

LPR IP camera

User manual



1. Introduction

The camera adopts 2.1 Mega Pixel 1/2.8" SONY Exmor progressive scan CMOS sensor, featured WDR, low illumination, high definition. Special LPR technology applied: Highlight Compression(HLC) adjustable, multi-section shutter speeds, LED illuminators brightness adjustable, AGC adjustable, digital display setting, automatic snapshot and FTP upload, etc.

Easy setting: no need professionals, no need client software. BNC video output on control board for connection with a monitor. Manual setting all the function on control board inside camera. Connect NVR or computer, playback video, pause and see license plates clearly.

Applicable in: freeway, city road, country road, entrance/exit of community, school, hospital, industrial park, parking lot or garage, toll gate, etc.
Surveillance place

2. Technical Parameter

Video	sensor	1/2.8 " SONY 2.1 Mega pixel Exmor progressive CMOS sensor
	Resolution max.	Full HD/1080P(1920x1080) + Full D1
	Min. illumination	color: 0.05 Lux at F1.2 / LED illuminator ON: 0.001Lux at F1.2
	WDR	Y
	video codec	H.264 Main Profile @ Level 4.1 / Motion JPEG
	streams	FHD/1080P + Full D1 + CVBS
	Frame rate	25 fps / 30fps
	video stream	H.264& M-JPEG video stream: video out multichannel video at max. Resolution. Frame rate and video steam adjustable, H.264 support VBR/CBR
	16: 9 display	support
	ROI	Y

	Lens	f= 6mm/8mm/12mm 3MP fixed lens
Audio	Two-way audio	1 channel linear input, 1k Ω ; 1 channel linear output, half duplex
Network	Network port	1 RJ45, 10/100M self adaptive Ethernet port, 1 BNC, 1 power supply port
	network protocol	IPv4, TCP/IP, UDP, HTTP, DHCP, RTP/RTCP/RTSP, FTP, UPnP, DDNS, NTP, IGMP, ICMP ,etc
	access agreement	WEB, SDK API, ONVIF
Storage	video	PC or NVR
	Snapshot images	TF card and/or FTP upload
Safety	Built-in watchdog	In unusual circumstances auto reset the system to ensure the normal operation.
	remote reset	network remote reset
General	OS	Microsoft Windows XP/Windows 7 IE: Microsoft Internet Explorer 6.x or above
	Video out	1.0V _{p-p} , 75 Ω
	Power supply	DC12V
	Operating temperature	-10 $^{\circ}$ C—50 $^{\circ}$ C
	N.W. (approx.)	2.5KG
	Size	12" (L) 390mm\times (W) 140mm\times (H) 143mm

3. Installation and setting

3.1. Connection computer and license plate recognition camera with 75 Ω coaxial cable at BNC port.

3.2. Connect DC12V power supply, if the upper casing is open, the indicator light is on

3.3. When the image appears in the monitor, adjust the focus and Iris to get clear image. Surveillance area: max. 5-8 meters wide.

3.4. Digital display: current traffic mode and its parameters.

To select various traffic mode by Rocker Switch UP or DOWN. The indicator is ON for the selected traffic mode. Five traffic modes following:

A1: normal mode

A2: 30KM/H

A3: 60KM/H

A4: 90KM/H

A5: 120KM/H

Traffic mode A1: no shutter speeds and Highlight compression function.

Traffic mode: A2, A3, A4, A5: highlight compression and electronic shutter speed functions are working at the same time.

HLC intensity is adjustable by Rocker Switch Left or Right. Set its intensity at night (or daytime when necessary). It automatically shifts according to the setting value from daytime to night. HLC intensity: E1-E6. When the intensity comes to E6 at night, it is the upmost highlight compression, the image view is much darker. Be sure to set to a suitable intensity for best view license plates. Factory default: E2 in daytime, E6 at night.

3.5. Set shutter speeds according to vehicle's speed. If there's ghost image, choose a higher speed mode. If the vehicle is not moving at all, choose the shutter speed mode: A1 or A2.

3.6. When main auxiliary lights is too strong or too weak, set LED brightness value from 00 to 32 by K1 or K2. The bigger value, the brighter LED illuminator. But it has to be not too whitish license plates. Factory default: 00 in daytime. Adjustable. 20 at night. Adjustable.

3.7. AGC setting. Enhance clearer image of license plates. Digital display: C1--C5, when it comes to C5, it is clearest image, but darker image.

3.8. External trigger signal input: Input external switch signal. The camera will automatically take snapshot picture when there's signal input. Snapshot images can be stored in TF card or FTP upload to designated computer.

3.9. Digital display: current traffic mode, HLC intensity, LED luminance value, AGC. Circle display them. Time interval: 5 seconds. Digital tube is off when finishing setting. It is on again when pressing any button for re-set

3.10. Connect PC or NVR via internet for live view or recording when finish setting.

3.11. Default IP:192.168.1.4, user name: :system, password: system IE port:6002

Initialize TF card and set snapshot parameters when logging in System.

3.12. NVR access protocol: ONVIF, port: 8080

3.13 TF card storage, FTP upload and image capture setting

3.13.1. Log in camera's system by IE browser. IP:192.168.1.4, user name: system, password: system IE port: 6002.

English

Login Update Contral

UserName: system

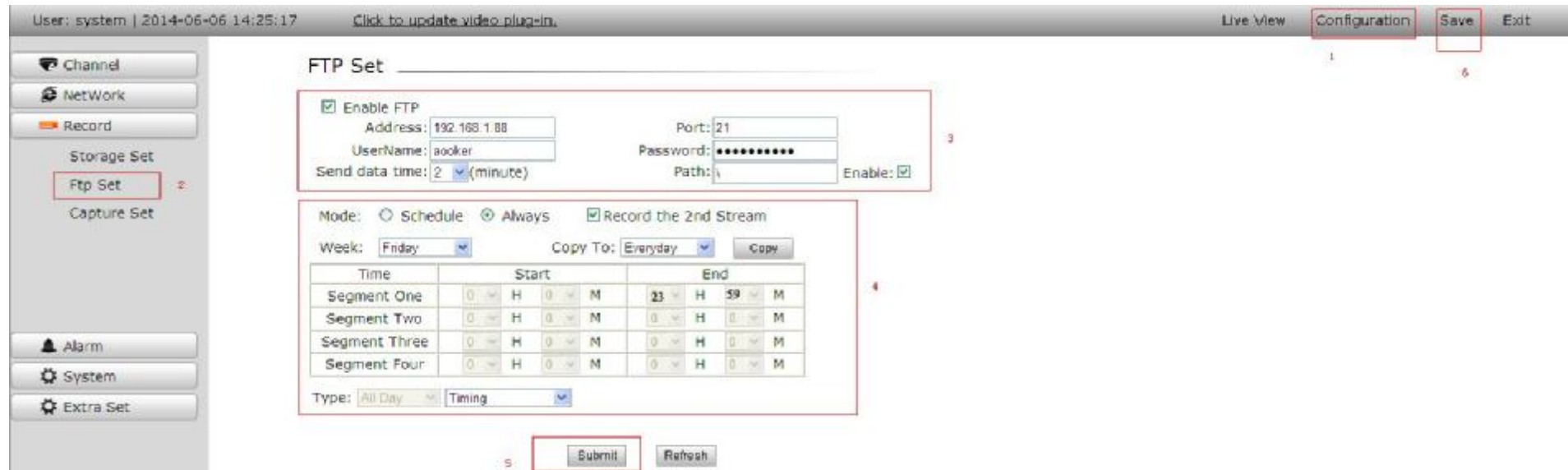
Password: ●●●●●●

Port: 6002

Login Reset

3.13.2 Log in system, **for video recording**, FTP set, “ Configuration - Record - Ftp Set - Submit - Save” .Step 1-6.

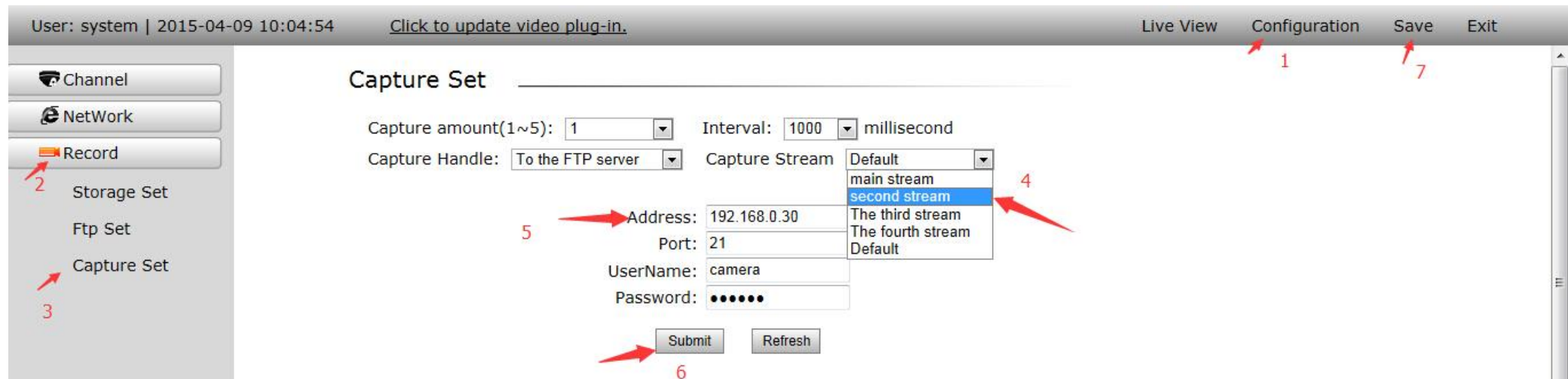
Use an internal network IP address (same network with camera) as FTP server. If untick “Record the 2nd Stream”, video recording main stream.



3.13.3. Log in system, **for snapshot image**, capture setting, “ Configuration - Record - Capture Set - Submit - Save” Step 1-7.

Use an internal network IP address (same network with camera) as FTP server.

Select capture stream.



5 types of capture handle: Store the snapshot images to TF card, or To the FTP server, or through alarm channel upload, or TF card and FTP upload, or TF card and upload alarm channel.

To store images to TF card and FTP upload to a designated directory. Select it in down menu.

User: system | 2014-05-31 02:35:02 [Click to update video plug-in.](#) Live View Configuration Save Exit

Channel
NetWork
Record
Storage Set
Ftp Set
Capture Set

Capture Set

Capture amount(1~5): Interval: millisecond

Capture Handle: Enable Second Stream

- To the FTP server
- Save to local hard disks
- To the FTP server
- Through the alarm channel upload
- Local preservation and FTP upload
- Local preservation and upload alarm channel

UserName:
Password:

3.13.4 Log in system. AlarmIn setting, “Configuration - Alarm - Alarm Set -Submit -Save”. Step 1-8. For snapshot or Record or Alarm to the CMS.

User: system | 2014-06-03 17:33:27 [Click to update video plug-in.](#) Live View Configuration Save Exit

Channel
NetWork
Record
Alarm
AlarmIn Set
AlarmOut Set
System
Extra Set

AlarmIn Set

Alarm Input Name Type

Week: Copy to:

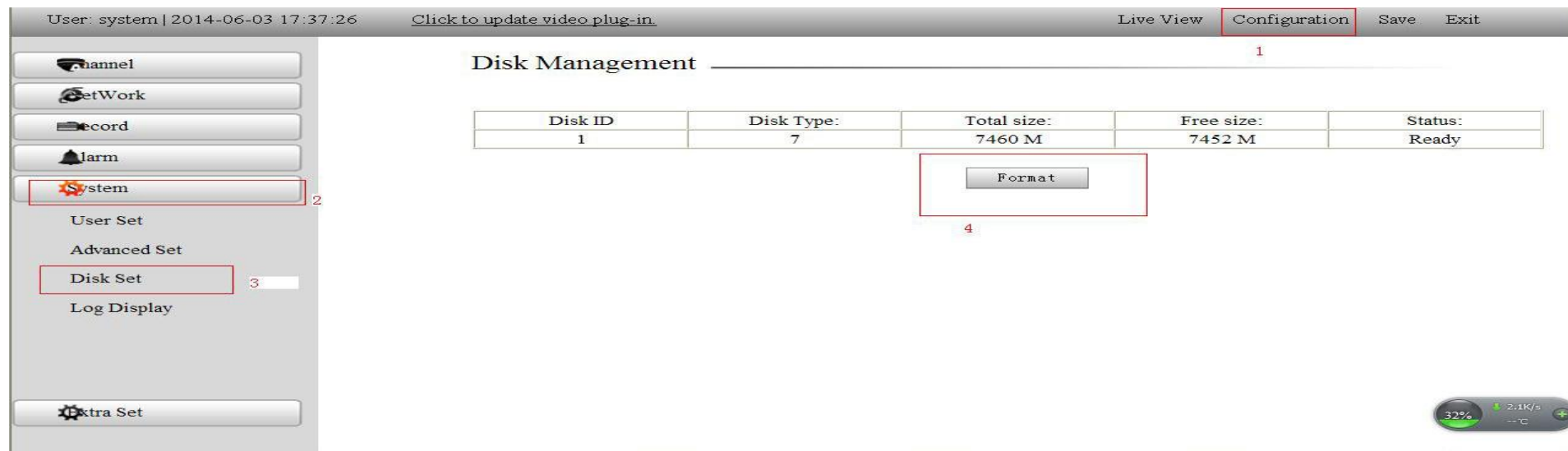
Time	Start	End
Segment one	<input type="text" value="0"/> H <input type="text" value="0"/> M	<input type="text" value="23"/> H <input type="text" value="59"/> M
Segment two	<input type="text" value="0"/> H <input type="text" value="0"/> M	<input type="text" value="0"/> H <input type="text" value="0"/> M
Segment three	<input type="text" value="0"/> H <input type="text" value="0"/> M	<input type="text" value="0"/> H <input type="text" value="0"/> M
Segment four	<input type="text" value="0"/> H <input type="text" value="0"/> M	<input type="text" value="0"/> H <input type="text" value="0"/> M

Enable linkage action

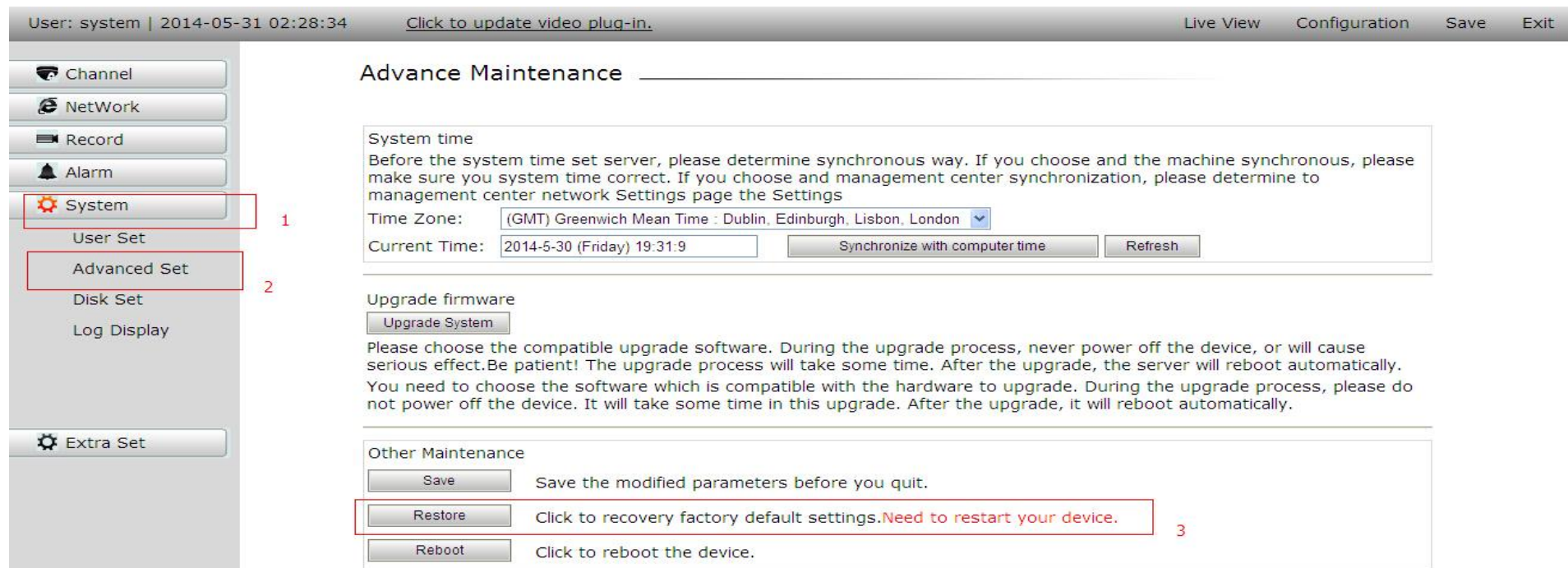
Move to preset location Cruise Alarm to the CMS Snapshot Record

Trigger alarm output Relay

3.13.5 Log in system, format TF card. “Configuration -System - Disk Set - Format”. Step 1-4.



3.13.6 Log in system. “Configuration - System - Advanced set - Restore “, restore camera if it is the 1st time setting. Step 1-3.



3.13.7 Then, the camera will capture image and store images when it is connected with inductive loops, etc. It says “Signal Alarm...” when live view.

User: system | 2014-06-20 11:07:09

[Click to update video plug-in.](#)

Live View Configuration Save Exit

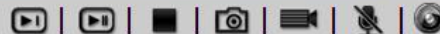
<81.101.101.228>Connect success[SIZE-704x576][FPS-25][BPS-744K] >>>>>>>>>>

RhinoTower



Signal Alarm...

1



OSD	VMD	Advance	Device	Privacy
Video	PTZ	Mode	Playback	Stream

PTZ speed 3D Control

Preset: Focus Mode:

1 2 3 4 5 6 7 8
9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24
25 26 27 28 29 30 31 32

3.13.8 Snapshot images by Video Motion Detection. It is for test purpose.

Please be noted that snapshot by Motion Detection is much less accurate than by inductive loops, radar, etc. external trigger because of poor illumination at night.

Log in System. “ Live View - VMD - Alarming Schedule - Linkage Action - ClearZone- Re-size VMD area - Setup - Save “. Step 1-6.

(Alarming Schedule: Copy to “ Everyday” and Copy.)

Threshold: less value, more sensitive.

The screenshot displays a web-based interface for video motion detection (VMD) configuration. The main window shows a live video feed of a road with a yellow grid overlay. A red rectangle highlights a specific area on the road. The interface includes a top navigation bar with 'Live View', 'Configuration', 'Save', and 'Exit' buttons. The 'Configuration' panel on the right is divided into several sections:

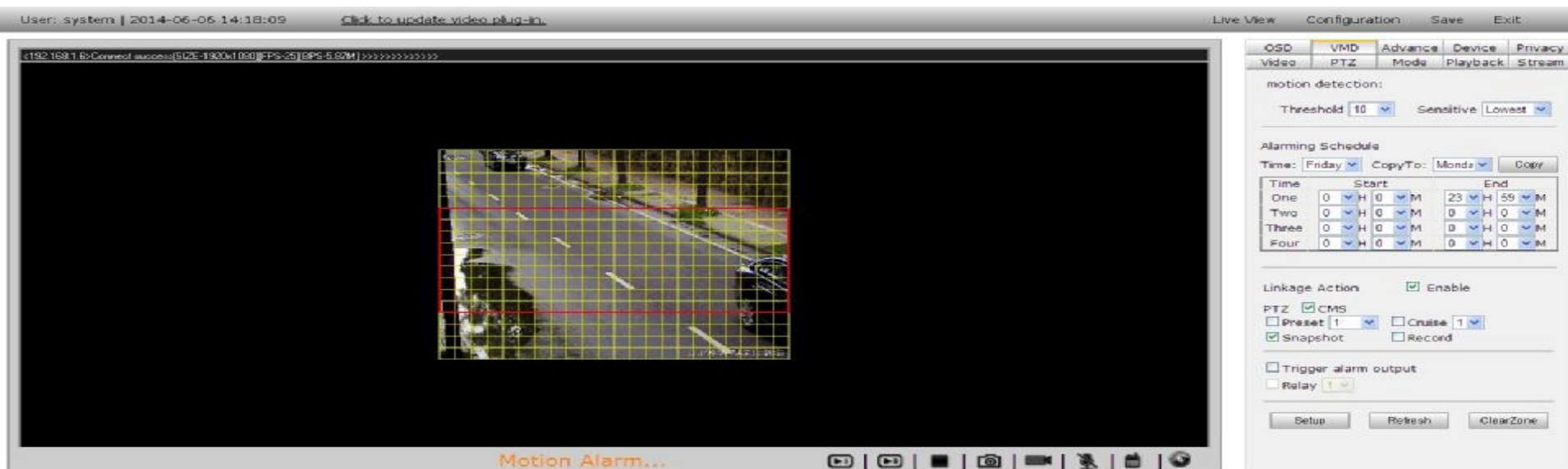
- OSD**: Includes 'VMD', 'Advance', 'Device', and 'Privacy' tabs.
- Video**: Includes 'PTZ', 'Mode', 'Playback', and 'Stream' tabs.
- motion detection:** Features a 'Threshold' dropdown set to '10' and a 'Sensitive' dropdown set to 'Lowest'.
- Alarming Schedule**: Includes a 'Time' dropdown set to 'Tuesd' and a 'CopyTo:' dropdown set to 'Mond'. Below this is a table for scheduling:

Time	Start	结束时间
One	0 H 0 M	23 H 59 M
Two	0 H 0 M	0 H 0 M
Three	0 H 0 M	0 H 0 M
Four	0 H 0 M	0 H 0 M

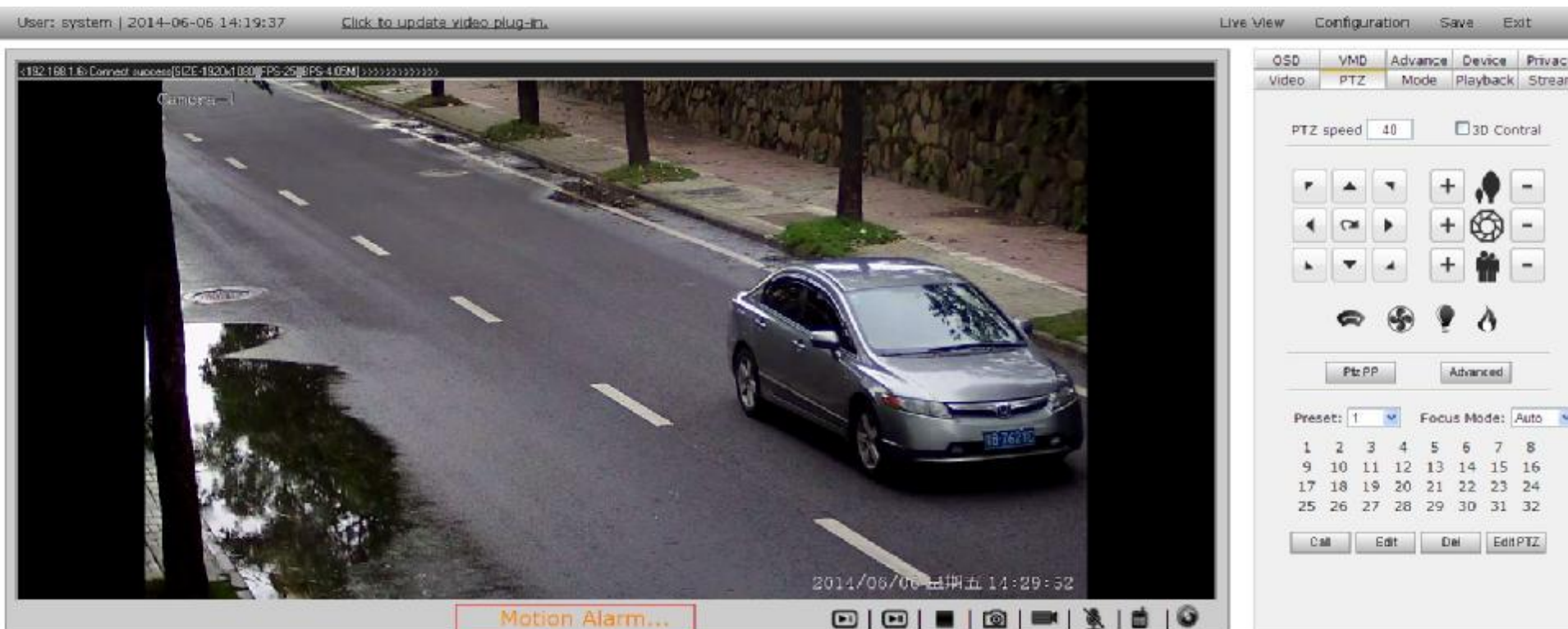
- Linkage Action**: Includes a checked 'Enable' checkbox, 'PTZ' options (checked 'CMS', 'Preset' 1, 'Cruise' 1), and 'Snapshot' (checked) and 'Record' (unchecked) checkboxes.
- Trigger alarm output**: Includes a checked 'Relay' dropdown set to '1'.
- Buttons**: 'Setup', 'Refresh', and 'ClearZone' buttons are located at the bottom of the configuration panel.

At the top of the interface, the user is logged in as 'system' on '2014-06-03 10:37:14'. A status bar at the bottom of the video feed shows technical details: '<192.168.1.5>Connect success[SIZE-1280x1024][FPS-25][BPS-4.44M] >'. A toolbar at the bottom of the video feed includes icons for play, stop, full screen, camera, volume, and refresh.

After finish VMD setting, it shows “Motion Alarm...” when the car is passing through the virtual square area.



When live viewing, it says “Motion Alarm...” when the car is passing through.



3.13.9 If you prefer MJPEG as second video stream, setting from “Live view - Stream - Stream Type - Second video stream setting- Setup - Save”. Step 1-6

User: system | 2014-06-04 12:38:33 [Click to update video plug-in](#)

Live View Configuration Save Exit

OSD VMD Advance Device Privacy

Video PTZ Mode Playback Stream

Video:

StreamType: 1080P(H.264)+D1(MJPEG)+C

D1StreamType: Image Use Size720*576

StreamEncrypt: Standard Stream

First video stream setting

Frame rate: All Type: Video

Mode: CBR Quality: Best

BitRate: 4096 Kbps

Second video stream setting

Frame rate: 12 Type: Video

Mode: CBR Quality: Best

BitRate: 512 Kbps

IsImitate: yes

31% 526K/s --°C

Setup Refresh

Remarks: When sub video stream is MJPEG, can't set higher frame rate of real time view. The camera can't proceed high stream. It will restore from time to time because of high stream.

3.13.10 There are various video stream type (main stream and sub stream) to meet customer's requirement.

“Live View - Stream - Stream Type - Setup - Save “.

User: system | 2014-06-04 12:47:26 [Click to update video plug-in.](#)

1 Live View Configuration Save Exit 6

OSD VMD Advance Device Privacy

Video PTZ Mode Playback Stream

Video: 2

3

StreamType: 1080P (H. 264)+D1 (MJPEG)+C

D1StreamType: 1080P (H. 264)+D1 (H. 264)
1080P (H. 264)+D1 (MJPEG)
1080P (H. 264)+CIF (H. 264)

StreamEncrypt: 1080P (H. 264)+D1 (H. 264)+CVBS
1080P (H. 264)+D1 (MJPEG)+CVBS

First video stream setting: 1080P (H. 264)+CIF (H. 264)+CVBS
1080P (MJPEG)+D1 (H. 264)

Frame rate: All 720P (H. 264)+720P (MJPEG)

Mode: CBR 720P (H. 264)+D1 (H. 264)
720P (H. 264)+CIF (H. 264)

BitRate: 4096 720P (H. 264)+D1 (H. 264)+CVBS
720P (H. 264)+CIF (H. 264)+CVBS

Second video stream setting 4

Frame rate: 12 Type: Video

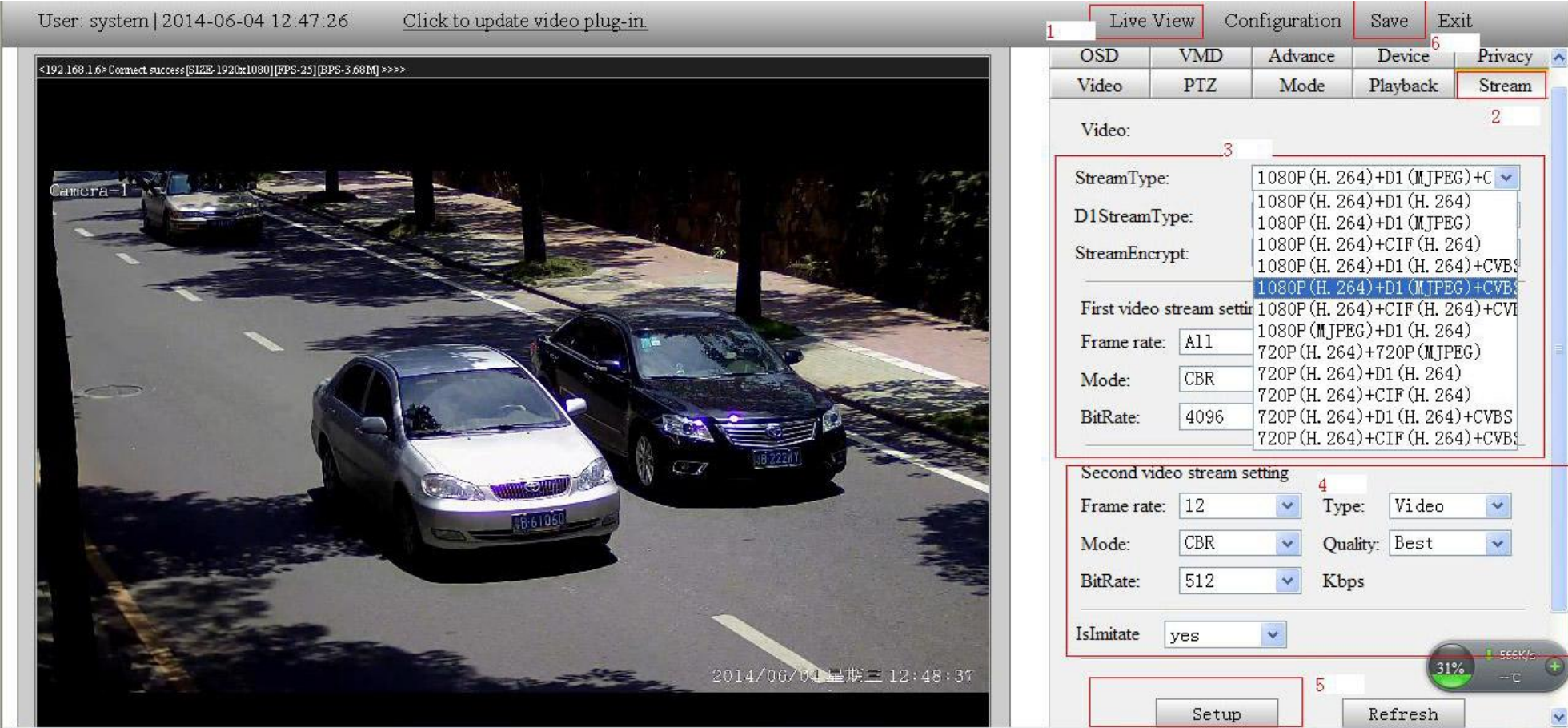
Mode: CBR Quality: Best

BitRate: 512 Kbps

IsImitate: yes

5 31% 55K/s --°C

Setup Refresh



3.13.11 To apply NTSC TV system, setting from “Live view - Device - Format Type - Setup - Save”. Step 1-5

User: system | 2014-06-04 12:53:45 [Click to update video plug-in.](#)

Live View Configuration Save ⁵

1

OSD VMD Advance Device ² Privacy
Video PTZ Mode Playback Stream

Device information:

Device Name: IPCAM

3 Format type: PAL
PAL
Device type: NTSC

Product SN: IPC2503142402885

MAC Address: 00-11-17-17-C4-A6

Software Version: 4.3.0.58Build20140512

Web Version: 1.0.0.65Build20140512

Firmware Version: 0.3

Channel Number: 1

4 Setup Refresh

30% 523K/s
--°C

3.13.12 Manual recording, “Live View”, Press recording icon to start and stop. Find recording at D:/Record/Video on your computer. It is for test purpose.

The screenshot displays a web-based camera interface. At the top, the status bar shows 'User: system | 2014-06-06 14:14:56' and a link 'Click to update video plug-in'. The main area is a live video feed of a street scene with a white SUV in the foreground and a dark car in the background. A red box highlights the 'Live view' button in the top navigation bar. On the right side, there is a control panel with tabs for 'OSD', 'VMD', 'Advance', 'Device', and 'Privacy'. The 'Advance' tab is selected, showing options for 'PTZ', 'Mode', 'Playback', and 'Stream'. The 'PTZ' section includes a 'PTZ speed' input set to 40 and a '3D Control' checkbox. Below these are several rows of icons for camera movement and settings. At the bottom of the control panel, there are buttons for 'Full PP', 'Advanced', a 'Preset' dropdown menu set to 1, and a 'Focus Mode' dropdown menu set to Auto. A 4x4 grid of preset numbers (1-16) and another 4x4 grid (17-32) are visible. At the bottom of the interface, there is a toolbar with icons for play, stop, record, and other functions. The recording icon is highlighted with a red box. The video feed shows a timestamp '2014/06/06 星期五 14:25:13' at the bottom.

3.13.13 Manual snapshot images, “ Live view” Press image icon to start capture . Find images at D:/Record/Image on your computer . It is for test purpose.

The screenshot displays a web-based camera interface. At the top, the status bar shows "User: system | 2014-06-06 14:12:38" and a link "Click to update video plugin.". The main area is a live video feed of a silver van on a road, with a timestamp "2014/06/06 星期五 14:22:56" at the bottom. A toolbar at the bottom of the video feed includes icons for play, stop, full screen, a camera icon (highlighted with a red box), and other controls. On the right, a control panel features tabs for "OSD", "VMD", "Advance", "Device", and "Privacy". The "Advance" tab is active, showing "PTZ speed" set to 40 and a "30 Control" checkbox. Below this are directional and zoom controls, a "PtzPF" button, and an "Advanced" button. A "Preset" dropdown is set to "1" and "Focus Mode" is set to "Auto". A 32-preset grid is visible, and buttons for "Call", "Edit", "Del", and "EditPTZ" are at the bottom.

4. problem and solution

If there is any problem in the camera, please try to solve it as below..

problem	solution
License plate image is not clear enough or obscure	<ol style="list-style-type: none">1. If too wide surveillance area.2. Well focus3. LED illuminator has enough luminance.4. Suitable HLC intensity.5. Set suitable shutter speed for fast vehicle speed.
Tailing image	<ol style="list-style-type: none">1. Set suitable shutter speed2. NVR proceed too slowly. Replace an advanced NVR. etc.
Image whitish.	<ol style="list-style-type: none">1 HLC intensity, AGC value, LED brightness value is on best match.2. WDR function ON in the daytime.
No network	<ol style="list-style-type: none">1. Network is connected.2. Network protocol is correct.

5.Warranty: one year from factory shipment.

6. Factory reserves the right to revise any technical parameters without prior notice.