

# **Mobile Network Video Recorder User's Manual**

**V 2.1.0**

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## **Welcome**

Thank you for purchasing our mobile network video recorder!  
This user's manual is designed to be a reference tool for your system.  
Contact your local retailer ASAP if something is missing or damaged in the bag.

# Cybersecurity Recommendations

## Cybersecurity Recommendations

### Mandatory actions to be taken towards cybersecurity

#### 1. Change Passwords and Use Strong Passwords:

The number one reason systems get “hacked” is due to having weak or default passwords. It is recommended to change default passwords immediately and choose a strong password whenever possible. A strong password should be made up of at least 8 characters and a combination of special characters, numbers, and upper and lower case letters.

#### 2. Update Firmware

As is standard procedure in the tech-industry, we recommend keeping NVR, NVR, and IP camera firmware up-to-date to ensure the system is current with the latest security patches and fixes.

### “Nice to have” recommendations to improve your network security

#### 1. Change Passwords Regularly

Regularly change the credentials to your devices to help ensure that only authorized users are able to access the system.

#### 2. Change Default HTTP and TCP Ports:

- Change default HTTP and TCP ports for systems. These are the two ports used to communicate and to view video feeds remotely.
- These ports can be changed to any set of numbers between 1025-65535. Avoiding the default ports reduces the risk of outsiders being able to guess which ports you are using.

#### 3. Enable HTTPS/SSL:

Set up an SSL Certificate to enable HTTPS. This will encrypt all communication between your devices and recorder.

#### 4. Enable IP Filter:

Enabling your IP filter will prevent everyone, except those with specified IP addresses, from accessing the system.

#### 5. Change ONVIF Password:

On older IP Camera firmware, the ONVIF password does not change when you change the system’s credentials. You will need to either update the camera’s firmware to the latest revision or manually change the ONVIF password.

#### 6. Forward Only Ports You Need:

- Only forward the HTTP and TCP ports that you need to use. Do not forward a huge range of numbers to the device. Do not DMZ the device's IP address.

- You do not need to forward any ports for individual cameras if they are all connected to a recorder on site; just the NVR is needed.

#### **7. Disable Auto-Login on SmartPSS:**

Those using SmartPSS to view their system and on a computer that is used by multiple people should disable auto-login. This adds a layer of security to prevent users without the appropriate credentials from accessing the system.

#### **8. Use a Different Username and Password for SmartPSS:**

In the event that your social media, bank, email, etc. account is compromised, you would not want someone collecting those passwords and trying them out on your video surveillance system. Using a different username and password for your security system will make it more difficult for someone to guess their way into your system.

#### **9. Limit Features of Guest Accounts:**

If your system is set up for multiple users, ensure that each user only has rights to features and functions they need to use to perform their job.

#### **10. UPnP:**

- UPnP will automatically try to forward ports in your router or modem. Normally this would be a good thing. However, if your system automatically forwards the ports and you leave the credentials defaulted, you may end up with unwanted visitors.
- If you manually forwarded the HTTP and TCP ports in your router/modem, this feature should be turned off regardless. Disabling UPnP is recommended when the function is not used in real applications.

#### **11. SNMP:**

Disable SNMP if you are not using it. If you are using SNMP, you should do so only temporarily, for tracing and testing purposes only.

#### **12. Multicast:**

Multicast is used to share video streams between two recorders. Currently there are no known issues involving Multicast, but if you are not using this feature, deactivation can enhance your network security.

#### **13. Check the Log:**

If you suspect that someone has gained unauthorized access to your system, you can check the system log. The system log will show you which IP addresses were used to login to your system and what was accessed.

#### **14. Physically Lock Down the Device:**

Ideally, you want to prevent any unauthorized physical access to your system. The best way to achieve this is to install the recorder in a lockbox, locking server rack, or in a room that is behind a lock and key.

**15. Connect IP Cameras to the PoE Ports on the Back of an NVR:**

Cameras connected to the PoE ports on the back of an NVR are isolated from the outside world and cannot be accessed directly.

**16. Isolate NVR and IP Camera Network**

The network your NVR and IP camera resides on should not be the same network as your public computer network. This will prevent any visitors or unwanted guests from getting access to the same network the security system needs in order to function properly.

# Important Safeguards and Warnings

## 1 . Electrical safety

All installation and operation here should conform to your local electrical safety codes.

The product must be grounded to reduce the risk of electric shock.

We assume no liability or responsibility for all the fires or electrical shock caused by improper handling or installation.

## 2 . Transportation security

Heavy stress, violent vibration or water splash are not allowed during transportation, storage and installation.

## 3 . Installation

Keep upwards. Handle with care.

Do not apply power to the NVR before completing installation.

Do not place objects on the NVR

## 4 . Qualified engineers needed

All the examination and repair work should be done by the qualified service engineers.

We are not liable for any problems caused by unauthorized modifications or attempted repair.

## 5 . Environment

The NVR should be installed in a cool, dry place away from direct sunlight, inflammable, explosive substances and etc.

This series product shall be transported, storage and used in the specified environments.

## 6. Accessories

Be sure to use all the accessories recommended by manufacturer.

Before installation, please open the package and check all the components are included.

Contact your local retailer ASAP if something is broken in your package.

### **Before your operation please read the following instructions carefully.**

#### ● **Installation environment**









- ✧ Keep away from extreme hot places and sources;
- ✧ Avoid direct sunlight;
- ✧ Keep away from extreme humid places;
- ✧ Avoid violent vibration;
- ✧ Do not put other devices on the top of the NVR;
- ✧ Be installed in well ventilated place; do not block the vent.

#### ● **Accessories**

Always use accessories recommend by the manufacturer.



## Safety Instruction

Icon	Note
 DANGER	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.
 WARNING	Indicates a potentially hazardous situation, which if not avoided, could result in serious device damage or person injury.
 CAUTION	Indicates a potentially hazardous situation, which if not avoided, could result in device damage, data loss, performance degradation, or unexpected results.
 Anti-static	Indicates it is the static sensitive device.
 Electric shock risk	Indicates presence of dangerous high voltage. There is a risk of electric shock to persons.
 High power laser radiation risk	Indicates presence of high power laser radiation.
 <b>Tips</b>	It is intended to help you to fix a problem or save your time.
 <b>Note</b>	Provides additional information to emphasize or supplement important points of the main text.

# 1 Features and Specifications

It is to introduce product features, applications and functions.

## 1.1 Overview

This series mobile NVR is a high-end HD digital video surveillance management product.

- It Integrates image process technology, wireless network technology, GPS technology, structure technology and vehicle information sampling and process technology together.
- Uses strong aluminum alloy case and adopts one 2.5-inch HDDs and one SD card as the storage media. It supports built-in 3G/4G, Wi-Fi wireless transmission mode and GPS,Beidou module (optional) .
- Installed on the vehicle, it can realize local audio/video storage and vehicle information sampling, at the same time it can transmit real-time video and vehicle information to the remote management center and establish real-time remote wireless surveillance management system.

It has the following features:

- Aluminum alloy case, small and sound ventilation, high stability.
- Dual-HDD as storage media. It enhances record files saved time.
- Built-in power module, convenient installation.
- Support PoE, can supply power to the network camera directly.
- Abundant functions, support various alarm mode, record mode and support multiple information, vehicle status sampling and record function.
- Built-in 3G/4G, Wi-Fi wireless transmission module, and GPS/Beidou module.
- Support TV/VGA/HDMI output at the same time.

This series NVR can be widely used in many vehicle areas or mobile surveillance areas such as long-distance passenger transport, city public transportation, public security system, road administration, logistics vehicle.

## 1.2 Function



### Note

- Slight difference may be found due to different series products.
- GPS, Beidou, Wi-Fi, 3G/4G function are optional. Please make sure you purchased product support these functions.

- **Video Output**

TV/VGA/HDMI port, use monitor or displayer, video wall to realize surveillance function.

TV/VGA/HDMI output at the same time.

- **Storage function**

Special data format to guarantee data security and can avoid vicious data modification.

- **Compression format**

Support multiple-channel audio and video signal. An independent hardware decodes the audio and video signal from each channel to maintain video and audio synchronization.

- **Backup function**

Support backup operation via USB port (such as flash disk, portable HDD)  
Client-end user can download the NVR file to local HDD to backup via network.

- **Record playback function**

Support each channel real-time record independently, and at the same time it can support search, forward play, network monitor, record search, download and etc.

Support various playback modes: slow play, fast play, backward play and frame by frame play.

Support time title overlay so that you can view event accurate occurred time

Support digital zoom function.

- **Network operation**

Support network remote real-time monitor, remote record search and remote PTZ control.

- **Alarm activation function**

Several relay alarm outputs to realize alarm activation and on-site light control.

The alarm input port and output port has the protection circuit to guarantee device safety.

- **Communication port**

RS485 port can realize peripheral device control.

RS232 port can connect to keyboard to realize central control, and can also connect to PC COM to upgrade system and realize maintenance.

Standard Ethernet port can realize network access function.

- **PTZ control**

Support PTZ control via network .

Support various decode protocols to allow the PTZ to control the speed dome.

- **GPS/Beidou**

The GSP/Beidou information can activate the record function while the search function can activate the vehicle movement track.

**Please note only the unit of GPS/Beidou module supports this function.**

- **3G/4G/Wi-Fi network**

Latest wireless network communication technology allows you to easily control the device.

**Please note only the unit of 3G/4G/Wi-Fi module supports this function.**

- **Removable HDD design**

The professional removable anti-vibration design. It supports fix and removable operation and can connect to PC to realize fast and convenience data backup.

- **Dual-stream**

Considering the wireless network band is small and the network is not stable, system adopts the dual stream to implement real-time record and network transmission independently, which greatly optimizes the network transmission encode code and enhance the wireless network control compatibility.

- **Vehicle status record**

There are eight external alarm ports. You can connect to the door signal, direction indicator lamp signal, reversing light signal, brake lamp signal and etc to prompt the driver and record vehicle status.

### 1.3 Specifications

	Parameter	4-channel series	8-channel series
System	Main Processor	High-performance industrial embedded micro controller	
	OS	Embedded LINUX	
	System Resources	Multiplex operations: Multiple-channel record, multiple-channel playback and network operation simultaneously	
	Interface	User-friendly graphical user interface	
	Input Devices	Mouse, remote control, keyboard	
	Input Method	Arabic number, English character, donation and extension Chinese (optional)	
	Shortcut Function	Copy/paste operation, USB mouse right-key shortcut menu, double click USB mouse to switch screen.	
Compression Standard	Video Compression	H.264, dual-stream	
	Audio Compression	G711a,PCM,G711u and AMR	
Video monitor	Video Input	4-ch network compression video input	
	Video Output	1-ch PAL/NTSC, aviation port (1.0VP- P, 75Ω) composite video signal output. 1-ch VGA output. 1-ch HDMI output. Support TV/VGA/HDMI video output at the same time.	
	Video Standard	Support PAL/NTSC.	
	Record Speed	Real-time Mode: PAL 1f/s to 25f/s per channel and NTSC 1f/s to 30f/s per channel	
	Video Partition	1/4 window(s)	1/4/8/9 window(s)
	Monitor Touring	Support monitor tour functions such as alarm and schedule auto control.	
	Resolution (PAL/NTSC)	Realtime monitor: 1080P/720P/4CIF	
		Playback: 1080P/720P/4CIF	
		Support dual-stream function. The sub-stream supports 4CIF/CIF.	
	Image Quality	6-level image quality (Adjustable)	
Privacy mask	Support one privacy mask of user-defined size in full screen. Support max 4 zones.		

	Image Information	Channel information, time information, GPS information, plate information and privacy mask zone. <b>Please note only the unit of GPS/Beidou module supports this function.</b>
	TV Adjust	Adjust TV output area suitable for the displayer of low image quality.
	Channel Lock	Cover secret channel with black screen though system is encoding normally. Screen-lock function to prevent unauthorized user seeing secret video.
	Channel Information	Channel name, recording status, screen lock status, video loss status and motion detection status are shown on the bottom left of display screen.
	Color Configuration	Hue, brightness, contrast, saturation and gain setup for each channel.
Audio	Audio Input	1-ch bidirectional talk audio input.
	Audio Output	1-ch bidirectional talk audio output.
	Bidirectional Audio	Support bidirectional talk function. Support 1-channel active MIC input and 1-channel line out.
Hard disk	Hard Disk	Support mechanical HDD. Each HDD maximally supports 2TB. Support eSATA.
Record and playback	Recording Mode	Manual recording, motion detection recording, schedule recording and alarm recording Priority: Manual recording> alarm recording>motion detection recording>schedule recording.
	Recording Length	1 to 120 minutes single record duration (Default setup is 60 minutes)
	Playback Repeat Way	When hard disk is full, system can overwrite previous video file.
	Record Search	Various search engines such as time, type and channel.
	Playback Mode	Various fast play, slow play speeds, manual frame by frame playback and reverse play mode.
	Various File Switch Ways	Can switch to previous or next file or any file in current play list. Can switch to file on other channel of the same time. (If there is a file) Support file continuous play, when a file is end system auto plays the next file in the current channel
	Multi-channel Playback	4-channel playback.
	Window Zoom	Switch between self-adaptive screen/full screen when playback
	Digital Zoom	When in one-window full-screen playback mode, you can select any zone to activate partial enlargement function.
Backup function	Backup Mode	HDD backup
		Support peripheral USB backup device. (Flash drive, portable HDD)
		Support USB burner (Support extension function)

		Support network download and save
Network Function	Network control	View monitor channel remotely.
		NVR configuration through client-end and web browser
		Upgrade via client or browser to realize remote maintenance.
		View alarm information such as external alarm, motion detection and video loss via client.
		File download backup and playback
		Multiple devices share information via corresponding software such as Digital Surveillance Software (DSS)
		Duplex transparent COM
		Network alarm input and output
		Bidirectional audio.
	Wireless Network	Support SMS function.
Support auto connection function.		
Support network type and parameter setup.		
Support network signal status indication function.		
Motion Detection and Alarm	Video Loss	Alarm can activate external alarm or screen message prompt. Alarm responding time≤5s
	Alarm Pre-record	Alarm can trigger pre-record function. Pre-record time ranges from 5 to 30s.
	External Alarm	Support record activation function or activate external alarm or screen message in specified period.
	Manual Alarm Control	Enable or disable alarm input channel Can simulate alarm signal to specific alarm output channel.
	Alarm Input	8-ch alarm input (NO/NC) , alarm input voltage 8-25V. 1-channel pulse speed measurement.
	Alarm Output	3-channel relay output: Two on-off signal output, one is controllable 12V power output.
	Alarm Relay	30VDC 1A, 125VAC 0.3A (Activation output)
Interface	USB Interface	2 USB 2.0 ports.
	Network connection	RJ45 10M/100/1000M self-adaptable Ethernet port
	eSATA	Record and file storage
	HDMI	Support HDMI output
	VGA	Support VGA output
	A/V OUT	Support AV output
	SD Card Slot	Insert SD card as R/W device or redundant HDD.
	RS485	One RS485 port. It is the PTZ control port Support various PTZ control protocols.
	CAN	Can provide large power to PTZ and etc.

	RS232	Two port : Extension RS232 port and aviation port RS232. Ordinary COM (Debug),keyboard connection and transparent serial port(COM input and output via network ) Connect to peripheral low-speed device, support hardware handshake
Extension Function	GPS/BDS	Built-in GPS/Beidou module. Display/encode GPS/Beidou information.
	3G/4G	Built-in 3G/4G module (EVDO,WCDMA,FDD-LTE,TD-LTE)
	Wi-Fi	Built-in Wi-Fi module
System Information	Hard Disk Information	Display HDD current status
	Data Stream Statistics	Data stream statistics for each channel (in wave mode)
	Log statistics	Backup to 1024 log files. Support various search engines such as time and type.
	Version	Display version information: channel amount, alarm input and output amount, system version and release date.
	On-line user	Display current on-line user
User Management	User Management	Multi-lever user management; various management modes Integrated management for local user, serial port user and network user. Configurable user power.
		Support user /group and its corresponding rights modification. No limit to the user or group amount.
	Password Authentication	Password modification Administrator can modify other user's password.
		Account lock strategy Five times login failure in thirty minutes may result in account lock.
Upgrade		TFTP COM tool or network update tool.
Login, Logout and Shutdown		Password login protection to guarantee safety
		User-friendly interface when login. Provide the following options: Logout /shutdown/ restart.
		Right authentication when shut down to make sure only those proper people can turn off NVR
General Parameters	Power	DC +6V~+36V self-adaptive, connect negative end to the ground
	Power Consumption	17W (No HDD or other peripheral device.)
	Working Temperature	-20°C – +55°C
	Working Humidity	10% – 90%
	Anti-vibration	Patent anti-shock technology
	Air Pressure	86kpa – 106kpa
	Dimension	180mm×208mm×100mm(W*D*H)
	Weight	3.0Kg (With HDD)
	Installation Mode	Desktop installation

## 2 Installation

### 2.1 Check Unpacked NVR

When you receive the NVR from the forwarding agent, please check whether there is any visible damage. The protective materials used for the package of the NVR can protect most accidental clashes during transportation. Then you can open the box to check the accessories.

Please check the items in accordance with the list (Remote control is optional). Finally you can remove the protective film of the NVR.

#### Note

Remote control is not a standard accessory and it is not included in the accessory bag.

### 2.2 About Front Panel and Rear Panel

For detailed information of the function keys in the front panel and the ports in the rear panel, please refer to the appendix for detailed information.

The model in the front panel is very important; please check according to your purchase order.

The label in the rear panel is very important too. Usually we need you to represent the serial number when we provide the service after sales.

### 2.3 Structure

#### 2.3.1 Front Panel

The front panel is shown as in Figure 2-1.

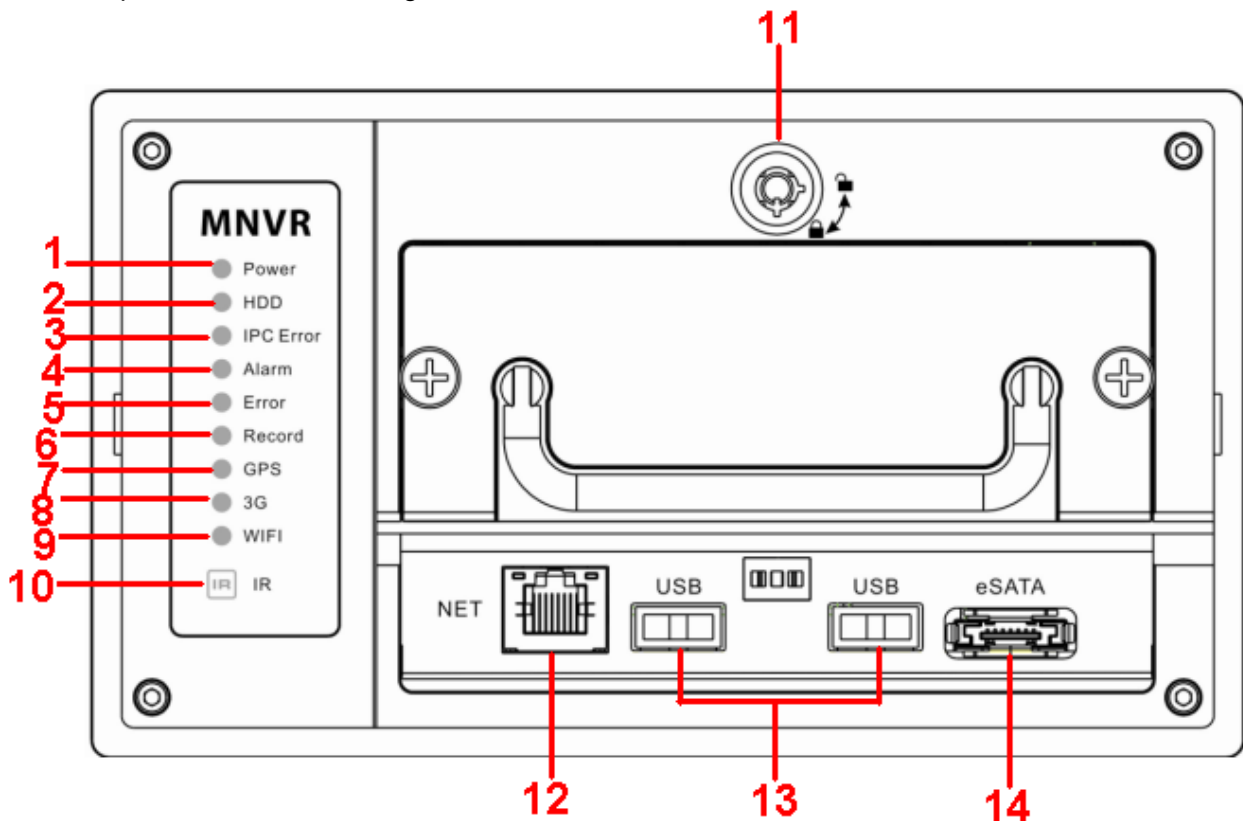





Figure 2-1



Please refer to the following sheet for detailed information.

SN	Function
1	Power indicator light
2	The red light is on when there is HDD. The light is off when there is no HDD.
3	Network camera connection status indicator light. The light becomes on when the connected network camera is abnormal.
4	Alarm indicator light.
5	HDD storage indicator light. The red light becomes on when the HDD write error occurs.
6	Record indicator light
7	Positioning indicator light   <b>Note</b> Please note only the unit of positioning module supports this function.
8	3G/4G indicator light   <b>Note</b> Please note only the unit of 3G/4G module supports this function.
9	Wi-Fi indicator light   <b>Note</b> Please note only the unit of Wi-Fi module supports this function.
10	Remote control IR receiver
11	Lock button
12	RJ45 network port
13	USB3.0 port
14	eSATA port

### 2.3.2 Rear Panel

The rear panel is shown as in Figure 2-2.

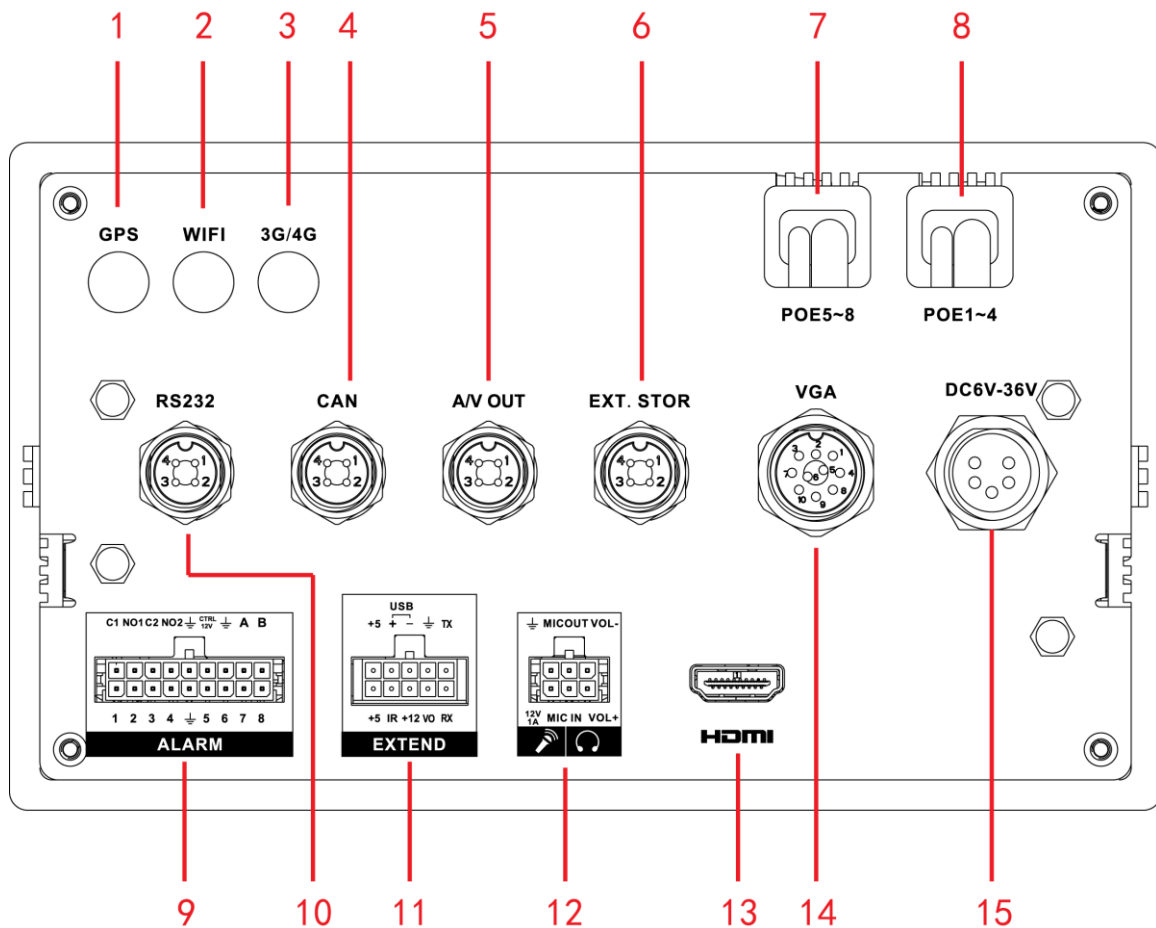


Figure 2-2

Please refer to the following sheet for front panel button information.

SN	Name	Function
1	Position antenna port	Connect to position antenna and receive signal from the satellite.  <b>Note</b> Please note only the unit of positioning module supports this function.
2	Wi-Fi antenna port	Connect to Wi-Fi antenna to receive Wi-Fi signal.
3	3G/4G antenna port	Connect to 3G/4G antenna to receive 3G/4G network signal.  <b>Note</b> Please note only the unit of 3G/4G module supports this function.
4	CAN port.	Connect to CAN BUS on the vehicle or provide power to the mobile PTZ.
5	Audio/video output	Connect mobile special audio/video monitor to output video/audio at the same time.

6	EXT.STOR port	Connect to peripheral HDD.
7	PoE 5~8	Support PoE. Connect to network camera. It can provide power to the camera.
8	PoE 1~4	
9	Alarm input/output port	Connect to mobile alarm device. Refer to chapter 2.7 for detailed port information.
10	RS232 COM	Connect to RS232 peripheral device.
11	Extend port	Each port has customized function. Refer to chapter 2.3.3.5 for detailed port information.
12	Bidirectional talk port	Connect to two-way radio/bidirectional talk terminal to begin bidirectional talk function. Refer to chapter 2.3.3.6 for detailed port information.
13	HDMI port	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device
14	VGA port	Connect to VGA monitor. Refer to chapter 2.3.3.7 for detailed port information.
15	Device power socket	Input device power. Refer to chapter 2.3.3.8 for detailed port information.

### 2.3.3 Port

The following contents are to introduce function of each port. You can make connection cable by yourself or you can contact your local retailer to purchase.

#### 2.3.3.1 CAN port

The CAN port is shown as below. See Figure 2-3.

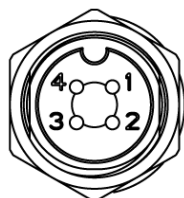


Figure 2-3

SN	Function	SN	Function
1	+12V/1A output	3	CAN_H
2	GND	4	CAN_L

### 2.3.3.2 Audio/Video Output

The audio/video output port is shown as below. See Figure 2-4.



Figure 2-4

SN	Function	SN	Function
1	+12V/1A output	3	Audio output
2	GND	4	Video output

### 2.3.3.3 EXT.STOR

The extension storage port is shown as below. See Figure 2-5.

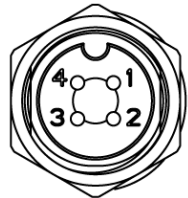


Figure 2-5

SN	Function	SN	Function
1	+12V/1A output	3	USB_DM
2	GND	4	USB_DP

### 2.3.3.4 RS232

The RS232 port is shown as below. See Figure 2-6.



Figure 2-6

SN	Function	SN	Function
1	+12V/1A output	3	RXD_232
2	GND	4	TXD_232

### 2.3.3.5 Extend Port

The extension port1 is shown as in Figure 2-7.

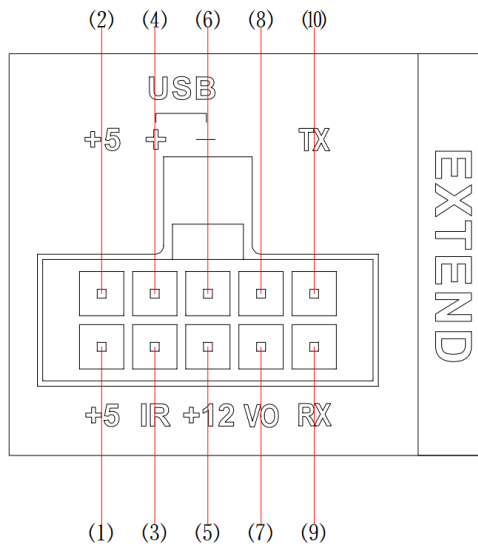


Figure 2-7

Please refer to the following sheet for detailed information.

SN	Function	SN	Function	SN	Function
1/2	5V output	3	Remote control input	4/6	USB
5	+12V output	7	Video output	8	GND
9	RXD_232	10	TXD_232	-	-

### 2.3.3.6 Bidirectional Talk

The bidirectional talk port is shown as in Figure 2-8.

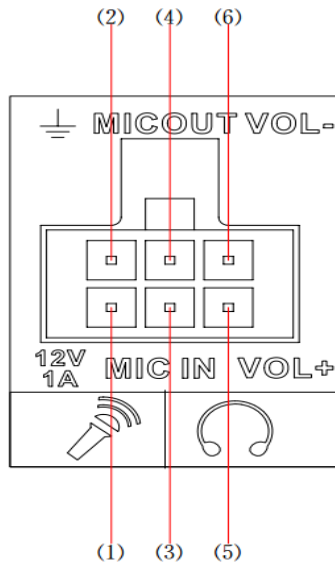


Figure 2-8

Please refer to the following sheet for detailed information.

SN	Function
1	12V/1A
2	GND
3	MIC IN

4	MIC OUT
5/6	Speaker+/Speaker-

### 2.3.3.7 VGA Port

The bidirectional talk port is shown as in Figure 2-9.

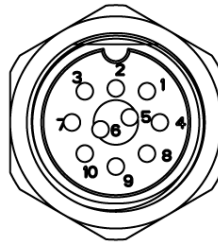


Figure 2-9

SN	Function	SN	Function	SN	Function
1	+12V/1A output	5	Audio output	9	VGA line synchronization
2	GND	6	VGA_B	10	VGA field synchronization
3	VGA_G	7	VGA_R	-	-
4	RXD_232	8	TXD_232	-	-

### 2.3.3.8 Power Input Port

The bidirectional talk port is shown as in Figure 2-10.



Figure 2-10

SN	Function	SN	Function
1	Power input +	3/4	GND
2	Power input -	5	ACC input

## 2.4 SIM Card Installation

Install SIM card to connect device to the internet.

### Note

Device does not support Micro SIM card or Nano SIM card.

### Preparation

Before the installation, please shut down the device and unplug the power cable.

This series product supports built-in SIM card. See Figure 2-11.

Step 1 Remove the HDD box.

Step 2 Push the SIM card slot to the back and open the SIM card slot.

Step 3 Insert the SIM card and then close the cover.

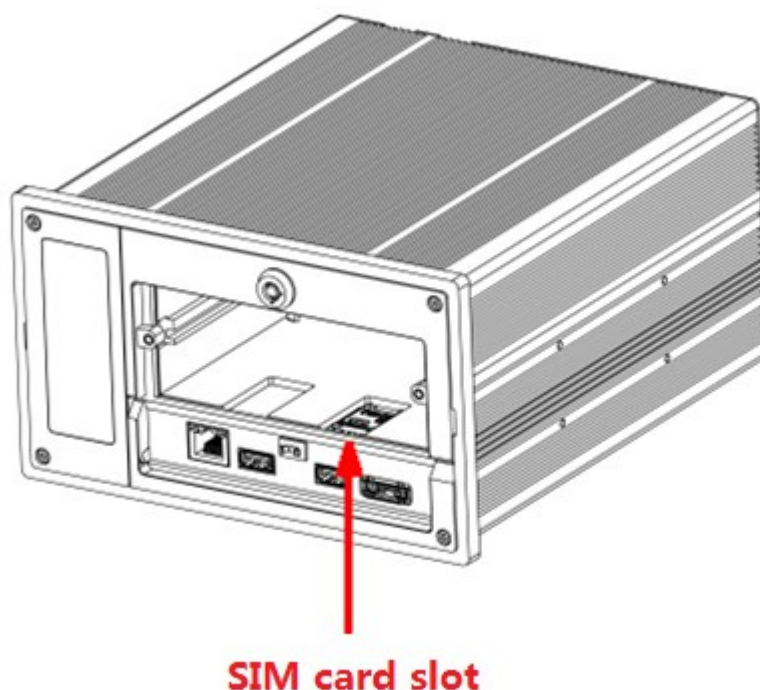


Figure 2-11

 **Note**

After install the SIM card, make sure you have properly secure the card slot in case it becomes damaged when remove the HDD box.

Step 4 Insert HDD box.

## 2.5 HDD Installation

### 2.5.1 HDD Installation

HDD is not standard accessories. Please purchase separately and follow the contents listed below to install.

 **Note**

- Shut down the device and unplug the power cable before install/remove the HDD.
- The e-lock on the right side of the front panel shall be unlocked when you install/remove the HDD. Please lock the button before you boot up the device.

System does not have the HDD or SD card by default. Please follow the steps listed below to install.

**Important**

- Shut down the device and unplug the power cable before install/remove the HDD.

Step 1 Remove the HDD box cover.

Step 2 Loosen the screws of the bottom board of the HDD box and then remove the bottom board. Now you can see an interface shown as in Figure 2-12.

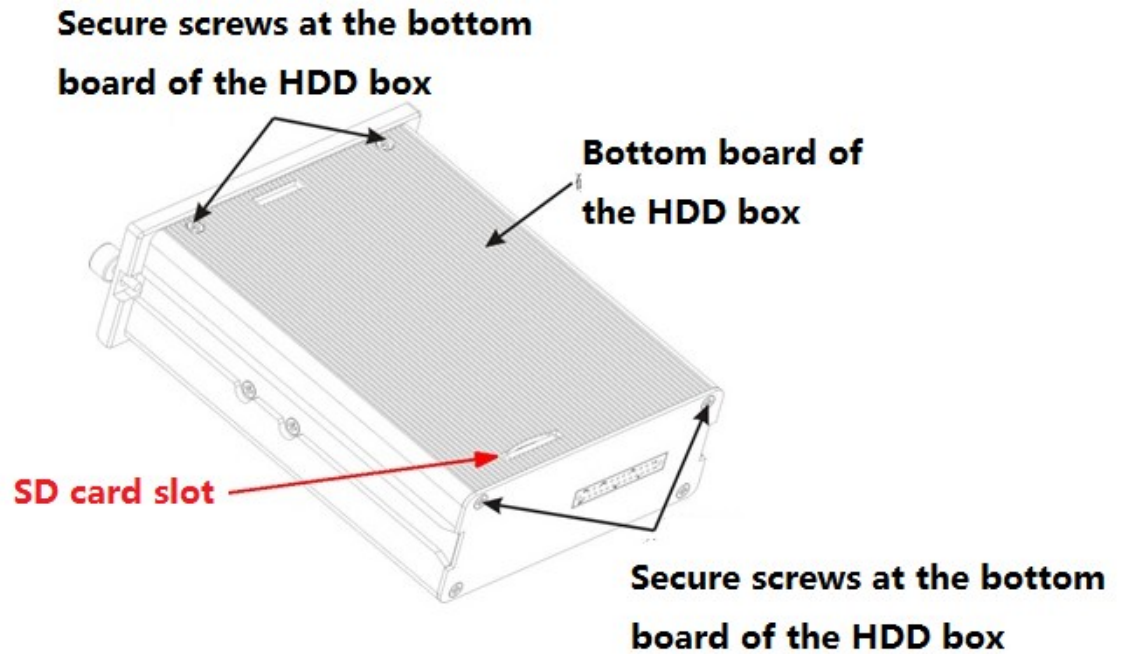


Figure 2-12

Step 3 Remove HDD bracket. Now you can see an interface shown as in Figure 2-13. Unfasten the two screws that secure the HDD bracket.

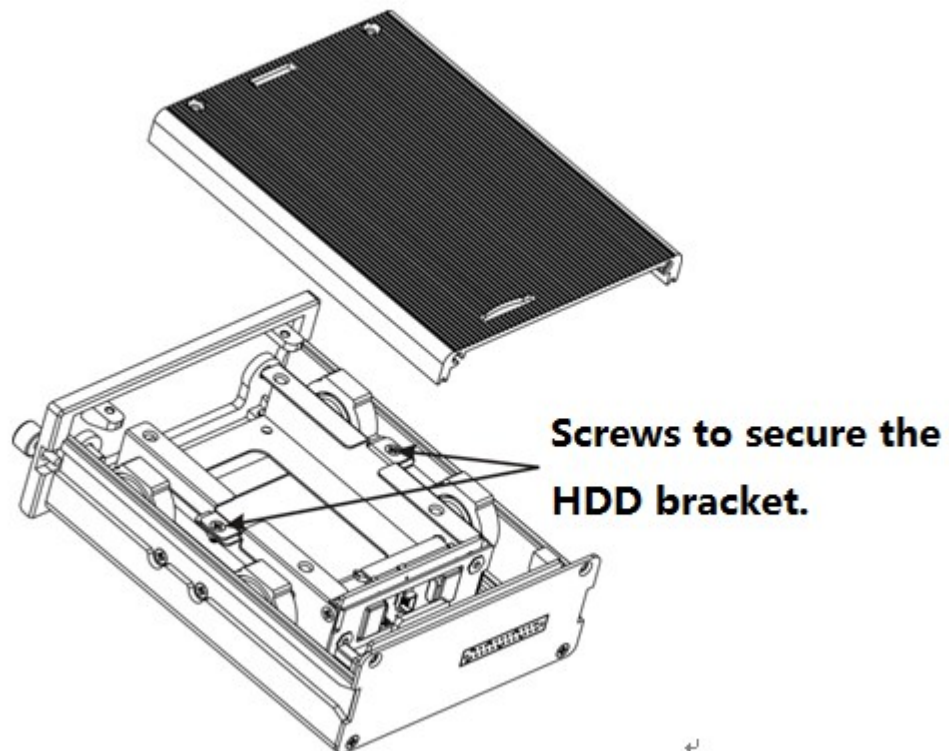


Figure 2-13

Step 4 Install the first HDD. Turn the HDD bracket to the top. See Figure 2-14 . Follow the arrow to put the HDD to the HDD bracket. Line up the screw holes of the HDD to the HDD holes and then use the screws to secure firmly.



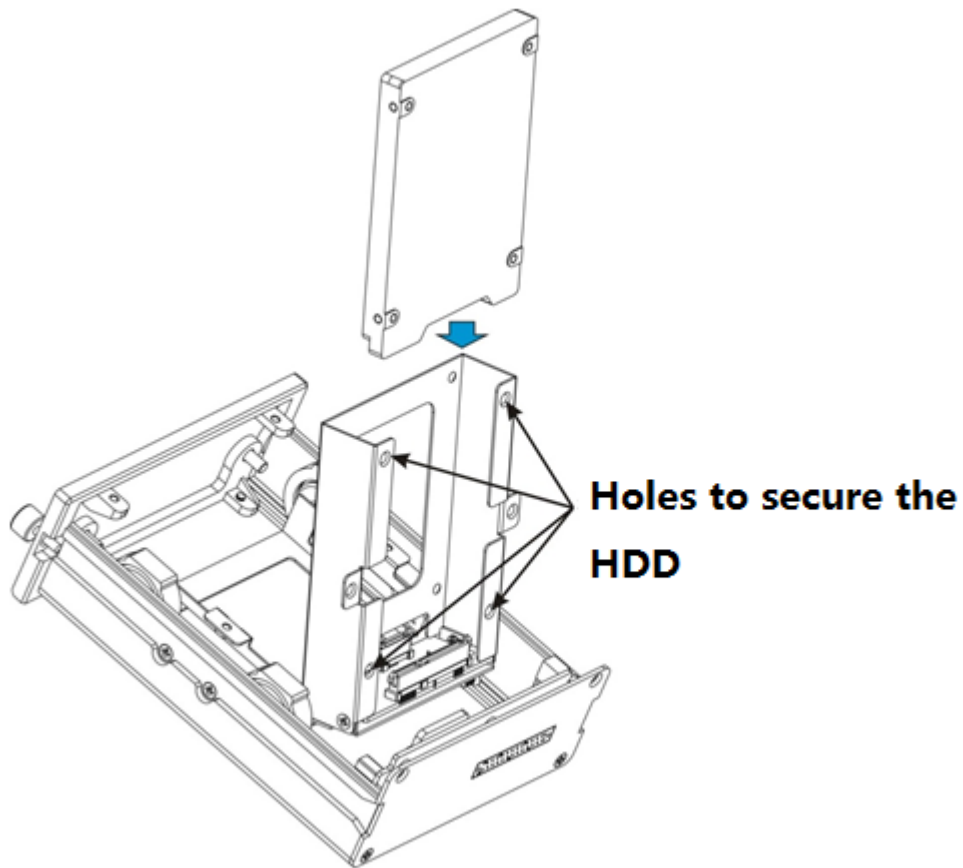


Figure 2-14

Step 5 Install the second HDD. Follow the arrow in Figure 2-15 to put the 2nd HDD to the HDD bracket. Line up the screw holes of the HDD to the HDD holes and then use the screws to secure the HDD firmly.

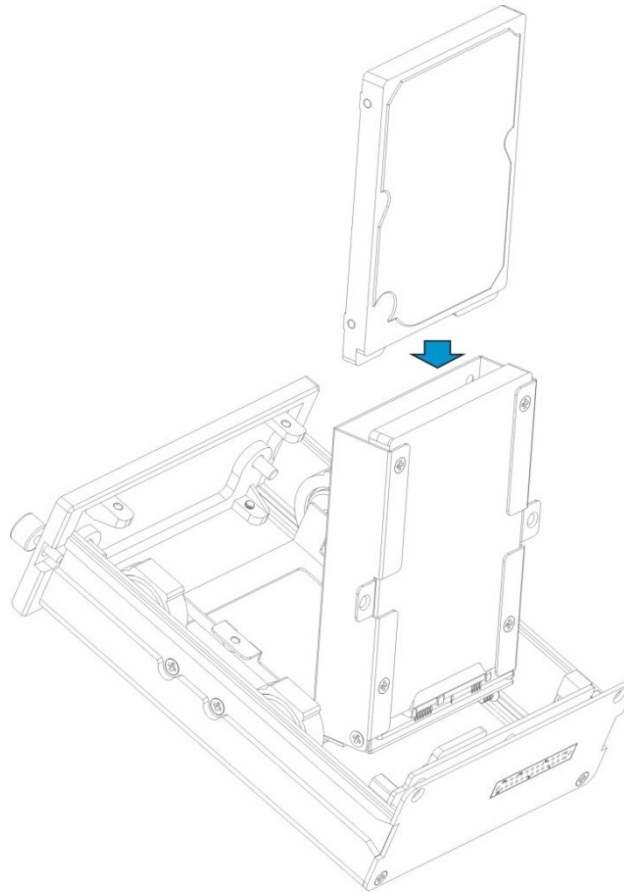


Figure 2-15

Step 6 Install HDD bracket. Put the HDD bracket to the HDD box. Secure the two screws of the HDD bracket. See Figure 2-16.

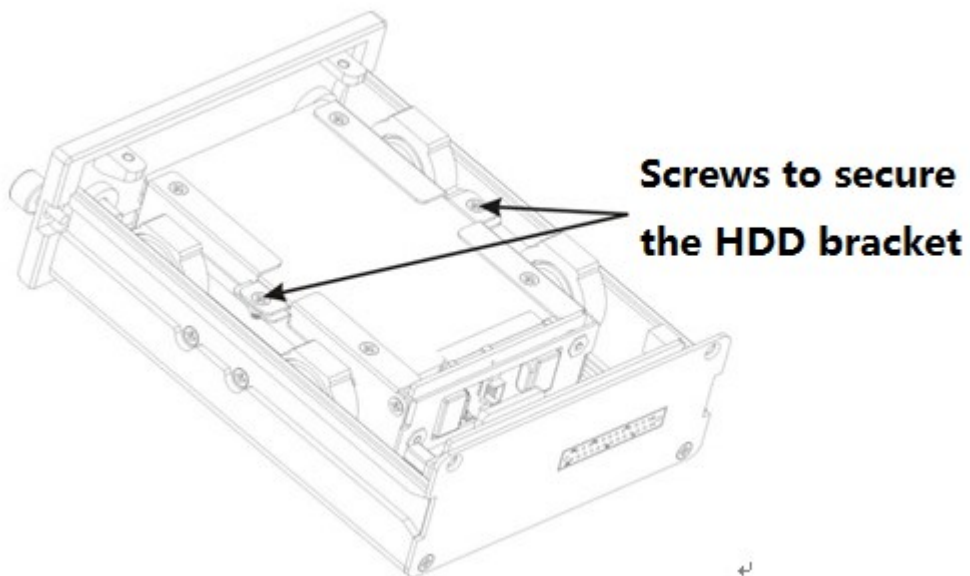


Figure 2-16

Step 7 Put the HDD box cover back. Install the secure the screws of the HDD box cover.

Step 8 Refer to Figure 2-12 to put the SD card to the SD card slot. Put the HDD box back to the

NVR. Now the installation is complete.

## 2.6 Connecting Audio/Video Input and Output Devices

It is to connect audio/video device if you want to view video and hear audio.

### 2.6.1 Audio/Video Input Introduction

System adopts RJ45 network port to input audio/video data.

Please follow the steps listed below to prepare the network cable and connection.

Step 1 Take the following items from the accessories bag and then follow the arrows marked in Figure 2-17 to insert the plastic gasket.



Figure 2-17

Step 2 Refer to Figure 2-18 to pull the items through the network cable and prepare the crystal head of the network cable.



Figure 2-18

Step 3 Put the plastic gasket to the head of the network cable. See Figure 2-19.



Figure 2-19

Step 4 Insert the network cable to the network port and then follow the sequence marked in Figure 2-20 to fasten the jacket.

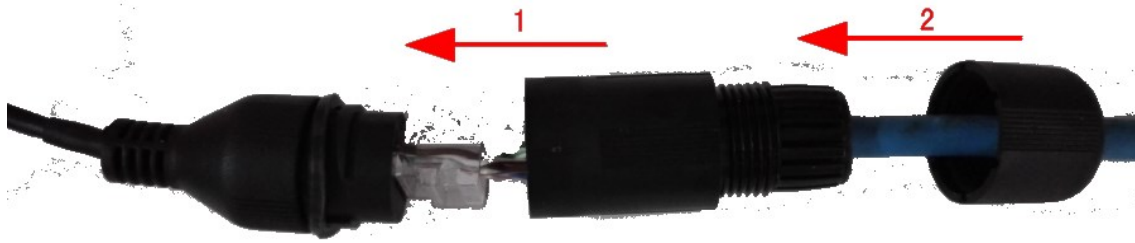


Figure 2-20



Figure 2-21

## 2.6.2 Audio/Video Output

### Video output

Video output includes CVBS(PAL/NTSC 1.0V<sub>P-P</sub> , 75Ω) output and a VGA output.

When you are using pc-type monitor to replace the monitor, please pay attention to the following points:

- To defer aging, do not allow the pc monitor to run for a long time.
- Regular demagnetization will keep device maintain proper status.
- Keep it away from strong electromagnetic interference devices.

Using TV as video output device is not a reliable substitution method. You also need to reduce the working hour and control the interference from power supply and other devices. The low quality TV may result in device damage.

### Audio Output

The audio output signal parameter is usually over 200mv 1KΩ. It can directly connect to low impedance earphone, active sound box or amplifier-drive audio output device.

Please refer to Figure 2-22. It is for audio and video output.

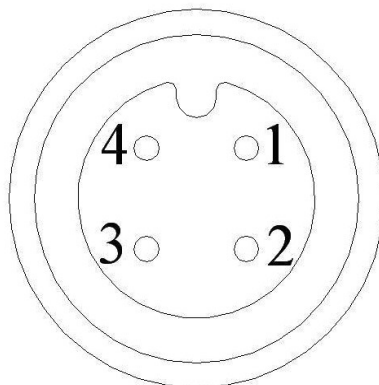


Figure 2-22

SN	Function
1	12V external power supplying. Less than 1.5A.
2	GND
3	Audio port
4	Video port

## 2.7 Alarm Input and Output Connection

There are two alarm input types for you to select: normal open (NO) and normal close (NC).

### 1. Alarm input

- Alarm input supports grounding alarm input.
- Alarm input supports 12V voltage signal alarm input.
- When the alarm device is connecting one NVR and one other device, please use a relay to separate them,

### 2. Alarm output

The alarm output max load shall be less than 0.5A. It should not be connected to high power load directly to avoid high current which may result in relay damage. Please use the co contactor to realize the connection between the alarm output port and the load.

### 3. How to connect PTZ decoder

- Ensure the decoder has the same grounding with DVR, otherwise you may not control the PTZ. Shielded twisted wire is recommended and the shielded layer is used to connect to the grounding.
- Avoid high voltage. Ensure proper wiring and some thunder protection measures.
- For too long signal wires, 120Ω should be parallel connected between A, B lines on the far end to reduce reflection and guarantee the signal quality.
- Device A/B cable cannot parallel connect with the 485 port of other device.
- The voltage between of A,B lines of the decoder should be less than 5v.

### 4. Please make sure the front-end device has soundly earthed.

Improper grounding may result in chip damage.

### 5. Alarm input type

NO (Normal open)/NC (Normal close).

#### 2.7.1 Alarm Input and Output Details

Alarm input and output interface is shown as in Figure 2-23.

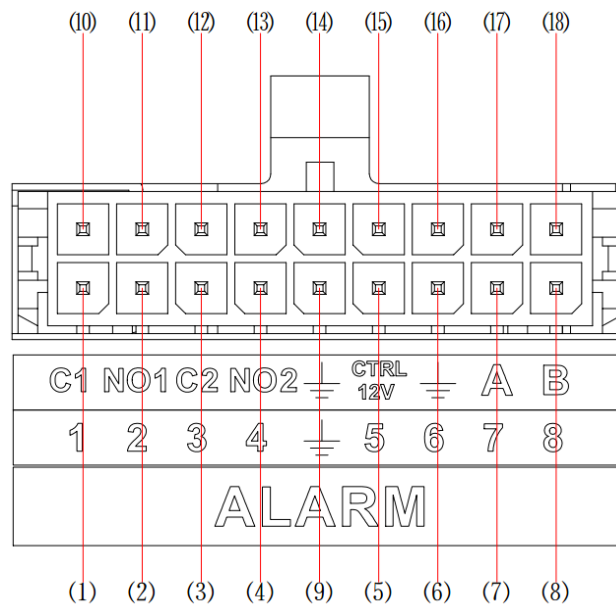


Figure 2-23

Please refer to the following sheet for detailed information.

Name	Pin Introduction
1~8	Alarm input 1~Alarm input 8
9	GND
10/11	Alarm output 1
12/13	Alarm output 2
14	GND
15	Controllable 12V output
16	GND
17/18	RS485 AB cable

### 2.7.2 Alarm Input Port

Please refer to the following sheet for more information. See Figure 2-24.

- Normal open or Normal close type.
- Please parallel connect COM end and COM end of the alarm detector (Provide external power to the alarm detector).
- Please parallel connect the Ground of the NVR and the ground of the alarm detector.
- Please connect the NC port of the alarm sensor to the NVR alarm input(ALARM)
- Use the same ground with that of NVR if you use external power to the alarm device.

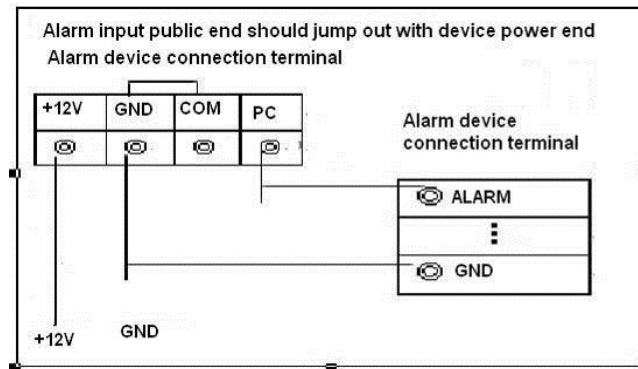


Figure 2-24

### 2.7.3 Alarm Output Port

- Alarm output is on-off signal alarm output (NO). Please use additional power supplying for the peripheral device. 2 channels are on-off signal alarm and 1 channel can provide 12V voltage output.
- RS485 A/B cable is for the A/B cable of the PTZ decoder.
- To avoid overloading, please read the following relay parameters sheet carefully.

#### Relay Specification

Model: HFD23			
Contact Parameter	Contact mode		1Z
	Contact resistance		100mΩ(0.1A 6VDC)
	Contact material		AgNi+gold-plating
	Contact		0.5A 125VAC/1A 30VDC
	Max switch voltage		125VAC / 60VDC
	Max switch current		2A
	Max switch power		62.5VA/30W
	Min allowed load		1mA 5V
	Mechanical durability		1x10 <sup>7</sup> (300/min)
	Electric durability		1x10 <sup>5</sup> (30/min)
Performance Parameter	Insulation resistance		1000MΩ(500VDC)
	Media pressure	Between loop and	1000VAC 1min
		Between separated contact	400VAC 1min
	Operation time (Rated voltage))		≤5ms

	Release time (Rated voltage)	≤5ms
	Bound time (Rated voltage)	About 5ms
	Loop temperature rise(Rated voltage)	≤65K
	Strike	98m/s <sup>2</sup>
	Vibration	10Hz~55 Hz 3.3mm Double amplitude
	Humidity	98% RH, 40℃
	Temperature	-30℃~70℃
	Weight	About 2.2g
	leading-out end mode	DIP
	Seal mode	Sealed
Loop	Rated Loop Power	Standard mode: 200mW; Sensitivity mode: 150mW

**Note: All the values listed in the above sheet are initial values.**

## 2.8 Remote Control

The remote control interface is shown as in Figure 2-25.

Please note remote control is not our standard accessory and it is not included in the accessory bag.

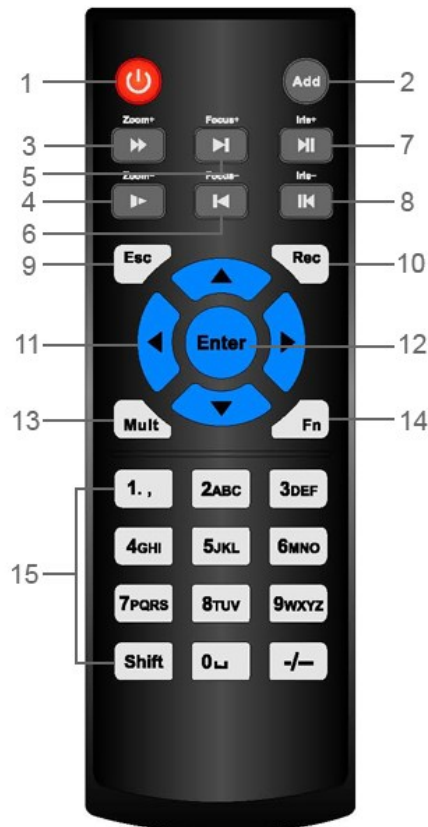




Figure 2-25

Please refer to the following sheet for detailed information.

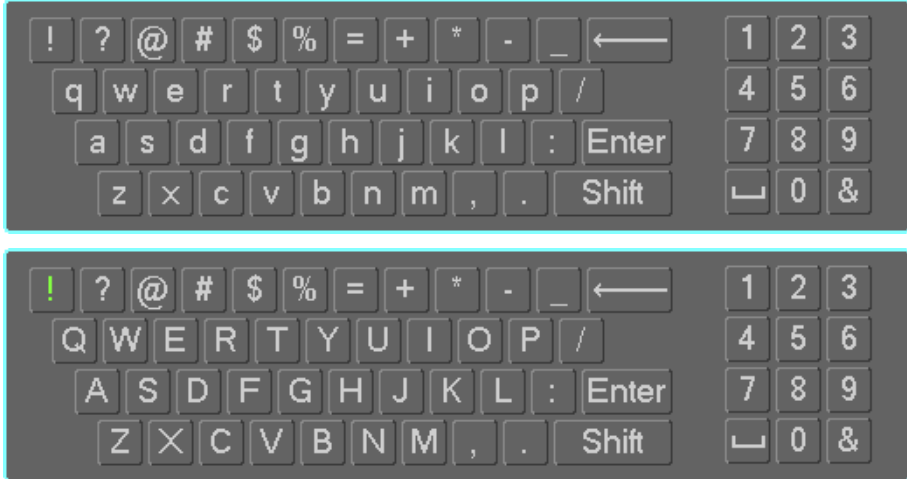
Serial Number	Name	Function
1	Power button	Click it to boot up or shut down the device.
2	Address	Click it to input device number, so that you can control it.
3	Forward	Various forward speeds and normal speed playback.
4	Slow play	Multiple slow play speeds or normal playback.
5	Next record	In playback mode, playback the next video.
6	Previous record	In playback mode, playback the previous video.
7	Play/Pause	In pause mode, click this button to realize normal playback. In normal playback click this button to pause playback. In real-time monitor mode, click this button to enter video search menu.
8	Reverse/pause	Reverse playback pause mode, click this button to realize normal playback. In reverse playback click this button to pause playback.
9	Cancel	Go back to previous menu or cancel current operation (close upper interface or control)
10	Record	Start or stop record manually In record interface, working with the direction buttons to select the record channel. Click this button for at least 1.5 seconds, system can go to the Manual Record interface.
11	Direction keys	Switch current activated control, go to left or right. In playback mode, click up/down button to switch playback channel. In 1-window playback mode, click left/right button to control playback speed. .

		Aux function(such as switch the PTZ menu, enable/disable reuse button)
12	Confirm /menu key	go to default button go to the menu
13	Multiple-window switch	Switch between multiple-window and one-window.
14	Auxiliary key	In 1-ch monitor mode: pop up assistant function: PTZ control and Video color.
		Switch the PTZ control menu in PTZ control interface.
		In text mode, click it to delete character.
15	0-9 number key	Input password, channel or switch channel.
		Shift is the button to switch the input method.

## 2.9 Mouse Operation

Please refer to the following sheet for mouse operation instruction.

Left click mouse	When you have selected one menu item, left click mouse to view menu content.
	Modify checkbox
	Click combo box to pop up dropdown list

	<p>In input box, you can select input methods. Left click the corresponding button on the panel you can input numeral/English character (small/capitalized). Here ← stands for backspace button. _ stands for space button.</p> <p>In English input mode: _stands for input a backspace icon and ← stands for deleting the previous character.</p>  <p>In numeral input mode: _ stands for clear and ← stands for deleting the previous numeral.</p>
Double left click mouse	<p>Implement special control operation such as double click one item in the file list to playback the video.</p> <p>In multiple-window mode, double left click one channel to view in full-window. Double left click current video again to go back to previous multiple-window mode.</p>
Right click mouse	<p>In real-time monitor mode, pops up shortcut menu.</p> <p>Exit current menu without saving the modification.</p>
Press middle button	<p>In numeral input box: Increase or decrease numeral value.</p> <p>Switch the items in the check box.</p> <p>Page up or page down</p>
Move mouse	Select current control or move control
Drag mouse	Select privacy mask zone.

## 3 Boot up and Shut down

Make sure a monitor has properly connected to the video output port of the device. Otherwise there is no video output.


Check there is a work-write HDD or not, otherwise device cannot record.



Caution

- The rated input voltage matches the device power on-off button. Please make sure the power wire connection is OK. Then click the power on-off button.
- To protect device, please connect device to the power adapter first and then connect the power cable.
- Always use the stable current, if necessary UPS is a best alternative measure.

### 3.1 Boot up

Turn the device key to , turn the vehicle key to ACC. The power indicator light becomes on. It may take a while for the device to boot up. It goes to multiple-window preview mode by default after booted up.



Note

The system can automatically backup video and resume previous working status after power failure.

#### Use ACC to boot up

Turn the vehicle key to the ACC, the power indicator light is on and device is booting up. The device is in preview mode by default. The record mode is auto. Refer to chapter 4.1.6 Manual record for detailed information.

#### Auto record

System enables schedule record function if the boot up is within the specified period. The corresponding record indicator light becomes on and system runs normally.

### 3.2 Shut Down

In the default setup, the device will automatically shut down after the ACC power is disconnected.

The ACC delay value ranges from 0 to 65535 (Unit: minute). System can delay shutting down for the specified time and then turn off (Main menu->Vehicle>Auto maintain) .

## 4 Local Operation

It is to introduce device initialization, local menu operation, settings, maintenance work.

### 4.1 Getting Started

#### 4.1.1 Initialize Device

If it is your first time to use the device, please set a login password of **admin** (system default user). You can select to use unlock pattern to login or not at your own choosing.

#### Note

For your device safety, please keep your login password of **admin** well after the initialization steps, and change the password regularly.

Please follow the steps listed below.

Step 1 Boot up NVR.

Device displays device initialization interface. See Figure 4-1.

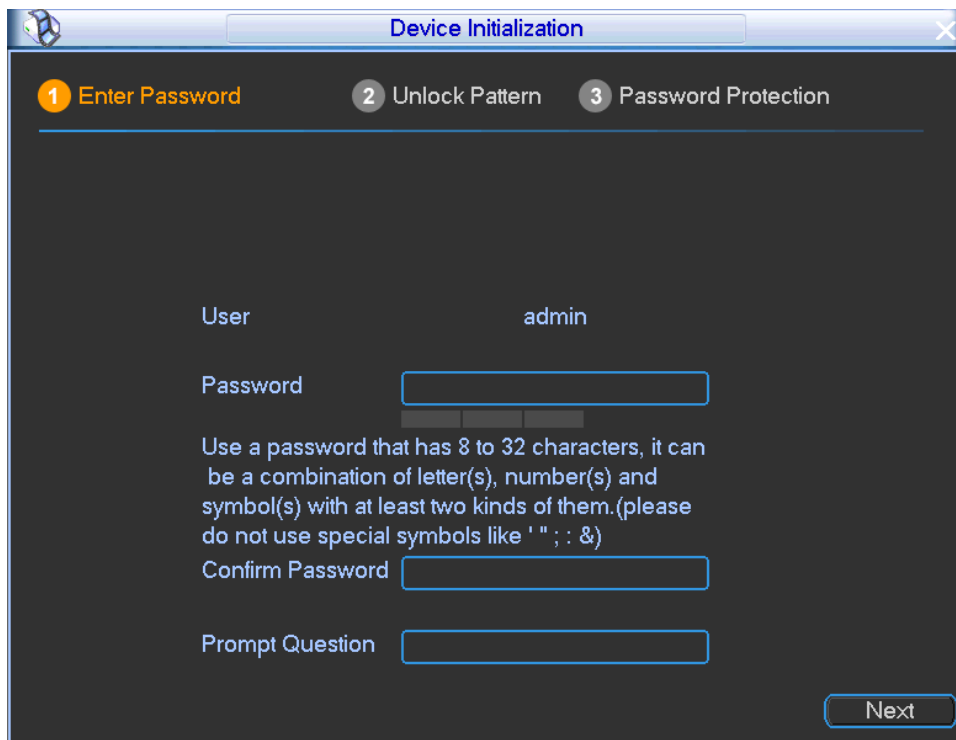



Figure 4-1

Step 2 Set login password of **admin**.

- User name: The default user name is **admin**.
- Password/confirm password: The password ranges from 8 to 32 digits. It can contain letters, numbers and special characters (excluding “'”, “””, “;”, “:”, “&”). The password shall contain at least two categories. Usually we recommend the strong password.
- Prompt question: If you set the prompt question here. On the login interface, move your mouse on , device can display the corresponding prompt question for you to remind the password.



## WARNING

**STRONG PASSWORD RECOMMENDED-For your device own safety, please create a strong password of your own choosing. We also recommend you change your password periodically especially in the high security system.**

Step 3 Click Next, device goes to the following interface. See Figure 4-2.

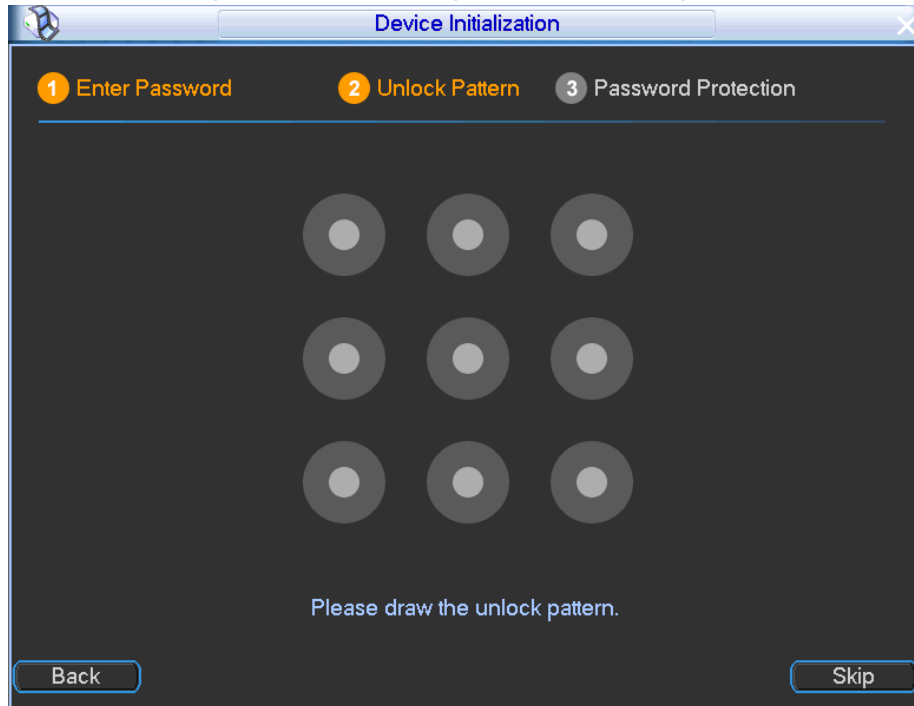


Figure 4-2

Step 4 Set unlock pattern.

After set unlock pattern, device goes to password protection interface. See Figure 4-3.



### Note

- Device adopts unlock pattern to login by default if you have set pattern here. If there is no unlock pattern, please input the password to login.
- Click Skip if there is no need to set unlock pattern.

**Device Initialization**

1 Enter Password      2 Unlock Pattern      3 Password Protection

Email Address   
To reset password, please input properly or update in time

Security Question

Question 1      What is your favorite children's book?   
Answer     

Question 2      What was the first name of your first boss?   
Answer     

Question 3      What is the name of your favorite fruit?   
Answer     

Figure 4-3

Step 5 Set security questions.

 **Note**

- After setting the security questions here, you can use the email you input here or answer the security questions to reset admin password. Refer to chapter 4.3.6.7 Reset password for detailed information.
- Cancel the email or security questions box and then click Next button to skip this step.
- Email: Input an email address for reset password purpose. In case you forgot password in the future, input the security code you got on the assigned email to reset the password of admin. If you have not input email here or you need to update the email information, please go to the main menu->Setting->System->Account->Modify user to set. Refer to chapter 4.3.6.2 Modify user for detailed information.
- Security question: Set security questions and corresponding answers. Properly answer the questions to reset admin password. In case you have not input security question here or you need to update the security question information, please go to the main menu->Setting->System->Account->Security question to set. Refer to chapter 4.3.6.6 Security question for detailed information.

 **Note**

If you want to reset password by answering security questions, please go to the local menu interface.

Step 6 Click OK to complete the device initialization setup.

## 4.1.2 Login

It is to login the local menu to operate the device.

Step 1 On the preview interface, right click mouse and select Main menu, Enter login interface. See Figure 4-4.

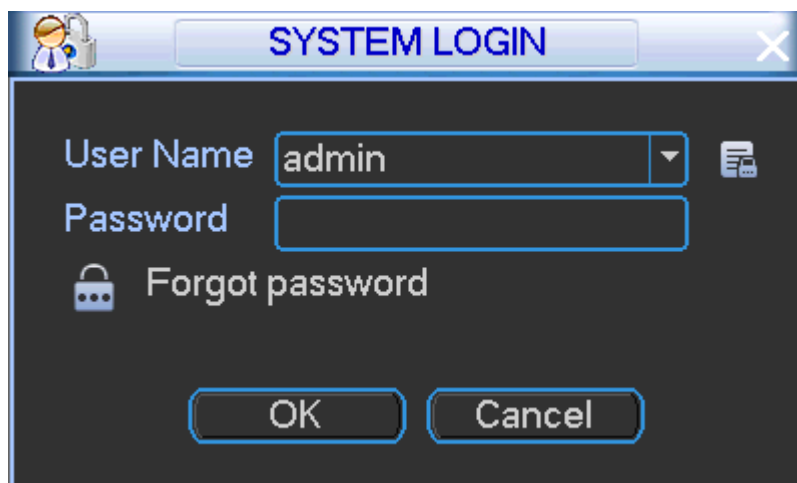




Figure 4-4

 **Note**

- If you have set unlock pattern, device goes to unlock pattern interface to login by default.
- Click  to view the prompt information to help you remember password.
- In case you forgot password, click  to answer security questions or use the email to reset password. Refer to chapter 4.3.6.7 Reset password for detailed information.

Step 2 The default user is **admin**, and then input the corresponding password (the password you set during initialization process).

Step 3 Click OK.

Enter main menu interface. See Figure 4-5.



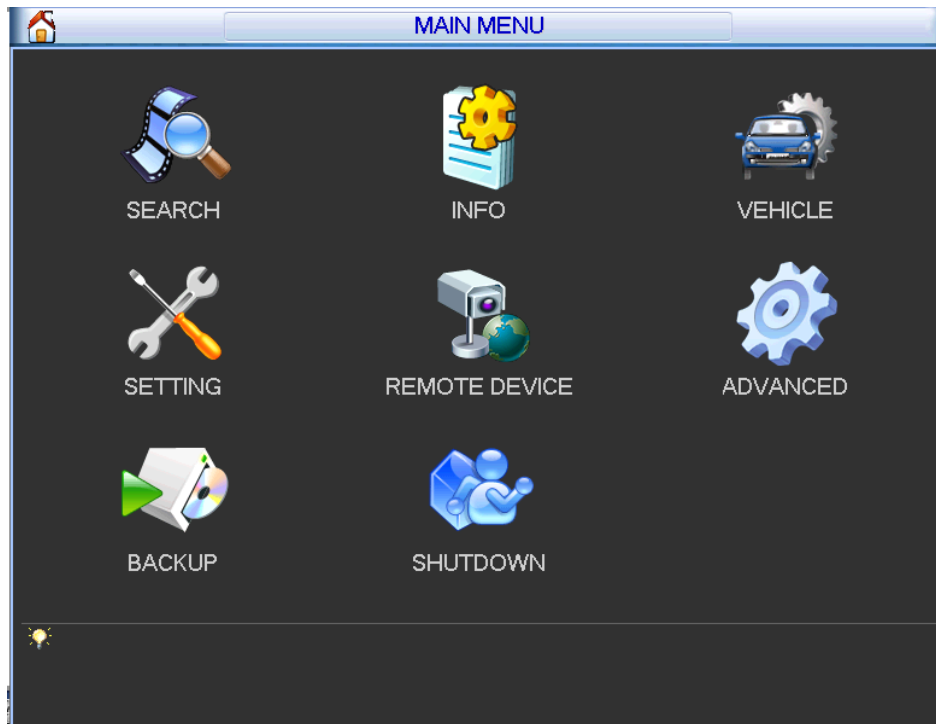


Figure 4-5

### 4.1.3 IP Address and Port

It is to set network information such as IP address or port.

Step 1 On the main menu, from Setting->Network,

Enter network interface. See Figure 4-6.

Step 2 Set parameters.

- IP Version: There are two options: IPv4 and IPv6. Right now, system supports these two IP address format and you can access via them.
- MAC address: The host in the LAN can get a unique MAC address. It is for you to access in the LAN. It is read-only.
- IP address: Here you can use up/down button (▲▼) or input the corresponding number to input IP address. Then you can set the corresponding subnet mask the default gateway.
- Subnet prefix: The input value ranges from 0 to 128. It is to mark a specified network MAC address. Usually it includes an organization of multiple-level.
- Default gateway: Here you can input the default gateway. Please note system needs to check the validity of all IPv6 addresses. The IP address and the default gateway shall be in the same IP section. That is to say, the specified length of the subnet prefix shall have the same string.
- DHCP: It is to auto search IP. When enable DHCP function, you cannot modify IP/Subnet mask /Gateway. These values are from DHCP function. If you have not enabled DHCP function, IP/Subnet mask/Gateway display as zero. You need to disable DHCP function to view current IP information. Besides, when PPPoE is operating, you cannot modify IP/Subnet mask /Gateway.
- TCP port: Default value is 37777. You can change if necessary.
- UDP port: Default value is 37778. You can change if necessary.
- HTTP port: Default value is 80.

- RTSP port: Default value is 554.  
**Important: System needs to reboot after you changed and saved any setup of the above four ports. Please make sure the port values here do not conflict.**
- Max connection: system support maximal 20 users. 0 means there is no connection limit.
- Preferred DNS server: DNS server IP address.
- Alternate DNS server: DNS server alternate address.
- Transfer mode: Here you can select the priority between fluency/video qualities.
- LAN download: System can process the downloaded data first if you enable this function. The download speed is 1.5X or 2.0X of the normal speed.

**Important**

**For the IP address of IPv6 version, default gateway, preferred DNS and alternate DNS, the input value shall be 128-digit. It shall not be left in blank.**

The screenshot shows a window titled "NETWORK" with the following settings:

- IP Version: IPv4
- IP Address: 10 . 15 . 23 . 31
- Subnet Mask: 255 . 255 . 0 . 0
- Gateway: 10 . 15 . 0 . 1
- TCP Port: 37777
- HTTP Port: 80
- UDP Port: 37778
- HTTPS Port: 443
- RTSP Port: 554
- MTU: 1500
- Preferred DNS: 8 . 8 . 8 . 8
- Alternate DNS: 8 . 8 . 4 . 4
- LAN Download:
- DHCP:
- Enable:

Buttons at the bottom: Default, Save, Cancel.

Figure 4-6

Step 3 Network Service (Optional)

**Note**

Follow the contents listed below if you want to set DDNS, email, FTP, P2P or SWITCH function.

1. Click Network setting button,  
Enter network setting interface. See Figure 4-7.

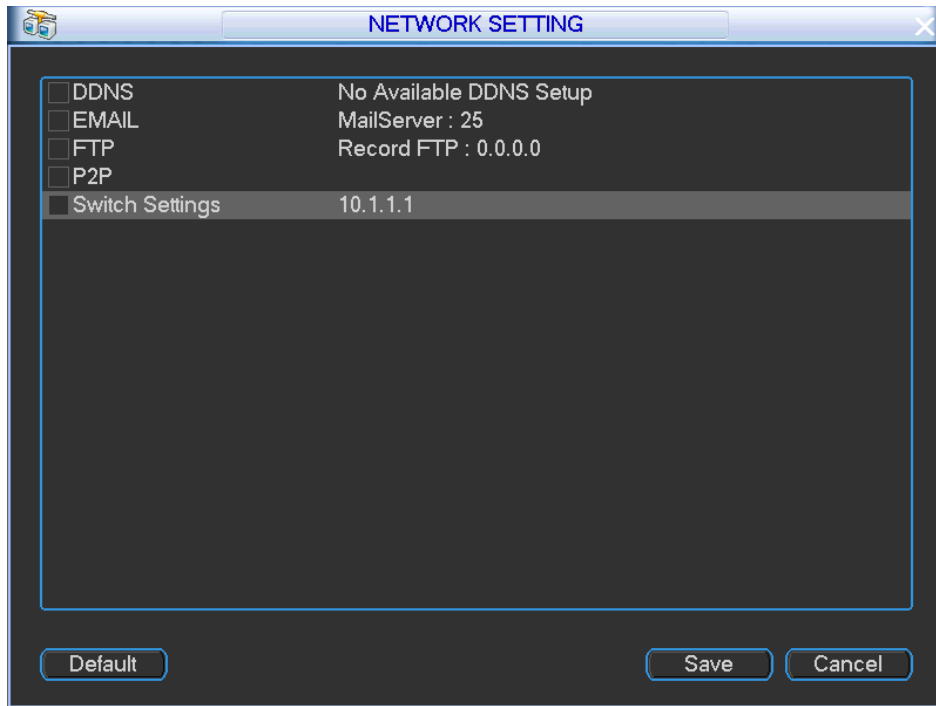


Figure 4-7

2. Please draw a circle to enable corresponding function.  
Double click current item to go to setup interface. Refer to chapter 4.3.2 Network Service for detailed information.
3. Click Save button.

Step 4 Click Save button.

#### 4.1.4 General Information

It is to set device basic information and some general settings such as system time, date format, language.

Step 1 On the main menu, from Setting->General, Enter General interface. See Figure 4-8.

Step 2 Set parameters.

- System time: Here is for you to set system time

#### Note

- Since system time is very important, do not modify time casually unless there is a must!
- Before your time modification, please stop record operation first!
- Date format: There are three types: YYYYMM-DD: MM-DD-YYYY or DD-MM-YYYY.
- Date separator: There are three denotations to separate date: dot, beeline and solidus.
- DST: Here you can set DST time and date. Please enable DST function and then click set button. You can see an interface is shown as in Figure 4-9. Here you can set start time and end time by setting corresponding week setup. In Figure 4-9, enable date button, you can see an interface is shown as in Figure 4-10. Here you can set start time and end time by setting corresponding date setup.

- Time format: There are two types: 24-hour mode or 12-hour mode.
- Language: Set system language.

 **Note**

- System needs to reboot to activate new setup.
- HDD full: Here is for you to select working mode when hard disk is full. There are two options: stop/overwrite.
- Pack duration: Here is for you to specify record duration. The value ranges from 1 to 120 minutes. Default value is 60 minutes.
- License No: Here you can set vehicle plate number.
- Auto logout: Here is for you to set auto logout interval once login user remains inactive for a specified time. Value ranges from 0 to 60 minutes.
- Preview bar: Check the box here, system displays the navigation bar on the interface when you boot up device the next time. Otherwise, it goes to the system login interface directly. You can check the box to select overlay position.
- Startup wizard: Once you check the box here, system will go to the startup wizard directly when the system restarts the next time. Otherwise, it will go to the login interface.
- IPC Time Sync: You can input an interval here to synchronize the IPC time with the NVR.

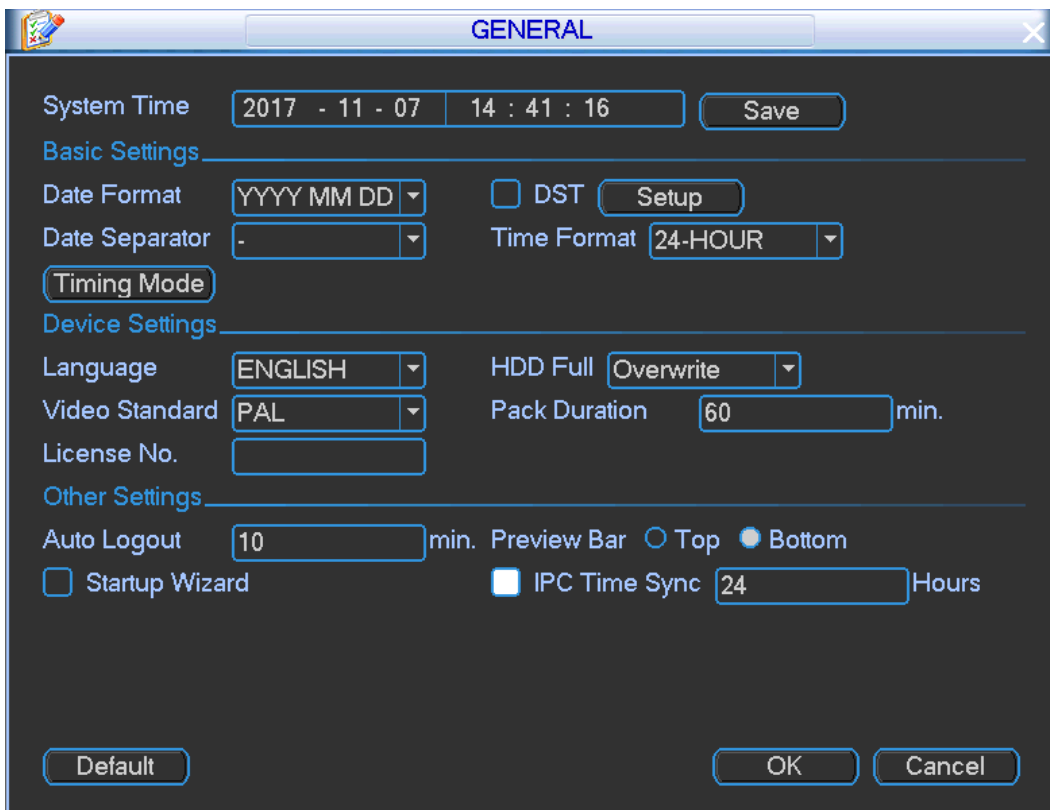


Figure 4-8

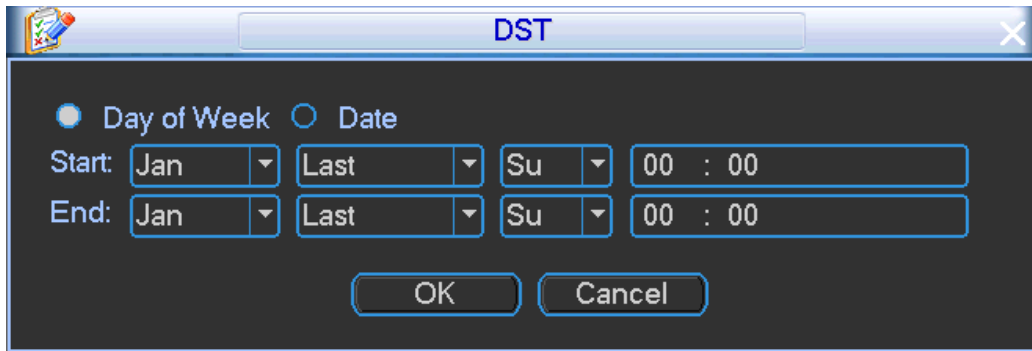


Figure 4-9

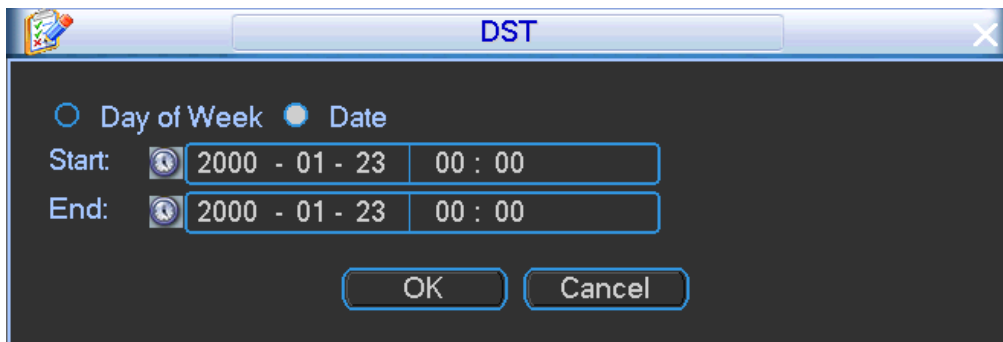


Figure 4-10

Step 3 Click Save button.

#### 4.1.5 Initialize and Register Camera

After add remote device, you can preview the video, and manage the device. System can manually add or search and add the remote device.

##### 4.1.5.1 Remote Device Initialization

Remote device initialization can change remote device login password and IP address.

Make sure the connected remote device supports initialization function.

Step 1 On the main menu, select Remote.

Enter Remote interface. See Figure 4-11.

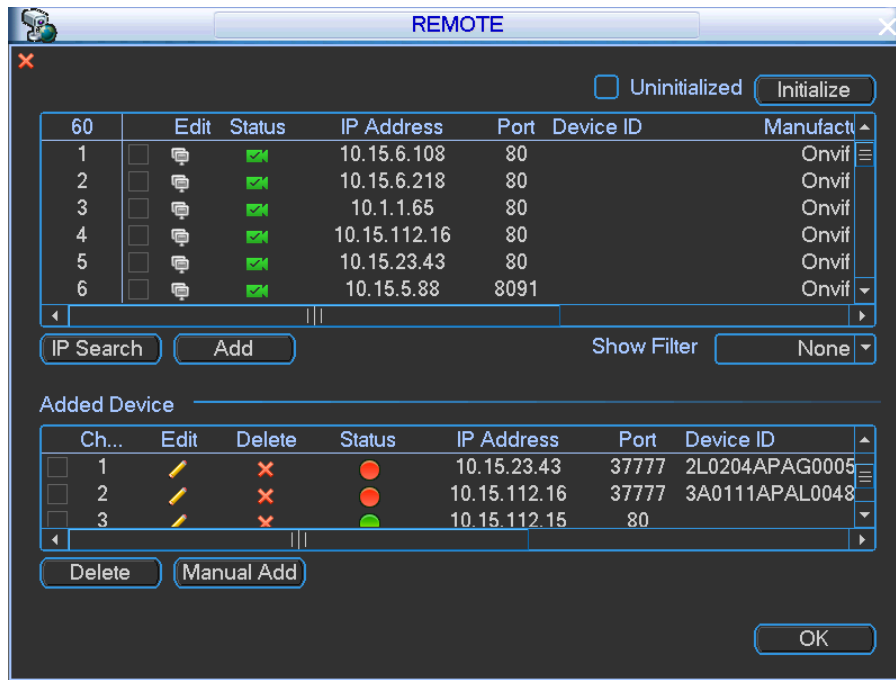


Figure 4-11

- Step 2 Click IP Search.  
Device displays searched results.
- Step 3 Check the Uninitialized box.  
Device displays camera(s) to be initialized.
- Step 4 Select a camera to be initialized and then click Initialize.  
Device displays password setup interface. See Figure 4-12.

 **Note**

- If you want to use current device password and email information, the remote device automatically uses NVR admin account information (login password and email). There is no need to set password and email. Please go to step 5.

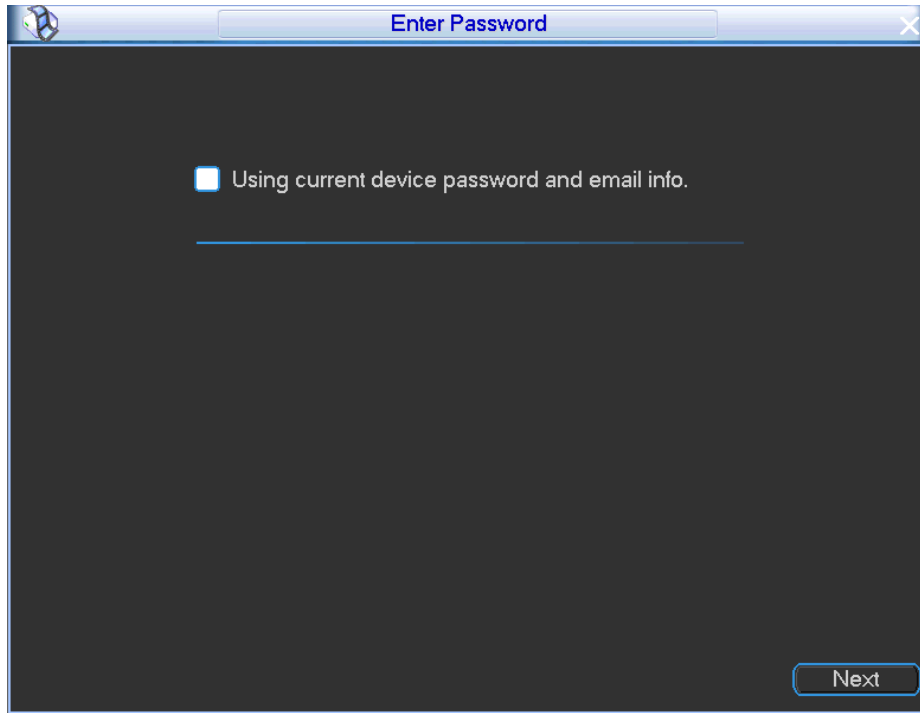


Figure 4-12

1. Cancel using current device password and email information, Enter password setting interface. See Figure 4-13.

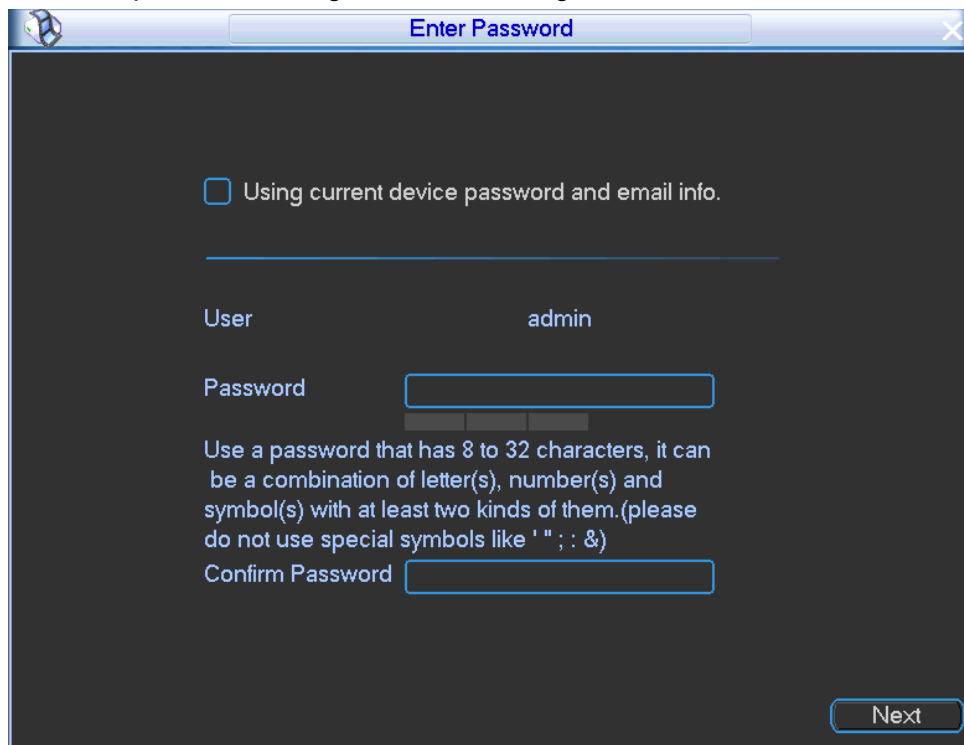


Figure 4-13

2. Set camera password.
  - The user name is **admin**. The password ranges from 8 to 32 digits. It can contain letters, numbers and special characters (excluding “'”, “””, “,””, “.””, “&”). The password shall contain at least two categories. Usually we recommend the strong password.



## WARNING

**STRONG PASSWORD RECOMMENDED-For your device own safety, please create a strong password of your own choosing. We also recommend you change your password periodically especially in the high security system.**

3. Click Next button.

Enter input email interface. See Figure 4-14.

Security Questions

Email Address

To reset password, please input properly or update in time

Back Next Skip

Figure 4-14

4. Set email information.

Email: Input an email address for reset password purpose.



### Note

Cancel the box and then click Next or Skip if you do not want to input email information here.

- Step 5 Click Next button.

Device begins initializing camera. See Figure 4-15.



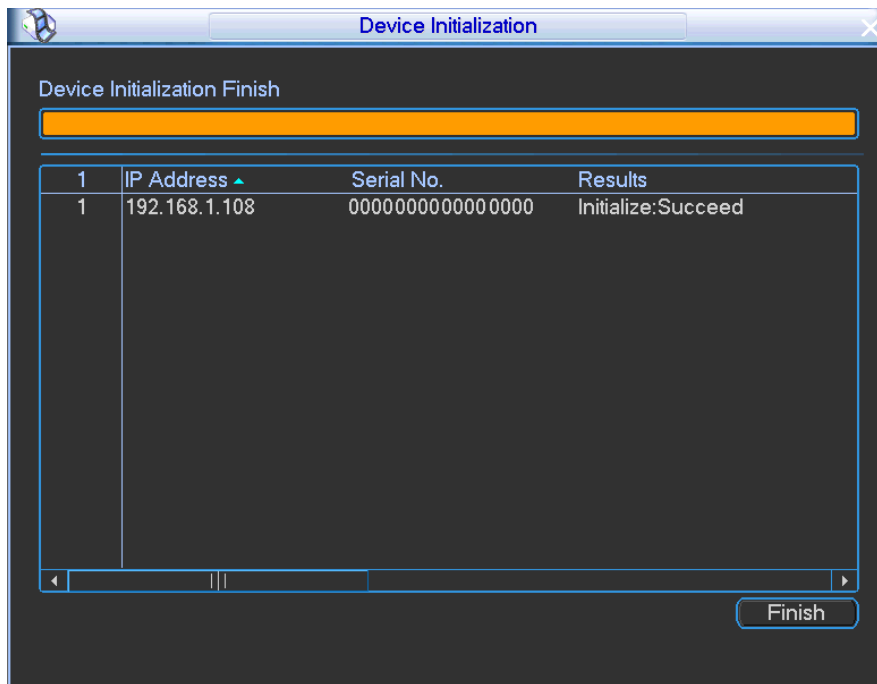


Figure 4-15

Step 6 Click Finish to complete the setup.


#### 4.1.5.2 Register

After add remote device, the device can receive, storage, and manage the video streams of the remote device. You can view, browse, playback, manage several remote devices at the same time.






Step 1 On the main interface, select Remote.  
Enter remote device interface. See Figure 4-11.



#### Note

There are two ways to go to Registration interface.

- For the channel has not register a camera, put your mouse on the preview window and click , you can go to the remote device interface.
- On the preview interface, right click mouse and then select Remote.

Step 2 Set parameters

- Channel: It is the device channel number. If you have not added the network camera, the channel number is shown as .
- Status: Red circle () means current channel has no video, green circle () means current channel has video.
- IP address: It is to display network camera IP address.
- Type: There are two connection types. You can use the network to connect to the camera or use the Wi-Fi. The  means current network camera connection mode is general; the  means current network camera mode is hotspot.

- Add/Delete: Click  to delete the device, click  to add the device to the NVR.
- Step 3 Add network camera.

- Device search: Click the button; you can search all network cameras in the same network segment. Double click a camera or check the camera box and then click Add button, you can add a device to the list.

 **Note**

The device in the added device list is not shown in the search result column.

- Manual Add: Click Manual Add button, you can set the corresponding network camera information and then select the channel you want to add. See Figure 4-16.
  - ◇ Manufacturer: Please select from the dropdown list.

 **Note**

Different series products may support different manufactures, please refer to the actual product.

- ◇ IP address: Input remote device IP address.
- ◇ RTSP port: Input RTSP port of the remote device. The default setup is 554.

 **Note**

Skip this item if the manufacture is private or customize.

- ◇ HTTP port: Input HTTP port of the remote device. The default setup is 80.

 **Note**

Skip this item if the manufacture is private or customize.

- ◇ TCP port: Input TCP port of the remote device. The default setup is 37777.
- ◇ User name/password: The user name and password to login the remote device.
- ◇ Channel No.: Input channel amount or click the Connect button to get the channel amount of the remote device.

 **Note**

We recommend click Connect button to get remote device channel amount, the manual add operation may result in failure if the input channel amount is not right.

- ◇ Remote channel No.: After getting the remote device channel amount, click Setup to select a channel.

 **Note**

Click to select one or more remote channel numbers here.

- ◇ Channel: The local channel number you want to add. One channel name has corresponding one channel number.
- ◇ Decode buffer: It is to set buffer time.

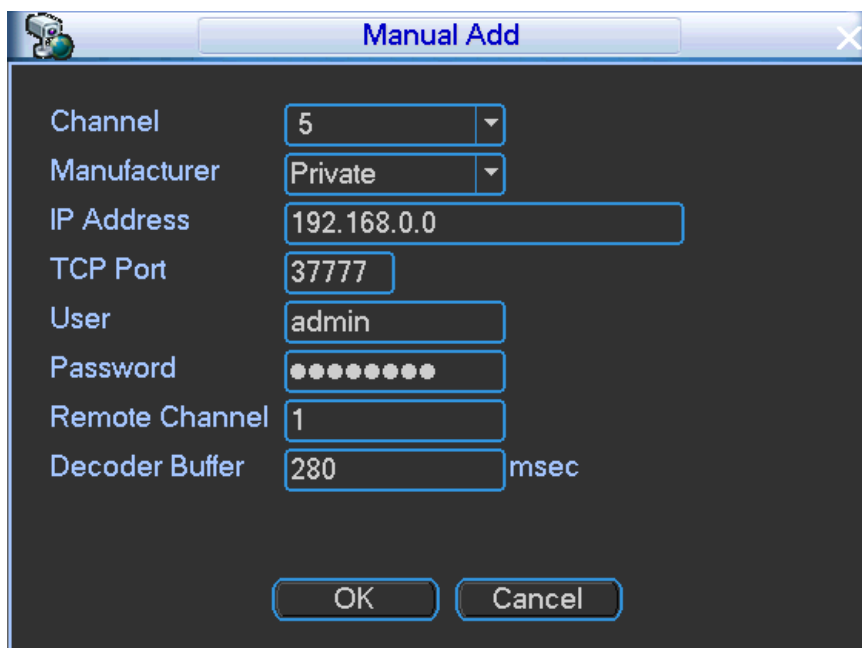



Figure 4-16

Step 4 Click OK to add the camera to the device.

 **Note**

Click  to change the remote device information. Click  to delete remote device. .

#### 4.1.5.3 Change IP address

Step 1 From Main menu->Setting->Camera->Registration, check the box before the camera name and then click Change IP or click the  before the camera name.

Enter change IP interface. See Figure 4-17 (The remote device is not in the added list) or Figure 4-18 (The remote device is in the added device list).

 **Note**

Check the box before several cameras, change the IP addresses of several cameras at the same time.

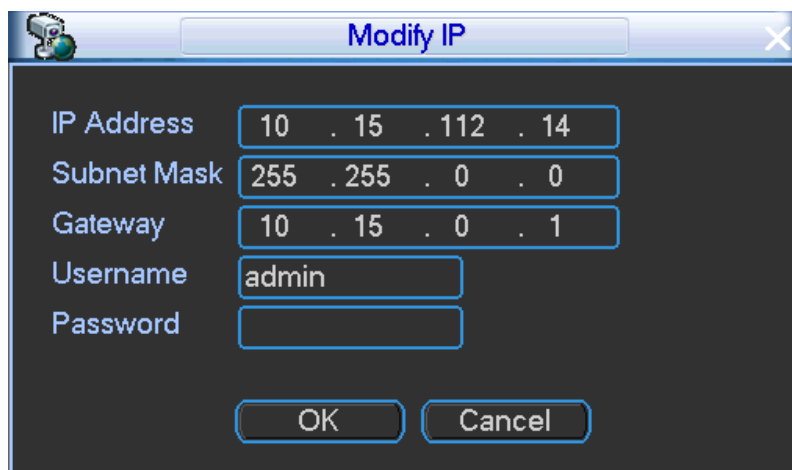


Figure 4-17

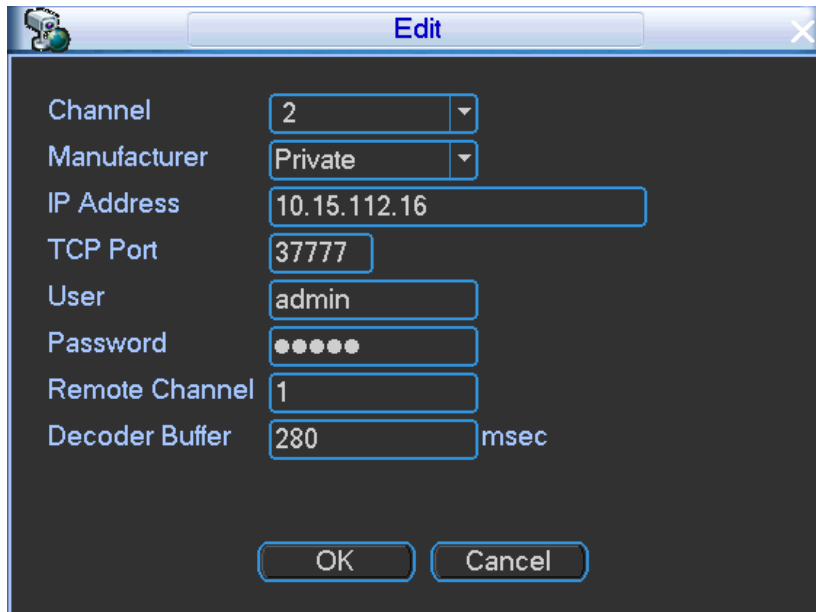


Figure 4-18

Step 2 Select IP mode.

Check DHCP, there is no need to input IP address, subnet mask, and default gateway. Device automatically allocates the IP address to the camera.

Check Static, and then input IP address, subnet mask, default gateway and incremental value.

 **Note**

If it is to change several devices IP addresses at the same time, please input incremental value. Device can add the fourth address of the IP address one by one to automatically allocate the IP addresses.

If there is IP conflict when changing static IP address, device pops up IP conflict dialogue box. If batch change IP address, device automatically skips the conflicted IP and begin the allocation according to the incremental value

Step 3 Input remote device user name and password.

Step 4 Click OK button to save settings.

After the changing operation, search again, device displays new IP address.

 **Note**

When change IP addresses of several devices at the same time, make sure the cameras user name and passwords are the same.

#### 4.1.6 Manual Record

 **Note**

You need to have proper rights to implement the following operations. Please make sure the HDD has been properly installed.

Step 1 Right click mouse or in the main menu, Advanced->Manual Record.

Enter Manual record interface. See Figure 4-19.

Step 2 Set parameters.

- Manual: The highest priority. After manual setup, all selected channels will begin ordinary recording.
- Schedule: Channel records as you have set in recording setup (Main Menu->Setting->Schedule)
- Stop: Corresponding channel stop recording.
- Enable/disable: Corresponding channel start/stop regular snapshot function.

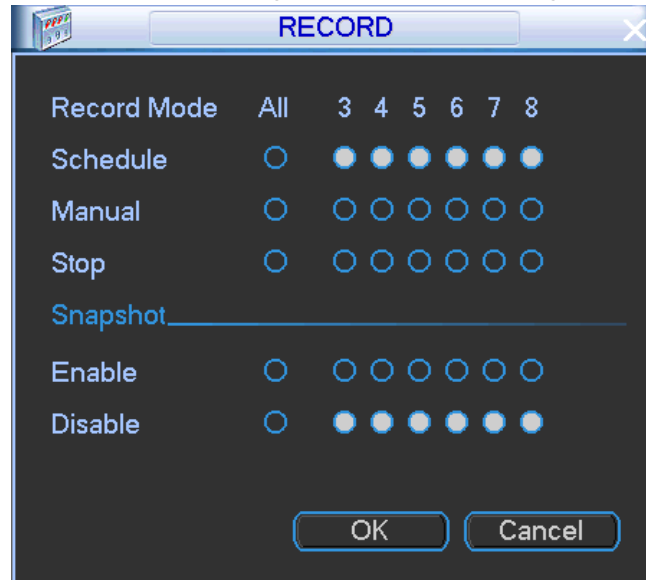


Figure 4-19

Step 3 Click OK button.

#### 4.1.7 Schedule

All channels are record continuously by default. You can set customized record period and record type.

After set schedule record, device can record video file according to the period you set here. For example, the alarm record period is from 6:00~18:00 Monday, device can record alarm video files during the 6:00~18:00. Refer to chapter 4.1.6 Manual record for detailed information.

Step 1 In the main menu, from setting to schedule, Enter schedule menu. See Figure 4-20.

Step 2 Set parameters.

- Channel: Please select the channel number first. You can select “all” if you want to set for the whole channels.
- Week day: There are eight options: ranges from Saturday to Sunday and all.
- Pre-record: System can pre-record the video before the event occurs into the file. The value ranges from 1 to 30 seconds depending on the bit stream.
- Redundancy: System supports redundancy backup function. It allows you backup recorded file in two disks. You can highlight Redundancy button to activate this function. Please note, before enable this function, please set at least one HDD as redundant. (Main menu->Advanced->HDD Management). **Please note this function is null if there is only one HDD.**
- Record types: There are three types: regular, MD, and alarm. Green color stands for regular recording, yellow color stands for motion detect (MD) recording, and red color stands for alarm recording.

 **Note**

When alarm type is MD/alarm, please enable the corresponding channel to record. For example, when alarm type is MD, please refer to chapter 4.3.4.2 Detect to enable motion detect record function, and refer to 4.1.6 Record control to set schedule record function.

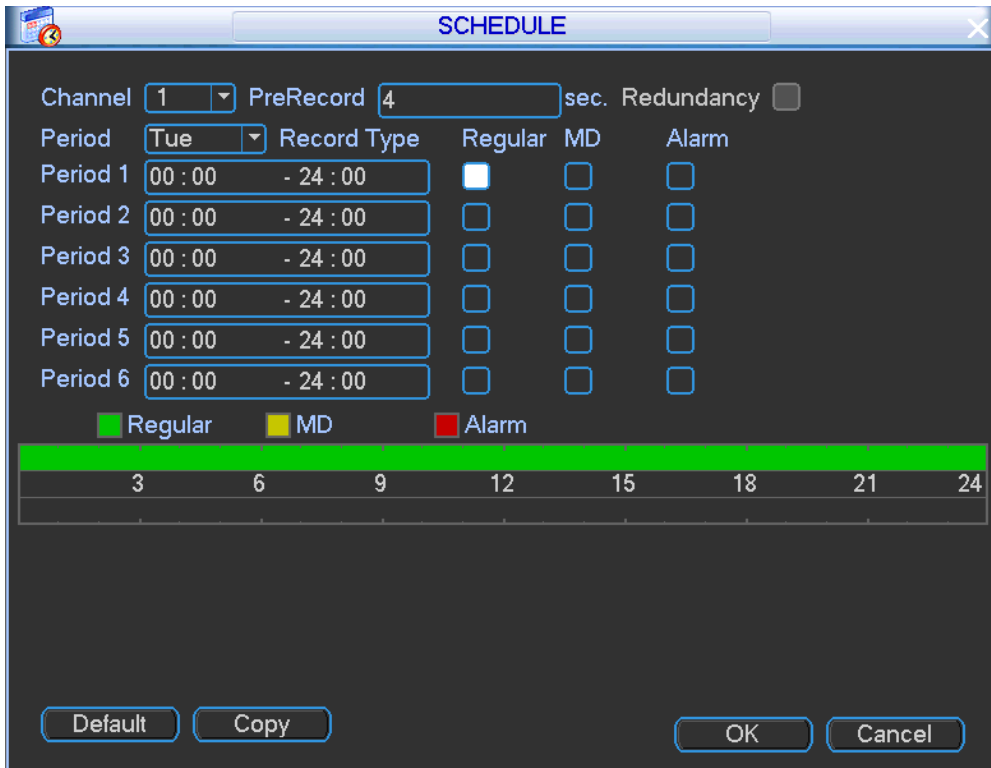


Figure 4-20

Step 3 Click OK button.

## 4.2 Operations

### 4.2.1 Preview

After you successfully logged in, you can go to 4-window preview interface directly. See Figure 4-21. System can overlay the corresponding date such as plate number, device indoor temperature, vehicle speed, system date and time, network connection status, GPS connection status, and platform connection status. You can refer to the following sheet for detailed information.



SN	Icon
1	Display plate number. For detailed setup information, please refer to chapter 4.1.4 General.
2	Display device working temperature.
3	Display current vehicle speed.
4	Display system time and date.
5	Network icon. It includes Wi-Fi, 3G, GPRS, DSS platform.
6	Current longitude and latitude.
7	 Video loss occurs.
8	 Current channel is recording now.



Figure 4-21

- If you want to change position of channel 1 and channel 2 when you are previewing, you can left click mouse in the channel 1 and then drag to channel 2, release mouse you can switch channel 1 and channel 2 positions.

#### 4.2.1.1 Preview interface

After register a remote device to the system, it can overlay time, channel name, GPS information and there is a line at the bottom of the interface to display channel record and alarm status.





SN	Icon	Function
1		When current channel is recording, system displays this icon.
2		When motion detection alarm occurs, system displays this icon.
3		When video loss alarm occurs, system displays this icon.

#### 4.2.1.2 Preview Control

Move you mouse to the top center of the video of current channel, you can see system pops up the preview control interface. If your mouse stays in this area for more than 6 seconds and has no operation, the control bar automatically hides. See Figure 4-22.



Figure 4-22

- Click , the icon becomes , left click mouse to select a zone and left click and then drag to zoom in the selected zone, right click mouse to restore original status.
- Click  to register a new remote device to current channel.
- Click  to display video in up/down/left/right mode.

#### 4.2.1.3 Right-Click Menu

It is to introduce right-click menu function on the preview interface.

On the preview interface, right click mouse, you can view menu interface shown as in Figure 4-23.

#### Note

Slight difference may be found on the following interface.

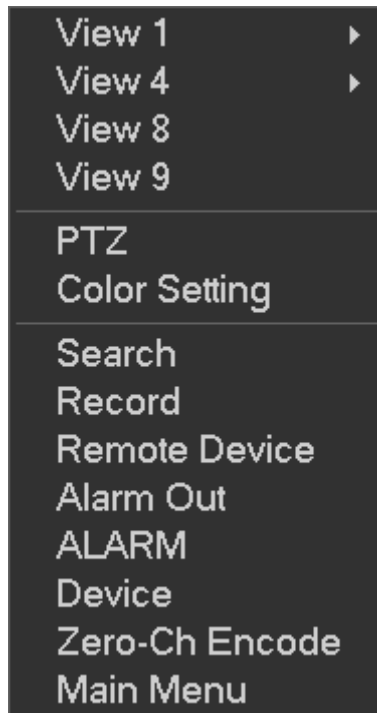


Figure 4-23

- **Window Switch**

System supports 1/4/8/9-window. You can select from the dropdown list. See Figure 4-24.



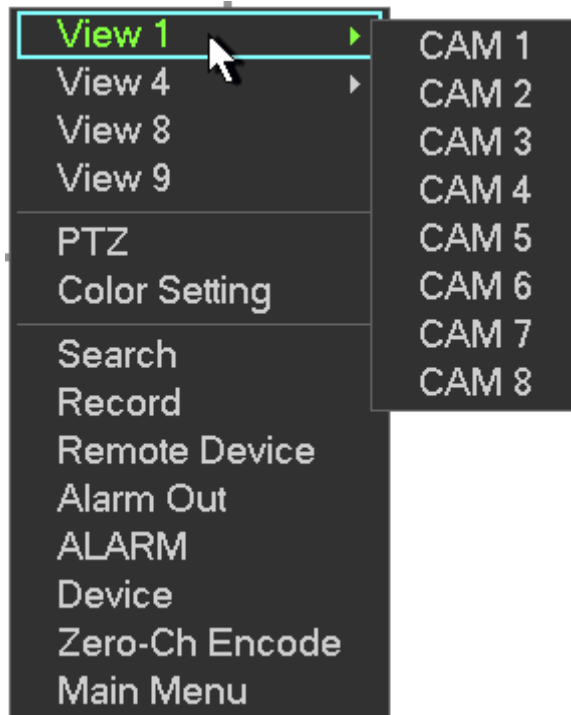


Figure 4-24

- **PTZ Control**

Before you go to PTZ control interface, please go to chapter 4.2.2 to set PTZ parameter. Click it to go to PTZ interface. See Figure 4-25.

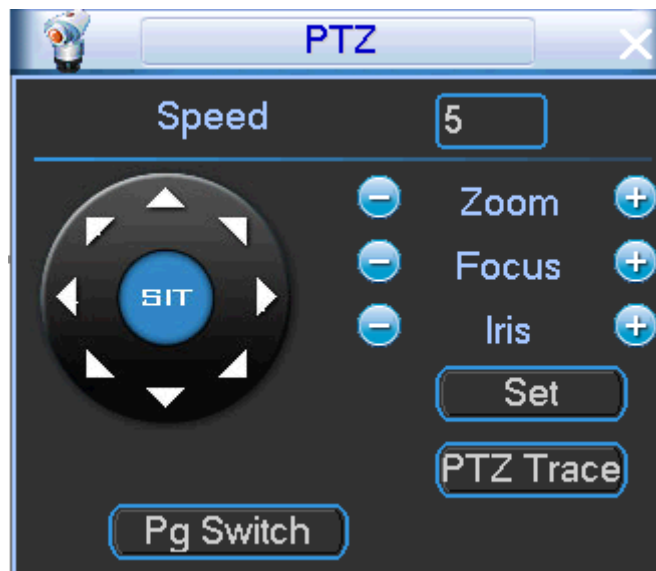


Figure 4-25

- **Color**

Here you can set hue, brightness, contrast, saturation, gain, white level, color mode and etc. Please refer to chapter 4.3.1.1 Image for detailed information.

- **Search**

Click it to go to Search interface to search and playback a record file. Please refer to chapter 4.2.3 Search & Playback for detailed information.

- **Record Control**

Enable/disable record channel. Please refer to chapter 4.1.6 Record control for detailed information.

- **Remote**

Please refer to chapter 4.1.5.2 Remote for detailed information.

- **Alarm Output**

It is to set alarm output mode. Please refer to chapter 4.3.4.4 Alarm output.

- **Device Info**

Please refer to chapter 4.4.2.2 Device info for detailed information.

- **Zero-channel encoding**

Click to go to zero-channel encoding interface. Please refer to chapter 4.2.1.4.3 Zero-channel encoding for detailed information.

- **Main Menu**

Click to go to the main menu.



**Note**

Right click mouse to go back to the upper-level menu.

#### 4.2.1.4 Preview Settings

It is to set channel output mode, tour mode and zero-channel encoding mode.

##### 4.2.1.4.1 Display

It is to set channel output mode such as transparent, channel name, overlay information, motion tour and alarm tour mode, split mode, and volume during preview and bidirectional talk process.

Step 1 On the main menu, from Setting->Display,

Enter display interface. See Figure 4-27.

Step 2 Set parameters.

- Transparency: Here is for you to adjust transparency. The value ranges from 128 to 255.

- Channel name: Here is for you to set camera channel name.

In Figure 4-27, click modify button after channel. You can see an interface shown as in Figure 4-26. Please note all your modification here applies to local end only. You need to refresh web or client-end to get the latest channel name. System max support 25-digital character.

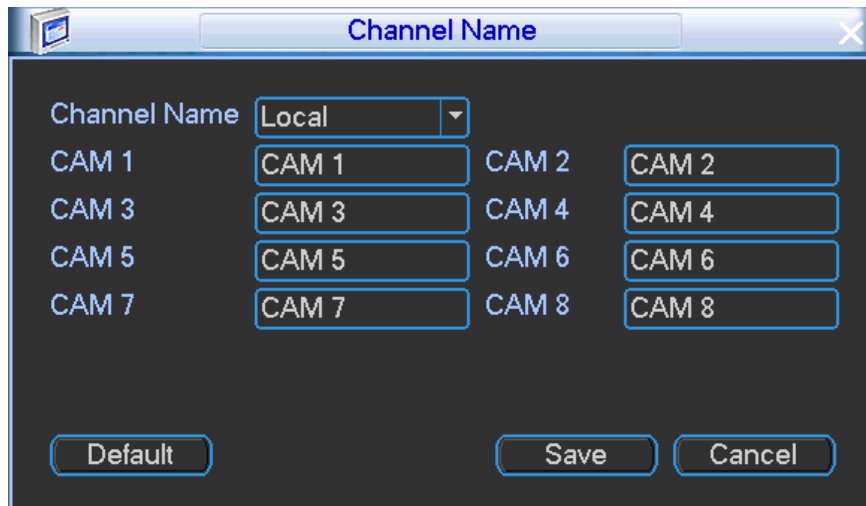


Figure 4-26

- Time display: You can select to display time or not when system is playback.
- Car number display: You can select to display plate number or not when system is playback.
- GPS display: System displays GPS information in the screen for your reference.  
**Please note only the unit of GPS module supports this function.**
- Resolution: Please note system needs to reboot to active current setup.
- Screen calibration: When connecting the device to the touch screen, click the screen calibration to calibrate the screen.
- Image enhance: Check the box; you can optimize the margin of the preview video.
- MD tour/alarm tour: It is to set motion detect tour/alarm tour split mode. Please note it supports 1-window tour mode only.

#### Note

Tour priority: Alarm tour>motion detect tour>general tour.

- Zero-Channel Encoding (Multiple-Preview) : It is to set encode mode, resolution, frame rate, overlay information and etc. Refer to chapter 4.2.1.4.2 Zero-channel encoding for detailed information.
- Video mirror: Set channel left/right/top/bottom mirror.
  1. Click Set button,  
Enter video mirror interface.
  2. Select different mirror mode:  
Top/bottom is to display video upside down, left/right is to change video left/right position.
  3. Click Save button.
- Split mode: It is to set preview split mode and the interval from other mode to the current split mode.
  - ◇ Select a channel if you select 1-window mode. Select all channels if you select 4-window mode.
  - ◇ When video stays in other split mode for specified period, system automatically switches to specified split mode.
- Preview: Drag the slide bar to adjust the volume during preview. On 1-window

preview mode, make sure the connected remote device supports audio input(the remote device has MIC or has connected to the peripheral MIC), device has connected to the screen that can output audio (such as AV screen) and current channel has enabled audio function, now you can hear the remote device audio during preview process.

- Volume control: Drag the slide bar to set volume during live or bidirectional talk process.

Step 3 Click Save button.

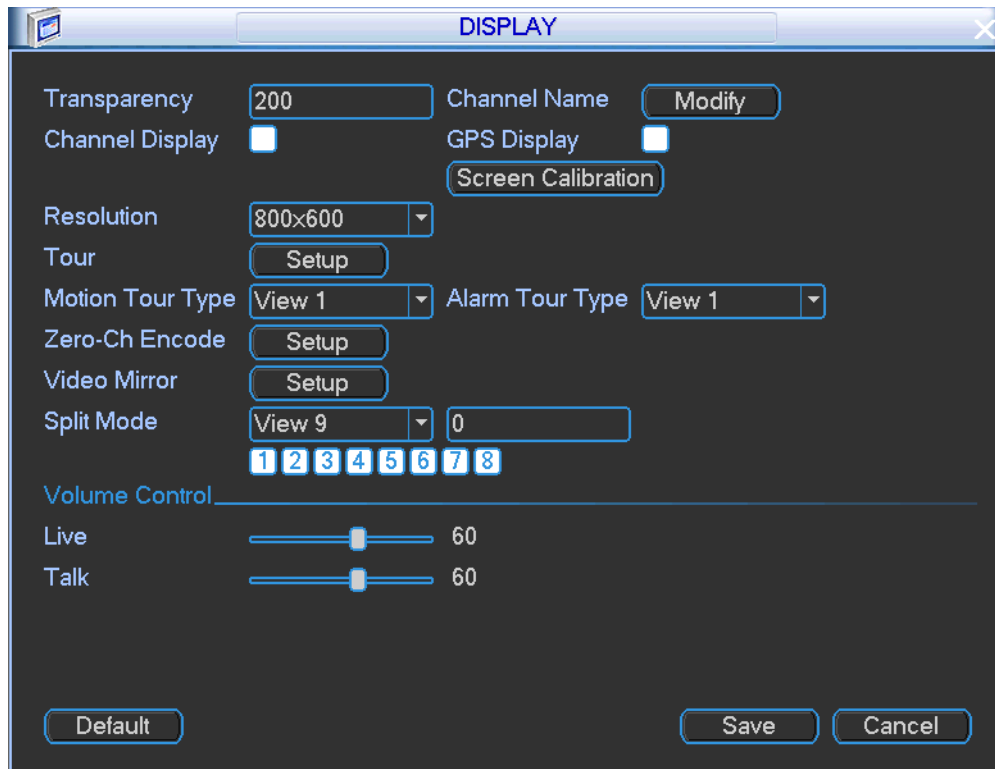


Figure 4-27

#### 4.2.1.4.2 Tour

Tour function is to display the videos from several channels at the specified interval regularly.

Step 1 On the main menu, from Setting->Display,  
Enter Display interface.

Step 2 Click tour Setup button,  
Enter tour interface. See Figure 4-28.

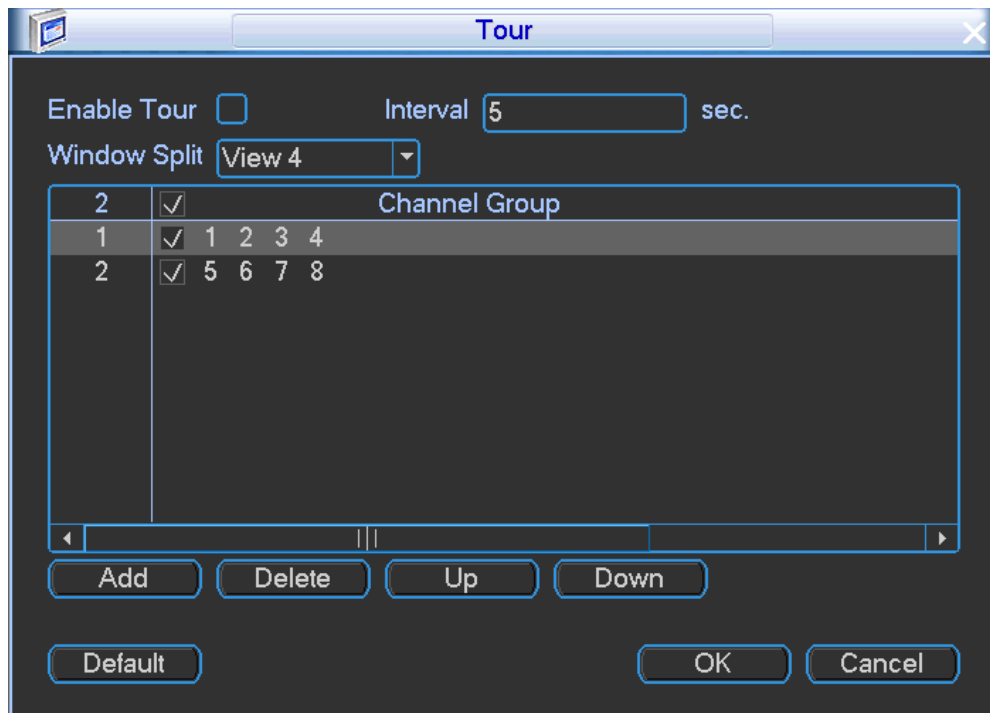


Figure 4-28


- Step 3 Check the box to enable tour function.
- Interval: Input proper interval value here. The value ranges from 5-120 seconds. The default setup is 5 seconds.
  - Window split: There are two options:1/4/8/9-window split mode.
  - Channel: Display all channel settings in current split mode.
    1. Click Add to add channel settings.
    2. Select a channel setting and then click delete, it is to delete current channel setting.
    3. Select a channel setting and then click move up/move down to move its position.
- Step 4 Click OK  
Device goes back to Display interface.
- Step 5 Click Save button.

#### 4.2.1.4.3 Zero-channel encoding

It is to enable and set zero-channel encoding function so that you can view several video sources at one channel on WEB.

- Step 1 On the main menu, from Setting->Display,  
Enter Display interface.
- Step 2 Click zero-channel encoding Setup button,  
Enter zero-encoding interface. See Figure 4-29.
- Step 3 Set parameters.
- Enable: This function is disabled by default. Check the box here to enable this function so that you can control the zero-channel encoding function at the WEB.
  - Compression: System default setup is H.264. You can set according to device capability.

- Resolution: The resolution value may vary due to different device capabilities. Please select from the dropdown list.
- Frame rate: System supports 1-25(30). The frame rate value may vary due to different device capabilities. Please select from the dropdown list.
- Bit Rate: System supports 640/768/896/1024. The bit rate value may vary due to different device capabilities and frame rate setups. Please select from the dropdown list.
- Save: Click the Save button to save current setup. If this function is disabled, you cannot operate zero-channel encoding function at the WEB, the video is black or null even you operate when the function is disabled. After you enabled this function, login the Web and you can select zero-channel encoding mode at the right corner of

the interface . Select a mode; you can view the local preview video.

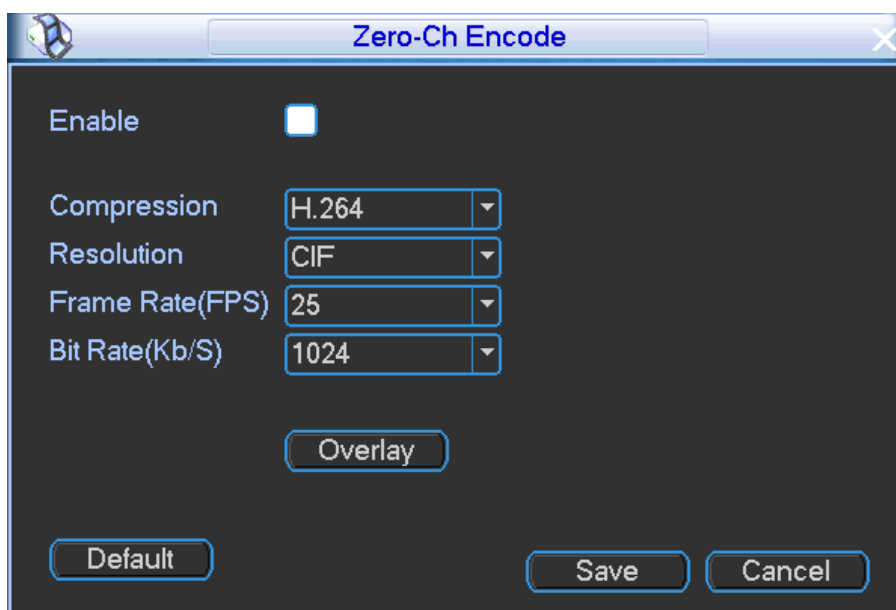


Figure 4-29

**Step 4** Set overlay information.

1. Click Overlay button,  
Enter overlay interface. See Figure 4-30.
2. Select Monitor after time/plate/GPS.
3. Click Setup.
4. Drag the title to the corresponding position and right click mouse to go back to overlay interface.
5. Click Save button.

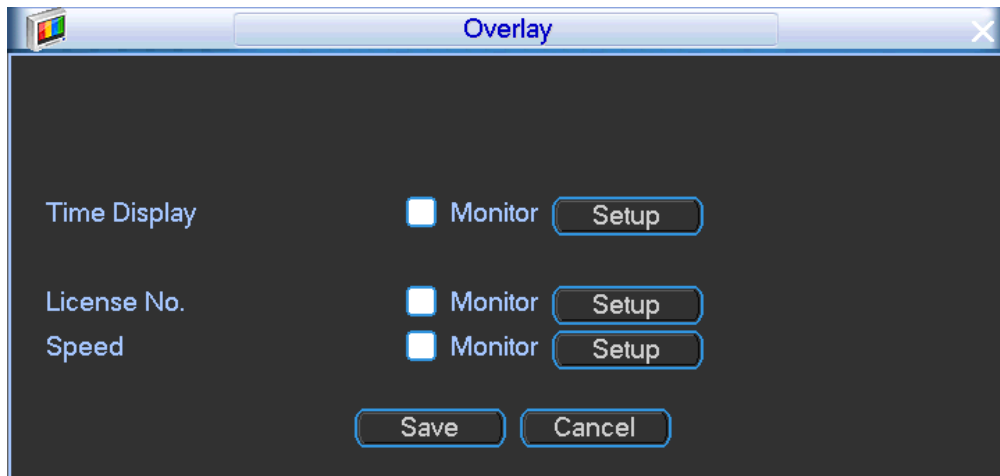


Figure 4-30

- Step 5 Click Save button.  
Device goes back to Display interface.
- Step 6 Click Save button.

## 4.2.2 PTZ

### Note

All the operations here are based on PELCOD protocol. For other protocols, there might be a little difference.

### **Cable Connection**

Please follow the procedures below to go on cable connection

- Connect the dome RS485 port to NVR 485 port.
- Connect dome video output cable to NVR video input port.
- Connect power adapter to the dome.

### 4.2.2.1 PTZ Settings

#### Note

The camera video should be in the current screen. Before setup, please check the following connections are right:

- PTZ and decoder connection is right. Decoder address setup is right.
- Decoder A (B) line connects with NVR A (B) line.

- Step 1 On the main menu, from setting to Pan/Tilt Control, Enter PTZ interface. See Figure 4-31.
- Step 2 Select a channel.
- Step 3 Set parameters.
- PTZ type: Please select remote mode if you are connecting to the network PTZ camera.
  - Protocol: Select corresponding PTZ protocol(such as PELCOD)
  - Address: Default address is 1.
  - Baud rate: Select corresponding baud rate. Default value is 9600.
  - Data bit: Select corresponding data bits. Default value is 8.

- Stop bit: Select corresponding stop bits. Default value is 1.
- Parity: There are three options: odd/even/none. Default setup is none.

Step 4 Click Save button.

 **Note**

Click Copy to copy current channel setup to other channel(s).

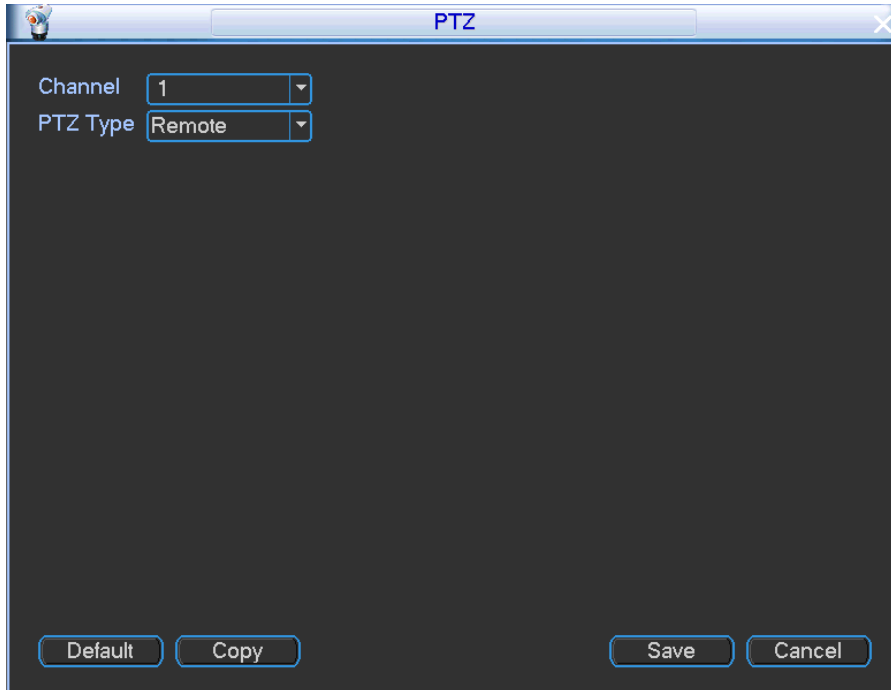


Figure 4-31

#### 4.2.2.2 PTZ Control

After completing all the setting please click save button. Right click mouse and then click PTZ. Please note you can only go to the PTZ control interface when you are in 1-window display mode.

Click Pan/Tilt/Zoom, the interface is shown as below. See Figure 4-32.

Here you can set the following items:

- Step: value ranges from 1 to 8.
- Zoom
- Focus
- Iris

Please click icon  and  to adjust zoom, focus and iris.

The corresponding item is grey if current unit does not support this function.

Here is a sheet for you reference.







Name	Function key	function	Shortcut key	Function key	function	Shortcut Key
Zoom		Wide	▶		Far	▶▶
Focus		Near	◀		Far	▶
Iris		Close	◀		Open	▶





Figure 4-32

In Figure 4-32, please click direction arrows (See Figure 4-33) to adjust PTZ position. There are total 8 direction arrows. You can use the remote control to set.



Figure 4-33

#### 4.2.2.3 3D Intelligent Positioning Key

In the middle of the eight direction arrows, there is a 3D intelligent positioning key. See Figure 4-34. Please make sure your protocol supports this function and you need to use mouse to control.

Click this key, system goes back to the single screen mode. Drag the mouse in the screen to adjust section size. The dragged zone supports 4X to 16X speeds. It can realize PTZ automatically. The smaller zone you dragged, the higher the speed.



Figure 4-34

#### 4.2.2.4 Preset/ Patrol/Pattern/Scan

In Figure 4-32, please click the “set” button. The interface is shown as below. See Figure 4-35.

Here you can set the following items:

- Preset
- Tour
- Pattern
- Border

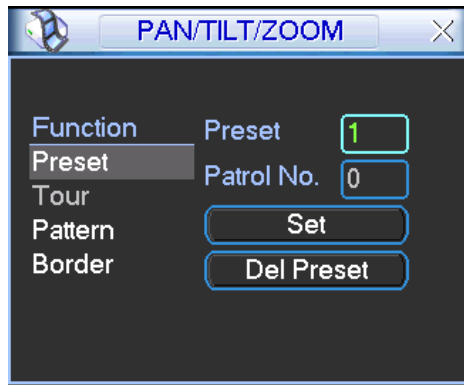


Figure 4-35

In Figure 4-32, click page switch button, the interface is shown as in Figure 4-36. Here you can activate the following functions:

- Preset
- Tour
- Pattern
- Auto scan
- Auto pan
- Flip
- Reset
- Page switch

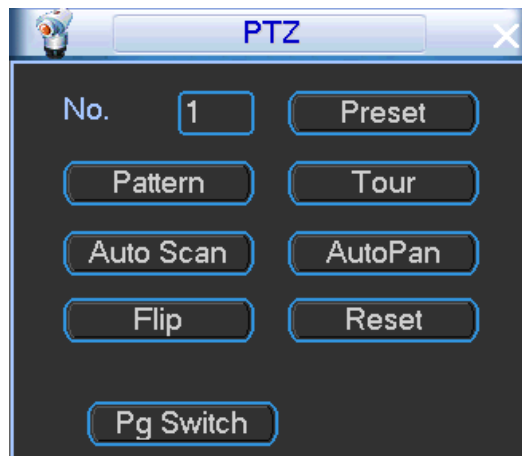


Figure 4-36



**Note**

- Preset, tour and pattern all need the value to be the control parameter. You can define it as you require.
- You need to refer to your speed dome user's manual for Aux definition. In some cases, it can be used for special process.
- The following setups are usually operated in the Figure 4-33, Figure 4-36 and Figure 4-37 .

4.2.2.4.1.1 Preset Setup

In Figure 4-32, use eight direction arrows to adjust camera to the proper position.

In Figure 4-36, click preset button and input preset number. The interface is shown as in Figure

4-37.

Now you can add this preset to one tour.

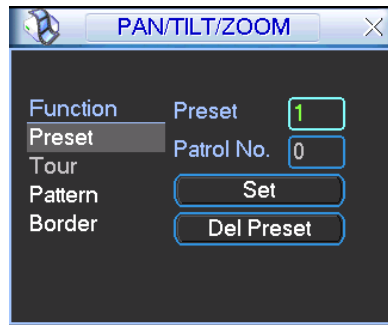


Figure 4-37

#### 4.2.2.4.1.2 Activate Preset

In Figure 4-36, please input preset number in the No. blank, and click preset button.

#### 4.2.2.4.1.3 Patrol setup (Tour Setup)

In Figure 4-35, click patrol button. The interface is shown as in Figure 4-38. Input preset number and add this preset to a patrol (tour). For each patrol (tour), you can input max 80 presets.



Figure 4-38

#### 4.2.2.4.1.4 Activate Patrol (tour)

In Figure 4-36, input patrol (tour) number in the No. blank and click patrol button

#### 4.2.2.4.1.5 Pattern Setup

In Figure 4-35, click pattern button and then click "begin" button. The interface is shown as in Figure 4-39. Then you can go to Figure 4-32 to modify zoom, focus, and iris.

Go back to Figure 4-39 and click "end" button. You can memorize all these operations as pattern 1.



Figure 4-39

#### 4.2.2.4.1.6 Activate Pattern Function

In Figure 4-36, input mode value in the No. blank, and click pattern button.

#### 4.2.2.4.1.7 Auto Scan Setup

In Figure 4-35, click border button. The interface is shown as in Figure 4-40.

Please go to Figure 4-32, use direction arrows to select camera left limit

Then please go to Figure 4-40 and click left limit button

Repeat the above procedures to set right limit.



Figure 4-40

#### 4.2.2.4.1.8 Activate Auto Scan

In Figure 4-36, click “Auto Scan” button, the system begins auto scan. Correspondingly, the auto scan button becomes Stop button. Click stop button to terminate scan operation.

#### 4.2.2.5 Aux function

In Figure 4-36, click Page switch button, you can see an interface is shown as below. See Figure 4-41. Here you can set auxiliary function. The aux value has relationship with the Aux button of the decoder.



Figure 4-42

Click Page switch button, system goes to the following interface. The options here are defined by the protocol. The aux number is corresponding to the aux on-off button of the decoder. See Figure 4-43.

- Direct Aux: It includes three items.
  - ✧ It is to use RS485 command to control the peripheral device light on/off. Make sure the connected peripheral device supports this function. Select Light from the dropdown list and click On to turn the light on and click Off to turn the light off.
  - ✧ It is to use RS485 command to control the peripheral device wiper. Make sure the

connected peripheral device supports this function. Select wiper from the dropdown list and click On to turn the wiper on and click Off to turn the wiper off.

- ✧ It is to use RS485 command to control the peripheral device heater module on/off. Make sure the connected peripheral device supports this function. Select defrost (clear fog) from the dropdown list and click On to turn the heater on and click Off to turn the heater off.
- Aux number: Input auxiliary number and then click On to start the auxiliary function. Click Off to stop auxiliary function.
- PONE: Check the box, device can go to the specified preset once it starts up.
- POFE: Check the box, device can go to the specified preset before it shuts down.

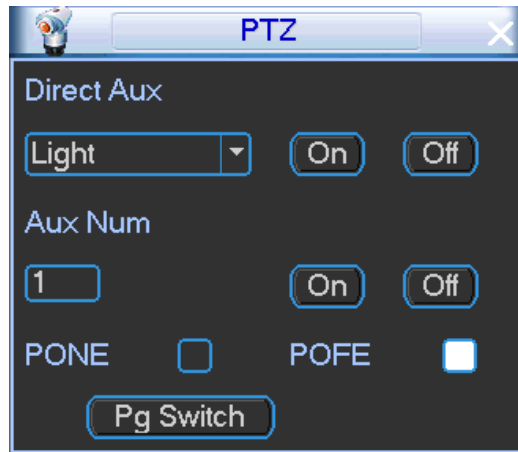


Figure 4-43

### 4.2.3 Search & Playback

Click Search button in the main menu, or on the preview interface, right click mouse and then select Search, search interface is shown as below. See Figure 4-44.

#### Note

Slight difference may be found on the user interface.

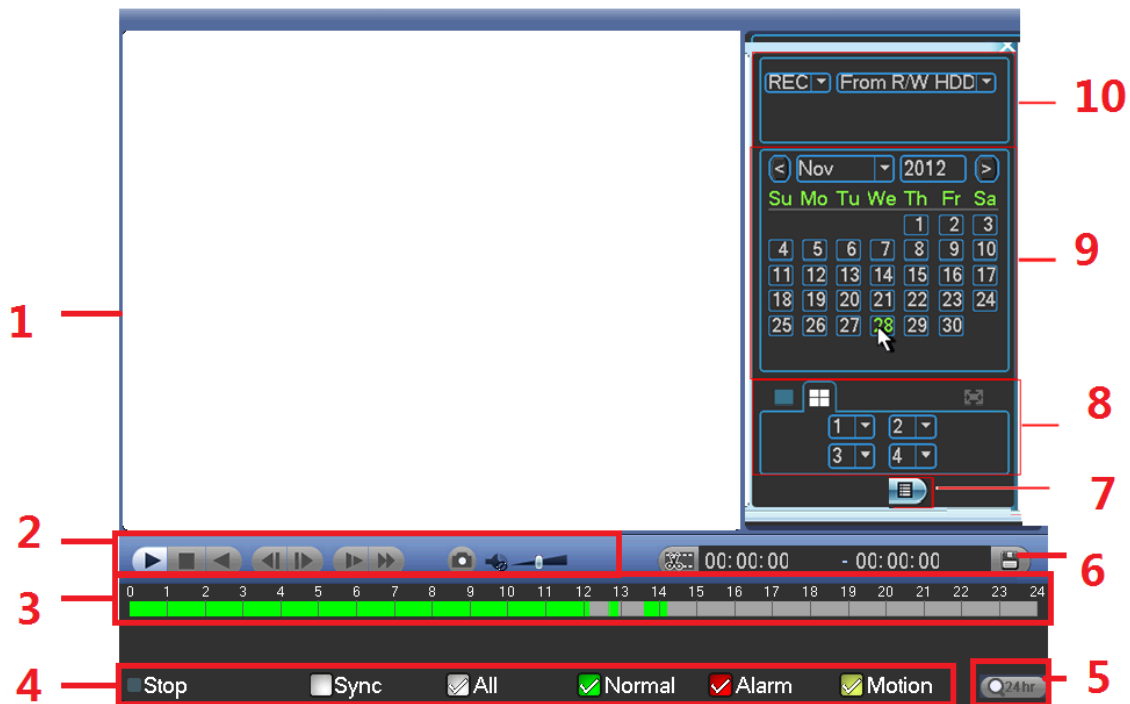





Figure 4-44

Please refer to the following sheet for more information.

SN	Name	Function
1	Display window	<ul style="list-style-type: none"> <li>Here is to display the searched picture or file.</li> <li>Support 1/4-window playback. Click  to set.</li> </ul>
2	Playback control bar	 <p>From left to right: play/pause, stop, backward, previous frame, last frame, slow play, fast play, volume.</p> <p> <b>Note:</b> All the operations here (such as playback speed, channel, time and progress) have relationship with hardware version. Some series NVRs do not support some functions or playback speeds.</p>
3	Time bar	It is to display the record type and its period in current search criteria.
4	Playback status and record type	<ul style="list-style-type: none"> <li>Playback status: Display current play status. It includes start play, pause play, stop play, backward, fast play and slow play.</li> <li>Record type: General/MD/alarm. Check the box to select a record type, the time bar displays corresponding file information.</li> </ul>
5	Time bar unit	The option includes: 24H, 12H, 1H and 30M. The smaller the unit, the larger the zoom rate. You can accurately set the time in the time bar to playback the record.
6	Clip	<ul style="list-style-type: none"> <li>It is to edit the file and save the footages you want.</li> </ul>

SN	Name	Function
7	Record type	In any play mode, the time bar will change once you modify the search type.
8	Playback mode and channel	<ul style="list-style-type: none"> <li>● Playback mode:1/4-channel.</li> <li>● The time bar will change once you modify the playback mode or the channel option.</li> </ul>
9	Calendar	<ul style="list-style-type: none"> <li>● The blue highlighted date means there is picture or file. Otherwise, there is no picture or file.</li> <li>● In any play mode, click the date you want to see, you can see the corresponding record file trace in the time bar.</li> </ul>
10	Search type	<ul style="list-style-type: none"> <li>● Here you can select to search the picture or the recorded file.</li> <li>● You can select to play from the read-write HDD, from peripheral device or from redundancy HDD.</li> <li>● Before you select to play from the peripheral device, please connect the corresponding peripheral device. You can view all record files of the root directory of the peripheral device. Click the Browse button; you can select the file you want to play.</li> </ul>

#### 4.2.3.1 Playback Control

The playback control interface is shown as below. See Figure 4-45.
















Figure 4-45

#### Note

All the operations here (such as playback speed, channel, time and progress) have relationship with hardware version. Some series NVRs do not support some functions or playback speeds.

Please refer to the following sheet for more information.

Icon	Function
	Play/Pause In slow play mode, click it to switch between play/pause.
	Backward play <ul style="list-style-type: none"> <li>● In normal play mode, left click the button, the file begins backward play. Click it again to pause current play.</li> <li>● In backward play mode, click  or  to restore normal play.</li> </ul>

Icon	Function
	<p>Display previous frame/next frame.</p> <ul style="list-style-type: none"> <li>When pause the normal playback file, click  or  to playback frame by frame.</li> <li>In frame by frame playback mode, click  or  to resume normal playback mode.</li> </ul>
	<p>Slow play In playback mode, click it to realize various slow play modes such as slow play 1, slow play 2, and etc.</p>
	<p>Fast forward In playback mode, click to realize various fast play modes such as fast play 1, fast play 2 and etc.</p>
	<p>Adjust the volume of the playback</p>
	<p>Click the snapshot button in the full-screen mode, the system can snapshot 1 picture. System supports custom snap picture saved path. Please connect the peripheral device first, click snap button on the full-screen mode, you can select or create path. Click Start button, the snapshot picture can be saved to the specified path.</p>

#### 4.2.3.2 Playback

Playback record by time or date.

During playback process, device supports digital zoom function to view the detailed information of specified zone.

- Left click mouse to select a zone on the screen to zoom in. Right click mouse to exit.
- Put the mouse middle button at the center of the zone you want to zoom in, and move the mouse wheel to zoom in.

During digital zoom process, drag to the mouse to any position to view the zoom in image on other video. Right click mouse to exit.

##### 4.2.3.2.1 Playback by Date

Select record type as Record, and then select from R/W HDD or the redundant HDD.

From R/W HDD: Playback the record file on local HDD.

From redundant HDD: If there is record file on redundant HDD, you can select playback from the redundant HDD. Refer to chapter 4.1.7 Schedule for redundant HDD settings information.

Select search date and playback channel.

Select date that has record, and select record type. See Figure 4-46.



Figure 4-46

Click  to playback.

##### 4.2.3.2.2 Playback by File






Click , system displays file list. It displays the first channel of the record. See Figure 4-47.





Figure 4-47


- Check a file name, double click file or click  to play.
- Input accurate time at the top column, you can search records of current day.
- System max displays 128 record files in one list.
- Click  to go back to the calendar/channel selection interface.

#### 4.2.3.3 Clip

This function allows you to clip some footages to a new file and then save to the USB device. See Figure 4-48. Please follow the steps listed below.

Step 1 Select a record first and then click  to playback.

Step 2 Select a time at the time bar and then click  to start clip,

Step 3 Select a time at the time bar and then click  to stop clip,


Step 4 Click , system pops up dialogue box to save the clip file.



Figure 4-48

#### Note

- Max save 1024 files at the same time.


- This function is not for the file already checked in the file list.

#### 4.2.3.4 Record Backup

This function is to backup files you checked in the file list, or the file you just clip.

#### Preparation

Device has connected to the peripheral device such as USB device.

- Step 1 On the main menu, click Backup button, or on the File list interface click , Enter Backup interface. See Figure 4-49.

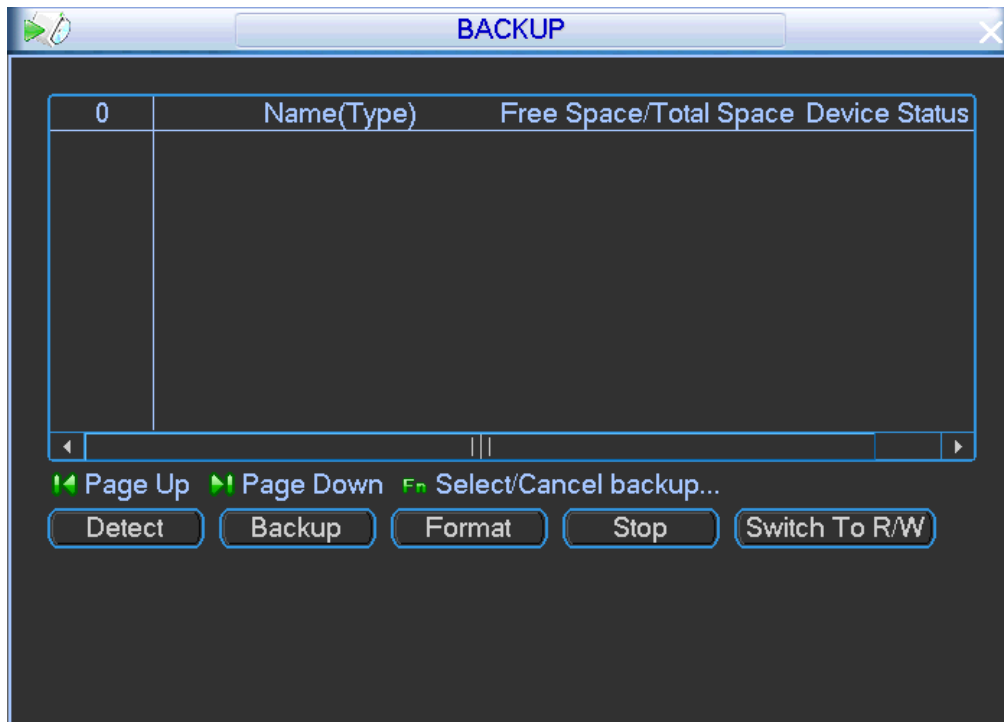


Figure 4-49

- Step 2 Click Detect,  
Device displays connected peripheral device and its space information, and status.

#### Note

- Select the detected peripheral device and click Format, it is to clear all data on the peripheral device.
- Select the detected peripheral device and then click Switch to R/W, it is to save peripheral device as the R/W HDD. Device can automatically save the record files on the peripheral device.
- Select the peripheral device that is backing up data, click Stop button to terminate backup process.

- Step 3 Click Backup,  
Enter Backup interface. See Figure 4-50.

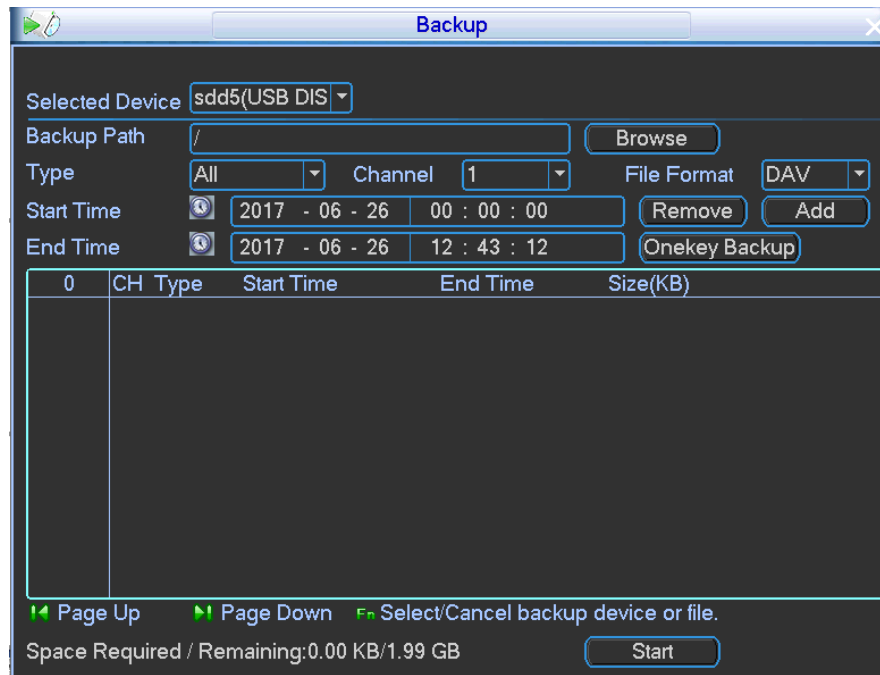


Figure 4-50

Step 4 Select peripheral device from the dropdown list and backup path.

Step 5 Set record file type, channel, record file format, file start time/end time and then click Add button.

Device displays searched results and there is corresponding marked file on the checked files.

 **Note**

- Continue searching the record files and then click Add, device displays searched results following current list.
- Click Browser to view or select USB device.
- Click Clear to clear searched results list.
- Click Onekey Backup, device automatically backs up current checked record files. Before the backup process make sure the peripheral device has enough space.

Step 6 Click Backup, device begins backing up record files.

There is a process bar for you reference.

Devices pops up dialogue box when backup is complete. Click OK to confirm.

 **Note**

Go to PC to view record files information. The record file name is “Channel\_Record type\_Time.dav”. The time format is “YearMonthDdateHourMinuteSecond”.

## 4.3 Settings

It is to set system information. It includes set camera parameters, set network service, vehicle information, event information, RS232, manage account, adjust TV output and manage HDD.

### 4.3.1 Camera Settings

#### 4.3.1.1 Image

It is to set video hue, brightness, contrastness, saturation, gain and etc.

Step 1 On the preview interface, right click mouse and then select Color,

Enter Color interface. See Figure 4-51.

Step 2 Set parameters.

- Channel: Select a channel from the dropdown list.
- Period: There are two periods in one day. You can set different sharpness, brightness, and contrast setup for different periods.
- Hue: It is to set video hue.
- Brightness: It is to adjust monitor window bright. The larger the number is, the bright the video is. When you input the value here, the bright section and the dark section of the video will be adjusted accordingly.
- Saturation: It is to adjust monitor window saturation. The larger the number, the strong the color is.
- Contrast: It is to adjust monitor window contrast. The larger the number is, the higher the contrast is. You can use this function when the whole video bright is OK but the contrast is not proper. Please note the video may become hazy if the value is too low. If this value is too high, the dark section may lack brightness while the bright section may over exposure.
- Gain: The gain is to set the gain value. The default value may vary due to different device models. The smaller the value, the low the noise. But the brightness is also too low in the dark environments. It can enhance the video brightness if the value is high. But the video noise may become too clear.
- Color mode: It is to set color mode. Color modes include: standard, soft, customized and etc.

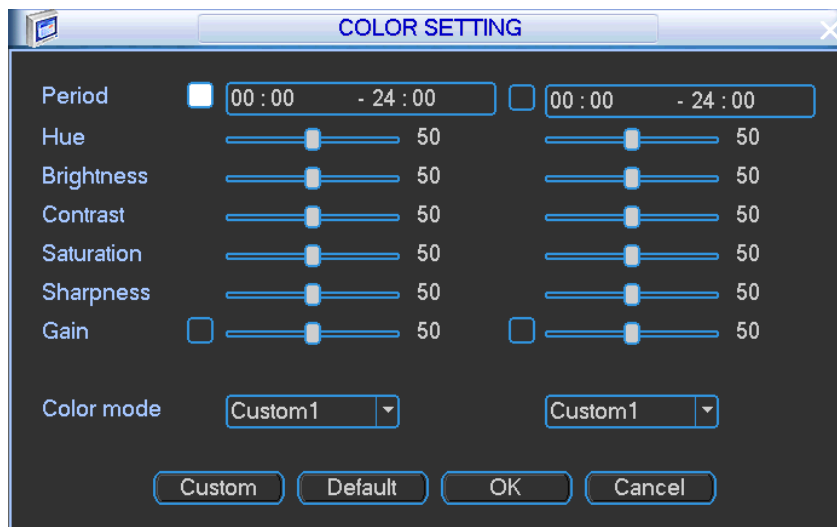


Figure 4-51

Step 3 Click OK button.

#### 4.3.1.2 Configuring Remote Device

It is to set remote device parameters such as video streams, overlay information and snapshot mode.

##### 4.3.1.2.1 Encode

It is to set remote device bit streams. It includes main stream and sub stream.

 **Note**

Some series cameras support three streams: main stream/sub stream1/sub stream2. The sub stream maximally supports 1080P.

Step 1 On the main menu, from Setting->Encode, Enter encode interface. See Figure 4-52.

Step 2 Set parameters.

- Channel: Select the channel you want.
- Type: Please select from the dropdown list. There are three options: regular/motion detect/alarm. You can set the various encode parameters for different record types.
- Compression: Select video compression mode.
- Resolution: System supports various resolutions, you can select from the dropdown list. The higher the resolution is, the better the video quality is.
- Frame rate: It ranges from 1f/s to 25f/s in NTSC mode and 1f/s to 30f/s in PAL mode.
- Bit rate type: System supports two types: CBR and VBR. In VBR mode, you can set video quality.
  - ◇ Main stream: You can set bit rate here to change video quality. The large the bit rate is, the better the quality is. Please refer to recommend bit rate for the detailed information.
  - ◇ Extra stream: In CBR, the bit rate here is the max value. In dynamic video, system needs to low frame rate or video quality to guarantee the value. The value is null in VBR mode.
- Quality: There are six levels ranging from 1 to 6. The sixth level has the highest image quality.
- Video/audio: You can enable or disable the video/audio. The main stream is enabled by default. The record includes audio and video if you highlight audio button here. For extra stream, you need to check video first and then select audio.
- Audio format: Select audio format from the dropdown list. Different series products support different audio format.

Step 3 Click Save button.

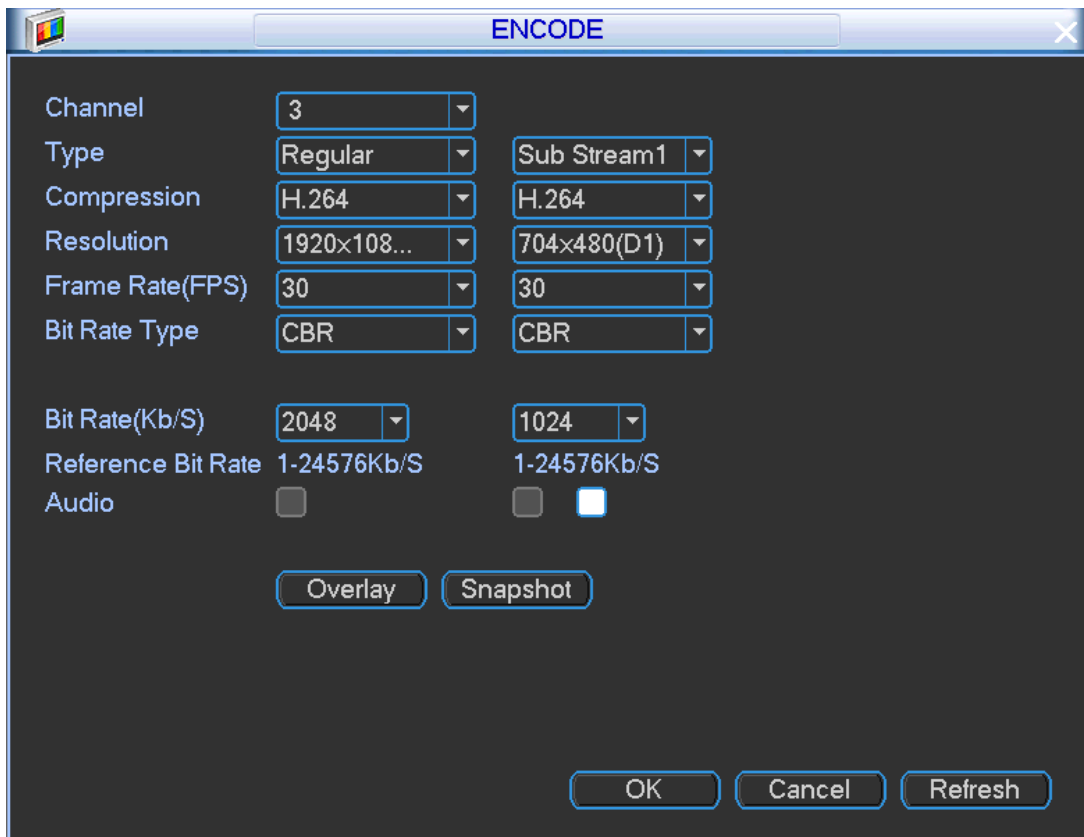


Figure 4-52

#### 4.3.1.2.2 Overlay

It is to set channel title, time title, plate title, and GPS title overlay position.

Step 1 From Main menu->Setting->Camera->Encode, click Overlay button, Enter Overlay interface. See Figure 4-53.

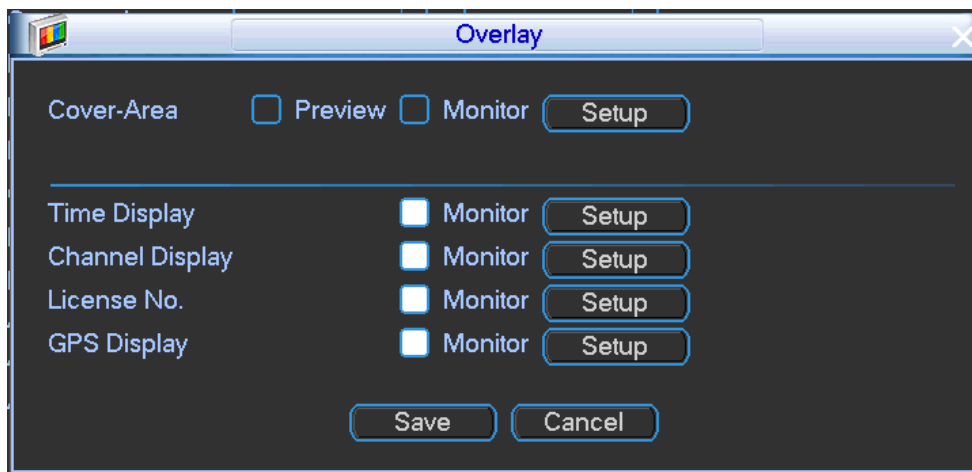


Figure 4-53

Step 2 Set parameters.

- Cover area: It is to set cover area section. Drag the mouse to set proper section size. In one channel video, system max supports 4 zones in one channel. You can set with Fn button or direction buttons.
- Preview/monitor: The cover area has two types. Preview and Monitor. Preview

means the privacy mask zone cannot be viewed by user when system is in preview status. Monitor means the privacy mask zone cannot be view by the user when system is in monitor status.

- Time display/Channel display/License No./GPS display: Select a channel to overlay title and drag the title to the corresponding position. The overlay function can overlay title on the real-time monitor video or the playback file. Click time title and then click Monitor, click Set button to drag the overlay title to the corresponding position.

 **Note**

Plate title can control the plate and alarm title at the same time.

Step 3 Click Save button.

#### 4.3.1.2.3 Snapshot

Please install HDD or set FTP. Refer to chapter 4.3.2.3 FTP to set FTP parameters.

The snapshot includes regular snapshot and event snapshot.

When these two modes are enabled at the same time, the event snapshot has higher priority than regular snapshot. If there is corresponding alarm, then the event snapshot is triggered. If there is no alarm, then regular snapshot is valid.

Step 1 From Main menu->Setting->System->Encode, click Snapshot button.

Enter Snapshot interface. See Figure 4-54.

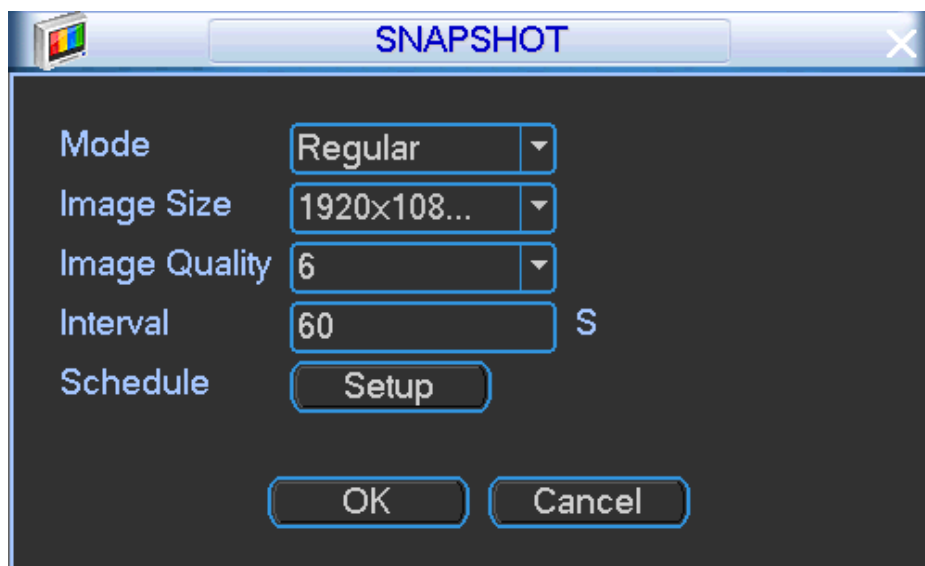


Figure 4-54

Step 2 Set parameters.

- Snapshot mode: There are two modes: regular and event. If you set regular mode, you need to set snapshot interval. If you set event snapshot, you need to set snapshot activation operation.
- Image size: It depends on the connected camera resolution. The default setup is 960H.
- Image quality: Here you can set snapshot quality. The value ranges from 1 to 6. The 6 has the highest image quality.
- Interval: It is for you to set timing (schedule) snapshot interval.

Step 3 Click Schedule setup button, the interface is shown as in Figure 4-55.

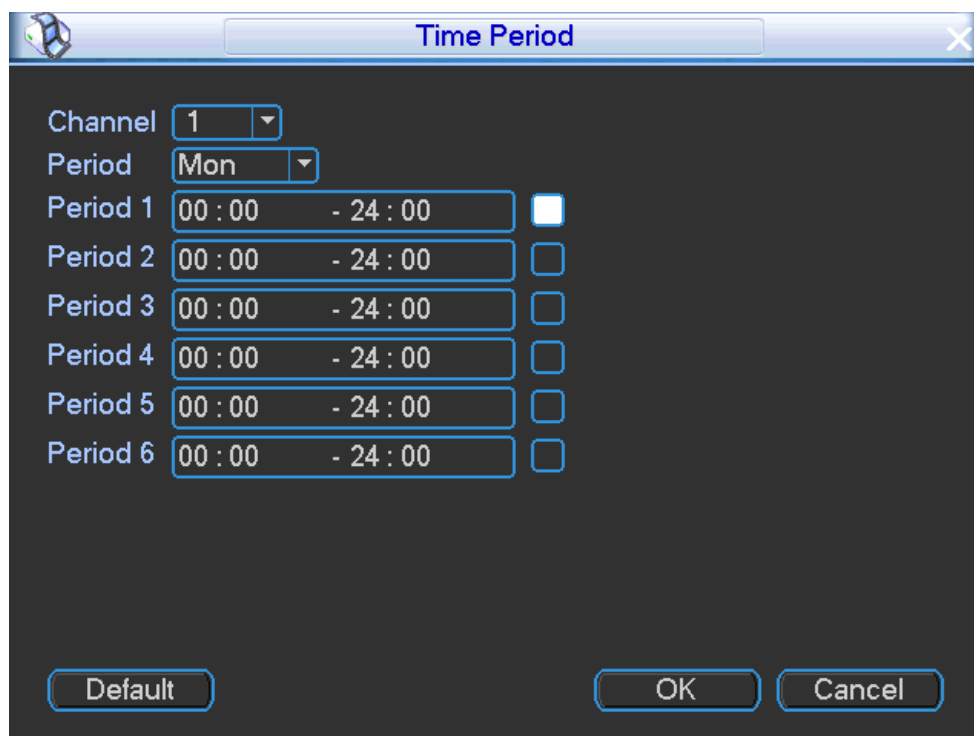


Figure 4-55







Step 4 Click OK button.

#### 4.3.1.3 Viewing Channel Status

It is to view remote device channel status

Here you can view IPC status such as video loss, tampering, external alarm, channel name, manufacturer, type and etc.

On the main menu, from Info->Remote device info->Channel status, enter channel status interface. See Figure 4-56.

- Channel: Remote device channel number.
- Status: Connection status.
  - ◇ : Remote device is online.
  - ◇ : Remote device is offline.
- IP Address: Display remote device IP address.
- MD/Video loss/Tampering/Alarm in: It is to display remote device motion detect, video loss, tampering, external alarm status.
  - ◇ : Remote device has no alarm.
  - ◇ : Remote device has an alarm.
  - ◇ : Video loss alarm.
  - ◇ : Motion detect alarm.



✧ : Tampering alarm.

- Channel name: Display channel name.
- Manufacturer: Display remote device manufacturer name.
- Type: Display remote device type.

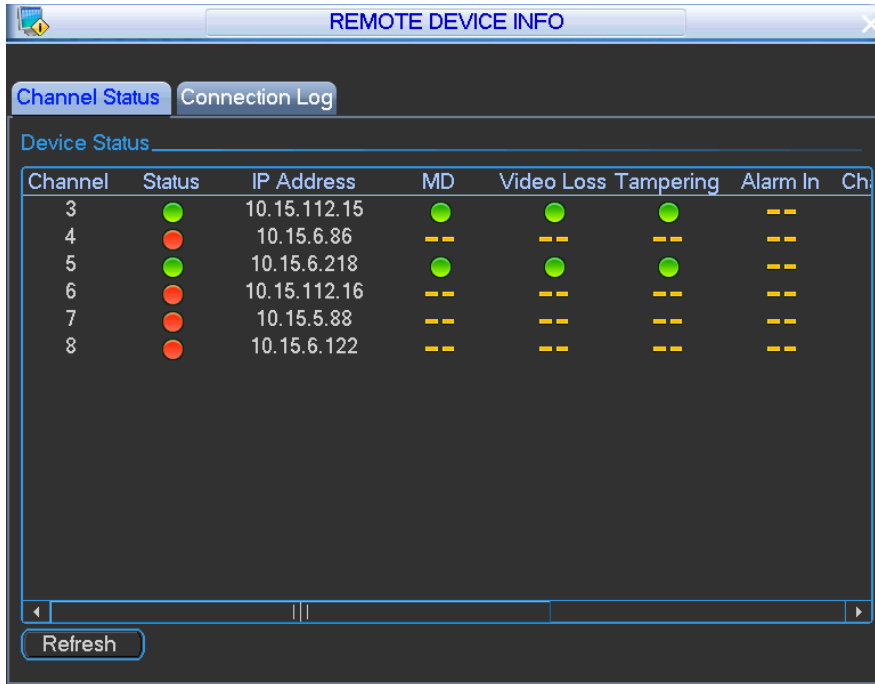


Figure 4-56

#### 4.3.1.4 Viewing Channel Connection log

Here you can view IPC log such as connection or offline.

Step 1 On the main menu, from Info->Remote device info->Connection log, Enter connection log interface. See Figure 4-57.

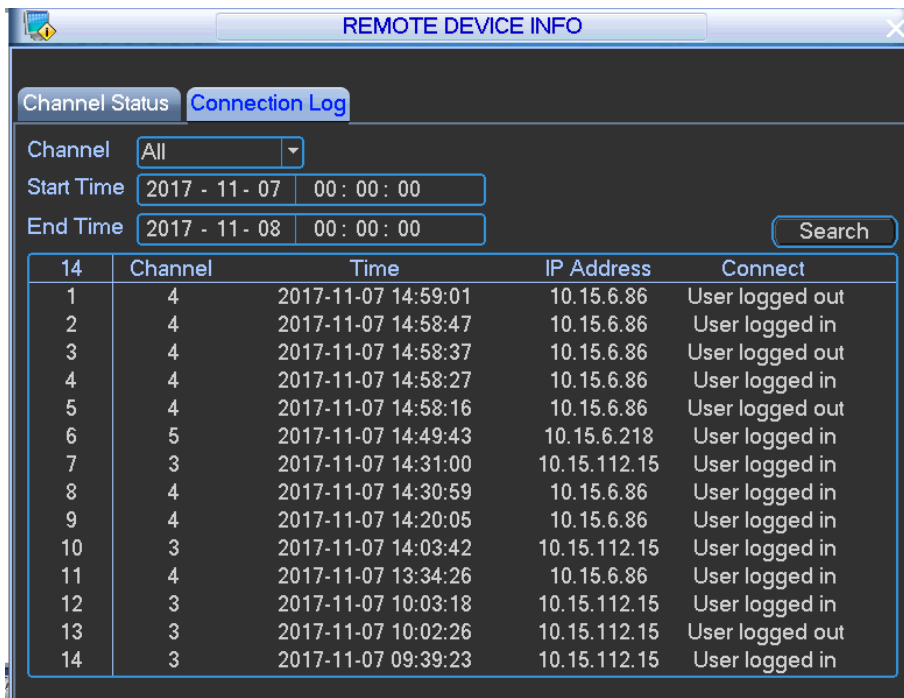


Figure 4-57

- Step 2 Select a channel and then set start time and end time,
- Step 3 Click Search,  
Device displays connection logs.

### 4.3.2 Network Service

It is to set network service. It includes DDNS, email, FTP, P2P, SWITCH and check network.

#### 4.3.2.1 DDNS

DDNS (Dynamic Domain Name Server) is to dynamically refresh the DNS domain name and IP address if the device IP address has changed frequently. The user can use the domain to access the device.

#### Preparation

Before the operation, make sure the device supports DNS type and go to the DDNS service provider website to register the domain name via the PC.



#### Note

After you successfully registered and logged in the DDNS website, you can view all connected device information of current login user.

- Step 1 On the main menu, from Setting->Network,  
Enter Network interface.
- Step 2 Click Network Service,  
Enter Network service interface.
- Step 3 Configuring DDNS.
  - 1. Double click DDNS,  
Enter DDNS interface. See Figure 4-58.

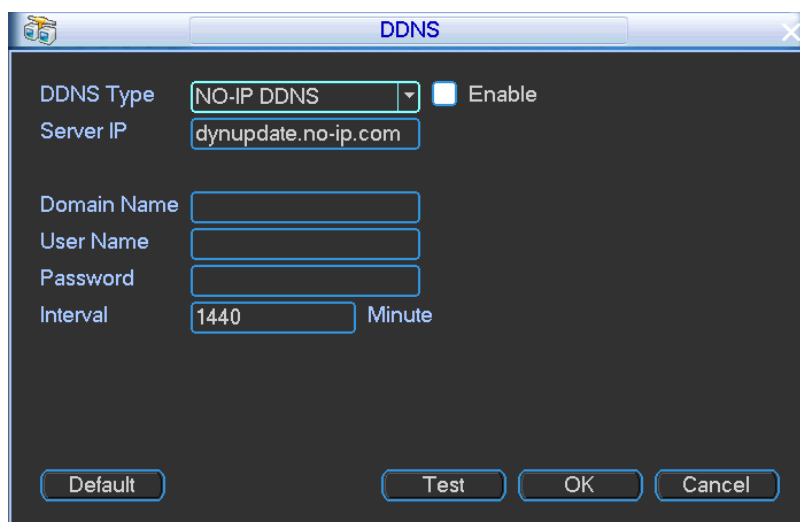


Figure 4-58

- 2. Check the box to enable DDNS function.
- 3. Set parameters.
  - Type/address:
    - ✧ Dyn dns DDNS is members.dyndns.org.
    - ✧ NO-IP DDNS is dynupdate.no-ip.com.
    - ✧ CN99 DDNS is members.3322.org.

- Domain: The domain name registered on the DDNS service provider website.
  - User name/password: Input the user name and password got from the DDNS service provider. Make sure you have logged in the DDNS service provider website to register an account (user name and password).
  - Interval: After DDNS boots up, it sends out refresh query regularly. The unit is minute.
4. Click OK.

Step 4 Click Apply or Save to complete setup.  
Enter Network interface.

Step 5 Click OK button.

Open a browser and input domain name, click Enter button.

The setting is right if you can view device WEB interface. Otherwise, please check the parameters.

#### 4.3.2.2 Email

After you set email function, system can send out an email once there is a video detection event, abnormality event etc.

Step 1 On the main menu, from Setting->Network,  
Enter Network interface.

Step 2 Click Network service,  
Enter network service interface.

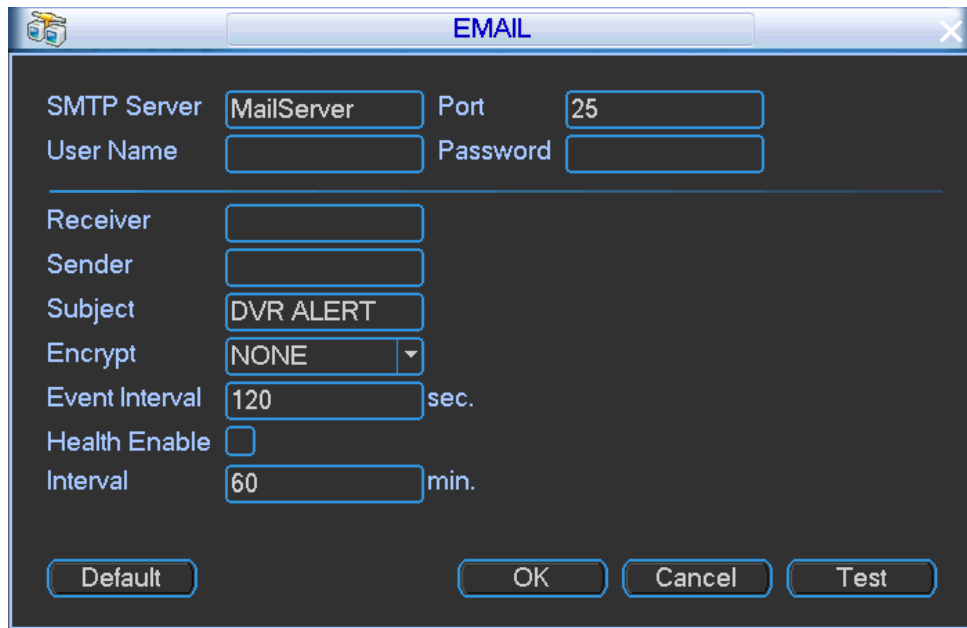
Step 3 Configuring email.

1. Double click email,  
Enter email interface. See Figure 4-59.
2. Set parameters.
  - SMTP server: Please input your email SMTP server IP here.
  - Port: Please input corresponding port value here.
  - User name: Please input the user name to login the sender email box.
  - Password: Please input the corresponding password here.
  - Sender: Please input sender email box here.
  - Title: Please input email subject here. System support English character and Arabic number. Max 32-digit.
  - Receiver: Please input receiver email address here. System max supports 3 email boxes.
  - SSL enable: System supports SSL encryption box.
  - Interval: The send interval ranges from 0 to 3600 seconds. 0 means there is no interval.
  - Health email enable: Please check the box here to enable this function. This function allows the system to send out the test email to check the connection is OK or not.
  - Interval: Please check the above box to enable this function and then set the corresponding interval. System can send out the email regularly as you set here. Click the Test button, you can see the corresponding dialogue box to see the email connection is OK or not. See Figure 4-60.
3. Click OK button.

Step 4 Click Apply or Save to complete setup.

Enter Network interface.

Step 5 Click Save button.



EMAIL

SMTP Server MailServer Port 25

User Name Password

Receiver

Sender

Subject DVR ALERT

Encrypt NONE

Event Interval 120 sec.

Health Enable

Interval 60 min.

Default OK Cancel Test

Figure 4-59

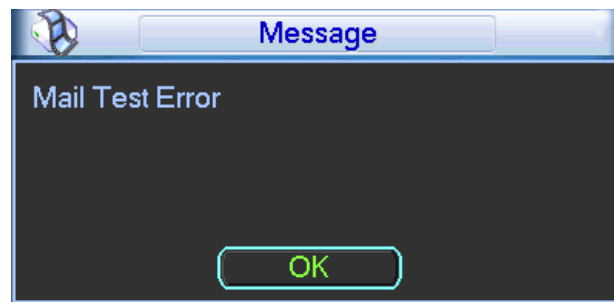


Figure 4-60

#### 4.3.2.3 FTP

It is to backup record file or image to the FTP to storage or view.

##### Preparation

Before the operation, please download or purchase the FTP service tool and install on the PC.



##### Note

For the FTP user, please set FTP folder write right, otherwise system cannot upload the image.

- Step 1 On the main menu, from Setting->Network,  
Enter Network interface.
- Step 2 Click Network service,  
Enter network service interface.
- Step 3 Configuring email.
  1. Double click FTP,  
Enter FTP interface. See Figure 4-61.
  2. Set parameters.

- Host IP: The host IP you have installed the FTP server.
- Host port: The default setup is 21.
- User name/Password: The account for you to access the FTP server.
- Remote directory: The folder you created under the root path of the FTP according to the corresponding rule.
  - ◇ If there is no remote directory, system can auto create different directories according to the IP, time and channel.
  - ◇ If there is remote directory, system can create corresponding folder under the FTP root path and then create different folders according to IP address, time and channel.
- File length: File length is upload file length. When setup is larger than the actual file length, system will upload the whole file. When setup here is smaller than the actual file length, system only uploads the set length and auto ignore the left section. When interval value is 0, system uploads all corresponding files.
- Image upload interval: It is the image upload interval. If the image upload interval is larger than the image snapshot frequency, system just uploads the lasted image.
  - ◇ If the image interval is 5 seconds and the snapshot frequency is 2 seconds, system will send out the latest image at the buffer at 5 seconds.
  - ◇ If the image upload interval is smaller than the snapshot frequency, system will upload at the snapshot frequency. For example, if the image interval is 5 seconds and the snapshot frequency is 10 seconds, system will send out the image at 10 seconds.
  - ◇ From main menu->Setting->Camera->Encode->Snapshot to set snapshot frequency.
- Channel: Select a channel from the dropdown list and then set week, period and record type.
- Week day/Period: Please select from the dropdown list and for each day, you can set two periods.
- Type: Please select uploaded record type (Alarm/intelligent/motion detect/regular). Please check the box to select upload type.
- Test: Check FTP test is OK or not. See Figure 4-62.

4. Click OK button.

Step 6 Click Apply or Save to complete setup.  
Enter Network interface.

Step 7 Click Save button.

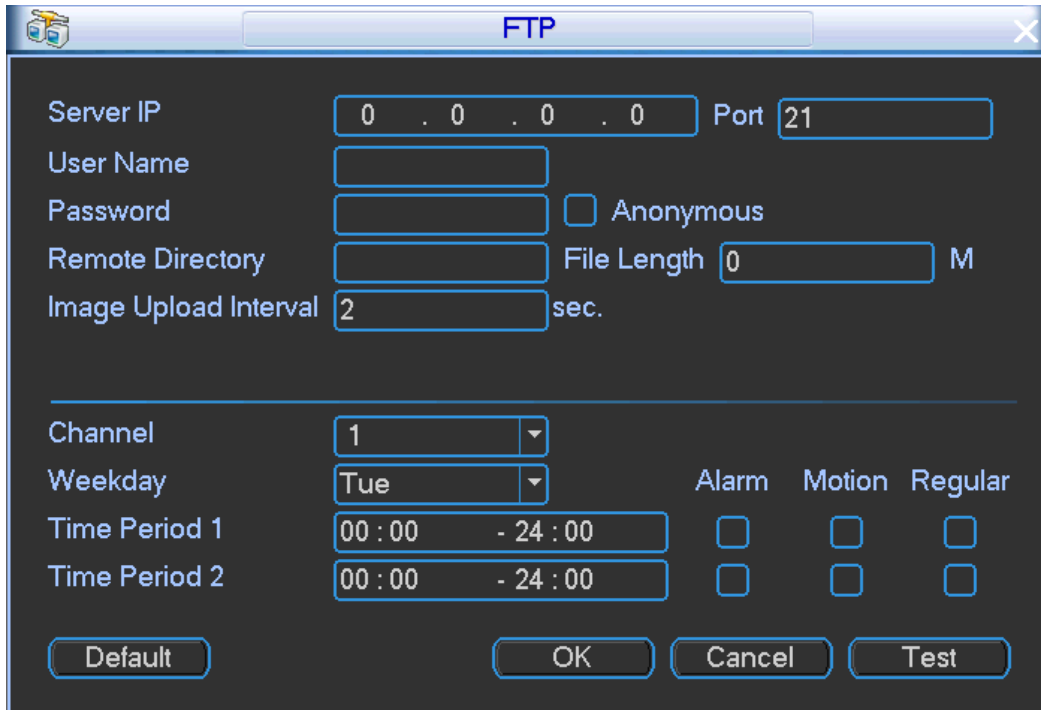


Figure 4-61



Figure 4-62

#### 4.3.2.4 P2P

You can use cellphone client or the management platform to access the device.

- You can use your cell phone to scan the QR code and add it to the cell phone client.
- Via the SN from scanning the QR code, you can access the device in the WAN. Please refer to the P2P operation manual included in the resources CD.

#### Preparation

- Make sure the device has connected to the network.
- Cellphone has downloaded and installed the corresponding client such as DMSS.

Step 1 On the main menu, from Setting->Network,  
Enter Network interface.

Step 2 Click Network service,  
Enter network service interface.

Step 3 Configuring P2P.  
1. Double click P2P,  
Enter P2P interface. See Figure 4-63.

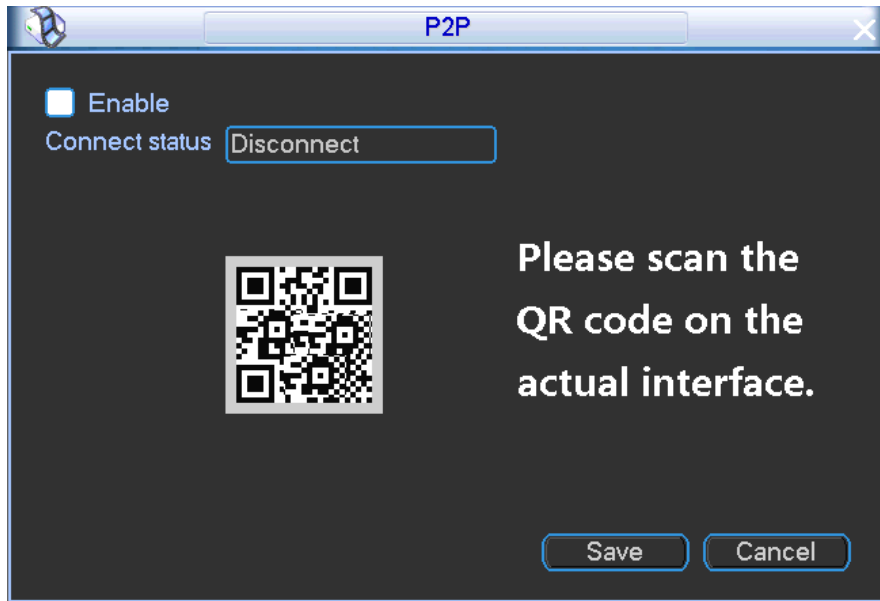
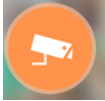




Figure 4-63

2. Open corresponding APP such as DMSS. tap  to go to the Live preview.
3. Tap  at the top left corner, you can see the main menu.
4. Tap Device manager button, you can use several modes (P2P/DDNS/IP and etc) to add the device. Click  to save current setup. Tap Start Live preview to view all-channel video from the connected device. See Figure 4-64.

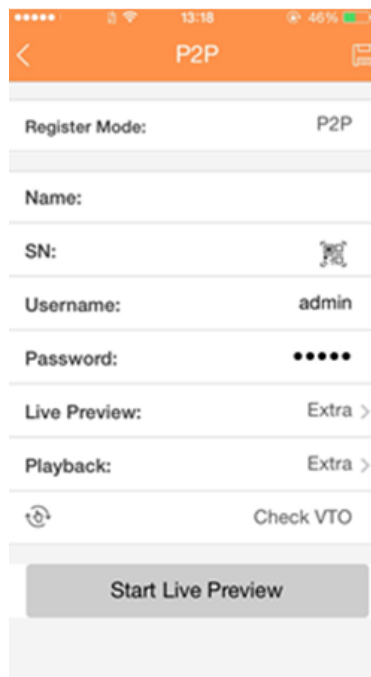
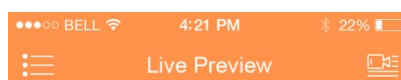


Figure 4-64



- Step 4 Click Apply or Save to complete setup.  
Enter Network interface.
- Step 5 Click Save button.

#### 4.3.2.5 Switch

When connect a network camera to the PoE port of the NVR, NVR can automatically allocate the IP address according to the specified IP segment. The network camera can automatically register to the NVR.

It is for you to set IP address, subnet mask, gateway and etc of the Switch. See Figure 4-65.



#### Caution

- This function is for product of PoE port.
- Do not connect switch to the PoE port, otherwise the connection may fail.
- The SWITCH function of the NVR is enabled by default. The IP segment is 10.1.1.1. Usually we recommend the default setup.
- For the camera from the third party, make sure the camera supports ONVIF and DHCP function is enabled.

- Step 1 On the main menu, from Setting->Network,  
Enter Network interface.
- Step 2 Click Network service,  
Enter network service interface.
- Step 3 Configuring SWITCH.
1. Double click SWITCH,  
Enter SWITCH interface. See Figure 4-63.

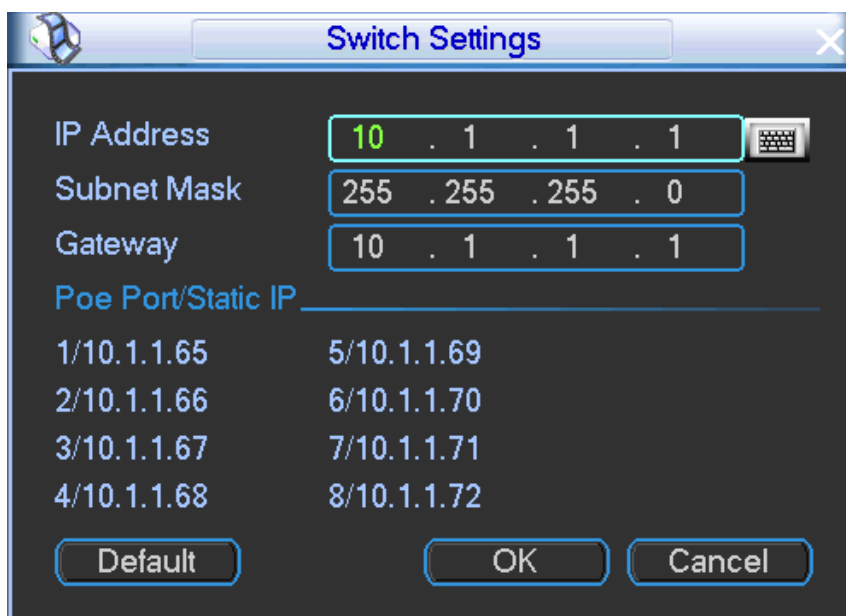


Figure 4-65

2. Set IP address, subnet mask, default gateway.



#### Note



SWITCH IP address and the device IP address shall not be in the same IP segment. Usually we recommend the default IP.

Step 4 Click Apply or Save to complete setup.

Enter Network interface.

Step 5 Click Save button.

Refer to the following table for PoE notice.

Type	Note
Connect camera to the PoE	<p>After connect the camera to the PoE, NVR allocate an IP address in the specified IP segment to the camera. NVR tries to use <b>arp ping to set</b>. If the NVR has enabled the DHCP function, it uses DHCP to set.</p> <ul style="list-style-type: none"> <li>● After successfully set IP address, NVR can send out broadcast via the switch and get the corresponding response. Now The camera has registered to the NVR. Go to the preview interface, the corresponding channel has been used and there is a small PoE icon at the top left corner.</li> <li>● Go to the Register interface to view the connected device list, you can see the PoE channel number, PoE port information and etc. Click IP search to display or refresh the information.</li> </ul>
Remove camera from the PoE port	<p>After remove the camera network cable from the PoE port, the channel displays "Cannot find the network host". On the registration interface, the IP address is shown as offline.</p>
The mapping policy when connect a camera to the PoE port.	<p>The PoE port and the channel window is one to one correspondence. For example, connect a network camera to PoE port 1, it register to channel 1 by default.</p>



#### Note

Connect the network to the PoE port via the network cable, device pops up dialogue for you to select replace a channel if all channels are in use now. Cannot replace the channel connected via PoE port.

### 4.3.2.6 Network Test

It is to view network status and loading.

#### 4.3.2.6.1 Network Test

It is to test network status and view network average delaying and packet loss rate.

Step 1 On the main menu, from Info->Network->Network test,

Enter Network test interface. See Figure 4-66.

Step 2 Set parameters.

- Destination IP: Please input valid IPV4 address and domain name.
- Test: Click it to test the connection with the destination IP address. The test results can display average delay and packet loss rate and you can also view the network status as OK, bad, no connection and etc. See Figure 4-67.
- Network Sniffer backup: Please insert USB2.0 device and click the Refresh button, you can view the device on the following column. You can use the dropdown list to select peripheral device. Click Browse button to select the snap path. The steps

here are same as preview backup operation.

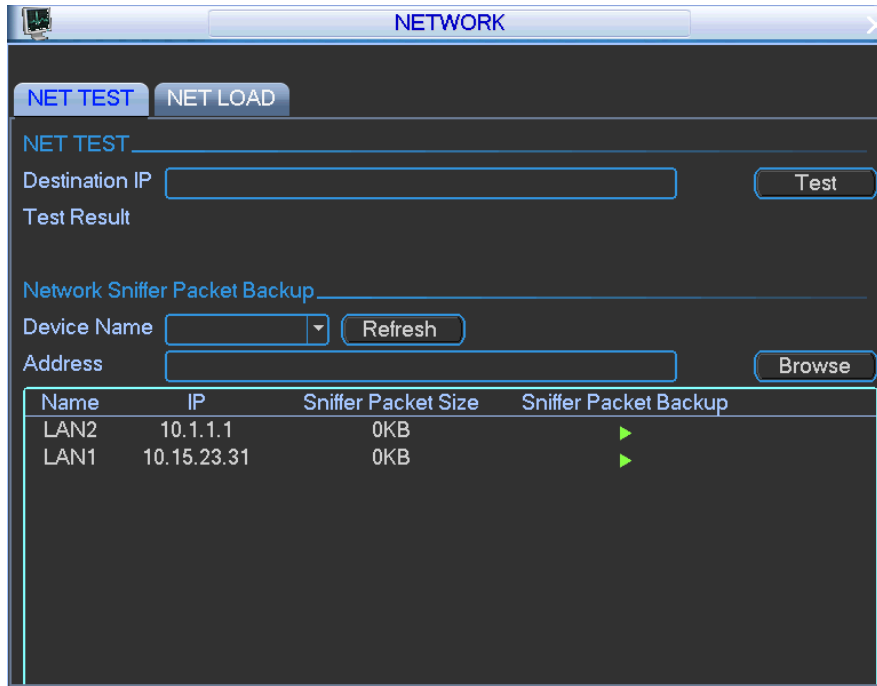


Figure 4-66

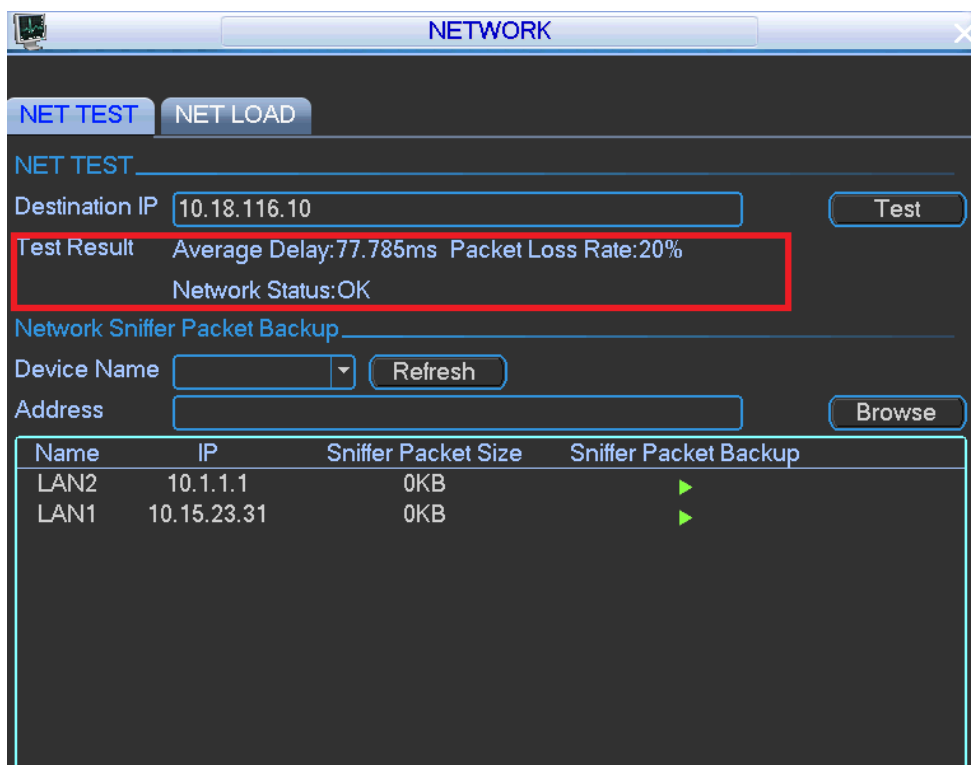


Figure 4-67

#### 4.3.2.6.2 Network Load

Step 1 On the main menu, from Info->Network->Network load, Enter Network load interface. See Figure 4-68.

Step 2 Select a LAN. Here you can view the follow statistics of the device network adapter.

 **Note**

- Device displays LAN1 network load by default.
- View one LAN speed by one time.
- The green wave is send out speed and red wave is receive speed.

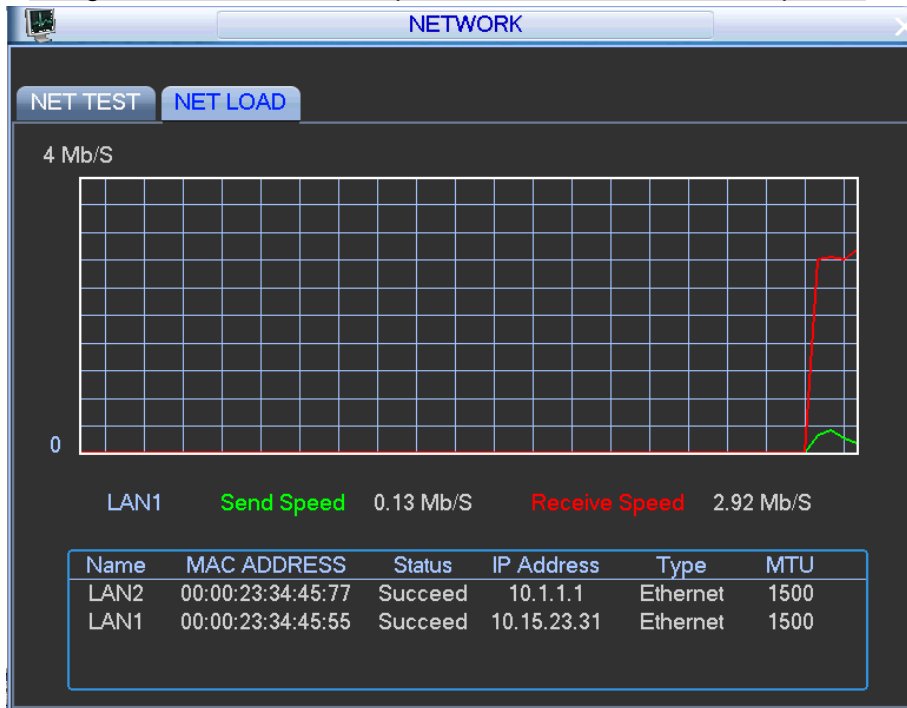


Figure 4-68

### 4.3.3 Vehicle

The vehicle interface is shown as below. It includes eight buttons: 3G/4G, Wi-Fi, G-Sensor, Register, Speed, custom backup.

#### 4.3.3.1 3G/4G

Once the device can dial the number to connect to the 3G/4G network to get alarm information, audio/video, image and device status.

 **Note**

The Wi-Fi has the higher priority than the 3G network when these two signals are available at the same. In this situation, the device uses Wi-Fi network by default and disconnect 3G network.

#### Preparation

Make sure the device has the 3G/4G module and has installed the SIM card.

Step 1 On the main menu, from Vehicle->3G/4G, Enter 3G/4G interface. See Figure 4-69.

There are total 3 panels.

- Pane 1: Display 3G signal intensity after you enabled 3G function.
- Pane 2: Display 3G module configuration information after you enabled 3G function.
- Pane 3: Display 3G module status information after you enabled 3G function.

 **Note**

Device supports to upgrade some 4G module firmware. Click Firmware upgrade to upgrade.

Step 2 Check the box to enable 3G/4G function. The function is enabled by default.

Step 3 Set parameters.

- 3G network: It is to display current wireless network adapter name.
- 3G Enable/Disable: Check the box here to enable 3G module.
- Network type: There are various network types for different 3G network modules. You can select according to your requirements.
- APN: It is the wireless connection server. It is to set you access the wireless network via which method.
- AUTH: It is the authentication mode. It supports PAP/CHAP/ NO AUTH.
- Dial number: Please input 3G network dialup number you got from your ISP.
- User name: It is the user name for you to login the 3G network.
- Password: It is the password for you to login the 3G network.
- 3G wireless network: Here is to display wireless network status, SIM card status, dial status. If the 3G connection is OK, then you can see the device IP address the wireless network automatically allocates.

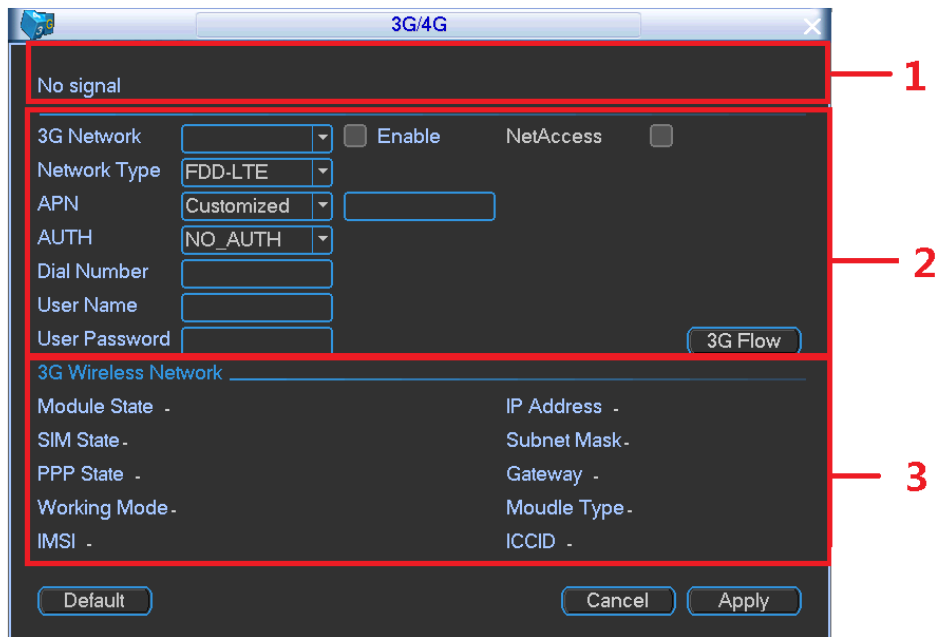


Figure 4-69

- 3G flow control: It is to show the 3G flow you used. See Figure 4-70.

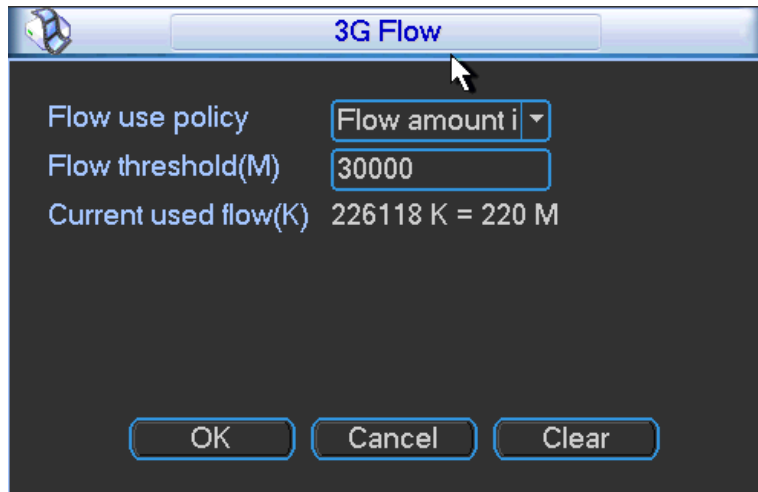


Figure 4-70

#### 4.3.3.2 Wi-Fi

It is to set Wi-Fi parameters and then add PC to the same network work, now you can use the PC to access the device WEB to operate.



#### Note

This function is for device of the Wi-Fi module only.

#### Preparation

Device has installed the Wi-Fi module.

Step 1 On the main menu, from Vehicle->Wi-Fi,  
Enter Wi-Fi interface. See Figure 4-71.

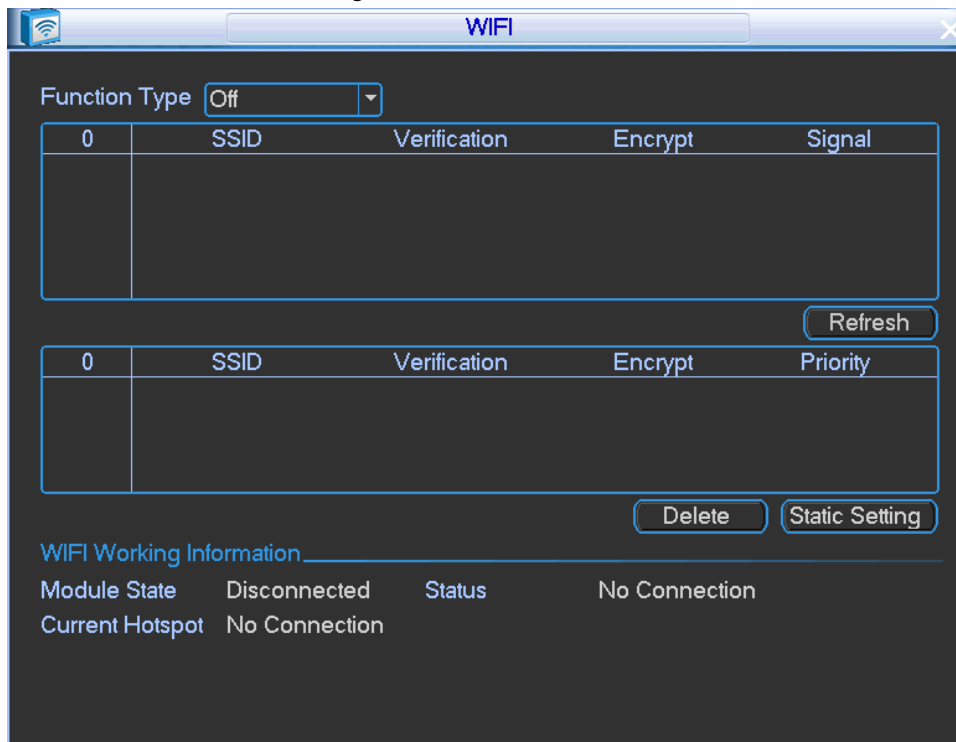


Figure 4-71

Step 2 Boot up a Wi-Fi module and then select function as Wi-Fi from the dropdown list.  
After device booted up, it can automatically connect to its latest successfully connected hotspot.

Connect to Wi-Fi.

After device successfully connected to the Wi-Fi, device displays Wi-Fi module working information, connection state, and current hotspot. Right now device supports ITM-UB12-S06PXX0000NV2.

- Auto Search

1. Click Refresh list.

The list display all Wi-Fi name, connection mode, encryption mode, signal intensity and etc.

2. Double click a network name, input password, and click OK to connect.

- Manual Add

1. Click Static setting

Enter static setting interface. See Figure 4-72.

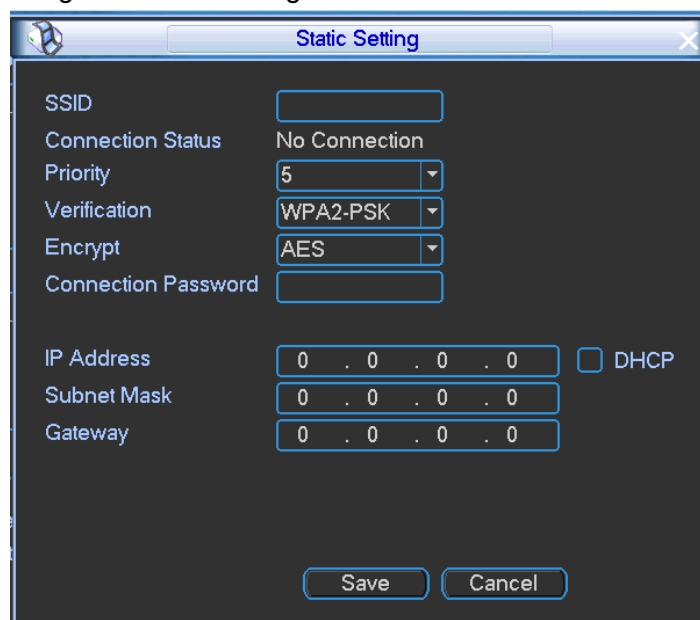


Figure 4-72

2. Input SSID, connection password, select priority, encryption type, set IP address, subnet mask, default gateway. Click OK button.

If select DHCP, device can automatically get corresponding IP address, subnet mask, and default gateway after successful connection.

3. Click Save button.



**Note**

- After successful connection, you can see Wi-Fi connection icon at the top right corner of the preview interface.
- When the hotspot verification type is WEP, system displays as AUTO since the device cannot detect its encryption type.
- System does not support verification type WPA and WPA2. The display may become abnormal for the verification type and encryption type.

### 4.3.3.3 Register

This function allows the device to auto register to the proxy you specified. In this way, you can use the client-end to access the device and then view the video.

Step 1 On the main menu, from Vehicle->Register,  
Enter Register interface. See Figure 4-73.

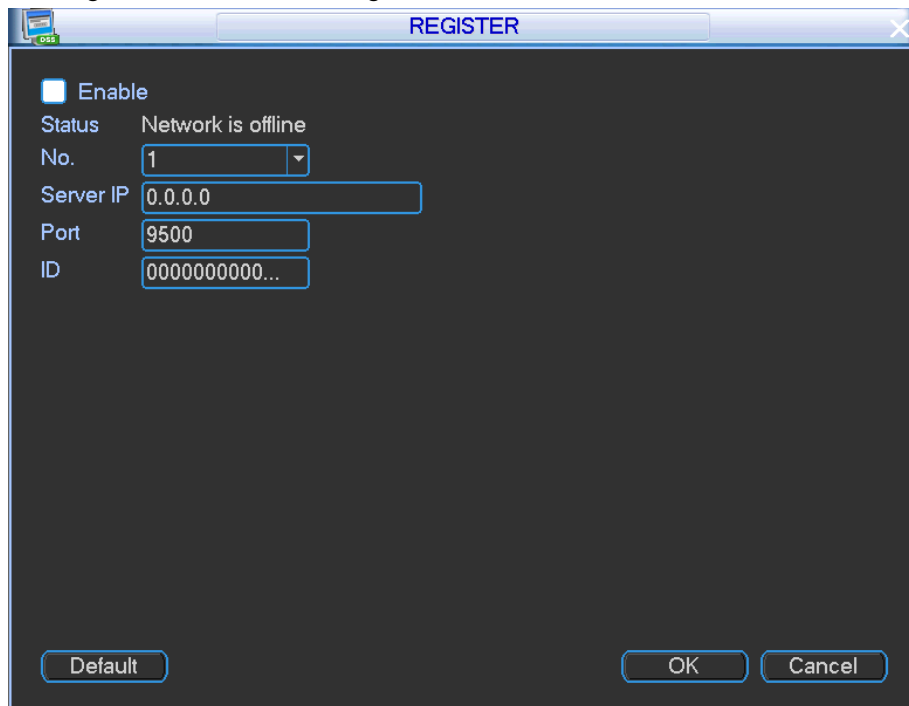


Figure 4-73

Step 2 Set parameters.

- Enable: Check the box to enable auto register function.
- Server IP address: The server IP address or server domain name you want to register.
- Port: The auto registration port value of the server.
- Sub-device ID: The device ID allocated by the server.

Step 3 Click OK button.

### 4.3.3.4 Speed

It is to view vehicle current moving mileage and speed source.

Step 1 On the main menu, from Vehicle->Register,  
Enter Speed interface. See Figure 4-74.



Figure 4-74

Step 2 Set parameters.

- Speed ratio: The parameter to calculate speed.

$$\frac{\text{Speed ratio}}{\text{Default speed ratio}} = \frac{\text{Vehicle actual running speed}}{\text{Displayed speed on the interface}}$$

- Speed: Current speed value.
- Mileage ratio: Speed mileage correction.
- Mileage cumulation: Select cumulation type.
- Mileage: Display mileage value.
- Clear: Clear mileage value.
- Start mileage: Set start mileage value.
- Speed source: Where the speed value comes from. It includes N/A, pulse, positioning, pulse/positioning.
  - ◇ Pulse: Got speed from the vehicle pulse system.
  - ◇ Positioning: Got speed from the positioning system such as GPS.
  - ◇ Pulse/Positioning: Got speed from the vehicle pulse system and positioning system. The vehicle pulse system has the higher priority.

Step 3 Click Save button.

#### 4.3.3.5 G-SENSOR

It is to view or correct vehicle position.

On the main menu, from Vehicle->G-SENSOR, enter G-SENSOR interface. See Figure 4-75.

Click Reset to correct vehicle position.



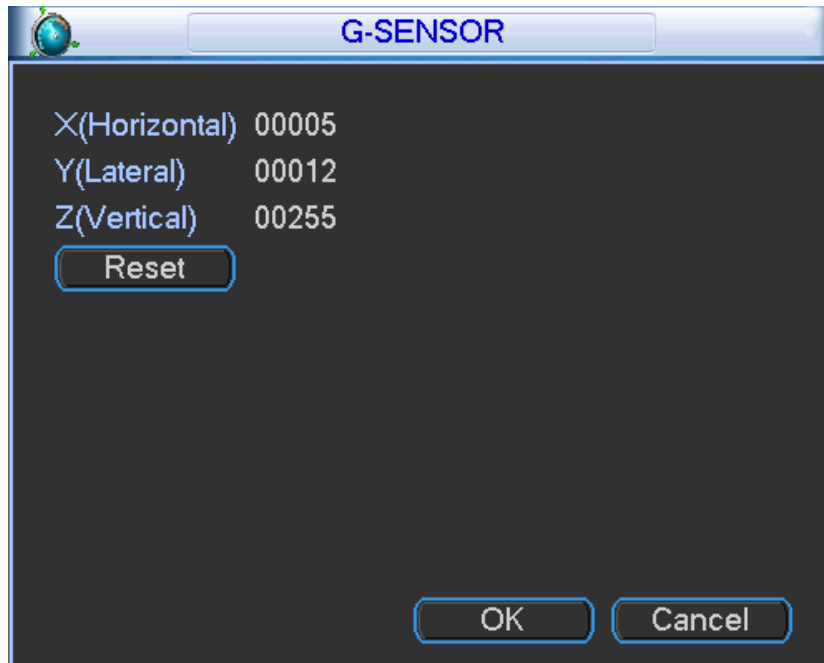


Figure 4-75

#### 4.3.3.6 Custom Default

It is to save the plate setup, 3G setup, auto register setup.

Step 1 From main menu->Vehicle->Custom default,  
Enter custom default interface See Figure 4-76.



Figure 4-76

Step 2 Set parameters.

- Backup: It is to backup important configuration such as plate number, 3G/4G and auto register.
- Restore: Restore backup configuration.
- Delete: Delete backup configuration.

#### 4.3.4 Alarm Events

It is to set alarm events. It includes alarm settings, video detect settings, abnormal event settings and alarm input and output.

#### 4.3.4.1 Alarm

It is to set local alarm/IPC offline alarm trigger mode and activation operations. When there is the local alarm/IPC offline alarm, device can generate an alarm and trigger the corresponding operations.

Step 1 From Main menu->Setting->Event->Alarm,

Enter alarm interface See Figure 4-77 and Figure 4-78.

Step 2 Set event type. Event type: There are two types. Local input/IPC offline alarm.

- Local input alarm: The alarm signal system detects from the alarm input port.
- IPC offline alarm: Once you select this item, system can generate an alarm when the front-end IPC disconnects with the NVR.

Step 3 Select alarm input channel and check the box to enable alarm function.

Step 4 Set parameters.

- Type: Normal open or normal close. This item is for local alarm only.
  - ◇ The normal open means the alarm signal is usually disconnect, system can generate an alarm when the alarm signal closed.
  - ◇ The normal close means the alarm signal is usually connect, system can generate an alarm when the alarm signal disconnected.
- Trigger: Here is for you to set activation mode. There are two options: High/low. Select high if the alarm signal is 12V/24V voltage. Select low if the alarm signal is the GND.
- Alarm name: You can input customized name here.
- Overlay: Please highlight the box here to enable this function. It can overlay alarm information on the video screen when an alarm occurred.
- Anti-dither: Here you can set anti-dither time. The value ranges from 5 to 600s. The anti-dither time refers to the alarm signal lasts time. It can be seem as the alarm signal activation stays such as the buzzer, tour, PTZ activation, snapshot, channel record. The stay time here does not include the latch time. During the alarm process, the alarm signal can begin an anti-dither time if system detects the local alarm again. The screen prompt, alarm upload, email and etc will not be activated. For example, if you set the anti-dither time as 10 second, you can see the each activation may last 10s if the local alarm is activated. During the process, if system detects another local alarm signal at the fifth second, the buzzer, tour, PTZ activation, snapshot, record channel will begin another 10s while the screen prompt, alarm upload, email will not be activated again. After 10s, if system detects another alarm signal, it can generate an alarm since the anti-dither time is out.
- Alarm output: The number here is the device alarm output port. You can select the corresponding ports(s) so that system can activate the corresponding alarm device(s) when an alarm occurred.
- Latch: When the anti-dither time ended, the channel alarm you select in the alarm output may last the specified period. The value ranges from 1 to 300 seconds. This function is not for other alarm activation operations. The latch is still valid even you disable the alarm event function directly.
- Show message: System can pop up a message to alarm you in the local host

screen if you enabled this function.

- Alarm upload: System can upload the alarm signal to the network (including alarm center and the WEB) if you enabled current function. System only uploads the alarm channel status. You can go to the WEB and then go to the Alarm interface to set alarm event and alarm operation. Please go to the Network interface to set alarm center information.
- Send email: System can send out the alarm signal via the email to alert you when alarm occurs. Once you enable the snap function, system can also send out an image as the attachment. Please go to the Main Menu->Setting->Network->Email interface to enable email function.
- Record channel: you can select proper channel to record alarm video when an alarm occurs.

 **Note**

- ◇ Make sure you have enabled alarm record function. Refer to chapter 4.1.7 Schedule for detailed information.
  - ◇ Make sure you have enabled auto record. Refer to chapter 4.1.6 Record for detailed information.
- Snapshot: You can enable this function to snapshot image when an alarm occurs.

 **Note**

- ◇ Make sure you have enabled trigger (event) snapshot. Refer to chapter 4.3.1.2.3 Snapshot for detailed information.
  - ◇ Make sure you have enabled auto snapshot. Refer to chapter 4.1.6 Record control for detailed information.
- Log: Check the box here, system can record alarm event log.
  - Buzzer: Highlight the icon to enable this function. The buzzer beeps when an alarm occurs.

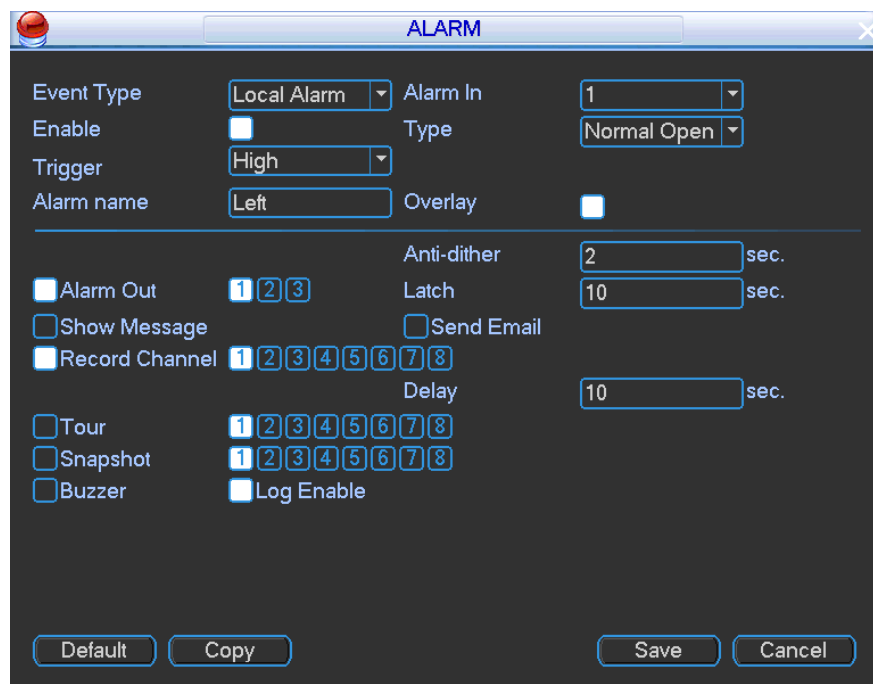


Figure 4-77

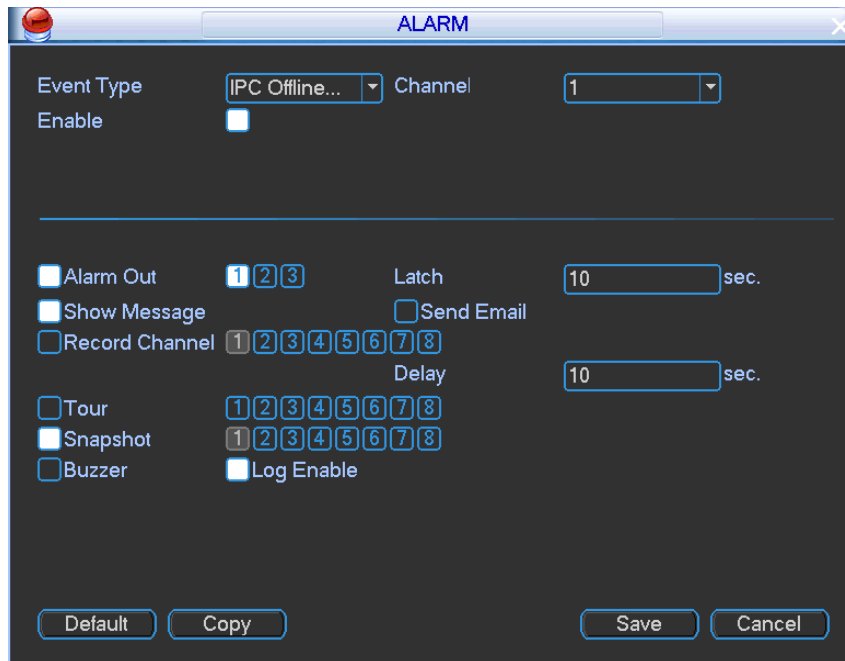


Figure 4-78

#### 4.3.4.2 Detect

There are three detection types: Motion detect/video loss/tampering. It is to detect video abnormal event and can process in time.

Step 1 From Main menu->Setting->Detect,

Enter video detect interface. See Figure 4-80.

Step 2 Set event type. There are three detection types: Motion detect/video loss/tampering.

- Motion detect: After analysis video, device can generate a motion detect alarm when the detected moving signal reached the sensitivity you set here.
- Video loss: Device generates an alarm and triggers the corresponding operations when video loss alarm occurs.
- Tampering: When someone viciously masks the lens, or the output video is in one-color due to the environments light change, the system can alert you to guarantee video continuity.

Step 3 Channel: Select a channel from the dropdown list to set corresponding function.

Step 4 Enable: Check the box here to enable video loss function.

Step 5 Set parameters.

- Region: This item is for motion detect only. Click select button, the interface is shown as in Figure 4-79. Here you can set motion detection zone. There are 396(PAL)/330(NTSC) small zones. The green zone is current cursor position. Grey zone is the motion detection zone. Black zone is the disarmed zone. You can click Fn button to switch between the arm mode and disarm mode. In arm mode, you can click the direction buttons to move the green rectangle to set the motion detection zone. After you completed the setup, please click ENTER button to exit current setup. Do remember click save button to save current setup. If you click ESC button to exit the region setup interface system will not save your zone setup.

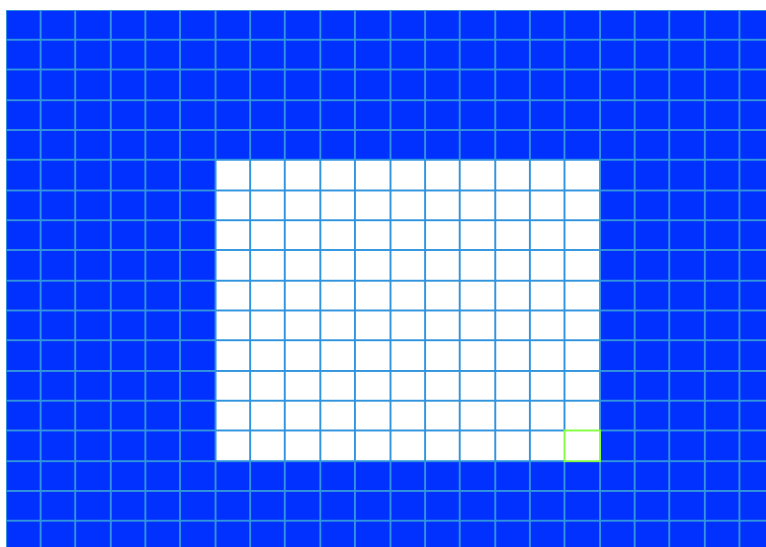


Figure 4-79

- Sensitivity: This item is for motion detect and tampering only. System supports 6 levels. The sixth level has the highest sensitivity.
- Delay motion: Check the box to delay motion detect function. This function becomes valid when ACC OFF.
- Alarm output: when an alarm occurs, system enables peripheral alarm devices.
- Latch: when video loss is complete, system auto delays detecting for a specified time. The value ranges from 1-300(Unit: second)
- Show message: System can pop up a message to alarm you in the local host screen if you enabled this function.
- Alarm upload: System can upload the alarm signal to the network (including alarm center) if you enabled current function.
- Send email: System can send out email to alert you when an alarm occurs.
- Record channel: Select the channel to activate recording function once an alarm occurred.



**Note**

- ◇ Make sure you have enabled alarm record function. Refer to chapter 4.1.7 Schedule for detailed information.
- ◇ Make sure you have enabled auto record. Refer to chapter 4.1.6 Record for detailed information.
- Record Delay: System can delay the record for specified time after alarm ended. The value ranges from 10s to 300s.
- Tour: Here you can enable tour function when an alarm occurs. System one-window tour. Please go to chapter 4.2.1.4.2 Tour for tour interval setup.
- Snapshot: You can enable this function to snapshot image when detect alarm occurs.



**Note**

- ◇ Make sure you have enabled trigger (event) snapshot. Refer to chapter 4.3.1.2.3 Snapshot for detailed information.

✧ Make sure you have enabled auto snapshot. Refer to chapter 4.1.6 Record control for detailed information.

- Log: Check the box here, system can record detect event log.
- Buzzer: Highlight the icon to enable this function. The buzzer beeps when an alarm occurs.

**Tips:**

You can enable preset/tour/pattern activation operation when video loss occurs.

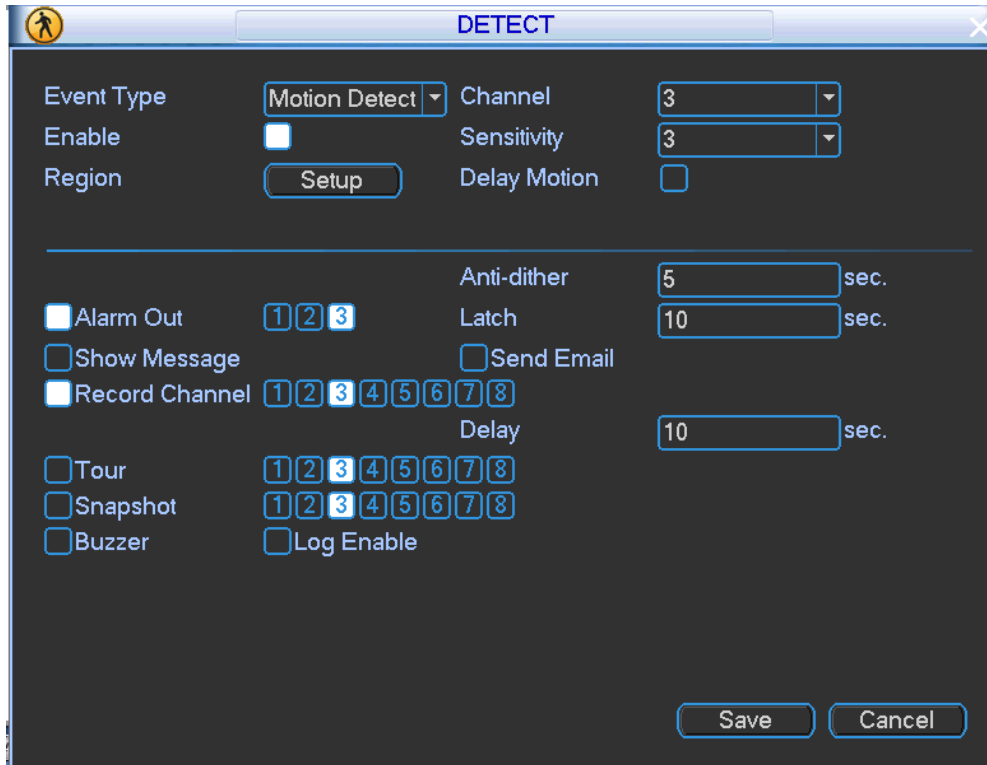


Figure 4-80

#### 4.3.4.3 Abnormal

System can trigger message prompt, alarm output or buzzer when abnormal event occurs.

Step 1 From main menu->Setting->Event->Abnormality,

Enter abnormal interface. See Figure 4-81 and Figure 4-82.

- Event type: There are several options for you such as disk error, no disk, no space, high temperature, low battery, over speed, low speed, turnover, collision and etc. (multiple choices).
- Enable: Check the box here to enable this function.
- Alarm output: Please select alarm activation output port (multiple choices).
- Less than: You can set HDD threshold here so that system can alert you once the HDD space is lower than the threshold here. This function is for no space only.
- High temperature: Select High temperature from the dropdown list, and then input the max temperature. Device can trigger an alarm once the case temperature is higher than the value you set.
- Attempts: It is to set login attempt times. Once the login attempt exceeds the threshold you set here, current account will be locked. This function is for illegal login only.
- Lock time: It is to set account lock time once its login attempt has exceeded the

threshold you set. This function is for illegal login only.

- Latch: Here you can set corresponding delaying time. The value ranges from 1s-300s. System automatically delays specified seconds in turning off alarm and activated output after external alarm cancelled.
- Show message: system can pop up the message in the local screen to alert you when an alarm occurs.
- Alarm upload: System can upload the alarm signal to the network (including alarm center) if you enabled current function.
- Send email: System can send out email to alert you when an alarm occurs.
- Log: Check the box here, system can record corresponding alarm log.
- Restart system: If you highlight the button here, system will restart automatically if there is no HDD.
- Buzzer: Highlight the icon to enable this function. The buzzer beeps when an alarm occurs.

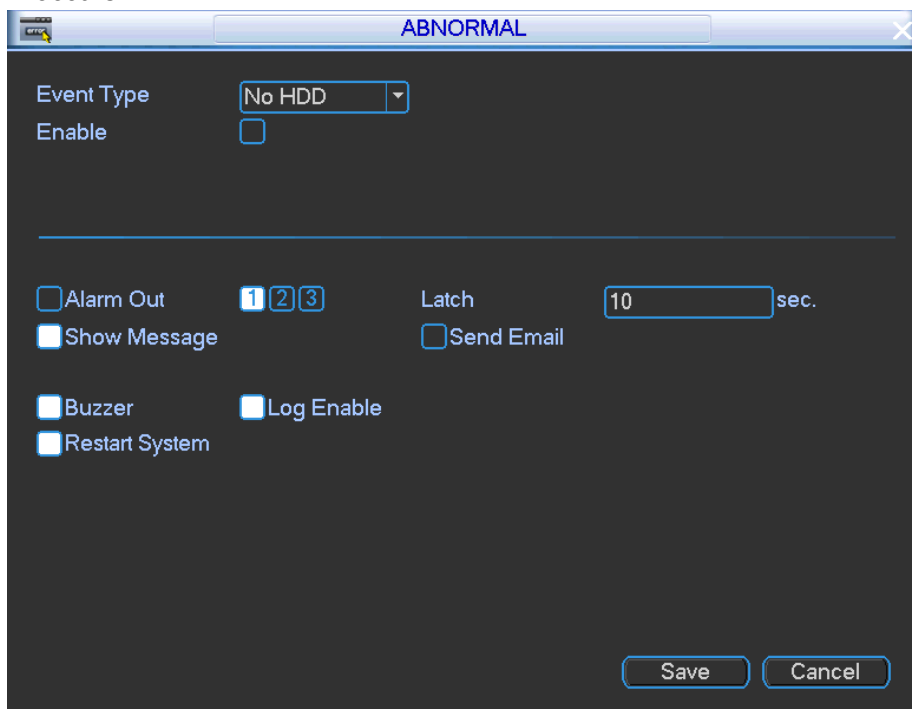


Figure 4-81

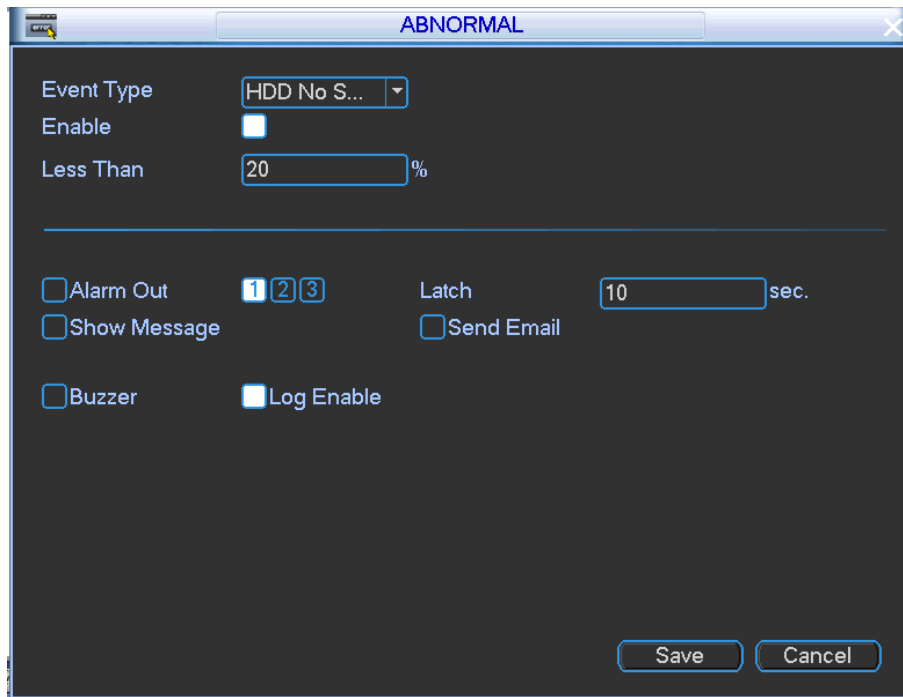


Figure 4-82

#### 4.3.4.4 Alarm Output

It is to set alarm output channel mode: manual/auto/close.

Step 1 From main menu->Setting->Event->Alarm output, Enter alarm output interface. See Figure 4-83.

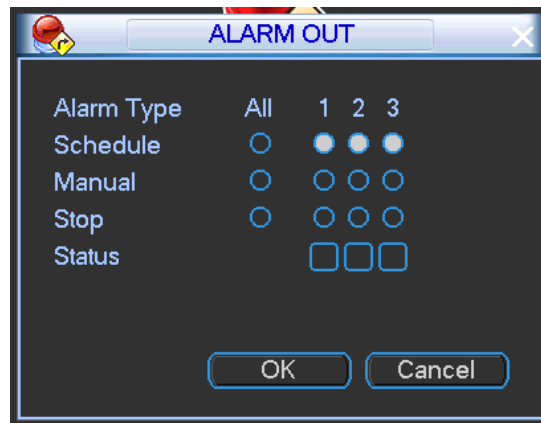




Figure 4-83

Step 2 Select alarm output mode for each channel.

- Auto: The corresponding event triggers the alarm output or cancels alarm.
- Manual: Forcedly trigger alarm output.
- Stop: Forcedly cancel or close alarm output.
- Status: It is to view alarm output port status. The alarm is enabled if the icon is highlighted.

Step 3 Click OK.



On Status item, it is to view each alarm output port status.  means there is an alarm output.  means there is no alarm output.

#### 4.3.5 RS232

It is to set RS232 function, baud rate and etc.

Step 1 From Main Menu->Setting->System->RS232,  
Enter RS232 interface. See Figure 4-84.

Step 2 Set parameters.

- Function: There are various devices for you to select.
  - ◇ Console is for you to use the COM or mini-end software to upgrade or debug the program.
  - ◇ The control keyboard is for you to control the device via the special keyboard.
  - ◇ Transparent COM (adapter) is to connect to the PC to transfer data directly.
  - ◇ Network keyboard is for you to use the special keyboard to control the device.
  - ◇ PTZ: Use COM to control the PTZ.
- ITS: Connect to mobile light box or touch screen.
- Baud rate: You can select proper baud rate.
  - ◇ The console and transparent COM default value is 115200.
  - ◇ Control keyboard, PTZ, ITS default value is 9600.
- Data bit: You can select proper data bit. The value ranges from 5 to 8.
- Stop bit: There are three values: 1/1.5/2.
- Parity: there are five choices: none/odd/even/space/mark.

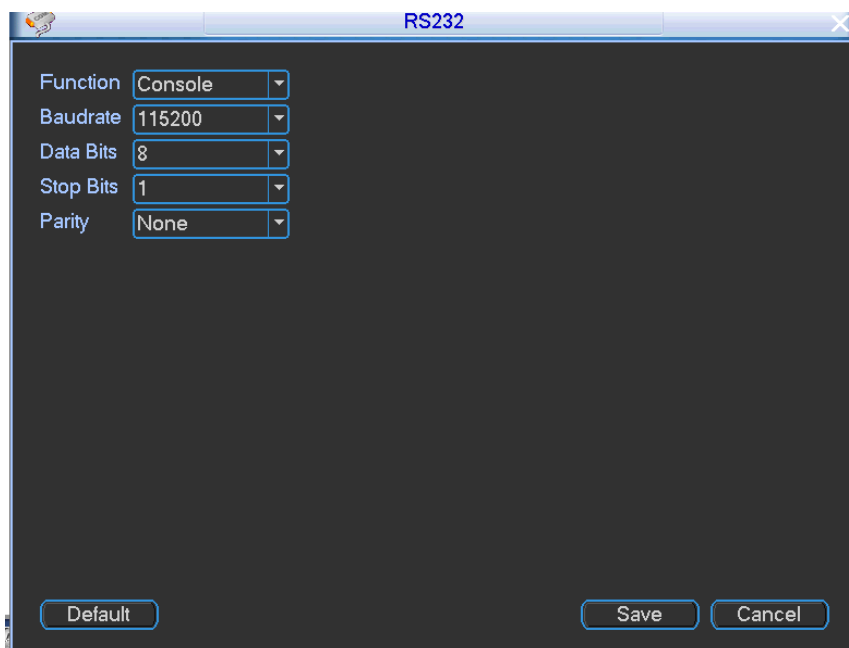


Figure 4-84

#### 4.3.6 Account

It is to manage user, user group and security questions.

- For the user name, the string max length is 31-byte, and for the user group, the string max length is 15-byte. The user name can only contain English letters, numbers and “\_”, “@”, “.”.

- The default user amount is 64 and the default group amount is 20. System account adopts two-level management: group and user. The user authorities shall be smaller than group authorities (The **admin** user authorities are set by default).
- For group or user management, there are two levels: admin and user. The user name shall be unique and one user shall only belong to one group.

#### 4.3.6.1 Add User

Step 1 From main menu->Advanced->Account,  
Enter Account interface. See Figure 4-85.

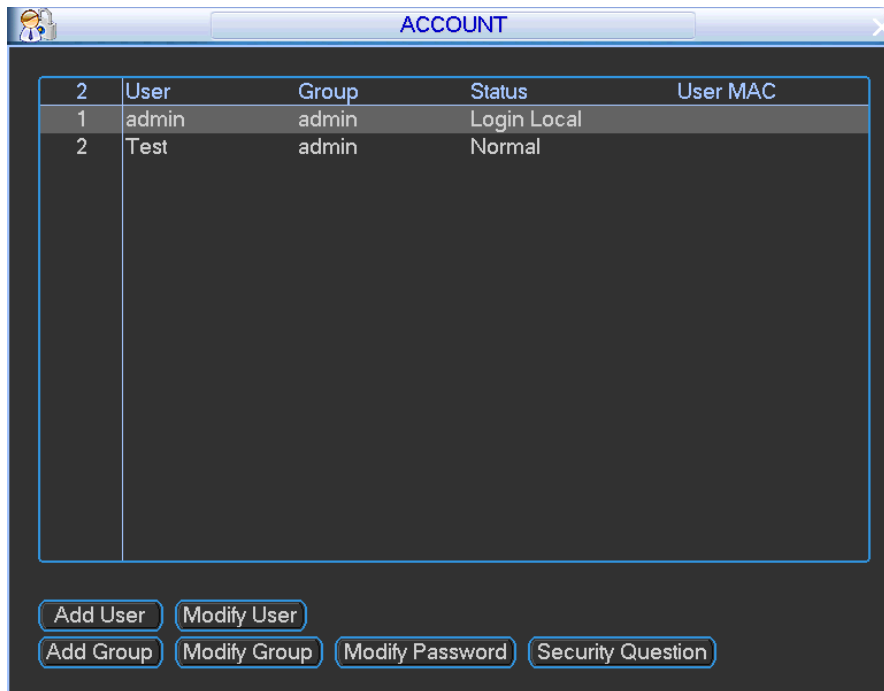


Figure 4-85

Step 2 Click Add user button in Figure 4-85.  
Enter Add user interface. See

Figure 4-86.

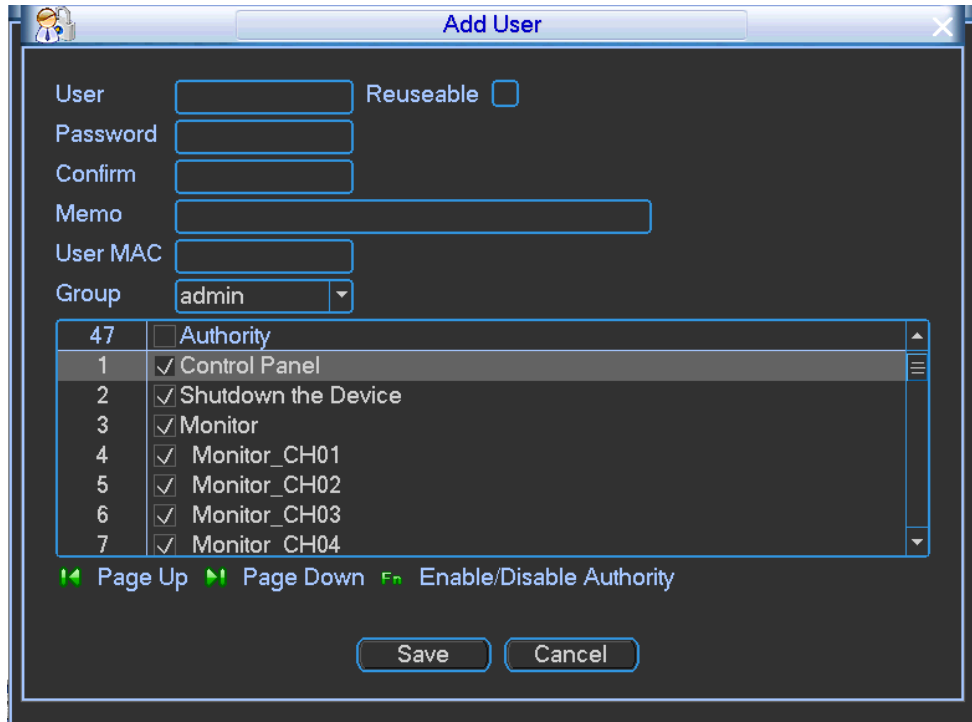


Figure 4-86

- Step 3 Input the user name, password; select the group it belongs to from the dropdown list. Then you can check the corresponding rights for current user.

#### **Note**

For convenient user management, usually we recommend the general user right is lower than the admin account.

- Step 4 Click Save button.  
Device pops up dialogue box. Click OK button.

#### 4.3.6.2 Modify User

It is to change user memo information, MAC address, user group, rights. For admin user, you can change designated email information, enable/disable unlock pattern.

- Step 1 From main menu->Advanced->Account,  
Select a user and then click Modify user button, enter Modify user interface. See Figure 4-87 or Figure 4-88 (**admin**).

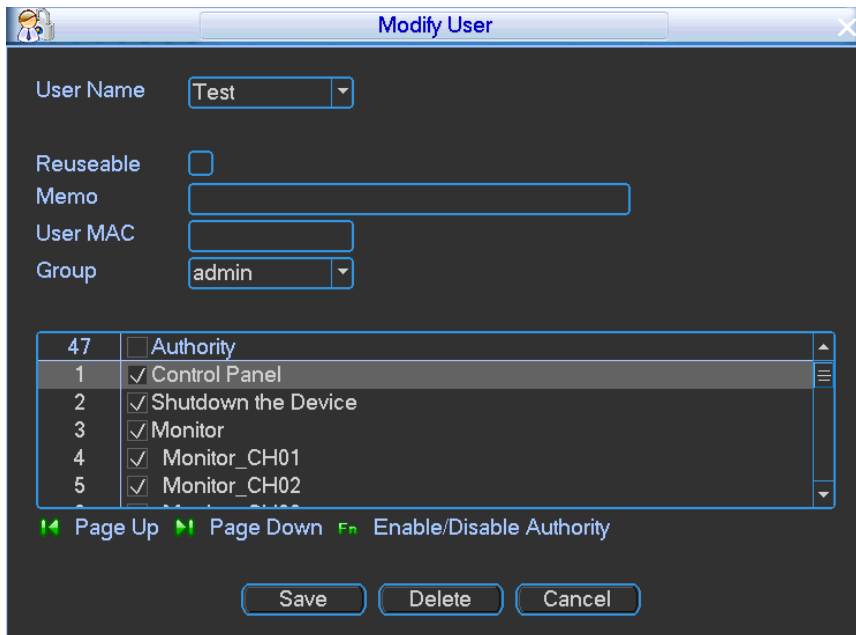


Figure 4-87

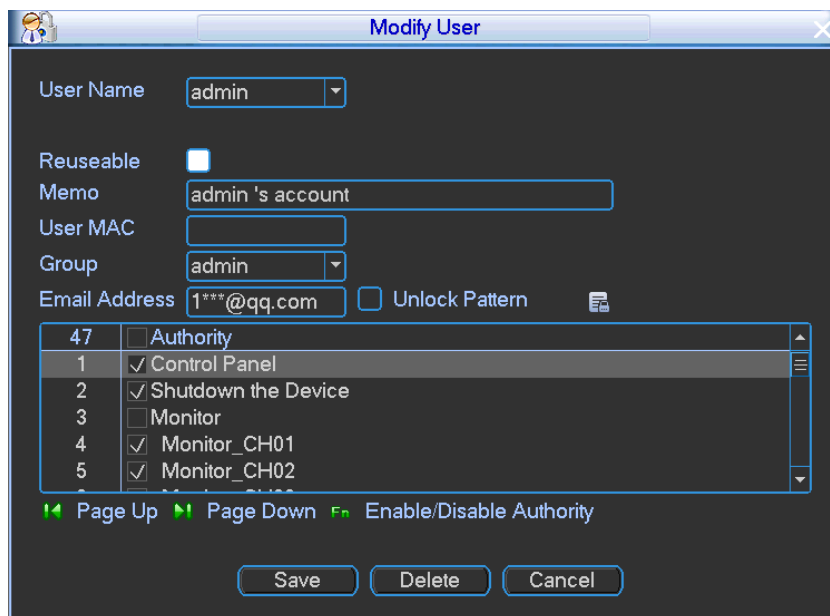


Figure 4-88

Step 2 Modify the user information.

 **Note**

- Cannot delete **admin**.
- Select a user and then click Delete button to delete a user.
- For **admin**, you can change the email address information you set during initialization process, or check the unlock pattern box to change unlock pattern, See Figure 4-88

Step 3 Click Save button.

### 4.3.6.3 Add User Group

It is to add a user group, set group rights.

Step 1 From main menu->Advanced->Account,

Click Add Group, enter Add group interface. See Figure 4-89.

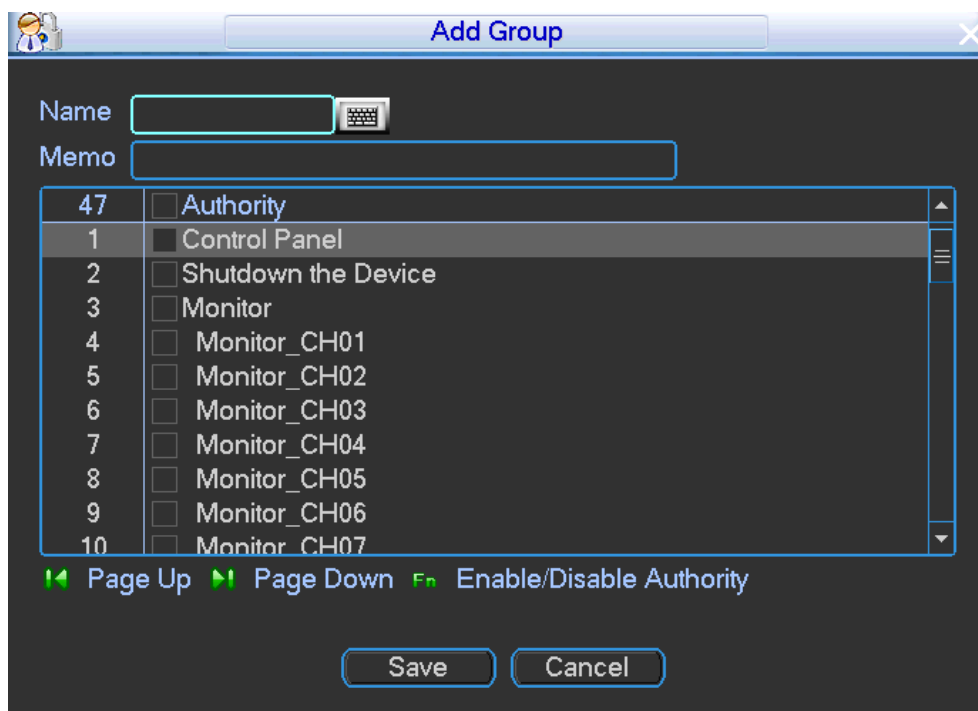


Figure 4-89

Step 2 Input user group name and memo, select rights from the dropdown list.

Step 3 Click Save button.

#### 4.3.6.4 Modify User Group

It is to modify user group name, memo or rights.

Step 1 From main menu->Advanced->Account,

Click Modify Group, enter Modify group interface. See Figure 4-90.

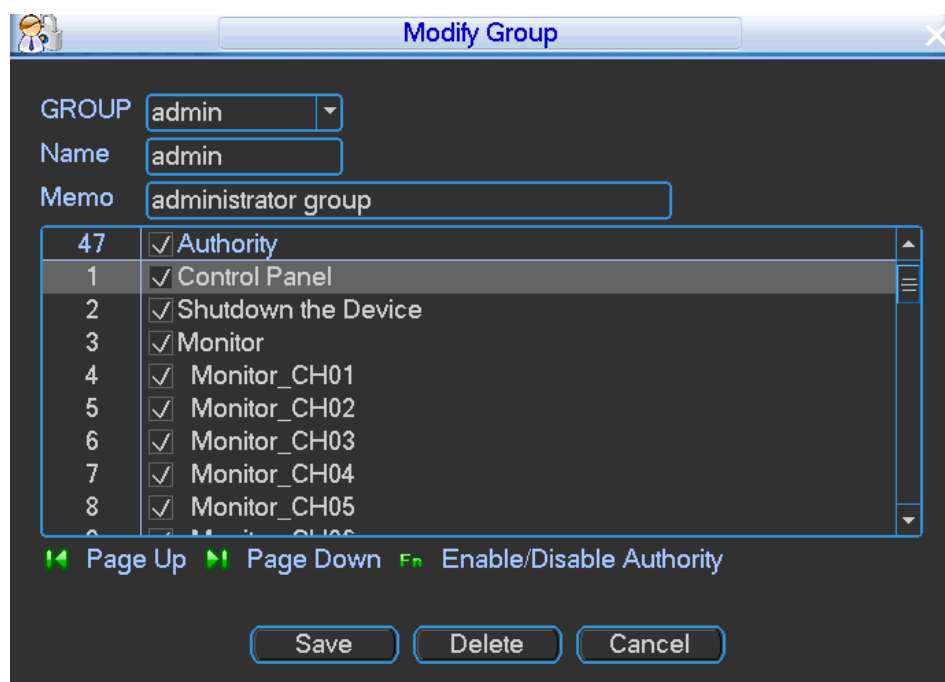


Figure 4-90

Step 2 Select a group and change user group name, memo, or rights.

 **Note**

- Cannot change admin/user group name.
- Select a group and then click Delete to delete a group.

Step 3 Click Save button.

#### 4.3.6.5 Change Password

It is to change user password.

Step 1 From main menu->Advanced->Account,  
Click Modify password, enter Modify password interface. See Figure 4-91.

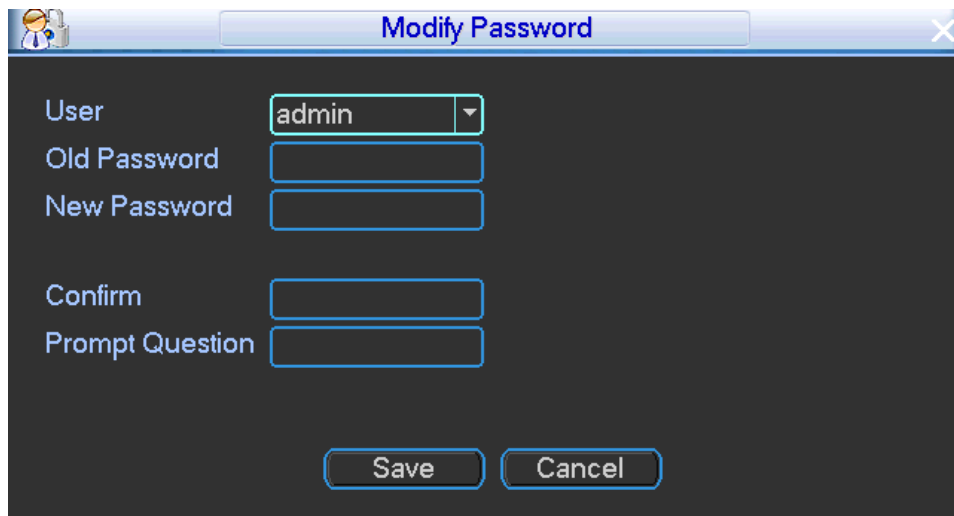


Figure 4-91

Step 2 Input user name and then input old password.  
Input new password twice to complete setup.

 **Note**

- Password/confirm password: The password ranges from 8 to 32 digital. It can contain letters, numbers and special characters (excluding “” , “'” , “;” , “:” , “&” ). The password shall contain at least two categories. Usually we recommend the strong password.

Step 3 Click Save button.

#### 4.3.6.6 Security Question

 **Note**

This function is for **admin** user only.

It is to change security questions. After you successfully answered security questions, you can reset admin account password.

Step 1 From main menu->Advanced->Account,  
Enter Account interface.

Step 2 Click Security question,  
Enter security question interface. See Figure 4-92.

Please set a security question so that you can find the password of admin again.

Question 1    
 Answer

Question 2    
 Answer

Question 3    
 Answer

Figure 4-92

Step 3 Input proper security question answers.

Step 4 Click Setup button.

After successfully set security questions, you can answer the security questions to reset **admin** password.

 **Note**

Input correct security answers and then click Delete button at the bottom of the interface, you can reset security questions and answers.

#### 4.3.6.7 Reset Password

If you forgot **admin** password, you can reset the password by email or by answering the security questions.

Please follow the steps listed below.

Step 1 Go to the device login interface. See Figure 4-93 or Figure 4-94.

- If you have set unlock pattern, device displays unlock pattern login interface. See Figure 4-93. Click “Forgot unlock pattern”, device goes to Figure 4-94.
- If you have not set unlock pattern, device displays password interface. See Figure 4-94.

 **Note**

Click Switch user button, NVR goes to general user login interface. The default user name is **admin**. Click the user name and then select a user from the dropdown list; you can login via other account.

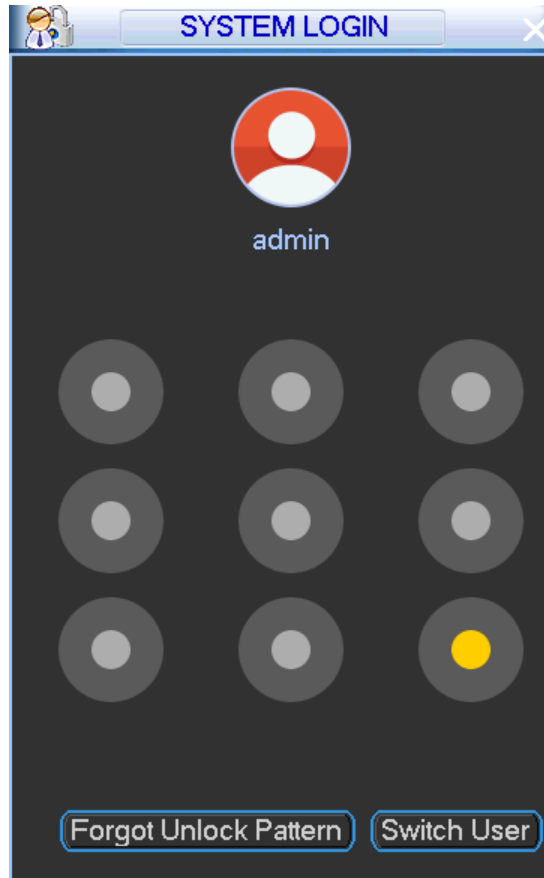


Figure 4-93

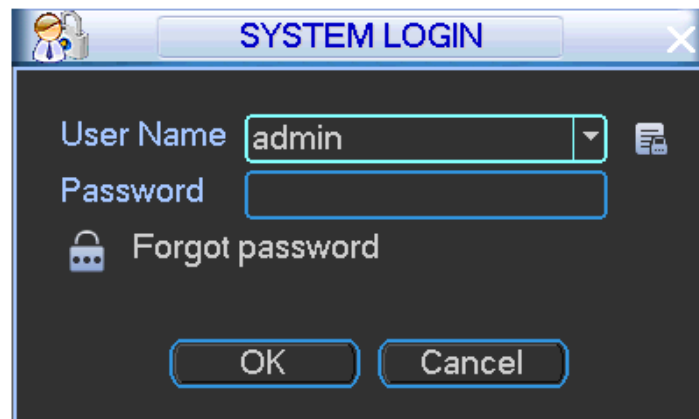


Figure 4-94

Step 2 Click .

- If you have not input email address information when you are initializing the device, the interface is shown as in Figure 4-95. Please input an email address and then click Next button, devices goes to Figure 4-96.
- If you have input email when you are initializing the device, device goes to Figure 4-96.



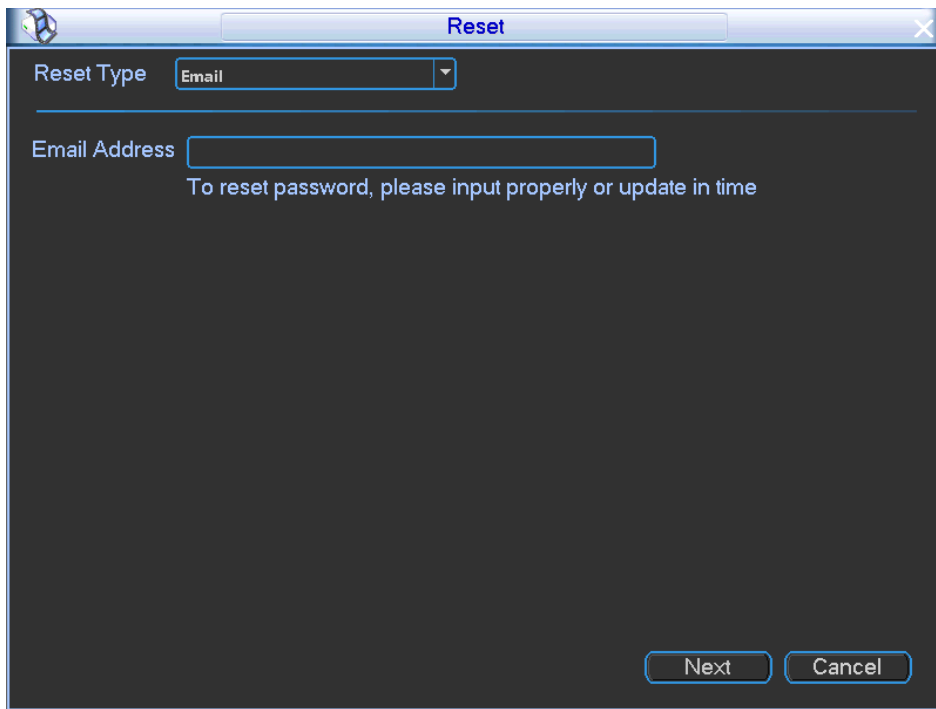


Figure 4-95

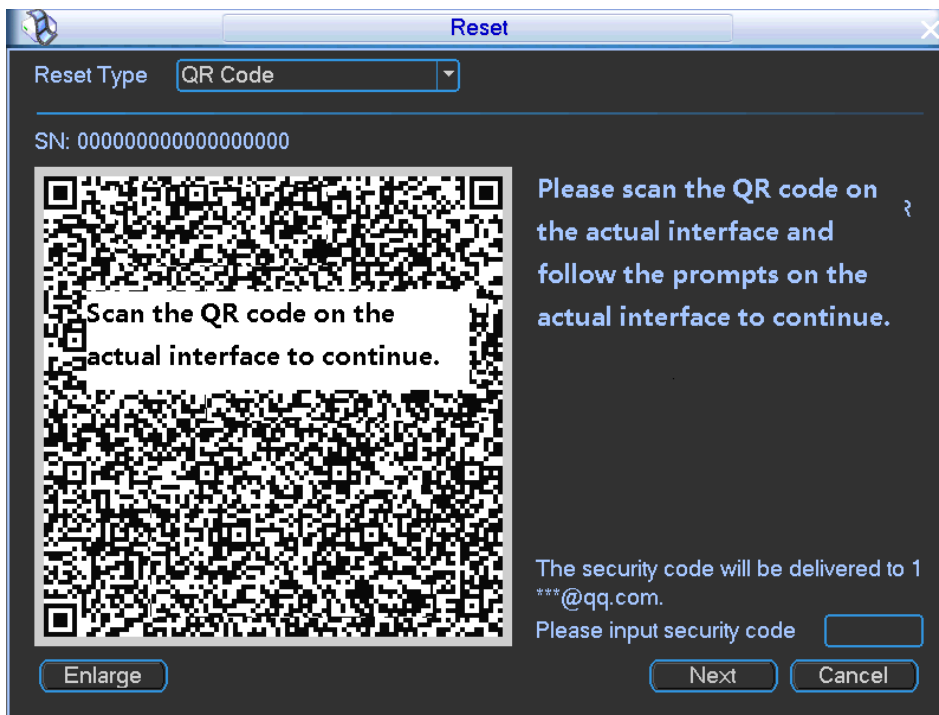


Figure 4-96

Step 3 Reset login password.

There are two ways to reset the password: Scan QR code and reset by email/security questions (local menu only)

- Email

In Figure 4-96, follow the prompts on the interface to scan the QR code, and then input the security code you get via the assigned email.



### Warning

- ✧ For the same QR code, max scan twice to get two security codes. Refresh the QR code if you want to get security code again.
- ✧ The security code on your email is only valid for 24 hours.
- Security questions  
In Figure 4-95, select security question from the drop down list. Device displays security question interface. See Figure 4-97. Please input the correct answers here.

Reset

Reset Type: Security Question

Question 1: What is your favorite children's book?  
Answer: [Text Input]

Question 2: What was the first name of your first boss?  
Answer: [Text Input]

Question 3: What is the name of your favorite fruit?  
Answer: [Text Input]

Next Cancel

Figure 4-97

- Step 4 Click Next button.  
Device displays reset password interface. See Figure 4-98.

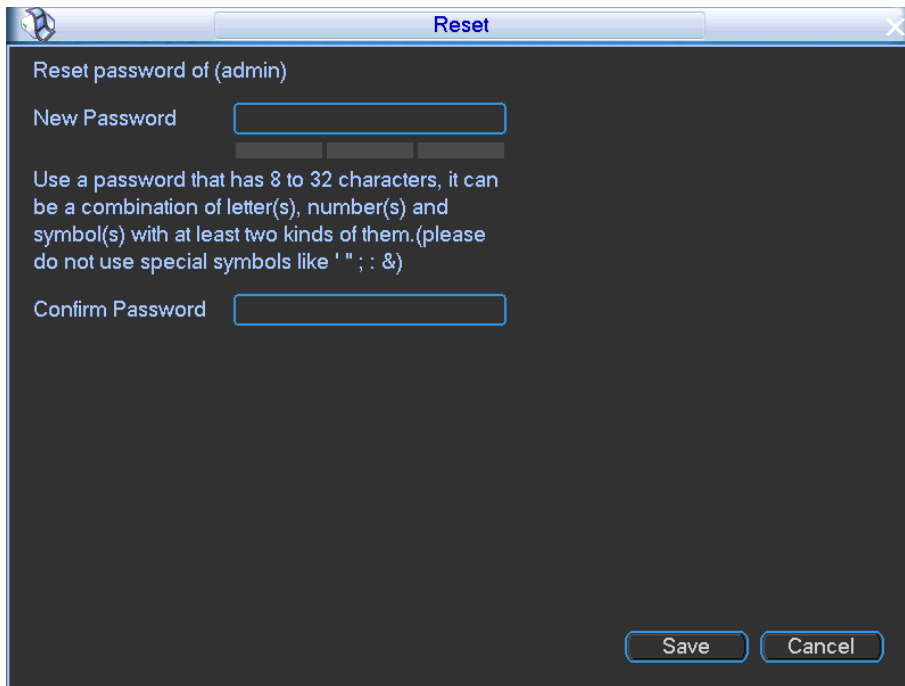


Figure 4-98

Step 5 Input new password and then confirm.



#### WARNING

**STRONG PASSWORD RECOMMENDED-For your device own safety, please create a strong password of your own choosing. The password shall be at least 8-digit containing at least two types of the following categories: letters, numbers and symbols. We also recommend you change your password periodically especially in the high security system.**

Step 6 Click Save button to complete the setup.

#### 4.3.6.8 Online Users

It is to manage online users connected to device via WEB. System detects there is any newly added or deleted user in each five seconds and refresh the list automatically.

You can disconnect one user or block one user if you have proper system right.

Step 1 From main menu->Info->System->Online user,  
Enter online user interface. See Figure 4-99.

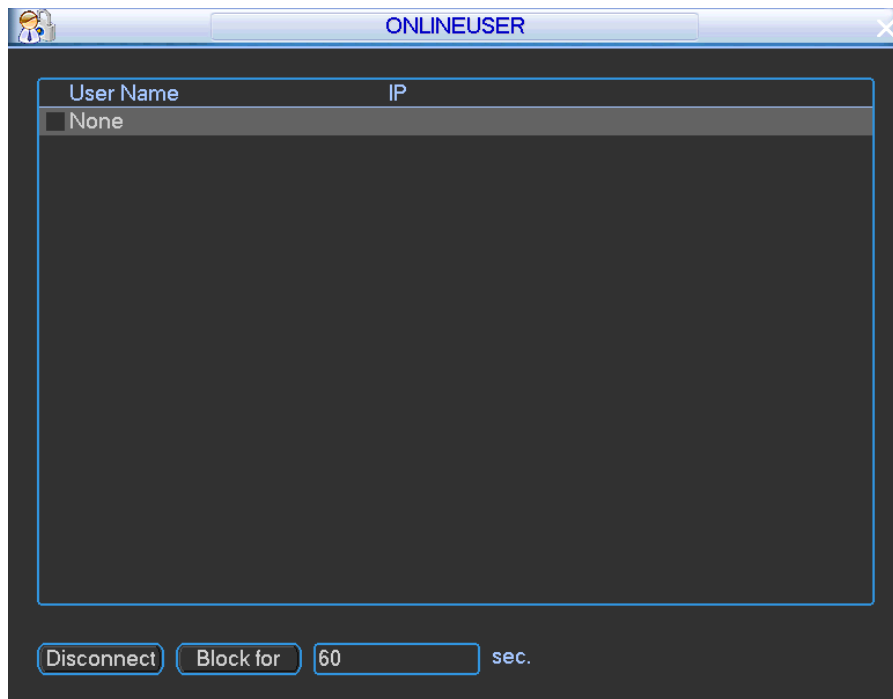



Figure 4-99

Step 2 Set parameters.

- Block: Click button  to disconnect or block one user if you have proper system right. The default setup is 60 seconds.
- Disconnect: Select a user and then click to disconnect.

 **Note**

- The max block period is 65535 seconds.
- System detects there is any newly added or deleted user in each five seconds and refresh the list automatically.

### 4.3.7 HDD

It is to view current HDD information such as type, status, total space, record time and etc. Or you can format HDD, change HDD properties, set alarm operations and etc.

#### 4.3.7.1 Configuring HDD

It is to view HDD type, format HDD and etc.

Step 1 On the main menu, from Advanced->HDD manager.

Enter HDD manager interface. See Figure 4-100.

Device displays current HDD information such as type, status, capacity and record time.

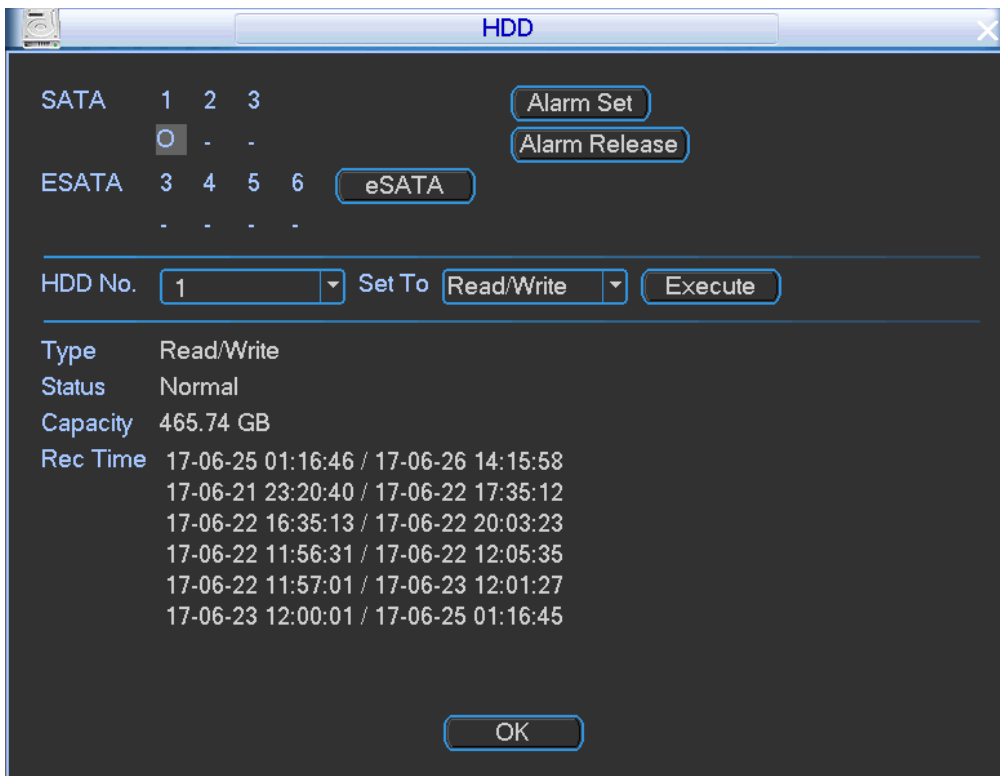


Figure 4-100

Step 2 Select a HDD from the dropdown list and operate.

When HDD is working properly, system is shown as O. When HDD error occurred, system is shown as X.

- Alarm set: Click alarm set button, the interface is shown as below. See Figure 4-101. (This interface is just like the abnormal setup). Please refer to chapter 4.3.4.3 Abnormal for detailed information.
- HDD operation: You can select a HDD mode from the dropdown list such as read-only or you can erase all data in the HDD. Please note system needs to reboot to get all the modification activated.
- eSATA: Click to view eSATA name, total space, free space, and status.
- Record time: It is to display record start time and end time of current HDD.

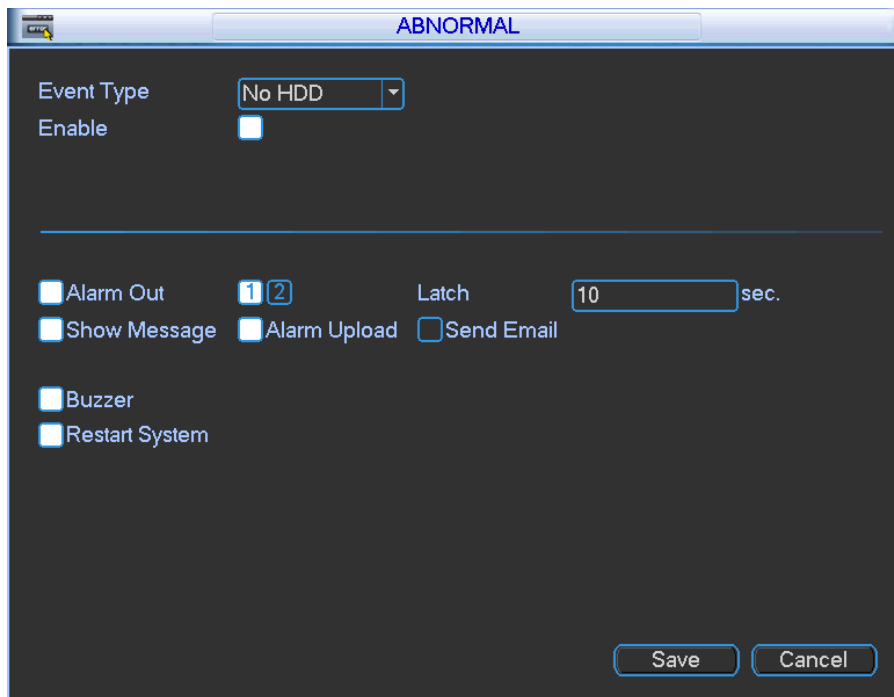


Figure 4-101

Step 3 Click OK button.

#### 4.3.7.2 HDD Info

It is to list HDD type, total space, free space, and status.

On the main menu, from Info->HDD, Enter HDD info interface. See Figure 4-102.

○ means current HDD/SD card is normal.. - means there is no HDD.

If disk is damaged, system shows as “?”. Please remove the broken hard disk before you add a new one.

Once there is a hard disk confliction, please check hard disk time and system time is the same or not. Please go to setting then general to modify system time. At last, reboot the system to solve this problem.

After system booted up, if there is any confliction, system goes to HDD information interface directly. Please note, system does not ask you to deal with it forcedly.



Figure 4-102

Parameter	Function
SATA	1-3 means system max supports 3HDDs. When HDD is working properly, system is shown as O. . “_” means there is no HDD.
SN	You can view the HDD amount the device connected to; * means the second HDD is current working HDD.
Type	The corresponding HDD property.
Total space	The HDD total capacity.
Free space	The HDD free capacity.
Status	HDD can work properly or not.
S.M.A.R.T	Click to view HDD detailed information.
Page up	Click it to view previous page.
Page down	Click it to view the next page.
View recording time	Click it to view HDD record information (file start time and end time).
View HDD type and capability	Click it to view HDD property, status and etc,

## 4.4 System Maintenance

### 4.4.1 Maintenance Requirements

To guarantee device proper operation and device safety, please follow the instructions listed below to manage, backup and maintain the device.

- Check the monitor video regularly.
- Delete the inactive user or user group regularly.
- Change device password each three months.
- Check and analyze system log, process the abnormal event in time.
- Backup device configuration files.
- Reboot and delete old files regularly.
- Upgrade firmware in time.

### 4.4.2 System Info

It is to view device version information, satellite information, log information, bit stream information and etc.

#### 4.4.2.1 Version

It is to view version information and release date.

On the main menu, from Info->Version, enter version interface. See Figure 4-103.

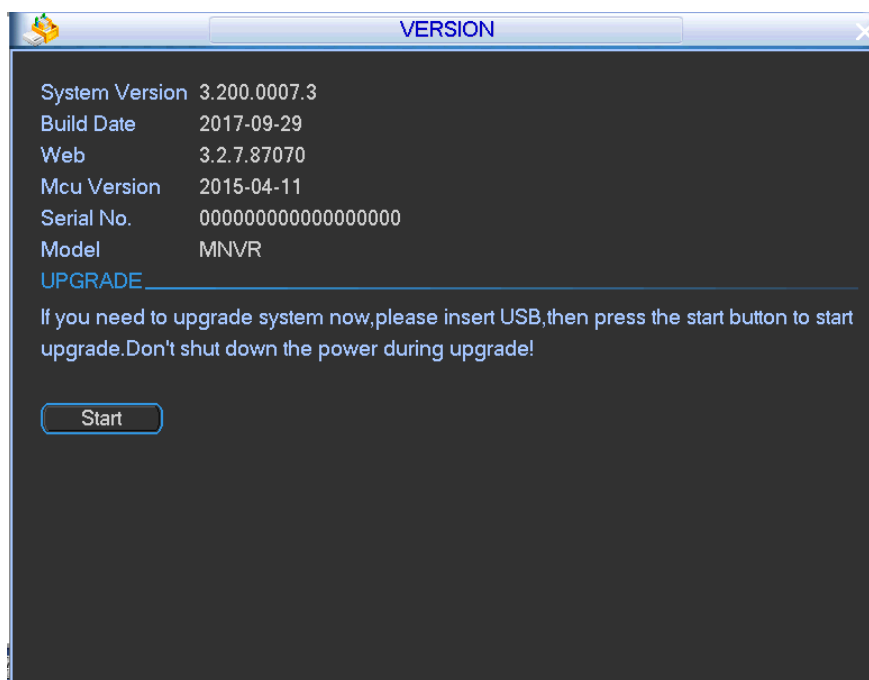


Figure 4-103

#### 4.4.2.2 Device

It is to view ACC status, voltage, record status, HDD status, GPS status, DSS registration status, 3G dial status, Wi-Fi connection status.

On the main menu, from Info->Device, enter Device interface. See Figure 4-104.

Click Details button to view the detailed information.



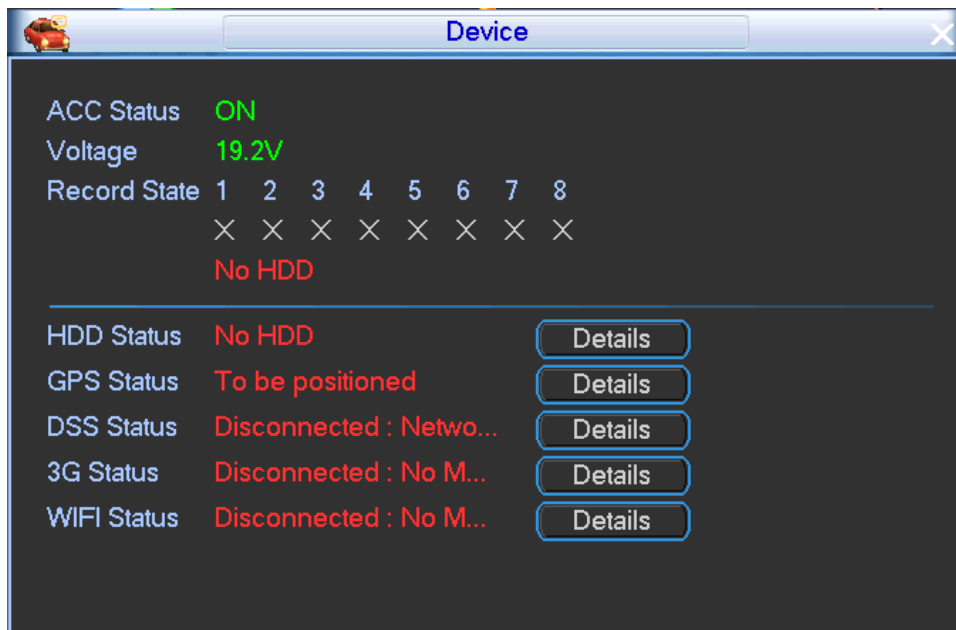


Figure 4-104

#### 4.4.2.3 Satellite

It is to display satellite positioning status, longitude/latitude and searched results. On the main menu, from Info->Satellite, enter Satellite interface. See Figure 4-105.

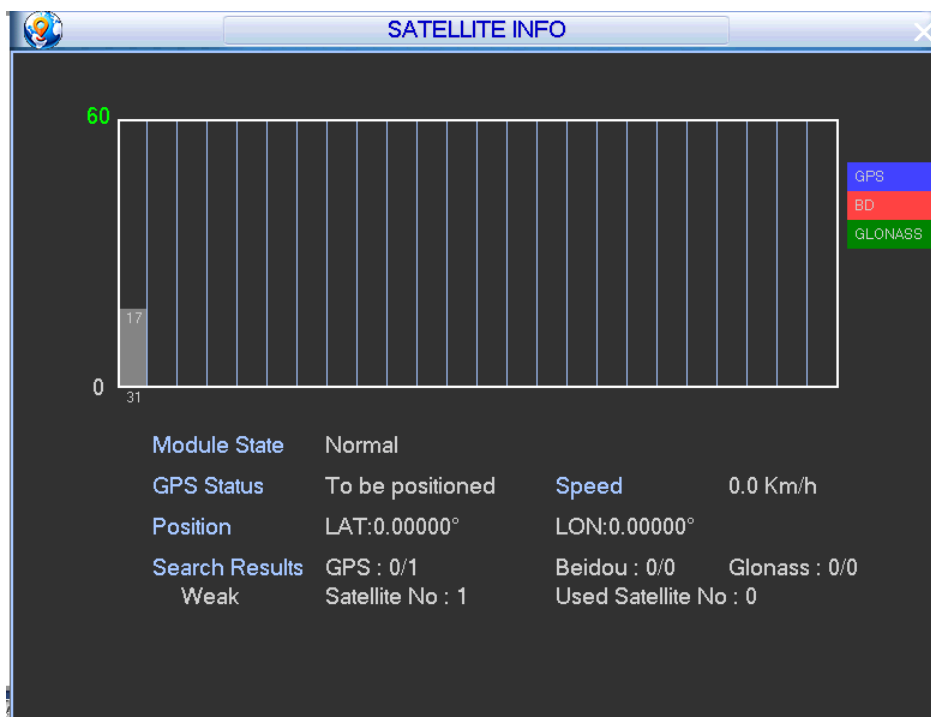


Figure 4-105

#### 4.4.2.4 Log

It is to view and backup system log file. On the main menu, from Info->Log, enter Log interface. See Figure 4-106.

- Start time/end time: Please select start time and end time, then click search button. You can view the log files in a list. System max displays 100 logs in one page. It can max save 1024 log files. Please use page up/down button on the interface or the buttons of the front panel to view more.
- Backup: Please select a folder you want to save; you can click the backup button to save the log files. After the backup, you can see there is a folder named Log\_time on the backup path. Double click the folder, you can see the log file
- Details: Click the Details button or double click the log item, you can view the detailed information. See Figure 4-107. Here you can use rolling bar to view information, or you can use Page up/Page down to view other log information.

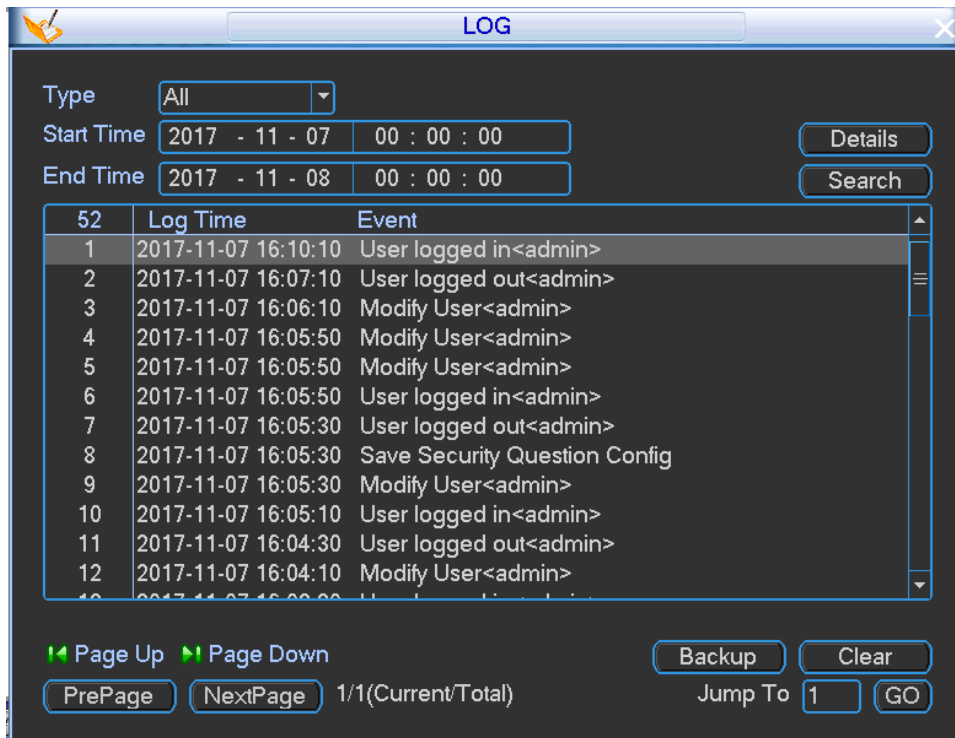


Figure 4-106

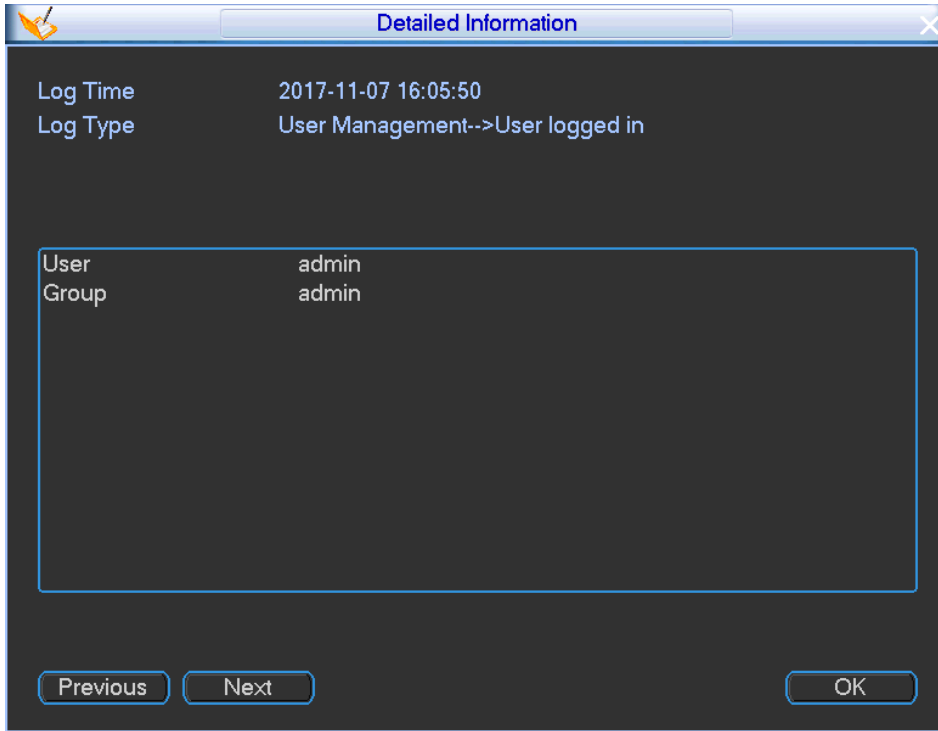


Figure 4-107

#### 4.4.2.5 BPS

It is to view current video data stream (Kb/S) and occupied hard disk storage (MB/h). On the main menu, from Info->BPS, enter BPS interface. See Figure 4-108.

The screenshot shows a window titled "BPS" with a close button (X) in the top right corner. The window displays a table with the following data:

Channel	Kb/S	MB/H	Wave
1	0	0	[Progress Bar]
2	0	0	[Progress Bar]
3	810	425	[Progress Bar]
4	0	0	[Progress Bar]
5	830	437	[Progress Bar]
6	0	0	[Progress Bar]
7	0	0	[Progress Bar]
8	0	0	[Progress Bar]

The "Wave" column contains green progress bars for each channel, indicating the current usage relative to a maximum capacity.

Figure 4-108

#### 4.4.3 Auto Maintenance

Here you can set auto-reboot time and auto-delete old files, auto shutdown, and auto ACC delay (0-65535 minutes) setup. You can set to delete the files for the specified days.

On the main menu, from Vehicle->Maintain, enter maintain interface. See Figure 4-109.

 **Note**

- The auto boot up and ACC delay function is only valid when vehicle ACC signal connection is OK. The auto shut down has higher priority than ACC delay. If you enable these two functions at the same time, the ACC delay function is null.

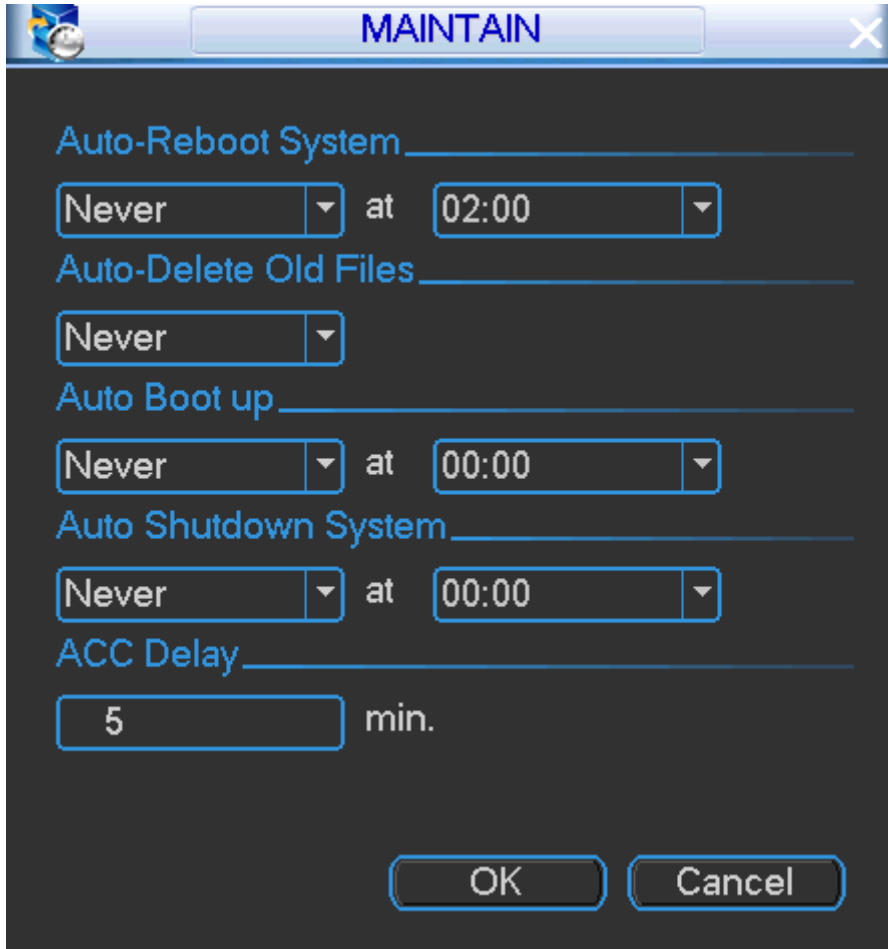


Figure 4-109

#### 4.4.4 Backup and Resume

It is to backup device record file, configuration information, log files, restore device configuration information or default settings.

##### 4.4.4.1 Backup and Resume Configuration

It is to copy current system configuration to other devices. It also supports import, create new folder, and delete folder and etc function.

#### Preparation

Device has connected to the USB device.

- Step 1 From Main menu->Advanced->Import/Export, Enter import/export interface. See Figure 4-110.

 **Note**

Click Refresh button to find the device if you go to the Import/export interface and then connect the USB device.

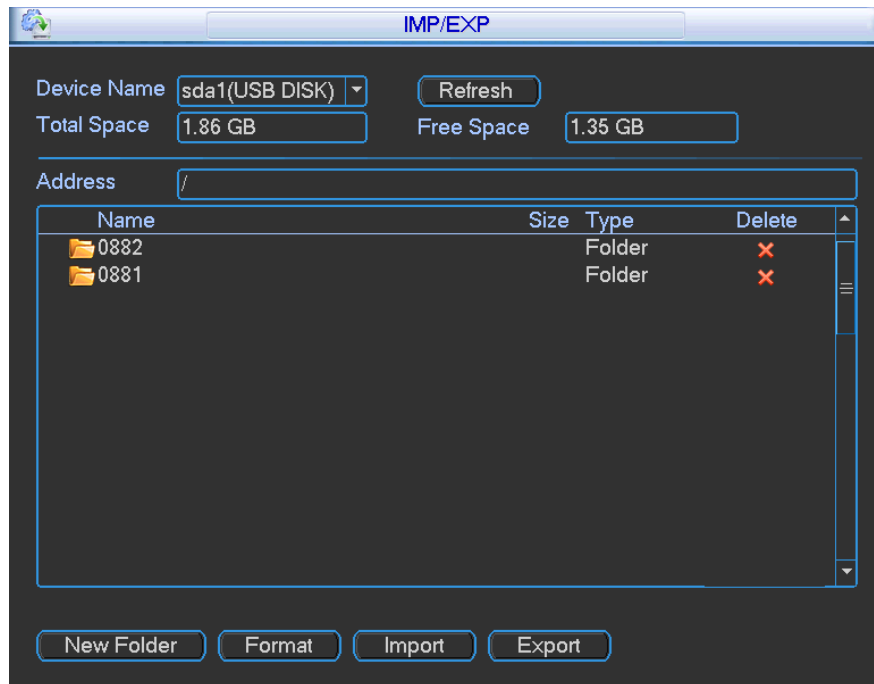


Figure 4-110

Step 2 Set parameters.

- Export: Please connect the peripheral device first and then go to the following interface. Click Export button, you can see there is a corresponding “Config\_Time” folder. Double click the folder, you can view some backup files.
- Import: Here you can import the configuration files from the peripheral device to current device. You need to select a folder first. You can see a dialogue box asking you to select a folder if you are selecting a file. System pops up a dialogue box if there is no configuration file under current folder. After successfully import, system needs to reboot to activate new setup.
- Format: Click Format button, system pops up a dialogue box for you to confirm current operation. System begins format process after you click the OK button.

 **Note:**

- System cannot open config backup interface again if there is backup operation in the process.
- System refreshes device when you go to the config backup every time and set current directory as the root directory of the peripheral device.
- If you go to the configuration backup interface first and then insert the peripheral device, please click Refresh button to see the newly added device.

#### 4.4.4.2 Backup Log

It is to backup system log file.

#### Preparation

Device has connected to the USB device.

Step 1 From Main menu->Info->Log,

Enter Log interface. See Figure 4-111.

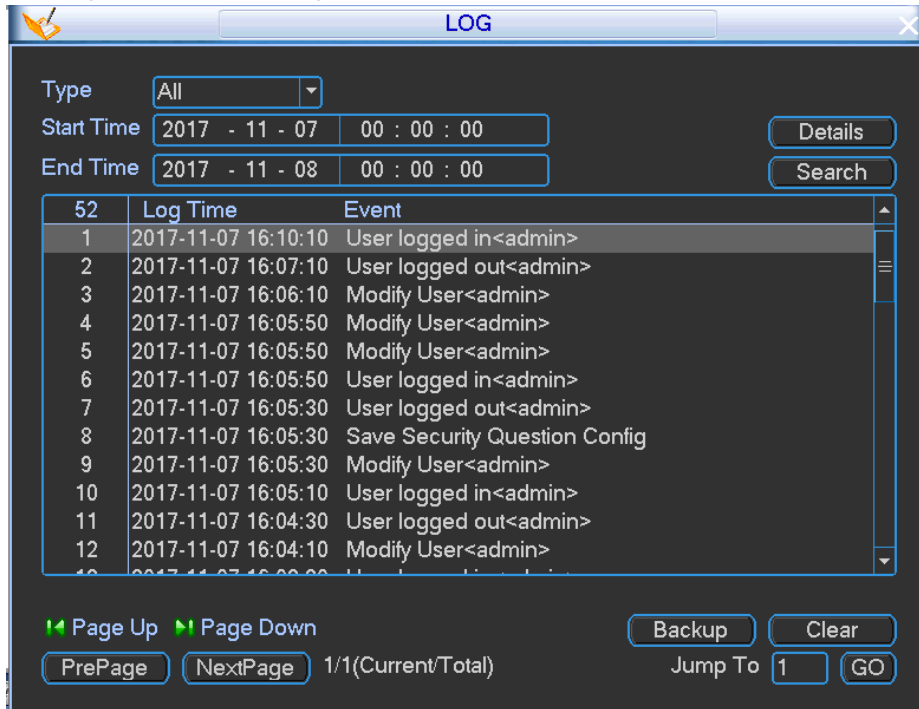


Figure 4-111

- Step 2 Select log type and then set start time and end time, click Search button. Device displays event name and occurred time. Click the Details button or double click the log item to view the detailed information.
- Step 3 Select logs and then click Backup button. Enter Backup interface. See Figure 4-112.

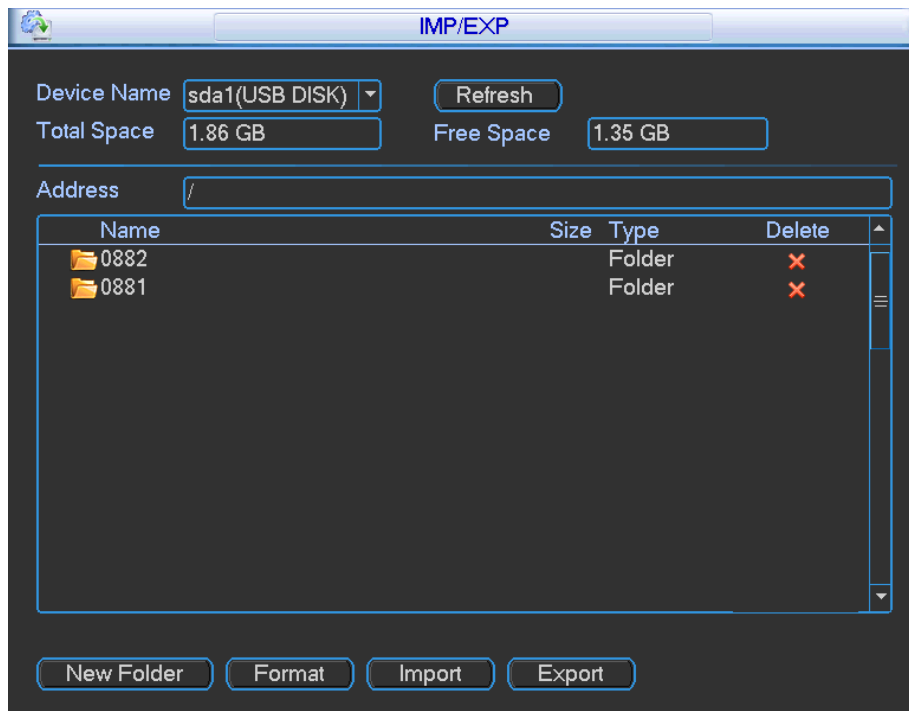


Figure 4-112

- Step 4 Select a folder you want to save logs.

Step 5 Click Start

Device pops up successfully backed up dialogue box.

Step 6 Click OK button.

#### 4.4.4.3 Default

When device is running slowly or configuration error occurred, you can use default function to try to fix the problem.



#### Caution!

- After some items restore the default settings, some customized information may become loss. Please be careful!
- Click restore default button, all system items restore factory default settings. Please be careful!

Step 1 From Main menu->Setting->Default,  
Enter default interface. See Figure 4-113.

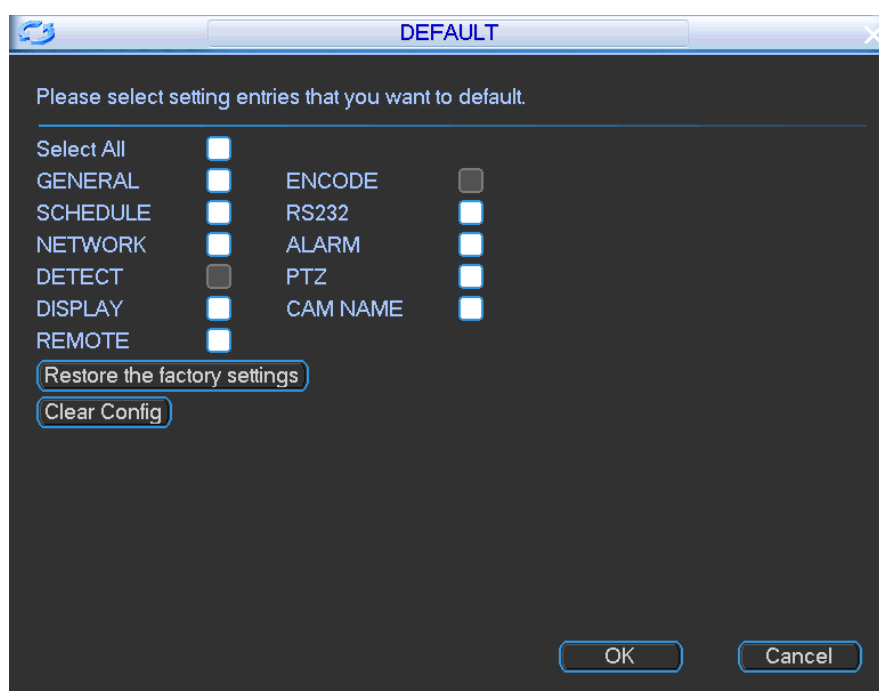


Figure 4-113

Step 2 Check an item (items) you want to restore factory default settings.

#### Note

Check All to select all items at the same time.

Step 3 Select corresponding operations.

- Clear config: Select an item (items) and then click Clear config button, device deletes current configurations and restore default settings.
- Click Restore the factory settings button, all system configurations restore factory default settings.

Step 4 Click OK

Device restores default settings after reboot.

#### 4.4.5 Upgrade Firmware

It is to upgrade device firmware via the connected peripheral device.

##### Preparation

Device has connected to the peripheral device that contains the firmware.

Step 1 From Main menu->Version->Log,  
Enter Log interface. See Figure 4-114.

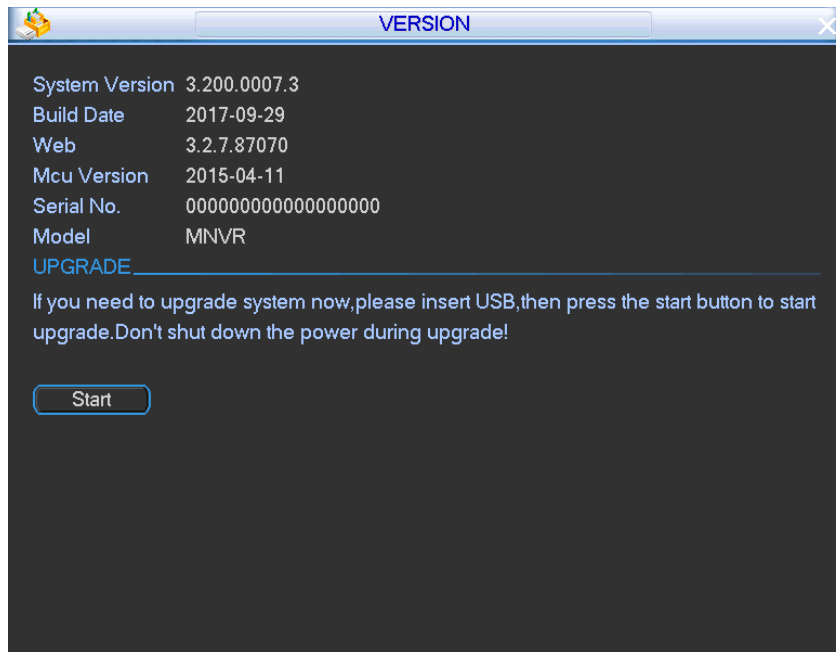


Figure 4-114

Step 2 Click Start,  
Enter system upgrade interface. See Figure 4-115.

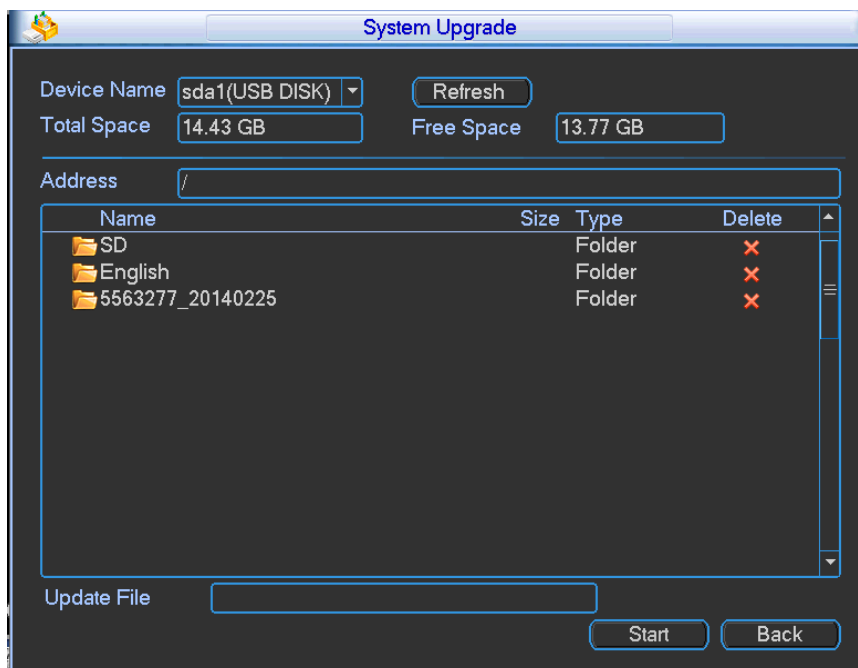


Figure 4-115



- Step 3 Select upgrade file and then click Start button.  
Device pops up dialogue box after upgrade is complete.
- Step 4 Click OK button.

#### 4.4.6 Sniffer

Using peripheral connected storage device to backup sniffer data. The backup data is for engineer to analyze network status.

##### Preparation

Device has connected to the peripheral device such as USB device.

- Step 1 From Main menu->Info->Network test,  
Enter network test interface.
- Step 2 Connect peripheral device such as USB device and then click Refresh button,  
Device detects peripheral device and displays its name.
- Step 3 Set Sniffer data path.
1. Click Browser,  
Enter browse interface. See Figure 4-116.

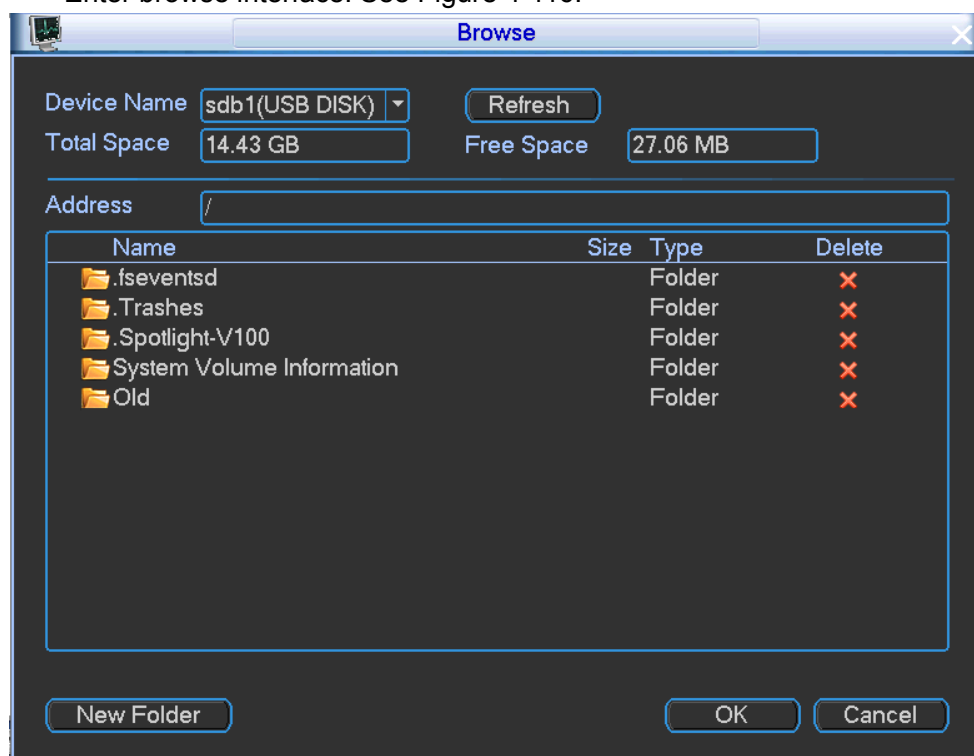




Figure 4-116

2. Set Sniffer data saved path.



##### Note

- Click refresh to view the latest total space, free space, and file list information.
  - Click  to release space.
  - Click New folder to create a new folder on the peripheral device.
3. Click OK.  
Enter Network Test interface.

Step 4 Click  to begin sniffer data.

 **Note**

- Collect data from one LAN port at one time.
- Exit network test if the sniffer begins. You can go to the WEB to view the video and etc.

Step 5 Click  to stop sniffer.

The backup data file name is Ethernet card name-Time.pcap. See Figure 4-117.

On the PC use Wireshark to open the sniffer file.

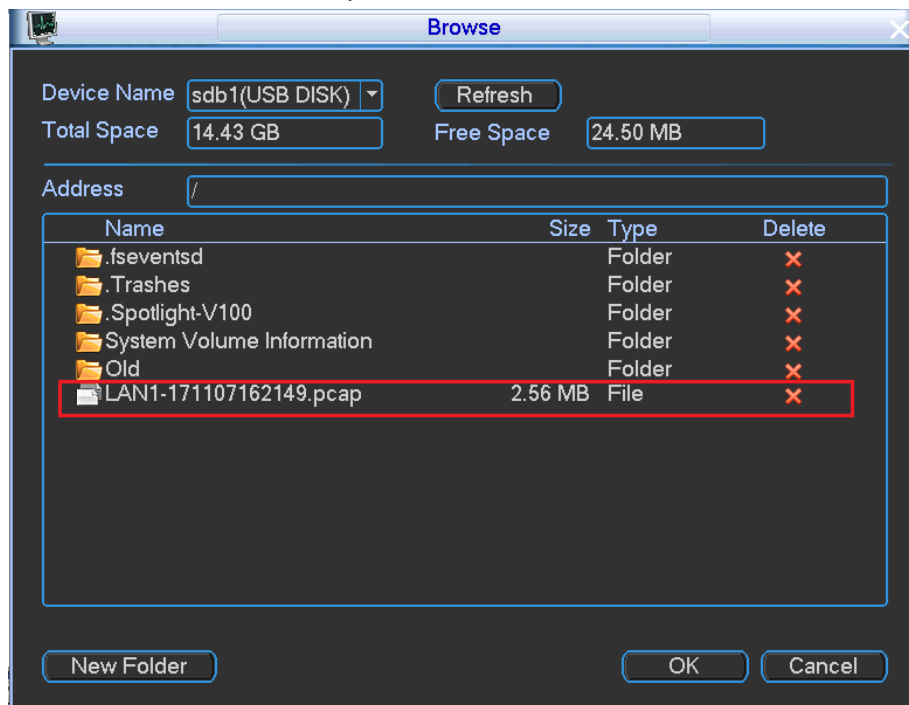


Figure 4-117

## 4.5 Shutdown

Double click shutdown button, system pops up a dialogue box for you to select. See Figure 4-118.

- Logout menu user: Log out menu. You need to input password when you login the next time.
- Restart application: Reboot device.
- Shutdown: System shuts down and turns off power.
- Restart system: System begins rebooting.
- Switch user: You can use another account to login.

If you shut down the device, there is a process bar for your reference, system waits for 3 seconds and then shut down (You cannot cancel).

Please note, sometimes you need to input the proper password to shut down the device.

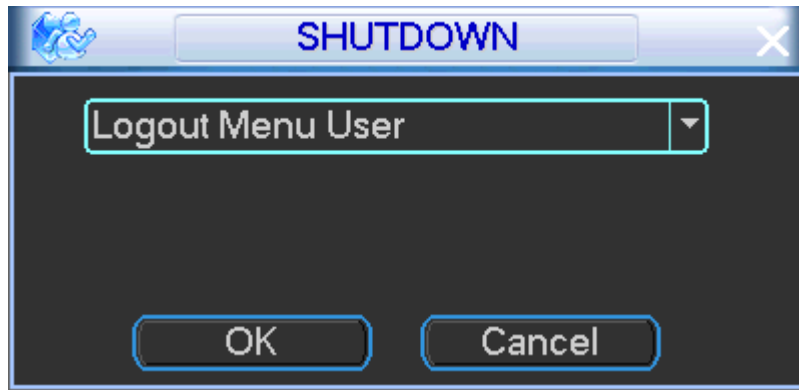


Figure 4-118

## 5 WEB OPERATION

There might be slightly difference in the interface due to different series.

### 5.1 Network Connection

Before web operation, please check the following items:

- Network connection is right
- NVR and PC network setup is right. Please refer to network setup(Setup ->Network)
- Use order ping `***.***.***.***`(\* NVR default IP address is 192.168.1.108) to check connection is OK or not. Usually the return TTL value should be less than 255.
- Open the IE and then input NVR IP address.
- System can automatically download latest web control and the new version can overwrite the previous one.
- If you want to un-install the web control, please run `uninstall webrec3.0.bat`. Or you can go to `C:\Program Files\webrec` to remove single folder. Please note, before you un-install, please close all web pages, otherwise the un-installation might result in error.
- Current series product supports various browsers such as Internet Explorer.

### 5.2 Device Initialization

If it is your first time to use the device or you have restored factory default setup, please set a login password of **admin** (system default user).



#### Note

For your device safety, please keep your login password of **admin** well after the initialization steps, and change the password regularly.

Please follow the steps listed below.

Step 1 Open the browser and then input the NVR IP address in the address column (Default IP address is 192.168.1.108.).

Step 2 Click Enter button.

Device displays device initialization interface. See Figure 5-1.

Device Initialization

1 Enter Password 2 Password Protection 3 Successful

Username admin

New Password

Weak Moderate Strong

Use a password that has 8 to 32 characters, it can be a combination of letter(s), number(s) and symbol(s) with at least two kinds of them.(please do not use special symbols like " ; : &)

Confirm Password

Next

Figure 5-1

Step 3 Set login password of **admin**.

- User name: The default user name is **admin**.
- Password/confirm password: The password ranges from 8 to 32 digitals. It can contain letters, numbers and special characters (excluding “'” , “”” , “;” , “:” , “&” ). The password shall contain at least two categories. Usually we recommend the strong password.



### WARNING

**STRONG PASSWORD RECOMMENDED-For your device own safety, please create a strong password of your own choosing. We also recommend you change your password periodically especially in the high security system.**

Step 4 Click Next, device goes to the following interface. See Figure 5-2.

Device Initialization

1 Enter Password 2 Password Protection 3 Successful

Email Address

Security Questions

Question 1 What is your favorite children's book?

Answer

Question 2 What was the first name of your first boss?

Answer

Question 3 What is the name of your favorite fruit?

Answer

Next

Figure 5-2

Step 5 Set security questions.



### Note

- After setting the security questions here, you can use the email you input here or answer the security questions to reset **admin** password. Refer to chapter 5.3 Reset password for detailed information.
- Cancel the email or security questions box and then click Next button to skip this step.
- Email: Input an email address for reset password purpose. Scan the QR code to reset the password, you need to receive the security code by the email. Input the security code to reset the password of **admin**. In case you have not input email address here or you need to update the email information, please go to the Setup->System->Account to set. Refer to chapter 5.6.5.5.1.2 Modify user for detailed information.
- Security question: Set security questions and corresponding answers. Properly answer the questions to reset **admin** password. In case you have not input security question here or you need to update the security question information, please go to the local menu->Setting->System->Account->Security question to set. Refer to chapter 4.3.6.6

Security question for detailed information.

 **Note**

If you want to reset password by answering security questions, please go to the local menu interface.

Step 6 Click OK to complete the device initialization setup. See Figure 5-3.

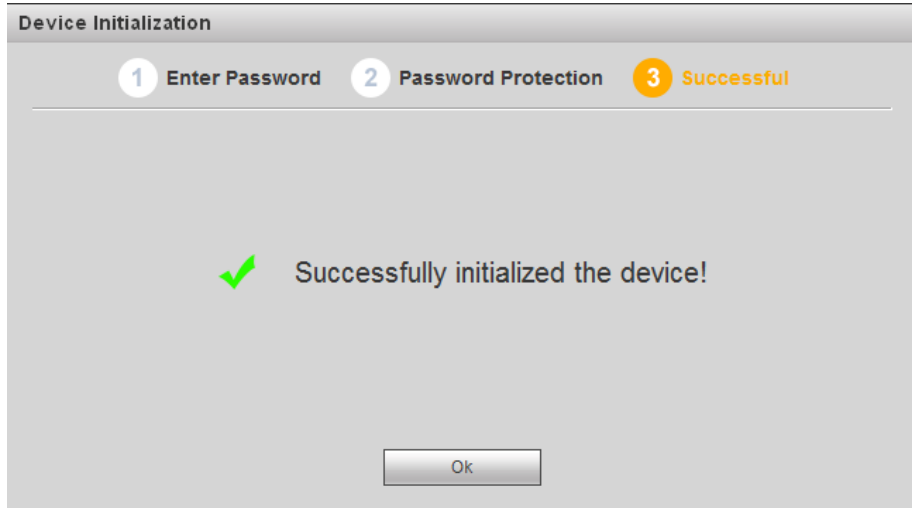


Figure 5-3

### 5.3 Reset Password

If you forgot **admin** password, you can reset the password by email or by answering the security questions (local menu only).

Please follow the steps listed below.

Step 1 Go to the device login interface. See Figure 5-4.



Figure 5-4

Step 2 Click Forgot password, enter the following interface. See Figure 5-5.

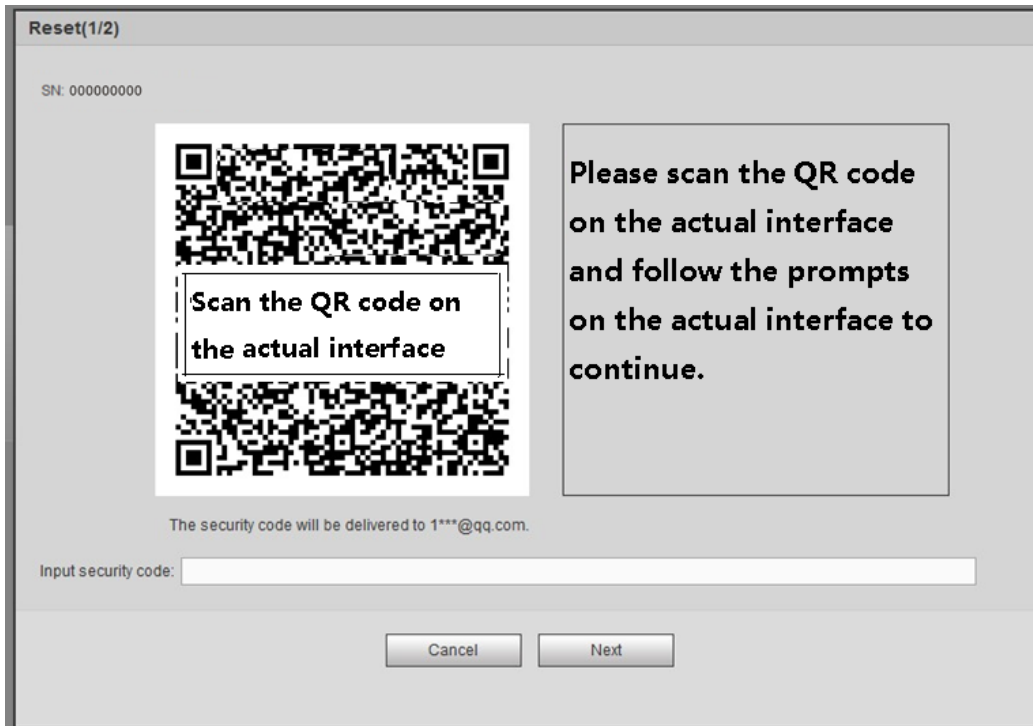


Figure 5-5

Step 3 Follow the prompts on the interface and then scan the QR code to get the security code.



**WARNING**

- ✧ For the same QR code, max scan twice to get two security codes. Refresh the QR code if you want to get security code again.
- ✧ The security code on you email is only valid for 24 hours.
- ✧ After five times security code failure, the **admin** account will be locked for 5 minutes.

Step 4 Input the security code on the email and then click Next button.

Step 5 Input new password and then confirm.



**WARNING**

**STRONG PASSWORD RECOMMENDED-For your device own safety, please create a strong password of your own choosing. The password shall be at least 8-digit containing at least two types of the following categories: letters, numbers and symbols. We also recommend you change your password periodically especially in the high security system.**

Step 6 Click OK button to complete the setup.

## 5.4 Login

Open browser and input NVR address in the address column. For example, if your NVR IP is 10.10.3.16, then please input http:// 10.10.3.16 in IE address column. See Figure 5-6.

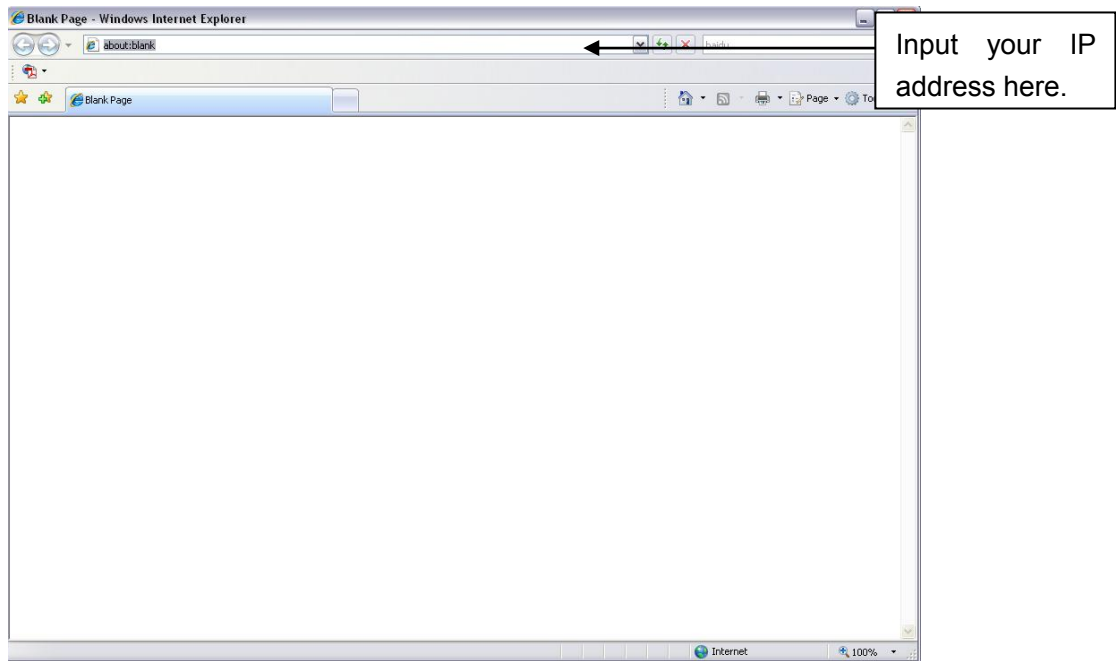


Figure 5-6

System pops up warning information to ask you whether install webrec.cab control or not. Please click yes button.

If you can't download the ActiveX file, please modify your settings as follows. See Figure 5-7.

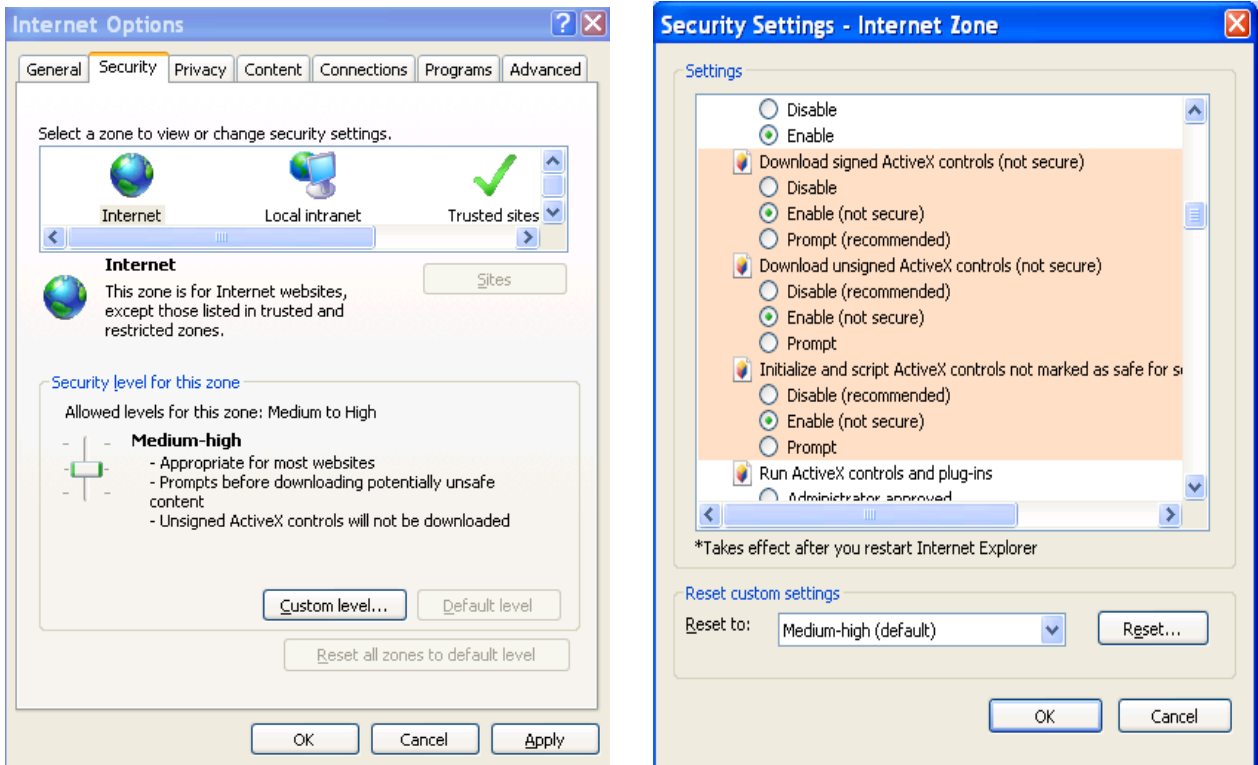


Figure 5-7

After installation, the interface is shown as below. See Figure 5-8.

Please input your user name and password.

Default factory name is **admin** and password is what you set in chapter 5.2 Device Initialization.

Click Login to login.





Figure 5-8

## 5.5 Main Interface

After you logged in, you can see the main interface. See Figure 5-9.



Figure 5-9

This main window can be divided into the following sections.

- Section 1: there are five function buttons: Preview (chapter 5.5.1), Setup (chapter 5.6), Playback (chapter 5.8), Alarm (chapter 5.9), Info (chapter 5.7) and logout (chapter 5.10).
- Section 2: There are channel numbers.

Please refer to Figure 5-10 for main stream (M) and sub stream (S) switch information.

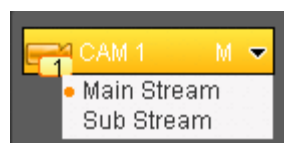


Figure 5-10

- Section 3: Start dialogue button.

You can click this button to enable audio talk. Click **【▼】** to select bidirectional talk mode. There are four options: DEFAULT, G711a, G711u, PCM, and AMR. After you enable the bidirectional talk, the Start talk button becomes End Talk button and it becomes yellow. See Figure 5-11.



Figure 5-11

- Section 4: Instant record button. Click it, the button becomes yellow and system begins manual record. See Figure 5-12. Click it again, system restores previous record mode..



Figure 5-12

- Section 5: Local play button.

The Web can playback the saved (Extension name is dav) files in the PC-end.

Click local play button, system pops up the following interface for you to select local play file. See Figure 5-13.



Figure 5-13

- Section 6: From the left to the right, you can see video quality/fluency/ full screen/vertical-sync/1-window/4-window/6-window/8-window/9-window. You can set video fluency and real-time feature priority.
- Section 7: PTZ operation panel. Please refer to chapter 5.5.2 for detailed information.
- Section 8: Image setup and alarm setup. Please refer to chapter 5.5.3 for detailed information.
- Section 9: It is to display several channels at one window. Please refer to chapter 5.5.4 for detailed information.

### 5.5.1 Real-time Monitor

In section 2, left click the channel name you want to view, you can see the corresponding video in current window.

On the top left corner, you can view device IP(10.10.6.129), channel number(1), network monitor

bit stream(2466Kbps) and stream type (M=main stream. S=Sub stream). See Figure 5-14.

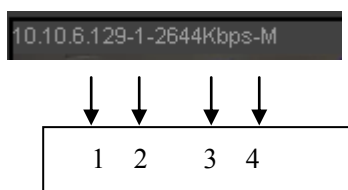


Figure 5-14

On the top right corner, there are six unction buttons. See Figure 5-15.

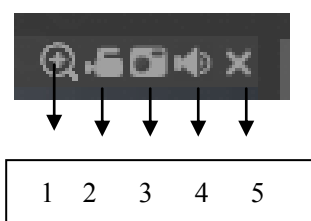


Figure 5-15

- 1: Digital zoom: Click this button and then left drag the mouse in the zone to zoom in. right click mouse system restores original status.
- 2: Local record. When you click local record button, the system begins recording and this button becomes highlighted. You can go to system folder RecordDownload to view the recorded file.
- 3: Snapshot picture. You can snapshot important video. All images are memorized in system client folder PictureDownload (default).
- 4: Audio :Turn on or off audio.(It has no relationship with system audio setup )
- 5: Close video.

### 5.5.2 PTZ

Before PTZ operation, please make sure you have properly set PTZ protocol. (Please refer to chapter 4.2.2).

There are eight direction keys. In the middle of the eight direction keys, there is a 3D intelligent positioning key.

Click 3D intelligent positioning key, system goes back to the single screen mode. Drag the mouse in the screen to adjust section size. It can realize PTZ automatically.

Please refer to the following sheet for PTZ setup information.

Parameter	Function
Scan	<ul style="list-style-type: none"> <li>● Select Scan from the dropdown list.</li> <li>● Click Set button, you can set scan left and right limit.</li> <li>● Use direction buttons to move the camera to you desired location and then click left limit button. Then move the camera again and then click right limit button to set a right limit.</li> </ul>
Preset	<ul style="list-style-type: none"> <li>● Select Preset from the dropdown list.</li> <li>● Turn the camera to the corresponding position and Input the preset value. Click Add button to add a preset,.</li> </ul>

Parameter	Function
Tour	<ul style="list-style-type: none"> <li>● Select Tour from the dropdown list.</li> <li>● Input preset value in the column. Click Add preset button, you have added one preset in the tour.</li> <li>● Repeat the above procedures you can add more presets in one tour.</li> <li>● Or you can click delete preset button to remove one preset from the tour.</li> </ul>
Pattern	<ul style="list-style-type: none"> <li>● Select Pattern from the dropdown list.</li> <li>● You can input pattern value and then click Start button to begin PTZ movement such as zoom, focus, iris, direction and etc. Then you can click Add button to set one pattern.</li> </ul>
Aux	<ul style="list-style-type: none"> <li>● Please input the corresponding aux value here.</li> <li>● You can select one option and then click AUX on or AUX off button.</li> </ul>
Light and wiper	You can turn on or turn off the light/wiper.

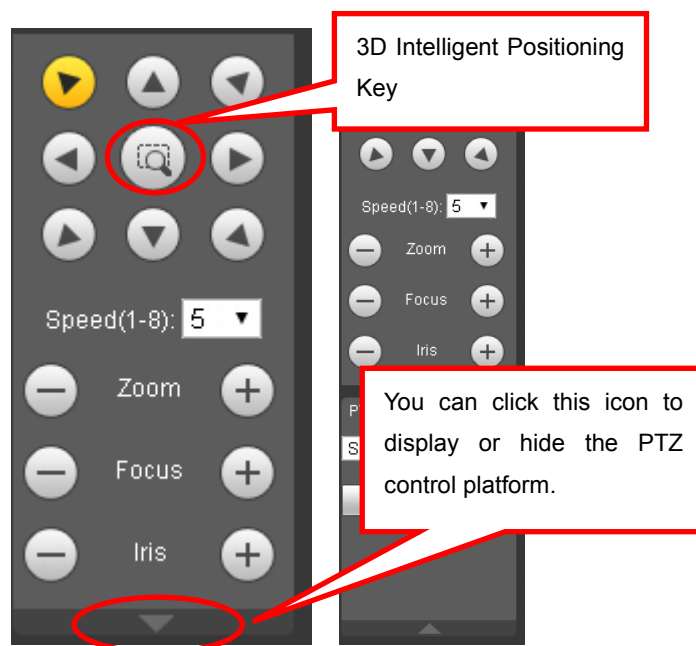


Figure 5-16

### 5.5.3 Image/Relay-out

Select one monitor channel video and then click Image button in section 8, the interface is shown as Figure 5-17.

#### 5.5.3.1 Image

Here you can adjust its brightness, contrast, hue and saturation. (Current channel border becomes green).

Or you can click Reset button to restore system default setup.

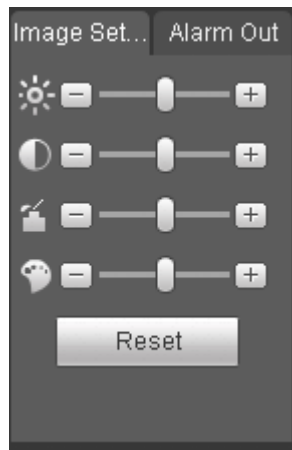


Figure 5-17

### 5.5.3.2 Relay output

Here you can select alarm output channel, the select channel alarm mode becomes manual when the alarm is enabled. See Figure 5-18. It is corresponding to the alarm output 1/2 of the rear panel. Please refer to chapter 2.7.1 for detailed information.



Figure 5-18

### 5.5.4 Zero-channel encoding

System allows you to preview several channels on one channel. It supports 1/4-window. See Figure 5-19.

**Please note only the product of this icon supports current function.**



Figure 5-19

## 5.6 Setup

### 5.6.1 Remote

#### 5.6.1.1 Remote Device

On the main interface, from Setup->Camera->Remote, you can go to an interface shown as Figure 5-20.

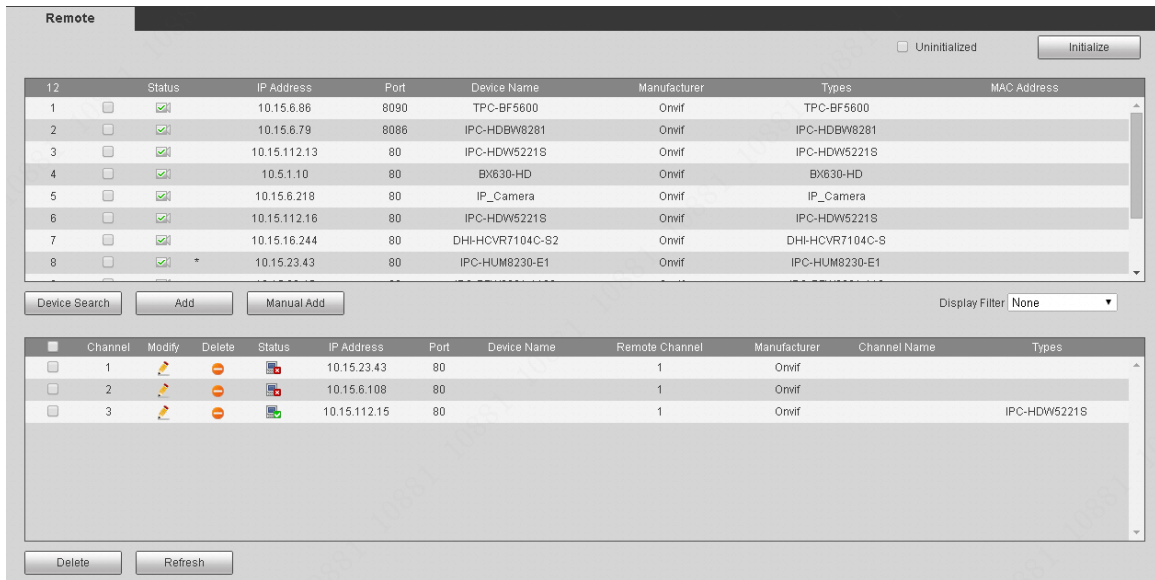








Figure 5-20

Please refer to the following sheet for log parameter information.

Parameter	Function
Device search	Click Device search button, you can view the searched device information on the list. It includes device IP address, port, device name, manufacturer and type.
Uninitialized	Click to search the initialized devices. Select an uninitialized device and then click the Initialize button to set the account. Refer to chapter 5.6.1.1.1 Initialize Camera for detailed information.
Preview	Click  to view the preview video of the remote device.
Add	Select a device in the list and then click Add button, system can connect the device automatically and add it to the Added device list. Or you can double click one item in the list to add a device.
Modify	Click  or any device in the Added device list, you can change the corresponding channel setup.
Delete	Click  , you can delete the remote connection of the corresponding channel.
Connection status	 : Connection succeeded.  : Connection failed.
Delete	Select a device in the Added device list and then click Delete button, system can disconnect the device and remove it from the Added device list.

Parameter	Function
Manual Add	<p>Click it, the interface is shown as in Figure 5-26. Here you can add network camera manually. Refer to chapter 5.6.1.1.3 Manual Add for detailed information.</p> <p> <b>Note</b></p> <ul style="list-style-type: none"> <li>● System supports manufactures such as Panasonic, Sony, Dynacolor, Samsung, AXIS, Arecont, Dahua and Onvif standard protocol.</li> <li>● If you do not input IP address here. System uses default IP 192.168.0.0 and system does not connect to this IP.</li> <li>● Cannot add two devices at the same time. Click OK button here, system only connect to the corresponding device of current channel.</li> </ul>
Export	<p>Click it, system can export the added device list to your local PC. The export file is .CVS file. The information includes IP address, port, remote channel number, manufacturer, user name, password and etc.</p>
Import	<p>Click it, you can import the setup file to the device. If the imported IP has conflicted with current added device, system pops up a dialogue box to remind you. You have two options:</p> <ul style="list-style-type: none"> <li>● OK: Click OK button, system uses the imported setup to overlay current one.</li> <li>● Cancel: Click Cancel button, system adds the new IP setup.</li> </ul>

#### 5.6.1.1.1 Initialize Camera

It is to initialize connected remote device and change its login password and IP address.

### Steps:

Step 1 From main interface->Setup>Camera->Remote.

Enter Remote interface. See Figure 5-20.

Step 2 Click Device search and check the Uninitialized box.

Device displays uninitialized camera. See Figure 5-21.

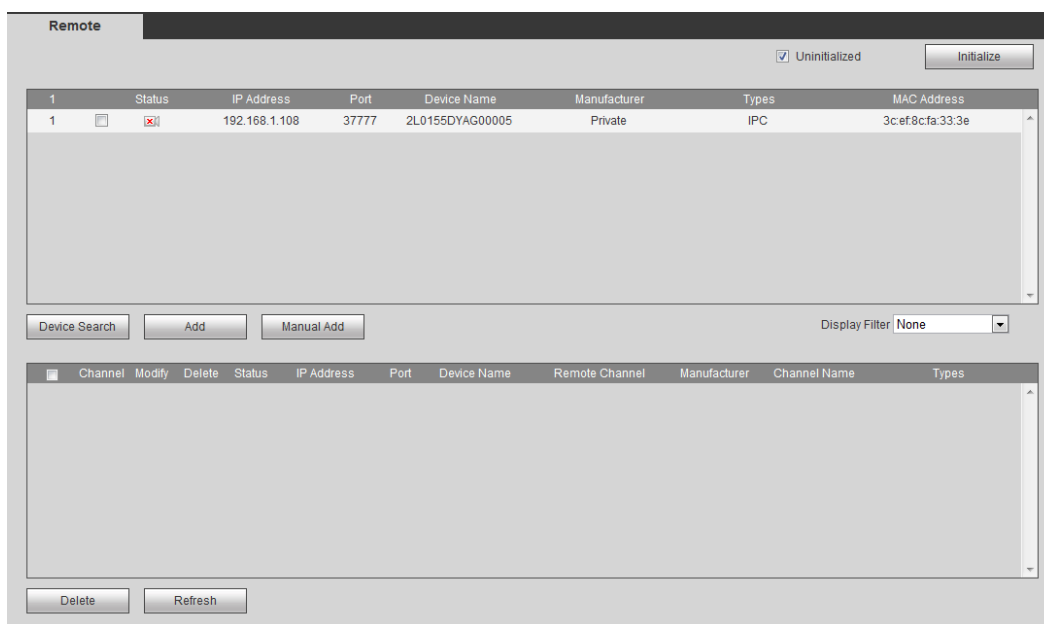


Figure 5-21

- Step 3 Select a camera to be initialized and then click Initialize button. Device displays password setup interface. See Figure 5-22.

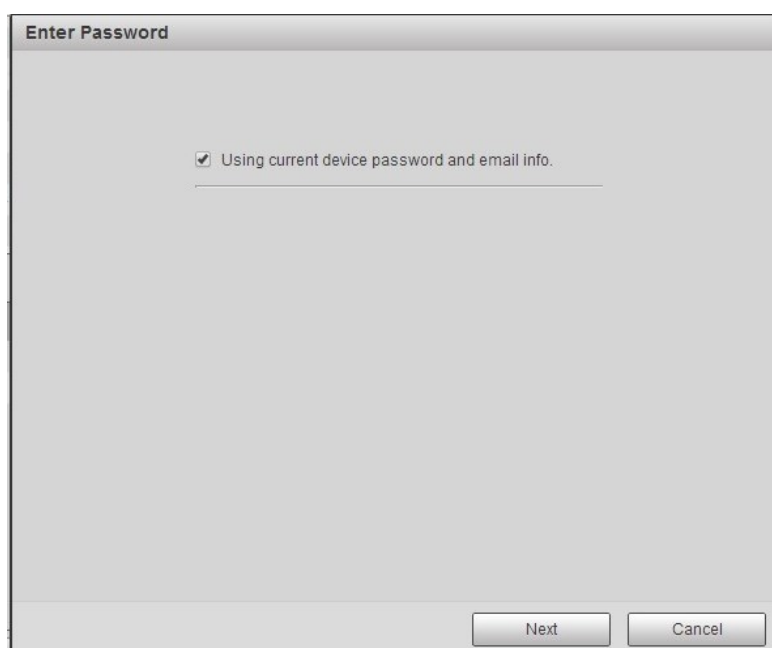


Figure 5-22

- Step 4 Set camera password.

- Using current device password and email: Check the box to use NVR current admin account and email information. There is no need to set password and email. Please go to step 5.

If you cancel the Using current device password and email info box, device enters Figure 5-23.

- User name/password: The user name is **admin**. The password ranges from 8 to 32 digitals. It can contain letters, numbers and special characters (excluding “”, “()”, “,”, “.”, “&”) . The password shall contain at least two categories. Usually we



recommend the strong password.



WARNING

**STRONG PASSWORD RECOMMENDED-For your device own safety, please create a strong password of your own choosing. We also recommend you change your password periodically especially in the high security system.**

Enter Password

Using current device password and email info.

---

Username            admin

New Password       

                         Weak Moderate Strong

Confirm Password   

Next

Figure 5-23

Step 5 Click Next button.

Enter input email interface. See Figure 5-24.

Email: Input an email address for reset password purpose.



**Note**

Cancel the box and then click Next or Skip if you do not want to input email information here.

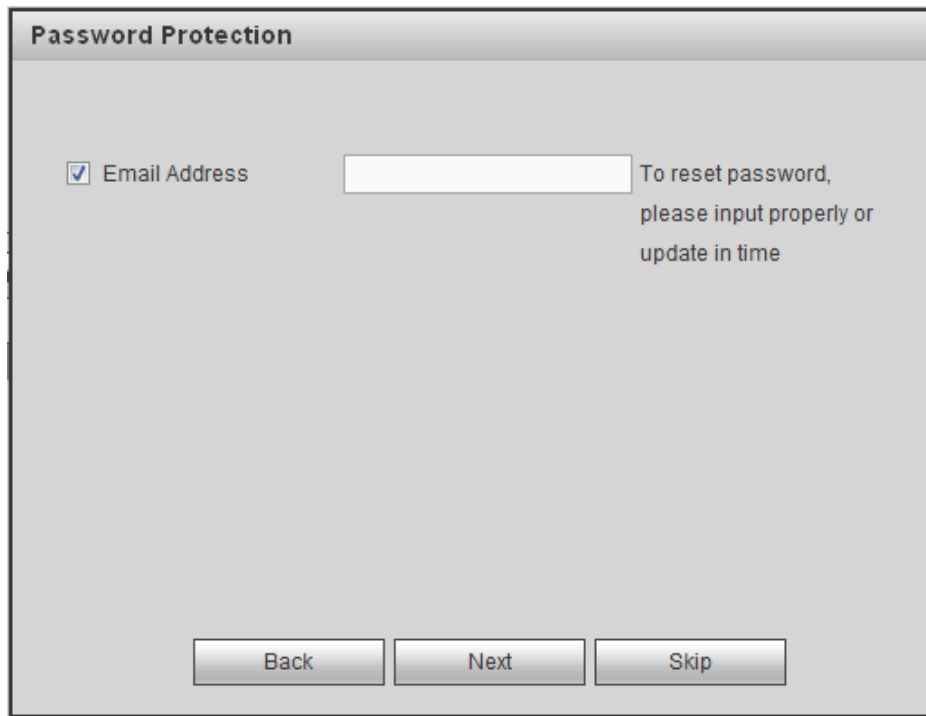


Figure 5-24

- Step 6 Click Next button.  
 Device begins initializing camera. See Figure 5-25.

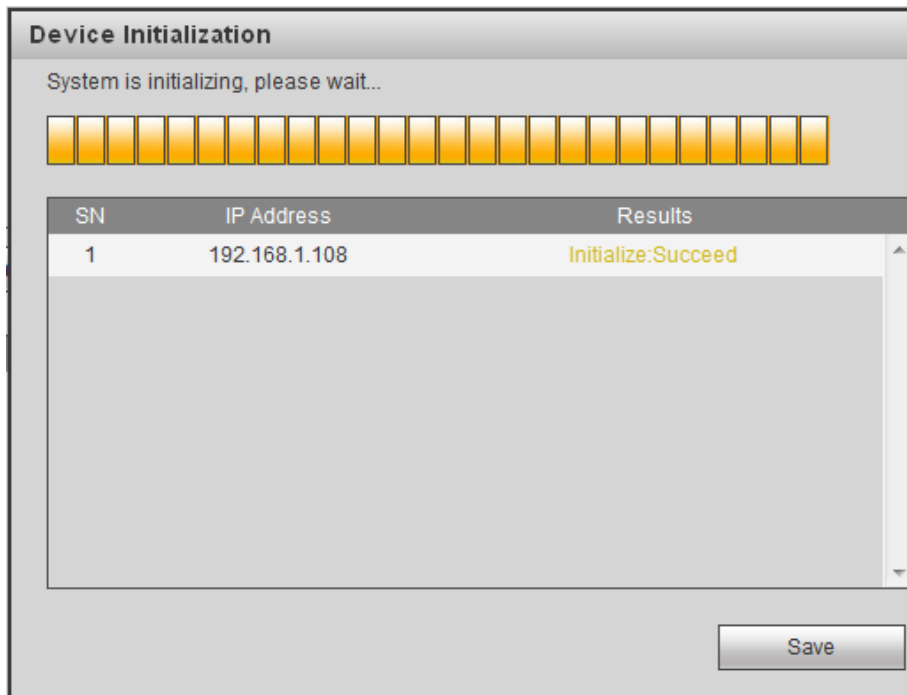


Figure 5-25

- Step 7 Click Save to complete the initialization.

#### 5.6.1.1.2 Auto Add

- Step 1 From main interface->Setup->Camera->Remote.  
 Step 2 Click Device Search, device displays searched results.

Step 3 Double click an IP address or select an IP address and then click Add button, it is to register the device to the NVR. Device supports batch add.



#### 5.6.1.1.3 Manual Add


Step 1 From main interface->Setup->Camera->Remote.

Step 2 Click Manual Add, device displays Manual add interface. See Figure 5-26.

Figure 5-26

Please refer to the following sheet for parameter information.

Parameter	Function
Manufacturer	<p>Please select from the dropdown list.</p> <p> <b>Note</b>            Different series products may support different manufacturers, please refer to the actual product.</p>
IP address	Input remote device IP address.
TCP port	Input TCP port of the remote device. The default setup is 37777.
User name/password	The user name and password to login the remote device.
Channel No.	<p>Input channel amount or click the Connect button to get the channel amount of the remote device.</p> <p> <b>Note</b>            We recommend click Connect button to get remote device channel amount, the manual add operation may result in failure if the input channel amount is not right.</p>

Parameter	Function
Remote channel No.	After getting the remote device channel amount, click Setup to select a channel.   <b>Note</b> Click to select one or more remote channel numbers here.
Channel	The local channel number you want to add. One channel name has corresponding one channel number.
Decode buffer	There are three items: realtime, local, fluent.



### Important

- You can edit the exported .CVS file. **Do not change the file format; otherwise it may result in import failure.**
- Does not support customized protocol import and export.
- The import and export device shall have the same language format.

#### 5.6.1.2 Conditions

Here you can view device property information. The setups become valid immediately after you set.

On the main interface, from Setup->Camera->Conditions, enter conditions interface. See Figure 5-27.

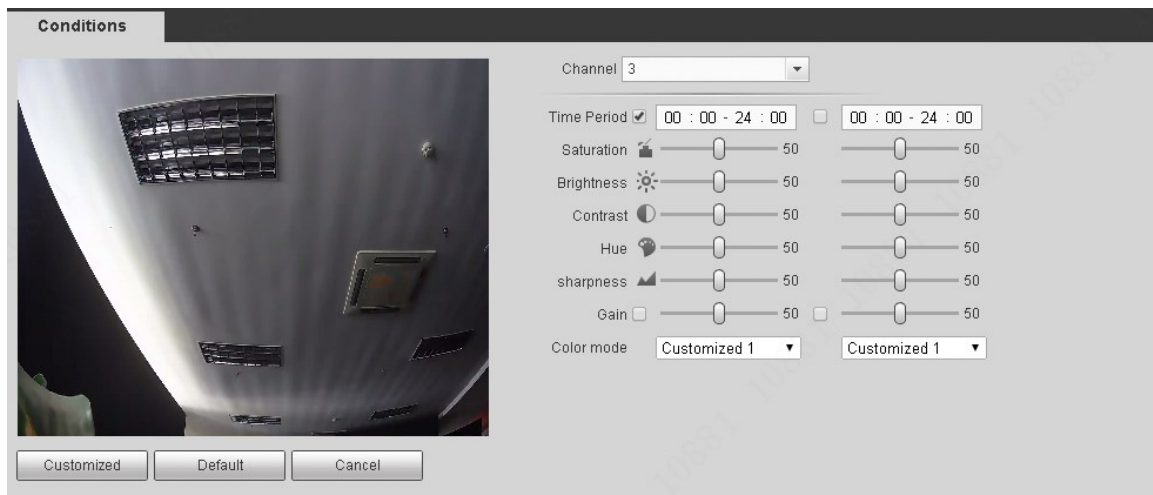


Figure 5-27

Please refer to the following sheet for detailed information.

Parameter	Function
Channel	Please select a channel from the dropdown list.
Period	It divides one day (24 hours) to two periods. You can set different hue, brightness, and contrast for different periods.
Hue	It is to adjust monitor video brightness and darkness level. The default value is 50.  The bigger the value is, the large the contrast between the bright and dark section is and vice versa.

Brightness	It is to adjust monitor window bright. The larger the number is, the bright the video is. When you input the value here, the bright section and the dark section of the video will be adjusted accordingly.
Contrast	It is to adjust monitor window contrast. The larger the number is, the higher the contrast is. You can use this function when the whole video bright is OK but the contrast is not proper. Please note the video may become hazy if the value is too low. If this value is too high, the dark section may lack brightness while the bright section may over exposure.
Saturation	It is to adjust monitor window saturation. The larger the number, the strong the color is.
Gain	The gain is to set the gain value. The default value may vary due to different device models. The smaller the value, the low the noise. But the brightness is also too low in the dark environments. It can enhance the video brightness if the value is high. But the video noise may become too clear.
White level	It is to enhance video effect.
Color mode	It is to set color mode. Color modes include: standard, soft, customized and etc.

### 5.6.1.3 Video and Audio

#### 5.6.1.3.1 Encode

On the main interface, from Setup->Camera->Encode->Encode, the encode interface is shown as below. See Figure 5-28.

The screenshot shows the 'Encode' configuration window with the following settings:

- Channel:** 3
- Main Stream:**
  - Code-Stream Type: Regular
  - Compression: H.264
  - Resolution: 1920\*1080(1920x1080)
  - Frame Rate(FPS): 30
  - Bit Rate Type: CBR
  - Bit Rate: 2048 Kb/S
  - Reference Bit Rate: 0-0Kb/S
- Sub Stream:**
  - Video Enable
  - Compression: H.264
  - Resolution: D1
  - Frame Rate(FPS): (empty)
  - Bit Rate Type: CBR
  - Bit Rate: 1024 Kb/S
  - Reference Bit Rate: 0-0Kb/S

Buttons: Save, Refresh

Figure 5-28

Please refer to the following sheet for detailed information.

Parameter	Function
Channel	Please select a channel from the dropdown list.
Video enable	Check the box here to enable sub stream video. This item is enabled by default.
Code stream type	It includes main stream, motion stream and alarm stream. You can select different encode frame rates form different recorded events. System supports active control frame function (ACF). It allows

	<p>you to record in different frame rates.</p> <p>For example, you can use high frame rate to record important events, record scheduled event in lower frame rate and it allows you to set different frame rates for alarm record.</p>
Compression	The main bit stream and the extra stream supports H.264, MJPG.
Resolution	System supports various resolutions, you can select from the dropdown list.
Frame Rate	PAL: 1~25f/s; NTSC: 1~30f/s.
Bit Rate	<ul style="list-style-type: none"> <li>● Main stream: You can set bit rate here to change video quality. The large the bit rate is, the better the quality is. Please refer to recommend bit rate for the detailed information.</li> <li>● Extra stream: In CBR, the bit rate here is the max value. In dynamic video, system needs to low frame rate or video quality to guarantee the value. The value is null in VBR mode.</li> </ul>
Reference bit rate	Recommended bit rate value according to the resolution and frame rate you have set.
Audio enable	System supports G711a/PCM/G711μ. The options may vary due to different series.
Watermark enable	<p>This function allows you to verify the video is tampered or not.</p> <p>Here you can select watermark bit stream, watermark mode and watermark character. Default character is DigitalCCTV. The max length is 85-digit. The character can only include number, character and underline.</p>

### 5.6.1.3.2 Snapshot

On the main interface, from Setup->Camera->Encode->Snapshot, the snapshot interface is shown as in Figure 5-29.

Figure 5-29

Please refer to the following sheet for detailed information.

Parameter	Function
Snapshot type	<p>There are two modes: Regular(schedule) and Event (activation).</p> <ul style="list-style-type: none"> <li>● Regular snapshot is valid during the specified period you</li> </ul>

	set. <ul style="list-style-type: none"> <li>● Activation snapshot only is valid when tampering alarm or local activation alarm occurs.</li> </ul>
Image size	It is to set snapshot picture size.
Quality	It is to set the image quality. There are six levels.
Interval	It is to set snapshot frequency.
Copy	Click it; you can copy current channel setup to other channel(s).

### 5.6.1.3.3 Overlay

On the main interface, from Setup->Camera->Encode->Overlay, the video overlay interface is shown as in Figure 5-30.

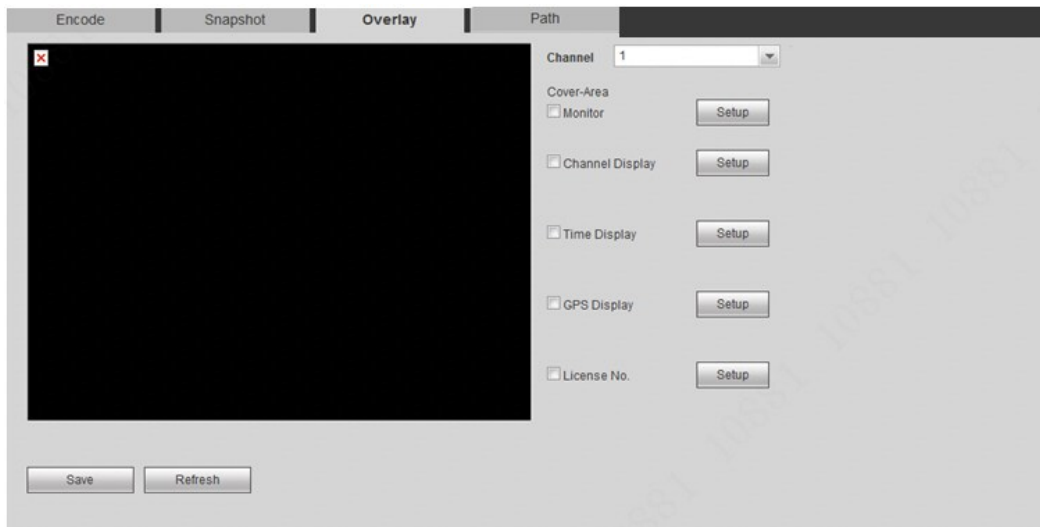


Figure 5-30

Please refer to the following sheet for detailed information.

Parameter	Function
Cover-area (Privacy mask)	Check Preview or Monitor first. Click Set button, you can privacy mask the specified video in the preview or monitor video. System max supports 4 privacy mask zones.
Time Title	You can enable this function so that system overlays time information in video window. You can use the mouse to drag the time title position. You can view time title on the live video of the WEB or the playback video.
Channel Title	You can enable this function so that system overlays channel information in video window. You can use the mouse to drag the channel title position. You can view channel title on the live video of the WEB or the playback video.
GPS Overlay	Overlay GPS information such as (speed, longitude, latitude) on the video.

Plate Overlay	Overlay some plate information on the video.
---------------	--

#### 5.6.1.3.4 Path

On the main interface, from Setup->Camera->Encode->Path, the storage path interface is shown as in Figure 5-31.

Here you can set snap image saved path and the record storage path. The default setup is C:\PictureDownload and C:\RecordDownload.

Please click the Save button to save current setup.

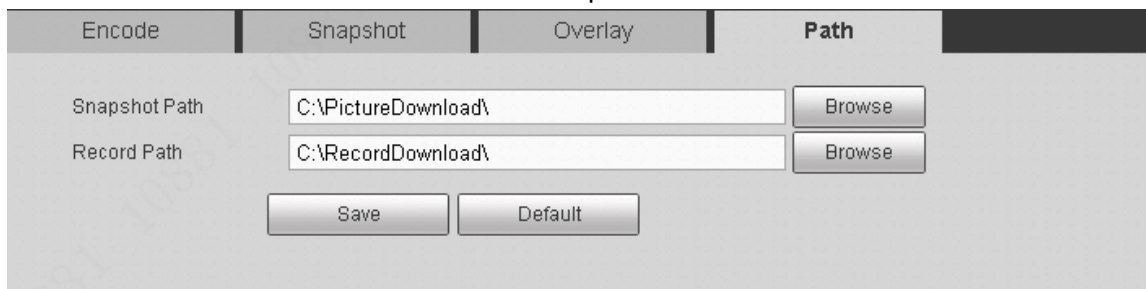


Figure 5-31

#### 5.6.1.4 Channel Name

Here you can set channel name.

On the main interface, from Setup->Camera->CAM Name, enter channel name interface. See Figure 5-32.

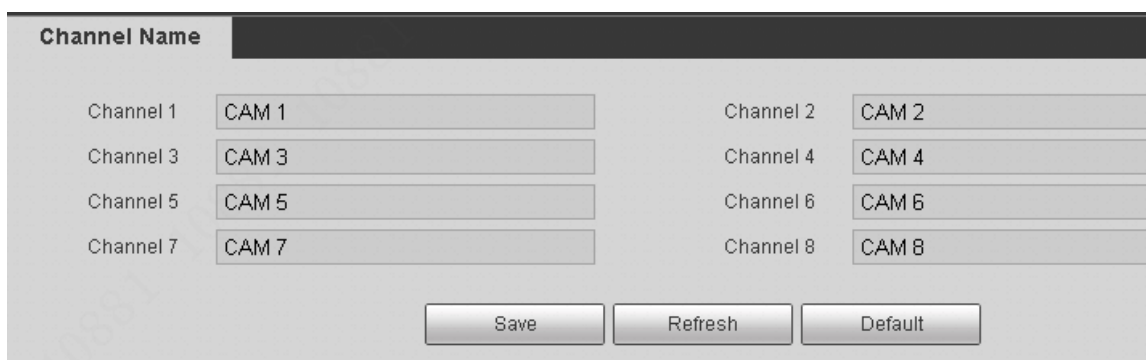


Figure 5-32

### 5.6.2 Network

#### 5.6.2.1 TCP/IP

On the main interface, from Setup->Network->TCP/IP, the TCP/IP interface is shown as in Figure 5-33.



**TCP/IP**

IP Version: IPv4

MAC Address: 00 . 00 . 23 . 34 . 45 . 55

Mode:  Static  DHCP

IP Address: 10 . 15 . 23 . 31

Subnet Mask: 255 . 255 . 0 . 0

Default Gateway: 10 . 15 . 0 . 1

Preferred DNS: 8 . 8 . 8 . 8

Alternate DNS: 8 . 8 . 4 . 4

MTU: 1500

LAN Download

Save Refresh Default

Figure 5-33

Please refer to the following sheet for detailed information.

Parameter	Function
Mode	<p>There are two modes: static mode and the DHCP mode.</p> <ul style="list-style-type: none"> <li>● The IP/submask/gateway are null when you select the DHCP mode to auto search the IP.</li> <li>● If you select the static mode, you need to set the IP/submask/gateway manually.</li> <li>● If you select the DHCP mode, you can view the IP/submask/gateway from the DHCP.</li> <li>● If you switch from the DHCP mode to the static mode, you need to reset the IP parameters.</li> </ul>
Mac Address	It is to display host Mac address.
MTU	Max transmission unit.
IP Version	It is to select IP version. IPV4 or IPV6. You can access the IP address of these two versions.
IP Address	Please use the keyboard to input the corresponding number to modify the IP address and then set the corresponding subnet mask and the default gateway.
Subnet Mask	Input subnet mask according to your device IP.
Default Gateway	Input default gateway according to your device IP.
Preferred DNS	DNS IP address.
Alternate DNS	Alternate DNS IP address.
<b>For the IP address of IPv6 version, default gateway, preferred DNS and</b>	

<b>alternate DNS, the input value shall be 128-digit. It shall not be left in blank.</b>	
LAN load	System can process the downloaded data first if you enable this function. The download speed is 1.5X or 2.0X of the normal speed.

### 5.6.2.2 Connection

On the main interface, from Setup->Network->Connection->Connection, the connection interface is shown as in Figure 5-34.

Figure 5-34

Please refer to the following sheet for detailed information.

Parameter	Function
Max connection	It is the max Web connection for the same device. The value ranges from 0 to 128. The default setup is 128.
TCP port	The default value is 37777. You can input the actual port number if necessary.
UDP port	The default value is 37778. You can input the actual port number if necessary.
HTTP port	The default value is 80. You can input the actual port number if necessary.
HTTPS	The default value is 443. You can input the actual port number if necessary.
RTSP port	The default value is 554.

### 5.6.2.3 HTTPS

In this interface, you can set to make sure the PC can successfully login via the HTTPS. It is to guarantee communication data security. The reliable and stable technology can secure the user information security and device safety.

On the main interface, from Setup->Network->Connection->HTTPS, enter HTTPS interface. See Figure 5-35.



#### Note

- You need to implement server certificate again if you have changed device IP.

- You need to download root certificate if it is your first time to use HTTPS on current PC.

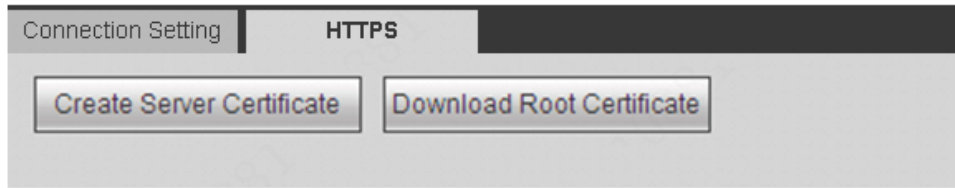


Figure 5-35

#### 5.6.2.3.1 Create Server Certificate

If it is your first time to use this function, please follow the steps listed below.

In Figure 5-35, click  button, input country name, state name and etc. Click Create button. See Figure 5-36.

#### Note

Please make sure the IP or domain information is the same as your device IP or domain name.

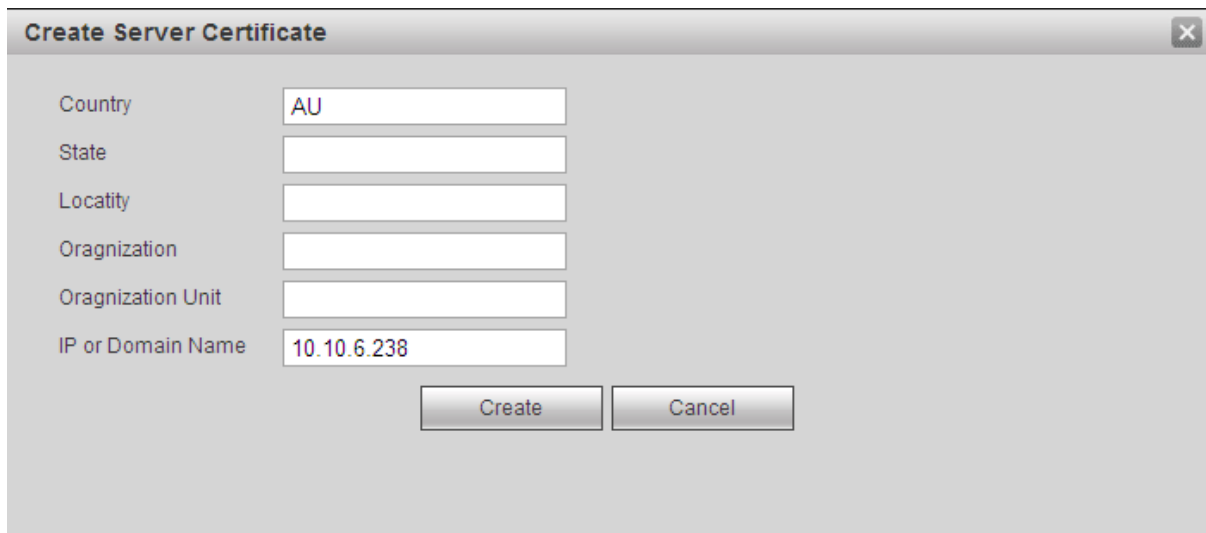


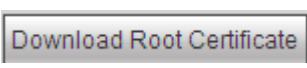
Figure 5-36

You can see the corresponding prompt. See Figure 5-37. Now the server certificate is successfully created.



Figure 5-37

#### 5.6.2.3.2 Download root certificate

In Figure 5-35, click  button, system pops up a dialogue box. See Figure 5-38.

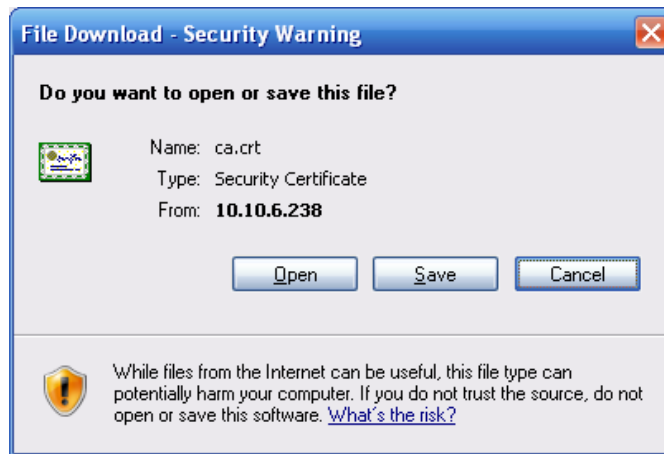


Figure 5-38

Click Open button, you can go to the following interface. See Figure 5-39.

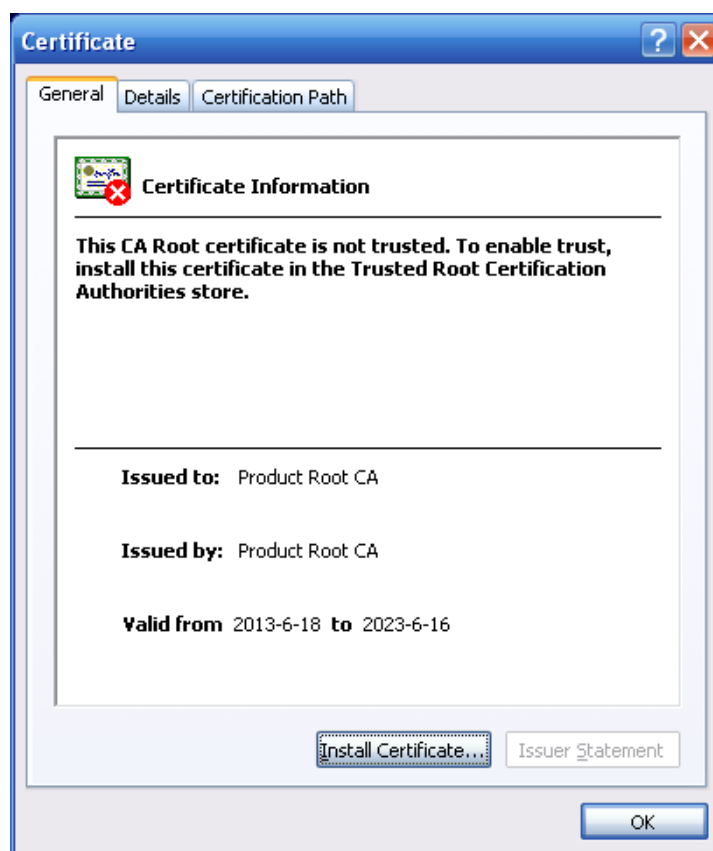


Figure 5-39

Click Install certificate button, you can go to certificate wizard. See Figure 5-40.



Figure 5-40

Click Next button to continue. Now you can select a location for the certificate. See Figure 5-41.

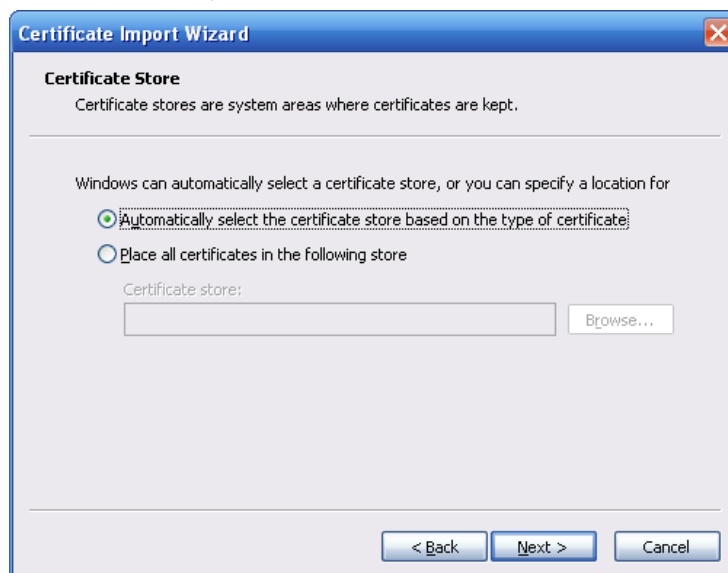


Figure 5-41

Click Next button, you can see the certificate import process is complete. See Figure 5-42.

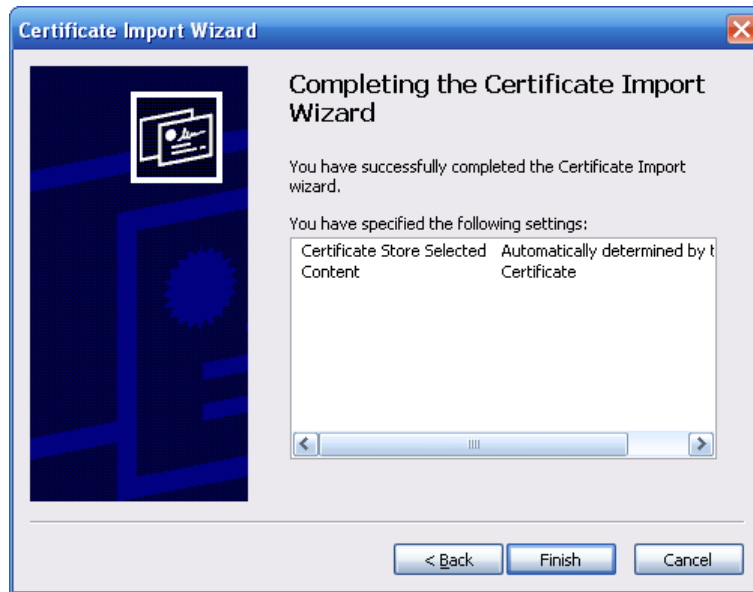


Figure 5-42

Click Finish button, you can see system pops up a security warning dialogue box. See Figure 5-43.

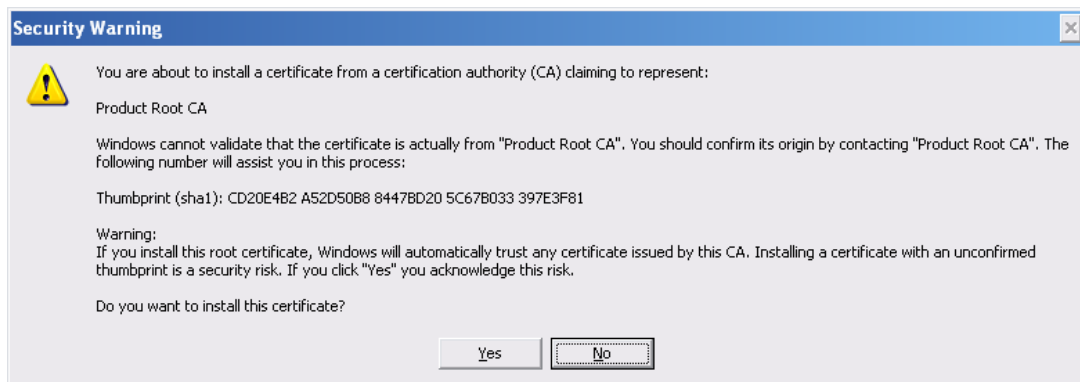


Figure 5-43

Click Yes button, system pops up the following dialogue box, you can see the certificate download is complete. See Figure 5-44.



Figure 5-44

#### 5.6.2.3.3 View and set HTTPS port

From Setup->Network->Connection->Connection, you can see the following interface. See Figure 5-45.

You can see HTTPS default value is 443.

**Connection Setting** | HTTPS

TCP Port:  (1025~65535)

UDP Port:  (1025~65535)

HTTP Port:  (1~65535)

HTTPS Port:  (1~65535)  Enable

RTSP Port:  (1~65535)

RTSP Format: rtsp://<Username>:<Password>@<IP Address>:<Port>/cam/realmonitor?channel=1&subtype=0  
channel: Channel, 1-8; subtype: Code-Stream Type, Main Stream 0, Sub Stream 1.

Figure 5-45

#### 5.6.2.3.4 Login

Open the browser and then input <https://xx.xx.xx.xx:port>.

xx.xx.xx.xx: is your device IP or domain name.

Port is your HTTPS port. If you are using default HTTPS value 443, you do not need to add port information here. You can input <https://xx.xx.xx.xx> to access.

Now you can see the login interface if your setup is right.

#### 5.6.2.4 Wi-Fi

**Please note this function is for the device of Wi-Fi module.**

From Setup->Network->3G/4G, the 3G/4G interface is shown as in Figure 5-46.

**WiFi**

Working Mode Selection: Wifi

SSID List	SSID	Connect mode	Authorize Mode	Signal Intensity
[Empty table body]				

SSID	Connect mode	Authorize Mode	Priority
[Empty table body]			

**WiFi Working Info**

Current Hotspot  
IP Address  
Subnet Mask  
Default Gateway

Figure 5-46

Please check the box to enable Wi-Fi function and then click the Search SSID button. Now you can view all the wireless network information in the following list. Double click a name to connect to it. Click Refresh button, you can view latest connection status.

#### 5.6.2.5 3G/4G

From Setup->Network->3G/4G, the 3G/4G interface is shown as in Figure 5-47.

Figure 5-47

Please refer to the following sheet for detailed information.

Parameter	Function
WLAN type	Here you can select 3G network type to distinguish the 3G module from different ISP. The types include WCDMA, CDMA1x and etc.
APN/Dial No.	Here is the important parameter of PPP.
Authorization	It includes PAP,CHAP,NO_AUTH.
Pulse interval	It is to set time to end 3G connection after you close extra stream monitor. For example, if you input 60 here, system ends 3G connection after you close extra stream monitor 60 seconds.
<b>Important</b> <ul style="list-style-type: none"> <li>◇ <b>If the pulse interval is 0, then system does not end 3G connection after you close the extra stream monitor.</b></li> <li>◇ <b>Pulse interval here is for extra stream only. This item is null if you are using main stream to monitor.</b></li> </ul>	

#### 5.6.2.6 DDNS

DDNS(Dynamic Domain Name Server) is to dynamically refresh the DNS domain name and IP address if the device IP address has changed frequently. The user can use the domain to access the device.

#### Preparation

Before the operation, make sure the device supports DNS type and go to the DDNS service provider website to register the domain name via the PC.

From Setup->Network->DDNS, the DDNS interface is shown as in Figure 5-48.





## Note

After you successfully registered and logged in the DDNS website, you can view all connected device information of current login user.

Figure 5-48

Please refer to the following sheet for detailed information.

Parameter	Function
Server Type	You can select DDNS protocol from the dropdown list and then enable DDNS function.
Server IP	DDNS server IP address
Server Port	DDNS server port.
Domain Name	Your self-defined domain name.
User	The user name you input to log in the server.
Password	The password you input to log in the server.
Update period	Device sends out alive signal to the server regularly. You can set interval value between the device and DDNS server here.

After setting, click Save button.

Input full domain name on the browser and click Enter button. The setting is right if you can view device WEB interface. Otherwise, please check the parameters.

### 5.6.2.7 Email

From Setup->Network->Email, the email interface is shown as in Figure 5-49.

**Email**

Enable

SMTP Server: MailServer

Port: 25 (1~65535)

Username:

Password:

Sender:

Encrypt Type: NONE

Subject: DVR ALERT

Receiver:  +  
 -

Interval: 120 sec. (0~3600)

Health Enable: 60 min. (30~1440)

Email Test

Save Refresh Default

Figure 5-49

Please refer to the following sheet for detailed information.

Parameter	Function
Enable	Please check the box here to enable email function.
SMTP Server	Input server address and then enable this function.
Port	Default value is 25. You can modify it if necessary.
Anonymity	For the server supports the anonymity function. You can auto login anonymously. You do not need to input the user name, password and the sender information.
User Name	The user name of the sender email account.
Password	The password of sender email account.
Sender	Sender email address.
Authentication (Encryption mode)	You can select SSL or none.
Subject	Input email subject here.
Attachment	System can send out the email of the snapshot picture once you check the box here.
Receiver	Input receiver email address here. Max three addresses. It supports SSL, TLS email box.
Interval	The send interval ranges from 0 to 3600 seconds. 0 means there is no interval.

Parameter	Function
	Please note system will not send out the email immediately when the alarm occurs. When the alarm or the abnormality event activates the email, system sends out the email according to the interval you specified here. This function is very useful when there are too many emails activated by the abnormality events, which may result in heavy load for the email server.
Health mail enable	Please check the box here to enable this function.
Update period (interval)	This function allows the system to send out the test email to check the connection is OK or not. Please check the box to enable this function and then set the corresponding interval. System can send out the email regularly as you set here.
Email test	The system will automatically sent out a email once to test the connection is OK or not .Before the email test, please save the email setup information.

#### 5.6.2.8 FTP

The FTP interface is to set FTP information.

From Setup->Network->FTP, enter FTP interface. See Figure 5-50.

Please set the FTP as your remote storage location. System can save record file or snapshot picture to the FTP once the network is offline or malfunction.

Figure 5-50

#### 5.6.2.9 P2P

You can use your cell phone to scan the QR code and add it to the cell phone client.

Via the SN from scanning the QR code, you can access the device in the WAN. Please refer to the P2P operation manual included in the resources CD.

From Setup->Network->P2P, enter P2P interface. See Figure 5-51.

Check the Enable box to enable P2P function and then click the Save button. Now you can view the device status and SN.



Figure 5-51

### 5.6.3 Event

#### 5.6.3.1 Video detect

##### 5.6.3.1.1 Motion detect

After analysis video, system can generate a video loss alarm when the detected moving signal reached the sensitivity you set here.

From Setup->Event->Detect->Motion detect, enter motion detect interface. See Figure 5-52.

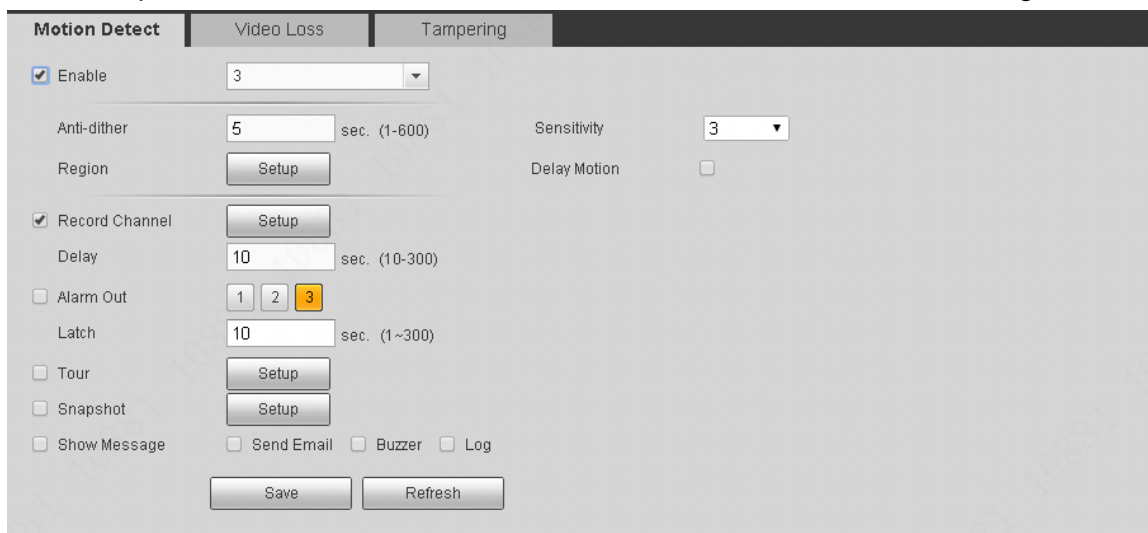


Figure 5-52

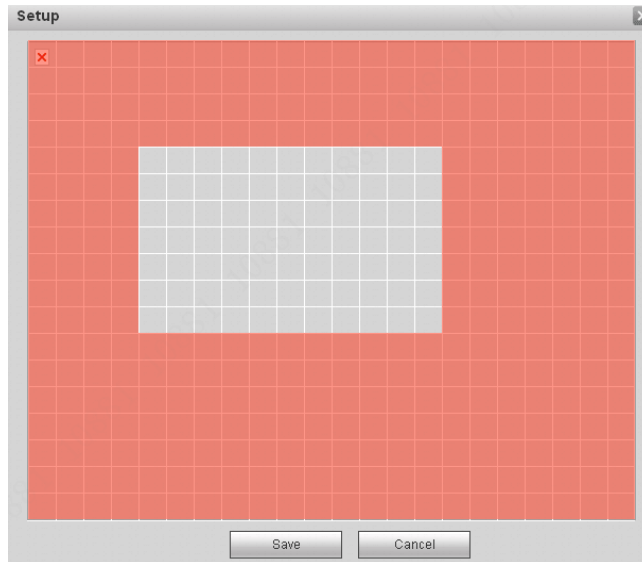


Figure 5-54

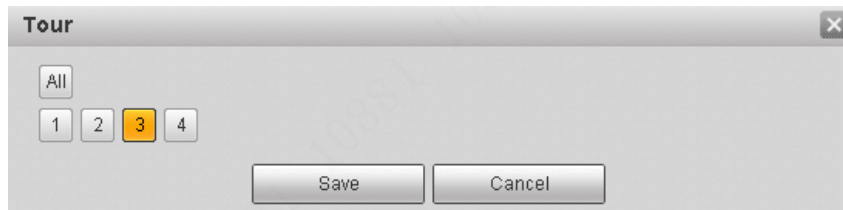






Figure 5-53

Please refer to the following sheet for detailed information.

Parameter	Function
Enable	You need to check the box to enable motion detect function. Please select a channel from the dropdown list.
Anti-dither	System only memorizes one event during the anti-dither period. The value ranges from 5s to 600s.
Sensitivity	There are six levels. The sixth level has the highest sensitivity.
Region	<p>If you select motion detection type, you can click this button to motion detection zone. The interface is shown as in Figure 5-54.</p> <p>Here you can set motion detection zone. There are four zones for you to set. Please select a zone first and then left drag the mouse to select a zone. The corresponding color zone displays different detection zone. You can click Fn button to switch between the arm mode and disarm mode. In arm mode, you can click the direction buttons to move the green rectangle to set the motion detection zone. After you completed the setup, please click ENTER button to exit current setup. Do remember click save button to save current setup. If you click ESC button to exit the region setup interface system will not save your zone setup.</p>
Record channel	<p>System auto activates channel(s) to record once an alarm occurs.</p> <p> <b>Note</b></p> <ul style="list-style-type: none"> <li>● Make sure you have enabled motion detect alarm record</li> </ul>

Parameter	Function
	<p>function. Refer to chapter 5.6.4.1 Schedule for detailed information.</p> <ul style="list-style-type: none"> <li>● Make sure you have enabled auto record. Refer to chapter 5.6.4.3 Record control for detailed information.</li> </ul>
Record Delay	System can delay the record for specified time after alarm ended. The value ranges from 10s to 300s.
Alarm out	Enable alarm activation function. You need to select alarm output port so that system can activate corresponding alarm device when an alarm occurs.
Latch	System can delay the alarm output for specified time after an alarm ended. The value ranges from 1s to 300s.
Show message	System can pop up a message to alarm you in the local host screen if you enabled this function.
Buzzer	Check the box here to enable this function. The buzzer beeps when an alarm occurs.
Log	Check the box here, system can record motion detect event log.
Alarm out	System can upload the alarm signal to the center (Including alarm center).
Send Email	<p>If you enabled this function, System can send out an email to alert you when an alarm occurs.</p> <p> <b>Note</b></p> <ul style="list-style-type: none"> <li>● Make sure you have enabled email function. Refer to chapter 5.6.2.7 Email for detailed information.</li> </ul>
Snapshot	<p>You need to check the box here to enable this function. You can set corresponding channel to snapshot when motion detect alarm occurs.</p> <p> <b>Note</b></p> <ul style="list-style-type: none"> <li>● Make sure you have enabled event (trigger) snapshot. Refer to chapter 5.6.1.3.2 Snapshot for detailed information.</li> <li>● Make sure you have enabled auto snapshot. Refer to chapter 5.6.4.3 Record control for detailed information.</li> </ul>
Tour	<p>Click setup button to select tour channel. System begins 1-window or multiple-window tour display among the channel(s) you set to record when an alarm occurs. See Figure 5-53.</p> <p> <b>Note</b></p> <ul style="list-style-type: none"> <li>● Make sure you have set tour interval and tour mode. Refer to chapter 5.6.5.2.2 Tour for detailed information.</li> <li>● Preview window restores previous split mode after alarm tour ended.</li> </ul>

From Setup->Event->Detect->Video loss, the video loss interface is shown as in Figure 5-55. This function allows you to be informed when video loss phenomenon occurred. You can enable alarm output channel and then enable show message function. For detailed setups, please refer to chapter 5.6.3.1.1 Motion detect for detailed information.

The screenshot shows the 'Video Loss' configuration page. It features a top navigation bar with 'Motion Detect', 'Video Loss', and 'Tampering' tabs. The 'Video Loss' tab is active. The main content area includes: an 'Enable' checkbox (checked) with a dropdown menu set to '3'; a 'Record Channel' checkbox (unchecked) with a 'Setup' button; a 'Delay' field set to '10' with the unit 'sec. (10-300)'; an 'Alarm Out' checkbox (unchecked) with three buttons labeled '1', '2', and '3', where '3' is highlighted in orange; a 'Latch' field set to '10' with the unit 'sec. (1-300)'; 'Setup' buttons for 'Tour' and 'Snapshot'; a 'Show Message' checkbox (unchecked) with sub-options for 'Send Email' (unchecked), 'Buzzer' (unchecked), and 'Log' (checked). At the bottom are 'Save' and 'Refresh' buttons.

Figure 5-55

### 5.6.3.1.3 Tampering

From Setup->Event->Detect->Tampering, the tampering (camera masking) interface is shown as in Figure 5-56.

After analysis video, system can generate a tampering alarm when the detected moving signal reached the sensitivity you set here.

For detailed setups, please refer to chapter 5.6.3.1.1 Motion detect for detailed information.

Figure 5-56

### 5.6.3.2 Alarm

Before operation, please make sure you have properly connected alarm devices such as buzzer. The input mode includes local alarm, IPC offline.

#### 5.6.3.2.1 Local Alarm


The local alarm interface is shown as in Figure 5-57.




Figure 5-57

Please refer to the following sheet for detailed information.

Parameter	Function
Enable	You need to check the box to enable this function. Please select a channel from the dropdown list.



Parameter	Function
Period	<p>This function becomes activated in the specified periods. There are six periods in one day. Please draw a circle to enable corresponding period.</p> <p>Select date. If you do not select, current setup applies to today only. You can select all week column to apply to the whole week.</p> <p>Click OK button, system goes back to local alarm interface, please click save button to exit.</p>
Type	Normal open or normal close.
Trigger	Here is for you to set activation mode. There are two options: High/low.
Overlay	Please highlight the box here to enable this function. It can overlay alarm information on the video screen when an alarm occurred.
Anti-dither	System only memorizes one event during the anti-dither period. The value ranges from 5s to 600s.
Record channel	<p>System auto activates channel(s) to record once an alarm occurs.</p> <p> <b>Note</b></p> <ul style="list-style-type: none"> <li>● Make sure you have enabled motion detect alarm record function. Refer to chapter 5.6.4.1 Schedule for detailed information.</li> <li>● Make sure you have enabled auto record. Refer to chapter 5.6.4.3 Record control for detailed information.</li> </ul>
Record Delay	System can delay the record for specified time after alarm ended. The value ranges from 10s to 300s.
Alarm out	Enable alarm activation function. You need to select alarm output port so that system can activate corresponding alarm device when an alarm occurs.
Latch	System can delay the alarm output for specified time after an alarm ended. The value ranges from 1s to 300s.
Show message	System can pop up a message to alarm you in the local host screen if you enabled this function.
Buzzer	Check the box here to enable this function. The buzzer beeps when an alarm occurs.
Log	Check the box here, system can record local alarm event log.
Alarm upload	System can upload the alarm signal to the center (including alarm center).
Send Email	If you enabled this function, System can send out an email to alert you when an alarm occurs.

Parameter	Function
	<p> <b>Note</b></p> <p>Make sure you have enabled email function. Refer to chapter 5.6.2.7 Email for detailed information.</p>
Snapshot	<p>You need to check the box here to enable this function. You can set corresponding channel to snapshot when an alarm occurs.</p> <p> <b>Note</b></p> <ul style="list-style-type: none"> <li>● Make sure you have enabled event (trigger) snapshot. Refer to chapter 5.6.1.3.2 Snapshot for detailed information.</li> <li>● Make sure you have enabled auto snapshot. Refer to chapter 5.6.4.3 Record control for detailed information.</li> </ul>
Tour	<p>Click setup button to select tour channel. System begins 1-window or multiple-window tour display among the channel(s) you set to record when an alarm occurs. See Figure 5-53.</p> <p> <b>Note</b></p> <ul style="list-style-type: none"> <li>● Make sure you have set tour interval and tour mode. Refer to chapter 5.6.5.2.2 Tour for detailed information.</li> <li>● Preview window restores previous split mode after alarm tour ended.</li> </ul>

### 5.6.3.2.2 IPC Disconnect Alarm

In the main menu, from Setup->Event->Alarm->IPC Disconnect, you can see alarm setup interface. See Figure 5-58. For setup information, please refer to chapter 5.6.3.2.1 Local alarm.



The screenshot shows the 'IPC Disconnect' configuration window. It has a title bar with 'Local Alarm' and 'IPC Disconnect'. The main area contains several settings:

- Alarm Channel: 1
- Record Channel: Setup
- Delay: 10 sec. (10-300)
- Alarm Out: 1, 2, 3
- Latch: 10 sec. (1~300)
- Tour: Setup
- Snapshot: Setup
- Show Message:  Send Email  Buzzer  Log

At the bottom, there are four buttons: Copy, Save, Refresh, and Default.

Figure 5-58

### 5.6.3.3 Abnormal

From main menu->Setup->Event->Abnormal, enter abnormal interface.

It includes three types: HDD/User/Device. See Figure 5-59 through Figure 5-61.

HardDisk	User	Device
Event Type	No HDD	
<input checked="" type="checkbox"/> Enable		
<input type="checkbox"/> Alarm Out	1 2 3	
Latch	10 sec. (1~300)	
<input checked="" type="checkbox"/> Show Message	<input type="checkbox"/> Send Email	<input checked="" type="checkbox"/> Buzzer <input checked="" type="checkbox"/> Log
<input checked="" type="checkbox"/> Auto-Reboot System		
Save		Refresh

Figure 5-59


HardDisk	User	Device
Event Type	Illegal Login	
<input checked="" type="checkbox"/> Enable		
Attempt(s)	5	
Lock Time	5 min.	
<input type="checkbox"/> Alarm Out	1 2 3	
Latch	10 sec. (1~300)	
<input type="checkbox"/> Send Email	<input checked="" type="checkbox"/> Log	
Save		Refresh

Figure 5-60

HardDisk	User	Device
Event Type	Temperature Too High	
Max Temperature	60 °C	
<input checked="" type="checkbox"/> Enable		
<input type="checkbox"/> Alarm Out	1 2 3	
Latch	10 sec. (1~300)	
<input type="checkbox"/> Show Message	<input type="checkbox"/> Send Email	<input type="checkbox"/> Buzzer <input checked="" type="checkbox"/> Log
Save		Refresh

Figure 5-61

Please refer to the following sheet for detailed information.

Parameter	Function
Event Type	The abnormal events include: <ul style="list-style-type: none"> <li>● HDD: No disk, disk error, disk no space;</li> <li>● User: Illegal login.</li> <li>● Device: Temperature too high, battery low voltage, over speed, low speed, collision, turnover.</li> </ul>
Enable	Check the box here to enable selected function.
Alarm Out	Please select corresponding alarm output channel when an alarm occurs. You need to check the box to enable this function.
Latch	The alarm output can delay for the specified time after an alarm stops. The value ranges from 0s to 300s. The default setup is 10 seconds. The 0 second means there is no delaying time.
Less than	You can set the minimum percentage value here. The device can generate an alarm when HDD capacity or the voltage is not sufficient. This item is for disk no space/battery low voltage type only.
Attempt(s)	It is to set login attempt times. Once the login attempt exceeds the threshold you set here, current account will be locked. This function is for illegal login only.
Lock time	It is to set account lock time once its login attempt has exceeded the threshold you set. This function is for illegal login only.
Max Temperature	The device can generate an alarm once the device temperature is higher than the threshold you set. This item is for temperature too high type only.
Show message	System can pop up a message to alarm you in the local host screen if you enabled this function.
Alarm upload	System can upload the alarm signal to the center (Including alarm center).
Send Email	If you enabled this function, System can send out an email to alert you when an alarm occurs.   <b>Note</b>  Make sure you have enabled email function. Refer to chapter 5.6.2.7 Email for detailed information.
Buzzer	Check the box here to enable this function. The buzzer beeps when an alarm occurs.
Log	Check the box here, system can record corresponding alarm log.

#### 5.6.3.4 Alarm Out

Here you can set alarm output channel mode: Auto/manual/stop.

From Setup->Event->Alarm output, enter alarm output interface. See Figure 5-62.



Figure 5-62

Please refer to the following sheet for detailed information.

Parameter	Function
Auto	The corresponding event triggers the alarm output or cancels alarm.
Manual	Forcedly trigger alarm output.
Close	Forcedly cancel or close alarm output.
Status	Here you can view alarm output port status. The alarm is enabled if the icon is highlighted.
Alarm release	Click the button, you can clear all alarm output status.

## 5.6.4 Storage

### 5.6.4.1 Schedule

In this interfaces, you can add or remove the schedule record/snapshot setup.

From Setup->Storage->Schedule, enter schedule interface. See Figure 5-63.

There are three record modes: general (auto).motion detect and alarm. There are six periods in one day. Please make sure you have enabled the corresponding record mode in the Setup->Storage->Conditions.

You can view the current time period setup from the color bar.

- Green color stands for the general record/snapshot.
- Red color stands for the alarm record/snapshot.
- Yellow color stands for motion detect record/snapshot.



Figure 5-63

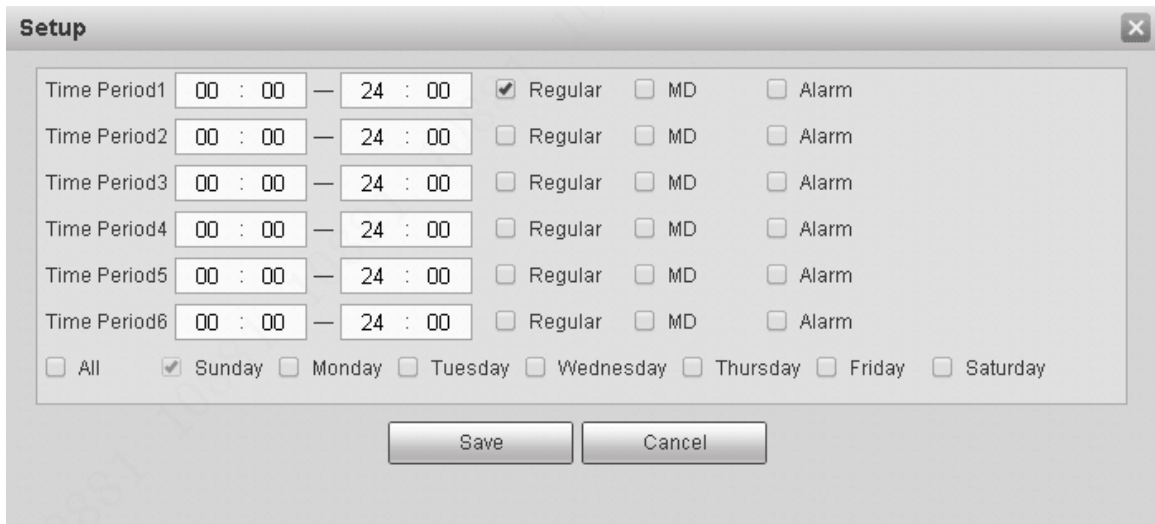


Figure 5-64

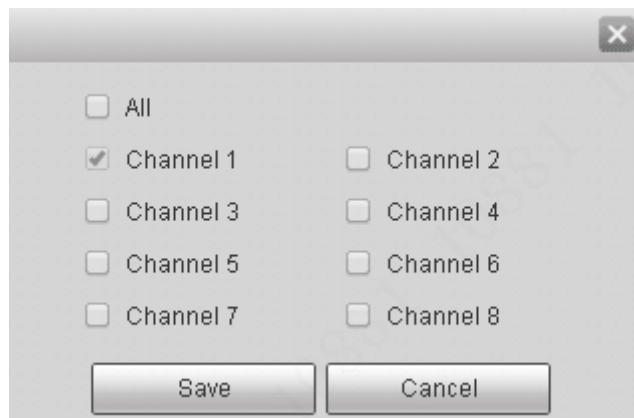




Figure 5-65

Please refer to the following sheet for detailed information.

Parameter	Function
Channel	Please select a channel from the dropdown list.
Pre-record	Please input pre-record time here. The value ranges from 0 to 30.
Redundancy	Check the box here to enable redundancy function. <b>Please note this function is null if there is only one HDD.</b>
Record	<p>Check the box here to enable record function.</p> <p> <b>Note</b></p> <p>When alarm type is MD/alarm, please enable the corresponding channel to record. For example, when alarm type is MD, please refer to chapter 5.6.3.1.1 Motion detect to enable motion detect record function, and refer to 5.6.4.3 Record control to set auto record function.</p>
Snapshot	<p>Check the box here to enable record function.</p> <p> <b>Note</b></p> <p>When alarm type is MD/alarm, please enable the corresponding channel to snapshot. For example, when alarm type is MD, please refer to chapter 5.6.3.1.1 Motion detect to enable motion detect snapshot function, and refer to 5.6.1.3.2 Snapshot to set Event snapshot function.</p>
Holiday	Check the box here to enable holiday function.
Setup (Sunday to Saturday)	<p>Click the Setup button, you can set record period. See Figure 5-64. There are six periods in one day. If you do not check the date at the bottom of the interface, current setup is for today only.</p> <p>Please click Save button and then exit.</p>
Setup (Holiday)	<p>Click the Setup button, you can set record period. See Figure 5-64. There are six periods in one day. If you check Holiday box, current channel shall record as your holiday setup here.</p>
Copy	<p>Copy function allows you to copy one channel setup to another. After setting in channel, click Copy button, you can go to interface Figure 5-65. You can see current channel name is grey such as channel 1. Now you can select the channel you want to paste such as channel 2. If you want to save current setup of channel 1 to all channels, you can click the first box "ALL". Click the OK button to save current copy setup. Click the OK button in the Encode interface, the copy function succeeded.</p>

#### 5.6.4.2 Storage

Here you can see storage device information. You can also operate the read-only, write-only, hot swap and format operation.

From Setup->Storage->HDD manage, enter HDD manage interface. See Figure 5-66.

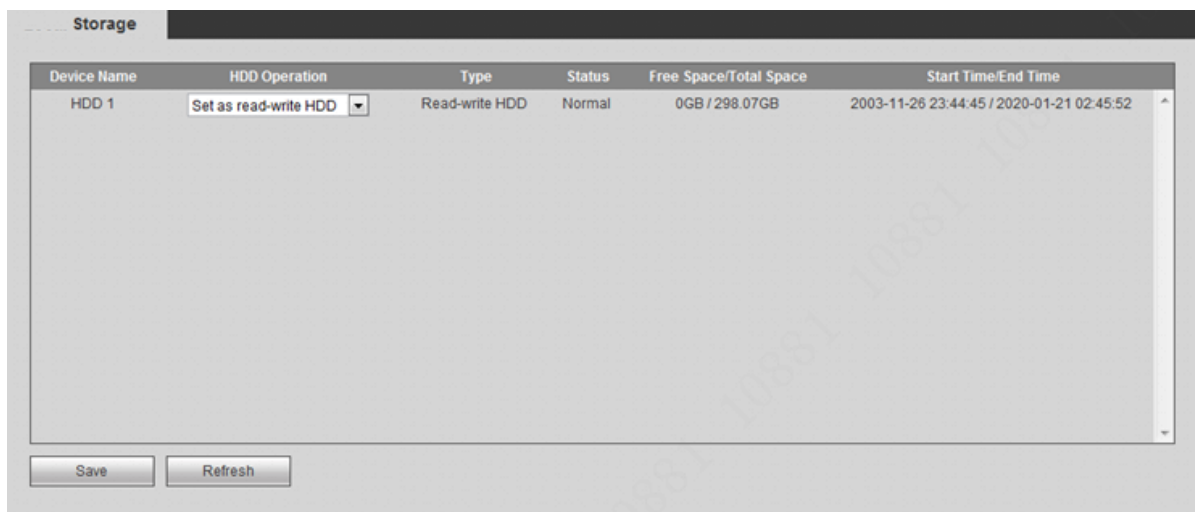


Figure 5-66

### 5.6.4.3 Record control

From Setup->Storage->Record, the record control interface is shown as in Figure 5-67.



Figure 5-67

Please refer to the following sheet for detailed information.

Parameter	Function
Channel	Here you can view channel number. The number displayed here is the max channel amount of your device.
Status	There are three statuses: schedule, manual and stop.
Auto	System enables auto record function as you set in record schedule setup (general, motion detect and alarm).
Manual	It has the highest priority. Enable corresponding channel to record no matter what period applied in the record setup.



Stop	Stop current channel record no matter what period applied in the record setup.
Start all/ stop all	Check the corresponding All button, you can enable or disable all channels record.

## 5.6.5 System

### 5.6.5.1 General

The general interface includes General, date/time and holiday setup.

#### 5.6.5.1.1 General

From Setup->System->General, the general interface is shown as in Figure 5-68.

Figure 5-68

Please refer to the following sheet for detailed information.

Parameter	Function
Language	You can select the language from the dropdown list. <b>Please note the device needs to reboot to get the modification activated.</b>
Video Standard	This is to display video standard such as PAL.
HDD full	Here is for you to select working mode when hard disk is full. There are two modes: stop/overwrite.
Pack duration	Here is for you to specify record duration. The value ranges from 1 to 120 minutes. Default value is 60 minutes.
Auto logout	Here is for you to set auto logout interval once login user remains inactive for a specified time.
Startup wizard	Check the box to enable startup wizard function.
License No.	Set vehicle plate number.
IPC Time Sync	You can input an interval here to synchronize the IPC time with the NVR.

#### 5.6.5.1.2 Date and time

The date and time interface is shown as in Figure 5-69

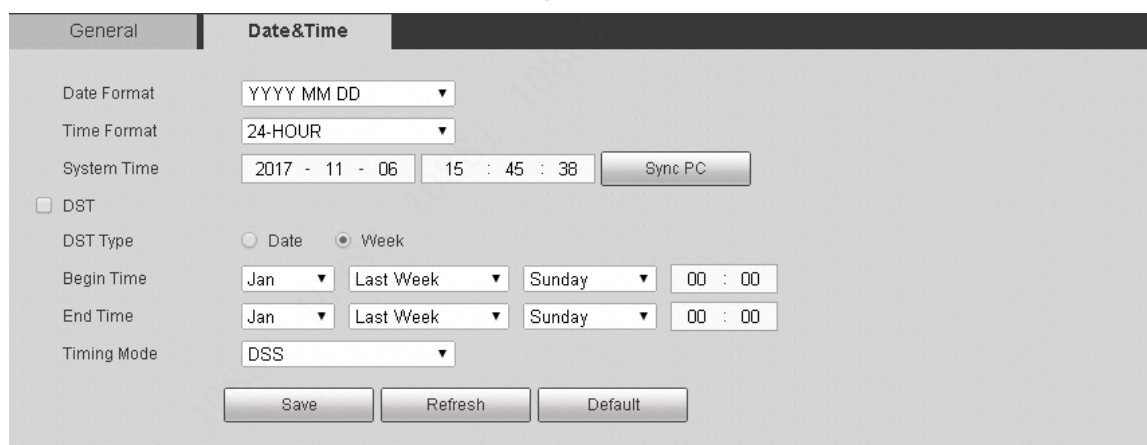


Figure 5-69

Please refer to the following sheet for detailed information.

Parameter	Function
Date format	Here you can select date format from the dropdown list.
Time Format	There are two options: 24-H and 12-H.
Time zone	The time zone of the device.
System time	It is to set system time. It becomes valid after you set.
Sync PC	You can click this button to save the system time as your PC current time.
DST	Here you can set day night save time begin time and end time. You can set according to the date format or according to the week format.
NTP	You can check the box to enable NTP function.
NTP server	You can set the time server address.
Port	It is to set the time server port.
Interval	It is to set the sync periods between the device and the time server.

## 5.6.5.2 Display

### 5.6.5.2.1 Display

From main menu->Setup->System->Display->Display, here you can set preview mode and overlay time or channel name. See Figure 5-70.

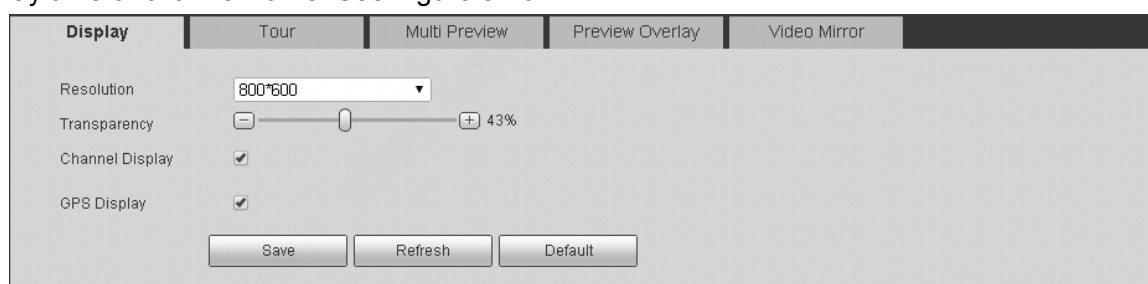


Figure 5-70

Please refer to the following sheet for detailed information.

Parameter	Function
Resolution	It is to set video resolution. Please note the system needs to reboot to activate current setup.
Transparency	Here is for you to adjust transparency. The lower the value is, the more transparent the local menu is.
Channel display/GPS display	Check the box here, you can view GPS information and channel number on the monitor video.

#### 5.6.5.2.2 Tour

From main menu->Setup->System->Display->Tour, the tour interface is shown as in Figure 5-71. Here you can set tour interval, split mode, motion detect tour and alarm tour mode.

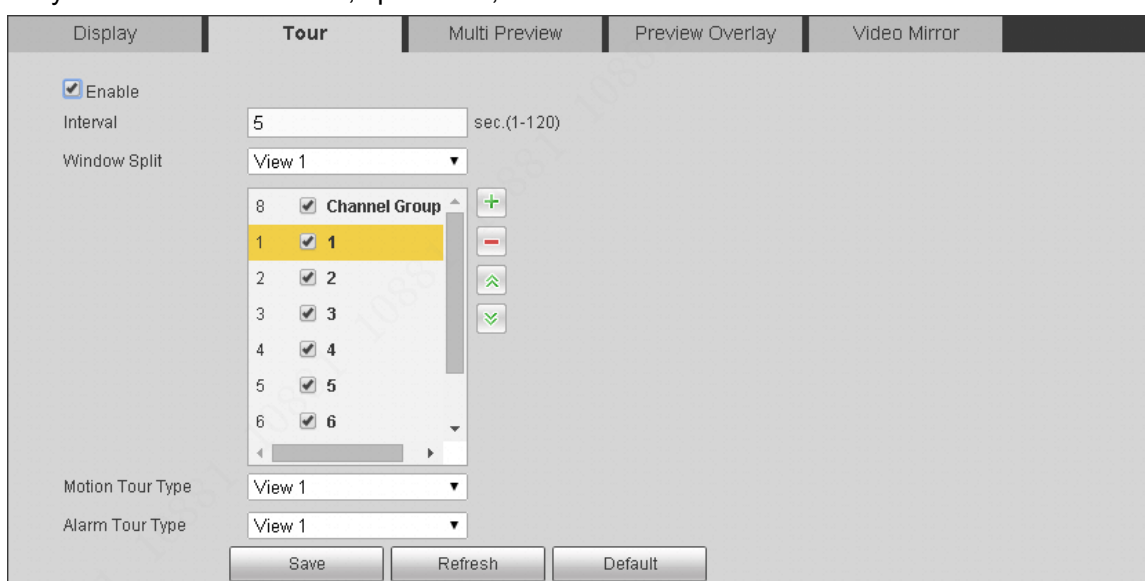


Figure 5-71

Please refer to the following sheet for detailed information.

Parameter	Function
Enable tour	Check the box here to enable tour function.
Interval	Here is for you to adjust transparency. The value ranges from 5 to 120s. The default setup is 5s.
Split	Here you can set window mode and channel group. System can support 1/4/8/9-window according to device channel amount.
Motion tour/Alarm tour	Here you can set motion detect tour/alarm tour window mode. System supports 1/4/8/9-window now.

#### 5.6.5.2.3 Zero-channel Encoding

It is to enable and set zero-channel encoding function so that you can view several video sources at one channel from WEB.

From main menu->Setup->System->Display->Zero-channel encoding, enter zero-channel interface. See Figure 5-72.

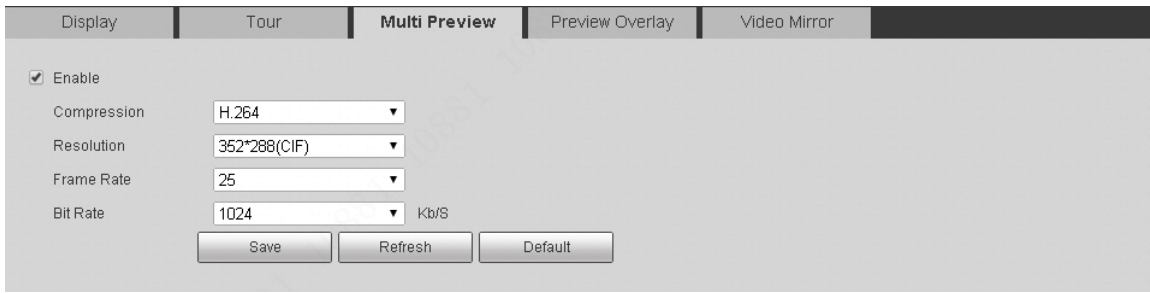



Figure 5-72

Please refer to the following sheet for detailed information.

Parameter	Function
Enable	This function is disabled by default. Check the box here to enable this function so that you can control the zero-channel encoding function at the WEB.
Compression	System default setup is H.264. You can set according to device capability.
Resolution	The resolution value may vary due to different device capabilities. Please select from the dropdown list.
Frame rate	The frame rate value may vary due to different device capabilities. Please select from the dropdown list.
Bit Rate	The default setup is 1024Kb/S. The bit rate value may vary due to different device capabilities and frame rate setups. Please select from the dropdown list.

Click Save to complete the setup.

- If this function is disabled, you cannot operate zero-channel encoding function at the WEB, the video is black or null even you operate when the function is disabled.
- After you enabled this function, you can use WEB to view the corresponding video.

Login the Web and you can select zero-channel encoding mode at the right corner of the interface . Select a mode; you can view the local preview video.

#### 5.6.5.2.4 Preview

From main menu->Setup->System->Display->Preview, the preview overlay interface is shown as in Figure 5-73. You can overlay time, speed, plate information and etc on the device preview interface and Web monitor video.

**The preview overlay is to overlay information on the preview interface or WEB monitor video, the information is not included in record file.**

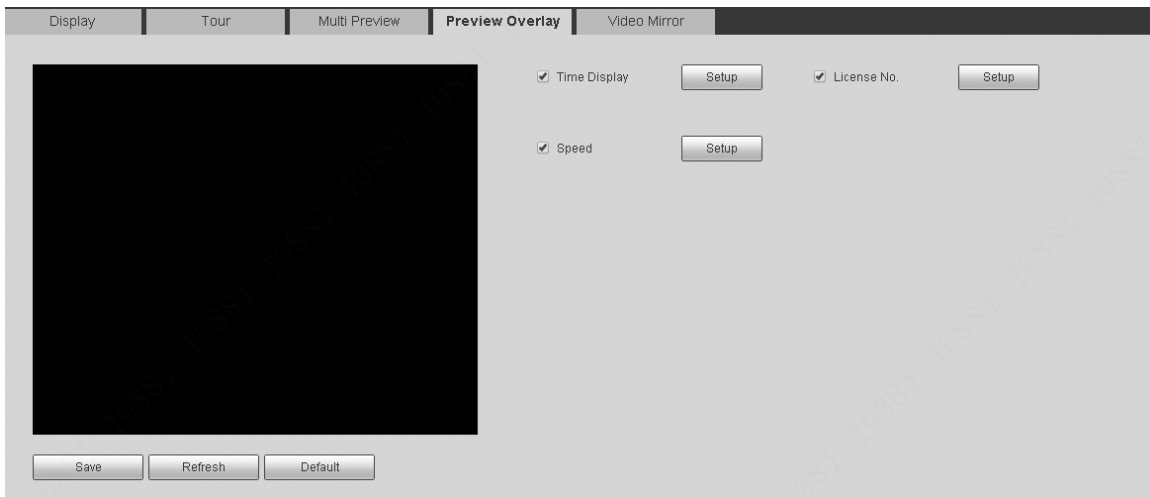


Figure 5-73

#### 5.6.5.2.5 Video Mirror

It is to set video up/down, left/right mirror.

From main menu->Setup->System->Display->Video mirror, enter video mirror interface. See Figure 5-74.

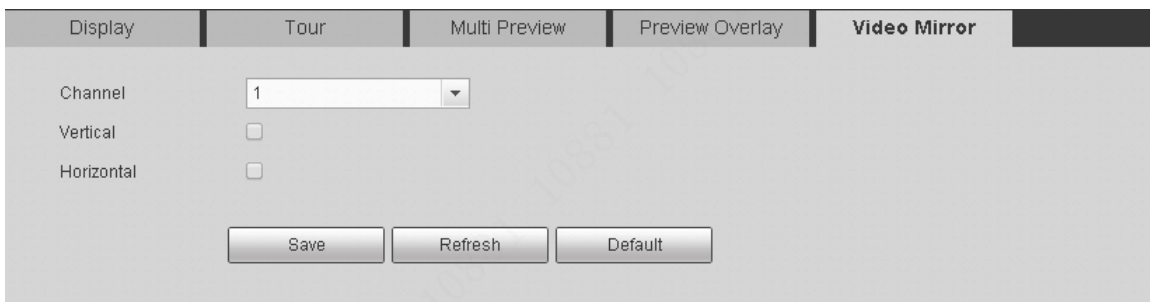


Figure 5-74

#### 5.6.5.3 RS232

From main menu->Setup->System->RS232, the RS232 interface is shown as in Figure 5-75.



Figure 5-75

Please refer to the following sheet for detailed information.

Parameter	Function
Function	Select the corresponding COM control protocol. Default setup is console.

Parameter	Function
	Default setup is console. <ul style="list-style-type: none"> <li>● Console is for you to use the COM or mini-end software to upgrade or debug the program.</li> <li>● The control keyboard is for you to control the device via the special keyboard.</li> <li>● Transparent COM (adapter) is to connect to the PC to transfer data directly.</li> <li>● Network keyboard is for you to use the special keyboard to control the device.</li> <li>● PTZ: Use COM to control the PTZ.</li> <li>● ITS: Connect to mobile light box or touch screen.</li> </ul>
Baud Rate	Select the baud rate. Default setup is 115200.
Data Bit	The value ranges from 5 to 8. Default setup is 8.
Stop bit	There are two options: 1/2. Default setup is 1.
Parity	There are five options: none/odd/even/space/mark. Default setup is none.

#### 5.6.5.4 PTZ

From main menu->Setup->System->PTZ, the PTZ interface is shown as in Figure 5-76.

Before setup, please check the following connections are right:

- PTZ and decoder connection is right. Decoder address setup is right.
- Decoder A (B) line connects with NVR A (B) line.

Click Save button after you complete setup, you can go back to the monitor interface to control speed dome.

Figure 5-76

Please refer to the following sheet for detailed information.

Parameter	Function
Channel	Select PTZ camera connected channel.
PTZ Type	There are two options: local/remote. Please select remote type if you are connecting to the network PTZ.
Protocol	Select the corresponding dome protocol such as PELCOD.
Address	Set corresponding dome address. Default value is 1. <b>Please note your setup here shall comply with your dome address;</b>

Parameter	Function
	<b>otherwise you cannot control the speed dome.</b>
Baud Rate	Select the dome baud rate. Default setup is 9600.
Data Bit	Default setup is 8. Please set according to the speed dome dial switch setup.
Stop bit	Default setup is 1. Please set according to the speed dome dial switch setup.
Parity	Default setup is none. Please set according to the speed dome dial switch setup.

#### 5.6.5.5 Account

It is to manage user, user group and security questions.

- For the user name, the string max length is 31-byte, and for the user group, the string max length is 15-byte. The user name can only contain English letters, numbers and “\_”, “@”, “.”.
- The default user amount is 64 and the default group amount is 20. System account adopts two-level management: group and user. The user authorities shall be smaller than group authorities (The **admin** user authorities are set by default).
- For group or user management, there are two levels: admin and user. The user name shall be unique and one user shall only belong to one group.

##### 5.6.5.5.1 User

From main window->Setup->System->Account->User, enter user interface. See Figure 5-77.

In this interface you can add/remove user and modify user name.

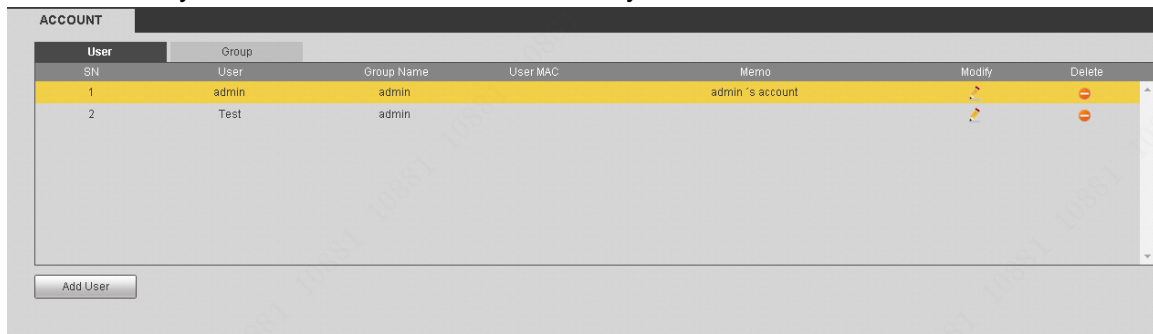


Figure 5-77

##### 5.6.5.5.1.1 Add user

It is to add a name to group and set the user rights.

From main window->Setup->System->Account->User, click Add user button. See Figure 5-78.

Input user name and input password twice to confirm. Check the boxes to select rights.

For convenient setup, please make sure the admin user has the higher rights than the general user.

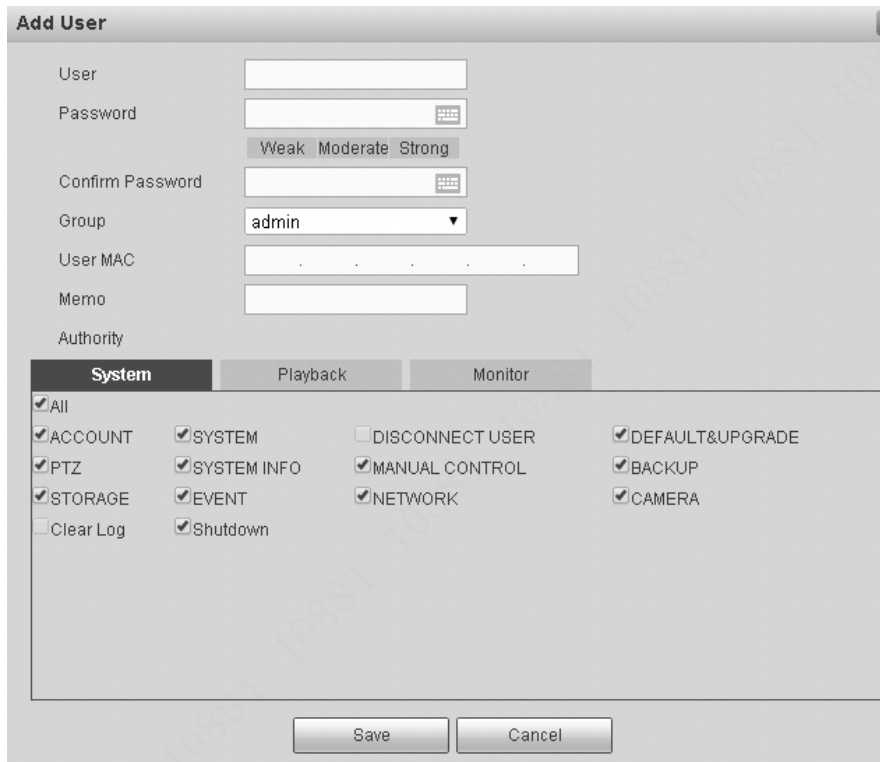



Figure 5-78

#### 5.6.5.5.1.2 Modify user

It is to modify the user property, belonging group, password and rights. For **admin**, you can change its email address.

From main window->Setup->System->Account->User, select a user and then click  to modify its information. See Figure 5-79.

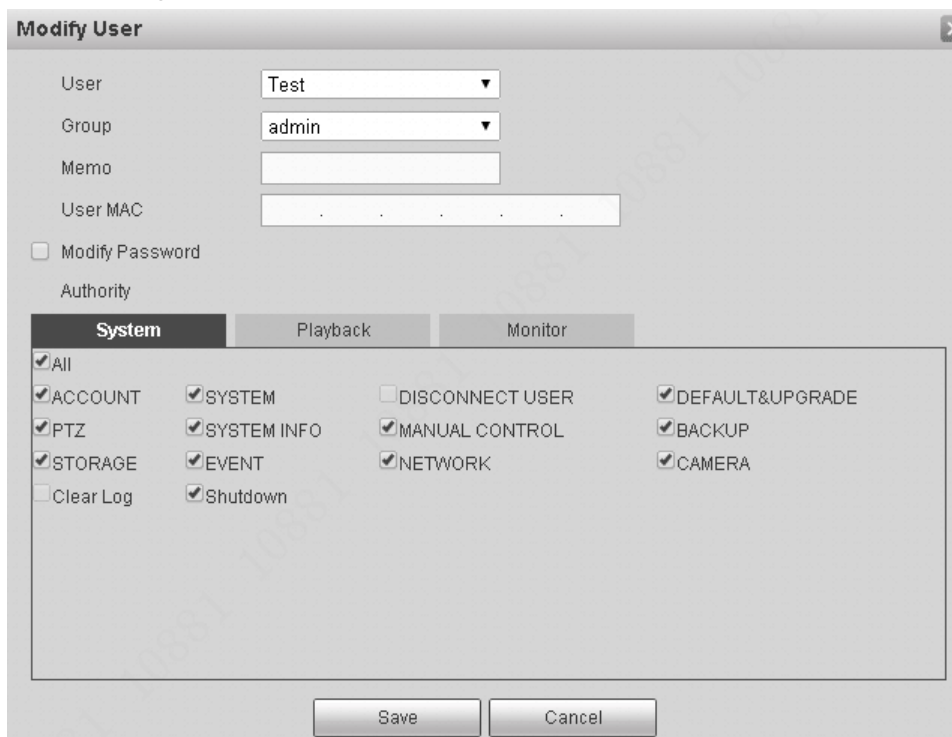


Figure 5-79




For the **admin**, the interface is shown as below. See Figure 5-80.  
 You can change email information. The email address here is to reset password purpose.

Figure 5-80

#### 5.6.5.5.1.3 Modify password

It is to modify the user password. You need to input the old password and then input the new password twice to confirm the new setup. Please click the OK button to save.

From main window->Setup->System->Account->User, select a user and then click  to modify its information.

Check the Modify password box, enter the following interface. See Figure 5-73.

Input old password and then input new password twice to confirm.

For **admin**, you can change its email information too.



#### WARNING

**STRONG PASSWORD RECOMMENDED-For your device own safety, please create a strong password of your own choosing. The password shall be at least 8-digit containing at least two types of the following categories: letters, numbers and symbols. We also recommend you change your password periodically especially in the high security system.**

Figure 5-81

#### 5.6.5.5.2 Group

The group management interface can add/remove group, modify group password and etc. From main menu->Setup->System->Account->Group, the interface is shown as in Figure 5-82.

SN	Group Name	Memo	Modify	Delete
1	admin	administrator group		
2	user	user group		

Figure 5-82

#### 5.6.5.5.2.1 Add group


It is to add group and set its corresponding rights.

From main menu->Setup->System->Account->Group, click Add group button. See Figure 5-83. Please input the group name and then check the box to select the corresponding rights.



Figure 5-83

#### 5.6.5.5.2.2 Modify group

From main menu->Setup->System->Account->Group, select a group and then click , you can see an interface is shown as in Figure 5-84. Here you can modify group information such as memo and rights.

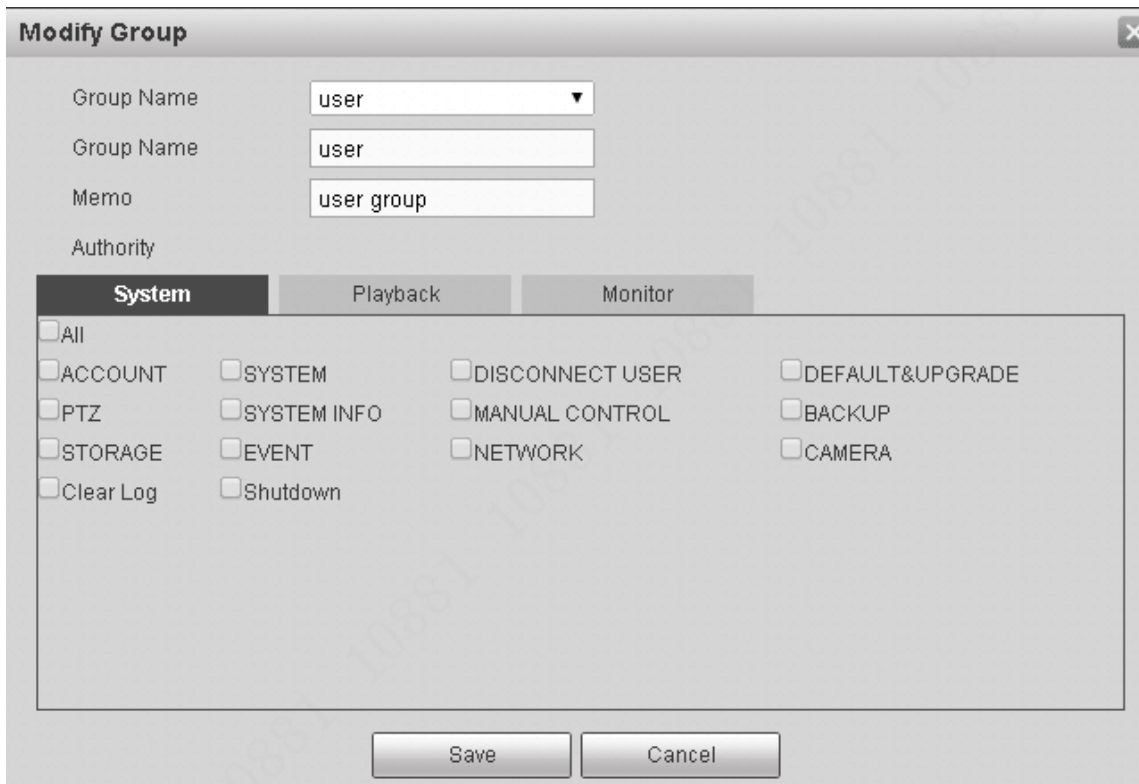


Figure 5-84

### 5.6.5.6 Import/Export

From main menu->Setup->System->Import/export, the interface is shown as in Figure 5-85.

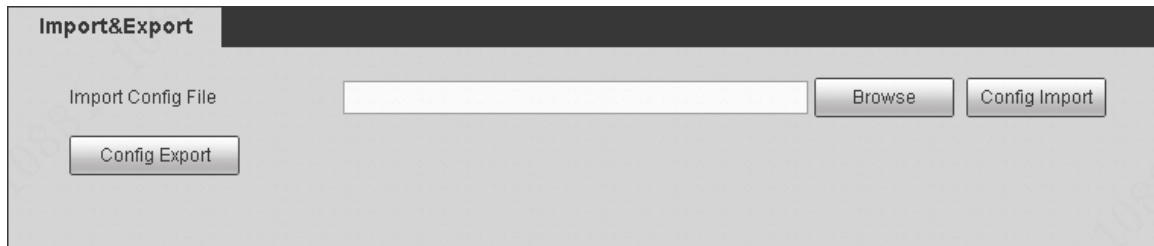


Figure 5-85

Please refer to the following sheet for detailed information.

Parameter	Function
Import	It is to import the local setup files to the system.
Export	It is to export the corresponding WEB setup to your local PC.

### 5.6.5.7 Default

From main menu->Setup->System->Default, the default setup interface is shown as in Figure 5-86.

Here you can select Channel/Network/Event/Storage/System. Or you can check the All box to select all items.

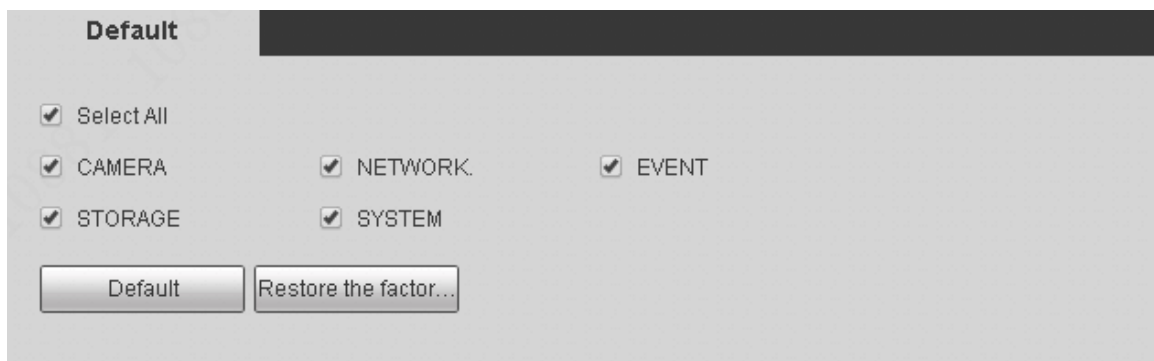


Figure 5-86

### 5.6.5.8 Upgrade

From main menu->Setup->System->Upgrade, the upgrade interface is shown as in Figure 5-87.

Please select the upgrade file and then click the update button to begin update. Please note the file name shall be as \*.bin. During the upgrade process, do not unplug the power cable, network cable, or shutdown the device.

#### **Important**

**Improper upgrade program may result in device malfunction!**

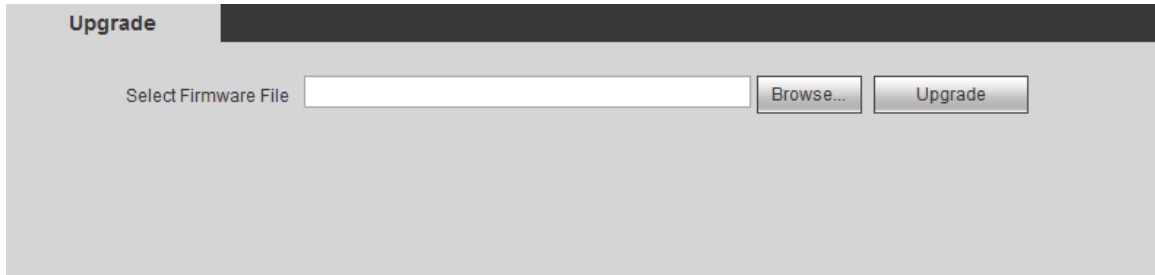


Figure 5-87

## 5.6.6 Vehicle

### 5.6.6.1 Speed

Here you can set speed ratio, mileage, speed source and etc. See Figure 5-88.

Figure 5-88

Please refer to the following sheet for detailed information.

Parameter	Function
Speed ratio	The parameter to calculate speed. $\frac{\text{Speed ratio}}{\text{Default speed ratio}} = \frac{\text{Vehicle actual running speed}}{\text{Displayed speed on the interface}}$
Speed	Speed value.
Mileage ratio	Speed mileage correction.
Mileage cumulation	Select cumulation type.
Mileage	Display mileage value.
Clear:	Clear mileage value.
Start mileage	Set start mileage value.
Speed source	Select speed source.

### 5.6.6.2 Custom Default

It is to backup the plate setup, 3G setup, auto register setup.

From main window->Setup->Custom default, enter custom default interface. See Figure 5-89.

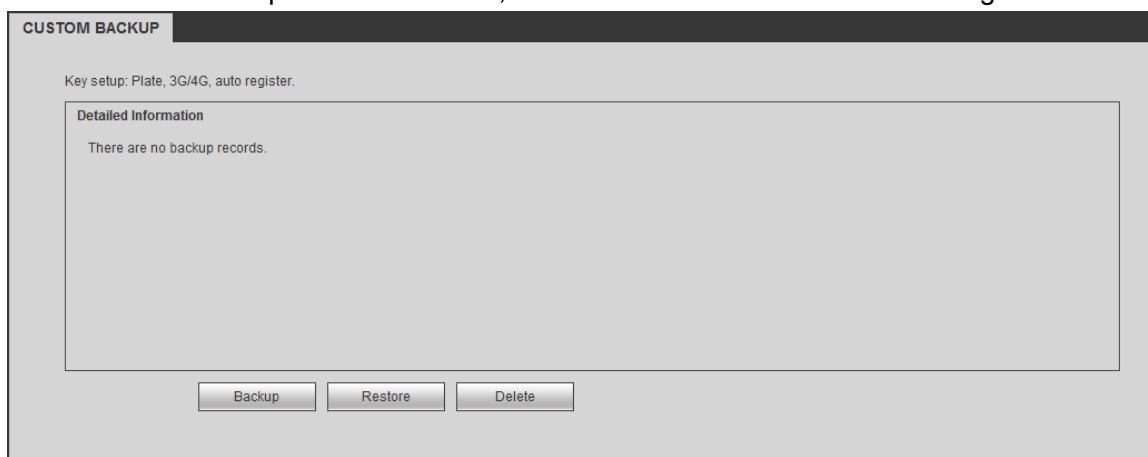


Figure 5-89

Please refer to the following sheet for detailed information.

Parameter	Function
Backup	Backup important configurations such as plate number, 3G/4G, auto register.
Delete	Delete the backup configurations.
Restore	Restore the backup configurations.

## 5.7 Information

### 5.7.1 Version

From Setup->Info->Version, the version interface is shown as in Figure 5-90.

Here you can view system hardware features, software version, release date and etc. Please note the following information for reference only.



Figure 5-90

### 5.7.2 Log

Here you can view system log.

From Setup->Info->Log, enter log interface. See Figure 5-91.

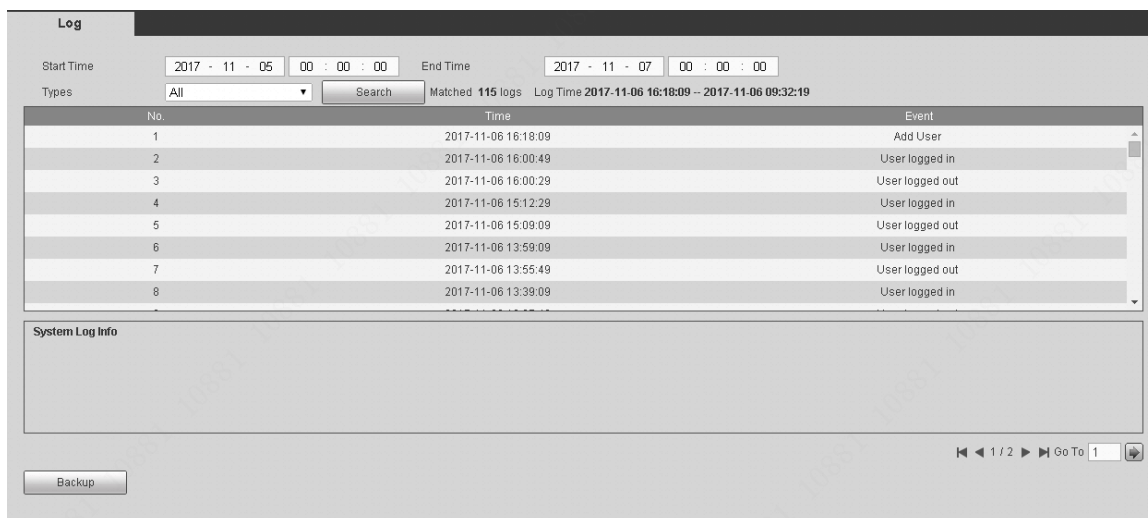


Figure 5-91

Please refer to the following sheet for log parameter information.

Parameter	Function
Type	Log types include: system operation, configuration operation, data operation, event operation, record operation, user management, log clear.
Start time	Set the start time of the requested log.
End time	Set the end time of the requested log.
Search	You can select log type from the drop down list and then click search button to view the list. You can click the stop button to terminate current search operation.
Detailed information	You can select one item to view the detailed information.
Clear	You can click this button to delete all displayed log files. Please note system does not support clear by type.
Backup	You can click this button to backup log files to current PC.

### 5.7.3 Online User

It is to view currently online user.

From Setup->Info->Online user, enter online user interface. See Figure 5-92.

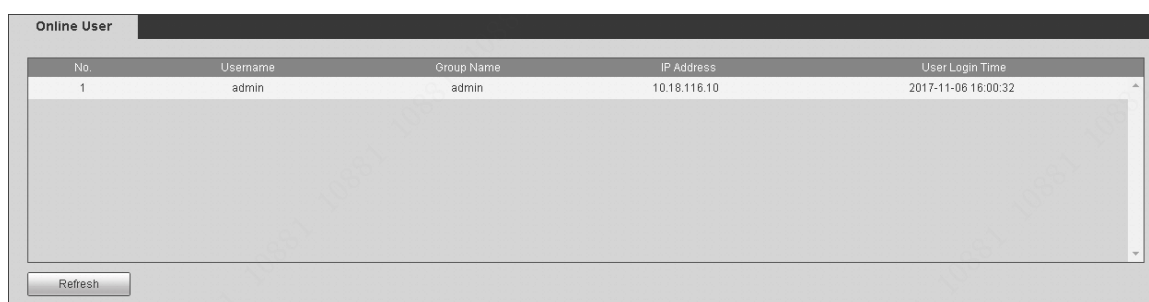


Figure 5-92

### 5.7.4 Satellite

It is to view satellite information such as module state, wireless state, and satellite search results. From main window->Setup->Vehicle->3G/4G->Satellite, the satellite interface is shown as in Figure 5-54.



Figure 5-93

### 5.7.5 Network Sniffer

Using peripheral connected storage device to backup sniffer data. The backup data is for engineer to analyze network status.

#### Preparation

Device has connected to the peripheral device such as USB device.

From main window->Setup->Info->Network sniffer, enter network sniffer interface. See Figure 5-94.

Select Ethernet card from the dropdown list, and then set saved path. Check target filer and then set IP address.

Click Start to begin sniffer.

Click Stop to stop.



Figure 5-94

## 5.8 Playback

Click Playback button, you can see an interface is shown as in Figure 5-95.

Please set record type, record date, window display mode and channel name.



You can click the date on the right pane to select the date. The green highlighted date is system current date and the blue highlighted date means it has record files.

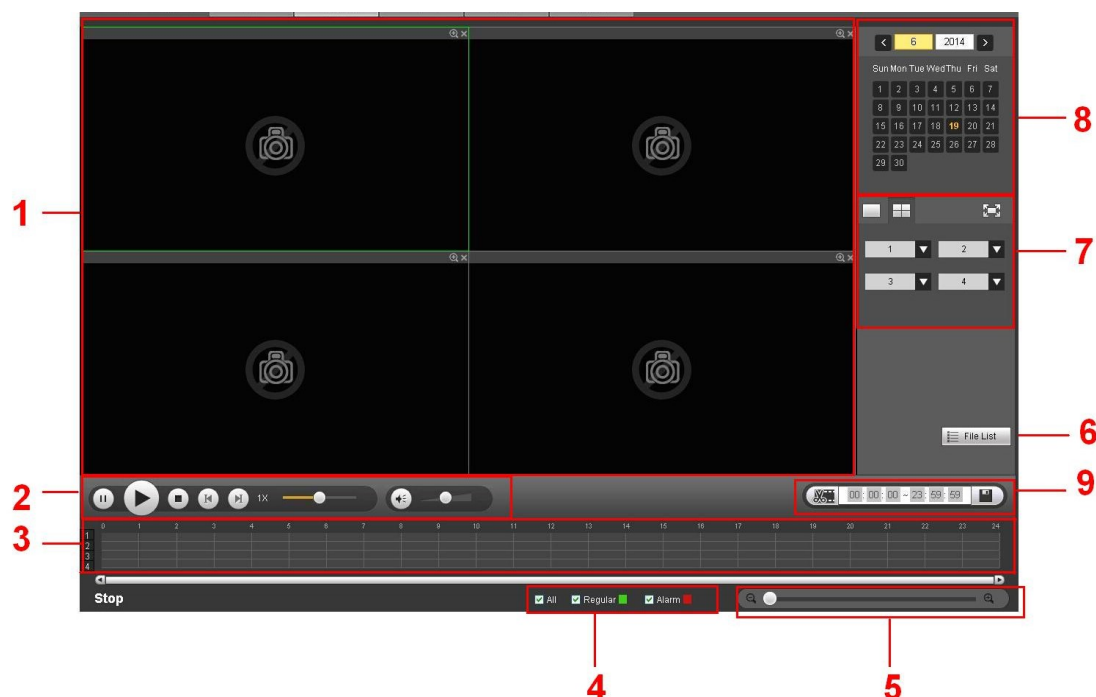


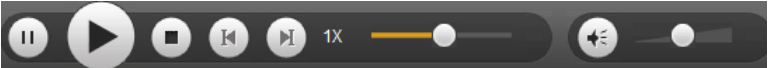




Figure 5-95

Please refer to the following sheet for detailed information.

SN	Function	Description
1	Display window	 <p>Click  to switch window amount. During the playback process, double click a window to zoom in.</p>
2	Playback control pane.	 <p>From left to right: pause/play/stop/previous frame/next frame/slow play/fast play/volume. <b>Note</b> The next frame button is only valid when record is in pause mode. Once the volume button  becomes , the audio is mute.</p>
3	Time bar	<ul style="list-style-type: none"> <li>● It is to display the record type and its period in current search criteria.</li> <li>● Use the mouse to click one point of the color zone in the time bar, system begins playback.</li> <li>● The time bar is beginning with 0 o'clock when you are setting the configuration. The time bar zooms in the period of the current playback time when you are playing the file.</li> <li>● The green color stands for the regular record file. The red color stands for the alarm record file.</li> </ul>
4	Record type	In any play mode, the time bar will change once you modify the

		search type. Right now system supports general, MD(motion detect) and alarm.
5	Time bar unit	You can adjust the time on the time bar to search record files.
6	File list	Please refer to chapter 5.8.3 for detailed information.
7	Window mode and channel options	There are two window modes: 1/4-channel. Change window mode, select record channel, the time bar can refresh accordingly.
8	Calendar	Blue: There is record file or image. Green: System current date. Click a date, you can view record file information on the time bar.
9	Clip and save record	Please refer to chapter 5.8.2 for detailed information.

### 5.8.1 Playback Record

There are three playback modes: Click play button/click any valid file position in the time bar/double click any file in the file list.





### 5.8.2 Clip and Save Record

It is to edit the file and save the interested footages to your local PC.

Use the calendar and time bar to search file(s).

Select corresponding channel(s).

There are two ways for you to clip.

- Please play the file you want to edit and then click button  when you want to edit. You can see the corresponding slide bar in the time bar of the corresponding channel such as  and . You can adjust the slide bar or input the accurate time to set the file end time. Click this button again and then save current contents in a new file.
- In this following figure, input start time and end time. See Figure 5-96. Click save button .

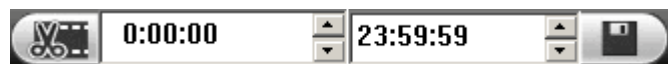


Figure 5-96

The default saved path is RecordDownload folder of the system HDD. You can change if necessary.

You can see the corresponding dialogue box when system is saving files. You can click Stop button to cancel current operation.

### 5.8.3 File List

Then please click file list button (Button 6 in Figure 5-95 ), you can see the corresponding files in the list. See Figure 5-97.

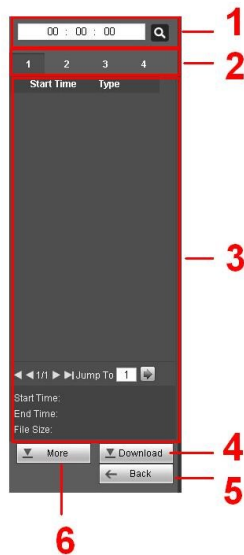
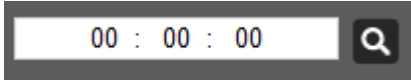
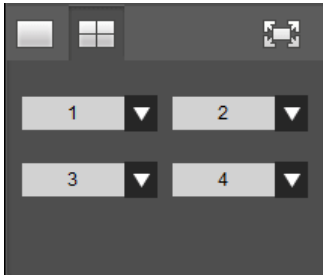



Figure 5-97

SN	Description
1	<p>Please select a date on the calendar pane and then input time here to search records of the specified time.</p> 
2	<p>Before the setup, please go to the playback window. Here you can select window mode and channel on the right pane (Pane 7 in Figure 5-95).</p> 
3	<p>System displays all records of current date by default. Click Enter button or double a record file you can begin playback. The record type includes: normal, MD and alarm.</p> 
4	<p>Check the file(s) you want to backup ( <input checked="" type="checkbox"/> ) and then click Download to save on your local PC.</p>
5	<p>Return</p>
6	<p>Click More button, you can search record files or picture. You can download by setting record channel, record type and record time. Here you can also download file to your local PC or USB devices. You can go to chapter 5.6.1.3.4 to set download path.</p>

Load more

It is for you to search record or picture. You can select record channel, record type and record time to download. There are two download types. The download by file interface is shown as in Figure 5-98 and the download by time interface is shown as in Figure 5-99.

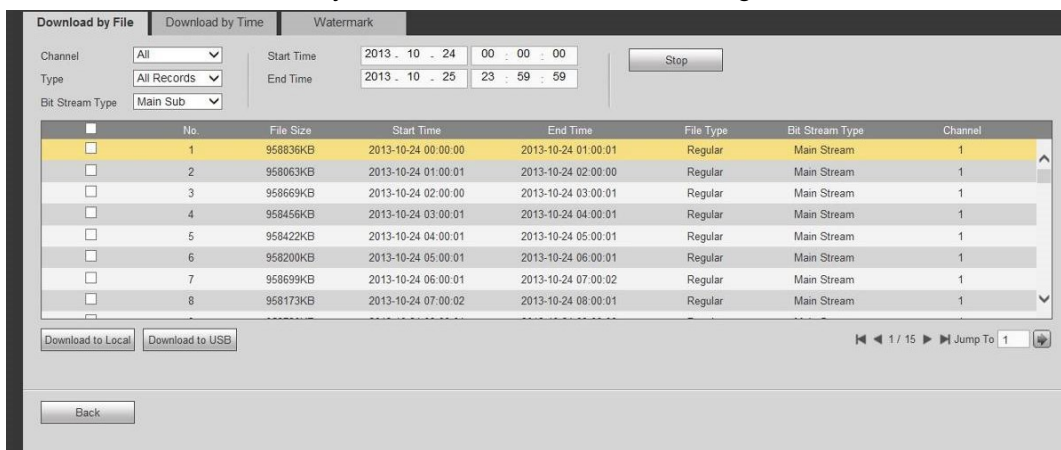


Figure 5-98

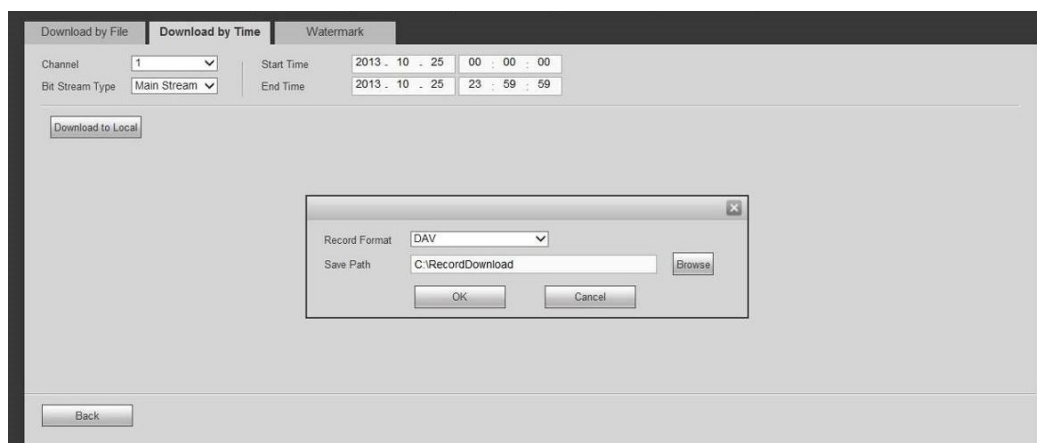


Figure 5-99

## Watermark

Watermark interface is shown as In Figure 5-98. Please select a file and then click Verify button to see the file has been tampered with or not

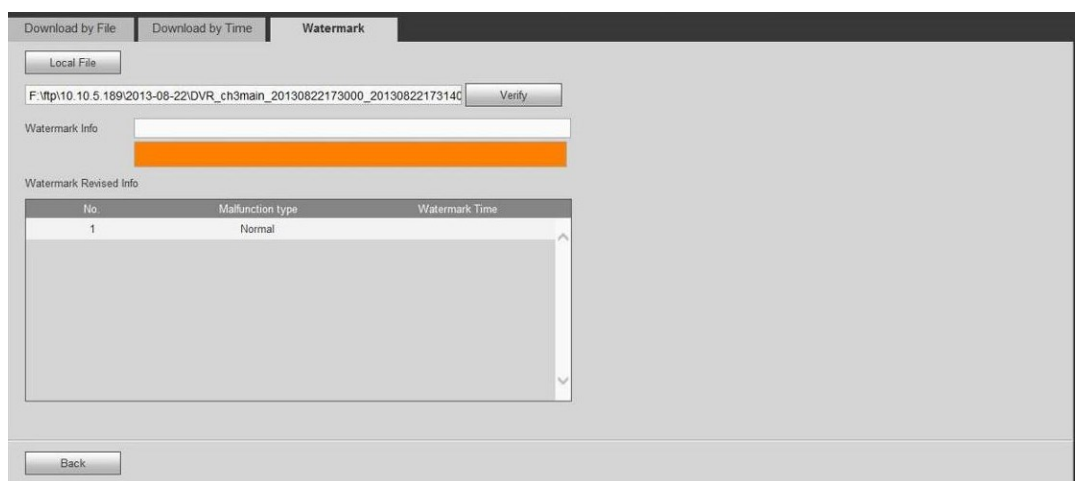


Figure 5-100

## 5.9 Alarm

Click alarm function, you can see an interface is shown as Figure 5-101.

Here you can set device alarm type and alarm sound setup.



Figure 5-101

Please refer to the following sheet for detailed information.

Please make sure current device can upload the alarm.

Type	Parameter	Function
Alarm Type	Video loss	System alarms when video loss occurs.
	Camera masking(Tampering)	System alarms when camera is viciously masking.
	Disk full	System alarms when disk is full.
	Disk error	System alarms when disk error occurs.
	External alarm	Alarm input device sends out alarm.
	Temperature high	System alarms when temperature is high.
	Battery low	System alarms when battery voltage is low.
Operation	Prompt	Check the box here, system can automatically pops up an alarm icon on the Alarm button in the main interface when there is an alarm.
Alarm Sound	Play alarm sound	System sends out alarm sound when an alarm occurs. You can specify as you wish.
	Sound path	Here you can specify alarm sound file.

## 5.10 Log out

Click log out button, system goes back to log in interface. See Figure 5-102.

You need to input user name and password to login again.



Figure 5-102

## 5.11 Un-install Web Control

You can use web un-install tool “uninstall web.bat” to un-install web control.

**Please note, before you un-installation, please close all web pages, otherwise the un-installation might result in error.**

## 6 Digital Surveillance System

Besides Web, you can use our Digital Surveillance Software (DSS) to login the device.  
For detailed information, please refer to *DSS user's manual*.

## 7 FAQ

### 1. After the vehicle started, the NVR cannot boot up properly.

There are following possibilities:

- Input power is not correct. It is too high or too low.
- Power connection is not correct.
- Power switch button is damaged.
- Program upgrade is wrong.
- HDD malfunction or something wrong with HDD ribbon.
- Seagate DB35.1, DB35.2, SV35 or Maxtor 17-g has compatibility problem. Please upgrade to the latest version to solve this problem.
- Front panel error.
- Main board is damaged.

### 2. NVR often automatically shuts down or stops running.

There are following possibilities:

- Input voltage is not stable or it is too low.
- HDD malfunction or something wrong with the ribbon.
- Button power is not enough.
- Front video signal is not stable.
- Working environment is too harsh, too much dust.
- Hardware malfunction.

### 3. System cannot detect hard disk.

There are following possibilities:

- HDD is broken.
- HDD ribbon is damaged.
- HDD cable connection is loose.
- Main board SATA port is broken.

### 4. There is no video output whether it is one-channel, multiple-channel or all-channel output.

There are following possibilities:

- Program is not compatible. Please upgrade to the latest version.
- Brightness is 0. Please restore factory default setup.
- There is no video input signal or it is too weak.
- Check privacy mask setup or your screen saver.
- NVR hardware malfunctions.

### 5. Real-time video color is distorted.

There are following possibilities:

- When using BNC output, NTSC and PAL setup is not correct. The real-time video becomes black and white.
- NVR and monitor resistance is not compatible.



- Video transmission is too long or degrading is too huge.
- NVR color or brightness setup is not correct.

#### **6. Cannot search local records.**

There are following possibilities:

- HDD ribbon is damaged.
- HDD is broken.
- Upgraded program is not compatible.
- The recorded file has been overwritten.
- Record function has been disabled.

#### **7. Video is distorted when searching local records.**

There are following possibilities:

- Video quality setup is too low.
- Program read error, bit data is too small. There is mosaic in the full screen. Please restart the NVR to solve this problem.
- HDD data ribbon error.
- HDD malfunction.
- NVR hardware malfunctions.

#### **8. There is no audio when monitor.**

There are following possibilities:

- It is not a power picker.
- It is not a power acoustics.
- Audio cable is damaged.
- NVR hardware malfunctions.

#### **9. There is audio when monitor but there is no audio when system playback.**

There are following possibilities:

- Setup is not correct. Please enable audio function
- Corresponding channel has no video input. Playback is not continuous when the screen is blue.

#### **10. Time display is not correct.**

There are following possibilities:

- Setup is not correct
- Battery contact is not correct or voltage is too low.
- Crystal is broken.

#### **11. NVR cannot control PTZ.**

There are following possibilities:

- Front panel PTZ error
- PTZ decoder setup, connection or installation is not correct.
- Cable connection is not correct.
- PTZ setup is not correct.

- PTZ decoder and NVR protocol is not compatible.
- PTZ decoder and NVR address is not compatible.
- When there are several decoders, please add 120 Ohm between the PTZ decoder A/B cables furthest end to delete the reverberation or impedance matching. Otherwise the PTZ control is not stable.
- The distance is too far.

## **12. Cannot log in client-end or web.**

There are following possibilities:

- For Windows 98 or Windows ME user, please update your system to Windows 2000 sp4. Or you can install client-end software of lower version. Please note right now, our NVR is not compatible with Windows VISTA control.
- ActiveX control has been disabled.
- No dx8.1 or higher. Please upgrade display card driver.
- Network connection error.
- Network setup error.
- Password or user name is invalid.
- Client-end is not compatible with NVR program.

## **13. There is only mosaic no video when preview or playback video file remotely.**

There are following possibilities:

- Network fluency is not good.
- Client-end resources are limit.
- There is multiple-cast group setup in NVR. This mode can result in mosaic. Usually we do not recommend this mode.
- There is privacy mask or channel protection setup.
- Current user has no right to monitor.
- NVR local video output quality is not good.

## **14. Network connection is not stable.**

There are following possibilities:

- Network is not stable.
- IP address conflict.
- MAC address conflict.
- PC or NVR network card is not good.

## **15. USB backup error.**

There are following possibilities:

- Burner and NVR are in the same data cable.
- System uses too much CPU resources. Please stop record first and then begin backup.
- Data amount exceeds backup device capacity. It may result in burner error.
- Backup device is not compatible.
- Backup device is damaged.

## **16. Alarm signal cannot be disarmed.**

There are following possibilities:

- Alarm setup is not correct.
- Alarm output has been open manually.
- Input device error or connection is not correct.
- Some program versions may have this problem. Please upgrade your system.

#### **17. Alarm function is null.**

There are following possibilities:

- Alarm setup is not correct.
- Alarm cable connection is not correct.
- Alarm input signal is not correct.
- There are two loops connect to one alarm device.

#### **18. Remote control does not work.**

There are following possibilities:

- Remote control address is not correct.
- Distance is too far or control angle is too small.
- Remote control battery power is low.
- Remote control is damaged or NVR front panel is damaged.

#### **19. Record storage period is not enough.**

There are following possibilities:

- Camera quality is too low. Lens is dirty. Camera is installed against the light. Camera aperture setup is not correct.
- HDD capacity is not enough.
- HDD is damaged.

#### **20. Cannot detect SIM card**

There are following possibilities:

- There is no SIM card.
- SIM card direction is wrong.
- SIM card is malfunction.

#### **21. My cell phone 3G dial failed.**

There are following possibilities:

- You have not installed the dial module or your installation is not right.
- Please make sure you have inserted the card.
- You have not installed the antenna or the connection is not sound.
- The center platform configuration is not right or the registration is not effective.
- The cell phone remaining sum is not sufficient.
- Signal is too weak.
- SIM card does not support corresponding service.

#### **22. 3G platform is offline**

There are following possibilities:

- Refer to the above item to check 3G dial function is OK or not.
- Check local auto register function setup.
- Check server setup.

### **23. No GPS data**

There are following possibilities:

- Check GPS antenna connection
- GPS antenna environment is free of block object.
- Vehicle data module is running or not.

## **Daily Maintenance**

- Do not allow other objects falling into the NVR (such as water), it may result in device malfunction.
- Always follow the transportation instructions. Do not transport the NVR upside down.
- Please pay attention to the cable connection. The improper connection steps may result in device malfunction or damage.
- Please make sure all the external cables have soundly earthed.
- Before you connect the power cable, please make sure other cables have properly connected.
- Use the cable strap in case there is short circuit, electric shock.
- Please keep the power cable neat in case it obstacles the driver or the passenger.
- Please remove the negative end (-) of the connection terminal before you configure the cable.
- Please unlock the key before you draw out the HDD box. Otherwise it may result in device damage.
- When washing the vehicle, please keep the NVR away from the water. Otherwise it may result in short circuit, fire or device malfunctions.
- Please make sure the NVR is away from the direct sunlight or other heating sources. Please keep the sound ventilation.
- Please use the brush to clean the board, socket connector and the chassis regularly.
- The NVR shall be soundly earthed in case there is audio/video disturbance. Keep the NVR away from the static voltage or induced \_voltage.
- Please unplug the power cable when you remove the audio/video signal cable, RS232 or RS485 cable.
- Please check the NVR is secured firmly and horizontally. Please make sure the anti-vibration component can work properly.
- Please check and maintain the NVR regularly.

## 8 Appendix A HDD Capacity Calculation

Calculate total capacity needed by each device according to video recording (video recording type and video file storage time).

Step 1: According to Formula (1) to calculate storage capacity  $q_i$  that is the capacity of each channel needed for each hour, unit Mbyte.

$$q_i = d_i \div 8 \times 3600 \div 1024 \quad (1)$$

In the formula:  $d_i$  means the bit rate, unit Kbit/s

Step 2: After video time requirement is confirmed, according to Formula (2) to calculate the storage capacity  $m_i$ , which is storage of each channel needed unit Mbyte.

$$m_i = q_i \times h_i \times D_i \quad (2)$$

In the formula:

$h_i$  means the recording time for each day (hour)

$D_i$  means number of days for which the video shall be kept

Step 3: According to Formula (3) to calculate total capacity (accumulation)  $q_T$  that is needed for all channels in the device during **scheduled video recording**.

$$q_T = \sum_{i=1}^c m_i \quad (3)$$

In the formula:  $c$  means total number of channels in one device

Step 4: According to Formula (4) to calculate total capacity (accumulation)  $q_T$  that is needed for all channels in device during **alarm video recording**.

$$q_T = \sum_{i=1}^c m_i \times a\% \quad (4)$$

In the formula:  $a\%$  means alarm occurrence rate

### Note

- This manual is for reference only. Slight difference may be found in the user interface.
- All the designs and software here are subject to change without prior written notice.
- All trademarks and registered trademarks are the properties of their respective owners.

- **If there is any uncertainty or controversy, please refer to the final explanation of us.**
- **Please visit our website or contact your local service engineer for more information.**