

INSTRUCTION MANUAL

2 Megapixel IR Bullet Camera

Before installing and using the camera, please read this instructions thoroughly and keep for reference.

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PRECAUTIONS

- **Avoid prolonged use in high temperature and high humidity environment**
Use the product within the operating range specified in the specifications.
Avoid locations where heat is generated, and Install in a well-ventilated place.
- **Do not install the camera in an unstable place**
Confirm that the camera is firmly fixed after installation.
Dropping the product due to poor installation may cause injury.
- **Install the camera away from dusty places**
This may cause product malfunction, poor image quality, fire or electric shock.
- **Do not install the camera under unstable lighting conditions**
It is possible to output an inappropriate image due to severe illumination change or lighting flickering.
- **Do not install the camera near gas or oil leaks**
Use in a place with flammable materials may cause fire.
Also, keep distance from power line cables or use separate metal piping.
- **Do not disassemble the camera or insert foreign objects**
There is no warranty liability for products that user disassembled.
- **Do not drop the camera or shock it**
It may cause malfunction.
- **Never keep the camera directly face to strong light.**
Exposure to strong light such as sunlight may cause light spreading or light blurring. In addition, direct sunlight can damage the image sensor.
- **Prepare for malfunction due to natural disasters**
The grounding work or the installation of the surge protector can minimize damage to the product due to lightning, etc.
- **Be sure to check the specifications of the power supply**
Before connecting the power to the product, make sure that the power supply meets the recommended specifications.

INTRODUCTION & FEATURES

Product Introduction

This is a high resolution network camera which can compress video and audio in real time, transmit the compressed data through the network.

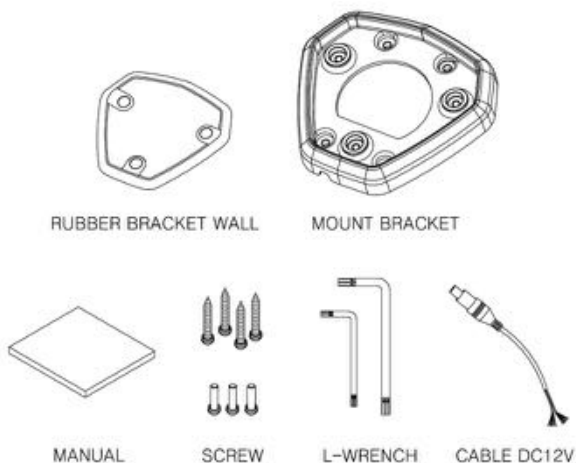
This camera contains 2 megapixel high resolution CMOS image sensor, Image signal processor(ISP), video/audio encoder, web server and network interface block inside. In addition, housing structure for protection against dust and water as well as built-in IR LED can provide clear video image even at night time and outdoor environment.

Features

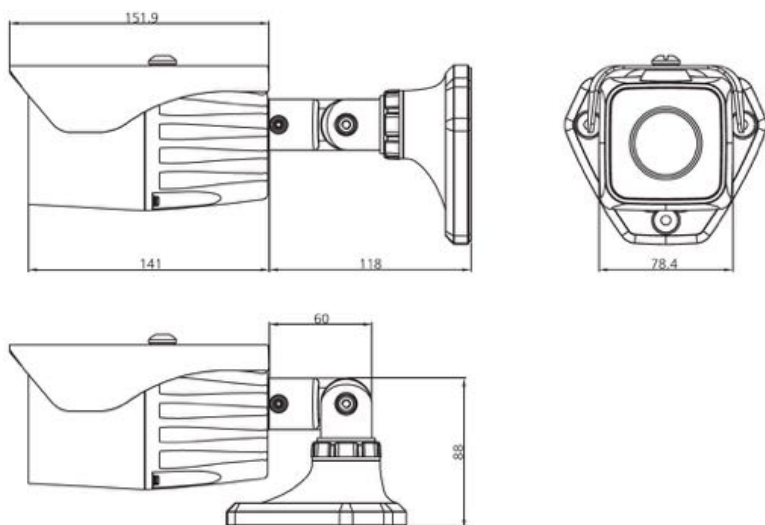
- 1/2.8", 2 megapixel Sony Starvis CMOS sensor
- 2.8~12mm Motorized Zoom Lens
- Remote control of Zoom & Focus
- 2D/3D DNR (Digital Noise Reduction)
- D WDR (Digital Wide Dynamic Range)
- Triple Video Streams
- H.265, H.264, MJPEG Video encoding
- Built-in web server
- ONVIF compatible
- PoE & DC12V
- IP67
- Housing structure for easy installation
- Built-in 4pcs of high Power IR-LED

ACCESSORIES & DIMENSIONS

Accessories

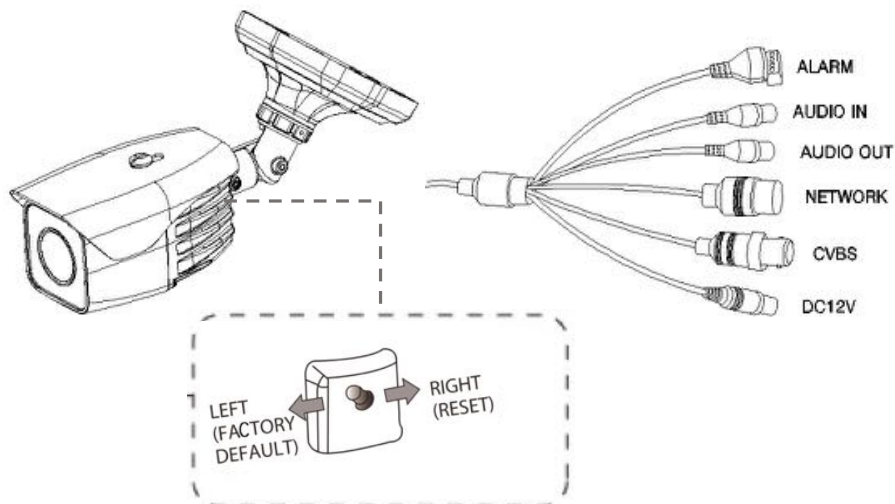


Dimensions (Unit : mm)



CONNECTORS

Connectors



Name	Detailed Description
Power	Connect to a DC12V power supply. In case of using PoE power, do not connect anything.
CVBS	This BNC connector outputs analog video (CVBS).
Audio In	Connect to an Audio source.
Audio Out	Connect to a Speaker.
LAN Cable	Connect to the Network cable.
Alarm	Connect to Alarm input signal and Alarm output signal. (A-Alarm Out, B-GND, C-Alarm In, D-GND)
Joystick	If you want to restore all settings to the factory defaults, push the lever to the left side and hold it for at least 10 seconds.

Note. Please refer to the label on each cable. Each cable has a descriptive label.

INSTALLATION

1. Mounting the Mount Bracket

- Using the supplied 4 screws, mount the mount bracket to wall or ceiling.

2. Mounting the Camera

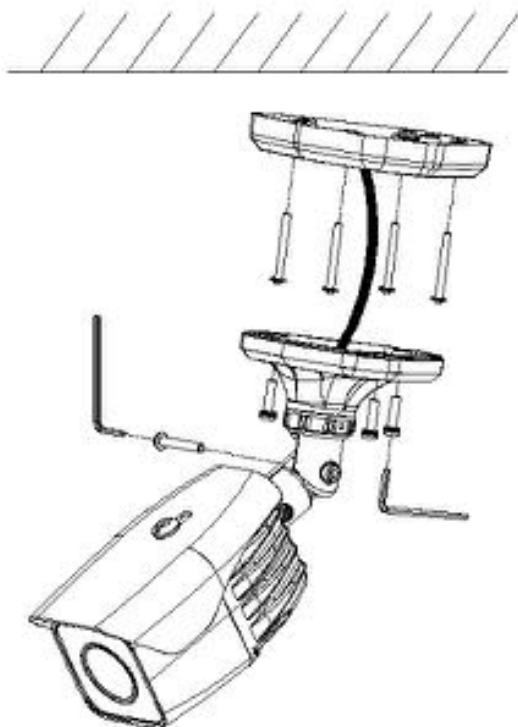
- Using supplied L-wrench, firmly fix the camera to the mount bracket.

3. Supply of power

- Supply DC12V or PoE power to camera.
- To prevent fire or electric shock, use a reliable power supply.

4. Camera Angle Adjustment

- Adjust the camera direction by turning the pan bracket left or right, the tilt bracket up or down, then firmly tighten the screws.
- After network connection, zoom and focus can be adjusted through zoom/focus buttons on the web browser.



WEB BROWSER ACCESS

Camera's default IP address is "192.168.1.30", but User name and Password is not configured in advance. Administrator's account should be created on the first access to the camera. Open an Internet Explorer browser and access to 192.168.1.30 then below window will appear.

Creation of administrator's account



The screenshot shows a web browser window titled "Create Administrator". It contains three text input fields labeled "User Name", "New Password", and "Confirm Password". Below these fields, there is a list of four user groups with their respective permissions: Group1: [0-9], Group2: [a-z], Group3: [A-Z], and Group4: [!@#\$%^&*()_-=+<>|,./]. At the bottom right of the form is a "Save" button.

Enter the user name (ID) and password you want to use, and click the "Save" button then initial access page will appear as shown below.



Network Camera Manager



The screenshot shows a web browser window titled "Network Camera Manager". In the center, there is a "LOGIN" section with two text input fields labeled "ID" and "PW". To the right of the "PW" field is a "Login" button.

WEB BROWSER ACCESS

If you click the login button after entering newly created account information, camera's setting page is displayed as below. Click the "LIVE" button to view the live video.

admin | Logout

LIVE | SETUP | EVENT

Basic Configuration
Network
Video
System
Advanced Configuration
Network
Camera
System

Network

Network Settings

☐ DHCP

MAC Address: 40:84:0C:02:D6:0C

IP Address: 192.168.1.30

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.1

DNS Server

First DNS: 160.129.63.1

Second DNS:

Port

HTTP Port: 60 [30, 3000 - 60000]

RTSP Port: 554 [554, 3000 - 60000]

Save

ActiveX Installation

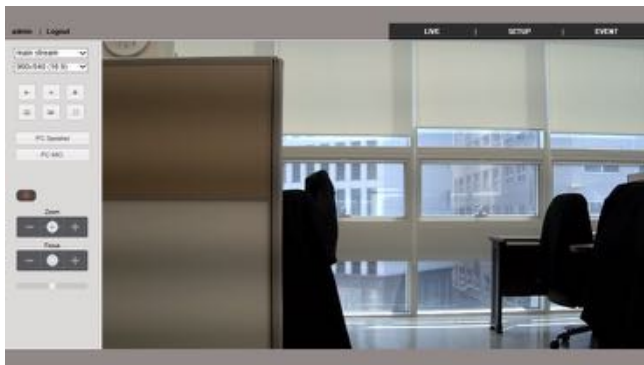
If this is the first access to LIVE view, you can not get video and you will be prompted to install additional plugin as shown below. Click allow and proceed the installation.



이 웹 페이지에서 'www.google.com'에서 제공된 'Java' 추가 기능을 실행하려고 합니다. [여기 클릭](#)

Live video

After the installation of ActiveX is completed, video image from IP camera is displayed as below.



Control buttons on Live page

<input type="text" value="main stream"/>	:	Select a video stream
<input type="text" value="960x540 (16:9)"/>	:	Select a resolution to display
	:	Display real time video
	:	Stop real time video display
	:	Start/Stop video recording
	:	Save current image
	:	Path of recorded video clip and saved image
	:	Full screen display
<input type="text" value="PC Speaker"/>	:	Speaker Enable/Disable
<input type="text" value="PC MIC."/>	:	Mic Enable/Disable
	:	Zoom/Focus Control (Speed control via slider)

BASIC CONFIGURATION

Network

You can change the network settings of IP camera.

The screenshot shows the 'Network' configuration page. On the left is a sidebar with a menu: 'Basic Configuration' (containing 'Network', 'Video', 'System'), 'Advanced Configuration' (containing 'Network', 'Camera', 'System'), and 'System'. The 'Network' tab is selected. The main area is titled 'Network' and contains 'Network Settings' and 'DNS Server' sections. The 'Network Settings' section includes a 'DHCP' checkbox (unchecked), 'MAC Address' (48 04 0C 02 05 CC), 'IP Address' (192.168.1.30), 'Subnet Mask' (255.255.255.0), and 'Default Gateway' (192.168.1.1). The 'DNS Server' section includes 'First DNS' (192.168.0.1) and 'Second DNS' (empty). Below these are 'Port' settings: 'HTTP Port' (80) and 'RTSP Port' (554), both with ranges in brackets. A 'Save' button is at the bottom right.

Video

You can configure the properties for up to 3 video streams.

The screenshot shows the 'Video' configuration page. The sidebar is identical to the Network page. The 'Video' tab is selected. The main area is titled 'Video' and has tabs for 'Main stream', 'Sub stream 1', and 'Sub stream 2'. The 'Main stream' tab is active. It shows an 'Enable' checkbox (checked) and various settings: 'Resolution' (1920x1080), 'Video Encode' (H.264), 'Video Profile' (Main), 'Frame Rate' (30), 'Quality' (40), 'Bitrate' (4096), 'Bitrate Type' (CBR), and 'Key Frame Interval' (30). The 'URL' field contains 'rtsp://192.168.1.30:554/stream1'. A 'Save' button is at the bottom right.

BASIC CONFIGURATION

System

You can do Camera update, Import & Export of setting file, Factory default, Reboot.

The screenshot shows a web interface for system configuration. At the top, there is a navigation bar with 'admin | Logout' on the left and 'LIVE | SETUP | EVENT' on the right. A left sidebar contains a menu with 'Basic Configuration' (Network, Video), 'System' (selected), and 'Advanced Configuration' (Network, Camera, System). The main content area is titled 'System' and contains several sections: 'Update' with a text input and 'Browse'/'Update' buttons; 'Import Config file' with a text input and 'Browse'/'Import' buttons; 'Export Config file' with an 'Export' button; 'Factory default (except for TCP/IP, HTTP) & Reboot' with a 'Factory default & Reboot' button; 'Factory default (All) & Reboot' with a 'Factory default & Reboot' button; and 'Reboot' with a 'Reboot' button.

admin | Logout

LIVE | SETUP | EVENT

Basic Configuration
Network
Video
System
Advanced Configuration
Network
Camera
System

System

Update
 Browse Update

Import Config file
 Browse Import

Export Config file
Export

Factory default (except for TCP/IP, HTTP) & Reboot
Factory default & Reboot

Factory default (All) & Reboot
Factory default & Reboot

Reboot
Reboot

ADVANCED CONFIGURATION

TCP/IP

You can change network type, network settings.

The screenshot shows the 'TCP/IP' configuration page. The left sidebar has a menu with 'Basic Configuration', 'Network', 'Video', 'System', 'Advanced Configuration', and 'Network' expanded. Under 'Network', 'TCP/IP' is selected. The main area has tabs for 'LIVE', 'SETUP', and 'EVENT'. The 'TCP/IP' tab is active. It contains sections for 'NIC Setting' (Type: Audio), 'Network Settings' (DHCP: unchecked, MAC Address: 48 84 0C 02 D5 CC, IP Address: 192.168.1.30, Subnet Mask: 255.255.255.0, Default Gateway: 192.168.1.1), and 'DNS Server' (First DNS: 168.126.63.1, Second DNS: empty). A 'Save' button is at the bottom right.

RTSP

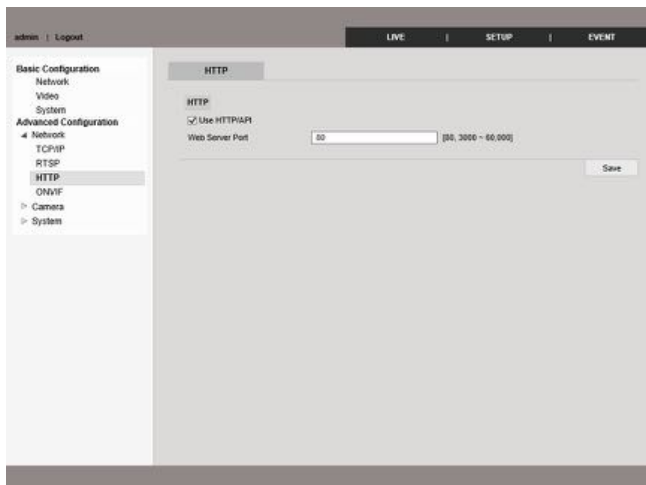
You can configure RTSP and Multicast entries.

The screenshot shows the 'RTSP' configuration page. The left sidebar has a menu with 'Basic Configuration', 'Network', 'Video', 'System', 'Advanced Configuration', and 'Network' expanded. Under 'Network', 'RTSP' is selected. The main area has tabs for 'LIVE', 'SETUP', and 'EVENT'. The 'RTSP' tab is active. It contains fields for 'RTSP Port' (554), 'RTSP Timeout' (120), 'RTSP Authentication' (OFF), 'RTSP Port' (40000), 'Use RTSP' (checked), 'Use Multicast' (checked), 'Multicast Video Address' (239.240.119.123), 'Multicast Audio Address' (239.240.119.124), 'Multicast Event Address' (239.240.119.125), 'Multicast Port' (41000), and 'Multicast TTL' (5). A 'Save' button is at the bottom right.

ADVANCED CONFIGURATION

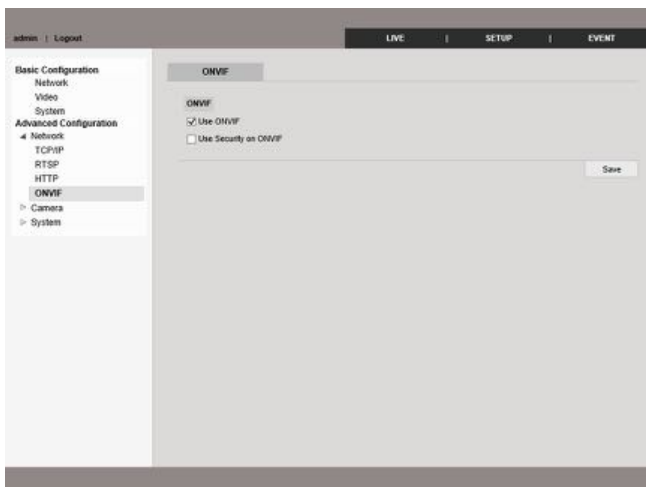
HTTP

You can decide the use of HTTP API and change the connection port of web browser.



ONVIF

You can decide whether to use ONVIF.



ADVANCED CONFIGURATION

Video

You can configure the properties for up to 3 video streams.

The screenshot shows a web interface for video configuration. At the top, there are tabs for 'LIVE', 'SETUP', and 'EVENT'. The 'SETUP' tab is active. On the left, there is a sidebar with a menu. Under 'Advanced Configuration', 'Camera' is expanded, and 'Video' is selected. The main content area is titled 'Video' and has three tabs: 'Main stream', 'Sub stream 1', and 'Sub stream 2'. The 'Main stream' tab is active. It contains a list of settings: 'Resolution' (1920x1080), 'Video Encode' (H.264), 'Video Profile' (Main), 'Frame Rate' (30), 'Quality' (40), 'Bitrate' (4096), 'Bitrate Type' (CBR), 'Key Frame Interval' (30), and 'URL' (rtsp://192.168.1.30:554/stream1). There is an 'Enable' checkbox checked. A 'Save' button is at the bottom right.

Video Mode

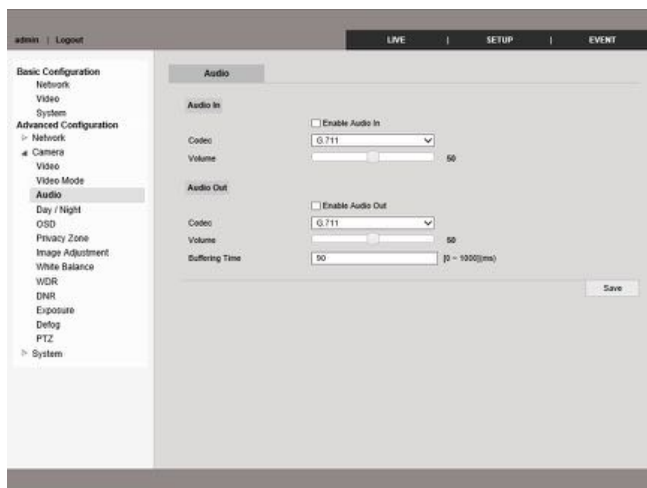
You can configure Mirror, Rotate, Scanning frequency, External video On/Off.

The screenshot shows a web interface for video mode configuration. At the top, there are tabs for 'LIVE', 'SETUP', and 'EVENT'. The 'SETUP' tab is active. On the left, there is a sidebar with a menu. Under 'Advanced Configuration', 'Camera' is expanded, and 'Video Mode' is selected. The main content area is titled 'Video Mode' and contains settings for 'Mirror' (Normal), 'Rotate' (OFF), 'Video Standard' (NTSC/60Hz), and 'External Video' (OFF). There is a 'Save' button at the bottom right.

ADVANCED CONFIGURATION

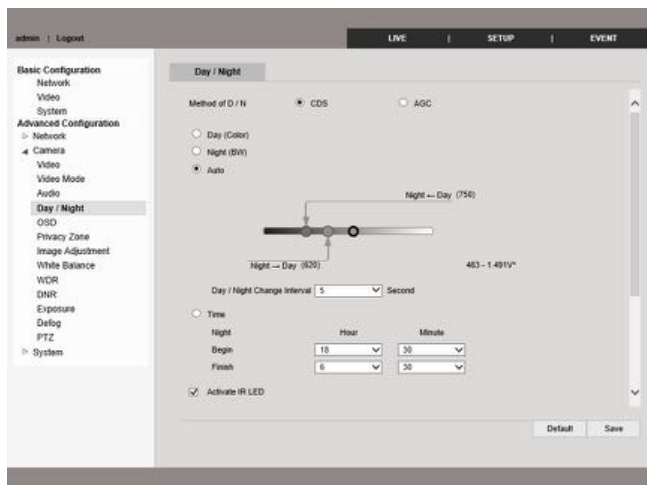
Audio

You can configure Audio related parameters.



Day/Night

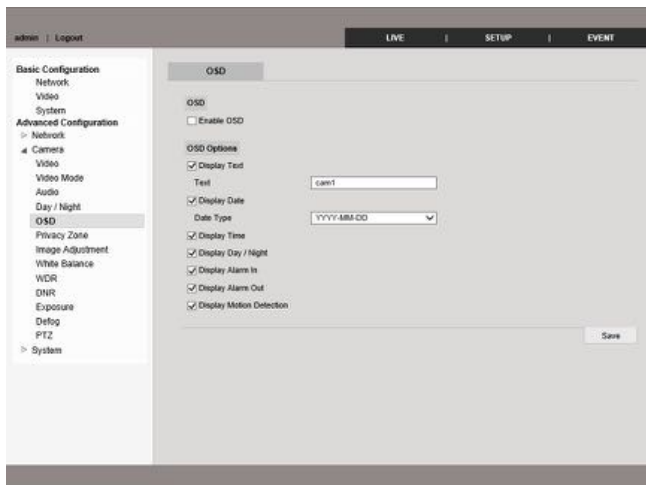
You can configure Day/Night details related to IR-Cut Filter operation.



ADVANCED CONFIGURATION

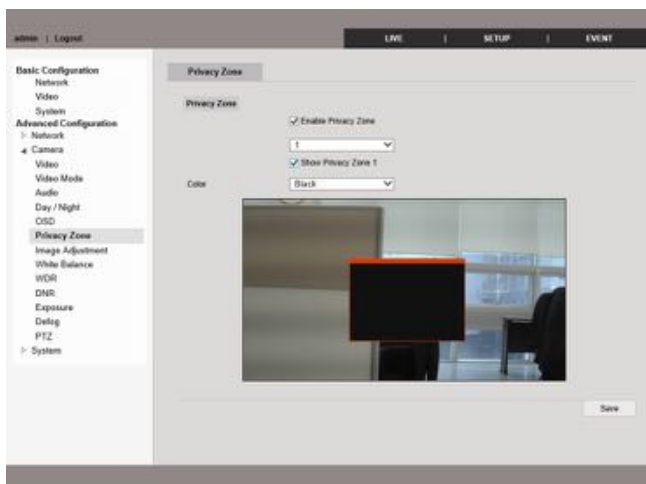
OSD

You can specify OSD items which are displayed on the screen.



Privacy Zone

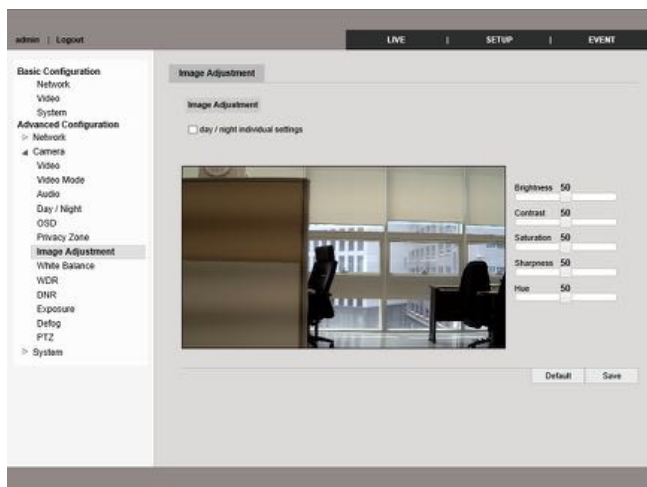
You can specify up to 8 privacy masking zones.



ADVANCED CONFIGURATION

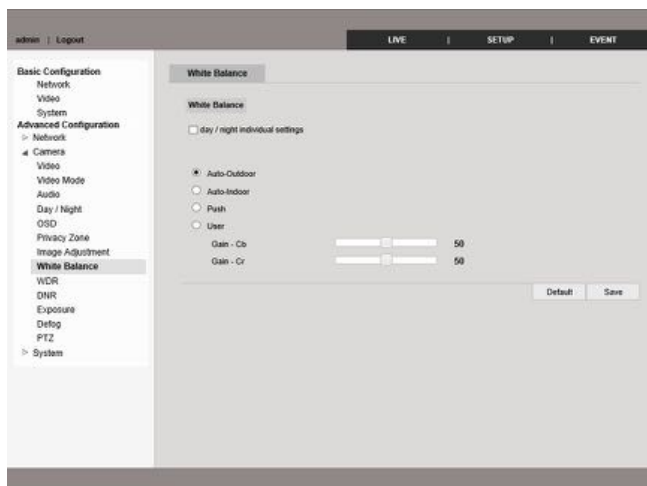
Image Adjustment

Brightness, Contrast, Saturation, Sharpness, Hue can be adjusted.



White Balance

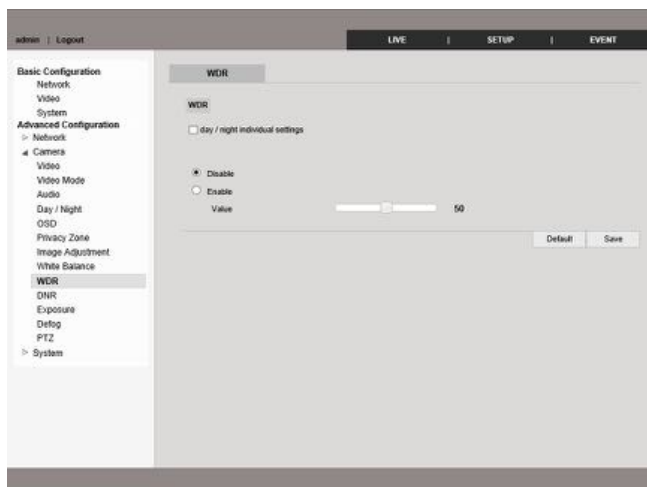
White Balance can be selected among Auto, One-Push, User defined mode.



ADVANCED CONFIGURATION

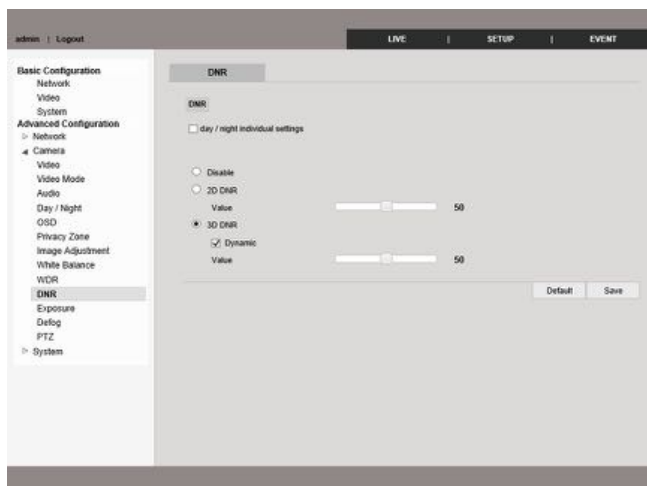
WDR

You can decide whether to use WDR function, and set its level.



DNR

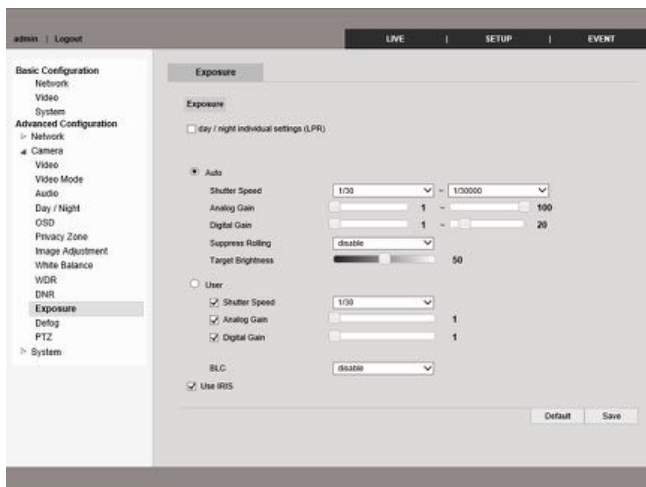
You can decide whether to use 2D/3D DNR, and set their levels.



ADVANCED CONFIGURATION

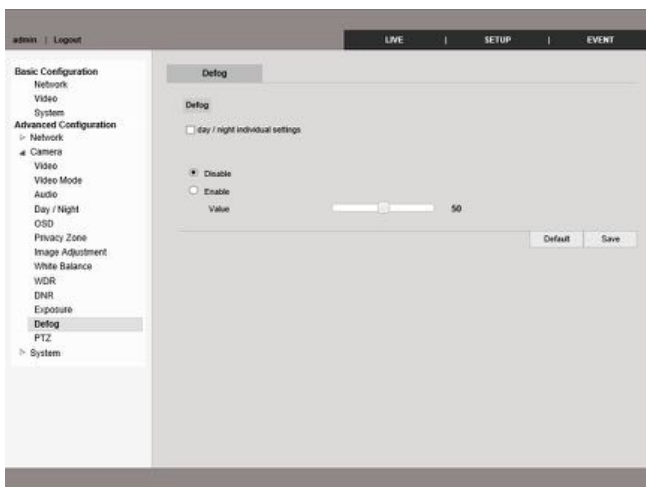
Exposure

You can configure Exposure mode, Range of shutter speed control, AGC level, etc which are related to camera's brightness control.



Defog

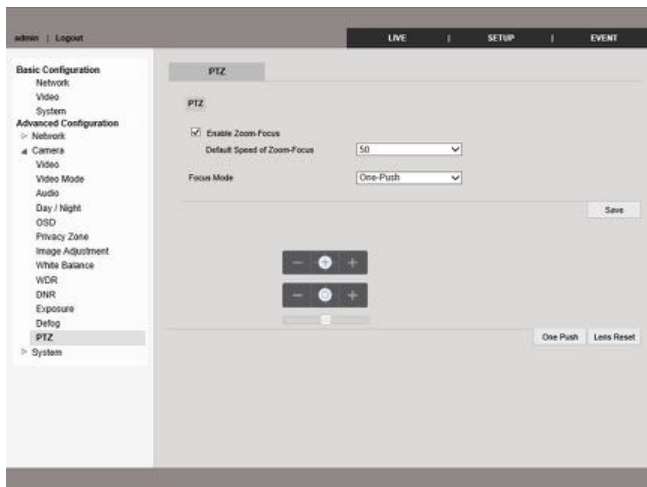
You can decide whether to use Defog function, and set its level.



ADVANCED CONFIGURATION

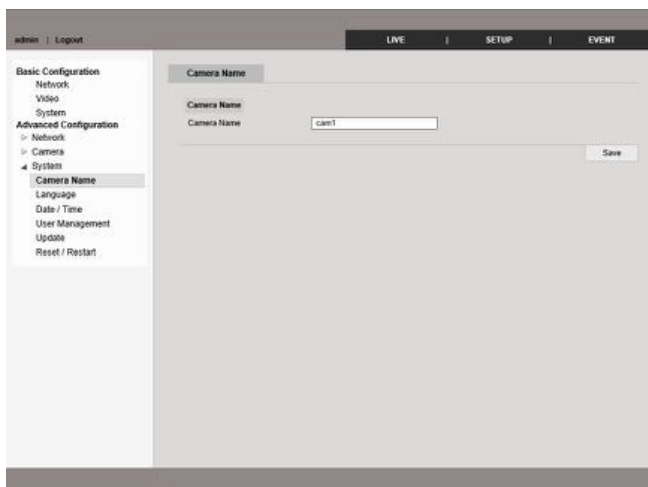
PTZ

You can decide whether to use the zoom/focus operation, and set the default operation speed and focus mode.



Camera Name

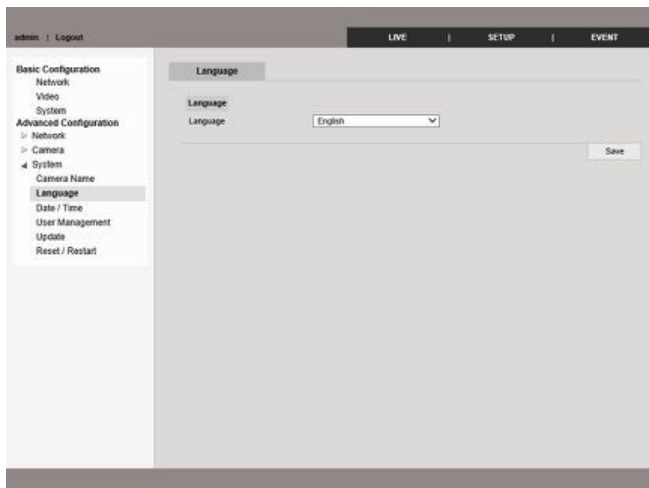
You can specify camera name.



ADVANCED CONFIGURATION

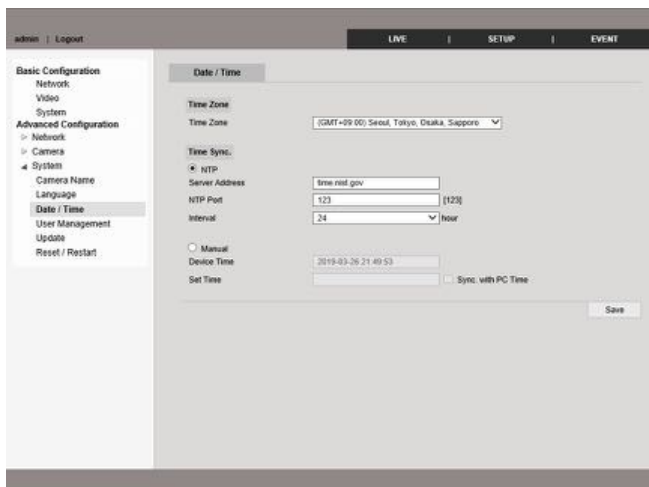
Language

It is applied to setting pages, and you can select among English, Korean and Japanese.



Date/Time

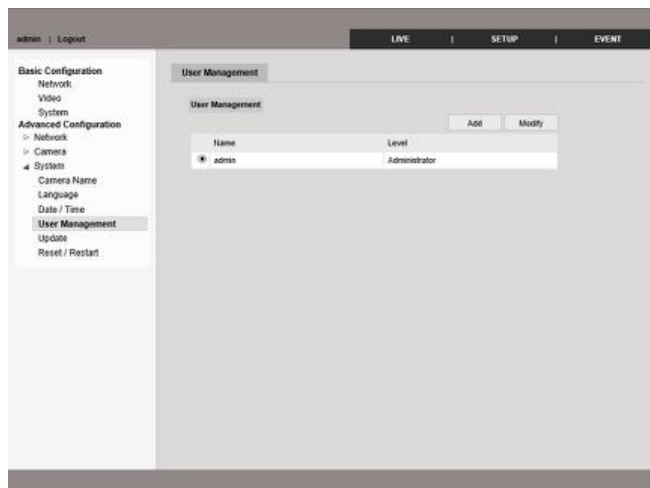
You can configure Time Zone, Synchronization with Time Server, Manual settings.



ADVANCED CONFIGURATION

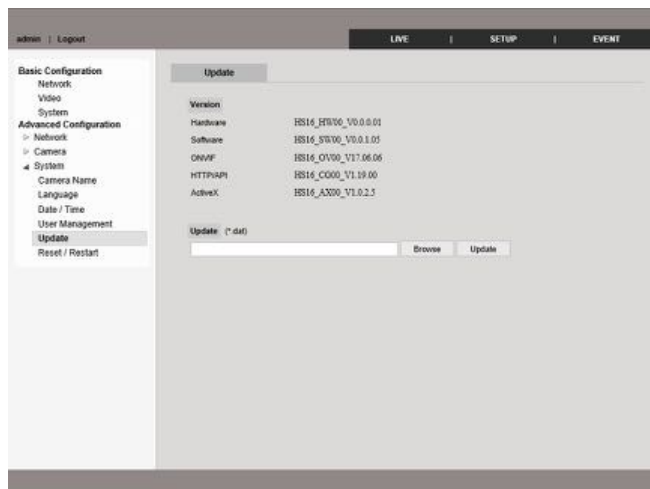
User Management

You can add/delete user account, and set permissions for each user.



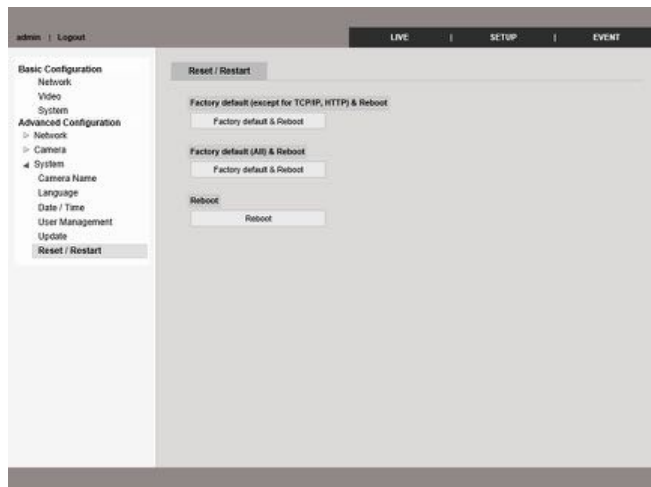
Update

Camera's firmware can be updated through this page.



Reset/Restart

You can restore all settings to factory default, restart camera.



Alarm

Alarm Input and Alarm Output can be configured.

The screenshot shows the 'Alarm' configuration page. The top navigation bar includes 'admin | Logout', 'LIVE', 'SETUP', and 'EVENT'. The left sidebar has a tree view with 'Event', 'Alarm', and 'Motion Detection'. The main content area is titled 'Alarm' and contains two sections: 'Alarm Input' and 'Alarm Output'. In the 'Alarm Input' section, there is a checkbox for 'Use Alarm Input' (unchecked), a radio button for 'NC (Normal Close)' (selected) and a dropdown for 'NO (Normal Open)', and a 'Duration' dropdown set to '100ms'. In the 'Alarm Output' section, there is a checkbox for 'Use Alarm Output' (unchecked), a radio button for 'Motion Detection' (unchecked) and a checked radio button for 'Alarm Input', and a 'Duration' dropdown set to '5'. At the bottom right of the form are three buttons: 'Alarm in Test', 'Alarm out Test', and 'Save'.

Motion Detection

You can decide whether to use Motion Detection, and set sensitivity, areas, etc.

The screenshot shows the 'Motion Detection' configuration page. The top navigation bar includes 'admin | Logout', 'LIVE', 'SETUP', and 'EVENT'. The left sidebar has a tree view with 'Event', 'Alarm', and 'Motion Detection'. The main content area is titled 'Motion Detection' and contains a section with a checkbox for 'Use Motion Detection' (unchecked), a 'Sensitivity' slider set to '3', and an 'Event Duration Time' dropdown set to '3'. Below this is a large video feed area showing a grid of red squares overlaid on a scene with two people. At the bottom of the video feed are two buttons: 'Select All' and 'Clear'. At the bottom right of the form is a 'Save' button.

SPECIFICATIONS

Camera	
Image Sensor	1/2.8" Sony Starvis CMOS Image Sensor
Total Pixel	1945(H) x 1109(V) = 2.16 megapixel
Active Pixel	1945(H) x 1097(V) = 2.13 megapixel
Scan System	Progressive
Min. Illumination	Color : 0.01 lux, BW : 0.001 lux, Color DSS : 0.001 lux, BW DSS : 0.0001 lux IR On : 0 lux
S/N Ratio	More than 50dB (AGC off)

Lens				
Lens type		Megapixel Motorized Lens		
Focal Length		f = 2.8~12mm		
Aperture		F1.4		
Angle of View (D, H, V)	Wide	120.8°	91°	74.7°
	Tele	36°	28°	21.2°

Camera Functions	
Day & Night	Auto / Day / Night
Privacy Zone	On / Off (Up to 8 Zones)
Motion Detection	On / Off (Up to 48 Zones, Sensitivity 1~5 Step)
D-WDR	On / Off (1~3 Step)
DNR	2DNR, 3DNR
Defog	On / Off
LSC	On / Off
Shutter Control	Auto (1/30~1/30000sec), Suppress Rolling, Manual
Image Adjustment	Bright / Contrast / Saturation / Sharp / Hue
White Balance	Auto Indoor / Auto Outdoor / Push / User
OSD Display	On / Off (Text, Date, Time, Event)
Video Mode	Normal / Mirror(H) / Flip(V) / Both(H/V)

SPECIFICATIONS

Network	
OS	Embedded Linux
Interface	RJ45 10/100 Base-T, PoE
Protocol	TCP/IP, UDP/IP, RTP, RTSP, RTCP, NTP, HTTP, DHCP, FTP, SMTP, DNS
ONVIF	Ver17.06.05
Concurrent Access	Up to 10 users
Compression Format	H.265 / H.264 / MJPEG
Resolution	1920×1080 / 1280×1024 / 1280×960 / 1280×720 / 1024×768 / 640×480 / 320×240
Performance	30fps@all resolution
Video Quality Control	H.265, H.264 : Bitrate Control MJPEG : Quality Level Control
Streaming	Triple Stream
Audio Compression	G.711
Audio Communication	Bi-directional
Sensor Input	1 (NC / NO)
Alarm Output	1 (Digital Output, Open Collector)
Client OS	Windows XP, 7, 8, 10
Web Browser (Manage)	IE 11, Firefox, Safari, Opera
Web Browser (View)	IE 11 Only (Active-X)

General Specifications	
Power	DC12V±10%, PoE IEEE802.3af, Class3
Power Consumption	DC12V, 680mA / 8.16W
Operation range	-10°C~+50°C / 0%~90% RH
Dimensions	78.4(W) x 88(H) x 269.9(D) mm
Weight	1.08Kg

P/N :
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