OWNER'S MANUAL

HD Compact Network Camera

Please read this manual carefully before operating your set and retain it for future reference.

MODEL
LW130W

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

This lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

FCC WARNING: This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

REGULATORY INFORMATION: FCC Part 15

This product complies with FCC Part 15B, Class B Limits: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device must not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Radiated Energy

Note: This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of 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 instructions, may 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 into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes and modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission rules.

• A suitable conduit entries, knock-outs or glands shall be provided in the cable entries of this product in the end user.

1. To comply with FCC RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.
2. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter

Caution: Danger of explosion if battery is incorrectly replaced. Replaced only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.
Holes in metal, through which insulated wires pass, shall have smooth well rounded surfaces or shall be provided with brushings.

This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numÈrique de la classe B est conforme ‡ la norme NMB-003 du.

Warning: Do not install this equipment in a confined space such as a bookcase or similar unit.

Warning: Wiring methods shall be in accordance with the National Electric Code, ANSI/NFPA 70.

Warning: This is a class B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Warning: To reduce a risk of fire or electric shock, do not expose this product to rain or moisture.

Caution: This installation should be made by a qualified
Service person and should conform to all local codes.

Caution: To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

Caution: The apparatus shall not be exposed to water (dripping or splashing) and no objects filled with liquids, such as vases, shall be placed on the apparatus.

To disconnect power from mains, pull out the mains cord plug. When installing the product, ensure that the plug is easily accessible.

CE

Disposal of your old appliance

1. When this crossed-out wheeled bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC.
2. All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities.
3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.
4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product.

EEE Compliance with Directive. (for Turkey only)

LG Electronics hereby declares that this/ these product(s) is/are in compliance with the essential requirements and other relevant provisions of Directive 2004/108/EC, 2006/95/EC, and 2009/125/EC.

European representative :
LG Electronics Service Europe B.V. Veluwezoom 15, 1327 AE Almere. The Netherlands (Tel : +31-(0)36-547-8888)

Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Cautions for Safe Operation

Handling of the unit

Be careful not to spill water or other liquids on the unit. Be cautious not to get combustible or metallic material inside the body. If used with foreign matter inside, the device is liable to fail or to get cause of fire or electric shock.
Remove dust or dirt on the surface of the lens with a blower.
Use a dry soft cloth to clean the body. If it is very dirty, use a cloth dampened with a small quantity of neutral detergent then wipe dry.
Avoid the use of volatile solvents such as thinners, alcohol, benzene and insecticides. They may damage the surface finish and/or impair the operation of the device.

Operating and storage location

Avoid viewing a very bright object (such as light fittings) during an extended period.

Avoid operating or storing the unit in the following locations.

• Extremely hot or cold places (operating temperature from -10 °C to 50 °C, however, we recommend that the unit be used within a temperature range from 0 °C to 45 °C)

Damp or dust place

Places exposed to rain

Places subject to strong vibration

Close to generators of powerful electromagnetic radiation such as radio or TV transmitters.

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Features

The LG Network Camera is designed to use on an Ethernet and Wireless network and must be assigned an IP address to make it accessible.

This manual contains instructions on how to install and manage the LG Network Camera in your networking environment. Some knowledge of networking environments would be beneficial to the reader.

Should you require any technical assistance, please contact authorized service center.

Dual H.264 Stream for single Video Input

Multi-Codec (H.264, MJPEG) Streaming

Audio Support (G.711, G.726 Full Duplex)

Ethernet 100Mbps

Wireless LAN 802.11b/g/n

Digital IN/OUT: Input 1port, Output 1port

MicroSD Memory extension (~32GB)

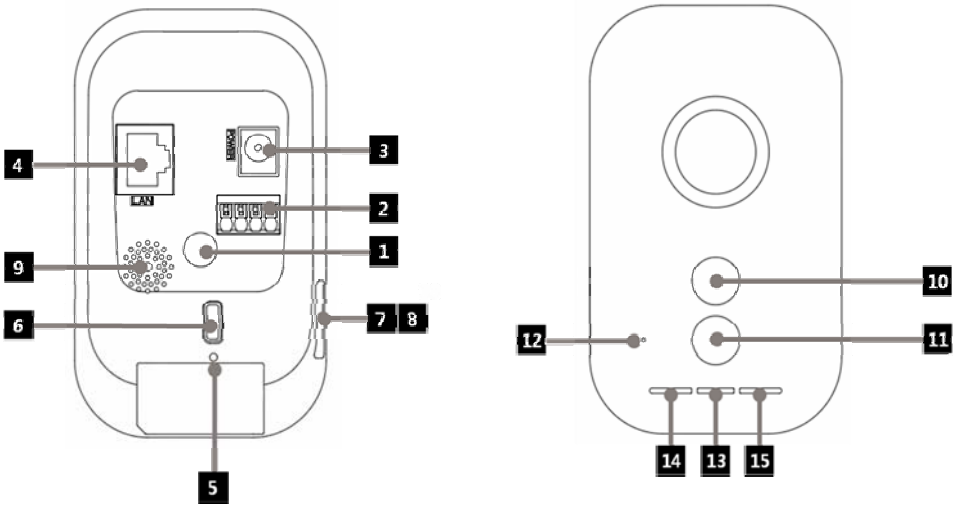
Pre/Post Alarm support

Human motion detection support

Flash LED (5meter)

AW, AE, AG support

Part Names and Functions



Part Names and Functions

① Camera installation hole
Use this hole to install the camera on the wall or ceiling.

② External device connectors
A IN(R)/A IN (Sensor input) Terminals: Provide physical interface for sensor.
A OUT(R)/A OUT (Relay output) Terminals: Provide physical interface for Alarm/Relay.

③ Power source terminal
Connect to a DC 5V power supply using proper cables.

④ ETHERNET
Connect to a PC or a network via a hub with a 10 BASE-T/100 BASE-TX cable attached RJ-45 connector

⑤ RESET button
Push the button, this would restart the device.

⑥ WPS(Wi-Fi Protected Setup), Factory Reset button
Push the button to use WPS or Factory Reset Function.
Push the button less than 4 seconds, this would trigger WPS.Push the button more than 10 seconds and Pop the button, this would trigger Factory Reset. When connecting AP using WPS, wireless LAN connection lamp blinks red and green. When it stops blinking and color of it is green, connection is completed. When it stops blinking and color of it is red, connection is failed.

Note:
Usage of WPS refers to the internet or access pointer manual. If access point sets shared mode, you cannot connect access point using WPS.

⑦ **Micro SD Card slot cover**

⑧ **Micro SD Card slot**
Insert micro SD card.

⑨ **Speaker**
Transmit Mic sound of PC.

⑩ **Motion detection sensor**
Detect movement around.

⑪ **Flash LED**

Light on when event is occurred.

⑫ **Mic**

Listen sound of camera surround.

⑬ **Power indicator**

The Green LED lights when the camera is powered.

⑭ **Ethernet connection indicator**

The Green LED lights when the Ethernet is connected.

⑮ **Wireless LAN connection indicator**

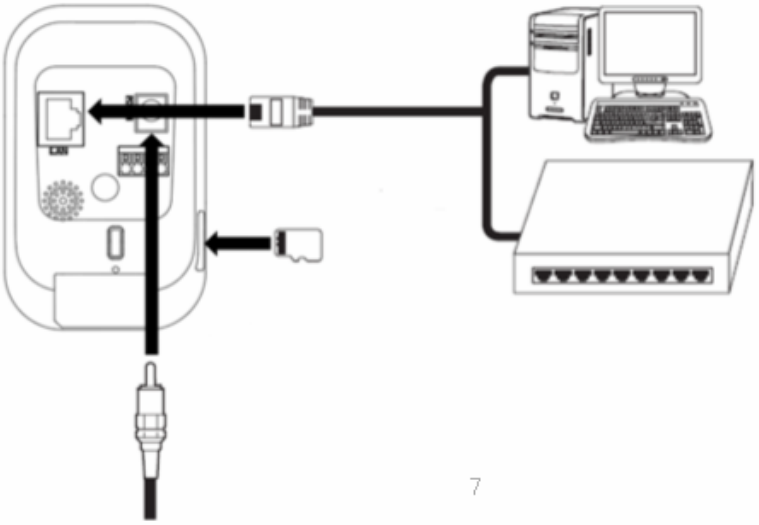
The Green LED lights when the Wireless LAN is connected.

Connections

Precautions

Be sure to switch off the unit before installation and connection. The installation should be made by qualified service personnel or system installers. Do not expose the power and connection cables to moisture, which may cause damage to the unit.

Connection Overview

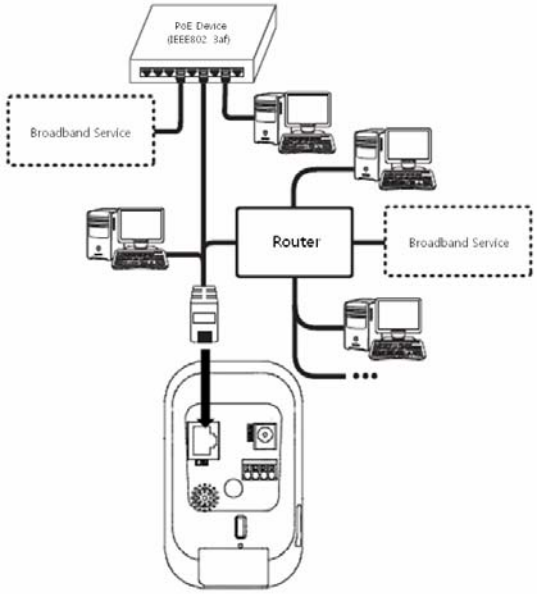


7

Connections

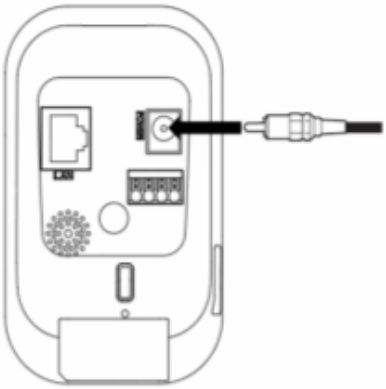
Connecting Network

You can control and monitor the system via network. With the remote control (monitoring), you can change the system configuration or monitor the image via network.



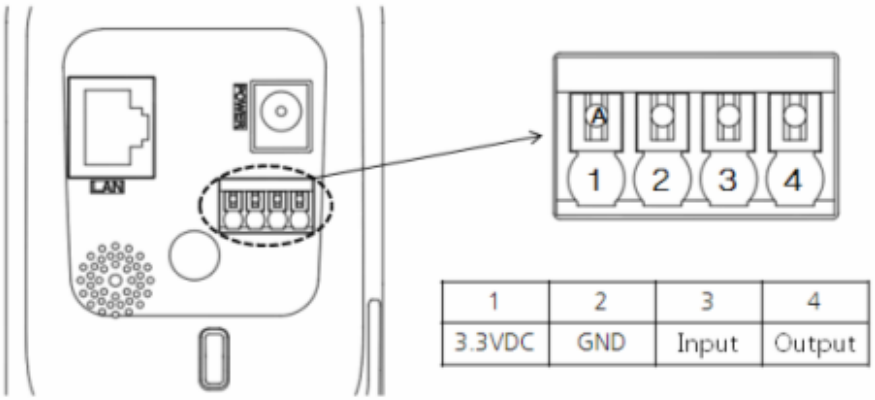
Connections

Connecting Power Source



Connect to the DC 5 V UL Listed, Class 2 Power Supply only on the unit. (Recommended power adapter is DC 5V/1.5A or above)

Connecting Alarm Device



1	2	3	4
3.3VDC	GND	Input	Output

Alarm terminals are used to connect the alarm (relay) devices such as sensors, door switches, etc. Specification of alarm terminal is shown as bellow.

[Alarm terminal specification]

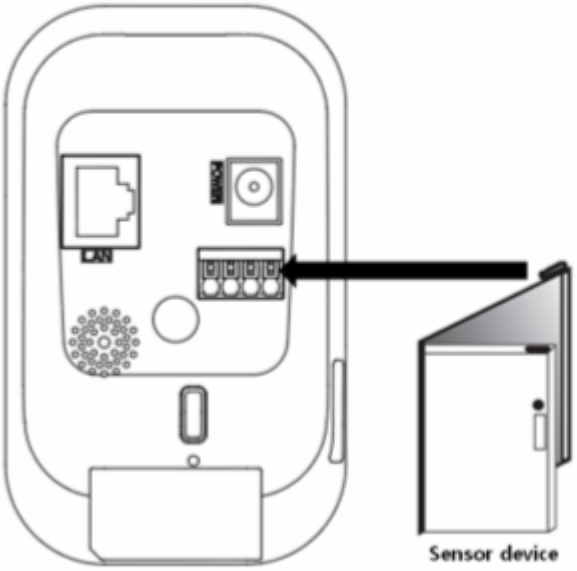
	Minimum	Typical	Maximum	Note
Digital Input	2.3V	3.3V	4.3V	
Digital Output	2.3V	3.3V		
Connectable cable	AWG 24		AWG 16	UL Standard
	0.20 mm^2		1.5mm^2	IEC Standard

- Absolute Maximum Ratings
  - Digital Input: -24V to +24VDC
  - Digital Output: +3V to +24VDC / 100mA Max

Connect connectable cable to alarm terminal.
While disconnecting, push A button.

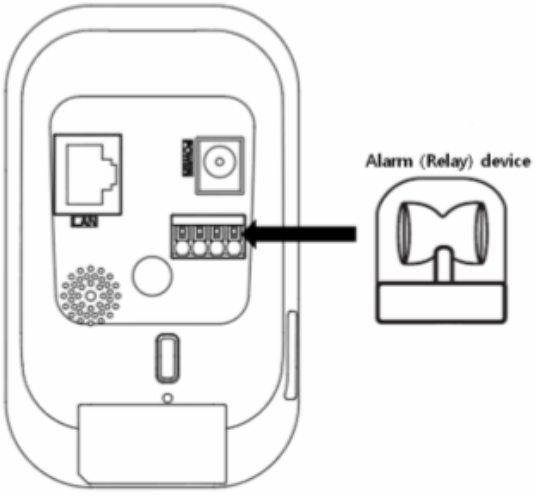
A IN(R)/A IN (Sensor Input)

Connect the sensor device to the sensor input terminal.



A OUT(R) / A OUT (Relay Output)

Connect the alarm (relay) device to the relay output terminal. Alarm signal is outputted at an event occurrence.



Note:

The Photo MOS Relay is rated for 100mA at 20V DC or 100mA at 28V AC.

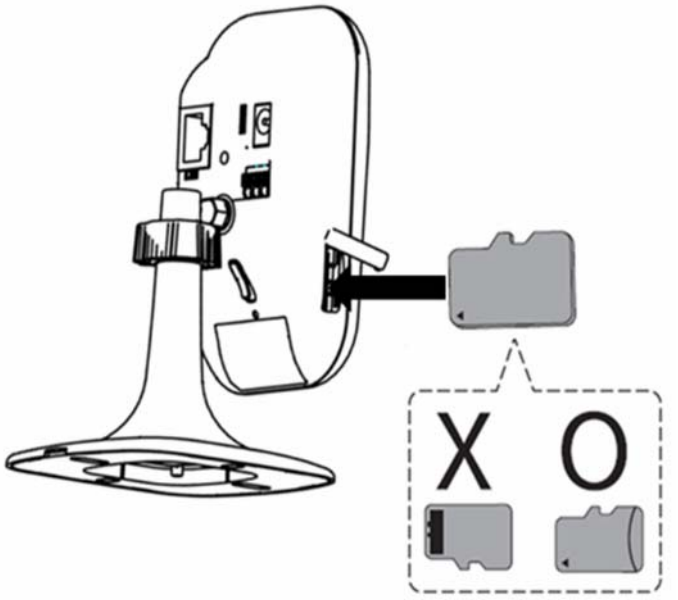
Connections

Using the micro SD card

You can record your surveillance environment with the micro SD card even if the network is disconnected condition.

To insert the micro SD card

1. Open the micro SD Card Slot Cover.
2. Insert the micro SD card carefully as shown in the following illustrations. Make sure the micro SD card terminal position before insert the micro SD card. Push the back end of the micro SD card to fix it at the last step.

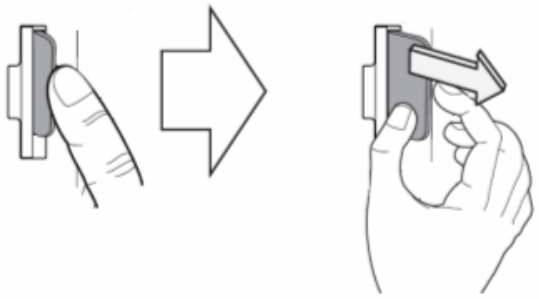


Notes:
Do not use the power too much when you insert the micro SD card. The micro SD card may be damaged.
If you insert the micro SD card in the wrong position, the micro SD card may be damaged or it may cause the malfunction of the micro SD Card Slot.
Keep the terminal part of the micro SD card in clean. Be careful the terminal part of the micro SD card not to dusty.
As the micro SD card is consumable, the micro SD card end its days and may be not able to save data if you use it more than over certain times. In this case, replace micro SD card to buy a new one.

Connections

Remove the micro SD card

1. Press the back end of the micro SD card to release the lock condition.



2. Take the micro SD card out carefully from the camera. It may cause a malfunction of the micro SD card or the micro SD card slot if you use the power too much at lock status.

Caution:

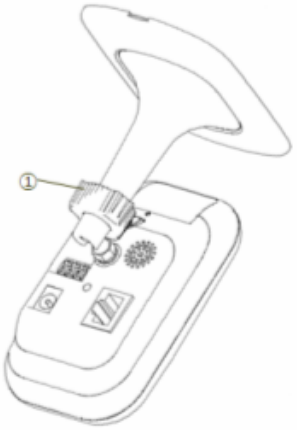
If you install the micro SD card on the camera and remove the micro SD card during operation, you must unmount the micro SD card by using the [SD Card > Configuration > Disk Management > Unmount] menu. The micro SD card data is compromised or the camera may not operate normally, if you remove the card without use [Unmount] function.

LG Electronics is not responsible for deleted data caused by user mishandling when you insert or remove the micro SD card.

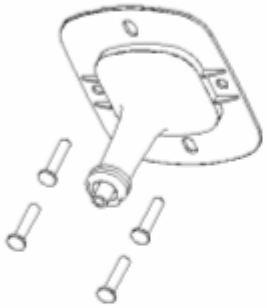
Recommended the micro SD card specification

Manufacturer	Capacity	Block Size (FAT 32)	Note
LG	Less than 32 GB	32 kbyte	Speed of reading and writing more than 10 MB/Second (Class 6)
Sandisk			
Transcend			

Camera Installation



Camera Installation



1. Separate the Stand from the Camera.
2. Separate the cover from the Stand.
3. Anchor stand to the wall or ceiling.
4. Put together again.

Operation and settings

Before using the system

Before using the LG IP device make sure the connections are correct and verify whether proper power supply is used.

Check the connections of the LG IP device for the correct conditions.

Check that the LG IP device is(are) connected to the network and that power is supplied.

Once the connections are made you need to install the LG client program to the PC from which you want to access the device. The LG Smart Web Viewer program is automatically installed when you connect the LG IP device. The LG Smart Station and the LG Smart Web Viewer program are the network programs of the LG Video Server and the LG IP cameras.

To view streaming video in Internet Explorer, set your browser to allow ActiveX controls. If you find this message “This website wants to install the following

add-on: ‘IPCam_Streamer.cab’ from ‘LG ELECTRONICS INC’”, Click the yellow bar and install LG Smart Web Viewer Program on your computer.

The Layouts and the Live view pages may differ with different OS (Operating Systems) and Web Browsers.

Care needs to be taken not to run any other applications when the Client Program is running as it may cause memory shortage.

Operation and settings

Recommended PC Requirements Accessing the LG IP device

The LG IP device can be used with most standard operating systems. You can access the LG IP device by following the below systems and browsers.

Items	Requirements
Operating System	Windows XP Professional, Windows VISTA, Windows 7
CPU	Intel Core2 Quard Q6700 (2.66 GHz) or above
Web Browser	Microsoft Internet Explorer above the version 6.0 and below the version 8.0.
DirectX	DirectX 9.0 or above
Memory	2 GB or above RAM
Graphics Card	256 MB or above Video RAM
Resolution	1 280 x 720 (with 32 bit color) or higher

Steps:

1. Install LG Smart Station Program

2. Discover LG IP device using the IP Utility

The IP Utility can automatically discover and display LG IP devices on your network. The IP Utility shows the MAC address, IP address, Model name and so on.

Note:

The computer running the IP Utility must be on the same network segment (physical subnet) as the LG IP device.

2.1 Run the IP Utility program.

2.2 Click the [Search] icon or select the [Search] option in the Device search menu. After a few seconds the found LG IP devices will be displayed in the IP Utility window.

3. Logging in to the LG Smart Web Viewer

The LG Smart Web Viewer can be used with most web browsers. The recommended browser is Internet Explorer with Windows.

3.1 Run the IP Utility and find the LG IP devices.

3.2 When the LG IP devices appear in the IP Utility window, double-click IP address or right click on the same IP address and select "Connect to Web Page" to start the LG Smart Web Viewer. When accessing the LG Smart Web Viewer, the authentication dialog appears on the screen.

3.3 Enter the user name and password. (Note that the default administrator user name and password are “admin”.)

3.4 Click the [OK] button and then the LG Smart Web Viewer is displayed in your browser.

Notes:

• You can also access the LG Smart Web Viewer as shown below.

3.1 Start your Web browser.

3.2 Enter the IP address of the LG IP device in the address bar of the browse.

3.3. Enter the user name and password set by the administrator.

3.4 Click the [OK] button and then the LG Smart Web Viewer is displayed in your browser.

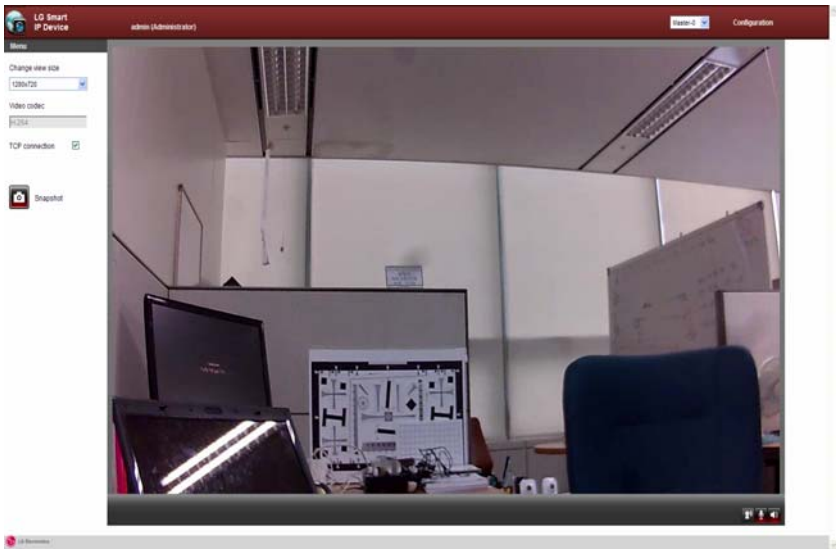
The LG Smart Web Viewer needs more time to display it according to the network conditions.

If the login window is not displayed, check the pop-up blocker. If you set the pop-up blocker, the login window is not displayed. You must allow the pop-ups.

If you connect the LG Smart Web Viewer for the first time, the Security Warning window is displayed to install the LG Smart Web Viewer program. You must install the LG Smart Web Viewer program for using the LG IP device.

If your computer or network is protected by a proxy or firewall, the proxy or firewall settings can prevent the LG Smart Web Viewer program. Change the proxy or firewall settings to activate the LG Smart Web Viewer program.

Operation and settings



Items	Description
Change view size D1	Select the video image size from the drop-down list. (1,280 x 720 (16:9 mode), D1 or CIF) The initial view size is set to D1
Video codec H.264	Display the current video codec of the selected video stream (Master or Slave).
TCP connection ☐	Check this option as the network connection type (TCP or UDP). If you check it, the client connects to the server using TCP connection.
Snapshot	Click to save the current image in JPEG format on your computer. 1. Click the [Snapshot] button and then the Snapshot window is displayed. 2. Click the [Save] button in the Snapshot window. 3. Enter the file name (JPEG format) and select the folder to save it. 4. Click the [Save] button to confirm it. 5. Click the [Close] button in the Snapshot window to close it.

Operation and settings

	Select the video stream. From the Live view drop-down list, select the desired video image source between [Master-0] and [Slave-0]. **Note:** Master and Slave are output video streams. You can set the stream configurations independently for either Master or Slave stream. This would facilitate the user to set the live view at his comfort.
	Provides all the necessary tools for setting up the device to your requirements. The user will need administrator level to do this. **Note:** If you want to exit the Configuration menu, select one of the video streams in the Live view drop-down list.
	Displays the current surveillance live screen. You can monitor the camera image on the live view window of the LG Smart Web Viewer.
	Click this button to connect or disconnect the audio communication between the LG IP device and the connected PC. (Color icon: On, Gray scale icon: Off.) **Note:** It cannot operate while sound alert operates.
	Click this button to switch the sound off and on, for the speaker of the computer. (Color icon: On, Gray scale icon: Off.)

Configuring the LG Network Camera Device

The features and options of the LG IP camera are configured through the Configuration menu. Only administrator-level users have permission to access the Configuration menu.

Accessing the Configuration menu

Click the [Configuration] button to display the LG Smart Web Viewer configuration window.

Warning

The Configuration setup should be made by qualified service personnel or system installers.

Configuration menu overview

The following table shows the list of menu items.

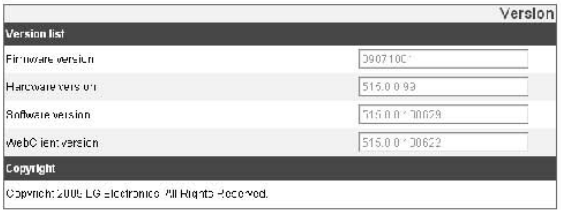
Main menu	Sub menu
System	Version
	Date & Time
	Maintenance
	Log & Report
	Language
Audio & Video	Camera
	Stream
	Audio
	Motion detect
Network	Basic
	RTP stream
	TCP/IP
	DDNS
	IP filtering
	Wireless
User	Basic
SD card	Basic
Event	Event schedule
	Event server
	Sensor & Relay

Operation and settings

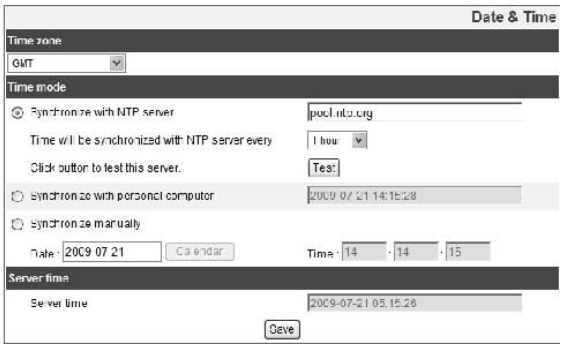
System settings

Version

Displays the current version of Firmware, Hardware, Software and Web Client.



Date & Time



Time zone

Set the time difference from GMT in the area where the IP device is installed. Select the time zone in the area where the IP device is installed from the drop down list.

Time mode

> Synchronize with NTP Server: Select if you want to synchronize the IP device's date and time with those of the time server called NTP (Network Time Protocol). Specify the NTP server's name. Click the [Test] button for connection test to the server.

> Synchronize with personal computer: Select if you want to synchronize the IP device's date and time with your computer.

> Synchronize manually: Select if you want to set the IP device's date and time manually. Select the year, month and date by clicking the calendar button. Set hour, minutes and seconds in the edit boxes.

Notes:

• When system reboot after time setting, time of system could be delayed. If you set the time correctly, set the [Synchronize with NTP server] option.

• Refer to NTP configuration as operation system of the Recording Server when the Recording Server use recording function and NTP server.

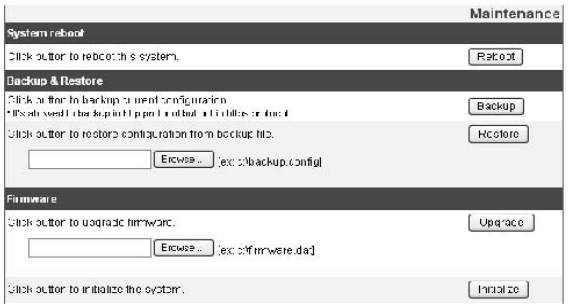
Server time

> Server time: Displays the current date and time of the IP device.

• Save: Click this button to confirm the settings.

Operation and settings

Maintenance



System reboot

Click the [Reboot] button to restart the IP device. It takes some minutes for the IP device to start again.

Backup and Restore

> Backup: To take a backup all of the settings. If necessary, it make possible to return to a backup configuration. Click this button and follow the instructions on the browser to specify the folder and save the setting data of the IP device. This configuration backup can be restored whenever needed.

> Restore:

1 Click the [Browse] button.

2 Find and open the file in which the configuration setting data is stored.

3 Click the [Restore] button and the system settings will be restored and reboot the system.

Notes:

- Backup and Restore can happen on IP device having the same version of firmware. This feature is not intended for multi-configurations or for firmware upgrades.
- The [Backup] function is allowed in HTTP protocol but not in HTTPS protocol.

Operation and settings

Firmware

> Upgrade

1 Click the [Browse] button.

2 Find and open the firmware file.

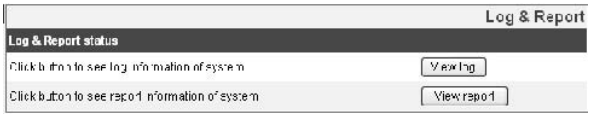
3 Click the [Upgrade] button to update the firmware.

Note:

When you upgrade the system, it may take some minutes to be done. Do not close the browser while the upgrade is in progress. If you close the browser, it may cause a malfunction. You should wait until the confirmation window is displayed. When the upgrade is finished, the confirmation window will be displayed.

> Initialize: The [Initialize] button should be used with caution. Clicking it will return all of the IP device's settings to the factory default values. (Except for Network settings, PTZ Protocol and Preset settings.)

Log & Report



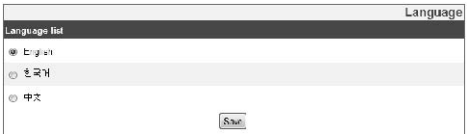
Log & Report status

The System log provides a summary of the status of the IP device. The unit records the data of the software activity in a file.

> View Log: Click this button to display the system log information.

> View report: Click this button to display the report of the system.

Language



Language list

Select a language for the LG Smart Web Viewer configuration menu and information display.

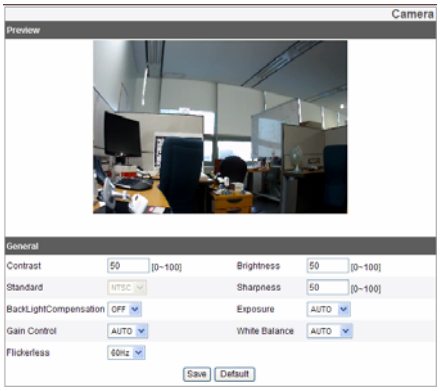
- Save: Click this button to confirm the settings.

Operation and settings

Audio & Video settings

Camera

Preview



You can preview the camera image on the preview window.

Operation and settings

General

> Contrast: Edit the contrast value from 0 to 100. Selecting 100 provides the image with the highest contrast.

> Brightness: Edit the brightness of the camera. It is brighter when a large value is selected and it is darker when a small value is selected.

> Standard: Displays the video standard of the camera.

> Sharpness: Edit the sharpness value from 0 to 100.

> BackLightCompensation: On or Off BackLightCompensation.

> Exposure: Edit Exposure value.

> Gain Control: Edit Gain control value. (Auto, x1, x2, x4, x8)

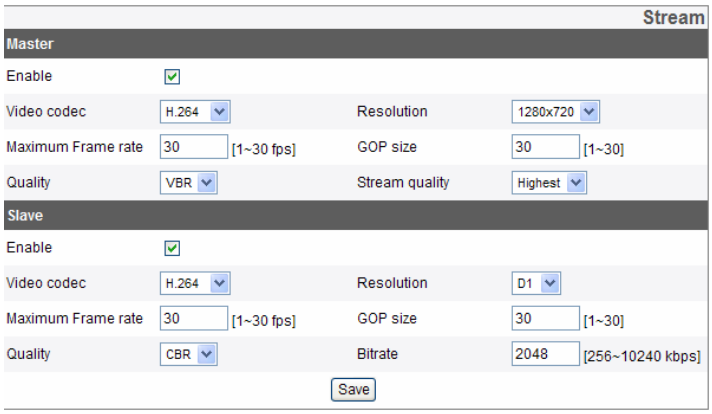
> White Balance: Edit White balance value. (Auto, Indoor1, Indoor2)

> Flickerless: Edit Flickerless value. (OFF, 60Hz, 50Hz)

- Save: Click this button to confirm the settings.

- Default: If you want to set the General setting to the default value, click the [Default] button and then click the [Save] button to confirm it.

Stream



> Enable: Click to activate the stream function.

> Video codec: Select the video mode (Codec) from the drop-down list. The viewer can choose between MJPEG and H.264.

> Resolution: Select the image size to be sent from the camera. (1280 x 720 (16:9 mode), D1 (704 x 480), CIF (352 x 240)).

> Maximum frame rate: Set the frame rate of the image.

> GOP size: It means “Group of Pictures”. The higher the GOP, the better is the video quality of the camera. Edit the value of GOP from 1 to 30. This setting is valid for H.264 video format only.

> Quality: Select the Quality.

- VBR: The bit rate may vary depending on the complexity of the video to meet the selected quality.
- CBR: The video quality may vary in order to preserve a constant bit rate.

> Stream quality: If the [Quality] option set to VBR, this option is displayed. Select the stream quality from the drop down box, the camera supports five types (Highest, High, Medium, Low and Lowest)

> Bit rate: If the [Quality] option set to CBR, this option is displayed. Edit the bit rate value from 256kbps to 10240kbps.

Note:

If the ‘Bit rate’ is configured too low with high resolution, the actual frame rate will decrease because of narrow bandwidth. So you need to set or change the ‘Bit rate’ to high value.

• Save: Click this button to confirm the settings.

Audio

Audio In

> Enable: Click the check box if you want to send the audio from the microphone input connector.

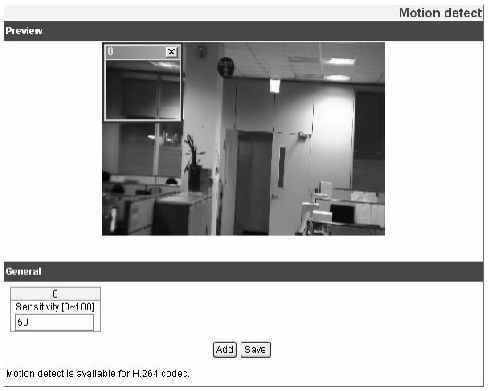
Note: The Clients connected to the IP device remain unaffected with additional changes made in the setting.

> Audio type: Select the codec when you send the audio from the microphone input connector.

Audio Out

> Enable: Click the check box to output the audio from the speaker.

- Save: Click this button to confirm the settings.



Preview

You can preview the motion detection window on the preview window.

General

> Sensitivity: Enter the sensitivity to detect an object in motion.

> Save: Click this button to confirm the settings.

How to set the motion detect window

1 Click the [Add] button. The motion detect window is displayed. You can add the five windows maximum for motion detection area.

2 Set the [Sensitivity] option.

3 Click the edge or corner of the window box to adjust the window size for motion detection.

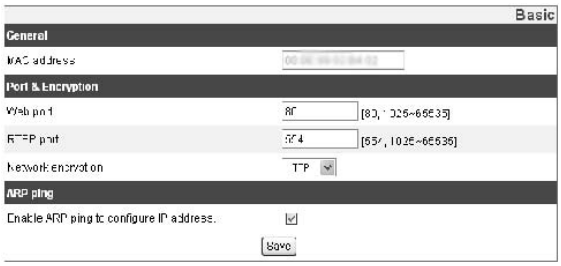
4 Click the [Save] button to save the settings.

Notes: You can reset the window size. Click one of the window edge or corner and drag & drop to reset the motion detection area.

Motion Detection can be activated when at least one of channels (Master/Slave) is enabled, Video codec is set to H.264 and GOP size is more than 2.

Network settings

Basic



General

> MAC address: Displays the MAC address.

Port & Encryption

> Web port: The default HTTP port number (80) can be changed to any port within the range 1,025 to 65,535.

> RTSP port: Check RTSP port. The default port is 554. Other ports can be selected within the range 1,025 to 65,535.

> Network encryption: Select the HTTP or HTTPS option for security.

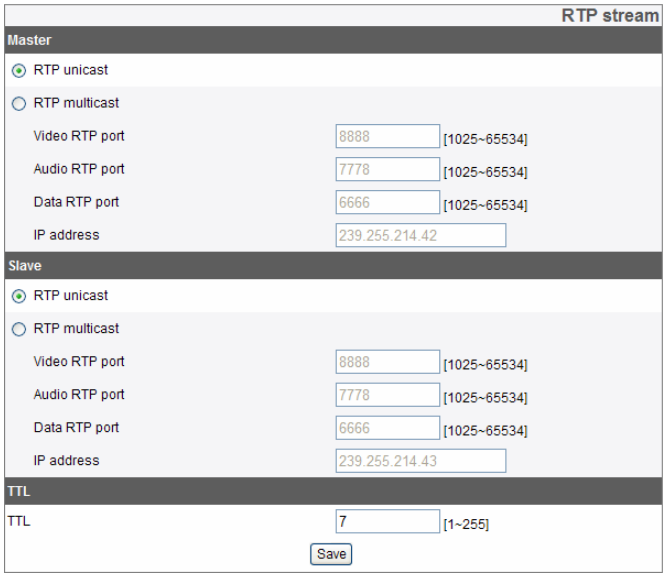
Note: The RTSP port number should not be same with the web port number.

ARP Ping

> Enable ARP Ping to configure IP address: Check to enable ARP ping.

- Save: Click this button to confirm the settings

RTP stream



RTP (Real-time Transport Protocol) is an internet protocol that allows programs to manage the real-time transmission of multimedia data, via unicast or multicast.

> RTP unicast: When enabled, the transmission of the data to the specified equipment happens on a network specifying a single address.

> RTP multicast: When enabled, it reduces the transmission load on the camera by making the computer of the same segment network receive the same transmission data. When multicast option is checked then selects Video Port number, Audio Port number and Data port number.

- Video RTP port: Specify the video transmission port number used for the multicast streaming. It is initially set to 8,888 and you can edit the between 1,025 and 65,534.

- Audio RTP port: Specify the audio port number used for the multicast streaming. It is initially set to 7,778 and you can edit this between 1,025 and 65,534.

- Data RTP port: Specify the VA data port number used for the multicast streaming. It is initially set to 6,666 and you can edit this between 1,025 and 65,534.

- IP address: Set the IP address for RTP multicast.

Note: Each stream using multicast needs its own pair of multicast IP address and port numbers to avoid address conflict.

TTL

> TTL: This option indicates the Time-To-Live of multicast packets. The default setting is 7, and the allowed TTL range is from 1 to 255.

- Save: Click this button to confirm the settings.

TCP/IP

IP address status

> Automatically set with DHCP: Select this option when a DHCP server is installed on the network to allow IP address assignment.

- Notify to SMTP server, if IP address is changed: If you select this option, the user get a notification mail telling about changing of IP of the device.

Note: You should register the SMTP server on the Event server setting to set this function.

> Statically Set: Select this option when you set a fixed IP address, with this setting specify the IP address, Subnet mask and default gateway manually.

- IP address: Enter an IP address.

- Subnet mask: Enter a subnet mask address.

- Gateway: Enter the gateway address.

DNS server status

> Primary DNS server: Enter the Primary domain name server that translates the hostnames into IP address.

> Secondary DNS server: Enter the Secondary DNS server address that backups the Primary DNS.

• Save: Click this button to confirm the settings. DDNS

DDNS

This free service is very useful when combined with the LG DDNS Server. It allows the user to connect the IP device using the URL, rather than an IP Address. This also solves the problem of having a dynamic IP address.

DDNS status

> Don't use DDNS server: Disable the DDNS function.

> Use DDNS server: Enable the DDNS function. -Provider: Displays the DDNS provider.

-Hostname: Enter the hostname you want to use.

• Save: Click this button to confirm the settings.

IP filtering

The access of the IP addresses in the list are allowed or denied according to the choice made in the drop-down list of the Basic policy option. The administrator can add up to 10 IP address entries to the list (a single entry can contain multiple IP addresses). The users from these IP addresses need to be specified in the user list with the appropriate access rights. The IP list is to control the access permission of clients by checking the client IP address.

IP list

> Basic policy: Select the basic policy type.

- Allow all: Allow all the IP address basically, but the IP addresses in the list are denied.

-Deny all: Deny all the IP address basically, but the IP addresses in the list are allowed. It needs at least one IP address to activate this function.

Save: Click this button to confirm the settings.

- Add: Click this button to add the IP address.

1. Click the [Add] button.
2. Set the IP options.

-Alias: Enter the alias.

-From: Enter the start IP address for the IP filtering.

-To: Enter the end IP address for the IP filtering.

Note: If you want to deny or to allow a range of IP addresses, enter the start IP address to "From" and the end IP address to "To". You can also add an IP address by entering the same IP address to "From" and "To".

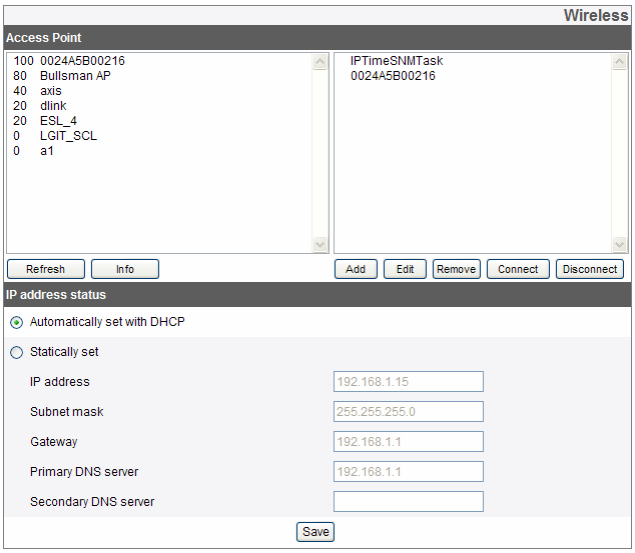
3. Click the [Save] button.
4. Repeat the steps 1 to 3 to add additional IP address.

Remove: Click this button to delete the IP address.

1 Select the alias from the list.

2 Click the [Remove] button. The IP address will be deleted.

Wireless



Access Point

> Click [Refresh] button, display Access Points around. Left number describes signal strength of access point and Right describes name of access point.

> Click [Info] button, show the detailed information of access point.

> Click [Add Config] button, add access point to right window.

> Click added access point of right window and [Connect] button, Wi-Fi starts connecting with selected AP. When connecting with AP, connection status is displayed and cha nged. (Connection status : connecting, IP assigning, connected, wps connected)

> Click [Disconnect] button, Wi-Fi is disconnected with AP.

Note: The camera user cannot edit, remove, and connect connected AP.

> Click [Add] Button, add access point.

> Click [Edit] Button, edit access point information.

> Click [delete] Button, delete access point.

IP address status

> Automatically set with DHCP: Select this option when a DHCP server is installed on the network to allow IP address assignment.

> Statically Set: Select this option when you set a fixed IP address, with this setting specify the IP address, Subnet mask and default gateway manually.

- IP address: Enter an IP address.

- Subnet mask: Enter a subnet mask address.

- Gateway: Enter the gateway address.

- Primary DNS server: Enter the Primary domain name server that translates the hostnames into IP address.

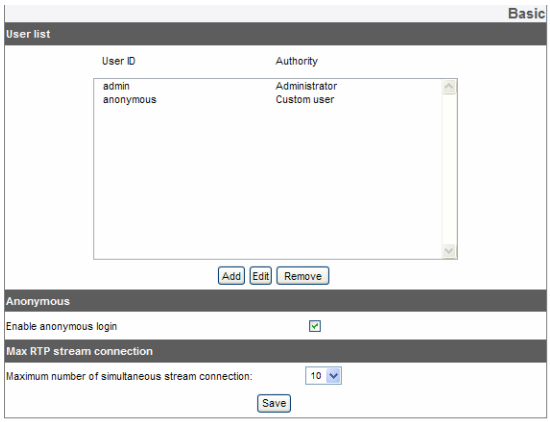
- Secondary DNS server: Enter the Secondary DNS server address that backups the Primary DNS.

• Save: Click this button to confirm the settings.

User settings

Basic

The IP device is shipped with the login rights of administrator only. If others need to access the IP device excluding the configuration a login with viewer rights need to be created. A maximum of 50 users can be created.



User list

> Add the User

You can register a new user with various access rights.

1. Click the [Add] button. User setting dialog is displayed.
2. Enter the new User ID and Password. (Should have a minimum of 4 characters and preferably a combination of alphanumeric).
3. To confirm the password, retype the password that you typed in the Password box.
4. Select the authority from the drop down list to provide the access rights to each user and then click the [Save] to confirm your selection.

- Administrator: Allows you to operate setup menus and to view live images.
- Power user: Use of the limited functions of the system (The Configuration menu is not allowed). A power user can use the Live View and audio functions.
- Normal user: Provides the lowest level of access, Allows to view live images only.
- Custom user: The user can login and view the live stream image only when the “Enable anonymous login” option is checked to enable it.

Note: Remember the password.

> Edit the registered user

You can change the password or authority.

1. Choose the user ID and then click the [Edit] button.
2. Change the Password or Authority, then click the [Save] button to confirm your selection.

> Delete the registered user

1. Choose the user ID you want to delete.
2. Click the [Remove] button.

Note:

The default administrator user ID ‘admin’ is permanent and cannot be deleted.

Anonymous

> Enable anonymous login Check the box to enable anonymous user login - allows the user access for only viewing the live stream image.

Maximum RTP stream connection

> Maximum number of simultaneous stream connection: Set this number to limit the number of simultaneous stream connections. The connections depend on the stream configuration as shown in the following Maximum RTP stream connection by stream configuration.

Video Codec	Resoul tion	Frame Rate	Quality	Maximum RTP stream
H.264	720p	30	HIGHEST	Up to 4
MJPEG	720p	20	HIGHEST	Up to 4

Note: Preview window of the IP device setting is affected by this setting. • Save: Click this button to confirm the settings.

SD Card settings

Basic

SD Card Recording

> Always: Start the recording at once.

> Recurrence Pattern: The recording is started according to the setting time of the selected day.

Note: You cannot set the time for a day. It will start the recording for the selected day of the time.

> Never: [Always] and [Recurrence Pattern] recording functions are not activated.
> Overwrite: If the micro SD card has insufficient space and this option will be activated. It will overwrite the oldest data.

> DiskFull Notification: Sends a warning e-mail to the SMTP server when the micro SD card has fully recorded. Select the SMTP server from the drop-down list. You should register the SMTP server on the Event server setting to set this function.

> Network Failure Recording: Select the checkbox to activate the micro SD card recording function. If the system does not work with recording server, the system will record the data to the micro SD Card. When the system connects to the recording server again, the recorded data of the micro SD card will transfer to the recording server automatically.

> Recording Server IP: Enter the recording server IP

> Set as NTP server IP: Click this button to use the entered Recording Server IP as the NTP server IP

> Stream: Select the stream type for the recording.

Notes:

The recorded file name is made automatically as the “[Created date of the file]_[GMT Recording Time]+(-)[Value of the Local Time minus GMT Time (Second)]_[Use or not of the Daylight saving time(N/D)]

Disk Management

> Using the micro SD card

1 Insert the micro SD card carefully to the micro SD card slot of the camera.

2 Click the [Mount] button. If the micro SD card is mounted to the system correctly, the [Mount] button will be changed to the [Unmount] button.

3 Displays the information of the [Disk ID], [Status], [Total Space] and [Free Space] options.

Notes:

When the micro SD card is mounted, you should format the micro SD card. After the micro SD card format is finished, you should click the [Mount] button to use it.
When you use the micro SD card format function, it may not progress immediately. In this case, you should try it again after waiting a few minutes.

> Remove the micro SD card

1 Click the [Unmount] button. If the micro SD card is unmounted from the system correctly, the [Unmount] button will be changed to the [Mount] button.

2 Remove the micro SD card from the micro SD card slot of the camera.

Note: When you use the Unmount function, it may not progress immediately. Operations such as recording of the system and reading of data are required stop time before the Unmount function is activated. You should try it again after waiting a few minutes.

File Management

Display the recorded file of the micro SD card on the list.

Click the [Search] button to display the recorded file. The list will be updated when you click the [Search] button.

> To view the recorded file of the micro SD card

1. Select the search option.

   -All: Search the all recorded files in the micro SD card.

   -Some: You can set the search condition by using the date and time options.

2. Click the [Search] button and then the search result is displayed on the list.

> Download: You can download the recorded data of the list to your PC. Select a recorded file on the list and click the [Download] button. The two confirmation window is displayed. You should download the all files that the recorded file(*.DAT) and information file(*.INFO).

Notes: It is recommended to deactivate the [Overwrite] function before you download the file. When [Overwrite] function is activated, the downloading file might be overwritten, if the micro SD card has insufficient space. The downloaded file can be played by using the LG Smart Station player.

> Remove: Delete file from the SD card.

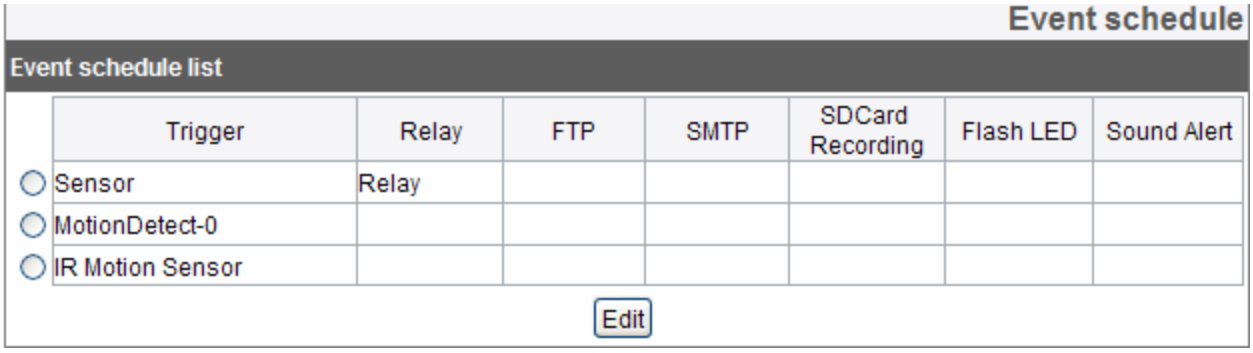
- Save: Click this button to confirm the settings.

Event settings

Event schedule

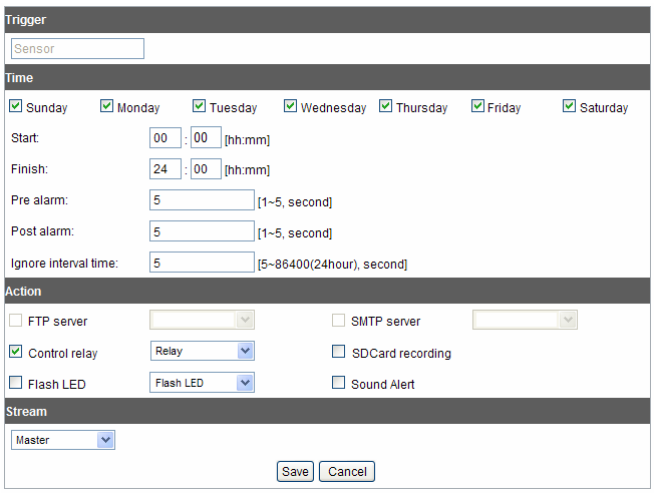
When an event (VA/Motion detect/Sensor event) occurs, this unit records the live images and routes as configured.

Event schedule list



>To edit the Event Schedule

1. Select the Trigger event and click the [Edit] button. Event schedule window is displayed.
2. Set the options.



Trigger: Displays the selected trigger event.

Time: Sets the Day, Start, Finish, Pre alarm, Post alarm and Ignore interval time options.

Action: Selects the options. This occurs when the event runs.

-FTP server/SMTP server: Uploading of images to an FTP server, or e-mail notification.

-Control relay: The relay is activated or deactivated.

-SDCard recording: Record on the SD card when the event runs.

-Flash LED: Flash on when the event runs.

-Sound Alert: Sound Alert on when the event runs.

- Stream: Selects the stream of the connected camera.

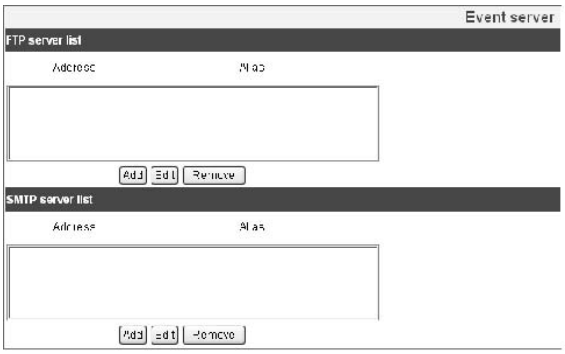
3. Click the [Save] button to confirm the settings.

Notes:

You should register the SMTP and FTP server on the Event server setting to set this function.

Recording of event (VA/Motion detect/ Sensor event) runs every 5 minutes split file. If the capacity of the SD card remains less than 200 MB, stop recording or overwrite new file after delete old one as [Overwrite] setting. The overwritten file cannot play or may malfunction when you download. Recorded file on the SD card, is recording 1 frame per second when set video codec to MJPEG.

Event Server



FTP server list

Event Servers are used to receive the recorded video clip.

> To add the FTP server

1 Click the [Add] button. FTP server setting window is displayed.

2 Set the FTP server options.

- Alias: Type the FTP Server name to upload the image files.

- Address: Enter the FTP server's IP address.

- Port: Enter the port number. The default FTP port is 21.

- User ID: Type the user name for the Folder shared in the FTP server.

- Password: Type the password for the folder shared in the FTP Server.

- Folder: Type the path with the folder that is shared in the FTP server.

-Test: Click [Test] button to test the FTP server.

3. Click the [Save] button to confirm the settings.

> To edit the FTP server

1 Choose the FTP server in the FTP server list.

2 Click the [Edit] button. You can check or edit the FTP server options.

> To delete the FTP server

1 Choose the FTP server in the FTP server list.

2 Click the [Remove] button. This would remove the FTP server from the list.

SMTP server list

By selecting the e-mail option, a still image of the event is captured and an e-mail with the attached image file is sent to the specified mail address.

> To add the SMTP server

1 Click the [Add] button. SMTP server setting window is displayed.

2. Set the SMTP server options.

- Alias: Enter the SMTP server name.

- User ID: Enter the user ID of the SMTP server. This would be the one who owns the mail account.

- Password: Enter the password of the SMTP server.

- Address: Enter the SMTP server address.

- Port: Enter the port number. The default port is 25.

- Enable SSL: Check when use the SSL (Secure Socket Layer) protocol. SSL protocol is cryptographic protocols that provide secure communication on a network.

- Receiving address: Type the recipients e-mail address. You can specify only one recipient e-mail address.

- Administrator address: Type the e-mail address of the administrator.

- Subject: Enter the subject/title of the e-mail. - Message: This message can describe the information of the acquired IP address, etc.

- Test: Click [Test] button to test the SMTP server.

3. Click the [Save] button to confirm the settings.

> To edit the SMTP server

1 Choose the SMTP server in the SMTP server list.

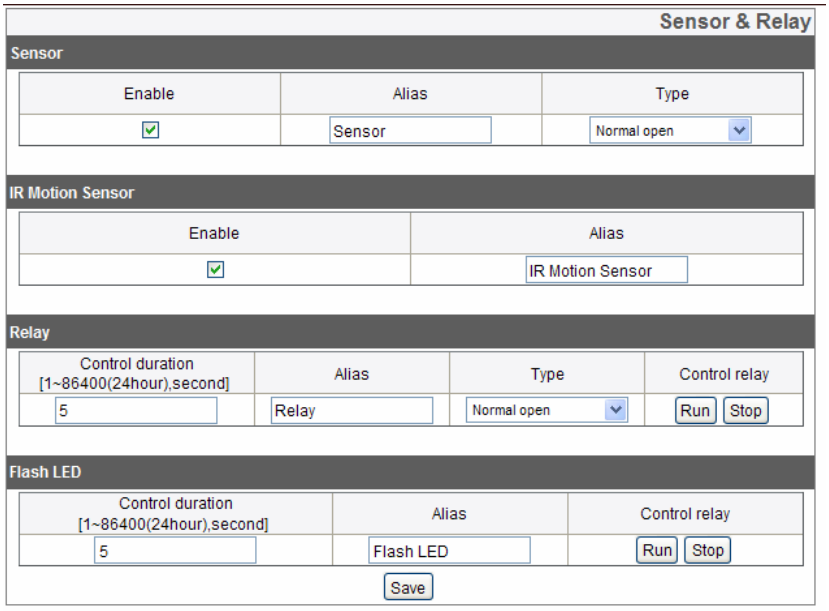
2 Click the [Edit] button. You can check or edit the SMTP server options.

> To delete the SMTP server

1 Choose the SMTP server in the SMTP server list.

2 Click the [Remove] button.

Sensor & Relay



Sensor

> Enable: Mark up when you want to activate the sensor.

> Alias: Display the sensor name.

> Type: Select the sensor type.

IR Motion Sensor

> Enable: Mark up when you want to activate the IR motion sensor.

> Alias: Display the IR motion sensor name.

Relay

> Control duration: Enter the relay time.

> lias: Display the relay name.

> Type: Select the relay type.

> Control relay:

- Run: Click to activate the relay.
- Stop: Click to stop the relay.

Flash LED

> Control duration: Enter the Flash LED running time.

> Alias: Display the FLASH LED name.

> Control relay:

- Run: Click to activate the Flash LED.
- Stop: Click to stop the Flash LED.

• Save: Click this button to confirm the settings.

Troubleshooting

This section provides useful information to help you to resolve any difficulty you might have with your LG IP device. Fault symptoms, possible causes and remedial actions are provided here.

IP Setting problems

- ARP/Ping: Disconnect and reconnect the power to the network camera. The device should get the IP within 2 minutes.

- Ping your camera: Open the command prompt on your computer, type ping with the IP address of the network device. The reply obtained by this command provides explanation for the cause of the problem.

bytes = 32 time = 2 ms indicates that the IP address is already used and cannot reuse the same. A new IP address needs to be obtained.

Destination host unreachable: indicates that the network device and your computer do not fall in the same subnet hence needs to get a new IP address. Contact the system administrator for the required help.

Request timed out: Indicates that the IP is free as it is not used by anyone and the network device can obtain this.

- IP Conflicts: If the LG network device is set with a static IP address and if the DHCP option is set then there may be IP's same as the network device and other network partner. Hence set the static IP address to 0.0.0.0 to resolve this conflict.

Cannot access the camera from browser:

Reconnect the network camera with power and check the ping operation to know if the IP is used by others.

Disable the proxy setting in the Browser if you are using a proxy server.

Check for proper cabling and network connections, try to ping after verifying the connectivity.

Sometimes when HTTPS is enabled, we would be checking the URL with http, in this case manually change the URL to the http/https accordingly.

Verify the DNS and Gateway settings if the IP address is assigned statically to the network device.

Troubleshooting

Accessing camera external to the local network

Firewall Protection: Check for the internet firewall with the system administrator, either he has to do port forwarding or modify the DMZ function on the router. Default router needed: Check if you need configure the router settings.

Sporadic network performance

Network Switches or hubs used may be of the lower configuration and the load on this may not meet the required conditions of our network camera. Check for the RJ-45 cables that are used for the network connectivity.

Login Password lost

Reset the camera by pressing the Factory Reset button for more than 10 seconds to restore default settings. After do the factory reset, login using the default username and password.

Video Streaming problems

If the video streaming does not start on the Web browser, install the LG Web Client ActiveX program on your computer following the instructions on the Web browser. When Windows IE browsers are used always take care to allow pop ups, check this option before we run the web client.

Check the quality of image by referring the video settings as described in the manual. Sometimes there would be intermittent or very slow video streaming, this may be because of the higher resolution and frame rate that are set for the video. The video streaming may appear poor at times; this may be because of the network traffic, too many devices connected to the switch or hub, enabling motion detection to each of the video streams and because of other programs running on your computer.

If the images appear to be blurred adjust the focus of the network camera to get a clear image.

Troubleshooting

Video images if appear white and black adjust the camera settings in the Audio&Video to get back the colorful image.

Select the Night mode if the network camera is connected at a place where surrounding light is less or dark.

If we obtain lower frame rate than set we need to check from the system administrator for sufficient bandwidth available or reduce the number of applications running on the client computer.

If the client PC's are unable to access the multicast stream, check with the system administrator for the use of a valid multicast address or check if the router is supporting multicasting.

If the images appear to have white of gray stripes on it, upgrade the Video graphics driver on the client PC to the latest version.

Video images may be noisy if you are using the camera in a very low light environment or the bit rate/ quality is set to very low values. Provide higher values for quality and support the surrounding environment with enough light.

Audio condition

The client computer that is interacting with the camera needs to have a sound card that is functional to support speaker and microphone.

The sound card needs to be checked for its support for full duplex communication. Ensure that the mute button of the client computer is not set and all the audio settings are correct.

Speaker button on the web viewer should be enabled to listen the audio from the network camera.

Ensure that the bidirectional audio button is enabled on the Web viewer and the microphone is set.

Change the input and the output gain for microphone and the speaker respectively to set correct audio level.

For all further support please contact the supplier or forums or websites.

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OpenSSL :

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> software written by Tim Hudson (tjh@cryptsoft.com).

> software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (http://www. openssl.org)

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Specification

ITEM		LW130W
Camera	Image Sensor	Progressive Scan CMOS (1.0 Mega Pixels)
	Lens	M12 Board Lens
	Resolution	Up to 1280 X 720
	Light	1W Flash LED
	Image Enhancement	Auto Exposure Control, Auto White Balance, Digital Zoom(Viewer), Digital Day & Night
Video	Video Out	RJ-45 (Network)
	Compression	H.264, MJPEG
	Frame Rate (Max)	30 fps @ 1280 x 720 (16:9 mode)
	Multi-Streaming	Dual Streaming
Audio	Audio In/Out	1/1 (Line level input/output)
	Compression	G.711, G.726 Support
	2-way Audio	Support
Event	Alarm In/Out	1/1
	Motion Detection	Human Sensing
	Event Notification	Relay Out, Email, FTP
	Pre Event Buffering	Support
Network	Ethernet	10/100 Ethernet
	Wireless LAN	802.11 b/g/n, WPS support
	Security	Password Protection, HTTPS(SSL, TLS)
	Protocol	TCP/IP(IPv4), HTTP, HTTPS, RTP, RTSP, UDP, DHCP, FTP, SMTP, NTP, ARP, ICMP, DDNS(LG)
Management	Integrated Client	LG Smart Station (64 channels recording and monitoring feature)
	Web Client	Live monitoring and system management for a device
	System Update	LG Smart Station or Web Client
	Connections	Up to 4
Misc.	Power Source	DC 5 V (±20 %)
	Input current	DC 5V : Maximum 1000 mA
	Operating Temperature	-10 ℃ to 50 ℃
	Operating Humidity	0 % RH to 80 % RH
	Dimension (W x H x D)	With Stand : 100 X 70 X 130 mm, Without Stand : 60 X 45 X 100 mm

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BZ03