



## OWNER'S MANUAL

# Color Video Network Camera

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

MODEL  
LSW2010F

P/NO : MFL62591933



**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 equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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

- **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.

**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 A 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.

### **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.

**CE** 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.

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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

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### 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

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

This manual contains instructions on how to install and manage the LG Color Video IP 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
- PoE (Power over Ethernet) Support (802.3af)
- 2 Power (DC 12 V, PoE) Support
- Audio Support (G.711, G.726 Full Duplex)
- Pre/Post Alarm Support
- Direct NAS Writing

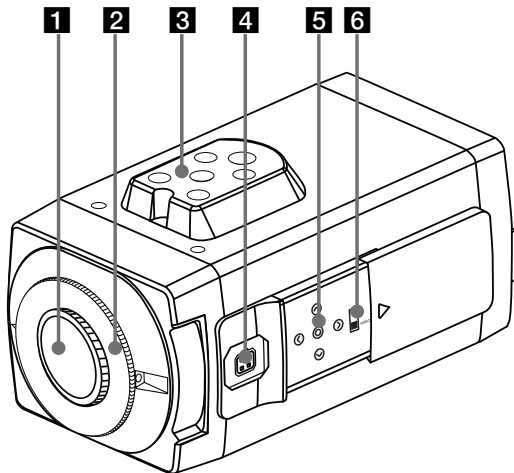
- High resolution and high sensitivity with a 6 mm Super HAD II CCD.
- Auto White Balance
- Day & Night function

## Accessories

- Program CD
- User Manual



## Part Names and Functions



### 1 Lens mount cap

The lens mount of the camera is covered using a cap to protect it. Remove the lens cap covering the lens.

### 2 Flange-back adjustment ring

### 3 Camera installation bracket




The bracket can be fixed at the top or bottom of the camera.

### 4 Lens iris output connector (LENS)




This 4-pin connector is used to send the Iris control signal and power supply to an auto-iris type lens.

### 5 Setup menu control buttons

Use these buttons to set the menu options.

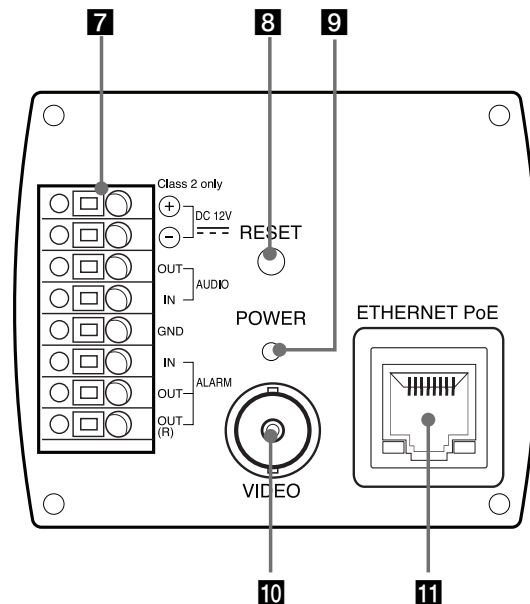
BUTTON	Description
 <b>UP button</b>	Used to move upper direction on the menu screen. Use this button to select an item or adjust the parameters.
 <b>DOWN button</b>	Used to move lower direction on the menu screen. Use this button to select an item or adjust the parameters.
 <b>RIGHT button</b>	Moves the cursor to the right. Used to increment the value selected in the menu. The parameter changes each time this button is pressed.

## Part Names and Functions

 <b>LEFT button</b>	Moves the cursor to the left. Used to decrement the value selected in the menu. The parameter changes each time this button is pressed.
 <b>SET button</b>	Executes selections and displays a sub-menu for an item with the  mark.

### 6 ALC Lens setting switch

- VIDEO: When you attach an Auto Iris lens requiring the video control signal, please put this switch in the VIDEO position.
- DC: When you attach an Auto Iris lens requiring the DC control signal, please put this switch in the DC position.



## Part Names and Functions

### **7 External device connectors**

- Power input terminal: Connects to a DC 12 V power supply using proper cables.
- AUDIO OUT (Line Level Output): Connect to an active speaker with a built-in amplifier.
- AUDIO IN (Line Level Input): Input for a mono microphone, or a line-in mono signal.
- ALARM IN (Sensor input) Terminals:  
Provides physical interface for sensor.
- ALARM OUT(R)/ALARM OUT (Relay output) Terminals:  
Provides physical interface for Alarm/Relay.

### **8 RESET button**

Push the button more than 3 seconds, this would restore the factory default settings.

### **9 Power indicator**

Lights when the camera is powered.

### **10 VIDEO OUT**

Supplies analog video signal (composite) to the connected device.

### **11 ETHERNET/POE Port**

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

#### **Note:**

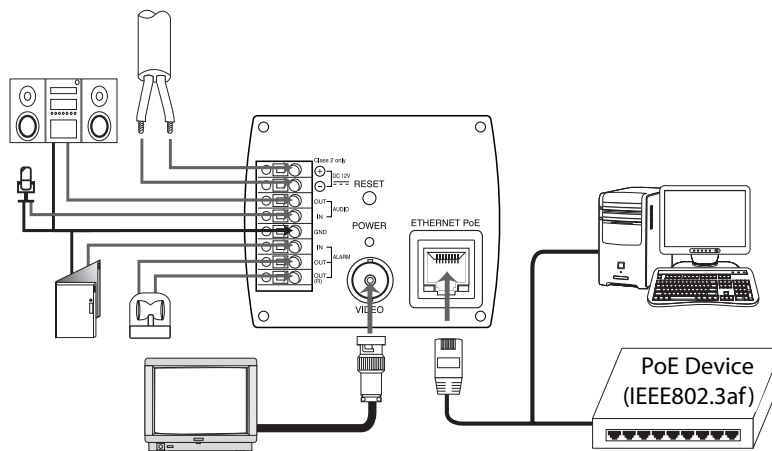
Power over Ethernet (PoE) is a technology that integrates power into a standard LAN infrastructure. It enables power to be provided to the network device, such as a network camera, using the same cable as that used for network connection. It eliminates the need for power outlets at the device locations and enables easier application of uninterruptible power supplies (UPS).

# 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.

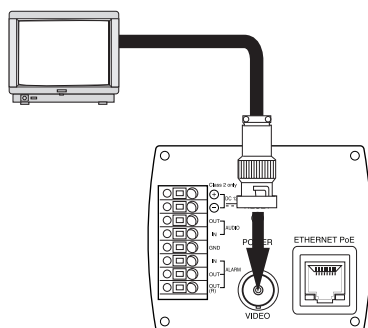
## Connection Overview



## Connections

### Connecting Display Device

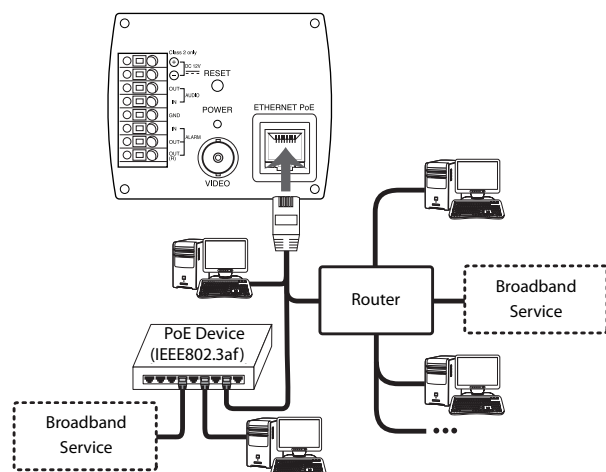
Connect the video signal between the IP camera and the monitor.



### 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. After the installation, check the network settings for the remote control and monitoring work.

Connect the IP camera to your network using a standard RJ-45 network cable as shown below.



# Connections

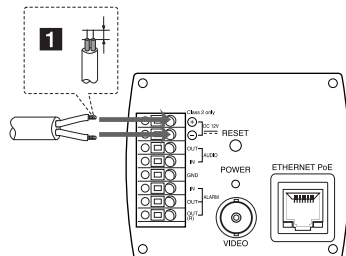
## Connecting Power Source

Connect power, using one of the methods listed below:

### To use the power adapter

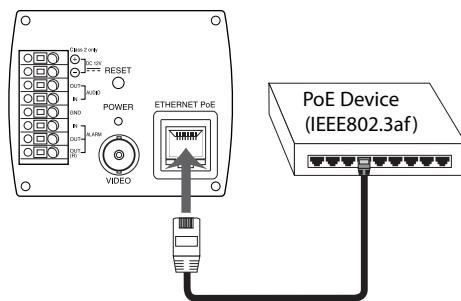
Connect a DC 12 V power source to the power input terminal as shown below.

1. Remove the insulation on the power cable as illustrated.
2. Connect to the DC 12 V UL Listed, Class 2 Power Supply only on the unit.



### To use the PoE (Power over Ethernet) device

Connect the PoE cable to the LAN port on the unit. You must use the "IEEE802.3af" standard PoE device.



### Note:

If the camera doesn't work properly after connect PoE device, please check if the PoE device is supplying enough power.

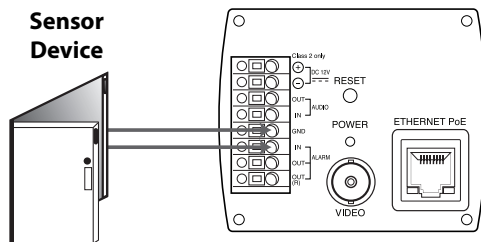
## Connections

### Connecting Alarm Device

Alarm terminals are used to connect the alarm (relay) devices such as sensors, door switches, etc.

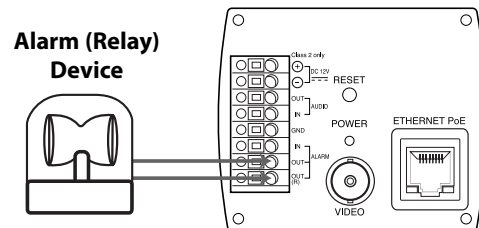
#### ALARM IN (Sensor Input )

Connect the sensor device to the sensor input terminal.



#### ALARM OUT(R) / ALARM OUT (Relay Output)

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



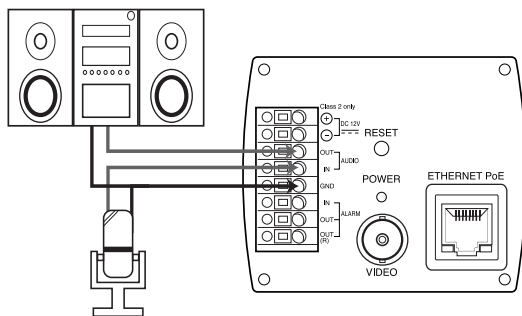
#### Note:

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

## Connections

### Connecting Microphone and Speaker Device

Optionally connect an active speaker and/or external microphone with a built-in amplifier. Each Microphone and Speaker should be connected with GND.

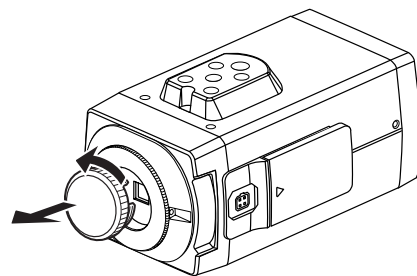


**Note:**

Keep the microphone away from the speaker to avoid howling.

### Mounting the Lens

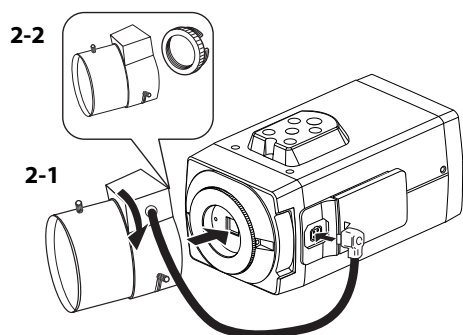
1. Remove the lens mount cap from the camera.



2. Install the auto-iris lens.
  - 2-1. CS mount type lens  
Carefully align the lens mount with the camera opening, then turn the lens slowly to install it.
  - 2-2. C mount type lens  
To allow for flange- back adjustment, install the C-mount adaptor (option) on the lens mount, then carefully align the lens mount with the camera opening and turn the lens slowly to install it.



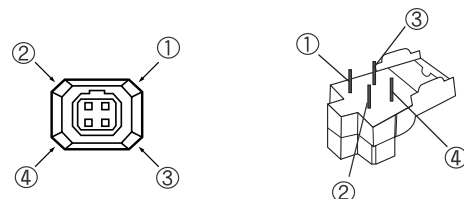
## Connections



3. Connect the lens plug to the lens iris output connector (LENS) on the side of the camera.  
When using lenses from other makers, the plug shape may not correspond to the terminal on the camera.  
In such a case, remove the original plug and using a soldering iron, connect a lens iris plug according to the diagram. (Refer to next page.)

### lens iris output connector

Pin layout for the lens iris output connector.

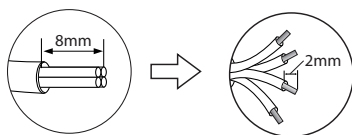


No.	DC type lenses	VIDEO type lenses
1	Damping -	Vcc (+9 V)
2	Damping +	Not used
3	Drive +	Video
4	Drive -	Ground

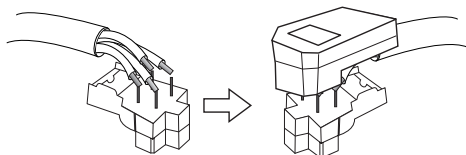
## Connections

### Rewire the lens iris plug

1. Cut off the plug of the lens cable, cut off approximately 8 mm of the insulation, and then strip approximately 2 mm of the ends of the cable sheaths.



2. Solder the ends of the cable wires to the ends of the pins, and then attach the cover of the lens iris plug.



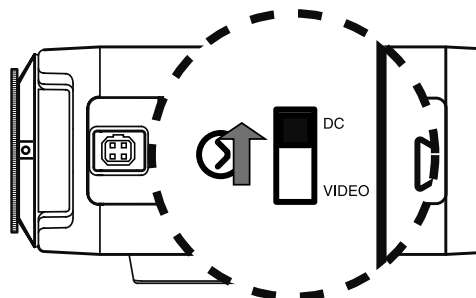
### Concerning Auto-Iris Lenses

#### DC type auto-iris lens

A lens without driver circuit that operates only on a DC power source. In general, this type of lens is referred to as DC type coil lens. (Set the ALC Lens Setting Switch to the DC position.)

#### CAUTION:

Depending on the type of lens used, the lens may not perform properly.



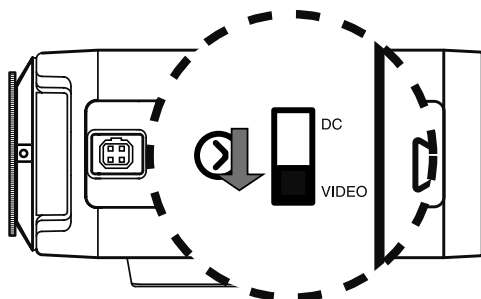
## Connections

### VIDEO type auto-iris lens

A lens with amplifier circuit that operates on video signal and DC power source. In general, this type of lens is referred to as EE amplifier type lens. ALC and LEVEL volume level controls are available on the lens for iris adjustments. (Set the ALC Lens Setting Switch to the VIDEO position.)

#### CAUTION:

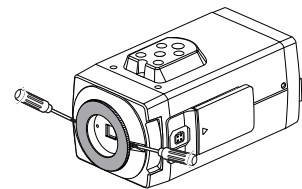
Be cautions not to use Auto Iris Lens with over 35mA.



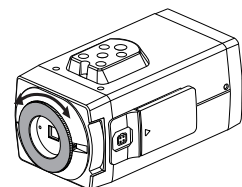
### Flange-back Adjustment

The adjustment is required only when a lens without focus-adjusting mechanism is mounted, or when a lens with adjusting mechanism is mounted and focus that is more accurate is needed.

1. Loosen the flange-back fixing screws.



2. Use the flange-back adjusting ring to obtain a focused point while watching the monitor screen.



## Connections

3. Tighten the flange-back fixing screws.

**Note:**

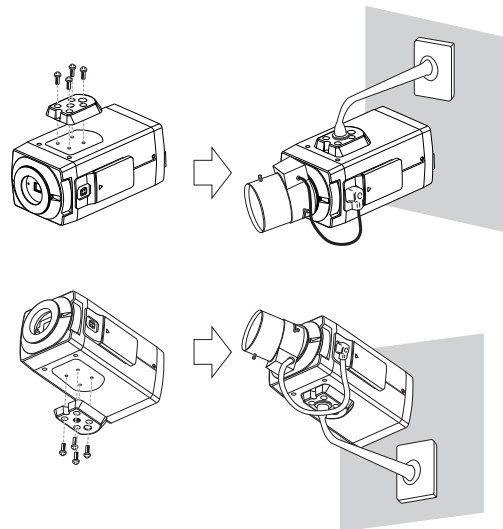
The object may be out of focus when using a source of near-infrared light than using the visible light.

## Mounting the camera

The mounting bracket can be secured on either the top or bottom of the camera. Use the same set of screws to attach the mounting bracket on the camera.

**Note:**

If using a camera mounting bracket, select a location that is strong enough to bear the full weight of the camera and the mounting bracket for long periods, and install the camera and mounting bracket securely.



# 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 program of the LG Video Server and the LG IP cameras.
- JRE (Java Runtime Environment) is a pre requisite for LG Smart Web Viewer program. If this is missing in the PC please install the same manually from "<http://java.sun.com>" website. (Version 1.6.0.11 or later)
- 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.

## Recommended PC Requirements

The LG IP device can be used with most standard operating systems and browsers.

Items	Requirements
Operating System	Windows XP Professional or above
CPU	Intel Core2 Quad Q6700 (2.66 GHz) or above
Web Browser	Microsoft Internet Explorer 6.0 or 7.0
DirectX	DirectX 9.0 or above
Memory	2 GB or above RAM
Graphics Card	256 MB or above Video RAM
Resolution	1280 x1024 (with 32 bit color) or higher

# Operation and settings

## Accessing the LG IP device

You can access the LG IP device by following the below steps.

### 1. Copy the IP Utility to your PC

- 1.1 Insert the Client Program CD.
- 1.2 Find and Copy IP Utility folder to your PC.

### 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 are 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.

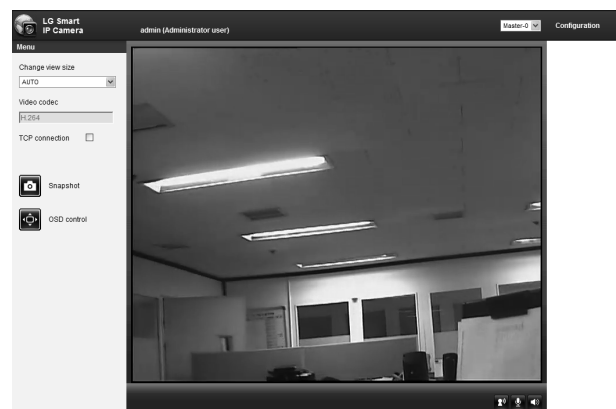
#### **Notes:**

- You can also access the LG Smart Web Viewer as shown below.
  - 3.1 Start your Web browser.



## Operation and settings

- 3.2 Enter the IP address of the LG IP device in the address bar of the browser.
  - 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.

### LG Smart Web Viewer Overview







## Operation and settings



Item	Description
<p>Change view size</p> <p>AUTO</p>	<p>Select the video image size from the drop-down list. (AUTO, D1 or CIF)</p> <p>The initial view size is set to AUTO. The AUTO option sets the view size according to the Server's resolution.</p>
<p>Video codec</p> <p>H.264</p>	<p>Displays the current video codec of the selected video stream (Master or Slave).</p>
<p>TCP connection <input checked="" type="checkbox"/></p>	<p>Check this option as the network connection type (TCP or UDP). If you check it, the client connects to the server using TCP connection.</p>
<p> Snapshot</p>	<p>Click to save the current image in JPEG format on your computer.</p> <ol style="list-style-type: none"> <li>1. Click the [Snapshot] button and then the Snapshot window is displayed.</li> <li>2. Click the [Save] button in the Snapshot window.</li> <li>3. Enter the file name (JPEG format) and select the folder to save it.</li> <li>4. Click the [Save] button to confirm it.</li> <li>5. Click the [Close] button in the Snapshot window to close it.</li> </ol>
<p> OSD control</p>	<p>Displays the Camera OSD control window. Use these buttons to setup the Camera. This button does not appear on the screen if the login is other than the administrator.</p>



## Operation and settings

	<p>Select the video stream. From the Live view drop-down list, select the desired video image source between [Master-0] and [Slave-0].</p> <p><b>Note:</b> 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.</p>
	<p>Provides all the necessary tools for setting up the device to your requirements. The user will need administrator level to do this.</p> <p><b>Note:</b> If you want to exit the Configuration menu, select one of the video stream in the Live view drop-down list.</p>
	<p>Displays the current surveillance live screen.</p> <p>You can monitor the camera image on the live view window of the LG Smart Web Viewer.</p>
	<p>Click this button to connect or disconnect the audio communication between the LG IP device and the connected PC.</p> <p>(Color icon: On, Gray scale icon: Off.)</p>

## Operation and settings

	Click this button to switch the microphone off and on for the computer. (Color icon: On, Gray scale icon: Off.)
	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 IP camera

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.

## Operation and settings

### 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

Main Menu	Sub Menu
User	Basic
Schedule	Recording schedule
	Recording server
Event	Event schedule
	Event server
	Sensor & Relay

# Operation and settings

## System settings

### Version

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

Version	
Version list	
Firmware version	09071001
Hardware version	258.0.0.99
Software version	258.0.0.091218
Web client version	258.0.0.192
Copyright	
Copyright 2009 LG Electronics. All Rights Reserved.	

## Date & Time

Date & Time

Time zone

GMT

Time mode

☒ Synchronize with NTP server

pool.ntp.org

Time will be synchronized with NTP server every

1 hour

Click button to test this server.

Test

☐ Synchronize with personal computer

2009-07-21 14:15:28

☐ Synchronize manually

Date: 2009-07-21

Calendar

Time: 14:14:15

Server time

Server time

2009-07-21 05:15:26

Save

### 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.

# Operation and settings

## 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 that of 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.

## Server time

- > Server time: Displays the current date and time of the IP device.
- Save: Click this button to confirm the settings.

## Maintenance

Maintenance	
<b>System reboot</b>	
Click button to reboot this system.	<input type="button" value="Reboot"/>
<b>Restore and backup</b>	
Click button to restore this configuration.	<input type="button" value="Restore"/>
<input type="text"/> <input type="button" value="Browse..."/> <input type="button" value="Upload"/> [ex. c:\backup.config]	
* Configuration file must be uploaded before restoring.	
Click button to backup this configuration.	<input type="button" value="Backup"/>
<b>Firmware</b>	
Click button to upgrade firmware.	<input type="button" value="Upgrade"/>
<input type="text"/> <input type="button" value="Browse..."/> <input type="button" value="Upload"/> [ex. c:\firmware.dat]	
*Firmware file must be uploaded before upgrading.	
Click button to initialize the system.	<input type="button" value="Initialize"/>

### System reboot

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

## Operation and settings

### Restore and backup

- > Backup: To take a backup of all of the settings. If necessary, it make possible to return to a backedup 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 when ever needed.
- > Restore: Click the [Browse] button and select the file in which the configuration setting data is stored and click the [Upload] button. Click the [Restore] button after successfully uploading the backup configuration. The System settings will be restored to the uploaded configuration except network settings, 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.

- [Backup] function is allowed in HTTP protocol but not in HTTPS protocol.

### Firmware

- > Upgrade
  1. Click the [Browse] button
  2. Find and open the firmware file.
  3. Click the [Upload] button.
  4. Click the [Upgrade] button to update the firmware.
- > 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	
<b>Log &amp; Report status</b>	
Click button to see log information of system.	<input type="button" value="View log"/>
Click button to see report information of system.	<input type="button" value="View report"/>

## Operation and settings

### 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 window of the system.

### Language

Language	
Language list	
<input checked="" type="radio"/>	English
<input type="radio"/>	한국어
<div>Save</div>	


### Language list

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

- Save: Click this button to confirm the settings.

## Audio & Video settings

### Camera

Camera	
Preview	
	
General	
Contrast	<input type="text" value="50"/> [0~100]
Brightness	<input type="text" value="50"/> [0~100]
Standard	<input type="text" value="PAL"/> [v]
Hue	<input type="text" value="50"/> [0~100]
<div>Save Default</div>	

### Preview

You can preview the camera image on the preview window.

# Operation and settings

## General

- > Contrast: Edit the contrast value in steps of 1, from 0 to 100. Selecting 100 provides the image with the highest contrast.
- > Brightness: Edit to fine adjust 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.
- > Hue: Edit the video Hue of the camera from 0 to 100.
- Save: Click this button to confirm the settings.
- Default: Click this button to restore the IP device back to original factory settings.

## Stream

Stream	
<b>Master</b>	
Enable	<input checked="" type="checkbox"/>
Video codec	H264
Resolution	D1
Maximum frame rate	25 [1~25 fps]
Quality	VBR
Stream quality	MEDIUM
<b>Slave</b>	
Enable	<input checked="" type="checkbox"/>
Video codec	H264
Resolution	D1
Maximum frame rate	25 [1~25 fps]
Quality	VBR
Stream quality	MEDIUM
<input type="button" value="Save"/>	

## Master/Slave

- > 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.



## Operation and settings

NTSC:	D1 (704 x 480), HALF D1 (704 x 240), CIF (352 x 240) and QCIF (160 x 112)
PAL:	D1 (704 x 576), HALF D1 (704 x 288), CIF (352 x 288) and QCIF (160 x 144)

- > Maximum frame rate: Set the frame rate of the image. Selectable values of the frame rates are as follows.

NTSC:	1 to 30 (fps)
PAL:	1 to 25 (fps)

- > 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 64 to 10 240 kbps.
- Save: Click this button to confirm the settings.

### Audio

Audio	
Audio in	
Enable	<input type="checkbox"/>
Audio type	G711 PCMA
Audio out	
Enable	<input type="checkbox"/>
Save	

## Operation and settings

### Audio In

- > Enable: Enables the check box when you are going to send the audio from the microphone input connector.

#### **Note:**

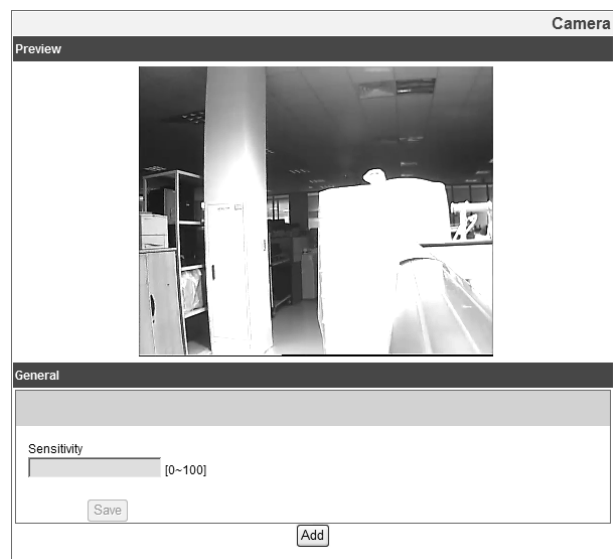
The Clients connected to the IP device remains unaffected with additional changes made in the setting.

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

### Audio Out

- > Enable: Enables the check box to output the audio from the speaker.
- Save: Click this button to confirm the settings.

### **Motion detect**



### Preview

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

# Operation and settings

## General

- > Sensitivity: Enter the sensitivity to detect the motion object.
- > Save: Click this button to confirm the settings.

## How to set the motion detection window

1. Click the [Add] button. The motion detection window is displayed. You can add the five windows maximum for motion detection area.
2. Set the [Sensitivity] options.
3. Click the [Save] button to save the settings.
4. Click the edge or coner of the window box to adjust the window size for motion detection.

## Notes:

- You can reset the window size. Click one of the window edge or coner and drag & drop to reset the motion detection area.
- Motion detection function is available for H.264 codec.

## Network settings

### Basic

Basic	
General	
MAC address	00:e0:91:85:64:08
Port & Encryption	
Web port	80 [80,1025~65535]
RTSP port	554 [554,1025~65535]
Network encryption	HTTP
TTL	
TTL	7 [1~255]
ARP Ping	
Enable ARP Ping to configure IP address. <input checked="" type="checkbox"/>	
Save	

### 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.

## Operation and settings

- > RTSP port: Check RTSP port and the default port is 554. Other ports can be selected 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.

### TTL

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

### 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 stream	
<b>Master</b>	
<input checked="" type="radio"/> RTP unicast	
<input type="radio"/> RTP multicast	
Video RTP port	<input type="text" value="8888"/> [1025~65534]
Audio RTP port	<input type="text" value="7777"/> [1025~65534]
Data RTP port	<input type="text" value="6666"/> [1025~65534]
IP address	<input type="text" value="239.255.214.42"/>
<b>Slave</b>	
<input checked="" type="radio"/> RTP unicast	
<input type="radio"/> RTP multicast	
Video RTP port	<input type="text" value="8888"/> [1025~65534]
Audio RTP port	<input type="text" value="7777"/> [1025~65534]
Data RTP port	<input type="text" value="6666"/> [1025~65534]
IP address	<input type="text" value="239.255.214.43"/>
<input type="button" value="Save"/>	

## Operation and settings

### Master / Slave

- > 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 select 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 this between 1 025 and 65 534.
    - Audio RTP port: Specify the audio port number used for the multicast streaming. It is initially set to 7 777 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 a pair of multicast IP address and port numbers to avoid address conflict.
- Save: Click this button to confirm the settings.

# Operation and settings

## TCP/IP

TCP/IP	
<b>IP address status</b>	
<input checked="" type="radio"/> Automatically set with DHCP	
Notify to SMTP server, if IP address is changed.	Nothing
<input type="radio"/> Statically set	
IP address	10.19.218.153
Subnet mask	255.255.254.0
Gateway	10.19.218.1
<b>DNS server status</b>	
DNS server	156.147.151.32
Secondary DNS server	165.244.106.110
Save	

### IP address status

- > Automatically set with DHCP: Select this option when a DHCP server is installed on the network to allow IP address assignment. With this setting, the IP address is assigned automatically.
  - Notify to SMTP server, if IP address is changed: If you select this option, the user get a notification mail telling him that the IP of the IP device has changed.

### **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

- > 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.

# Operation and settings

## 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.

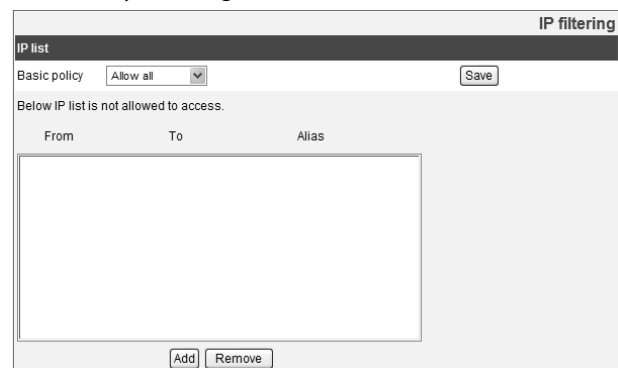


### DDNS status

- > 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.



## Operation and settings

### 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 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.

## User settings

### **Basic**

The default user ID of this IP device are [admin] (Administrator) and [anonymous] (Custom user).

If your user ID is registered as an administrator, you can register a new user and provide the access rights for each user. A maximum of 50 users can be created.



## Operation and settings

User ID	Authority
admin	Administrator
anonymous	Custom user

**Anonymous**

Enable anonymous login ☐

**Maximum RTP stream connection**

Maximum number of simultaneous stream connection: 10

### 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 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, PTZ control, OSD control and audio functions.
  - Normal user: Provides the lowest level of access. Allows to view live images only.

## Operation and settings

---

- 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.

## Operation and settings

Video Codec	Resolution	Frame Rate (NTSC)	Quality	Maximum RTP stream
H.264	D1	30	HIGHEST	Up to 5
H.264	D1	30	MEDIUM	Up to 10
MJPEG	D1	30	MEDIUM	Up to 1
MJPEG	Half D1	30	MEDIUM	Up to 2
MJPEG	D1	15	MEDIUM	Up to 10

**Note:**

Preview window of the IP device setting and preset setting are affected by this setting.

- Save: Click this button to confirm the settings.

### Schedule settings

#### Recording schedule

This IP device provides video monitoring, recording and event management functions. Users can record video continuously, on schedule, on alarm and/or on motion detect.

Recording schedule

Total schedule list

ID	Repeat type
1	Repeat none

Add

Edit

Remove

Allocate

Schedule list

Stream

Master

ID	Repeat type
1	Repeat none

Edit

DeAllocate

## Operation and settings

---

### To set the Recording Schedule

1. Click the [Add] button. Recording schedule setting window is displayed.
2. Set the [Pre alarm] and/or [Post alarm] option.
  - Pre alarm: Specifies the maximum recording time before the event detection.
  - Post alarm: Specifies the maximum recording time after the event detection.
3. Select the [Repeat type] option and set the detail options. It can be configured in 5 different ways, Repeat None, Daily, Weekly, Monthly and Yearly.
  - Custom day: If the [Repeat type] option set to [None], [Monthly] or [Yearly], this option is displayed.
  - Schedule duration: If the [Repeat type] option set to [Monthly] or [Yearly], this option is displayed.
4. Set the Activation Time parameters (24H clock) for the event.
  - NONE: No scheduled recording.
  - CONTINUITY: Recording starts automatically from the preset time.
  - Motion Detect: Recording starts automatically when the motion is detected within a designated time.
  - SENSOR: Recording starts automatically when the sensor input of the IP device is activated within a designated time.
  - DUPLICATED (C,S): Recording starts automatically from the preset time. When the sensor input is activated within a designated time, change the continuous recording mode to the sensor event recording mode and recording starts automatically.

## Operation and settings

---

- DUPLICATED (C,M): Recording starts automatically from the preset time. When the motion is detected within a designated time, change the continuous recording mode to motion event recording mode and recording starts automatically.
  - DUPLICATED (M,S): Recording starts automatically when the motion is detected or the sensor input is activated within a designated time.
  - DUPLICATED (C,M,S): Recording starts automatically from the preset time. When the motion or SENSOR event is detected, change the continuous recording mode to the Motion event recording mode or the sensor event recording mode.
6. Click the [Save] button to confirm the settings.

### To edit the Recording Schedule

1. Choose the particular schedule in the Total schedule list that needs to be edited.

2. Click the [Edit] button.  
You can check or edit the recording schedule options.

### To activate the Recording Schedule

1. Set the [Stream] option. This would give an option to set either the Master stream or the Slave stream for recording
2. To allocate a recording schedule choose the particular one and click the [Allocate] button.

### To deactivate the Recording Schedule

1. Choose the schedule in the Schedule list.
2. Click the [DeAllocate] button.

### To delete the Recording Schedule

1. Choose the particular schedule from the Total Schedule list.
2. Click the [Remove] button.

## Operation and settings

### Recording server

Recording server is used to save the recorded data files.

The screenshot shows a web-based configuration interface for a recording server. The title bar at the top says "Recording server". Below it, there is a section titled "Recording server" with a checkbox labeled "Enable". Under this section, there are several input fields: "Address:", "User ID:", "Folder:", "Capacity:" (with a value of "0" and "[GB]"), "Password:", "Type:" (with a dropdown menu showing "CIFS"), and "Overwrite:" (with a checked checkbox). Below this section is another section titled "Disk full notification of recording server." containing a checkbox for "Control relay" (with a dropdown menu showing "Relay-0") and a checkbox for "SMTP server" (with a dropdown menu). A "Save" button is located at the bottom right of the form.

#### Recording server

These options can be set by using the LG Smart Station program. (Display only in this LG Smart Web Viewer program.)

#### Disk full notification of recording server.

- > Control relay: Marks up to activate the alarm. Alarm is activated when the Recording Server is full and has no place to record.

- > SMTP server: Select the SMTP server address. Sends an e-mail when the Recording Server has no further place to record.

#### **Note:**

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

- Save: Click this button to confirm the settings.

# Operation and settings

## Event settings

### Event schedule

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

Event schedule			
Event schedule list			
Trigger	Sensor-0		
Relay	Relay-0		
FTP server			
SMTP server			
Pre alarm	5	Post alarm	5
<input type="button" value="Edit"/>			
Trigger	MotionDetect-0		
Relay			
FTP server			
SMTP server			
Pre alarm	5	Post alarm	5
<input type="button" value="Edit"/>			

#### 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 weekday, 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.
- Stream: Selects the stream of the connected camera.
- Default: Sets to default setting value.

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

## Operation and settings

### Note:

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

### Event Server

Event Servers are used to receive the recorded video clip and/or notification messages.

The screenshot shows a window titled "Event server". It contains two sections: "FTP server list" and "SMTP server list". Each section has a table with columns "Address" and "Alias". Below each table are "Add", "Edit", and "Remove" buttons.

FTP server list	
Address	Alias
<div></div>	
<div>Add Edit Remove</div>	

SMTP server list	
Address	Alias
<div></div>	
<div>Add Edit Remove</div>	

### FTP server list

Image files can be transferred to the FTP server depending on the event schedule. Image file that has been recorded for an external event is sent to the FTP server.

- > 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.



## Operation and settings

- Test: Select [Test] 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 image file attached 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. This password of the same account.
    - 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.

## Operation and settings

- 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: Select [Test] 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 & Relay			
<b>Sensor</b>			
Enable	Alias	Type	
<input checked="" type="checkbox"/>	Sensor-0	Normal open ▼	
<b>Relay</b>			
Control duration [1~86400(24hour), second]	Alias	Type	Control relay
5	Relay-0	Normal open ▼	<input type="button" value="Run"/> <input type="button" value="Stop"/>
<input type="button" value="Save"/>			

#### Sensor

- > Enable: Marks up when you want to activate the sensor.
- > Alias: Displays the sensor name.
- > Type: Select the sensor type.

## Operation and settings

### Relay

- > Control duration: Enter the relay time.
- > Alias: Displays the relay name.
- > Type: Select the relay type.
- > Control relay:
  - Run: Click to activate the relay.
  - Stop: Click to stop the relay.
- Save: Click this button to confirm the settings.

### OSD Menu Setup

The following table shows the list of menu items and options. You can adapt the camera to your requirements by setting up the respective items in these menus.

Main Menu	Sub Menu	Contents	
EXPOSURE	ELC/ALC	BACKLIGHT	OFF/BLC/HSBLC
		BRIGHTNESS	0 to 100
		AGC	OFF/LOW/MIDDLE/ HIGH
		SHUTTER	X512, ... , X2, AUTO, OFF, A.FLK, 1/160, ... , 1/90 000
		SENS-UP	OFF
			AUTO
		EXIT	RET/TOP/END

## Operation and settings


Main Menu	Sub Menu	Contents	
WHITE BAL	ATW	-	
	AWC ➡ PUSH	-	
	MANUAL	COLOR TEMP	INDOOR, OUTDOOR
		RED	-100 to 100
		BLUE	-100 to 100
		EXIT	RET/TOP/END
DAY/NIGHT	AUTO	LEVEL	LOW/ MIDDLE/ HIGH
		DWELL TIME	5, 10, 15, 30, 60 SEC
		EXIT	RET/TOP/END
	DAY	-	
	NIGHT	-	

Main Menu	Sub Menu	Contents	
3D-DNR	OFF	-	
	LOW	-	
	MIDDLE	-	
	HIGH	-	
PRIVACY	OFF	-	
	ON	MASK NUMBER	AREA 1 to 8
		DISPLAY	ON/OFF
		COLOR	GRAY, WHITE, BLACK,
		HEIGHT	4 to 100
		WIDTH	4 to 100
		MOVE Y	2 to 98
		MOVE X	2 to 98
		EXIT	RET/TOP/END








## Operation and settings

Main Menu	Sub Menu	Contents	
SPECIAL	D-ZOOM	OFF	
		ON	ZOOM
			PAN
			TILT
			EXIT
	D-EFFECT	OFF/ V-FLIP/ MIRROR/ ROTATE	
	SHARPNESS	0 to 68	
	STABILIZER	OFF/ ON	
	COLOR	OFF/ ON	
	USER TITLE	OFF/ ON	
	LANGUAGE	English (The supported language can be different depending on the model.)	
EXIT	RET/TOP/END		
RESET	CAMERA REBOOT	-	
	FACTORY RESET	-	
	EXIT	-	
EXIT	-	-	







### General Operation

1. Click the [OSD control] button in the LG Smart Web Viewer.
2. Click  button on the OSD control window.  
The camera setting menu appears on the live view window.









3. Use  or  button to select an option then click  button. Submenu appears.
4. Use  or  button to select a submenu option.
5. Use  or  button to select a value.

## Operation and settings



6. Select [EXIT] option then click  button to exit the setup menu. In the submenu, use  or  button to select the [EXIT] then use  or  button to select a mode and click  button to exit the setup menu.
  - RET: Return to the previous.
  - TOP: Return to the CAMERA SETTING menu screen.
  - END: Exit the setup menu.

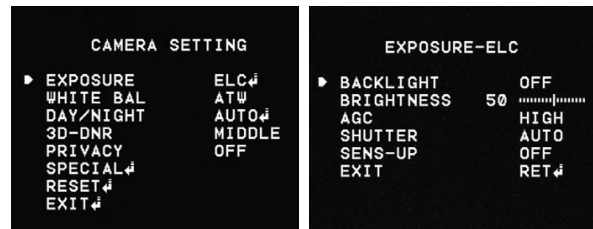
### Notes:

-  button: Used to move upper direction on the menu screen.
-  button: Used to move lower direction on the menu screen.
-  button: Used to increment the value selected in the menu.
-  button: Used to decrement the value selected in the menu.
-  button: Executes selections and displays a sub-menu for an item with the  mark.

## Exposure settings

You can set the exposure options using the EXPOSURE menu.

1. Select [EXPOSURE] option on the [CAMERA SETTING] menu.
2. Use  or  button to select a mode (ALC  $\leftrightarrow$  ELC).
3. Press [SET] button and the EXPOSURE menu appears.

















### BACKLIGHT

Use BACKLIGHT option to view the object clearly in back-light conditions.

1. Select [BACKLIGHT] option on the [EXPOSURE] menu.

## Operation and settings



2. Use  or  button to select a mode then click  button.
  - BLC: Camera's backlight compensation feature helps alleviate issues of visibility in high contrast areas. Set the BLC limit.
    - > BLC LIMIT: LOW  $\leftrightarrow$  MIDDLE  $\leftrightarrow$  HIGH
  - HSBLC: Use for masking brightness of the specific area to view the subject more clearly. The HSBLC mode is automatically activated only in low luminance scene.
    - > AREA SETTING: Use  or  button to select a area then use  or  button to select a ON or OFF. Click  button to exit the area setting menu.
    - > GRAY SCALE: Use  or  button to select a gray scale.  
(GRAY $\leftrightarrow$ D.GRAY $\leftrightarrow$ BLACK).
    - > USER SCALE: Use  or  button to select a bright level. (5 level)
    - > MASK: Use  or  button to select [ON] or [OFF].

If you set the MASK to ON, the mask function is activate only when the HSBLC is activated by auto mode.

- OFF: Not used.



### **BRIGHTNESS**

You can increase the brightness of the darkened video. If you set the brightness to lower value, the image is darkened. If you set the brightness to higher value, the image gets bright.

1. Select [BRIGHTNESS] option on the [EXPOSURE] menu.
2. Use  or  button to set the bright level.

### **AGC (Automatic Gain Control)**







If the images are too dark, change the maximum [AGC] value to make the images brighter.

1. Select [AGC] option on the [EXPOSURE] menu.
2. Use  or  button to select a mode.  
(OFF $\leftrightarrow$  LOW $\leftrightarrow$ MIDDLE $\leftrightarrow$ HIGH)

## Operation and settings






### **SHUTTER (Shutter Speed)**

Select the desired shutter speed for camera exposure. You can change the shutter speed to higher speed to capture fast-moving subjects, though the image becomes darker.

1. Select [SHUTTER] option on the [EXPOSURE] menu.
2. Use  or  button to set shutter speed.  
(x512, ..., x2  AUTO  OFF  A.FLK  1/160, ..., 1/90 000)

### **SENS-UP**

If pictures are not clear due to darkness, this SENS-UP operation would increase the sensitivity of picture.

1. Select [SENS-UP] option on the [EXPOSURE] menu.
2. Use  or  button to select mode.
  - AUTO: Adjust the sensitivity of the picture automatically.
    - > SENS-UP LIMIT: Use  or  button to set the SENS-UP limit. (x2, ..., x128)
    - > EXIT: Select a mode and click  button to exit the menu.

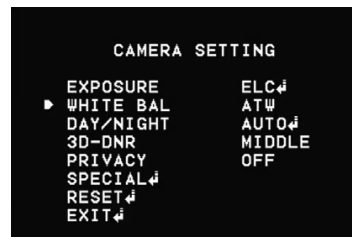
- OFF: Not used.




### **Note:**

If you set to one of the SHUTTER options except AUTO on the [SHUTTER] menu or [AGC] to [OFF], the [SENS-UP] setting is not available and [---] mark is displayed.

### **White Balance settings**




Select the method by which the camera shifts its output colors to compensate for the color of a light source.



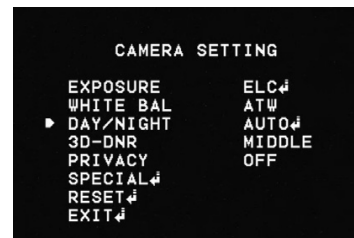
1. Select [WHITE BAL] option.
2. Use  or  button to select a mode then click  button.





## Operation and settings

- ATW (Auto-Tracing White Balance): In this mode, the color temperature range for the proper white balance is approximately from 1 700 K to 11 000 K. Proper white balance may not be obtained under the following conditions:
  - > When the color temperature is out of the 1 700 K to 11 000 K range.
  - > When the scene contains mostly high color temperature objects, such as a blue sky or sunset.
  - > When the scene is dim.
- AWC ➔ PUSH: If you select the AWC ➔ PUSH mode, you will be able to set up the White Balance automatically using  button.
- MANUAL: You can set the white balance options manually.
  - > COLOR TEMP: Use  or  button to select a function.
    - INDOOR: The color temperature range for the proper white balance is approximately 3 200 K.
    - OUTDOOR: The color temperature range for the proper white balance is approximately 5 100 K.
  - > RED: Set the desired red value. (-100 to 100)
  - > BLUE: Set the desired blue value. (-100 to 100)

### Day/Night settings







1. Select [DAY/NIGHT] option.
2. Use  or  button to select mode for day/night function.
  - AUTO: You will be able to change the Day/Night mode automatically.

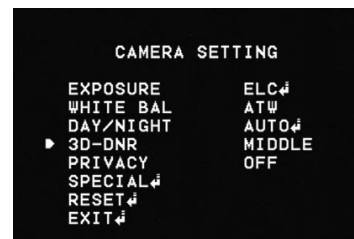
## Operation and settings



- **Note:**

If you set the AGC to [OFF] or the SHUTTER is set to one of the SHUTTER options except AUTO on the [EXPOSURE] menu, the AUTO mode of the DAY/NIGHT function is not available and [---] mark is displayed.

- > LEVEL: Use  or  button to select a level. (LOW↔MIDDLE↔HIGH)
  - > DWELL TIME: Use  or  button to select a dwell time. (5, 10, 15, 30 or 60 SEC)
- DAY: Color mode enabled.
  - NIGHT: Black-and-white mode enabled.

### 3D-DNR setting



1. Select [3D-DNR] option.  
If pictures are not clear due to noise, this option would reduce the noise of picture.
2. Use  or  button to select a option. (OFF↔LOW↔MIDDLE↔HIGH)

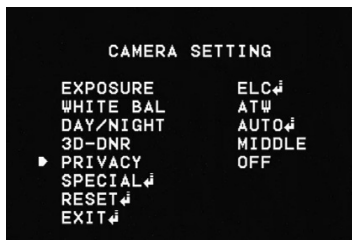
**Notes:**

- If you set the AGC to [OFF] on the [EXPOSURE] menu, the [3D-DNR] function is not available.
- When you use this function, the afterimage may occur.

# Operation and settings

## Privacy Mask setting

This function is aiming at the protection of personal privacy, selecting a screen part black not to be displayed in the screen. Up to 8 zones can be registered.



1. Select [PRIVACY] option.
2. Use or button to select a [ON] and click button. The PRIVACY MASK menu appears.
3. Use or button to select a zone number (AREA1 to AREA8) on the [MASK NUMBER] option.
4. Use or button to set up the ON or OFF on the [DISPLAY] option. If you set to ON, the mask zone box appears on the live window.

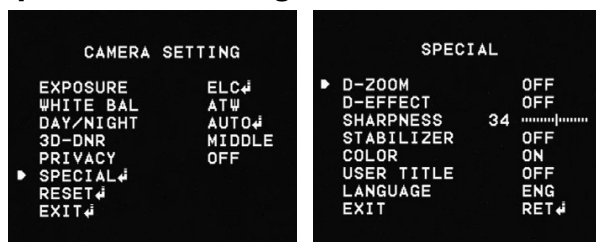
5. Use or button to select the color of the mask zone box on the [COLOR] option.
6. Use or button to select an option then use or button to adjust the option.
  - HEIGHT: Enlarge or decrease the vertical size of the mask zone box.
  - WIDTH: Enlarge or decrease the horizontal size of the mask zone box.
  - MOVE Y: Moves vertical position of the mask zone box.
  - MOVE X: Moves horizontal position of the mask zone box.

### Note:

The parts with the registered mask numbers from AREA1 to AREA4 have the same color. (So do the parts with the numbers from AREA5 to AREA8). If you change the mask color, the registered mask color will be changed automatically with the same color for each of group (AREA1 to AREA4, AREA5 to AREA8).

# Operation and settings

## Special menu settings



### D-ZOOM

You can select the digital zoom level.

1. Select [D-ZOOM] option on the [SPECIAL] menu.
2. Use or button to select a [ON] then click button. When you set to ON, the displayed image can be shaking.
3. Use or button to select a option then use or button to select a level.
  - ZOOM: Use or button to enlarge the screen.

- PAN: Use or button to move the screen. (left or right)
- TILT: Use or button to move the screen. (up or down)

### D-EFFECT (Digital effect)

You can select the digital effect.



1. Select [D-EFFECT] option on the [SPECIAL] menu.
2. Use or button to select a digital effect.
  - V-FLIP: Flip the picture vertically.
  - MIRROR: Turn on the mirror effect.
  - ROTATE: Rotate the picture. (180°)
  - OFF: Turn off the digital effect.

### SHARPNESS

The degree to which the boundary of the two portions is clearly distinguished.

1. Select [SHARPNESS] option on the [SPECIAL] menu.

## Operation and settings

2. Use  or  button to adjust the option. If you set the sharpness value to higher, the image outline becomes sharp. If you set to lower value, the image outline becomes dim.

### **STABILIZER**

The image stabilizer function minimizes the appearance of shaky images caused by low-frequency vibration.

This function is useful for outdoor surveillance.



Select [STABILIZER] option and set to ON or OFF.

#### **Note:**

If you set the [STABILIZER] to ON, the Digital zoom is set to [x1.1] automatically.




### **COLOR**

You can switch the displayed picture to gray scale or color.






1. Select [COLOR] option on the [SPECIAL] menu.
2. Use  or  button to change a color effect.
  - ON: To display the picture with color.
  - OFF: To display the picture with grayscale.

### **USER TITLE**

You can use the camera identification to assign a number and character to the camera (0 to 9, A to Z, a to z). To disappear the user title, select [OFF].

1. Select [USER TITLE] option on the [SPECIAL] screen.
2. Use  or  button to select a [ON] then click  button. The USER TITLE menu appears.



3. Use , ,  or  button to select a character or number then click  button.
  - CLR: Clear all entered characters and numbers.
  - POS: Move the USER TITLE position on the screen using the arrow buttons.
  - END: Confirm your selection or exit the setting.

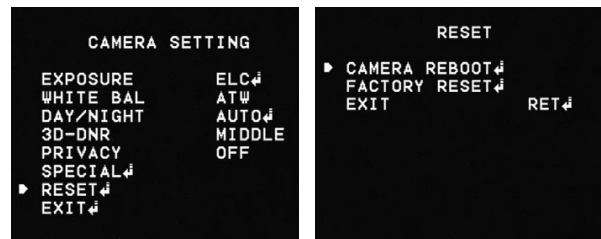
## Operation and settings

- **1** (Blank): Insert a space at the cursor position.
- **←** / **→**: Moves cursor to left or right.

### LANGUAGE

Select the viewer language for the camera setup menu and OSD information display.

### Reset setting



1. Select [RESET] option.
2. Click **→** button and the RESET menu appears.
3. Use **↑** or **↓** button to select option.
  - CAMERA REBOOT: Reboot the camera system.
  - FACTORY RESET: Clear certain settings and information and return to factory default settings.
4. Click **→** button to confirm your selection.

# 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.
  1. 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.
  2. 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.
  3. 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: The other device may use the same IP address with the LG IP device. Refer 'Ping your camera' to check the conflict and then contact the system administrator for the required help.

## **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.
- When the web page loading is failed or very slow, Check the streaming configuration. Use H.264 codec and change frame rate, stream quality, resolution setting.

## Troubleshooting

- If you have error at web client live view page, close browser, delete below directory and re-connect the camera.  
ex) "C:\Documents and Settings\[UserID]\WebClient".

### **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 RJ45 cables that are used for the network connectivity.
- If POE is used check if the power is got by the network camera when connected to it.

### **Login Password lost**

- Reset the camera by pressing the Reset button for more than 3 seconds to restore default settings.

- After the factory settings login using the default user-name and password.

### **Video Streaming problems**

- If the video streaming does not start on the Web client as per the indication install the latest version of JRE (Java Runtime Environment) on your computer.
- 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

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- If video images appear white and black adjust the settings in the OSD 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 or 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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  - > software written by Tim Hudson (tjh@cryptsoft.com).
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## Specification

Item	LSW2010F
Image Device	6 mm Super HAD II CCD
Lens Type	C/CS Mount
Video Out	1.0 Vp-p Composite Signal (75 $\Omega$ )
Auto Gain Control	OFF/ LOW/ MIDDLE/ HIGH
Exposure	ALC/ELC
Electric Shutter	1/50 ~ 1/90 000 (PAL), 1/60~1/90 000 (NTSC)
Day/Night	Digital Day and Night ( Auto/ Day / Night )
Sense-Up	AUTO/OFF
Min. Illumination	Color: 0.06 lx (Sens-up Off), B/W: 0.00006 lx (Sens-up On)
Resolution	570 TV Lines
White Balance	ATW / AWC / Manual
Backlight Compensation	BLC/HSBLC/OFF
3D-DNR	OFF/ Low/ Middle/ High
Privacy Masking	8 Zone
Digital Zoom	X8

## Specification

Item	LSW2010F
DIS(Stabilizer)	ON/OFF
Digital Effect	OFF/ V-Flip / Mirror / Rotate
Resolution (Max)	704 x 480 (NTSC), 704 x 576 (PAL)
Output	RJ-45(Network), CVBS (Monitor)
Frame Rate (Max)	30 fps/25 fps(NTSC/PAL)
Compression	H.264 (Basic Profile), MJPEG, Dual Stream
Audio	Full Duplex (Line level input/output )
Audio Compression	G.726, G.711 (A-law, u-law)
Sensor/Relay	1 digital input, 1 relay output
Event Detection	Sensor In, Motion detect
Event Notification	Relay, SMTP, FTP
ID/Password	Multi level user ID/password (Admin, Power, Normal, Customer)
Encryption	HTTPS (SSL,TLS)
Physical Layer	10/100 base TX Ethernet

## Specification

Item	LSW2010F
Protocol	TCP/IP(IPv4), HTTP, HTTPS, RTP, RTSP, UDP, DHCP, FTP, SMTP, NTP, ARP, ICMP, DDNS(LG)
IP support	Dynamic, Static, Private IP
Users	Unicast 10 Streams / 50 user registration
Operation Temp. / Humidity	-10 °C to 50 °C / 0 %RH to 80 %RH
Power Source	PoE, DC 12 V (±10 %) (1 A or above)
Power Consumption	About 4 W (DC), About 4.6 W (PoE)
Dimension (WxDxH)	67.4 mm X 135.4 mm X 61.5 mm
Weight	370 g

