

OPERATION MANUAL



VTD-MV8NZ213PN

ONVIF



VTC-IR8NZ4213PN

FEATURES:

- 1/2.8" 8.46 MegaPixel Sony STARVIS[®] CMOS Sensor
- 8 MegaPixel [4K] Network Camera (3864 x 2192 @ 30/25fps)
- f=2.7~13.5mm Motorized Varifocal Lens
- ONVIF Compliant with Zero Configuration, ONVIF Event Mapping
- 2 High Power IR LEDs with up to 100' IR Range [VTD-MV8NZ213PN]
- 5 x 850nm High Power LEDs with up to 130' IR Range [VTC-IR8NZ4213PN]
- Adaptive Web-Based Resizing (Layout/Display Device Dependent)
- H.265, H.264 & MJPEG
- Alarm Input/Output
- MicroSD Memory Card Slot (Supporting Local Recording up to 256GB)
- 120dB Dynamic Range with DOL (Digital Overlap) WDR @30/25fps
- Line Crossing, Field Intrusion, Appear / Disappear Smart Stream, Rol
- Motion Detection, Privacy Masking, Digital Zoom (8x), Backlight / Highlight Compensation, Mirror / Flip, Sens-up (Slow shutter), Hue, Contrast, Brightness / Saturation, Sharpness
- PoE (IEEE Std. 802.3af) and AC24V / DC12V
- Built-in Fan and Optimized Cooling System
- IP68
- IK10 (VTD-MV8NZ213PN Only)
- Built-in / Integrated Junction Box (VTC-IR8NZ4213PN)
- Flush and Surface Mounts Included with VTD-MV8NZ213PN
Optional Wall Mount: VT-MV/WMT, Adapters: VT-MV/PLMT (Pole), VT-MV/SB (Surface), VT-MV/TB, (Tilted Base), VT-MV/JMT (Junction Mount)
- 3-Year Warranty

***FOR WIRING AND HARDWARE, SEE SEPARATE
VITEK VIRTUOSO INSTALLATION GUIDE

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Category	Menu	Configuration		
LIVE VIEW	Player Control	Pause, Snapshot, Record		
		Display (Window Fit, Full Screen, Custom)		
	Video Stream	Stream1, Stream2, Stream3, Stream4		
	Protocol	HTTPS, HTTP, TCP, UDP		
	PTZ Control	Zoom, Focus, Direct Zoom(or Push AF)		
PLAYBACK	Event Search, Timeline Search, Timeline Bar			
SETUP	Information	General, System Information, Open-source Information		
	Video & Image	Source	Stream1/2/3/4	
		Smart Video Stream	ROI(Region of Interest), Dynamic GOP	
		Image	Basic	Brightness, Contrast, Saturation, Hue, Sharpness, Enable flip image, Enable mirror image
			OSD	Enable text OSD, Enable date & time OSD, Enable zoom & focus OSD
		AE	Mode, Slow shutter, Auto Iris / Flicker-less, Shutter, Max. Shutter, Gain, Max. Gain	
		AWB	Mode, R Gain, Gr Gain, Gb Gain, B Gain	
		AF(***)	Mode, Speed, Lens Locking / Calibration, Enable Day & Night sync focus, Lens initialize on boot	
		Day & Night	Mode, Switching Time,	
		WDR	WDR(Mode, Level), DWDR(Mode, Level), Defog(Mode, Level)	
		BLC	BLC(Mode, Level), HLC(Mode)	
		DNR	3DNR(Mode, Level)	
		LDC	Mode, Level	
		Vertical View	Mode, Rotation	
	Privacy Mask	Color, Name		
	Digital Zoom	Level		
	DIS			
	Record	Record	Overwrite when storage full, Continuous record setting	
		Schedule		
		Recycling	Enable Recycling, Recycling Time Setting (Month/Day/Hr)	
Storage		Format, Remove, Storage Information		

SETUP	Event	Triggers	Motion, VCA, System, Manual, Network, Timer, Day/Night
		Actions	Record, Alarm Out, E-Mail, FTP, Video Boost, Notification Server
		Rules	Event Processing, ONVIF Mapping
	System	Security	User, HTTPS, IP Filter, ONVIF, Video Stream, Export/Import
		Date & Time	Current Time, New Time, Time Zone, Date & Time Display
		Network	TCP/IP, DDNS, RTP, UPnP, Zeroconf, Bonjour
		Language	English, Deutsch, Français, 한국어
		Maintenance	Maintain (Restart, Reset, Default), Upgrade, Setup Export, Setup Import
		Logs & Report	Logs (Database Capacity, Search Condition, Log List), Logs Server, Report
	LOG OUT		

Network Control menu Setup

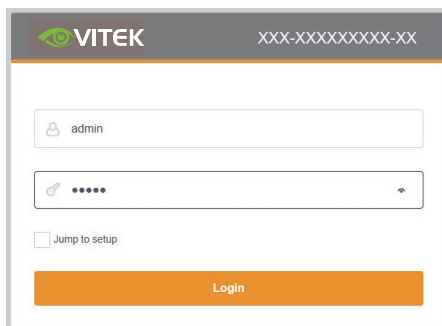
■ Log-in through the Web-Viewer

1. After camera is connected to a switch, install "IP MANAGER", available via website <https://www.vitekccctv.com>
2. Make sure the PC and switch are connected before accessing IP MANAGER.
3. After installing, double click IP MANAGER's icon to start.
4. The Cameras are automatically scanned when IP MANAGER is running.
5. If you double-click the model name on IP Manager, it goes to the Login page.
6. Install Active-X according to the instructions at the bottom of browser if needed.

The default username / password
Are admin / admin

SYSTEM Requirements

- OS: Windows 7 or higher / MAC OS
- Web browser:
- MS Internet Explorer (Ver. 9 or higher)
- MS Edge
- Mozilla Firefox: Windows Only
- Google Chrome: Windows Only
- Apple Safari: Mac OS X only
- Supports only officially released versions.



Change IP Address

The default IP address of cameras are 192.168.1.10.

If you want to change IP address, right click mouse and select Change IP.

Type the IP address to change and click OK button.

Stop Discovery
Refresh

Default Login S/W Version

Model Name	IP Address	Zeroconf Address	MAC Address	Version
EXAMPLE	192.168.1.10	169.254.94.234		1.2.1.76
EXAMPLE	192.168.1.11	0.0.0.0		2.2.2.60-RC03
EXAMPLE	192.168.1.23	169.254.247.12		1.2.1.76
EXAMPLE	192.168.1.12	0.0.0.0		2.2.2.72-RC190926

Change IP...
Quick View...
Login...
Maintenance >
Calibration >
Upgrade...
Restore...
Web Browser...

IP Address: 192 . 168 . 1 . 10
Subnet: 255 . 255 . 255 . 0
Gateway: 192 . 168 . 1 . 1

OK Cancel

4 camera detected

※ **Change all connected camera's IP address at once: x=**

- 1) Highlight all cameras (hold Ctrl and click all cameras) and right click mouse and choose "Change IP...".
- 2) Open the Change IP control panel.
- 3) Type the IP address to change and click OK button.

■ **IP MANAGER description**

A: Model Name: Show the connected camera model number.

B: IP Address: Show the IP address of connected camera.

C: Version: Show the camera F/W version.

D: Change IP: Available to change IP.

E: Quick View: Available to have Quick View after Login.

F: Login: Available to Login(admin/admin) and then Quick View.

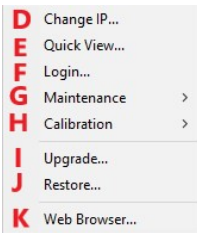
G: Maintenance: Factory default/ Reset/Reboot are available.

H: Calibration: Opens cam view to start lens calibration

I: Upgrade: Able to upgrade camera firmware.

J: Restore: restore camera settings from file

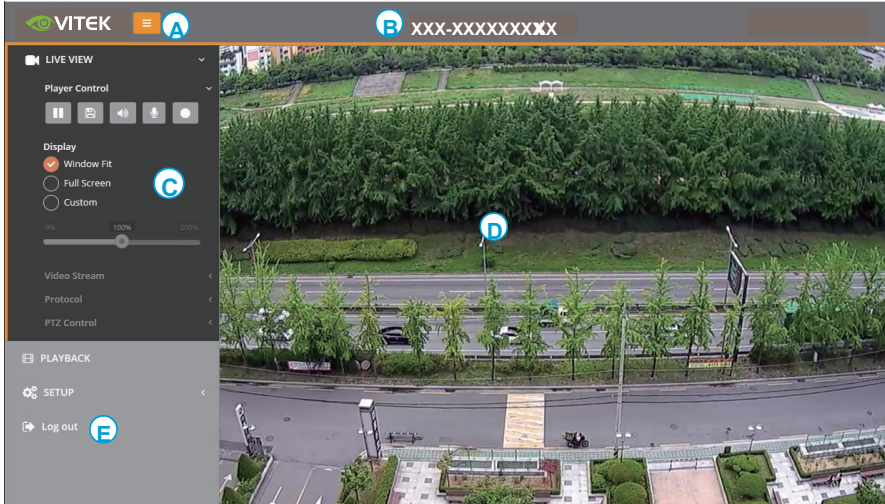
K: Web Browser: Opens cameras web browser page



1. LIVE VIEW

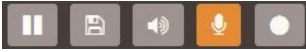
Enter the live view menu on the Web Viewer.

■ Web Viewer description



- A) Menu button: Click the button to show or hide the setup menu bar.
- B) Model name: Shows the camera model name connected.
- C) Main setup menu bar: Set the camera or network functions.
- D) Camera monitoring window: Display the currently connected camera view or function.
- E) Log out and exit the web viewer

■ Player Control.



①

②

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1. Pause: Pauses live view.

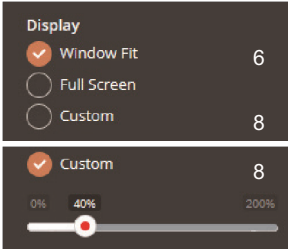
2. Snapshot: Captures the image in .jpg format with the current stream resolution.

3. Speaker: (Available only with built-in Audio Models)

4. Microphone: (Available only with built-in Audio Models)

5. Record: (Available with the built-in Storage feature version only)

Records live video in H.264 format into the equipped storage memory like SD, SDHC & SDXC with the selected video stream at the RECORD menu.



a. Window Fit: Resizes the live view display to fit along with the display window size.

⑦ Full Screen: Resizes the live view display to fit to the monitor resolution. ESC key returns to the previous view.

⑧ Custom: Selects the live view display scale,

0%~200%, by the control bar. 100% is original size.

■ Video Stream

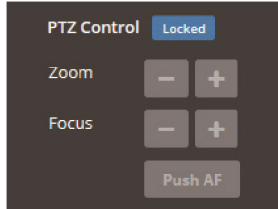
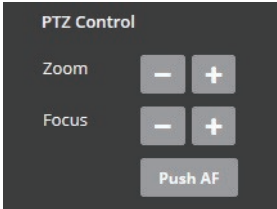
Selects the video source stream to display live view only.

■ Protocol

Selects the network protocol out of HTTPS, HTTP, TCP or UDP.

■ PTZ Control

(Available with AF version & the built-in motor driven V/F lens version only)



- ZOOM: Controls the lens optical zoom in/out for WIDE & TELE.
- FOCUS: Adjusts the lens focus manually for NEAR & FAR.
- PUSH AF: Gets the lens to focus on the push of a button.

NOTE

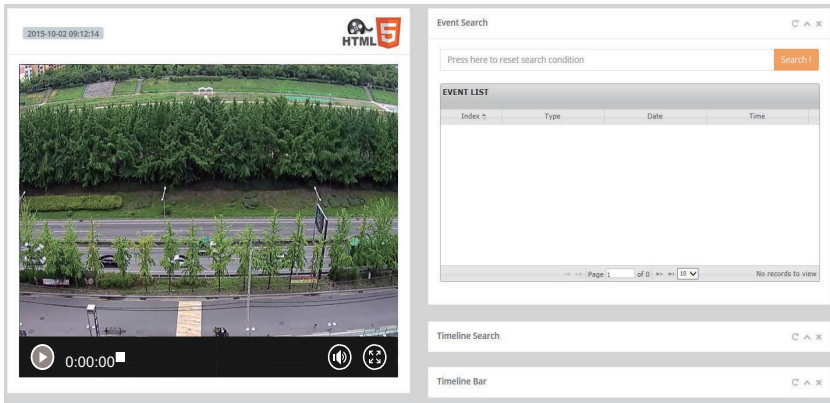
ZOOM, FOCUS & PUSH AF are disabled when PTZ control is locked.

PTZ control can be unlocked at Setup>Video & Image>Image>AF>Lens Locking to OFF or TIMER.

CAUTION

- Set LENS LOCKING at Setup>Video & Image>Image>AF>Lens Locking to ON or TIMER after completing lens setting to prevent unwanted lens operation.
- Do not adjust zoom/focus in low light conditions or night mode. It might cause erroneous focusing.
- For V/F versions, Zoom/Focus operation **is strongly recommended** for installation purpose only. Frequent zoom/focus adjustments can reduce the life span of the lens.

2. PLAYBACK (From Installed SD Card Where Applicable)



■ Event Search

Playback display using the event list.

- Press the input bar to pop up EVENT DATE & TIME window and select the event TYPE.
- Click SEARCH button to show up EVENT LIST.
- Select the recorded event and click the play button at the bottom-left corner of the playback window.

■ Timeline Search

Playback display by Date & Time for continuous and event recording.

- Select the date in the SEARCH CALENDAR and then the hour & minute at TIMELINE BAR.

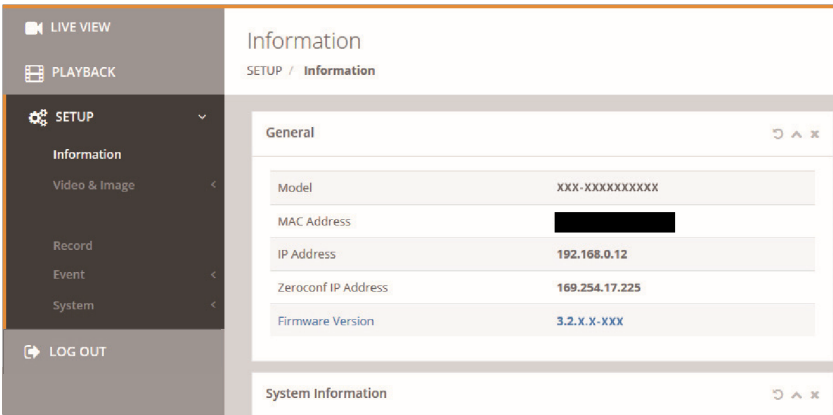


3. SETUP

Enter the setup menu on the Web Viewer.

3-1. Information

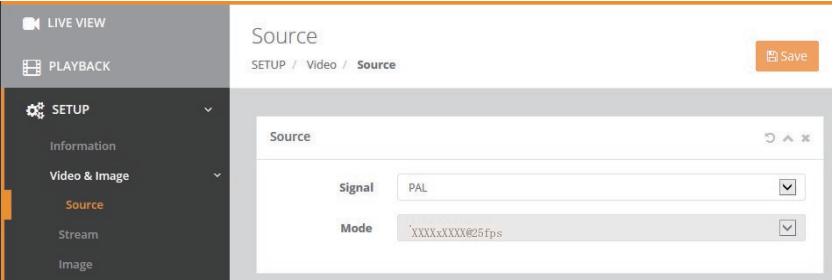
Shows the overall information about the system such as Model name, MAC address, IP address, Zeroconf, IP address, Firmware version, Server time, Running time, CPU usage, Inbound/Outbound Bandwidth and Open-source list.



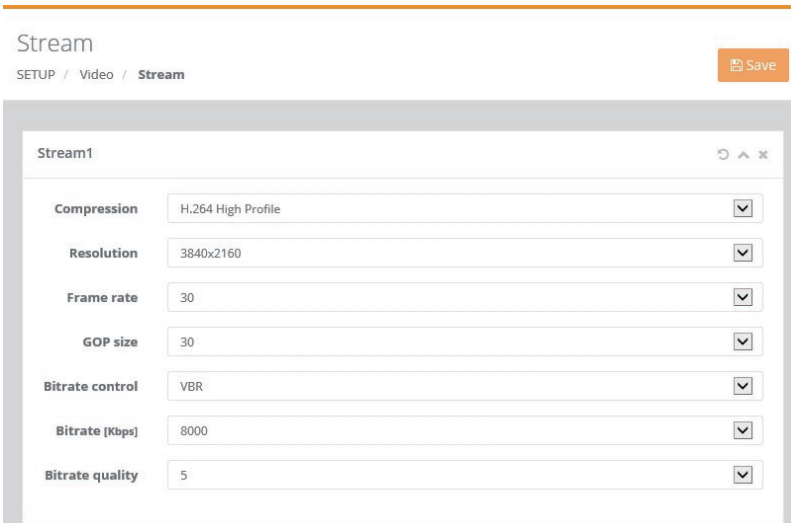
3-2. Video & Image

3-2-1. Source

- **SIGNAL:** Set NTSC/PAL mode depending on TV system. Generally set to NTSC in 60Hz area and PAL in 50Hz area for the electrical power system of your country. Changes will restart the camera.



3-2-2. Stream



• **Stream1, 2, 3, 4**

> COMPRESSION: H.265(+) and H.264(+) are available in all streams but MJPEG is available in Streams 3, and 4 only.

- H.265+, H.264+: ability to process video data according to users' demand and lowering overall bandwidth and reduce the storage burden.

If H.265+ or H.264+ is selected, Smart Video Stream and Dynamic GOP are switched ON automatically.

Accordingly, ROI (Region of Interest) and Dynamic GOP should be set in Smart Video Stream menu to use H.265+ and H.264+.

> RESOLUTION: Each stream can have its individual resolution selected from its list.

> FRAME RATE: Each stream can have its individual frame rate in fps selected from its list.

> GOP SIZE: GOP (Group of Picture) defines the number of Intra-coded pictures (I frame) & Predictive-coded pictures (P frame) in H.264. I frame is a complete image while P frame is the predictive image data which can lower the image data dramatically between frames. GOP SIZE stands for the number of P frames between I frames. Too small GOP SIZE (too frequent I frames) can degrade the picture quality because the codec compresses the data to maintain the bitrate. On the contrary, a little bigger GOP SIZE can improve the picture quality with better quality for P frames if the network is in good condition.

> BITRATE CONTROL: Selects how to manage the bitrate.

- VBR (Variable Bit Rate):

Provides higher image quality with the optimal variable bitrate for the scene which has more moving elements in the image. It is not recommended when network is in heavy duty use.

- CBR (Constant Bitrate):

Tends to keep the bitrate steady at the assigned bitrate within a very small variation. It is useful when the network is in very heavy use.

> BITRATE: Indicates the transmission speed through the network and defines the overall picture quality along with the image resolution, frame rate, GOP size and the compression codec for H.265, H.264. A high value provides the higher image quality but the total sum of bitrates for the streams has to be considered in calculating the network duty.

> BITRATE Quality: Enables to set the quality.

3-2-3. Smart Video Stream


- **ROI (Region of Interest)**

- > Ability to process video data according to user's demand.
- > Available to deliver high quality video on interested regions while delivering lower quality video on non-interested region.
- > Lowering overall bandwidth and reduce the storage burden.

> How to set Region of Interest:

- 1) Mark ENABLE checkbox to enable ROI function.
- 2) Click the right mouse button on the video viewer, select "Create ROI area" menu and drag the ROI area.
- 3) After dragging, enter a Name, select Quality and save.

ROI (Region Of Interest)
Dynamic GOP



Enable

Name

Quality

ID	Name	Quality	Delete

Enable non-ROI frame rate setting

Frame Rate

Stream	ROI frame rate	non ROI frame rate
1	25	<input type="text" value="10"/>
2	25	<input type="text" value="10"/>

- 4) ROI frame rate is available to set in Settings> Video & Image> Video Stream.
- 5) To delete the selected area, Click the right mouse button on the video viewer, select "Create ROI area" or click "Delete" button.
- 6) After setting the mode, press SAVE.

> How to set non-Region of Interest:

Set the frame rate (non-ROI frame rate) for each stream and press SAVE.

● **Dynamic GOP:**

- > Outputs Intra-coded pictures (I frame : Complete Image)
 When there is motion or change in picture only to save bitrate.

3-2-4 . Image

The screenshot shows the 'Image' configuration page in a web interface. On the left is a sidebar with 'LIVE VIEW', 'PLAYBACK', and 'SETUP' sections. The 'SETUP' section is expanded to show 'Image' selected. The main area is titled 'Image' and contains a 'Viewer' window displaying a live video feed of a street scene with trees and buildings. A green success message box is overlaid on the top right, stating 'Success This request has been performed without error'. Two 'Save' buttons are visible: one in the success message and one in the top right corner of the main interface.

The screenshot shows the 'Basic' settings panel for image adjustment. It features tabs for 'Day' and 'Night' settings. The 'Day' tab is active, showing sliders for Brightness (8 [Default]), Contrast (8 [Default]), and Saturation (9 [Default]). The 'Night' tab also shows sliders for Brightness (8 [Default]), Contrast (8 [Default]), and Saturation (9 [Default]). Below these are sliders for Hue (4 [Default]) and Sharpness (5 [Default]). At the bottom, there are two checkboxes: 'Enable flip image' and 'Enable mirror image', both of which are currently unchecked.

● **Basic**

- > BRIGHTNESS: Adjusts the overall brightness of the scene. Increasing the value increases the brightness.
- > CONTRAST: Adjusts the contrast of the scene. Increasing the value increases the contrast.
- > SATURATION: Adjusts the color richness of the scene. Increasing the value increases the color richness.
- > HUE: Adjusts the color hue (NTSC only). Decreasing the value produces a greenish hue and increasing the value produces a pinkish hue.
- > SHARPNESS: Adjusts the sharpness of the scene. Increasing the value increases the sharpness.
- > ENABLE FLIP IMAGE: Flips the image on horizontal axis (up and down).
- > EABLE MIRROR IMAGE: Mirrors the image on vertical axis (left and right).

● **OSD**

- > ENABLE TEXT OSD: Enables display of the Text typed in the TEXT field (displays bottom-right).
- > ENABLE DATE&TIME OSD: Enables display of the Date & Time (displays top-left).
- > ENABLE ZOOM&FOCUS OSD: Enables display of the Zoom Ratio & Focusing Mode. (Displays top-right). (Applies to Built-in Motor driven V/F lens and AF models only)
- > MODE: Allows you to select when the ZOOM&FOCUS OSD is displayed.
 - ON PUSH: Displays on the OSD for a few seconds while lens is adjusting.
 - ALWAYS: always Displays the OSD.

The screenshot shows a camera's settings menu with the 'OSD' tab selected. The menu includes options for 'Enable text OSD', 'Text' (set to 'CAM1'), 'Enable date&time OSD', 'Enable zoom&focus OSD', and 'Mode' (set to 'On push'). A green 'Note' box at the bottom provides additional information about OSD text length and character restrictions.

Basic | **OSD** | AE | AWB | AF | Day/Night | WDR | BLC | DNR | LDC | VerticalView

Enable text OSD

Text: CAM1

Enable date&time OSD

Enable zoom&focus OSD

Mode: On push

Note

- The maximum length of OSD text is 16 characters.
- The available OSD characters are alphanumeric and +-=:;.,'?!'~!@#\$()[]<>{ }

● **AE**

> **MODE:** Selects how to control the exposure, **AUTOMATIC** or **MANUAL**. > **SLOW SHUTTER:** Extends the shutter time over the maximum shutter at multiple times of value in **SLOW SHUTTER**. Increasing the values increases brightness but also increases blurriness.

> **AUTO IRIS:** Engages the mechanical iris of the lens to control the amount of incoming light to the sensor.

• **OFF:** Iris opens, and the shutter is engaged to control the video level.

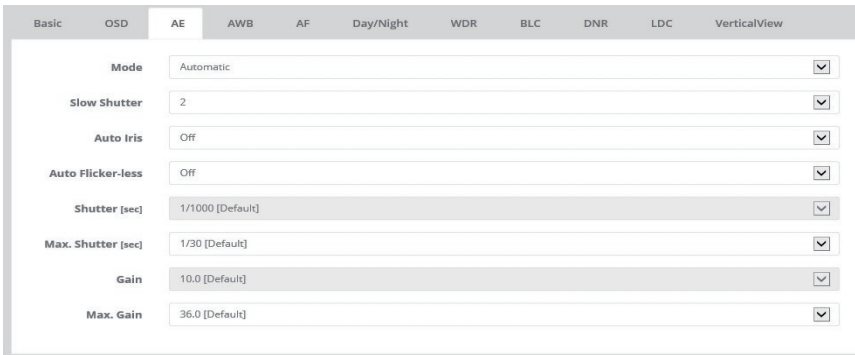
> **AUTO FLICKER LESS:** Automatically detects and fixes the flickering image under fluorescent lighting caused by the mismatch between NTSC/PAL and 50Hz/60Hz electric power frequency.

> **SHUTTER:** (Available only in **MANUAL** mode) Sets the shutter to a fixed value.

> **MAX. SHUTTER:** Sets the maximum exposure time to limit long exposure at night or in low-light scenes.

> **GAIN:** (Available only in **MANUAL** mode) Sets the overall video gain.

> **MAX. GAIN:** Sets the maximum gain that can be automatically reached at night or in low-light scenes.



The screenshot shows the camera's menu system with the 'AE' (Auto Exposure) menu selected. The menu items and their current values are as follows:

Menu Item	Current Value
Mode	Automatic
Slow Shutter	2
Auto Iris	Off
Auto Flicker-less	Off
Shutter [sec]	1/1000 [Default]
Max. Shutter [sec]	1/30 [Default]
Gain	10.0 [Default]
Max. Gain	36.0 [Default]

● **AWB**

> **MODE:** Provides White Balance presets. **ATW** or **Manual** is recommended for most applications.

> **R GAIN / Gr GAIN / Gb GAIN / B GAIN:** (Available only in **MANUAL AWB** mode) Adjusts the white balance by Cb/Cr color components to the specific lighting which has a fixed color temperature. Not recommended for regular scenes.



● **AF** (Available with the built-in motor driven V/F lens version only)

> **MODE:** Selects how to control the focus of the built-in Motor driven V/F lens or AF lens.

- **MANUAL:** Focusing works during zoom operation only and stops thereafter.
- **AUTOMATIC:** Focusing works steadily for sharp focusing on the object. In the case of a Motor driven lens, focusing resumes in about 7~8 seconds to save the lens lifetime when the focus gets lost.

[**NOTE**]

- 1) **MANUAL** mode is strongly recommended to maintain the working-life of the lens.
- 2) Lens operation count is stored in the camera for service purposes.

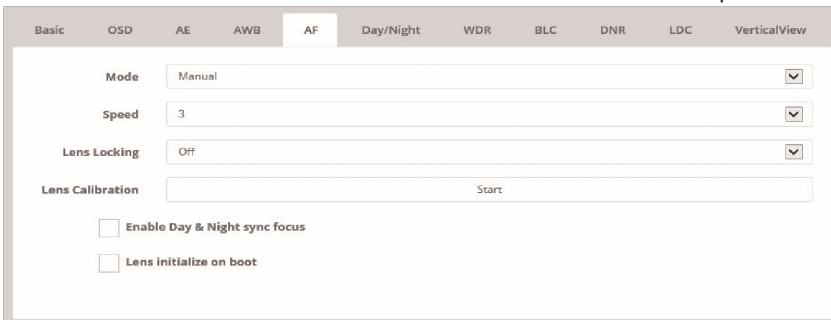
> **SPEED:** Adjusts the zoom control speed. Increasing the value increases the speed.

> **LENS LOCKING:** Allows locking of the lens control to prevent undesirable operation.

- **OFF:** Disables the locking feature allowing lens operation at any time.
- **ON:** Locks and disables the lens operation immediately.
- **TIMER:** Locks and disables the lens operation after a certain period of time, as set in **LOCKING TIMER**.

> **LOCKING TIMER:** Defines the amount of time before the lens is locked.

> **LENS CALIBRATION:** Calibrates and renews the lens data as setup at the Factory.



[WARNING]

LENS CALIBRATION is not necessary for regular installations.

LENS CALIBRATION would only be necessary should you not be able to focus the lens after a zoom operation due to shock during transportation of the camera.

To perform LENS CALIBRATION:

- A fixed object with sharp edges should be at least 3 meters away in front of the camera and should be stationary i.e., not moving. A plain wall is not suitable to calibrate on.
 - The camera must be placed firmly, without shock or vibration, during the calibration. - Scene light level must be bright enough. Do not try calibration at night or in low-light. - If the calibration fails, change the environment and try again.
- > ENABLE DAY&NIGHT SYNC FOCUS: Enables refocusing whenever the day/night changes. It is not recommended to use this feature as it may lose focus overnight due to focusing failure at night.

> LENS INITIALIZE ON BOOT: Mark ENABLE checkbox to enable lens initializing when camera is booting.

● **Day & Night**

- > MODE: Selects how to control the day/night feature.
- DAY: Disables the switching day/night filter and fixes it to DAY (color) only.
 - NIGHT: Disables the switching day/night filter and fixes it to NIGHT (B/W) only.
 - AUTOMATIC: Allows the day/night filter to switch via the amount of the incoming light through the lens only. Cameras without built-in IR LED must select AUTOMATIC.
 - EXTERNAL: Allows the day/night filter to switch via the built-in light sensor only, like a photo sensor. Cameras with the built-in IR LED must select EXTERNAL.
 - COLOR DN [AUTOMATIC]: Produces color video at night without switching day/ night filter. Values in BRIGHTNESS, CONTRAST&SATURATION at SETUP>VIDEO& IMAGE>IMAGE>BASIC>DAY or NIGHT are applied to the scenes for day and night accordingly.
- > SWITCHING TIME: Delays switching the day/night filter to prevent from an undesirable transition.
- > THRESHOLD [D->N]: (Available in AUTOMATIC mode)
Sets the threshold level for day->night switching. Decrease the value to switch at low luminance.
- > THRESHOLD [N->D]: (Available in AUTOMATIC mode)
Sets the threshold level for night->day switching. Increase the value to switch at high luminance.
- > THRESHOLD [Current]: (Available in AUTOMATIC mode)
Shows current threshold level.

Basic OSD AE AWB AF Day/Night WDR BLC DNR LDC VerticalView

Mode External

Switching Time [sec] 5 [Default]

Threshold [Day->Night] 48 [Default]

Threshold [Night->Day] 20 [Default]

Threshold [Current]

IR LED Control Off

> IR LED CONTROL: LEDs can be controlled on the web

[CAUTION]

- The gap between THRESHOLD [D->N] and THRESHOLD [N->D] should be greater than 18. Otherwise, an undesirable transition may occur.
- Too high a value in THRESHOLD [N->D] can cause cameras installed in low-light areas to stay in night mode permanently i.e., even during daytime.

● **WDR** (DOL HDR, Digital Overlap High Dynamic Range)

> WDR: Improves the visibility and the dynamic range for a high contrast scene temporally with multi scan images.

> DWDR: Improves the visibility by compensating dark area spatially.

> DEFOG: Enhances the image contrast against fog.

Basic OSD AE AWB AF Day/Night WDR BLC DNR LDC VerticalView

WDR

Mode Off

Level 3

DWDR

Mode On

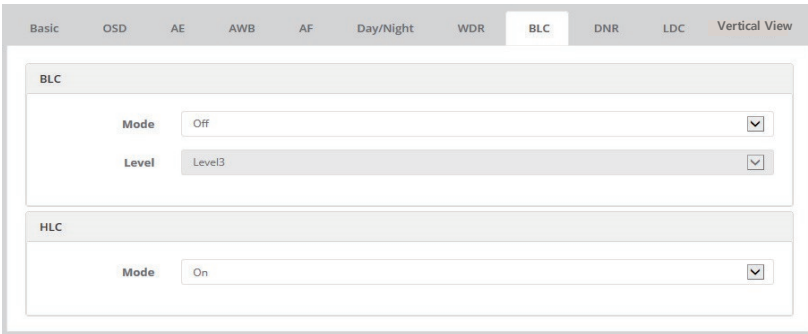
Level 1

Defog

Mode Automatic

Level 30

● **BLC**



> BLC (Back Light Compensation):

- **MODE:** ON enhances the visibility of the back-lit object.
- **LEVEL:** Determines the strength of the brightness. Higher value gets brighter.

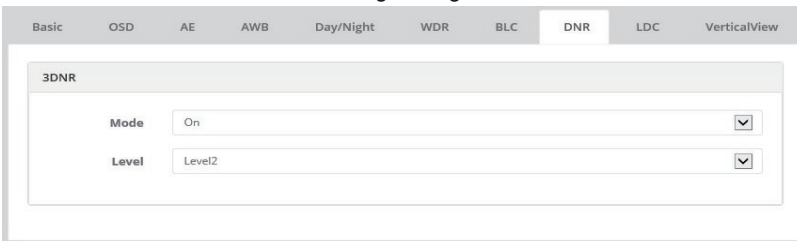
> HLC (High Light Compensation):

ON cuts out the bright area with a black mask and excludes it from compensation.

● **DNR** (Dynamic Digital Noise Reduction)

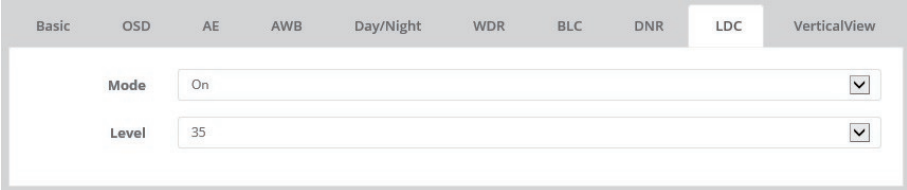
> 3DNR:

- **MODE:** ON reduces the noise by cancelling the spatial & temporal components in a 3 dimensional way.
- **LEVEL:** Determines the strength of the noise reduction. Higher values reduce more noise but can also lead to a ghosting effect.

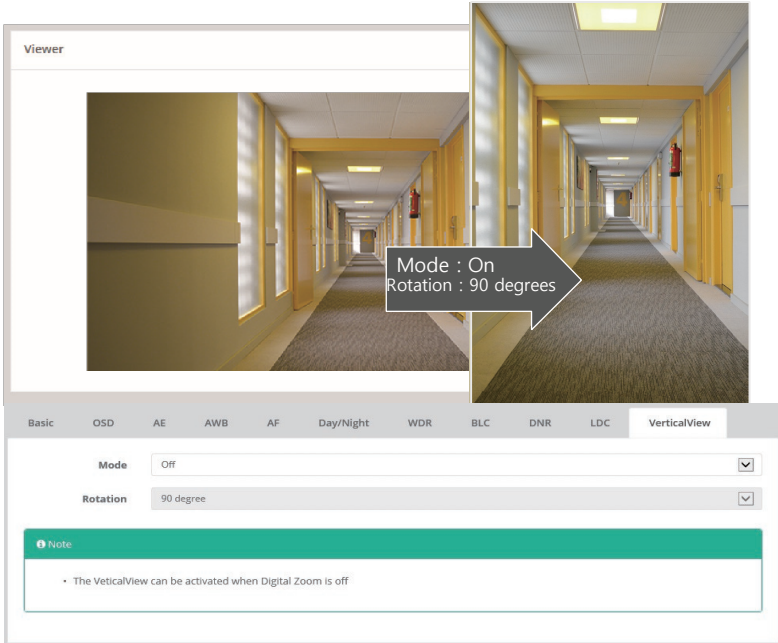


● **LDC** (Lens Distortion Compensation)

> **MODE**: ON compensates for the barrel distortion caused by wide angles. >
LEVEL: Determines the amount of the compensation. Higher values expand the shrunken areas in the corners.



● **Vertical View**



> **MODE**: ON displays the video in vertical view format, 16:9->9:16 for narrow streets, corridors or hallways.

> **ROTATION**: Determines the orientation to rotate.


3-2-5. Privacy Mask

Mark **ENABLE** checkbox to activate the privacy masks.

> **COLOR**: Select the color to mask at each privacy area.

> **NAME**: Input the individual name for each privacy mask.

Privacy Mask C A X



Enable

Color

Name

ID	Name	Delete
1	New	Delete

Note

- The position of mask can be changed only if digital zoom and corridor function are inactive

To set the privacy mask (up to 8 privacy areas):

1) Mark ENABLE checkbox.

2) In the video window, place the mouse cursor anywhere and right click the mouse button. A mini pop up appears.

Select CREATE MASK AREA / DELETE MASK AREA.

3) In the video window, place the mouse cursor where you would like to create a mask. Left Click the left mouse button to create (or delete) a mask. The mask window can be moved or resized with the mouse.

4) Enter the name in the list and then click SAVE.

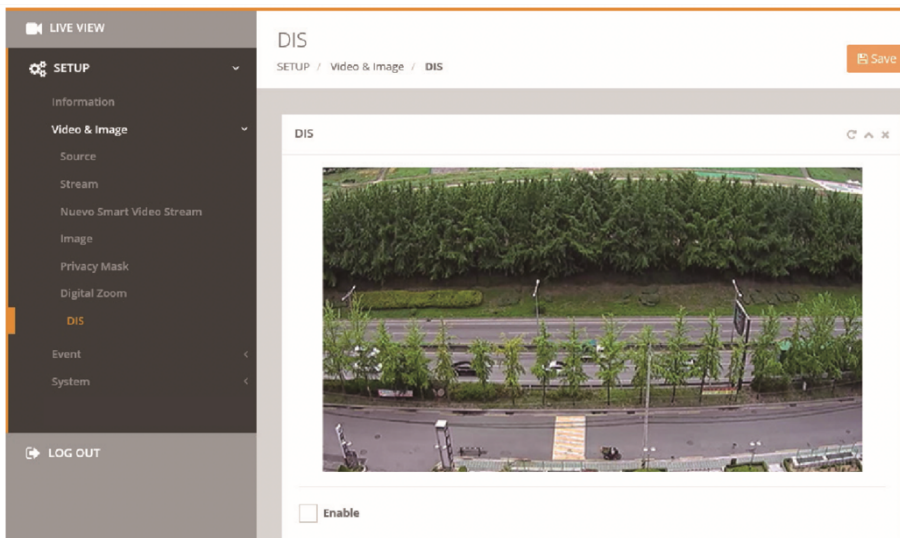
3-2-6. Digital Zoom

> Mark ENABLE checkbox to activate the digital zoom.

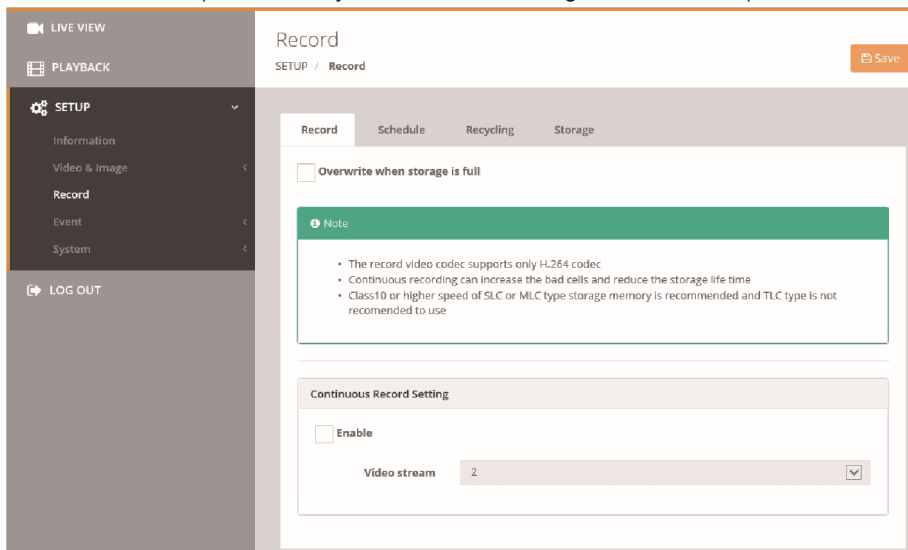
> LEVEL selects the fixed digital zoom ratio. X1.0 is not digital zoomed.

3-2-7. DIS (Digital Image Stabilization)

> Mark **ENABLE** checkbox to reduce and stabilize the shaky image from a camera installed in a vibrating area. FOV (Field of view) will be reduced if set to **ENABLE** .



3-3. Record (Available only with the built-in Storage feature version)

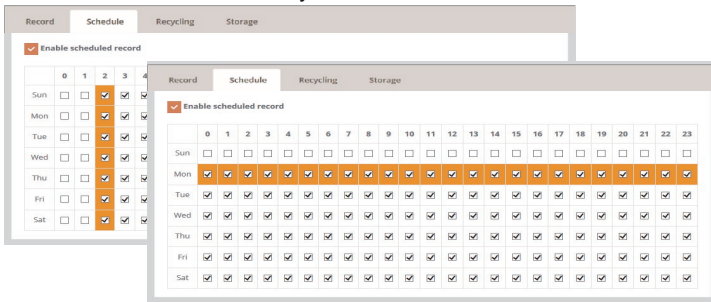


3-3-1. Record

- > Mark **OVERWRITE WHEN STORAGE IS FULL** checkbox to allow the storage to be overwritten.
- > **CONTINUOUS RECORD SETTING**: Mark **ENABLE** checkbox to activate continuous recording into the storage.
- > **VIDEO STREAM**: Selects the stream to be recorded into the storage.
 - [**NOTE**] SD, SDHC or SDXC memory can be used as a storage device. Refer to manual for the suitable memory size from standard SD or micro-SD.

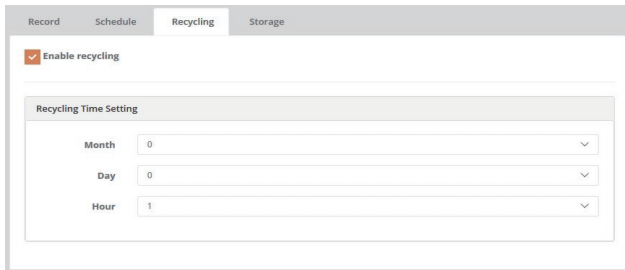
3-3-2. Schedule

- > Mark ENABLE SCHEDULED RECORD checkbox to activate the scheduled recording into the storage.
- > Mark each box in time and day matrix when to be recorded.
It can be selected a time zone or day of the week.



3-3-3. Recycling

- > Mark ENABLE RECYCLING checkbox to delete recorded video data in storage when certain time is passed. For example, if Recycling Time is set to 2 Months 1 Day 0 Hour, all the video data that passed 2 Months 1Day 0 Hour will be deleted.
- > Recycling Time Setting: Set the storage period of recorded video data
 - Month: Set the Month of storage period from 0 to 12 Months.
 - Day: Set the Day of storage period from 0 to 30 days.
 - Hour: Set the Hour of storage period from 0 to 23 hours.



3-3-4. Storage

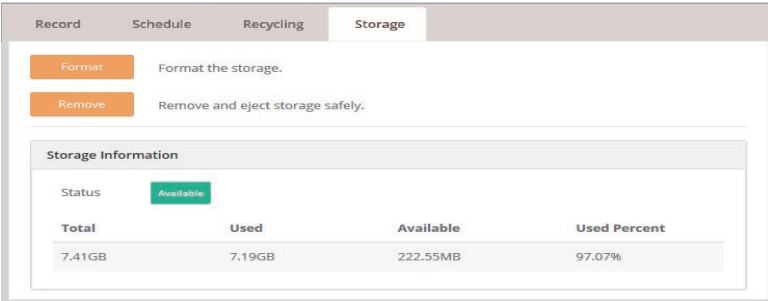
> **FORMAT:** Formats the storage. Backup the data before formatting the storage if necessary.

> **REMOVE:** Helps removing the storage safely.

[NOTE]

Common Internet File System (CIFS) is a remote file access protocol that forms the basis for Windows file sharing, network printing, and various other network services. CIFS requires a large number of request/response transactions, and its performance degrades significantly over high-latency WAN links such as the Internet.

Network File System (NFS) is a network file system protocol, allowing a user on a client computer to access files over a network in a manner similar to how local storage is accessed. NFS, like many other protocols, builds on the Open Network Computing Remote Procedure Call (ONC RPC) system.



The screenshot shows a user interface for storage management. At the top, there are four tabs: Record, Schedule, Recycling, and Storage. The Storage tab is active. Below the tabs, there are two buttons: 'Format' and 'Remove'. The 'Format' button is orange and has the text 'Format the storage.' next to it. The 'Remove' button is also orange and has the text 'Remove and eject storage safely.' next to it. Below these buttons is a section titled 'Storage Information'. This section contains a table with the following data:

Total	Used	Available	Used Percent
7.41GB	7.19GB	222.55MB	97.07%

3-4. Event

3-4-1. Triggers

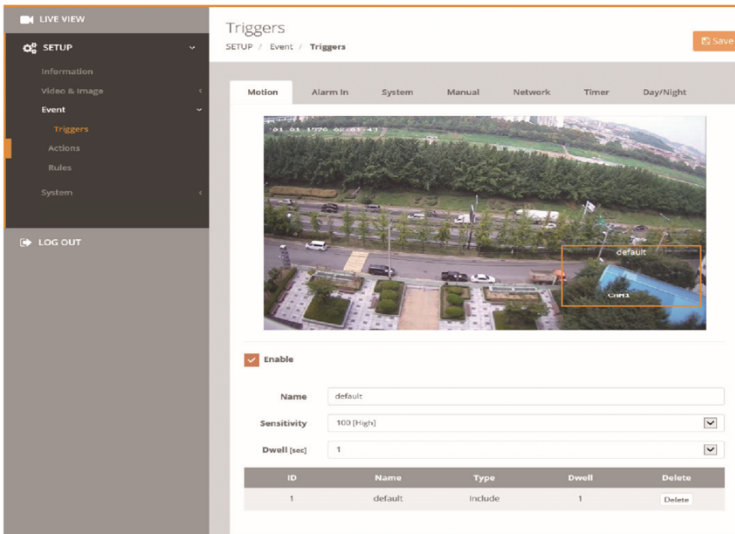
EVENT TRIGGERS menu defines and sets the parameters for the various event sources.

[Important NOTE]

Once the event is generated, the camera can record the video into the storage, output the alarm signal, email the event, send the video clip to FTP, boost the video frame rate, move to PTZ preset or send the event to the notification server. These post processes require the settings at SETUP>EVENT>ACTIONS first and then SETUP>EVENT>RULES.

• Motion

- > Mark ENABLE checkbox to create & activate up to 4 motion areas.
- > NAME: Input the individual name for each motion detection area.
- > SENSITIVITY: Sets the motion detection sensitivity for all areas. Higher values increase sensitivity
- > DWELL: Sets the time for the motion event once detected.



To set the motion detection area (up to 4 include-types and 4 exclude-types):

- 1) Mark ENABLE checkbox.
- 2) In the video window, place the mouse cursor where you would like to make a detection window and click & drag the right button. The following window is then generated.
 - INCLUDE-Type defines areas where motion should be detected.
 - EXCLUDE-Type defines areas within a window that should be ignored.
- 3) Enter a name and then click SAVE.

[NOTE] Motion detection and VCA cannot be used simultaneously. If either one is enabled, the other one is disabled automatically.

• VCA (Video Contents Analysis)

Triggers
SETUP / Event / Triggers Save

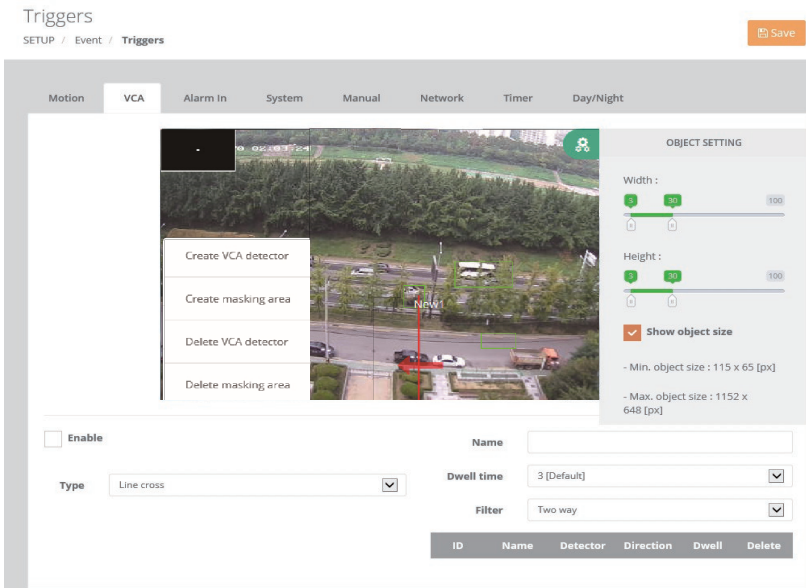
Motion **VCA** Alarm In System Manual Network Timer Day/Night

Create VCA detector
Create masking area
Delete VCA detector
Delete masking area

OBJECT SETTING
Width : 3 100
Height : 3 100
 Show object size
- Min. object size : 115 x 65 [px]
- Max. object size : 1152 x 648 [px]

Enable
Type: Line cross
Name:
Dwell time: 3 [Default]
Filter: Two way

ID	Name	Detector	Direction	Dwell	Delete
----	------	----------	-----------	-------	--------



> Mark ENABLE checkbox to create & activate up to 3 VCAs (Line Cross, Field intrusion & Appear/Disappear)

> NAME: Input the individual name for each VCA.

To set the VCA detection area (up to total 3 VCAs including Line Cross, Field intrusion & Appear/Disappear):

1) Mark ENABLE checkbox.

2) Right click the mouse button on the video viewer and a popup menu appears.

- CREATE VCA DETECTOR: Select to create the VCA type, up to 3 VCAs.
 - CREATE MASKING AREA: Select to create the masking area which will exclude the detection.
 - DELETE VCA DETECTOR: Deletes the existing VCA window. VCAs can be deleted at the list also.
 - DELETE MASKING AREA: Deletes the existing VCA mask window.
- 3) Enter a name and then click SAVE.

- **[NOTE]** Motion detection and VCA cannot be used simultaneously. If either one is enabled, the other one is disabled automatically.

> **OBJECT SETTING:**

Click the green rotating icon on the top-right of the video window and OBJECT SETTING menu will appear. To hide it, click the icon again.

Mark SHOW OBJECT SIZE checkbox and a black rectangle at the top-left corner of the video window will appear. The black rectangle is the reference size which shows the minimum (white box) & maximum (black box) detecting size of the object. To adjust the minimum (or maximum) object size to be detected, adjust the left (right) ends of the slide bars, WIDTH & HEIGHT, by moving them with clicking and holding the left mouse button. Objects can be detected only for the object size set between minimum and maximum, that is, an object which is smaller than minimum or greater than maximum can't be detected. Too small value in MINIMUM or too big value in MAXIMUM for the object size might increase the erroneous detections.

- WIDTH: Sets the minimum/maximum sizes in width of the objects to be detected.
- HEIGHT: Sets the minimum/maximum size in height of the objects to be detected.
- SHOW OBJECT SIZE: Shows the reference size of detection object.

● **Alarm In**

- > Mark ENABLE checkbox to input the alarm signal from the alarm-in port.
- > TYPE: Lets the camera know the type of alarm contacts, NO=Normally Open & NC=Normally Close.
- > DWELL TIME: Sets the time for the alarm once detected by the alarm-in.

The screenshot shows a configuration menu with tabs for Motion, VCA, Alarm In, System, Manual, Network, Timer, and Day/Night. The 'Alarm In' tab is selected. It contains an 'Enable' checkbox which is checked. Below it, there are two dropdown menus: 'Type' set to 'NO' and 'Dwell time [sec]' set to '5'.

- **System**

Used to trigger the event when the camera gets rebooted.

> Mark ENABLE checkbox to activate the system event.

> DWELL TIME: Sets the time for the alarm once the system event is detected.



The screenshot shows a configuration menu with tabs for Motion, VCA, Alarm In, System, Manual, Network, Timer, and Day/Night. The 'System' tab is selected. Below the tabs, there is an 'Enable' checkbox which is currently unchecked. Below that is a 'Dwell time [sec]' field with a dropdown menu showing the value '3'.

- **Manual**

Enables to user to set the event trigger optionally.

> Mark ENABLE checkbox to enable the manual trigger icons on the live view menu.

> DWELL TIME: Sets the time for the event once triggered by the manual trigger on the live view menu.

Motion VCA Alarm In System **Manual** Network Timer Day/Night

Manual Trigger1

Enable

Dwell time [sec] 3

Manual Trigger2

Enable

Dwell time [sec] 3

Manual Trigger3

Enable

Dwell time [sec] 3

Manual Trigger4

Enable

Dwell time [sec] 3

• **Network**

Used to trigger the event when the network connection fails.

> Mark ENABLE checkbox to activate the network event.

> DWELL TIME: Sets the time for the event once triggered by the network connection event.

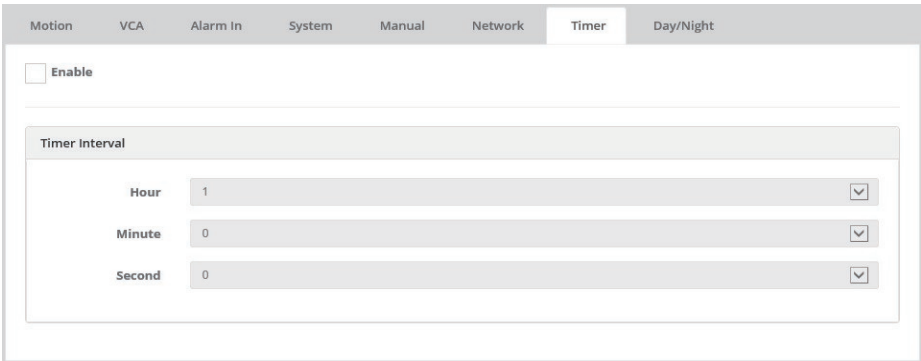
Motion VCA Alarm In System Manual **Network** Timer Day/Night

Enable

Dwell time [sec] 3

• **Timer**

Mark ENABLE checkbox to trigger the event as defined Timer Interval.
(Hour/Minute/Second)

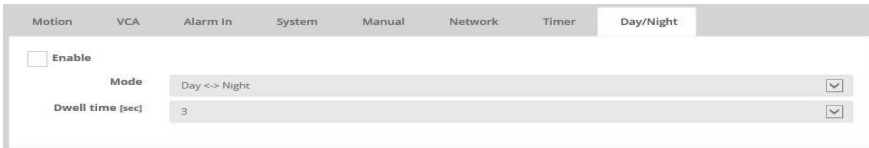


• Day / Night

Mark ENABLE checkbox to trigger the event when Day/Night is switched.

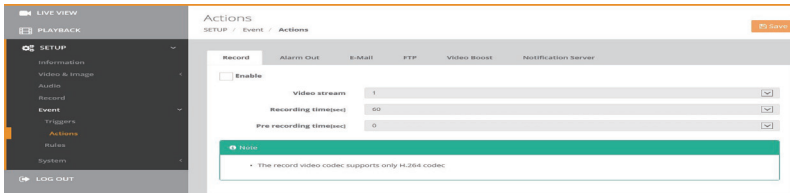
> MODE: Select the mode, Day->Night or Night->Day.

> DWELL TIME: Sets the interval duration for the alarm event.



3-4-2. Actions

EVENT ACTIONS menu defines and sets the parameters for how to treat the various event sources.

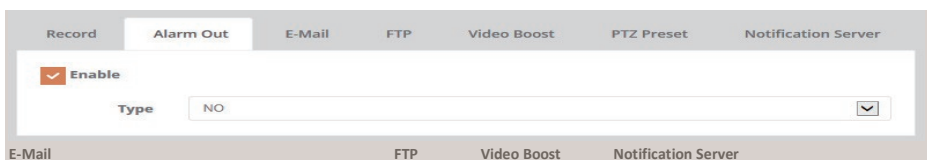


- **Record** (Available only with the built-in storage feature version)

- > Mark ENABLE checkbox to enable recording into the built-in storage when the event occurs.
- > VIDEO STREAM: Selects the stream to be recorded when the event occurs.
- > RECORDING TIME: Sets the length of time to record after the event.
- > PRE-RECORDING TIME: Sets the length of time to record before the event.

- **Alarm Out**

- > Mark ENABLE checkbox to output the alarm signal to the alarm-out port.
- > TYPE: Selects the type of alarm contacts, NO=Normally Open & NC=Normally Closed. Alarm-out port is not an actual relay contact but outputs 0V for Low level & 3.3V for High level with the current driving capacity of 50mA max.



- **E-mail**

The camera can send email messages generated by the events via SMTP (Simple Mail Transfer Protocol).

- > Mark ENABLE checkbox to enable emailing.
 - SENDER: Enter the email address as the sender. Any virtual email address like sample@sample.com can be used if the recipient can recognize it from the camera.
 - INTERVAL: Sets the interval for emailing after the events occur.
 - AGGREGATE EVENTS: Sets the number of events which will be sent in an email.
- > Mark USE MAIL SERVER checkbox to set the mailing server.
 - MAIL SERVER: Enter the host name or IP addresses for the mail servers. If a host name is used, a valid DNS server must be specified in the Network-Basic settings.
 - PORT: Enter the port number of the mail server.

> Mark ENABLE USE(SMTP) AUTHENTICATION checkbox if the mail server requires authentication.

- USERNAME: Enter the username as provided by the network administrator.
- PASSWORD: Enter the password as provided by the network administrator.
- LOGIN METHOD: Select one for SMTP authentication method allowed.

Record Alarm Out **E-Mail** FTP Video Boost PTZ Preset Notification Server

Enable

Sender

Interval [1... 86400] sec

Aggregate events [1... 100] EA

Use mail server

Mail server

Port

Enable use(SMTP) authentication

User name

Password

Login method

Video Boost Notification Server **FTP**

Receiver List

Receiver1	<input type="text"/>	Receiver2	<input type="text"/>
Receiver3	<input type="text"/>	Receiver4	<input type="text"/>
Receiver5	<input type="text"/>	Receiver6	<input type="text"/>
Receiver7	<input type="text"/>	Receiver8	<input type="text"/>

E-Mail(SMTP) Test

Receiver

[NOTE]

If a PLAIN or LOGIN mechanism is negotiated, the camera sends the username and password to the SMTP server. The LOGIN mechanism is supported by Microsoft, as well as some other clients. Most other clients support the PLAIN authentication mechanism. Since the vast majority of email clients support only PLAIN or LOGIN, mail server administrators will probably want to consider using STARTTLS to provide an encryption "tunnel" between the client and server to protect the username and password.

> RECEIVER LIST: Enter the recipient's email addresses as the receivers. > E-MAIL(SMTP) TEST: Enter the recipient's email address in RECEIVER and click the TEST button to test if the mail servers are functioning and the email address is valid.

• FTP

FTP notification will save files on the specified FTP server.

> Mark ENABLE checkbox to set the FTP server.

- SERVER: Enter the IP address or host name of the specific FTP server.
- PASSIVE MODE: Under normal circumstances the network camera simply requests the target FTP server to open the data connection. Checking this box issues a PASV command to the FTP server and establishes a passive FTP connection; whereby the network camera actively initiates both the FTP control and data connections to the target server. This is normally desirable if there is a firewall between the network camera and the target FTP server
- PORT: Enter the port number used by the FTP server. The port number can be adjusted in the range 1-65535. The default setting is 21.
- REMOTE DIRECTORY: Specify the path to the directory where the uploaded images will be stored. If this directory doesn't already exist on the FTP server, an error message shows up when uploading.
- USERNAME: Enter the username provided by the network administrator.
- ANONYMOUS LOGIN: Mark ANONYMOUS LOGIN checkbox if anyone is permitted to access the FTP server.
- PASSWORD: Enter the password provided by the network administrator.

Record Alarm Out E-Mail **FTP** Video Boost PTZ Preset Notification Server

Enable

Server Passive mode

Port

Remote directory

User name Anonymous login

Password

JPEG Setting

Pre-event [sec] [fps]

Post-event [sec] [fps]

Prefix file name

Additional suffix None Date&Time Sequence number

Video Boost Notification Server

> **JPEG SETTING:** Configures JPEG for the FTP server.

- **PRE-EVENT:** Sets the time & the frame rate for JPEG images to be sent to FTP before the event.
- **POST-EVENT:** Sets the time & the frame rate for JPEG images to be sent to FTP after the event.
- **PREFIX FILE NAME:** Input the prefix for JPEG image file names to be sent to FTP.
- **ADDITIONAL SUFFIX:** Selects the suffix for JPEG image file names to be added after the file name. Selecting NONE will overwrite the previous file and thus DATE & TIME is preferable.

● **Video Boost**

Sets the frame rate and bitrate for H.264 stream and the quality for JPEG stream at EVENT STATE when the event occurs.

[NOTE] Video boost is disabled during SD recording.

Record	Alarm Out	E-Mail	FTP	Video Boost	Notification
Video Boost 1					
<input type="checkbox"/> Enable					
	Normal State		Event State		
Frame rate	25/30		30		
Bitrate	4000/8000		8000		
Video Boost 2					
<input type="checkbox"/> Enable					
	Normal State		Event State		
Frame rate	25/30		30		
Bitrate	1000		1000		
Video Boost 3					
<input type="checkbox"/> Enable					
	Normal State		Event State		
Frame rate	25/30		30		
Quality	60		60		
Video Boost 4					
<input type="checkbox"/> Enable					

• Notification Server

> Mark ENABLE checkbox to notify the event to the notification server when it occurs.

- TYPE: Selects the network protocol to connect the notification server.
- SERVER URL: Input the server URL of the notification sever.
- USERNAME: Enter the username (default : admin)
- PASSWORD: Enter the password (default : admin)

> NOTIFICATION TEST: Input the test message and click TEST button.

[NOTE]

There could be several event actions like FTP, e-mail etc. For detailed URL per event actions, refer to API documents. In case Notification server is set as event rule, the same URL from Notification Test should be entered in RULE>ADD>NOTIFICATION SERVER.

Record Alarm Out E-Mail FTP Video Boost PTZ Preset **Notification Server**

Enable

Type HTTP

Server URL http://

Username

Password

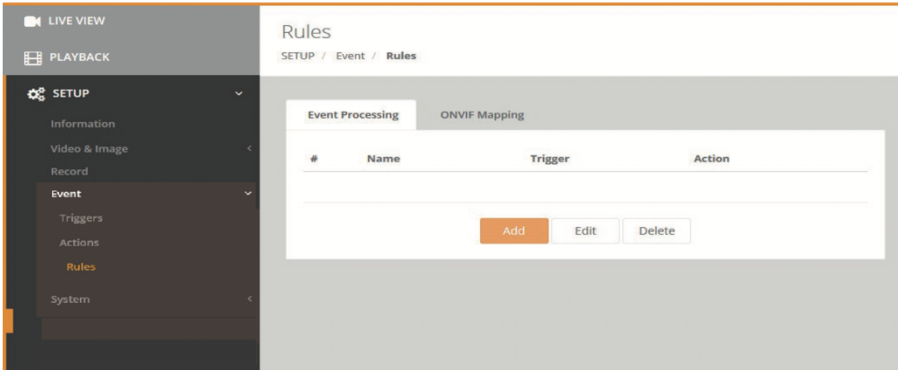
Notification Test

Message

Record Alarm Out E-Mail FTP Video Boost

3-4-3. Rules

EVENT RULES menu defines and sets the parameters for what to do for the various event sources.



Event process lists have to be generated and can be edited for what to do when the event occurs. List shows the rule name, trigger source and type of action for each event process. To edit or delete the rule in the list, click the listed line and then click EDIT or DELETE button.

Adding & Editing RULES

> NAME: Input the rule name which is descriptive to the rule.

EVENT TRIGGER

> TYPE: Select the type of the event source.

> AND: Mark ENABLE checkbox to trigger the event when two TYPES of event occur within the defined dwell time of the individual events.

EVENT ACTION

> ALARM OUT: Mark the checkbox to activate the alarm-out port, if available, as set in SETUP>EVENT> ACTIONS>ALARM OUT when the selected event occurs.

> E-MAIL:

- Input the email addresses to be emailed.
- Mark the checkbox for the email addresses to be emailed as set in SETUP>EVENT> ACTIONS>E-MAIL when the selected event occurs
- SUBJECT of email is a required field and ADDITIONAL INFO is optional to input.

Add Rule

Name

Event Trigger

Type AND

Event Action

Alarm out

E-Mail

Address1 Address2

Address3 Address4

Address5 Address6

Address7 Address8

Subject

Additional info

Notification Server

Message

FTP

Video Boost Video1 Video2 Video3 Video4

Record

> NOTIFICATION SERVER: Mark the checkbox to use the notification server as set in SETUP>EVENT> ACTIONS> NOTIFICATION SERVER when the selected event occurs.

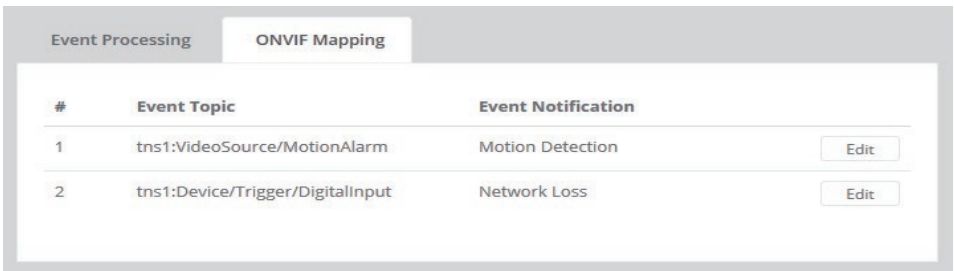
- MESSAGE: Input the message to be sent to the notification server.

- > FTP: Mark the checkbox to use FTP as set in SETUP>EVENT>ACTIONS>FTP when the selected event occurs.
- > VIDEO BOOST: Select the video stream to be boosted up.
 [**NOTE**] Video boost is disabled if RECORD is enabled.
- > RECORD: (Available only with the built-in Storage feature version)
 Mark the checkbox to record the image into the built-in storage, if available, as set in SETUP>EVENT>ACTIONS>RECORD when the selected event occurs.

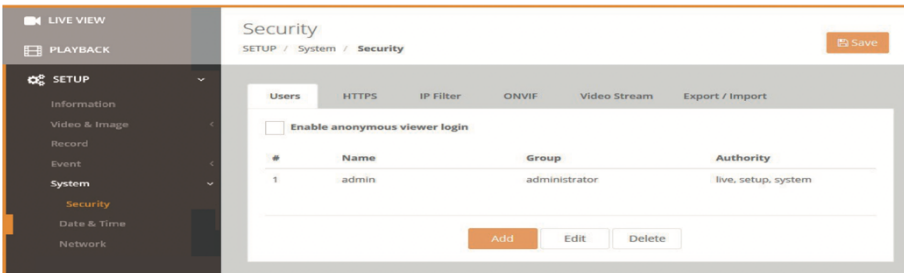
● **ONVIF Mapping**

Onvif mapping is provided to map the various events generated by this camera, but not defined by Onvif, to assign them to Onvif events for the Onvif compatible VMS's or NVRs. Two mappings for Motion and Alarm In are provided to be mapped and can be used by editing them.

For example, any of the selected items in tns1: Video Source/Motion Alarm will notify the Onvif compatible VMS's or NVRs as Motion Alarm. In the same way, any of the selected items in tns1: Device/Trigger/Digital Input will notify the Onvif compatible VMS's or NVRs as Alarm IN.



3-5. System

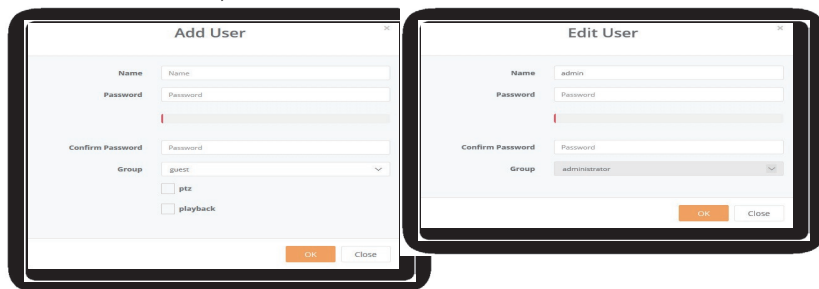


3-5-1. Security

• **Users**

Manages the user accounts by names, groups and authorities.

> USERS: Can be added, edited or deleted.



• **HTTPS**

Selects the CONNECTION MODE.



> HTTP: Transfers data without encryption. Supports a URL that only starts with "HTTP: "

> HTTPS: Transfer data with encryption by Hypertext Transfer Protocol over SSL protocol. Supports a URL that only starts with "HTTPS: "

> HTTP&HTTPS: Supports both HTTP and HTTPS protocols.

> Redirect HTTP to HTTPS: Enables to redirect HTTP to HTTPS.

[NOTE]

To ensure security on the internet, all web browsers provide several security levels that can be adjusted for sites that use SSL (Secure Socket Layer) technology to transfer data. SSL encrypts communications, making it difficult for unauthorized users to intercept and view usernames and passwords. SSL requires signed certificates to determine if the web browser accessing the camera has the required authentication. This camera can generate a self-signed certificate using Open SSL.

• **IP Filter**

> Mark ENABLE IP ADRESS FILTERING to filter the IP addresses.

> Mark ON/OFF for the IP address range to use IP filtering.

> Select ALLOW or DENY to permit or filter out the IP address range.

> Input the IP address ranges with START IP and END IP.

Users HTTPS **IP Filter** ONVIF Video Stream Export / Import

Enable IP address filtering

On/Off	Priority	Policy	Start IP	End IP
<input type="checkbox"/>	1	ALLOW <input type="checkbox"/>	0 . 0 . 0 . 0	0 . 0 . 0 . 0
<input type="checkbox"/>	2	ALLOW <input type="checkbox"/>	0 . 0 . 0 . 0	0 . 0 . 0 . 0
<input type="checkbox"/>	3	ALLOW <input type="checkbox"/>	0 . 0 . 0 . 0	0 . 0 . 0 . 0
<input type="checkbox"/>	4	ALLOW <input type="checkbox"/>	0 . 0 . 0 . 0	0 . 0 . 0 . 0
<input type="checkbox"/>	5	ALLOW <input type="checkbox"/>	0 . 0 . 0 . 0	0 . 0 . 0 . 0

[NOTE] To add a subnet of network addresses, these must be added in CIDR (Classless Inter-Domain Routing) notation. For example: entering 192.168.1.0/24 will add all the addresses in the range 192.168.1.1 to 192.168.1.254.

Contact your network administrator for more detail. If the network camera is accessed via a proxy server, the IP address for the proxy server must be added as an allowed address.

● **ONVIF**

> Mark ENABLE WS SECURITY to provide the ONVIF compliance.

● **Video Stream**

> ENABLE RTSP AUTHORIZATION : If marked, the authorization is required when the stream 1/2/3 is accessed using RTSP.

> ENABLE JPEG SNAPSHOT AUTHORIZATION : If marked, the authorization is required when the Jpeg snapshot image is requested.

> ENABLE JPEG/HTTP PUSH AUTHORIZATION : If marked, the authorization is required when the Jpeg/HTTP PUSH image is requested.

Users HTTPS IP Filter ONVIF **Video Stream** Export / Import

Enable RTSP authorization

Enable JPEG Snapshot authorization

Enable JPEG/HTTP PUSH authorization

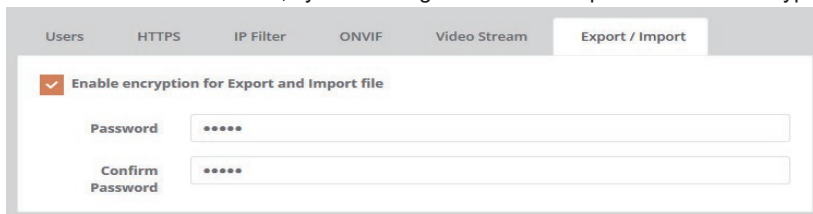
- **Export / Import**

> Mark ENABLE ENCRPTION FOR EXPORT AND IMPORT FILE :

System configuration file, which is exported at SETUP>SYSTEM>MAINTENANCE>SETUP EXPORT, is encrypted with the password herein.

[**NOTE**] THIS PASSWORD MUST BE USED when System configuration file is imported by other cameras if the file was exported with the password.

> If the checkbox is not marked, system configuration file is exported without encryption.



3-5-2. Date & Time

- **Current Time**

Shows the current date and time. Clicking SAVE tap updates and saves the date and time with the selected time in NEW TIME.

- **New Time**

Select one of the following server times.

> SYNCHRONIZE WITH COMPUTER TIME : Obtains the time from the computer.

> SET MANUALLY : Sets the date and time manually.

> SYNCHRONIZE WITH NTP SERVER : Obtains the time from the assigned NTP server at every hour in INTERVAL. The NTP server's IP address or host name has to be specified in the time server.

- **Time Zone**

Select the time zone to be referenced to the NTP server where the camera is installed. Mark AUTOMATICALLY ADJUST FOR DAYLIGHT SAVING CHANGES check box to update the time automatically with daylight savings.

• **Date & Time Display**

Select the date & time formats to be displayed.

The screenshot shows a web interface for configuring the Date & Time. On the left is a sidebar menu with options: LIVE VIEW, PLAYBACK, and SETUP. Under SETUP, there are sub-menus: Information, Video & Image, Record, Event, System (expanded), Security, Date & Time (highlighted), Network, Language, Maintenance, and Logs & Report. At the bottom of the sidebar is a Log out button. The main content area is titled 'Date & Time' and includes a breadcrumb 'SETUP / System / Date & Time' and a Save button. The configuration is divided into three sections: 1. 'Current Time' with fields for Date (01-01-1970) and Time (23:57:25). 2. 'New Time' with three options: 'Synchronize with computer time' (checked), 'Set manually' (radio button), and 'Synchronize with NTP server' (radio button). The 'Set manually' option has Date (13-01-2016) and Time (17:04:23) fields. The 'Synchronize with NTP server' option has Date (01-01-1970), Time (23:57:10), a Server field (0.pool.ntp.org), and an Interval (Hour) dropdown set to 12. 3. 'Time Zone' section at the bottom.

3-5-3. Network

• **TCP/IP**

> IPv4 ADDRESS :

- OBTAIN IP ADDRESS VIA DHCP : Gets the IP address assigned by the DHCP (Dynamic Host Configuration Protocol) server.
- STATUS : 'Allocated' shows that the IP address is obtained from the DHCP.
- IP ADDRESS, SUBNET MASK, GATEWAY : Displays the current IP address which is obtained from the DHCP.
- USE THE FOLLOWING ADDRESS : Requires the input of a static IP address manually.

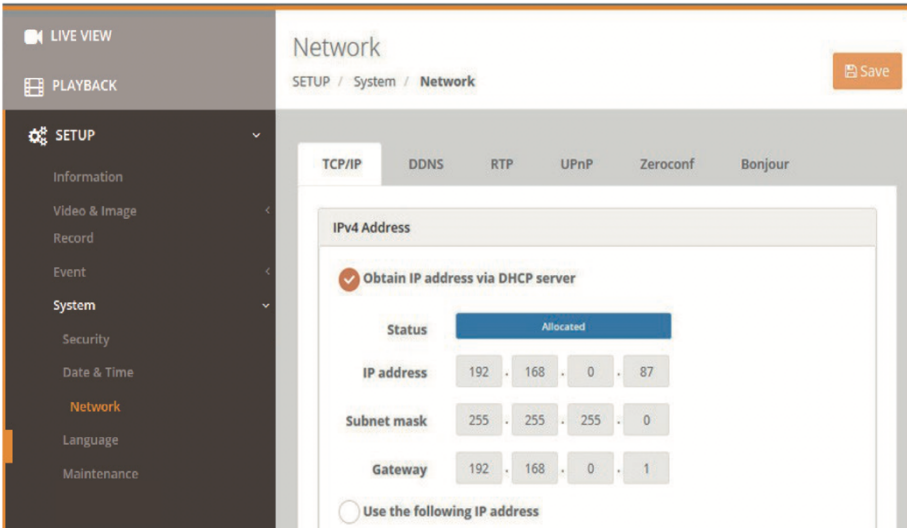
> IPv6 ADDRESS : Mark ENABLE check box to use IPv6 address and click SAVE button, then new IPv6 address will be obtained.

> DNS :

- OBTAIN DNS ADDRESS VIA DHCP SERVER : Obtains the DNS address automatically assigned by DHCP server.

- USE THE FOLLOWING DNS ADDRESS : Requires manual input as per below.
 - DOMAIN NAME : Enter the domain for the host name
 - PRIMARY DNS SERVER : Enter the IP address of the primary DNS server.
 - SECONDARY DNS SERVER : Enter the IP address of the secondary DNS server.
- > HOSTNAME : This camera can be accessed using a host name instead of an IP address.

The host's name is usually the same as the assigned DNS name.



IPv6 Address

Enable

IPv6 address: fe80::211:22ff:fe33:4455/64

DNS

Obtain DNS address via DHCP server
 Use the following DNS address

Domain name: _____

Primary DNS: 168 . 126 . 63 . 1

Secondary DNS: 0 . 0 . 0 . 0

Hostname

Hostname: RW5-H4MIPAF39-IR001122334455

Port

HTTP port: 80

HTTPS port: 443

RTSP port: 554

Ethernet Property

Speed & Duplex: Auto

> PORT :

- HTTP PORT : Use a port number in the range 1024-65535. Default is 80.
- HTTPS PORT : Use a port number in the range 1024-65535. Default is 443.

- **RTSP PORT** : Use a port number in the range 1024-65535. Default is 554.

- **DDNS** (Dynamic Domain Naming Service)

- > Mark **ENABLE** checkbox to use DDNS.
- > **DDNS server** : Select the DDNS server to use.
- > Input **REGISTERED HOST** name, **USERNAME**, **PASSWORD** and **INTERVAL**.

[NOTE]

If the camera has not been registered to the DDNS host previously, the registration is required. If the camera is already registered but its IP address changes, the DDNS must be updated with this new IP address. It will update at a regular interval.

The screenshot shows a web interface with several tabs: TCP/IP, DDNS, RTP, UPnP, Zeroconf, and Bonjour. The DDNS tab is selected. Below the tabs, there is a form with the following elements:

- An **Enable** checkbox, which is currently unchecked.
- A **DDNS server** dropdown menu with the value `dyndns.org` selected.
- Input fields for **Registered host**, **User name**, **Password**, and **Confirm password**.
- An **Interval** dropdown menu with the value `1 hour` selected.

- **RTP**

> **START PORT & END PORT** : RTP port range defines the range of the ports from which ports of the video are automatically selected. This feature is useful if the camera is connected to a NAT router with manually configured port mapping. Limit the range of the ports permitted for RTP unicast/multicast by entering **START PORT** and **END PORT**.

> **MULTICAST - STREAM1, 2, 3** : Only IP addresses within certain ranges can be used for multicasting. The camera has been pre-configured with addresses from these ranges and does not normally need to be reconfigured. If an address needs to be changed, please contact the network administrator.

- Mark ENABLE checkbox to use the multicast for each stream.
- DESTINATION IP: Type IP address in the range. Multicast addresses are allocated according to these IANA policies.
- PORT : Use the port number in the range 1024-65532. Default is 4000.
- TTL : When IP packets or data fails to be delivered to the destination within TTL (Time to Live), this setting tells the network router when to discard the packet. The value is usually measured in 'hops', i.e., the number of network routers that can be passed before the packet arrives at its destination or is dropped.

The screenshot displays a configuration window with tabs for TCP/IP, DDNS, RTP, UPnP, Zeroconf, and Bonjour. The RTP tab is active. It features input fields for 'Start port' (30000) and 'End port' (30199). Below this, there are three sections for 'Multicast - Stream'. Each section includes an 'Enable' checkbox, a 'Destination IP' field (231.1.128.20), a 'Port' field (40000), and a 'TTL' field (1). Small text next to the fields provides additional context, such as 'Only even values are available' for ports and 'hops' for TTL.

• UPnP

UPnP is enabled by default so that the network camera can be automatically detected by operating systems and clients that support this protocol.

> FRIENDLY NAME : Enter the name up to 32 alphanumeric characters like Model Name-MAC address.

[NOTE]

UPnP must also be enabled on your Windows computer. To do this, open the Control Panel from the Start Menu and select Add/Rename programs. Select Add / Remove Windows Components and open the Networking Services section. Click Details and then select UPnP as the service to add.

TCP/IP DDNS RTP **UPnP** Zeroconf Bonjour

Enable

Friendly name

• **Zeroconf**

ZeroConf (Zero configuration) networking enables the network to establish automatically with the automatic assignment of numeric network addresses (zeroconf IP addresses) without requiring manual operator intervention or special configuration servers when the DHCP server is not available in the network.

- > Mark ENABLE to use ZeroConf networking.
- > ZeroConf ADDRESS : 169.254.xxx.xxx as default.

TCP/IP DDNS RTP UPnP **Zeroconf** Bonjour

Enable

Zeroconf address

• **Bonjour**

Bonjour is Apple's implementation of zero-configuration networking (zeroconf), a group of technologies that includes service discovery, address assignment, and hostname resolution.

TCP/IP DDNS RTP UPnP Zeroconf **Bonjour**

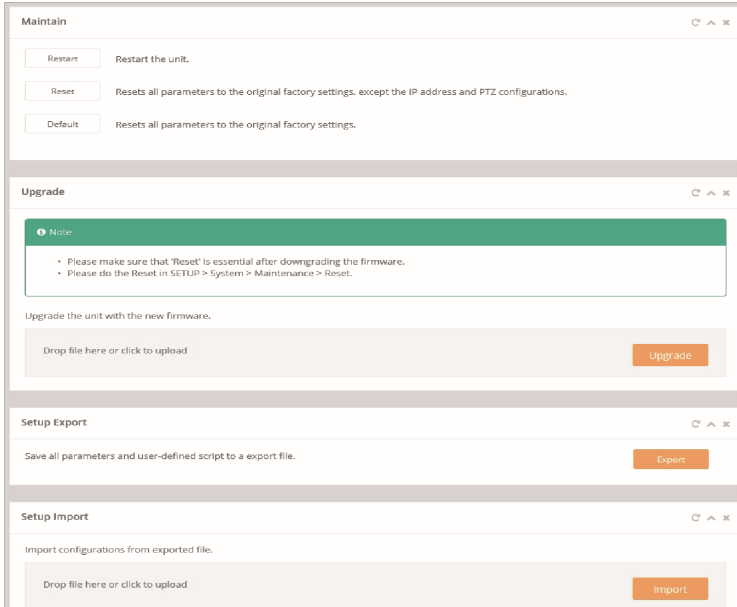
Enable

Friendly name

3-6-4. Language

Six languages are available to select from English, Deutsch (German), Français (French), 한국어 (Korean).

3-5-5. Maintenance



● **Maintain**

> **RESTART** : Restarts the camera without changing any settings.

> **RESET** : Restarts and loads the factory settings but does not change IP address and PTZ settings.

> **DEFAULT** : Loads and saves the factory defaults for all parameters including IP address and PTZ settings.

[CAUTION]

Do not disconnect the power or network cable during RESET or DEFAULT operations.

● **Upgrade**

Bring the firmware file to the drop box or click the drop box to browse for the firmware file, and then click the UPGRADE button.

[CAUTION] Do not disconnect the power or network cable during firmware UPGRADE.

● **Setup Export**

Current configurations for the camera can be saved as a file by clicking the EXPORT button.

3-5-6. Logs & Report

- Logs

The log file records the story into the unit since the system restarts.

> DATABASE CAPACITY: Shows the useable system memory space for Log file. >

SEARCH CONDITION: Allows you to search the log as per the type. E.g., System, Access, Event and Media, Start-End date and Start-End time.

> LOG LIST: Shows the logs as per the search.

- Logs Server

Mark ENABLE checkbox to receive log data from camera to server.

> TLS Encryption: Mark checkbox to encrypt the communication data.

> Type: Selects the network protocol to connect the server.

> Format: Selects the log protocol.

> Server address: Inputs the server address.

> Server port: Inputs the server port.

- Report

Provides overall information about the server status.

Troubleshooting

If you suspect a problem is being caused by incorrect configuration or some other minor problem, consult the troubleshooting guide below.

Upgrading the Firmware

Firmware is software that determines the functionality of the network camera. One of your first actions when troubleshooting a problem should be to check the current firmware. The latest version may contain a correction that fixes your particular problem. The current firmware version in your camera is displayed on the Basic Configuration or About. For the latest firmware of the camera, please contact with your product administrator.

Detailed instructions on how to perform the upgrade process are provided with each new release. See also the Maintenance / Upgrade for more information.

General Troubleshooting

The following list covers some of the problems that may be encountered and suggests how to remedy them:

Symptom	Guide
The camera cannot be accessed by some clients.	If using a proxy server, try disabling the proxy setting in your browser. Check all cabling and connectors.
The camera works locally, but not externally	Check if there are firewall settings that need to be adjusted. Check if there are router settings that need to be configured.
Poor or intermittent network connection.	If using a network switch, check that the port on that device uses the same setting for the network connection type (speed/duplex).
The camera cannot be accessed via a host name.	Check that the host name and DNS server settings are correct.
Not possible to log in.	When HTTPS is enabled, ensure that the correct protocol (HTTP or HTTPS) is used. When attempting to log in, you may need to manually type in http or https in the browser's address bar.
No image using Refresh and/or slow updating of images.	If images are very complex, try limiting the number of clients accessing the camera.

Images only shown in black & white.	Check the Video & Image setting.
Blurred images.	Refocus the camera.

Troubleshooting Cont'd...

Poor image quality.	Increased lighting can often improve image quality. Check that there is sufficient lighting at the monitored location. Check all image and lighting settings.
Rolling dark bands or flickering in image.	Try adjusting the Exposure Control setting under AE and AWB part.
H.265, H.264 not displayed in the client.	Check that the correct network interface is selected in the Video & Image/Stream.
Multicast H.265, H.264 not displayed in the client.	Check with your network administrator that the multicast addresses used by the camera are valid for your network. Check that the Enable multicast checkbox are enabled in the System/Network/RTP tab. Checks with your network administrator to see if there is a firewall preventing viewing.
Multicast H.265, H.264 only accessible by local clients.	Check if your router supports multicasting, or if the router settings between the client and the server need to be configured. The TTL value may need to be increased.
Color saturation is different in H.265, H.264 and Motion JPEG.	Modify the settings for your graphics adapter. Please see the adapter's documentation for more information.

DETAILED SPECIFICATIONS

VTD-MV8NZ213PN



Imaging Sensor	1/2.8" 8.46MP [4K] RGB Bayer Array CMOS Sony STARVIS® Sensor
Effective Pixels	3864(H) x 2192(V)
Sensitivity	Color : 0.15 Lux, B/W : 0.01 Lux
Scanning Mode	Progressive Scan
S/N Ratio	50dB
IR LEDs / Range	2 Hi Pwr 850nm IR LEDs / 100'
Lens	F=2.7~13.5mm F1.6, 4x Motorized Zoom Lens
Day/Night	ICR by Auto, Day, Night, External
Shutter Speed Control	Automatic: Min. 1/135,000 sec ~ Max.1/60 sec , Manual: Min. 1/10,000 sec ~ Max.1/10 sec
Gain Control	Automatic: ~ Max. 54dB / Manual: ~ Max. 54dB (def. 1.2dB)
Auto White Balance Mode	Automatic, Outdoor, Shade, Clear Sky, Fluorescent Light, Light Bulb, Flame, Manual
Digi Overlap (DOL) WDR	120dB Dynamic Range w/ DOL: Triple Scan Images @ 30/25fps
DNR	XD-DNR (2D-NR, 3D-NR)
Functions	HLC/BLC, Motion Detection, Privacy Mask, D-Zoom(-x8), Mirror/Flip, Sens-up(Slow shutter), Brightness, Contrast, Saturation, Sharpness, Hue, LDC, Vertical View (90°/270°)
Ingress Protection / Impact	IP68 / IK10
Housing	Aluminum Cast, Flush and Surface Mount, 3-Axis Gimbal, Double Sided Anti-Scratch Hard Coated Clear Bubble
Power Input	PoE(IEEE Std. 802.3af) , DC12V/AC24V
Pwr Consump. DC12V, 24VAC	570mA (IR Off) / 1080mA AC (IR On), 285mA (IR Off) / 540 DC (IR On)
Power Consumption (PoE)	8.5W
Video Compression	H.265+ (Smart), H.265, H.264+ (Smart), H.264 & MJPEG
Video Resolution	3840 x 2160 [4K], 3072 x 1728, 2560 x 1440,
Video Frame Rate	1920 x 1080 [Full HD], 1600 x 900, 1280 x 720 [HD]
Video Streaming	Up to 30 / 25fps @ 3840 x 2160p
FTP Uploading	MJPEG Still Image
Login Authority	Administrator, Operator, Guest
Security	Multi User Authority, IP Filter, HTTPS Video Stream, Import/Export
Network Time Sync.	Synchronize Computer/NTP Server, Manual
Software Reset	Built-In Web, ONVIF Compatible 3rd Party VMS
Auto Recovery	Back-up, Restore
Remote Upgrade	Using Web Browser
Protocol	TCP/IP, UDP, IPv4/v6, HTTP, HTTPS, FTP, UPnP, RTP, RTSP, RTCP, DHCP, ARP, Zeroconf
Client Software	Client Software Built-In Web, ONVIF Compatible 3rd Party VMS
SD Memory Card	Slot for 256GB MicroSD Memory Card (H.264 recording)
Alarm	2-way Alarm Input / Output
SDK Support	API, ONVIF Profile S Compliant
Installation, Operating Temp.	-4°F~122°F (-20°C ~ +50°C) / Humidity: 20~80%RH, -40°F~122°F (-40°C ~ +50°C) / Humidity: 20~80%RH
Dimensions	5.51" W x 4.69" H x 3.94" Diameter (140 x 119 x 100mm)
Weight	2.2lbs (1kg) without Surface Mount

DETAILED SPECIFICATIONS

VTC-IR8NZ213PN



Imaging Sensor	1/2.8" 8.46MP [4K] RGB Bayer Array CMOS Progressive Scan Sony STARVIS® Sensor*
Effective Pixels	3864(H) x 2192(V)
Sensitivity	Color : 0.15 Lux, B/W : 0.01 Lux
S/N Ratio	50dB
IR LEDs / Range	5 Hi Pwr 850nm IR LEDs / Up to 130'
Lens	F=2.7~13.5mm Motorized Vari-Focal Lens
Day/Night	ICR by Auto, Day, Night, External
Shutter Speed Control	Automatic: Min. 1/135,000 sec ~ Max.1/60 sec, Manual: Min. 1/10,000 sec ~ Max.1/10 sec
Gain Control	Automatic: ~ Max. 54dB / Manual: ~ Max. 54dB (def. 1.2dB)
Auto White Balance Mode	Automatic, Outdoor, Light bulb, Fluorescent light, Clear sky, Shade, Manual
Digi Overlap (DOL) WDR	120dB Dynamic Range w/ DOL: Triple Scan Images @ 30/25fps
DNR	XD-DNR (2D-NR, 3D-NR)
Functions	HLC/BLC, Motion Det., Privacy Mask, D-Zoom(×8), Mirror/Flip, Sens-up (Slow shutter), Brightness, Contrast, Saturation, Sharpness, Vertical View 90°/270°
Audio	N/A
Ingress Protection	IP68
Housing	Aluminum Cast, Dual Window, Cooling Fan & Optimized Heat Sink System, 1-Touch 3-Axis Locking Bracket & Junction Box
Power Source	PoE(IEEE Std. 802.3af) , DC12V/AC24V *Circuit protection against faulty connection in power polarity & Isolated loop problem
Power Consumption	570mA (IR Off) / 1080mA AC (IR On), 285mA (IR Off) / 540 DC (IR On) 8.5 Watts
Video Compression	H.265+ (Smart), H.265, H.264+ (Smart), H.264 & MJPEG
Video Resolution	3840 x 2160 [4K], 3072 x 1728, 2560 x 1440, 1920 x 1080 [Full HD], 1600 x 900, 1280 x 720 [HD]
Video Frame Rate	Up to 30fps @ 3840 x 2160p
Video Streaming	Simultaneous H.264/+ (Smart), H.265/+ (Smart), MJPEG (Multi Streaming) Independent Frame Rate and Bandwidth Cntrl, VBR/CBR
FTP Uploading	MJPEG Still Image
Login Authority	Administrator, Operator, Guest
Security	Multi User Authority, IP Filter, HTTPS Video Stream, Import/Export
Network Time Sync.	Synchronize Computer/NTP Server, Manual
Software Reset	Restart, Reset, Factory Default
Auto Recovery	Backup, Restore
Remote Upgrade	Using Web Browser
Protocol	TCP/IP, UDP, IPv4/v6, HTTP, HTTPS, FTP, UPnP, RTP, RTSP, RTCP, DHCP, ARP, Zeroconf
Client Software	Client Software Built-In Web, ONVIF Compatible 3rd Party VMS
SD Memory Card	Slot for 256GB Micro SD Memory Card (H.264 recording)
Alarm	2-Way Alarm
SDK Support	API, ONVIF Profile S/T Compliant
Installation / Operating Temp.	-4°F~122°F (-20°C ~ +50°C) / Humidity : 20%RH ~ 80%RH
Dimensions (W x H x L)	4.24 x 3.42 x 11.85" / 108mm x 130.5mm x 318.4mm
Weight	3.64lbs (1.65kg) with J-Box

LIMITED PRODUCT WARRANTY

This VITEK product carries a three (3) year limited warranty. VITEK warrants to the purchaser that products manufactured by VITEK are free of any rightful claim of infringement or the like, and when used in the manner intended, will be free of defects in materials and workmanship for a period of three (3) years, or as otherwise stated above, from the date of purchase by the end user. This warranty is nontransferable and extends only to the original buyer or end user customer of a VITEK Authorized Reseller.

The product must have been used only for its intended purpose, and not been subjected to damage by misuse, willful or accidental damage, caused by excessive voltage or lightning.

The product must not have been tampered with in any way or the guarantee will be considered null and void.

This guarantee does not affect your statutory rights.

Contact your local VITEK Reseller should servicing become necessary.

VITEK makes no warranty or guarantee whatsoever with respect to products sold or purchased through unauthorized sales channels. Warranty support is available only if product is purchased through a VITEK Authorized Reseller.