

KEDACOM

User Manual for HD IP Camera of LC Series

Version 01

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Target Audience

Administrators and Operators of Video Surveillance Products

Document Version

Version 01

Applicable Models

LC2150 series, LC2250 series, LC2110 series, LC2210 series, LC211 series, and LC2240 series


Related Document

Quick Start Guide for LC2110 & LC2210

Quick Start Guide for LC2150 & LC2250

Quick Start Guide for LC211 LC2240

Convention

Icon	Convention
	Notes
<i>italic</i>	Book or document name; Filling content
>	Connector between menus of different level
BOLD	Menu; Button; Option

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1. Product Brief

HD IP Camera (hereinafter referred to as Camera) is a remote video surveillance device based on IP network technology of independent research and development of Suzhou Keda Technology Co., Ltd. It encodes and transmits HD video. Also, it can be deployed at any point of a surveillance network and transmits videos via public or private IP network. The device has built-in IR illumination module, which satisfies different video surveillance requirements better.

1.1 Appearance




Picture1-1 LC2110/LC2210 Series



Picture1-2 LC2150/LC2250 Series



Picture1-3 LC2111/LC2240 Series

 Note: -B series without end bracket

1.2 Main Functions

Live View

Apply high-performance progressive scan sensor, with clear image and vivid color;

High-performance video processing chip and efficient video encoding, providing HD video;

Dual-stream to fit different network bandwidth;

Configurable text overlay on video

IR Illumination

Built-in IR illumination module to better satisfy different video surveillance requirements

Networking

Static address, DHCP or PPPoE;

NAT traversal, DNS and multicast technology

PoE

PoE supported, realize network transmission and power supply only with a PoE switch

Camera Parameter Adjustable

Multiple camera parameters are adjustable to suit various surveillance requirements.

Motion Detection

User can set motion detection area in the surveillance scene. Once someone appears in the defined area, the system will trigger alarm.

Privacy Mask

Keep sensitive information private.

ROI Encode

Only encode specific area to ensure normal surveillance and constant resolution of key area under poor network.

Clipping Area Encode

Only encode specific area to ensure normal surveillance of key area under poor network.

User Management

Different permissions will be allocated to different accounts to ensure normal operation of device.

2. Start Up

Please refer to the Quick Start Guide in the packing for device installation and wiring.

2.1 Client Installation Conditions

Requirements of PC for installing the client:

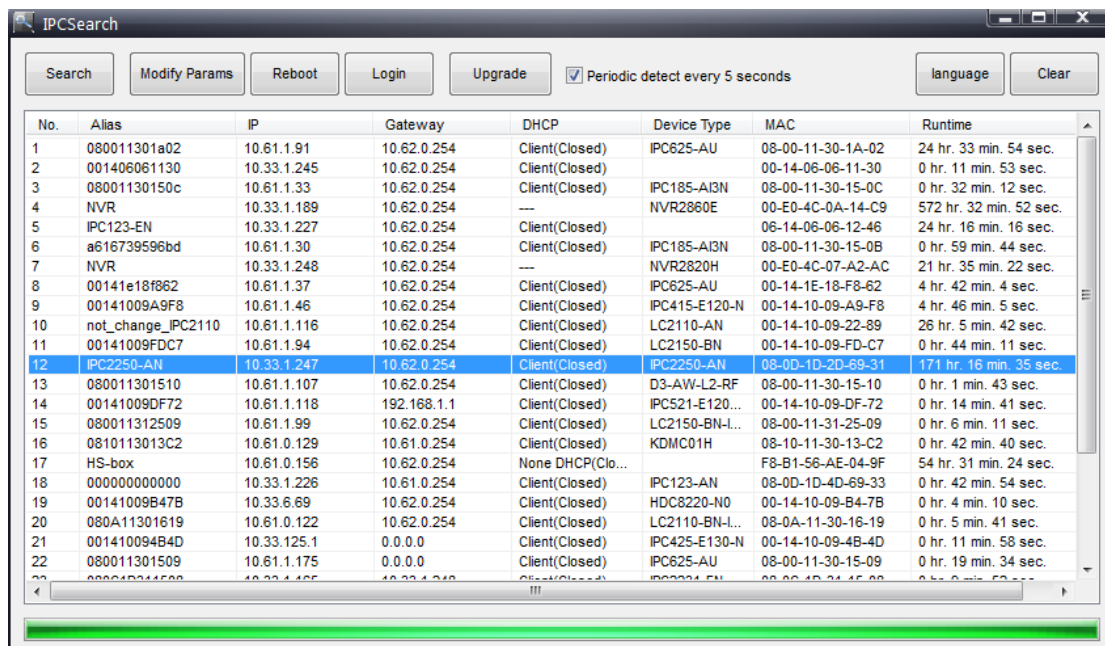
- ✚ Operating System: Windows XP or newer versions
- ✚ Browser: IE6.0 or newer versions
- ✚ Processor: 2.0 GHz CORE®2 series or other equivalent processors
- ✚ RAM Memory: 2GB or above
- ✚ DirectX: 9.0c

2.2 Initial Configuration

- 1) Power on the camera after installing and wiring.
- 2) Get IPCSearch from the attached CD.

 Note: IPCSearch is green software free from installation.

- 3) RunIPCSearch: it will search devices in LAN automatically and display the list as shown in Picture 2-1.



The screenshot shows the IPCSearch application interface. At the top, there are buttons for Search, Modify Params, Reboot, Login, and Upgrade. A checkbox for 'Periodic detect every 5 seconds' is checked. There are also buttons for 'language' and 'Clear'. Below these is a table with the following columns: No., Alias, IP, Gateway, DHCP, Device Type, MAC, and Runtime. The table contains 23 rows of data, with the 12th row highlighted in blue.

No.	Alias	IP	Gateway	DHCP	Device Type	MAC	Runtime
1	080011301a02	10.61.1.91	10.62.0.254	Client(Closed)	IPC625-AU	08-00-11-30-1A-02	24 hr. 33 min. 54 sec.
2	001406061130	10.33.1.245	10.62.0.254	Client(Closed)		00-14-06-06-11-30	0 hr. 11 min. 53 sec.
3	08001130150c	10.61.1.33	10.62.0.254	Client(Closed)	IPC185-AI3N	08-00-11-30-15-0C	0 hr. 32 min. 12 sec.
4	NVR	10.33.1.189	10.62.0.254	---	NVR2860E	00-E0-4C-0A-14-C9	572 hr. 32 min. 52 sec.
5	IPC123-EN	10.33.1.227	10.62.0.254	Client(Closed)		06-14-06-06-12-46	24 hr. 16 min. 16 sec.
6	a616739596bd	10.61.1.30	10.62.0.254	Client(Closed)	IPC185-AI3N	08-00-11-30-15-0B	0 hr. 59 min. 44 sec.
7	NVR	10.33.1.248	10.62.0.254	---	NVR2820H	00-E0-4C-07-A2-AC	21 hr. 35 min. 22 sec.
8	00141e18f862	10.61.1.37	10.62.0.254	Client(Closed)	IPC625-AU	00-14-1E-18-F8-62	4 hr. 42 min. 4 sec.
9	00141009A9F8	10.61.1.46	10.62.0.254	Client(Closed)	IPC415-E120-N	00-14-10-09-A9-F8	4 hr. 46 min. 5 sec.
10	not_change_IPC2110	10.61.1.116	10.62.0.254	Client(Closed)	LC2110-AN	00-14-10-09-22-89	26 hr. 5 min. 42 sec.
11	00141009FDC7	10.61.1.94	10.62.0.254	Client(Closed)	LC2150-BN	00-14-10-09-FD-C7	0 hr. 44 min. 11 sec.
12	IPC2250-AN	10.33.1.247	10.62.0.254	Client(Closed)	IPC2250-AN	08-0D-1D-2D-69-31	171 hr. 16 min. 35 sec.
13	080011301510	10.61.1.107	10.62.0.254	Client(Closed)	D3-AW-L2-RF	08-00-11-30-15-10	0 hr. 1 min. 43 sec.
14	00141009DF72	10.61.1.118	192.168.1.1	Client(Closed)	IPC521-E120...	00-14-10-09-DF-72	0 hr. 14 min. 41 sec.
15	080011312509	10.61.1.99	10.62.0.254	Client(Closed)	LC2150-BN-I...	08-00-11-31-25-09	0 hr. 6 min. 11 sec.
16	0810113013C2	10.61.0.129	10.61.0.254	Client(Closed)	KDMC01H	08-10-11-30-13-C2	0 hr. 42 min. 40 sec.
17	HS-box	10.61.0.156	10.62.0.254	None DHCP(Clo...		F8-B1-56-AE-04-9F	54 hr. 31 min. 24 sec.
18	000000000000	10.33.1.226	10.61.0.254	Client(Closed)	IPC123-AN	08-0D-1D-4D-69-33	0 hr. 42 min. 54 sec.
19	00141009B47B	10.33.6.69	10.62.0.254	Client(Closed)	HDC8220-N0	00-14-10-09-B4-7B	0 hr. 4 min. 10 sec.
20	080A11301619	10.61.0.122	10.62.0.254	Client(Closed)	LC2110-BN-I...	08-0A-11-30-16-19	0 hr. 5 min. 41 sec.
21	001410094B4D	10.33.125.1	0.0.0.0	Client(Closed)	IPC425-E130-N	00-14-10-09-4B-4D	0 hr. 11 min. 58 sec.
22	080011301509	10.61.1.175	0.0.0.0	Client(Closed)	IPC625-AU	08-00-11-30-15-09	0 hr. 19 min. 34 sec.
23	080011301509	10.33.1.175	10.33.1.248	Client(Closed)	IPC625-AU	08-00-11-30-15-09	0 hr. 19 min. 34 sec.

Picture2-1IPCSearch

- 4) Select a camera to be configured, click **Modify Params** or right click the mouse. Interface is shown in Picture 2-2.

Picture2-2Modify Parameter

- 5) After modification, **Modify Params** will be disabled and the device will reboot automatically. Please wait patiently. After reboot, the button will be enabled again. Please select this device again and click **Login** or double click device name to enter web client. Interface is shown in Picture 2-3.

Picture2-3IPCCtrl Login Interface

- 6) Enter user name and password:
 IPCCtrlaccounts consist of bothadmin and guest users:
 admin: can perform full operations.
 guest: can perform operations, for example, live video view, image search, video record search, video playback, etc. guest can neither configure parameters, delete videos or snapshots, nor operate user management or equipment maintenance.

7) Interface after login is shown in Picture 2-4.



Toolbar Buttons on Main Menu

Picture2-4IPCCtrl Interface

3. Product Functions

IPC Ctrl can not only view live video, but also perform local snapshot and recording.

i Note: Functions of different cameras may differ, and this Manual will take camera with more functions as example. User operation is subject to the actual functions of the model. Disabled button in IPC Ctrl means the model doesn't support the function.

3.1 Live View

The default interface after user login is live video view, or user can click Live View to enter the interface.

3.1.1 Toolbar Buttons on Main Menu



Picture3-1 Toolbar Buttons on Main Menu

View 

Click this button to play live video.

Stop 

Click this button to stop live view.



Full Screen 

Click this button to display full screen.

When Drag to Zoom is disabled, double click the live video to display full screen directly, and double click again to exit.

Snapshot 

Click this button to snapshot an image.

Snapshot includes PU Snapshot  and Local Snapshot . User can set in Parameter>Local Setting.

 Notes:

- 1) PU Snapshot: PU Snapshots an image and sends it to local client in .JPG format. The image quality is good, but there is some time delay caused by network.
- 2) Local Snapshot: Client snapshots an image and save it locally. The image quality is ordinary, but there isn't any time delay.

Local Setting

Path for PU Snapshot:	C:\IPC Control\PuSnapShot	Modify Path
Path for Recording:	C:\IPC Control\Video	Modify Path
Path for Local Snapshot:	C:\IPC Control\Picture	Modify Path
Download PU Snapshot Path:	C:\IPC Control\DownloadedPicture	Modify Path
Download Recording Path:	C:\IPC Control\DownloadedVideo	Modify Path

Image Adjustment

Move Image Pixels up by: (0~32) Move Image Pixels left by: (0~32)

Move Image Pixels down by: (0~32) Move Image Pixels right by: (0~32)

All the parameters must be in multiples of 4.

Decoder

Smoothness: (1~20) *

Noise Reduction (level 0~4)

VSync Vsync(it will increase CPU utilization, so use it only when necessary.)

Snapshot type: ▼

Stream Type: ▼

PTZ(ON) *

* Setting will only take effect after reboot IPCCtrl.

Picture3-2Snapshot Setting

User can set or modify save path for PU Snapshot and Local Snapshot in Parameter>Local Setting, as shown in Picture 3-2.

Recording

Click this button to start recording and click again to stop recording. Recording is saved on local PC. User can set or modify save path in Parameter>Local Setting.

3.1.2 Image Adjustment

3.1.2.1 Brightness

Due to low light situation, the image will look completely or partially dark and hard to recognize. IPCCtrl provides the following functions to increase image brightness and ensure surveillance quality.

Enable IR Lamp

In low light situation, IR lamp can be started to get better surveillance images.

Increase Image Brightness

In Image Adjustment part, user can drag Brightness slide bar to adjust image brightness.


Or, enable Camera Mode to make camera transfer to preset value in a defined period of time.

Slower Shutter Speed

Camera shutter speed means the cycle of the sensor calculating light input amount. Therefore, the slower the speed is, the brighter the image is.


 Note: If the target object is moving fast, this method is not applicable.

Set Max. Auto Shutter and Min. Auto Shutter in Parameter>Video Parameter>Basic Setting.

Click  (Manual) on Page 2 of function buttons to select shutter speed, measured in second (s).

Increase Gain

Camera gain means the light sensitivity of a sensor. A high gain may reduce light exposure for low light situation.

 Note: However, the higher the gain is, the worse the image will be. User is advised to select Auto, applying default values, or set Max. Auto Gain (range 6-42 dB) in Parameter>Video Parameter>Basic Setting

Enable WDR

WDR can provide optimal exposure in intense backlight conditions.

On Page 2 of function buttons, click  to enable WDR and  to disable WDR.

3.1.2.2 White Balance Adjustment

The basic conception of White Balance is “to make all colors white regardless of the color temperature of the light source”. It can compensate color rendition in pictures taken in specific light source.

On Page 2 of function buttons, select White Balance Mode, Auto, Light or Manual.

After selecting Manual, enter Red Gain and Blue Gain respectively to adjust image colors.

3.1.2.3 Day/Night Mode


Day (Night) Mode means disabling (enabling) IR lamp, and the image shifts to color (B/W), thus to get optimal images for day (sufficient light source) and night (insufficient light source) conditions.

 Note: When a device without IR lamp enables Night Mode means the image shifts to B/W.


Day Mode

On Page 1 of function buttons, click  (Day Mode) to disable IR lamp and the image shifts to color.

Night Mode

Click  (Night Mode) to enable IR lamp and the image shifts to B/W.

Auto


Click  (Auto) and the system will shift Day/Night Mode automatically according to pre-set value. Notes for different devices are as follows:

- Camera with IR lamp will shift to Day Mode or Night Mode automatically according to IR Sensitivity, which can be set on Page 4 of function buttons.
- Camera without IR lamp will shift to Day Mode or Night Mode automatically according to Color to B/W value and B/W to Color value, which can be set on Page 6 of function buttons.

Also, user can enable Camera Mode to make camera shift to Night Mode automatically in a defined period of time.

3.1.2.4 Noise Reduction

When there are many noise points caused by environment and camera lens, Noise Reduction function can be enabled to adjust images.

On Page 6 of function buttons, set Noise Reduction value and click  to save setting.

3.1.2.5 Auto Adjustment

Auto Adjustment applies default settings of the camera block, which are suitable for most conditions.

On Page 1 of function buttons, click  (All auto adjustments), and all parameters will restore to default values.

Also, user can set Focus, Shutter and other parameter as Auto alone.

3.1.2.6 Video Freeze

On Page 5 of function buttons, select this function and the video will display the last frame image before clicking. Click  to disable freeze.

3.1.2.7 Drag to Zoom

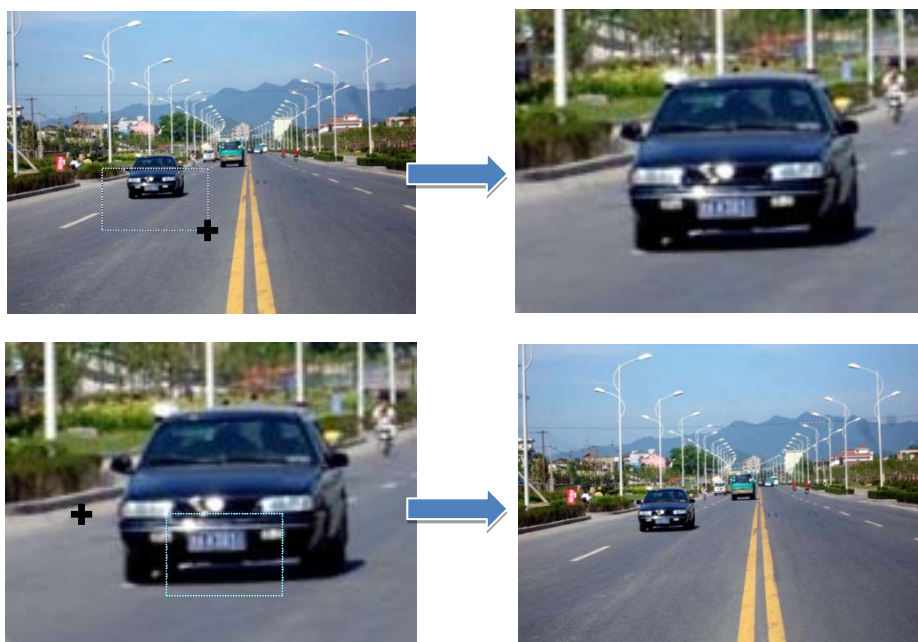
Definition: Drag to Zoom function centers the selected area and zooms in the area to full screen.

Enable: Right click the image and click Drag to Zoom on the popup menu to enable the function; or check Drag to Zoom on the bottom of Page 1 of function buttons.

Start: Drag an area (left to right) with mouse to zoom in and center it.

Cancel: Drag a reverse rectangle (right to left) with mouse to cancel zoom and center.

Disable: Right click the image and click Drag to Zoom on the popup menu to disable the function; or uncheck Drag to Zoom on the bottom of Page 1 of function buttons.



Picture3-3Drag to Zoom

3.2 Motion Detection

Detect movements in the defined area. Once the movement exceeds the defined sensitivity, an alarm will be triggered by IPCCtrl.

3.2.1 Set Area

Motion detection of Full Area and maximum 4 user-defined areas

- 1) Check Parameter>Video Parameter>Intelligent Alarm to set motion detection area.
- 2) Check Enable Intelligent Alarm, and select Motion Detection. Detection area can be full area or specific area. If user selects specific area, the user should define detection area on the below image.
- 3) Click a square and it will turn purple red. Start from this square and draw an area to be the detection area, which will turn purple red.
- 4) Click **Save** under the view window or click **Reset** to reset the area.

3.2.2 Clear Area

Start from an undefined square and draw an area that contains the defined area, or click the defined squares one by one to clear setting. Save to make settings effective.

3.2.3 Disable Function

To disable this function, uncheck the checkbox Enable Intelligent Alarm.

3.3 Privacy Mask

Mask sensitive and private part of the image so as to keep sensitive information private.

3.3.1 Set Area

The image is divided into 16 columns and 12 rows of small squares. The maximum masking area can be 24 squares. The maximum number of Privacy Mask area is 4.

- 1) Check Parameter>Video Parameter>Privacy Mask to set privacy mask area.
- 2) Check Enable Privacy Mask.
- 3) Click a square and it will turn purple red. Start from this square and draw an area to be the masking area, which will turn purple red.
- 4) Click **Save** under the view window or click **Reset** to reset the area.

3.3.2 Clear Area

Start from an undefined square and draw an area that contains the defined area, or click the defined squares one by one to clear setting. Save to make settings effective.

3.3.3 Disable Function

To disable this function, uncheck the checkbox Enable Privacy Mask.

3.4 Clipping Area Encode

After user defines the encoding area, the system will encode and display the clipping area only, so as to save system resources and network bandwidth.

In the interface Parameter>Video Parameter>Clipping Area Encode, drag an area with mouse, click **Save** under the view window or click **Reset** to reset the area.

3.5 ROI Encode

Only encode specific area to ensure normal surveillance and constant resolution of key area under poor network. The resolution of the area must be greater than 704×576 and less than the current resolution.

In the interface Parameter>Video Parameter>ROI Encode, drag an area with mouse, click **Save** under the view window or click **Reset** to reset the area.

i Note: When ROI Encode is enabled, if user modifies image resolution or aspect ratio (stand screen/widescreen), the device will quit ROI Encode automatically.

3.6 *Snapshot

Click **Snapshot** to enter snapshot management interface. User can perform operations on snapshots in SD card, such as view, delete and download.

i Note: If the Snapshot interface is disabled, please confirm the SD card is inserted and then reboot client.

Operation Steps

- 1) Search snapshots: search those pictures within the defined duration from the SD card.
- 2) On the snapshot list, select searched picture and perform operations such as view, delete and download.

3.7 *Recording

Click **Recording** to enter recording management interface. User can perform operations on recordings in SD card, such as playback, delete and download. (A SD card must be inserted in the camera.)

i Note: If the Recording interface is disabled, please confirm the SD card is inserted and then reboot client.

i Note: Record Mode includes: Start Recording When Disconnected, Recording All the Time, and Stop Recording, configurable in Parameter>Recording Parameter.

Recording Parameter

Record Mode (Takes Immediate Effect)

Main-Stream Starts Recording When Disconnected
 Automatically(Sec. Stream Record When Disconnected)
 Main Stream Recording
 Sec. Stream Recording
 Stop Recording

Pre-Record Time: s

Total Space of SD Card: GB

Available Space of SD Card: MB

Note: when no space is available in SD card, the oldest recording will be overwritten.

Picture3-4Recording

3.7.1 Playback

- 1) Select Recording Duration from Calendar.
- 2) If there is background color on a date, it means there is recording on that day. Select duration of the date and the video will be displayed directly in the right window.

3.7.2 Download

Select Recording Duration from calendar and download recording to local PC, download path configurable.

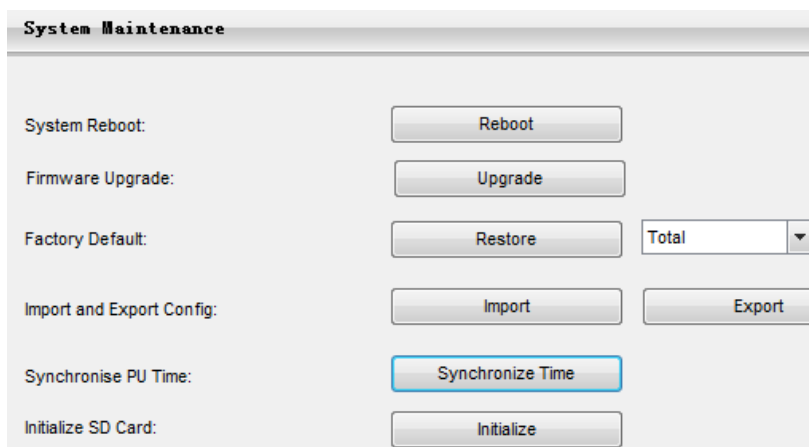
3.8 Upgrade

3.8.1 Firmware Upgrade

Contact dealer for upgrade file.

Method1

- 1) Enter IPCCtrl interface Parameter>System Maintenance> Upgrade, as shown in Picture 3-5.



Picture3-5Firmware Upgrade

- 2) Select local upgrade file (<*.pkg> or <*.img> format).
- 3) During upgrading, please do nothing but waiting.
- 4) After upgrading, please download ActiveX control again. After finishing it, reboot browser.

i Note: Please click “Upgrade” during system upgrading, and the upgrade file is usually in <*.pkg> or <*.img> format.

Method2

- 1) RunIPCSearch.
- 2) Click **Upgrade** to upgrade firmware of cameras of the same model simultaneously.

3.8.2 IPCCtrlUpgrade

After firmware upgrade, please login web client again. The page will prompt to download a new ActiveX control. After downloading it, client upgrade will be completed. Login again to enter the latest IPCCtrl.

i Note: For detailed operation instructions of IPCCtrl, please refer to the help document.

4. Parameter

4.1 Network Access

2.2 Initial Configuration has introduced how to modify parameters via IPCSearch to make camera access network. Camera accepts multiple network access methods (via Ethernet and PPPoE). The following introduces how to configure camera network parameters in IPCCtrl.

4.1.1 Ethernet

Open Parameter>Network Setting>Ethernet Parameter, as shown in Picture 4-1 to configure IP address, subnet mask and default gateway.

Ethernet Parameter

DHCP

IP Address: 10 . 61 . 0 . 138

Subnet Mask: 255 . 224 . 0 . 0

Default Gateway: 10 . 62 . 0 . 254

Preferred DNS Address: 0 . 0 . 0 . 0

Alternate DNS Address: 0 . 0 . 0 . 0

Save Reset

Picture4-1 Ethernet Parameter

4.1.2 PPPoE

Open Parameter>Network Setting>PPPoE Parameter, as shown in Picture 4-2 to enter user name and password, and save.

Enable PPPoE

User Name: root

Password: ****

Auto Dial-up

Auto Redial Interval(s): 1

Auto Redial Retry Time: 3

Save Reset

Picture4-2 PPPoE Parameter

4.2 Register to VMS

Open Parameter>System Setting>Register to VMS as shown in Picture 4-3 to enter VMS address and port. Save settings and reboot device.

Register to VMS

Register VMS* LB*

LB Server Address: IP: 0 . 0 . 0 . 0

LB Server Port: Domain Name: 5511

Register VMS Port: 5510

VMS Exclusive Channel: 0 * (Available IPC channel: 8)

Connection Link Interval(s): 10

Connection Link Time: 6

Send the NAT Probe Packet: Enable

Auto Networking: Enable

(For Administrator Use Only)

Device UUID: 00201607227620000000000000000000

UUID Password: *****

* Setting will only take effect after reboot!

Picture4-3Register to VMS

4.3 *BNC Output

Camera with BNC output can output analog image directly when local display function is enabled.

Open Parameter>Video Parameter>Camera Parameter, select 'Start' from the BNC Output drop-down list and set the CVBS Video Mode, as shown below.

VideoSetting:

PTZ Protocol: PELCO_D_K

Camera Address Code(0-127): 1

Video Aspect Ratio: WideScreen Displa

BNC Output: Start

COM No.: COM1

CVBS Video Mode: PAL *

Video Standard: CVBS SDI

YUV: Enable

* Setting will only take effect after reboot!

Picture4-4BNC Output

4.4 User Management

Admin user has the authorization to modify passwords of IPCCtrl admin user and guest user.


Modification method:

- 1) Open Parameter>System Setting>User Management
- 2) Check the checkbox of the item to be modified, the password area will be enabled and editable.
- 3) Enter new password.
- 4) Confirm new password.
- 5) Click Save to validate setting, and Reset to quit modification.

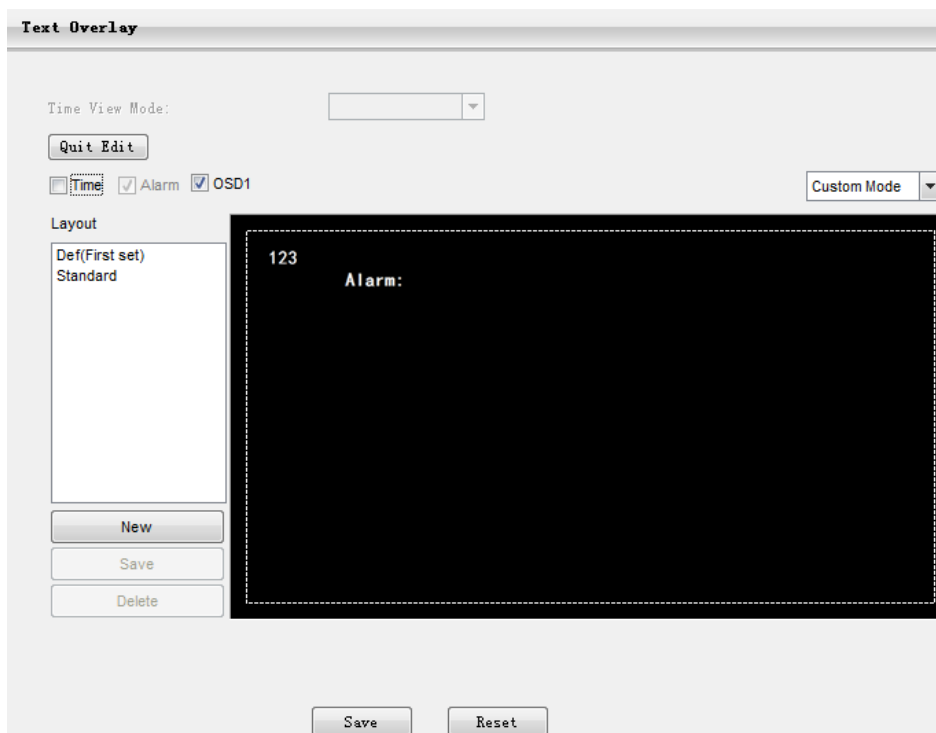
4.5 Text Overlay

Display preset text on the surveillance window, configuration steps as follows:

- 1) Open Parameter>Video Parameter>Text Overlay
- 2) Check Edit Text checkbox, as Picture 4-5 shows.
- 3) User can create and save multiple OSD layouts. Click Create and input layout name. Select this layout from the list and edit it.
- 4) Check text types to be overlaid, time and user-defined OSD selectable.

 Note: Different models may support different numbers of OSD. Configuration is subject to actual camera model.

- 5) Double click user-defined OSD to input text content. Each OSD supports maximally 3 lines of text. User can check Align Right checkbox to align texts on the right, or the default setting is “align left”.
- 6) Drag text to the ideal position in the view window.
- 7) Click Save to validate settings, and Reset to quit edit.



Picture4-5Text Overlay

4.6 Camera Mode

Open path: Parameter>Video Parameter>Camera Mode

After enabling Camera Mode, user can define maximally 8 different non-overlapping durations, and all parameters will be adjusted to the preset values automatically.

4.6.1 Configure Parameter

4.6.1.1 Night Mode

After enabling this function, device will shift to Night Mode in the defined duration automatically. The IR lamp will be enabled and the image will turn B/W.

4.6.1.2 Shutter, Gain, Auto

Shutter and Gain values configurable

Or enable Auto mode to apply set Shutter and Gain automatically.

4.6.1.3 Brightness, Contrast, Saturation, Sharpness

Brightness, Contrast, Saturation and Sharpness values configurable

Brightness, Contrast, Saturation and Sharpness range: 0-255.

4.6.1.4 Frame Rate, Encoding Rate

Frame Rate and Encoding Rate configurable

Main Stream

Encoding Format:	H264
Encoding Bit-Rate(64~8192 kbps):	4096
Resolution:	1920*1080
Encoding Frame Rate(fps):	25
Max. Quantization (1~51):	50
Min. Quantization (1~51):	15
Max. Key Frame Interval (1~2500 Frame):	75
Enable Sec. Stream:	<input checked="" type="checkbox"/> Enable *
Bit-Rate Control:	CBR
Video Standard:	NONE
Encoding Level:	M

(For Administrator Use Only)

Stream Transmit Address:	172 . 16 . 15 . 41
Stream Transmit Port:	60000
Default Stream Transmit:	<input type="checkbox"/> Enable *
Enable Stream Transmit:	<input type="checkbox"/> Enable

* Setting will only take effect after reboot!

Save Reset

Picture4-7Main Stream Encoding

 Note: For detailed operation instructions of the client IPCCtrl, please refer to the help document.

5. Appendix: Glossary of Terms

Term	Explanation
720P	Resolution of 1280*720 pixels
CIF	Resolution of 352*288 pixels
QCIF	Resolution of 176*144 pixels
PU	Periphery Unit, such as camera and encoder used for video surveillance
ROI	Region Of Interest
Key Frame Interval	Key Frame defines the important frame when change happens in a video. This frame will be completely encoded. Key Frame Interval defines the maximum frames during the interval between key frames. If the video changes quite frequently, shorter Key Frame Interval will make video more real, but it will take more bandwidth.
Quantization	Set Min. and Max. Quantization, and image compression quantization will fluctuate in the range. During image compression, larger quantization brings higher compression ratio and higher distortion ratio. On the contrary, smaller quantization brings lower compression ratio and better image recovery, but meanwhile takes more bandwidth.