

(IR) Bullet LPR/ANPR Network Camera



User Manual

Safety Notice

- Before using the product, please carefully read through the safety information and operation instructions.
- Safely store the User Manual for future reference.
- When operating the unit, please follow instructions on the User Manual.
- Before cleaning the unit, please first unplug the power.
- Do not place the unit on an unstable cart, tripod, or on a tabletop as personal injury and damage to the unit may occur due to a fall. Please use officially certified support, frames, and accessories included with the product. Follow the instructions in this User Manual during installation to ensure the quality and maintain safety.
- Please follow the labeled specifications on the unit and supply with the correct power. If unsure of the actual power requirements, please contact the distributor and do not connect the power at will.
- The power cable must be properly secured as improper connections may cause a short circuit, fire hazards, or serious damage and hazards.
- During prolonged inactivity, please unplug the power cable and the video cable to avoid damage from lightning strike and power surges.
- Please do not insert any objects into the unit or spill liquids to avoid short circuits.
- High voltage circuitry contained within the unit. Do not disassemble to avoid electric shock. All maintenance operations must be handled by qualified maintenance staff.
- When the following occurs, please first power off the unit and then perform maintenance by qualified maintenance staff:
 - Damaged power cable or socket
 - Liquid spills or foreign objects in the unit
 - Inoperable unit when proper instructions are followed
 - Dropped unit or damaged shell
 - Other anomalies
- Replaced components by the maintenance staff must be official certified parts of identical specifications. Using unauthorized components can cause fire hazards and electric shock damage.
- After the unit maintenance has been completed, the maintenance staff must perform safety inspection to ensure proper operation.

CE Compliance Statement

This equipment complies with the following requirements of the EMC Directive 2004/108/EC for CE Marking: EN 55022: 2006 + A1: 2007 Class B, EN 61000 and EN 50130.



FCC Compliance Statement

If the declaration of conformity markings are present on the equipment, the following statements apply:



Tested to comply with FCC standards for HOME OR OFFICE USE.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

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

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit other than the one to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



	<p>Waste Electrical and Electronic Equipment</p> <p>Correct disposal of this product (applicable in the European Union and other European countries with separate collection systems). This product should be disposed of, at the end of its useful life, as per applicable local laws, regulations and procedures.</p>
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The specifications or appearance of this product are subject to change without a prior notice.

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1. Overview

Introduction

The LPR615 is a 2MP IP LPR camera engineered for detail-demanding traffic surveillance, ranging from access control to high-speed monitoring up to 180km/h. And the LPR610 is a 2MP IR Bullet LPR camera engineered for mid-range traffic surveillance, suitable for LPR applications up to 180km/h. Featuring 1080p resolution, it is perfect for monitoring multi-lane traffic. This industry-leading traffic network camera utilizes the proprietary CatchAll™ Technology to deliver clearer images of critical traffic information in detail, regardless of the environment or lighting conditions. The advanced Intelligent Traffic Mode allows full customization to optimize the identification results. The vandal-resistant, die-cast aluminum alloy housing protects the camera from rough weather and vandalism.

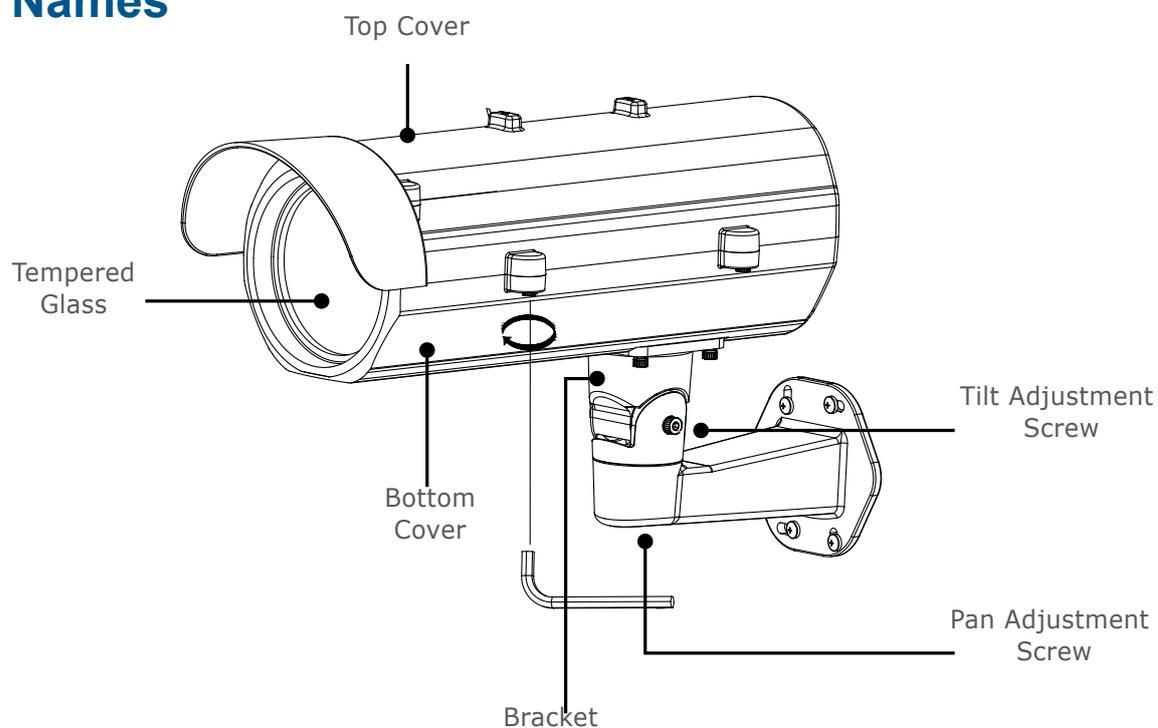
Package Contents

Check the items supplied with your network traffic camera against the following list. If any of the following items is missing, please contact your dealer.

- | | |
|--------------------------------|----|
| ■ Printed Quick Start Guide | x1 |
| ■ Camera power adaptor | x1 |
| ■ Hexagonal wrench | x1 |
| ■ Bracket pack (with 4 screws) | x1 |

Hardware Overview

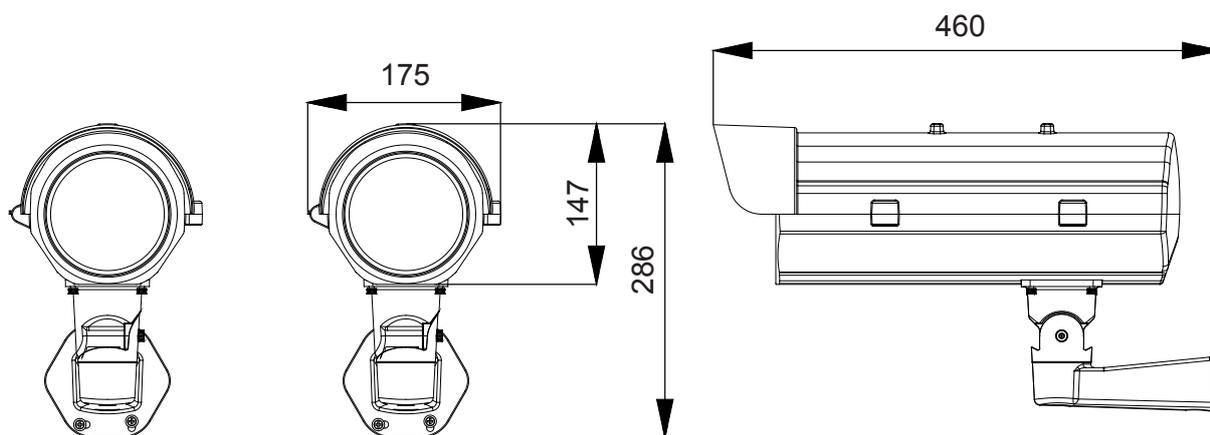
Part Names



The figure above is the illustration of the housing, which may be used with most of ICR real Day and Night cameras.

Dimensions

Unit: mm



Specifications

LPR615

Video	
Sensor Type	1/2.7" image sensor optimized for low-light performance
Active Pixels	1920x1080 (HxV)
Compression	H.264 / MPEG4 / Motion JPEG
Streaming	Triple simultaneous streams
Resolution	1080p, SXVGA, 720P, XGA, SVGA, D1, VGA, 2CIF, CIF
Max. Frame Rate	2MP 16:9 (1920x1080) at 30 fps (NTSC) and 25 fps (PAL)
Day/Night	CBR/VBR
Day/Night Mode	Mechanical (ICR) D/N Control
Shutter Time	Auto/ Forced BW/ Forced Color/ External
Minimum Illumination	1/10000s to 1/3.75s selectable (60Hz); 1/10000s to 1/3.125s selectable (50Hz)
Video Output	0.08 Lux @30IRE; 0.20 Lux @50IRE (Shutter Speed: 1/15 sec)
Bit Rate Control	NTSC: 720 X 480 @30fps; PAL: 720 X 576 @25fps
Lens	
Lens Type	Built-in; Varifocal
Focal Length, F-number	f=8-80mm, F1.6
Focus / Zoom	Manual
View Angle (FOV)	H: 38.16°(Wide)~3.5°(Tele)/V:22.05°(Wide)~2.09°(Tele)
IRIS Control	DC IRIS
Audio	
Audio Communication	Two-Way Mono Audio, Full-Duplex
Compression	G.711, PCM, 8kHz
Audio In/Out	External microphone and speaker
Image Enhancement	
Image Settings	AES, AWB, AGC Exposure Mode: AES / ALC / Flickerless / Manual; White Balance: Auto / Manual; Backlight Compensation Configurable Brightness, Contrast, Hue, Saturation, and Sharpness Gamma Correction
Digital WDR	Yes; 5 level sensitivity
Privacy Zone	Yes; customized threshold privacy zone
Frequency Control	50Hz, 60Hz
Date & Time Stamp	Yes
Intelligent Video & Event Management	
Motion Detection	5 x 5 zones, 5 level sensitivity or customized threshold
Blur Detection	Customized sensitivity in seconds
Ethernet Detection	Network loss detection
Smart Encoding	Configurable ROI for better picture quality
Others	Snapshot, Smart Focus, e-PTZ, Optimized i-frame setting
Events	Motion detection, face detection, audio detection, blur detection, Ethernet detection, external alarm
Event Actions	File upload via FTP, SMTP and SD Card; Notification via email, HTTP and TCP External output activation; Video and audio recording to SD Card
Store Category	Alarm / Motion / Schedule/ Un-interrupt recording Stores video clips and snapshots
Intelligent Traffic Mode	
Intelligent Traffic Mode	4 modes including City Surveillance, Highway, Entry/Toll and Parking lot
Profiles	4 customizable parameters options to meet various field conditions for best performance on 24/7 application
Local Storage	
Memory Card Slot	Micro SD / Micro SDHC Card up to 32 GB
Memory Card Over-write	Yes
Network	
Protocol	IPv4, TCP/IP, UDP, HTTP, SMTP, DNS, DHCP, NTP, FTP, RTP, RTSP, RTCP, ICMP, UPnP

Ethernet	10Base-T/100Base-TX Ethernet connection for LAN / WAN, RJ-45
ONVIF	Yes
Browser	IE Browser 6.0 or Above
Security	Two-level access with password protection
I/O & Controls	
Power	Screwless Terminal block
Power LED Indicator	Yes
Alarm In/Out	Terminal Block 2 in / 1 out
Network	RJ-45 with LEDs
Audio In/Out	3.5mm Phone Jack 1 in / 1 out
RS-485	Reserved
Analog Video	BNC X1, 1.0Vp-p, 75Ω
Reset	Within 5 secs to reboot; More than 5 secs to load default
Power	
Power Requirement	AC 24V ± 10%
Power Consumption (Max.)	35W (Max.)
Mechanism	
Dimensions(WxDxH)	114 x 66 x 65 mm (4.5" x 2.6" x 2.6")
Weight	4400g (9.7lb)
Protection	IP66
Battery Backed-up Real-time Clock	Yes; External RTC
Environment	
Operating Temp.	-40°C ~ 50°C (-40°F ~ 122 °F)
Operating Humidity	10~ 90% RH
Storage Temp.	-20°C ~ 60°C (-4°F ~ 140°F)
Regulatory	
Approvals	CE, FCC, RoHS
Ordering Information	
Model No.	NTSC: LPR615-N2-US-MES, PAL: LPR615-P2-EU-MES
Accessories	Easily adjustable 2-axis and cable-concealed bracket with standard package

LPR610

Video	
Sensor Type	1/2.7" image sensor optimized for low-light performance
Active Pixels	1920x1080 (HxV)
Compression	H.264 / MPEG4 / Motion JPEG
Streaming	Triple simultaneous streams
Resolution	1080p, SXVGA, 720P, XGA, SVGA, D1, VGA, 2CIF, CIF
Max. Frame Rate	2MP 16:9 (1920x1080) at 30 fps (NTSC) and 25 fps (PAL)
Day/Night	CBR/VBR
Day/Night Mode	Mechanical (ICR) D/N Control
Shutter Time	Auto/ Forced BW/ Forced Color/ External
Minimum Illumination	1/10000s to 1/3.75s selectable (60Hz); 1/10000s to 1/3.125s selectable (50Hz)
Video Output	0.08 Lux @30IRE; 0.20 Lux @50IRE (Shutter Speed: 1/15 sec)
Bit Rate Control	NTSC: 720 X 480 @30fps; PAL: 720 X 576 @25fps
Lens	
Lens Type	Built-in; Varifocal
Focal Length, F-number	f=15-50mm, F1.5
Focus / Zoom	Manual
View Angle (FOV)	H: 20.01°(Wide)~6.09°(Tele) / V: 23.6°(Wide)~3.8°(Tele)
IRIS Control	DC IRIS
IR LEDs	
LED Quantity	96 pcs (850nm)
IR Distance	15-30m (50-100ft)
IR turn on status	Under 5 Lux by auto control
LED Life	More than 10,000 hours (50°C)
Audio	
Audio Communication	Two-Way Mono Audio, Full-Duplex
Compression	G.711, PCM, 8kHz
Audio In/Out	External microphone and speaker
Image Enhancement	
Image Settings	AES, AWB, AGC Exposure Mode: AES / ALC / Flickerless / Manual; White Balance: Auto / Manual; Backlight Compensation Configurable Brightness, Contrast, Hue, Saturation, and Sharpness Gamma Correction
Digital WDR	Yes; 5 level sensitivity
Privacy Zone	Yes; customized threshold privacy zone
Frequency Control	50Hz, 60Hz
Date & Time Stamp	Yes
Image Enhancement	
Image Settings	Exposure Mode: Auto Exp./Manual Exp./Auto IRIS; White Balance: Auto/Manual; Backlight Compensation: 5x5 zones selectable; Gain, Sharpness, Saturation, Brightness, Contrast: 255 level sensitivity
WDR	Digital WDR; 5 level sensitivity
DNR	-
Privacy Zone	Yes; customized threshold privacy zone
Image Orientation	Mirror, Flip
Frequency Control	NTSC(60Hz)/ PAL(50Hz)
Date & Time Stamp	Yes
Intelligent Video & Event Management	
Motion Detection	Yes, 5-level sensitivity
Others	Ethernet / Blur / Audio Detection, Snapshot, Smart Focus, e-PTZ, Optimized i-frame setting
Event Actions	File upload via FTP, SMTP and SD Card; Notification via email, HTTP and TCP External output activation; Video and audio recording to SD Card
Store Category	Event snapshot, Edge recording, Manual Snapshot, Manual Recording
Intelligent Traffic Mode	4 modes including City Surveillance, Highway, Entry/Toll and Parking lot

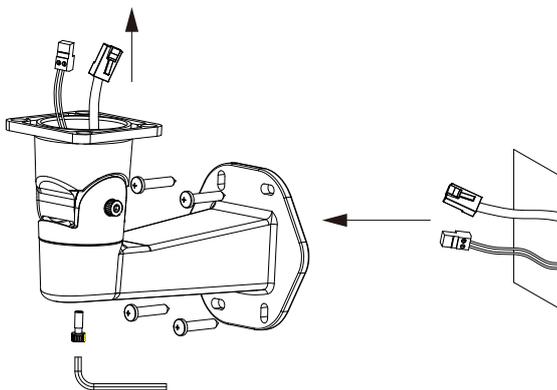
Profile	4 customizable parameters options to meet various field conditions for best performance on 24/7 application
Local Storage	
Memory Card Slot	Micro SD / Micro SDHC Card up to 32 GB
Memory Card Over-write	Yes
Network	
Protocol	IPv4, TCP/IP, UDP, HTTP, SMTP, DNS, DHCP, NTP, FTP, RTP, RTSP, RTCP, ICMP, UPnP
Ethernet	10Base-T/100Base-TX Ethernet connection for LAN / WAN, RJ-45
ONVIF	Yes
Browser	IE Browser 6.0 or Above
Security	Two-level access with password protection
I/O & Controls	
Power	Screwless Terminal block
Power LED Indicator	Yes
Alarm In/Out	Terminal Block 2 in / 1 out
Network	RJ-45 with LEDs
Audio In/Out	3.5mm Phone Jack 1 in / 1 out
Analog Video	BNC X1, 1.0Vp-p, 75Ω
Reset	Within 5 secs to reboot; More than 5 secs to load default
Power	
Power Requirement	AC 24V ± 10%
Power Consumption (Max.)	45W (Max.)
Mechanism	
Dimensions(WxDxH)	422 x 174 x 145mm (16.6" x 6.9" x 5.7")
Weight	6000g (13.22lb)
Protection	IP66
Environment	
Operating Temp.	-40°C ~ 50°C (-40°F ~ 122 °F)
Operating Humidity	10~ 90% RH
Storage Temp.	-20°C ~ 60°C (-4°F ~ 140°F)
Regulatory	
Approvals	CE, FCC, RoHS
Ordering Information	
Model No.	NTSC: LPR610-N2-US-MES; PAL: LPR610-P2-EU-MES
Accessories	Easily adjustable 2-axis and cable-concealed bracket with standard package

2. Installation

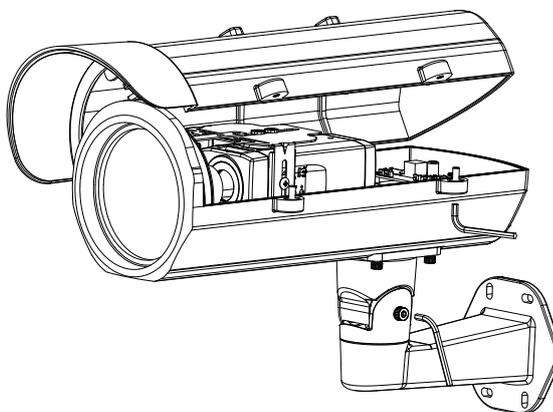
Installation of the Camera and Bracket

Wiring Cables

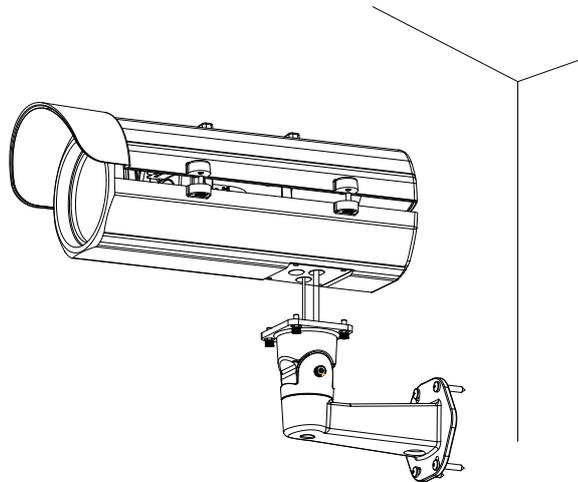
1. Take the bracket from the box and put the power cable and Ethernet cable through the bracket and then fix the bracket to the wall (Loose the screws of the bracket for easy assembly if necessary).



2. Take out the housing and open the side cover with the hexagonal wrench.

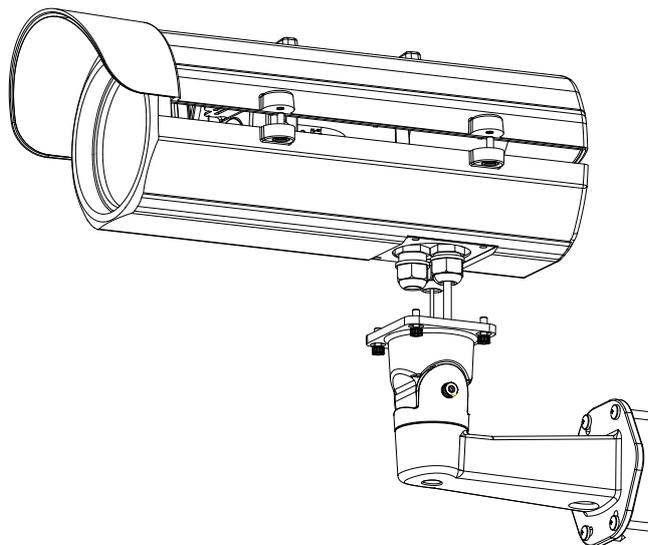


- Put the Ethernet cable through the bottom of the housing and let it pass from the hole. Make connection of power by plugging the terminal block into the power socket.



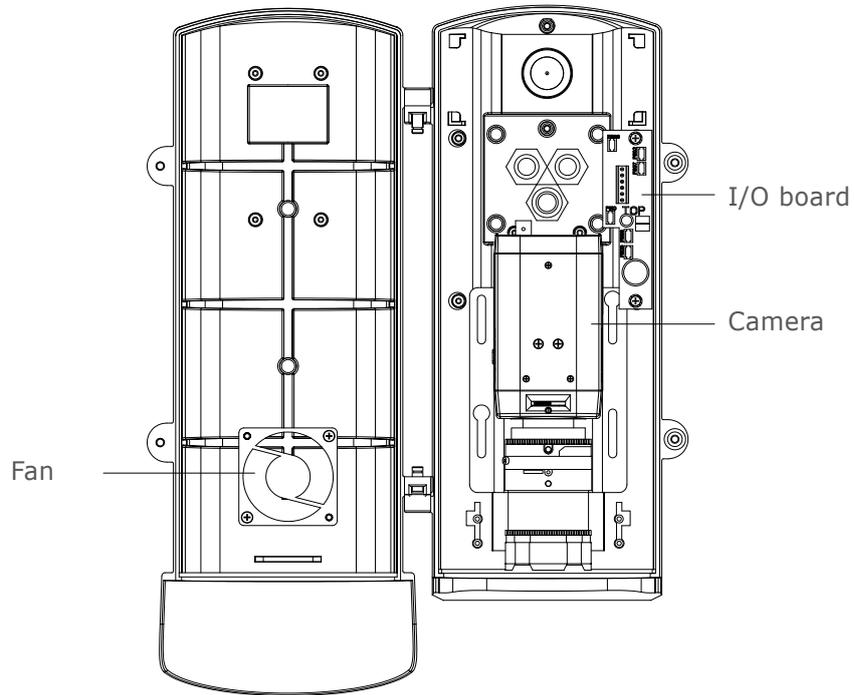
Note

For waterproof installation, use the provided spacer and stick it right by the outlet. Then install the three glands to get the power cable and Ethernet cable pass through the hole of the gland covers.

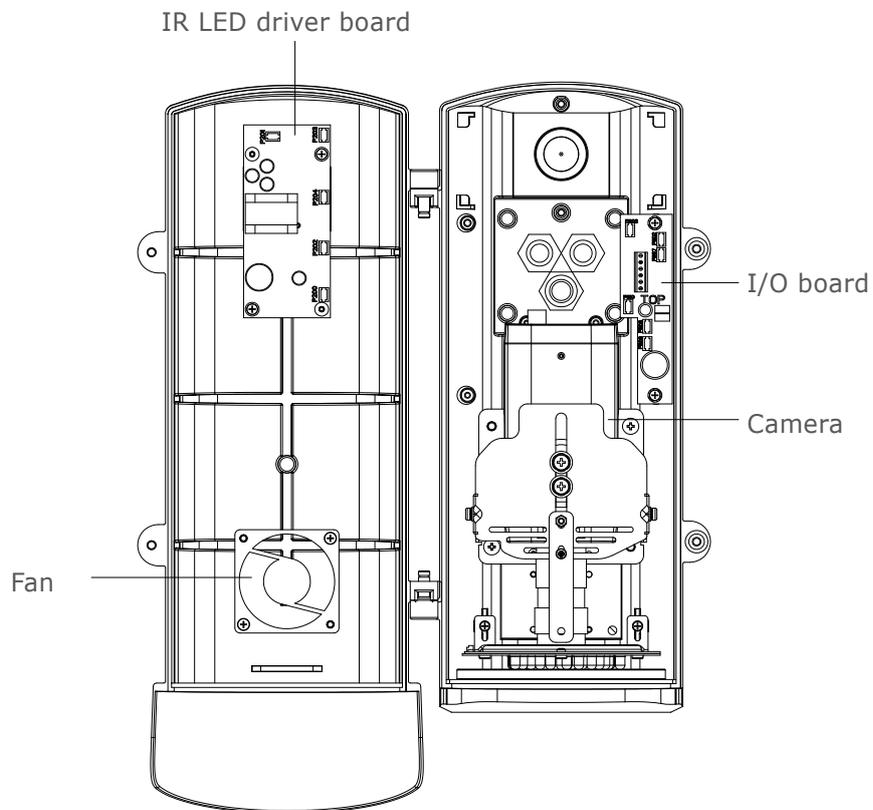


2. Installation

4. Open the side cover and you can see the housing inner part as the figure shown below.



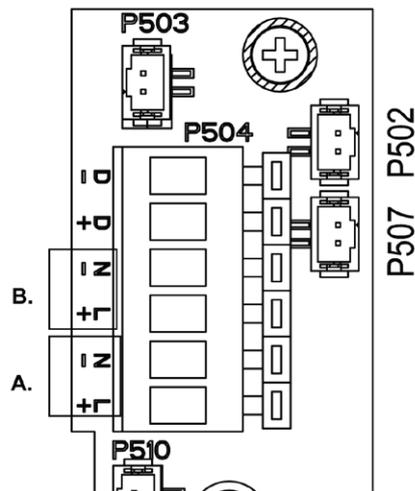
LPR615 Inner Part Definition



LPR610 Inner Part Definition

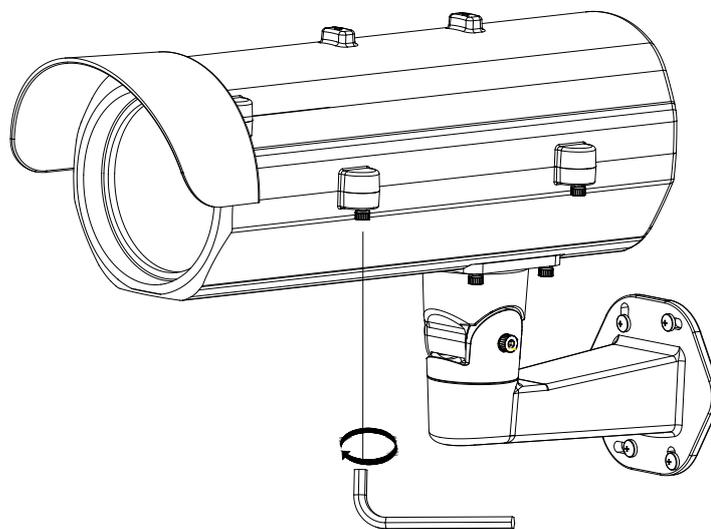
I/O Contacts

Connect the power cable to the power port of the AC24V camera and to the A section (L+: power +/ N-: power-) as below. And connect the outside AC24V power supply to the section B(L+: power+/ N-: power-).



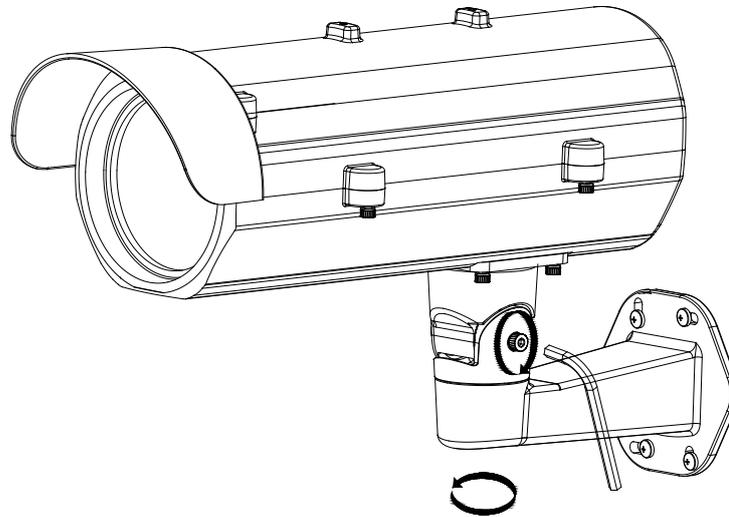
Contact positions on the heater board

5. After you have finished wiring the Ethernet cable, close the side cover and use the provided screws to fix the housing on the bracket with the hexagonal wrench.



2. Installation

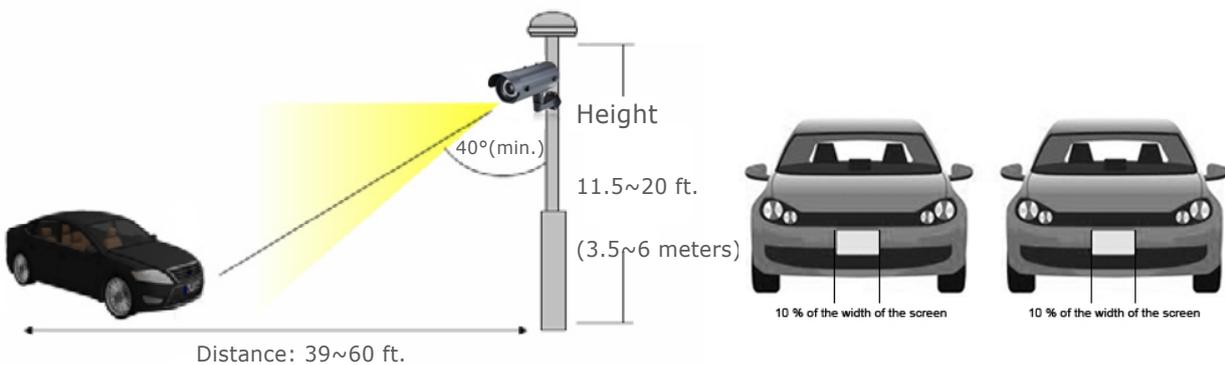
- Loosen the pan and tilt adjustment screws of the bracket to adjust the angle of the housing and then tighten the screws.



Recommended Installation Distance

LPR615 & LPR610 is built in with a 8 ~80mm and 15 ~50mm lens respectively, which can capture a wide 24~26 ft. (7.5~8 meters) field. To ensure an optimal view, please adjust the lens under the conditions we suggest.

- The camera height should be higher than 11.5 ft. (3.5 meters).
- The width of the license plate should cover approximately 10% of the width of the screen.
- Vertical angle should not be less than 40 degrees.



Initial Configuration

Before connecting the camera to your network infrastructure, it's suggested that you connect the camera to a computer first to perform initial configurations.

1. To access the camera, the PC must be on the same network segment as the camera. The default IP address of the camera is a static one (192.168.1.30). Configure your PC's IP address as 192.168.1.X (X is a number between 2 to 254 excluding 30) and subnet mask as 255.255.255.0, and then your PC should be able to access the camera.
 - **IP Address:** 192.168.1.30
 - **Subnet Mask:** 255.255.255.0
2. Using an Ethernet cable, connect the camera to the computer.

The LAN port of the camera supports auto MDI/MDIX so there is no need to use a cross-over cable.
3. On the PC, launch a web browser and enter the IP address of the camera in the URL field:
http://192.168.1.30
4. When prompted for login, enter the default user name: **admin** and password: **1234** to log in. Note that the user name and password are case-sensitive.
5. Configure the settings to meet your requirements. For more information, refer to the User Manual on the provided CD-ROM.

Network Deployment

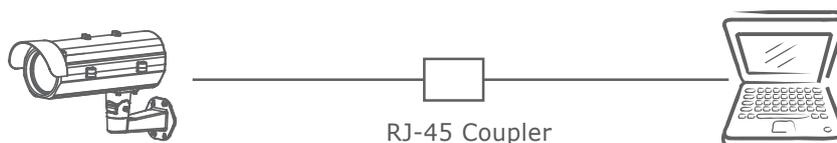
There are many different ways that you can connect the camera to your network, depending on your applications requirements. You should always set the camera's network settings according to your network configurations. The following diagrams depict some typical applications with guidelines on network settings. For more information on network settings, always consult with your network administrator or ISP as required.

Type 1: Direct Connection to a PC

Directly connect the RJ-45 cable of the camera to a PC.



To extend the connection length, you should use an RJ-45 female/female coupler to connect two category 5/5e UTP/STP cables together.





Although an RJ-45 coupler is used to extend the connection length, the total length between the PC and the IP camera must not exceed 100 meters (328 feet). The LAN port of the camera supports auto MDI/MDIX (Medium dependent interface crossover) so there is no need to use cross-over cable.

To access the camera, the PC must be on the same network segment as the camera. The default IP address of the camera is a static one (192.168.1.30). Configure your PC's IP address as 192.168.1.X (where X is a number between 2 to 254 excluding 30) and subnet mask as 255.255.255.0, and then your PC should be able to access the camera.

Type 2: Connection to LAN

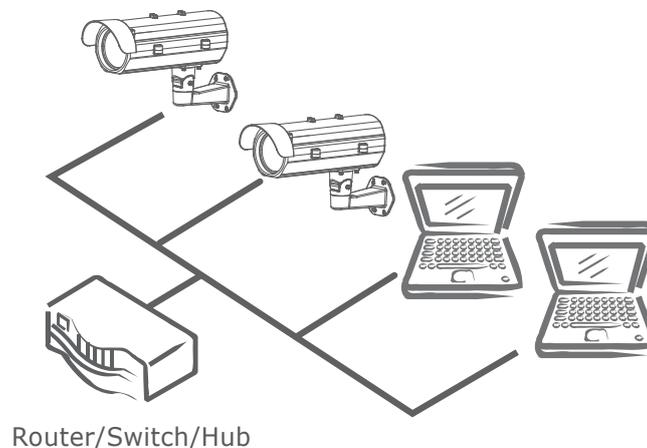
To add the camera(s) to an existing LAN, just connect the camera(s) to the router, switch or hub on your network.



The LAN port of the camera supports auto MDI/MDIX (Medium dependent interface crossover) so there is no need for an uplink port or the use of a cross-over cable.

Assign an IP address to your camera following your network IP allocation policy. The IP address can be manually specified by users or by a DHCP server, if available on your network.

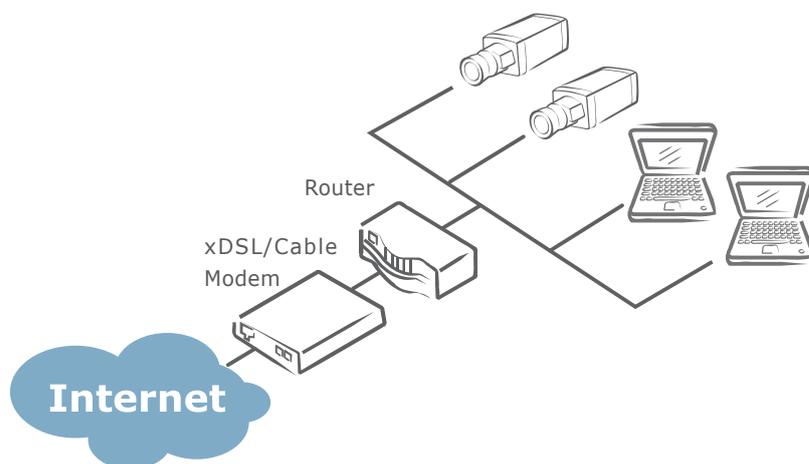
Then, you can monitor and manage the camera via a web browser from a local PC.



Type 3: Remote Connection via the Internet

If the network where the camera resides is connected to the Internet, you can also provide remote access to your camera over the Internet.

Typically a broadband router has a built-in DHCP function to assign a local IP address to your camera. You can alternatively assign a fixed IP address to the camera to prevent it from frequently changing.



To access the camera from a local PC, simply use the local IP address of the camera.

To enable remote access, you must configure your router/firewall to forward an incoming request to that fixed local IP address of the camera. Therefore, when an external host sends a request to access your camera, the request will first reach the router's external IP address and then be forwarded to the local IP address of the camera.

Port forwarding is based on the service you want to provide. For example, forward HTTP port to enable remote web access to your camera, or RTSP port to enable access to video/audio streams from the camera.

If your camera is configured to use a non-standard HTTP port, then you have to forward that port accordingly.

Accessing the Camera for the First Time

The camera comes with a web-based setup utility, allowing you to view the video of the camera and configure the camera for optimal use in your environment.

To access the camera's web-based control utility, you need a PC that meets the following requirements:

- **Operating System:** Windows Vista® or XP
- **Browser:** Internet Explorer Version 6.0 or later
- **CPU:** Intel® Pentium® 4 Processor 2GHz or higher
- **RAM:** 512 MB or more.

Then take the following steps to connect your PC to the camera.

Step 1: Make the connection

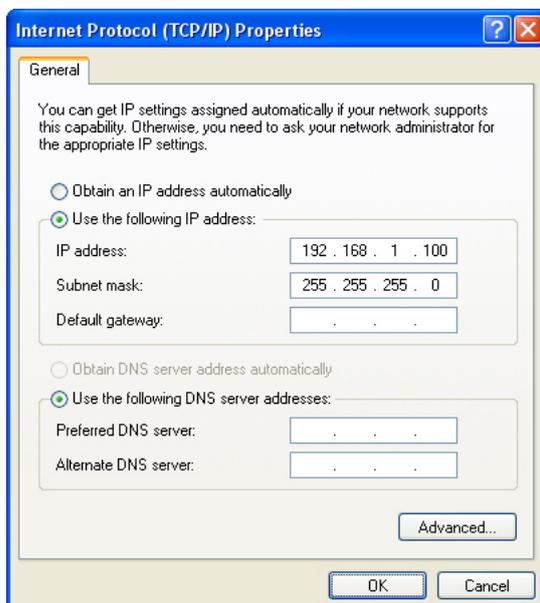
For initial setup purposes, connect one end of an Ethernet cable to the RJ45 connector of the camera and the other end to the LAN port on your PC.

Step 2: Configure your PC's IP address

The camera uses a default IP address of 192.168.1.30 and subnet mask of 255.255.255.0. To have your PC on the same network with the camera, configure your PC's IP settings as below:

- **IP address:** 192.168.1. X, where X is a number between 2 to 254, excluding 30.
- **Subnet mask:** 255.255.255.0.

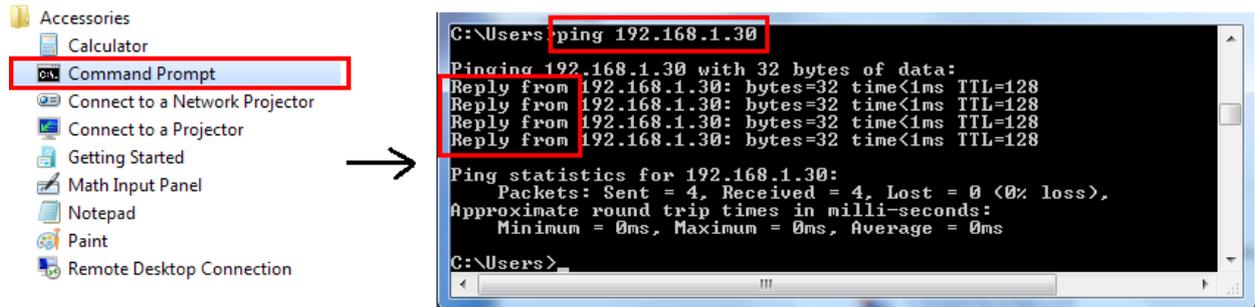
Ignore all other settings and click **OK**.



Step 3: Link Verification between PC and Camera

1. Launch the Command Prompt by clicking the **Start** menu, **Programs, Accessories** and then **Command Prompt**.
2. At the prompt window, type `ping x.x.x.x`, where x.x.x.x is the IP address of the camera (the default is 192.168.1.30).

If the message of **"Reply from..."** reponds, it means the connection is established.

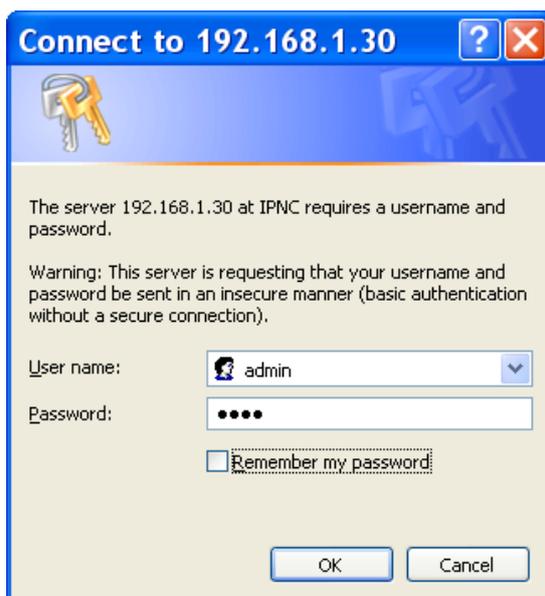


Step 4: Accessing the Camera from IE Browser

Open the IE browser and enter the IP address of the camera in the URL field. The default is 192.168.1.30.

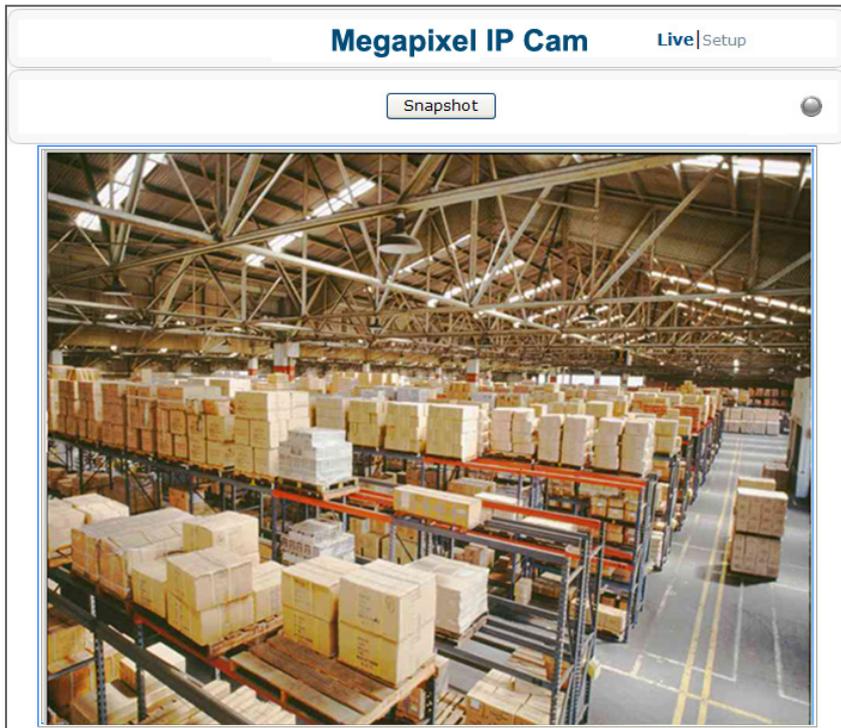


When prompted for login, enter the user name and the password (The defaults: **admin**, **1234**). Note that the user name and password are case-sensitive.



2. Installation

Upon successful login, you will see the live view screen shown below, which is an example for series introduction.



Using “IP Finder” to Manage Cameras

IP Finder is a management tool included on the product CD. It is designed to manage your network cameras on the LAN. It can help find multiple network cameras, set IP addresses, show connection status and manage firmware upgrades.

Installing IP Finder

Before proceeding, make sure your operating system is Windows Vista or Windows XP.

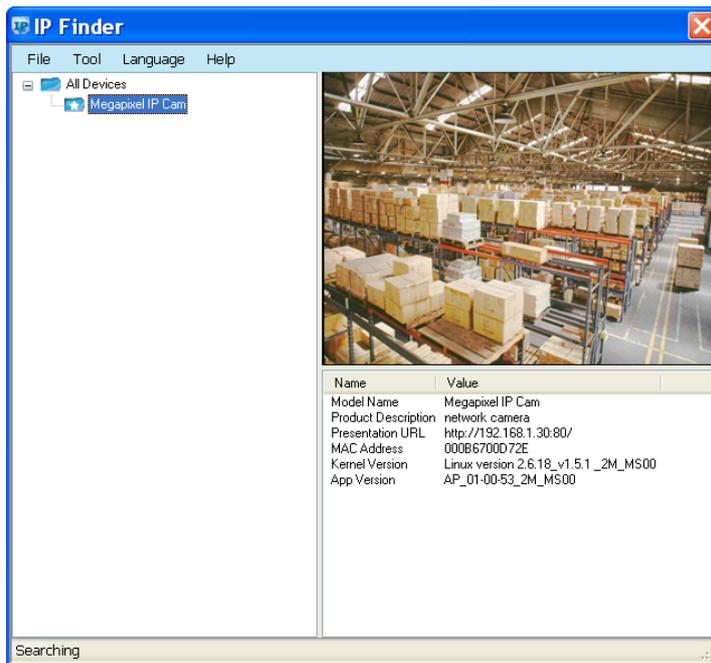
To install the software, simply locate and double-click the **IP Finder** setup file on the provided CD. Then follow the on-screen prompts to proceed.

Using IP Finder

To launch IP Finder, double-click the **IP Finder** shortcut on the desktop or click **Start > Programs > IP Finder > IP Finder**.

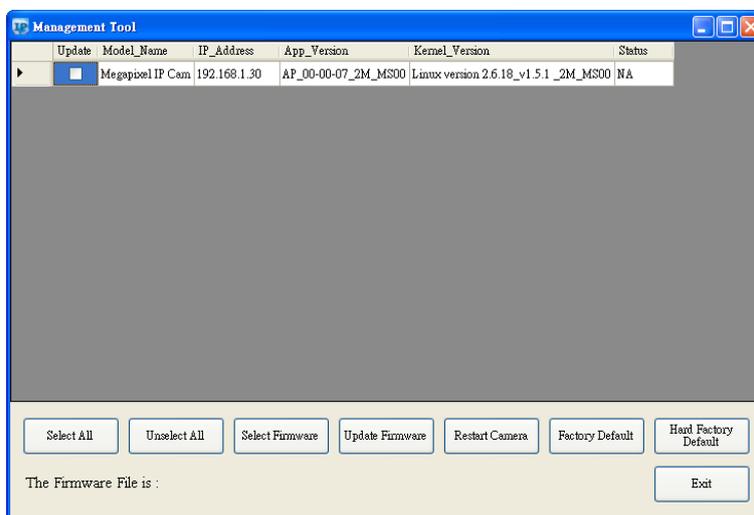
After you launch **IP Finder**, it will search for all the available cameras on the same network. Click the plus sign next to “**All Devices**” to expand the menu and display all the found cameras.

Clicking a target camera will show the live view (if available) and the detailed information of the camera, including the MAC address. Each camera comes with a unique MAC address, which is indicated on the product label. It helps identify which camera is currently accessed, particularly when multiple cameras are connected on your network.



The **Tool** menu of the **IP Finder** allows you to perform these tasks:

- **Search Network:** This option allows you to search the cameras on the network.
- **Set Master ID and Password:** Allows you to set a master ID and password for managing the cameras with IP Finder.
- **Management Tool:** Allows you to restart the camera, update firmware, reset all of the camera settings to default (except network settings) and reset all of the camera parameters to default.



For an individual camera, right-click the camera and a menu will provide these options:

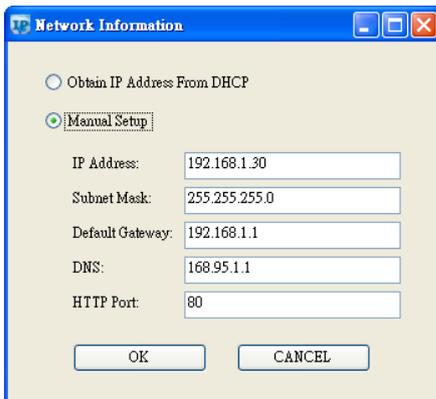
- **Go to Presentation URL:** Launch IE browser to access the web-based utility of the camera.
- **Set Device ID and Password:** Set the login ID and password for managing the camera with IP Finder.

2. Installation



A dialog box titled "Enter ID and Password" with a blue title bar and standard window controls. It contains two text input fields: "ID:" and "Password:". Below the fields is an "OK" button.

- **Network Information:** Allows you to configure the camera's network settings.



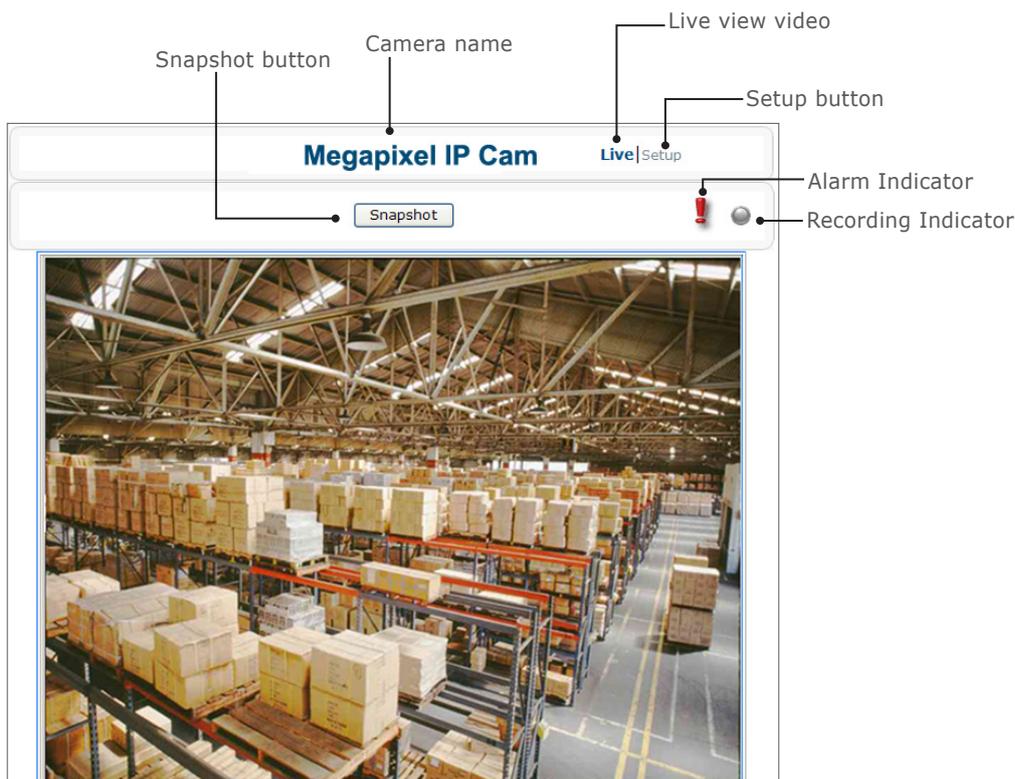
A dialog box titled "Network Information" with a blue title bar and standard window controls. It features two radio buttons: "Obtain IP Address From DHCP" (unselected) and "Manual Setup" (selected). Below the radio buttons are five text input fields with the following values: "IP Address: 192.168.1.30", "Subnet Mask: 255.255.255.0", "Default Gateway: 192.168.1.1", "DNS: 168.95.1.1", and "HTTP Port: 80". At the bottom are "OK" and "CANCEL" buttons.

3. Web-based Interface

3.1 Overview

3.1.1 Main Screen

After you log in to the camera's web-based control utility, you will first see the live view screen of the camera. The screen below is an example for series introduction.



The live view screen of the utility provides these options:

- **Snapshot:** Pressing this button takes a snapshot of the current live view screen.
- **Live:** Pressing this button displays the live view of the camera.
- **Setup:** Pressing this button allows you to access the setup page.
- **Camera name:** Displays the name of the camera.
- **Recording Indicator:** Turns red when the recording is proceeding.
- **Alarm Indicator:** Appears when an alarm is triggered.
- **Live view video:** Shows the live view of the camera.

Note that the accessibility to the options varies according to the login account.

- **Viewer:** Allowed to view only the live view screen. Access to other options is restricted.
- **Administrator:** Can access all the options on the live view page and make configurations on the setup pages.

3.1.2 Setup Menu

The **Setup** options are categorized into six groups: **ANPR/LPR, Image, Network, System, Event** and **Recording**. Clicking the name will expand its sub-menu. See the ensuing sections for more information.

3.1.3 Applying Settings

Each configuration page provides a **Save** button. Settings are applied right after you press the **Save** button. And the browser will refresh to load the latest setting or otherwise pop up the **"Save OK"** message to indicate that settings have been applied.

3.2 ANPR/LPR Settings

3.2.1 ANPR/LPR

Traffic



Built in with 4 preset modes with optimized parameter settings in accordance with different car speeds and camera angles to help inexperienced users easily achieve the best capture results in these preprogrammed scenarios, e.g. city surveillance, highway, entry point/toll station, and parking lot.

- **Normal:** Set the exposure mode to improve image quality.
- **User:** Allows you to set exposure mode and desired time frames to meet different conditions during a day
- **City Surveillance:** Applied to the speed from 20 kmph to 110 kmph (12mph to 68mph). Please set the camera facing vehicle directly.
- **High Way:** Applied to higher auto speed environment, such as freeway. The speed is around 90 kmph to 180 kmph (56mph to 112mph). Please set the camera facing vehicle directly.
- **Entry Point, Toll station:** Applied to the speed from 20 kmph to 110 kmph (12mph to 68mph). Please set the camera facing the car front with angle.
- **Parking Lot:** Applied to parking area. The auto speed is around 0 kmph to 20 kmph (0mph to 12mph). Please set the camera facing vehicle directly.

Exposure Mode

The **Exposure Mode** allows you to configure the exposure settings to meet the image quality requirements in relation to lighting and other considerations.

The screenshot shows the 'Exposure Mode' configuration window. It is divided into two main sections: 'Auto Exposure' and 'Manual Exposure'. The 'Auto Exposure' section is currently selected, indicated by a radio button. It contains several settings, each with a dropdown menu: 'Method' is set to 'Center weighted', 'EV' is set to '0', 'Max Exposure' is set to '1/3.75', 'Min Exposure' is set to 'Unlimited', 'Sensitivity' is set to '10', and 'Max. Gain' is set to 'Default'. The 'Manual Exposure' section is also visible but not selected. It includes 'Exposure Time' set to '1/ 30.00 Sec' and 'Gain' set to '0'. A range '(1/3.75~1/10000)' is shown next to the exposure time.

Auto Exposure Settings

- **Method:** Select which area of the image will be used to measure the amount of light to achieve best exposure.
 - **Center Weighted:** Exposure metering is averaged over the entire frame but emphasis is placed on the central area.
 - **Object Targeted:** This option meters the exposure based on the targets you specify. When this option is selected, define your target by clicking squares displayed on the image and then press **Save Spot Window** to save the setting.
- **EV:** In a scene with predominantly light or dark areas, the image will be underexposed or overexposed, causing an image to be too dark or bright. In such situations, you can adjust a compensation value to optimize the exposure. Decrease the value if images appear too light (overexposed). Increase the value if images are too dark (underexposed).
- **Max/Min. Exp:** Select the maximum / minimum exposure time according to the light source. The selectable value will change according to the frequency setting under **Image > Basic Settings**.
- **Sensitivity:** Select how sensitive the camera reacts to the light. A higher value enables the camera to be more sensitive to the light conditions and adjust the exposure in the shortest time interval.
- **Max Gain:** Specify the maximum amount of amplification applied to the image. A high level of gain allows images to be viewable in very low light, but will increase the image noise.

Manual Exposure Settings

- **Exposure Time:** Enter a desired exposure time.
- **Gain:** Select a gain value from 0 to 16. A high level of gain allows images to be viewable in very low light, but will increase image noise.

Auto IRIS Mode

Select Auto IRIS Mode to configure the exposure settings with the auto iris control enabled.

- **Method:** Select which area of the image will be used to measure the amount of light to achieve best exposure.
 - **Center Weighted:** Exposure metering is averaged over the entire frame but the emphasis is placed on the central area.
 - **Object Targeted:** Define your target by clicking squares displayed on the image and then press **Save Spot Window** to save the setting.
- **EV:** Decrease the value if images appear too light (overexposed). Increase the value if images are too dark (underexposed).
- **Convergence Speed:** Select the lens' convergence speed from the drop-down list. Higher the convergence speed, the faster the lens iris opening responds to changes in light levels.

Shutter Settings:

- **Slow Shutter:** Set the exposure time from a set of fixed shutter speeds.
- **Manual Exposure Time:** Manually input a desired exposure time.

Gain Settings:

- **Max. Gain:** Specify the maximum amount of amplification applied to the image. A high level of gain allows images to be viewable in very low light, but will increase the image noise.
- **Manual Gain:** Select a gain value from 0 to 16.



For optimal LPR results, users are recommended to adjust the Manual Exposure Time and Manual Gain appropriate for the actual environment at the monitored site.

Profile

Profile			
<input checked="" type="checkbox"/>	Cus 1	Start	00 : 00 End 24 : 00
<input type="checkbox"/>	Cus 2	Start	00 : 00 End 24 : 00
<input type="checkbox"/>	Cus 3	Start	00 : 00 End 24 : 00
<input type="checkbox"/>	Cus 4	Start	00 : 00 End 24 : 00
Gain		0	
Level		OFF	
Brightness		< 128 > (0-255)	
Contrast		< 128 > (0-255)	
Saturation		< 128 > (0-255)	
Sharpness		< 128 > (0-255)	
Shutter		1/ 30.000 sec	
Default all image parameters			

Profile Setting provides users with flexibility to customize and apply different parameter settings at up to 4 different time frames in order to meet the variation in light, weather and other environmental factors during a day.(Unavailable when traffic mode is normal)

- **Gain:** Unavailable
- **Brightness:** Adjust the image brightness level.
- **Contrast:** Adjust the image contrast level.
- **Saturation:** Adjust the image saturation level.
- **Sharpness:** Adjust the image sharpness level.
- **Shutter:** Unavailable
- **Default All Image parameters:** Pressing this button will restore all the image settings to the defaults.

ICR Control

ICR Control	
<input checked="" type="radio"/>	Auto
<input type="radio"/>	Forced B/W
<input type="radio"/>	Forced Color
<input type="radio"/>	External
Alarm	1
Active	LOW

The camera incorporates an IR cut filter. In ICR Control you can specify how the camera switches between color and black/white modes.(Unavailable when traffic mode is normal)

- **Auto:** Allows the camera to automatically switch between color and black/white modes.(Available only when traffic mode is user)
- **Forced B/W:** Forces the camera stay in black/white mode at all times.
- **Forced Color:** Forces the camera stay in color mode at all times.
- **External:** Enable this option if an external alarm input device is connected to control the IR cut filter.
 - **Alarm:** Set alarm input as 1 or 2 according your actual connection.
 - **Active:** Select (electricity) current status as high or low to define active status.

3.3 Image Settings

3.3.1 Codec

The Codec page allows you to configure the video streams for the camera. You can optionally configure a secondary or third stream to a resolution as required by your third-party device or software.

Basic Settings	
Camera Name:	Megapixel IP cam
Primary Stream:	Codec: H264
	Resolution: 1080P (1920x1080)
	Bit Rate: 8000 kbps (500~8000)
	Frame Rate: 30 FPS
	I-frame Interval: 1 S
Secondary Stream:	Codec: OFF
	Resolution: ...
	Bit Rate: 4000 Kbps (500~4000)
	Frame Rate: 30 FPS
	I-frame Interval: 1 S
Third Stream:	Codec: MJPEG
	Resolution: VGA (640x480)
Mirror:	OFF
Rate Control:	VBR
TV Out Stream:	ON
<input type="button" value="Save"/>	

Camera Name Settings

- Enter a descriptive name of the camera. Note that if you want to make the camera ONVIF compliant (see **Network > ONVIF**), no space is allowed in the camera name.

H.264 Codec Settings

- **Resolution:** Click the drop-down menu to choose a resolution for the video.
- **Bit Rate:** According to your bandwidth, specify a value for data transmission rate (kbps). Higher value gets higher video quality but consumes more bandwidth.
- **Frame Rate:** Choose the intended frame rate, i.e., the number of frames to transmit per second.
- **I-frame Interval:** While keeping the same frame rate, you can specify longer I-frame interval to achieve reduced bit rate, optimized bandwidth consumption and minimized storage space consumption. Generally, it's recommended setting longer interval for less motion and sufficient lighting conditions, and shorter interval for scenes with lots of motion and low lighting conditions. Click the drop-down menu to select options including 1/2, 1, 2, 3, 4 seconds.

MPEG4 Codec Settings

- **Resolution:** Click the drop-down menu to choose a resolution for the video.
- **Bit Rate:** According to your bandwidth, specify a value for data transmission rate (kbps). Higher value gets higher video quality but consumes more bandwidth.
- **Frame Rate:** Choose the intended frame rate, i.e., the number of frames to transmit per second.
- **I-frame Interval:** While keeping the same frame rate, you can specify longer I-frame interval to achieve reduced bit rate, optimized bandwidth consumption and minimized storage space consumption. Generally, it's recommended setting longer interval for less motion and sufficient lighting conditions, and shorter interval for scenes with lots of motion and low lighting conditions. Click the drop-down menu to select options including 1/2, 1, 2, 3, 4 seconds.

MJPEG Codec Settings

- **Resolution:** Click the drop-down menu to choose a resolution for the video.
- **Quality:** Set the image's quality as High, Normal or Low.
- **Frame Rate:** Choose the intended frame rate, i.e., the number of frames to transmit per second.



Note

1. Live View uses the MJPEG codec. If no streaming is using MJPEG, it will result in no video for Live View.

Codec

No JPEG Codec! Please choose a suitable codec mode on Setup->Image->Codec page.

2. If MJPEG is selected for both the primary stream and the third stream, Live View will always display video using the third stream codec settings.

3. Web-based Interface

Refer to the tables below for selectable codec types for each streaming:

2MP Model Streaming Combination					
Primary		Secondary		Third	
Codec	Resolution	Codec	Resolution	Codec	Resolution
MJPEG	1080P	OFF	N/A	OFF	N/A
		H264 MPEG4	D1 VGA 2CIF CIF		
	SXVGA 720P XGA SVGA D1	OFF	N/A	OFF	N/A
		H264 MPEG4	D1 VGA 2CIF CIF	MJPEG	VGA CIF
				OFF	N/A
				MJPEG	VGA CIF
MPEG4	1080P	OFF	N/A	OFF	N/A
		SXVGA 720P XGA SVGA D1	OFF	N/A	MJPEG
	OFF				N/A
	MJPEG				VGA CIF
	OFF				N/A
	H264	1080P	OFF	N/A	OFF
H264 MPEG4			D1 VGA 2CIF CIF	MJPEG	VGA CIF
SXVGA 720P XGA SVGA D1	OFF	N/A	OFF	N/A	
			MJPEG	VGA CIF	
	H264 MPEG4	D1 VGA 2CIF	OFF	N/A	
			MJPEG	VGA	

Mirror Settings

This option allows you to mirror or flip the video image if required.

- **OFF:** Turns off this function.
- **HORIZONTAL:** Flips the images horizontally.
- **VERTICAL:** Flips the images vertically.
- **BOTH:** Flips the images vertically and horizontally.

Rate Control

Choose a bit rate control to manage your bandwidth usage.

- **Variable Bit Rate (VBR):** VBR keeps the video stream quality as constant as possible by varying bit rate. This mode ensures high quality image for motion scene and is often selected when image quality demands priority. However, this mode requires more bandwidth in order to vary the bit rate.
- **Constant Bit Rate (CBR):** CBR maintains a specific and constant bit rate by varying the stream quality. With CBR, streaming is smooth and network throughput is stable for any scene. This mode is typically used with a limited bandwidth environment.

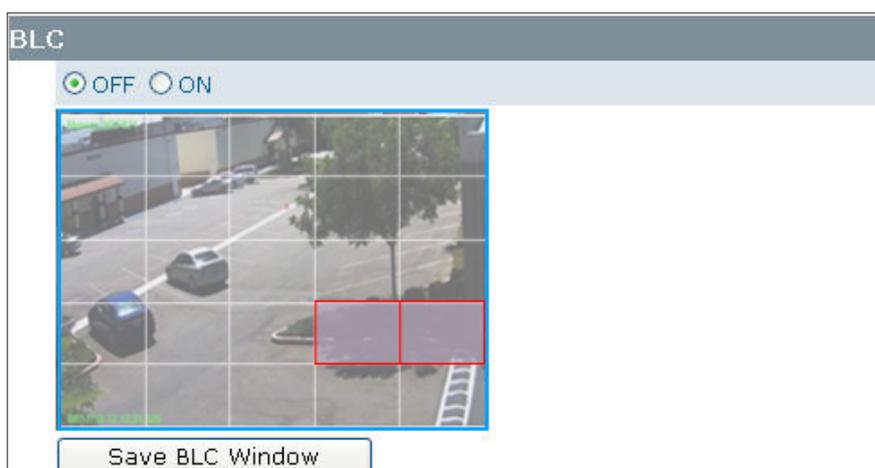
TV Output Stream

Turn on this option if you connect an analog monitor to the camera's **Video** connector for video output.

3.3.2 Exposure

BLC (Backlight Compensation)

The **Backlight Compensation** function allows you to provide the optimal exposure of subjects under back light circumstances.



- **OFF/ON:** Choose to enable or disable the BLC function.
- **BLC area setting:** BLC area refers to the dark area where more details are expected. Define your BLC area by clicking squares displayed on the screen and then press Save BLC Window to save the setting.

Digital Wide Dynamic Range

Digital WDR

Level:
OFF
▼

When there are both very bright and very dark areas simultaneously in the field of view, you can enable Digital Wide Dynamic Range (WDR) function. It optimizes an image to ensure that dark areas are more visible while retaining details in bright areas.

- **Level:** Depending on the contrast/dynamic range of a scene, you can select different level of WDR. Higher level of WDR suits for higher contrast/dynamic scene.

3.3.3 White Balance

White Balance



White Balance Mode

Auto White Balance

Sensitivity 10 ▼

Manual White Balance

R Gain 2.0 (0.4~4.0)

G Gain 2.0 (0.4~4.0)

B Gain 2.0 (0.4~4.0)

Save

Select a white balance mode according to external light condition for the best color temperature.

- **Auto White Balance:** Use this option when there is no special lighting in the environment. The camera will automatically adjust the color temperature according to the light conditions and the sensitivity you specify. The higher the sensitivity, the faster the adjustment. If the lighting conditions change frequently, select a lower sensitivity to prevent the camera from frequently changing white balance.
- **Manual White Balance:** With any special light in the environment, you can use this option to manually adjust the red, green and blue channels, which are mostly affected by the special light. For example, if red color is too bright, then you should lower the R Gain value.

3.3.4 Basic Setting

The **Basic Setting** allows you to specify a frequency and adjust the basic image settings to optimize your video image.

Basic Settings



Basic Settings

Frequency	<input checked="" type="radio"/> 50 Hz <input type="radio"/> 60Hz
TV System	<input type="radio"/> NTSC <input checked="" type="radio"/> PAL
Brightness	< 128 > (0-255)
Contrast	< 128 > (0-255)
Saturation	< 128 > (0-255)
Sharpness	< 128 > (0-255)

Default All Image Parameters.

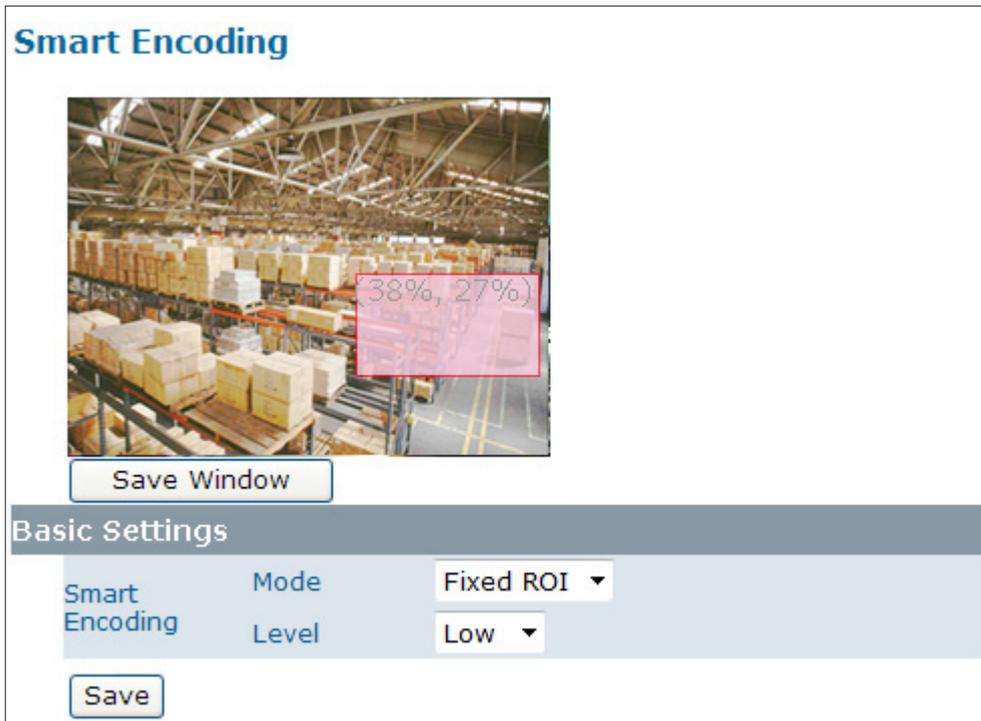
- **Frequency:** Select an appropriate frequency to reduce the flicker on the image. "50 Hz" and "60 Hz" are provided. Frequencies settings will affect the **Max. Exposure** and **Min. Exposure** settings under **Image > Exposure**.
- **TV System:** Displays the current video standard: NTSC or PAL. This setting cannot be changed via web interface.
- **Brightness:** Adjust the image brightness level.
- **Contrast:** Adjust the image contrast level.
- **Saturation:** Adjust the image saturation level.
- **Sharpness:** Adjust the image sharpness level.
- **Default All Image parameters:** Pressing this button will restore all the image settings to the defaults.

3.3.5 Smart Encoding

On the **Smart Encoding** page you can specify a specific region of the video as more important, i.e., a region of interest (ROI). When a ROI is specified, the camera will assign a higher number of bits to the ROI area to deliver better video quality than non-ROI areas.



The Smart Encoding function is only available when H.264 is selected for one of the streams.



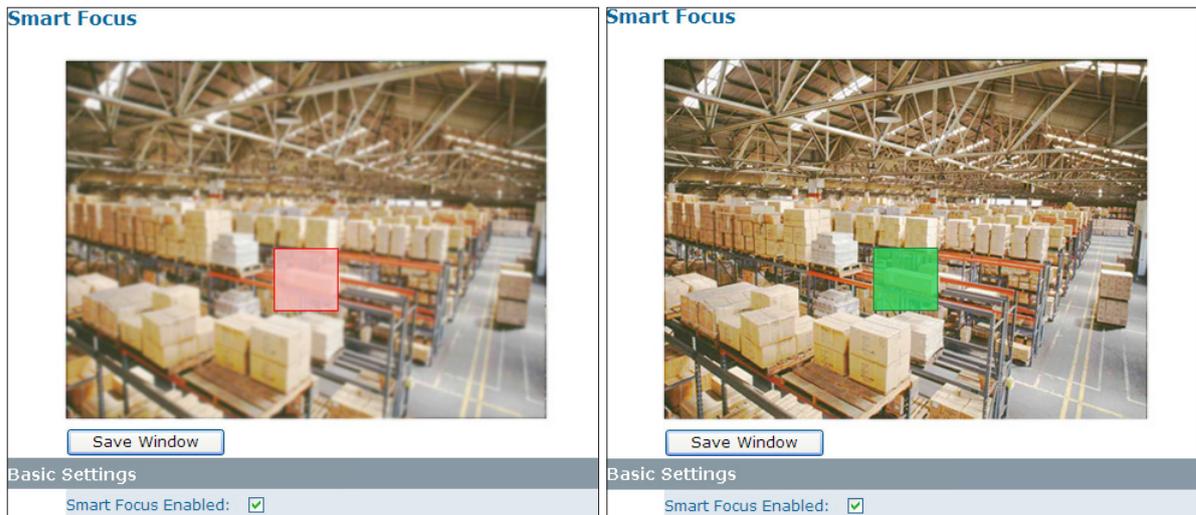
Basic Setting

To define a smart encoding area, click and drag your mouse on the image to define the region of interest and click **Save Window** to save the region. Click anywhere on the image to cancel the current defined area.

- **Mode:** Select **Fixed ROI** to enable smart encoding function.
- **Level:** Select a priority level (Low or High) for the ROI.

3.3.6 Smart Focus

In addition to observing the live view image to see if focus is achieved, you can also enable **Smart Focus** to help you verify if focus is locked. If this function is enabled, whenever focus is achieved, the focus window turns green.



Basic Settings

To focus on a desired subject using the Smart Focus function:

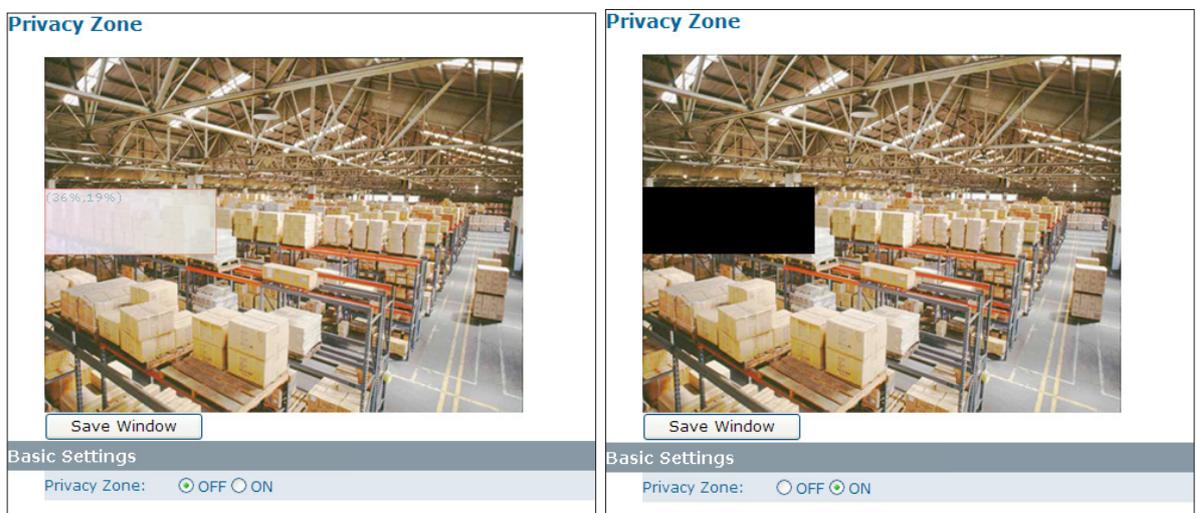
1. Click on the subject that you want to focus on and then click **Save Window**.
2. Check the **Smart Focus Enabled** box. This will turn the smart focus indicator to red.
3. Use the focal length and focus controls to optimize the focus. When focus is achieved, the indicator turns green.

3.3.7 Privacy Zone

Privacy Zone allows you to mask sensitive areas of the image for privacy protection. If enabled, it will mask the live view and the recorded video clips/JPEG files.

To turn on the privacy zone function:

1. Click and drag your mouse on the image to define the region to be masked and then click **Save Window**.
2. Select **ON** to enable **Privacy Zone**. This will turn the masked area to black.



3.4 Network

3.4.1 Basic

Basic	
Basic Setting	
<input type="checkbox"/> DHCP	
IP Address:	192.168.1.30
Subnet Mask:	255.255.255.0
Default Gateway:	192.168.1.1
DNS:	168.95.1.1
HTTP Port:	80 [80, 1025~65535]
MAC:	00:0b:67:00:d9:e5
<input type="button" value="Save"/>	

- **DHCP:** If there is a DHCP server on the network and you enable this option, the server will automatically assign an IP address and related information to the camera.



Note

If there is no DHCP server on your network or you prefer to manually assign an IP address to the camera, leave the DHCP checkbox blank.

- **IP Address & Subnet Mask:** If the DHCP function is not enabled, you have to assign an IP address with the subnet mask to the camera.
- **Default Gateway:** Enter the IP address of the gateway if required. Please contact your network administrator whether you need to set up the gateway.
- **DNS:** Enter the IP address of a DNS server. If you enter a domain name instead of an IP address in server-related fields, e.g., FTP, SMTP or NTP server, then the camera will need a DNS server to translate domain names into an IP address that is actually used for communication on the Internet.
- **HTTP Port:** Use the standard HTTP port number 80 or alternatively specify another port number between 1025 and 65535.

If you choose to use a non-standard port, and the camera on the LAN is to be accessible from the Internet, then you must configure your router/firewall to forward incoming HTTP request to that specified port (via NAT/port forwarding settings).

- **MAC:** Display the MAC address of the camera. Each camera comes with a unique MAC address, which is indicated on the product label. It helps you to identify which camera is currently accessed, particularly when multiple cameras are connected to your network.

3.3.2 FTP

To allow the camera to upload recorded video clips/JPEG files to an FTP server, you have to specify an FTP server and configure related settings.

FTP	
Basic Settings	
FTP Server IP:	<input type="text" value="192.168.1.1"/>
FTP Server Port:	<input type="text" value="21"/> [20,21,1024~ 65535]
User Name:	<input type="text"/>
Password:	<input type="text"/>
File Upload Path:	<input type="text" value="default_folder"/>
<input type="button" value="Save"/>	

- **FTP Server IP:** Enter the IP address of the FTP server.
- **FTP Server Port:** Enter the port number of the FTP server.
- **User Name:** Enter the user name to logon to the FTP server.
- **Password:** Enter the password to logon to the FTP server.
- **File Upload Path:** Specify the folder which has been created under FTP server root directory.

3.3.3 SMTP

To enable the camera to send you email notifications when an alarm is triggered, you need to specify an SMTP server to send the emails.

SMTP	
Basic Settings	
<input type="checkbox"/> My Server Requires Authorization.	
SMTP Server IP:	<input type="text" value="192.168.1.1"/>
User Name:	<input type="text"/>
Password:	<input type="text"/>
Sender:	<input type="text"/>
Receiver:	<input type="text"/>
<input type="button" value="Save"/>	

- **My Server Requires Authorization:** If your SMTP server requires authorization to send emails, enable this option.
- **SMTP Server IP:** Enter the IP address of the SMTP server.
- **User Name:** Enter the user name to log on to the SMTP server.
- **Password:** Enter the password to log on to the SMTP server.
- **Sender:** Enter the email address to be shown as the sender of the notification email.
- **Receiver:** Enter the email address to which the notification email is sent.

3.3.4 NTP

If you want the camera to synchronize its time clock with an NTP (Network Time Protocol) sever, configure the NTP server settings here.

NTP

Basic Settings

NTP Server:

Time Zone:

DST: Automatically Adjust for Daylight Saving.

Start: MTH WK - SUN :

End: MTH WK - SUN :

- **NTP Server:** Enter the IP address or the domain name of the NTP server to synchronize with.
- **Time Zone:** Select a time zone in which the camera is located.
- **DST:** Tick the **Automatically Adjust for Daylight Saving Time Changes** check box to apply the daylight saving time and users are supposed to configure the start/end time period by clicking the drop-down menus respectively.

3.3.5 RTSP

RTSP is a standard for connecting a client to establish and control streaming data over the web. If you want to allow third-party devices or software to access video/audio streams from the IP camera over the network, you must configure the RTSP ports. You can provide up to 6 streams according to the specific codec mode with different RTSP port.

RTSP

RTSP Port Setting

Stream 1:	<input type="text" value="8555"/>	MJPEG/Primary
Stream 2:	<input type="text" value="554"/>	MPEG4/Primary
Stream 3:	<input type="text" value="8554"/>	MPEG4/Secondary
Stream 4:	<input type="text" value="8558"/>	MJPEG/Third
Stream 5:	<input type="text" value="8556"/>	H.264/Secondary
Stream 6:	<input type="text" value="8557"/>	H.264/Primary

Port Value Range:(554~65535)

To use an RTSP player to access the camera's streams, you have to use correct RTSP URL to request the streams. Refer to the table below for RTSP URLs:

Stream	URL
MJPEG Primary	rtsp://192.168.1.30:8555/mjpeg
MJPEG Third	rtsp://192.168.1.30:8558/mjpeg
H.264 Primary	rtsp://192.168.1.30:8557/h264
H.264 Secondary	rtsp://192.168.1.30:8556/h264
MPEG4 Primary	rtsp://192.168.1.30:554/mpeg4
MPEG4 Secondary	rtsp://192.168.1.30:8554/mpeg4

*Replace the IP address and the port number with the camera's settings if otherwise configured.

3.3.6 ONVIF

ONVIF is a standard that ensures interoperability between IP-based physical security products regardless of the manufacturers. This camera is ONVIF compliant and you can configure whether the camera can be found by other ONVIF compliant products and the related settings.

ONVIF

Basic Settings

Discovery via ONVIF.

Accept command/functionality outside of Discovery capability.

User Authentication.

Basic Settings

- **Discovery via ONVIF:** Check the box if you want the camera to be found by other ONVIF compliant devices in a network, e.g., an ONVIF compliant NVR.
- **Accept command/functionality outside of Discovery capability:** If checked, the camera is allowed to accept commands from ONVIF compliant device thus changing the camera's functionality.
- **User Authentication:** If an ONVIF compliant device needs authentication for communication, enable this option.

3.4 System

3.4.1 Date and Time

Date & Time

Current Time

Date: Time:

New Time

Set Manually

Date: / /

Time: : :

Synchronize with Computer Timer

Date: Time:

Synchronize with NTP Server

NTP Server:

Time Zone:

Date Format: ▼

Current Time

Displays the current date and time of the camera. Date and time will be updated after you configure new settings in the **New Time** section and click **Save** to apply the settings.

New Time

You can set the camera time by one of the following methods:

- **Set Manually:** Manually enter the camera's date and time settings in the given fields.
- **Synchronize with Computer Timer:** Use this option to synchronize the camera's date and time with the computer timer.
- **Synchronize with NTP Server:** Use this option to synchronize the camera's date and time with an NTP (Network Time Protocol) server, which can be configured under **Network > NTP**.
- **Date Format:** Allows you to specify a desired date format.

3.4.2 Time Stamp

The **Time Stamp** function allows you to overlay the date and time stamp on the video. When enabled, the recorded video will be displayed with the date and the time.

The screenshot shows a configuration panel titled "Time Stamp". At the top, there is a checkbox labeled "Enable Date and Time Stamp". Below it, the "Date Format" is set to "YYYY/MM/DD" with a dropdown arrow. At the bottom of the panel is a "Save" button.

- **Enable Date and Time Stamp:** Check this box to enable the date and time stamp on images/video clips; to disable this function, uncheck the box.
- **Date Format:** Select the desired date format for the time stamp.

3.4.3 Firmware

The screenshot shows a configuration panel titled "Firmware". It is divided into several sections:

- Current Version Description:** Shows "Kernel Version: Linux version 2.6.18_v1.5.1_MS03" and "App Version: AP_01-00-62-02_MS03".
- Specify the Firmware to Update:** Includes a text input field, a "Browse..." button, and an "Update" button.
- Note:** A blue box with the text "Note: Do not disconnect the power of the device, during the update."
- Restart/Reset Options:** Three buttons are listed with red warning text:
 - "Restart Camera" with the warning "!!Restart Camera will cause disconnect."
 - "Factory Default" with the warning "!!Reset all of the camera parameters to default except Network.."
 - "Hard Factory Default" with the warning "!!Reset all of the camera parameters to default."

Current Version Description: Displays the current version of the firmware.

Specify the Firmware to Update: This function is designed to update the firmware of the camera. To perform the firmware upgrade, follow these parameters:

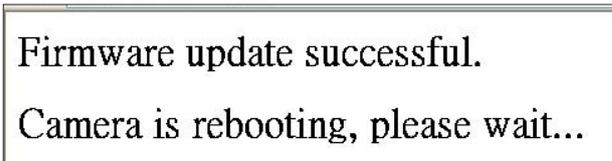
- Keep the network connected during the update process.
- DO NOT turn off or restart the camera during the firmware update process.

To update the firmware:

1. Click the **Browse** button to locate the firmware file.
2. Click the **Update** button to start update.
3. When prompted, click **OK** to proceed.



1. Wait about 20~60 seconds until the file is successfully updated. Once the update is completed, the browser will show a message reads "Firmware update successful". Then it will take 60 seconds to restart the camera.



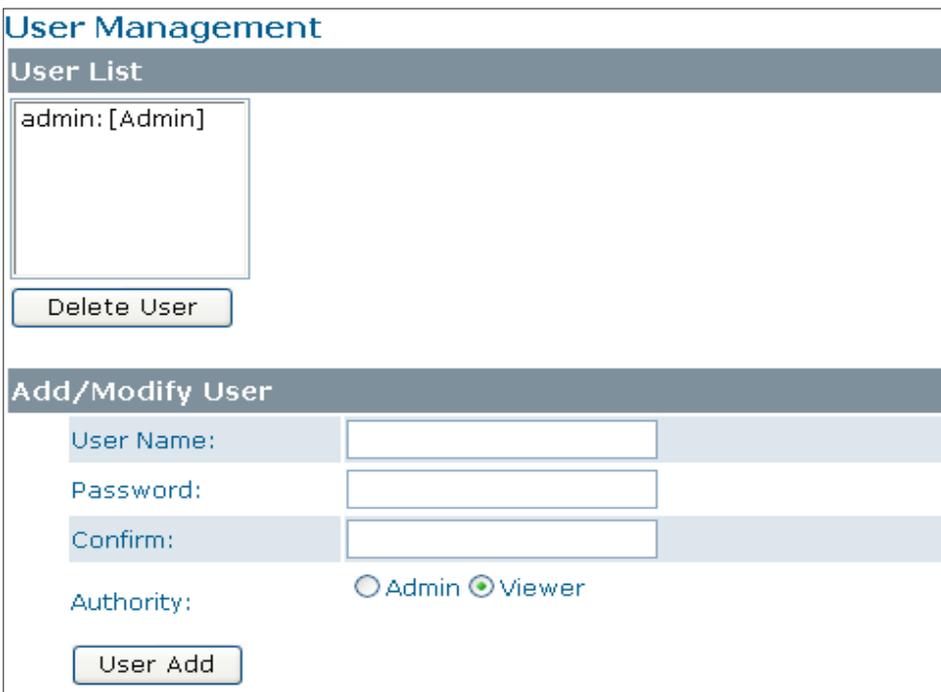
2. The utility will automatically go back to live view screen after firmware has been updated successfully.

You can also perform these tasks on the **Firmware** page:

- **Restart camera:** Restart the camera. This will cause all streams to disconnect.
- **Factory Default:** Reset all of the camera settings to the defaults, except network settings. After you confirm to reset, the camera will reset and restart automatically. When complete, you will return to the live view page.
- **Hardware Factory Default:** Reset all of the camera parameters to the defaults, including the network settings.

3.4.4 User Management

The **User Management** page allows you to manage user accounts and access privileges.



User List

Displays the list of current user accounts of the camera. To delete a user account, select the unwanted user account from the list and then click **Delete User**.

Add/Modify User

You can add a new user or modify current user's account or authority.

- To add a new user, enter the user name and password and specify the authority. Then click **User Add** to add a user.
- To modify the password of the existing user, enter the user name and modify the password.
- Two types of account can be specified:
 - **Admin (Administrator)**: Can access all camera functions, pages and make configurations.
 - **Viewer (Guest)**: Can only access the live view page and take snapshots.

3.4.5 Language

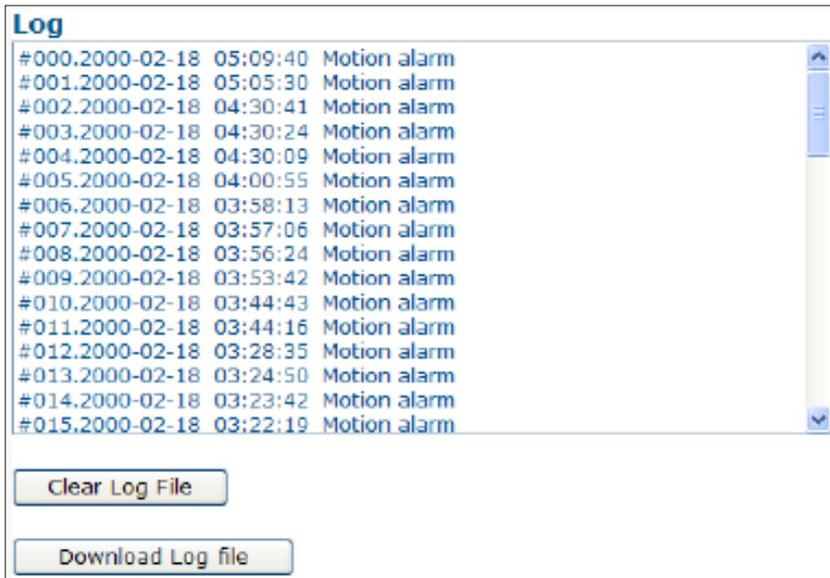
The **Language** drop-menu allows you to change the language of the web interface. Supported languages include English, Spanish, Italian, Simplified Chinese and Traditional Chinese. Click **Save** to apply the language setting, and the browser will automatically refresh to reflect the change.



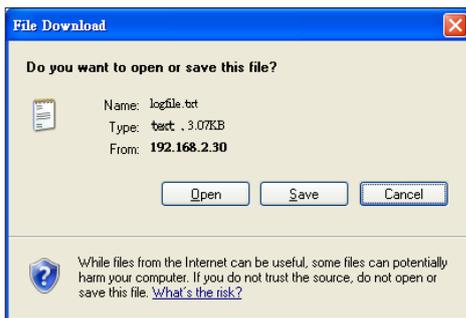
The screenshot shows a web interface window titled "Language". Below the title is a "Basic Setting" section. Inside this section, there is a label "Language" followed by a dropdown menu currently displaying "English". At the bottom of the window, there is a "Save" button.

3.4.6 Log

This page displays detailed information about the camera's operations and activities, including all the login and alarm records.



- **Clear Log File:** Click the button to clear the log cache.
- **Download Log File:** Click the button to save the current log into a text file. When a dialog window shows up, click the **Save** button to locate the directory where the logfile.txt is to be stored.



3.4.7 Audio

Audio

Audio Receiving OFF ON

Audio Receiving Volume

Audio Playing OFF ON

Audio Playing Volume

Note:

1.Audio receiving means a PC or other devices may receive the audio transmitted from Camera through audio input jack.

2.Audio playing means Camera may play the audio or soundtrack transmitted from a PC or other devices through the audio output jack.

3.Camera may play the default siren sound once an alarm is triggered.

4.Each audio function is only activated in Live view mode.

- **Audio Receiving:** If a microphone is connected to the camera, you can select **ON** to allow the camera to record the audio and transmit to your PC. This enables the camera to pick up sounds in the background.
- **Audio Receiving Volume:** Allows you to adjust the audio recording volume of the camera ranging from 1 to 4.
- **Audio Playing:** If a speaker is connected to the camera, you can select **ON** to allow the camera to play the audio transmitted from your PC. This enables you to speak to the person(s) around the camera.
- **Audio Playing Volume:** Allows you to adjust the audio playing volume of the camera ranging from 1 to 4.

Using the two-way audio function

Note that the two-way audio function is **only active in the live view page** using the web browser. To use the two-way audio function:

1. Make sure a speaker is connected to the **Audio Out** port and a microphone is connected to the **Audio In** port of the camera.
2. Enter **System > Audio** and enable both the **Audio Receiving** and **Audio Playing** functions. Then adjust the audio volume to the desired level.
3. To access the two-way audio streams:
4. Make sure your computer is connected to a microphone and speaker. Enter the **live view page** of the web-based utility.
5. Speak into the microphone and the person(s) around the camera should hear your voice.
6. When people around the camera are talking to you, you should hear them from the speaker that is connected to the computer.

3.5 Event

When an event occurs, it triggers an alarm and the camera will take a pre-defined action, e.g., sending a recorded video clip or JPEG files to a designated server. With this camera, an event can be triggered by external alarm devices or the camera's detection mechanism, including motion, blur, audio and Ethernet detection.



Note

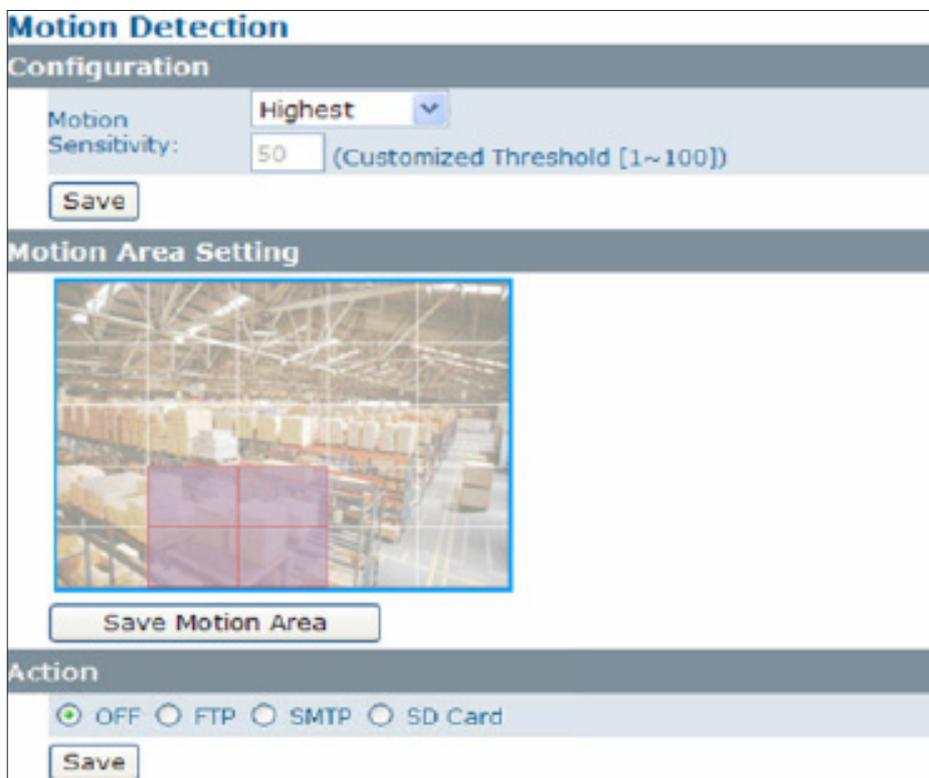
1. When there is more than one recording to be carried out at the same time, the scheduled video recording takes top priority, followed by the recording triggered by an Ethernet disconnection and lastly the recording triggered by other events.
2. Only one event will be handled at a time. If an event is already triggered, other event will be logged to the system but no action will be taken.

3.5.1 Motion Detection

When the **Motion Detection** is enabled, the camera detects motion under a pre-specified condition within a designated area. When motion is detected, the camera will generate an alarm and then take a specified action.

Note that to use the motion detection function, the following two conditions must be met:

1. You must select MJPEG codec for one of the streams to enable the live view.
2. You must select H.264 or MPEG4 codec for one of the streams to process the motion detection.



The screenshot shows the 'Motion Detection' configuration page, divided into three sections:

- Configuration:** Features a 'Motion Sensitivity' dropdown menu set to 'Highest' and a text input field for 'Customized Threshold' with the value '50'. A 'Save' button is located below these settings.
- Motion Area Setting:** Displays a live video feed of a warehouse with a red rectangular area overlaid on the floor to indicate the motion detection zone. A 'Save Motion Area' button is positioned below the video.
- Action:** Contains radio buttons for selecting an action: 'OFF' (selected), 'FTP', 'SMTP', and 'SD Card'. A 'Save' button is at the bottom of this section.

Configuration

- **Motion Sensitivity:** Specify the sensitivity to moving objects before the camera triggers an alarm. The higher the sensitivity, the slighter the movement is required to set off an alarm. You can alternatively select **User Define** and enter a value from 1 to 100 in the **Customized Threshold** field. When the motion within a specified area exceeds the threshold, an alarm will be triggered.

Select **OFF** to disable the motion detection

Motion Area Setting

- **Motion area setting:** Click target squares displayed on the screen to define detection areas; once configured, click **Save Motion Area** to save settings.

Action

Specify the action to be taken when an alarm is triggered upon motion detection:

- **OFF:** No action will be taken, but an alarm will be logged.
- **FTP:** Recorded video clips/JPEG files will be uploaded to the FTP server when alarm is triggered.
- **SMTP:** Notification email with the recorded JPEG files attached will be sent to the SMTP server.
- **SD Card:** Recorded video clips will be saved to the SD card when the alarm is triggered.

3.5.2 External Alarms

If external alarm devices, e.g., sensors and alarms, are connected to the camera's alarm input/output, the following settings must be made:

External Alarms		
Configuration		
	Setting	Level
Alarm In1	<input checked="" type="radio"/> Disable <input type="radio"/> Enable	<input checked="" type="radio"/> Low <input type="radio"/> High
Alarm In2	<input checked="" type="radio"/> Disable <input type="radio"/> Enable	<input checked="" type="radio"/> Low <input type="radio"/> High
Alarm Out	<input checked="" type="radio"/> Disable <input type="radio"/> Enable	<input checked="" type="radio"/> Low <input type="radio"/> High
Action		
Alarm In1	<input checked="" type="radio"/> OFF <input type="radio"/> FTP <input type="radio"/> SMTP <input type="radio"/> SD Card	
Alarm In2	<input checked="" type="radio"/> OFF <input type="radio"/> FTP <input type="radio"/> SMTP <input type="radio"/> SD Card	
<input type="button" value="Save"/>		

Configuration

- **Setting:** Enable the Alarm I/O that is connected with the respective external alarm device.
- **Level:** Set the (electricity) current as low or high to define the active state.

Action

Specify the action to be taken when external alarm is triggered:

- **OFF:** No action will be taken, but an alarm will be logged.
- **FTP:** Recorded video clips/JPEG files will be uploaded to the FTP server when alarm is triggered.
- **SMTP:** Notification email with the recorded JPEG files attached will be sent to the SMTP server.
- **SD Card:** Recorded video clips will be saved to the SD card when the alarm is triggered.



Note

To perform a video recording, you must select MJPEG codec for one of the streams.

3.5.3 Face Detection

With the **Face Detection** enabled, one or multiple square frames will cover the faces detected in the scene. You can specify a particular area by clicking and dragging your mouse, and then click the **Save Window** button. People's faces appearing within the area will be detected. Click the **Delete Window** button followed by clicking **Save** to remove the defined region.

Face Detection



Basic Settings	
Face Detection	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Detection Box	ON ▾
Direction	UP ▾
Threshold	Medium ▾
Minsize	25 ▾
Priority	Higher ▾

Action	
<input checked="" type="radio"/> OFF <input type="radio"/> FTP <input type="radio"/> SMTP <input type="radio"/> SD Card	
<input type="button" value="Save"/>	

Basic Settings

- **Face Detection:** Enable/Disable face detection. When the selected radio button is changed and the **Save** button is clicked, the camera may take around 25 seconds to restart while the web displaying the status being loading.
- **Detection Box:** Select **ON** to show square frames on the screen for the detected faces.

- **Direction:** Select the orientation of faces in the video stream. **UP** means the top of the face is generally in the up direction. The orientation may need to be adjusted when the camera is installed on its side or at an angle.
- **Threshold:** Select a face detection acceptance tolerance (High/Medium/Low).
- **Minsize:** Select the minimum size of the detection box. Options include 20, 25, 32 and 40; smaller value means smaller faces in the distance can be detected.
- **Priority:** Select whether face regions have higher or lower encoding priority when the **Advanced Settings ROI** feature is applied.

Action

Select the radio buttons for actions in response to the pictures saved to FTP server, SMTP server or SD card if a face detection alarm is triggered. **OFF** is set by default.

- **OFF:** No action will be taken (but an alarm is logged).
- **FTP:** Recorded AVI/JPEG files will be uploaded to an FTP server when the alarm is triggered.
- **SMTP:** Notification e-mail attached with the recorded JPEG files will be sent to a SMTP server.
- **SD Card:** Recorded AVI/JPEG files will be saved to the SD card when the alarm is triggered.

3.5.4 Blur Detection

With the **Blur Detection** enabled, when the camera detects incidents that make video image blur, e.g. redirection, blocking or defocusing, the camera will generate an alarm and then take a specified action.



Note that to use the blur detection function, the following two conditions must be met:

1. You must select MJPEG codec for one of the streams to enable the live view.
2. You must select H.264 or MPEG4 codec for one of the streams to process the motion detection.

Blur Detection

Configuration

Blur Detection:	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Sensitivity:	<input style="width: 50px;" type="text" value="50"/> seconds (10~600)

Action

<input checked="" type="radio"/> OFF	<input type="radio"/> FTP	<input type="radio"/> SMTP	<input type="radio"/> SD Card
--------------------------------------	---------------------------	----------------------------	-------------------------------

Configuration

- **Blur Detection:** Select **Enable** to enable Blur Detection; select **Disable** to disable this function.

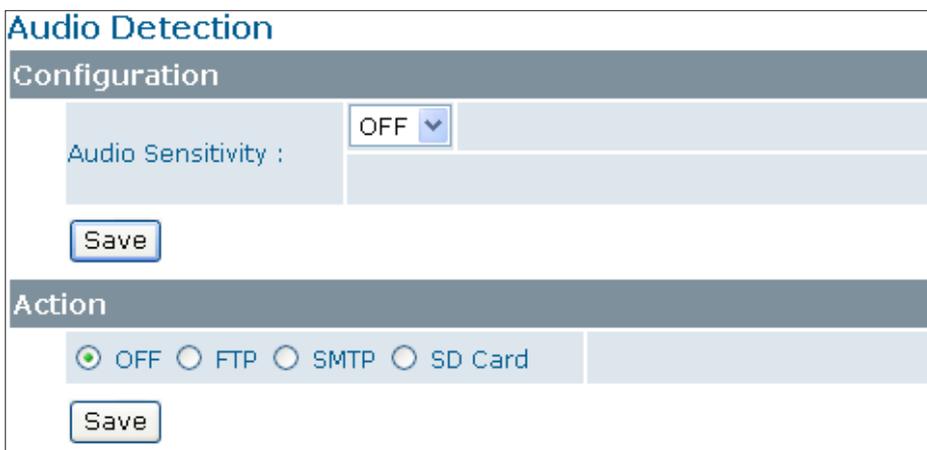
- **Sensitivity:** You can alternatively customize the camera’s sensitivity to a blur. The camera will judge whether it has been tampered based on the sensitivity threshold specified.

Action

- **OFF:** No action will be taken, but an alarm will be logged.
- **FTP:** Recorded video clips/JPEG files will be uploaded to the FTP server when alarm is triggered.
- **SMTP:** Notification email with the recorded JPEG files attached will be sent to the SMTP server.
- **SD Card:** Recorded video clips will be saved to the SD card when the alarm is triggered.

3.5.5 Audio Detection

With the **Audio Detection** enabled, when the camera detects any sound, the camera will generate an alarm and then take a specified action.



Configuration

- **Audio Sensitivity:** Specify the camera’s sensitivity level to the audio signal. The higher the sensitivity, the lower the volume is required to set off an alarm.

When set to **OFF**, the audio detection is disabled.

Action

Specify the action to be taken when an alarm is triggered upon audio detection:

- **OFF:** No action will be taken, but an alarm will be logged.
- **FTP:** Recorded video clip will be uploaded to the FTP server when the alarm is triggered.
- **SMTP:** A notification email attached with the recorded video clip will be sent to the SMTP server.
- **SD Card:** Recorded video clip will be saved to the SD card when the alarm is triggered.



To perform a video recording, you must select MJPEG codec for one of the streams.

3.5.6 Ethernet Detection

With **Ethernet detection** enabled, when the camera detects an Ethernet disconnection, the camera will generate an alarm and then take a specified action.

Configuration

- **Trigger an Alarm When Ethernet is Disconnected:** Select whether to disable/enable this function.

Action

Specify the action to be taken when an alarm is triggered upon audio detection:

- **OFF:** No action will be taken, but an alarm will be logged.
- **SD Card:** Recorded video clips will be saved to the SD card in AVI format when the alarm is triggered.



Note

Regardless of your settings in **Recording > SD card**, when an Ethernet disconnection is triggered, the video clip recording will always be saved in AVI format.

3.5.7 Event Management

Basic Setting

- **Alarm Duration:** Specify the duration of the alarm when an event is triggered.
- **Alarm Reset:** Use this button to stop the current alarm and to restart event detection again.

3.6 Recording

Recording allows you to configure recording-related settings and schedule recording. The defaults are listed in the table below:

3.6.1 Settings – Video File

Configure the duration and format of video to be recorded when an alarm is triggered.

Video File

Basic

AVI Duration for FTP server: Second(s)

AVI Duration for SD card: Second(s)

AVI Format:

Basic Settings

- **AVI Duration for FTP Server:** Select recorded video duration in seconds for the FTP server.
- **AVI Duration for SD Card:** Select recorded video duration in seconds for the SD card.
- **AVI Format:** Select a desired video format. Available formats depend on the primary and the secondary streaming codec/resolution settings.

3.6.2 Settings – FTP

FTP

FTP Networking

FTP Server IP:

User Name:

File Upload Path:

Storage Setting

Number of files to upload: (1~20)

File Format:

The number of files setting is just for JPEG.

FTP Networking

Displays the current FTP settings, which are specified via **Network > FTP**.

Storage Setting

- **Number of files to upload:** Enter the number of JPEG files to be uploaded to the FTP per event.
- **File Format:** Select the format in which to upload the recorded video file to the FTP server when an event has been triggered.
 - **JPEG files:** The camera will record specified number of JPEG files and upload to the FTP server.
 - **AVI files:** The camera will record AVI files and upload to the FTP sever. For the duration and AVI format, see **Recording > Setting > Video File**.

3.6.3 Settings – SMTP

SMTP

SMTP Networking

SMTP Server IP: 192.168.1.1

Email Address:

Storage Setting:

Attached File Numbers: (1~20)

Attached File Format: JPEG

The file number could be limited since the client's SMTP server may regulate & restrain the data volume from senders.

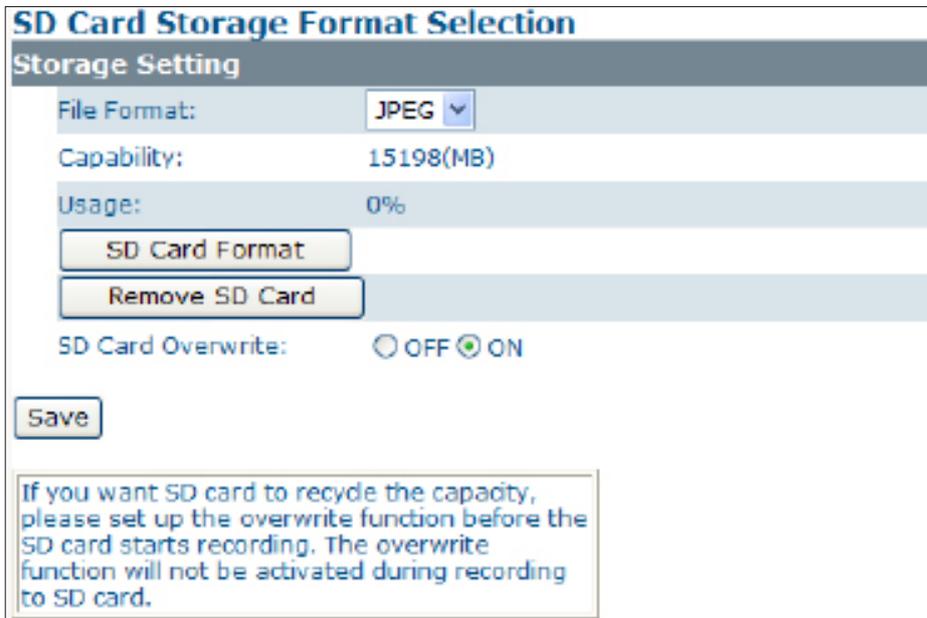
SMTP Networking

Displays the current SMTP settings, which are specified via **Network > SMTP**.

Storage Setting

- **Attached File Numbers:** Enter the number of JPEG images that will be attached to the notification email. Set a lower number if SMTP server has an email size limit.
- **Attached File Format:** In JPEG format always.

3.6.4 SD Card Storage Format Selection



Storage Setting

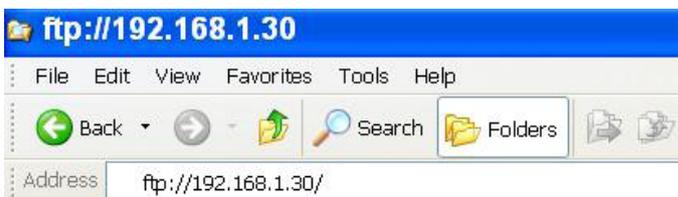
- **File Format:** Specify the format of the video/picture to be saved to the SD card when an event is triggered.
- **Capacity/Usage:** Shows the card capacity and the space usage percentage.
- **SD Card Format:** Use this button to format the SD card. This option is not available if an SD card has not been inserted in the camera.
- **Remove SD Card:** Click this button before safely removing the SD card. This option is not available if an SD card has not been inserted in the camera.
- **SD Card Overwrite:** Select **ON** to enable overwriting once the storage is full.

Accessing SD Card



Note

Users can access the SD card via the FTP service by entering the FTP address (**ftp://192.168.1.30** by default) in the URL field of the web browser.



Then an FTP login window shows up asking for login ID and password. After filling in the login ID and password fields (defaults are **admin** and **1234** respectively), you can see the the FTP directory with successful login.



Besides, users can also just launch the **Windows Explorer** to access SD card. The same, users are supposed to enter the FTP address (**ftp://192.168.1.30** by default) in the address field and finish login process. Then you can directly get into the directory.

3.6.5 Period Setting

The Period Setting allows you to schedule video recordings at specified times. Set the automatic recording times by selecting the desired weekday and the period of time. Up to 7 scheduled recordings can be set. Check **Save to SD Card** should you wish to save the recorded video clips to the SD card.



Note

The scheduled recording always demands higher priority than the alarm-based recording. When a scheduled recording is proceeding, the alarm-based recording will be disabled but the alarms will be logged.

4. VLC Player for RTSP Streaming Access

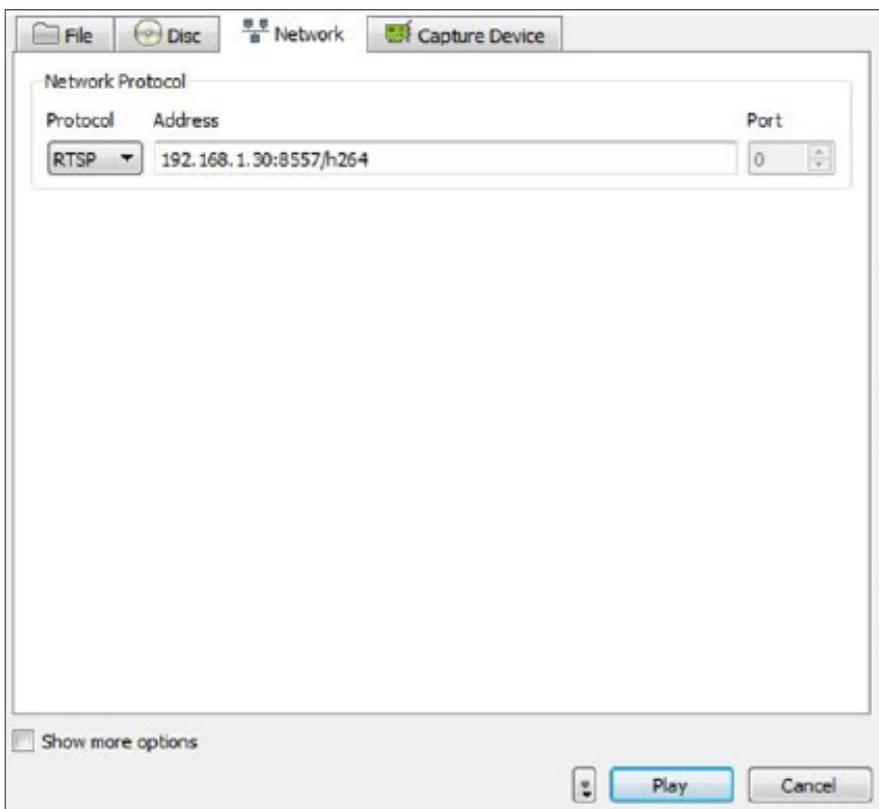


Note

- This information is provided for convenience only. We will not provide support for the installation or use of VLC software.
- The IP addresses used in the document are the default URLs and are provided for example purposes only. You will need to use an IP address that is appropriate for your network.

To use VLC player to view RTSP streaming, follow these steps to proceed:

1. Download and install VLC Player (version 1.0.5) from <http://www.videolan.org/vlc>.
2. Launch VLC Player.
3. Click Media _Open Network Stream.
4. On the **Network** tab, choose **RTSP** from the **Protocol** menu.



5. In the **Address** field enter the IP address of the stream that you want to view.

The table below lists default URLs.

Stream	URL
MJPEG Primary	rtsp://192.168.1.30:8555/mjpeg
MJPEG Third	rtsp://192.168.1.30:8558/mjpeg
H.264 Primary	rtsp://192.168.1.30:8557/h264
H.264 Secondary	rtsp://192.168.1.30:8556/h264
MPEG4 Primary	rtsp://192.168.1.30/mpeg4
MPEG4 Secondary	rtsp://192.168.1.30:8554/mpeg4

6. Click **Play** and you will see the image streaming.