



G1102E

User's Manual

V2.05a

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Overview

iMege G1102E is an economical, bullet type IP camera designed with high quality video and enhanced low-light performance ideal for both indoor and outdoor applications.

Recognizing the changing demands for IP surveillance products, G1102E provides weather-proof IP66 rated housing with built-in IR illuminators and all-in-one mechanism for easy installation.

Read before use

This instruction manual is intended for administrators and users of the iMege G1102E IP Camera, including instructions for using and managing the camera on your network. The use of video surveillance devices can be prohibited by laws that vary from country to country. It is the user's responsibility to ensure that the operation of such devices is legal before installing this unit for surveillance purposes.

Heed all warnings

Before installing the IP Camera, please read and follow all the safety and operating instructions to avoid any damages caused by faulty assembly and installation. The user must adhere to all the warnings on the product and in this manual.

Liability

Every reasonable care has been taken in the preparation of this instruction manual. Ingrasys can not be held responsible for any technical or typographical errors and reserves the right to make alterations to the product and manuals without prior notice. Ingrasys makes no warranty of any kind with regard to the material contained within this manual, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The user should verify the relevant information is current and complete before placing orders. All products are sold subject to Ingrasys' terms and conditions of sale at the time of order acknowledgement.

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Trademarks

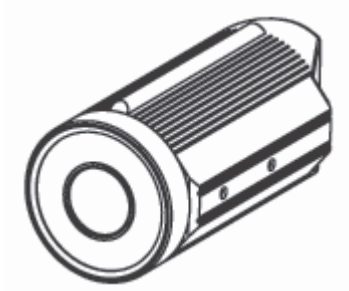
All names used in this manual and products are probably registered trademarks of respective companies. iMege is a registered trademark of Ingrasys Technology Inc. All rights reserved.

CE/FCC Statement (EMC)

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 which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. If the equipment is not installed and used in accordance with the instruction, it generates, uses, and can radiate radio frequency energy which may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his/her own expense will be required to take whatever measures may be required to correct the interference.

Package Contents

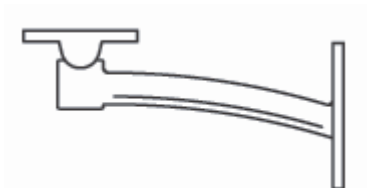
- G1102E



- Quick Installation Guide



- Wall Mount Bracket



- Warranty Card



- Power Adapter



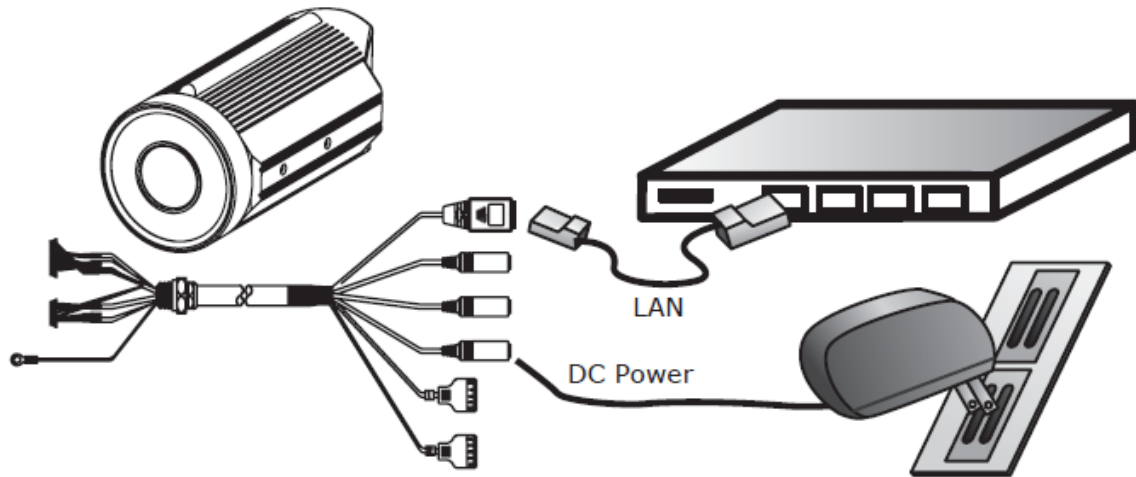
- Product CD



Installation

Hardware Installation

1. Connect the camera to a network switch / hub with an Ethernet cable.
2. Connect the power jack to the camera, and connect the adapter to a power outlet.
3. For the use of PoE, just connect the camera to a PoE switch with an Ethernet cable; no need to connect the power adapter to the camera.

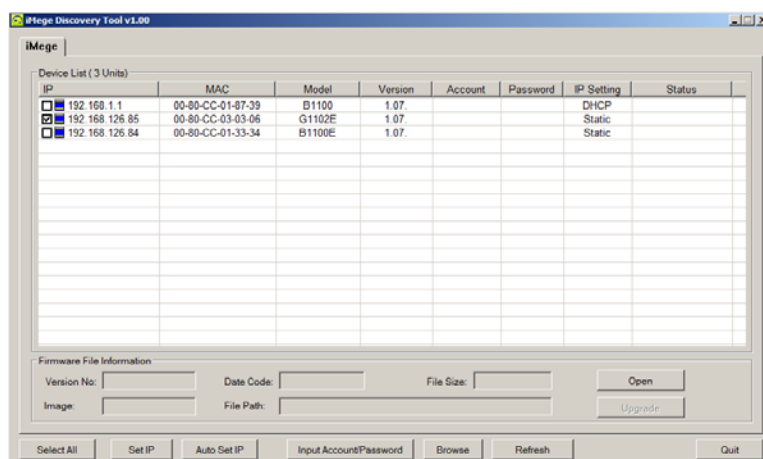


Assigning IP Address to the device

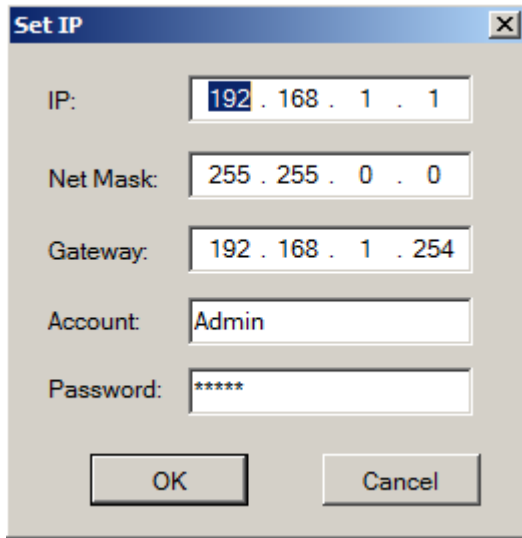
The iMege device discovery tool is a utility provided for searching iMege network video devices in a network. It can also manage the IP assignment for multiple devices. This is useful when bulk network setting of the network devices is required.

When IP camera is correctly installed in a network, it can be searched by the tool. The steps of applying this search tool are as below.

1. Launch iMege Discovery Tool (iMegeDiscovery.exe). The tool will start searching and then displaying the cameras on the Device List after they are found.



2. Check the box to select a camera device from the list. The following operations will be applied on it.
3. The selected camera may have been assigned a valid IP address via DHCP server. It can also be manually given an IP address. To do so, click on “Set IP” button. In the pop-up “Set IP” window, input the IP, Subnet Mask and Gateway. Input account info if camera is password protected.



The image shows a 'Set IP' dialog box with the following fields and values:

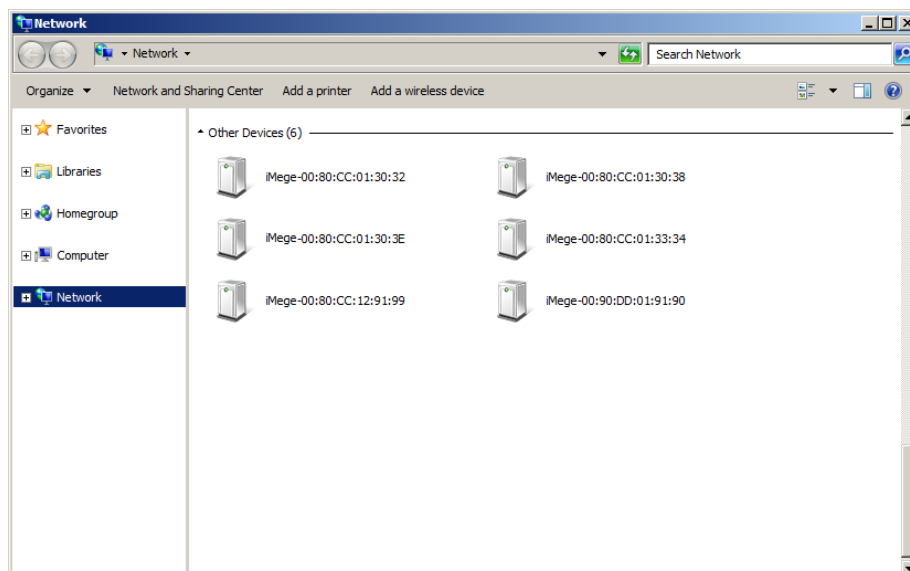
Field	Value
IP:	192 . 168 . 1 . 1
Net Mask:	255 . 255 . 0 . 0
Gateway:	192 . 168 . 1 . 254
Account:	Admin
Password:	*****

Buttons: OK, Cancel

4. Click on the “Browse” button. This will launch an IE browser and link to the camera web page immediately.

Discovering devices in Windows Network

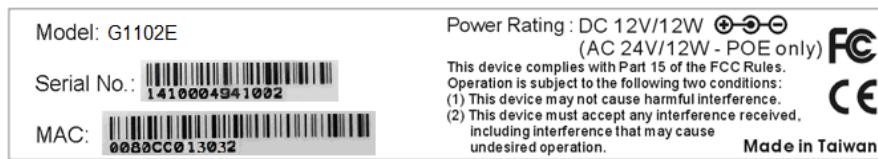
If the IP camera is installed in a network with DHCP and UPnP services, after obtaining an IP address from DHCP server, it can then be discovered in “Windows Network” of a client PC, see figure below. The reason for being automatically discovered is that the IP camera’s UPnP is default enabled (see **Network → Network Connectivity**).



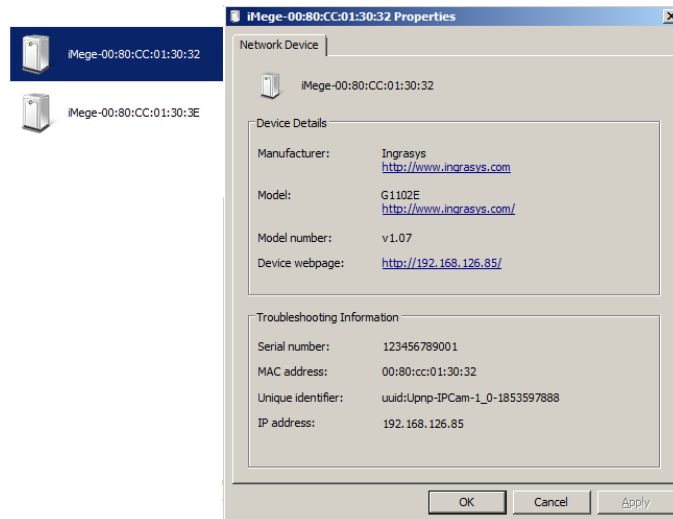
NOTE

The term “**Windows Network**” in given figure above is used in Windows Vista / 7. It can be referred to Windows XP’s “**My Network Places**” which possesses the same capability of discovering UPnP devices.

To identify the camera from the listed devices in “Network”, utilize the UPnP name (e.g. iMege) and the device’s MAC address. This MAC address can be found on the label, see figure below.

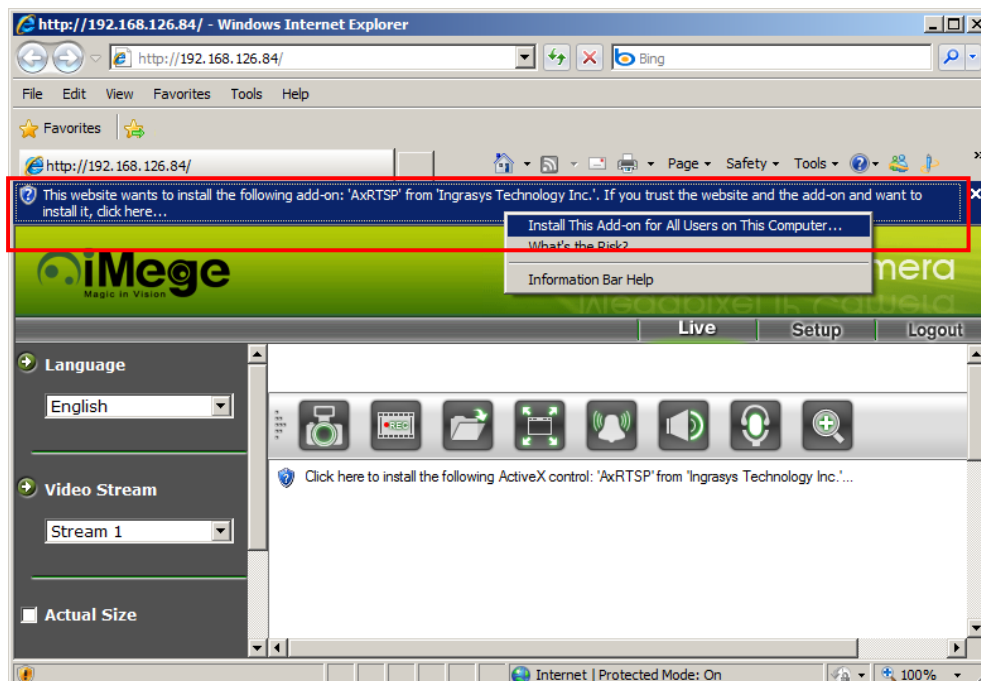


Right-click on the device and select “Properties”, the pop-up window shows all the information related to the device, including the **web access info**. Use the web address to connect to the IP camera. Or simply double-click on the selected device, which gets immediately access to the camera webpage.



ActiveX add-on Installation

The access to the camera webpage for the first time will be prompted to install the ActiveX. This installation is essential for viewing live video via IE browser. To allow the installation, click on the message bar and select “Install This Add-on for All Users on This Computer....”.

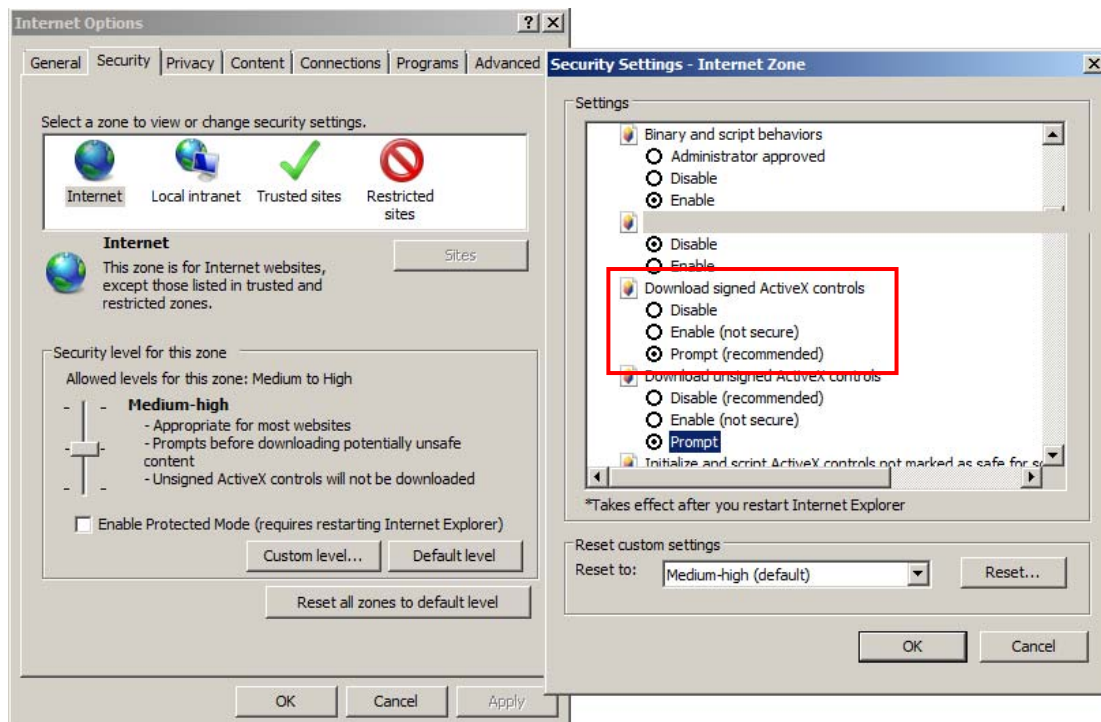


Continue the following instructions until the ActiveX is completely installed. The IE browser can then display the live video of the IP camera as below figure.



NOTE

If, however, there is not any prompted message or ActiveX can not be installed at all, change the IE security level and settings. In IE → Internet Options → Security → Custom level, make sure the "Download signed ActiveX controls" setting is "**Enable**" or "**Prompt**" selected.



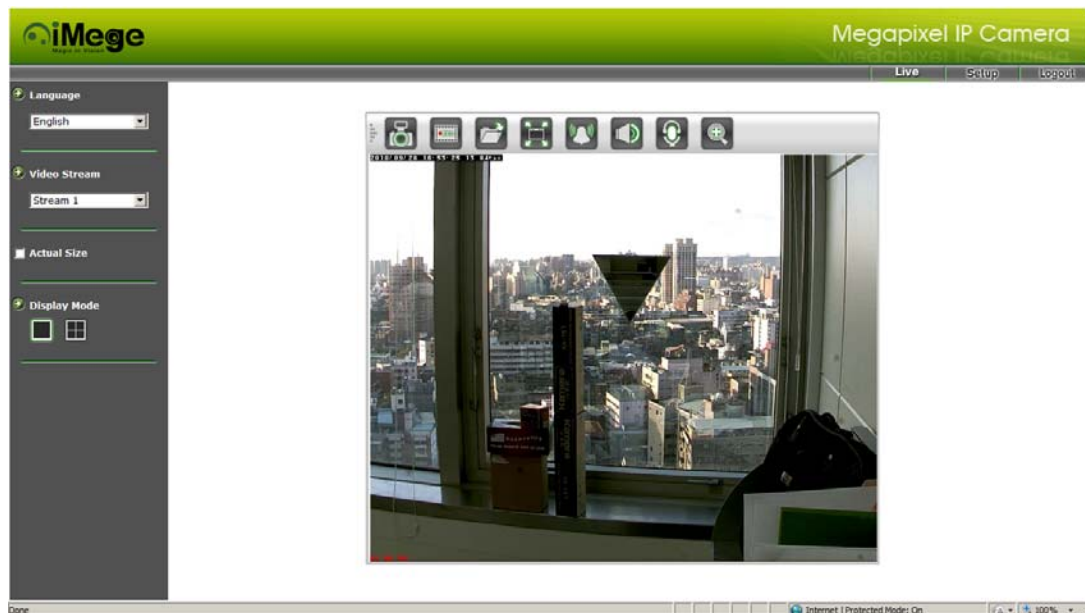
Accessing the camera

Viewing the live video

With correct installations and IP settings, the camera device can be approached via network. There are three ways to view the live video from the camera,

1. IE Browser

Launch IE browser and input the IP address of the camera, or click on “Browse” button on iMege Discovery Tool. The web page with video will then be shown as below.



2. RTSP Player

The live video of the camera can be played with a RTSP player, such as VLC or QuickTime. A URL command, like <rtsp://Camera IP> or <rtsp://Camera IP/v0> will be required. The example given below is that the live video is displayed with QuickTime player.



3. NVR / CMS Software

Some software (NVR / CMS) vendors may have announced the integration with this camera model. In this case, the software is able to retrieve the video from the camera for both live displaying and recording. For detailed support information and operation, please contact the software vendors for further instructions.

NOTE

The camera supports three simultaneous video streaming (see **Video & Audio → Video Setting**). To gain access to the camera for each video stream, the **RTSP port** will be required. The port **554** (default RTSP port) is for the access to Stream1, while port **1554** and **2554** are for Stream2 and Stream3 respectively. The URL would be like below.

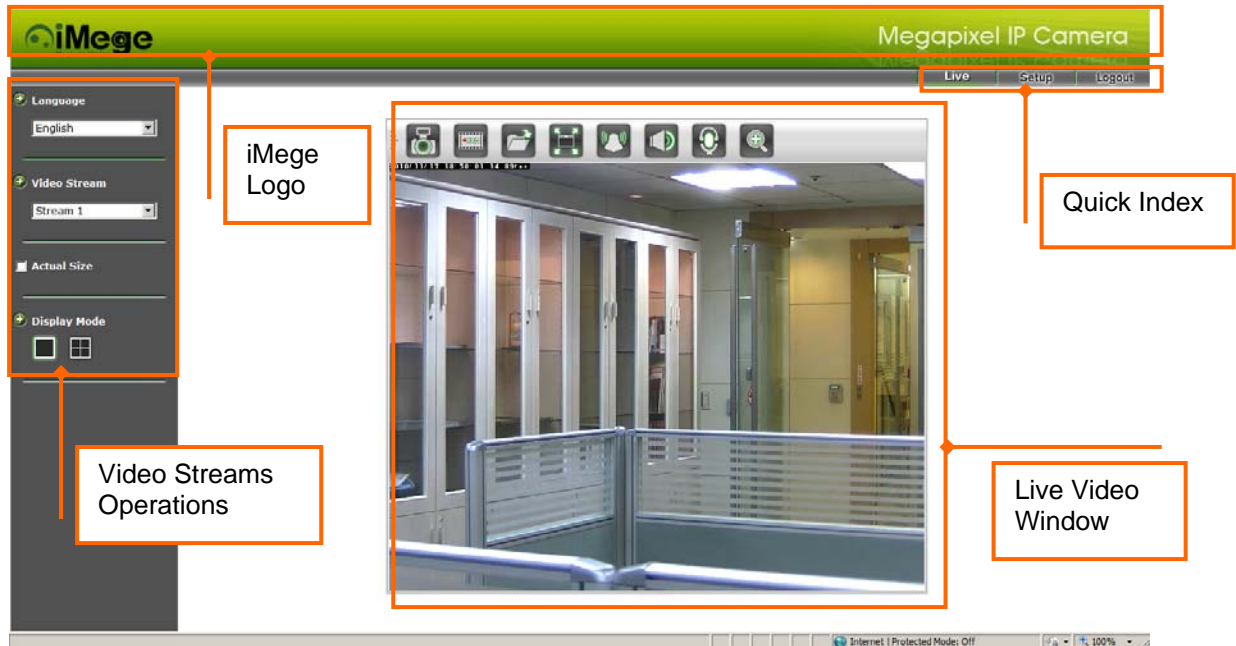
Stream1: rtsp://Camera_IP

Stream2: rtsp://Camera_IP:1554

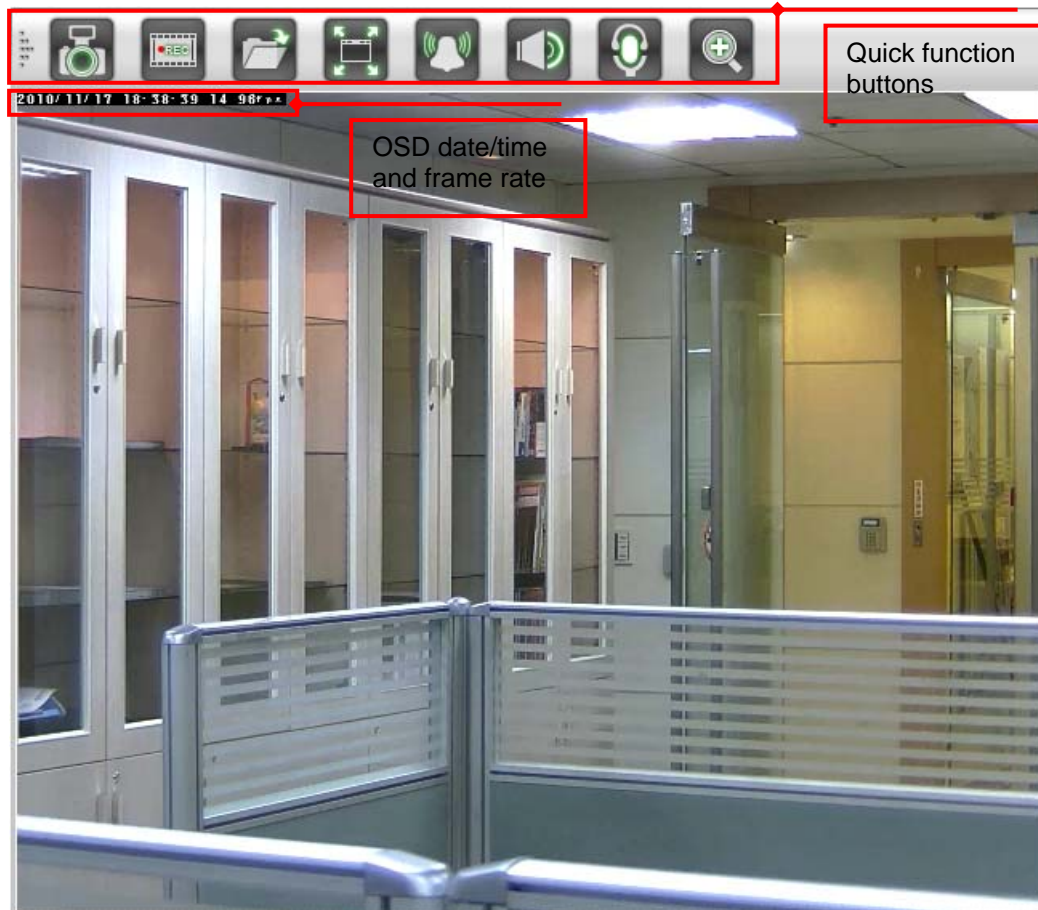
Stream3: rtsp://Camera_IP:2554

The live view page

The first view of access to the camera is the web with live video images. This page allows some basic operations of playing live video / audio.



Live Video Window





Snapshot: Press the button to capture an image photo



Record: Press the button to start recording. Press again to stop it.



Record Path: set up a file path that video clips and snapshots can be stored.



Full screen: Press the button to enter the full screen mode. Press ESC key to quit this mode.



Manual trigger: Press the button as triggering an event. See *Event Management* for detail.



Listen: Enable / Disable to receive video from camera

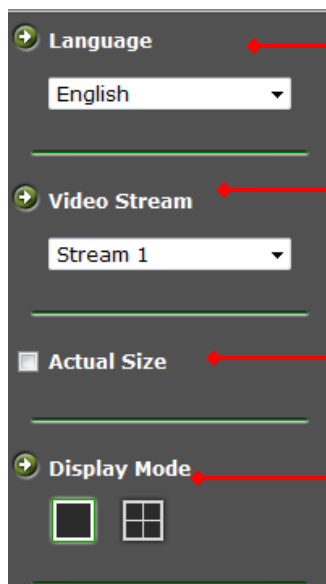


Talk: Enable / Disable to send audio to camera



Digital Zoom: toggle the digital zoom function.

Video Streams Operations



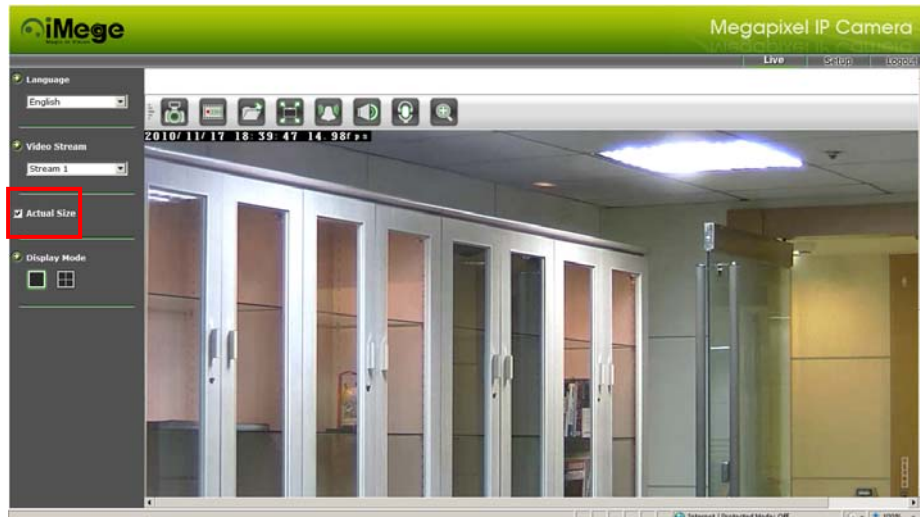
Language selection for the WEB UI

Select video stream for displaying on live video window

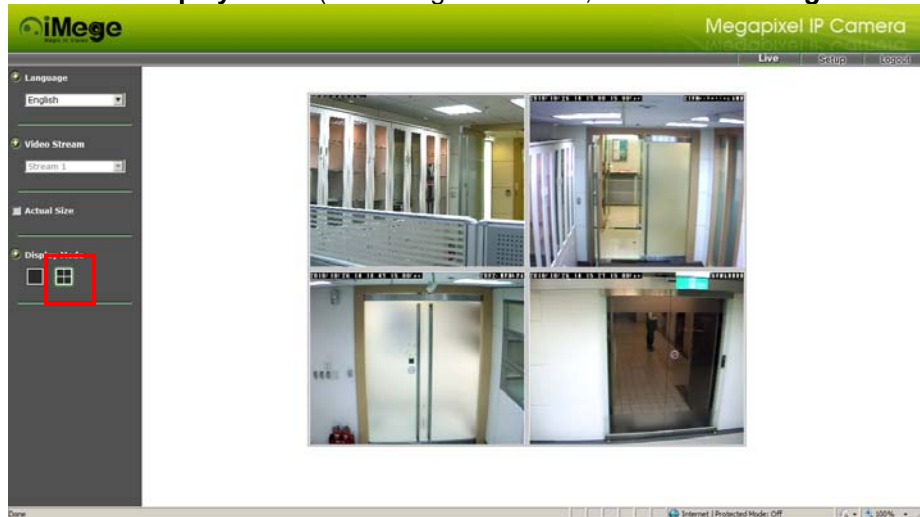
Display the video in actual (configured) size or digital (scaled) size

Live display in single channel / 4-channel mode

Actual size



4-channel display mode (for adding other video, see [Video Setting](#) → [Join Video](#))



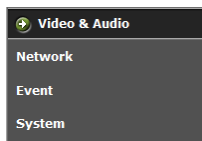
NOTE

The sub video streams can also be joined in 4-channel mode, so that live page can display simultaneously all the 3 video streams.

Video & Audio

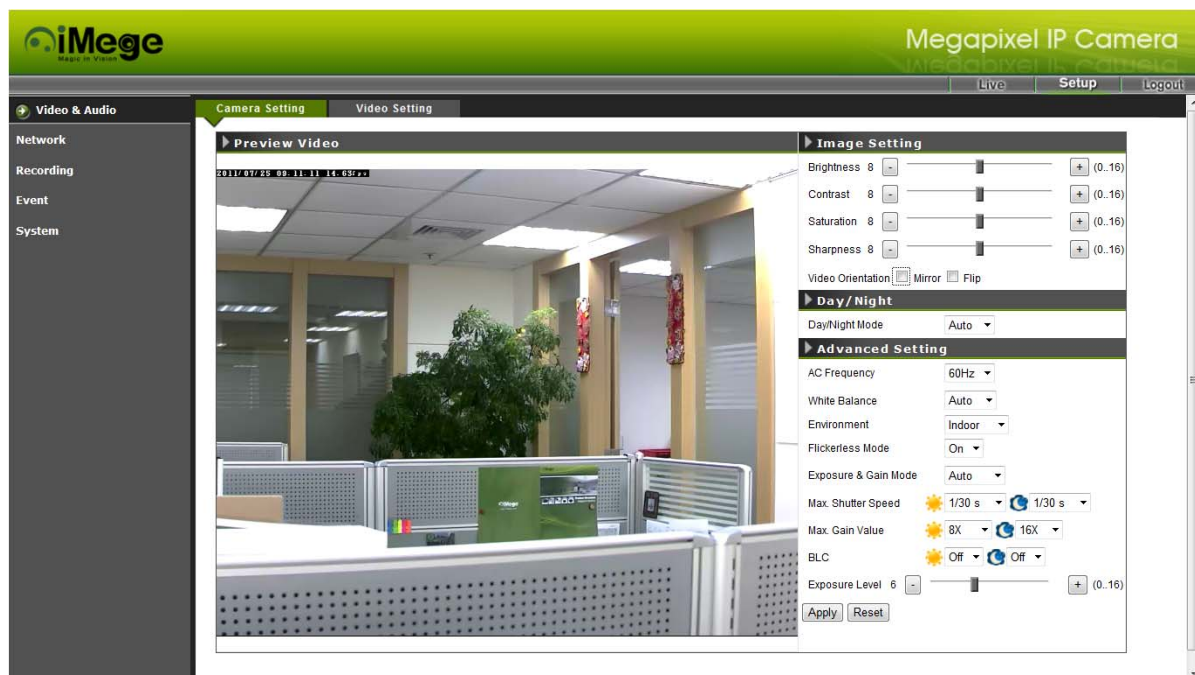
This section describes how to configure the video streaming of the device, and the related camera image configurations. Users with Administrator or Operator authority (see **System → User Management**) would intend doing these configurations.

Click on “Setup” to enter the configuration pages.



There are 3 subdirectories in “Video & Audio” for detailed settings of each function:

- Camera Setting
- Video Setting
- Audio Setting



Camera Setting

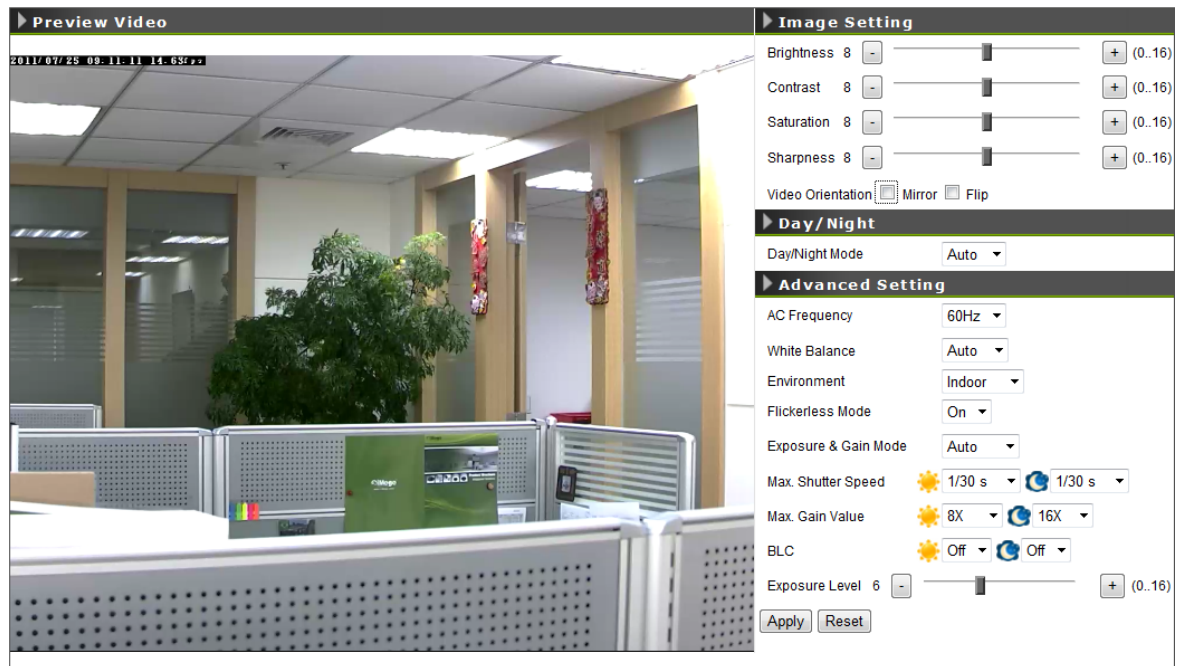


Image Setting

Brightness: the luminance of image view. Default value is 8; adjustable from 0 to 16.

Contrast: the ratio of luminance of white to black. Default value is 8; adjustable from 0 to 16.

Saturation: colorfulness of a color related to its own brightness. Default value is 8, adjustable from 0 to 16.

Sharpness: refer to image acutance, which presents in the edges contrast of an image. Default value is 8, adjustable from 0 to 16.

The 4 correlates are referring image appearance in terms of color/vision that are adjustable according to user preferences.

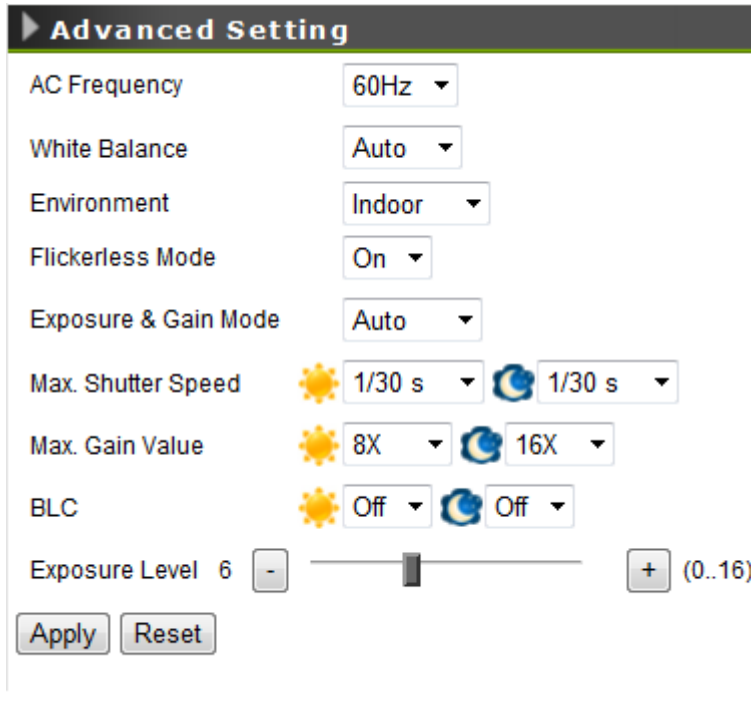
Video Orientation: change the image orientation. **Mirror**, rotate the image horizontally. **Flip**, rotate the image vertically. These operations are usually applied when camera must be installed in an exceptional position, e.g. ceiling, so camera must be upside-down installed.

Day/Night

Switch the video images for Day (plenty of light) or Night (Low light) scene. In "Auto" mode, camera will switch to Day or Night vision according to the light intensity.

The switching of Day/Night modes includes 2 actions; switching IR Filter **In / Off**, and switching image to **Color / Mono**. In day mode, the IR filter is switched in to avoid the image sensor from receiving the infrared, thus the true color image is provided. When camera enters night mode, IR filter is switched off to allow IR illuminations going into the sensor, thus increasing the images light level. The image color is switched to B/W (Mono mode).

Advanced Setting



The screenshot shows the 'Advanced Setting' window with the following controls:

- AC Frequency:** 60Hz (dropdown)
- White Balance:** Auto (dropdown)
- Environment:** Indoor (dropdown)
- Flickerless Mode:** On (dropdown)
- Exposure & Gain Mode:** Auto (dropdown)
- Max. Shutter Speed:** Daytime (sun icon) 1/30 s, Nighttime (moon icon) 1/30 s (dropdowns)
- Max. Gain Value:** Daytime (sun icon) 8X, Nighttime (moon icon) 16X (dropdowns)
- BLC:** Daytime (sun icon) Off, Nighttime (moon icon) Off (dropdowns)
- Exposure Level:** 6, with minus and plus buttons and a slider, range (0..16)
- Buttons:** Apply, Reset

AC Frequency: Anti-flicker setting for environment with fluorescent light sources, image sensor needs to fit the frequency of light (power) source. For instance, the power frequency is 50Hz for most European countries, while 60Hz is typically for US. This setting is therefore regionally different.

White Balance: the selections for different lightening condition, which is refereeing to color temperature.

Environment: Select an environmental lightening. This gives an overall exposure condition.

Flicker-less Mode: flickering can also present in various exposure level. Set "Flickerless" Mode "On" to fix the maximum shutter speed (auto exposure control). Thus, the flickers can be eliminated.

Exposure & Gain Mode: Select auto / manual Exposure & Gain control mode. The selection defines the controlling in a range of or fixed value, according to the following two items (**Shutter Speed** and **Gain Value**). The configurations will be limited at selected maximum rates when AUTO mode is on.

(Max.) Shutter Speed: referring to exposure time. Higher shutter speed is normally applied under strong light circumstance, so the image won't be overexposure. Lower shutter speed, on the other hand keeps image luminance in low light environment.

(Max.) Gain Value: the amplification factor for the incoming light. Increasing the gain value provides a brighter image, but the noises may also be increased.

BLC: Enable this function for image objects under backlight circumstances.

Exposure Level: Adjust Exposure level for a target exposure time that is the amount of light allowed for the image sensor.

NOTE

The "Shutter Speed", "Gain Value" and "BLC" can be configured for daytime and nighttime. The configurations will be applied according to the current status of "Day/Night Mode".

Video Setting

Camera Setting

Video Setting

Audio Setting

▶ Video Stream

☒ Enable Stream 1

☐ Enable Stream 2

☐ Enable Stream 3

▶ Video Overlay

☒ Enable OSD

▶ Join Video

Join Camera List

Index	Camera Name	IP Address	Modify
Add New			

Apply

Video Stream

This tab provides detailed stream configurations. These settings can affect video size, quality. The maximum transmission performance can be expected under the condition of full network bandwidth.

The camera supports up to 3 video streams. Each stream can be configured with following items.

▶ Video Stream

☒ Enable Stream 1

Video Format	H.264
Resolution	1280x1024
Frame Rate	15 fps
Intra Frame Period	1 S
Video Quality	
<input type="radio"/> Constant Bit Rate	Target Bit Rate 64Kbps
<input checked="" type="radio"/> Variable Bit Rate	Quality Level Excellent

☒ Enable Stream 2

☒ Enable Stream 3

Video Format: H.264, MPEG4 and MJPEG are available for the selection. The demand of bandwidth and storage requirement differs from the selection of video format. In the request of same video quality, H.264 contributes to less bandwidth and storage requirement, which can be more efficient than MPEG4 or MJPEG.


Resolution: The resolution here describes an image size counted in width by height, e.g. 640x480, referring to **pixel resolution**. The maximum resolution available for Stream1 is 1280x1024 (SXGA), and other resolutions down to 160x120(QQVGA). Stream2 is available from VGA to QQVGA. Stream3 is available in QVGA and QQVGA resolutions.

Frame Rate: configure the maximum frame rate in video streaming. Higher frame rate gives a better video in terms of smoothly moving objects/scenes. However, this would result in higher bandwidth and storage requirement.

Intra Frame Period: is applied only in MPEG4 / H.264 which the video stream is composed of **I**-frames (full image information) and **P**-frames (motion-compensated difference information). This setting configures the **Intra Frame Period** which is the time period between 2 I-frames. The shorter period means the higher frequency of I-frame. Video can then be well handled while bit rate may increase.

Video Quality: select the way of bit rate control to adjust the video quality, the Constant Bit Rate (CBR) or Variable Bit Rate (VBR). The selection of CBR mode concerns about the circumstances of fixed data rate transferring. VBR, on the other hand is utilized when network bandwidth is less concerned. CBR is not applicable in MJPEG video mode.

Video Overlay

Video Overlay	
<input checked="" type="checkbox"/> Enable OSD 	
<input checked="" type="checkbox"/> Include Timestamp	Date & Time ▾
Position	Up_Left ▾
<input type="checkbox"/> Include Text	<input type="text"/>
Position	Up_Left ▾
Color	White ▾
Background	Black ▾
Transparent	0% ▾

The camera supports stamping text information on the video images. The date/time string or/and a line of text message (e.g. Camera Name or View location) are available to be selected for displaying or hiding on the images.

The strings are placed on the video image as header / footer in left, middle or right position. The text color, background color and transparent level to the image can also be configured.

Join Video

This function allows user to add other video sources. All added videos can be displayed concurrently on the live view page.

Join Video

Join Camera List

Index	Camera Name	IP Address	Modify
Add New			

Add / Edit Join Camera

Camera Name

B1100

Camera IP Address

192.168.141.10


RTSP User Name

RTSP Password

Video Stream

Stream 1

Test Camera Connection



Press “**Add New**” button to extend the panel for connection info. Input the IP address of the camera, the user name / password if it is authenticated, and then choose the video stream from this camera. Press “**Test Camera Connection**” button to check this link’s availability.

Audio Setting

Check the “Enable Audio” checkbox to enable the video streaming with audio. The audio encoding supports G.711 ulaw / alaw. To apply audio transmission, a microphone must be plugged into the phone jack (Ext. Mic. In, see **Connectors**).

Camera Setting

Video Setting

Audio Setting

Audio Setting

☐ Enable Audio

Audio Encoding

Encoding

alaw

Audio Input Setting

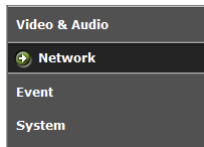
Source

External Microphone

Apply

Network Configuration

The IP Camera acts as one of the network devices. It allows “**IP address**” to be assigned, so certain network functionalities can be implementable within this device. This section describes these configurations. Fundamentally, for instance, the IP assignment of the device can be done via **DHCP server**, **static IP option** or **PPPoE** to obtain IP from the service provider.

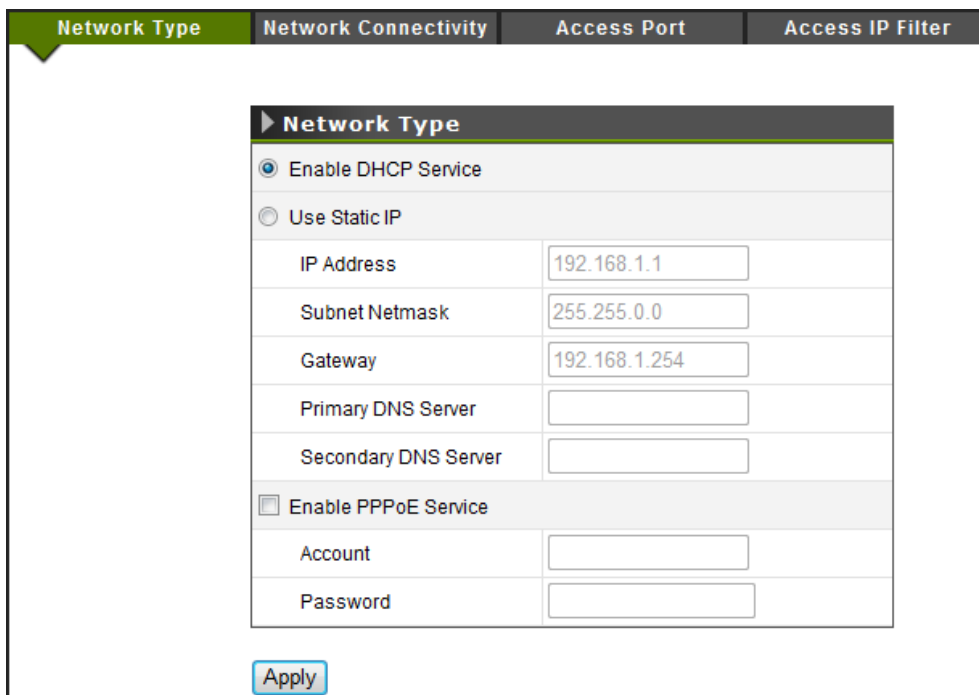


There are 4 subdirectories in “Network Configuration” for detailed settings of each network related function:

- **Network Type**
- **Network Connectivity**
- **Access Port**
- **Access IP Filter**

Network Type

Camera IP configuration includes **DHCP**, **Static IP** and **PPPoE**.



Network Type	
<input checked="" type="radio"/>	Enable DHCP Service
<input type="radio"/>	Use Static IP
IP Address	192.168.1.1
Subnet Netmask	255.255.0.0
Gateway	192.168.1.254
Primary DNS Server	
Secondary DNS Server	
<input type="checkbox"/>	Enable PPPoE Service
Account	
Password	

Apply

Enable DHCP Service: The default setting is DHCP, which camera will be automatically given an IP address in a network with DHCP server.

Use Static IP: Camera may also be manually assigned with a static IP address. Subnet mask, Gateway and DNS server(s) will also need to be specified for certain network function properly executed.

Enable PPPoE Service: This service is usually provided by an ISP (Internet Service Provider). IP Camera can establish a dial-up connection to the ISP and then get connected to Internet.

Network Connectivity

This page provides the connectivity configuration, so that IP camera can be accessed without necessarily providing the numerical IP address.

Network Type	Network Connectivity	Access Port	Access IP Filter
<div> Network Connectivity </div> <div> <input checked="" type="checkbox"/> Enable UPnP Service <div> UPnP Name <input type="text" value="iMege"/> </div> </div> <div> <input type="checkbox"/> Enable DDNS Service <div> Service Provider <input type="text" value="dyndns.org"/> </div> <div> Hostname <input type="text"/> </div> <div> Account <input type="text"/> </div> <div> Password <input type="text"/> </div> </div> <div> <input type="button" value="Apply"/> </div>			

Enable UPnP Service: with UPnP enabled, IP camera device can be easily discovered in Windows Network (My Network Places). See “Discover devices in Windows Network” in previous section.

Enable DDNS Service: By registering this sort of service, camera can be assigned and accessed over Internet with a hostname instead of IP address. To enable the services, visiting the website of the service provider and registering an account are required.

Dyndns.org: <http://www.dyndns.com/>

DHS.org: <http://www.dhs.org/>

Access Port

The Web access port can be changed in this page. Default HTTP and HTTPS port numbers are 80 and 443 respectively. The configuration of these port numbers provides the simple security.

Network Type	Network Connectivity	Access Port	Access IP Filter
<div> Access Port </div> <div> HTTP Setting <div> HTTP Port <input type="text" value="80"/> </div> </div> <div> HTTPS Setting <div> HTTPS Port <input type="text" value="443"/> </div> </div> <div> <input type="button" value="Apply"/> </div>			

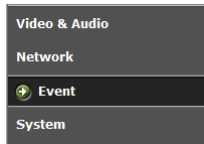
Access IP Filter

This setting also provides a basic security by filtering the accesses from other hosts. Enable this function and choose “Allow / Deny” of the listed IP addresses. Up to 15 IP address can be added in the list.

Network Type	Network Connectivity	Access Port	Access IP Filter																														
<div> <div>Access IP Filter</div> <div> <input type="checkbox"/> Enable IP Filter </div> <div> Filter Type <input checked="" type="radio"/> Allow <input type="radio"/> Deny </div> <table border="1"> <thead> <tr> <th>No.</th> <th>IP Address</th> <th>Enable</th> </tr> </thead> <tbody> <tr><td>1</td><td><input type="text"/></td><td><input type="checkbox"/></td></tr> <tr><td>2</td><td><input type="text"/></td><td><input type="checkbox"/></td></tr> <tr><td>3</td><td><input type="text"/></td><td><input type="checkbox"/></td></tr> <tr><td>4</td><td><input type="text"/></td><td><input type="checkbox"/></td></tr> <tr><td>5</td><td><input type="text"/></td><td><input type="checkbox"/></td></tr> <tr><td>6</td><td><input type="text"/></td><td><input type="checkbox"/></td></tr> <tr><td>7</td><td><input type="text"/></td><td><input type="checkbox"/></td></tr> <tr><td>8</td><td><input type="text"/></td><td><input type="checkbox"/></td></tr> <tr><td>9</td><td><input type="text"/></td><td><input type="checkbox"/></td></tr> </tbody> </table> </div>				No.	IP Address	Enable	1	<input type="text"/>	<input type="checkbox"/>	2	<input type="text"/>	<input type="checkbox"/>	3	<input type="text"/>	<input type="checkbox"/>	4	<input type="text"/>	<input type="checkbox"/>	5	<input type="text"/>	<input type="checkbox"/>	6	<input type="text"/>	<input type="checkbox"/>	7	<input type="text"/>	<input type="checkbox"/>	8	<input type="text"/>	<input type="checkbox"/>	9	<input type="text"/>	<input type="checkbox"/>
No.	IP Address	Enable																															
1	<input type="text"/>	<input type="checkbox"/>																															
2	<input type="text"/>	<input type="checkbox"/>																															
3	<input type="text"/>	<input type="checkbox"/>																															
4	<input type="text"/>	<input type="checkbox"/>																															
5	<input type="text"/>	<input type="checkbox"/>																															
6	<input type="text"/>	<input type="checkbox"/>																															
7	<input type="text"/>	<input type="checkbox"/>																															
8	<input type="text"/>	<input type="checkbox"/>																															
9	<input type="text"/>	<input type="checkbox"/>																															

Event management

Event management describes the handling of events with the corresponding actions. A common case can be exemplified is storing a captured image to a local storage (Actions), when there is a Motion Event (Trigger Condition). This chapter gives the configurations of **Triggers** (what to detect?) and **Actions** (“what to send” and “where to send”). A time based schedule can also be applied.



Configuration of Event Handling

There are 4 subdirectories in the “Event” category. The 4 configuration groups are correlated. A completed event setting may need to configure each part in sequence.

- Event Server & Media
- Motion Configuration
- DI/DO Setting
- Event List

Event Server & Media

The “Event Server” is the configuration of “where to send”, e.g. FTP server, while Media is the sending file type. The combination of file type and the remote servers will then be applied as an event action.

Event Server List

Click on “Add New” button to add the remote servers. These are email recipients and FTP server.

Add Event Server

Server Name

Server Type

☒ Email

Mail Server Address

User Name

Password

Server Port Number

Sender's E-mail Address

Mail Subject Prefix

Receiver Table

Index	Email Address	Description
1	<input type="text"/>	<input type="text"/>
2	<input type="text"/>	<input type="text"/>
3	<input type="text"/>	<input type="text"/>
4	<input type="text"/>	<input type="text"/>
5	<input type="text"/>	<input type="text"/>

☐ FTP

FTP Server Address

User Name

Password

Server Port Number

Upload Path

☐ Passive Mode

Test Apply Cancel

Email: Send the media file via email when an event is triggered.

Mail Server Address: enter a host name or IP address of the email server

User Name: enter the user name of the email account

Password: enter the password of the email account

Server Port Number: the server port of the mail server. Default is 25

Sender's E-mail Address: enter the email address of the sender

Mail Subject Prefix: enter the subject description for the mail.

Receiver Table: enter the recipients' email address. The mail can be sent to up to 5 recipients.

FTP: Send the media file to a FTP server when an event is triggered.

FTP Server address: enter the FTP server's address

User Name: enter the user name of the FTP login account

Password: enter the user name of the FTP login password

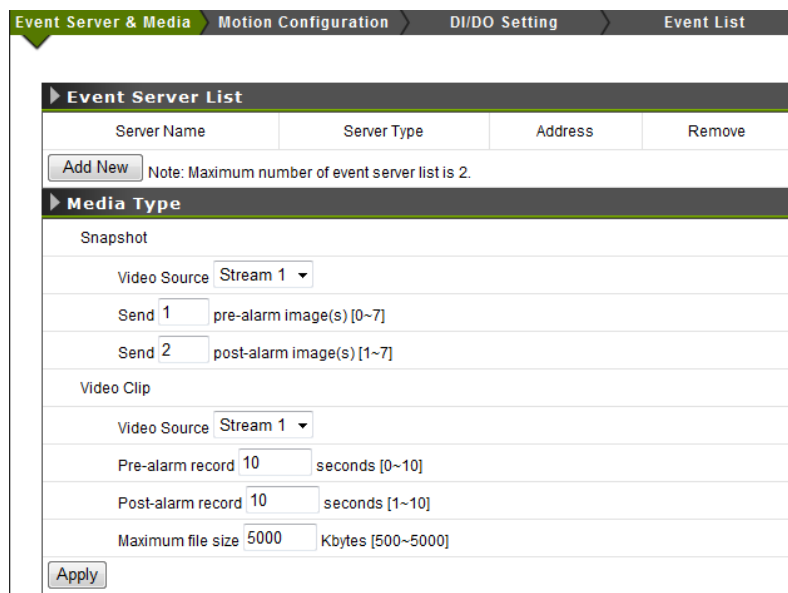
Server Port Number: the server port of the FTP server. Default is 21

Upload Path: enter the file path that files will be sent to.

Passive Mode: check the box for passive mode transmission. This option is usually applied when the FTP server is behind a firewall.

Media Type

There are 2 types of media (file) available, **snapshot** (.jpg image) and **video clip** (.avi).



The screenshot shows the 'Event Server & Media' configuration page. It has a breadcrumb trail: Event Server & Media > Motion Configuration > DI/DO Setting > Event List. The main content area is titled 'Event Server List' and contains a table with columns: Server Name, Server Type, Address, and Remove. Below the table is an 'Add New' button and a note: 'Note: Maximum number of event server list is 2.' Below this is a section titled 'Media Type' with two sub-sections: 'Snapshot' and 'Video Clip'. The 'Snapshot' section has a 'Video Source' dropdown set to 'Stream 1', a 'Send' field with '1' and 'pre-alarm image(s) [0~7]', and another 'Send' field with '2' and 'post-alarm image(s) [1~7]'. The 'Video Clip' section has a 'Video Source' dropdown set to 'Stream 1', a 'Pre-alarm record' field with '10' and 'seconds [0~10]', a 'Post-alarm record' field with '10' and 'seconds [1~10]', and a 'Maximum file size' field with '5000' and 'Kbytes [500~5000]'. There is an 'Apply' button at the bottom of the form.

Video Source: the video source from either streaming that will be captured.

Pre-alarm / Post-alarm image(s): enter the numbers of images that will be captured before and after trigger is activated.

Pre-alarm / Post-alarm video: enter the numbers of seconds that video will be recorded before and after trigger is activated.

Maximum file size: define the maximum file size that a video clip is generated.

NOTE

Video clip configuration is not available in this model.

Motion Configuration

There are 3 MD (Motion Detection) areas can be enabled. Each MD can be individually enable / disable, set its covering range and the trigger sensitivity.

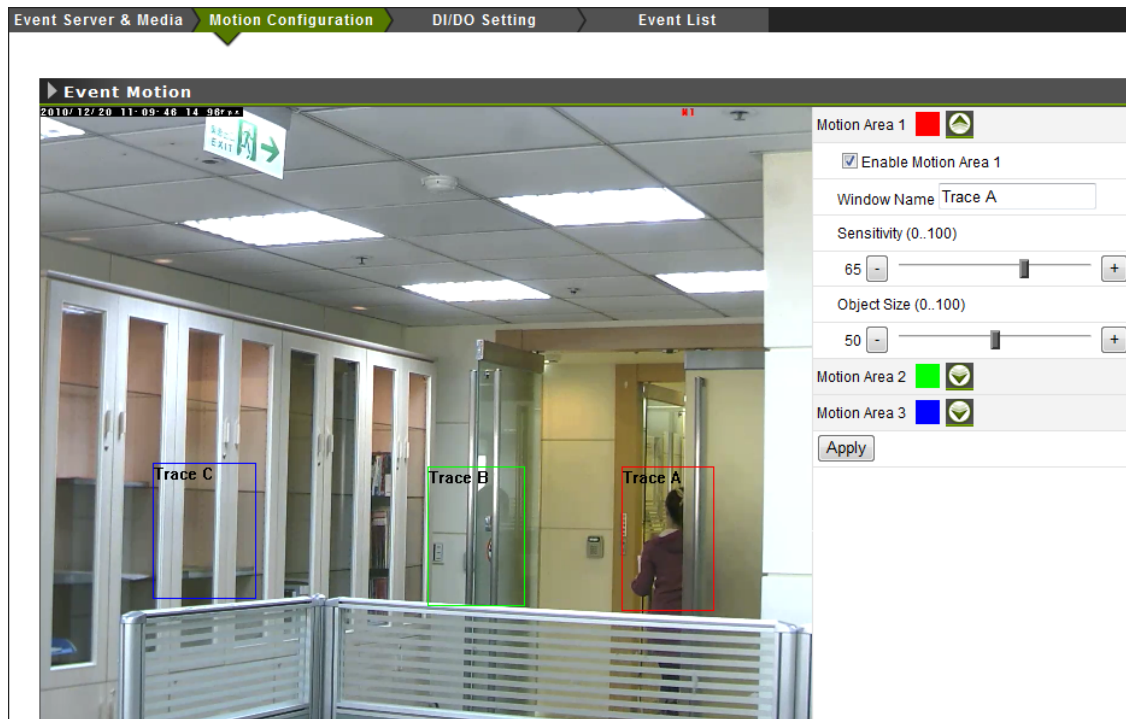
To enable and verified the MD follow the steps below.

1. Check the box to enable the motion area
2. Drag and drop to move the motion window
3. Hold and drag any corner of the rectangle to resize the window.
4. When a moving object is detected, a red motion icon (e.g. M1) appears on the upper-right of the image.
5. By dragging the pin of the slider bars, adjust the detection “Sensitivity” and “Object Size” of the rectangle covered area.

NOTE

By name implying, the “**Sensitivity**” setting means the sensitivity level to the motion detection; the higher value given makes the motion window more sensitive to the moving object. “**Object Size**” indicates the trigger threshold. A lower “Object Size” value means it is easier to exceed the value, and thus trigger the motion event.

6. To enable other motion area, repeat above steps.
7. Click on “Apply” button to save the settings.



DI/DO Setting

The DI/DO setting provides the information of Digital I/O's initial and current status. The initial status can be configured while current status is detected by the IP camera system.

Digital input (DI) can be configured as one of the trigger conditions. When its current status is different from the initial, the trigger is activated. Digital output (DO), on the other hand, can be one of the responding actions. When its current status is different from the initial status, the output is triggered.

Event Server & Media
Motion Configuration
DI/DO Setting
Event List

Digital Input/Output Status

Sensor	Sensor Name	Current Status
Digital Input 1	di1	Disabled
Digital Output	do	Open

Digital Input/Output Configuration

Sensor	Sensor Name	Initial Status
Digital Input 1	<input type="text" value="di1"/>	Disabled ▾
Digital Output	<input type="text" value="do"/>	Open ▾

Event List

List a summary of configured events. That is the selection of trigger condition(s) and the corresponding actions, as well as the scheduling. Up to 10 event objects can be configured.

Event Server & Media > Motion Configuration > DI/DO Setting > **Event List**

Event List											
Event Name	Status	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	Sun.	Trigger	Action	Remove
<input type="button" value="Add New"/> Note: Maximum number of event list is 10.											

Click on “Add New” button. This extends the form for detailed configurations.

Add / Edit Event List

☐ Enable This Event

Event Name

Event Schedule 2000/01/08 00:56:50 Sat

☒ Select All

☐ Scheduled Pattern

All	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Mon.																								
Tue.																								
Wed.																								
Thu.																								
Fri.																								
Sat.																								
Sun.																								

Triggered by

☐ Motion Detection

☐ Motion Area 1 ☐ Motion Area 2 ☐ Motion Area 3

☐ Digital Input

☐ Digital Input 1

☐ Manual Trigger

☐ Network Fail

Action

☐ Trigger digital output for seconds

Upload files to a server


Event Server	Media Type
<input type="checkbox"/> -Select Event Server- ▼	<input type="checkbox"/> -Select Media Type- ▼
<input type="checkbox"/> -Select Event Server- ▼	<input type="checkbox"/> -Select Media Type- ▼
<input type="checkbox"/> -Select Event Server- ▼	<input type="checkbox"/> -Select Media Type- ▼
<input type="checkbox"/> -Select Event Server- ▼	<input type="checkbox"/> -Select Media Type- ▼

Event Name: enter a name, e.g. Motion Detection, to identify this configured event.

Event Schedule: choose “Select All” for 24/7 or drag-and-draw to select the hours of a day in a week that this configuration will be taken effect.

Triggered by: this describes the selection of trigger conditions which include

1. **Motion Detection:** select the motion detection area(s) used for trigger condition. To enable and configure the motion detection areas, go to **Motion Configuration**.
2. **Digital Input:** enable system to detect the DI (Digital Input) status as a trigger condition. For detail DI setting, go to **DI/DO Setting**.

3. **Manual Trigger:** enable system to detect the user input action (press the alarm button,  on the live view page).
4. **Network Fail:** enable system to detect the network connection status.


Action: selection of responding actions

1. **Digital output:** check the box to enable the digital output as a responding action. For detail configuration, go to **DI/DO Setting**.
2. **Upload files to a server:** this sort of action contains 2 parts; selection of the destination and selection of file type. The destination includes the FTP server and the email recipients. The file type includes snapshot image and video clip. For detail configuration, go to **Event Server & Media**.

Examples of Event Handling

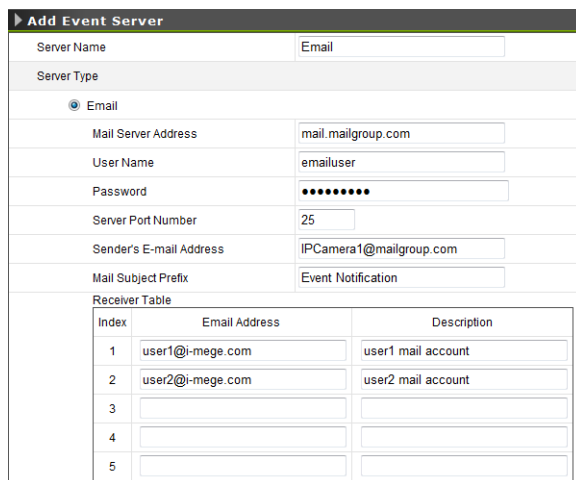
The following cases are provided as the examples of **Event Handling**.

Scenario 1

While viewing live video, user can manually trigger an event anytime simply by pressing a button,  on the web page. It will then send an email with the captured pictures.

The configurations are illustrated as below,

1. In **Event → Event Server & Media → Event Server List**, click on “Add New”. Choose “Email” and fill in the email server and recipients’ information.



Add Event Server

Server Name: Email

Server Type: ☒ Email

Mail Server Address: mail.mailgroup.com

User Name: emailuser

Password: ••••••••

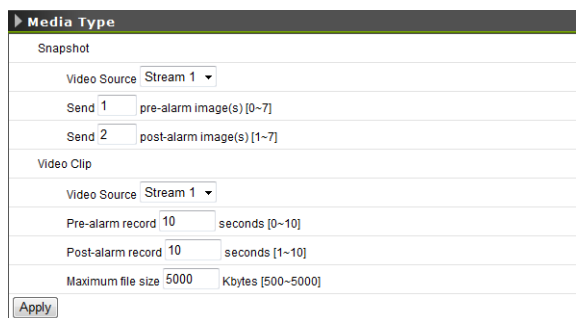
Server Port Number: 25

Sender's E-mail Address: IPCamera1@mailgroup.com

Mail Subject Prefix: Event Notification

Index	Email Address	Description
1	user1@i-mege.com	user1 mail account
2	user2@i-mege.com	user2 mail account
3		
4		
5		

2. In the same web page, configure the Media Type. That is the pictures attached in the mail. In the below example, the system is configured to capture 1 picture before the event (pre-alarm) and 2 pictures for the event and after (post-alarm).



Media Type

Snapshot

Video Source: Stream 1

Send 1: pre-alarm image(s) [0~7]

Send 2: post-alarm image(s) [1~7]

Video Clip

Video Source: Stream 1

Pre-alarm record: 10 seconds [0~10]

Post-alarm record: 10 seconds [1~10]

Maximum file size: 5000 Kbytes [500~5000]

Apply

3. Click on “Apply” to save the email server and media settings.
4. In **Event List** page, click on “Add New”, and choose from the listed items according to the requirement. It may be done as the figure below.

Add / Edit Event List

☒ Enable This Event **a**

Event Name **b**

Event Schedule 2000/01/08 04:12:40 Sat

☒ **c** Select All

☐ Scheduled Pattern

All	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Mon.																							
Tue.																							
Wed.																							
Thu.																							
Fri.																							
Sat.																							
Sun.																							

Triggered by

☐ Motion Detection

☐ Motion Area 1 ☐ Motion Area 2 ☐ Motion Area 3

☐ Digital Input

☐ Digital Input 1

☒ **d** Manual Trigger

☐ Network Fail

Action

☐ Trigger digital output for seconds

Upload files to a server

Event Server	Media Type
<input checked="" type="checkbox"/> Email	Image
<input type="checkbox"/> -Select Event Server-	-Select Media Type-
<input type="checkbox"/> -Select Event Server-	-Select Media Type-
<input type="checkbox"/> -Select Event Server-	-Select Media Type-

- Event of manual triggering -

- Check the box to enable this event. It can be deselected later without erasing all the following settings.
- Give a name of this event setting; e.g. MTrigger (stands for Manual Trigger). This is an identity of an object of event handling.
- Choose "Select All" for 24/7, as this event is required for that it can be triggered anytime.
- Select "Manual Trigger" for this event's trigger source. This will activate the manual trigger button in the live view that user can manually trigger an alarm anytime.
- Check the box to enable the action; emailing with the captured pictures. Select "Email" and "image" for the Event Server and Media Type respectively.

5. Click on "Apply" to save the settings of this page.

Scenario 2

A user is to define the motion detection area(s) in the camera view. When someone goes across these areas, camera is aware of the trigger activated and then an illuminator device attached to the camera will be lighted up. Meanwhile, camera is to upload the images to a FTP server. This detection should be activated from 22:00 to 08:00 everyday.

The configurations are illustrated as below,

1. Suppose that the required media type is previously configured. That is 1 pre-alarm picture and 2 post-alarm pictures configured in Scenario 1.
2. In **Event Server List**, click on “Add New”. Choose “FTP” and fill in the ftp server and log in information.

Add Event Server

Server Name:

Server Type:

☐ Email

Mail Server Address:

User Name:

Password:

Server Port Number:

Sender's E-mail Address:

Mail Subject Prefix:

Receiver Table

Index	Email Address	Description
1	<input type="text"/>	<input type="text"/>
2	<input type="text"/>	<input type="text"/>
3	<input type="text"/>	<input type="text"/>
4	<input type="text"/>	<input type="text"/>
5	<input type="text"/>	<input type="text"/>

☒ FTP

FTP Server Address:

User Name:

Password:

Server Port Number:

Upload Path:

☐ Passive Mode

3. Go to **Motion Configuration** page, and define the MD areas.
4. Go to **DI/DO Setting** page, and set up the “Initial Status” of the digital output.

NOTE

The “Initial Status” is the normal state (no event triggered) of the DO pins. In the case, suppose that the connected illuminator can be driven by DC12V. The initial status should then be set “Open”. When a motion event is detected, camera changes the output status to “12VDC”. The illuminator is then lighted up.

Digital Input/Output Status

Sensor	Sensor Name	Current Status
Digital Input 1	di1	Disabled
Digital Output	do	Open

Digital Input/Output Configuration

Sensor	Sensor Name	Initial Status
Digital Input 1	di1	Disabled
Digital Output	do	Open

Apply

Open
12VDC

5. Go to **Event List** page. Click on “Add New” button.

Add / Edit Event List

☒ Enable This Event **a**

Event Name **b**

Event Schedule 2000/01/08 04:41:11 Sat

☐ Select All

☒ Scheduled Pattern **c**

All	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Mon.																						
Tue.																						
Wed.																						
Thu.																						
Fri.																						
Sat.																						
Sun.																						

Triggered by

☒ Motion Detection **d**

☒ Motion Area 1 ☒ Motion Area 2 ☒ Motion Area 3

☐ Digital Input

☐ Digital Input 1

☐ Manual Trigger

☐ Network Fail

Action

☒ Trigger digital output for seconds **f**

Upload files to a server

Event Server	Media Type
<input checked="" type="checkbox"/> FTP e	Image
<input type="checkbox"/> -Select Event Server-	-Select Media Type-
<input type="checkbox"/> -Select Event Server-	-Select Media Type-
<input type="checkbox"/> -Select Event Server-	-Select Media Type-

- Event of Motion Detection -

a. Check the box to enable this event.

b. Give a name of this event setting; e.g. MD Event (stands for Motion Detection). This is an identity of an object of event handling.

c. Select time frame in the schedule table, for the requirement that is available from 22:00 to 08:00 everyday.

d. Select "Motion Detection" for this event's trigger source. Suppose that all 3 motion areas are enabled.

e. Check the box to enable the action; select the FTP as the destination, and the configured "image" that will be uploaded.

f. Check the box to enable the digital output as the event action. In the example, the output will be changed to 12V for 10 seconds, then goes back to "Open" status.

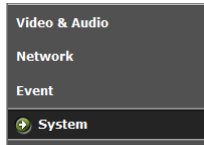
6. Click on "Apply" to save the settings of this page.

There can be more configured objects of event handling. The Event List page may look like the figure below. It is the summary of all configured event details.

Event List											
Event Name	Status	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	Sun.	Trigger	Action	Remove
Motion1	Enabled				00:00-24:00				MD	SD / Image	Remove
Motion2	Enabled				00:00-24:00				MD	SD / Image	Remove
Motion3	Enabled				00:00-24:00				MD	SD / Image	Remove
MD Event	Enabled	00:00-09:00	00:00-09:00	00:00-09:00	00:00-09:00	00:00-09:00	00:00-09:00	00:00-09:00	MD	Digital Output	Remove
MTrigger	Enabled	22:00-24:00	22:00-24:00	22:00-24:00	22:00-24:00	22:00-24:00	22:00-24:00	22:00-24:00	Manual	SD / Video	Remove
NetFail	Enabled				00:00-24:00				Network Fail	Email / Image	Remove
										SD / Video	Remove

Add New Note: Maximum number of event list is 10.

System options



System Information

The page gives details of the IP camera system.

In **System Status**, the Model ID, device firmware / ActiveX version and MAC address are listed. The Camera Name and Location fields are revisable to identify a unit among multiple cameras installed.

The IP address info of this IP camera is listed in **Network Status**. The RTSP Status field shows the video stream(s) being requested by the listed client(s).

System Information	Date and Time	User Management	Maintenance	LOG service																												
<div> <div>▶ System Status</div> <table border="1"> <tr> <td>Camera Name</td> <td><input type="text" value="iMege"/></td> </tr> <tr> <td>Location</td> <td><input type="text"/></td> </tr> <tr> <td>Model ID</td> <td>G1102E</td> </tr> <tr> <td>Firmware Version</td> <td>v1.15</td> </tr> <tr> <td>Activex Version</td> <td>1.0.0.130</td> </tr> <tr> <td>ISP Firmware Version</td> <td>V06</td> </tr> <tr> <td>MAC Address</td> <td>00:80:CC:01:91:90</td> </tr> </table> </div> <div> <div>▶ Network Status</div> <table border="1"> <tr> <td>IP Address</td> <td>192.168.205.69</td> </tr> <tr> <td>Subnet Mask</td> <td>255.255.0.0</td> </tr> <tr> <td>Gateway</td> <td>192.168.1.254</td> </tr> <tr> <td>DNS Server</td> <td>192.168.200.87</td> </tr> <tr> <td>PPPoE Status</td> <td>0</td> </tr> <tr> <td>DDNS Address</td> <td>0</td> </tr> <tr> <td>RTSP Status</td> <td>Channel[1]: 192.168.11.106</td> </tr> </table> </div> <div> <input type="button" value="Apply"/> </div>					Camera Name	<input type="text" value="iMege"/>	Location	<input type="text"/>	Model ID	G1102E	Firmware Version	v1.15	Activex Version	1.0.0.130	ISP Firmware Version	V06	MAC Address	00:80:CC:01:91:90	IP Address	192.168.205.69	Subnet Mask	255.255.0.0	Gateway	192.168.1.254	DNS Server	192.168.200.87	PPPoE Status	0	DDNS Address	0	RTSP Status	Channel[1]: 192.168.11.106
Camera Name	<input type="text" value="iMege"/>																															
Location	<input type="text"/>																															
Model ID	G1102E																															
Firmware Version	v1.15																															
Activex Version	1.0.0.130																															
ISP Firmware Version	V06																															
MAC Address	00:80:CC:01:91:90																															
IP Address	192.168.205.69																															
Subnet Mask	255.255.0.0																															
Gateway	192.168.1.254																															
DNS Server	192.168.200.87																															
PPPoE Status	0																															
DDNS Address	0																															
RTSP Status	Channel[1]: 192.168.11.106																															

Date and Time

This section describes the date/time adjustment for the IP camera system. The ways to adjust the IP camera's date/time can be automatic (Synchronize with NTP Server / PC) or manual settings.

System Information	Date and Time	User Management	Maintenance	LOG service
Current Date & Time				
Date (yyyy/mm/dd)		2010/11/12		
Time (hh:mm:ss)		14:34:24		
Configure Date & Time				
<input type="radio"/> Keep Current Date & Time <input type="radio"/> Synchronize with NTP Server				
NTP Server Address		time.windows.com		
Update Interval		Daily		
<input checked="" type="radio"/> Synchronize with PC				
Computer Date		2010/11/12		
Computer Time		14:33:49		
<input type="radio"/> Set Manually				
Date		2010/11/12		
Time		14:34:15		
Date Display Format		YYYY/MM/DD		
Time Zone		GMT +08 Taipei, Beijing, Hong Kong		
<input type="checkbox"/> Daylight Saving Time Enable Automatically				
<input type="button" value="Apply"/>				

Current Date & Time

Display current system date/time of the IP camera. The date format can be changed from the drop-down list in **Configure Date & Time**.

Configure Date & Time

Keep Current Date & Time: the option of keeping current date and time; not to be adjusted.

Synchronize with NTP Server: automatic method for date/time adjustment. The IP Camera must be able to gain access to the given NTP server (e.g. time.windows.com), which is usually the ability of Internet access. The IP camera system can therefore get updated with the time server.

NOTE: To apply "synchronize with NTP Server", a **Time Zone** must be selected for referencing to the local time.

Synchronize with PC: The PC connected to the IP camera can also be a date/time synchronizer. However, if the PC is connecting from a **time zone** different from where camera is installed, the system will pop up a warning message for time zone differential.

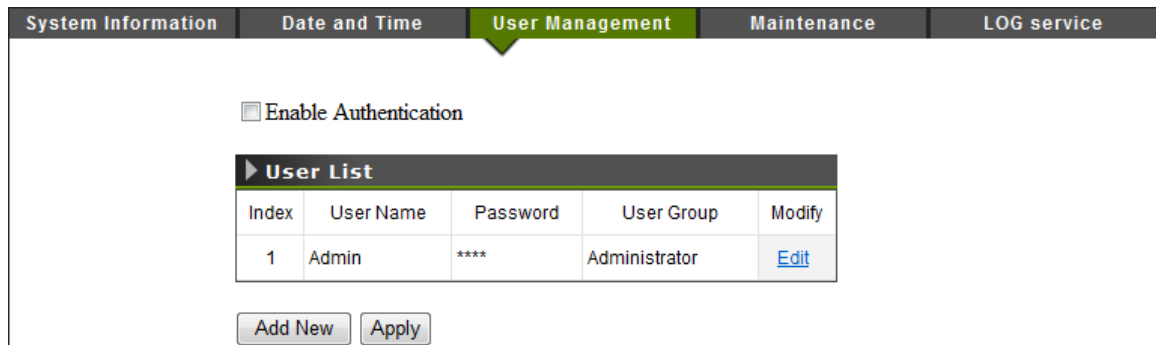
Set manually: manually adjust the date / time for the system

Date Display Format: The system date can be displayed in the format of DD/MM/YYYY, MM/DD/YYYY or YYYY/MM/DD.

Time Zone: Select an appropriate time zone for local where IP camera is installed. The automatic adjustments will be applied based on the selected time zone. Check the "**Daylight Saving Time**" checkbox for areas that are observing DST.

User Management

By default, the access to the camera is not user authenticated. For security, the IP camera should be restricted to account only accesses. It is able to enable user accounts, as well as to manage the added users in this page.

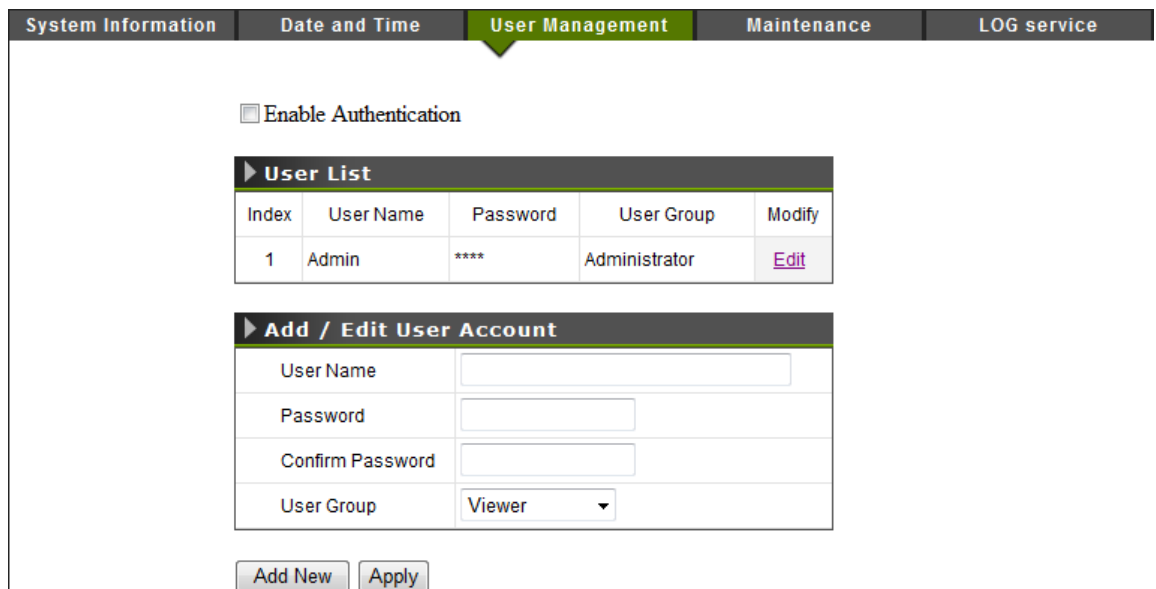


System Information | Date and Time | **User Management** | Maintenance | LOG service

☐ Enable Authentication

User List				
Index	User Name	Password	User Group	Modify
1	Admin	****	Administrator	Edit

Initially, there is a default account, **Admin** in the “**User List**”. To enable this account, click on “Edit”. The “**Add / Edit User Account**” table appears. Fill the password in both “Password” and “Confirm Password” fields for the Admin account.



System Information | Date and Time | **User Management** | Maintenance | LOG service

☐ Enable Authentication

User List				
Index	User Name	Password	User Group	Modify
1	Admin	****	Administrator	Edit

Add / Edit User Account	
User Name	<input type="text"/>
Password	<input type="password"/>
Confirm Password	<input type="password"/>
User Group	<input type="text" value="Viewer"/>

To create a new account, press “Add New” button. Create a User name / Password for this account and select the user type; **Administrator**, **Operator** or **Viewer**.

Check the “**Enable Authentication**” box to enable the account authentication. Click on “Apply” to save all the settings.

The user account with “**Administrator**” authentication can do all the configurations. “**Operator**” has the same rights as Administrator, except for **User Management**. “**Viewer**” is allowed only the access to live view page. Up to 8 user accounts can be added in the User List.

Maintenance

This page provides tools for camera system maintenances;

- **Reboot:** restart the camera system
- **Restore to Factory Default:** restore camera factory default settings. The network setting can be kept by checking the “**Except Network Type**” checkbox.
- **Configurations (User settings) backup/restore:** the system settings can be backed-up and exported to a file. The file can be applied to upload the previous user settings to the camera, or other cameras.

NOTE

The backup file can be applied to other IP cameras, so user won't need to configure each device. It is recommended to switch the IP setting to DHCP mode before exporting the backup file. Otherwise, all IP cameras will have the same IP address.

- **Firmware Upgrade:** there may be new released firmware for updated features or issues fixed. To upgrade the firmware for the system, retrieve the firmware image file, import to the system and then do the upgrade process.

System Information	Date and Time	User Management	Maintenance	LOG service
<div> <div>▶ Reboot</div> <div> <input type="button" value="Reboot"/> Note: Restart system (Please wait 25 seconds for reboot) </div> </div>				
<div> <div>▶ Restore to Factory Default</div> <div> <input type="button" value="Restore to Factory Default"/> <div> <input type="checkbox"/> Except Network Type </div> </div> </div>				
<div> <div>▶ Backup Configurations</div> <div> <input type="button" value="Backup"/> </div> </div>				
<div> <div>▶ Upload Configurations</div> <div> Note: Return system configuraiton. Use a backup file to return the camera to a previous configuration. <div> Select File: <input type="text"/> <input type="button" value="Browse..."/> <input type="button" value="Upload"/> </div> </div> </div>				
<div> <div>▶ Firmware Upgrade</div> <div> <div>Current Firmware Version: v1.07</div> <div> Select Firmware File: <input type="text"/> <input type="button" value="Browse..."/> <input type="button" value="Upgrade"/> </div> </div> </div>				

LOG service

The system operations and / or process will be recorded in the log system. The link provides the review of these records.

System Log: contains records of system changes, e.g. login failed, link on/off, video settings updated and etc.

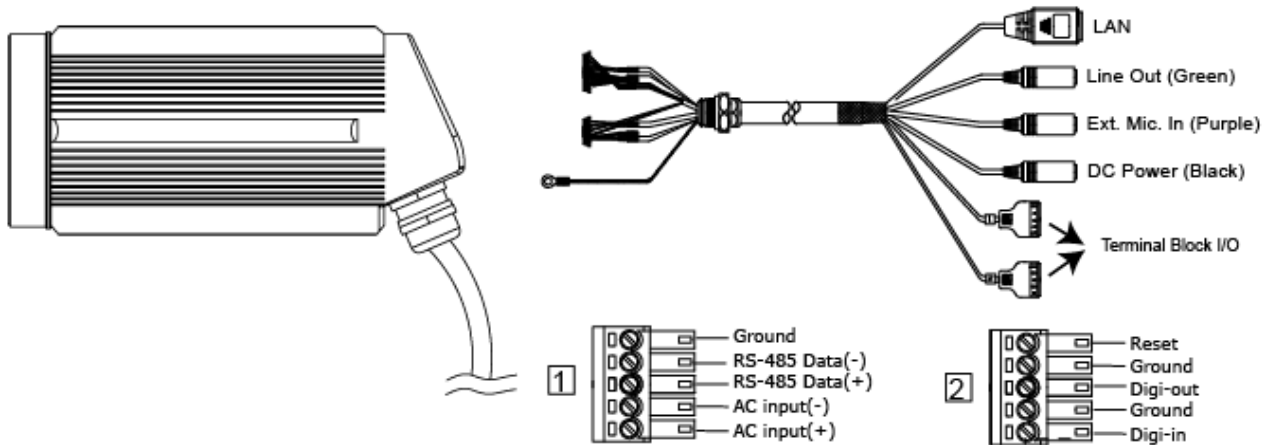
Event Log: records the log message of triggered event, for instance, motion detection is asserted.

Parameter List: list all the system parameters with the current value, e.g. *network.lan.static_ip=192.168.126.84*

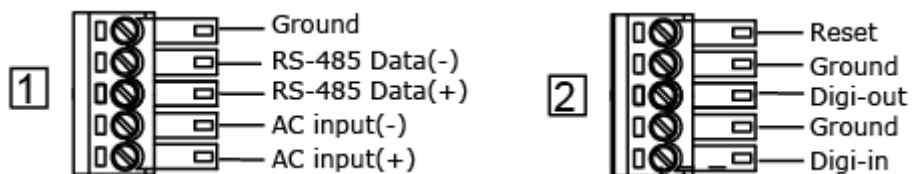
System Information	Date and Time	User Management	Maintenance	LOG service
<div> <div>▶ System Log</div> <div> <input type="button" value="System Log"/> </div> </div>				
<div> <div>▶ Event Log</div> <div> <input type="button" value="Event Log"/> </div> </div>				
<div> <div>▶ Parameter List</div> <div> <input type="button" value="Parameter List"/> </div> </div>				

Connectors

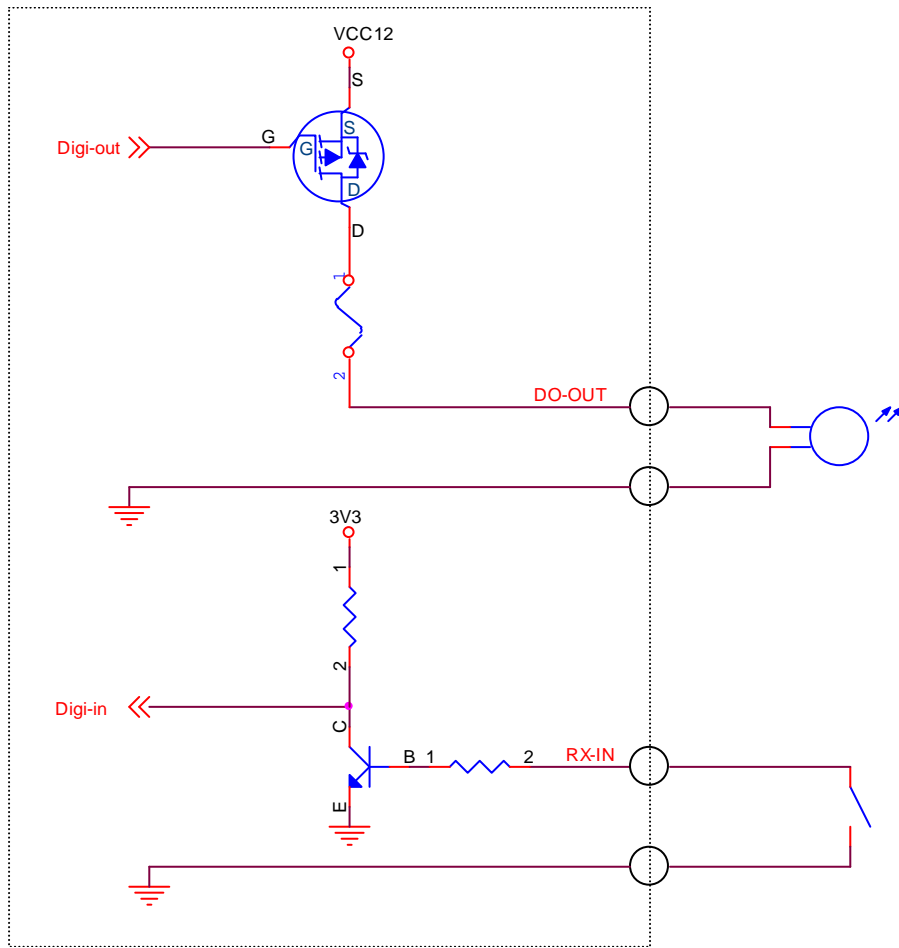
Physical appearance and connectors



I/O connectors – Pin definitions



Schematic diagram of Digital I/O

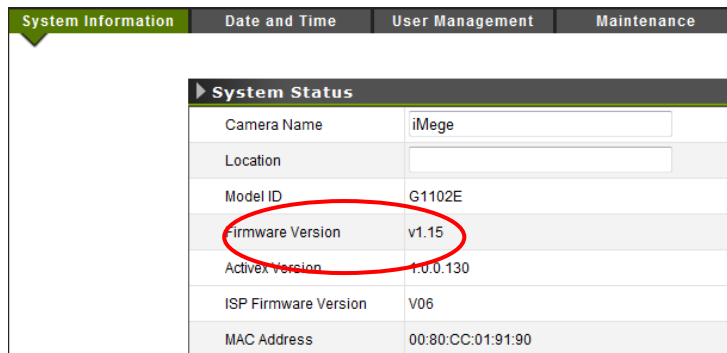


Troubleshooting

Check firmware version

Firmware version may imply the functionalities' updates or availability in the camera system. Therefore, in the first step of troubleshooting and then reporting, it helps to locate the found issues. Newer version firmware may have these issues corrected.

The version code can be found in **Setup -> System -> System Information**, see figure below.

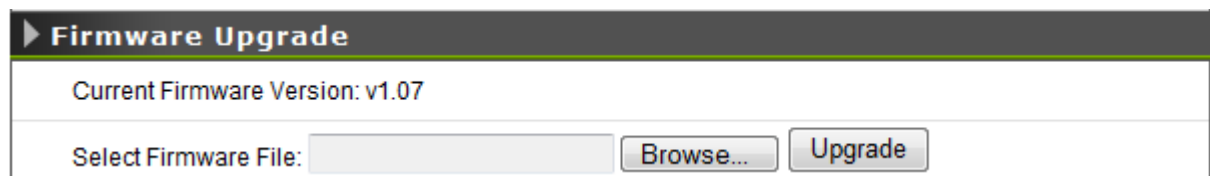


System Information	
Date and Time	
User Management	
Maintenance	
System Status	
Camera Name	iMege
Location	
Model ID	G1102E
Firmware Version	v1.15
Active Version	1.0.0.130
ISP Firmware Version	V06
MAC Address	00:80:CC:01:91:90

Upgrade device firmware

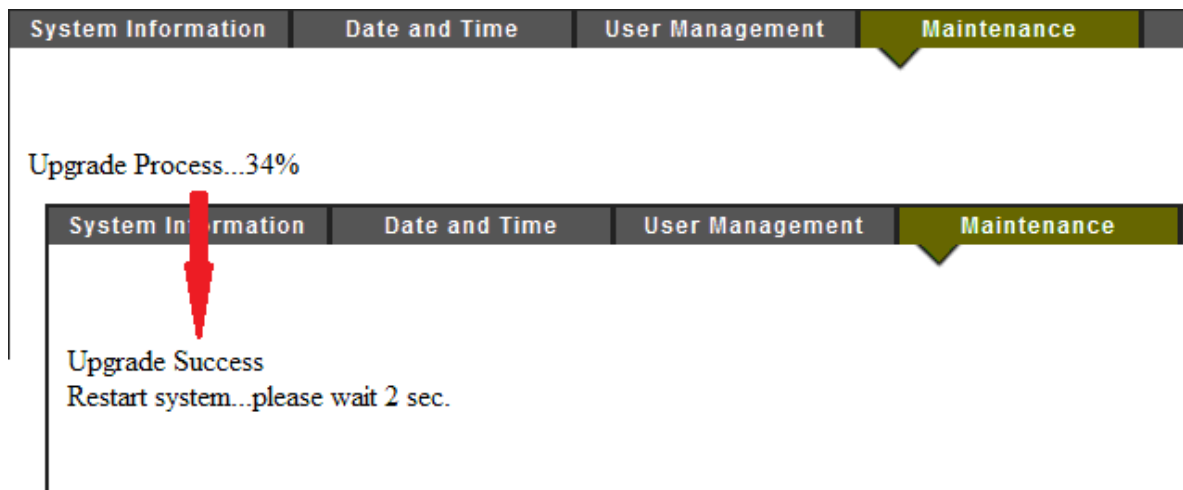
Firmware upgrade process should be done via the web configuration; **Setup -> System -> Maintenance -> Firmware Upgrade**. Before the process, read the instructions and release notes coming with each new released version. For the steps,

1. Check and retrieve the latest firmware image file from iMege website.
2. Disconnect all clients' requests from the camera that will be firmware upgrading.
3. Stop the recording (local / remote) if it is enabled.
4. Go to the Firmware Upgrade page, browse and locate the downloaded firmware image file, then click on "Upgrade" button.



Firmware Upgrade	
Current Firmware Version: v1.07	
Select Firmware File:	<input type="text"/> <input type="button" value="Browse..."/> <input type="button" value="Upgrade"/>

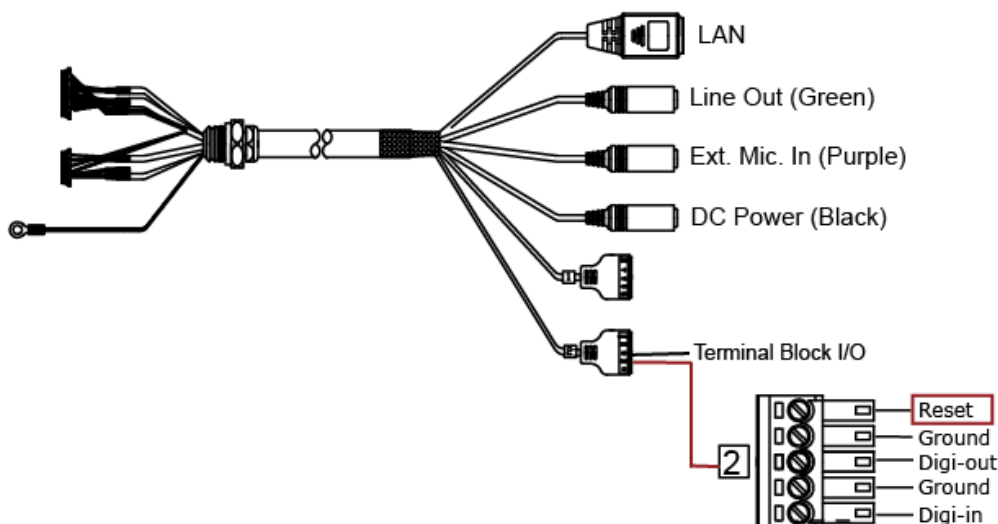
5. The upgrade should start immediately, depending on file transferring status. The web will then show the upgrading progress. The overall upgrading process takes about 2 minutes. During this period, DO NOT DISCONNECT the power. Otherwise the system of this unit can be damaged.



6. When the process is completed, check the firmware version to confirm the system is successfully upgraded.

Recover device settings

In some cases, camera system does not respond to any operation. A certain recovering processes would help to get the unit back to initial status, so that it can resume operable / configurable. This will be the operations on the "Reset Function".



1. **Restart / Reboot the device**
Short **Reset pin** and **Ground pin** of the terminal block within 1 second; the system will be restarted.
2. **Reset User Management**
Short **Reset pin** and **Ground pin** of the terminal block for 5~9 seconds; User management settings will be reset to default and the system will be restarted.
3. **Reset to factory default settings**
Short **Reset pin** and **Ground pin** of the terminal block for over 10 seconds; the system will be reset to factory default and the system will be restarted.

Technical Specifications

Model Name		G1102E
System		Embedded Linux, ARM based 32-Bit RISC Processor, 16MB Flash ROM, 128MB DDR
Video Compression		H.264, MPEG4, MJPEG
Video Resolution		SXGA(1280x1024), HD720(1280x720), VGA(640x480), QVGA(320x240), QQVGA(160x120)
Frame Rate		Up to 15fps @ SXGA, Up to 30fps @ HD720 / VGA / QVGA / QQVGA
Image Sensor		1/2.7" progressive scan CMOS sensor
Lens		CS mount, Fixed iris, Focal Length 6.0mm, F1.8;
Minimum Illumination		0 Lux (IR On)
Image Settings		ICR (Removable IR-cut filter) for day & night vision
		AEC, AWB, BLC, Brightness, Contrast, Saturation, Sharpness
		Flip, Mirror
		OSD Timestamp & Text caption overlay
Event Management	Triggers	Motion Detection, Digital Input, Manual Trigger
	Actions	Digital Output Notification via Email or FTP with attached snapshot
Network	Interface	10/100 Base-T Ethernet
	Protocols	IPv4, TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP, IGMP, FTP, DHCP, DNS, DDNS, PPPoE, NTP, SMTP
Audio		External Mic In, Audio out
Power Supply		DC 12V/2A
		AC24V
		Built-in PoE IEEE 802.3af compliant
Operation Temperature		-10°C ~ 50°C (14°F ~ 122°F)
Operation Humidity		20% ~ 80% RHG
Dimension (Øx H)		84.9 mm x 179.98 mm
Net Weight		906 grams
Connectors		1 x RJ45 Ethernet LAN Connector with 2 LED Indicators 2 x Phone jacks (Ext. Mic In x 1, Audio out x 1) 1 x 12 VDC Jack 5-pin terminal block for GND / RS-485 / AC 24V input 5-pin terminal block for Digital Input / Digital Output / Reset / GND
Client System Requirement		OS: Microsoft Windows 7 / Vista / XP / 2K, Browser: IE 6.x or above

*Design and specifications are subject to change without notice.

