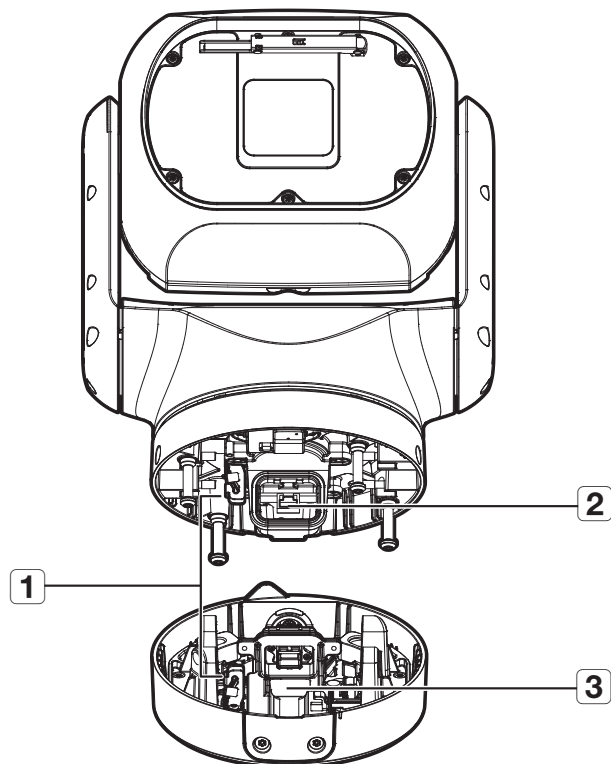
AT A GLANCE

Appearance



Item	Description
<b>1</b> Windshield wiper	Used for wiping off raindrops or snow dripping on the window. <b>!</b> Do not adjust the wiper manually by hand. After power is turned on, booting will be completed and the wiper will move to its default position.
<b>2</b> Lens	Lens for the camera.
<b>3</b> IR LED	These infrared LED's are controlled by the illumination sensor.
<b>4</b> LED lamp	Displays the camera power status.
<b>5</b> Illumination Sensor	Detects incoming light to control the IR LED.
<b>6</b> Micro SD Card slot	Compartment for the Micro SD card.
<b>7</b> Reset button	The button restores all camera settings to the factory default. Press and hold for about 5 seconds to reboot the system. <b>!</b> If you reset the camera, the network settings will be adjusted so that DHCP can be enabled. If there is no DHCP server in the network, you must run the Device Manager program to change the basic network settings such as IP address, Subnet mask, Gateway, etc., before you can connect to the network.
<b>8</b> Wiring hole cover	Used when connecting cables to the side.

## Inside



Item	Description
<b>1</b> Safety wire hook	Hang a safety cable during installation to prevent the product from falling.
<b>2</b> Network port	A port that connects to the HPoE injector and network cable for power and network connection.
<b>3</b> Network connector	A connector to connect the network cable.

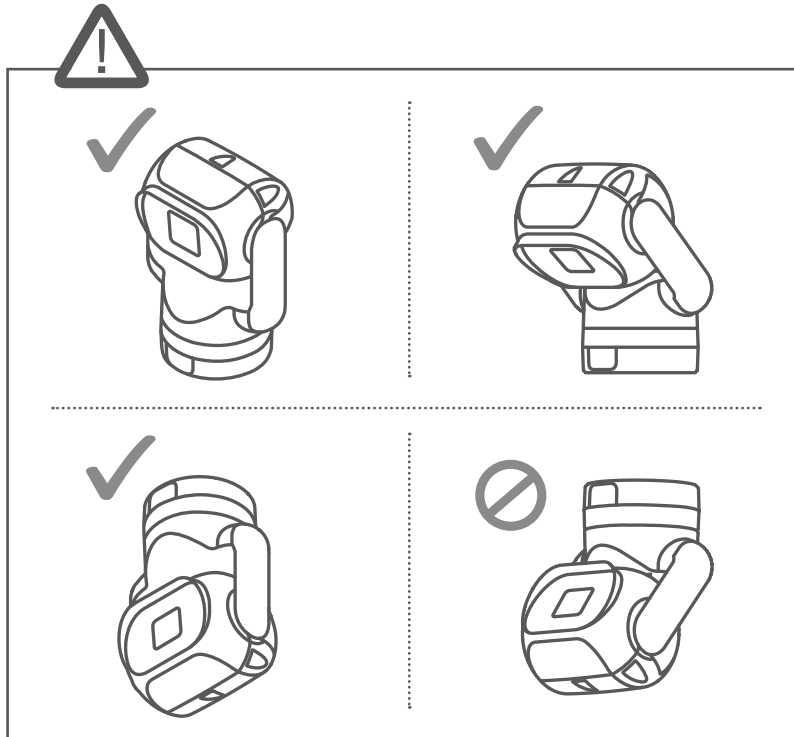
## INSTALLATION

### Precautions before installation

Ensure you read out the following instructions before installing the camera:

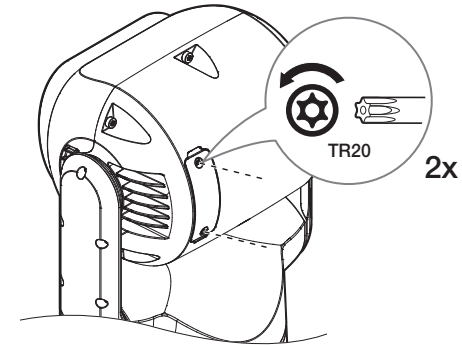
- Select an installation site that can hold at least 5 times the camera's weight.
- Stuck-in or peeled-off cables can cause damage to the product or a fire.
- For safety purposes, keep anyone else away from the installation site. And put aside personal belongings from the site, just in case.
- If the product is installed with excessive force, it may cause damage to the camera due to malfunction. Forcing assembly using non-compliant tools may damage the product.

- ! ■ Power on the HPoE injector only after installation is complete. Supplying power while the installation is in progress may cause fire or damage the product.



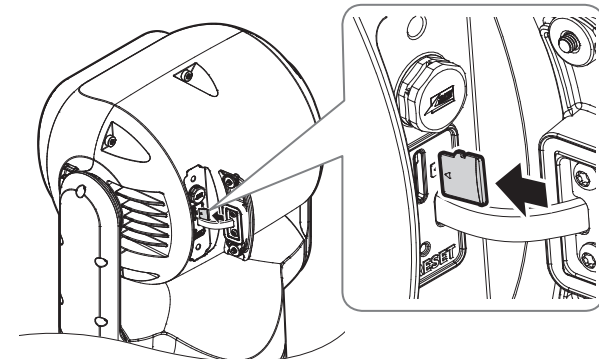
### Inserting a Micro SD card

1. Unfasten screw on the Micro SD card slot cover by turning them counterclockwise using the Torx screwdriver.

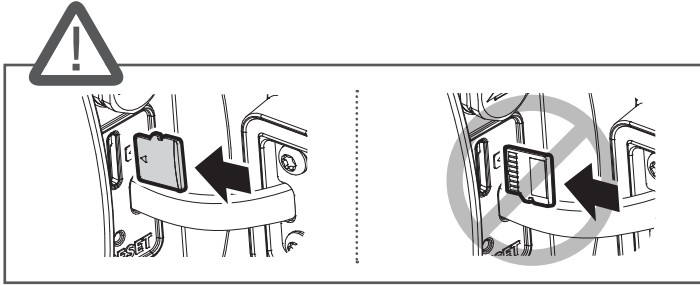


- ! ■ Disconnect the power cable from the camera before inserting the Micro SD card.
- When it rains or the humidity is high, insertion or ejection of a Micro SD card is not recommended.
- When installing/removing the Micro SD card, make sure you put the product body on a flat ground before working on it in order to prevent accidents due to loss or drop of any parts.
- Do not remove the screws.

2. Pull up the Micro SD card cover and push the Micro SD card to the arrow direction as shown in the figure.

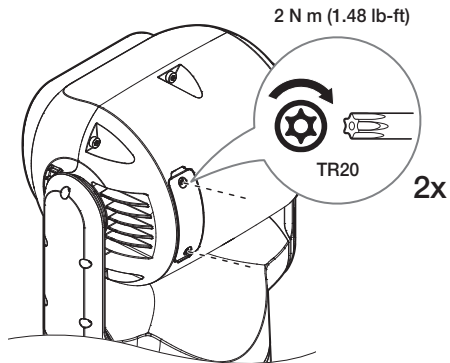


- ! Do not forcefully insert it in the reverse direction. It might damage your Micro SD card and your product.



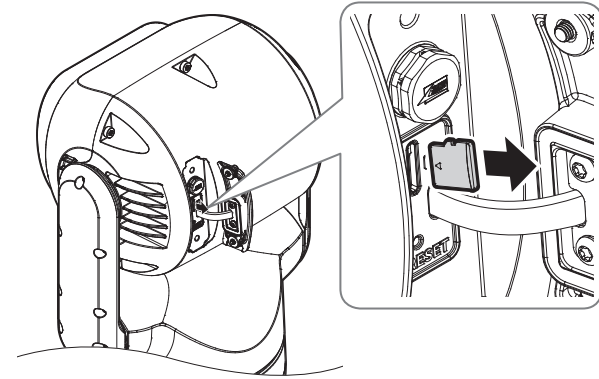
3. Assemble the camera in the reverse order of disassembly after the Micro SD card is inserted.

- ! Tighten the screws when assembling the Micro SD card cover to prevent moisture penetration.



### Removing a Micro SD card

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



- ! Before removing the Micro SD card, in **<Setup (⚙)>** **<Event>** **<Storage>**, set the device to **<Off>** and press the **[Apply]** button and turn the camera off.
- ! If you turn off the camera or remove the Micro SD card that contains data from the product, the data may be lost or damaged.

### Getting ready for network cable installation(IP66/IP68)

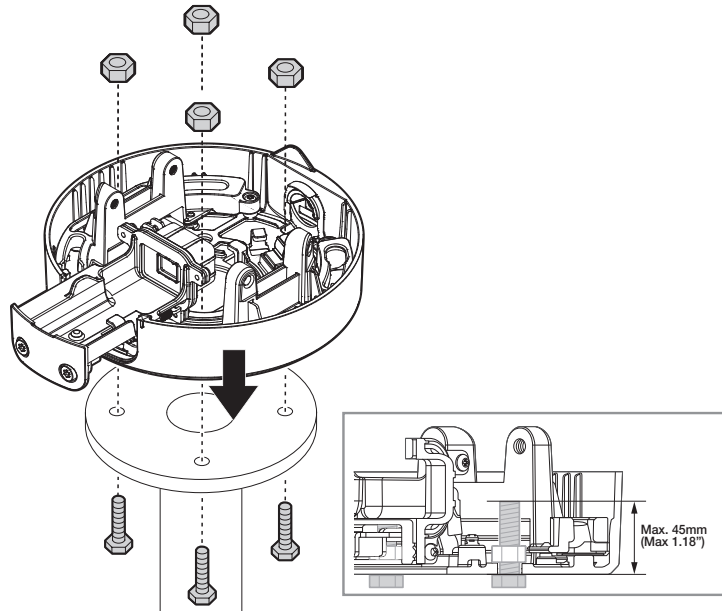
For details of how to install the network cable, refer to “RJ45 Push-Pull Kit Assembly Guide.”

You can also watch the “RJ45 Push-Pull Kit Assembly” video by scanning or clicking the QR code on the right.

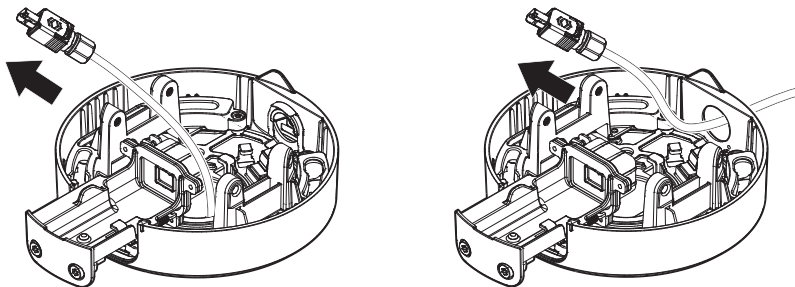


### Installing in Upright mode

1. Secure the install base to the installation surface by using bolts and nuts.




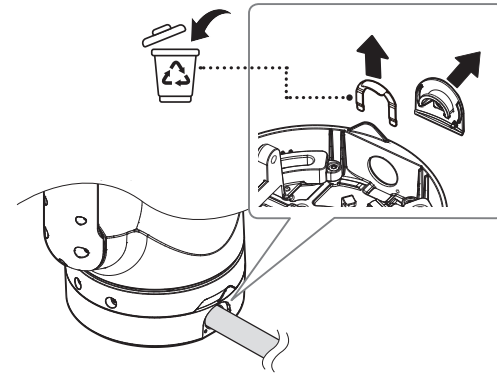
2. Pull out the network cable through the wiring hole on the bottom or side of the install base.



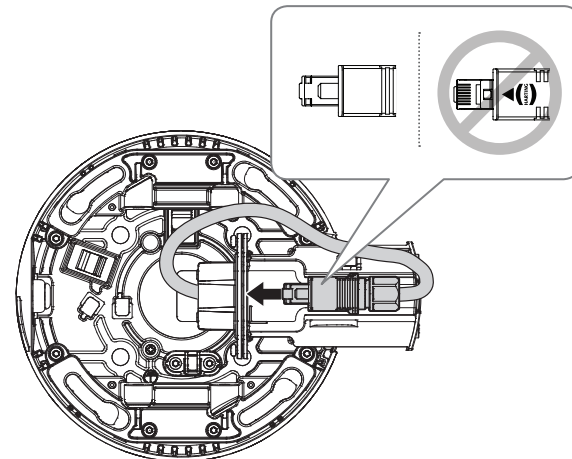
<Installing through the wiring hole on the bottom>

<Installing through the wiring hole on the side (installing conduit)>

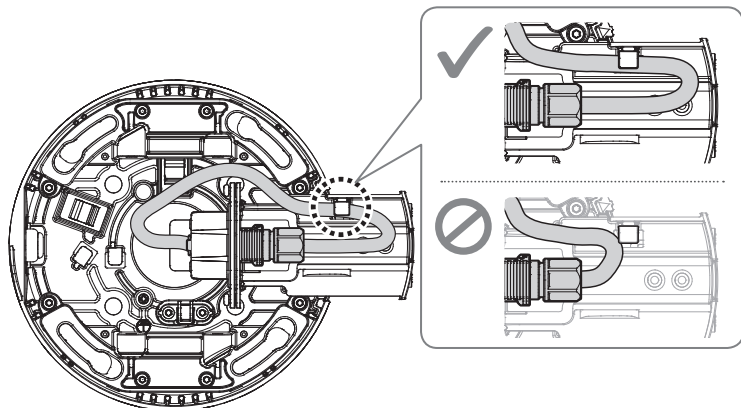
 ■ When connecting the cable through the side, remove the wiring hole cover first before using.



3. After checking the direction of the network cable, connect it to the network connector.

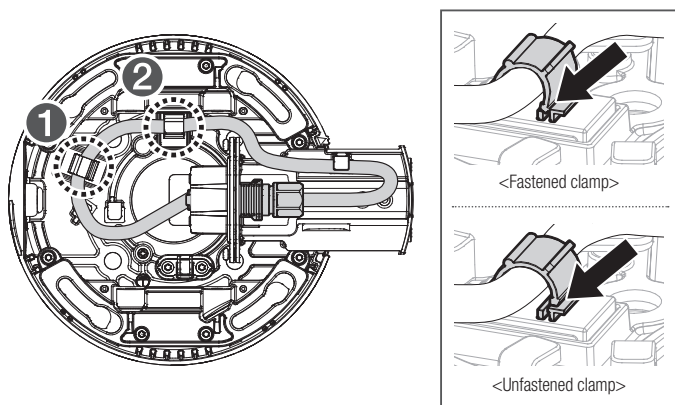


4. Secure the network cable to the cable hanger.

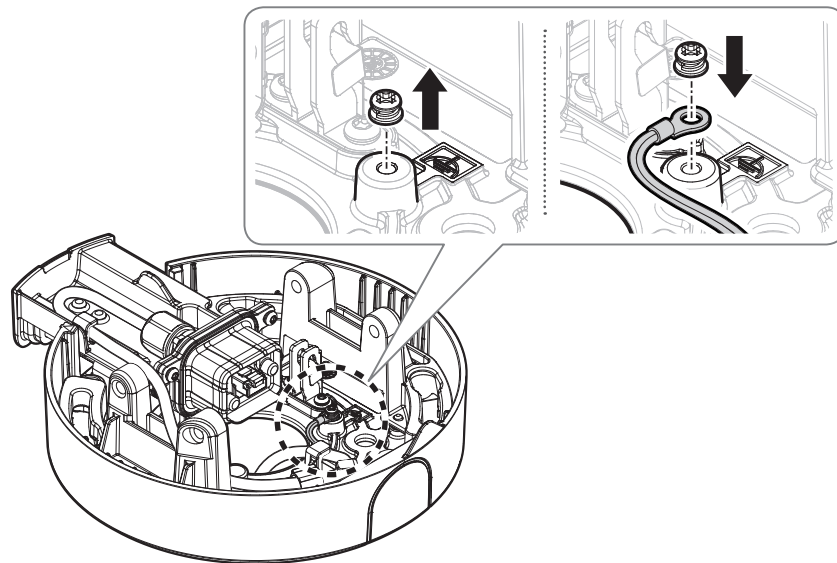


5. Secure the network cable by connecting it to the cable clamp.

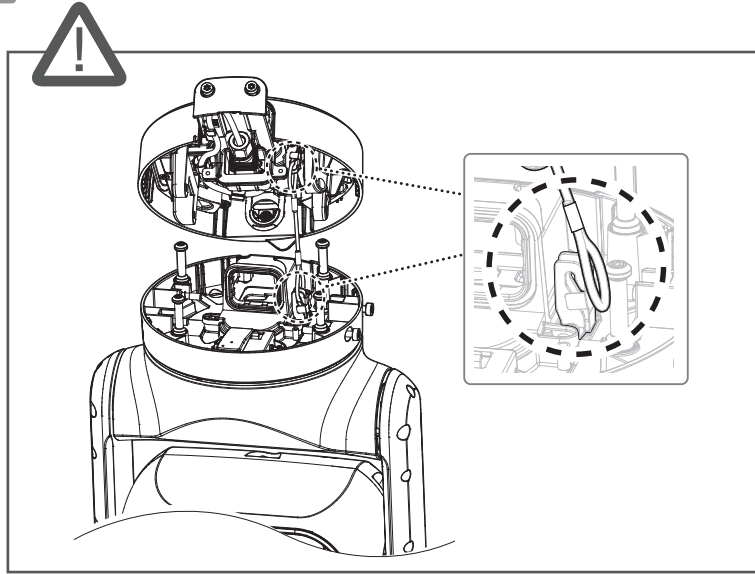
- When using cables with a diameter of 8mm or longer or thick and solid cables such as STP, do not fasten the left (1) clamp.



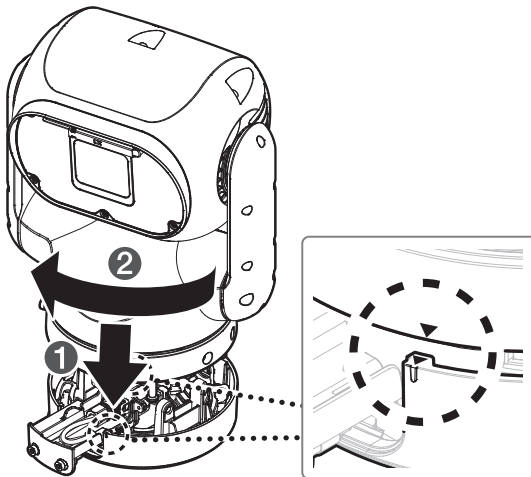
6. Connect the ground wire as shown in the figure.



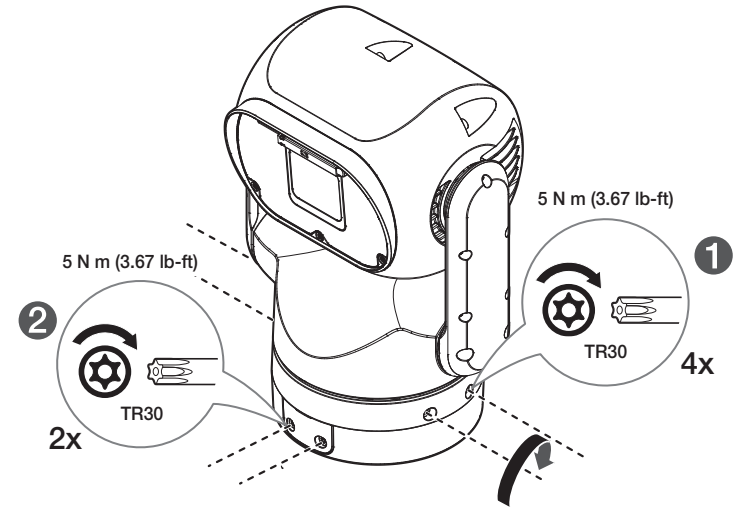
- ! When installing in Inverted mode, connect the camera body and install base using the provided safety cable.



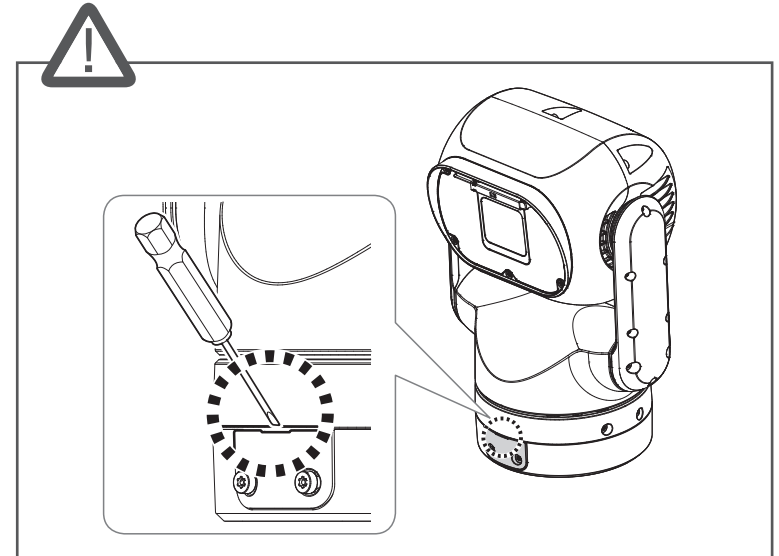
7. After attaching the camera to the install base by referring to the assembly direction guide, turn the camera clockwise completely.



8. Turn the camera's fastening screws and network connector clockwise to tighten the screws.



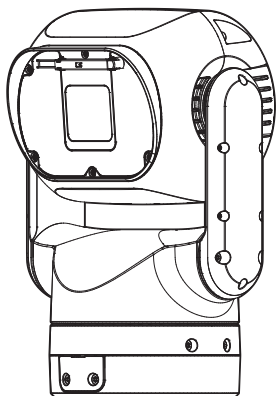
- ! If the network connector is not removed during disassembly, use a flathead screwdriver to remove it as shown in the figure below.



## Installing in Canted mode

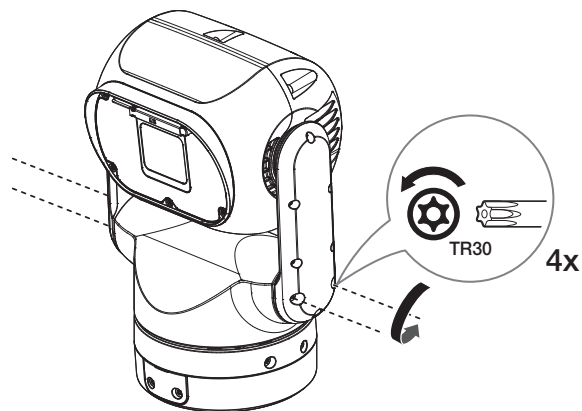
Depending on the installation environment, you can change to Canted mode when the camera needs to be canted.

1. After turning off the power, proceed with the canted installation.

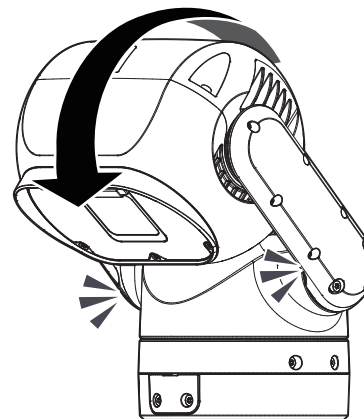


2. Loosen the fastening screws on the camera arm.

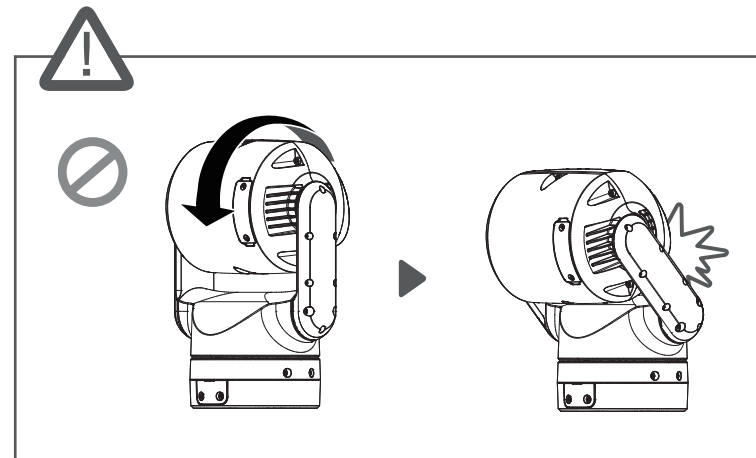
- It is not required to completely remove the fastening screws from the camera.



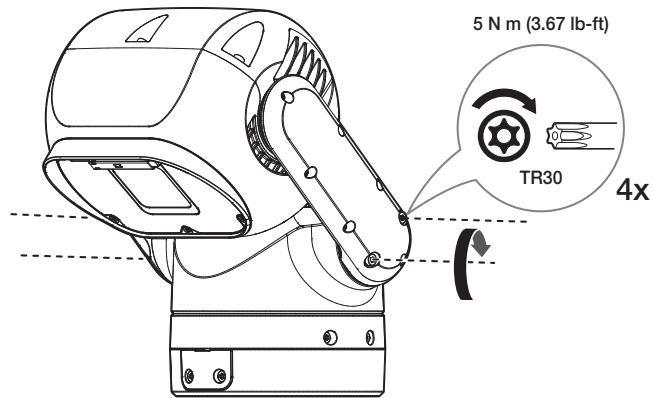
3. Cant the camera until the camera arm to which the camera head is connected stops rotating.



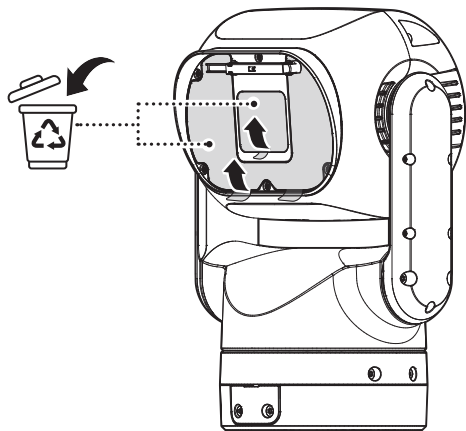
- If you cant the camera after rotating the camera head more than 260°, it may cause head crash; check the head position before canting.



4. When canting the camera is complete, tighten the fastening screws to secure the camera head.



5. When installation is complete, remove the protective film from the camera front cover.



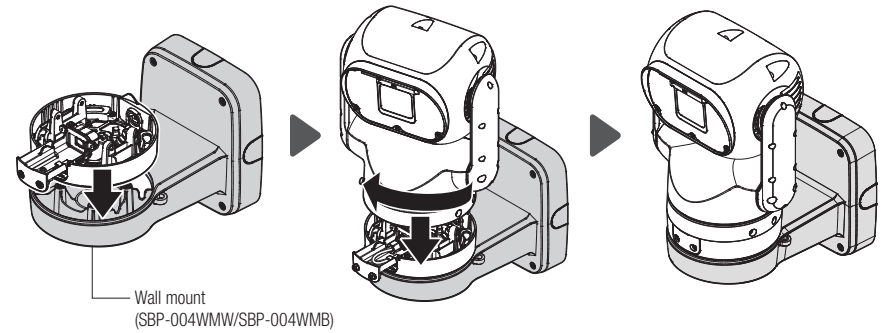
## Installing with the mount for camera installation

For installation guidelines for mounts, refer to the installation manual that is enclosed with the mount.

 See "Optional Accessories for Installation" for the appearance of each mount (unbundled). (page 7)

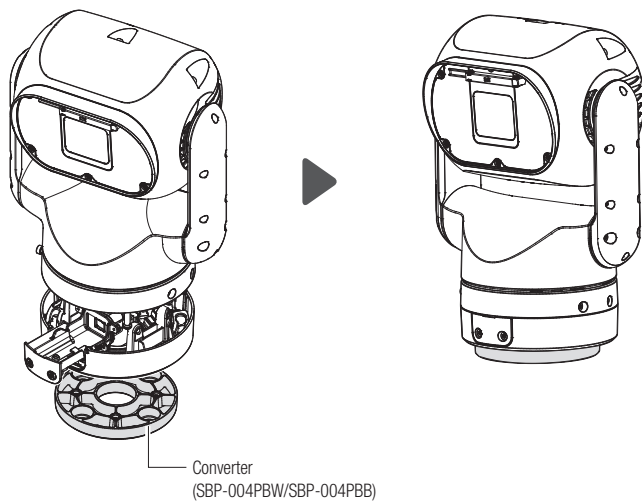
## Installing using wall mount

You can install by using the separately sold wall mount (SBP-004WMW/SBP-004WMB).



### Installing using converter

You can install by using the separately sold converter (SBP-004PBW/SBP-004PBB).

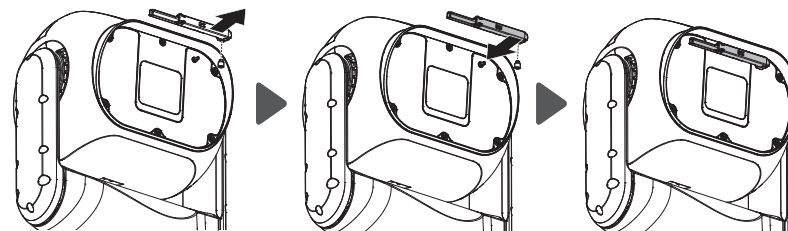


### Replacing the wiper/front cover

For details of how to install, refer to the installation manual included with each consumable.

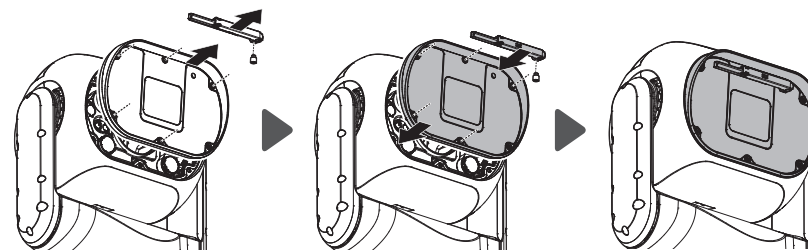
#### Replacing the wiper

You can replace the wiper by purchasing the separately sold one (SBP-K004W).



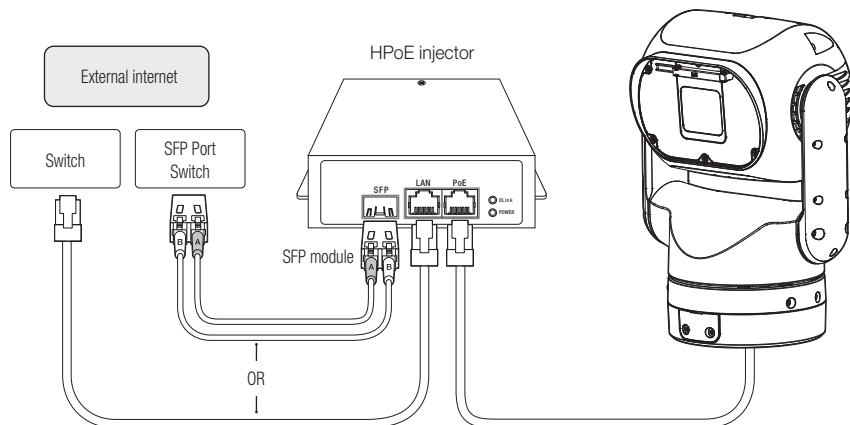
#### Replacing the front cover

You can replace the front cover by purchasing the separately sold one (SBP-K004F).



## POWERING AND NETWORKING

Connect the HPOE injector with the HPOE port of the camera.



- ❗ The product cannot be used at  $-50^{\circ}\text{C}$  or below ambient temperature.
- The product may not be defrosted depending on the installation area at  $-30^{\circ}\text{C}$ .
- After the product is left alone under a low temperature environment, it will take up to 2 hours to normally operate.
- If the product is turned on after being exposed to  $-20^{\circ}\text{C}$  or below environment for some time, reset the time.
- Use the provided HPOE injector when connecting power and network.
- Use only either one of network cable or fiber optic cable for connection.

## Network Cable Specification

Item	Contents	Remark
Connector	RJ45 (10/100BASE-T)	
Ethernet	10/100BASE-T	
Cable	UTP Category 5e	
Max Distance	100 m	DC Resistance $\leq 0.125 \Omega/\text{m}$
PoE Support	HPOE	

- ⚡ Use an STP cable to increase the protection from thunderstroke damage.

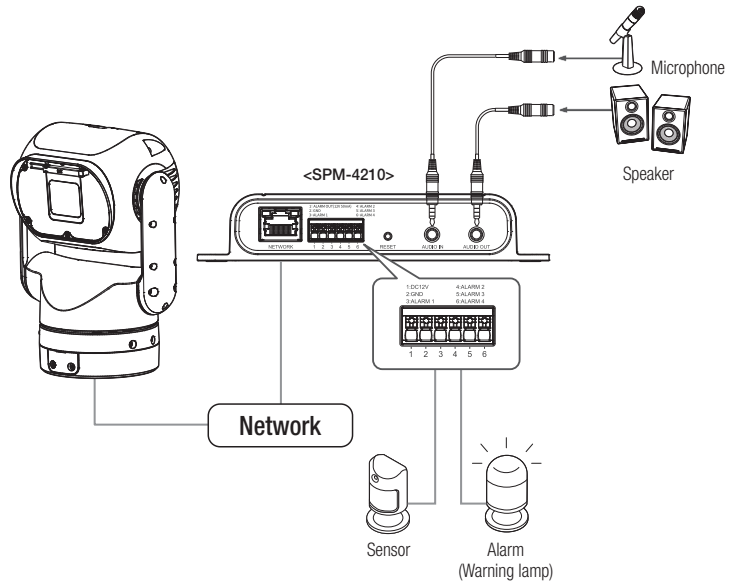
## SFP port Specification

Support SFP Voltage	3.3 V Typical
Support SFP Current	300 mA Max.
Support SFP Cage	Standard mini-SFP Cage(for 6.5 mm pitch SFP)
Support SFP Port Type	LC Type
Required SFP Speed	1250 Mbps(For 1000 Mbps Ethernet)
Required SFP's BER(Bit Error Rate)	Max $10^{-12}$
Transmission Method(Optical)	Mode Depends on SFP Module
Optical Mode(Long/Short Wave)	Mode Depends on SFP Module
Cable Insertion Loss(dB)	Mode Depends on SFP Module

- ❗ The connection/disconnection of the SFP module must be made only when the power is off.
- A kink in the optical cable may disrupt the connection for communication.
- Do not directly look at the optical cable. It can damage your eyes.

## CONNECTING AUDIO AND ALARM I/O

You can connect audio and alarm using a network I/O box separately sold.



- For more information on the network I/O box, see the manual for the network I/O box.
- You can set the network I/O box in Camera web viewer <Setup (⚙)> → <Event> → <I/O box> menu.
- Connect only one camera per network I/O box. The product may malfunction if more than one camera is connected.

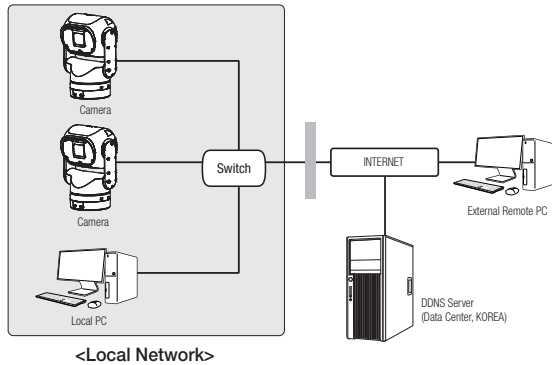
# network connection and setup

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

## CONNECTING THE CAMERA DIRECTLY TO LOCAL AREA NETWORKING

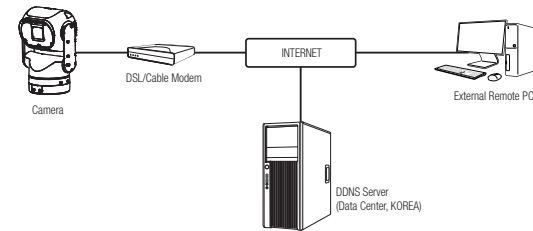
### Connecting to the camera from a local PC in the LAN

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.
- 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 21)

## 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 camera.
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.

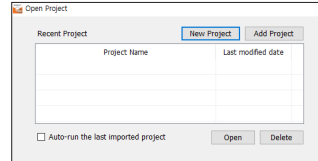
- For information on how to set DDNS, refer to the online help of Web Viewer.
- For information on how to set the IP format, refer to the online help of Web Viewer.

## USING DEVICE MANAGER

- Device manager program can be downloaded from <Support>-<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.

## SETTING UP PROJECTS

You can save and import cameras for each project. To create a new project, set the project name and a password. You need to enter a password to run the created project.



## 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

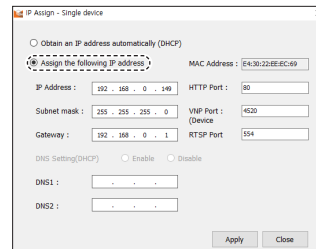
If you want to change camera network setting, <Login OK> sign must be displayed at <Status>. Click <Credential> at the main page to log in.

### Configuring Static IP

Manually insert and configure IP address & port information.

### When setting one camera

- 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.



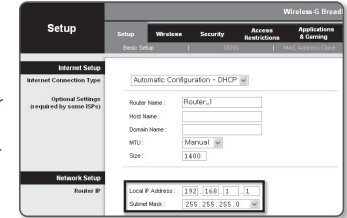
### If not using a Broadband Router

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.
- 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 23)

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

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

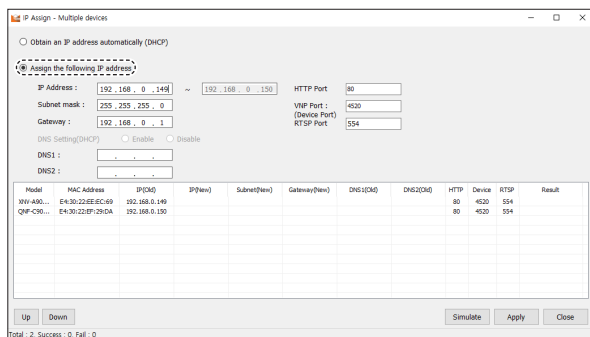
ex)

	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
	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].

## When setting multiple cameras



1. Click the camera from the list that you want the change the IP setting.
2. Click <IP Assign> at the main page of device manager.
3. Select <Assign the following IP address>.
4. Enter the initial address of the IP address range to be assigned.
5. Click the [Simulate] button to check the IP address to be assigned for each equipment.
  - You can edit each address by double-clicking the IP address item.
6. Click the [Apply] button to start IP assignment.
7. Check the <Result> item for the success of IP assignment.

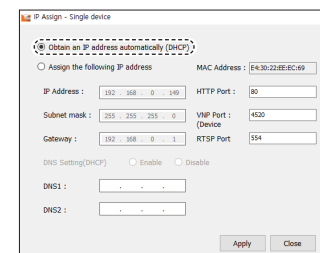
## Configuring Dynamic IP

Receive IP address from DHCP

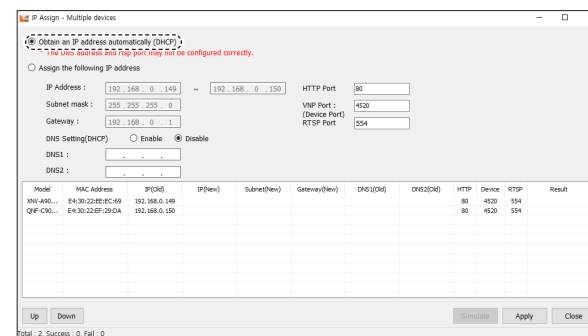
- Example of the Dynamic IP environment
  - If a Broadband Router, with cameras connected, is assigned an IP address by the DHCP server
  - If connecting the camera directly to modem using the DHCP protocols
  - If IPs are assigned by the internal DHCP server via the LAN

## When setting one camera

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].



## When setting multiple cameras

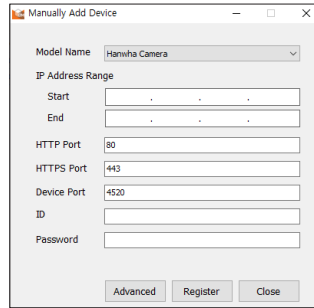


1. Click the camera from the list that you want to change the IP setting.
2. Click <IP Assign> at the main page of device manager.
3. Select <Obtain an IP address automatically (DHCP)>.
4. Click the [Apply] button to start IP assignment.
5. Check the <Result> item for the success of IP assignment.

## MANUALLY REGISTERING CAMERA

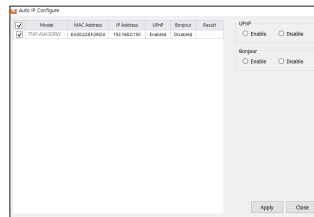
If the camera cannot be found using search function, the camera can be registered remotely by manually inserting IP information, if the camera is connected to external network.

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, HTTPS port, ID, and password.
4. Click **[Register]** button.
5. Check if camera is registered.
  - Check MAC address at the sticker attached to the camera.



## 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. To use the **<UPnP>** or **<Bonjour>** protocol, select **<Enable>** and click the **[Apply]** button.



## PORT RANGE FORWARD (PORT MAPPING) SETUP

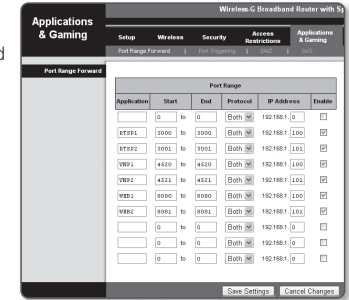
If you have installed a Broadband Router with a camera connected, you must set the port range forwarding on the Broadband Router so that a remote PC can access the camera in it.

### 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.



Application	Start	End	Protocol	IP Address	Enable
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	192.168.1.1	<input type="checkbox"/>
IPTV1	2000	2000	Both	192.168.1.100	<input type="checkbox"/>
IPTV2	2001	2001	Both	192.168.1.101	<input type="checkbox"/>
WMS1	4120	4120	Both	192.168.1.100	<input type="checkbox"/>
WMS2	4121	4121	Both	192.168.1.101	<input type="checkbox"/>
WMS3	4000	4000	Both	192.168.1.100	<input type="checkbox"/>
WMS4	4001	4001	Both	192.168.1.101	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	192.168.1.1	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	192.168.1.1	<input type="checkbox"/>

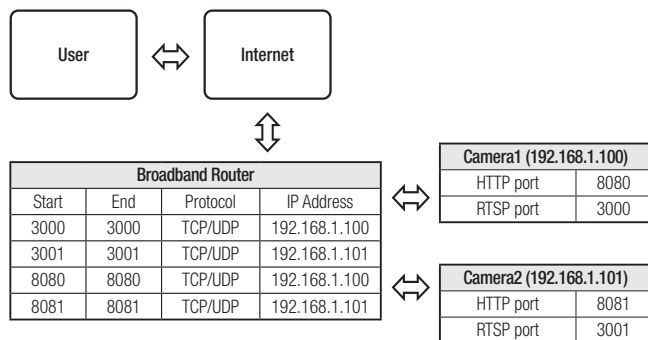


- Port forwarding setting is an example of setting CISCO IP router.
- The settings may differ depending on the connected Broadband Router model. For more information, refer to the user manual of the applicable router.

## 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. Select the desired project, then click the [Open] button.
3. Entering the password will display the list of cameras in the project.
4. 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.

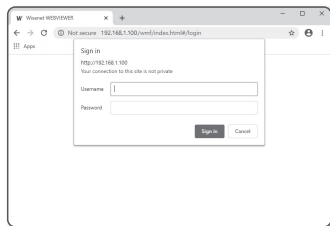
1. Before you can access a camera in the Broadband Router network, you should have set the port range forward for the Broadband Router.
2. From the remote PC, launch the Internet browser and type the DDNS URL address of the camera, or the IP address of the Broadband Router in the address bar.  
ex) <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 use the UPnP or Bonjour protocol, refer to "Automatically configuring IP".

### To check the DDNS address

If the camera is connected directly to the DHCP cable modem, DSL 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.

- !
  - For a new password with 8 to 9 characters, you must use at least 3 of the following: uppercase/lowercase letters, numbers and special characters. For a password with 10 characters or longer, you must use at least 2 types of those mentioned. (support up to 64 characters)
    - Special characters that are allowed. :  
~!@#\$\$%^&\*()\_+={}|~\;:"<>.,?/
  - Space is not allowed for password.
  - The password and ID cannot be identical.
  - You cannot use the same character repeatedly or sequential characters on a keyboard as passwords for enhanced security.
  - Be sure to remember the password you set, as you will need to reset the product by pressing the **[RESET]** button if you lose your password.

## 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's ID, **"admin,"** can be changed in the Web Viewer.
2. Enter the password in the **<Password>** input field.
3. Click **[Sign in]**.  
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.
- 📐
  - You will experience the best video quality if the screen size is 100%. Reducing the ratio may cut the image on the borders.

## CAMERA WEB VIEWER SETUP

1. Click the **[Setup (⚙️)]** icon.
2. The Settings window appears.
3. You can configure settings for the camera's basic information, video, audio, network, event, analysis, and system over the network.
4. Click **<Help (🔗)>** to view detailed descriptions of each function.

## TROUBLESHOOTING

PROBLEM	SOLUTION
<b>No video is displayed when accessing the plug-in free webviewer on Safari via HTTPS.</b>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>
<b>I can't access the camera from a web browser.</b>	<ul style="list-style-type: none"> <li>Check to make sure that the camera's Network settings are appropriate.</li> <li>Check to make sure that all network cables have been connected properly.</li> <li>If connected using DHCP, verify that the camera is able to acquire dynamic IP addresses without any problem.</li> <li>If the camera is connected to a Broadband Router, verify that port forwarding is properly configured.</li> </ul>
<b>Viewer got disconnected during monitoring.</b>	<ul style="list-style-type: none"> <li>Connected Viewers become disconnected upon any change to camera or network configurations.</li> <li>Check all network connections.</li> </ul>
<b>The camera connected to the network is not detected in the Device Manager program.</b>	<ul style="list-style-type: none"> <li>Turn off the firewall settings on your PC and then search the camera again.</li> </ul>
<b>Images overlap.</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>
<b>No image appears.</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>

PROBLEM	SOLUTION
<b>&lt;Motion detection&gt; of &lt;Analytics&gt; is set to &lt;Enable&gt;, but no notification e-mail reaches me even when an analysis event had occurred.</b>	<ul style="list-style-type: none"> <li>Verify the settings in the following sequence:                             <ol style="list-style-type: none"> <li>Check &lt;Data &amp; Time&gt; settings.</li> <li>The &lt;Motion detection&gt; should be set to &lt;Enable&gt;.</li> <li>Check if the &lt;E-mail&gt; option of &lt;Event setup&gt; menu is checked to use.</li> </ol> </li> </ul>
<b>Cannot record into the Micro SD card.</b>	<ul style="list-style-type: none"> <li>Check if the Micro SD card is defective.</li> <li>When replacing the Micro SD card, it must be done while the power is disconnected from the product.</li> </ul>
<b>Micro SD card is inserted but the camera does not operate properly.</b>	<ul style="list-style-type: none"> <li>Check if the Micro SD card is inserted in the proper direction. Operation of Micro SD card that is formatted by other devices is not guaranteed with this camera unit.</li> <li>Format the Micro SD card again in &lt;Setup&gt; → &lt;Event&gt; → &lt;Storage&gt; menu.</li> </ul>
<b>Cannot record in the NAS.</b>	<ul style="list-style-type: none"> <li>Confirm that the information registered in the NAS is correct.</li> </ul>
<b>It reports that NAS setting has failed.</b>	<ul style="list-style-type: none"> <li>Confirm that the IP address of the NAS is valid.</li> <li>Confirm that the ID/password of the NAS is valid.</li> <li>Confirm that you can access the folder designated as the default folder using the ID of the NAS.</li> <li>Confirm that the NAS SMB/CIFS items are unchecked.</li> <li>Confirm that the NAS IP address and the camera IP address are in the same format. ex) The NAS &amp; 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.</li> <li>Check whether you tried to access as another user without formatting the default folder saved or used.</li> <li>Confirm that you used recommended NAS equipment.</li> </ul>



Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.



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.

