

22X D/N WDR 1.3MP HD Fast Dome IP Camera

INSTRUCTION MANUAL

Executive Summary

LILIN's H.264 video server or HD fast dome IP PTZ camera uses the latest compression technologies providing Quadruple Streaming of H.264 and JPEG in different resolutions. LILIN's Quadruple Streaming technologies allow transmitting digital video at various bitrate and frame rate to fit both high and low bandwidth network environment.

Built-in intelligent video analytics engine enables audio and motion detection for extra protection. These features can be easily interfaced by other applications. Other useful features include two-way audio, SD card recording (video server), smartphone live access, email snapshot, and continuous sending JPEG snapshots to an FTP server.

LILIN's H.264 Video Server and HD fast dome IP camera have the latest technologies video de-interlace, built-in video analytics, and ONVIF conformant with all these features integrated within one camera. LILIN's CMX Software system solution with H.264 video server or HD fast dome IP PTZ camera series can provide integrated system solution in migrating to IP Video application.

Key Features

- Up to 1.3 mega-pixel 30 FPS encoding capacity
- Support dual encoding format H.264 and JPEG
- Quadruple Streaming technology, 4 concurrent streaming available
- Smartphone live monitoring
- Built-in intelligent video analytics (IVA) engine for audio and motion detection
- IVA alarm notification via Email or FTP
- Two-way audio (for audio models only)
- Bit rate and frame rate adjustable on-the-fly
- Support Android, iPad, and iPhone mobile live monitoring
- DDNS and UPnP supported
- Network time protocol (NTP) supported
- Support PCM/G.711 audio streaming
- Support ONVIF protocol
- Support CMX Software HD 3.6

Trademark Acknowledgments

Microsoft, Windows 2000, Windows XP, Windows Vista, Windows 7, ActiveX, and Internet Explorer are registered trademarks of Microsoft Corporation in the U.S. and/or other countries.

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States and other countries.

Flash, Macromedia, and Macromedia Flash Player are either trademarks or registered trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Linux and DynDNS are registered trademarks of the respective holders.

Intel, Pentium, and Intel® Core™ 2 Duo are registered trademarks of Intel Corporation.

FFmpeg is a trademark of Fabrice Bellard, originator of the FFmpeg project.

QuickTime and the QuickTime logo are trademarks or registered trademarks of Apple Computer, Inc., used under license there from.

Other names of companies and their products mentioned in this manual may be trademarks or registered trademarks of their respective owners.

Other References

Smartphone

For smartphone live monitoring, please visit appendix for the details.

LILIN Universal ActiveX Control

Sample code and document are included in product CD and can be downloaded from our company website.

LILIN HTTP API

For non-ONVIF integration, please see LILIN HTTP API document. We adopt HTTP API document for all LILIN IP cameras.

Caution

- Do not drop or strike this equipment
- Do not install the equipment near any naked flames or heat sources
- Do not expose this unit to rain, moisture, smoke or dust environment
- Do not cover the opening of the cabinet with cloth and plastic or to install this unit in poor ventilated places. Allow 10cm between this unit and its surroundings
- Do not continue to operate the unit under abnormal conditions such as detection of smoke, strange smell or no display on screen while power is turned on
- Do not touch the power connection with wet hands
- Do not damage the power cord or leave it under pressure
- Do not operate this unit near magnet, speaker system, etc., to avoid unnecessary magnetic interference
- Connection cables should be grounded properly



Table of Content

Chapter 1 System Overview	4
Chapter 2 Before Accessing IP Camera	5
Chapter 2-1 Configure IP Address Using IPScan Utility	5
Chapter 2-2 Configure IP Address Using HTML Page	5
Chapter 2-3 Internet Browser Setting & Software Component Required	6
Chapter 2-4 Login	6
Chapter 3 Start Using the Camera	7
Chapter 3-1 IP Camera Operational HTML Page	7
Chapter 3-2 PTZ Control Panel	7
Chapter 3-2-1 PT Mode	8
Chapter 3-2-2 ePTZ	8
Chapter 3-2-3 Camera Control Panel	9
Chapter 3-2-4 Two-way Audio	9
Chapter 3-2-5 Record in a Local PC	9
Chapter 3-3 Configurations	9
Chapter 3-3-1 Server Settings	10
Chapter 3-3-2 User Settings	11
Chapter 3-3-3 Timer	11
Chapter 3-3-4 System Setting	12
Chapter 3-4 Network	12
Chapter 3-4-1 General Settings	12
Chapter 3-4-2 DHCP Setting	13
Chapter 3-4-3 HTTP & RTSP Service	13
Chapter 3-4-4 SMTP Service	14
Chapter 3-4-5 FTP Service	14
Chapter 3-4-6 DDNS Settings	15
Chapter 3-4-7 UPnP Settings	15
Chapter 3-5 Video Settings	16
Chapter 3-5-1 Video General	16
Chapter 3-5-2 Weighted Streaming Mode	16
Chapter 3-5-3 Video Quality	17
Chapter 3-6 PTZ Settings	20
Chapter 3-6-1 General Settings	21
Chapter 3-6-2 PTZ Advanced Settings	21
Chapter 3-6-3 PTZ Schedule Settings	24
Chapter 3-7 SD Card Recording	24
Chapter 3-7-1. SD Card Recording Setting	24
Chapter 3-8 Alarm Settings	25
Chapter 3-8-1 Motion/Alarm Setup	25
Chapter 3-8-2 Alarm (DI) Input Detection	25
Chapter 3-8-3 Motion Area	25
Chapter 3-8-4 Audio Detection	26
Chapter 3-9. Audio Setting	26
Appendix	27
Advance Network DDNS and PPPoE Technologies	27
Advance Network Port Forwarding Technology	27
iPhone Access	27
Android Access	28
Emergency Factory Default	29
SD Card Compatibility List	29
Specification	30

Chapter 1 System Overview

Chapter 1-1 System Requirements

The IP Camera's H.264 video compression technology can provide high compression rate and superior video quality. However, the performance highly depends on both CPU computational power of a client PC and the network bandwidth for transmitting video streaming. The following sections specify system requirement for running the H.264 IP Camera:

Chapter 1-2 Software Requirements

Merit LILIN Universal ActiveX software components are required for web interface for displaying JPEG or H.264 video. When you first time login the IP camera using Internet Explorer, it prompts for a security warning dialog box for downloading LILIN Universal ActiveX. Please click on Install button to download.



Flash player is also required for controlling the PTZ device. Please visit <http://www.adobe.com/products/flashplayer> to download the software component.



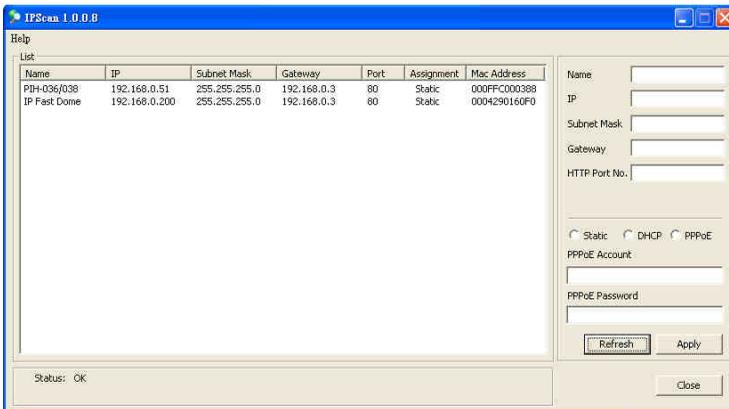
Chapter 2 Before Accessing IP Camera

Before accessing to the IP camera, make sure that the camera's RJ-45 network cable, audio cable, and IP camera's power cable are properly installed. For setup IP address, please consult your network administrator for available IP addresses. The default IP address of IP camera is 192.168.0.200. User can also use default IP address to verify IP camera's network connection.

Chapter 2-1 Configure IP Address Using IPScan Utility

To configure IP address using IPScan utility, copy IPScan application from installation CD to your local PC or execute IPScan software from installation CD directly. IPScan utility can also be downloaded from our company website. To change IP address, subnet mask, gateway, or HTTP port, please follow steps below:

- Run IPScan utility.
- Click on Refresh button. All available devices get listed in Device list box.
- Select the device item in Device list box.
- Edit or modify addresses in IP, Subnet Mask, Gateway, or HTTP Port edit box.
- Click on Apply button to configure the settings.
- Click on Refresh button to verify the settings.



Note: Make sure that IPScan is version 1.0.0.31 or above.

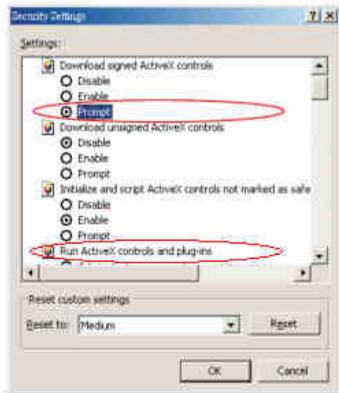
Chapter 2-2 Configure IP Address Using HTML Page

To change IP address using HTML page, please first type the default IP address, 192.168.0.200, in Internet browser and follow steps below:

- Logon H.264 HD video server or IP PTZ camera using default username and password—"admin" and "pass".
- Click on "Configure" hyper link.
- Click on "Network->General" hyper link.
- Type or modify edit box for IP address, subnet mask, gateway, or HTTP connection port.
- Click on Submit button.

Chapter 2-3 Internet Browser Setting & Software Component Required

Make sure that your Internet Browser allows signed ActiveX plug-in running on your PC. Set “Download Signed ActiveX plug-in controls” to “Prompt” and “Run ActiveX control and plug-in” to “Enable” at Internet Explorer->Tools->Options->Security Settings.



After finishing above security settings, accessing IP camera's live video by default IP address of IP camera using Internet Explorer will prompt a Security Warning dialog box. Click on OK button to download the ActiveX directly from H.264 HD video server or IP PTZ camera.

Chapter 2-4 Login

There are two levels of user authentication including administrator and guest for accessing the H.264 HD video server or IP PTZ camera.



The default settings of username and password are described as follows:

	Administrator	Guest
Username	admin	guest
Password	pass	guest

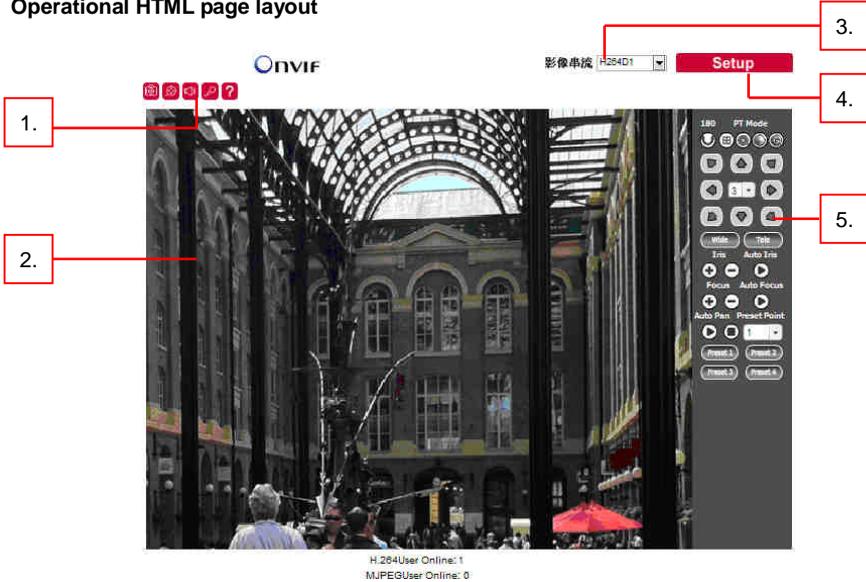
To logon the H.264 HD video server or IP PTZ camera, please type username and password in logon HTML page and click on Submit button to enter the system.

Chapter 3 Start Using the Camera

After login H.264 HD video server or IP PTZ camera as administrator, there are two main features—system operation and configuration. Operation and configuration features are described as follows:

Chapter 3-1 IP Camera Operational HTML Page

Operational HTML page layout



1. **Camera Control panel**—IP camera control panel.
2. **LILIN Universal ActiveX control**—Display RTSP H.264 or JPEG network video.
3. **Profile switching menu**—Switching one profile to another
4. **Setup menu**—IP camera setup menu
5. **PTZ control panel**

Chapter 3-2 PTZ Control Panel

All the PTZ features are described as follows:

	<p>Iris +: Iris large</p> <p>Iris -: Iris small</p>		<p>Focus +: Focus far</p> <p>Focus -: Focus near</p>
	<p>Auto Iris: Set the device to auto Iris mode.</p>		<p>Auto Focus: Set the device to auto focus mode.</p>
	<p>Wide: Lens zoom out</p>		<p>Preset: Preset points recall</p>
	<p>Tele: Lens zoom in</p>		

Chapter 3-2-1 PT Mode

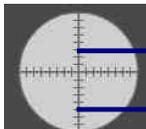
There are four Pan and Tilt Modes (PT) for users to operate the PTZ device. To select one of the PT modes, please click on the icon under PT Mode panel.



PT mode



PT mode with speed



Lower speed (inner)

Higher speed (outer)

Pan mode at absolute position



Absolute position

Pan and tilt modes at absolute position

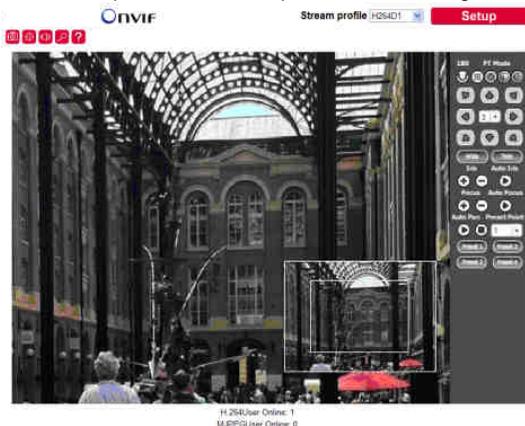


Absolute position

Tilt lens

Chapter 3-2-2 ePTZ

To perform ActiveX ePTZ feature, please use a computer mouse to drag on the ActiveX control.



LILIN Universal ActiveX control becomes eZoom mode.

Please use computer mouse pointing to the sub-window of PIP view. Dragging the sub-window can perform ePan and eTilt. Using mouse scroll button can perform zoom in and out features.

Performing right-mouse click on the video can disable ePTZ feature.

Chapter 3-2-3 Camera Control Panel

Control panel buttons are described as below:

	Snapshot: Take a snapshot of the video.
	Recording at PC
	Speak on: Speak to remote site (for audio model only).
	Audio on: Set audio on (for audio model only).

Chapter 3-2-4 Two-way Audio



For two-way audio, please click on Microphone icon for speaking to the remote site. To stop speaking to the remote site, please click on Microphone icon again.

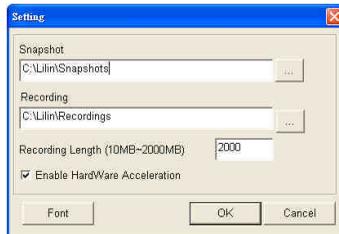
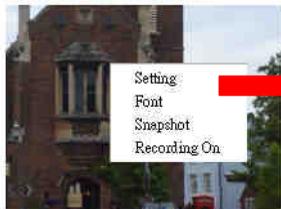


To listen to the remote site, please click on Speaker icon for listening to the remote site. To stop listening to the remote site, please click on Speaker icon again.

Note: Only IP camera models with audio can support this feature.

Chapter 3-2-5 Record in a Local PC

To record into a local PC, please first right-click on LILIN Universal ActiveX control. It shows up in the setting dialog box. A user can specify the recording path and recording size. Please make sure that the ePTZ or ROI feature is unchecked for displaying recording setting dialog box by right-mouse-click.



To playback the AVI video, simply click on Windows Media Player.

Chapter 3-3 Configurations

H.264 HD video server or IP PTZ camera's administrator can configure the device via standard HTML web pages. This chapter explains the detail of each configuration setting.

Chapter 3-3-1 Server Settings

Server settings contain H.264 HD video server or IP PTZ camera server's system information such as MAC address, firmware version, users, system timer, and other system settings. To change or to use these options, please follow the instructions at this section.

Setting	Value
MAC Address	00:0f:fc:25:92:47
Firmware Version	1.0.489q2
OS Version	Linux 2.6.32
System Reboot Time	2012/10/12 09:26:46
Device Name	IPST22
Language	English
Display Name	Enable (selected) / Disable
Display Timer	Enable (selected) / Disable
Display PTZ OSD	Enable (selected) / Disable
ActiveX OSD Display	Enable / Disable (selected)
ActiveX OSD Name	IPST22
Low Latency Mode	Enable / Disable (selected)

MAC Address

Network MAC address of the video server or camera

Firmware Version & OS Version

Firmware update allows a user to upgrade H.264 HD video server or IP PTZ camera's firmware remotely. A user can use firmware version to verify if the device has the latest version.

Device Name

The device name can be used by IPScan utility to identify the H.264 HD video server or IP PTZ camera—To change the device name, enter the name for H.264 D1 video server or IP PTZ camera and click on Submit button.

Language

Language setting can be changed dynamically.

Display Name

Display camera name.

Display Time

Display camera timer.

Display PTZ OSD

Display PTZ internal OSD (PTZ only).

ActiveX OSD Name

Display camera OSD name on only ActiveX.

Low Latency Mode

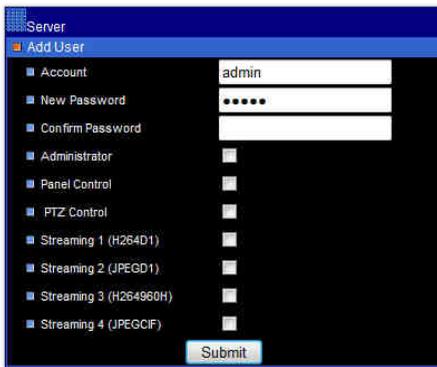
Enable: ActiveX will cache 15 frames for smooth video.

Chapter 3-3-2 User Settings

There are ten user accounts allowed for the system. Each account can be configured for its access rights. To add/edit a user, please click on Add/Edit User button. To access H.264 HD video server or IP PTZ camera without authentication, set Bypass Logon radio button to ON.



To change account name, please type the new account name in Account edit box. To change new password, please type the new password in the New Password edit box. Click on Submit button to update the user settings. To delete a user, please click on "Remove User" button.



Administrator: Enable or disable setup mode for a user.

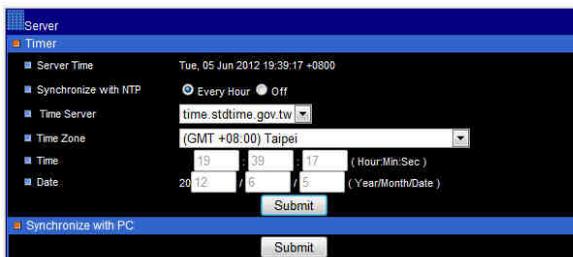
Camera Control Panel: Enable or disable Control Panel for a user.

PTZ: Enable or disable PTZ feature for a user.

Streaming: Enable or disable a streaming for a user.

Chapter 3-3-3 Timer

H.264 HD video server or IP PTZ camera allows a user to change system timer via standard HTML web page. To change H.264 HD video server or IP PTZ camera's system timer, please enter the date and time in the edit boxes. Click on Submit button to apply this operation.



Synchronize with NTP

To synchronize Internet time system, check Auto Synchronize option to "Every Hour". H.264 HD video server or IP PTZ camera synchronizes its system timer with a time server every hour.

Note: Network Time Protocol feature requires Internet connection.

Synchronize with a PC

A user can synchronize the PC system timer to the IP camera's system timer.

Chapter 3-3-4 System Setting

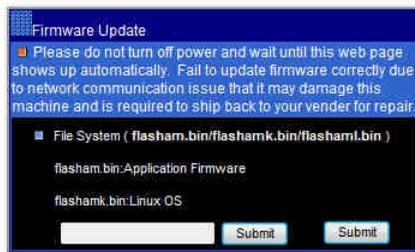
Load Default feature allows to load manufacturing default. There are certain critical settings such as IP addresses and video system which are not affected by this operation. To reboot H.264 HD video server or IP PTZ camera, click on Reboot System hyper link.



To update firmware of H.264 HD video server or IP PTZ camera, please click on Firmware

Note: In case of forgetting the password, the device is required to send back to our company for a manufacturing default or read appendix for emergency default.

Update hyper link. Locate "flasham.bin" in your computer by clicking the Browse button. Click Submit button to finish firmware upgrade. To ensure the quality of transmission, please make sure that there is no user accessing H.264 HD video server or IP PTZ camera during firmware upgrade.



Chapter 3-4 Network

H.264 HD video server or IP PTZ camera provides Internet protocols including IP, DHCP, and DDNS. A user can configure these Internet protocol settings. To setup above, please read the following sections:

Chapter 3-4-1 General Settings

Network general settings are the basic settings connecting H.264 HD video server or IP PTZ camera to the network. The default IP Address of H.264 HD video server or IP PTZ camera is 192.168.0.200. A user can use this IP address to verify the network connection between a local PC and H.264 HD video server or IP PTZ camera using Web Browser.

For local area network configuration, please enter, at least, IP address, Subnet Mask, and Gateway IP. Click Submit button to update these settings.

Network	
General	
Connection method	<input checked="" type="radio"/> Static <input type="radio"/> DHCP <input type="radio"/> PPPoE
IP Address	192.168.0.200
Subnet Mask	255.255.255.0
Gateway	192.168.0.1
Default DNS	168.95.1.1
Second DNS	168.95.1.1
PPPoE Account	account@pppoe.com
PPPoE Password
<input type="button" value="Submit"/>	

For Internet access configuration, please contact your local ISP for global IP address. Once the physical Internet connection gets installed, enter IP address (global), Subnet Mask, and Gateway IP from the ISP.

- **Default DNS IP Address**—Primary Domain Name Server, the IP address of the domain name server
- **Second DNS IP Address**—Secondary Domain Name Server, the IP address of the domain name server, a backup DNS server for default DNS
- **PPPoE Account**—Account name of PPPoE service
- **PPPoE Password**—Password of PPPoE service

Chapter 3-4-2 DHCP Setting

Router, gateway, or other software DHCP servers can dynamically assign an IP address to the H.264 HD video server or IP PTZ camera. There is no need to configure IP address, subnet mask, and gateway. Since the DHCP may assign a different IP address to the H.264 HD video server or IP PTZ camera after power off, a user can use IPScan utility to launch Web Browser for searching H.264 HD video server or IP PTZ camera. To enable DHCP, click on DHCP option and click on Submit button.

Note: Once the DHCP option gets enabled, IP camera of the IP address assigned by DHCP server. This feature allows only in LAN environment.

Chapter 3-4-3 HTTP & RTSP Service

HTTP protocol is a reliable protocol for sending video streaming. Port forwarding technology can be used for sending video over Internet. The detail is described in the appendix. For changing HTTP service's port number, please consult available port number from your network administrator. Change the port number at the port field and click on "Submit" button.

Network	
HTTP/RTSP Service	
HTTP Port	80
RTSP Port	554
Video Port	<input checked="" type="radio"/> HTTP Port <input type="radio"/> RTSP/UDP Port
<input type="button" value="Submit"/>	

Note: For low latency application, please select RTSP/UDP streaming option.

Chapter 3-4-4 SMTP Service

Alarm or motion notification feature can send an alarm or motion detection snapshot to an E-mail account. To enable alarm or motion sending E-mail feature, please setup the following email accounts.

Network

SMTP Service

E-mail Receiver Setting

- E-mail Address1: receiver@mail.com
- E-mail Address2:
- E-mail Address3:
- E-mail Address4:
- E-mail Address5:
- Auto E-mail Sent: Enable Disable
- Auto E-mail Sent Dwell: 60 Sec.
- Alarm/Motion E-mail Sent: Enable Disable
- Alarm/Motion Detection Dwell: 5 Sec.

E-mail Sender Setting

- E-mail Address: sender@mail.com
- SMTP Server: mail.com
- SMTP Authentication: AUTH LOGIN AUTH SSL
- SMTP Port: 25
- Authentication: Enable Disable
- Auth Account: sender
- Auth Password:

Submit

Test E-mail

- E-mail Subject: This is a testing email
- E-mail Content: This is a testing email

Send Status

- E-mail receiver setting
E-mail address— E-mail address of the recipient
- E-mail sender setting
E-mail address— E-mail address of the sender
- Auto E-mail sent snapshots—constantly send JPEG snapshots within E-mail dwell time.
- SMTP server— Sender's SMTP server
Authorization— SMTP server's authorization option if applicable
Authorization account— Account of the SMTP server
Authorization password— Password of the account

To send a test snapshot to a SMTP server, please click “Send” button to test and to verify the connection of the SMTP server.

Chapter 3-4-5 FTP Service

Alarm or motion notification feature can send alarm or motion detection snapshot to an FTP account. To enable alarm or motion sending FTP feature, please setup the following FTP account information.

Network

FTP Service

- FTP Server IP/DNS: ftp.server.com
- Account: Account
- Password:
- Directory: /alarm_peg/
- Prefix:
- Date Format: YYMMDD_hhmmss (YY:Year,MM:Month,DD:Date, hh:Hour, mm:Minute, ss:Second)
- Postfix:
- Auto FTP Sent: Enable Disable
- Auto FTP Sent Dwell: 10 Sec.
- FTP Sent Time:
 - Enable 0 (Hour) 0 (Min)
 - Enable 0 (Hour) 0 (Min)
 - Enable 0 (Hour) 0 (Min)
 - Enable 0 (Hour) 0 (Min)
- Alarm/Motion FTP Sent: Enable Disable
- Alarm/Motion Detection Dwell: 10 Sec.

Submit

Test FTP

Send Status

- FTP server IP/DNS— IP address or domain name of the FTP server
- Account— Account of the FTP server
- Password— Password of the account
- Directory—File path for storing the JPEG snapshots
- Prefix—Prefix of the JPEG filename
- Date format—Date format string for the JPEG filename
- Postfix—Postfix of the JPEG filename
- Auto FTP sent—Constantly send JPEG snapshot within FTP dwell time.
- FTP sent time—Schedule FTP snapshot at specific time

Send email to Yahoo or Gmail account. Please follow:

- E-mail Address: Please fill in the SMTP for Yahoo or Gmail account.
- SMTP Server:
For Gmail, please fill in "smtp.gmail.com".
For Yahoo E-mail, please fill in "smtp.mail.yahoo.com".
- SMTP Authentication: Please check "AUTH SSL".
- SMTP Port:
For Gmail, please fill in "465".
For Yahoo E-mail, please fill in "465".
- Authentication: Select "Enable".
- Auth Account and Password: Please fill in the E-mail address and password and select "Submit".

Chapter 3-4-6 DDNS Settings

DNS stands for domain name server, it provides domain name translation service for a device's IP. Basically, domain name is easier to remember than numeric values (IP). DNS service requires service registration and subscription. DynDNS (DDNS) provides domain name service without subscription.



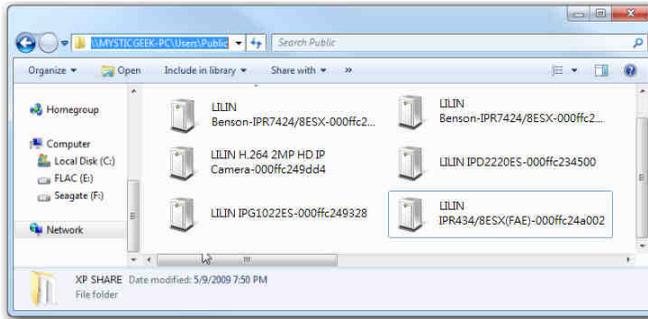
Note: DDNS feature requires Internet connection.

To use www.ddnsipcam.com, you can use the last 6 digits of the MAC address for the host name and default account. The default password is "pass". If the IP camera is on Internet with global IP address, you can access it directly the IP camera by using DDNS host name.

The IP camera tries to automatically register to www.ddnsipcam.com without further registering. For example, type "24094f.ddnsipcam.com" in a browser with login name "24094f" and password "pass" for login into the IP camera, if the IP camera is on Internet.

Chapter 3-4-7 UPnP Settings

UPnP service is a plug-n-play protocol. By clicking on network node of Windows File Explorer, you can find LILIN cameras that are discovered by Windows via UPnP protocol.

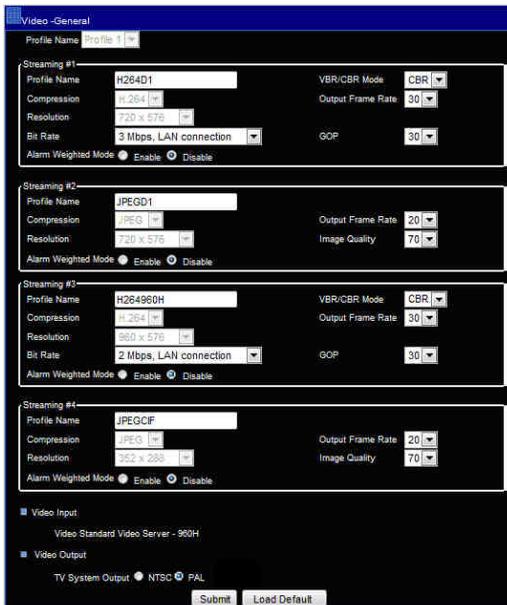


Chapter 3-5 Video Settings

This section describes the details in setting the H.264 video's attributes. The settings of bit rate control, video input, and video resolution can be configured.

Chapter 3-5-1 Video General

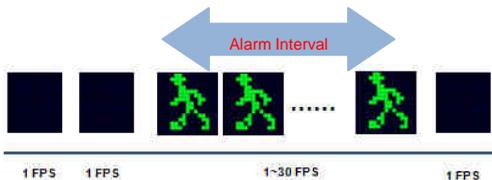
For transmitting H.264 video over low bandwidth network such as Internet, please set the bit rate close to network upload bandwidth. H.264 IP camera can encode video frames based on the bit rate setting.



- Profiles: Selections of streaming combination
- Profile Name: Description of the streaming profile
- Compression: compression type of the streaming profile
- Resolution: the resolution of the compression
- VBR/CBR: VBR: Video quality encoding mode/constant bit rate encoding mode.
- Bit Rate: Maximum bit rate available for a network connection
- Output Frame Rate: the frame rate of the profile
- GOP: 1 frame period per second
- Video Input: sensor input device
- TV System Output: NTSC/PAL video system

Chapter 3-5-2 Weighted Streaming Mode

Weighted streaming mode is activated when an alarm went off. The streaming goes to the maximum speed, for example 30 FPS. If there is no alarm activity, the streaming stays one frame per second for saving bandwidth and storage.



Chapter 3-5-3 Video Quality

Under the tab < Video Quality >, there are categories including: < Camera Advanced I > and < Camera Advanced II >.

3-5-3.1 Camera Advance I

Camera Advanced I Setting Menu can be found under this path: **Video Quality > Camera Advanced I**

In the Camera Advanced I Setups Menu, users can set various camera parameters including Day/Night (ICR), Mirror and Flip Function. Each setting is specified as follows:

Camera Advanced I	Camera Advanced II	Camera Advanced III
<ul style="list-style-type: none"> ■ Day/Night <ul style="list-style-type: none"> Day/Night Mode <input type="text" value="Auto"/> Day/Night Delay (Sec.) <input type="text" value="5"/> ■ Mirror <input type="text" value="Off"/> ■ Flip <input type="text" value="Off"/> ■ Load Default <input type="text" value="Default"/> 		
		<input type="button" value="Submit"/>

Day/Night

IR Cut removable allows to schedule IR activation by (1) auto, (2) day, or (3) night. When the setting is set to "Auto", IR activation is according to the light source signal strength automatically switch day (color) or night (black and white) mode. "Night" setting means that the IR cut feature is removed. "Day" setting means that the IR cut feature is forced to be always on.

Mirror

Users can change video display type if necessary. If select "ON", the image will be rotated horizontally.

Flip

Users can change video display type if necessary. If select "ON", the image will be rotated vertically.

3-5-3.2 Camera Advance II

Camera Advanced II Setting Menu can be found under this path: **Video Quality > Camera Advanced II**

In the Camera Advanced II Setups Menu, users can set various camera parameters including Exposure, 3D-DNR, WDR, White Balance, Sharpness, DIS and BLC Function. Each setting is specified as follows:

Camera Advanced I	Camera Advanced II	Camera Advanced III
Exposure Mode: Auto Brightness: 32 Lens Iris: 0n Shutter: Off AGC: 0 Flickerless: On AGC Limit: 42 Shutter Limit: Off 3D-DNR 3D-DNR Mode: Auto 3D-DNR Level: High WDR WDR: Off		White Balance White Balance Mode: ATW1 Push Auto: Submit Manual Red: 67 Manual Blue: 64 Sharpness Sharpness: 7 DIS DIS: Off BLC BLC Mode: Off BLC Level: 0 HLC Level: 232
<input type="button" value="Load Default"/>		<input type="button" value="Submit"/>

■ **Exposure**

In the Exposure Mode Setting users can select Auto, Shutter, Iris and Fix four modes.

Exposure-Auto Mode

In this mode can adjust the parameter of the Brightness/Flickerless/AGC Limit/Shutter Limit.

Exposure-Iris Mode

In this mode can adjust the parameter of the Brightness/Shutter/Flickerless/AGC Limit.

Exposure-Shutter mode

In this mode can adjust the parameter of the Brightness/Lens Iris/AGC Limit/Shutter Limit.

Exposure-Iris Mode

In this mode can adjust the parameter of the Brightness/Lens Iris/Shutter/AGC/Flickerless.

Brightness

This parameter is to adjust the brightness of the image. (0 to 64)

Lens Iris

This parameter is to set the aperture value. The value of iris is adjustable from F1.6 ~ F32.

Shutter

This parameter is to set the shutter speed. The range of shutter speed is from x256~1/10k.

AGC

The value if gain is adjustable from 0 ~ 42.

Flickerless

Eliminate image flicker.

AGC Limit

This parameter is to set the maximum auto gain control. The value of AGC limit is adjustable from 0~42.

Shutter Limit

The value of Shutter Limit is adjustable from x256 ~ x1.

■ **3D-DNR**

With the 3D Noise Reduction function, the processor analyzes pixel by pixel and frame by frame to eliminate environmental noise signal so that the highest quality image can be produced even in low light conditions.

3D-DNR Mode

3D-Digital Noise Reduction mode select.

Select **OFF** this function off.

Select **ON** It's always controlled.

Select **AUTO** It's controlled by darkness when it is dark.

3D-DNR LEVEL

When 3D-DNR MODE is ON or AUTO, 3D-DNR reduction level change. Low/Mid/High

■ **WDR Function**

Select D-WDR function. Off/Low/Mid/High

When the high luminance part and the low illumination part are detected, the suppression low illumination part is raised, and a high luminance part is adjusted in the contrast.

■ **White balance**

A camera needs to find reference color temperature, which is a way of measuring the quality of a light source, for calculating all the other colors. The unit for measuring this ratio is in degree Kelvin (K). Users can select one of the White Balance Control modes according to the operating environment.

ATW1 Mode

Auto Tracking White Balance.

ATW2 Mode

Auto Tracking White Balance (a drawing in limitation of the color) .

AWC Mode

Auto White Balance Control (One-Push White Balance).

Manual Mode

In this mode, users can change the White Balance value manually via specifying R gain and B gain; the range of R/B gain is from 0 to 127.

Indoor Mode

The indoor mode setting.

Outdoor Mode

The outdoor mode setting.

■ **Sharpness**

Increasing the sharpness level can make the image looked sharper; especially enhancing the object's edge. The Sharpness value is adjustable from 0 to 14.

■ **BLC**

BLC Mode

Users can choose to activate or disable the BLC function or HLC function.

BLC Level

Select BLC function level (Operational when BLC Mode is ON).

-1 : (Weak) ~ 0 : (Default) ~ +2 : (Strong)

HLC Level

Select HLC function level (Operational when BLC Mode is HLC). The Level range is adjustable from -32 ~ +32

HLC Description:

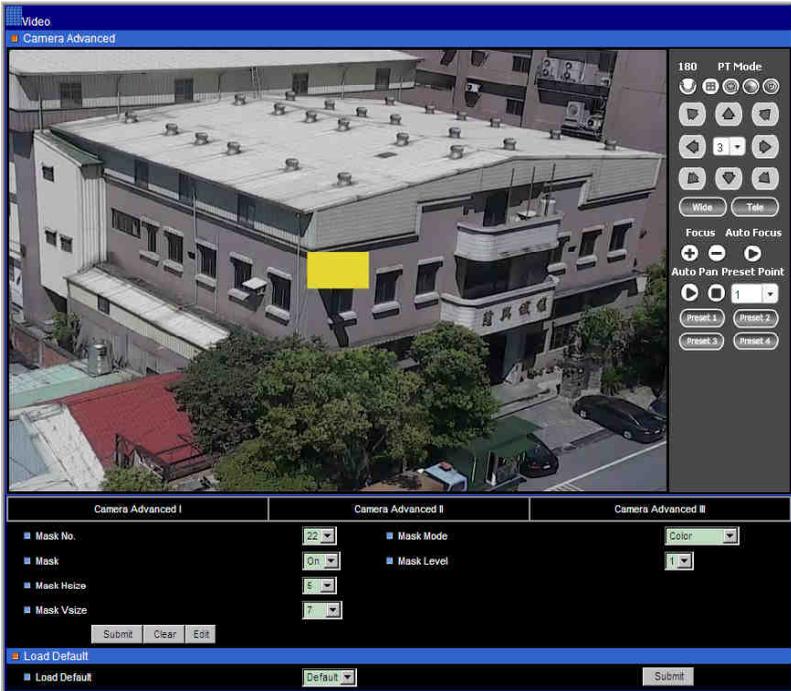
Possible to see car number plate and other more visible by level control of halation part such as headlight, and so on.

3-5-3.3 Camera Advance III

The privacy mask function set. each mask set to the object at the center of the screen as the main mask position. To set the mask zone manipulation horizontal and vertical and lens to the target. When Set Mask No. 、Mask 、Mask Hsize 、Mask Vsize 、Mask Mode 、Mask Level, then press

Submit

to save the mask zone. follow the process set mask zone. functions instructions and illustrations are as follows :



■ **Mask No.**

Set up twenty four mask zone. Drop-down options for 1~24.

■ **Mask**

Enable/disable the selected mask zone number.

■ **Mask Hsize**

Set the mask area width, Drop-down options for 3 ~ 80.

■ **Mask Vsize**

Set the mask area Height, Drop-down options for 5 ~ 127.

■ **Mask Mode**

Set the mask area display mode, Drop-down options for Black/White or Mosaic or Color.

■ **Mask Level**

Black/white by the mask mode, Drop-down options for 0 ~ 15.

Mosaic by the mask mode, Drop-down options for 0 ~ 2.

Color by the mask mode, Drop-down options for 0 ~ 7.

■ **Submit**

When these parameters are set, press the "Submit" to save; When the mask area to open more than eight area, a warning dialog will pop up.

■ **Clear**

Clear the selected mask area.

■ **Edit**

Move PTZ to the position previously set mask area for the user to modify the mask area.

Chapter 3-6 PTZ Settings

Under the tab <PTZ>, there are categories including: <General>, <PTZ Advance> and <PTZ Schedule>.

Chapter 3-6-1 General Settings

Preset

The Preset Programming can be found under this path: **PTZ> General**.

Totally 128 Preset Points can be programmed for the IP Camera. Please refer to the instructions below to set a Preset Point.

Preset Setting

To setup a Preset Point, please first move the cursor to the PTZ control panel. Then move camera to desired position by using pan, tilt, and zoom buttons. Adjust the lens' iris and focus by using iris and focus buttons. Subsequently, assign a number for the current position from the drop-down Preset Point List. Then assign a Dwell Time and Active Speed for the current position from the drop-down Dwell List and Speed List. Click on the button <Save> to save the settings mentioned above.



1.3MP IP PTZ Interface

Preset Go

To have the camera move to a specified Preset position, please select the Preset Point from the drop-down Preset Point list. Then the camera shall readily move to the target position.

Chapter 3-6-2 PTZ Advanced Settings

3-6-2.1 Lens Advance

Lens Advance Setting Menu can be found under this path: **PTZ> PTZ Advance> Lens Advance**

In the Lens Advance Setup Menu, users can set various Lens parameters including Focus, Focus Sensitivity, Digital Zoom, Zoom Speed and Focus Speed. Each setting is specified as follows:

Focus

Auto focus at PTZ or auto focus only at zoom operations

Focus Sensitivity

Focus sensitivity (Low:0 ~ High:6)

Digital Zoom

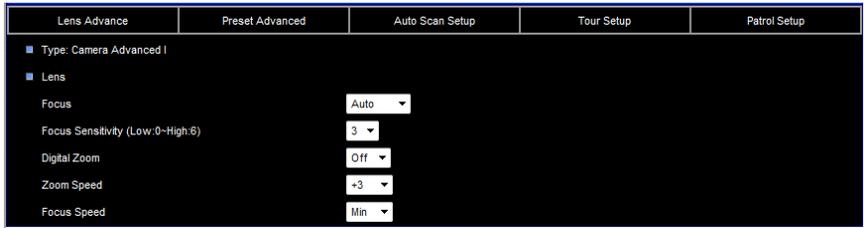
Enable digital zoom feature after optical zoom.

Zoom Speed

Zoom speed adjustment

Focus Speed

Focus speed adjustment



3-6-2.2 Pan-Tilt Setup

Pan-Tilt Setting Menu can be found under this path: **PTZ> PTZ Advance> Pan-Tilt Setup**

In the Pan-Tilt Setup Menu, users can set various Pan-Tilt parameters including Home Position, Self Return Time, Self Return Mode and Auto Mode. Each setting is specified as follows:

Home Position

Specify home position for one of the presets.

Self Return Time

User Define if IP Fast Dome idles for a period of time, the selected function will be activated automatically.

Self Return Mode

Return to home position at home position, auto scan mode, tour mode, or patrol mode. Users are able to set an operation mode to ensure constant monitoring. If the IP Fast Dome Camera idles for a period of time, the selected function will be activated automatically; this is the Return Mode function. The Return Mode function allows constant and accurate monitoring to avoid the Dome Camera idling or missing events.

Auto Mode

Specify auto scan mode, tour or patrol for auto Pan mode.



3-6-2.3 Auto Scan Setup

Auto Scan Programming can be found under this path: **PTZ> PTZ Advance> Auto Scan Setup**

The IP Fast Dome Camera supports up to Four Auto Scan Paths. Please follow the instructions below for Auto Scan Path setup.

Auto Scan Setting

To setup a Auto Scan Path, please first select a path number from the drop-down list. Then move the cursor to the PTZ control pane, and move the camera to a desired view (PTZ controls) as the start point of a Auto Scan Path. Click on the <apply> button of < Start Position > and start programming the Auto Scan Path via PTZ controls. When finishing programming, click on the <apply> button of <End Position> to quit. Then this Auto Scan Path will be automatically recorded. Subsequently, assign a Dwell Time and Active Speed for the current position from the drop-down Dwell List and Speed List.



3-6-2.4 Tour Setup

The Tour Path Programming can be found under this path: **PTZ> PTZ Advance> Tour Setup**

The IP Fast Dome Camera supports totally four Tour Path; each Tour Path consists of up to 32 Preset Points. Please refer to the instructions below to program a Tour table.

NOTE: Before setting this function, users must pre-define at least two Preset Points.

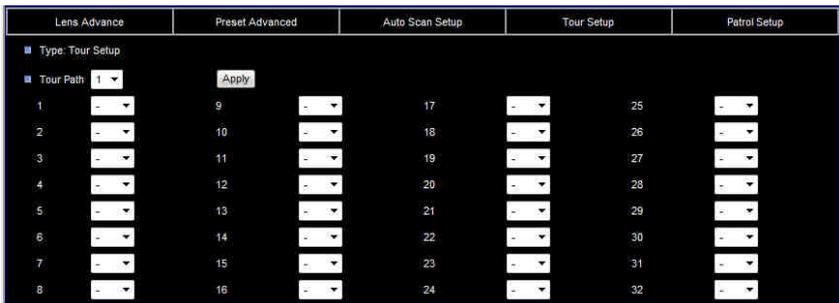
Tour Path Setting

- **Tour Path**

Please select the number of Tour Path to be set from the drop-down list in the top of the Tour Setup menu.

- **Sequential Preset Points Setting**

Please setup each Preset Point of the programmed Tour Path in order, assigning a Preset Point from the <Item> list for the specified number of Preset Point. Finally, Click on the <Apply> button to save the settings mentioned above.



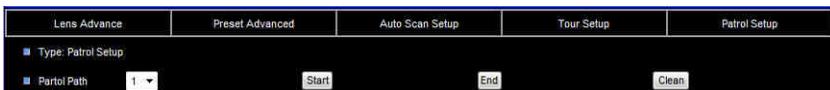
3-6-2.5 Patrol Setup

The Patrol Path Programming can be found under this path: **PTZ> PTZ Advance> Patrol Setup**

The IP Fast Dome Camera supports up to four Patrol Paths. Please follow the instructions below for Patrol Path setup.

Patrol Path Setting

To setup a Patrol Path, please first select a path number from the drop-down list. Then move the cursor to the PTZ control pane, and move the camera to a desired view (PTZ controls) as the start point of a Patrol Path. Click on the <Start> button to start record and start programming the Cruise Path via PTZ control. When finishing programming, click on the <End> button to quit. Then this Cruise Path will be automatically recorded.



Chapter 3-6-3 PTZ Schedule Settings

To setup PTZ scheduling, please select PTZ schedule link. Use the mouse select on the radio button of the preset types, None, Autopan, Preset #1, Preset #2, Preset #3, and Preset #4.

Click on the hour of the calendar control to configure the preset action.

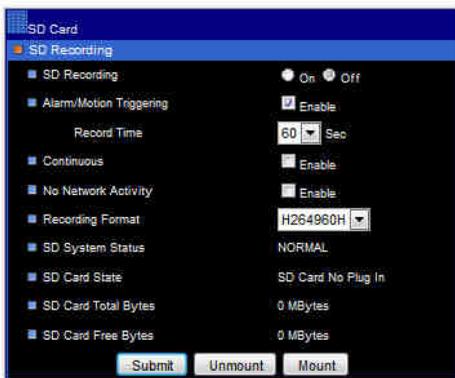


Chapter 3-7 SD Card Recording

To record video on SD Card, please insert SD card into the SD card slot. Enable SD card recording feature. The IP camera can start to record video into the SD card.

Chapter 3-7-1. SD Card Recording Setting

For SD card recording setting, please see the following for detail.



- **SD Recording:** Enable SD card recording.
- **Alarm/Motion Triggering:** Digital input and motion detection SD card recording.
- **Recording Time:** Post alarm recording time.
- **Continuous:** Continuous recording mode
- **No Network Activity:** If there is no network connection, perform SD recording.
- **Recording Format:** Recording resolution
- **SD System Status:** SD Linux mounting status.
- **SD Card State:** SD card inserting status
- **SD Card Capacity:** SD card total capacity
- **SD Card Free Space:** SD card free space
- **Mount:** Manually mount SD card.
- **Un-mount:** Manually un-mount SD card.

To un-mount the SD card, please click “un-mount SD Card” button. It might crash the file system of the SD card, if a user does not un-mount the SD card properly.

Backup File Download File name information.(YYYYMMDDHHMMSS.avi)		
First Record Time	2011/09/24 (Year/Month/Date)12:22:00 (Hour/Mn/Sec)	
Last Record Time	2011/09/27 (Year/Month/Date)11:00:01 (Hour/Mn/Sec)	
2011/09/27	11:00:01	20110927_110001.avi
2011/09/27	10:59:00	20110927_105900.avi
2011/09/27	10:58:00	20110927_105800.avi
2011/09/27	10:57:00	20110927_105700.avi
2011/09/27	10:56:00	20110927_105600.avi
2011/09/27	10:55:00	20110927_105500.avi
2011/09/27	10:54:00	20110927_105400.avi
2011/09/27	10:53:00	20110927_105300.avi
2011/09/27	10:52:00	20110927_105200.avi
2011/09/27	10:51:00	20110927_105100.avi
2011/09/27	10:50:00	20110927_105000.avi
2011/09/27	10:49:00	20110927_104900.avi
2011/09/27	10:48:00	20110927_104800.avi
2011/09/27	10:47:01	20110927_104701.avi
2011/09/27	10:46:00	20110927_104600.avi
2011/09/27	10:45:00	20110927_104500.avi
2011/09/27	10:44:00	20110927_104400.avi
2011/09/27	10:43:00	20110927_104300.avi
2011/09/27	10:42:00	20110927_104200.avi
2011/09/27	10:41:00	20110927_104100.avi

Chapter 3-8 Alarm Settings

H.264 D1 video server or IP PTZ camera's hardware alarm system contains motion detection, alarm sensors, and one alarm/relay output. Many alarm features such as motion/alarm email notification and FTP archiving can be found at this section.

Chapter 3-8-1 Motion/Alarm Setup

There are motion detection zones allowed in the H.264 D1 video server or IP PTZ camera. A user can enable the detection zones with different sensitivities ranging from 1 to 99 (highest to lowest) for motion detection. Once a suspicious motion activity gets triggered, H.264 D1 video server or IP PTZ camera can start to capture one JPEG snapshot on various recording mediums.

Chapter 3-8-2 Alarm (DI) Input Detection

- **Alarm Notification**—Enable alarm notification.
- **Alarm Input Mode**—Normal open/normal close for detecting alarm input
- **Alarm Output Time**—Trigger alarm output based on the dwell.



For video encoder model, since there are two alarm outputs, a user can specify alarm output time.

Chapter 3-8-3 Motion Area

Once above information get set, please configure the motion area of the monitored environment. To configure motion area, perform mouse click on the video area.



Chapter 3-8-4 Audio Detection

For audio model, the IP camera has audio detector detecting acoustic level. If the volume exceeds the audio sensitivity value, audio detector triggers an alarm for notification.



Chapter 3-9. Audio Setting

Audio setting is based on the following:

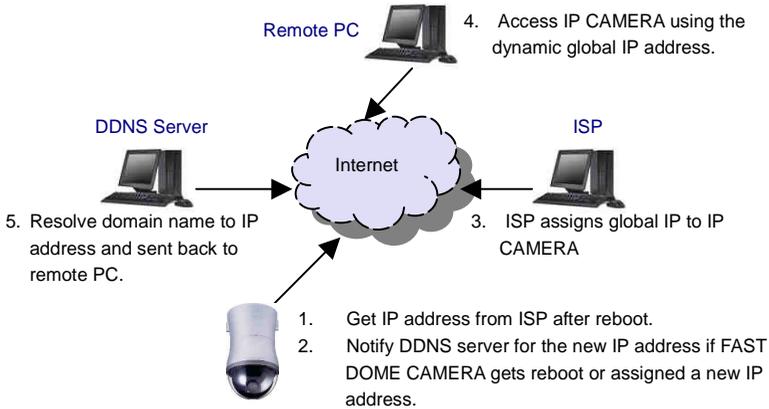


- MIC Volume: MIC or line input volume
- Audio Input Mode: Choose MIC input or Line input.
- Audio Input Gain: Voice input gain magnification
- Audio Output Volume: Line output volume adjustment
- Audio Coding Type: G.711 u-Law
- Sample Rate: Audio sample rate
- Bit Rate: Audio bit rate.

Appendix

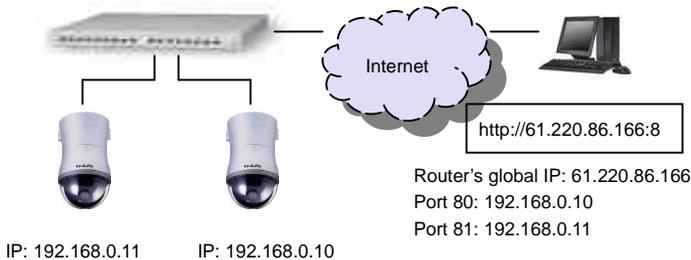
Advance Network DDNS and PPPoE Technologies

The advantage of using DDNS and PPPoE is to save the cost of IP address. H.264 AVC IP camera's PPPoE service gets a dynamic global IP address after system reboot. This IP address may get changed periodically. This is the address needed to access the video server over Internet. When ISP re-assigns a new IP address to H.264 AVC IP camera, H.264 AVC IP camera notifies DDNS service. A remote PC can access H.264 AVC IP camera by typing domain name in a browser. The domain name gets resolved by DDNS service and gets translated to its dynamic global IP address. The dynamic global IP address can now be accessed by the remote PC.



Advance Network Port Forwarding Technology

Port forwarding technology is an advanced network technology which is widely used for using one global IP shared by many network devices. The network architecture is illustrated as below. Port 80 of the router (61.220.86.166) is assigned to the device IP address, 192.168.0.10. Port 81 of the router is assigned to the device IP address, 192.168.0.11. When Remote PC accesses the router's port 81 (61.220.86.166:81), it eventually accesses the video server at 192.168.0.11.



iPhone Access

To use Live Cams Pro (Egman Technologies Inc.) for LILIN IP cameras. Please use your iPhone and select AppStore for download Live Cams Pro application developed by Egman Technologies Inc.



Execute Live Cams Pro application. Please click on “Add Camera” button on your phone while using Live Cams Pro. Task bar gets prompted as below:
Please selection one of the following drivers for cameras: Profile 1: H.264 HD or D1 IP camera.



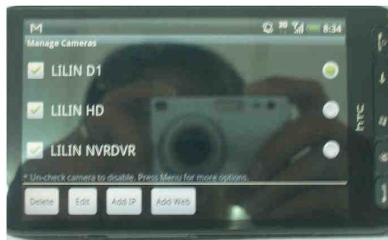
Android Access:

Please use your Android phone and select Android Market for downloading IP Cam Viewer/IP Cam Viewer Lite application developed by Robert Chou.

Execute IP Cam Viewer/IP Cam Viewer Lite application. Please click on Setup button on your phone while using IP Cam Viewer/IP Cam Viewer Lite. Task bar gets prompted as below:



Please click on Manage Cameras button. A list of camera names shows on the screen. Please select one of the cameras and click on Edit button.



“Add/Edit IP Camera” dialog box gets prompted for editing an IP camera or a DVR.



In “Add/Edit IP Camera” dialog box, please enter the following information:

1. Name: Name of the IP camera or DVR’s camera
2. Category: Please select Merit LILIN.
3. Type: Select device type, Merit LILIN D1/Merit LILIN HD/Merit LILIN DVR.
4. IP Address: Please type IP address, for example http://59.124.49.36:60005 where 60005 is the port number.
5. Provide username and password information. For IP camera, the default username and password are “admin” and “pass”. For DVR, the default username and password are “admin” and “1111”.

Once above information is entered, please click “Save” button. You are able to see live video of the IP camera or DVR’s camera.

Emergency Factory Default

To restore the server to factory default settings, please:

1. Hold Load Default Button or short Reset Cable for 10 seconds, then release the button or Reset Cable.
2. After about 40 seconds, the network LED light is off, and then it becomes lit again.
3. This camera has completed the factory default setting, and it reboots.
4. Use IPScan scanning for the IP address of the IP device.
5. Launch Internet browser for the IP address of the IP device.
6. Type default username “admin” and password “pass” for enter web interface of the IP device.

SD Card Compatibility List

Manufacturer	Size	SDHC/SDSC
Sandisk	16GB	SDHC
Sandisk	8GB	SDHC
Transcend	8GB	SDHC
Transcend	4GB	SDHC
Sandisk	32GB	SDHC

Specification

Network Function	
Video compression	H.264, Motion JPEG
Resolution	SXGA(1280 x 1024), D1(720 x 480), CIF(352 x 240)
Frame rate	H.264 : 30 FPS at SXGA(1280 x 1024)
	Motion JPEG : 30 FPS at D1(720 x 480)
Video streaming	RTP/HTTP, RTP/TCP, RTP/UDP
Video bitrate	128Kbps ~ 5Mbps
	Frame rate and bitrate controllable on-the-fly
	VBR / CBR / GOP supported
Security	Base64 HTTP encryption
	Multiple user access levels with password protection
	10 user accounts available
Users	8 simultaneous users
OSD	Text overlay for date, time, and camera name
Alarm Function	Image upload over FTP and E-mail by alarm / motion detection
CPU, memory	Embedded SoC ARM11, 528MHz, 256MB DDR2, 256MB flash memory
Web PTZ control	Pan , tilt , zoom in / out , absolute position, and video-click-n-move
PTZ preset scheduling	Yes, via web interface
Maintenance	Firmware update via HTTP
	Firmware available at web site
Network Interface	10Mbps/ 100Mbps, RJ-45
Client PC requirement	OS : Windows 2000 , Windows XP , Windows Vista, Windows 7
	Browser : Windows Internet Explorer 6, 7, 8
	CPU : Intel Pentium 4 1.8GHz or above
	RAM : 1GB or above, Independent Display Card
Network protocols	IP, TCP, UDP, HTTP, SMTP, NTP, DDNS, UPnP, FTP, ARP, DHCP, PPPoE, DNS, RTSP, RTCP, Telnet, ONVIF
Mobile phone and PDA	iPhone, iPad, and Android support
System integration	ONVIF 及 LILIN HTTPAPI
CMX	CMX HD 3.6 support
Video display	LILIN Universal ActiveX & LILIN Java Applet
OS	Embedded Linux 2.6.32
Two-way Audio	G.711

- Design and specification are subject to change without further notice.

DISTRIBUTOR :

66-IPS622OOE-2