Mobile Network Video Recorder

User Manual

<u>User Manual</u>

About this Manual

This Manual is applicable to DS-M5504HNI series Mobile Network Video Recorder.

The Manual includes instructions for using and managing the product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version in the company website (http://overseas.hikvision.com/en/).

Please use this user manual under the guidance of professionals.

Trademarks Acknowledgement

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Legal Disclaimer

Regulatory Information

FCC Information

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This product has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this product does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

FCC Conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.

2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement

This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the EMC Directive 2004/108/EC, the RoHS Directive 2011/65/EU, the R&TTE Directive 1999/5/EC.

2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info

2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg).

For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info

Industry Canada ICES-003 Compliance

This device meets the CAN ICES-3 (B)/NMB-3(B) standards requirements.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) this device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radioexempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut

fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Safety Instruction

These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into "Warnings" and "Cautions"

Warnings: Serious injury or death may occur if any of the warnings are neglected.

Cautions: Injury or equipment damage may occur if any of the cautions are neglected.

⚡	⚠
Warnings Follow these safeguards to prevent serious injury or death.	**Cautions** Follow these precautions to prevent potential injury or material damage.

⚡   **Warnings**

- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.

- In the use of the product, you must be in strict compliance with the electrical safety regulations of the nation and region. Please refer to technical specifications for detailed information.

- Input voltage should meet both the SELV (Safety Extra Low Voltage) and the Limited Power Source with +8 to +36VDC according to the IEC60950-1 standard. Please refer to technical specifications for detailed information.

- Do not connect several devices to one power adapter as adapter overload may cause over-heating or a fire hazard.

- Please make sure that the plug is firmly connected to the power socket.

- If smoke, odor or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center. Thank you for purchasing our product. If there is any question or request, please do not hesitate to contact the dealer.

Safety Instructions

- Read, keep and follow these instructions.
- Professional automobile assembly manufacturers or automakers are required for the system installation. And place the device at a well-ventilated position inside the automobile.
- Please make yourself be familiar with the power connection before installation.
- Use the factory recommended HDD for this device.
- Install antennas of wireless networks and satellite positioning in place with good signal and away from lightning, avoiding the coverage or shielding of other objects. Keep the master and slave antennas upright in a distance of at least 20cm if both of them are installed.
- The system is made of sophisticated electronics and do not disassemble the device by yourself.
- Contact the qualified technician from Hikvision or authorized dealer if there is any question or request.

Product Key Features

General

- User-friendly GUI providing easy and flexible operations
- Each channel supporting up to 1080P resolution with high-efficient and flexible H.264 encoding technology
- Up to 4 IP cameras can be added
- Two pluggable 2.5-inch HDDs/SSDs are connectable
- Hard disk box with fan and USB interface supporting intelligent temperature control and data export
- Built-in 3G (WCDMA) and WIFI modules providing flexible data transmission solutions
- Power-off protection avoiding key data from loss
- Built-in GPS module precisely positioning the vehicle via the satellite and recording the location information in the stream
- Information collection interfaces collecting driving information such as left/right turn, braking, backing up, etc.
- Multiple extension interfaces supporting connection of external G-sensor, etc.
- Specialized aviation connectors ensuring signal stability
- Ignition startup, Delay (0 h to 6 h) shutdown and 24-hour scheduled startup/shutdown
- Wide-range power input (+ 8 VDC to + 36 VDC)
- Aluminum die-cast chassis well adaptable to working environment
- SIM card design
- Software-based firewall supported

Local Monitoring

- 1/4/9-division live view and adjustable display sequence of screens
- Shielding designated live view channel
- Motion detection, tamper-proof, video exception alarm and video loss alarm
- Privacy mask

HDD Management

- Up to two 2.5-inch SATA disks
- S.M.A.R.T. function
- HDD sleep
- File format compatible with Windows system; eliminating file fragments by disk space pre-allocation technology

Record and Playback

- Cycle recording and non-cycle recording supported
- Three types of compression parameters including main stream (normal), main stream (event) and sub-stream
- Multiple recording types: normal, alarm, motion, motion|alarm, motion&alarm
- Up to 8 time periods configurable for different recording types
- Pre-record and post-record for motion or alarm triggered recording
- Search and play back record files by camera No., recording type, start/end time, etc.
- Supporting pause, fast forward, slow forward, skip forward, skip backward and mute when playback

Backup

- Export video data by USB device
- Export video data by pluggable HDD
- Management and maintenance of backup devices

Alarm and Exception

- Management of alarm input/output
- Management of video loss alarm, motion detection alarm, video tampering alarm
- Configurable arming schedule of alarm input/output
- Alarm for video loss, motion detection, video tampering, video signal exception, video input/output standard mismatch, illegal login, network disconnected, IP confliction, HDD error, and HDD full
- Multiple alarm linkage actions including pop-up image on monitor, audible warning and alarm output. Motion detection and alarm input can also trigger recording of specified channels
- Automatic restore when system is abnormal
- Supporting alarm and status display terminal

Other Local Functions

- Two-level user management; admin user is allowed to configure the parameters and create many operators
- Supporting record and search the logs of operation, alarm, exceptions and information
- Upgrade system via USB or network interface
- Import/export of device configuration file

Network Functions

- Self-adaptive 10M/100M network interface
- WCDMA supported
- Wi-Fi supported
- Remote configuration and operation by iVMS platform and SDK platform
- TCP/IP, DHCP, DNS, NTP, and SADP supported
- Remote search, playback, download of record files
- Remote parameters setup; remote import/export of device parameters
- Remote viewing of the device status, system logs and alarm status
- Remote HDD formatting, program upgrading and system restart
- RS-232 transparent channel transmission
- Embedded WEB server

Development Scalability

- SDK for Windows and Linux system
- Development support and training for application system

NOTE

- The Wi-Fi function is only supported by the "/WI" devices.
- The 3G dialing function is only supported by the "/GW" devices.

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Chapter 1 Introduction

1.1 Front Panel

The front panel of DS-M5504HNI series is displayed below:
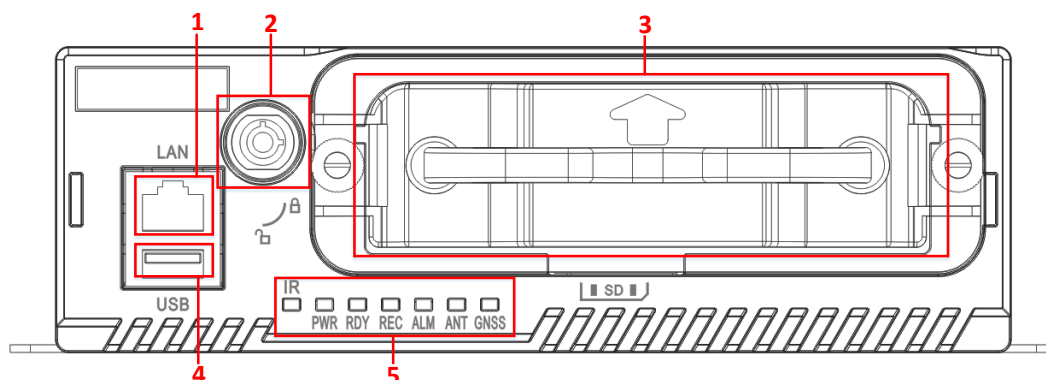
Figure 1. 1 Front Panel

Table 1. 1 Description of Front Panel

No.	Name	Description
1	LAN	1 RJ45 10M / 100M self-adaptive PoE interfaces.
2	Hard disk lock	Lock / Unlock the hard disk box.
3	Hard disk box	Insert two 2.5-inch SATA HDDs / SSDs for data storage.
4	USB	USB 2.0 interface
5	Indicators	IR: IR receiver Receive IR signal from remote control
		PWR: Power indicator Lights green after device starts up; Lights red when device is standby.
		RDY: Ready indicator Lights green after device starts up properly.
		REC: Record indicator Lights green when recording.
		ALM: Alarm indicator Lights red when alarm occurs.
		ANT: ANT indicator Solid green indicates dialing module is normal. Flashing green indicators device dialed.
		GNSS: GNSS indicator Solid green indicates GNSS module is normal. Flashing green indicates positioning succeeded.

1.2   Rear Panel

The rear panel of DS-M5504HNI series is displayed below:
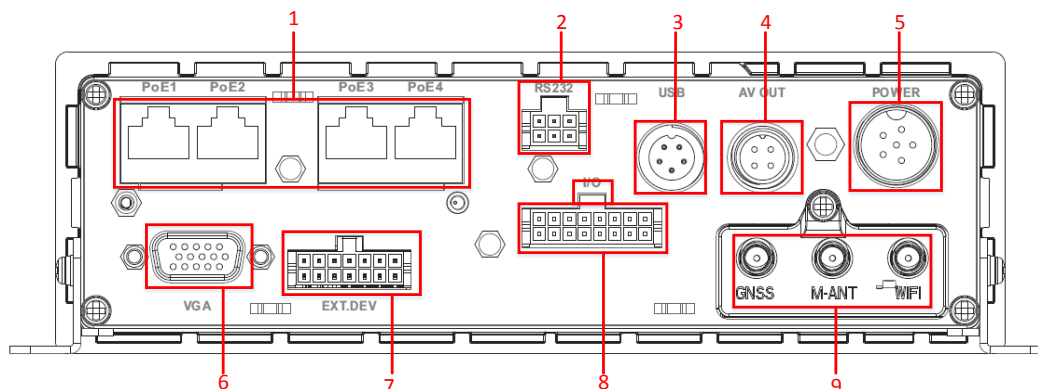
Figure 1. 2 Rear Panel

Table 1. 2 Description of Rear Panel

No.	Name	Description
1	PoE1 to POE4	PoE interfaces connectable to IP cameras, providing the power supply
2	RS232	RS-232 interface
3	USB	USB interface, 5-pin aviation plug
4	AV OUT	4-pin aviation plug for audio & video output; providing DC12V power supply.
5	POWER	6-pin aviation plug for power supply and start control
6	VGA	VGA interface
7	EXT. DEV	10-pin aviation plug for RS-422 interface, two-way audio interface, and video output
8	I/O	Alarm input / output interfaces
9	GNSS	GNSS antenna interface
	M-ANT	3G antenna interfaces
	WIFI	Wi-Fi antenna interface

NOTE

- Part function is optional. For details, see the actual device model.
- Pin definition of aviation plugs is for reference only. For details, see the tag on the corresponding component.

1.3   IR Remote Control Operations

The device may also be controlled with the included IR remote control, shown in Figure 1.3.

NOTE

Batteries (2×AAA) must be installed before operation.
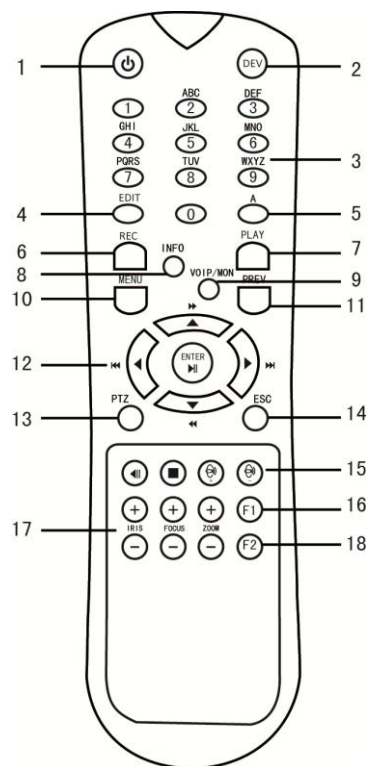
Figure 1. 3 Remote Control

Table 1. 3 Description of the IR Remote Control Buttons

No.	Name	Description
1	Power	Reserved
2	DEV	Input device number.
3	Number keys	1. Input number, symbol, and character. 2. Switch to the corresponding channel in Live View mode.
4	Edit	1. Enter the edit status, and then delete the character in the front of the cursor. 2. It can also be used to *tick* checkbox. 3. In Playback mode, it can be used to generate video clips for backup.
5	A	Switch between input methods (Number, English, symbol) when in the edit status.
6	REC	Reserved
7	PLAY	Enter video search interface
8	INFO	Reserved
9	VOIP/MON	Reserved
10	MENU	Enter Main menu interface.
11	PREV	Switch between single screen and multi-screen mode.

		Up, Down, Left, Right
12	**DIRECTION Buttons**	1. The DIRECTION buttons are used to navigate between different fields and items in menus. 2. In the playback interface, they are used for fast forward, slow forward, rewind. 3. In Live View mode, these buttons can be used to switch channel(s).
	ENTER	1. The ENTER button is used to confirm selection in any of the menu modes. 2. It can also be used to *tick* checkbox. 3. In Playback mode, it can be used to play or pause the video. 4. In Auto-switch mode, it can be used to stop /start auto switch.
13	**PTZ**	Reserved
14	**ESC**	Back to the previous menu.
15	**RESERVED**	Reserved for future use.
16	**F1**	In video search interface, it can be used to select all record files.
17	**PTZ Control Buttons**	Buttons to adjust the iris, focus and zoom of a PTZ camera.
18	**F2**	Reserved

Remote Control Troubleshooting:

NOTE

Make sure you have installed batteries properly in the remote control. And you have to aim the remote control at the IR receiver in the front panel.

If there is no response after you press any button on the remote, follow the procedure below to troubleshoot.

Steps:

1. Go to Menu > Other Settings > Display > Advance Setting by operating the mouse.
2. Check and remember device ID#. The default ID# is 255. This ID# is valid for all the IR remote controls.
3. Press the DEV key on the remote control.
4. Enter the device ID# in step 2.
5. Press the ENTER button on the remote.

If there is still no response from the remote, please check the following:

1. Batteries are installed correctly and the polarities of the batteries are not reversed.
2. Batteries are fresh and not out of charge.
3. IR receiver is not obstructed.

If the remote still can't function properly, please change a remote and try again, or contact the device provider.

1.4   USB Mouse Operations

A regular 3-button (Left/Right/Scroll-wheel) USB mouse can also be used with this device. To use a USB mouse:

1. Plug USB mouse into one of the USB interfaces on the front panel of the device.
2. The mouse should automatically be detected. If in a rare case that the mouse is not detected, the possible reason may be that the two devices are not compatible, please refer to the recommended device list from your provider.

Table 1. 4 Description of USB Mouse Operations

Name	Action	Description
Left-click	Single-click	Menu: Select and enter. Checkbox: Check / Uncheck the checkbox.
	Double-click	Live View: Switch single-screen and multi-screen.
	Click-and-drag	Tamper-proof, privacy mask, motion detection: Select target area.
Right-click	Single-click	Live View: Show right-click menu. Menu: Go back to upper-level menu.

1.5 Starting Up and Shutting Down the Device

Two working modes are available for the mobile NVR. The connection of power cables and control interfaces varies from the device working mode.

● Vehicle ignition startup and time-delay shutdown

The mobile NVR starts up when the vehicle ignites and shuts down according to the pre-defined delay time after the vehicle is off. The startup and shutdown of the device depend on the vehicle ignition signal.

● Timing on/off

The mobile NVR starts up or shuts down automatically according to the pre-defined time and the device works separately from the running status of the vehicle.

1.5.1 Vehicle Ignition Startup and Time-delay Shutdown

The vehicle ignition startup and time-delay shutdown are realized by the vehicle ignition switch, which includes positive pole ignition switch (providing high level signal when the switch closes) and negative pole ignition switch (providing low level signal when the switch closes). The wire connection of the device varies from different vehicle ignition switch.

For detailed time settings of time-delay shutdown, see Chapter 6.1

NOTE

● Please contact the vehicle manufacturer for the connection information of starting switch.

● The vehicle ignition switch, also called car key, controls the startup and shutdown of the vehicle. Most of the cars adopts positive pole ignition switch currently.
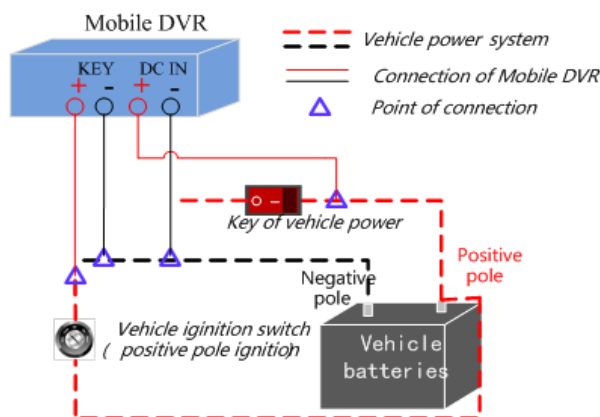
Positive pole ignition switch

Figure 1. 4 Connection of Positive Pole Ignition Switch

Ignition switch is connected to the positive pole of DC+12/24V of vehicle batteries. Please make sure that the connection is correct, and then perform the following steps:

Steps:

1. Connect the "DC IN +" of mobile NVR to the positive pole of vehicle batteries, jumping over the switch of normal vehicle power.
2. Connect the "DC IN -" and "KEY -" of mobile NVR to the negative pole of vehicle batteries.
3. Connect the "KEY +" of mobile NVR to the vehicle ignition switch.

NOTE

The normal vehicle power refers to the main power of the vehicle power supply system. After the vehicle is off, the normal vehicle power still provides direct-current source for the other devices inside and generally a main switch is used to turn on/off it.

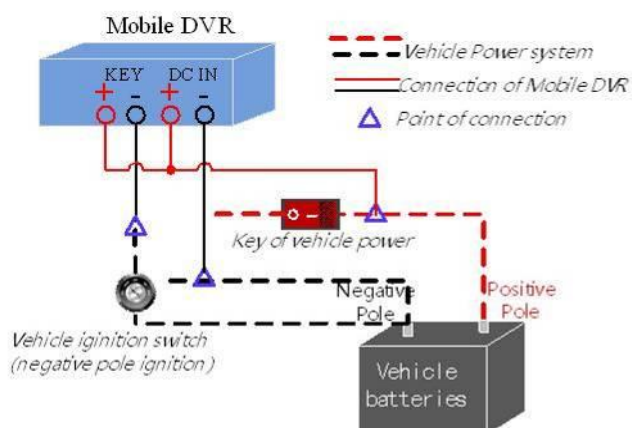## Negative pole ignition switch

Figure 1. 5 Connection of Negative Pole Ignition Switch

Ignition switch is connected to the negative pole of DC+12/24V of vehicle batteries. Please make sure that the connection is

correct, and then perform the following steps:

Steps:

1. Connect the "DC IN +" and "KEY +" of mobile NVR to the positive pole of vehicle batteries, jumping over the switch of normal vehicle power.

2. Connect the "DC IN -" to the negative pole of vehicle batteries.

3. Connect the "KEY -" of mobile NVR to the vehicle ignition switch.
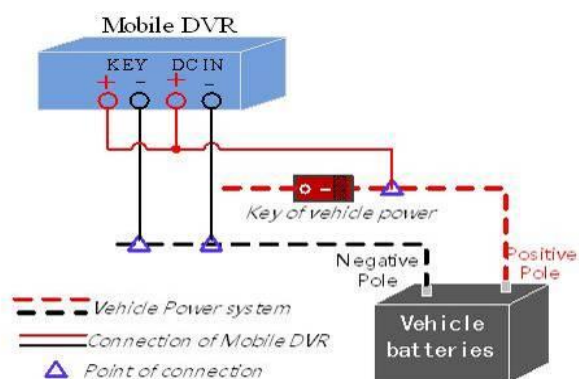
1.5.2 Timing On/Off

Figure 1. 6 Timing On/Off

Steps:

1. Connect the "DC IN +" and "KEY +" of mobile NVR to the positive pole of vehicle batteries.

2. Connect the "DC IN -" and "KEY -" of mobile NVR to the negative pole of vehicle batteries.

For detailed time settings of time-delay shutdown, see Chapter 6.1

1.6   Alarm Input / Output Connection

1.6.1 Alarm Input Connection

DS-M5504HNI series mobile NVR adopts the high/low-level electrical signals triggering (high level: 6 to 36 VDC; low level: 0 to 5 VDC) to realize alarm input. And in order to avoid error report caused by voltage fluctuation, no alarm will be triggered by voltage ranging of 5 to 6VDC.
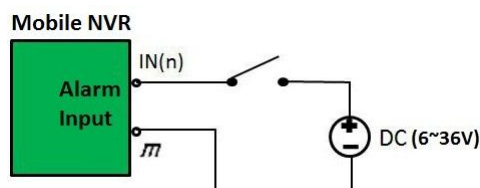

Figure 1. 7 Alarm Input Connection

1.6.2 Alarm Output Connection

The alarm output interfaces B1 and C1 of the mobile NVR is closed normally if no alarm occurs. When an alarm output is triggered, the corresponding A1 and B1 interfaces will be connected. Thus, the active alarm device is required for the system.
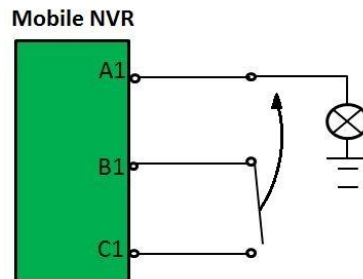

Figure 1. 8 Alarm Output Connection

1.7   Hard Disk Installation

- Use the factory recommended 2.5-inch hard disk.
- For single HDD installation, the thickness of the HDD should be 9.5mm or 7mm; for double HDD installation, the thickness of each HDD should be 7mm.
- Initialize the HDD for recording after the installation. Otherwise, the system will give an audible warning for HDD error. For details, see *4.1.1 Initializing the HDD*.

Perform the following steps to install the HDD on the mobile NVR.

Steps:

1. Prepare the tools and components for installation: two 2.5-inch SATA HDDs, antistatic gloves, key to hard disk lock, cross screwdriver, conventional screws and sunk screws.
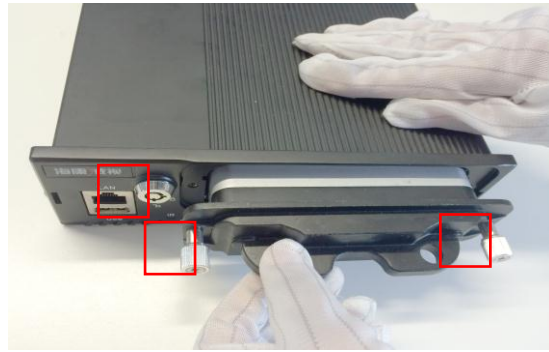
    Put on the antistatic gloves before the installation.

2. Insert the key and turn in counterclockwise to open the hard disk lock, unfasten the screws counterclockwise and pull out the hard disk box.
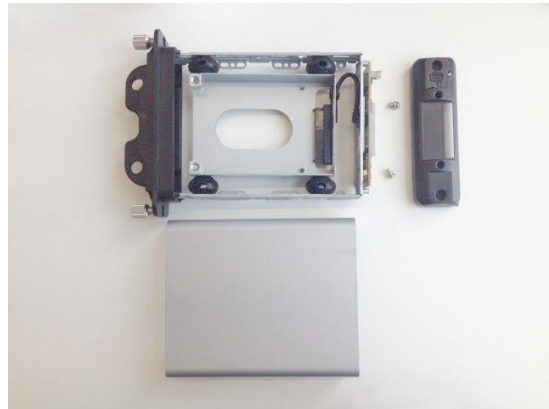
![NOTE]

The hard disk lock is locked when the keyhole stands upwards and is open when the keyhole stands leftward.

3. Loosen and remove the two set screws marked in the figure with the screwdriver, and then take the hard disk apart.
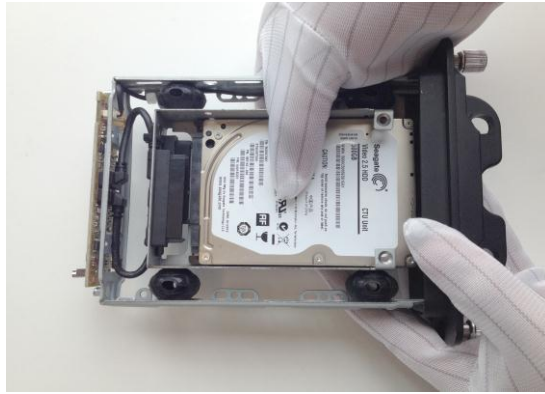
4. The assembly parts of the hard disk box are shown in the figure.

5. Place the first HDD into the hard disk box, with the PCB facing downward.

6. After the HDD is fully placed into the bracket, reverse the hard disk box and flat the HDD. There are two disk sockets in the bracket and tightly insert the first HDD into the one at the bottom.

7. Tighten the four screws marked in the figure to fix the HDD.

![NOTE]

For some certain HDDs, only the two upside screws are available. Tighten the two screws and go to the next step.
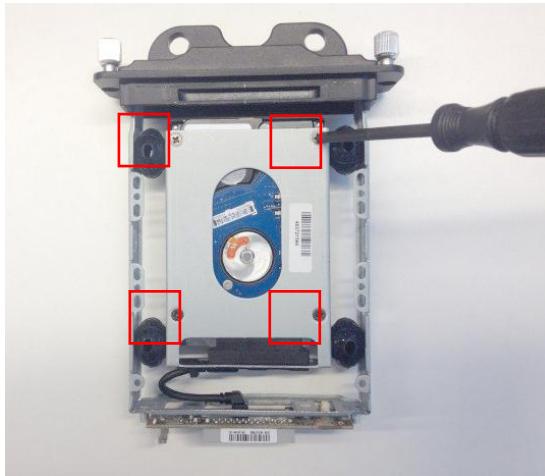
8. Tighten the two set screws on the left and right sides of the hard disk box, shown in the figure, to fix the inserted HDD.

9. Place the second HDD into the hard disk box, with the PCB facing upwards.

10. After the HDD is fully placed into the bracket, tightly insert the second HDD into the socket.

11. Fix and tighten the two screws marked in the figure.

12. Tighten the two set screws on the left and right sides of the hard disk box, shown in the figure, to fix the inserted HDD.

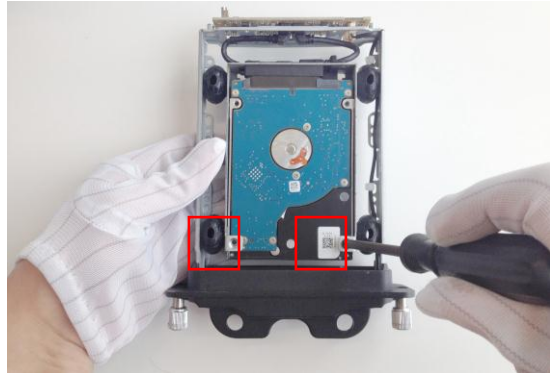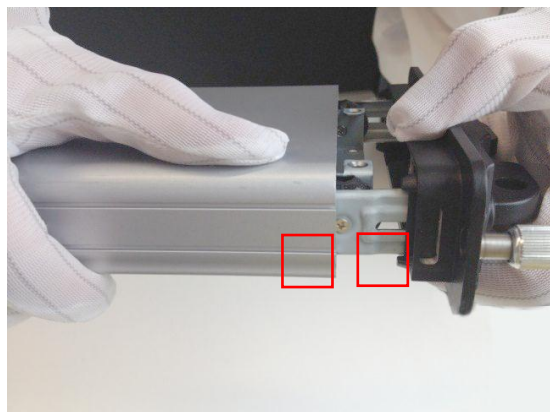13. Align the two sharp edges of the hard disk box marked in the figure, and assemble the whole hard disk box.

14. Tighten the two set screws of the hard disk box, as shown in the figure.
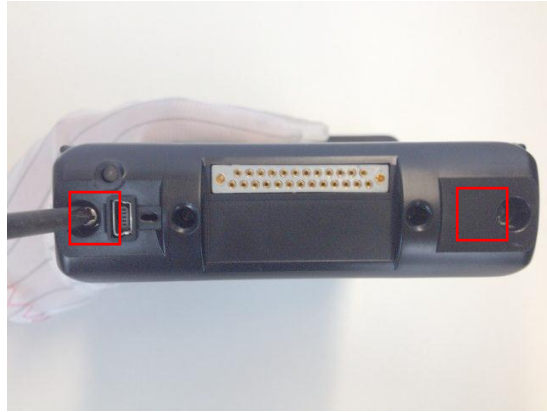
15. Insert the hard disk box back to the mobile NVR, and then tighten the screws clockwise.

1.8 SIM Card Installation

Pluggable wireless network module is designed for the mobile NVR and you should install the SIM card to realize the 3G function.

Perform the following steps to install the SIM card on the mobile NVR

Steps

1. Put on the antistatic gloves before the installation.

2. Use the screwdriver to loosen and remove the set screw on the rear panel.

3. Hold the small handle tightly and pull the 3G module component out of the device.

4. Press the yellow button on the 3G module component to pop up the corresponding SIM card socket. And then remove the SIM card socket.
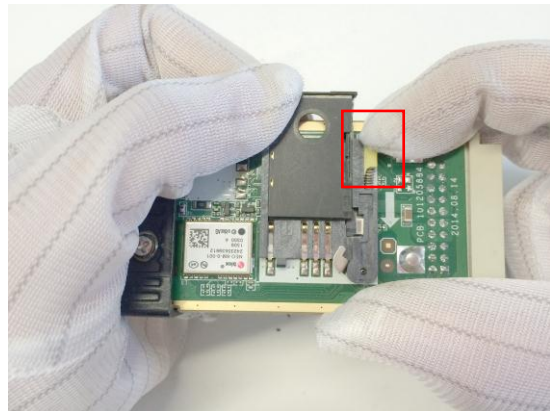
5. Place the SIM card into the SIM card socket correctly, as shown in the figure.

6. Place the SIM card socket installed with the SIM card back to the 3G module component.

7. Install the 3G module component back to the mobile NVR, and tighten the set screw.
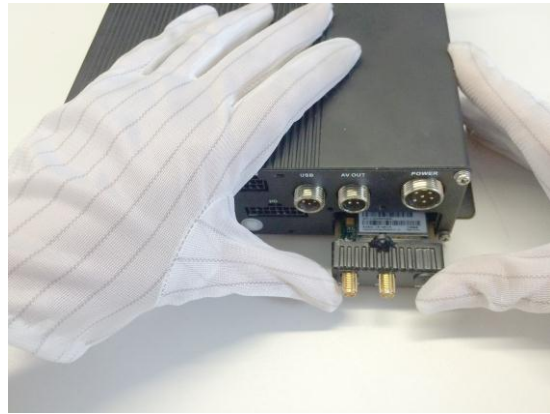
1.9   Cable Hooks Installation

Steps:

1. Prepare the IP camera dedicated cable hooks.

Make sure that the two cable hooks on the left-side faces leftward; and the two cable hooks on the right-side faces rightward.
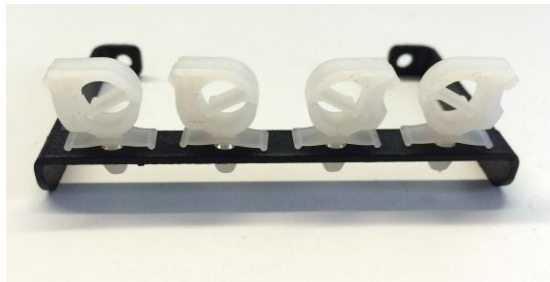
2. Open the cable hooks clip.
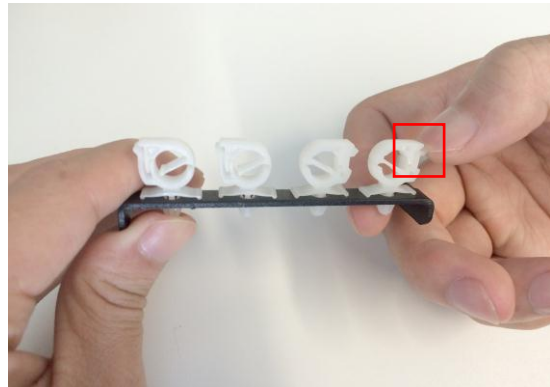
3. Fix the cable hooks to the rear panel of the mobile NVR with the screwdriver.
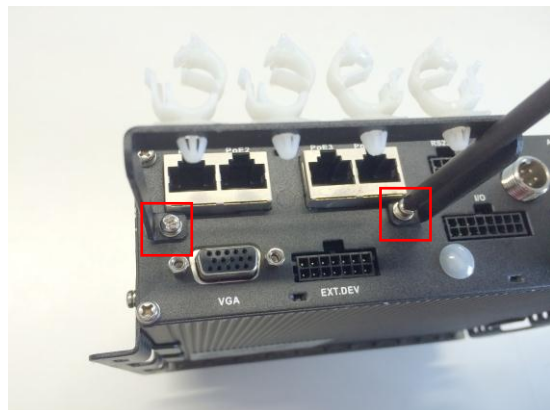
4. Insert the network cable into the PoE interface through the cable hook, as shown in the figure.

5. To disconnect the network cable, you can remove the clip locating on the opening of hook, shown in the figure, and then release the network cable.
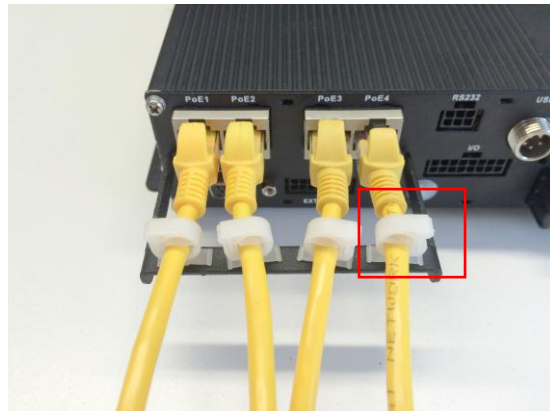
6. After the network cable is fixed by the hook, connect the other side of the cable to the IP camera.

Chapter 2 Basic Operations

2.1 Setting Admin Password

Purpose:

For the first-time access, you need to activate the device by setting an admin password. No operation is allowed before activation.

Steps:

1. Input the same password in the text field of **Create New Password** and **Confirm New Password**.

Figure 2. 1 Settings Admin Password

⚠ **STRONG PASSWORD RECOMMENDED**– *We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.*

2. Click **OK** to save the password and activate the device.

For the old version device, if you update it to the new version, a dialog box will pop up once the device starts up. You can click **YES** and follow the wizard to set a strong password.

2.2 Main Page

You can operate the mobile NVR via the remote control or USB mouse.

● **Enter Main Page**

Option 1 (using remote control):

Press the **MENU** button on the remote control to enter the main page.

Option 2 (using USB mouse):

Right click on the screen, and then select the **Menu** item on the right-click menu to enter the main page.

● **Operations On Main Page**

Option 1 (using remote control):

Move the cursor via the direction buttons to select the sub-menu icon, and then press the **Enter** button to enter the interface of the sub-menu.

Option 2 (using USB mouse):

Click the sub-menu icon on the screen to enter the interface of the sub-menu.

● **Exit from Main Page:**

Option 1 (using remote control):

Press the **ESC** button to go to the previous page or exit from the main page.

Option 2 (using USB mouse):

Right click on the screen to go to the previous page or exit from the main page.

Figure 2. 2 Main Page

2.3 User Management

Purpose:

There is a default account in the NVR: *Administrator*. The *Administrator* user name is *admin* and the password is set when you start the device for the first time. The *Administrator* has the permission to add and delete user and configure user parameters.

Steps:

1. Enter the User Management interface.

    Menu > Other Settings > User

Figure 2. 3 User Management

2. Click the **Add** button to enter the Add User interface.

Figure 2. 4 Add User

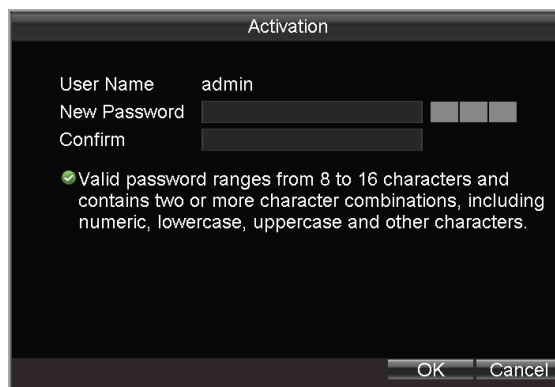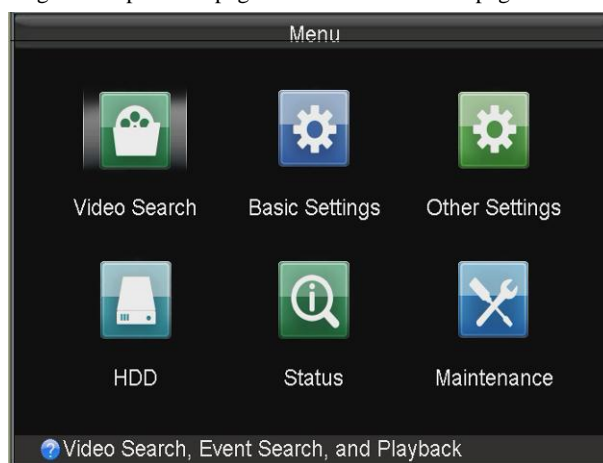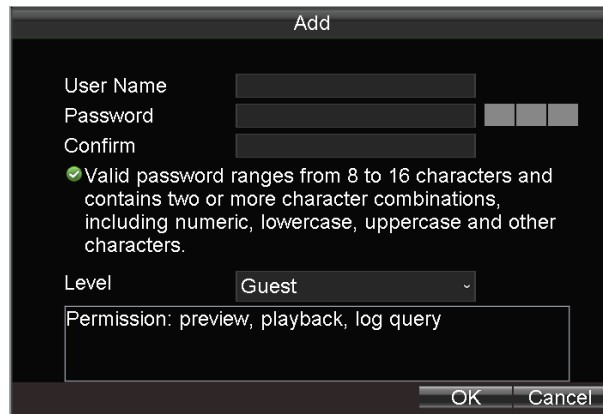3. Input the information of the new user, including user name, password and confirm password.

⚠ **STRONG PASSWORD RECOMMENDED**– *We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.*

4. Select the user level from the drop-down list.

   Operator: The operator has permissions of Preview, Playback, Backup, Log Search and Parameters Settings.

   Guest: The Guest has permission of Preview, Playback, Backup and Log Search.

5. Click the **OK** button to save the settings and go back to the User Management interface.

6. You can click the **Delete** button to delete the selected user and click the **Modify** button to modify the user information.

2.4   IPC Settings

Purpose:

IP camera can be added to the mobile NVR, and thus you can get the live view or record the video of the connected IP cameras. You can also set the parameters of the connected IP camera or delete it according to the actual needs.

Click the IPC icon on the Other Settings interface to enter the IP Camera Settings interface.
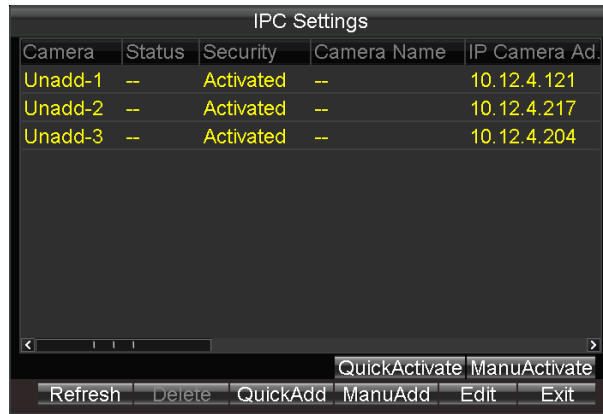
Figure 2. 5 IP Camera Settings

2.4.1 Activating IP Cameras

Purpose:

Before adding the cameras, make sure the IP cameras to be added are in active status.

Steps:

1. Enter IPC Settings interface.

    Menu > Other Settings > IPC Settings
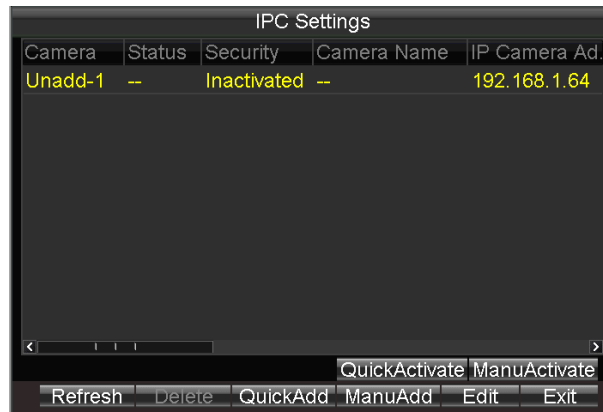
Figure 2. 6 IPC Settings Interface

2. Click to select an Inactivated IP camera.

3. Activate the selected IP camera.

● **Option 1**: Quick Activation

    Click the **Quick Activation** button. Thus the IP camera password is set as the same with the Mobile NVR password.

● **Option 2**: Manual Activation

    1) Click the **Manual Activation** button.
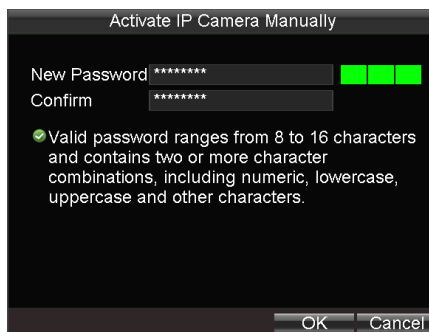
Figure 2. 7 Activate IP Camera Manually

2)   Input **New Password** and **Confirm.**

⚠️ **STRONG PASSWORD RECOMMENDED**– *We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.*

3)   Click **OK** to activate it.

2.4.2 Adding IP Cameras

Adding IP Camera Automatically

Purpose:

The online IP cameras in the same network segment with the system will be displayed on a list.

Steps:

1.   Click to select the IP camera on the list.

2.   Click the **QuickAdd** button, and the selected IP camera will be added automatically.

NOTE   Make sure the IP camera password is the same with mobile NVR, or adding IP camera will fail.

The icon ❌ indicates the IP camera is offline;

The icon ✅ indicates the connected IP camera works properly.

Figure 2. 8 Quick Add IP Camera

Adding IP Camera Manually

1. Click the **ManuAdd** button to enter the Add IP Camera Manually page.

2. Select the IP channel No. for the IP camera.

3. Input the required information, including the IP address, protocol, port No., user name and password.

4. Click the **Protocol** button, and you can customize the protocol according to the actual needs.

5. Click **OK** to save the settings.

NOTE

Up to 4 IP cameras can be added to the system.

Figure 2. 9 Add IP Camera-Manual

2.4.3 Setting IP Cameras

The added IP cameras will be displayed on a list on the IP Camera Settings interface.

1. Select the IP camera on the list, and click **Edit** to enter the Edit IPC interface

2. Edit the information of the selected IP camera, including the IP address, protocol, port No., and then input the user name and password.

3. Click **OK t**o save the settings.

Figure 2. 10 Edit IP Camera

2.4.4 Deleting IP Cameras

1. Select the IP camera on the list, and click **Delete** button.
2. Confirm the pop-up dialog box, and the selected IP camera is deleted from the system.
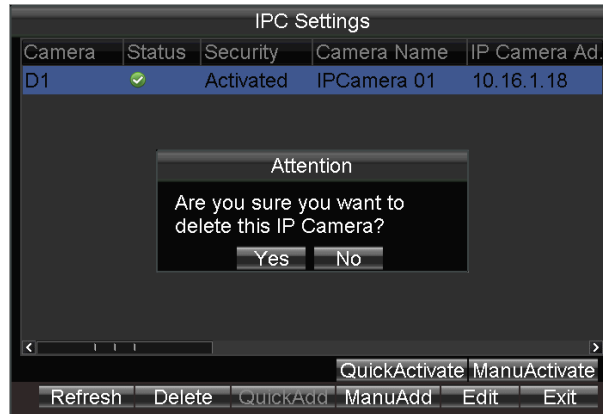
Figure 2. 11 Delete IP Camera

2.5 Display Settings

Purpose:

You can set the system time, select the CVBS output standard, enable the password, configure the DST settings, etc.

Steps:

1. Enter the Display Settings interface.

   Menu>Other Settings>Display

   The system language is set as English by default, and is not editable.
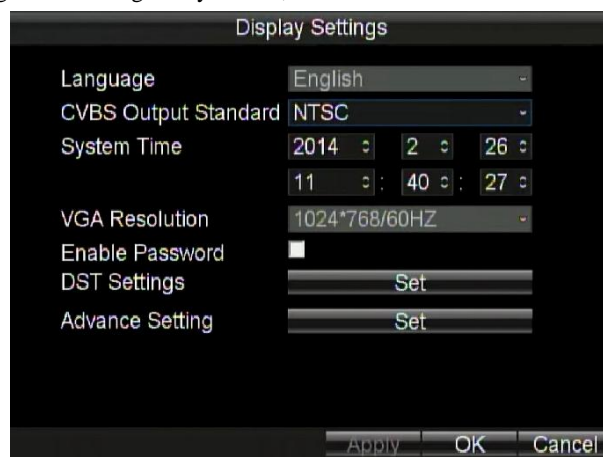
Figure 2. 12 Display Settings

2. Select the CVBS output standard to NTSC or PAL according to the actual video input standard.

3. Set the system time. You can click the **DIRECTION** keys on the remote control to positioning the cursor (**Left**/**Right**)

   and adjust the date or time (**Up**/**Down**).

NOTE

For mouse operations, you can click the arrow icon to adjust the date and time.

4. Select the VGA resolution from the drop-down list.

NOTE

The VGA resolution is only configurable when the Mobile NVR is connected to a VGA monitor. And you can set it as 1024*768/60Hz, 1280*720/60Hz, 1280*1024/60Hz or 1920*1080/60Hz.

5. Check the checkbox of **Enable Password** enable the password authentication before operations.

6. Click the **Set** button of DST Settings, and you can configure the DST (Daylight Saving Time) for the system.

   Perform the following steps to configure the DST settings.

   1) Check the checkbox of **Enable DST**.

   2) Set the start time and end time for the DST period.

   3) Select the DST bias from the drop-down list.

   4) Click **Apply** to save the settings and click **OK** to exit.

NOTE

When the DST function is disabled on the Mobile NVR side, the DST function of the connected IP camera(s) should be disabled.

Figure 2. 13 DST Settings

7. Click the **Set** button of Advance Settings, and you can configure the advanced parameters for display.

   ➢ **Device Name:** Input the system name as desired in the text field.

   ➢ **Device No.:** Edit the device No. for remote control. The device No. ranges from 1 to 255. The default device No. is 255.

NOTE

It is recommended not to modify the **Device No.**. Otherwise, you need to input the Device No. on the remote control every time you use it.

   ➢ **Brightness of CVBS:** Adjust the video output brightness.

   ➢ **Menu Transparency:** The transparency proportion of the menu displayed on the live view interface. You can set it as 1:3, 1:1, 3:1 or Non-transparent.

NOTE

- The smaller the proportion value is, the more transparent the menu is.

- When the Not Transparent is selected, only the menu is displayed on the interface.

➢ **Operation Timeout:** If no operations are done during the selected time, the live view interface will be displayed automatically.
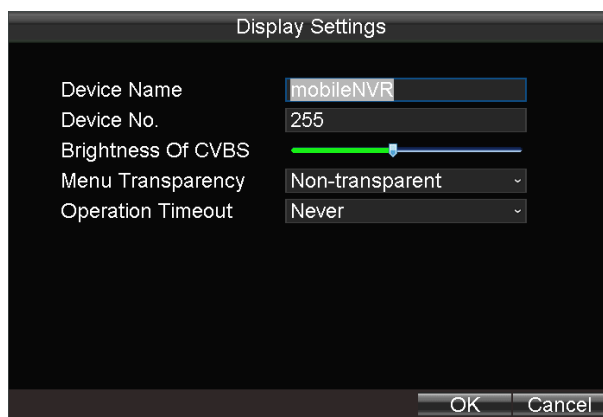
Figure 2. 14 Advanced Settings

8. Click **OK** to save the settings and exit.

2.6 Camera Settings

Purpose:

You can configure the camera name, OSD (On Screen Display) settings, etc.

The settings of OSD, standing for On Screen Display, include the display of camera name, date and week and the corresponding position information.

Steps:

1. Enter the Camera Settings interface.

   Menu>Other Settings>Camera

Figure 2. 15 Camera Settings

2. Select the camera from the drop-down list.

3. Input the camera name as desired in the text field.

4. Check the checkboxes to display the camera name, date or week on the live view interface of selected camera.

5.   Select the date format and time format according to the actual needs, and then select the OSD property.

6.   Click the **OSD Position** button and use the **F2** key and **Direction** keys on remote control to adjust the OSD position.

7.   Click the **Set** button of More Setting, and you can configure the video parameters, mask area, motion detection, etc.

Figure 2. 16 More Setting

➢   **Image Settings**

Perform the following steps to adjust the video parameters, including Brightness, Contrast, Saturation and Hue.

1)   Click the **Set** button of Image Settings to enter the Image Settings interface.

2)   Select the parameter item, press **Enter** key on the remote control, and use the **Direction** keys to adjust the value of the selected item.

3)   You can click **Default** to restore the default video parameters.

4)   Click **OK** to save the new settings.

Figure 2. 17 Image Settings Interface

➢   **Mask**

The privacy mask can be set to prevent some certain spots in the surveillance area from being viewed or recorded.

Perform the following steps to set a privacy mask:

1)   Check the checkbox of **Mask** to enable the privacy mask function.

2)   Click the **Area Settings** button to set the mask area on the live view interface.

3)   Press the **Edit** key on the remote control and a red block appears on the screen.

4)   Press the **Direction** keys on the remote control to adjust the position of the red block.

5)   Press the **Enter** key on the remote control to save the position of the red block.

6)   Press the **Direction** keys on the remote control to adjust the size of the block.

7)   Press the **Enter** key on the remote control to save the size of the block.

8)   You can press the **A** key on the remote control to clear all the mask areas.

NOTE

● For mouse operations, you can click-and-drag the mouse to draw the area on the live video, and clear the area via the right-click menu.

● Up to 4 mask areas can be configured for each channel.

● The mask area information of one channel cannot be copied to another one.

● You cannot view the image of the mask area either from the live view interface or record files.

● The screen is divided into 22*18 blocks in PAL format and 22*15 blocks in NTSC format.

➢ **Tamper-proof Detection**

A tampering alarm is triggered when the camera is covered and the monitoring area cannot be viewed. Linkage actions including audible warning, alarm output, etc., can be set to handle it. For details, see Chapter 7.2.3.

➢ **Motion Detection**

A motion detection alarm is triggered when the client software detects motion within its defined area.

Linkage actions including audible warning, alarm output, etc., can be set to handle it. For details, see Chapter 3.2.

➢ **Video Loss Detection**

When the device cannot receive video signal from the front-end devices, the video loss alarm will be triggered. Linkage actions including audible warning, alarm output, etc., can be set to handle it. For details, see Chapter 7.2.4.

8. Optionally, you can select the camera and click **Copy** to copy the current settings to the selected camera.

9. Click **Apply** to save the new settings and click **OK** to exit.

2.7 Preview Settings

Purpose:

You can configure the dwell time of live view window, set the camera order, enable/disable the audio preview, etc.

Steps:

1. Enter the Preview Settings interface.
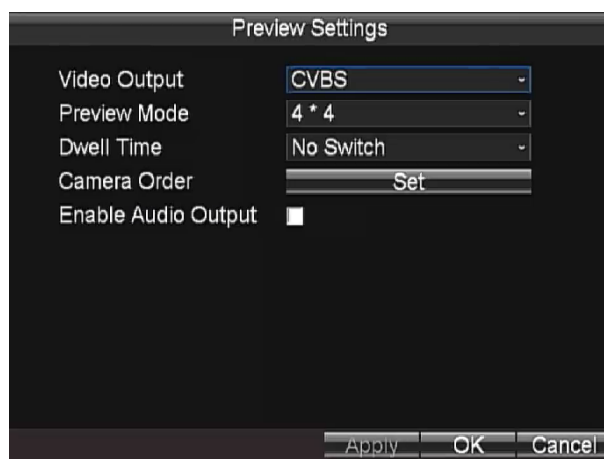
Menu>Other Settings>Preview

Figure 2. 18 Preview Settings

2. Select the video output from the drop-down list according to the actual needs.

3. Select the preview mode, dwell time for live view, and then enable/disable the audio output.

➢ **Preview Mode:** select the window division mode for live view.

➢ **Dwell Time:** the switch interval of the live view screen. The screen will be switched to the next one after the selected dwell time.

➢ **Enable Audio Output:** Enables/disables audio output for the selected video output.

4. Click the **Set** button to set the camera order.

Perform the following steps to set the camera order for display:

1) Use the **Direction** keys on the remote control to select the icon ◀ / ▶ on the screen, and press the **Enter** key to go to the previous / next display window.

2) Select the display window, and press **Enter** key on the remote control to enter the edit mode.

3) Press **Direction** keys on the remote control to select the camera for display.

NOTE

The character "X" means no camera will be displayed on the selected window.

4) Press **Enter** key on the remote control to confirm the settings.

5) Click **OK** to save the new settings and exit.

NOTE

For mouse operations, you can click the icon ◀ / ▶ to select the display window, and click the icon ↕ to set the camera for display.
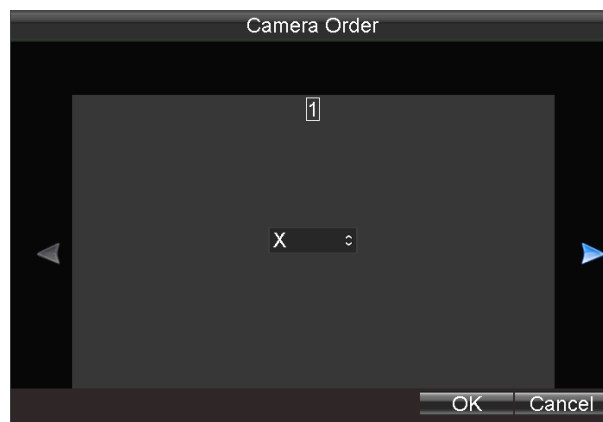

Figure 2. 19 Camera Order

5. Click the **Apply** button to save the new settings and click **OK** to exit.

Chapter 3 PTZ Controls

3.1 Configuring PTZ Settings

Purpose:

Follow the procedure to set the parameters for PTZ. The configuring of the PTZ parameters should be done before you control the PTZ camera.

Before you start:

Add a PTZ camera. For details, please refer to 2.4 *IPC Settings*.

Steps:

1. Enter the PTZ Settings interface.

    Menu > Other Settings > PTZ

Figure 3. 1 PTZ Settings

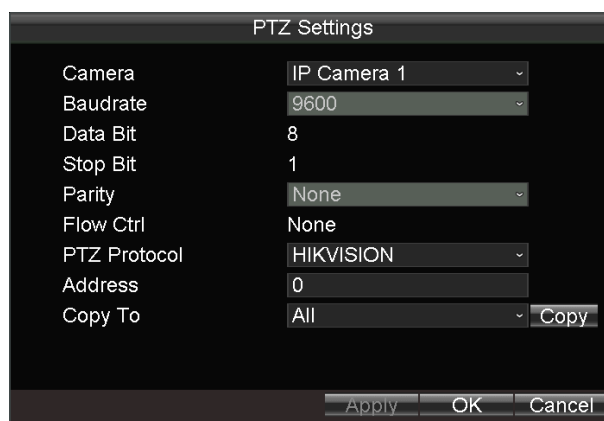2. Choose the camera for PTZ setting in the **Camera** dropdown list.
3. Input the parameters of the PTZ camera.

    All the parameters should be exactly the same as the PTZ camera parameters.
4. Click **OK** button to save the settings.

3.2 PTZ Control Panel

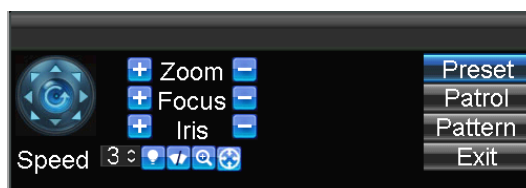Right-click a PTZ camera and click **PTZ** on the popup right-click menu to enter the PTZ Control interface.
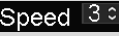
Figure 3. 2 PTZ Control Panel

Table 3. 1 Description of PTZ Control Panel

Icon	Description	Icon	Description	Icon	Description
	Direction button and the auto-cycle button		Zoom+, Focus+, Iris+		Zoom-, Focus-, Iris-
Speed 3	Moving speed		Light on/off		Wiper on/off
	3D-Zoom		Image Centralization		

3.3   Setting PTZ Presets, Patrols & Patterns

Before you start:

Please make sure that the presets are supported by PTZ protocols.

3.3.1   Customizing Presets

Purpose:

Follow the steps to set the preset location which you want the PTZ camera to point to when an event takes place.

Steps:

1. Right-click a PTZ camera and click **PTZ** on the popup right-click menu to enter the PTZ Control interface.

Figure 3. 3 Right-click Menu

2. Use the directional button to wheel the camera to the location where you want to set preset; and the zoom and focus operations can be recorded in the preset as well.

Table 3. 2 PTZ Control Panel

3. Click **Preset** button to pop up preset setting interface.

4. Select a **Preset No.**, and click **Set** to link the location to the preset.

5. Repeat the steps 2 and 3 to save more presets.

6. You can click the **Clear** button to clear the location information of the preset, or click the **Clear All** button to clear the location information of all the presets.

3.3.2 Calling Presets

Purpose:

This feature enables the camera to point to a specified position such as a window when an event takes place.

Steps:

1. Right-click a PTZ camera and click **PTZ** on the popup right-click menu to enter the PTZ Control interface.

2. Click **Preset** button to pop up preset setting interface.

3. Select a **Preset No.**, and click **Call** to link the location to the preset.

PTZ Control		
	Preset Patrol	Pattern
No.	Preset Name	Enabled
01	Preset 1	No
02	Preset 2	No
03	Preset 3	No
04	Preset 4	No
05	Preset 5	No
06	Preset 6	No
07	Preset 7	No
08	Preset 8	No
09	Preset 9	No
10	Preset10	No
11	Preset11	No
12	Preset12	No
13	Preset13	No
	Call Set Clear All Clear OK	

Figure 3. 4 PTZ Panel

Chapter 4 Record Settings

4.1 Configuring Encoding Parameters

4.1.1 Initializing the HDD

Before you start:

Install at least one HDD on the mobile NVR for video data storage.

Steps:

1. Enter the HDD Management interface.

    Menu>HDD

Figure 4. 1 HDD Management

2. Select the hard disk from the drop-down list. You can view the status, free space and capacity of the HDD.

3. Set the overwrite mode to **Yes** or **No** to enable or disable the disk overwriting function for the selected HDD.

4. Click the **View** button, and you can view the S.M.A.R.T. information of the HDD.

- If the hard disk is installed correctly and formatted, the status is displayed as normal or sleeping.
- The disk overwriting function is enabled by default. If the disk overwriting function is disabled, the recording will stop when the hard disk is full.

4.1.2 Configuring Record Settings

Purpose:

You can configure the transmission stream type, the resolution, frame rate, etc.

Steps:

1. Enter the Record Settings interface.

    Menu>Basic Settings>Record

Figure 4. 2 Record Settings

2. Select the camera from the drop-down list.

3. Configure the following settings:

> ➢ **Encoding Parameters**

Main Stream (Normal): used for schedule recording;

Main Stream (Event): used for event recording;

Sub Stream: used for network transmission.

NOTE

> When Main Stream (Event) is selected as the encoding parameters, the settings of stream type, resolution, bitrate type, video quality, frame rate and max. bitrate are the same with that of Main Stream (Normal) and cannot be configured.

> ➢ **Stream Type**

Video and Video & Audio are selectable.

> ➢ **Resolution**

Select the resolution for the selected camera and stream type. 1080P (1920*1080), XVGA (1280*960), and HD720P (1280*720) are selectable.

> ➢ **Bitrate Type**

Variable and Constant are selectable.

The video quality is configurable when you select Variable to the bitrate type; and the video quality is set as Medium by default and cannot be edited when you select Constant to the bitrate type.

> ➢ **Video Quality**

If you select Variable to the bitrate type, you can set the video quality as Highest, Higher, Medium, Low, Lower and Lowest.

> ➢ **Frame Rate**

Frame rate refers to the frequency of the image frame after compression. With other parameters constant, reduce the video frame rate, and you can lower the maximum bitrate to some extent.

> ➢ **Max. Bitrate(Kbps)**

Select the fixed value provided by the system or customize the maximum bitrate as desired.

4. Click the **Set** button of Schedule to enter the record schedule interface.

1) Check the check box of **Enable Schedule** to enable the record schedule settings.

2) Select the day from the drop-down list for settings.

3) Check the checkbox of **All Day** to enable all-day recording, and then select the recording type from the

drop-down list.

You can also uncheck the checkbox of **All Day**, customize the time period for recording, and select the recording type for each time period.

4) Click **OK** to save the new settings and exit.

You can view the recording status on the Record Status interface (Menu>Status>Record).

![NOTE]

- 5 recording types are selectable: Normal, Motion Detection, Alarm, Motion | Alarm and Motion & Alarm.
- Up to 8 time periods can be set for each day and each of the time periods cannot be overlapped.
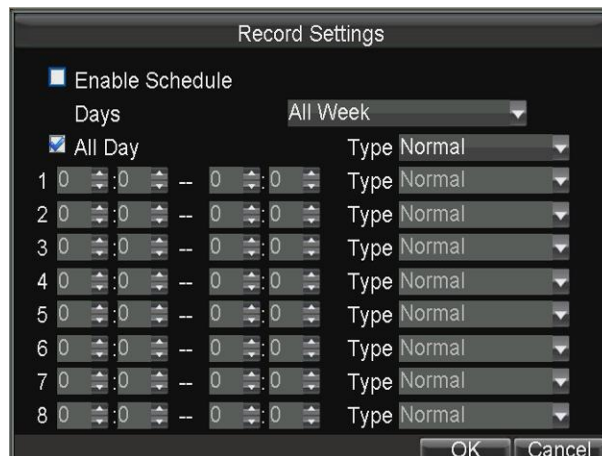

Figure 4. 3 Record Schedule Settings

5. Click the **Set** button of More Settings to configure the pre-record and post-record time.

   ➢ **Pre-record:** Normally used for the event (motion or alarm) triggered record, when you want to record before the event happens. For example, when an alarm occurs at 10:00, if the pre-record time is set as 5 seconds, the camera records the alarm at 9:59:55.

   ➢ **Post-record:** After the event finished, the video can also be recorded for a certain time. For example, when an alarm ends at 11:00, if the post-record time is set as 5 seconds, the camera records till 11:00:05.

6. Optionally, you can select the camera and click **Copy** to copy the current settings to the selected camera.

7. Click **Apply** to save the settings and click **OK** to exit.

4.2   Configuring Motion Detection Record

Purpose:

In the motion detection record, once a motion event occurs, the device starts to record and multiple linkage actions will be triggered.

Steps:

1. Enter the Advanced Camera Settings interface.

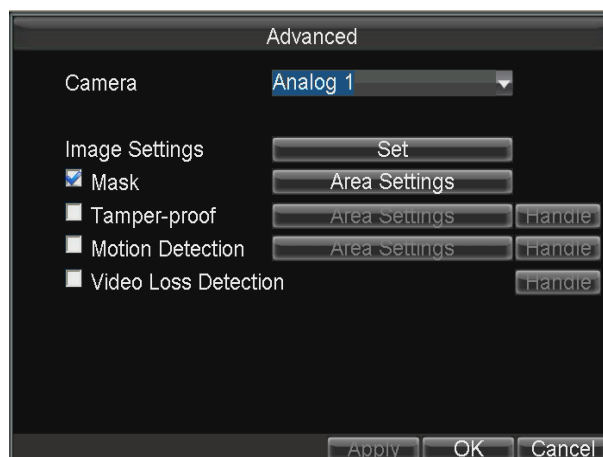   Menu>Other Settings>Camera>Set (More Setting)

Figure 4. 4 Motion Detection Settings

2. Check the checkbox of **Motion Detection** to enable the motion detection function.

3. Click the **Area Settings** button to set the area for motion detection.

    Perform the following steps to set a specified area for motion detection:

    1) Press the **Edit** key on the remote control and a red block appears on the screen.

    2) Press the **Direction** keys on the remote control to adjust the position of the red block.

    3) Press the **Enter** key on the remote control to save the position of the red block.

    4) Press the **Direction** keys on the remote control to adjust the size of the block.

    5) Press the **Enter** key on the remote control to save the size of the block.

    6) Press the **Menu** key on the remote control to set the detection sensitivity. You can set the level as 1~6 or off. Click **OK** to save the settings.

    7) You can press the **A** key on the remote control to clear all the mask areas.

    8) Press the **Enter** key on the remote control to save the settings and then press **Esc** key to exit.

    NOTE

    For mouse operations, you can click-and-drag the mouse to draw the area on the live video, right-click to set the detection sensitivity and clear the area.

4. Click the **Handle** button of Motion Detection, and you can set the arming schedule and alarm linkage actions.

    Perform the following steps to set the arming schedule and alarm triggered linkage actions:

    1) Select the day from the drop-down list, and set the arming schedule for the alarm linkage actions.

    2) Optionally, you can copy the current settings to other days in the week.

    3) Check the checkboxes to enable the corresponding linkage actions.

        ➢ **Pop-up Image on Monitor**

        When an alarm is triggered, the local monitor displays the video image from the alarming channel configured for full screen monitoring.

        ➢ **Audio Warning**:

        Trigger an audible *beep* when an alarm is detected.

        ➢ **Trigger Alarm Output**:

        Trigger an alarm output when an alarm is detected. For details of alarm output settings, see Chapter 7.2.2.

    4) Click the **Set** button of Triggered Camera to select the camera to record when the alarm is triggered.

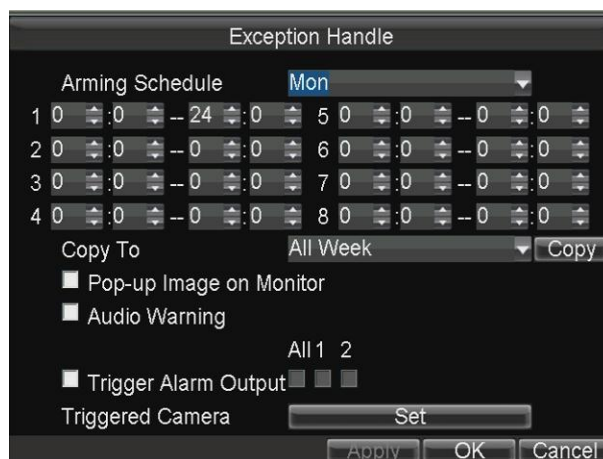   5) Click **Apply** to save the new settings and click **OK** to exit.

Figure 4. 5 Linkage Actions of Motion Detection

5. Click **Apply** to save the new settings and click **OK** to exit.

6. Enter the Record Settings interface, and select Motion as the record type to set the arming schedule of motion detection record.

   Menu>Basic Settings>Schedule>Set (More Setting)

4.3   Configuring Alarm Triggered Record

Purpose:

Follow the procedure to configure alarm triggered recording.

Steps:

1. Enter the Alarm Input settings interface.
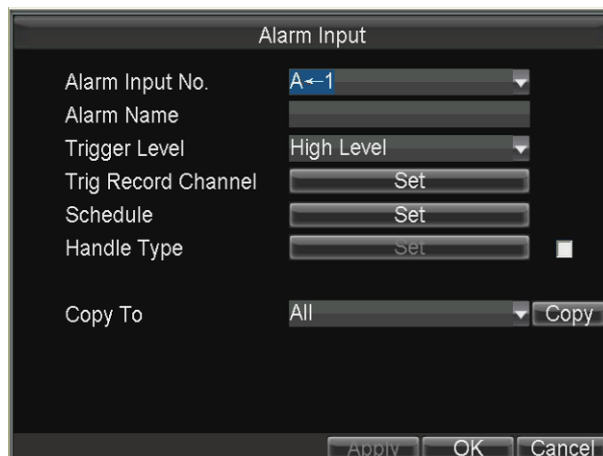
   Menu>Other Settings>AlarmIn

Figure 4. 6 Alarm Input Settings

2. Click the **Set** button of **Trig Record Channel** to select the alarm triggered recording channel(s). For other alarm input settings, see Chapter 7.2.1.

3. Click the **Apply** button to save the settings and click **OK** to exit.

After configuring alarm input, enter the Record Settings interface to set alarm triggered record. Please see *Chapter 3.1.2* for record settings (set the **Type** to alarm, motion | alarm or motion & alarm).

4.4   Searching Record Files

Purpose:

You can search and play back the record files stored on the device.

Steps:
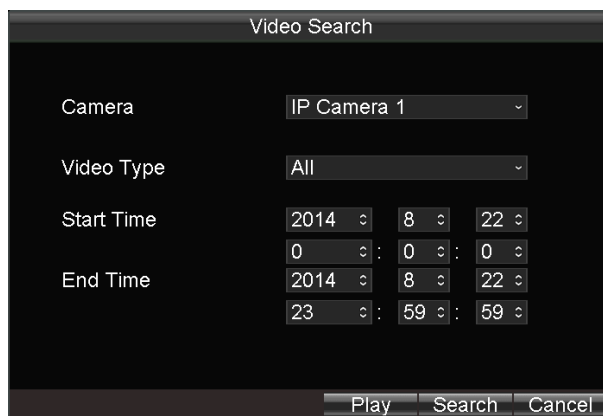
1.   Enter the Video Search interface.

Menu>Video Search

Figure 4. 7 Video Search Interface

---

2.   Select the camera and video type from the drop-down list, and then specify the start time and end time for search.

3.   Click the **Play** button, and you can play back the searched record files directly.

A playback toolbar appears at the bottom of the playback interface.

Click-and-drag the slider with the mouse, and you can adjust the playback process as desired.

Click the icon   /   , and you can enable / disable to audio of the record files.

Click the icon   /   , and you can start / stop clipping the record files and save the video clips when exiting from the playback interface.
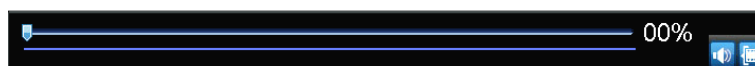

Figure 4. 8 Playback Toolbar

● When more than 4000 record files are found, the top 4000 items have the priority to be played back.

● Press the **Up** / **Down** keys on the remote control to adjust the playback speed.

4.   Click the **Search** button, and the record files will be displayed on a list.

Select the record file, click the **Play** button, and you can play back the selected record file.

Select the record files, click the **Export** button, and you can export the record files for backup.

● For remote control operations: Press **Up** / **Down** keys on the remote control to positioning the cursor on the list; Press **Left / Right** keys on the remote control to select the **Play**, **Export** or **Cancel** buttons.

● Press **Edit** key on the remote control to select the current record file or press F1 key to select all record files.

Figure 4. 9 Search Result Interface

Chapter 5   Wireless Network Settings

5.1   Dialing Settings

Before you start:

Install a 3G SIM card on the mobile NVR.

Steps:

1. Enter the Dialing Settings interface.

    Menu>Basic Settings>Dial
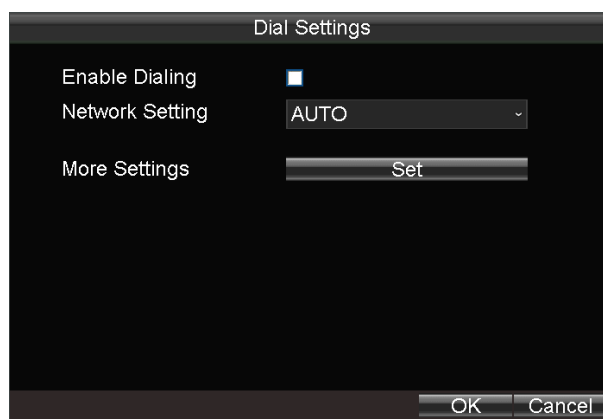
Figure 5. 1 3G Dialing Settings

2. Select the network for the device. Auto, Adjust, 2G and 3G are selectable.

    ![NOTE]

    If Auto is selected, the wireless network module will detect the network situation automatically and switch to the network with higher speed, such as from 2G to 3G; If Adjust is selected, the device itself will detect the network situation and switch to the network with higher speed, such as from 2G to 3G.

3. Check the checkbox of **Enable Dialing** to enable the dialing function of the device.

4. To configure the VPDN (Virtual Private Dialup Network) settings, you can click the **Set** button of More Settings, input the access point name (APN), dialing number, username and password, select the authentication type, and then click **OK** to save the settings.

    ![NOTE]

    Please contact the local operator and consult the network parameters of the VPDN.
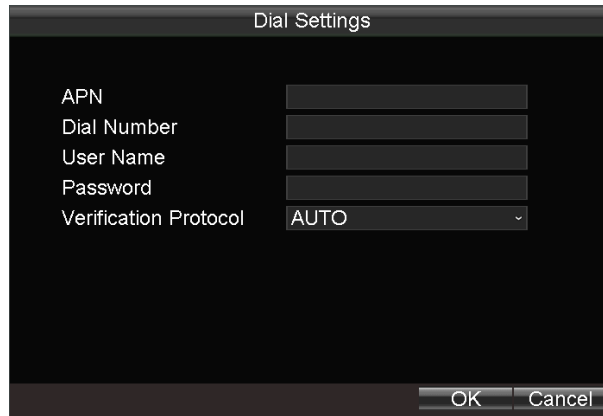
Figure 5. 2 Private Network Settings

5. Click **OK** and reboot the device to activate the new settings.

   You can view the dialing status on the Dialing Status interface (Menu>Status>Dial).

   The PIN management function is reserved.

5.2 Wi-Fi Settings

Purpose:

You can connect the device to the Wi-Fi networks and transmit the data via the Wi-Fi.

Steps:

1. Enter the Wi-Fi Settings interface.

   Menu>Basic Settings>WiFi
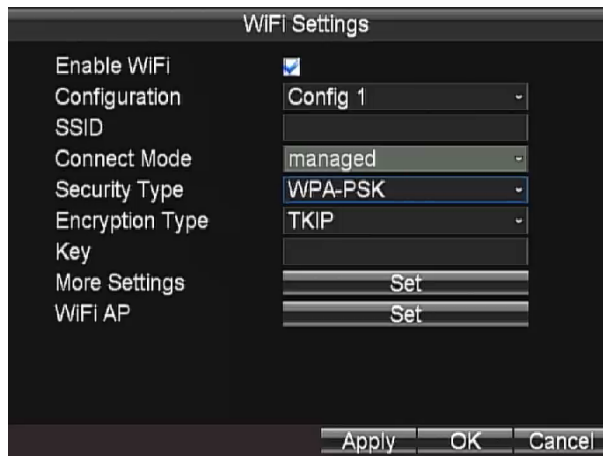
Figure 5. 3 Wi-Fi Settings

2. Check the checkbox of **Enable WiFi** to enable the Wi-Fi settings.

3. Select the configuration file, and then set the network SSID (Service Set Identifier), security type, encryption type and key.

   5 configuration files are available and only one SSID can be set for each file.

4. Click the **Set** button of More Settings, and you can set the IP address and DNS server for Wi-Fi network.
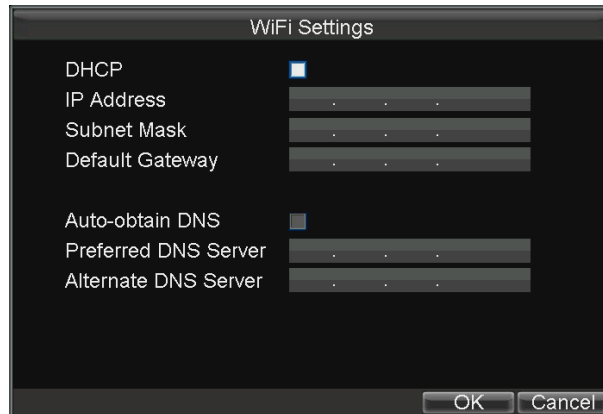
Figure 5. 4 IP & DNS Settings for Wi-Fi

NOTE

Check the checkbox of **DHCP** and **Auto-obtain DNS** to obtain IP address and DNS server for Wi-Fi network automatically.

5. Click the **Set** button of WiFi AP, and you can configure the settings of Wi-Fi access point.

Figure 5. 5 Wi-Fi Access Point Settings

6. Click **Apply** to save the new settings and click **OK** to exit.

You can view the Wi-Fi status on the Wi-Fi Status interface (Menu>Status>WiFi). Click the **Query** button to search the available access points of Wi-Fi network, including SSID, Security Type and Signal Strength.
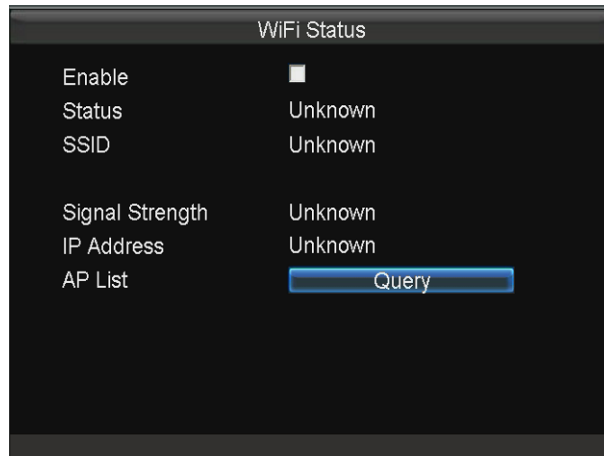
Figure 5. 6 Wi-Fi Status Interface

Chapter 6　　Platform Settings

The Mobile NVR can be remotely accessed via iVMS platform and Push Mode platform. Make sure the parameters configured are valid for the platform you select for login.

6.1　Accessing by iVMS Platform

Before you start:

Create the device ID of mobile NVR on the iVMS platform.

Steps:

1. Enter the Platform Settings interface.

   Menu>Basic Settings>Platform

2. Select Platform iVMS as the current platform from the drop-down list.
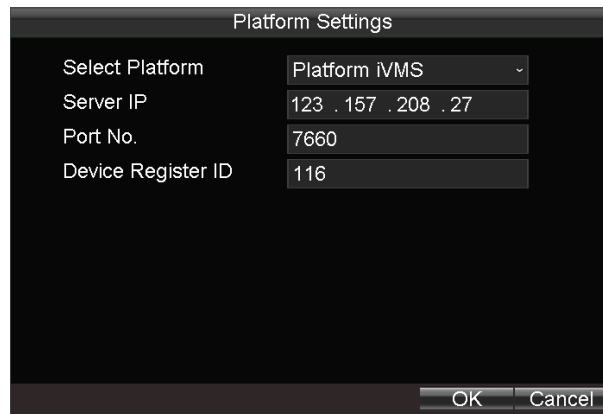
Figure 6. 1 iVMS Platform Settings

3. Configure the following parameters:

   ➢ **Server IP**: Input the static IP address of iVMS server.

   ➢ **Port No.**: The default value is 7660.

   ➢ **Device Register ID**: The ID of the Mobile NVR registered on the iVMS platform.

4. Click **OK** and reboot the device to activate the new settings.

   You can view the platform status on the Platform Status interface (Menu>Status>Plat).

6.2　Accessing by Push Mode Platform

Push mode platform is applicable to the equipment integration. Only SDK and development support are provided.

Enter the Platform Settings interface (Menu>Basic Settings>Platform), and select 3G_SDK as the platform type.
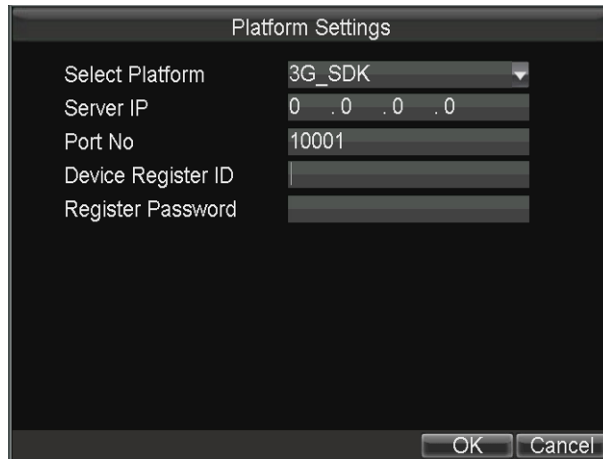
Figure 6. 2 Push Mode Platform

Chapter 7 Mobile Specified Functions

7.1 Configuring Startup and Shutdown

Purpose:

You can set the shutdown delay time (Vehicle Ignition Startup and Shutdown) or specify the startup/shutdown time (Timing On/Off) for the mobile NVR.

➢ **For Vehicle Ignition Startup and Shutdown**

Steps:

1. Enter the Start Control interface.

   Menu>Basic Settings>Start

2. Select Halt Delay as the auto work type from the drop-down list.

3. Select the delay time for device shutdown. The delay time ranges from 0 min to 6 hours.

4. Optionally, check the checkbox of **Voltage Protect** and then select the voltage limit percent. Once the voltage of the device reaches the selected threshold, the device will shut down automatically.

5. Click **OK** to save the new settings and exit.
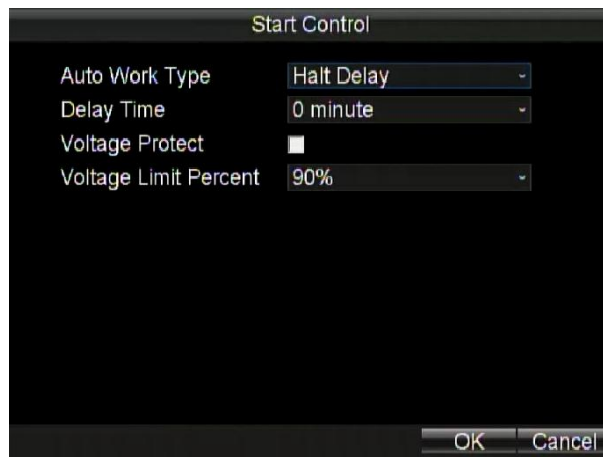
Figure 7. 1 Start Control-Halt Delay

➢ **For Timing On / Off**

Steps:

1. Enter the Start Control interface.

   Menu>Basic Settings>Start

2. Select Auto Working as the auto work type from the drop-down list.

3. Select the day on which you want to start up / shut down the device automatically.

4. Specify the time segment for the device to start up and shut down.

5. Optionally, you can copy the settings to other days in the week.

6. Click **OK** to save the new settings and exit.

NOTE

Two periods can be configured for each day. And the time periods can't be overlapped each other.
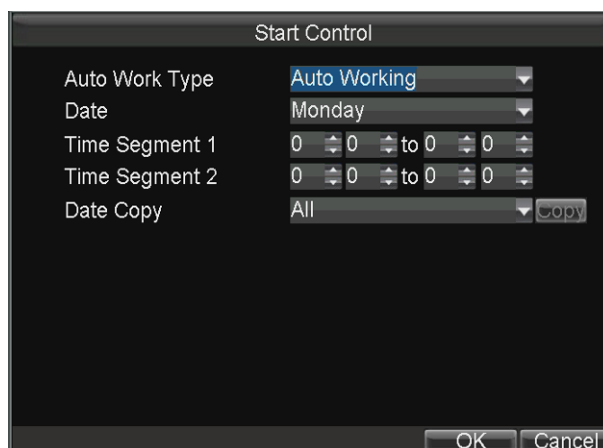
Figure 7. 2 Start Control-Auto Working

7.2   Configuring Satellite Positioning

Purpose:

The built-in GNSS module supports both GPS (Global Positioning System) and BDS (BeiDou Navigation Satellite System, reserved), contributing to the device positioning and speed limit alarm.

Steps:

1. Enter the Satellite Positioning Settings interface.

    Menu>Basic Settings>Position
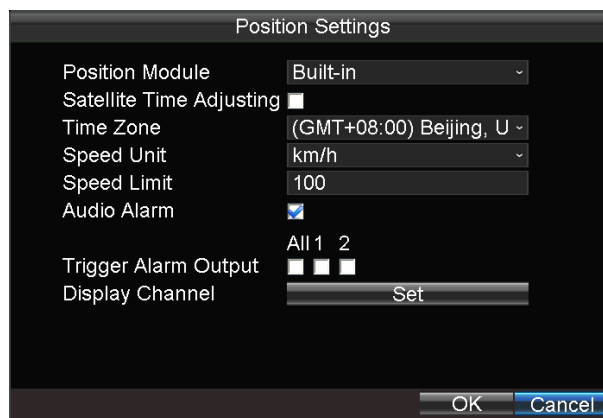
Figure 7. 3 Satellite Positioning Settings

2. Select the mode of the Position Module. 4 modes of positioning module are selectable.

    ➢ **RS232**: Obtain data from the satellite positioning module connected through RS232 interface.

    ➢ **RS485**: Obtain data from the satellite positioning module connected through RS485 interface.

    ➢ **Built-in**: Obtain data from the satellite positioning module built in the mobile NVR.

    ➢ **Display Terminal**: Obtain data from the intelligent display terminal.

3. Check the checkbox of **Satellite Time Adjusting** and then select the time zone in which the device locates.

4. Select the speed unit and input the speed limit value.

5. Set the linkage actions for speeding alarm, including audible warning and alarm output. For details of alarm output

settings, see Chapter 7.2.2.

6. Click the **Set** button of Display Channel, and select the connected IP cameras. Then the device positioning information will be displayed on the selected channels.

7. Click **OK** to save the new settings and exit.

You can view the device positioning status on the Positioning Status interface (Menu>Status>Position).

7.3 Configuring G-Sensor Alarm

Purpose:

G-Sensor detects and records the acceleration speed information in 3-axial (X, Y, Z) directions.

Before you start:

Connect an external sensor to the device for obtaining and providing the acceleration speed in 3-axial directions.

Steps:

1. Enter the G-Sensor Settings interface.

Menu>Basic Settings>G-Sensor
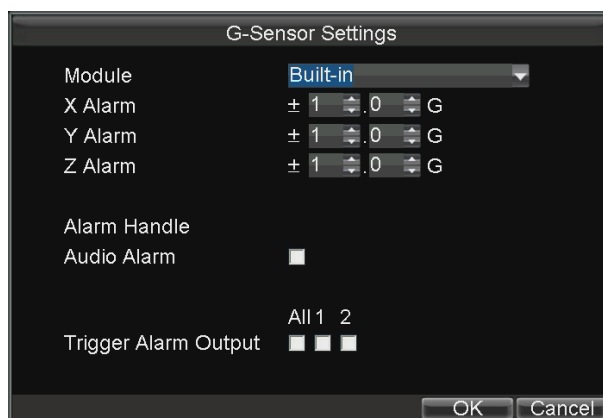
Figure 7. 4 G-Sensor Settings

2. Select the mode of G-sensor Module. 2 modes of G-sensor module are selectable.
   ➢ **RS232**: The G-sensor is connected to the mobile NVR through RS232 interface.
   ➢ **Built-in:** The G-sensor is built in the mobile NVR

3. Set the limit value for acceleration alarm in X, Y and Z directions.

NOTE

X, Y and Z represent the direction of acceleration and the unit of alarm value is G (G=9.8 m/s^2).

4. Set the linkage actions for acceleration alarm, including audible warning and alarm output. For details of alarm output settings, see Chapter 7.2.2.

5. Click **OK** to save the new settings and exit.

You can view the G-sensor status on the G-sensor Status interface (Menu>Status>G-sensor).

7.4 Configuring Sensor-In

Purpose:

Sensor-In detects and records the driving information of the vehicle, including pedal braking, turning left/right, reversing,

etc.

Steps:

1. Enter the Sensor-In Settings interface.

   Menu>Basic Settings>Sensor-In
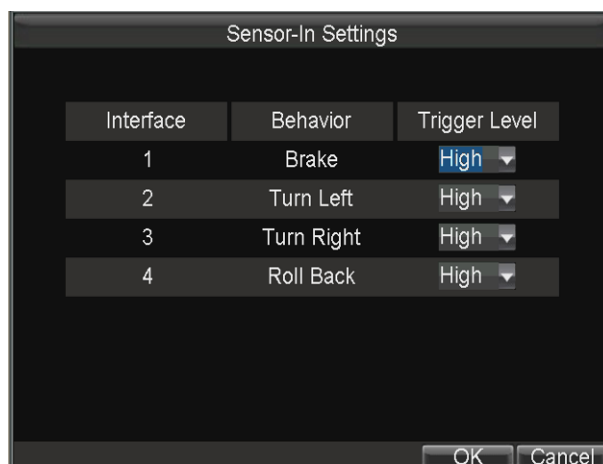
Figure 7. 5 Sensor-In Settings

2. Sensor-In is triggered by high or low level and you can set the parameters according to the vehicle.
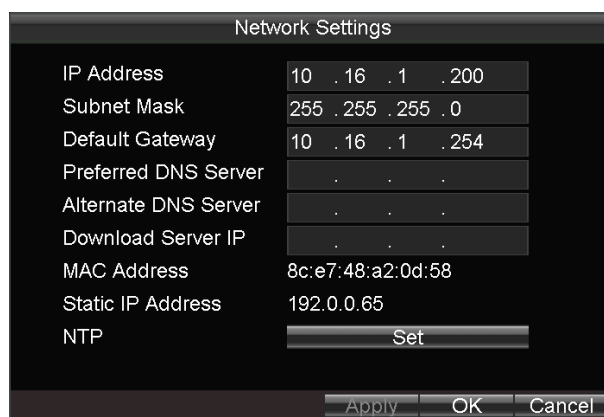
Chapter 8 Other Functions

8.1 Local Network Settings

Steps:

1. Enter the Local Network Settings interface.

   Menu>Basic Settings>Network

Figure 8. 1 Local Network Settings

2. Input the device IP address, subnet mask, default gateway, DNS server address and download server IP in the corresponding text fields.

   ![NOTE]

   - The IP address of the device should be unique in the network and the default value is 192.0.0.64.
   - The download server IP should be set when you upload the record files to the designate server.

3. Click the **Set** button of NTP, and you can configure the NTP (Network Time Protocol) settings for the device.

   Perform the following steps to configure the NTP settings:

   1) Check the checkbox of **NTP** to enable the NTP settings.
   2) Input the interval of time synchronization.
   3) Input the IP address of NTP server.
   4) Click **OK** to save the new settings and exit.
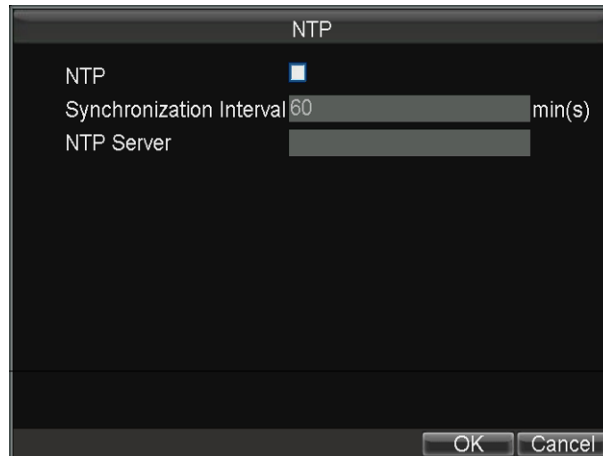
Figure 8. 2 NTP Settings

4. Click **Apply** to save the new settings and click **OK** to exit.

8.2   Alarm Settings

8.2.1   Configuring Alarm Input

Purpose:

Configure the settings for alarm input, including trigger level, arming schedule, alarm linkage actions, etc.

Steps:

1. Enter the Alarm Input Settings interface.

   Menu>Other Settings>AlarmIn

Figure 8. 3 Alarm Input Settings

2. Select the alarm input No., input the alarm name as desired in the text field, and then set the trigger level of the alarm input according to the actual needs.

   ● 3-ch alarm inputs and 4-ch sensor in, which are triggered by high/low level (high level: 6~36 VDC; low level: 0~5 VDC), are selectable.

- In order to avoid error report caused by voltage fluctuation, no alarm will be triggered by voltage ranging from 5VDC to 6VDC.

3. Click the **Set** button of Trig Record Channel to select the alarm triggered recording channel(s). The selected channel(s) will start to record when a connected alarm input occurs.

4. Click the **Set** button of Schedule to set the arming schedule for alarm inputs. Up to 8 time periods can be set within each day. Optionally, you can click **Copy** to copy the current settings to other days in the week.
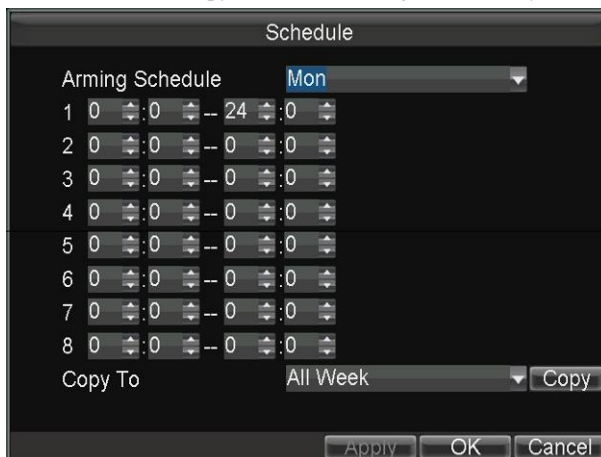
Figure 8. 4 Arming Schedule

5. Check the checkbox of **Handle Type** and click the corresponding **Set** button, and you can configure the alarm linkage actions, including Pop-up Image on Monitor, Audio Warning and Trigger Alarm Output.

  ➢ **Pop-up Image on Monitor**

  When an alarm is triggered, the local monitor displays the video image from the alarming channel configured for full screen monitoring.

  ➢ **Audio Warning**:

  Trigger an audible *beep* when an alarm input is detected.

  ➢ **Trigger Alarm Output**:

  Trigger an alarm output when an alarm when an alarm input is detected.

Figure 8. 5 Alarm Linkage Action

6. Click **Apply** to save the new settings and click **OK** to exit.

8.2.2 Configuring Alarm Output

Purpose:

You can configure the arming schedule, alarm duration time, alarm name for alarm output.

Steps:

1. Enter the Alarm Output Settings interface.

   Menu>Other Settings>AlarmOut
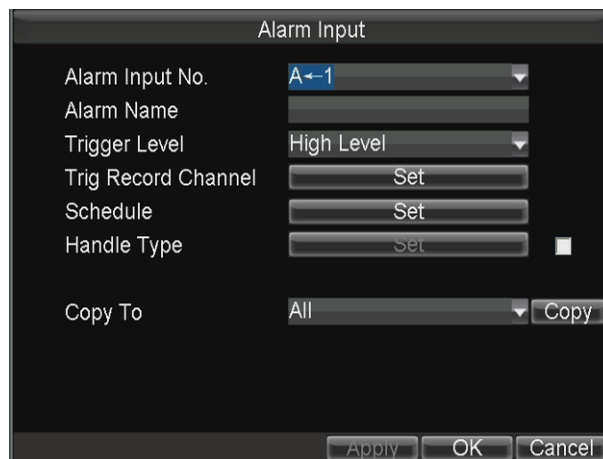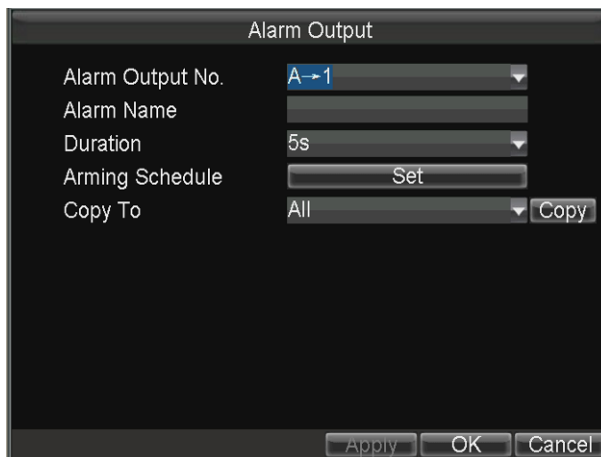

Figure 8. 6 Alarm Output Settings

2. Select the alarm output No., input the alarm name as desired in the text field, and then set the alarm duration time.

   NOTE

   Two alarm outputs are available.

3. Click the **Set** button of Schedule to set the arming schedule for alarm outputs. Up to 8 time periods can be set within each day. Optionally, you can click **Copy** to copy the current settings to other days in the week.
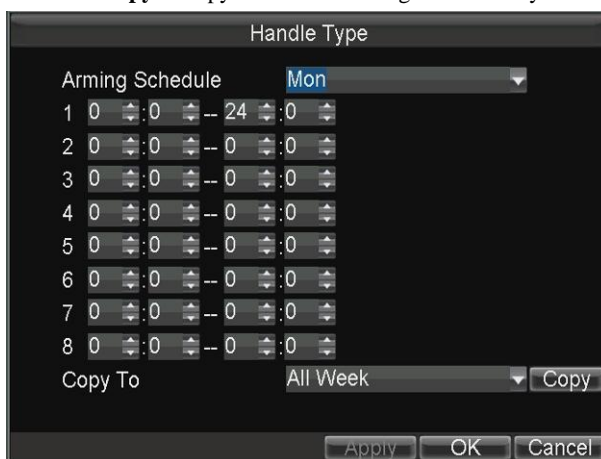

Figure 8. 7 Arming Schedule Settings

4. Click **Apply** to save the new settings and click **OK** to exit.

8.2.3 Configuring Video Tampering Alarm

Purpose:

A tampering alarm is triggered when the camera is covered and the monitoring area cannot be viewed. Linkage actions including audible warning, alarm output, etc., can be set to handle it.

Steps:

1. Enter the Advanced Camera Settings interface.

    Menu>Other Settings>Camera>Set (More Setting)

Figure 8. 8 Tamper-Proof Settings

2. Select the camera for settings from the drop-down list.

3. Check the checkbox of **Tamper-proof** to enable the tamper-proof function.

4. Click the **Area Settings** button to set the area for video tampering detection.

NOTE

> The video tampering alarm can be triggered only when the view of the camera is fully covered. The regional video tampering alarm function is reserved.

Perform the following steps to set a specified area for video tampering detection:

1) Press the **Edit** key on the remote control and a red block appears on the screen.

2) Press the **Direction** keys on the remote control to adjust the position of the red block.

3) Press the **Enter** key on the remote control to save the position of the red block.

4) Press the **Direction** keys on the remote control to adjust the size of the block.

5) Press the **Enter** key on the remote control to save the size of the block.

6) Press the **Menu** key on the remote control to set the detection sensitivity. You can set the level as Low, Medium or High. Click **OK** to save the settings.

7) You can press the **A** key on the remote control to clear all the mask areas.

8) Press the **Enter** key on the remote control to save the settings and then press **Esc** key to exit.

5. Click the **Handle** button of Tamper-proof, and you can set the arming schedule and alarm linkage actions for video tampering alarm.

    Perform the following steps to set the arming schedule and alarm triggered linkage actions:

1) Select the day from the drop-down list, and set the arming schedule for the alarm linkage actions.

2) Optionally, you can copy the current settings to other days in the week.

3) Check the checkboxes to enable the corresponding linkage actions.

    ➢ **Pop-up Image on Monitor**

When an alarm is triggered, the local monitor displays the video image from the alarming channel configured for full screen monitoring.

➢ **Audio Warning**:

Trigger an audible *beep* when an alarm is detected.

➢ **Trigger Alarm Output**:

Trigger an alarm output when an alarm is detected.

4) Click **Apply** to save the new settings and click **OK** to exit.
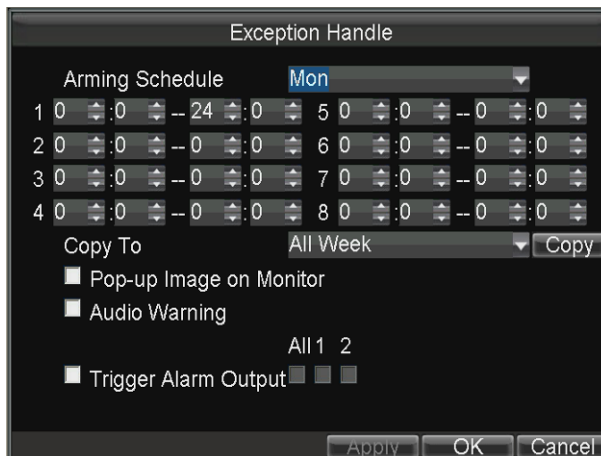
Figure 8. 9 Linkage Action of Tamper-proof

6. Click **Apply** to save the new settings and click **OK** to exit.

8.2.4 Configuring Video Loss Alarm

Purpose:

When the device cannot receive video signal from the front-end devices, the video loss alarm will be triggered. Linkage actions including audible warning, alarm output, etc., can be set to handle it.

Steps:

1. Enter the Advanced Camera Settings interface.

Menu>Other Settings>Camera>Set (More Setting)
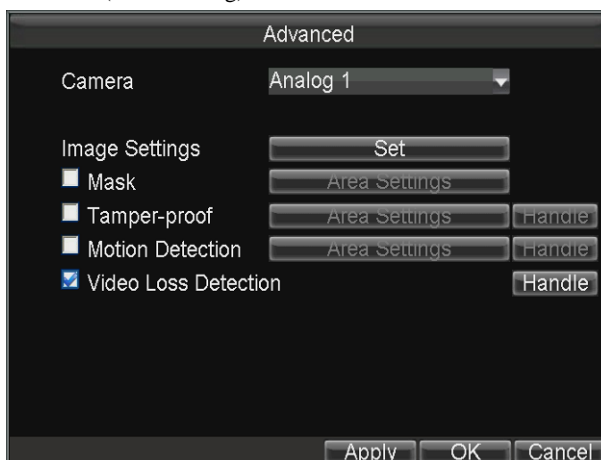
Figure 8. 10 Video Loss Settings

2. Check the checkbox of **Video Loss Detection** to enable the video loss detection settings.

3. Click the **Handle** button of Video Loss Detection, and you can set the arming schedule and alarm linkage actions for video loss alarm. For details of arming schedule settings and linkage action settings, see step 4 in Chapter 7.2.3.
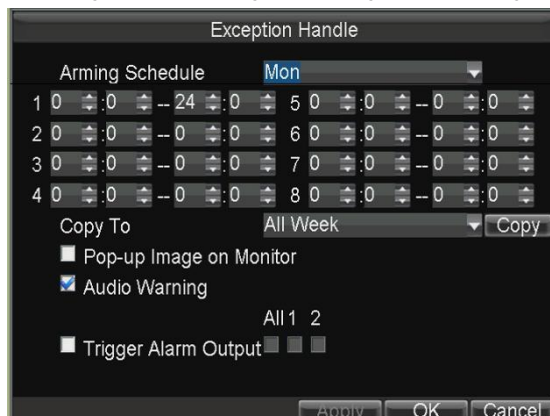
Figure 8. 11 Linkage Action of Video Loss

4. Click **Apply** to save the new settings and click **OK** to exit.

8.2.5 Handling Exceptions

Purpose:

Exception Settings refer to the handling methods of various exceptions, e.g.

➢ **HDD Full:** The HDD is full.

➢ **HDD Error:** Writing HDD error, unformatted HDD, etc.

➢ **Network Disconnected:** Network cable is disconnected.

➢ **IP Conflicted:** Duplicated IP address.

➢ **Illegal Login:** Incorrect user id or password.

➢ **Video Output Standard Mismatch:** I/O video standards do not match.

➢ **Abnormal Recording:** No space for saving recorded files.

Steps:

1. Enter the Exception interface.

    Menu>Other Settings>Exception
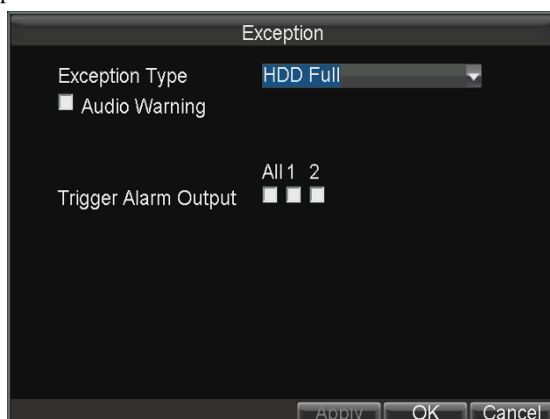
Figure 8. 12 Exception

2. Select the Exception Type and set the alarm linkage actions, including audible warning and alarm output.

3. Click **Apply** to save the new settings and click **OK** to exit.

8.2.6 Configuring Alarm Terminal

Steps:

1. Enter the Alarm Terminal interface.

    Menu>Other Settings>Alarm Terminal
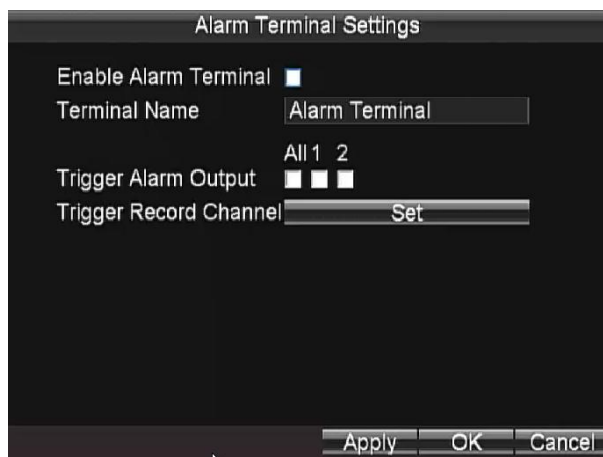
Figure 8. 13 Alarm Terminal

2. Check the checkbox of **Enable Alarm Terminal** to enable the alarm terminal settings.

3. Edit the terminal name if needed.

4. Select the alarm output and then select the alarm triggered recording channel(s).

5. Click **Apply** to save the new settings and click **OK** to exit.

NOTE

The alarm terminal function requires for the cooperation of status display terminal DS-1530HMI. For details, see the user manual of DS-1530HMI.

8.3 Configuring Firewall Settings

Purpose:

The mobile DVR provides software-based firewall to protect the device against the threats from the public network. A white list can be set, and only the trusted IP addresses on the white list can access the device via the network.

NOTE

- 192.0.0.xxx are set as the default trusted IP addresses.
- The IP address of the platform server to add the device is set as the trusted IP address.
- Up to 16 IP addresses can be added on the white list.

Steps:

1. Enter the Firewall Settings interface.

    Menu > Other Settings > Firewall

Figure 8. 14 Firewall Settings

2. Optionally, you can select **Enable SSH Service**, thus to effectively prevent information leakage during remote management.

3. Click the **Add** button to enter the Add IP Address dialog box, input the trusted IP address, and click **OK**.

Figure 8. 15 Add IP Address

4. The trusted IP address will be added on the white list.

Figure 8. 16 White List Settings

NOTE

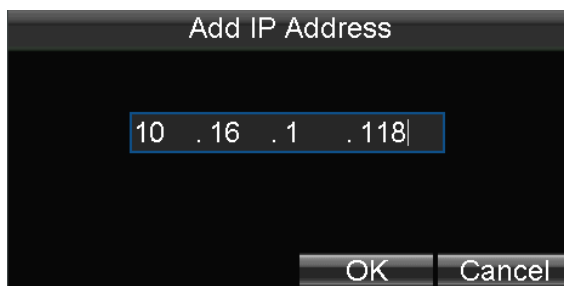The configured white list will be cleared after you reboot the device.

5. To delete the trusted IP address, you can select it on the white list and then click the **Delete** button.

You can also click the **Clear All** button to clear all the trusted IP address on the white list.

8.4   Serial Port Settings

Purpose:

Two types of serial ports are provided: RS-232 and RS-485.

The RS-232 port can be used in two ways:

➢ **Parameters Configuration**: Connect a PC to the DVR through the PC serial port. DVR parameters can be configured by using software such as HyperTerminal. The serial port parameters must be the same as of the device when connecting with the PC serial port.

➢ **Transparent Channel**: Connect a serial device directly to the device. The serial device will be controlled remotely by the PC through the network and the protocol of the serial device.

The RS-485 port is used for the communication with the connected external device.

Steps:

1.   Enter the Serial Port Settings interface to configure the parameters.

Menu>Basic Settings>SerialPort
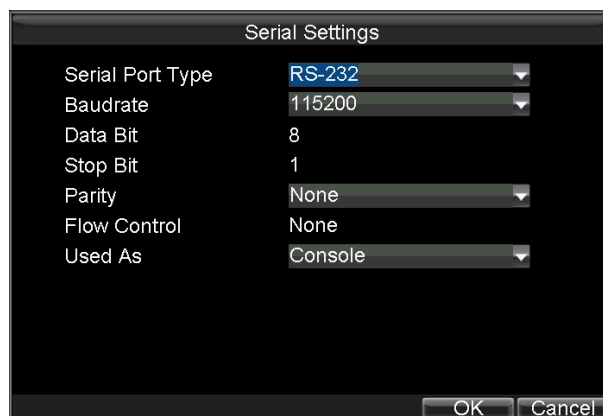
Figure 8. 17 Serial Port Settings Interface

2.   Select serial port type and configure the parameters, including baud rate, parity and usage.

3.   Click **OK** to save the settings and exit.

8.5   Backup

Before you start:

Connect a USB or eSATA backup device to the mobile NVR.

Purpose:

The video files recorded on the local mobile NVR can be automatically exported to the connected USB or eSATA device for backup.

Steps:

1.   Enter the Backup Settings interface.

Menu>Basic Settings>Backup
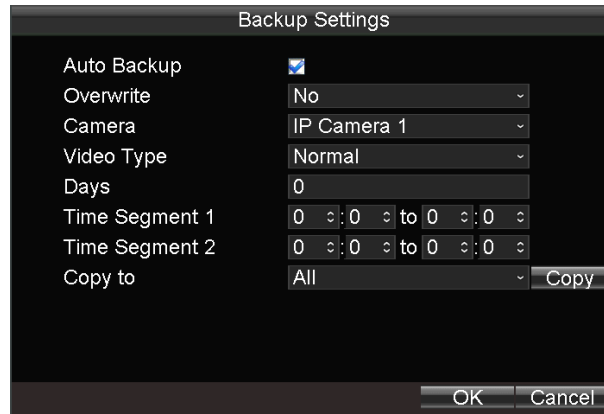
Figure 8. 18 Backup Settings Interface

2. Check the checkbox of **Auto Backup** to enable the automatic backup function.

3. Select the overwrite mode from the drop-list.

    No: The backup process will stop when the connected backup device becomes full.

    By Time: The exported video files will be overwritten when the connected backup device becomes full. And the earlier the video files are exported, the earlier they are overwritten.

    By Time & Event: The exported video files will be overwritten when the connected backup device becomes full. And the event (motion, alarm) triggered recordings will be locked and not be overwritten.

4. Select the camera No. and video type from the drop-down list for backup.

5. Input the number of days for backup in the text field. For example, if you set the days value as 2, the video files of today and yesterday will be exported for backup.

6. Specify the time segment for backup in the day. Two time segments can be set for one day.

7. Optionally, you can copy the current settings to the other channels.

8. Click **OK** to save the new settings and exit.

Chapter 9   Device Maintenance

9.1   Checking Status

The status of recording, 3G, platform, satellite positioning, G-Sensor, alarm and WiFi can be checked in the Status interface (Menu>Status).

Figure 9. 1 Status Interface

9.2   Management and Maintenance

9.2.1 Upgrading the System

Purpose:

The mobile NVR can be upgraded by local USB device or remote FTP server.

➢   **Upgrading by local USB flash disk**

Before you start:

Connect the USB device, on which the upgrade firmware is stored, to the mobile NVR.

NOTE

The upgrade firmware should be stored in the root directory of the USB device.

Steps:

1.   Enter the Upgrade interface and select USB Upgrade as the upgrade type.

Menu>Maintenance>Upgrade

Figure 9. 2 Upgrade Interface

2. Press **Refresh** to refresh the latest information of the connected USB device.

3. Click **Upgrade** to start upgrading and reboot the device to activate the new settings.

➢ **Upgrading by remote FTP server**

Before you start:

Ensure the network connection of the PC (running FTP server) and the DVR is valid and correct. Run the FTP server on the PC and copy the firmware into the corresponding directory of your PC.

Refer to the user manual of the FTP server to set the FTP server on your PC and put the firmware file into the directory as required.

Steps:

1. Enter the Upgrade interface and select FTP Upgrade as the upgrade type.
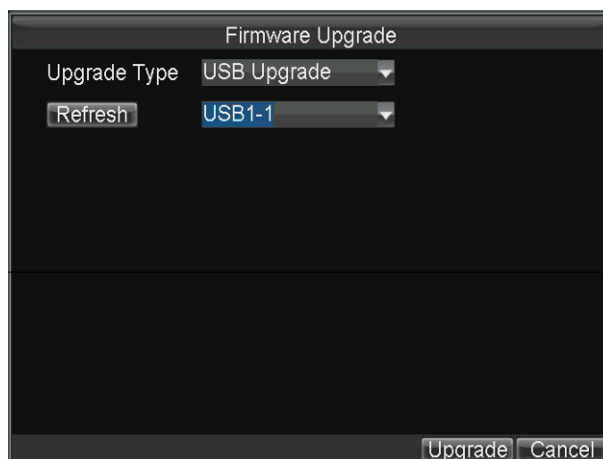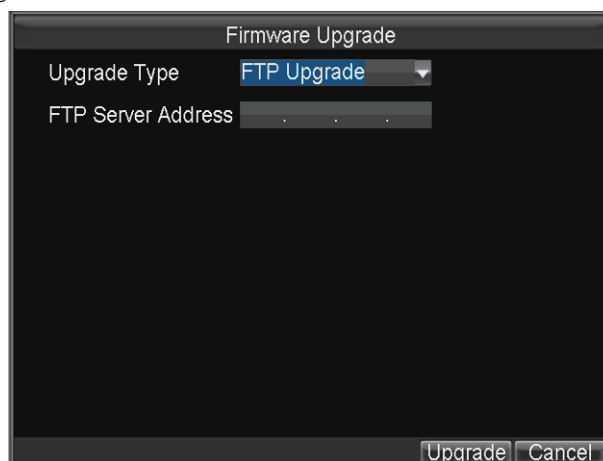
Menu>Maintenance>Upgrade

Figure 9. 3 Upgrade Interface

2. Input the IP address of FTP server in the text field.

3. Click **Upgrade** to start upgrading and reboot the device to activate the new settings.

9.2.2 Searching & Exporting Log files

Purpose:

The operation, alarm, exception and information of the device can be stored in log files, which can be viewed and exported at any time.

Steps:

1. Enter the Log Search interface.

    Menu>Maintenance>Log Search
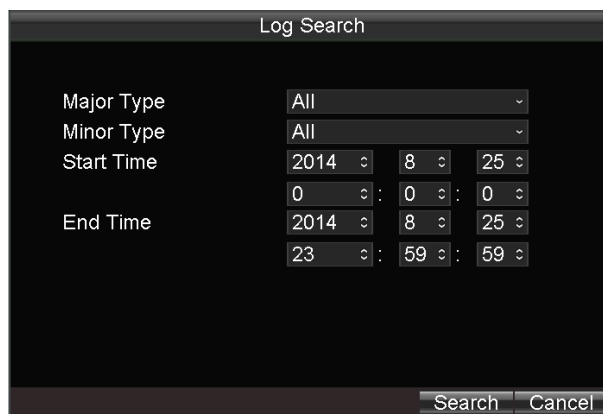
Figure 9. 4 Log Search Interface

2. Select the major type of the logs from the drop-down list, including Alarm, Exception, Operation and Information. You can also select All as the major type to search all the logs.

3. Select the minor type of the logs under the selected major type.

4. Specify the start time and end time for the log search.

- Press **Left / Right** keys on the remote control to positioning the cursor.
- Press **Up** / **Down** keys on the remote control to adjust the date and time.

5. Click the **Search** button. The logs matching the search conditions will be displayed on a list.

Figure 9. 5 Log Search Results

6. Select the log item, and then click **Details** to view the detailed information of the selected log.

7. Select the log item, and then click **Play** to play the related record files (If there is any record file related).

8. Connect the USB device to the mobile NVR, and then click **Export** to export the log file to the USB device for backup.

- Press **Up** / **Down** keys on the remote control to positioning the cursor on the list.
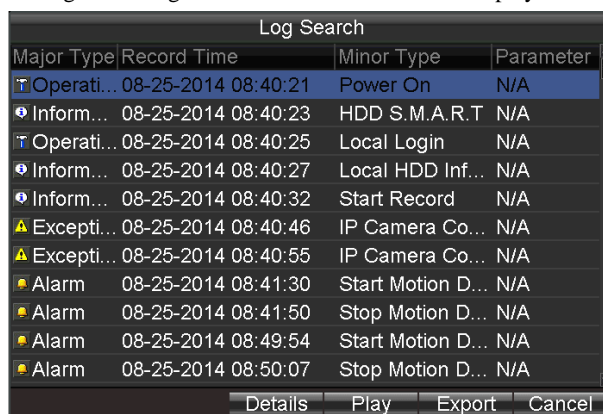- Press **Left / Right** keys on the remote control to select the **Play**, **Export** or **Cancel** buttons.
- Press **Enter** key on the remote control to select the log file.

9.2.3 Restoring Default Settings

Steps:

1. Enter the Default interface.

    Menu > Maintenance > Default
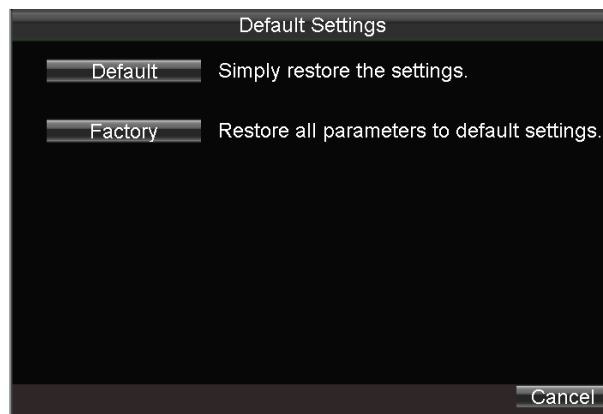
Figure 9. 6 Restore Default Settings

2. Select the restoring type from the following two options.

    Default: Restore all parameters, except the network (including IP address, subnet mask, gateway, MTU, NIC working mode, default route, server port, etc.) and user account parameters, to the factory default settings.

    Factory: Restore all parameters to the factory default settings.

3. Click the **OK** button to restore the default settings.

9.2.4 Importing/Exporting Configuration Files

Purpose:

The configuration files of the mobile NVR can be exported to local device for backup; and the configuration files of one device can be imported to multiple devices if they are to be configured with the same parameters.

Before you start:

Connect a USB device to the mobile NVR.

Steps:

1. Enter the Import/Export Configuration Files interface.

    Menu>Maintenance>Configuration
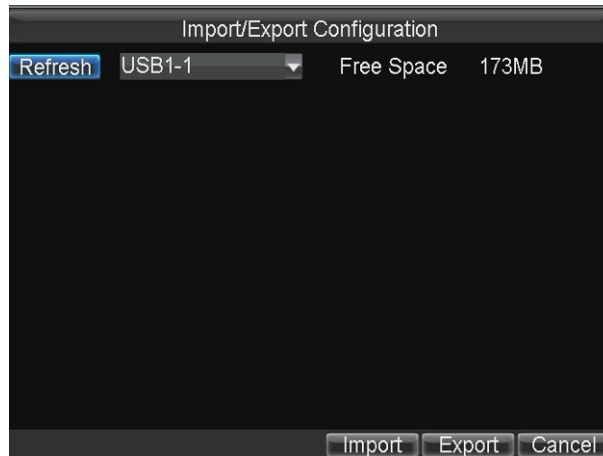
Figure 9. 7 Import/Export Configuration Files

2. Click the **Export** button to export configuration files to the USB device.

3. To import the configuration file, connect a USB device on which the configuration file is stored to the mobile NVR, and then click the **Import** button. Reboot the device to activate the new settings after the importing process is complete.

The configuration file should be stored on the root directory of the USB device.

9.2.5 Viewing System Information

Steps:

1. Enter the System Information interface.

    Menu>Maintenance>Information
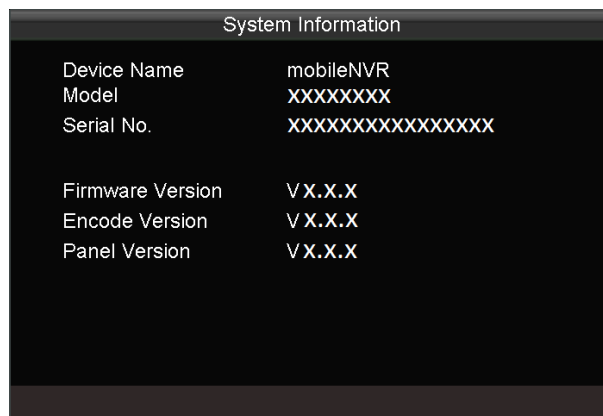
Figure 9. 8 System Information

2. You can view the device name, model, serial No. , firmware version, encoding version and panel version.

9.2.6 Managing Backup Device

Purpose:

You can view the status and the free space/capacity of the connected USB or eSATA backup device. And you can also format the backup device if needed.

Steps:

1. Enter the Backup Device interface.

    Menu>Maintenance>Storage
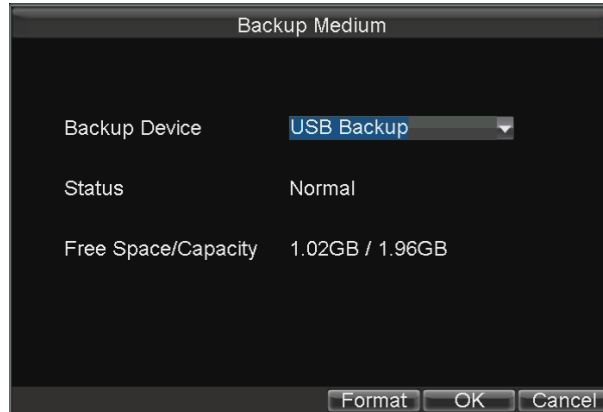
Figure 9. 9 Backup Device Interface

2. Select the backup device from the drop-down list, and you can view the status and the free space/capacity of the backup device.

3. Click **Format**, and you can format the selected USB or eSATA device.

9.2.7 Rebooting

You can go to the Reboot interface (Menu>Maintenance>Reboot) to reboot the mobile NVR.

Figure 9. 10 Reboot Interface

Chapter 10   Appendix

10.1 Glossary

- **3G:** 3G refers to the 3rd-generation telecommunication technology which is the high speed transmission of the cell data. The 3G service can transmit sound and other data simultaneously and the bitrate is up to hundreds kbps.
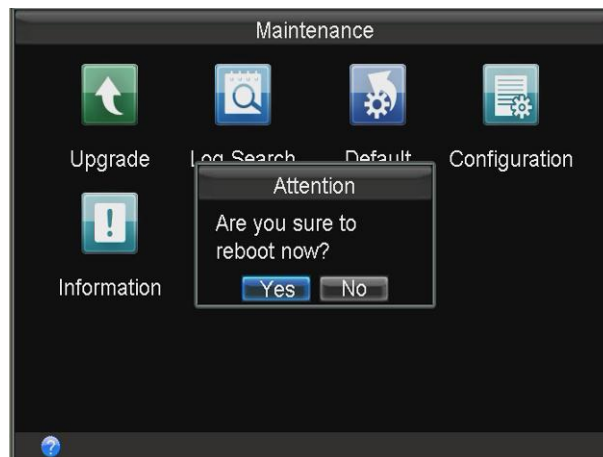
- **DHCP:** DHCP is the acronym of Dynamic Host Configuration Protocol, and it is one of the TCP/IP protocol stacks, it is used to assign the dynamic IP address to the host on the network.

- **Dual Stream:** Dual stream is a technology used to record high resolution video locally while transmitting a lower resolution stream over the network.

- **GNSS:** A satellite navigation system is a system of satellites that provide autonomous geo-spatial positioning with global coverage. It allows small electronic receivers to determine their location (longitude, latitude, and altitude) to high precision (within a few meters) using time signals transmitted along a line of sight by radio from satellites. The signals also allow the electronic receivers to calculate the current local time to high precision, which allows time synchronization. A satellite navigation system with global coverage may be termed GNSS (Global Navigation Satellite System).

- **GPS:** GPS (Global Positioning System) is a space-based global navigation satellite system that provides location and time information in all weather and anywhere on or near the earth, where there is an unobstructed line of sight to 4 or more GPS satellite.

- **G-Sensor:** G-sensor (Gravity-sensor) can sense the change of the accelerated force, such as the shaking, free falling and lifting. And those changes of the accelerated force can be sensed by the G-sensor in a means of electrical signals, and then link certain action according to the changes of the electrical signals.   When applied in the hard disk protection, G-Sensor can check the current status of the hard disk in case of the affection of the R/W function by the sudden change of the accelerated force.

- **NTP:** NTP is Network Time Protocol, and it is a protocol used to synchronize the computer time.

- **Sensor-In:** Sensor-In is a built-in module on the mobile NVR used to record the movement information of the vehicle, such as the braking, left-turning and right0turning and so on. The information can be used for analysis of an accident.

- **Transparent Channel:** Transparent channel is a mechanism which analyzes the IP datagram and sends it by the serial interface. It extends the control distance of the serial devices and for the user, only the point to point transmission is seen and the actual transmission is ignored.

- **VPDN:** Virtual Private Dial-up Network is a network that uses primarily public telecommunication infrastructure, such as the internet, to provide remote office or travelling users' access to a central organization network, such as the ISP private network, financial network and so on.

- **WiFi:** WiFi is a mechanism of the wireless connecting electronic devices. A device enabled with WI-FI such as PC, video game console, can connect to the internet via a wireless network access point.

10.2 FAQ

- **Why does my DVR make a beeping sound after booting?**

The possible reasons for the warning beep on the device are as follows:

a) There is no HDD installed in the device.

b) The HDD is not initialized.

c) HDD error

To cancel the beeping sound and use the device without HDD, enter the Exception Settings interface. For detailed information, see *Chapter 7.2.5 Handling Exceptions*.

- **DVR fails to start up after connecting the power.**

Possible reasons:

a) Incorrect voltage input (6 ~ 36 VDC) and power consumption (≥ 50W).

b) The HDD lock is not closed.

c) The power connections are incorrect and please refer to *Chapter 1.3*.

d) The motherboard or power functions abnormally. In case of hardware failure, please contact the supplier of the product.

- **Fail to connect 3G.**

Possible reasons for 3G connection failure are as follows:

a) Dialing is not enabled.

b) APN, dial number, user name and password should be set for 3G VPDN private network.

c) No 3G antenna connected. When both the master/slave antennas are connected, locate them vertically with above 20cm distance from each other.

d) SIM card is out of service or 3G service is not opened.

- **Fail to connect to WiFi.**

Please check the following settings:

a) The SSID, encryption type or password are entered incorrectly.

b) AP (access point) or router works abnormally.

c) No WiFi antenna connected or the antenna is not vertically located.

- **The DVR cannot be accessed via platform (iVMS) after successful connection to 3G or WiFi.**

Possible reasons:

a) The parameters (e.g., server IP, device registered ID, etc.) of the platform are configured incorrectly.

b) The platform works abnormally.

- **Fail to obtain satellite positioning information.**

Possible reasons:

a) The satellite positioning antenna is not placed outdoor.

b) There is no satellite positioning module (built-in or external) available for the DVR.

c) The Posit**ion Module** are configured incorrectly (please see *Chapter 6.2*).

- **Why does the device seem unresponsive when operating with the IR remote control?**

Please read *Chapter 1.3*, and check:

a) The batteries are installed correctly, making sure that the polarities of the batteries are not reversed.

b) The batteries are fresh and are not out of power.

c) The remote sensor is not covered or blocked by other object.

d) There are no fluorescent lamps in use nearby.

- **No backup device is detected when exporting recorded files?**

Possible reasons:

a) There is no backup device connected with the DVR.

b) The DVR and your backup device are not compatible.

c) Initialize the backup device before using.

d) The backup device is damaged.

- **The IP camera shows offline after added.**

Possible reasons:

a) Network connection error. Make sure that the IP camera and NVR are connected properly and are in the same IP segment.

b) The password of IP camera is incorrect.

c) Exception occurs when adding the IP camera. You can delete the IP camera and try to add it again.

d) The IP camera and the NVR firmware are incompatible. You can try again with another IP camera.

- **The IP camera is added to the 4000 / 4200 client successfully, while no video signal is available for live view.**

Possible reasons:

a) The stream parameters of the IP camera and NVR do not match. Make sure the stream type, main stream parameters and sub stream parameters of the IP camera and NVR should be consistent.

b) The IP camera and the NVR firmware are incompatible. You can try again with another IP camera.

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