

VITEK VIRTUOSO IP CAMERA MANUAL

Virtuoso

VITEK[®]
INDUSTRIAL VIDEO PRODUCTS, INC.

VTD-MV8NZ311P



**4K
8MP**

VTC-IR8NZ4311P

PREMIUM 8MP IP CAMERAS

- 1/2.5" 8.29 MegaPixel [4K] Sony STARVIS[®] CMOS Sensor*
- 8 MegaPixel [4K] Network Camera (3840 x 2160 @ 30/25fps) with HTML5 Playback
- Cross Web Browsing (IE, Edge, Safari, Firefox, Chrome)
- Direct Integration with Leading Enterprise VMS Software
- Quad Streaming H.265, H.264 & MJPEG
- MicroSD Memory Card Slot (up to 128GB)
- ICR Dual Filter Switch
- 2-way Audio***, Alarm Input/Output
- F=3.6~11mm F1.5 Motorized Zoom Lens with Autofocus
- 120dB Dynamic Range with DOL (Digital OverLap) WDR
- Improved Noise Reduction with Enhanced XD-DNR
- LDC (Lens Distortion Compensation), VCA (Video Contents Analysis)
- Line Crossing, Field intrusion, Appear/Disappear, Smart Stream, ROI (Region of Interest)
- Motion Detection, Privacy Masking, Defog, D-Zoom(~10x), Mirror/Flip, Sens-up (Slow shutter), Hue, Contrast, Brightness / Saturation, Sharpness
- PoE(IEEE Std. 802.3af) and AC24V/DC12V
- IP-68, Built-in Fan and Optimized Cooling system
- Ultra Low Operating Temp. -40~122°F (Humid. 20~80%)



VTC-IR5NZ3212P

PREMIUM 5MP IP CAMERAS

- 1/2.8" 5.69 MegaPixel Sony STARVIS[®] CMOS Sensor*
- 5 MegaPixel Network Camera (2592 x 1944 @ 30/25fps)
- Cross Web Browsing (IE, Edge, Safari, Firefox, Chrome)
- Quad Streaming H.265, H.264 & MJPEG
- MicroSD Memory Card Slot (Supporting Local Recording up to 128GB)
- ICR Dual Filter Switch
- 2.7-12mm Motorized Zoom Lens with Autofocus *Except VTC-CB5N
- 120dB Dynamic Range with DOL (Digital OverLap) WDR @30/25fps
- Improved noise reduction with enhanced XD-DNR
- LDC (Lens Distortion Compensation), VCA (Video Content Analysis) Function
- Smart Stream, ROI (Region of Interest)
- Motion Detection, Privacy Masking, Defog, D-Zoom(~10x), Mirror/Flip, Sens-up (Slow Shutter), Hue, Contrast, Brightness / Saturation, Sharpness
- Circuit Protection Against Faulty Connection in Power Polarity
- Isolated Power Supply Protects Against Ground Loop Problem
- PoE(IEEE Std. 802.3af) and AC24V/DC12V
- Built-in Fan and Optimized Cooling system
- IP-67 Ingress Protection



VTD-MV5NZ212P



VTC-CB5N

*Lens not included

* Sony Starvis is a registered trademark of the Sony Corporation (an independently owned and operated company which has not endorsed or licensed this product.)

** Please research federal and local laws regarding audio surveillance

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LIMITED PRODUCT WARRANTY

VITEK products carry 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.



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Menu Control

Setup Menu table

Category	Menu	Configuration		
LIVE VIEW	Player Control	Pause, Snapshot, Speaker(*), Microphone(*), 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, Auto flickerless Shutter, Max. Shutter, Gain, Max. Gain	
		AWB	Mode, R Gain, Gr Gain, Gb Gain, B Gain	
		AF (***)	Mode, Speed, Lens Locking, Lens Calibration, Enable Day & Night sync focus, Lens initialize on boot	
		Day&Night	Mode, Switching Time, Threshold, IR LED Control	
		WDR	WDR(Mode, Level), DWDR(Mode, Level), Defog(Mode, Level)	
		BLC	BLC(Mode, Level), HLC(Mode)	
		DNR	3DNR(Mode, Level)	
		LDC	Mode, Level	
		VerticalView	Mode, Rotation	
		Privacy Mask	Color, Name	
	Digital Zoom	Level		
	DIS			
	Audio(*)	Compression, Sample rate, Bitrate, Input Volume, Output Volume, Audio auto activation on ONVIF access		
	Record(**)	Record	Overwrite when storage is full, Continuous record setting	
		Schedule		
Recycling		Enable Recycling, Recycling Time Setting(Month, Day, Hour)		
Storage		Format, Remove, Storage Information		

Menu Control

SETUP	Event	Triggers	Motion, VCA, Alarm In(*), 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, <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		Maintenance	Maintain(Restart, Reset, Default), Upgrade, Setup Export, Setup Import
		Logs & Report	Logs (Database Capacity, Search Condition, Log List), Logs Server , Report
	LOG OUT		

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

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

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

Network Control menu Setup

* Log-in the Web-Viewer

1. After camera is connected with server, install the IP Manager. Control is available via WEB.
2. Make sure the server is connected before accessing IP MANAGER.
3. After installing, double clicking IP MANAGER's icon to start.
4. The Camera is automatically scanned when IP MANAGER is running.
5. If you double-click the model name on IP Manager, it goes to Login page.
6. Install Active-X. according to the instruction at the bottom of browser.

The default username / password are 'admin'.

* SYSTEM Requirements

- OS: Windows 7 or higher / MAC OS
- Web browser:

Full Menu Setup

- MS Internet Explorer (Ver. 9 or higher)
- Mozilla Firefox: Windows Only
- Google Chrome: Windows Only
- Apple Safari: Mac OS X only
- Supports only officially released version.

* Change IP Address

The default IP address of cameras are 192.168.1.10.

If you want to change IP address, click right button of Mouse and there is control panel. Type the IP address to change and click OK button.

Stop Discovery
Refresh

S/W Version
Default Login

Model Name	IP Address	Zeroconf Address	MAC Address	Version
VTC-IR8NZ4212P	192.168.1.10	169.254.94.234	78:C2:C0:21:7F:CF	1.2.1.76
VTC-IR5NZ32	192.168.1.11	0.0.0.0	A4:58:0F:19:38:B9	2.2.2.60-RC03
VTD-MV8NZ212P	192.168.1.23	169.254.247.12	78:C2:C0:21:7F:D2	1.2.1.76
VTD-MV5NZ212P	192.168.1.12	0.0.0.0	78:C2:C0:21:72:1D	2.2.2.72-RC190926

4 camera detected

Change IP...
Quick View...
Login...
Maintenance
Upgrade...
Web Browser...

Obtain IP address via DHCP server
Use the following IP address

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

OK Cancel

> *Change all connected camera's IP address at once:

- 1) 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.
- 4) Change all the selected camera IP address in order.

* IP MANAGER description

- A Model Name: Show the connected camera model number.
B IP Address: Show the IP address of connected camera.

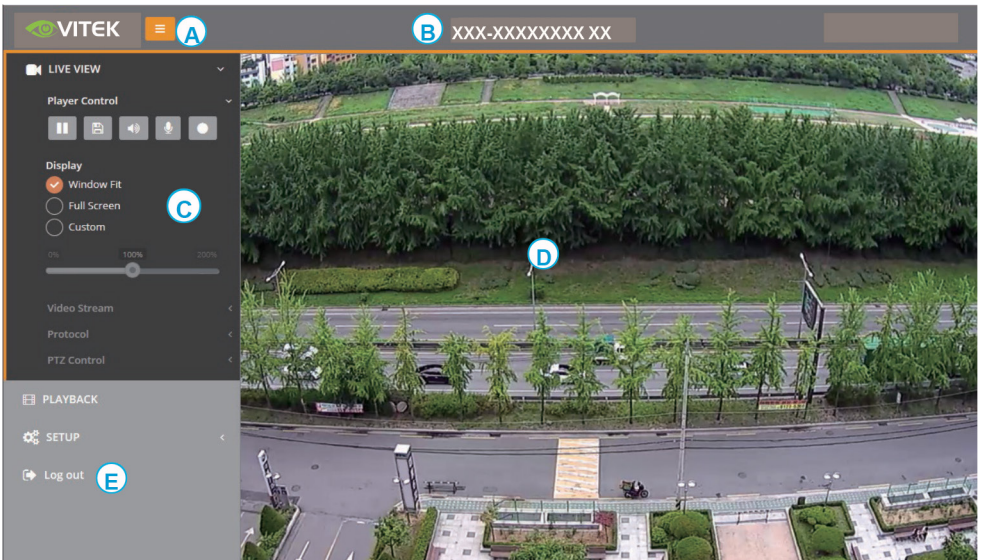
Menu Control

- A - Version: Show the camera F/W version.
- B - Chane IP: Available to change IP.
- C - Quick View: Available to have Quick View after Login.
- D - Login: Available to Login(admin/admin) and then Quick View.
- E - Maintenance: Factory default/ Reset/Reboot are available.
- F - Upgrade: Able to upgrade camera firmware
- G - Web Browser: Go to Web browser.

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

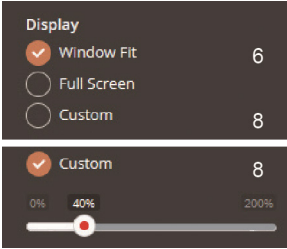
Full Menu Setup

* Player Control



- 1 Pause: Pauses the live view.
- 2 Snapshot: Captures the image in .jpg format with the current stream resolution.
- 3 Speaker: (Available only with the built-in Audio feature version) Enables Audio to be outputted to the audio out port.
- 4 Microphone: (Available only with the built-in Audio feature version) Enables Audio input from the audio input port.
- 5 Record: (Available with the built-in Storage feature version only) Records the live video in H.264 format into the equipped storage memory like SD, SDHC & SDXC with the selected video stream at the RECORD menu.

Full Menu Setup



6 Window Fit: Resizes the live view display to fit 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

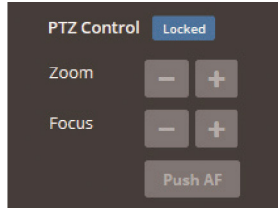
Selects the video source stream to display.

■ Protocol

Selects the network protocol 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: Starts auto focus at 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.

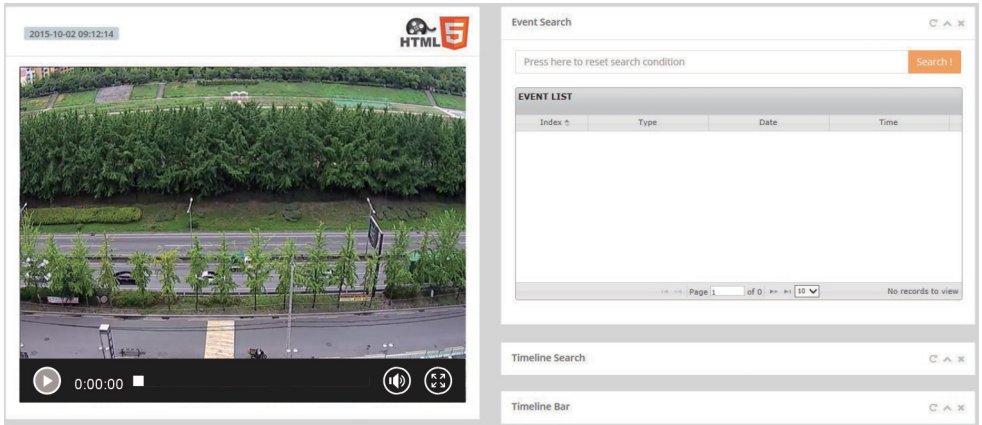
CAUTION

- Set LENS LOCKING at Setup>Video & Image>Image>AF>Lens Locking to ON or TIMER after completing lens setting to prevent unwanted lens operation.

Full Menu Setup

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



■ Event Search

Playback display the event list.

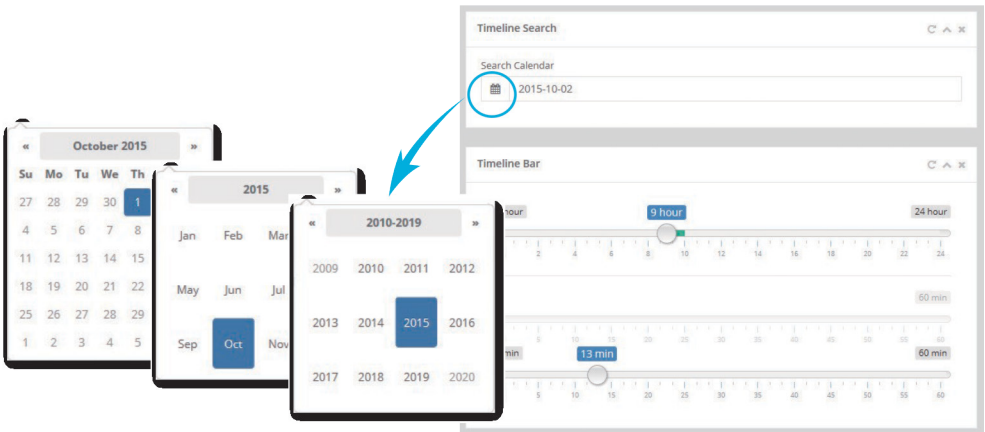
- Press the input bar to pop up EVENT DATE & TIME window and select the event TYPE.
- Click SEARCH button to show EVENT LIST.
- Select the recorded event and click the play button at the bottom-left corner of the playback window.

■ 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.

Full Menu Setup



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.

LIVE VIEW

PLAYBACK

SETUP

Information

Video & Image

Audio

Record

Event

System

LOG OUT

Information

SETUP / Information

General

Model	XXX-XXXXXXXXXX
MAC Address	78:D5:48:05:D5:1D
IP Address	192.168.0.12
Zeroconf IP Address	169.254.17.225
Firmware Version	3.2.X.X-XXX

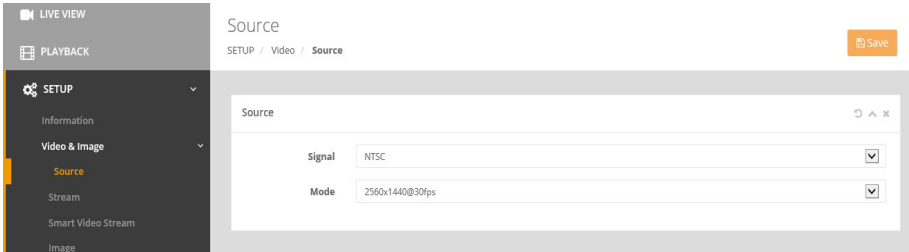
System Information

Full Menu Setup

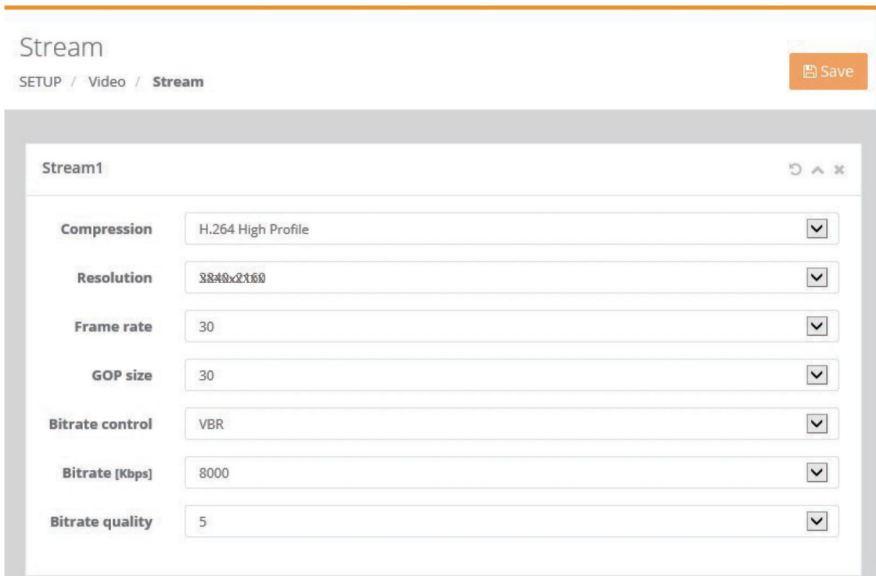
3-2. Video & Image

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



Full Menu Setup

• **Stream1, 2, 3, 4**

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

- H.265+, H.264+: Enables to process video data smartly 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 too strongly 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. Too big GOP SIZE can make a longer black out or a broken image if the network quality is not good enough.

> BITRATE CONTROL: Selects how to manage the bitrate.

- VBR (Variable Bit Rate):

Provides the 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.

- 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 as 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.

Full Menu Setup

3-2-3. Smart Video Stream

● **ROI (Region Of Interest)**


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

> How to set Region of Interest:

- 1) 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 drag, enter a Name, select Quality and save.

Full Menu Setup

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 in Settings> Video & Image> Video Stream.5) To delete the selected area, right Click the mouse button on the video viewer, select "Create ROI area" or click "Delete" button.

6) After setting the mode, click SAVE.

> How to set non-Region of Interest:

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

- **Dynamic GOP:**

> Outputs Intra-coded pictures (I frame : Complete Image)

When there is motion or change in picture only to save bitrate.

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Full Menu Setup

3-2-4. Image

Success
This request has been performed without error

Save

LIVE VIEW

PLAYBACK

SETUP

- Information
- Video & Image
 - Source
 - Stream
 - Image
 - Privacy Mask
 - Digital Zoom
- Audio
- Record
- Event
- System


Log out

Image

SETUP / Video / Image

Save

Viewer



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

Day

Brightness 8 [Default]

Contrast 8 [Default]

Saturation 9 [Default]

Hue 4 [Default]

Sharpness 5 [Default]

Night

Brightness 8 [Default]

Contrast 8 [Default]

Saturation 9 [Default]

Enable flip image

Enable mirror image

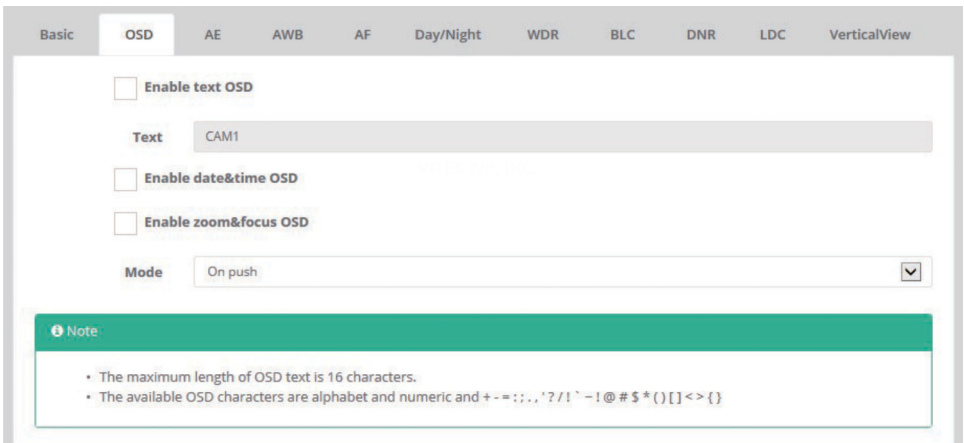
Full Menu Setup

• **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: Displays on the OSD at all times.



Full Menu Setup

• AE

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

> **AUTO IRIS:** Engages the mechanical iris of 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.

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

Full Menu Setup

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

Mode ATW - Indoor

R Gain 128

Gr Gain 128

Gb Gain 128

B Gain 128

- **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.

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

Mode Manual

Speed 3

Lens Locking Off

Lens Calibration Start

Enable Day & Night sync focus

Lens initialize on boot

Full Menu Setup

[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 10 feet 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 steady without 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 over the night 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 the 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 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. Decreasing the value switches at low light
 - > 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.

Full Menu Setup

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 (VTD-MV5NZZ12P Only)

[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 at 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 the 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

Full Menu Setup

• **BLC**

The screenshot shows the camera's menu interface with the 'BLC' tab selected. The 'BLC' section has two settings: 'Mode' set to 'Off' and 'Level' set to 'Level3'. The 'HLC' section has one setting: 'Mode' set to 'On'.

> BLC (Back Light Compensation):

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

> HLC (High Light Compensation):

ON cuts out the highlight area with 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 3 dimensional way.
- LEVEL: Determines the strength of the noise reduction. Higher values reduce more noise but can also lead to a ghosting effect.

The screenshot shows the camera's menu interface with the 'DNR' tab selected. The '3DNR' section has two settings: 'Mode' set to 'On' and 'Level' set to 'Level2'.

• **LDC** (Lens Distortion Compensation)

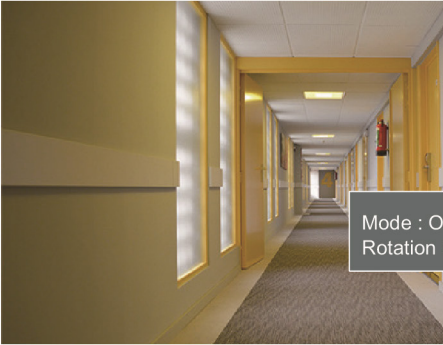
Full Menu Setup


> 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.

Basic	OSD	AE	AWB	Day/Night	WDR	BLC	DNR	LDC	VerticalView
<p>Mode: <input type="text" value="On"/></p> <p>Level: <input type="text" value="35"/></p>									

- **Vertical View (corridor)**

Viewer





Mode : On
Rotation : 90 degree

Basic	OSD	AE	AWB	AF	Day/Night	WDR	BLC	DNR	LDC	VerticalView
<p>Mode: <input type="text" value="Off"/></p> <p>Rotation: <input type="text" value="90 degree"/></p>										
<p>Note</p> <p>• The VerticalView can be activated when Digital Zoom is off</p>										

> 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.

Full Menu Setup


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: v

Name:

ID	Name	Delete
1	New	<input type="button" value="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 click the right 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.
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.

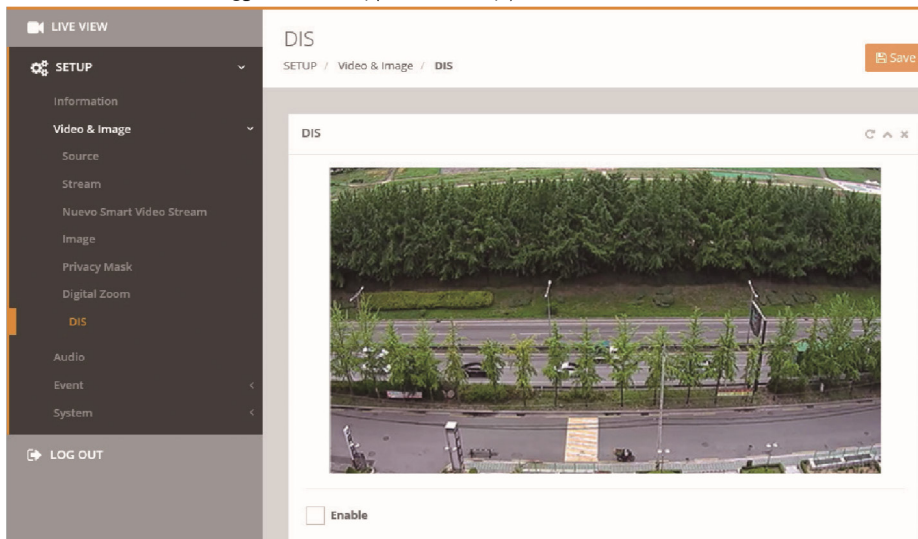
Full Menu Setup

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)

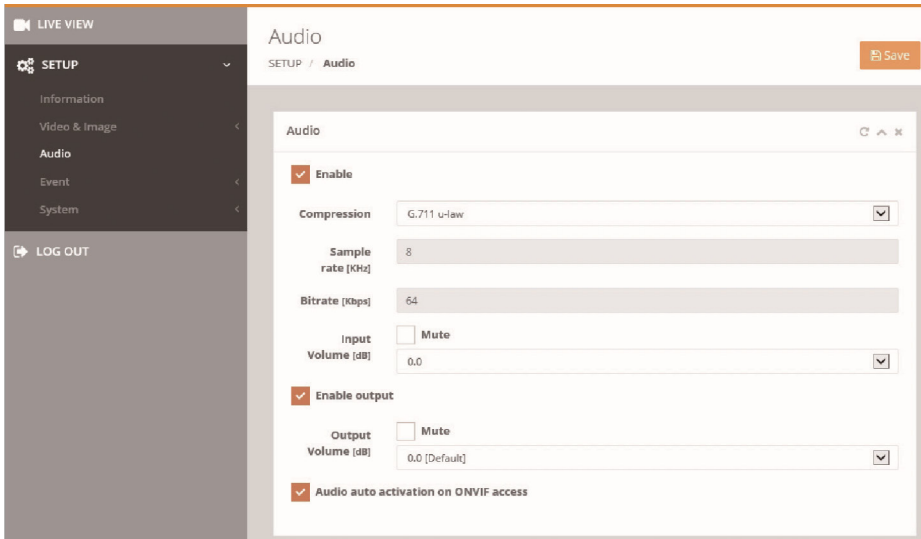
- > Mark ENABLE checkbox to reduce and stabilize the shaky image from a camera installed in a vibrating area. FOV (Field of view) will be reduced if set to ENABLE .



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

- > Mark ENABLE checkbox to activate the audio. Supports full duplex audio.
- > COMPRESSION: Selects audio compression codec. μ -law is used primarily in North America and a-law used in most other countries outside North America. G.711 μ -law tends to give more resolution to higher range signals while G.711 a-law provides more quantization levels at lower signal levels.
- > SAMPLE RATE: Fixed at 8KHz by G.711.
- > BITRATE: Fixed at 64Kbps by G.711, the international standard for encoding wired telephone audio.
- > Mark INPUT MUTE checkbox to mute the input from audio-in.

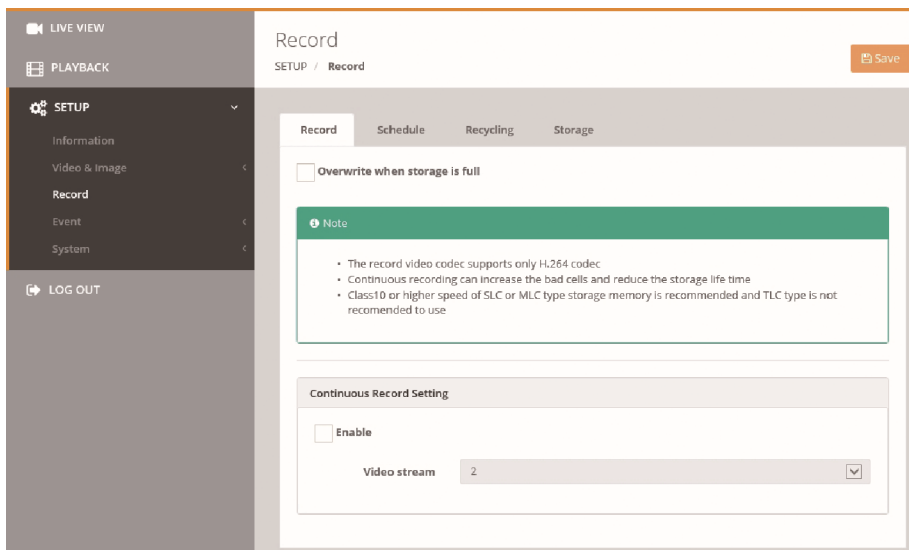
Full Menu Setup



- > **INPUT VOLUME:** Adjusts the volume of the input signal level. -0.5dB reduces the volume about -6%, 0.0dB bypasses the signal without adjusting the volume and 3.0dB increases the volume about +41%.
- > Mark **ENABLE OUTPUT** checkbox to activate the audio. Supports full duplex audio.
- > Mark **OUTPUT MUTE** checkbox to mute the output to audio-out.
- > **OUTPUT VOLUME:** Adjusts the volume by the output signal level. -0.5dB reduces the volume about -6%, 0.0dB bypasses the signal without adjusting the volume and 3.0dB increases the volume about +41%.
- > **Audio auto activation on ONVIF access** If the checkbox is marked, Audio auto activation after reset or rebooting the camera is compatible to ONVIF.

3-4. Record (Available only with the built-in Storage feature version)

Full Menu Setup



3-4-1. Record

- > Mark **OVERWRITE WHEN STORAGE IS FULL** checkbox to allow the storage to be overwritten.
- > **CONTINUOUS RECORD SETTING**: Mark **ENABLE** checkbox to activate the 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.

3-4-2. 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.
selected time zone or day of the week.

Full Menu Setup

The screenshot displays the 'Schedule' configuration interface. It features two overlapping windows, both with the 'Enable scheduled record' checkbox checked. The top window shows a weekly schedule grid with columns labeled 0, 1, 2, 3, 4 and rows labeled Sun, Mon, Tue, Wed, Thu, Fri, Sat. The bottom window shows a 24-hour schedule grid with columns labeled 0 through 23 and rows labeled Sun, Mon, Tue, Wed, Thu, Fri, Sat. In both grids, the 'Mon' row is highlighted in orange, and the 'Tue' through 'Sat' rows have checkmarks in all columns.

3-4-3. 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 1Day 0Hour, all the video data that passed 2 Months 1Day 0Hour 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.

The screenshot displays the 'Recycling' configuration interface. It features a 'Recycling' tab with the 'Enable recycling' checkbox checked. Below this is the 'Recycling Time Setting' section, which contains three dropdown menus: 'Month' set to 0, 'Day' set to 0, and 'Hour' set to 1.

3-4-4. Storage

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

Full Menu Setup

> 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 web interface with a top navigation bar containing 'Record', 'Schedule', 'Recycling', and 'Storage'. The 'Storage' tab is active. Below the navigation bar, there are two orange buttons: 'Format' with the text 'Format the storage.' and 'Remove' with the text 'Remove and eject storage safely.'. Below these buttons is a 'Storage Information' section containing a table with the following data:

Status	Storage Information		
Available			
Total	Used	Available	Used Percent
7.41GB	7.19GB	222.55MB	97.07%

3-5. Event

3-5-1. 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.

Full Menu Setup

The screenshot displays the 'Triggers' configuration page in the VITEK IVP web interface. The left sidebar shows the navigation menu with 'SETUP' expanded to 'Event' > 'Triggers'. The main content area features a video feed of a street scene with a blue detection area labeled 'CAM1' and 'default'. Below the video, there are configuration fields: 'Enable' (checked), 'Name' (default), 'Sensitivity' (100 [High]), and 'Dwell [sec]' (1). A table at the bottom lists the trigger configuration.

ID	Name	Type	Dwell	Delete
1	default	Include	1	Delete

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)

Full Menu Setup

Triggers
SETUP / Event / Triggers Save

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

05:20:33.224

OBJECT SETTING

Width :

Height :

Show object size

- Min. object size : 115 x 65 [px]
- Max. object size : 1152 x 648 [px]

Enable

Type

Name

Dwell time

Filter

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) Click the right 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:

Full Menu Setup

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

- > 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.

Motion VCA Alarm In System Manual Network Timer Day/Night

Enable

Type NO

Dwell time [sec] 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.

Motion VCA Alarm In System Manual Network Timer Day/Night

Enable

Dwell time [sec] 3

- **Manual**

Enables the user to set the event trigger optionally.

Full Menu Setup

- > 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.

The screenshot displays the 'Manual' menu configuration page. At the top, there is a navigation bar with tabs for Motion, VCA, Alarm In, System, Manual (selected), Network, Timer, and Day/Night. Below the navigation bar, there are four identical configuration sections, each titled 'Manual Trigger1' through 'Manual Trigger4'. Each section contains an 'Enable' checkbox (which is unchecked) and a 'Dwell time [sec]' input field with a dropdown arrow, both set to the value '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.

The screenshot displays the 'Network' menu configuration page. At the top, there is a navigation bar with tabs for Motion, VCA, Alarm In, System, Manual, Network (selected), Timer, and Day/Night. Below the navigation bar, there is a single configuration section. It contains an 'Enable' checkbox (which is unchecked) and a 'Dwell time [sec]' input field with a dropdown arrow, both set to the value '3'.

Full Menu Setup

• *Timer*

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

The screenshot shows a web interface with a navigation bar at the top containing tabs: Motion, VCA, Alarm In, System, Manual, Network, **Timer**, and Day/Night. Below the navigation bar, there is a section for the Timer configuration. It starts with an **Enable** checkbox. Below that is a **Timer Interval** section with three rows: **Hour** set to 1, **Minute** set to 0, and **Second** set to 0. Each value is in a grey input field with a dropdown arrow on the right.

• *Day / Night*

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

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

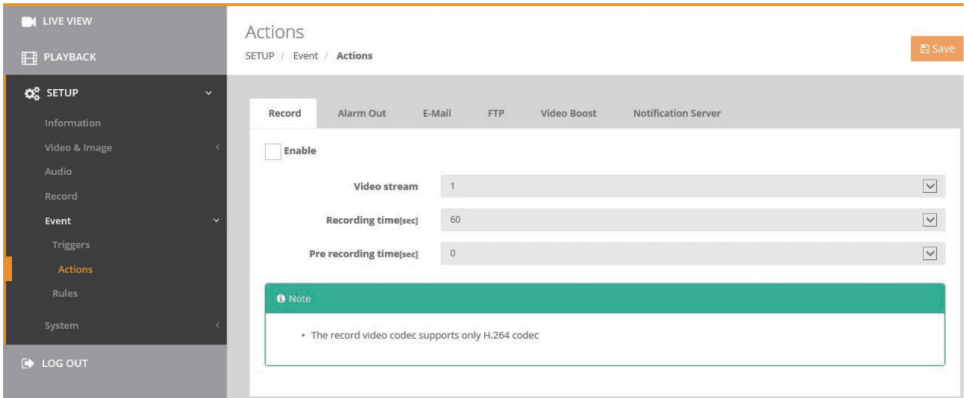
> DWELL TIME: Sets the interval duration for the alarm event.

The screenshot shows a web interface with a navigation bar at the top containing tabs: Motion, VCA, Alarm In, System, Manual, Network, Timer, and **Day/Night**. Below the navigation bar, there is a section for the Day/Night configuration. It starts with an **Enable** checkbox. Below that are two rows: **Mode** set to "Day <-> Night" and **Dwell time [sec]** set to 3. Each value is in a grey input field with a dropdown arrow on the right.

Full Menu Setup

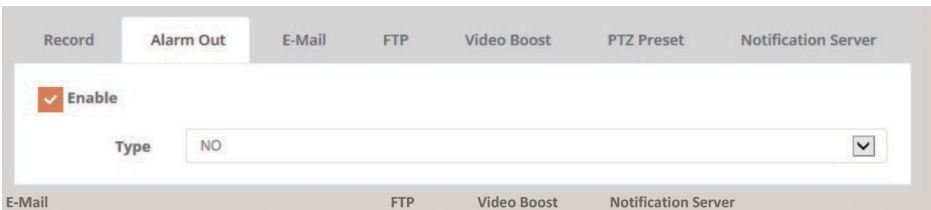
3-5-2. Actions

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** (Available only with the built-in Alarm feature version)
 - > 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.



Full Menu Setup

• 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 of the sender. Any virtual email address like sample@sample.com can be used so 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 user name 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
<input type="checkbox"/> Enable						
Sender			<input type="text"/>			
Interval [1... 86400] sec			<input type="text" value="60"/>			
Aggregate events [1... 100] EA			<input type="text" value="50"/>			
<input type="checkbox"/> Use mail server						
Mail server			<input type="text"/>			
Port			<input type="text" value="25"/>			
<input type="checkbox"/> Enable use(SMTP) authentication						
User name			<input type="text"/>			
Password			<input type="text"/>			
Login method			<input type="text" value="AUTH LOGIN"/> <input type="button" value="v"/>			

Full Menu Setup

The screenshot displays two sections of the configuration interface:

- Receiver List:** A table with two columns and eight rows. Each row contains a label (Receiver1 through Receiver8) and a corresponding empty text input field.
- E-Mail(SMTP) Test:** A section with a label "Receiver" followed by a wide text input field and an orange "Test" button.

[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.

Full Menu Setup

- **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 user name 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

Boost Notification Server Video

> **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.

Full Menu Setup

- **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 most 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 Server
Video Boost 1					
<input type="checkbox"/> Enable					
	Normal State		Event State		
Frame rate	30		30 <input type="button" value="v"/>		
Bitrate	8100		4000 <input type="button" value="v"/>		
Video Boost 2					
<input type="checkbox"/> Enable					
	Normal State		Event State		
Frame rate	30		30 <input type="button" value="v"/>		
Bitrate	1000		1000 <input type="button" value="v"/>		

• 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. To enable audio when the event occurs, copy the URL at SETUP>AUDIO and paste it on the server URL like <http://x.x.x.x/setup/audio/audio.php>
 - **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.

Full Menu Setup

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

Enable

Type HTTP

Server URL http://

Username

Password

Notification Test

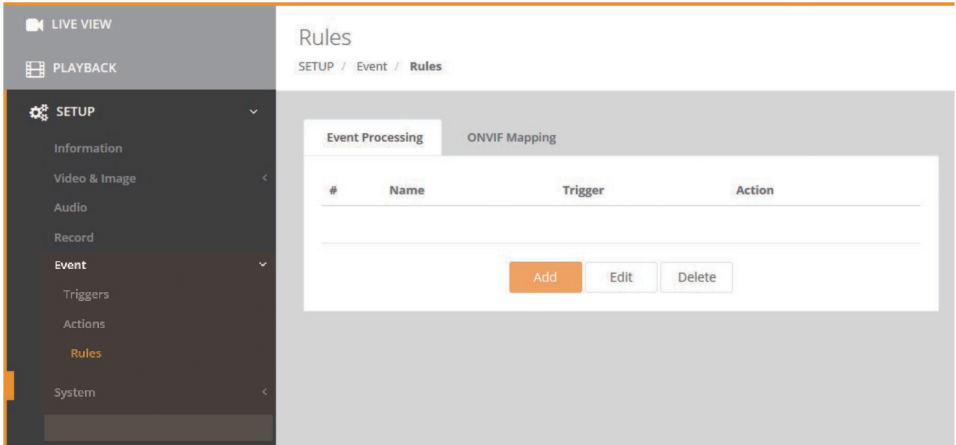
Message

Record Alarm Out E-Mail FTP Video Boost

Full Menu Setup

3-5-3. Rules

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



• **Event Processing**

Event process lists must 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.

Full Menu Setup

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.

Full Menu Setup

> 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 VMSeS 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 VMSeS 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 VMSeS or NVRs as Alarm IN.

Event Processing		ONVIF Mapping
#	Event Topic	Event Notification
1	tns1:VideoSource/MotionAlarm	Motion Detection <input type="button" value="Edit"/>
2	tns1:Device/Trigger/DigitalInput	Network Loss <input type="button" value="Edit"/>

Full Menu Setup

3-6. System

The screenshot displays the 'Security' configuration page. The left sidebar is expanded to the 'System' section, with 'Security' highlighted. The main content area shows the 'Users' tab selected. A table lists the current user accounts:

#	Name	Group	Authority
1	admin	administrator	live, setup, system

Below the table are buttons for 'Add', 'Edit', and 'Delete'. A checkbox for 'Enable anonymous viewer login' is also visible at the top of the table area.

3-6-1. Security

- **Users**

Manages the user accounts by names, groups and authorities.

> USERS: Can be added, edited or deleted.

The 'Add User' dialog includes the following fields and options:

- Name: [Text Input]
- Password: [Text Input]
- Confirm Password: [Text Input]
- Group: [Dropdown Menu, selected: guest]
- ptz: [Checkbox]
- playback: [Checkbox]

The 'Edit User' dialog includes the following fields and options:

- Name: [Text Input, value: admin]
- Password: [Text Input]
- Confirm Password: [Text Input]
- Group: [Dropdown Menu, selected: administrator]

- **HTTPS**

Selects the CONNECTION MODE.

Full Menu Setup

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

Connection mode: HTTP&HTTPS

Redirect HTTP to HTTPS

- > 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 ADDRESS FILTERING to filter the IP addresses.
- > Mark ON/OFF for the IP address range to use IP filtering.
- > Select ALLOW or DENY permitting 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	0 . 0 . 0 . 0	0 . 0 . 0 . 0
<input type="checkbox"/>	2	ALLOW	0 . 0 . 0 . 0	0 . 0 . 0 . 0
<input type="checkbox"/>	3	ALLOW	0 . 0 . 0 . 0	0 . 0 . 0 . 0
<input type="checkbox"/>	4	ALLOW	0 . 0 . 0 . 0	0 . 0 . 0 . 0
<input type="checkbox"/>	5	ALLOW	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

Full Menu Setup

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.

The screenshot shows the 'Video Stream' configuration page. At the top, there are tabs for 'Users', 'HTTPS', 'IP Filter', 'ONVIF', 'Video Stream', and 'Export / Import'. The 'Video Stream' tab is selected. Below the tabs, there are three checkboxes, all of which are checked (indicated by a red checkmark in a square):

- 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.

The screenshot shows the 'Export / Import' configuration page. At the top, there are tabs for 'Users', 'HTTPS', 'IP Filter', 'ONVIF', 'Video Stream', and 'Export / Import'. The 'Export / Import' tab is selected. Below the tabs, there is a checkbox labeled 'Enable encryption for Export and Import file', which is checked (indicated by a red checkmark in a square). Below this checkbox, there are two password input fields:

- Password**: A text input field with six dots (••••••) indicating a masked password.
- Confirm Password**: A text input field with six dots (••••••) indicating a masked password.

3-6-2. Date & Time

Full Menu Setup

• **Current Time**

Shows the current date and time. Clicking SAVE 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.

3-6-3. Network

Full Menu Setup

• 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 name is usually the same as the assigned DNS name.

The screenshot displays the 'Network' configuration page. On the left, a navigation menu includes 'LIVE VIEW', 'PLAYBACK', and 'SETUP'. Under 'SETUP', 'Network' is highlighted. The main content area shows the 'Network' title and a breadcrumb 'SETUP / System / Network'. A 'Save' button is in the top right. Below the title are tabs for 'TCP/IP', 'DDNS', 'RTP', 'UPnP', 'Zeroconf', and 'Bonjour'. The 'TCP/IP' tab is selected, showing the 'IPv4 Address' section. It features a radio button for 'Obtain IP address via DHCP server' (checked) and a 'Status' indicator showing 'Allocated'. Below this are input fields for 'IP address' (192.168.0.87), 'Subnet mask' (255.255.255.0), and 'Gateway' (192.168.0.1). At the bottom, there is an unselected radio button for 'Use the following IP address'.

Full Menu Setup

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: RWS-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.

Full Menu Setup

- 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 for configuring DDNS. At the top, there are tabs for 'TCP/IP', 'DDNS', 'RTP', 'UPnP', 'Zeroconf', and 'Bonjour'. The 'DDNS' tab is selected. Below the tabs, there is a form with the following fields:

- Enable
- DDNS server: dyndns.org (dropdown menu)
- Registered host: (text input field)
- User name: (text input field)
- Password: (text input field)
- Confirm password: (text input field)
- Interval: 1 hour (dropdown menu)

- **RTP**

> START PORT & END PORT: RTP port range defines the range of the ports from which ports of the video/audio 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.

Full Menu Setup

- **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.

TCP/IP
DDNS
RTP
UPnP
Zeroconf
Bonjour

Start port [30000... 39800; Only even values are available]

End port

Multicast - Stream 1

Enable

Destination IP - - - [224.0.0.0... 239.255.255.255]

Port [1024... 65530; Only even values are available]

TTL [1... 255]

Multicast - Stream 2

Enable

Destination IP - - - [224.0.0.0... 239.255.255.255]

Port [1024... 65530; Only even values are available]

TTL [1... 255]

Multicast - Stream 3

• 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.

Full Menu Setup

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

Friendly name

• **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), and Korean.

Full Menu Setup

3-6-5. Maintenance

Maintain 🔄 ⬆️ ✖️

Restart the unit.

Resets all parameters to the original factory settings, except the IP address and PTZ configurations.

Resets all parameters to the original factory settings.

Upgrade 🔄 ⬆️ ✖️

Note

- Please make sure that 'Reset' is essential after downgrading the firmware.
- Please do the Reset in SETUP > System > Maintenance > Reset.

Upgrade the unit with the new firmware.

Drop file here or click to upload

Setup Export 🔄 ⬆️ ✖️

Save all parameters and user-defined script to an export file.

Setup Import 🔄 ⬆️ ✖️

Import configurations from exported file.

Drop file here or click to upload

● **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.

Full Menu Setup

- **Setup Export**

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

- **Setup Import**

The exported configuration file from a reference camera or a backup configuration can be imported and configured/reloaded onto other cameras.

[NOTE]

- SETUP EXPORT/SETUP IMPORT can only be used on the same camera models with the same firmware. This feature is not intended for the configuration of multiple units or for firmware upgrades.
- When the encrypted System configuration file with the password is imported, type the password at SETUP>SYSTEM>SECURITY>EXPORT/IMPORT with the SAME password which was used in exporting the system configuration file from the reference camera. Otherwise, 'INVALID FILE' error appears.

3-6-6. 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.