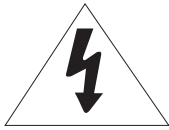# MEGApix® PANO™ 9MP
180°, 360° fisheye view camera
DWC-PVF9M2TIR

User's Manual Ver. 03/18

Before installing and using the camera, please read this manual carefully.
Be sure to keep it handy for future reference.

Safety Information

⚡ (triangle)	**CAUTION** RISK OF ELECTRIC SHOCK. DO NOT OPEN.	! (triangle)

CAUTION:

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

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

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

WARNING

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

WARNING

1. Be sure to use only the standard adapter that is specified i the specification sheet. Using any other adapter could caus fire, electrical shock, or damage to the product

2. Incorrectly connecting the power supply or replacing battery may cause explosion, fire, electric shock, or damage to th product.

3. Do not connect multiple cameras to a single adapter. Exceeding the capacity may cause excessive heat generation or fire

4. Securely plug the power cord into the power receptacle. Insecure connection may cause fire

5. When installing the camera, fasten it securely and firmly A falling camera may cause personal injury.

6. Do not place conductive objects (e.g. screw drivers, coins, metal items, etc.) or containers filled with water on top o the camera. Doing so may cause personal injury due to fire electric shock, or falling objects.

7. Do not install the unit in humid, dusty, or sooty locations. Doing so may cause fire or electric shock

8. If any unusual smells or smoke come from the unit, stop using the product. Immediately disconnect the power sorce and contact the service center. Continued use in such a condition may cause fire or electric shock

9. If this product fails to operate normally, contact the nearest service center. Never disassemble or modify this product in any way.

10. When cleaning, do not spray water directly onto parts of the product. Doing so may cause fire or electric shock

Precaution

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

Handling
- Do not disassemble or tamper with parts inside the camera.
- Do not drop the camera or subject it to shock or vibration as this can damage the camera.
- Clean the clear dome cover with extra care. Scratches and dust can ruin the quality of the camera image.

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

Important Safety Instructions

1. **Read these instructions.** - All safety and operating instructions should be read before installation or operation.

2. **Keep these instructions.** - The safety, operating and use instructions should be retained for future reference.

3. **Heed all warnings.** - All warnings on the product and in the operating instructions should be adhered to.

4. **Follow all instructions.** - All operating and use instructions should be followed.

5. **Do not use this device near water.** - For example: near a bath tub, wash bowl, kitchen sink, laundry tub, in a wet basement; near a swimming pool; etc.

6. **Clean only with dry cloth.** - Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners.

7. **Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.** - Slots and openings in the cabinet are provided for ventilation, to ensure reliable operation of the product, and to protect it from over-heating. The openings should never be blocked by placing the product on bed, sofa, rug or other similar surfaces. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided and the manufacturer's instructions have been adhere to.

8. **Do not install near any heat sources such as radiators, heat registers, or other apparatus (including amplifiers) that produce heat.**

9. **Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement.**

10. **Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.**

11. **Only use attachments/accessories specified by the manufacturer.**

12. **Use only with cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.**

13. **Unplug the apparatus during lightning storms or when unused for long periods of time.**

14. **Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.**

Disposal of Old Appliances

1. When this crossed-out wheel bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC.

2. All electrical and electronic products should be disposed of separately form the municipal waste stream stream in accordance to laws designated by the government or the local authorities.

3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.

4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product.

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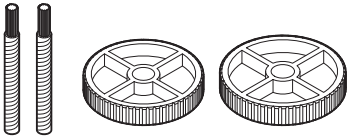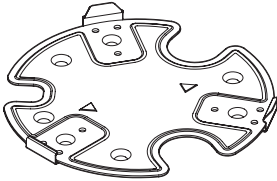
Table of Contents
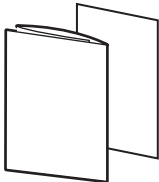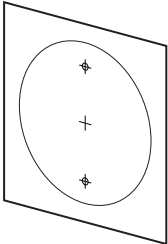
Introduction -
Product & Accessories
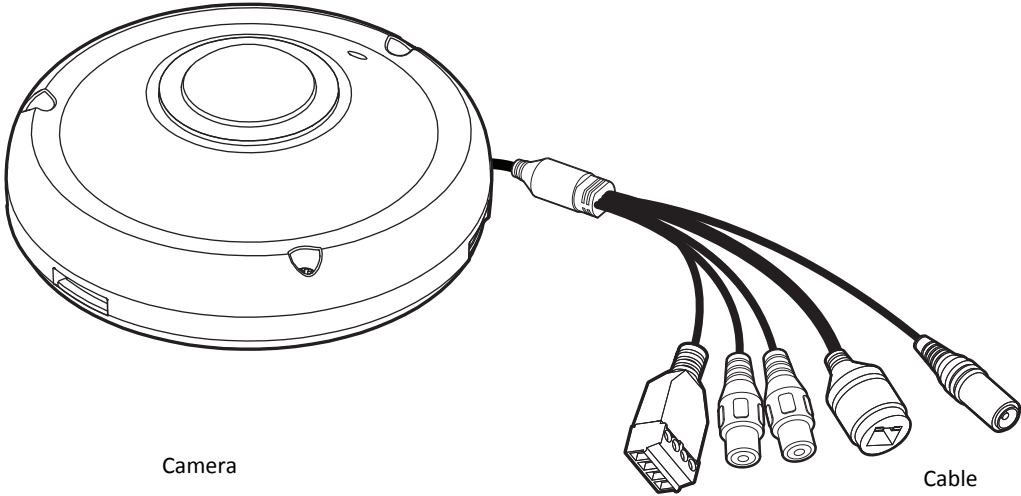
Camera

Cable

Mount Bolt & Nut

Mount Plate

Quick Manual &
Download Guide

Template Sheet
for Installing by Bolt & Nut
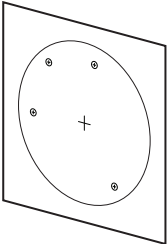
Template Sheet
for Installing by Plate

Torx Wrench

Waterproof cap & Gasket

Screw &
Plastic Anchor-3pcs

Introduction -
Part Name

Dome Cover

Illumination Sensor Hall

Window cover

Illumination Sensor

Fisheye lens

Reset button

SD Card Slot

Alarm In/Out

Audio In/Out

RJ-45 Connector

DC Power Jack

Waterproof cap

Mount Plate

Plate Hook
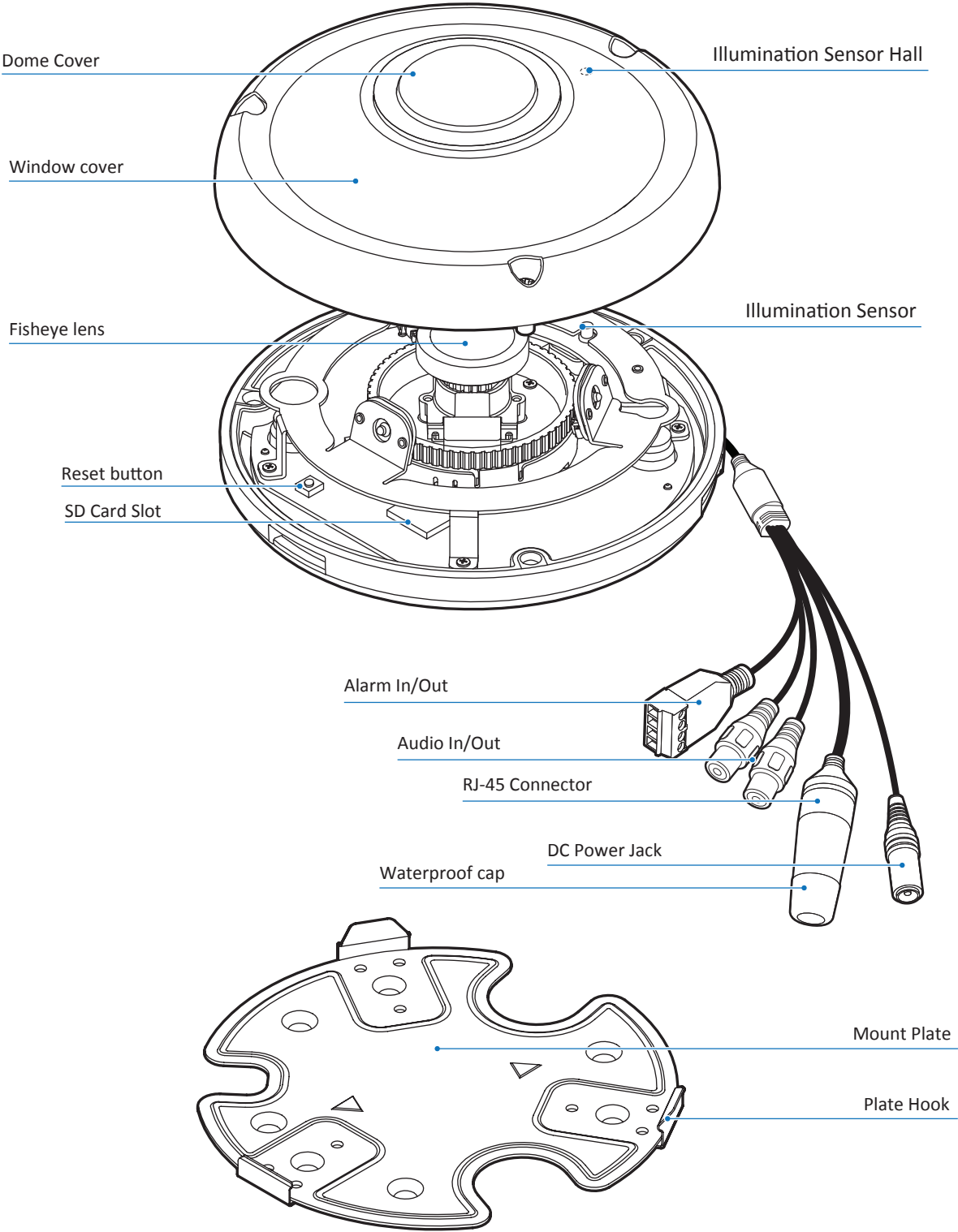
Installation -
Disassemble the camera
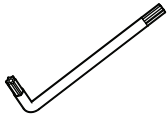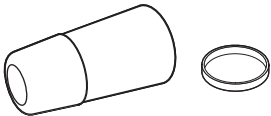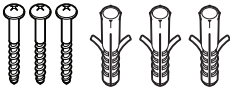
Before installing your camera, you have to read the following cautions.

1. You have to check whether the location can bear five times of the weight of your camera.

2. Don't let the cable to be caught in improper place or the electric line cover to be damaged.
   Otherwise it may cause a breakdown or fire.

3. When installing your camera, don't allow any person to approach the installation site. If you have any valuable things under the place, move them away.

UPPER-SENSOR HOLE POINT

GASKET-CABLE HOLE POINT

BOTTOM- CABLE HOLE
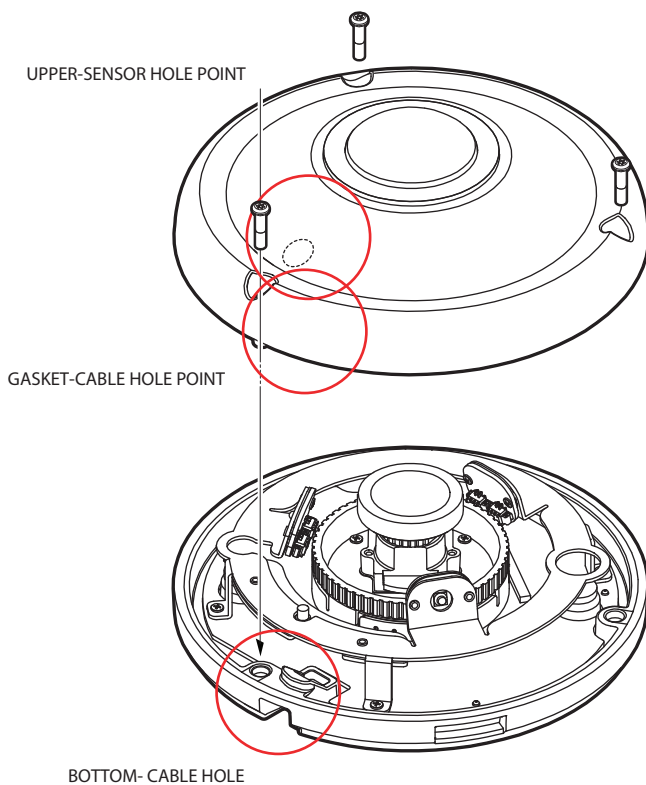
❶ Detach the dome cover by torx wrench provided from bottom case before installation the camera.

1. The camera includes a sensor at the camera's module. For the sensor to function properly, the camera's dome includes a special hole the sensor.

2. When assembling the camera together, please make sure the sensor hole in the camera's dome is positioned right on top of the sensor on the camera's module.
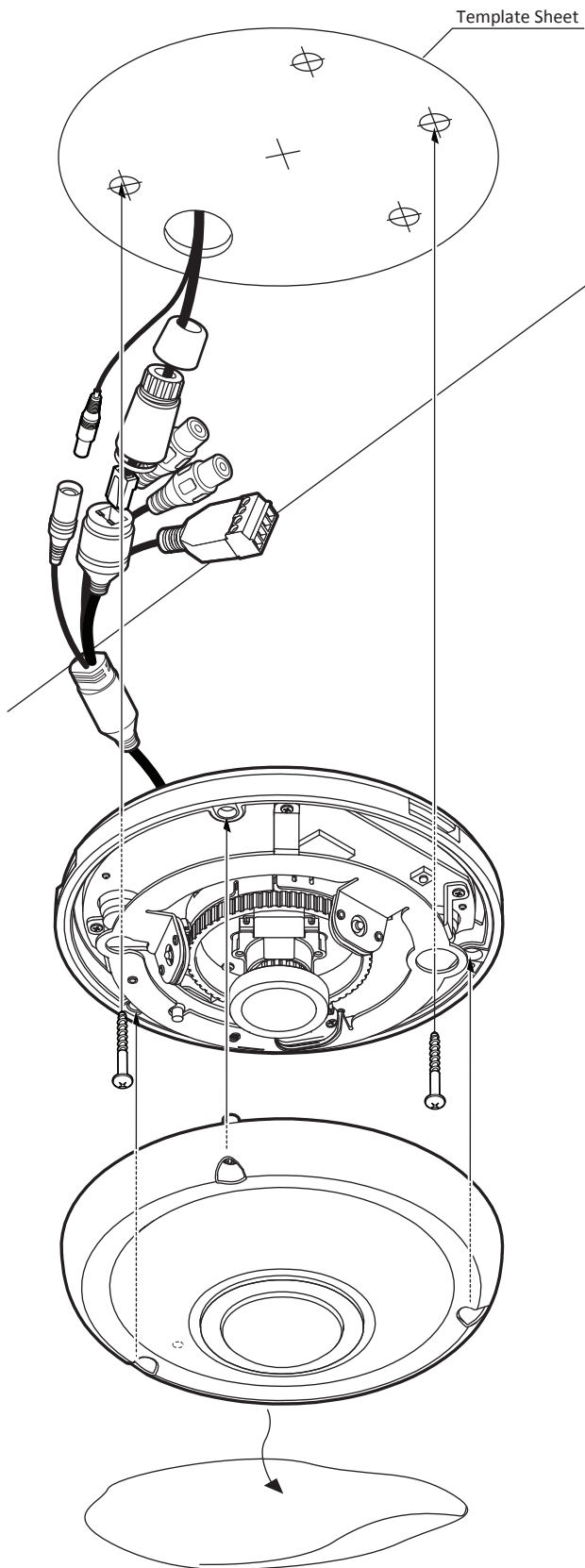
※ **Reset to the Factory Default**
Press the reset button for 5 seconds to return the setup to the factory default.

※ **Warning:**
If you press the 'Reset' button, you will lose all settng data. If needed, please, make a note for further installation.

Installation -
Installation

Template Sheet

❶ Detach the camera's cover dome from the camera's module by unscrewing the three cover dome screws using the L-wrench.

❷ Use the camera or mounting template to mark and drill the necessary holes in the wall or ceiling.

❸ Pull wires through and make connections.

　※ Put the Lan cable into (a), then (b) will be assembled to (a) tightly. As a final step, (c) need to be assembled to (b) without making any space.
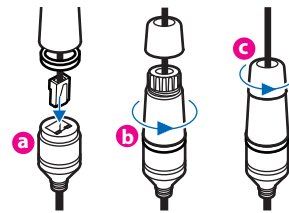
❹ Using two (2) included screws, mount and secure the camera to the mounting surface.

❺ Secure the camera's cover dome onto the camera base to complete the installation.

❻ Detach the protection film from the dome cover.

Installation -
Installation Using Mount Plate

Template Sheet

❶ Detach the camera's cover dome from the camera's module by unscrewing the three cover dome screws.
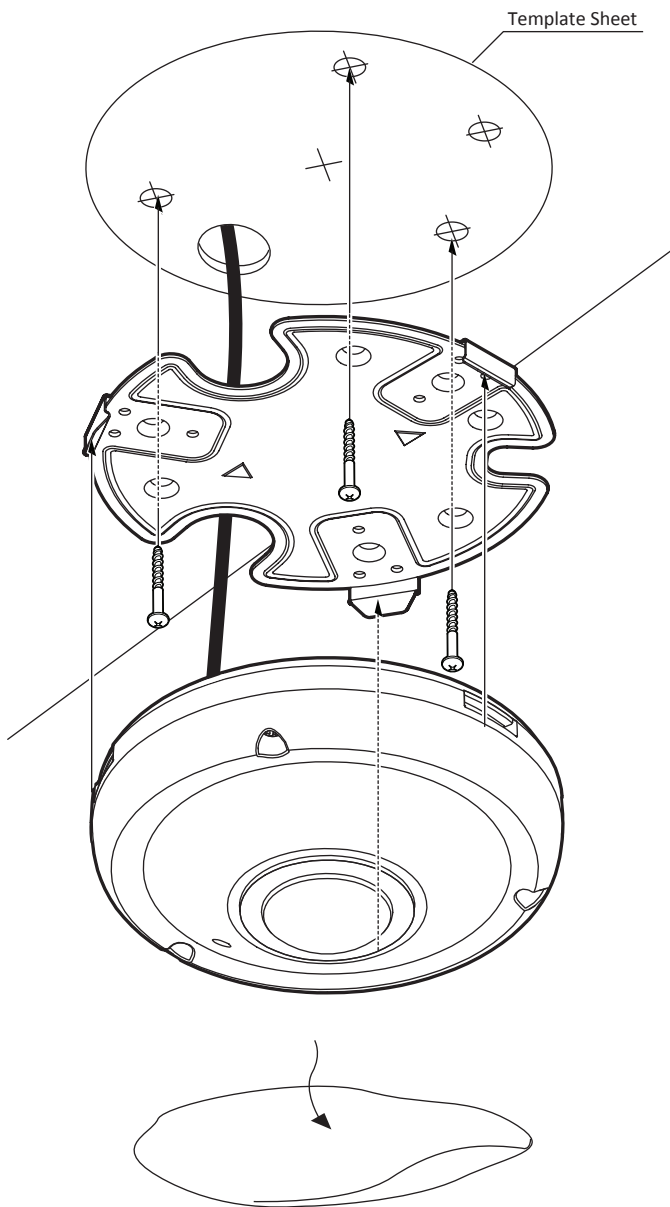
❷ Using the metal mount plate, mark and drill the necess -ary holes in the wall or ceiling.

❸ Pull wires through and make connections.

❹ Using the three (3) included screws, mount and secure the camera to the wall or ceiling.

❺ Attach the camera base to the metal mount by snapp -ing it into place using the two metal handles.

❻ Secure the camera's cover dome onto the camera base to complete the installation.

❼ Detach the protection film from the dome cover.

Installation -
Installation Using Mount Bolt & Nut

❶ Using the template sheet, make and drill the cabling holes on the wall/ceiling.

❷ Secure the two long mounting screws to the camera's base.

❸ Pass the wires through the mount bracket and make all necessary connections.

Installation -
Installation Using Mount Bolt & Nut
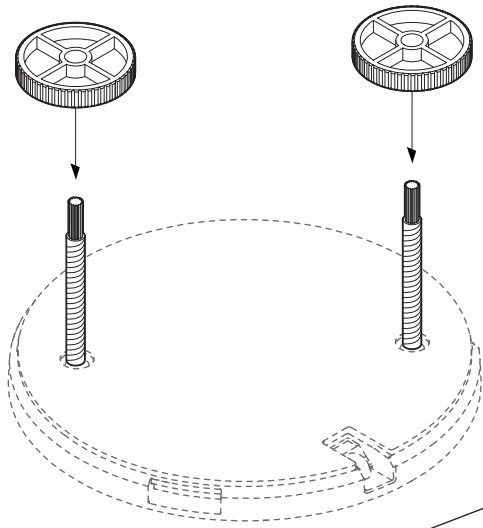
❹ Mount the camera to the mounting surface by using the 2 mounting nuts. Rotate the locking discs over the screws until the camera is held tightly from the mount -ing surface.
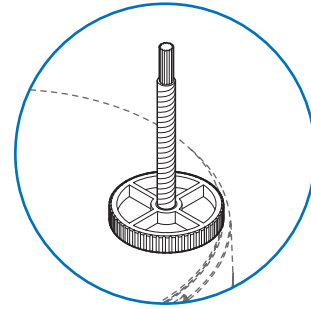
❺ Secure the camera's cover dome onto the camera base to complete the installation.
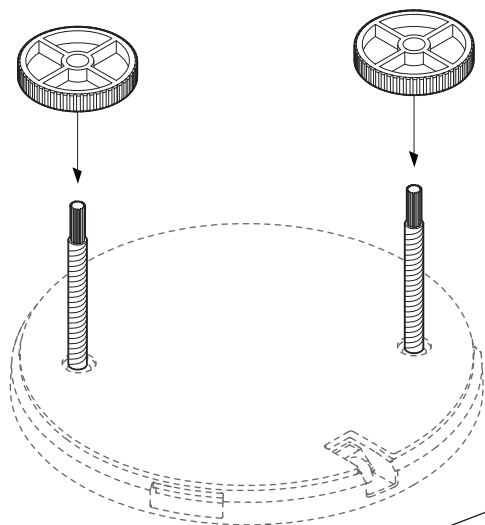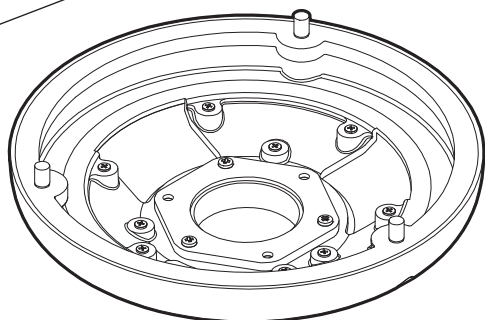
❻ Detach the protection film from the dome cover.
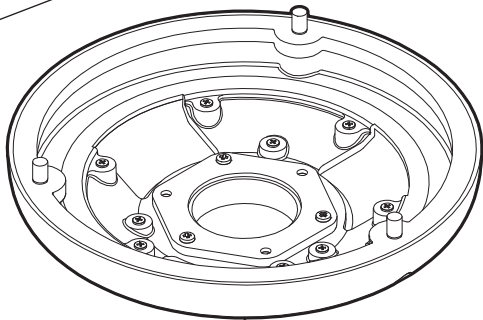
Installation -
Cabling

Two Options
Use a PoE-enabled swtich to connect data and power through a single cable and begin viewing and recording images instantly.
A non-PoE switch will require an adaptor for power transmission.

1. Using a PoE-Enabled Switch
The Camera is PoE-compliant, allowing transmission of power and data via a single Ethernet cable.
PoE eliminates the need for the different cables used to power, record, or control the camera. Follow the illustration below to connect the camera to a PoE-enabled switch using an Ethernet cable.

Ethernet cable
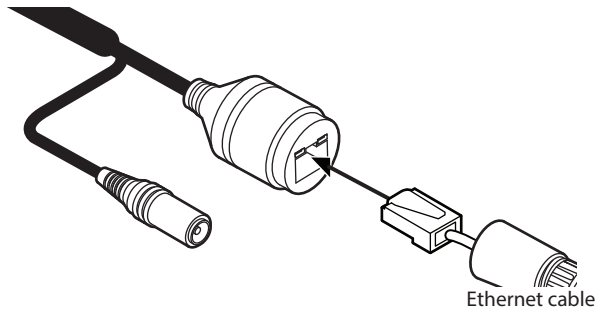
2. Using a Non-PoE Switch
If a PoE-enabled switch is not used, use a power adaptor for power transmission and non-PoE switch for data transmission.
Follow the illustrations below to connect the camera without a PoE-enabled Switch.

Ethernet cable

Power

Installation - Cabling

⑥ Alarm Input
⑤ Alarm Output
④ Audio Input
③ Audio Output
② Network
① Power
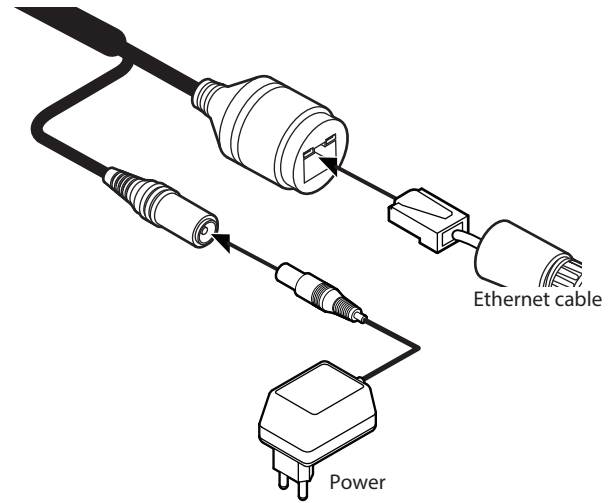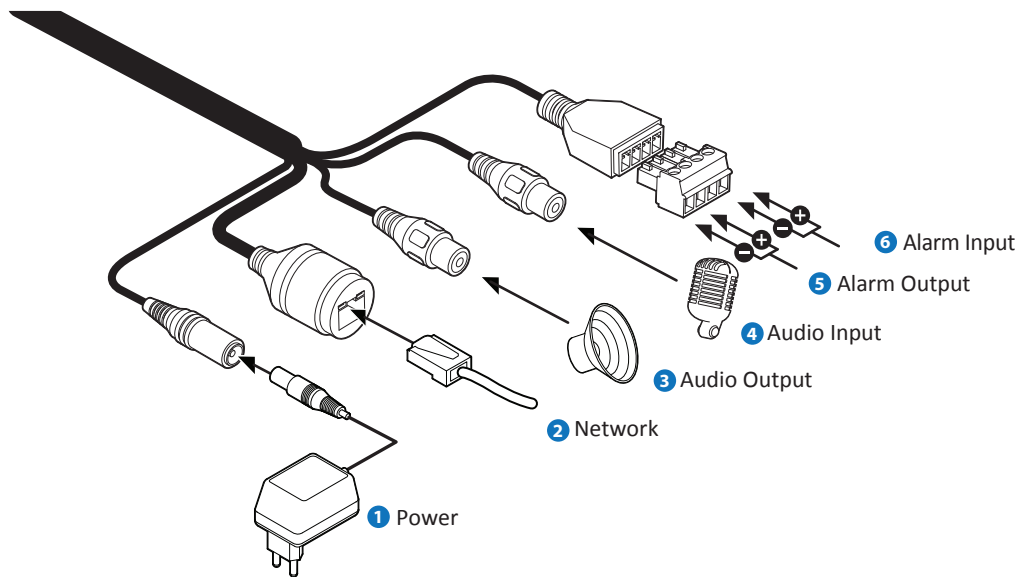
① Power Connection
Please, check the voltage and current capacity of rated power carefully.

Rate Power	Current Consumption	PoE
DC 12V	7W	IEEE 802.3af Class 3

② Network Connection
Connect the crossover cable into the RJ-45.

③ Audio Output
Connect the 'Audio Out' cable of the camera to device like speaker.

④ Audio Input
Connect the 'Audio In' cable of the camera to the device like microphone.

⑥ Alarm Input
⑤ Alarm Output
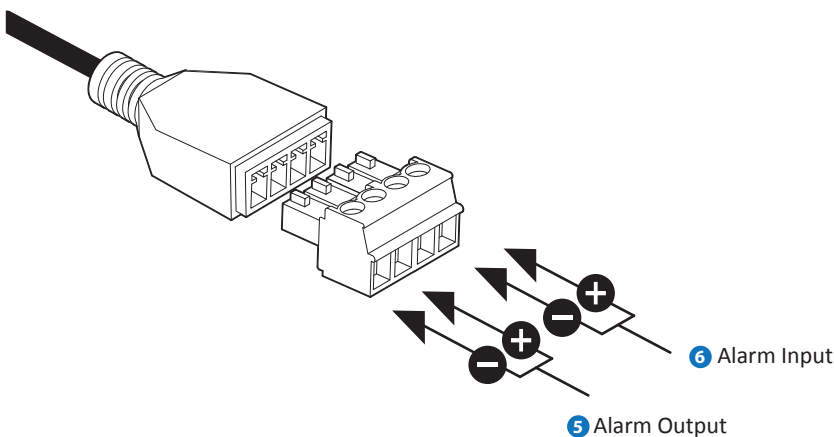
⑤ Alarm Output
It connects to the alarm lights, siren or lamps, and it is activated according to the Setup menu setting.

Cable of the relay output device should connect to the line of the Alarm Cable.

⑥ Alarm Input/Sensor
Cable of the sensor/alarm input device should connect to the line of the Alarm Cable.

13

Installation -
Inserting/Removing an SD Memory Card

Reset button

SD card slot
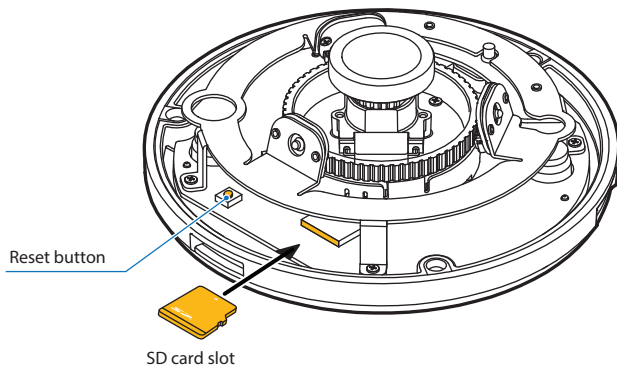
The memory card is an external data storage device that has been developed to offer an entirely new way to record and share video, audio, and text data using digital devices.
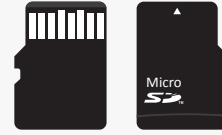
※ **Recommended SD Card Specification** (Not Included)
- Type: Micro SD (SDHC)
- Manufacturer: Transcend, Kingston, Toshiba, SanDisk
- Capacity: 4GB~32GB
- Class: UHS-I U3 Class 10

❶ Inserting an SD Memory Card
Insert the SD card in the arrow direction.

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

Reset button

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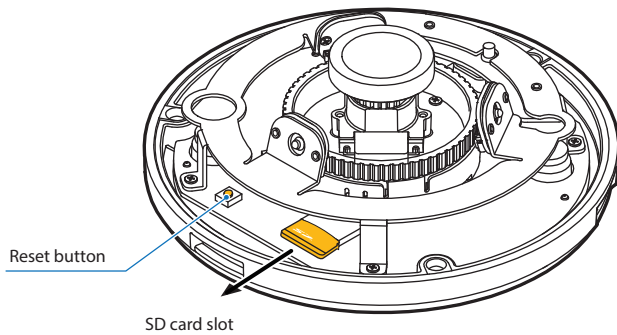
❷ Removing an SD Memory Card
Removing an SD Memory Card Gently press down on the exposed end of the memory card as shown in the diagram to eject the memory card from the slot.

  ※ Pressing too hard on the SD memory card can cause the card to shoot out uncontrollably from the slot when released.

  ※ If you have saved data in the SD memory card, removing the SD memory card prior to settng record to OFF will cause damage to the data stored in the card.

Network Setup-
DW IPFinder™

Show / Hide Thumbnail View

Refresh Thumbnail View

Refresh Search Results

Camera's IP Address

Camera's Name

Camera's Thumbnail View

Camera's Model Number

Camera's Model Mac Address

Firmware update

DHCP Status

Camera Firmware

Live Time

WebPort

Network's Gateway

Network's Netmask

Camera
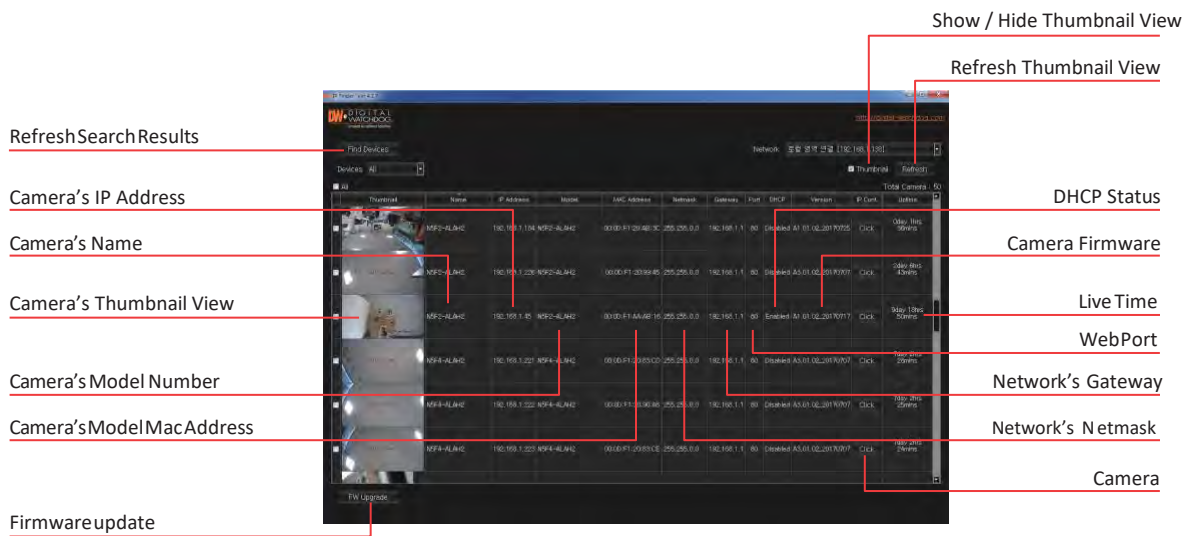
❶ Go to : http://www.digital-watchdog.com and search for 'IP Finder' on the quick search bar at the top of the page.

❷ The latest IP Finder software will appear in the search results. Click on the link to download the file to your computer.

❸ The software will scan your network for all supported cameras and display the results in the table. Allow up to 5 seconds for the IP Installer to find the camera on the network.

❹ You can press the 'Refresh List' to search the network again, or filter the search results by entering a value in the filter box at the bottom of the page.

❺ Check the box next to 'Display Camera Thumbnail' to view a JPEG image of the camera's view next to the camera name on supported models.

ℹ Select DHCP if the internet service is dynamic IP. This will allow the camera to receive its IP address from the DHCP server.

ℹ Select STATIC to manually enter the camera's IP address, subnet mask, Gateway and DNS information.

ℹ Contact your network administrator for more information.

❻ The camera's default network information is :

ℹ Default TCP/IP information
  - IP: 192.168.1.2
  - Subnet Mask: 255.255.255.0
  - Gateway: 192.168.1.1
  - DNS : 168.126.63.1

❼ JPEG image of the camera's view next to the camera name.

ℹ A 'Port Forwarding' has to be set in your network's router for external access to the camera.

❽ To save the changes made to the camera's settings, input ID and PW of the camera for authentication.

❾ If the camera needs to be rebooted after the settings were changed, press the 'Reboot' button. The camera will power cycle and will appear back in the search results once the reboot is complete.

ℹ Default ID / PW : admin / admin

❿ Click 'Save' to save changed values.

⓫ To update the camera's firmware from the DW IP Finder™, click on the firmware tab, upload the firmware file and select the cameras to update. You can update multiple cameras at the same time.

Webviewer - Settings
Login

❶ **Administrator connection (on the initial page)**
1) "ID" admin (Unchangeable)
2) "Password" admin. (the default password can be changed in the web setting page)
3) Type the ID and password and click the button "Login", the web monitoring page shows up.
4) You can also type the ID and password and click "Login" after checking the box "Setting" to go directly to the camera's settings page.
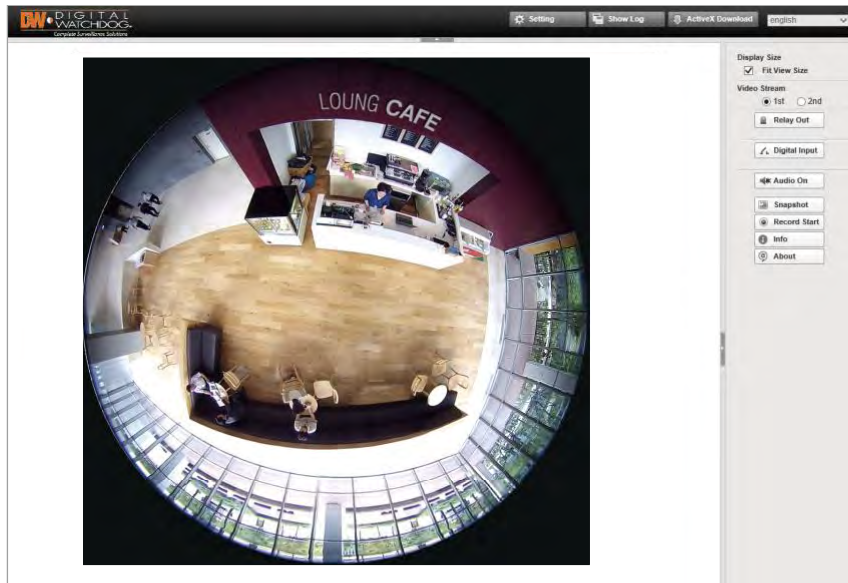
❷ **Guest connection (on the initial page)**
1) "Guest Login" click the test "Guest Login" below the button "Login" without an ID and a password.
2) Under the guest connection, only restrictive functions will be available. Settings page can not be accessed as a guest.

Web viewer

Monitor and configure the MEGApix® camera through a built-in web viewer.

❶ Type the camera's IP address in a web browser. Enter Username and Password. Default: Username: admin | Password: admin

❷ The web browser may ask to install ActiveX to view video from the camera. Once it has been installed, Internet Explorer will display video images from the camera.

❸ Internet Explorer version 8.0 or higher are recommended.

❹ The Web Client is also available in Google Chrome, Safari and Firefox web viewers. Please note that features may be limited.

❺ Snapshot: Capture a still image from the camera's live view. The image is saved as a .jpeg file to your local downloads directory.

❻ View the camera in full screen: you can hide all the settings and menu options and display the camera's view across your entire monitor. Press Esc to exit the full screen mode.

❼ Local Recording: Record short videos from the camera's streaming and save them locally.
 1) Click the Record button to start recording. A red frame will appear around the display area.
 2) Click the Record button a second time to stop recording.
 3) the recorded video will be saved locally to your directory.

Webviewer - Settings
Web viewer
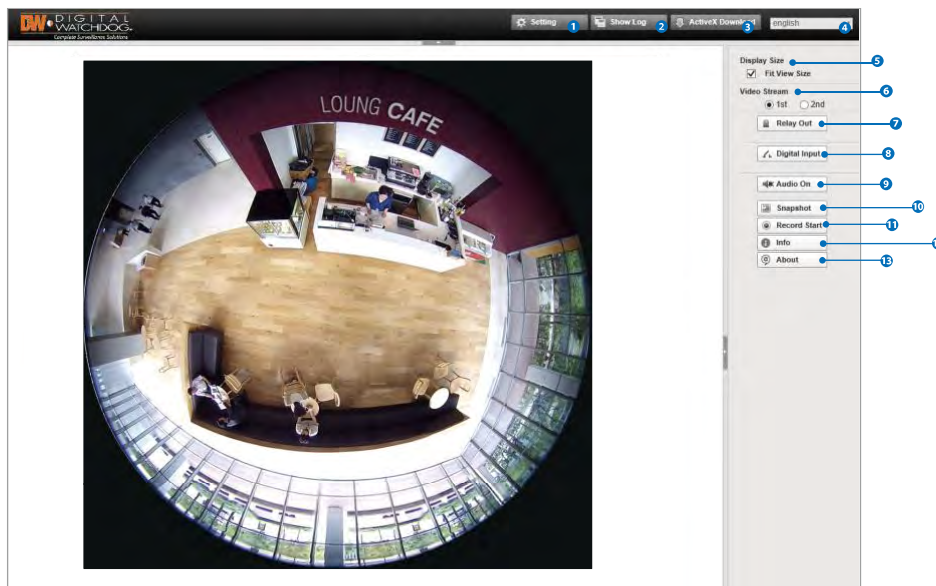
Monitor and configure the MEGApix® camera through a built-in web viewer.

**❶ Setting button -** Enables you to move to the web setting page (Live button : Web setting page -> Web monitoring page)

❷ Show Log button - The window for the log data shows up.

❸ ActiveX Download button - Click this button if the ActiveX for video monitoring is not downloaded automatically.

❹ Language menu - The language can be selected out of the items of the language box.

❺ Display Size - Fit View Size check box: The adjustment bar shows up when this check box is unchecked.

❻ Video & Stream - The selected one out of the streams displays on the page. For the activation of the streams, check the item "Video Profile" on the web setting page.

❼ Relay Out button - Controls the external device that is connected. (Before use, check the availability of the product features or the connection status of the installed equipment.)

❽ Digital Input - Shows the contact signal connected.

❾ Audio On/Off - Enables you to monitor the audio signal of the microphone connected. (Audio IN connector) (Before use, check the availability of the product features or the connection status of the installed equipment.)

❿ Snapshot - Captures a JPEG Image of the current video stream (JPEG file path: C:/)

⓫ Record Start - Records the video of the current video stream (AVI file path:C:/), The red outline shows up on recording.

⓬ Info - Shows the information of the transferred data on the upper side of the image.
1) Image information : FPS (frame/sec) / Camera (Channel) Name / Resolution
2) Event Status- : Motion Detect (red) / Video signal (green) / Digital IN (blue)
3) For the use of the motion detection, the check box "Enable" of the item "Motion Detect" should be checked.

⓭ About - Displays the ActiveX information.

Webviewer - Settings
Status
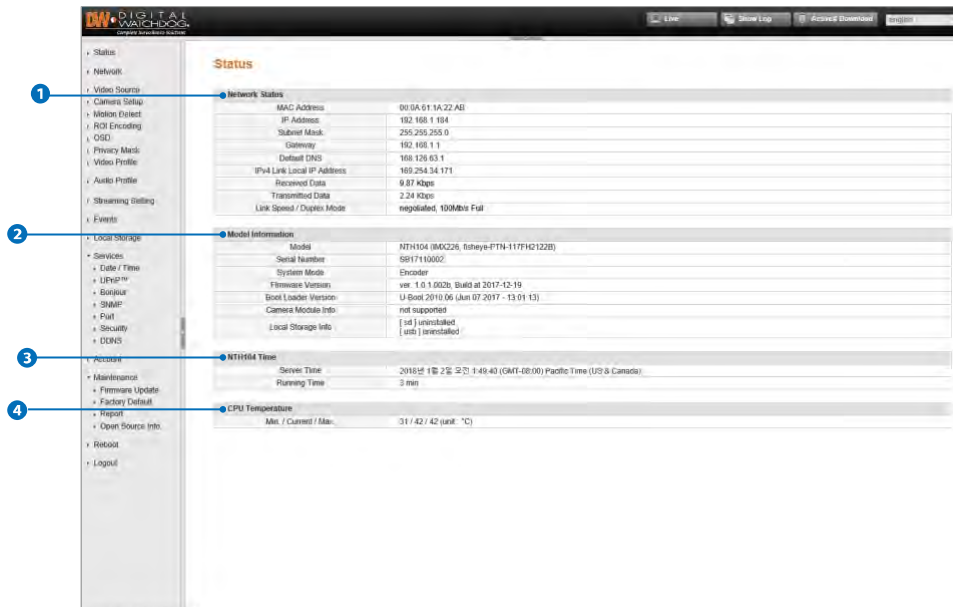
View the camera's basic settings and status.

❶ Network Status - Displays the camera's current network information, including MAC Address, IP Address, Subnet Mask, Gateway, Default DNS, IPv4, Received Data velocity, Transmitted Data velocity, and the connection status for Link Speed/Duplex Mode.

❷ Model Information - Displays the camera's hardware information, including Firmware and Boot Loader versions, camera's Model, Serial Number, System Mode and local storage information.

❸ Camera Time - Displays the camera's time information including the camera's current time settings and the running time (how long the camera has been running since the last time it booted up).

❹ CPU Temperature - Show the camera's CPU running temperature, including proper range in °C.

Webviewer - Settings
Network
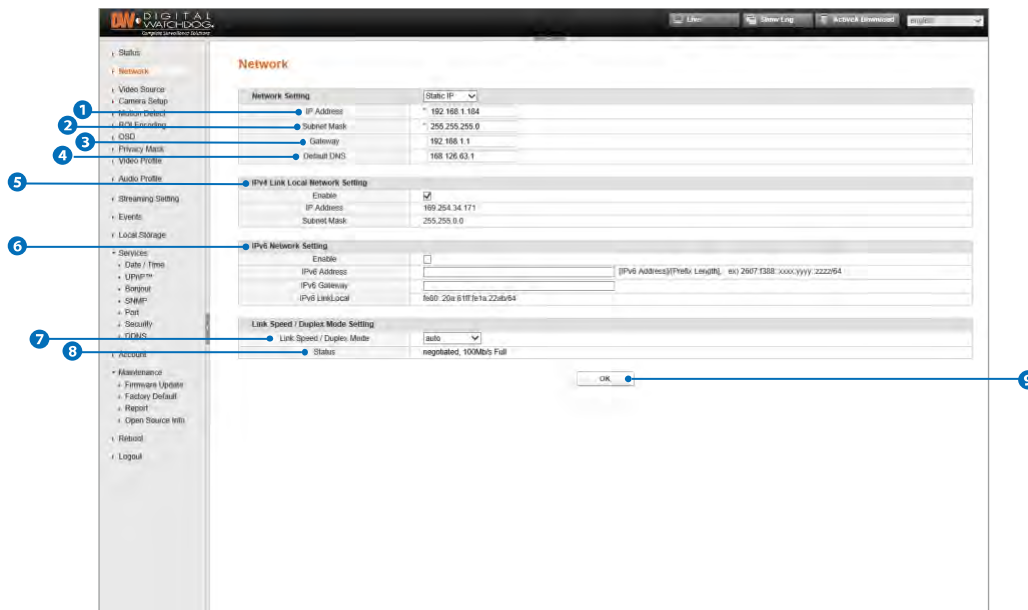
View the camera's network information.

1 **IP Address**
  1) Dynamic IP - Select Dynamic IP if you are using a DHCP Server. The camera will obtain all its network information automatically from the server.
  2) If you do not have a DHCP server, or wish to manually enter the camera's network information, select static IP Address from the drop-down options. Contact you Internet Service Provider(ISP) or Network Administrator for more information.

2 **Subnet Mask -** The camera is set to DHCP. Subnet will change according to network settings.

3 **Gateway -** This is your router's external IP address. This address is used when accessing the camera remotely from outside the network. The router will channel the data request to the appropriate port associated with the camera.

4 **Default DNS -** Enter a Domain Name Server (DNS) address. This translates a web addresses to an IP addresses.

5 **IPv4 Link Local Network Setting -** Enabled by default.
  1). IP Address, Subnet Mask
     These are set automatically based on you settings in the Network Setting section.

6 **IPv6 Network Setting -** Disabled by default.
  1) Manually set the camera's IP address and gateway. The number next to "/" on IPv6 Address are setting value for the sub-network.
  2) IPv6 LinkLocal - Set automatically by the communication between the local network devices. This is disabled by default.
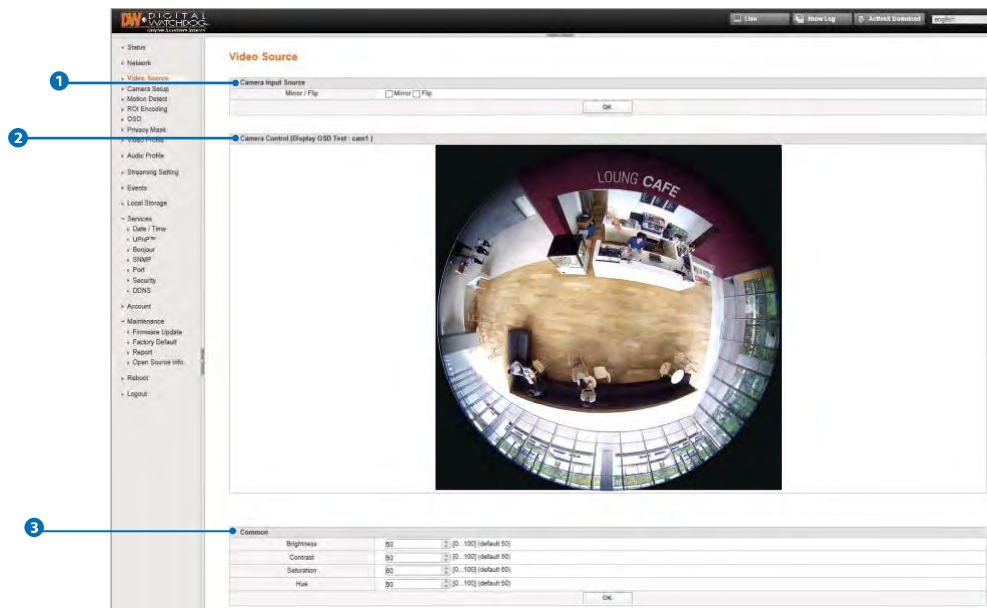
7 **Link Speed / Duplex Mode -** If the auto negotiation mode has a problem with the connected network device, use a specified value. The value of the camera and the network device should be the same.

8 **Status -** The status of the current network connection.

9 Click OK to apply any changes to the settings.

Webviewer - Settings
Video Source

Adjust the camera's input source, add OSD text and adjust the camera's image settings.

❶ Camera Input Source

1) Mirror / Flip - Select to reverse or flip the camera's image.

2) Click OK to apply any changes to the settings.

❷ Camera Control (Display OSD Text) (not supported) : Shows the camera display.

❸ Common

1) Brightness - The higher the number, the brighter the image will appear. Default value is 50.

2) Contrast - The higher the number, the contrast between the dark and bright areas in the camera's FoV will be more distinct. Default value is 50.

3) Saturation - The higher the number, the more vibrant the colors will appear on the camera's image. The lower the number, the more black and white the image will appear. Default value is 60.

4) Hue - The higher the number, the camera's image will use warmer tones. The lower the number, the camera's image will use cooler tones. Default value is 50.

Webviewer - Settings
Camera Setup
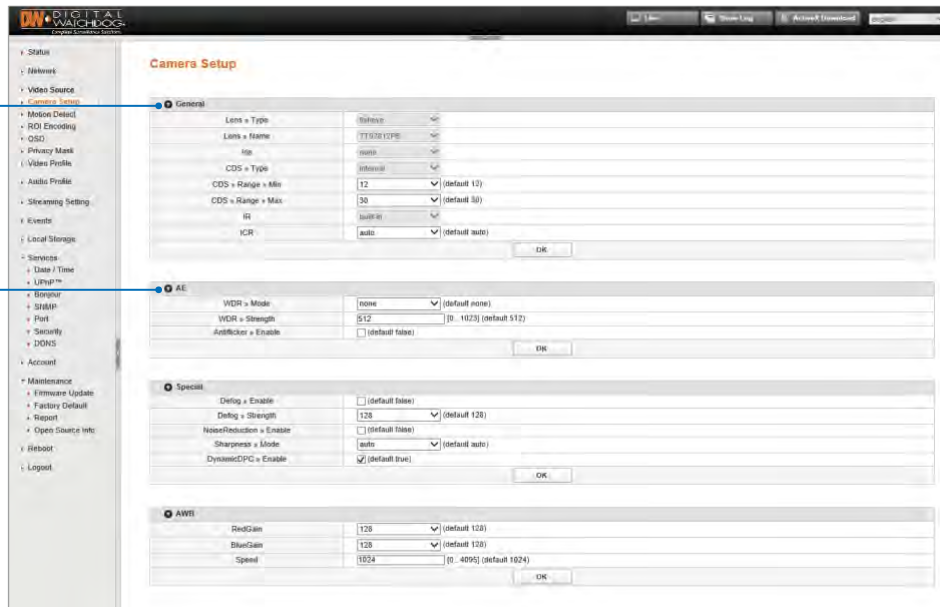
Monitor and configure the MEGApix® camera through a built-in web viewer.

❶ **General -** This section allows you to adjust the camera's lens, iris and day/night mode.
   1) Lens - Sets the type of the Lens. Select from Fixed, Fisheye, Varifocal or MFZ. Please note that options may not be available based on the camera's model and lens.

   2) Iris - Sets the type of the Iris (on supported cameras)

   3) CDS>>Type - Sets the type of the CDS from internal or none. The CDS affects the day/night transition.

   4) CDS>>Range>>Min & Max - Marks the light level at which the camera will switch between color and B/W. Set the minimum and maximum values for the CDS threshold. Default values are mentioned next to the drop-down menu.

   5) IR - You can manually activate the cameras IR LED board. Select Built-in to activate the IR LEDs in the camera when low light is detected. If you are using an external light source, or the camera's own IR LEDs interfere with other LEDs in the system, you can set it to non, and manually disable it.
   6) ICR - This allows you to set the camera's day/night mode. You can select to keep the camera in color or B/W regardless of the lighting conditions, or set to auto. If auto is set, the camera will switch between color and B/W according to the CDS settings set above.

❷ **AE -** This section allows you to adjust the camera's Auto Exposure settings.
   1) WDR>>Mode - Select D-WDR to enable WDR. The Wide Dynamic Range is used when there are extremely bright and extremely dark areas in the VoF of the camera.

   2) WDR>>Strength - Adjusts the strength of the WDR. The higher the value, the stronger the WDR treatment will appear on the camera's image.

   3) Antiflicker>>Enable - Check the box to enable the Antiflicker function.

Webviewer - Settings
Camera Setup
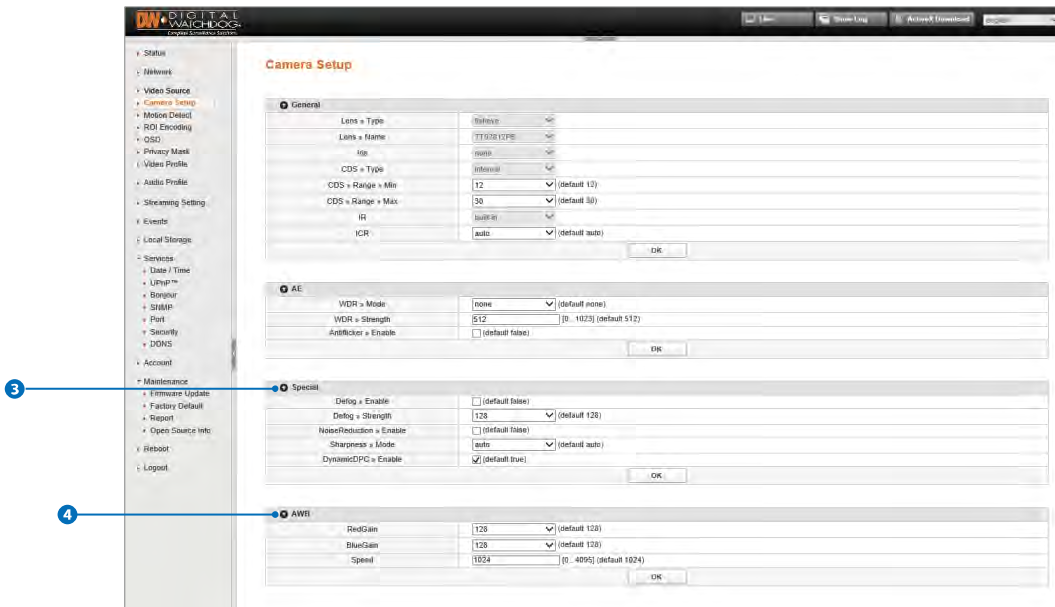
Monitor and configure the MEGApix® camera through a built-in web viewer.

❸ **Special -** Use this section to adjust the camera's De-Fog, Smart DNR(T), Sharpness.

1) Defog>>Enable - Select to enable the camera's De-Fog feature. This allows the camera to process a scene that is obscured by fog or weather conditions and provides a visibly improved image.

2) Defog>>Strength - Adjusts the strength of the defog. The higher the number, the stronger the De-Fog treatment will appear on the camera's image.

3) Noise Reduction>>Enable - (Smart 3D DNR™ Digital Noise Reduction) – Control the level of noise in the image. If enabled, the camera will manipulate the image to reduce digital noise, but it may also increase lagging when motion occurs.

4) Sharpness>>Mode - Select Auto or Manual to activate the camera's enhanced sharpness, or Disable.

5) Click OK to apply any changes to the settings.

❹ **AWB -** This section allows you to adjust the camera's Auto White Balance settings.

1) Red Gain - Adjusts the amount of red in the image.

2) Blue Gain - Adjusts the amount of blue in the image.

3) Speed - Set a duration for collecting data for Auto white balance. It is recommend to leave at the default value.

Webviewer - Settings
Motion Detection
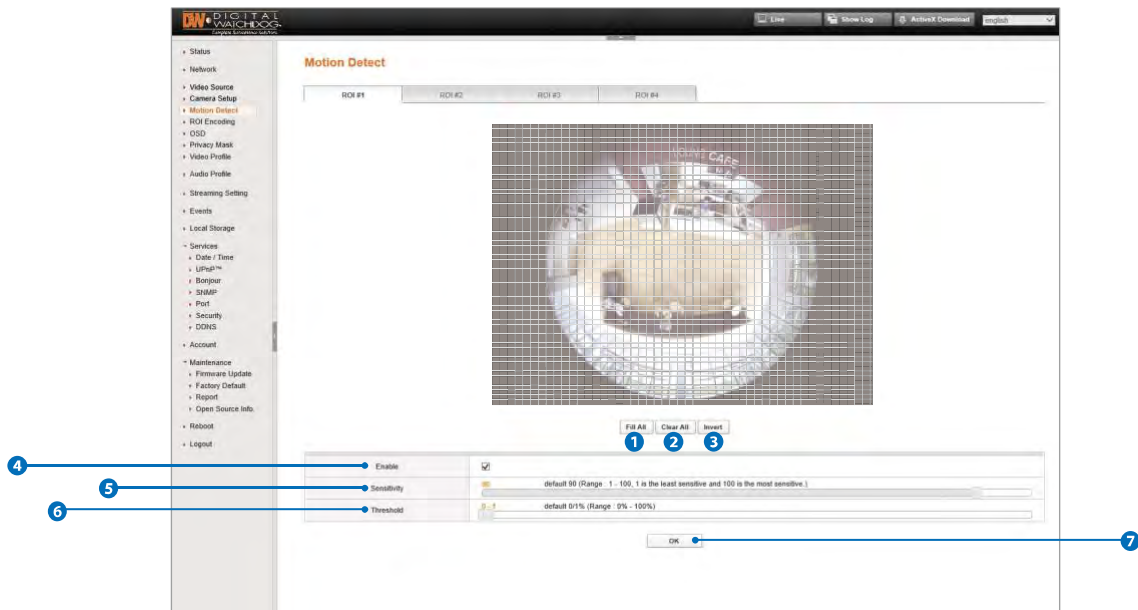
To setup a motion detection mask on the camera's view, click on any point in the camera's preview and drag to make a detection range. once a motion detection mask is set, a red mark will appear on the upper bar of the video image on the web monitoring page. The camera supports four (4) different motion detection masks. Each one can be setup individually be selecting the appropriate tab (ROI#1~4 tab).

1 **Fill All -** If enabled, the entire camera's FoV will be set to motion detection.

2 **Clear All -** Deselects the selected area.

3 **Invert -** Inverts the selected area.

4 **Enable -** Check the box for the activation.

5 **Sensitivity -** The higher the value, the more sensitive to motion the area will be.

6 **Threshold -** When the ratio of the moving parts to the whole image is on the range, the detection is checked.

7 Click OK to apply any changes to the settings.

Webviewer - Settings
ROI Encoding
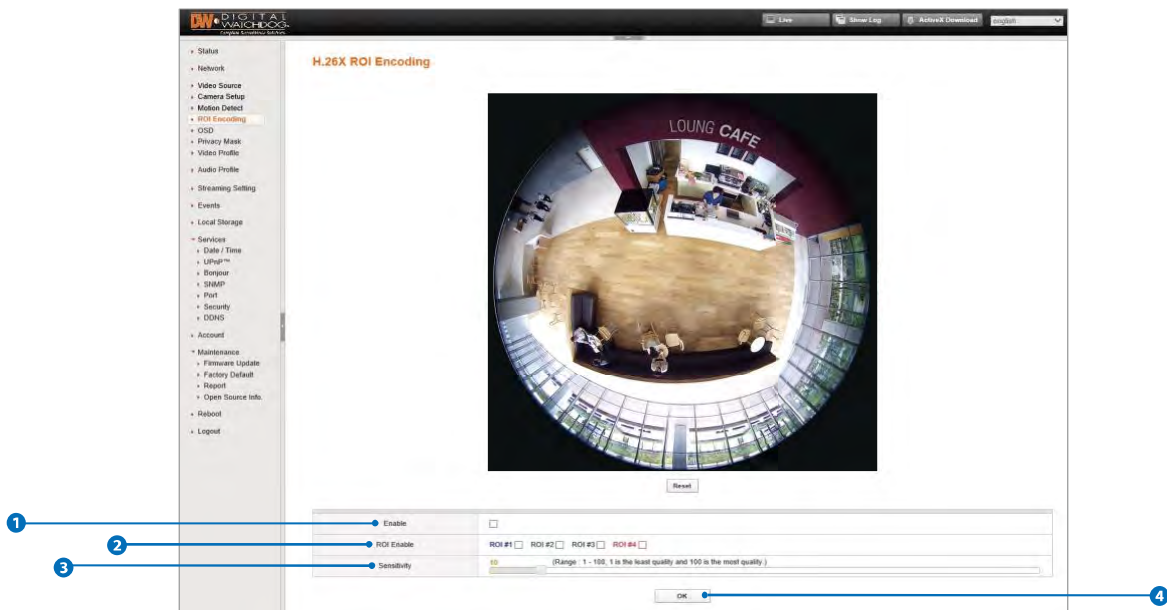
ROI (Region of Interest) Encoding function: the region specified by a ROI is encoded to transmit a relatively good image compared to other regions.

❶ To activate, check the Enable box.

❷ The camera supports up to four (4) separate ROIs. Select out of "ROI#1~4". Once you check the box next to a specific ROI, a colored mask will appear in the camera's display. Click and drag the mask to adjust the position and size of the region.

❸ **Sensitivity -** Set from 1~100. The higher the value, the higher the mask's sensitivity. (If the video bit rate is set to less than the recommended bit rate, the image quality of the ROI will be affected.)

❹ Click OK to apply any changes to the settings.

※ Setting and example

❶ **Condition -** 1920x1080 resolution encoding, 1.5Mbps network bandwidth.

❷ **Setting -** Setting the ROI to 1/4 of the entire image and the sensitivity to a value out of 40~60.

❸ **Effect -** The quality of the image set to the ROI is similar to the image that is transferred by the transfer rate "4Mbps" (the default value of 1920x1080 resolution). You can also monitor the non-ROI part.

Webviewer - Settings
OSD
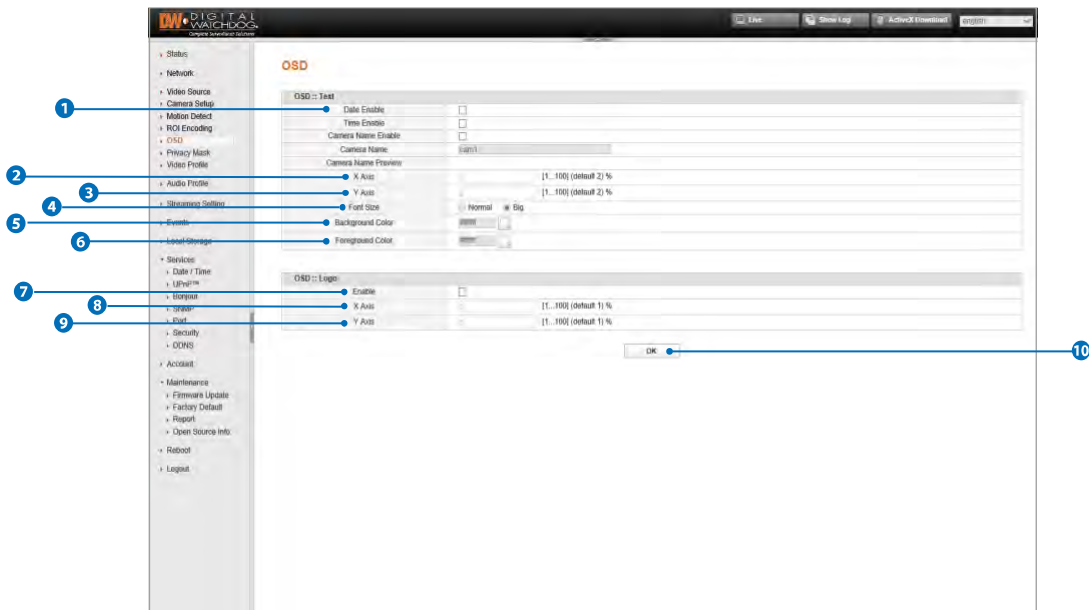
Add OSD text or a logo to the camera's view.
OSD : : Text

❶ **Date / Time / Camera Name Enable -** check the box next to the information you want to show on the camera's image.
   If the Camera Name is enabled, enter an appropriate name for the camera.

❷ **X Axis -** Adjust the X axis position of the OSD text.

❸ **Y Axis -** Adjust the Y axis position of the OSD text.

❹ **Font Size -** Adjust the size of the OSD text.

❺ **Background Color -** Select a color for the text's background.

❻ **Foreground Color -** Select a color for the text's font.

   OSD : : Logo

❼ **Enable -** Check for the activation.

❽ **X Axis -** Adjust the X axis position of the OSD Logo.

❾ **Y Axis -** Adjust the Y axis position of the OSD Logo.

❿ Click OK to apply any changes to the settings.
   ※ Before using the OSD Logo feature, refer to the firmware update / OSD Logo Update entries and upload a logo file.

Webviewer - Settings
Privacy Mask
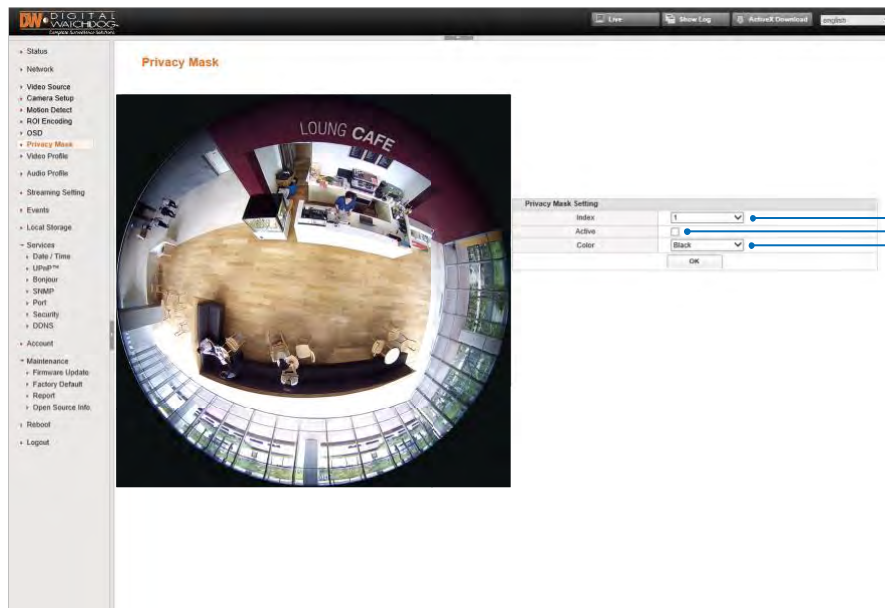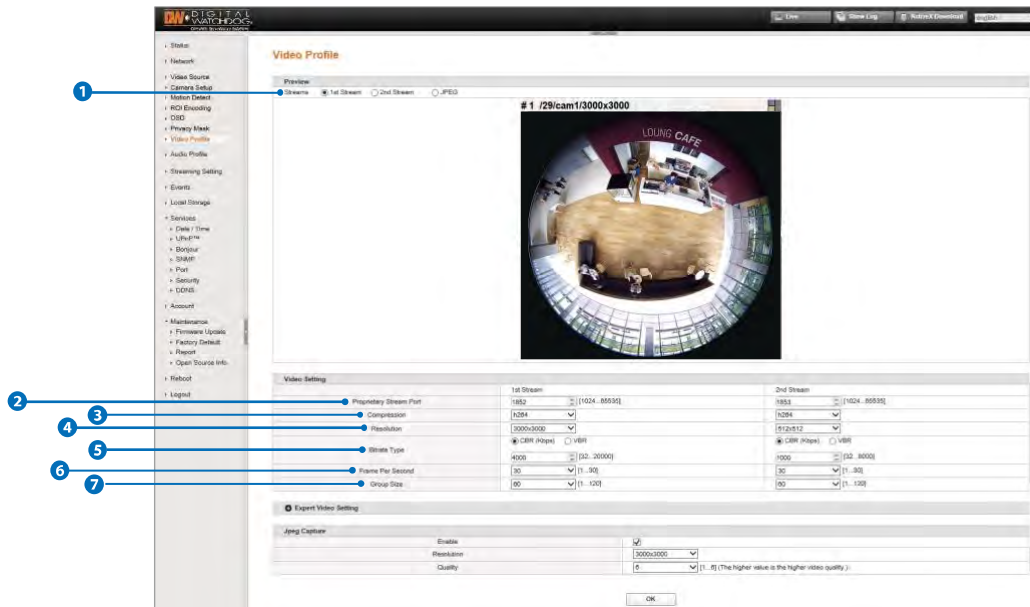

① **Index -** Select the index 1 ~ 8 and Set the privacy index.

② **Active -** The Privacy mask function can be enable or disable.

③ **Color -** Set the privacy mask's color.
Black/Gray/White/Red/Green/Blue/Cyan/Yellow/Magenta.

Video Profile

Adjust the camera's streams, resolution, bit rate etc.

❶ **Streams** -Select which stream to show in the preview and adjust in the settings of this page. The camera supports two simultaneous stream plus a JPEG stream.

❷ **Proprietary Stream Port -** The port number for transferring the video and audio data.

❸ **Compression -** Select the compression type for the stream (H.265 / H.264 / MJPEG).

❹ **Resolution -** Set the image size. The camera supports up to 9MP resolution.

❺ **Bitrate Type**
   1) CBR : the unit is kbps.
      Bitrate Recommendation : 3000x3000 -> 8000 / 2048x1536 -> 6000 / 1080p -> 4000~6000 / 720p -> 2000~3000 /D1 -> 1000~1500 / CIF -> 500~750)
   2) VBR : 1(best) ~ 6

❻ **Frame Per Sec -** The number of frames transferred in a second (default: 30)

❼ **Group Size -** This sets the number of I-frames and P-frames per second. If GOP is set to 30, the camera will record 1 I-frame and 29 P-frames. To improve the recording quality, lower the GOP number. However, the lower the number, the larger the streaming file size will be. (default: 60)

Webviewer - Settings
Video Profile
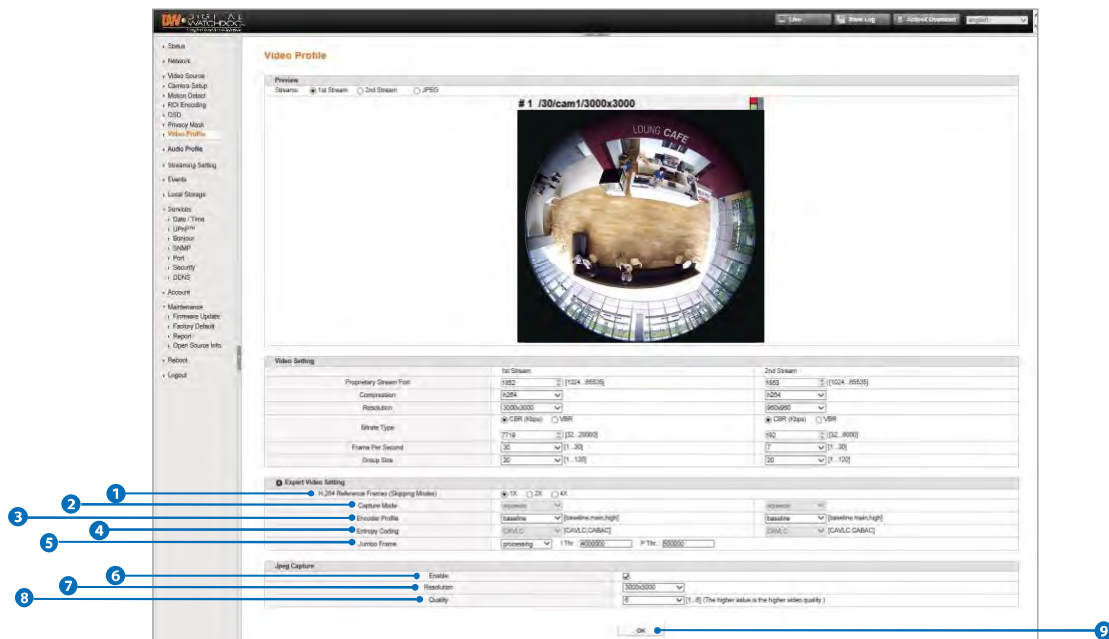
Set the Expert Video Setting and JPEG Capture.

❶ H.264 Reference Frames (Skipping Modes) - Once the value is set to "4X", the camera will play recorded video at "4X" with less system resources.

❷ Capture Mode - In case the resolution of the monitor is SD (Standard Definition), the HD (High Definition) video ratio (16:9) will be changed to the SD video ratio (4:3).
1) Squeeze : stretches the video horizontally to make the ration 4:3
2) Crop : crops the video by the left and right end (the video ratio is kept).

❸ Entropy Profile - Set the video's encoding to decoding settings. Baseline is set as the default profile.
Compression ratio, system load: baseline < main < high. The bandwidth of "high profile" is less by 20% than that of "baseline".

❹ Entropy Coding - The camera runs as CAVLC. (compression ratio: CAVLC < CABAC, system load: CAVLC < CABAC)

❺ Jumbo Frame - Discards or processes the I-frames or P-frames in excess of a specific value.
(I Thr.: I frame threshold, P Thr.: P frame threshold).

❻ Enable - Capture the camera's view as JPEG.

❼ Resolution - Adjust the resolution.

❽ Quality - Set 1(Best) ~ 6.

❾ Click OK to apply any changes to the settings.

# Webviewer - Settings
Audio Profile
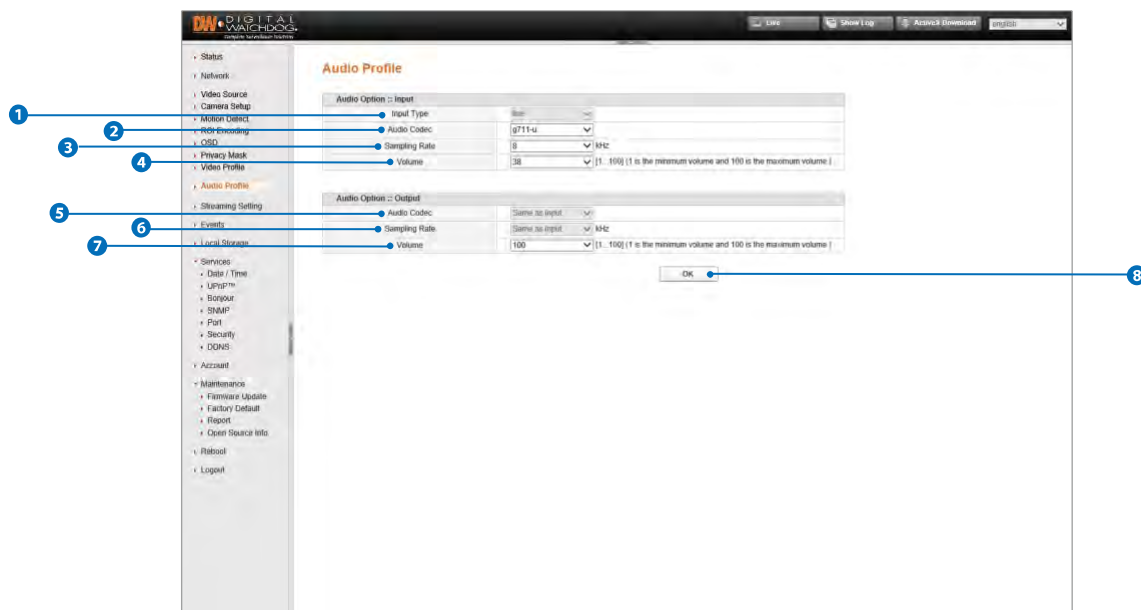
Audio Option : : Input

❶ **Input Type -** Line (or line / mic ; the models with built-in mic)

❷ **Audio Codec -** G.711-u / G.711-a / G.726 (quality : G.711>G.726, playing compatibility : G.711<G.726)

❸ **Sampling Rate -** 8kHz (or 8kHz ; fixed on MR904)

❹ **Volume -** 1 ~ 100

Audio Option : : Output

❺ **Audio Codec -** G.711-u / G.711-a / G.726 (quality : G.711>G.726, playing compatibility : G.711<G.726)

❻ **Sampling Rate -** 8kHz (or 8kHz ; fixed on MR904)

❼ **Volume -** 1 ~ 100

❽ Click OK to apply any changes to the settings.
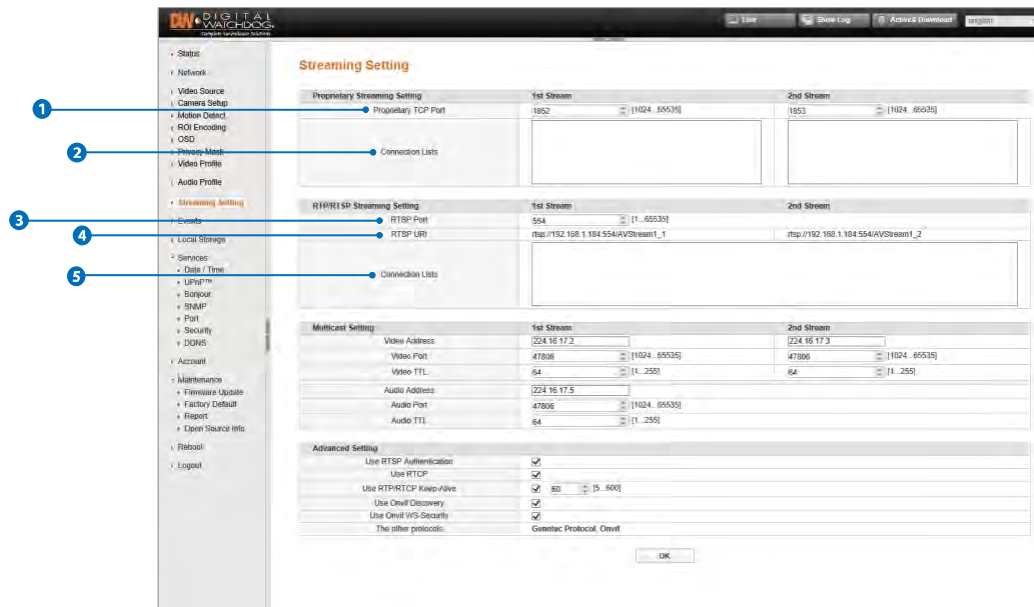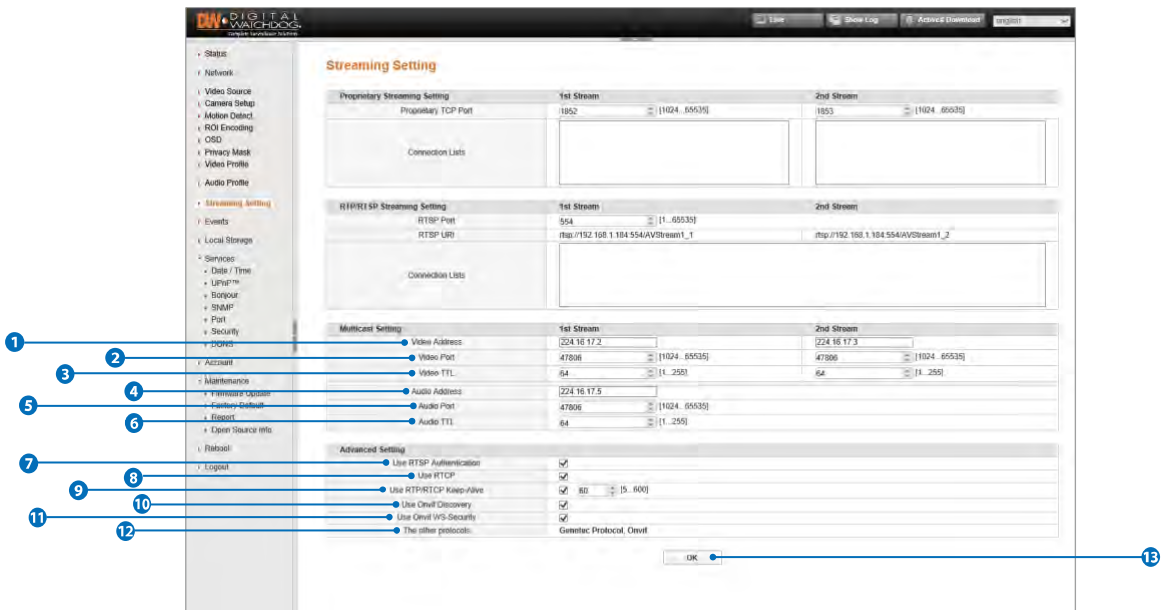
Streaming Setting

Adjust the camera's streams and their advanced settings such as RTSP, TCP and Multi-cast.

❶ **Proprietary TCP Port -** The port for the transmission by the proprietary protocol
(based on the settings under "Video Profile / Video Setting / Proprietary Stream Port ").

❷ **Connection Lists -** The IP address and port information of the monitoring devices that are connected to the camera.

❸ **RTSP Port -** The port number used for RTSP transmission.

❹ **RTSP URI (Uniform Resource Identifier) -** This is the path that is used on the monitoring program for playing RTSP stream from the camera. The default paths are:
1) 1st Stream > rtsp://192.168.1.2:554/AVStream1_1
2) 2nd Stream > rtsp://192.168.1.2:554/AVStream1_2
3) 3rdStream > rtsp://192.168.1.2:554/AVStream1_3

❺ **Connection Lists -** The IP address and port information of the monitoring devices that are connected to the camera.

Webviewer - Settings
Streaming Setting

Adjust the camera's streams and their advanced settings such as RTSP, TCP and Multi-cast.

1 **Video Address -** The IP address for video data transmission.

2 **Video Port -** The port number for video data transmission.

3 **Video TTL -** Set the number of the routers that pass when transmitting the video data.

4 **Audio Address -** The IP address for audio data transmission.

5 **Audio Port -** The port number for audio data transmission.

6 **Audio TTL -** Set the number of the routers that pass when transmitting the audio data.

7 **User RTSP Authentication -** Check the box if an authentication process is required.

8 **Use RTCP -** Check the box if RTCP function is required.

9 **Use RTP/RTCP Keep-Alive -** Check the box if the stream times-out.

10 **Use Onvif Discovery -** Check the box if Onvif Discovery is required.

11 **Use Onvif WS-Security -** Check the box if Onvif WS-Security is required.

12 **The other protocols -** Displays the supported protocols.

13 Click OK to apply any changes to the settings.

Webviewer - Settings
Events
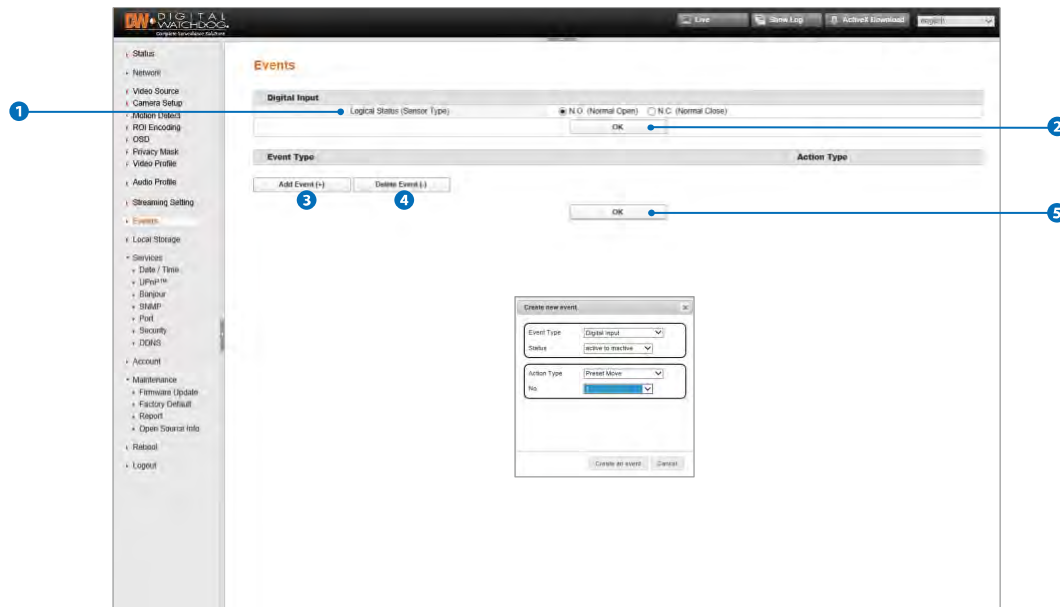
Digital Input

❶ **Logical Status (Sensor Type) -** Set according to the normal state of the electrical signal of the attached device. (Open / Close)

1) N.O. (Normal Open) : in case of the normal state is "open"
2) N.C. (Normal Close) : in case of the normal state is "close"

❷ Click OK to apply any changes to the settings.

Event Types

❸ **Add Event (+) button -** Click this button to add an event entry.

　　Create New Event

1) Event Type : Select one out of "Digital Input / Motion / Timer"
　　1-1) Digital Input > Sensor : Select a sensor to use. Digital Input > Status : Select one out of "close to open / open to close".
　　1-2) Motion > ROIs : Motion ROI (refer to the item "Motion Detect")
　　1-3) Motion > Status : Select one out of "On/Off".
　　1-4) Timer > Interval : Select one out of "1~86400"
2) Action Type : Select one out of "Preset Move / Digital Output / TDN"
　　2-1) Preset Move > No : Select one out of "1~255". Set the preset on the item "Video Source".
　　2-2) Digital Output > Relay/No : Select considering the connection "Digital Output".
　　2-3) Digital Output > Status : Select one out of "close to open / open to close".
　　2-4) Digital Output > dwtime : Duration (1~60 seconds)
　　2-5) TDN > Status : Select one out of "BW / Color" (not supported)

❹ **Delete event (-) button -** Click this button to remove the event entry.

❺ **OK button -** Click this button to apply the changed setting values.

Webviewer - Settings
Local Storage
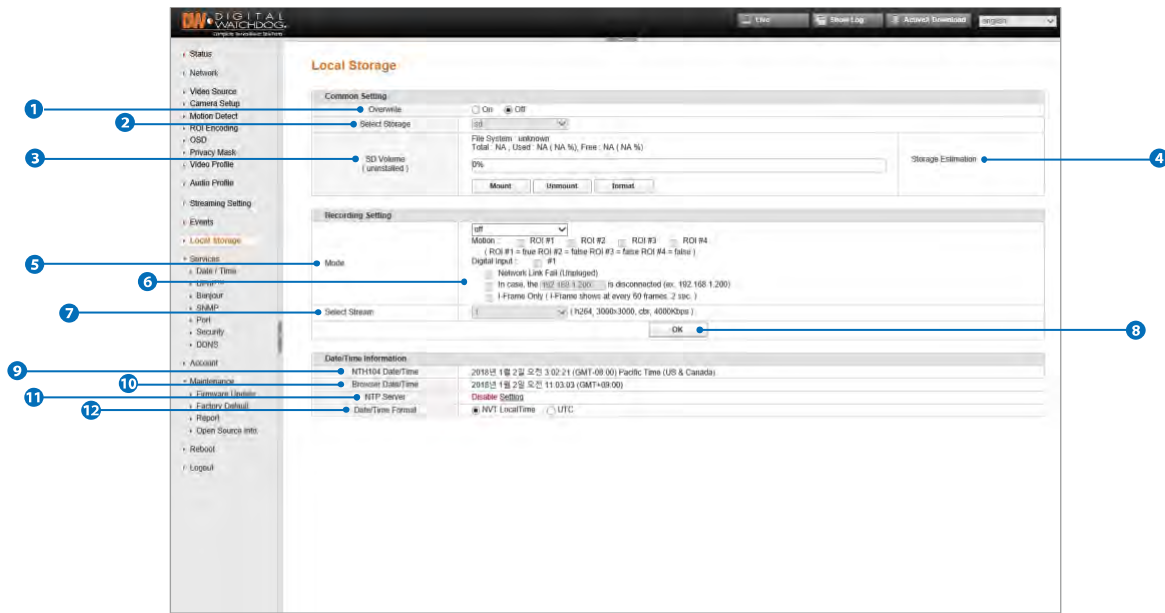
The camera supports SD/SDHC memory card for local recording.

❶ **Overwrite -** Select whether to overwrite old data when the card is full.

❷ **Select Storage -** This section shows the SD Card used for storage.

❸ **SD Volume -** Shows memory information
1) File System : FAT32
2) Total : 14.83 GBytes
3) Used : 14.33 GBytes (96.65%)
4) Free : 508 MBytes (3.35%)

❹ **Storage Estimation -** Shows the estimated time that can be saved.

❺ **Mode -** Select off (not saving) / continuous (continuous recording) / event (records when an event occurs)

❻ **Event types that can be selected**
1) Motion : When motion occurs using the motion detection values in the ROI setup page.
2) Sensor : When a sensor is activated using the camera's Digital Input Settings.
3) Network Link Fail (Unplugged) : When the camera's network connection with the monitoring PC is lost.
4) I-Frame Only (I-Frame shows at every 60 frames, 2sec.) : the camera will record only the main frames of the video.
   The contents of the black "(...)" are the values that are set on the "Video Profile" settings.

❼ **Select Stream -** Select which stream to record.

❽ Click OK to apply any changes to the settings.

❾ **Model name Date/Time -** Shows the camera's time information.

❿ **Browser Date/Time -** Shows the time information of the monitoring PC.

⓫ **NTP Server -** Enable the local storage to sync with the time synchronization settings.

⓬ **Date Time Format -** Select Camera(NVT) Local Time /UTC

Services - Date/Time
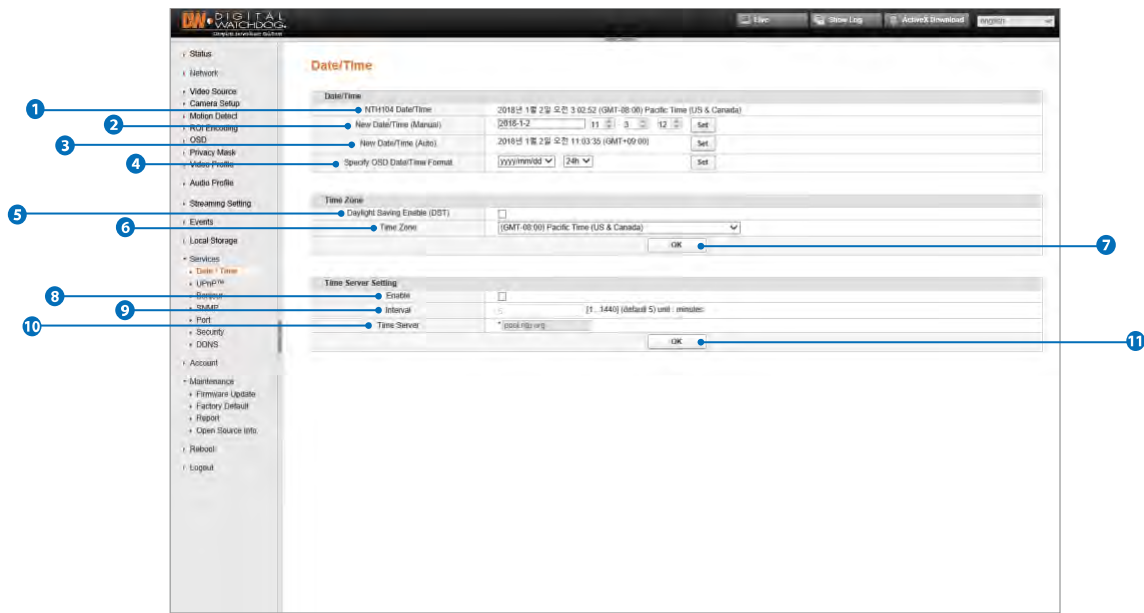
Use this menu to adjust the camera's local date, time, and time server settings.

❶ **Date/Time -** Displays the current time.

❷ **New Date/Time (Manual) -** Adjust the camera's time manually. Click the "Set" button to apply the changes.

❸ **New Date/Time (Auto) -** Synchronize the time with the time of the monitoring PC. Click the "Set" button to apply the changes.

❹ **Specify OSD Date/Time Format -** Set the date and time format. Click the "Set" button to apply the changes.

❺ **Daylight Saving Enable (DST) -** Check the box to enable the DST function..

❻ **Time Zone -** Select the time zone from the available options.

❼ Click OK to apply any changes to the settings.

❽ **Enable -** Check the box to enable.

❾ **Interval -** Set the request time intervals (in minutes).

❿ **Time Server -** Enter the IP address or hostname of a time server.

⓫ Click OK to apply any changes to the settings.
　※ Time Server : If enabled, the camera will synchronize its date and time with a time server.
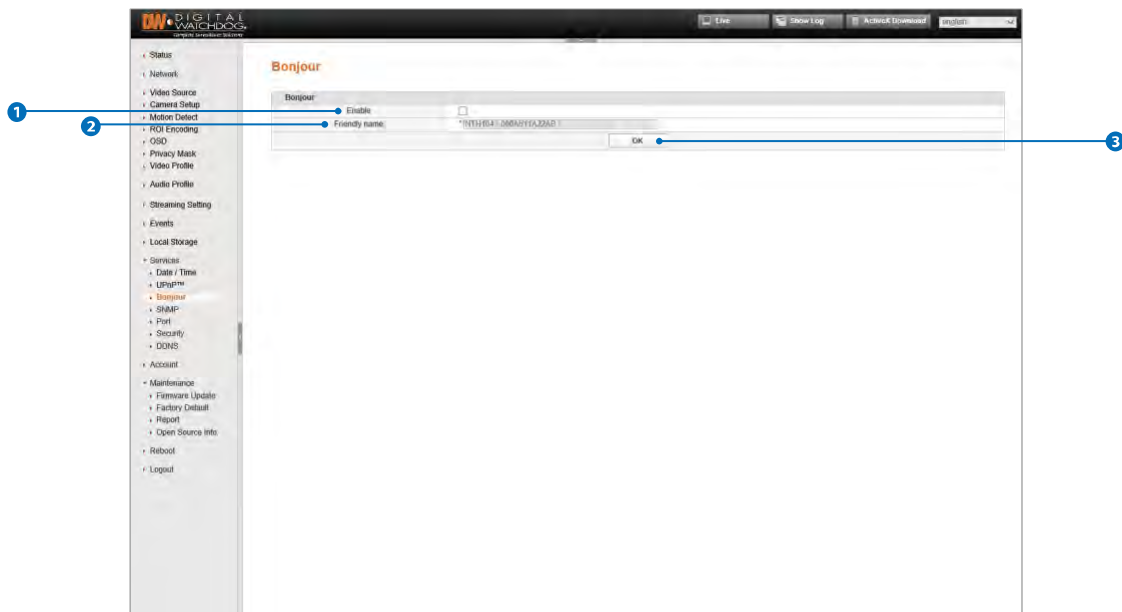
Services - UPnP
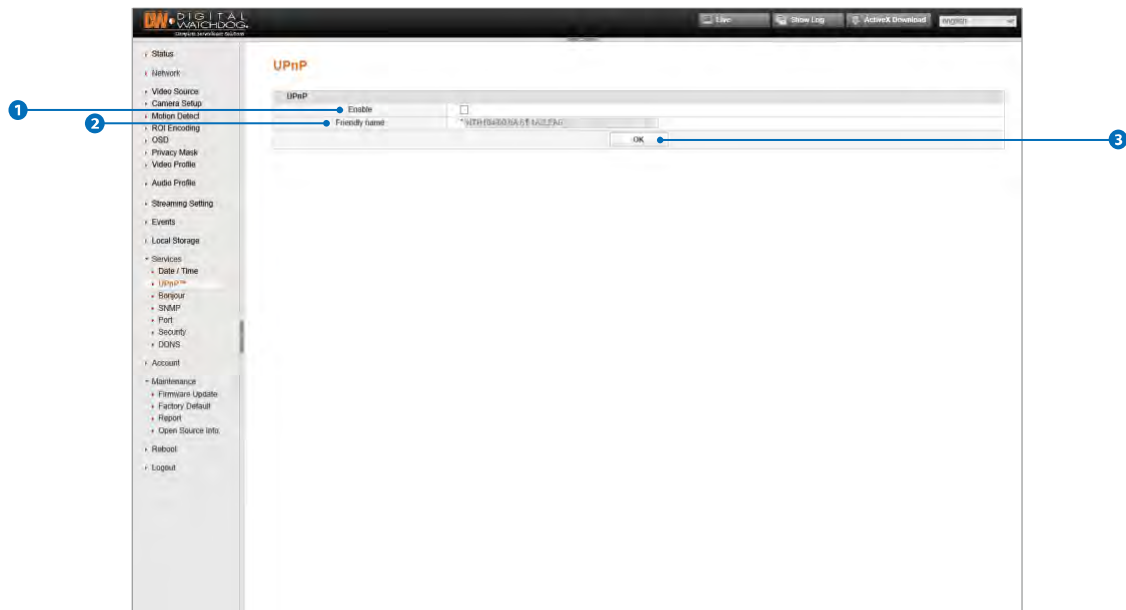
The camera supports UPnP for auto detection with Windows explorer.

❶ **Enable -** Check to enable UPnP.

❷ **Friendly name -** This is the name identifying the camera when using the UPnP search It is created by the camera's MAC address. You can modify it as needed.

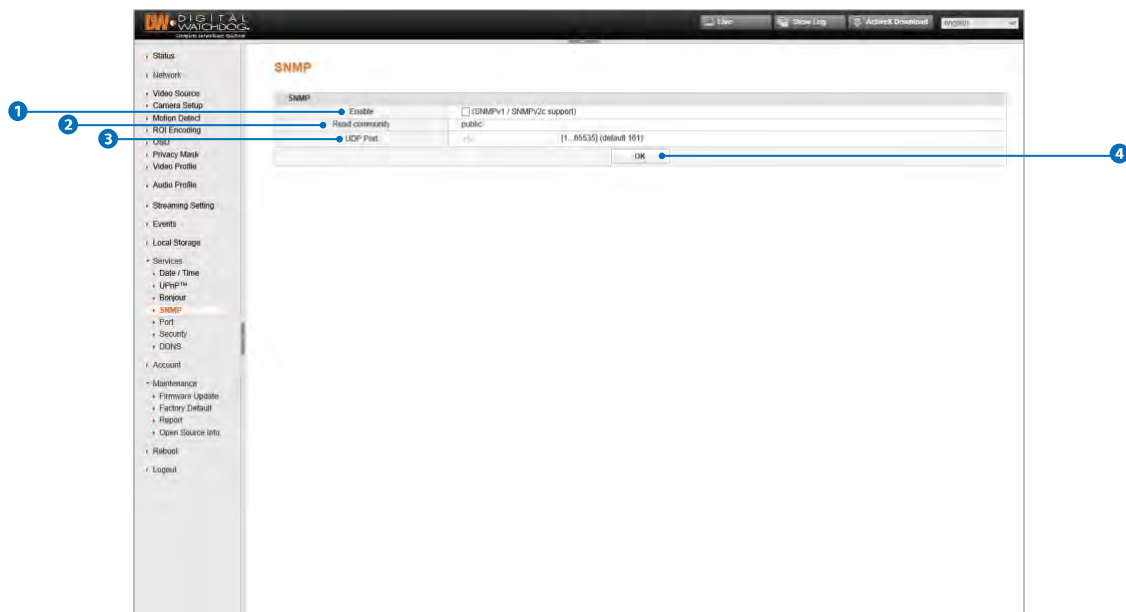❸ Click OK to apply any changes to the settings.

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Services - Bonjour

The camera supports Bonjour for auto detection with Windows explorer.

❶ Enable - Check the box for the activation.

❷ Friendly name - It is created by the MAC address automatically. This can be changed after the check box "Enable" is checked.

❸ Click OK to apply any changes to the settings.
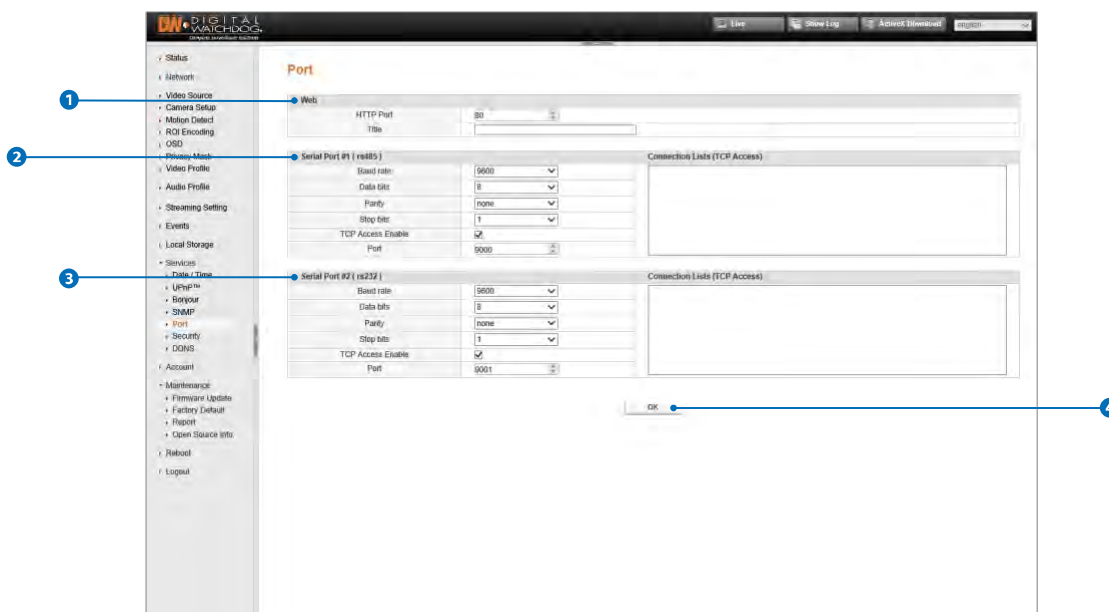
Webviewer - Settings
Services - SNMP

Use this menu to set the camera's SNMP settings.

1 Enable - Check to enable.

2 Read community - Shows the running mode as "public". (fixed)

3 UDP Port - Enter the port number for use.

4 Click OK to apply any changes to the settings.

Webviewer - Settings
Services - Port

Use this menu to Set up the port number for the data communication.

① **Web (HTTP) -** The camera's web port is set by default to 80. You can modify it as needed.

② **Serial Port #1(RS485) (Currently not supported)**

③ **Serial Port #2(RS232) (Currently not supported)**

④ Click OK to apply any changes to the settings.

Services - Security
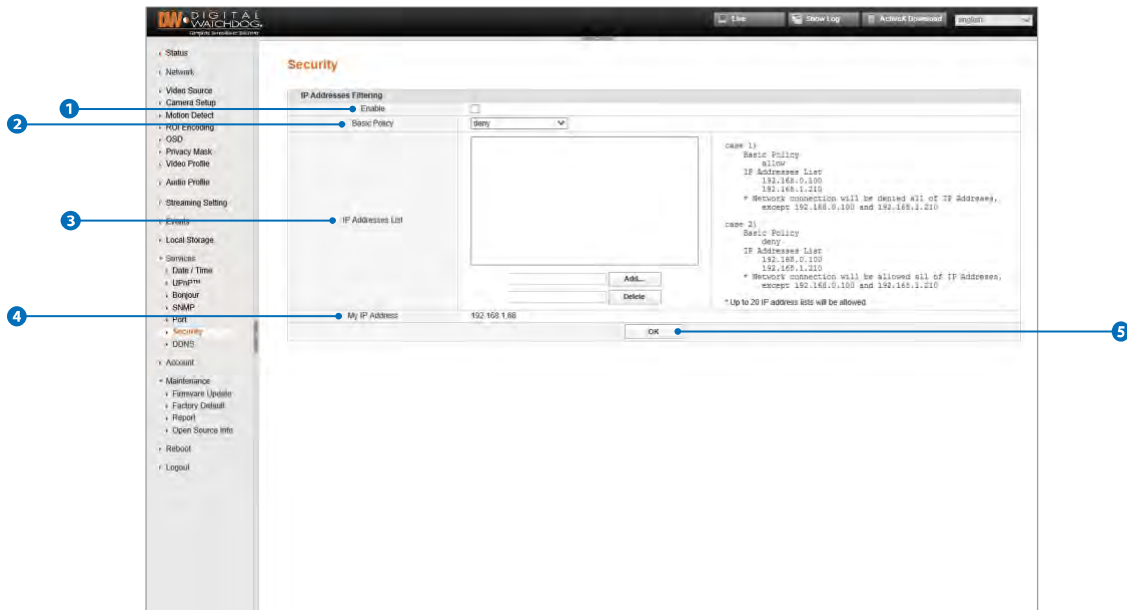
This menu allows you to restrict access to the camera according to IP addresses.
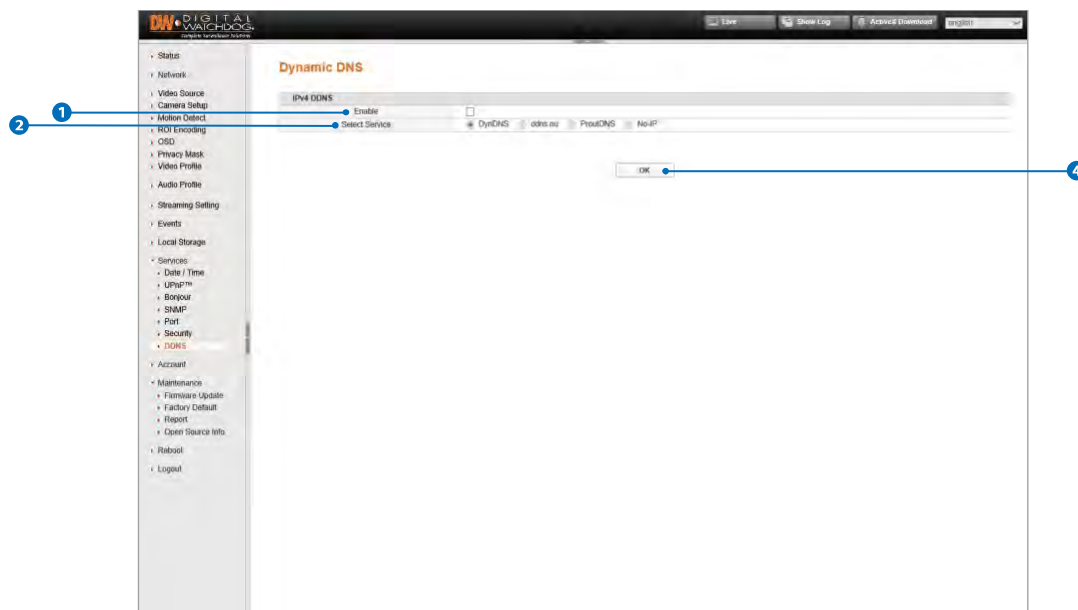
❶ **Enable -** Check to enable.

❷ **Basic Policy -** Select "allow" / "deny"

❸ **IP Addresses List -** Create the IP address list for filtering. Press the 'Add' button to add new IP addresses to the list, or 'delete' to remove them from the list.

❹ **My IP Address -** Displays the IP address of the PC currently connected to the camera.

❺ Click OK to apply any changes to the settings.

**The camera supports a Dynamic DNS feature. Please note that these are third-part DDNS services, and some may require subscription or payment.**

❶ **Enable -** Check to enable.

❷ **Select Service -** Select a service to use.

❸ Type the information that is used on the registration process of the DDNS server homepage.

❹ Click OK to apply any changes to the settings.

Webviewer - Settings
Account
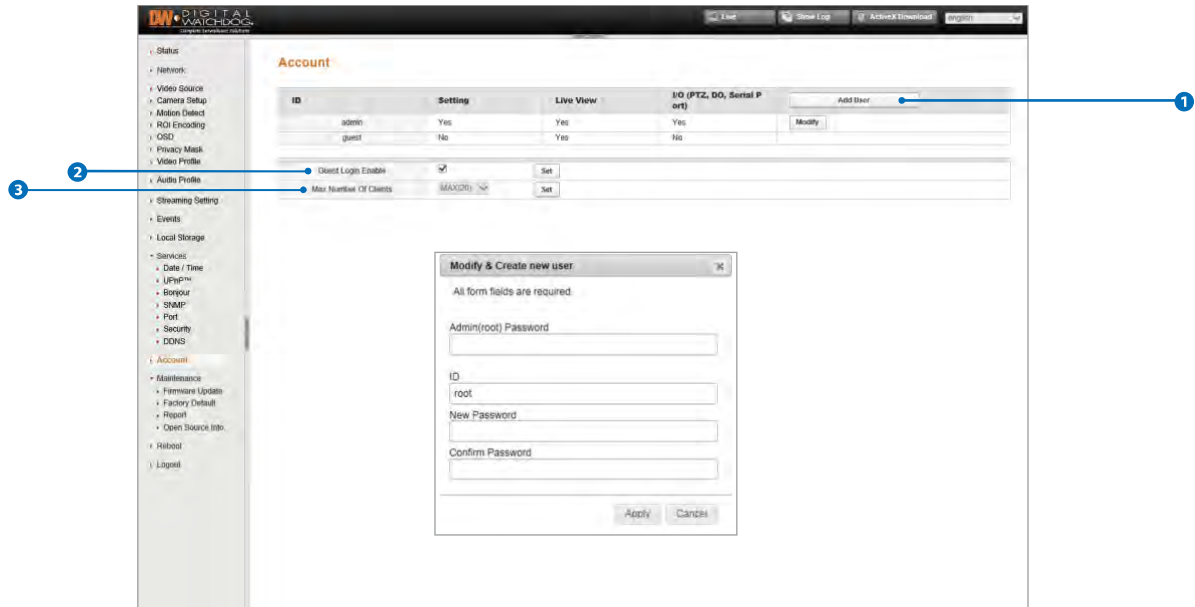
The camera supports multiple users with different permission levels.

① Add User

1) Admin (Root) Password - Enter the administrator's password.
2) ID - Enter or modify the ID for the user.
3) New Password, Confirm Password - Enter or modify the password for the ID to be added.
4) Apply/Cancel button - Click "Apply" to save the changes or "Cancel" to cancel.

② Guest Login Enable check box - Check this box to enable guest login services. Click "Set" to apply the changes.

③ Max Number of Clients - The maximum allowed connections are 20. (fixed)
　※ To add a new user, press the "Add User" button. To modify an existing user, press the "Modify" button next to that user's name. The Modify & Create New user page will appear.

Webviewer - Settings
Maintenance - Firmware Update
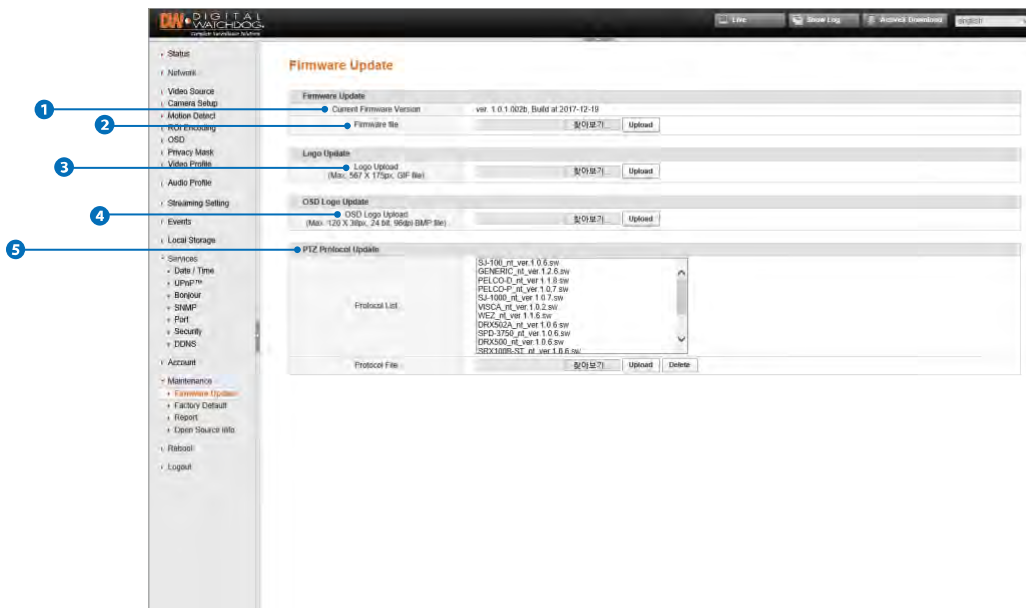
Use this menu to update the camera's firmware when needed.

❶ **Current Firmware Version -** Displays the current firmware version.

❷ **Firmware File**
   1) Click "Browse..." and select the file to upload.
   2) Click "Upload" to start updating.
   ※ The camera's power supply must not be interrupted. Updates can take up to 10 minutes.
   ※ Network setting will remain the same, however, video settings may be reset during the update.

❸ **Logo Upload**
   1) Click "Browse..." and select the file to upload.
   2) Click "Upload" to start updating.

❹ **OSD Logo Upload**
   1) Click "Browse..." and select the file to upload.
   2) Click "Upload" to start updating.

❺ **PTZ Protocol Update (not supported)**
   ※ If anew protocol is uploaded, select the new protocol in the Video Source settings page and apply it by clicking "Set".

Maintenance - Factory Default
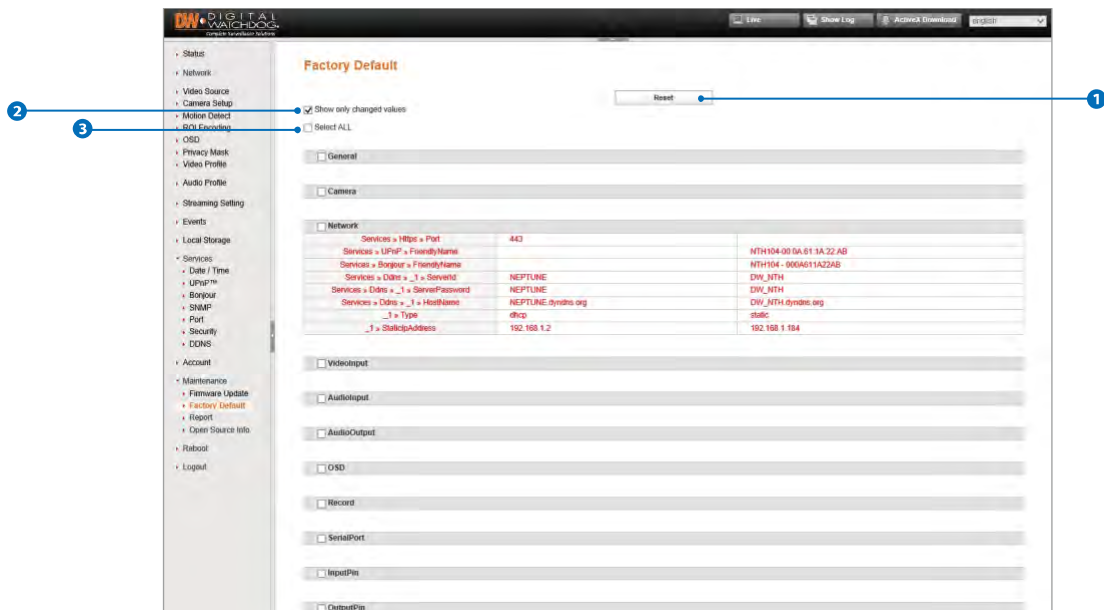
When necessary, you can reset the camera to its factory default settings.

❶ **Reset button -** Click the button to initialize the reset of the selected values. Please note to click the reset button only after selecting the values to be initialized.

❷ **Show only changed values check box -** Check to display only the changed values (default).

❸ **Select All check box -** You can manually check the box next to each settings you want to reset, or use the Select All button to selects all groups to be initialized.

Maintenance - Report

This page displays the camera's current setting and can be printed or saved as a PDF file for reference.

❶ Use the "Print" button to export the report for you records.

Maintenance - Open Source Info.
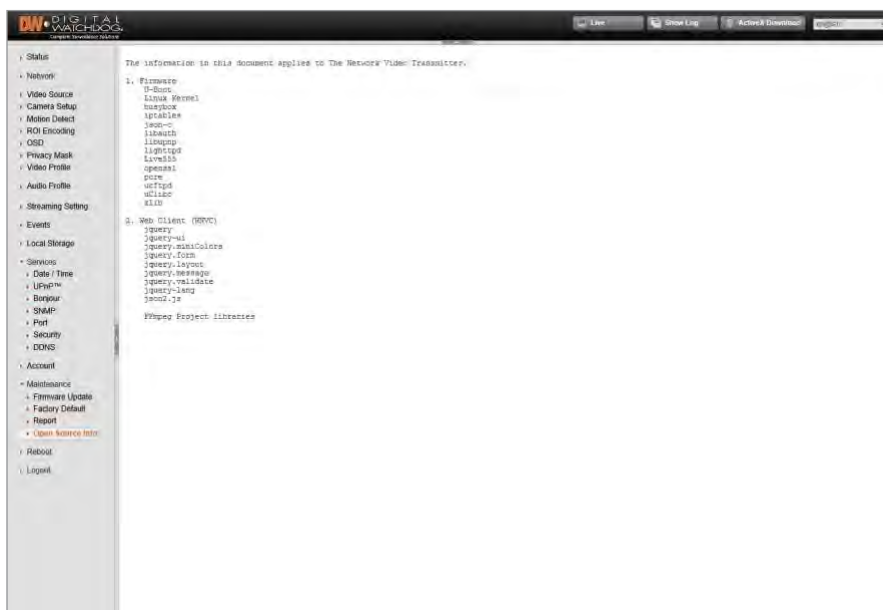
This page documents the camera's firmware and web client information for open source integrations.

Webviewer - Settings
Reboot
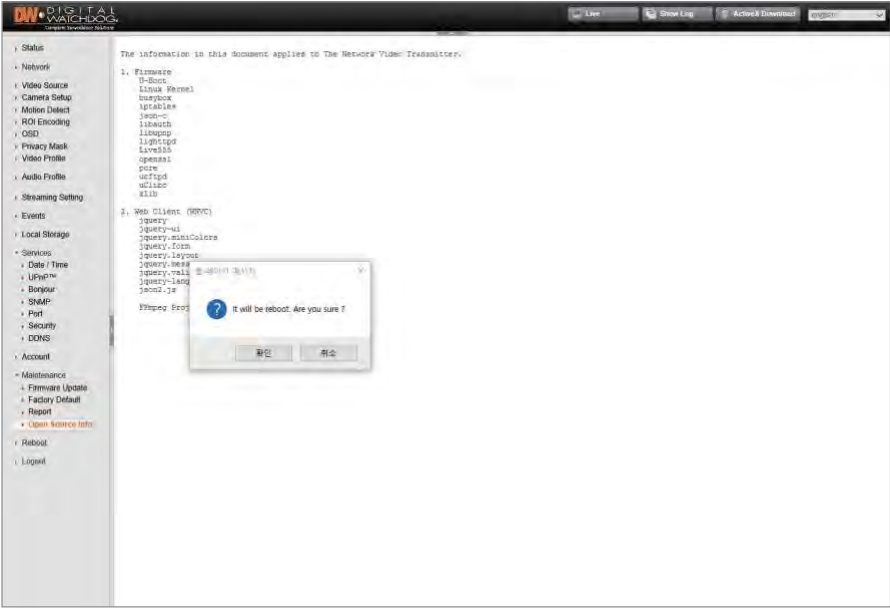
You can select to reboot the camera as needed. A confirmation window will appear to confirm the reboot.

Appendix

A : Current TCP / IP Settings

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

1. Windows 7 Users

```
Start
  ↓
Control Panel
  ↓
Network and
sharing center
  ↓
Manage network
connections
  ↓
Properties
  ↓
Select either
Internet Protocol
Ver.4 (TCP/IPv4)
or Internet Protocol
Ver.6 (TCP/IPv6)
  ↓
Click Properties
```
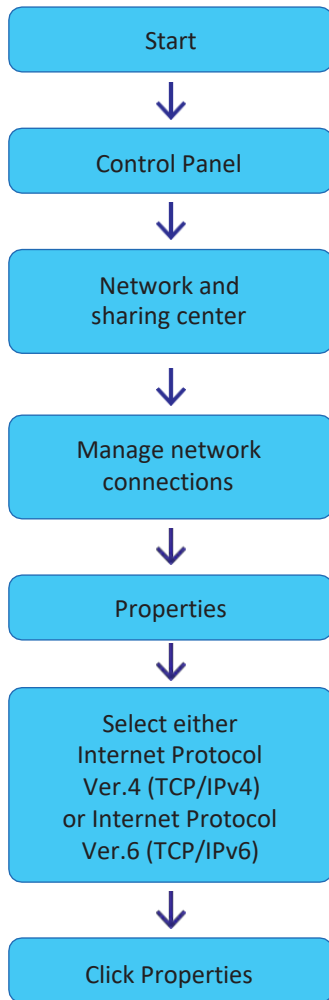
Under the 'General' tab of the TCP/IP Properties you will see your IP address information.

2. Windows 10 Users

```
Start
  ↓
Settings
  ↓
Network & Internet
  ↓
Click on Change
adapter options in
Ethernet
  ↓
Select the Ethernet,
Right click and
choose Properties
  ↓
Select either
Internet Protocol
Ver.4 (TCP/IPv4)
or Internet Protocol
Ver.6 (TCP/IPv6)
  ↓
Click Properties
```
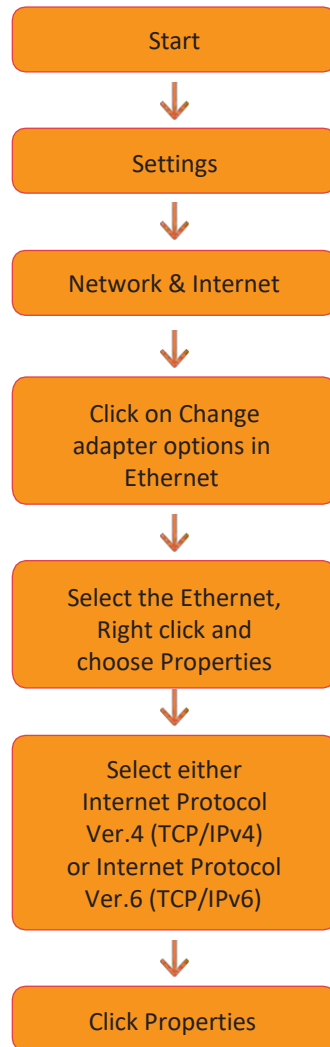
Under the 'General' tab of the TCP/IP Properties you will see your IP address information.

Appendix -
B : Changing IP address and subnet mask

1. Windows 7 Users

Start

↓

Control Panel

↓

Network and sharing center

↓

Manage network connections

↓

Properties

↓

Select either Internet Protocol Ver.4 (TCP/IPv4) or Internet Protocol Ver.6 (TCP/IPv6)

↓

Click Properties
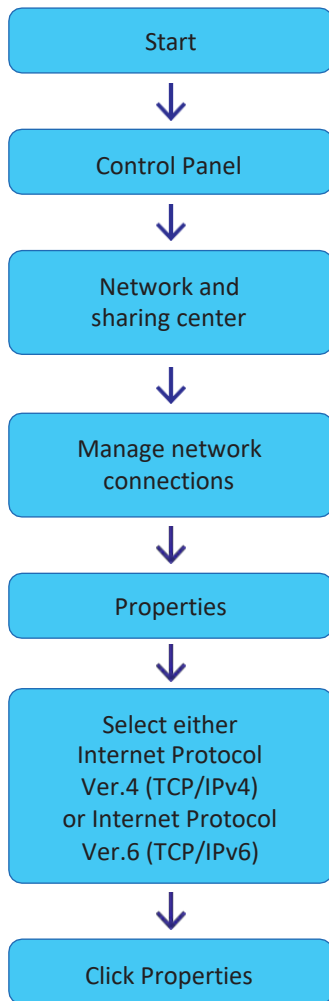
Select 'Use the following IP address'

2. Windows 10 Users

Start

↓

Settings

↓

Network & Internet

↓

Click on Change adapter options in Ethernet

↓

Select the Ethernet, Right click and choose Properties

↓

Select either Internet Protocol Ver.4 (TCP/IPv4) or Internet Protocol Ver.6 (TCP/IPv6)

↓

Click Properties
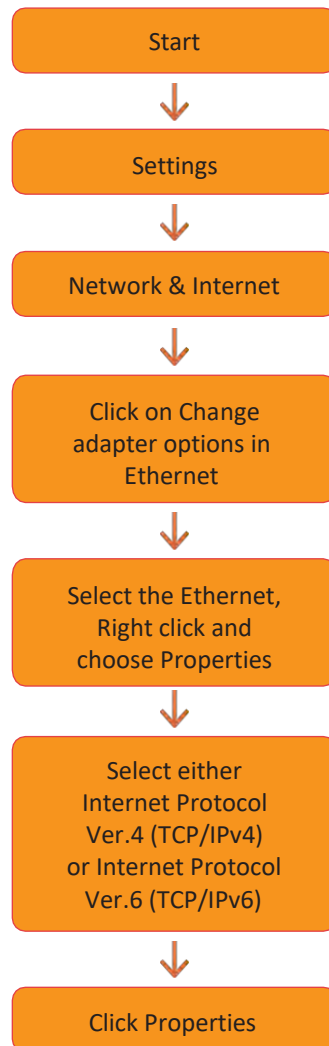
Select 'Use the following IP address'

Appendix -
FAQ

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

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

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

4. I can access the video server on my LAN, but not from the Internet.
Verify that your router (if applicable) has port forwarding properly configured. If accessing from our DDNS service, verify correct serial number. Firewall issues may prevent user access.

5. How do I open an MS-DOS or Command Prompt?
Start > (All) Programs > Accessories > Command Prompt

6. How do I find out my IP address information if my settings were automatically detected?
1) Open a Command Prompt
2) At the prompt type -"ipconfig / all" (without the quotes)
3) Near the end of the information supplied, should be your current IP address, subnet mask, default gateway and DNS servers

7. I can't connect!!
In the case of a connection failure.
Modem Reboot > Modem Reboot Finished > Router Reboot > Router Reboot Finished > IP Camera Reboot > IP Camera Reboot Finish > Verify DDNS and IP Camera connection, if applicable.

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

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

10. How do I enable or check VLC on my browser

Internet Explorer

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

Chrome

Open Chrome > Chrome menu settings > Advanced settings > Individual information - content settings > Run automatically

11. How do I reset the unit to factory defaults?
Refer to the part name page and find the reset button. Power ON the unit and use a paper clip to push the reset button within that opening. You should then see the ACTIVE light turn off and after a few seconds the ACTIVE light will begin to flash, signifying a successful reboot. If the ACTIVE light does not turn off after depressing the reset button, please try holding the button in for a few seconds and releasing. YOU WILL LOSE ALL DATA THAT HAD BEEN ENTERED PREVIOUSLY AND THE IP CAM -ERA WILL BE SET TO ITS FACTORY RESETS.

Specifications - Dimension

Unit: Inch (mm)

4.9" (125mm)

1.88" (48mm)
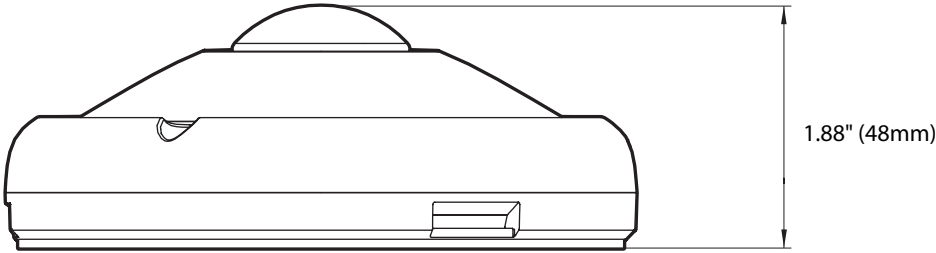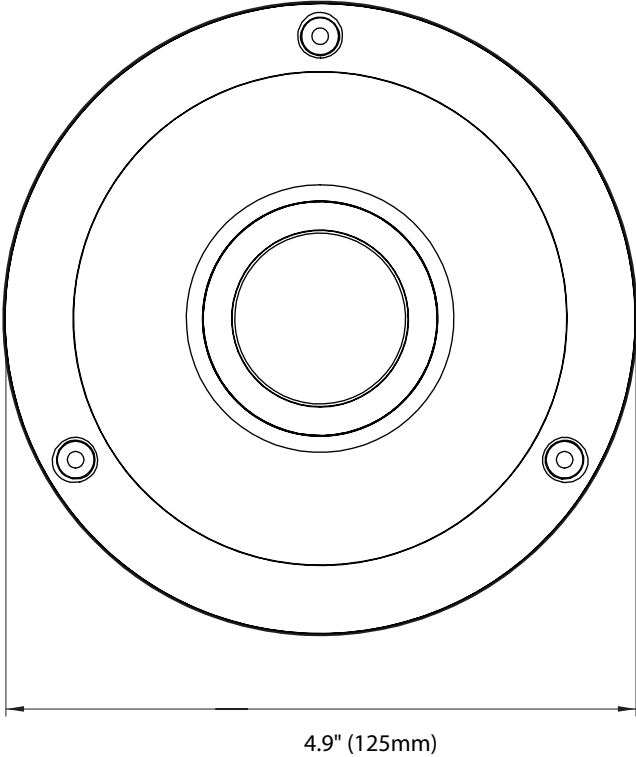
Warranty Information

Digital Watchdog (referred to as "the Warrantor") warrants the Camera against defects in materials or workmanships as follows:

Labor: For the initial five (5) years from the date of original purchase if the camera is determined to be defective, the Warrantor will repair or replace the unit with new or refurbished product at its option, at no charge.

Parts: In addition, the Warrantor will supply replacement parts for the initial five (5) years.

To obtain warranty or out of warranty service, please contact a technical support representative at 1+ (866) 446-3595, Monday through Friday from 9:00AM to 8:00PM EST.

A purchase receipt or other proof of the date of the original purchase is required before warranty service is rendered. This warranty only covers failures due to defects in materials and workmanship which arise during normal use. This warranty does not cover damages which occurs in shipment or failures which are caused by products not supplied by the Warrantor or failures which result from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, modification, faulty installation, set-up adjustments, improper antenna, inadequate signal pickup, maladjustments of consumer controls, improper operation, power line surge, improper voltage supply, lightning damage, rental use of the product or service by anyone other than an authorized repair facility or damage that is attributable to acts of God.

Limits & Exclusions

There are no express warranties except as listed above. The Warrantor will not be liable for incidental or consequential damages (including, without limitation, damage to recording media) resulting from the use of these products, or arising out of any breach of the warranty. All express and implied warranties, including the warranties of merchantability and fitness for particular purpose, are limited to the applicable warranty period set forth above.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights from vary from state to state.

If the problem is not handled to your satisfaction, then write to the following address:

Digital Watchdog, Inc.
ATTN: RMA Department
5436 W Crenshaw St
Tampa, FL 33634

Service calls which do not involve defective materials or workmanship as determined by the Warrantor, in its sole discretion, are not covered. Cost of such service calls are the responsibility of the purchaser.
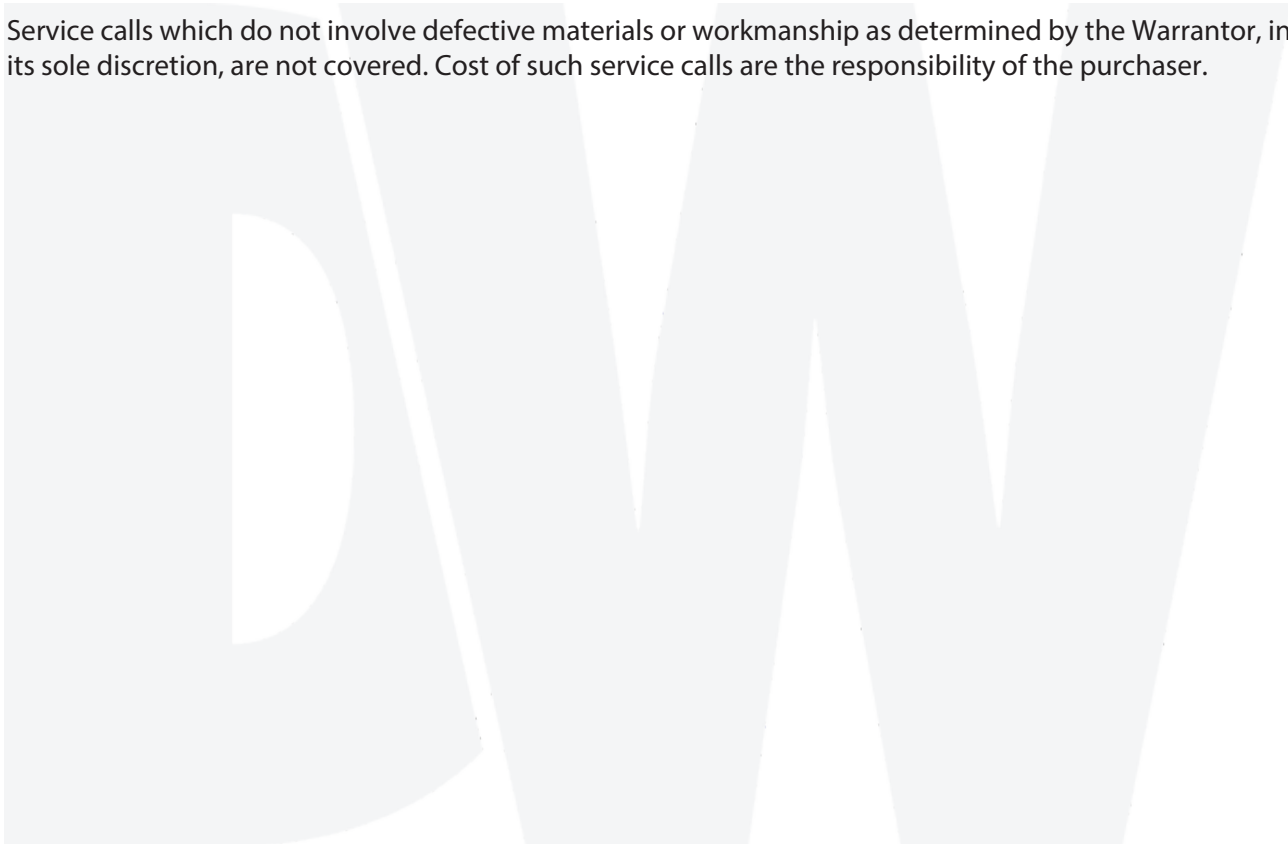
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