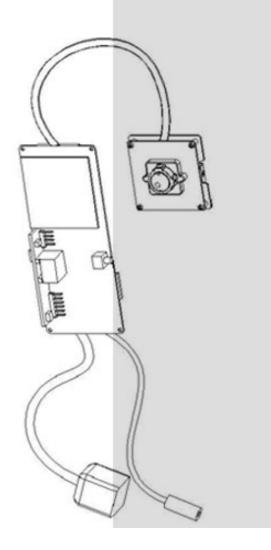
INSTRUCTION MANUAL

# FULL HD ATM MODULE NETWORK CAMERA USERS MANUAL



Please read this manual thoroughly before use, and keep it handy for future reference.

# WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PROCUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECT THROUGH THE VENTILATION GRILLS OR OTHER OPENNINGS ON THE EQUIPMENT.

# CAUTION



# **EXPLANATION OF GRAPHICAL SYMBOLS**



The 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.



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 appliance.

# PRECAUTIONS

Safety ------

Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by the qualified personnel before operating it any further.

Unplug the unit from the wall outlet if it is not going to be used for several days or more. To disconnect the cord, pull it out by the plug. Never pull the cord itself.

Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials(curtains, draperies) that may block the ventilation holes.

Height and vertical linearity controls located at the rear panel are for special adjustments by qualified personnel only. Do not install the unit in an extremely hot or humid place or in a place subject to excessive dust, mechanical vibration.

The unit is not designed to be waterproof. Exposure to rain or water may damage the unit.

# Cleaning -----

Clean the unit with a slightly damp soft cloth. Use a mild household detergent. Never use strong solvents such as thinner or benzene as they might damage the finish of the unit.

Retain the original carton and packing materials for safe transport of this unit in the future.

# Contents

1.	Description	4
	1.1 Components	4
	1.2 Key Features	5
	1.3 Over View	6
2.	Installation	
	2.1 Basic installation	7
	2.2 Network Connection and IP Assignment	9
3.	Operation	10
	3.1 Access from a browser	10
	3.2 Access from the internet	11
	3.3 Setting the admin password over a secure connection	11
	3.4 Live View Page	12
	3.5 Network Camera Setup	13
	3.5.1 Basic Configuration	14
	1) Users	14
	2) Network	17
	3) Video & Image	18
	4) Audio	
	5) Date & Time	22
	3.5.2 Live view	
	3.5.3 Video & Image	
	3.5.4 Audio	
	3.5.5 Event	
	1) Event-In	
	2) Event-Out	
	3) Event Map	
	3.5.6 System	
	1) Information	
	2) Security	
	3) Date & Time	
	4) Network	
	5) Language	
	6) Maintenance	
	7) Support	
	3.6 Playback	
	3.7 Help	
	3.8 Resetting to the factory default settings	71
4.	Appendix	72
	4.1 Troubleshooting	72
	4.2 Preventive Maintenance	
	4.3 Product Specification	
	4.4 System Requirement for Web Browser	75

# 1. Description

The Network Camera supports the network service for an image sensor with progressive scan, which can be monitored on a real-time screen regardless of distances or location. By using its dedicated program, many users are able to have access to the Network Camera simultaneously or a single user can monitor various network cameras at the same time. It also enables users to play, store and retrieve a monitoring image by using a PC. All the settings and real-time monitoring screens are also provided through an access to the web.

The Network Camera is fully featured for security surveillance and remote monitoring needs. It is based on the DSP compression chip, and makes it available on the network as real-time, full frame rate Motion JPEG and H.264 (or MPEG-4) video streams.

### **1.1 Components**

The system comes with the following components:

Quantity	Contents
1	Camera module
1	Installation CD
1	Extension cable kit
1	Alarm cable kit

**NOTE:** Check your package to make sure that you received the complete system, including all components shown above.

# 1.2 Key Features

#### • Brilliant video quality

The Network Camera offers the highly efficient H.264 video compression, which drastically reduces bandwidth and storage requirements without compromising image quality. Motion JPEG is also supported for increased flexibility.

#### • Triple streams

The Network Camera can deliver triple video streams simultaneously at full frame rate in all resolutions up to 1920 x 1080 using Motion JPEG and H.264 (or MPEG-4). This means that several video streams can be configured with different compression formats, resolutions and frame rates for different needs.

#### Image setting adjustment

The Network Camera also enables users to adjust image settings such as contrast, brightness and saturation to improve images before encoding takes place.

#### Micro-SD Recording support

The Network Camera also supports a micro-SD memory slot for local recording with removable storage.

#### Improved Security

The Network Camera logs all user access, and lists currently connected users. Also, its full frame rate video can be provided over HTTPS.

#### • Megapixel Resolution

2 Megapixel, Max 30fps@1920x1080

#### • PoE

The network camera can be powered through PoE, which simplifies installation since only one cable is needed for carrying power, as well as video & controls.

#### • ONVIF

This is a global interface standard that makes it easier for end users, integrators, consultants, and manufacturers to take advantage of the possibilities offered by network video technology. ONVIF enables interoperability between different vendor products, increased flexibility, reduced cost, and future-proof systems.

#### Audio support

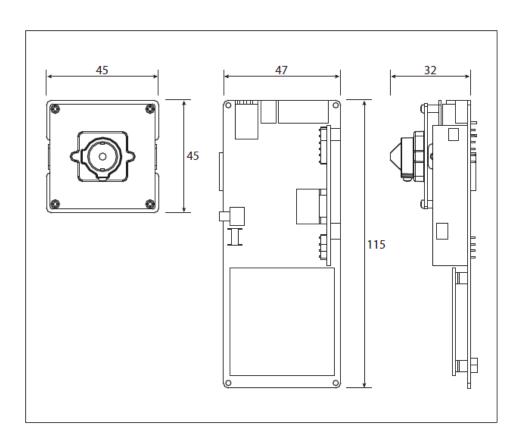
The Network Camera also supports two-way audio.

#### 1.3 Overview

#### Camera Dimension

See the diagrams below for the exact dimension of the network camera.

• Full Dimensions : Main 47.0 x 21.0 x 115.0 mm, 1.85 x 0.82 x 4.49 inches Sensor 45.0 x 45.0 x 32.0 mm, 1.77 x 1.77 x 1.25 inches

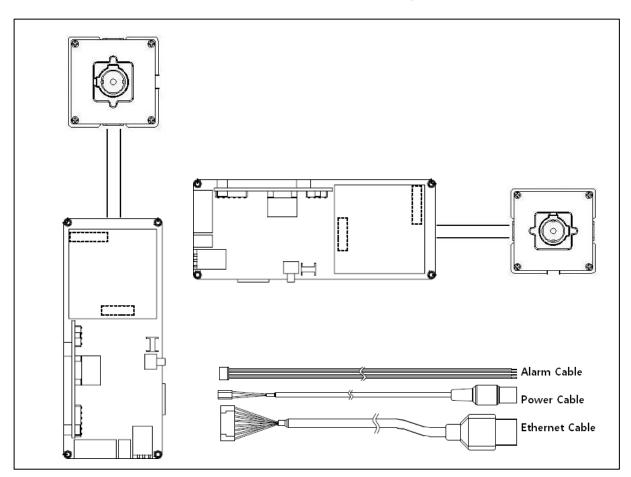


**Users manual** 

# 2. Installation

# 2.1 Basic installation

Default position of the strip camera out of the box is for vertical Orientation of the camera view. For horizontal orientation of camera, Camera module rotates 90 degrees in the desired direction.



NO	Name	Description
1	Alarm Cable	Yellow : Alarm input, Black : GND, Blue : Alarm output
2	Power Cable	Cable for Power source (DC 12V)
3	Ethernet Cable	Cable for Ethernet (POE)

#### • Connecting to the RJ-45

Connect a standard RJ-45 cable to the network port of the network camera. Generally a cross-over cable is used for directly connection to PC, while a direct cable is used for connection to a hub.

#### • Micro SD memory slot

Insert the SD memory card.

#### Connecting Alarms

#### Alarm In :

You can use external devices to signal the network camera to react on events. Mechanical or electrical switches can be wired to the AI (Alarm In) and G (Ground) connectors.

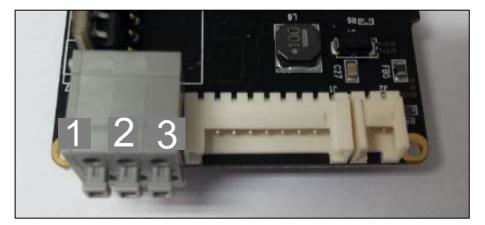
G(Ground) :

Connect the ground side of the alarm input and/or alarm output to the G (Ground) connector. Alarm Out :

The network camera can activate external devices such as buzzers or lights. Connect the device to the AO (Alarm Out) and G (Ground) connectors.

#### Connecting Audio In / Out

Connect Audio In(Mic) / Audio Out(Speaker) to the camera.



 Audio In(Microphone) : Connect the signal line of microphone.
 G(Ground) : Connect the ground side of the audio input and audio output to the G (Ground) connector.
 Audio Out(Speaker) : Connect the signal line of speaker.

#### Connecting the Power

Connect the DC 12V power adaptor to the camera.

#### 2.2 Network Connection and IP assignment

The Network Camera supports the operation through the network. When a camera is first connected to the network it has no IP address. So, it is necessary to allocate an IP address to the device with the "Smart Manager" utility on the CD. (Default IP 192.168.30.220)

- 1. Connect the Network Camera / device to the network and power up.
- Start SmartManager utility (Start>All programs>SmartManager>SmartManager), the main window will be displayed, after a short while any network devices connected to the network will be displayed in the list.

🚯 SmartManager	a	-	-				×
<u>Eile View H</u> elp							
🔍 🔍 🔍 🔍 🕅 IP Filter:	· · · ~		Apply				
ļ. P	🛃 Model Name	MAC Address	IP Address	Wireless IP Address	Zero Conf. IP	Version	
Model Name (1)	Z Model Name	00:07:D8:17:0C:49	192.168.30.220		169.254.79.106	2.1.0-T2_release	
Ready							CAP NUM SCRL

3. Select the camera on the list and click right button of the mouse. You can see the pop-up menu below.

File       View       Help         Product       Apply         Product       Model Name       MAC Address       IP Address       Wireless IP Address       Zero Conf. IP       Version         Production       Production       Production       Production       Production       Production         Production       Production       Production       Production       Production       Production       Production         Production	
P         Model Name         MAC Address         IP Address         Wireless IP Address         Zero Conf. IP         Version           To All Devices (1)         Model Name         00:07:08:17:00:49         192:168:30:220         160:254:70:106         2:1.0.72:-gelease	
Image: Second	
Model Name (1) ONVIF (1) G Quick View Quick View Maintenance Upgrade Firmware Log In Open Web Page Emergency Firmware Upgrade	
Ready CAP NUI	SCRL _

4. Select Assign IP. You can see the "Assign IP address" window. Enter the required IP address.

ſ	Assign IP Address	×
	Assign new IP address	
		192 . 168 . 30 . 220
	Camera Information	
	Model :	Model Name
	Name :	Camera Name
	MAC Address :	00:07:D8:17:0C:49
	IP Address :	192.168.30.220
		OK Cancel

Note: For more information, refer to the Smart Manger User's Manual.

# 3. Operation

The Network Camera can be used with Windows operating system and browsers. The recommended browsers are Internet Explorer, Safari, Firefox, Opera and Google Chrome with Windows.

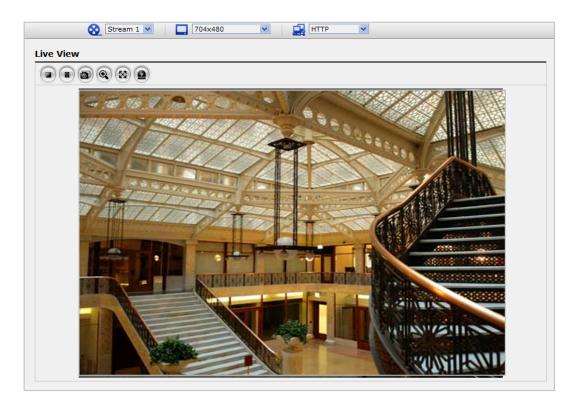
**NOTE:** To view streaming video in Microsoft Internet Explorer, set your browser to allow ActiveX controls.

### 3.1 Access from a browser

- 1. Start a browser (Internet Explorer).
- 2. Enter the IP address or host name of the Network Camera in the Location/Address field of your browser.
- 3. You can see a starting page. Click Live View or Setup to enter web page.



4. The network camera's **Live View** page appears in your browser.



#### 3.2. Access from the internet

Access from the internet once connected, the Network Camera is accessible on your local network (LAN). To access the network camera from the Internet you must configure your broadband router to allow incoming data traffic to the network camera. To do this, enable the NAT-traversal feature, which will attempt to automatically configure the router to allow access to the network camera. This is enabled from Setup > System > Network > NAT.

For more information, please see "3.5.4 System>Network>NAT" of User's Manual.

#### 3.3 Setting the admin password over a secure connection

To gain access to the product, the password for the default administrator user must be set. This is done in the "Admin Password" dialog, which is displayed when the network camera is accessed for the setup at the first time. Enter your admin name and password, set by the administrator.

**Note:** The default administrator username and password is "admin". If the password is lost, the Network Camera must be reset to the factory default settings. See "3.8 Resetting to the Factory Default Settings" for more details.

Windows Security	
The server 192. password.	168.30.220 at Camera Name requires a username and
	erver is requesting that your username and password be cure manner (basic authentication without a secure
	User name Password Remember my credentials
	OK Cancel

To prevent network eavesdropping when setting the admin password, this can be done via an encrypted HTTPS connection, which requires an HTTPS certificate (see note below).

To set the password via a standard HTTP connection, enter it directly in the first dialog shown below. To set the password via an encrypted HTTPS connection, see "3.5.6 System >Security>HTTPS".

**Note:** HTTPS (Hypertext Transfer Protocol over SSL) is a protocol used to encrypt the traffic between web browsers and servers. The HTTPS certificate controls the encrypted exchange of information.

### 3.4 Live View Page

The live view page comes in variable viewer modes. Users are allowed to select the most suitable one out of those modes. Please, adjust the mode in accordance with your PC specifications and monitoring purposes.



#### 1) General controls

Eive View Page 🛛 Search & Playback Page 🧟 Setup Page 🕜 Help Page

**WIDEO VIDEO VIDEO** 

**L** <u>4CIF (704x480)</u> The resolution drop-down list allows you to select the most suitable one out of video resolutions to be displayed on live view page.

The protocol drop-down list allows you to select which combination of protocols and methods to use depends on your viewing requirements, and on the properties of your network.

#### 2) Control toolbar

The live viewer toolbar is available in the web browser page only. It displays the following buttons:

- The Stop button stops the video stream being played. Pressing the key again toggles the start and stop. The Start button connects to the network camera or start playing a video stream.
- The Pause button pause the video stream being played.
- The Snapshot button takes a snapshot of the current image. The location where the image is saved can be specified.
- The digital zoom activates a zoom-in or zoom-out function for video image on the live screen.
- The Full Screen button causes the video image to fill the entire screen area. No other windows will be visible. Press the 'Esc' button on the computer keyboard to cancel full screen view.
- The Manual Trigger button activates a pop-up window to manually start or stop the event.
- Use this scale to control the volume of the speakers.
- Use this scale to control the volume of the microphone.
- **-** Use this scale to control the volume of the speakers and microphones.

#### 3) Video Streams

The network camera provides several images and video stream formats. Your requirements and the properties of your network will determine the type you use.

The Live View page in network camera provides access to H.264, MPEG-4 and Motion JPEG video streams, and to the list of available video streams. Other applications and clients can also access these video streams/images directly, without going via the Live View page.

#### 3.5 Network Camera Setup

This section describes how to configure the network camera, and is intended for product Administrators, who have unrestricted access to all the Setup tools; and Operators, who have access to the settings for Basic, Live View, Video & Image, Audio, Event, and System Configuration.

You can configure the network camera by clicking Setup in the top right-hand corner of the Live View page. Click on this page to access the online help that explains the setup tools

Windows Security	
The server 192. password.	168.30.220 at Camera Name requires a username and
	server is requesting that your username and password be sure manner (basic authentication without a secure
	User name Password Remember my credentials
	OK Cancel

When accessing the Network Camera for the first time, the "Admin Password" dialog appears. Enter your admin name and password, set by the administrator.

Note: If the password is lost, the Network Camera must be reset to the factory default settings. See "3.8 Resetting to the Factory Default Settings".

### 3.5.1 Basic Configuration

You can see the device information in this information page.

#### 1) Users

User access control is enabled by default. An administrator can set up other users, by giving these user names and passwords. It is also possible to allow anonymous viewer login, which means that anybody may access the Live View page, as described below:

Basic Configuration	Users		
Users			
· Network	User Setting		
<ul> <li>Video &amp; Image</li> </ul>	Enable anonymous viewer	r login	
· Audio	User List Setting		
· Date & Time	User List Betting		
	User Name	User Group	Authority
Live View	admin	administrator	live, setup, system
Video & Image		Add Modify	Remove
Audio			
Event		Save Reset	
System			
About			

The user list displays the authorized users and user groups (levels):

User Group	Authority
Guest	Provides the lowest level of access, which only allows access to the
Guesi	Live View page.
	An operator can view the Live View page, create and modify
Operator	events, and adjust certain other settings. Operators have no access
	to System Options.
Administrator	An administrator has unrestricted access to the Setup tools and can
Administrator	determine the registration of all other users.

- Enable anonymous viewer login: Check the box to use the webcasting features. Refer to "3.5.2 Video & Image" for more details.
- Click the Add, Modify, or Remove button for managing user account.

🖉 Network Camera - Wi	ndows Internet 🔳 🗖 🔀
🧃 http://192,168,1,35/basic/u	useredit, php?user_section=ad 🔯
Add User	
User Setting	
• User name :	Alice
· Password :	••••
Confirm password :	••••
• User Group :	administrator 💌
ОК	CANCEL
😜 인터넷	🖓 🕶 🔍 100% 👻 🛒

#### To add a new user:

1. Click the Add tab, and then new pop-up window appears.

2. Click in the User name box and type a new user name (1 to 14 alphanumeric characters). User names are not case sensitive.

3. Click in the Password box and type a password (1 to 8 alphanumeric characters). Passwords are case sensitive.

4. Click in the Confirm password box and retype a password.

5. Click in the User group box and select one of the groups you wish to assign to the user.

6. Click the OK button to save the settings and add a new user.

🖉 Network Camera - Windows Internet 🔳 🗖 🔯
🙋 http://192,168,10,176/basic/useredit,php?user_section=r 🔀
Modify User
User List Setting
User name : Alice     Password :     Confirm password :      User gruop : administrator
OK CANCEL

#### To modify a user:

1. Select one of the User Name in the User List Setting you want to modify.

2. Click the Modify tab, and then new pop-up window appears.

3. Click in the Password box and type a password (1 to 8 alphanumeric characters). Passwords are case sensitive.

4. Click in the Confirm password box and retype a password.

5. Click in the User group box and select one of the groups you wish to assign to the user.

6. Click the OK button to save the settings and modify a user.

#### NOTE

The user name can't be modified.

#### To remove a user:

- 1. Select one of the User Name in the User List Setting you want to remove.
- 2. Click the Remove tab. A dialog box appears with confirmation message.
- 3. Click the OK button. The user profile is removed from the User List Setting profile.

#### NOTE

The admin user name can't be modified.

- Click the Save button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

#### 2) Network

The network camera supports both IP version 4 and IP version 6. Both versions may be enabled simultaneously, and at least one version must always be enabled. When using IPv4, the IP address for the network camera can be set automatically via DHCP, or a static IP address can be set manually. If IPv6 is enabled, the network camera receives an IP address according to the configuration in the network router. There is also the option of using the Internet Dynamic DNS Service. For more information on setting the Network, please see Setup> System>Security>Network.

Basic Configuration	Network		
• Users	IP Address Configuratio	n	
Network			
<ul> <li>Video &amp; Image</li> </ul>	Obtain IP address Use the following I		
· Audio	- IP address	P address : 192 . 168 . 50 . 31	
· Date & Time			
	- Subnet mask	255 . 255 . 255 . 0	
Video & Image	- Default router	192 . 168 . 50 . 1	
Audio			
Event		Save Reset	
System			
About			

- Obtain IP address via DHCP Dynamic Host Configuration Protocol (DHCP) is a protocol that lets network administrators centrally manage and automate the assignment of IP addresses on a network. DHCP is enabled by default. Although a DHCP server is mostly used to set an IP address dynamically, it is also possible to use it to set a static, known IP address for a particular MAC address.
- Use the following IP address To use a static IP address for the Network Camera, check the radio button and then make the following settings:
  - **IP address** Specify a unique IP address for your Network Camera.
  - **Subnet mask** Specify the mask for the subnet the Network Camera is located on.
  - **Default router** Specify the IP address of the default router (gateway) used for connecting devices attached to different networks and network segments.

#### Notes:

- DHCP should only be enabled if using dynamic IP address notification, or if your DHCP server can update a DNS server, which then allows you to access the Network Camera by name (host name). If DHCP is enabled and you cannot access the unit, you may have to reset it to the factory default settings and then perform the installation again.
- 2. The ARP/Ping service is automatically disabled two minutes after the unit is started, or as soon as an IP address is set.
- 3. Pinging the unit is still possible when this service is disabled.

#### 3) Video & Image

Basic Configuration	Video & Image	
· Users		
• Network	Sensor Setting	
Video & Image	Capture mode	1600x1200 Max. 15fps 📝
· Audio		
• Date & Time	Stream 1 Setting	
Live View	Codec	H.264 Baseline Profile 🕑
	Resolution	1600x1200
Video & Image	Bitrate control	CBR
Audio	Bitrate	4000 💌 [Kbps]
Event	Framerate	15
System	GOP size	15 [130]
About	Stream 2 Setting	
	Codec	MJPEG
	Resolution	640x480
	Framerate	15
	Quality	50 [1100]
	Stream 3 Setting	
	Codec	H.264 Baseline Profile 💌
	Resolution	Same as Stream 1
	Bitrate control	CBR
	Bitrate	1000 🕑 [Kbps]
	Framerate	15
	GOP size	15 [1 30]
		Save Reset

#### Stream1 Setting

#### - Codec:

The codec settings are separated into MPEG4 and H.264.

H.264 is also known as MPEG-4 Part 10. This is the new generation compression standard for digital video. This function offers higher video resolution than Motion JPEG or MPEG-4 at the same bit rate and bandwidth, or the same quality video at a lower bit rate.

#### - Profile:

There are 4 pre-programmed stream profiles available for quick set-up. Choose the form of video encoding you wish to use from the drop-down list:

#### \* H.264 HP (High Profile):

The primary profile for broadcast and disc storage applications, particularly for highdefinition television applications (for example, this is the profile adopted by the HD DVD and Blu-Ray Disc).

#### \* H.264 MP(Main Profile):

Primarily for low-cost applications that requires additional error robustness, this profile is used rarely in videoconferencing and mobile applications, it does add additional error resilience tools to the Constrained Baseline Profile. The importance of this profile is fading after the Constrained Baseline Profile has been defined.

#### \* H.264 BP(Base Profile):

Originally intended as the mainstream consumer profile for broadcast and storage applications, the importance of this profile faded when the High profile was developed for those applications.

#### \* MPEG4 SP(Simple Profile):

Mostly aimed for use in situations where low bit rate and low resolution are mandated by other conditions of the applications, like network bandwidth, device size etc.

#### - Resolution:

It enables users to determine a basic screen size when having an access through the Web Browser or PC program. The screen size control comes in seven modes like 1920x1080, 1280x720, 640x480, 352x240, and 320x240. Users can reset the selected screen size anytime while monitoring the screen on a real-time basis.

#### - Bitrate control:

Limiting the maximum bit rate helps control the bandwidth used by the H.264 or MPEG-4 video stream. Leaving the Maximum bit rate as unlimited maintains consistently good image quality but increases bandwidth usage when there is more activity in the image. Limiting the bit rate to a defined value prevents excessive bandwidth usage, but images are lost when the limit is exceeded.

Note that the maximum bit rate can be used for both variable and constant bit rates. The bit rate can be set as Variable Bit Rate (VBR) or Constant Bit Rate (CBR). VBR adjusts the bit rate according to the image complexity, using up bandwidth for increased activity in the image, and less for lower activity in the monitored area.

CBR allows you to set a fixed target bitrate that consumes a predictable amount of bandwidth. As the bit rate would usually need to increase for increased image activity, but in this case cannot, the frame rate and image quality are affected negatively. To partly compensate for this, it is possible to prioritize either the frame rate or the image quality whenever the bit rate needs to be increased. Not setting a priority means the frame rate and image quality are equally affected.

#### - Frame rate:

Upon the real-time play, users should select a frame refresh rate per second. If the rate is high, the image will become smooth. On the other hand, if the rate is low, the image will not be natural but it can reduce a network load.

#### GOP size:

Select the GOP(Group of Picture) size. If users want to have a high quality of fast image one by one, please decrease the value. For the purpose of general monitoring, please do not change a basic value. Such act may cause a problem to the system performance. For the details of GOP setting, please contact the service center.

#### Stream2 Setting

Sometimes the image size is large due to low light or complex scenery. Adjusting the frame rate and quality helps to control the bandwidth and storage used by the Motion JPEG video stream in these situations. Limiting the frame rate and quality optimizes bandwidth and storage usage, but may give poor image quality. To prevent increased bandwidth and storage usage, the Resolution, Frame rate, and Frame Quality should be set to an optimal value.

- JPEG resolution: Same as the Stream1 Setting.
- JPEG frame rate: Same as the Stream1 Setting.

#### - JPEG quality:

Select the picture quality. If users want to have a high quality of fast image one by one, please decrease the value. For the purpose of general monitoring, please do not change a basic value. Such act may cause a problem to the system performance.

• Stream3 Setting

**Codec:** Same as the Stream1 setting.

- **Resolution:** Select the Stream1 resolution or the Stream2 resolution.
- Bitrate control: Same as the Stream1 setting.
- Frame rate: Same as the Stream1 setting.
- **GOP size:** Same as the Stream1 setting.

When satisfied with the settings, click **Save**, or click **Reset** to revert to previously saved settings.

#### 4) Audio

Basic Configuration	Audio - Basic		
Live View	Audio Setting		
Video & Image	Enable audio		
Audio	- Compression type	G.711 u-law	
Basic	- Sample rate	8KHz	
Event	- Sound bitrate	64kbps	
System	Audio Input		
About	Input volume	[dB]	Auto
	Audio Output		
	Enable full duplex - Output volume	0 (dB	Mute
		Save Reset	

The Network Camera can transmit audio to other clients using an external microphone and can play audio received from other clients by attaching a speaker. The Setup page has an additional menu item called **Audio**, which allows different audio configurations, such as, full duplex, and simplex.

Audio Setting

#### - Enable audio:

Check the box to enable audio in the video stream.

- Compression type:

Select the desired audio Compression format, G711.

- Sample rate:

Select the required Sample rate (number of times per second the sound is sampled). The higher the sample rate, the better the audio quality and the greater the bandwidth required.

#### - Sound bitrate:

Depending on the selected encoding, set the desired audio quality (bitrate). The settings affect the available bandwidth and the required audio quality.

#### Audio Input

Audio from an external line source can be connected to the terminal I/O of the network camera.

#### Input volume:

If there are problems with the sound input being too low or high, it is possible to adjust the input gain for the microphone attached to the network camera.

#### Audio Output

#### - Enable full duplex:

Check the box to enable Full Duplex mode. It means that you can transmit and receive audio (talk and listen) at the same time, without having to use any of the controls. This is just like having a telephone conversation.

This mode requires that the client PC has a sound card with support for full-duplex audio.

Uncheck the box enable Simplex mode. The simplex mode only transmits audio from the network camera to any web client. It does not receive audio from other web clients.

#### - Output volume:

If the sound from the speaker is too low or high it is possible to adjust the output gain for the active speaker attached to the network camera.

When satisfied with the settings, click **Save**, or click **Reset** to revert to previously saved settings.

#### 5) Date & Time

Basic Configuration	Date & Time
· Users	
• Network	Current Server Time
Video & Image	Date : 2013-06-05 Time : 07:42:19
· Audio	
Date & Time	New Server Time
	• Time zone
Live View	(GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London
Video & Image	Automatically adjusts for daylight saving time changes
Audio	• Time mode
Event	O Synchronize with computer time
System	Date : 2013-06-06 Time : 15:45:09
About	• Synchronize with NTP server
	NTP server : 192.168.30.1 NTP Interval : 12 💌 [hour]
	O Set manually
	Date : 2013-06-05 Time : 07:42:18
	Date & Time Format
	Date Format : YYYY-MM-DD
	Time Format : 24 Hour
	Save Reset

#### Current Server Time

It displays the current date and time (24h clock). The time can be displayed in 12h clock format in the overlay (see below).

#### New Server Time

Select your time zone from the drop-down list. If you want the server clock to automatically adjust for daylight savings time, select the "Automatically adjustment for daylight saving time changes".

From the **Time Mode** section, select the preferred method to use for setting the time:

- **Synchronize with computer time:** sets the time from the clock on your computer.
- **Synchronize with NTP Server:** the network camera will obtain the time from an NTP server every 60 minutes.
- **Set manually:** this option allows you to manually set the time and date.

# 3.5.2 Live View

#### ▼ Source

Basic Configuration	Source				
Live View	Video Input Mode				
· Source					
🛛 Video & Image	Video Mode	NTSC	~		
Audio			Save	Reset	
Event					
System					
About					

# • Video Input Mode

#### - Video Mode:

Choose Video Mode you wish to use from the drop-down list: NTSC or PAL

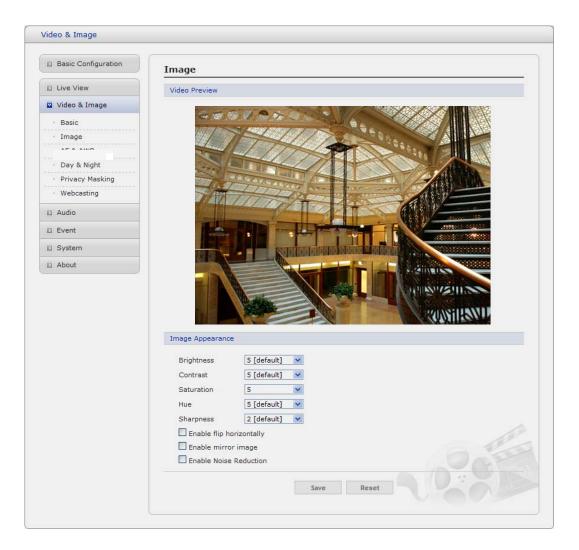
# 3.5.3 Video & Image

#### ▼ Basic

Basic Configuration	Video & Image	- Basic
Live View	Sensor Setting	
Video & Image	Capture mode	1600x1200 Max. 15fps 💙
Basic	Capture mode	
· Image	Stream 1 Setting	
· AE & AWB		
· Day & Night	Codec	H.264 Baseline Profile
Privacy Masking	Resolution	1600×1200
· Webcasting	Bitrate control	CBR
Audio	Bitrate	4000 🔽 [Kbps]
	Framerate	15
Event	GOP size	15 [130]
System		
About	Stream 2 Setting	
	Codec	MJPEG 🗸
	Resolution	640x480
	Framerate	15
	Quality	50 [1100]
	Stream 3 Setting	
	Codec	H.264 Baseline Profile 🕑
	Resolution	Same as Stream 1
	Bitrate control	CBR
	Bitrate	1000 V [Kbps]
	Framerate	15
	GOP size	15 [1 30]
		Save Reset

Refer to "3.5.1 Basic Configuration > Video & Image" for more details.

#### ▼ Image

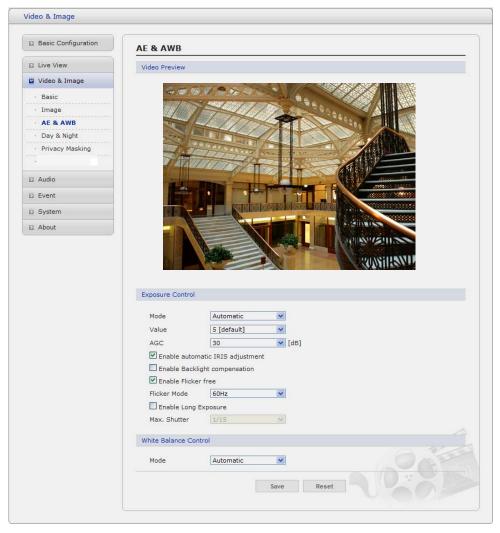


#### • Image Appearance

This page provides access to the advanced image settings for the network camera.

- **Brightness:** The image brightness can be adjusted in the range 1-10, where a higher value produces a brighter image.
- **Contrast:** The image contrast can be adjusted in the range 1-10.
- Saturation: Adjust the image's contrast by raising or lowering the value in this field.
- Hue: The image hue can be adjusted in the range 1-10.
- **Sharpness:** Controls the amount of sharpening applied to the image. A sharper image might increase image noise especially in low light conditions. A lower setting reduces image noise, but the image would be less sharp.
- Enable flip image: Check this box to flip the image.
- Enable mirror image: Check this box to mirror the image.
- Enable Noise Reduction: Check this box to reduce an image noise.
- Enable Wide Dynamic Range: Check this box to use the WDR function.

#### ▼ AE & AWB



This page provides access to set the exposure and white balance of the network camera.

#### • Exposure Control

Configure the exposure settings to suit the image quality requirements in relation to lighting consideration.

- **Mode:** Supports exposure modes to control the amount of light detected by the camera sensor based on settings for light conditions. The default setting is Auto.
- \* Automatic: Automatically sets the amount of light detected by the image sensor.
- \* Hold Current: Fixes the exposure at its current state.
- Value: Select a value in the drop-down list to tune the exposure.
- **AGC:** Select a maximum value for AGC (Auto Gain Control).
- Flicker Mode: Provides the options for flicker.
- \* **50Hz:** Select at 50 Hz environments.
- \* **60Hz:** Select at 60 Hz environments.
- Enable Long Exposure: Check this box to use the long exposure function.
- \* Max. Shutter: Select a maximum value for shutter speed

#### White Balance Control

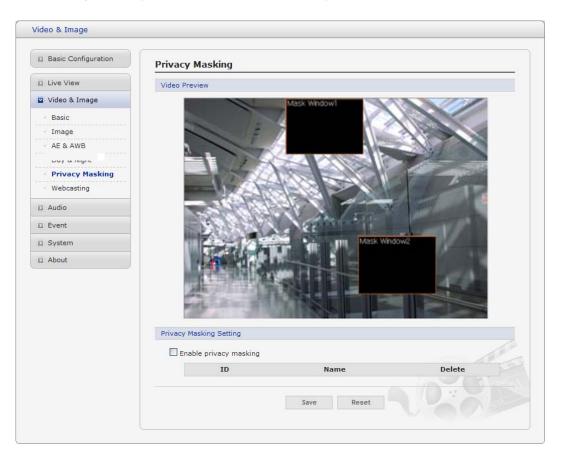
This adjusts the relative amount of red, green and blue primary colors in the image so that the neutral colors are reproduced correctly. The camera can be set to automatically adjust for the type of light and compensate for its color. Alternatively, the type of light source can be set manually.

From the drop-down list, select the white balance setting suitable for the lighting used for your camera. The available options are:

- **Automatic:** Automatic identification and compensation for the light source color. This can be used in most situations and is the recommended setting.
- **Fixed Indoor:** Fixed color adjustment, ideal for a room with incandescent (a glow) lighting and good for a normal color temperature around 2600K.
- **Fixed Fluorescent 1:** Fixed color adjustment; good for fluorescent lighting with a color temperature around 4000K.
- **Fixed Fluorescent 2:** Fixed color adjustment; good for fluorescent lighting with a color temperature around 5000K.
- **Fixed Outdoor 1:** Fixed color adjustment for sunny, with a color temperature around 6500K.
- Fixed Outdoor 2: Fixed color adjustment for cloudy, with a color temperature around 7500K.

#### ▼ Privacy Masking

The privacy masking function allows you to mask parts of the video image to be transmitted. You can set up to eight privacy masks and the color of privacy masks is black.



The privacy masks are configured by Mask windows. Each window can be selected by clicking with the mouse. It is also possible to **resize or delete**, **or move** the window, by selecting the appropriate window at the mouse menu on the video screen.

New Privacy Mask	
Select	•
Delete	
Freeze	

To create a mask window, follow steps:

- 1. Click the right button of mouse to see the mouse menu.
- 2. Select New Privacy Mask in the mouse menu.
- 3. Click and drag mouse to designate a mask window area.

You can also modify or delete a mask window index. Select an index and then, modify items or delete button. Select "Enable" to activate the privacy masking function.

#### ▼ Webcasting

The network camera can stream live video to a website. Copy the HTML code generated on the screen and pastes it in page code of the website you want to display live video.

<pre>Video &amp; Image     Basic     Image     AE &amp; AWB     Privacy Masking     Webcasting     Audio     Audio     Event     System     About     Webcasting     About     Webcasting     COBJECT id='HX_Media' codebase='http://192.168.50.31/NautilusV20.cab#V(e)     classid='clsid:731D29F4-2872-4542-B85F-539610D7C5DB' standby='Downloa     width=512 height=368 align=center hspace=0 vspace=0&gt;   </pre>	Basic Configuration	Webcasting
<pre>Image AE &amp; AWB  Privacy Masking  Webcasting Audio Event System About  System About About  System About About  System About About  System About Ab</pre>	Video & Image	Webcasting HTML code
<pre>Image AE &amp; AWB A</pre>	• Basic	
<pre> About Check Check</pre>	• Image	Stream 1 O Stream 2 O Stream 3
<pre>&gt; Privacy Masking &gt; Webcasting 4 Audio 4 Audio 4 Event 2 About About About </pre> <pre>     classid='clsid:731D29F4-2872-4542-B85F-539610D7C5DB' standby='Downloa width=512 height=368 align=center hspace=0 vspace=0&gt;  </pre> <pre>     </pre> <pre>     classid='clsid:731D29F4-2872-4542-B85F-539610D7C5DB' standby='Downloa width=512 height=368 align=center hspace=0 vspace=0&gt;  <pre>     </pre> <pre>     classid='clsid:731D29F4-2872-4542-B85F-539610D7C5DB' standby='Downloa width=512 height=368 align=center hspace=0 vspace=0&gt;  <pre>     </pre> <pre>     classid='clsid:731D29F4-2872-4542-B85F-539610D7C5DB' standby='Downloa width=512 height=368 align=center hspace=0 vspace=0&gt;  </pre> <pre>     classid='clsid:731D29F4-2872-4542-B85F-539610D7C5DB' standby='Downloa clsid:731D29F4-2872-4542-B85F-539610D7C5DB' standby='Downloa clsid:731D29F4-2872-4542-B85F-539610D7C5DB' standby='Downloa clsid:731D29F4-2872-4542-B85F-539610D7C5DB' standby='Downloa clsid:731D29F4-2872-4542-B85F-539610D7C5DB' standby='Downloa clsid:731D29F4-2872-4542-B85F-539610D7C5DB' standby='Downloa clsid:731D29F4-2872-4542-B85F-539610D7C5DB' standby='Downloa clsid:731D29F4-2872-4542-B85F-539610D7C5DB' standby='Downloa clsid:731D29F4-2872-4542-B85F-539610D7C5DB' standby='Downloa clsid:731D29F4-2872-454555-531/1/standby='Downloa clsid:731D</pre></pre></pre></pre></pre></pre></pre>	· AE & AWB	
Webcasting         Audio         Audio         Event         System         About         Var obj = document.getElementById('HX_Media'); function onInit()         {         obj.Connect(0, '192.168.50.31/NautilusV20.cab#Vecclassid='clsid:'31D29F4-2872-4542-885F-539610D7C5DB' standby='Downloa width=512 height=368 align=center hspace=0 vspace=0>   <	Privacy Masking	
<pre>a Audio classid='clsid:731D29F4-2872-4542-885F-539610D7C5DB' standby='Downloa width=512 height=368 align=center hspace=0 vspace=0&gt;    <script> var obj = document.getElementById('HX_Media'); function on1nit() { obj.Initialize(1); obj.ViewLayout = 0; obj.Connect(0, '192.168.50.31/1/stream1', 80, 3, 0, 0); obj.SetMenuType(0); } function onClose() { obj.Disconnect(0); } </pre></td><td>· Webcasting</td><td><div></td></tr><tr><td><pre>1 Event 2 System 3 System 4 About 4 About</td><td>a Audio</td><td>classid='clsid:731D29F4-2872-4542-B85F-539610D7C5DB' standby='Downloa</td></tr><tr><td><pre>About About A</td><td>2 Event</td><td></OBJECT></td></tr><tr><td><pre>var obj = document.getElementById('HX_Media'); function onInit() {             obj.Initialize(1);             obj.ViewLayout = 0;             obj.Connect(0, '192.168.50.31/1/stream1', 80, 3, 0, 0);             obj.SetMenuType(0);             }             function onClose()             {                  obj.Disconnect(0);             } </pre></td><td>System</td><td></HTML></td></tr><tr><td></td><td>About</td><td><pre>var obj = document.getElementById('HX_Media'); function onInit() {     obj.Initialize(1);     obj.Voinect(0, '192.168.50.31/1/stream1', 80, 3, 0, 0);     obj.Connect(0, '192.168.50.31/1/stream1', 80, 3, 0, 0);     obj.SetMenuType(0);     function onClose()     {         obj.Disconnect(0);         /         c/script> </pre></td></tr></tbody></table></script></pre>		

**Note:** To use webcasting service, the Enable Anonymous viewer login option must be checked. Refer to "3.5.1 Basic Configuration > Users" for more details.

#### 3.5.4 Audio

Basic Configuration	Audio - Basic		
Live View	Audio Setting		
Video & Image	Enable audio		
Audio	- Compression type	G.711 u-law	
Basic	- Sample rate	8KHz	
Event	- Sound bitrate	64kbps	
System	Audio Input		
D About	Input volume	[dB]	Auto
	Audio Output		
	Enable full duplex		
	- Output volume	0 (dB)	Mute
		Save Reset	

Refer to "3.5.1 Basic Configuration > Audio" for more details.

#### 3.5.5 Event

# 1) Event-In

#### ▼ On Boot

Basic Configuration	Event In - On Boot
🖾 Live View	On Boot Setting
🗈 Video & Image	Enable on boot
Audio	- Dwell time 3 [1 180] sec
Event	Save Reset
<ul> <li>Event In</li> <li>On Boot</li> <li>Manual Trigger</li> <li>Motion</li> <li>Network Loss</li> <li>Event Out</li> <li>Event Map</li> </ul>	Save Reset
<ul> <li>System</li> <li>About</li> </ul>	

This is used to trigger the event every time the Network Camera is started. Select "Enable" to activate the motion event.

#### ▼ Event In – Alarm In

Basic Configuration	Event In - Alarm In
D Video & Image	Alarm In Port 1 Setting
🛛 Audio	Enable alarm in port 1
Event	- Type
<ul> <li>Event In <ul> <li>On Boot</li> <li>Alarm In</li> <li>Manual Trigger</li> <li>Motion</li> <li>Network Loss</li> </ul> </li> <li>Event Out <ul> <li>Event Out</li> <li>Event Map</li> </ul> </li> <li>System</li> <li>About</li> </ul>	- Dwell time 3 [1 180] sec

This page allows you to configure the input supported by the camera. The Port can be given as Normally Open or Normally Close state, and their Normal state can be configured.

An input will be inactive as long as its Normal state equals its Current state. The 2 options for Normal state are NO (Normally Open) and NC (Normally Close). The input is activated when the Current state changes so that it no longer equals the Normal state.

#### Alarm In Port 1 Setting

Click the Enable alarm in port1 checkbox to enable the Alarm In port 1.

- **Type:** The default setting is NO.
- \* NO: Normally Open

As an example, if the Normal state for a pushbutton connected to an input is Open circuit, this means that as long as the button is not pushed (and the Current state remains as Open circuit), the state will be inactive.

- \* NC: Normally Close
   When the button is pushed, the circuit is grounded, the input's state changes to Grounded circuit and the input will no longer be in its normal state it will have become active.
   An input on the camera has an Open circuit when disconnected or when there is a voltage.
- **Dwell time:** The default setting is 60 seconds. Dwell time means how long time the alarm input signal hold on as an input signaling source.

Click the Save button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

### **Users manual**

vent	
Basic Configuration	Event In - Manual Trigger
🗵 Video & Image	Manual Trigger 1 Setting
<ul> <li>Audio</li> <li>Event</li> </ul>	Enable manual trigger 1 - Dwell time 3 [1 180] sec
Event In	Manual Trigger 2 Setting
<ul> <li>Alarm In</li> <li>Manual Trigger</li> <li>Motion</li> </ul>	Enable manual trigger 2 - Dwell time 3 [1 180] sec
Network Loss	Manual Trigger 3 Setting
<ul> <li>Event Out</li> <li>Event Map</li> </ul>	Enable manual trigger 3 - Dwell time 3 [1 180] sec
System	Manual Trigger 4 Setting
D About	Enable manual trigger 4 - Dwell time 3 [1 180] sec Save Reset

This option makes use of the manual trigger button provided on the live view page, which are used to start or stop the event type manually. Alternatively the event can be triggered via the product's API (Application Programming Interface).

### ▼ Motion

	Event In - Motion						
E Live View	Video Preview						_
🗈 Video & Image	2//2		The Party New York, Name		1		
Audio	2 0			: 1	t		
V Event	:		•	: /.			
🗆 Event In							
· On Boot					. 1 -	5-	
Manual Trigger     Motion		💽 🖬 Gates	/ Portes				
Network Loss		+ = c Grade				+-1	
Event Out	COFFIE	Mojier		Motic	in 2	150	
Event Map	$\uparrow$						
0.122.081					10 A 10		
E System		A STATE OF THE STA					
<ul><li>System</li><li>About</li></ul>					P		
	Video Motion Detection Settin	g					
	Video Motion Detection Settin						
		tection					
	Enable video motion de	tection ight	Threshold	Sensitivity	Dwell	Delete	
	Enable video motion de O Day O Day & N ID Name	tection ight Type	Threshold 2	Sensitivity 55			
	Enable video motion de	tection ight Type	2	55	Dwell 3	Delete X	
	Enable video motion de O Day O Day & N ID Name	tection ight Type I Include	2 3 2	55 1 55			
	Enable video motion de O Day O Day & N ID Name 1 Motion	tection ight Type I Include	2	55	3	x	
	Enable video motion de O Day O Day & N ID Name 1 Motion	tection ight Type I Include	2 3 2	55 1 55	3	x	

Motion detection is used to generate an alarm whenever movement occurs (or stops) in the video image. A total of 8 Motion and/or Mask windows can be created and configured.

Motion is detected in defined **Motion** windows, which are placed in the video image to target specific areas. Movement in the areas outside the motion windows will be ignored. If part of a motion window needs to be masked, this can be configured in a **Mask** window.

#### • Pre-Viewer

Motion detection windows are configured by Motion or Mask windows. Each window can be selected by clicking with the mouse. It is also possible to **resize or delete**, **or move** the window, by selecting the appropriate window at the mouse menu on the video screen.



To create a motion or mask window, follow steps:

- 1. Click the right button of mouse to see the mouse menu.
- 2. Select New Motion (or Mask) Window in the mouse menu.
- 3. Click and drag mouse to designate a motion area.

#### • Motion Detection Setting

The behavior for each window is defined by adjusting the Threshold and Sensitivity, as described below.

A motion index is a set of parameters describing Window Name, Type, Threshold, Sensitivity, and Dwell Time. Window Types is one of Motion and Mask windows.

- **Threshold:** Sets up the threshold for the motion detection.
- **Sensitivity:** Sets up the sensitivity for the motion detection.
- **Dwell Time:** Set the hold time an event lasts for the specified hold time from the point of detection of a motion.

You can also modify or delete a motion index. Select an index and then, click the Modify or Delete button.

Select "Enable" to activate the motion window.

#### ▼ Network Loss

Basic Configuration	Event In - Network Loss
E Live View	Network Loss Setting
🗈 Video & Image	Enable network loss
🗈 Audio	- Dwell time 3 [1 180] sec
Event	Save Reset
<ul> <li>Event In         <ul> <li>On Boot</li> <li>Manual Trigger</li> <li>Motion</li> <li>Network Loss</li> </ul> </li> <li>Event Out</li> <li>Event Map</li> <li>System</li> </ul>	
D About	

This is used to trigger the event every time the network connection is failed. Select "Enable" to activate the Network Loss event.

## 2) Event-Out

## ▼ SMTP(E-Mail)

Basic Configuration	Event Out - SMTP(E-M	lail)		
Video & Image	SMTP(E-Mail) Setting			
2 Audio	Enable SMTP			
🗄 Event In	- Interval	60	[1 86400] sec	
Event Out	- Aggregate events	50		
• SMTP(E-Mail)	Use mail server			
· FTP & JPEG	- Mail server			
HTTP Server	- Port	25		
<ul> <li>Alarm Out</li> <li>Audio Alert</li> </ul>	Enable use(SMTP)	authentication		
Record	- User name			
· Event Map	- Password			
System	- Login method	AUTH LOGIN		
About	SMTP(E-Mail) Receiver			
	Receiver 1	Receiver 2	2	
	Receiver 3	Receiver 4	4	
	Receiver 5	Receiver 6	5	
	Receiver 7	Receiver 8	3	
	SMTP(E-Mail) Test			
	Receiver	Test		
		Save Reset	t	

The Network Camera can be configured to send event and error email messages via SMTP (Simple Mail Transfer Protocol).

#### • SMTP(E-Mail) Setting

Select "Enable" to activate the SMTP operation.

- **Mail Server / Port:** Enter the host names (or IP addresses) and port numbers for your mail server in the fields provided, to enable the sending of notifications and image email messages from the camera to predefined addresses via SMTP.
- **Sender:** Enter the email address to be used as the sender for all messages sent by the Network Camera.
- **Interval:** Represents the frequency of the email notification when an event occurs.
- Aggregate events: Shows the maximum number of emails sent within each interval.

If your mail server requires authentication, check the box for Use authentication to log in to this server and enter the necessary information.

- User Name/Password: Enter the User Name and Password as provided by your network administrator or ISP (Internet Service Provider).

To ensure that the login procedure is performed as securely as possible when using SMTP authentication, you must define the weakest authentication method allowed.

- Login Method: Set the Weakest method allowed to the highest/safest method supported by the mail server. The most secure method is listed in the drop-down list: Login / Plain
- SMTP(E-Mail) Receiver
  - **Receiver:** Enter an email address. You can also register the e-mail address of recipients up to 8.
- SMTP(E-Mail) Test
  - **Receiver:** Enter an email address and click the Test button to test that the mail servers are functioning and that the email address is valid.

event	
Basic Configuration	Event Out - FTP & JPEG
🖾 Video & Image	FTP Setting
🗈 Audio	Enable FTP
Event	- Server Passive mode
🗄 Event In	- Port 21
Event Out     SMTP(E-Mail)     FTP & JPEG     HTTP Server	- Remote directory      - User name      Password
<ul> <li>Alarm Out</li> <li>Audio Alert</li> </ul>	JPEG Setting
Record     Event Map     System     About	Pre-event         Time : 5         [0 30] sec         FPS : 1         [1 2] fps           Post-event         Time : 5         [0 30] sec         FPS : 1         [1 2] fps           Prefix file name         basename_
	Save Reset

When the network camera detects an event, it can record and save images to an FTP server. Images can be sent as e-mail attachments. Check the box to enable the service.

• FTP Setting

▼ FTD & IDFG

- **Server:** Enter the server's IP address or host name. Note that a DNS server must be specified in the TCP/IP network settings if using a host name.
- **Port:** Enter the port number used by the FTP server. The default is 21.
- Use passive mode: Under normal circumstances the Network Camera simply requests the target FTP server to open the data connection. Checking this box issues a PASV command to the FTP server and establishes a passive FTP connection; whereby the Network Camera actively initiates both the FTP control and data connections to the target server. This is normally desirable if there is a firewall between the camera and the target FTP server.
- **Remote directory:** Specify the path to the directory where the uploaded images will be stored. If this directory does not already exist on the FTP server, there will be an error message when uploading.
- User name/Password: Provide your log-in information.
- JPEG Setting
  - **Pre-event:** A pre-event buffer contains images from the time immediately preceding the event trigger. These are stored internally in the server. This buffer can be very useful when checking to see what happened to cause the event trigger.

Check the box to enable the pre-trigger buffer, enter the desired total length in seconds, minutes or hours, and specify the required image frequency.

- **Post-event:** This function is the counterpart to the pre-trigger buffer described above and contains images from the time immediately after the trigger. Configure as for pre-event.
- **Prefix file name:** This name will be used for all the image files saved. If suffixes are also used, the file name will take the form cyrefix>.<suffix>.<extension>
- Additional suffix: Add either a date/time suffix or, a sequence number with or without a maximum value

## ▼ HTTP Server

Basic Configuration	Event Out - HTTP Server
Video & Image	HTTP Server Setting
🗈 Audio	Enable HTTP server
Event	- URL
🗄 Event In	- Port 80
<ul> <li>Event Out</li> <li>SMTP(E-Mail)</li> <li>FTP &amp; JPEG</li> </ul>	- User name - Password
HTTP Server     Alarm Out	HTTP Server Test
<ul> <li>Audio Alert</li> <li>Record</li> </ul>	Send message
· Event Map	Save Reset
System	
About	

When the network camera detects an event, HTTP Server is used to receive uploaded image files and/or notification messages. Check the box to enable the service.

## • HTTP Server Setting

- **Name:** The name of the HTTP event server. Use a descriptive name.
- **URL:** The network address to the server and the script that will handle the request. For example: <u>http://192.168.12.244/cgi-bin/upload.cgi</u>
- User name/Password: Provide your log-in information.

#### HTTP Server Test

When the setup is complete, the connection can be tested by clicking the Test button.

## ▼ Event Out – Alarm Out

Basic Configuration	Event Out - Alarm Out
🛛 Video & Image	Alarm Out Port Setting
🗈 Audio	Enable alarm out
Event	- Type
🗄 Event In	Save Reset
<ul> <li>Event Out</li> <li>SMTP(E-Mail)</li> <li>FTP &amp; JPEG</li> <li>HTTP Server</li> <li>Audio Alert</li> <li>Record</li> <li>Event Map</li> <li>System</li> </ul>	
About	

## Enable alarm out

Click the Enable alarm out checkbox to enable the Alarm Out port.

- **Type:** The default setting is NO.
- \* NO: Normally Open
- \* NC: Normally Close

Click the Save button to save the settings, or click the Reset button to clear all of the information you entered without saving it.

## ▼ Audio Alert

Basic Configuration	Event Out - Audio Alert				
🗉 Video & Image	Audio Alert Setti	ing			
🖾 Audio	Enable auc	lin alert			
Event	- Audio file			Browse	Upload
🗄 Event In	- Audio file	2		Browse	Upload
<ul> <li>Event Out</li> <li>SMTP(E-Mail)</li> </ul>	- Audio file	3		Bro wse	Upload
· FTP & JPEG	Audio Alert Test				
HTTP Server     Alarm Out	No.	File Name	File Size	Play Time	Bitrate
- Audio Alert	1	365.g711u	54 KB	7	64 kbps
Record	* Note				
• Event Map	Total file s	ize must be less than 512KE	L.		
System		T	est Remove		
E About					
		Sa	ve Reset		
					12

When the network camera detects an event, it can output a predefined audio data to external speaker. Check the box to enable the service.

#### • Audio Alert Setting

To use the audio alert with the Network Transmitter, an audio data file made by user must be uploaded from your PC. Provide the path to the file directly, or use the Browse button to locate it. Then click the Upload button.

An audio file for Audio Alert can be made by Audio Recorder tool in the NCTitanium software.

#### Audio Alert Test

When the setup is complete, the audio output can be tested by clicking the Test button. To remove an audio file, select index and click the Remove button.

**Note:** For a proper operation of Audio Alert, you must enable "full duplex" in Audio setting page.

#### Audio Recorder

To use Audio Recorder tool to make an audio file for Audio Alert function, you must install the NCTitanium on the installation CD at first.

The The NCTitanium program (Start>All Programs>NCTitanium>Tools>ARecorder) in your PC, the main window will be displayed as below.

🍰 ARecorder - v1.0.0.1	🛃 ARecorder - v1.0.0.1	
0 SEC 30 SEC	0 SEC	30 SEC

The description of each button in the ARecorder window follows.

	Open: Open an audio file.
٠	Capture: Capture audio from the microphone in your PC.
	Save: Save a captured file to your PC. (PCM format)
*	Encode: Encode a current capture file or opened PCM file to G.711 file for Audio Alert.
	Play: Play a current audio file.
	Stop: Stop playing audio.

Procedures to make an audio file in G.711 format for Audio Alert.

- 1. Connect the microphone in your PC.
- 2. Click the Capture button and talk to the microphone to record the audio or voice. You can record up to 30 seconds. Click the Stop button to stop on capturing.
- 3. Click the Save button and then set the file name to save a current capture file with PCM format. If you don't need to make any PCM file, skip this step and then go to the step 5 directly.
- 4. Click the Open button and then select the file name to open an audio file in PCM format.
- 5. Click the Encode button to encode a current audio file to G.711 format for Audio Alert. Set the file name and encode parameters.

ENCODE SETU	P 🔀
MODEL	H.264 G.711 supported
CODEC	G.711 uLaw
SAMPLE RATE	8.000 kHz
BITS PER SAMPLE	16 bits
CHANNELS	Mono
BITRATE	64 kbps
	1

**Caution:** All parameters must be synchronized with ones in audio setting page of network devices for a proper operation.

#### ▼ Record

Basic Configuration	Event Out - Record
Live View	Record Setting
Video & Image	Enable Record
Audio	☑ Overwrite
Event	Continuous Record
Event In	* Note : Continuous Record is not available while using SD.
Event Out	- Stream Type Stream 1 👻
· SMTP(E-Mail)	- Pre-event 0 [0 10] sec
FTP & JPEG     HTTP Server	- Post-event 0 [0 60] sec
Record	Record schedule
Event Notification	No Recording
Boost	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Event Map	SUN
System	MON
About	
	THU
	FRI
	SAT SAT
	All Select All Delete
	Device Setting
	Device Type SD 💌
	Format
	Device Status : No Storage
	Device Remove
	Remove
	Device Information
	Total Used Available Used Percent Bad Sector
	0.00MB 0.00MB 0.00% 0.00%
	Save Reset

When the network camera detects an event, it can record video stream in the Micro SD Memory (not supplied) or NAS (Network Attached Device) as a storage device. Check the box to enable the service.

- Record Setting
  - **Overwrite:** Click checkbox to overwrite the storage device.
  - Stream Type: You can select Stream1, Stream2, or Stream3.
    - \* Stream1: H.264 or MPEG-4 data
      - \* Stream2: MJPEG data
    - \* Stream3: You can select VIDEO or IMAGE.
  - **Pre-event:** Enter pre-event time value for storage device pre-recording.
  - **Post-event:** Enter post-event time value for storage device post-recording.
- Record Schedule

You can set the weekly recording schedule for each day. Drag or click area by a box unit at first. Clicking the block toggles the recording between on and off.

Click the "All Select" button to set a schedule for the entire week or a whole day, respectively.

#### • Device Setting

Select Device Type to be recorded in the drop-down list.

- SD: built-in SD card
- **CIFS:** A file format for a NAS device.
- **NFS:** A file format for a NAS device.

Note1: Common Internet File System (CIFS) is a remote file access protocol that forms the basis for Windows file sharing, network printing, and various other network services. CIFS requires a large number of request/response transactions and its performance degrades significantly over high-latency WAN links such as the Internet.

Note2: Network File System (NFS) is a network file system protocol, allowing a user on a client computer to access files over a network in a manner similar to how local storage is accessed. NFS, like many other protocols, builds on the Open Network Computing Remote Procedure Call (ONC RPC) system.

Device Setting	
Device Type	
Address	
Remote directory	
Capacity	0 GB
ID	
Password	Check

- \* Address: Enter IP address for NAS device.
- \* **Remote Directory:** Enter directory or folder location to be recorded in the NAS device.
- \* **Capacity:** Enter the capacity of storage to be used. It must be less than the total storage capacity.
- \* **IP/Password:** Enter ID and Password. The network camera will ask them whenever you access NAS device.
- \* Check: Press the Check button to check the validity of Device Setting data.

#### • Format

Click the Format button to format SD card.

#### Device Information

Show current SD card information.

## ▼ Event Notification

Basic Configuration	Event Out - Event Notification		
🖾 Live View	Event Notification Setting		
🛛 Video & Image	Enable event notification		
🛙 Audio	- Notification server URL		
Event	- Notification server port	80	
🗄 Event In		Save Reset	
Event Out     SMTP(E-Mail)     FTP & JPEG     HTTP Server     Record     Event Notification     Boost		uure nuser	
• Event Map			
D System			
🖾 About			
			L'A

When the network camera detects an event, Notification Server is used to receive notification messages as a type of XML data format. Check the box to enable the service.

- Event Notification Setting
  - **Notification Server URL:** The network address to the server and the script that will handle the request.

#### ▼ Boost

Basic Configuration	Event Out - Boost	t	
Live View	Boost Setting		
🗈 Video & Image	Enable boost		
Audio	- Boost Stream	Stream 1 💉	
Event		Normal Condition	Boost Condition
🗄 Event In	Framerate	15 💌	15 🗸
Event Out	Bitrate control	CBR 🗸	tertaine ini menerati ( ) ( ) ( ) ( )
<ul> <li>SMTP(E-Mail)</li> <li>FTP &amp; JPEG</li> </ul>	Bitrate	4000 V [Kbps]	4000 🕑 [Kbps]
HTTP Server     Record     Event Notification     Boost     Event Map		Save Reset	
System			
D About			

The Boost feature is used in conjunction with event detection. When this feature is turned ON, the Framerate and Bitrate in the boost condition can be set to a different value than the ones in the normal condition field. When an event is detected, the camera will boost the Framerate and Bitrate from the normal condition to this boosted level for the duration of the event.

Check the box to enable the service.

#### Boost Setting

You can set the condition in Normal and Boost mode.

- Boot Stream: Select a video stream for each condition in the drop-down list.
- Framerate: Select a frame refresh rate per second for each condition in the drop-down list.
- **Bitrate control:** Select VBR or CBR in the drop-down list in Normal Condition. You can't change it in Boost Condition.
- **Bitrate:** Select a value for each condition in the drop-down list.

## 3) Event Map

Basic Configuration	Event Map			
Live View	Event Map List			
🛛 Video & Image	Event Name	Event In	Event Out	
Event	Lvent Name	LVCIII	Event out	
🗄 Event In		Add Modify	Remove	
🗄 Event Out		induly	Remote	
· Event Map				
System				
D About				
				1 1

The event map allows you to change the settings and establish a schedule for each event trigger from the Network Camera. You can register the event map up to max. 15.

Click Add button to make a new event map and you can see a popup window as below.

General

Enter the name for a new event map.

Event In

Select an event type in the drop down list.

- Event Out
  - **E-mail:** Select email addresses you want to send via email that an event has occurred.
  - **FTP:** Select checkbox beside FTP to record and saves images to an FTP server when an event has occurred.
  - **HTTP Server:** It sends notification messages to an HTTP server that listens for these. The destination server must first be configured on the Event In page. Enter a message you want to send.
  - **Audio Alert:** Select a Audio alert file the Network Camera output when audio alert event triggered. The Audio alert file must first be configured on the Event In page.
  - **Record:** Select a record check box you want to record when an event has occurred.

Add Event Map			
General			
• Name	New Event		
Event In			
• Туре	Onboot	✓	
Event Out			
E-Mail To e-mail address 1 To e-mail address 3		To e-mail address 2	
To e-mail address 3		To e-mail address 6	
To e-mail address 7		To e-mail address 8	
Subject Additional info			
FTP			
HTTP server			
Message			
Record			
		OK Cancel	

#### General

Enter the name for a new event map.

#### Event In

Select an event type in the drop down list.

- Event Out
  - **E-mail:** Select email addresses you want to send via email that an event has occurred.
  - **FTP:** Select checkbox beside FTP to record and saves images to an FTP server when an event has occurred.
  - **HTTP Server:** It sends notification messages to an HTTP server that listens for these. The destination server must first be configured on the Event In page. Enter a message you want to send.
  - **Audio Alert:** Select a Audio alert file the Network Transmitter output when audio alert event triggered. The Audio alert file must first be configured on the Event In page.

## 3.5.6 System

#### 1) Information

You can enter the system information. This page is very useful when you refer device information after installation.

Basic Configuration	Information		
🛙 Video & Image	Device Name Configura	tion	
🛙 Audio		H.264 Network Camera	
E Event	Device name	H.264 Network Camera	
System	Location Configuration		
· Information	Location1		
I Security	Location2		
· Date & Time	Location3		
I Network	Location4		
· Language			
• Maintenance		Save Reset	
· Support			
🛙 About			

- **Device Name Configuration** Enter the device name.
- Location Configuration Enter the location information. You can enter that by four.

## 2) Security

#### ▼ Users

Basic Configuration	Security - Users		
🛛 Video & Image	User Setting		
🛛 Audio	Enable anonymous viewer	login	
Event		login	
System	User List Setting		
Information	User Name	User Group	Authority
Security	admin	administrator	live, setup, system
Users		Add Modify	Remove
HTTPS			
• IP Filtering		Save Reset	
· Date & Time			
🗉 Network			
• Language			
· Maintenance			
· Support			
About			
2			

User access control is enabled by default, when the administrator sets the root password on first access. New users are authorized with user names and passwords, or the administrator can choose to allow anonymous viewer login to the Live View page, as described below:

#### • User Setting

Check the box to enable anonymous viewer login to the Network Camera without the user account. When using the user account, users have to try log-in at every access.

#### • User List Setting

This section shows a registered user account. Enter a user name and password to be added, and register them by pressing the Add button. You can see the pop-up window as below.

name : user1	
ord :	
m password :	
group : guest	~
guest operator administrator	
guest operator	

## ▼ HTTPS

Basic Configuration	Security - HTTPS
🗵 Video & Image	HTTPS Connection Policy
Event	
System	Connection Mode
· Information	Private Certificate
Security Users HTTPS Date & Time Network	Browse and click Upbad     Note     When private certificate does not exist, default certificate is used.     Save Reset
Language     Maintenance     Support	
D About	

For greater security, the Network Camera can be configured to use HTTPS (Hypertext Transfer Protocol over SSL (Secure Socket Layer)). That is, all communication that would otherwise go via HTTP will instead go via an encrypted HTTPS connection.

#### HTTPS Connection Policy

Choose the form of connection you wish to use from the drop-down list for the administrator, Operator and Viewer to enable HTTPS connection (set to HTTP by default).

- HTTP
- HTTPS
- HTTP & HTTPS

#### • Upload Certificate

To use HTTPS for communication with the Network Camera, An official certificate issued by a CA (Certificate Authority) must be uploaded from your PC. Provide the path to the certificate directly, or use the **Browse** button to locate it. Then click the **Upload** button.

Please refer to the home page of your preferred CA for information on where to send the request. For more information, please see the online help.

## ▼ IP Filtering

Basic Configuration	Security - IP Filter	ring		
Video & Image	IP Filtering Setting			
Audio	Enable IP filtering			
Event	On/Off Priority	Policy	Start IP	End IP
System	1	ALLOW 😽	0.0.0.0	0.0.0.0
	2	ALLOW 😒	0.0.0.0	0.0.0.0
Information	3	ALLOW 💌	0.0.0.0	0.0.0.0
Security	4	ALLOW 😒	0.0.0.0	0.0.0.0
* Users	5	ALLOW 😽	0.0.0.0	0.0.0.0
· HTTPS				
· IP Filtering			Save Reset	
· Date & Time				
Network				
· Language				
Maintenance				
· Support				
About				

Checking the **Enable IP address filtering** box enables the IP address filtering function. Up to 256 IP address entries may be specified (a single entry can contain multiple IP addresses). Click the **Add** button to add new filtered addresses.

When the IP address filter is enabled, addresses added to the list are set as allowed **or** denied addresses. All other IP addresses not in this list will then be allowed or denied access accordingly, that is, if the addresses in the list are allowed, then all others are denied access, and vice versa. See also the online help for more information.

Note that users from IP addresses that will be allowed must also be registered with the appropriate access rights (Guest, Operator or Administrator). This is done from Setup> System>Security>Users.

## 3) Date & Time

Basic Configuration	Date & Time
Video & Image	Current Server Time
a Audio	Date : 2001-05-31 Time : 20:25:20
Event	
System	New Server Time
Information	Time zone
E Security	(GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London
· Date & Time	Automatically adjustment for daylight saving time changes
Network	• Time mode
· Language	
· Maintenance	Synchronize with computer time     Date : 2012-04-23     Time : 09:41:32
Support	Date : 2012-04-23 Time : 09:41:32
	O Synchronize with NTP server
About	NTP server : time.nist.gov NTP Interval : 12 💌 [hour]
	O Set manually
	Date : 2001-05-31 Time : 20:25:19
	Date & Time Format
	Date Format : YYYY-MM-DD
	Time Format : 24 Hour
	Save Reset

#### • Current Server Time

It displays the current date and time (24h clock). The time can be displayed in 12h clock format in the overlay (see below).

#### New Server Time

Select your time zone from the drop-down list. If you want the server clock to automatically adjust for daylight savings time, select "Automatically adjusts for daylight saving time changes".

From the Time Mode section, select the preferred method to use for setting the time:

- **Synchronize with computer time:** sets the time from the clock on your computer.
- **Synchronize with NTP Server:** the network camera will obtain the time from an NTP server every 60 minutes.
- **Set manually:** this option allows you to manually set the time and date.

**Note:** Note that if using a host name for the NTP server, a DNS server must be configured under TCP/IP settings.

#### 4) Network

Basic Configuration	Network - Basic			
Video & Image	IP Address Configuration			
Audio				
Event	O Obtain IP address via DHCP O Use the following IP address :			
System	- IP address 192 . 168 . 50 . 31			
Information	- Subnet mask 255 , 255 , 0			
Security	- Default router 192 . 168 . 50 . 1			
· Date & Time				
	IPv6 Address Configuration			
Basic	Enable IPv6			
· DDNS	IPv6 address : fe80::207:d8ff:fe10:1703/64			
	DNS Configuration			
* RTP				
• UPnP	O Obtain DNS server via DHCP			
· QoS	Use the following DNS server address :			
• NAT Traversal	- Domain name			
<ul> <li>Zeroconf</li> </ul>	- Primary DNS server 168 . 126 . 63 . 1			
· Bonjour	- Secondary DNS server 0 . 0 . 0			
· Language				
· Maintenance	Host Name Configuration			
· Support	Host Name HPCB-C1AAH3S0007D810170:			
About	Services			
	HTTP port 80			
	HTTPS port 443			
	RTSP port 554			
	ARP/Ping setting			
	Enable ARP/Ping setting			
	Save Reset			

Setting in regard to network can be executed. Settings for IP, DNS, Host Name, Port, and ARP/Ping can be established, along with setting for DDNS, uPnP, QoS, Zeroconfig, Bonjour.

#### ▼ Basic

- IP Address Configuration:
  - **Obtain IP address via DHCP:** Dynamic Host Configuration Protocol (DHCP) is a protocol that lets network administrators centrally manage and automate the assignment of IP addresses on a network. DHCP is enabled by default. Although a DHCP server is mostly used to set an IP address dynamically, it is also possible to use it to set a static, known IP address for a particular MAC address.
  - **Use the following IP address:** To use a static IP address for the Network Camera, check the radio button and then make the following settings:
  - \* IP address: Specify a unique IP address for your Network Camera.
  - \* **Subnet mask:** Specify the mask for the subnet the Network Camera is located on.
  - \* **Default router:** Specify the IP address of the default router (gateway) used for connecting devices attached to different networks and network segments.

## • IPv6 Address Configuration

Check this box to enable IPv6. Other settings for IPv6 are configured in the network router.

## • DNS Configuration

DNS (Domain Name Service) provides the translation of host names to IP addresses on your network.

- **Obtain DNS Server via DHCP:** Automatically use the DNS server settings provided by the DHCP server. Click the View button to see the current settings.
- Use the following DNS server address to enter the desired DNS server by specifying the following:
- \* **Domain name:** enter the domain(s) to search for the host name used by the Network Camera. Multiple domains can be separated by semicolons (;). The host name is always the first part of a Fully Qualified Domain Name, for example, myserver is the host name in the Fully Qualified Domain Name myserver.mycompany.com where mycompany.com is the Domain name.
- \* **DNS servers:** enter the IP addresses of the primary and secondary DNS servers.

#### Host Name Configuration

- **Host Name:** enter the host name to be used as device information in the client software or SmartManager.

## Services

- **HTTP port:** Enter a port to receive a service through the HTTP. Default Port Number is '80'.
- **HTTPS port:** Enter a port to receive a service through the HTTPS. Default Port Number is '443'.
- **RTSP port:** Enter a port to receive a service through the RTSP. Default Port Number is '554'.

#### ARP/Ping Setting

- Enable ARP/Ping setting of IP address - The IP address can be set using the ARP/Ping method, which associates the unit's MAC address with an IP address. Check this box to enable the service.

Leave disabled to prevent unintentional resetting of the IP address.

## ▼ DDNS

Basic Configuration	Network - DDNS	
D Video & Image	Internet DDNS (Dynamic Domain	Name Service)
🗈 Audio	Enable DDNS	
Event	* Note	
System		to configure at least primary DNS server in DNS configuration
<ul> <li>Information</li> </ul>	settings to use Dynamic DNS	5.
I Security	- DDNS Server	cctv-network.co.kr
• Date & Time	- Registered host	
Network	- User name	
Basic	- Password	
DDNS	- Confirm password	
• RTP	- Maximum time interval	1 hour
• UPnP	🗌 Register local network IF	P address
· QoS	Registered IP address :	
· NAT Traversal		
Zeroconf		Save Reset
· Bonjour		
• Language		
· Maintenance		
· Support		

#### • Internet DDNS(Dynamic Domain Name Service)

When using the high-speed Internet with the telephone or cable network, users can operate the Network Camera even on the floating IP environment in which IPs are changed at every access. Users should receive an account and password by visiting a DDNS service like <u>http://www.dyndns.com/</u>, or http://www.cctv-network.co.kr/.

- **Enable DDNS:** Check to get DDNS service to be available.
  - \* DDNS Server: Select the DDNS server.
  - \* Registered host: Enter an address of the DDNS server.
  - \* Username: Enter an ID to access to the DDNS server.
  - \* Password: Enter a password to be used for accessing the DDNS server.
  - \* Confirm: Enter a password again to confirm it.
  - \* **Maximum time interval:** Set a time interval to synchronize with the DDNS server. Select an item in the interval drop-down list.
  - \* Register local network IP address: Register a Network Video Server IP address to the DDNS server

## ▼ RTP

Basic Configuration	Network - RTP
Video & Image	Port Range
2 Audio 2 Event 2 System	Start port     30000     [30000 39920; only even values are available]       End port     30079
· Information	Multicast (Stream 1)
<ul> <li>Becurity</li> <li>Date &amp; Time</li> </ul>	Enable multicast - Multicast destination IP 231 . 1 . 128 . 20 [224.0.0.0 239.255.255.255]
Network Basic DDNS	- RTP port [1024 65530; only even values are available] - RTP TTL [1 255] Enable always multicast
• RTP • UPnP	Multicast (Stream 2)
<ul> <li>QoS</li> <li>NAT Traversal</li> <li>Zeroconf</li> <li>Bonjour</li> </ul>	Enable multicast         - Multicast destination IP       231 . 1 . 128 . 21       [224.0.0.0 239.255.255]         - RTP port       40006       [1024 65530; only even values are available]         - RTP TTL       1       [1 255]
· Language	Enable always multicast
Maintenance	Multicast (Stream 3)
· Support	Enable multicast         - Multicast destination IP       231 . 1 . 128 . 22       [224.0.0.0 239.255.255.255]         - RTP port       40008       [1024 65530; only even values are available]         - RTP TTL       1       [1 255]         Enable always multicast
	Save Reset

Have a setting for sending and receiving an audio or video on a real-time basis. These settings are the IP address, port number, and Time-To-Live value to use for the media stream(s) in multicast H.264 format. Only certain IP addresses and port numbers should be used for multicast streams. For more information, please see the online help.

- Port Range
  - **Start port:** Enter a value between 30000 and 39920
  - End port: Enter a value between 30000 and 39920

#### Multicast

This function is for sending Video and Audio to Multicast group.

- **Enable Multicast:** Check the checkbox to enable multicast operation.
- **Multicast destination IP:** Enter an IP between 224.0.0.0 and 239.255.255.255. Although it is empty, an IP will be entered automatically.
- **RTP port:** Enter a value between 1024 and 65530.
- **RTP TTL:** Enter a value between 1 and 255. If a network status is smooth, enter a lower value. On the other hand, if a network status is poor, enter a higher value. When there are many Network Cameras or users, a higher value may cause a heavy load to the network. For a detailed setting, please consult with a network manager.

#### ▼ UPnP

Basic Configuration	Network - UPnP		
🛙 Video & Image	UPnP Configuration		
🛙 Audio	Enable UPnP		
E Event	- Friendly name	HPCB-C1AAH3S-0007D8101703	
System			
· Information		Save Reset	
I Security			
· Date & Time			
Network			
• Basic			
· DDNS			
· RTP			
• UPnP			
· QoS			
· NAT Traversal			
· Zeroconf			
· Bonjour			
• Language			
· Maintenance			
Support			

The Network Camera includes support for UPnP<sup>™</sup>. UPnP<sup>™</sup> is enabled by default, and the Network Camera then is automatically detected by operating systems and clients that support this protocol.

**Note:** UPnP<sup>™</sup> must be installed on your workstation if running Windows XP. To do this, open the Control Panel from the Start Menu and select Add/Remove Programs. Select Add/Remove Windows Components and open the Networking Services section. Click Details and then select UPnP<sup>™</sup> as the service to add.

## ▼ QoS

Quality of Service (QoS) provides the means to guarantee a certain level of a specified resource to selected traffic on a network. Quality can be defined as a maintained level of bandwidth, low latency, and no packet losses.

Basic Configuration	Network - QoS
D Video & Image	DSCP Setting
Audio	
E Event	Live stream DSCP 0 [0 63] Event/Alarm DSCP 0 [0 63]
System	Management DSCP 0 [0 63]
· Information	
I Security	Automatic Traffic Control
· Date & Time	Enable automatic traffic control
Network     Basic     DDNS	Maximum bandwidth     1024     Mbit/s     Priority     Framerate     Automatic framerate control
• RTP • UPnP • <b>QoS</b>	Save Reset
<ul> <li>NAT Traversal</li> <li>Zeroconf</li> <li>Bonjour</li> </ul>	
<ul> <li>Language</li> <li>Maintenance</li> </ul>	
<ul> <li>Support</li> </ul>	

The main benefits of a QoS-aware network are:

- The ability to prioritize traffic and thus allow critical flows to be served before flows with lesser priority.
- Greater reliability in the network, thanks to the control of the amount of bandwidth an application may use, and thus control over bandwidth races between applications.

#### • DSCP Settings

For each type of network traffic supported by your network video product, enter a DSCP (Differentiated Services Code Point) value. This value is used to mark the traffic's IP header. When the marked traffic reaches a network router or switch, the DSCP value in the IP header tell the router or switch which type of treatment to apply to this type of traffic, for example, how much bandwidth to reserve for it. Note that DSCP values can be entered in decimal or hex form, but saved values are always shown in decimal.

The following types of traffic are marked:

- Live Stream DSCP:
- Event/Alarm DSCP:
- Management DSCP:

#### • Automatic Traffic Control

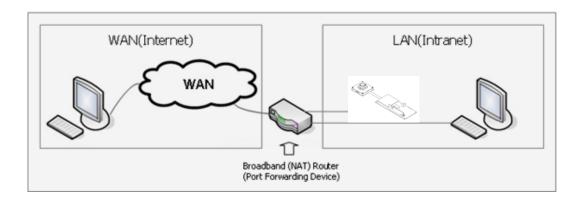
Set a limitation on user network resources by designating the maximum bandwidth.

- **Maximum bandwidth:** In case of sharing other network programs or equipment, it is possible to set a limitation on the maximum bandwidth in the unit of Mbit/s or kbit/s.
- **Auto frame rate:** Selected if not influenced by a network-related program or equipment without a limitation on the network bandwidth.

## ▼ NAT Traversal

A broadband router allows devices on a private network (LAN) to share a single connection to the Internet. This is done by forwarding network traffic from the private network to the "outside", that is, the Internet. Security on the private network (LAN) is increased since most broadband routers are pre-configured to stop attempts to access the private network (LAN) from the public network/Internet.

Use **NAT traversal** when your network cameras are located on an intranet (LAN) and you wish to make it available from the other (WAN) side of a NAT router. With NAT traversal properly configured, all HTTP traffic to an external HTTP port in the NAT router is forwarded to the network camera.



#### Notes:

- For NAT traversal to work, this must be supported by the broadband router.
- The broadband router has many different names:

"NAT router", "Network router", Internet Gateway", "Broadband sharing device" or "Home firewall" but the essential purpose of the device is the same.

Basic Configuration	Network - NAT (Port Mapping)
Live View	Wire NAT traversal Setting
🛙 Video & Image	Wire NAT traversal Setup : Enable
🗈 Audio	
E Event	External http port : 10000 [1024 65535] External rtsp port : 10001 [1024 65535]
System	
· Information	* Note
⊞ Security	If the Port is 0, the assigned port of network camera will be set automatically.
· Date & Time	HTTP URL :
Network Basic DDNS	RTSP URL :
• RTP • UPnP	Save Reset
· QoS	
NAT	
· Zeroconf	
- Bonjour	
· Language	
• Maintenance	
Support	

## • NAT traversal Settings

- **Enable:** when enabled, the network camera attempt to configure port mapping in a NAT router on your network, using UPnP<sup>™</sup>. Note that UPnP<sup>™</sup> must be enabled in the Network Camera (see System>Network>UPnP).
- \* **automatic setting:** The Network Camera automatically search for NAT routers on your network.
- \* **manual setting:** Select this option to manually select a NAT router and enter the external port number for the router in the field provided.

#### Notes:

- If you attempt to manually enter a port that is already in use, an alert message will be displayed.
- When the port is selected automatically it is displayed in this field. To change this enter a new port number and click Save.

## ▼ Zeroconf

Zeroconf allows the network camera to create and assign IP address for network cameras and connect to a network automatically.

Basic Configuration	Network - Zeroconf	
🛙 Video & Image	Zeroconf Configuration	F
🛙 Audio	Enable Zeroconf	
E Event	IP address : 169.254.88.31	
System		
· Information	Save Reset	
I Security		
· Date & Time		
Network     Basic     DDNS		
• RTP • UPnP		
· QoS · NAT Traversal · <b>Zeroconf</b>		
Bonjour		
• Language		
Maintenance		
· Support		

Zero configuration networking (zeroconf), is a set of techniques that automatically creates a usable Internet Protocol (IP) network without manual operator intervention or special configuration servers.

Zero configuration networking allows devices such as computers and printers to connect to a network automatically. Without zeroconf, a network administrator must set up services, such as Dynamic Host Configuration Protocol (DHCP) and Domain Name System (DNS), or configure each computer's network settings manually, which may be difficult and time-consuming.

Zeroconf is built on three core technologies:

- Assignment of numeric network addresses for networked devices (link-local address auto configuration)
- Automatic resolution and distribution of computer hostnames (multicast DNS)
- Automatic location of network services, such as printing devices through DNS service discovery.

## ▼ Bonjour

The network camera includes support for Bonjour. When enabled, the network camera is automatically detected by operating systems and clients that support this protocol.

Basic Configuration	Network - Bonjour		
D Video & Image	Bonjour Configuration		
🗈 Audio	Enable Bonjour		
E Event	- Friendly name	HPCB-C1AAH3S-0007D8101703	
System			
· Information		Save Reset	
🗄 Security			
· Date & Time			
Network			
• Basic			
· DDNS			
• RTP			
• UPnP			
· QoS			
· NAT Traversal			
Zeroconf			
Bonjour			
· Language			
Maintenance			
Support			

**Note:** Bonjour - Also known as zero-configuration networking, Bonjour enables devices to automatically discover each other on a network, without having to enter IP addresses or configure DNS servers. Bonjour is a trademark of Apple Computer, Inc.

## 5) Language

It will be able to select a user language. The type of language it will be able to select is the English, the French, the German, the Spanish and the Italian.

Basic Configuration	Language			
Live View	Language Setting			
🖬 Video & Image	Language	English	V	
Audio	Language	English		
E Event			Save Reset	
System				
· Information				
⊞ Security				
• Date & Time				
🗄 Network				
· Language				
Maintenance				
<ul> <li>Support</li> </ul>				
About				

## 6) Maintenance

Basic Configuration	Maintenance
Video & Image	Maintenance
Audio	Restart Restart the server.
Event	Restart Reset all parameters, except the IP parameters.
System	Default Reset all parameters to the factory settings.
· Information	Upgrade
⊞ Security	Upgrade the server with the new firmware.
· Date & Time	- Specify the firmware to updgrade :
🗄 Network	
· Language	Browse and click Upgrade
Maintenance	* Note
· Support	Do not turn off the unit during flash upgrade. The unit will restart automatically when the
About	upgrade is finished (1-5 minites).
	Backup
	Save all parameters and user-defined script to a backup file. Backup
	Restore
	Resture
	Restore current configuration to backup file - Specify the backup file to restore:
	Browse and click Restore

#### Maintenance

- **Restart:** The unit is restarted without changing any of the settings. Use this method if the unit is not behaving as expected.
- **Reset:** The unit is restarted and most current settings are reset to factory default values. The settings that are not affected are:
  - \* the boot protocol (DHCP or static)
  - \* the static IP address
  - \* the default router
  - \* the subnet mask
  - \* the system time
- **Default:** The default button should be used with caution. Pressing this will return all of the Network Camera's settings to the factory default values (including the IP address).

#### • Upgrade

Carry out the upgrade by importing an upgrade file and pressing the Upgrade button. During the upgrade, do not turn off the power of the Network Camera. And try an access again after waiting five minutes or longer.

#### Backup

Save a setting value that users enter to the Network Camera, to a user PC.

#### Restore

Import and apply a setting value saved to a user PC.

**Note:** Backup and Restore can only be used on the same unit running the same firmware. This feature is not intended for multi-configurations or for firmware upgrades.

## 7) Support

The support page provides valuable information on troubleshooting and contact information, should you require technical assistance.

Basic Configuration	Support
🖾 Video & Image	The log and report files can be useful for troubleshooting or contacting the support team.
🛙 Audio	Logs
E Event	System Log System log information
System	Event Log Event log information
Information	Reports
I Security	
• Date & Time	Server Report Important information of the server status.
🗄 Network	Parameter List The unit's parameters and their current settings.
• Language	
· Maintenance	
Support	
About	

#### Logs

The network Camera support system log information. Click the System Log button to get the log data.

- Reports
  - **Server Report:** Click the Server Report button to get the important information about the server's status and should always be included when requesting support.
  - **Parameter List:** Click the Parameter List button to see the unit's parameters and their current settings.

## 3.6 Playback

The Playback window contains a list of recordings made to the memory card. It shows each recording's start time, length, the event type used to start the recording, calendar and time slice bar indicates if the recording is existed or not.

Event List		
	- 8 0	
Event Search	- 0	
2010-08-25 14:43:00 4 2010 / 8 +	- C 3 A - 5	
S         M         T         W         T         F         S           01         02         03         04         05         06         07           08         09         10         11         12         13         14		3
10         00         10         14         14         17         14           15         16         17         16         19         20         21           22         23         24         25         26         27         28           29         30         31         1         1         1         1         1	0         1         2         3         4         5         6         7         8         9         30         33         34         15         16         17         18         19         20         21         22           0         5         10         15         20         25         30         35         40         45         50         55	23 60

The description of playback window follows.

#### (1) Video Screen

You can see the video screen when playing the video clip in the Micro SD memory

#### (2) Playback Buttons

To view a recording data in the SD local storage, select it from the list and click the Playback buttons.

- ( Go to the first: go to the beginning of the video clip.
- Fast backward play:
- Backward play: play backward of the video clip.
- (a) Step backward play: go back one frame of the video clip.
- Pause: pause playback of the video clip.
- **Step forward play: go forward one frame of the video clip.**
- Forward Play: play forward the video clip.
- Fast forward play: play fast forward of the video clip.
- Step forward play: go forward one frame of the video clip.



- Clip copy: copy the video clip.
- Q Zoom In: zoom in the video clip
- Full Screen: display full screen of the video.

#### (3) Time Chart

Display an hour-based search screen for the chosen date. If there is recording data, a blue section will be displayed on a 24-hour basis.

#### (4) Speaker Control Bar

Use this scale to control the volume of the speakers.

#### (5) Search Calendar

Search results from the SD local storage in the network camera connected are displayed monthly. If there is a recorded data for a particular date, a blue square on the date will be displayed.

#### (6) Play Time

Displays time of the video playing.

#### (7) Event Search Window

Select a search option in the drop-down list and click GO button. You can also enter the time period for searching. If you click Start Date or End Date zone, displays Search Calendar.

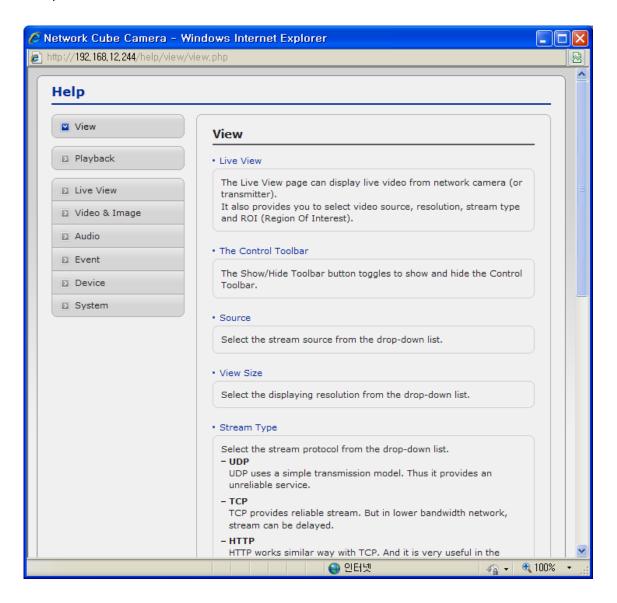
😃 Onboot	-
🛪 All	
😃 Onboot	
식 Alarm	
🔗 Trigger	
🕅 Motion	

#### (8) Event List Window

Event List displays the event(s) that were recorded in the SD local storage. Select a list and click the play button. The video clip will be played.

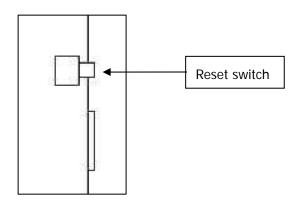
## 3.7 Help

The Help information window will be provided as a popup window so that users can open and read it without a need for log-in. It will offer a description on setting and Help page by which users can manipulate the Network Camera without a reference to the manual.



## 3.8 Resetting to the factory default settings

To reset the Network Camera to the original factory settings, go to the Setup>System> Maintenance web page (described in "3.5.4 System > Maintenance") or use the Reset button on the network camera, as described below:



#### Using the Reset Button

Follow the instructions below to reset the Network Camera to the factory default settings using the Reset button.

- 1. Switch off the Network Camera by disconnecting the power adapter.
- 2. Press and hold the Reset button with a straightened paperclip while reconnecting the power.
- 3. Keep the Reset button pressed during about 2 seconds and then release the reset button.
- 4. The network camera resets to factory defaults and restarts after completing the factory reset.

CAUTION: When performing a Factory Reset, you will lose any settings you have saved. (Default IP 192.168.30.220)

## 4. Appendix

## 4.1 Troubleshooting

Troubleshooting if problems occur, verify the installation of the Network Camera with the instructions in this manual and with other operating equipment. Isolate the problem to the specific piece of equipment in the system and refer to the equipment manual for further information.

Problems/Symptoms	Possible Causes or Corrective Actions
The camera cannot be accessed by some clients.	If using a proxy server, try disabling the proxy setting in your browser. Check all cabling and connectors.
The camera works locally, but not externally.	Check if there are firewall settings that need to be adjusted. Check if there are router settings that need to be configured.
Poor or intermittent network connection.	If using a network switch, check that the port on that device uses the same setting for the network connection type (speed/duplex).
The camera cannot be accessed via a host name.	Check that the host name and DNS server settings are correct.
Not possible to log in.	When HTTPS is enabled, ensure that the correct protocol (HTTP or HTTPS) is used. When attempting to log in, you may need to manually type in http or https in the browser's address bar.
No image using Refresh and/or slow updating of images.	If images are very complex, try limiting the number of clients accessing the camera.
Images only shown in black & white.	Check the Video & Image setting.
Blurred images.	Refocus the camera.
Poor image quality.	Increased lighting can often improve image quality. Check that there is sufficient lighting at the monitored location. Check all image and lighting settings.
Rolling dark bands or flickering in image.	Try adjusting the Exposure Control setting under AE and AWB part.
H.264 not displayed in the client.	Check that the correct network interface is selected in the Video & Image/Stream.
Multicast H.264 not displayed in the client.	Check with your network administrator that the multicast addresses used by the camera are valid for your network. Check that the Enable multicast checkbox are enabled in the System/Network/RTP tab. Checks with your network administrator to see if there is a firewall preventing viewing.
Multicast H.264 only accessible by local clients.	Check if your router supports multicasting, or if the router settings between the client and the server need to be configured. The TTL value may need to be increased.
Color saturation is different in H.264 and Motion JPEG.	Modify the settings for your graphics adapter. Please see the adapter's documentation for more information.
Video cannot be recorded.	Check that the SD Card is inserted properly. Check that the SD Card is formatted properly.

## 4.2 Preventive Maintenance

Preventive maintenance allows detection and correction of minor that faults before they become serious and cause equipment failure.

Every three-month, perform the following maintenance.

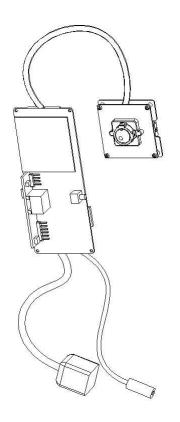
- 1. Inspect all connection cables for deterioration or other damage.
- 2. Clean components with a clean damp cloth.
- 3. Verify that all the mounting hardware is secure.

## 4.3 Product Specification

CImage sensor1/2.8" Exmor CMOSAActive Array1920 (H) x 1080(V)MLensFixed pin hole 4.3mm Lens, F2.0EAngle of View70° (H) ~ 40° (V)RMin. illuminationColor: 2.51Lux (F2.0, 501RE)AShutter Speed1/10,000 ~ 1/60Video Compression Motion JPEG H.264 (MPEG-4 Part 2) H.264 (MPEG-4 Part 10) Profiles: H.264 HP, MP, and BP, MPEG-4 SP	
M       Lens       Fixed pin hole 4.3mm Lens, F2.0         Angle of View       70° (H) ~ 40° (V)         R       Min. illumination         A       Shutter Speed         1/10,000 ~ 1/60          Motion JPEG          Hege 4 Part2          H.264 (MPEG-4 Part 10)          Profiles: H.264 HP, MP, and BP, MPEG-4 SP	
E       Angle of View       70° (H) ~ 40° (V)         M       Min. illumination       Color: 2.51Lux (F2.0, 50IRE)         A       Shutter Speed       1/10,000 ~ 1/60         Video Compression       Motion JPEG         MPEG-4 Part2       H.264 (MPEG-4 Part 10)         Profiles: H.264 HP, MP, and BP, MPEG-4 SP	
R       Min. illumination       Color: 2.51Lux (F2.0, 50IRE)         A       Shutter Speed       1/10,000 ~ 1/60         Video Compression       Motion JPEG         MPEG-4 Part2       H.264 (MPEG-4 Part 10)         Profiles: H.264 HP, MP, and BP, MPEG-4 SP	
A       Shutter Speed       1/10,000 ~ 1/60         Video Compression       Motion JPEG         MPEG-4 Part2       H.264 (MPEG-4 Part 10)         Profiles: H.264 HP, MP, and BP, MPEG-4 SP	
Video Compression       Motion JPEG         MPEG-4 Part2       H.264 (MPEG-4 Part 10)         Profiles: H.264 HP, MP, and BP, MPEG-4 SP	
Video Compression       MPEG-4 Part2         H.264 (MPEG-4 Part 10)         Profiles: H.264 HP, MP, and BP, MPEG-4 SP	
Video Streaming         Simultaneously H.264(or MPEG-4) and MJPEG           Video Streaming         Controllable Frame Rate and Bandwidth VBR/CBR H           MPEG-4         MPEG-4	1.264 and
Video Resolutions320x240 ~ 1920x1080	
N Frame Rate 30fps @ all resolution	
E         Protocol         TCP/IP, UDP, IPv4/v6, HTTP, HTTPS, QoS, FTP, u           T         RTSP, RTCP, DHCP, ARP, Zeroconf, Bonjour	
W Security Multi-user authority, HTTPS, IP Filtering, Privacy Zon	ie
O Max. Connection 10	
R         API Programming Interface         API Supported, Open Platform Compatible: ONVIF	
Alarm Triggers Motion Detection, Manual Trigger, Ext alarm input	
Alarm In / Out In : 1 Ext input Out : 1 Ext output	
Alarm Events       File upload via FTP and HTTP         Notification via E-mail, HTTP and TCP	
Video Buffering         Pre and Post Alarm	
Motion Detection Yes, max. 8 programmable zone	
Network Time Synchronization Yes	
SD Recording Yes, Continuous/Event	
Software Reset Yes	
Factory Reset         Yes, Button/Web browser	
Auto Recovery Yes	
Installation Tool SmartManager, NC Titanium	
Upgrade Web browser, SmartManager, NC Titanium	
Ethernet RJ-45 10BASE-T/100BASE-TX	
G Operating Temperature -10°C ~ 40°C	
N Operation Humidity 0~80% (non-condensing)	
E Power Consumption DC12V 330MA 4W/ POE 48V 88MA 4W Power over Ethernet IEEE 802 3af Class0	
R         A         Dimensions (W x H x D)         Main 47.0 x 21.0 x 115.0 mm, 1.85 x 0.82 x 4.49 inc.           Sensor 45.0 x 45.0 x 32.0 mm, 1.77 x 1.77 x 1.25 in	
Unit Weight 0.5Kg	

## 4.4 System Requirement for Web Browser

Operating System: Microsoft Windows 98, Microsoft Windows ME, Microsoft Windows 2000, Microsoft Windows XP, Microsoft Windows Vista, Windows 7 or Windows 8 CPU: Intel Core 2 Duo 2Ghz or higher, 1GB RAM or more, 10GB free disk or higher VGA: AGP, Video RAM 32MB or higher (1024x768, 24bpp or higher)



# FULL HD ATM MODULE CAMERA



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