

**Dear users, functional setting of this device requires some expertise. Therefore, please carefully read and fully understand the instruction before use.**

# **Operating Instruction for FM MDVR-IP4/IP8 HD MDVR**

**Thank you for choosing our product. Difference between models or product upgrading may result in appearance or features different from those described in the instruction; thus, it all depends on the actual product or you can contact the manufacturer. Information contained herein is subject to irregular change without prior notice.**







## Statement






This instruction is applicable for FM MDVR-IP4/IP8 HD series MDVR products. Information contained herein may not be technically accurate. If any conflict between the product and the instruction is found during usage, it all depends on the actual product or you can contact the manufacturer. Information contained herein is subject to irregular change without prior notice.


## Usage Precautions

### 1. Installation Environment


-  To extend the service life, please try to install the device in a place where vibration is weak;
-  To ensure normal heat dissipation, do not install the device in a poorly-ventilated area (such as trunk), and also keep about 15 cm away from other objects on the same level;
-  The device shall be horizontally installed and protected against water, humidity and lightning; in addition, keep the vehicle still during installation to prevent damage to the device due to falling off;
-  To ensure safe operation, keep the device, camera, cables and other accessories out of reach of passengers and driver.


### 2. Avoid Electric Shock and Fire

-  **8V-36V** DC power supply is used for this device. Please note the positive and negative terminals during connection to prevent short circuit;
-  Please power the device off before connecting any peripheral ;
-  Do not touch the power supply and the device with wet hands;
-  Do not spray liquid on the device to prevent internal short circuit or fire;
-  Do not place any other device directly on top of the camera;

 Do not disassemble the housing without authorization to avoid damage or electric shock;

### 3. Transport and Handling

 To prevent incidental damage to the device during transport. Handle the device with due care. The original packaging materials and carton are preferred;

 Power the device off before handling or part replacement to prevent any damage;

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## 一、Product Description

### 1. Product Overview

FM MDVR-IP4/IP8 is a hybrid HD MDVR with combined 4 ways of HD and 4/8 ways of analog audio & video recording and replaying specially designed for vehicles. The product adopts ARM DSP fast dual-core processor running on the Linux embedded OS, and also integrates the most advanced H.264 video encoding/decoding in IT industry, 3G/4G network, GPS and WiFi, as well as fail-safe protection, HDD shock absorption, HDD heating, wide voltage features. It is extensively applied in public buses, logistics vehicles, school buses, police cars, financial convoy cars and fuel tankers.

Features:

- H.264 image compression encoding supported, PAL: 00fps@720P, 200fps@960H
- FM MDVR-IP4/IP8 support multi-mode HD video access (see technical specifications for details)
- Air video interface is used to provide high reliability and strong anti-seismic property
- Built-in 3G/4G network, GPS, WiFi (optional)
- Built-in 2.5" HDD, max. 2TB HDD supported, damping technique
- 1 HDMI, 2 CVBS video outputs, maximum 1080P supported
- Good scalability, 1 RS485 interface, 2 RS232 interfaces
- 8V-36V wide voltage DC supply, 12V POE power supply supported
- HDD heating technique supported, operating temperature range -40°C- + 80°C

### 2. Technical Specifications

Item	Parameter	FM MDVR-IP4/IP8
系统 System	操作语言 Language	中文/英文 Chinese/English
	操作界面 Operating interface	图形化菜单操作界面 (OSD 菜单) Graphical user interface (OSD menu)
	密码安全 Password & security	用户密码、管理员密码两级管理 User password and Admin password management

视频 Video	视频输入 Video input	4 路复合视频输入+4 路网络摄像头 4-way composite video input + 4-way network camera 支持 4*720P AHD/960H/D1 摄像头 Four 720P AHD /960H/D1 cameras supported 或支持 4*720P/1080P 网络摄像头 Or four 720P/1080P network camera supported 或支持 2*720p AHD+2*960H 模拟混接 Or two 720p AHD + two 960H analog mixing supported 或支持 4*720P IPC+4*720P AHD/960H/D1 高清混接 Or four 720P IPC + four 720P AHD/960H/D1 HD mixing supported	8 路复合视频输入+4 路网络摄像头 8-way composite video input + 4-way network camera 支持 8*960H 摄像头 Eight 960H camera supported 或支持 4*720P/1080P 网络摄像头 Or four 720P/1080P network camera supported 或支持 4*730P IPC+8*960H/D1/CIF 高清混接 Or four 720P IPC + eight 960H/D1/CIF HD mixing supported
	视频输出 Video output	3 路视频输出(1 路 HDMI, 最大支持 1080P、2 路 CVBS, 其中 1 个 φ3.5 Phone Jack, 一个在 24PIN 连接头) 3-way video output (1 HDMI, max. 1080P supported, 2 way CVBS, of which one is φ3.5 Phone Jack and the other one is 24PIN connector)	
	视频显示 Video display	支持 1~8 画面显示 1~8 screens supported	支持 1~12 画面显示 1~12 screens supported
	视频标准 Video standard	PAL 制式、NTSC 制式 PAL format, NTSC format	
	图像压缩 Image compression	H.264 Main profile, PAL: 100 帧 720P/秒、NTSC: 120 帧 720P/秒 H.264 Main profile, PAL: 100 frames 720P/s, NTSC: 120 frames 720P/s	H.264 Main profile, PAL: 200 帧 960H/秒、NTSC: 240 帧 960H/秒 H.264 Main profile, PAL: 200 frames 960H/s, NTSC: 240 frames 960H/s
音频 Audio	音频输入 Audio input	4 路音频输入 4 audio inputs	8 路音频输入 8 audio inputs
	音频输出 Audio output	2 路音频输出 (其中 1 个 φ3.5 Phone Jack, 一个在 24PIN 连接头) 2 audio outputs (one is φ3.5 Phone Jack, and the other is 24PIN connector)	
	录音方式 Recording mode	声音与视频同步录制 Synchronous video & audio recording	
图像处理及存储	图像格式 Image format	CIF/D1/960H/720P/1080P 可选 CIF/D1/960H/720P/1080P optional	CIF/D1/960H 可选 CIF/D1/960H optional

Image processing and storage	视频流标准 Video streaming standard	ISO14496-10
	视频码率 Video bit rate	CIF: 1536Kbps ~ 128Kbps
		HD1: 2048Kbps ~ 400Kbps
		D1: 2048Kbps ~ 400Kbps
		960H: 2048Kbps ~ 400Kbps
		720P: 4096Kbps ~ 400Kbps
8 级画质可选，1 级画质最高，8 级最低 Eight picture quality levels are available, with level 1 being the highest and level 8 being the lowest		
音频码率 Audio bit rate	40Kbps	
数据存储 Storage	最大支持 2T 硬盘/SSD Max. 2T HDD/SSD	
	通讯板上 1 个 SD 卡，当硬盘出错时支持 SD 卡备份录像（根据 3G/4G 模块可选） One SD card is provided on the communication board. When the HDD is exceptional, you can back up videos into the SD card (3G/4G module is optional)	
报警 Alarm	报警输入 Alarm input	8 个报警输入，可配置 1V 以下低电平报警或 5V 以上高电平报警 Eight alarm inputs. You can set the lower level alarm (1V or below) or upper level alarm (5V or above)
	报警输出 Alarm output	1 个报警输出，输出高电平 12V One alarm output, the higher level of this output is up to 12V
通信接口 Communication interface	RS485 接口 RS485 interface	支持 1 个 RS485 接口 One RS485 interface supported
	RS232 接口 RS232 interface	支持 2 个 RS232 接口 Two RS232 interfaces supported
无线通信 Wireless	3G	内置 3G 通信模块(HSUPA/HSDPA/WCDMA/EVDO/TD-SCDMA)可选 Optional built-in 3G communication module (HSUPA/HSDPA/WCDMA/EVDO/TD-SCDMA)
	4G	内置 4G 通信模块(FDD-LTE/TDD-LTE)可选 Optional built-in 4G communication module (FDD-LTE/TDD-LTE)
	WiFi	内置 WiFi 模块（可选） Built-in WiFi module (optional)
GPS	支持内置 GPS 模块，地理坐标、速度等可写入编码码流，同时可以无线上传 Writable code stream such as built-in GPS module, geographical coordinate, rate supported; in addition, wireless uploading is possible	



传感器 Sensor	内置加速度传感器 G-Sensor Built-in acceleration sensor G-Sensor	
配套软件 Supporting software	PC 端回放分析 Play-back analysis in PC	在 PC 端回放视频文件，同时对文件中的车辆信息进行分析 Play back video file in PC, and analyze vehicle information in the file
	CMS 管理软件 CMS management software	通过无线网络实现视频预览、GPS 上传、报警上传及中心命令下发、参数配置等功能 Use the wireless network to realize video preview, GPS upload, alarm upload and command issuance and parameter configuration
软件升级 Software upgrade	本机支持通过前置 USB2.0 接口和远程 CMS 平台升级 Front USB2.0 interface and remote CMS upgrade are possible for this device	

产品电气参数:

Electrical Specifications:

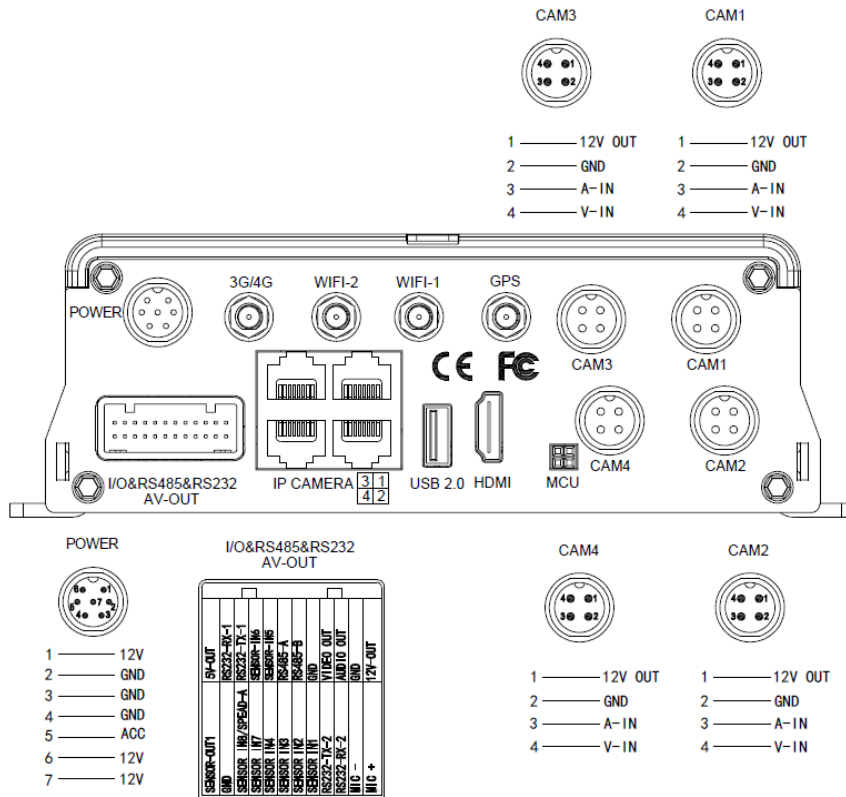
电源输入 Power supply	+8~+36V	8V~36V, 使用前请确保车载蓄电池供电电压; 长期超过 36V, 将烧坏机器。 8V~36V, Check the supply voltage of the vehicle battery before use; if it is supplied with more than 36V for a prolonged period, the device may be damaged.
电源输出 Power output	12V	12V (+/-0.2V), 最大电流:3A 12V(+/-0.2V), max. current: 3A
ACC 检测 ACC detection	≤4V	关机 Power off
	≥5V	开机 Power on
视频输入阻抗 Video input impedance	75Ω	每个视频输入阻抗: 75Ω Each video input impedance: 75Ω
视频输出电压 Video output voltage	2Vp-p	2VP-P CVBS 输出模拟信号, 显示器设备输入需要 75Ω 阻抗以适应它。 2VP-P CVBS output analog signal which should be adapted by 75Ω of input impedance from the display unit.
I/O 接口 I/O interface	1V 以下 1V or below	低电平报警 Low level alarm
	5V 以上 5V or above	高电平报警 High level alarm
工作温度 Working temperature	-40°C~80°C	在通风良好的环境 In a well-ventilated place

3.主机介绍

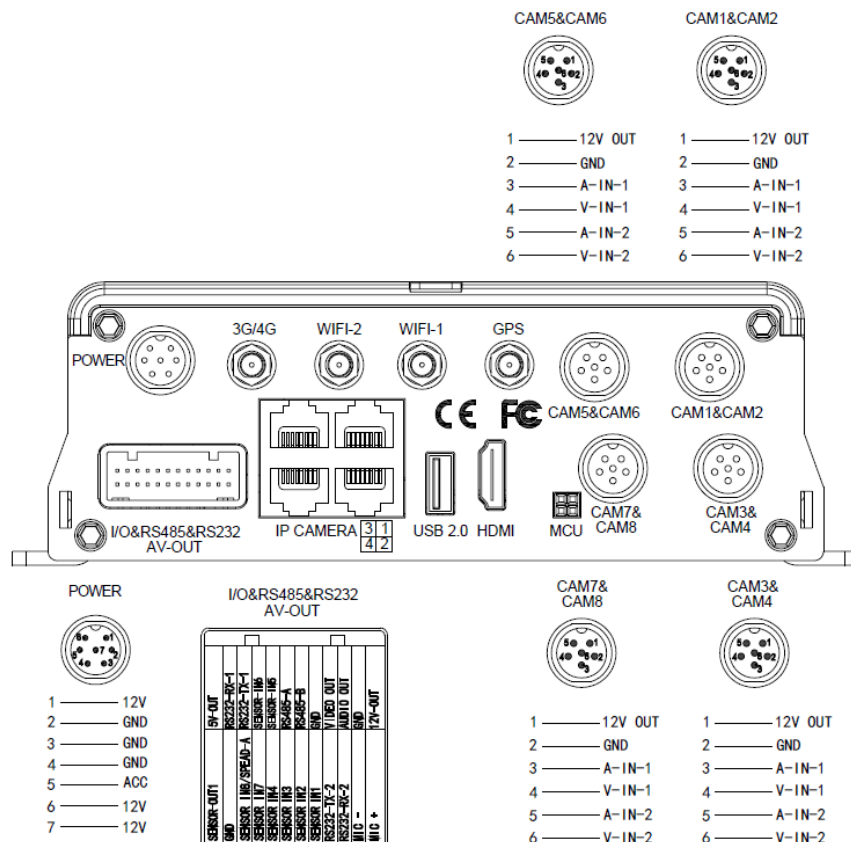
3. Introduction to Mainframe



### FM MDVR-IP4 Interface Diagram



### FM MDVR-IP8 Interface Diagram:



#### 4. Introduction to Main Keys of Your Remote Control

登陆 (LOGIN) Login	<p>在录像机设有密码时，按下 LOGIN 键可输入密码。由于系统没有恢复和复位功能，请切记密码。</p> <p>When the recorder is set with a password, press the Login key to input your password. As the system is not provided with recover and reset features, always keep your password in mind.</p>
INFO key	<p>信息查看</p> <p>Check information</p>
四画面分割键 Quad View key 数字键 1,2,3,4 Number key 1, 2, 3, 4	<p>在监视画面下，用于四画面和单画面之间的切换；按下画面分割键显示 4 画面，如果是按下数字 1/2/3/4 那相应的显示通道 1—通道 2—通道 3—通道 4</p> <p>On the monitoring interface, used to switch between quad view and single view; press the Quad View key to display 4 screens. You can press number 1/2/3/4 to display channel 1, channel 2, channel 3 and channel respectively.</p>
退出 (RETURN) Return key	<p>返回上一层子菜单，最终退出设置菜单并退出到监视画面</p> <p>Return to the previous menu, and finally exit from the setup menu to the monitoring interface</p>

暂停/单步 PAUSE/STEP key	回放图像资料时的暂停播放和单步放键，每按一次可以播放一步，按下放像键恢复正常播放速度 Used to pause playing or play images at a single step. Press the key again to recover normal play speed
帧放键 (FRAME) Frame key	Press this key to play a video in a frame rate
播放 (PLAY) Play key	开始播放键 (搜索到录像文件且选中后，按下此键就可以播放) Press this key to start playing (search the video file to be played and select, then press the key to play it)
快进 (FWD) FWD key	回放录像资料时的快进键，有四档：2X,4X,8X,16X Forward key in four grades: 2X,4X,8X,16X
快退键 (REW) REW key	回放录像资料时的快进键，有四档：2X,4X,8X,16X Rewind key in four grades: 2X,4X,8X,16X
NEXT key	播放过程中翻到下一页/下个文件 Page down or roll to the next file
PREV key	播放过程中翻到上一页/上个文件 Page up or roll to the previous file
云台功能键 PTZ key	自动、预置、调用、变倍+、变倍-、调焦+、调焦-、光圈+、光圈-、PTZ、PRESET、RECALL、BRUSH Auto, preset, call, zoom +, zoom -, focus +, focus -, aperture +, aperture -, PTZ, PRESET, RECALL, BRUSH
F1, F2, F3	F1 是功能测试键 F1 is a key to start functional test

## II. Device and Installation

### 1. Installation

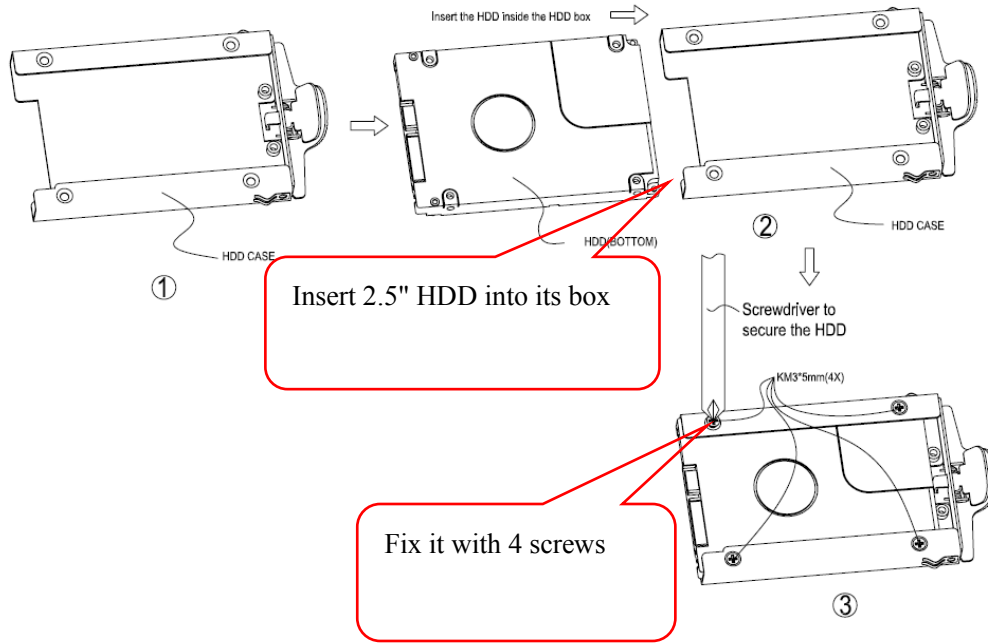
Step 1: Open the protective cover

Turn the electric lock located on the front panel anti-clockwise to unlock it and open the protective cover.



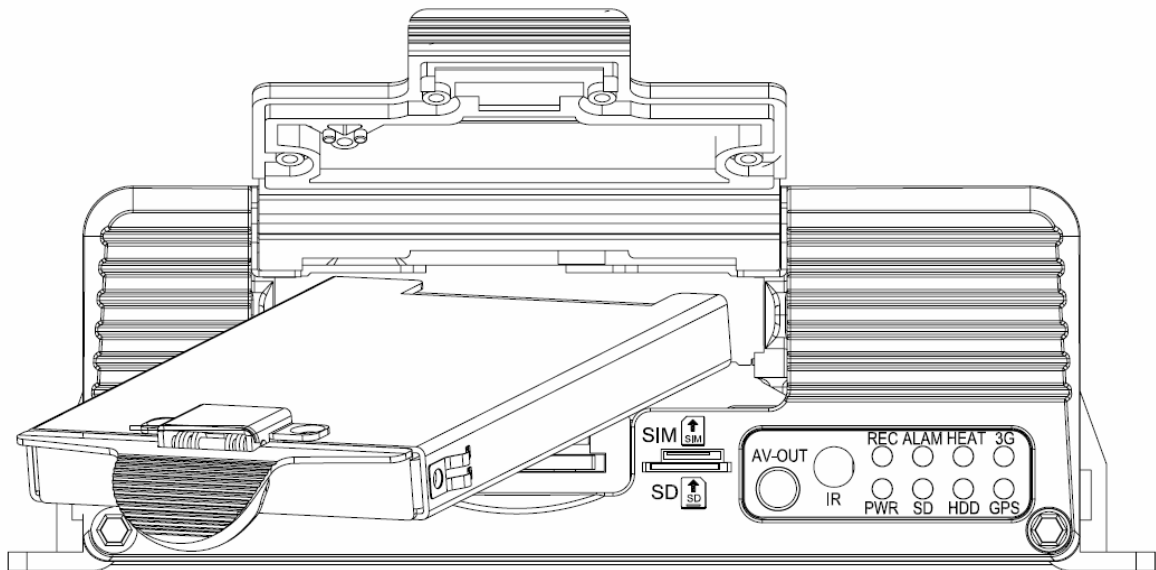
Step 2: Prepare the HDD

Insert the prepared HDD into the HDD box and fix it.



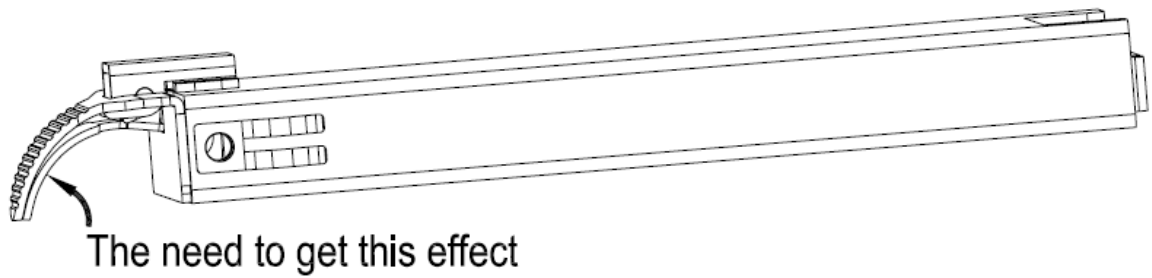
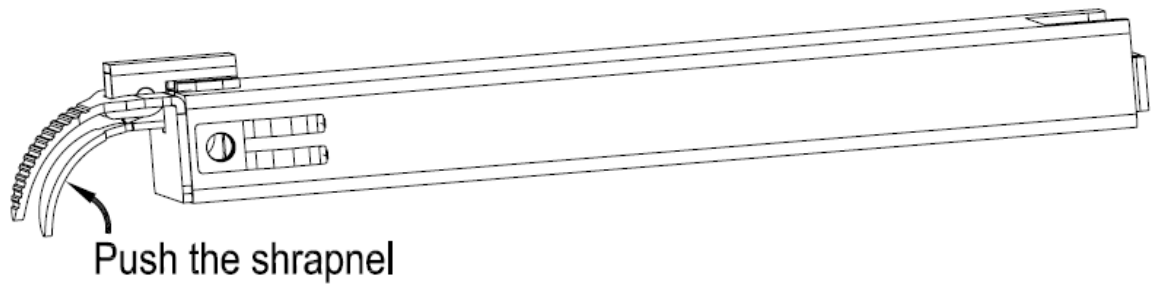
Step 3: Insert the HDD

Slowly insert the machined HDD by aligning with the HDD box until you hear a "click" sound.



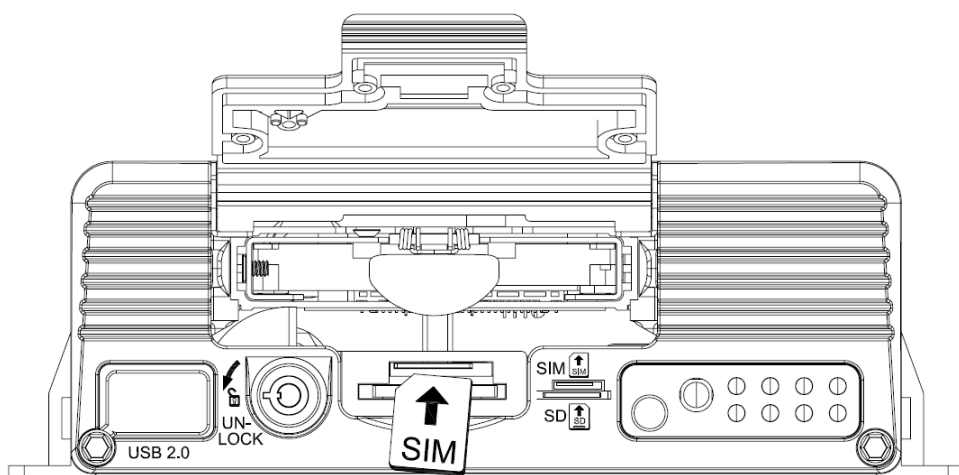
Take the HDD out of its box by holding the box handle and then pull it out, as shown in the figure:





Step 4: Install SIM and SD cards

As indicated on the panel, install SIM card and SD card into its respective place. According to the device's communication configuration, install the related SIM card, such as WCDMA (China Unicom), EVDO (China Telecom) or TD-SCDMA (China Mobile) in 3G version, as well as TDD-LTE or FDD-LTE in 4G version. The SD card is mainly used to back up video files when the HDD is exceptional (the SD card is located on the communication board and only present in models with 3G/4G module supported).



Step 5: Lock the electric lock

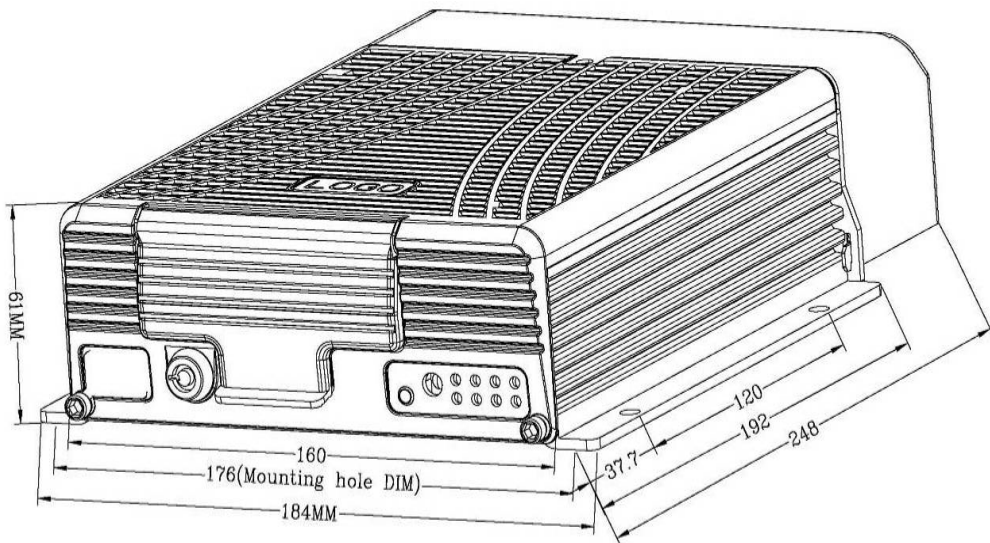
After all units are installed, close the protective cover, and then turn the electric lock clockwise to lock it;

otherwise, the device cannot be powered on.



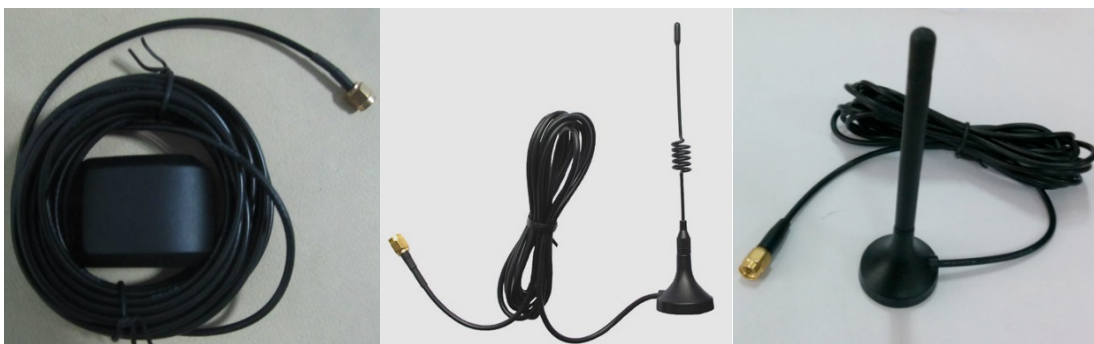
Step 6: Install the mainframe

According to indicated MDVR mounting hole size, install the device in a proper place of the vehicle.



Step 7: Install GPS, 3G/4G, WiFi antenna

As shown in the following figure, connect GPS, 3G/4G and WiFi antenna to corresponding interface on the rear panel of the MDVR and keep wires well arranged to protect the signal from external interference.

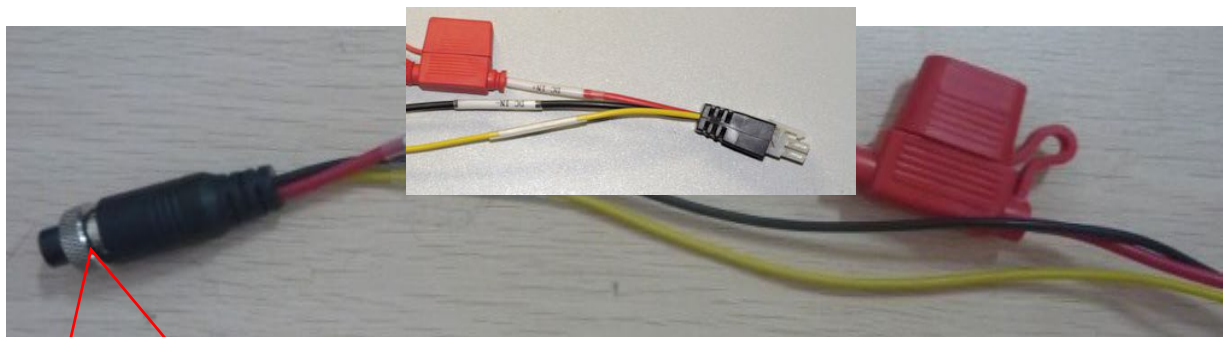


Step8: 接电源线

Step 8: Connect the power cord

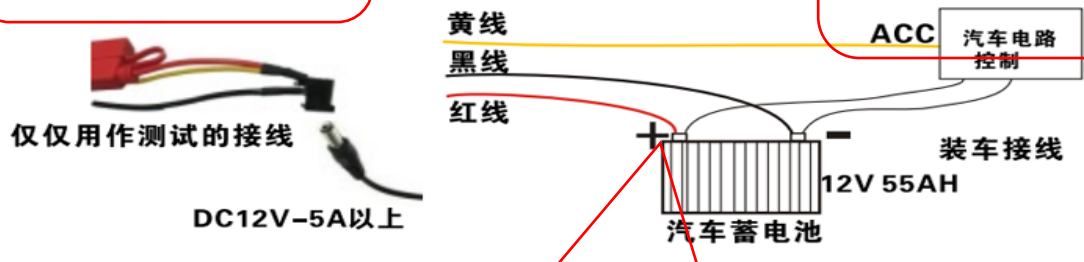
Connect the air power cord to 6PIN power input interface on the rear panel of the MDVR (If it is in white, the 6pin cable shall be connected with an adapter), while the red and black cables are directly connected to the battery of the vehicle, i.e. positive terminal and negative terminal respectively. The yellow cable is connected to ACC, the vehicle control circuit switch (used to start the vehicle motor). The unit will be enabled automatically when the car key is enabled and disabled when the key is disabled.

When the device is not installed in a vehicle (such as monitoring systems in bus station, logistic transfer) or under test, you can use a switching power above DC12V-5A to supply the mainframe. In this case, twist the red and yellow cables as a cable to connect it to the positive terminal, while the black one is connected to the negative terminal separately.




This terminal is connected to the power interface on the rear panel of the MDVR

Connect it to an air adapter before connecting to the power interface on the rear panel of the MDVR



Before connecting, check that the voltage ranges from 8V to 36V. If not, the device will be suspended.



It is suggested that the vehicle mounted machine be directly powered from positive and negative terminals of the battery cell, or led from the mains power at the fuse without use of ground strap, which may influence normal operation of the mainframe due to negative pulse; The power cable used for positive and negative terminals shall have diameter of φ1.5mm or above.

Step 9: Connect the display output unit

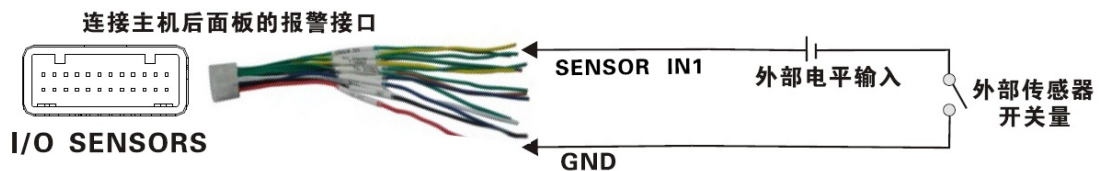
This product supports one HDMI and two CVBS video outputs (one is  $\phi 3.5$  Phone Jack on the front panel, and the other is 24PIN connector). A customer can connect to the display unit according actual conditions. Connect the 3-in-1 terminal of the supplied 4pin-AV output cable to the  $\phi 3.5$  Phone Jack on the front panel, and the other terminal to the display unit.



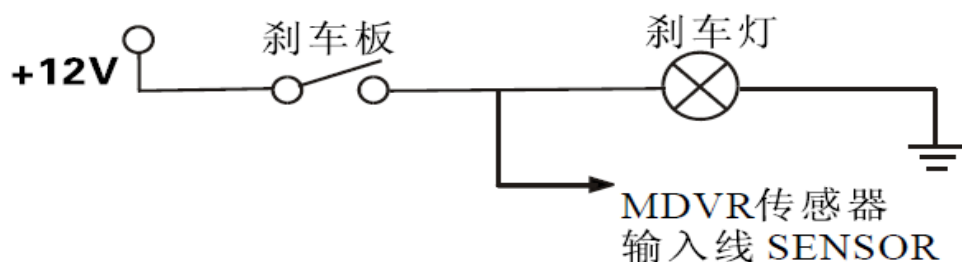
Step 10: Alarm input and output cable

A: Sensor input alarm cable

Connect the external sensor to set with alarm feature to 8 external alarm input ports of the I/O sensor on the rear panel of the MDVR. The external alarm inputs shall be connected to related sensor switching units, such as door magnet power, emergency switch, turn signal switch and brake light, as shown in the following figure.



For example: the following block diagram shows that high level is detected when the brake pad is stepped down; otherwise, low level will be detected. Thus, braking operation may trigger device alarm.



B: Over-speed alarm cable

a: If a speed is acquired from GPS, requiring normal GPS signal, the alarm feature can be enabled by simply configuring settings via Setup menu -> Alarm -> Speed.

b: If a speed is acquired from the vehicle, the over-speed alarm feature can be enabled by connecting it to the speed pulse sensor. The pulse sensor is connected to SPEED-A and SPEED-B cables of the device, as shown in the following figure:

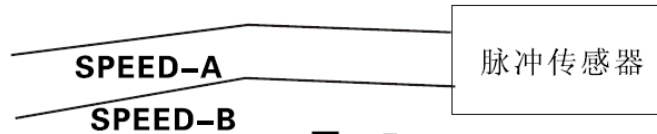


图 4-5

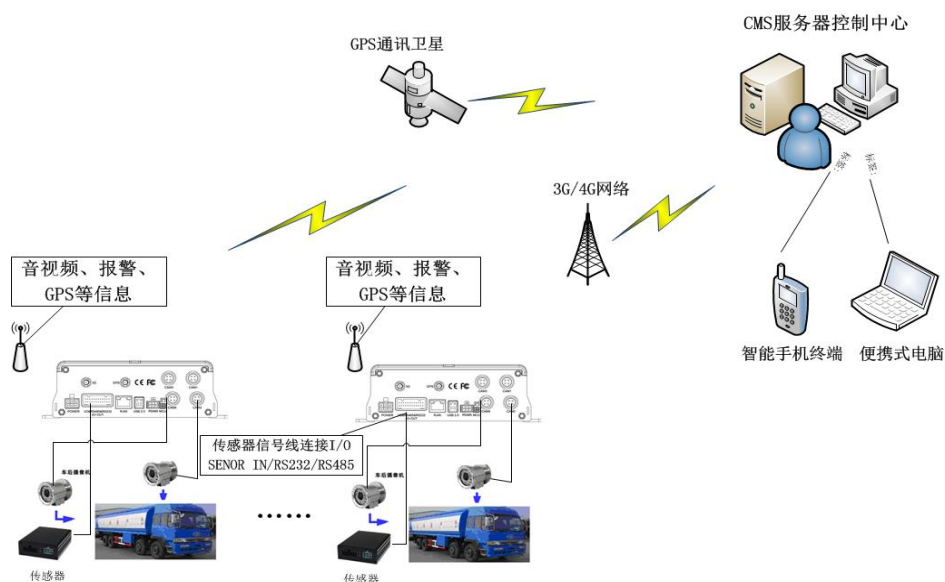
C: Alarm output cable

This device provides one alarm outputs and uses 200MA to drive external alarm units. If you expect to drive a device with higher power, connect an external electrical appliance, as shown in the following figure.



Step 11: RS232/RS485 device connection

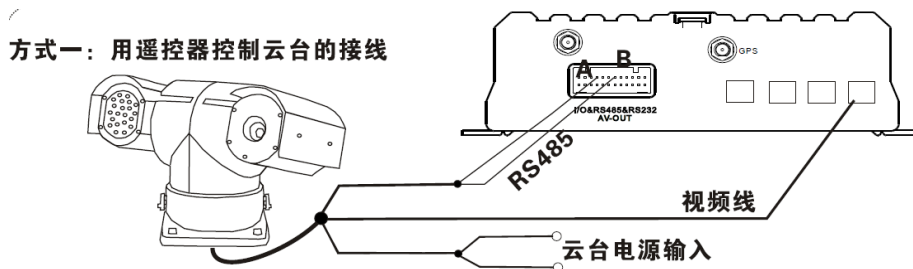
This product provides two RS232 serial ports, to which a user can connect the desired sensor, OBD and two-way radio supporting RS232 according to actual requirements. Before installation, firstly connect the power cord and communication cable of the external device to the supplied 24pin I/O port, and then to 24PIN I/O port on the rear panel of the vehicle MDVR. Finally, install the probe for the external device and keep cables well arranged. The following shows the schematic connection diagram:



Step 12: Connect PTZ

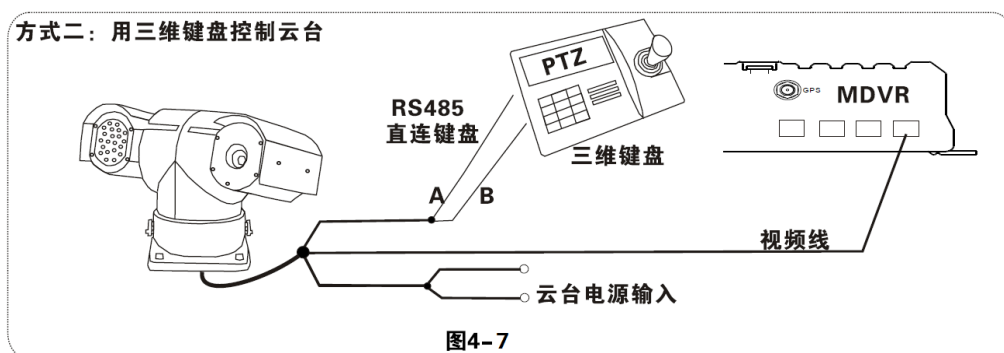
There are three methods for connecting PTZ in terms of PTZ control method:

- The first method is connect the RS485 control cable of the PTZ to the RS485A and RS485B of the main frame, connect the video cable to the mainframe video input, and then power the PTZ. At the same time, configure the PTZ setting corresponding to PTZ data under the peripheral setup option to use the remote control to control the PTZ.



After the PTZ is connected and parameters are set, you shall select the channel connected to the PTZ before using the remote control to control the PTZ. For example, if the PTZ is connected to Channel 2, then you can control it only after switching the monitoring interface to Channel 2 and maximizing it.

- The second method is to directly connect the RS485 control cable of the PTZ to 3D control keypad, connect to the video cable to the mainframe video input to power the PTZ and 3D keypad, and then set keypad parameters corresponding to the PTZ. Thus you can use the 3D keypad to control the PTZ, with higher speed and efficiency than the remote control.

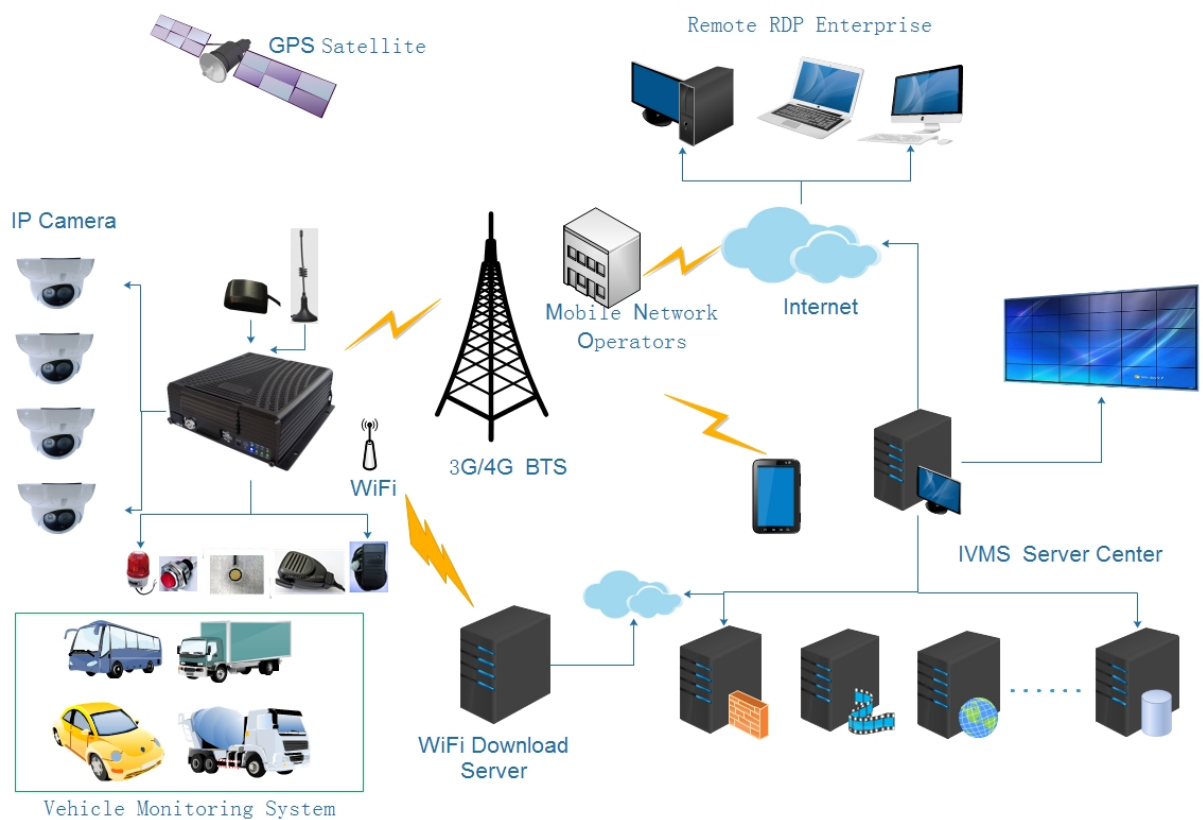


- The third method is to combine these two connection methods by connecting both vehicle mainframe and 3D keypad to control the rotation of the PTZ to realize even remote control.

## 2. Connection Method of This Solution

This product is suitable for video monitoring or remote monitoring and applicable for general or special

vehicles. It mainly uses the special designed vehicle camera to acquire the front video signal, then transmits the signal via a special video cable to the MDVR mainframe for video compression and image processing and finally stored in the HDD. It can also locate where the vehicle is in real time via GPS module, and then upload the location information to the remote server via 3G/4G module. You can download video files from the remote client to realize real-time remote monitoring of the vehicle. The following shows the actual application model of this product that may be different depending on vehicle type and peripherals.

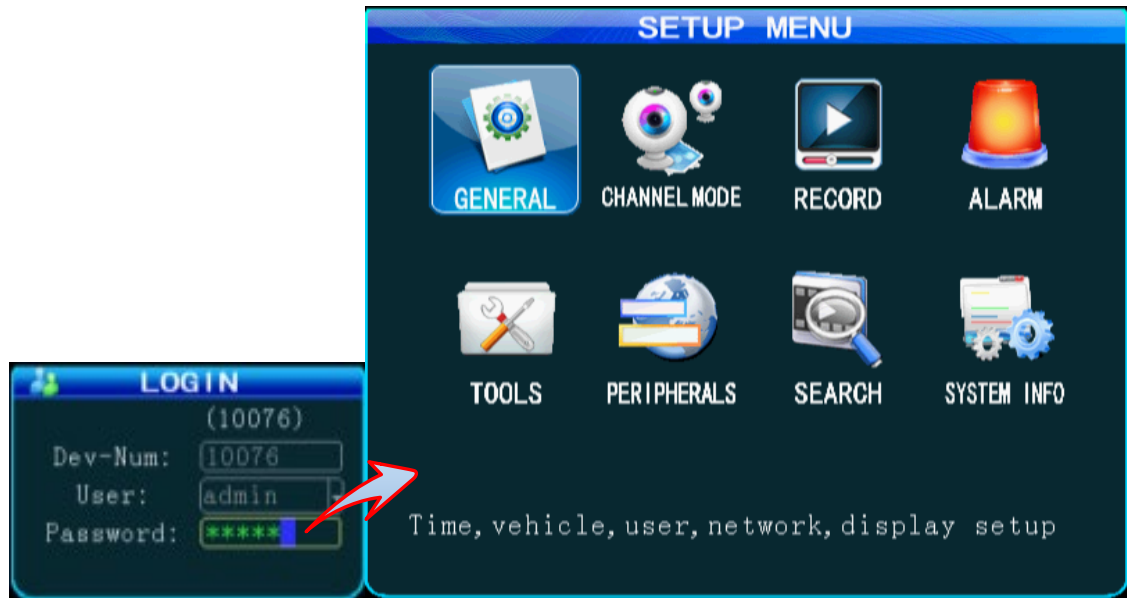


### III. Basic Settings

After the power supply is connected to the vehicle start circuit, ensure that the device will automatically start when the vehicle is started if the power supply is properly connected to peripherals. The system enters the Quad View after start, where you can press the Login key on your remote control to input the Admin password (888888 by default) to enter the setup menu and configure related settings to meet vehicle management requirements.

The Setup menu has 8 options including: General, Channel Mode, Record, Alarm, Tools, Peripherals, Search and System Info (as shown in the figure). The following section will individually introduce related setting

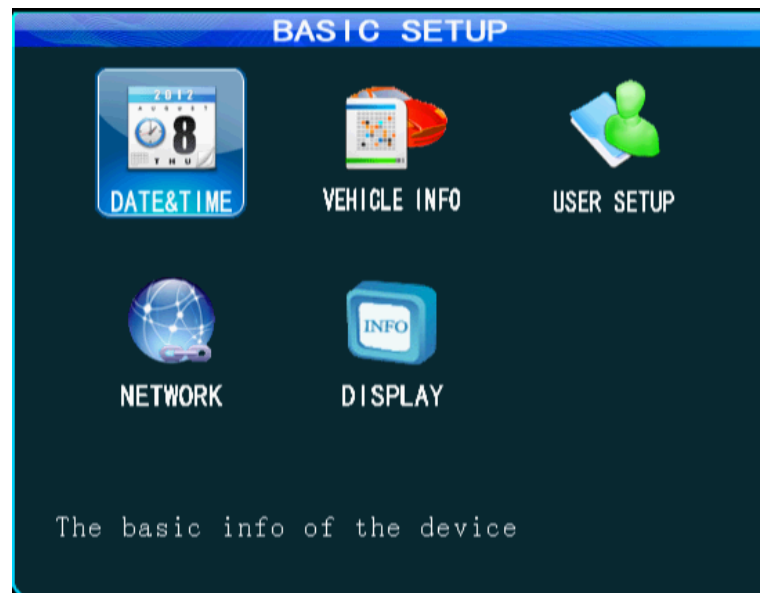
methods.



### 1. Basic Setup:

Step 1: Basic Setup

From Setup menu, press the "ENTER" key to enter the General interface, where you can set desired date and time, vehicle information, user management, network and display.



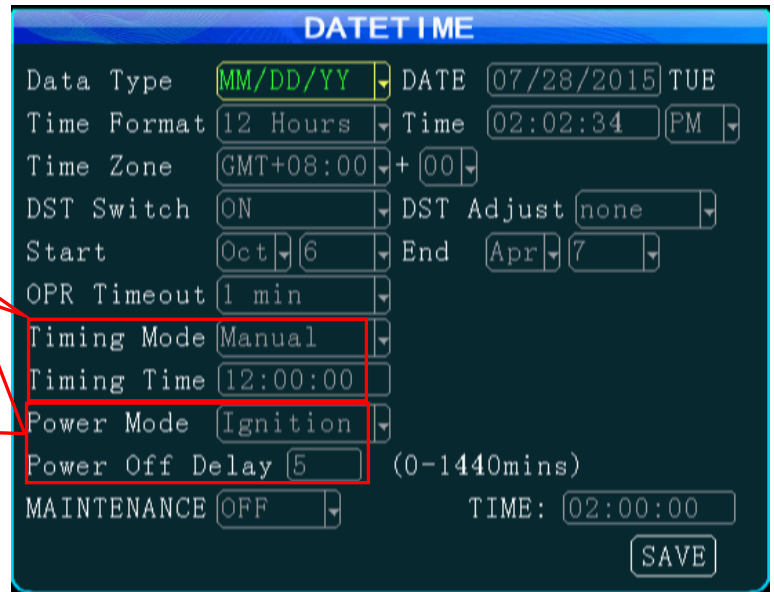
Step 2: set Date & Time

From the General menu, select "Date & Time" to enter its interface.



If GPS timing mode is selected, the time will be updated at the timing point.

According to the connection method of the installed power supply, select the default ignition mode, where you can set the recording delay time after shutdown



**DATETIME**

Data Type  DATE  TUE

Time Format  Time

Time Zone  +

DST Switch  DST Adjust

Start   End

OPR Timeout

Timing Mode

Timing Time

Power Mode

Power Off Delay  (0-1440mins)

MAINTENANCE  TIME:



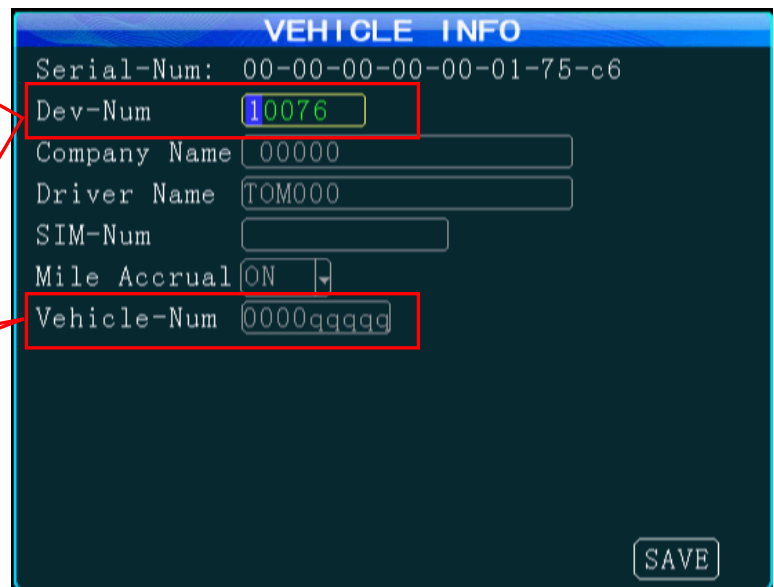
1. It is advised to enable the auto-maintenance feature when the device is operating for a prolonged time, allowing that the device automatically restarts within the set maintenance time.
2. OPR Timeout meaning the quit automatically time if you dont operate , Other options are set as required and after setting.

### Step 3: Set Vehicle INFO

Press the "Return" key to return to the General menu to enter the Vehicle Info menu. To facilitate unified management of vehicles on the server, it is recommended to completely fill in vehicle information.

The server will monitor and manage vehicles through device number. When vehicles are managed via 3G/4G network, please ensure the uniqueness of the device number.

Please ensure your vehicle number is correct which will be superimposed on the video.



**VEHICLE INFO**

Serial-Num: 00-00-00-00-00-01-75-c6

Dev-Num

Company Name

Driver Name

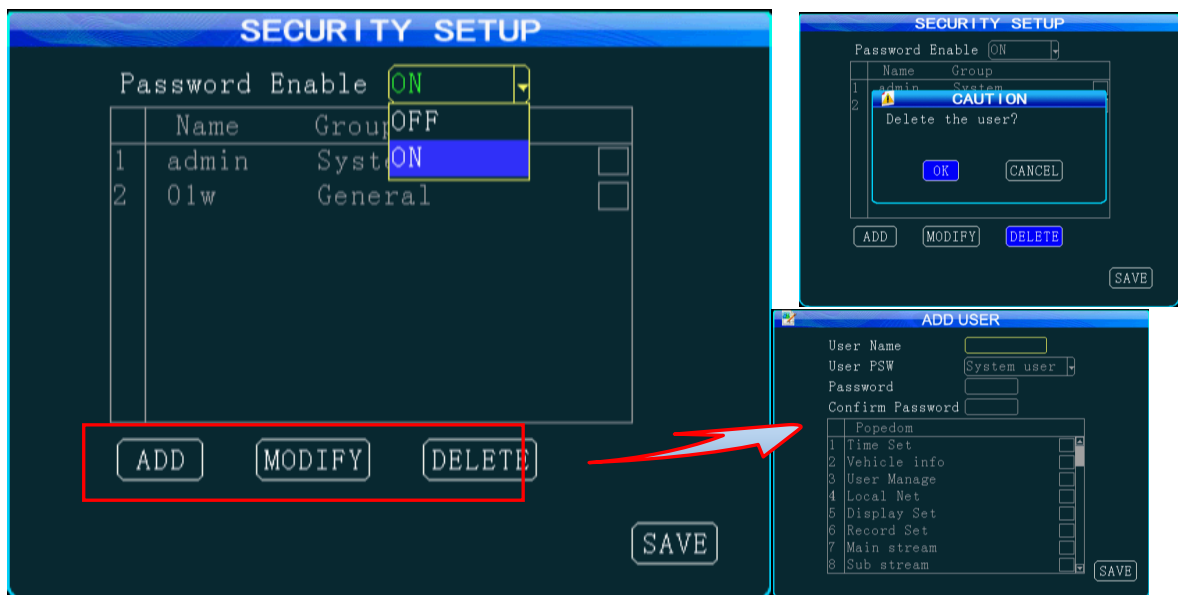
SIM-Num

Mile Accrual

Vehicle-Num

#### Step 4: User Setup

Press the "RETURN" key to return to the General menu to enter the User Setup menu and to switch the password enable on. The original admin password is 888888. If the password is changed, the password is required when restarting to enter the system setup menu.



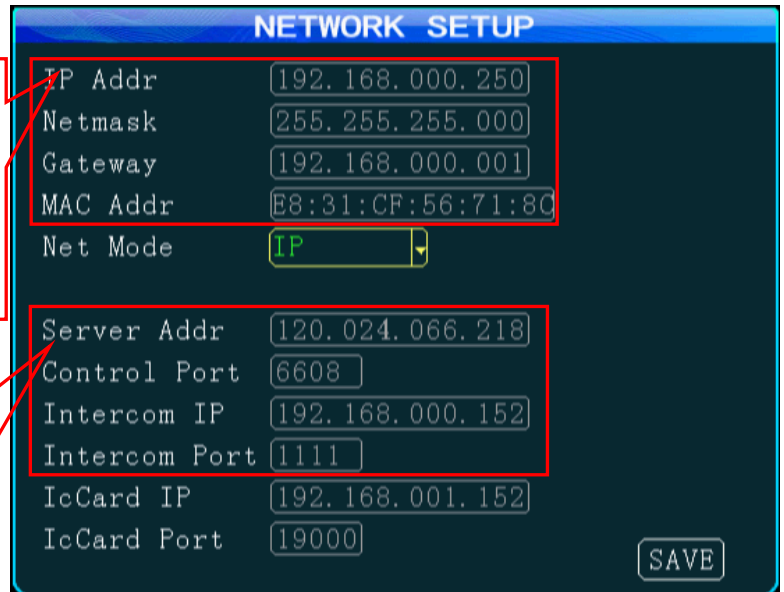
1. You can add, modify or delete a user, or set user permission.
2. After setting, move your cursor to the "Save" key and press the "ENTER" key to save it.

#### Step 5: Network Setup

Press the "Return" key to return the General menu to enter Network Setup interface.

当选择外接 IPC 时，此处的 IP 网段应与所接的 IPC 在同一网段，网关地址设置为该网段首个 IP 地址，如 192.168.000.001。  
If an external IPC is selected, the IP network segment here shall be the same as that of the connected IPC. The gateway address is set to the first IP address of this segment, such as 192.168.000.001.

当设备通过 3G/4G 网络上报到服务器时或者需要连接对讲机时需设置相应的 IP、端口及协议类型。  
When the device is reported to the sever via 3G/4G network, or is connected to the two-way radio, the related IP, port and protocol type shall be set.



The screenshot shows a 'NETWORK SETUP' screen with the following fields and values:

- IP Addr: 192.168.000.250
- Netmask: 255.255.255.000
- Gateway: 192.168.000.001
- MAC Addr: E8:31:CF:56:71:80
- Net Mode: IP
- Server Addr: 120.024.066.218
- Control Port: 6608
- Intercom IP: 192.168.000.152
- Intercom Port: 1111
- IcCard IP: 192.168.001.152
- IcCard Port: 19000

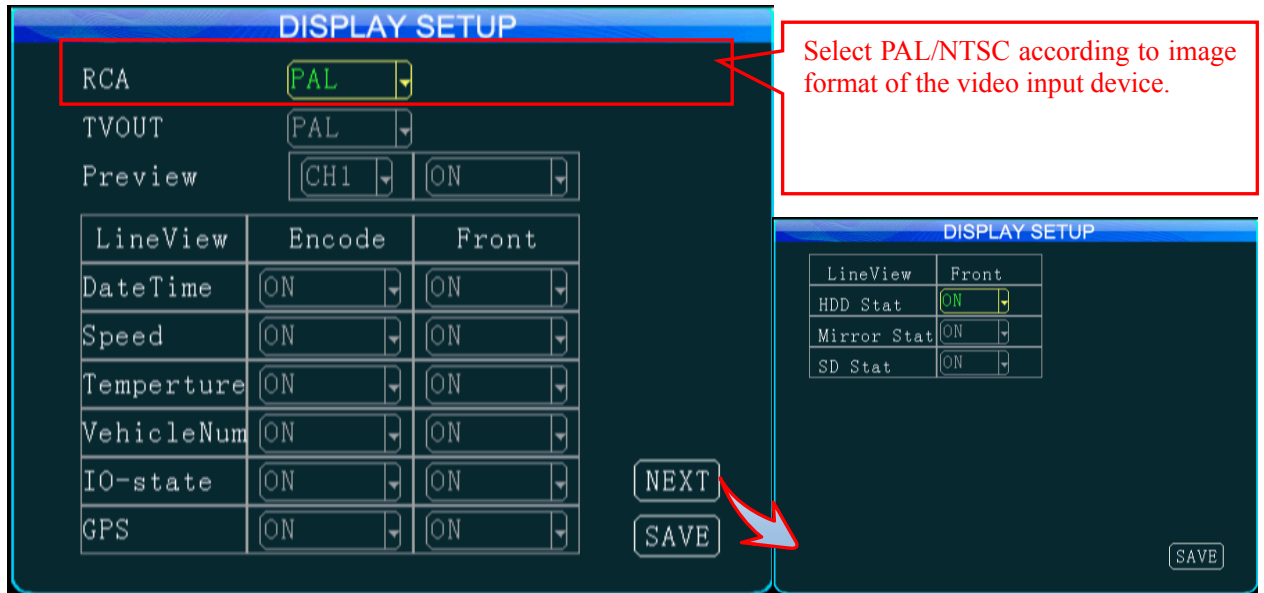
A 'SAVE' button is located at the bottom right of the screen.




1. The two-way radio has the port number of 9988, while this parameter is unavailable for an analog two-way radio.
2. A dynamic IP is assigned to the server, rather than a fixed IP, "Domain Name" is selected as the connection mode. In this case, a fixed IP is more stable; thus, it is not advised to use domain name mode.
3. A customer can establish its own server or use a server provided by the manufacturer. If a server (including intercom server) provided by the manufacturer is required, please contact our technical support, which will provide the assigned device number, server IP, related user account and password to the customer. The customer shall simply fill these parameters into the related fields.
4. Fill in the IP and port number of the department standard platform when being reported to it, while it is not required for this product

## Step 6: Display Setup



Press the "Return" key to return the General menu to enter Display Setup interface.



- 
1. Preview of videos on the screen; you can set date&time, speed, HDD temperature, vehicle number, IO alarm state, and GPS information to on or off during video encoding or screen display.
  2. Select PAL/NTSC for the output format as required and after setting, move your cursor to the "Save" key and then press the "ENTER" key to save it.

## 2.Channel Mode

Press the "Return" key twice to return to the setup menu and select Channel Mode where you can select different channel modes depending on the model you use (here, FM MDVR-IP4 is taken as an example). The device will restart if a mode is switched to the other. This product is a hybrid DH vehicle MDVR supporting several types of camera connection. The interfaces for the analog camera are defined as follows and the standard interface is for the IP camera. A user can select the proper camera type and configure software properly according to hardware connection mode.

Connection Diagram	Pin Number	Interface Definition	Connection Diagram	Pin Number	Interface Definition	Pin Number	Interface Definition
	1	12V OUT		1	12V OUT	5	A-IN-2
	2	GND		2	GND	6	V-IN-2
	3	A-IN		3	A-IN-1		
	4	V-IN		4	V-IN-1		

● Camera Connection Mode

Connection Mode	Connection Diagram	Model FM MDVR-IP4/IP8
Connection of analog camera		4 ways of D1/960H/720P AHD video inputs available; 2 ways of 720p AHD(1&2 CH)+2*960H 3&4 CH)analog mixed video inputs available
Connection of network camera		4 ways of 720P/1080P IPC video inputs available
Mixed connection of analog and network cameras		4 ways of 720P IPC + 4 ways of 720P AHD/960H/D1 HD mixed video inputs available

FM MDVR-IP4/IP8 Connection Mode

Connection Mode	Connection Diagram	Model FM MDVR-IP4/IP8
Connection of single analog camera		8 ways of CIF/ D1/960H analog video inputs available
Connection of single network camera		4 ways of 720P/1080P IPC video inputs available
Mixed connection of analog and network cameras		4 ways of 720P IPC+8*960H HD mixed video inputs available

FM MDVR-IP4/IP8 Connection Mode

**CHANNEL MODE**

	Local		NetWork		
	720P	960H	1080P	720P	
1	4	0	0	0	<input type="checkbox"/>
2	0	0	0	4	<input type="checkbox"/>
3	4	0	0	4	<input checked="" type="checkbox"/>
4	0	4	0	0	<input type="checkbox"/>
5	0	4	0	4	<input type="checkbox"/>
6	2	2	0	0	<input type="checkbox"/>

➔

CAUTION

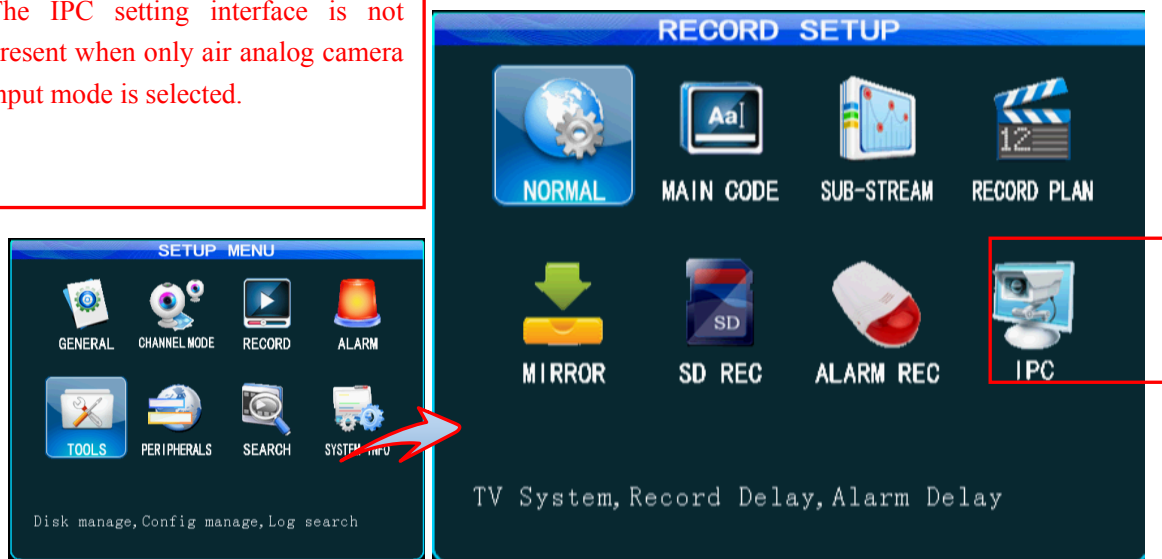
Reset Successful, reboot!

### 3. Record Setup:

Step 1: Enter the Record Setup interface

Press the "Return" key twice to return to the Setup Menu, where you can configure record settings, including general settings, main code, sub-stream, recording schedule, mirror recording, SD recording, alarm recording and IPC setting.

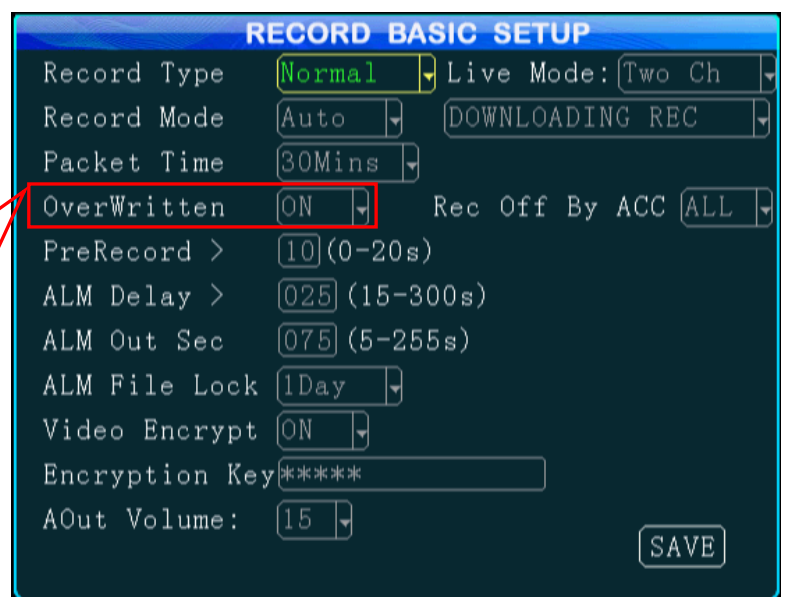
The IPC setting interface is not present when only air analog camera input mode is selected.



Step 2: Record Basic Setup

From the Record Setup menu, select the General option and press the "Enter" key to enter the Record Basic Setup interface, where you can select the desired recording mode as required. The record packet time can be set to 15 min, 30 min, 45 min or 60 min.

When this option is enabled, when the HDD space is lower than 2G; When the space of mirror record HDD and SD card is less than 300M, the early videos will be automatically overwritten.



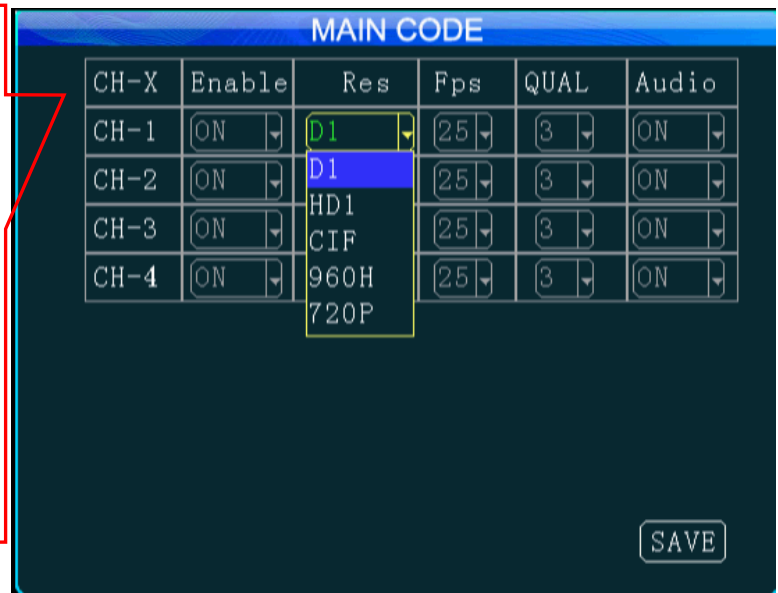


1. When the alarm record option is selected, you can set the pre-record time, alarm record delay time, alarm output time and alarm lock time. When timing record is selected, you shall set the record schedule (for details, see Step 5).
2. After setting, move your cursor to the "Save" key and press the "ENTER" key to save it.

### Step 3: Main Code

Press the "Return" key to return to the Record Setup menu to enter the Main Code setting interface, where you can set the main code of the external analog camera. Resolution D1/HD1/CIF/960H/720P are available for choice.

- 1) The frame rate is adjusted according to image format. The higher the frame rate is, the better the timeliness will be. PAL is adjustable between 1-25 frames; NTSC is adjustable between 1-30 frames.
- 2) Level 8 indicates the lowest picture quality. The higher the picture quality is, the better video definition will be.



1. Enabling of the record feature requires an external pickup or the camera is provide with a pickup.
2. If only IP camera input is selected, only IPC setting is required;
3. After setting, move your cursor to the "Save" key and press the "ENTER" key to save it.

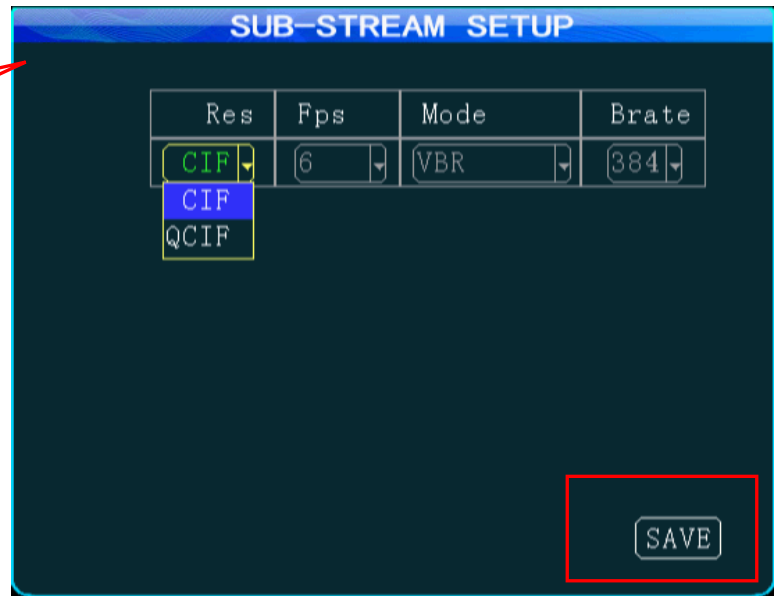
### Step 4: Sub-Stream Setup

Press the "Return" key to return to the Record Setup menu to enter the Sub-stream setting interface. This setting is directly related to definition and fluency of video on the CMS platform. The higher the resolution, the frame rate and bit rate is, and the higher the definition of the video will be. However, this requires more memory

and broadband.

可设置为固定码率 CBR 或动态码率 VBR, 16-384bit/s 可选, 默认 96bit/s。

You can set it to fixed bit rate CBR or dynamic bit rate VBR, 16-384bit/s is optional and the default is 96bit/s.



1. 子码流分辨率可选 CIF 和 QCIF, 目前 3G 网络最高可实现 CIF 实时网传;
1. Either CIF or QCIF is optional for sub-stream resolution. Currently, the maximum CIF real-time transmission can be realized for 3G network;
2. 设置完毕后将光标移到“保存”键按“ENTER”键保存。
2. After setting, move your cursor to the "Save" key and press the "ENTER" key to save it.

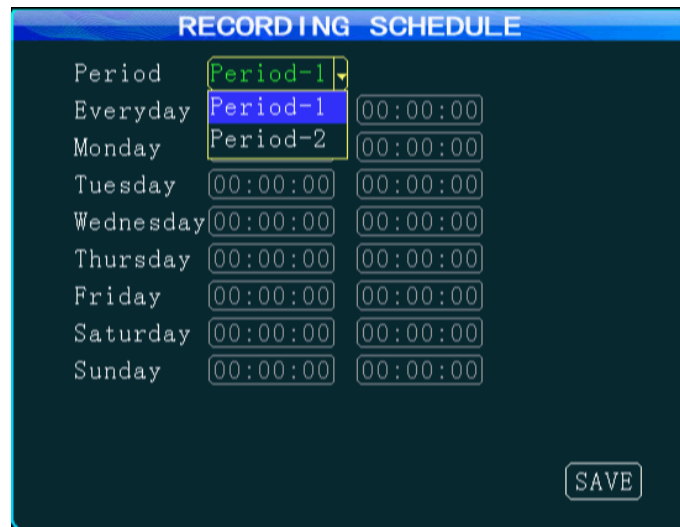
Step5: 录像计划 (定时录像模式下需设置)

Step 5: Recording Schedule (to be set in timing record mode)

按“RETURN”键返回录像设置菜单, 进入录像计划设置界面。录像常规设置里的录像模式如果选择“定时录像”模式 (不常用), 则需要在这里设置定时录像的时间段 (可选择 2 个时间段)。

Press the "Return" key to return to the Record Setup menu to enter the recording schedule setting interface. If "Timing Record" mode (not commonly used) is selected under record mode in the General option, you shall set the record time frame here (two time frames can be selected).





1. 录像常规设置里的录像模式如果选择“定时录像”模式，才需要设置录像计划；
1. The Recording Schedule shall be set only when the "Timing Record" mode is selected under record mode in the General option.
2. 设置完毕后将光标移到“保存”键按“ENTER”键保存。
2. After setting, move your cursor to the "Save" key and press the "ENTER" key to save it.

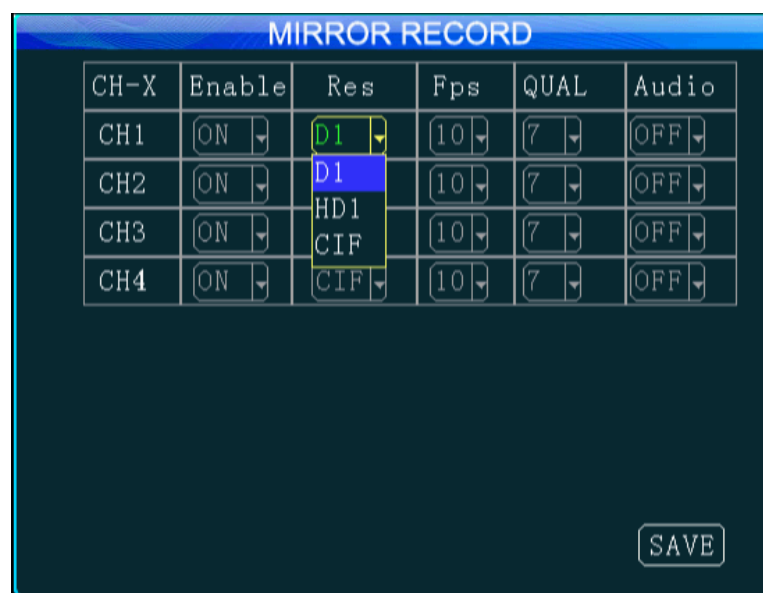
#### Step6: 镜像录像设置

#### Step 6: Mirror Record

按“RETURN”键返回录像设置菜单，进入镜像录像设置界面。镜像录像作为车载 DVR 备份录像，是为防止硬盘出错而导致的录像丢失。（具体设置可参考 step2 主码流设置）

Press the "Return" key to return to the Record Setup menu to enter the Mirror Record setting interface.

Mirror record, as back record for the vehicle DVR, is used to prevent loss of records due to HDD error. (for details, please refer to step2 main code setting)

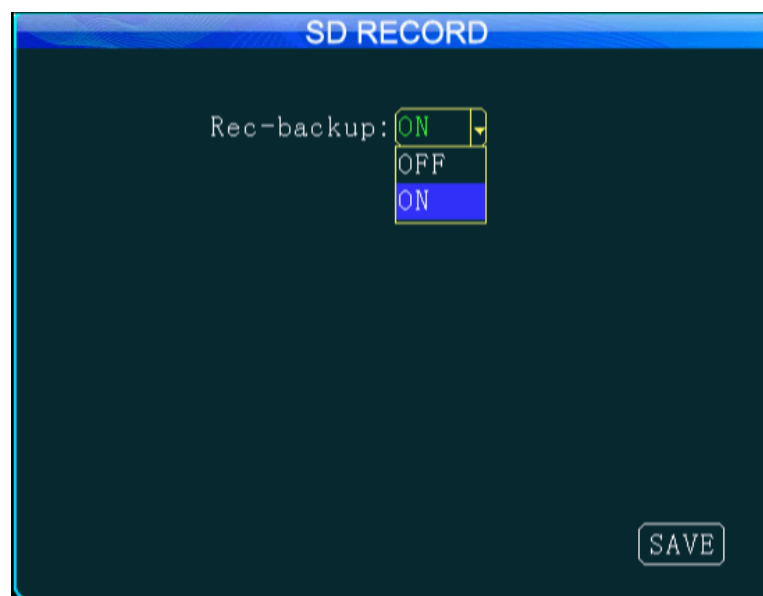


### Step7: SD 卡录像设置

#### Step 7: SD Record

按“RETURN”键返回录像设置菜单，进入 SD 卡录像设置界面。开启时，当硬盘由于震动等原因导致不存在时，如果打开了 SD 录像功能，就会把录像文件存储在 SD 卡中。

Press the "Return" key to return to the Record Setup menu to enter the SD Record setting interface. When this option is selected, if the HDD is not present due to shock and SD record feature is enabled, record files will be stored in the SD card.

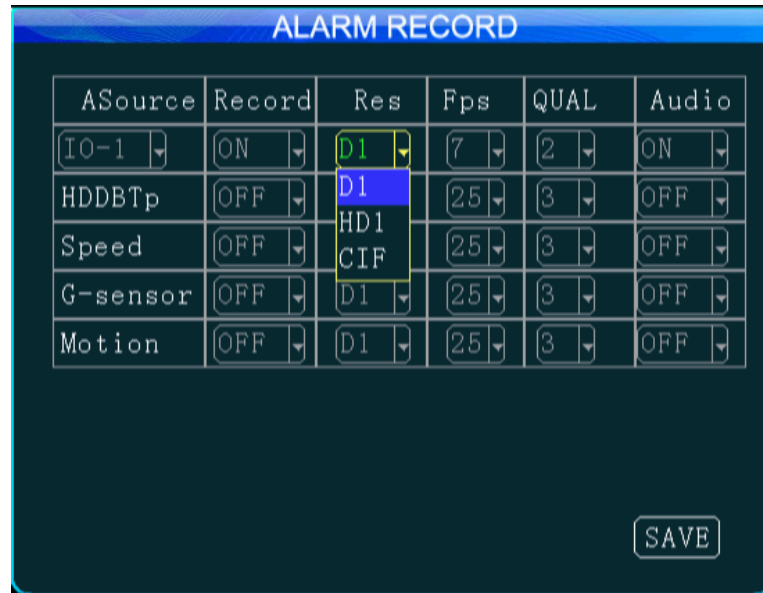


### Step8: 报警录像设置

#### Step 8: Alarm Record

按“RETURN”键返回录像设置菜单，进入报警录像设置界面。设置时请对应具体的报警源进行设置，可参照 step2 主码流设置。

Press the "Return" key to return to the Record Setup menu to enter the Alarm Record setting interface. Please set this option according to the specific alarm source by referencing Step 2 Main Code.



1. 该功能规划中...，正常情况下只要设置好主码流相应的参数（如：主码流的分辨率设置为 HD1 或 CIF、帧率设置为 25 帧、画质设置 3），当有报警触发录像时，报警录像文件就可以按照所设置的高质量视频参数来进行录像；

1. This feature is planning... Under normal circumstances, you shall simply set related parameters related to the main code (for example, the main code resolution is set to HD1 or CIF, frame rate is set to 25 frames and the picture quality is set to 3). When the record operation is triggered by an alarm, the alarm record file can be recorded according to set high quality video parameters;

2. 设置完毕后将光标移到“保存”键按“ENTER”键保存。

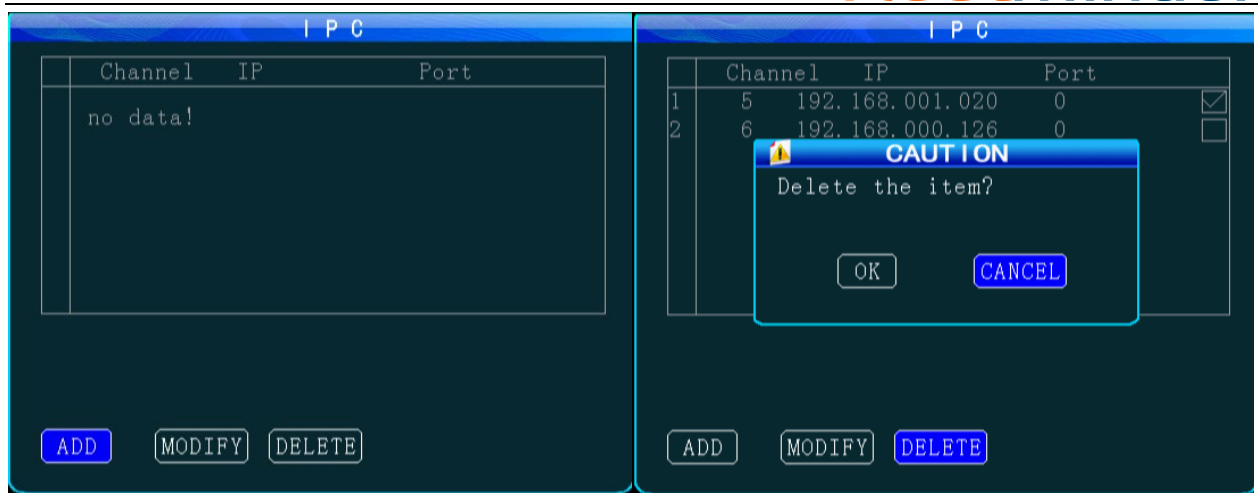
2. After setting, move your cursor to the "Save" key and press the "ENTER" key to save it.

#### Step9: IPC 设置

#### Step 9: IPC

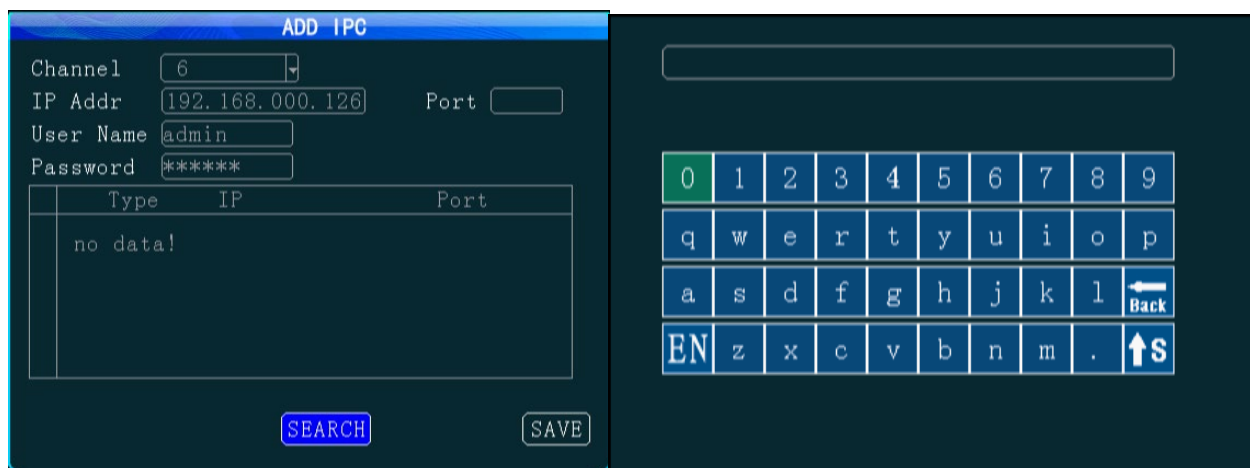
按“RETURN”键返回录像设置菜单，进入 IPC 设置界面。设置之前需确保 IPC 已经与 MDVR 主机连接好，点击“添加”、“修改”、“删除”选项可对 IPC 参数进行相应的操作。

Press the "Return" key to return to the Record Setup menu to enter the IPC setting interface. Before setting, ensure that IPC is properly connected to the MDVR mainframe. You can click "Add", "Modify" or "Delete" option to add, modify or delete IPC parameters.



添加摄像头时，先选择所对应的通道，可手动输入网络摄像头的 IP 地址和端口号或者点击“搜索”后在结果中选择所需要的网络摄像头。用户名和密码为网络摄像头对应设置的账号和密码，带有保密功能的网络摄像头需将此处设置与网络摄像头本身一致；没有密保功能的网络摄像头此处可不设置。设置时用遥控器移动至对应字母所在位置，按“Enter”确认选择，按“Return”返回完成输入。

When adding a camera, select the related channel, and you can manually input the IP address and port number of the network camera or click "Search" to select the desired network camera in the search result. The user name and password are set for the network camera. For a network camera with security feature, the setting shall be the same as that for the network camera itself; or this setting can be ignored. Use your remote controller to move to the latter you want, press "Enter" to confirm your selection and press "Return" to return and complete your input.



1. IP 地址和端口号是指网络摄像头本身设置的 IP 地址及端口号，手动设置时需保持一致；
1. IP address and port number are those for the network camera itself. Be sure to keep them consistent when setting manually;
2. 点击“搜索”会将所有连接到 MDVR 的 IP 摄像头搜索出来；
2. Clicking on "Search" will list all IP cameras connected to the MDVR;
3. 设置完毕后将光标移到“保存”键按“ENTER”键保存。

3. After setting, move your cursor to the "Save" key and press the "ENTER" key to save it.

#### 4.报警设置：

#### 4. Alarm Setup:

Step1: 进入报警设置

Step 1: Enter the Alarm Setup interface

按两次“RETURN”键返回系统菜单，选择报警设置。包含传感器、速度、加速度、温度、移动侦测、联动设置及其他报警模式的设置。需要启用报警功能必须同时外接相应的传感器才能使用，以下使能设置“开启”代表开启报警功能，报警类型选“事件”时为正常录像，选择“报警”时为报警录像；门限值代表报警触发时的速度极限值。

Press the "Return" key to return to the Setup Menu and select the Alarm Setup interface, where you can set sensor, speed, acceleration, temperature, motion detection, linkage setting and other alarm modes. The alarm feature can be used only when an external sensor is connected. The alarm feature is enabled when following enable settings are on. If "Event" is selected for alarm type, normal recording is conducted. If "Alarm" is selected, alarm record is conducted; the threshold indicates the speed limit when the alarm is triggered.



Step2: 传感器设置

Step 2: Sensor Setup

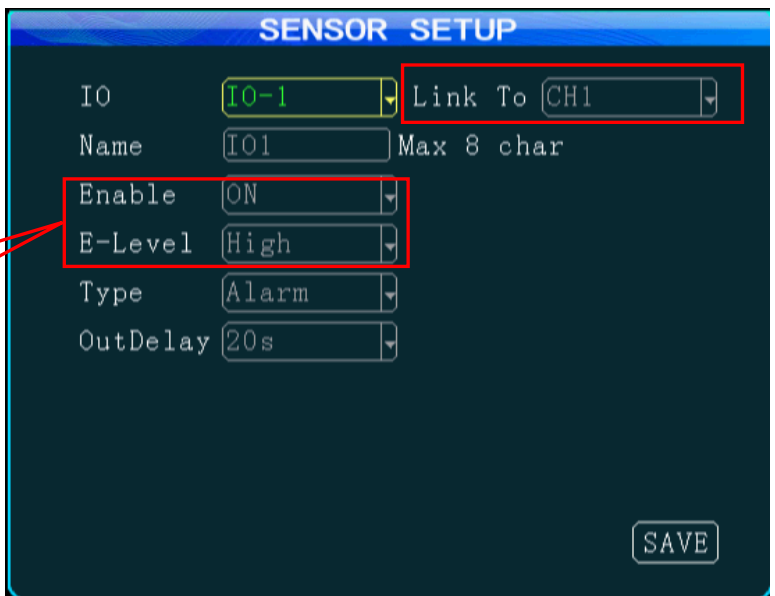
在报警设置菜单下，选择“传感器”图标，按“ENTER”键进入传感器报警设置选项。本产品提供 8 路 SENOR-IN 输入，可根据实际情况设置传感器名称。

From the Alarm Setup menu, select the "Sensor" menu and press the "Enter" key to enter the sensor alarm

可选择传感器对应的视频监控通道，当报警触发时，监视器自动弹出该通道放大画面视频图像。

You can select the video monitoring channel corresponding to this sensor. When the alarm

setting option. This product support 8 channels sensor-in, You can set the desired sensor name as required.



使能设置为“开启”，用户一般使用高于 5V 的高电平来触发报警  
When Enable is set to "ON", a user generally uses high level over 5V to trigger the alarm



1. 输出延时是指当在报警联动里设置了报警输出，则报警关闭后，报警输出会延时所设置的时长；设置完毕后将光标移到“保存”键按“ENTER”键保存。

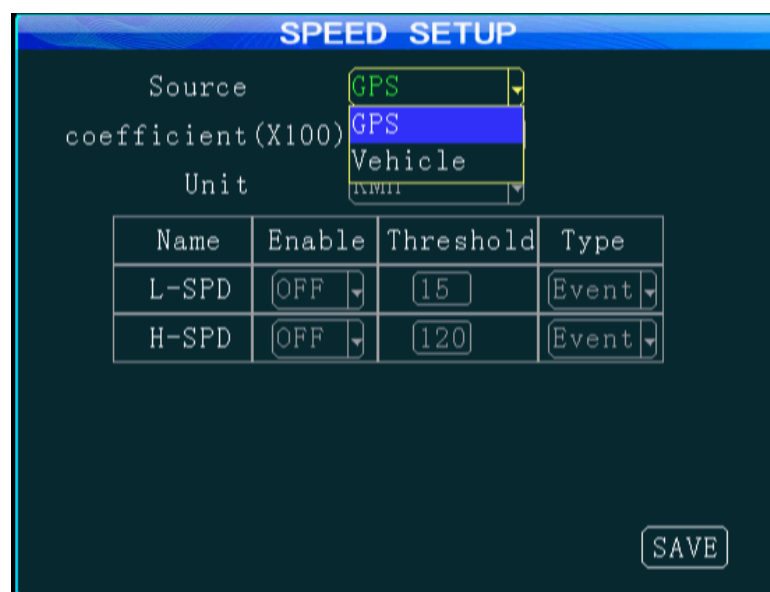
1. Output delay indicates that alarm output is set in the alarm linkage, i.e. when the alarm is off, the alarm outputs within the set delay time; After setting, move your cursor to the "Save" key and press the "Enter" key to save it.

### Step3: 速度报警设置

#### Step 3: Speed Setup

按“RETURN”键返回报警设置菜单，进入速度报警设置界面。

Press the "Return" key to return the Alarm Setup menu to enter Speed Setup interface.



Name	Enable	Threshold	Type
L-SPD	OFF	15	Event
H-SPD	OFF	120	Event



1. 选择 GPS 时需保持信号稳定；选择车辆时需将脉冲传感器接入设备端口的 SPEED-A 和 SPEED-B 两根线，速度单位可选 KMH/MPH；

1. Keep the signal stable when selecting GPS; connect the pulse sensor to the SPEED-A and SPEED-B. The speed can be in KMH/MPH;

2. 系数 (X100) 是指当选择“车辆”来获取速度时，需根据设定的速度和获取的脉冲来测定，系数= (3600\*脉冲数) / 速度 KMH，脉冲数为车辆行驶 1 千米距离过程中产生的脉冲信号个数；

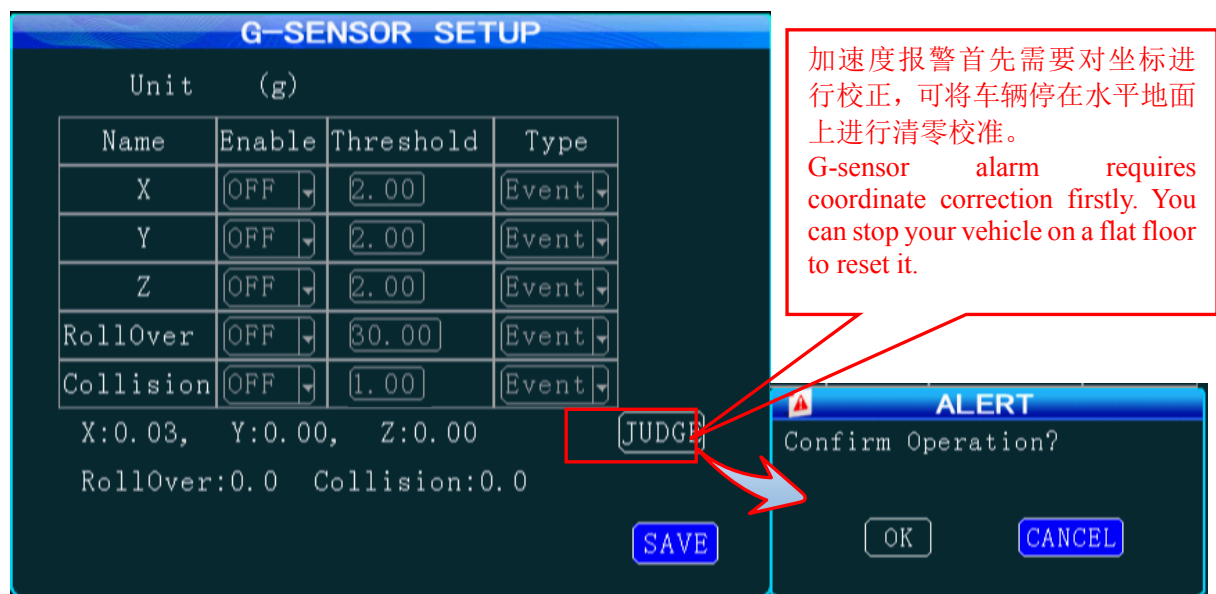
2. After setting, move your cursor to the "Save" key and press the "ENTER" key to save it.

#### Step4: 加速度报警设置

#### Step 4: G-sensor Setup

按“RETURN”键返回报警设置菜单，进入加速度报警设置界面。当刹车、转弯、加速、撞车时瞬间的加速度较大，直观反映在门限值变动快。

Press the "Return" key to return to the Alarm Setup menu to enter G-sensor Setup interface. When transient acceleration is high during braking, turning, acceleration or collision, it indicates the threshold value changes fast.



Name	Enable	Threshold	Type
X	OFF	2.00	Event
Y	OFF	2.00	Event
Z	OFF	2.00	Event
RollOver	OFF	30.00	Event
Collision	OFF	1.00	Event

X:0.03, Y:0.00, Z:0.00  
RollOver:0.0 Collision:0.0

ALERT  
Confirm Operation?  
OK CANCEL

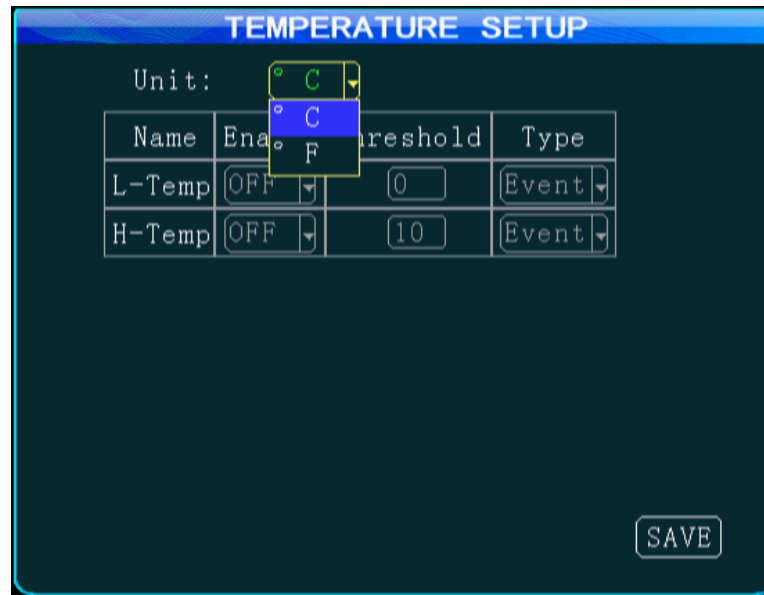
#### Step5: 温度报警设置

#### Step 5: Temperature Setup

按“RETURN”键返回报警设置菜单，进入温度报警设置界面，温度单位：°C/°F可选，开启报警功能后还可以传到中心 CMS 平台记录报警信息。

Press the "Return" key to return to the Alarm Setup menu to enter the Temperature Setup interface. (unit: °C/°F optional). If temperature alarm feature is enabled, this information can be transmitted to the central CMS

platform.



Step6: 联动报警设置

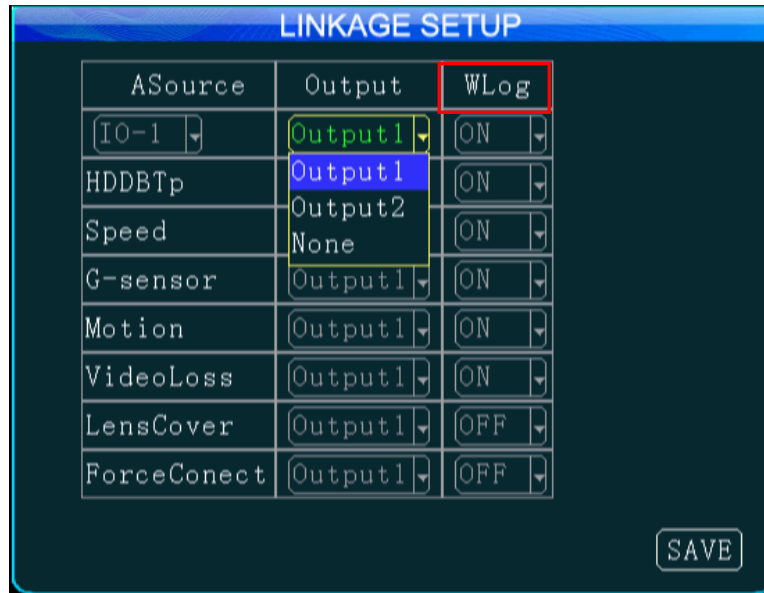
Step 6: Linkage Setup

按“RETURN”键返回报警设置菜单，进入联动设置界面。可分别在联动设置内选择无输出/输出 1/输出 2，当相应的报警触发时会产生 12V 的高电平，可用于驱动其他光电设备。（具体连接可参照报警输入/输出线连接方式）

Press the "Return" key to return to Alarm Setup menu to enter the Linkage Setup interface. You can select none/output 1/output2 from the linkage setup menu. 12V of high level is generated to drive other optoelectronic devices when the related alarm is triggered. (For detailed connection method, please refer to alarm input/output cable connection).

打开可记录相关报警记录  
Open to record related alarm logs





Step7: 移动侦测报警设置（暂不支持）

Step 7: Motion Detection (coming soon)

按“RETURN”键返回报警设置菜单，进入移动侦测设置界面。侦测区域，可使用遥控器来选择两点作为对角的来确定侦测区域。在用户选定的区域内，当有移动物体时，系统侦测到后会发出报警信息，用户可以在“系统工具-日志搜索”下搜索到移动侦测 alarm 的报警事件，名称为“CHL MD 报警”。

Press the "Return" key to return to the Alarm Setup menu to enter the Motion Detection interface. Within the detection area, you can use your remote control to select two points as diagonal to define a detection area. Within the user defined area, when there is an object moving, the system will give an alarm when it is detected. A user can search motion detection alarm events under "Configuration -> Log Search", naming "CHL MD alarm".

灵敏度越高越容易侦测到环境的变化，但是会造成亮度、色彩等变化也会触发报警，因此不建议使用该报警模式。  
 The environmental change may be detected more easily when the sensitivity is high; however, change of brightness and color will also trigger an alarm; thus, this alarm mode is not recommended.  
 侦测区域，可使用遥控器来选择两点作为对角的来确定侦测区域。  
 Detection area, you can use your remote control to select two points as diagonal to define the detection area.

CH-X	Enable	Sensitivity	Area
CH-1	OFF	L	SETUP
CH-2	OFF	L	SETUP
CH-3	OFF	L	SETUP
CH-4	OFF	L	SETUP

侦测区域设置方法如下：

The detection area is set as follow:

选中“设置”按遥控器“ENTER”进入移动侦测区域设置界面，

Select "Setup", and press the "Enter" key on the remote control to enter the motion detection setting interface,

第一：先选中第一个方块（黄色），按下“ENTER”后移动方块变成蓝色；

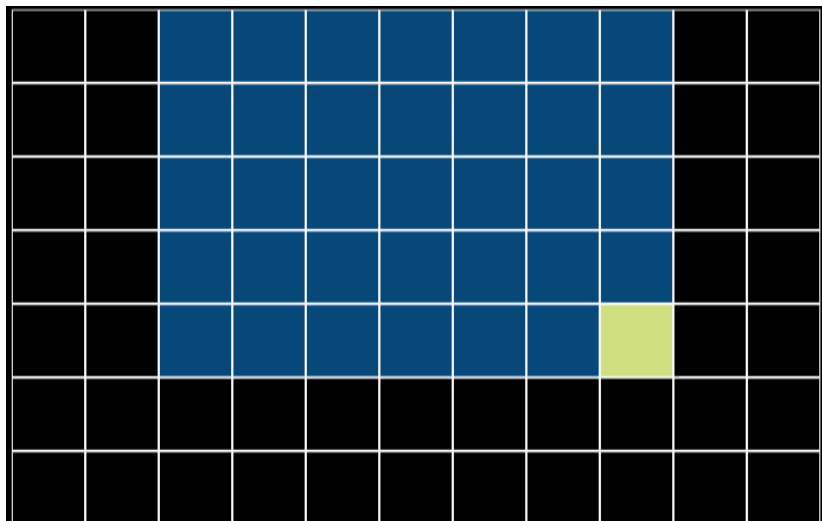
Firstly: select the first block (yellow), and the motion block changes to blue after pressing the "Enter" key.

第二：再选中第二个方块按“ENTER”，以这两个方块为对角的矩形区域就是被选定的；

Secondly: select the second block and press the "Enter" key. The rectangular area formed by the diagonal of these two blocks is defined;

第三步：“RETURN”返回上级界面然后再按保存。

Thirdly: press the "Return" to return to the previous menu and press the "Save" key.



## 5.系统工具：

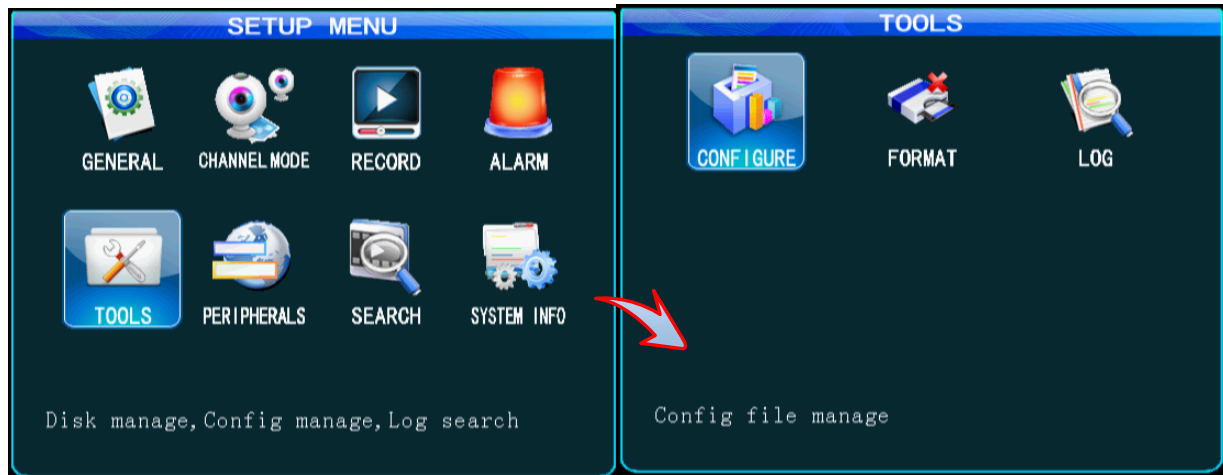
### 5. Configuration:

Step1:进入系统工具

Step1:Enter system tools

按 2 次 “RETURN” 键返回系统菜单，选择 “系统工具” 图标，进入系统工具。

Press the "Return" key to return to the Setup Menu and select the configuration interface,Enter the system tools.



Step2: 系统配置管理

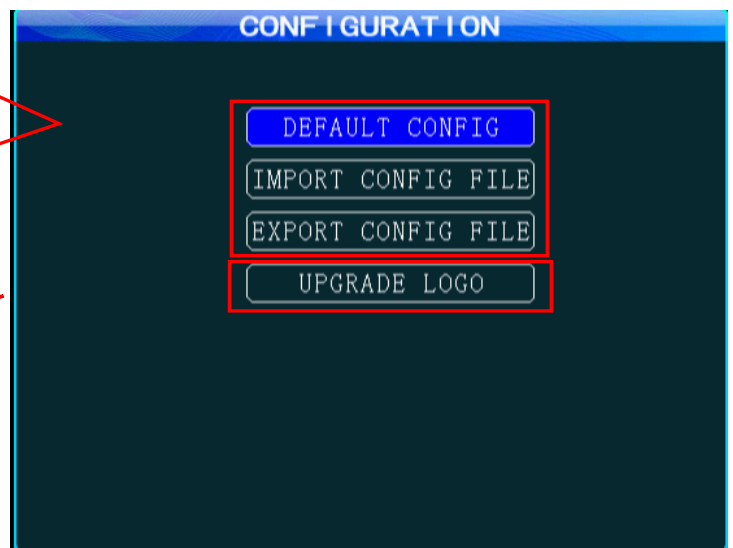
Step 2: Configuration management

按“RETURN”键返回系统菜单，选择“系统工具”图标，进入配置管理设置界面，可以通过USB导入/导出系统配置，也可以恢复系统默认设置。

Press the "Return" key to return to the Setup Menu and select the "Configuration" icon to enter the Configuration interface, where you can import/export configuration through USB or recover default configuration.

可用前端USB接口导入事先准备好的系统设置，导出保存当前设置。  
You can use the front USB interface to import preset configuration or exported to save current settings.

Logo 图片大小: 720\*576; 名称及格式: loading.jpg, upgrading.jpg  
Logo image size: 720\*576; name and format: loading.jpg, upgrading.jpg

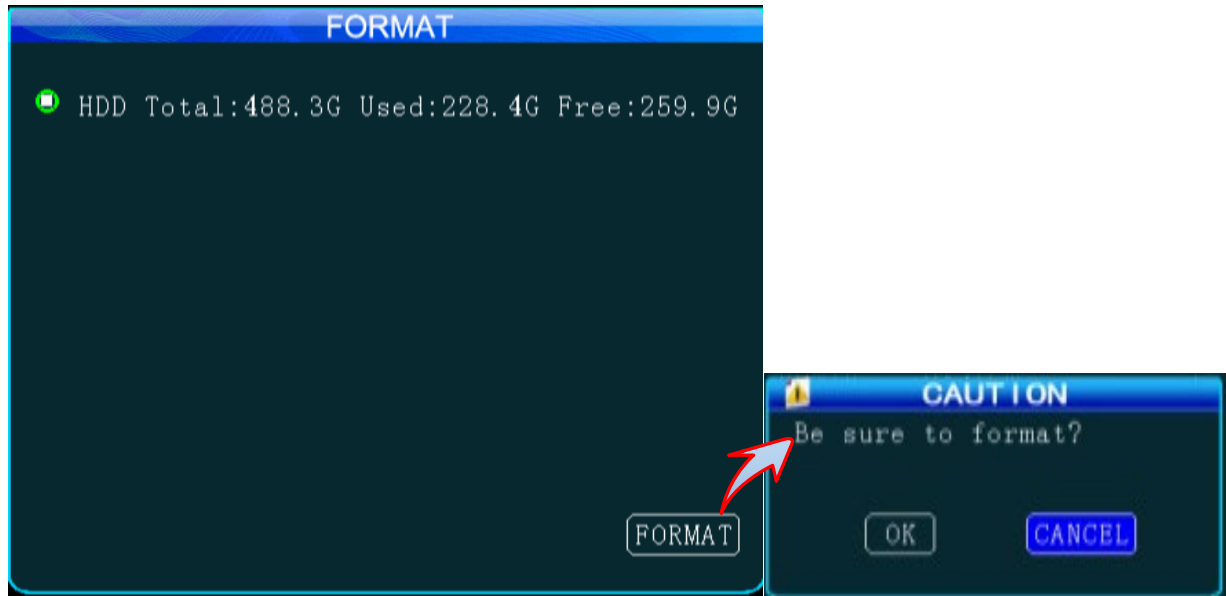


Step2:设备格式化

Step 2: Formatting

按“RETURN”键返回系统工具菜单，进入格式化设置界面。选择需要格式化的存储介质，然后选择格式化即可。

Press the "Return" key to return to the Setup Menu to enter the Format setting interface, where you can select the storage medium to be formatted and press the "Format" button.



1. 硬盘第一次插入设备使用，必须进行格式化；
1. The HDD shall be formatted before being inserted into its box;
2. 格式化操作将删除存储空间内所有数据，格式化之前请确认是否有重要资料。
2. Formatting will clear all data stored in the memory. Please check if there is important information before formatting.

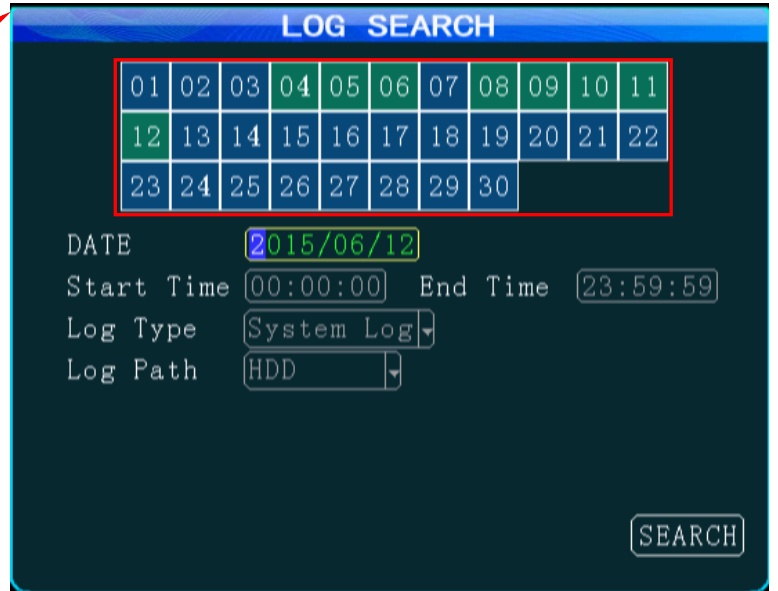
Step3: 日志搜索

Step 3: Log Search

按“RETURN”键返回系统工具菜单，进入日志搜索设置界面。

Press the "Return" key to return to the Configuration menu to enter the Log Search setting interface.

绿色背景的日历代表有日志，选择日期、时间及日志类型即可搜索。  
 The calendar with a green background indicates that there is a log that can be searched by simply selecting date, time and log type.



## 6. 外设设置:

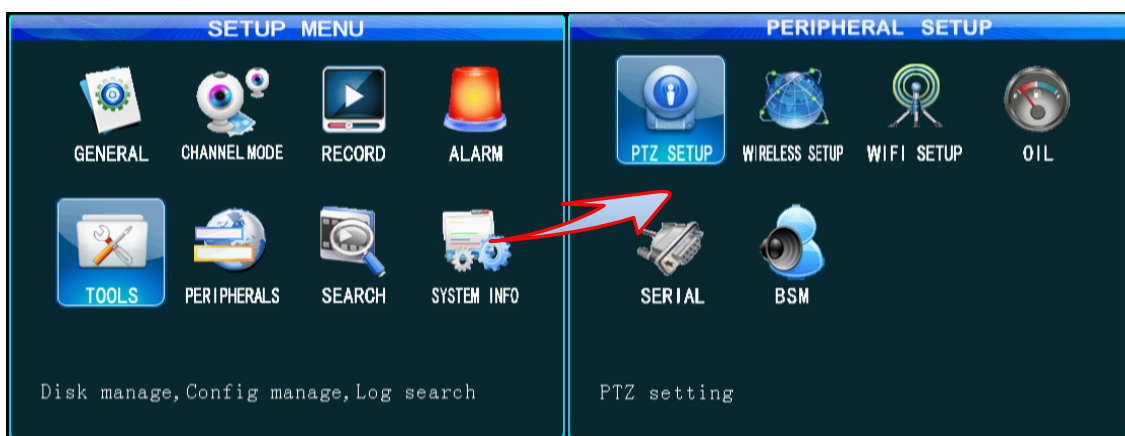
### 6. Peripheral Setup:

Step1: 进入外设设置

Step 1: Enter the Peripheral Setup interface

按“RETURN”键返回系统菜单，选择外设图标进入外设设置菜单。包括：云台、无线宽带、WIFI 设置、油量和串口。

Press the "Return" key to return to the Setup Menu to select the Peripherals icon to enter the Peripheral Setup interface, where you can set PTZ, wireless broadband, WiFi, Oil, serial port.



Step2: 云台设置

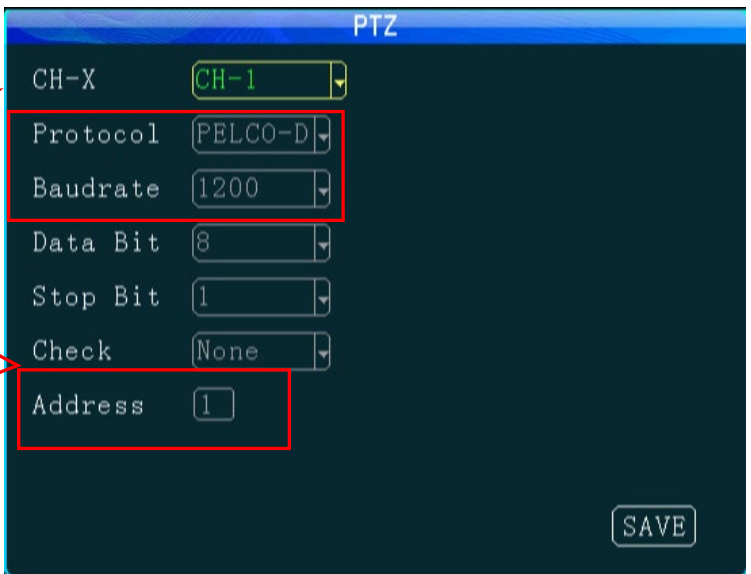
Step 2: PTZ

在外设设置菜单中选择云台图标，进入云台设置。数据位、停止位和校验码默认即可。

From the Peripheral Setup menu, select the PTZ icon to enter the corresponding interface. Use default data bit, stop bit and check code.

设置好云台相关参数后，要选定接云台的通道才能用遥控器控制云台，比如说云台接在通道 2 上，那么在监视界面上要切换到 2 通道最大化才能控制它。

After set the PTZ parameters, you should choose PTZ corresponding channels to remote control the PTZ, such as PTZ on channel 2, so in the monitoring interface need switch to the maximum 2 channel to control it.



The screenshot shows the PTZ configuration screen with the following settings: CH-X: CH-1, Protocol: PELCO-D, Baudrate: 1200, Data Bit: 8, Stop Bit: 1, Check: None, Address: 1. A 'SAVE' button is at the bottom right.

**根据云台设置修改不同的协议和波特率。  
Use different protocols and baudrates depending on PTZ**

**当云台数量多的时候需要设置不同的地址码来识别。可直接输入和云台设置对应的地址值。  
When there are many PTZs, set different addresses for easy identification. You can directly input the address value corresponding to the PTZ.**

### Step3: 无线宽带设置

### Step 3: Wireless Setup

按“RETURN”键返回外设设置菜单，进入无线宽带设置界面。当 MDVR 内置 3G/4G SIM 卡，并采用 3G/4G 网络进行上报平台时，需要开启无线拨号，并根据运营商网络制式选择通讯类型。3G/4G 的软件版本不同，界面存在一些差异，如下图所示。国内运营商此部分设置保持默认即可（下图为中国联通和电信的默认设置），但国外用户需根据本国移动网络运营商提供的信息对应填写。

Press the "Return" key to return to the Peripheral Setup menu to enter the Wireless Setup menu. When 3G/4G SIM card is used in MDVR and information is reported to the platform via 3G/4G, wireless dial-up shall be enabled, and a proper communication type shall be selected according to operator's network format. There are some differences between 3G/4G software versions, as shown in following figure. Use the default settings for domestic subscribers (the following figure shows default settings for China Unicom and China Telecom). For foreign subscribers, fill these fields with information provided by your local mobile network operator.

模块使能	开启
类型	EVDO
接入点	Ctnet
中心号码	#777
用户名	Card
密码	****

中国电信EVDO

模块使能	开启
类型	WCDMA
接入点	3gnet
中心号码	*99#
用户名	Card
密码	****

中国联通WCDMA



3G SETUP

Wireless: ON

Type: WCDMA

APN: 3gnet

Center-Num: \*99#

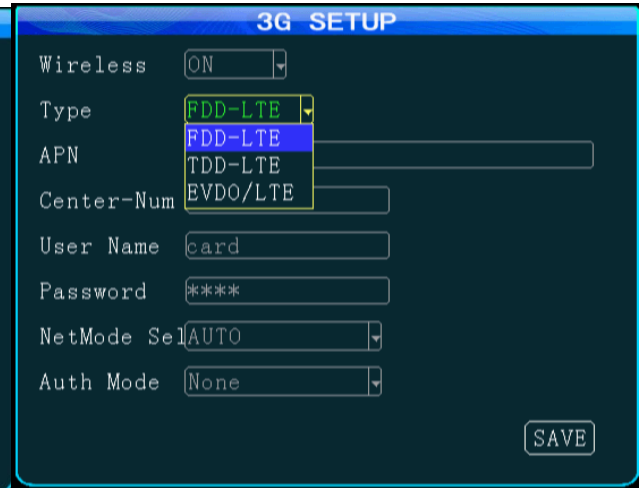
User Name: card

Password: \*\*\*\*

SAVE

3G 版本软件界面

Interface for 3G software



3G SETUP

Wireless: ON

Type: FDD-LTE

APN: FDD-LTE

Center-Num: EVDO/LTE

User Name: card

Password: \*\*\*\*

NetMode Sel: AUTO

Auth Mode: None

SAVE

4G 版本软件界面

Interface for 4G software



1.退出全部菜单后，按遥控器上的 INFO 按钮，能够看到 3G/4G 通信的相关信息，如果信号良好，那会显示拨号成功；

1. After exiting from all menus, pressing the INFO button on the remote control will show all 3G/4G-specific information. If the signal is normal, the dial-up operation is successful;

2.设置完毕后将光标移到“保存”键按“ENTER”键保存。

2. After setting, move your cursor to the "Save" key and press the "ENTER" key to save it.

#### Step4: WiFi 设置

#### Step 4: WiFi Setup

按“RETURN”键返回外设设置菜单，进入 WIFI 设置界面。输入对应 WIFI 的 IP、SSID、子网掩码等信息，设备通过 IP 判断其 RJ45 接口是否和外置模块连接成功。

Press the "Return" key to return to the Peripheral Setup menu to enter the WiFi Setup interface where you can input the desired IP, SSID and submask of your WiFi. The device will check the RJ45 is successfully connected to the external module.

根据实际情况选择  
Select as required

WiFi 自动下载服务器通过此 SSID 判断是否使用 WiFi 连接。  
The WiFi auto-download server checks if WiFi connection is used via this SSID.



1. 车载 DVR SSID 设置完成后，添加对应的 WiFi 下载点也需对应 SSID 才能实现 WiFi 自动下载；

1. After SSID of the MDVR is set, a corresponding SSID is also required when adding the appropriate WiFi download point to realize WiFi auto-download;

2. 其他按需求进行设置，设置完毕后将光标移到“保存”键按“ENTER”键保存。

2. Other options are set as required and after setting, move your cursor to the "Save" key and then press the "ENTER" key to save it.

### Step5: 油量设置

#### Step 5: Oil Setup

按“RETURN”键返回外设设置菜单，进入油量设置界面，应用该功能需要外接油量传感器并开启报警使能。系数=邮箱总容量 (L) /高度 (mm) \*100%

Press the "Return" key to return to the Peripheral Setup menu to enter the Oil Setup interface. This feature can be enabled only when an external oil level sensor is connected and the enable feature is on. Coefficient = total capacity of the oil tank (X) /height (mm) \*100%

根据实际油箱的尺寸来设置该系数。表示多少毫升油量为 1L 油。

This coefficient shall be set according to the size of your oil tank to indicate how much of oil capacity corresponding to 1L of oil.



## Step6: 串口设置

### Step 6: Serial Device Setup

按“RETURN”键返回外设设置菜单，进入串口设置界面。该设置需接入相应的串口设备，可根据对应的串口设备设置相应的参数，一般采用默认设置即可。

Press the "Return" key to return to the Peripheral Setup menu to enter Serial Device Setup interface. This setting requires connection to the related serial device. You can set related parameters according to the related serial device settings. In generally, default settings are used.



1. 外接 RS232 设备后，需在串口设置中将串口 1 或串口 2 设置为对应的设备名称才可使用相应传感器功能；

1. After an external RS232 device is connected, related sensor feature can be used only when serial port 1 or serial port 2 is set to related serial device name;

2. 设置完毕后将光标移到“保存”键按“ENTER”键保存。

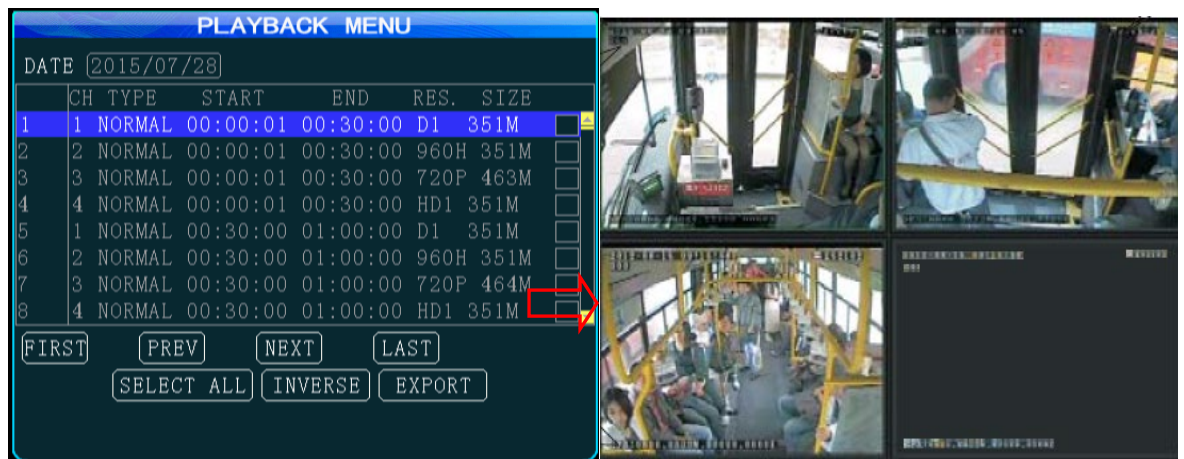
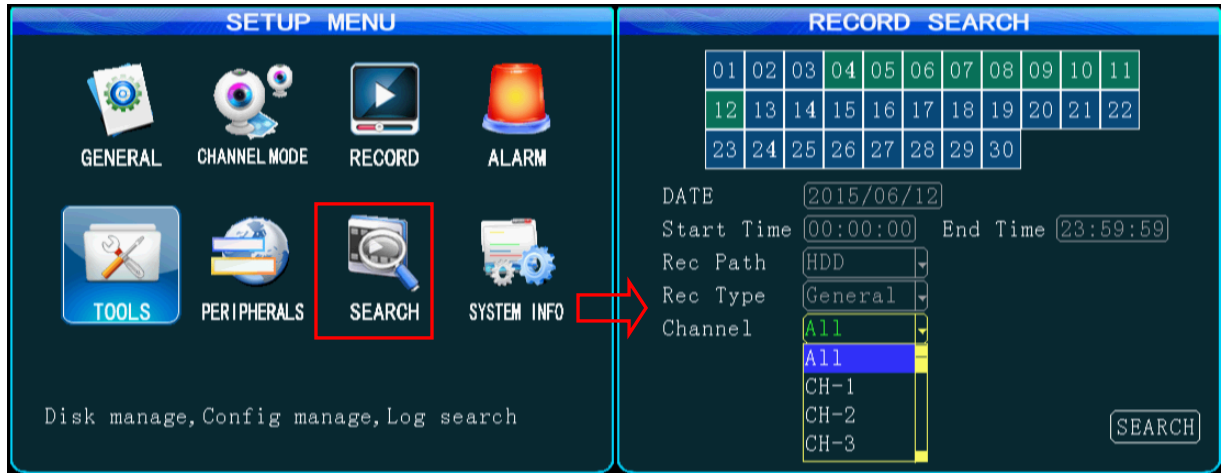
2. After setting, move your cursor to the "Save" key and press the "ENTER" key to save it.

## 7.录像搜索:

### 7. Record Search:

按“RETURN”键返回系统菜单，选择录像搜索。在搜索结果中可以选择录像文件进行播放等操作。绿色背景的日历代表有日志，选择日期、时间、录像类型及相应通道即可搜索。

Press the "Return" key to return to the Configuration menu to select the Record Search option. You can play the video file in the search result. The calendar with a green background indicates that there is a log that can be searched by simply selecting date, time, record type and related channel.

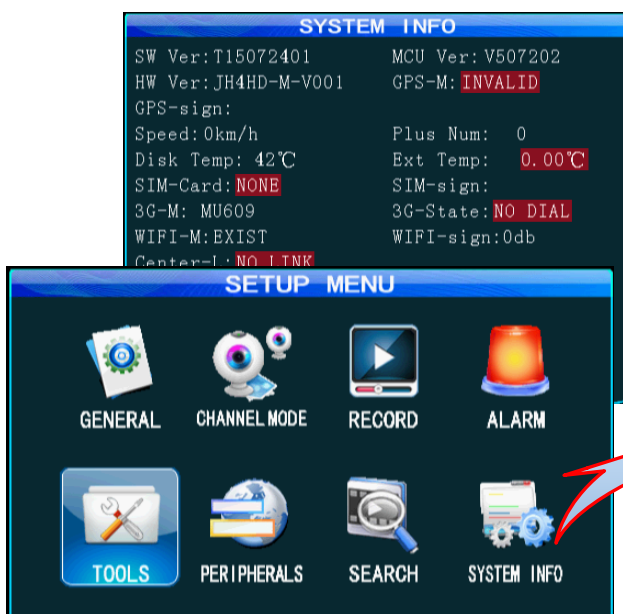


## 8.系统信息:

### 8. System Information:

在现场监视四画面状态下，按遥控器上的“INFO”键，或者进入系统菜单可以直接显示系统信息。

In Quad View mode, you can either press the INFO key on your remote control or enter the setup menu to display the system information.



SYSTEM INFO				
Storage	Total	Used	Free	State
Main	488.2G	468.4G	19.8G	StandBy
Mirror	0.0M	0.0M	0.0M	None
Backup	0.0M	0.0M	0.0M	None

IC EXIST: IC CONN:  
 Vehicle Mileage:0.00 KM RESET  
 DNS: 202.96.134.133  
 IN:12.2V AD1:0.0V AD2:0.0V  
 X:0.03, Y:0.00, Z:-0.02  
 RollOver:0.0, Collision:0.0 PREV

## 附录 1: MDVR 常见问题及处理

### Appendix 1: Common Questions and Answers (QA) for MDVR

问: 当产品出现自己不能处理的问题时应该怎么做?

**Q: What shall we do when a problem that could not be solve occurs to the product?**

答: 记录产品型号和软件版本号, 提交详细的问题描述给我们的技术支持工程师以便分析。您描述的越详细, 越方便我们分析处理。

A: Record product model and software version number and submit detailed problem description to our technical support engineer for analysis. Detailed description will be very helpful to our analysis.

问: 当车载主机设备没有视频输出怎么办?

**Q: What shall we do when the mobile device has no video output?**

答: 1.检查主机的开机状态。如果仅仅有一个蓝色指示灯亮起, 说明主机仍处于待机状态未开机; 同时检查主机电源的红线和黄线是否供电正常, 如果只有一根线供电, 那么主机是无法启动的。

A: 1. Check the power status of the device. If only one blue indicator is lit up, it indicates that the device is still in standby mode and not powered on; at the same time, check if red or yellow cable of the main power is supplied normally; If not, the device cannot be started.

2.查看显示屏是否供电, 以及显示器视频是否切换到 AV 状态。

2. Check if the display is powered and if the display video is switched to AV status.

3.检查主机视频输出线和显示器的连接状态。

3. Check the connection status of the video output cable and display.

4.检查主机锁的锁定状态, 确保锁定才能正常开机。

4. Check the lock status the mainframe lock; the device can be started only when the lock is locked.

问：当主机视频输入接口和摄像机输入接口不同时怎么办？

**Q: What shall we do when the mainframe video input interface is different from the camera input interface?**

答：车载主机用的是 4 针型接口，摄像机是 BNC 接口或航空头型。如果不一致，请用转换接头进行连接，或者用和车载主机线序定义进行标准对接的线对接。

A: a 4-pin interface is used for the vehicle device. BNC interface or air interface is used for the camera. If inconsistency is found, please use an adapter or connect it to a standard line defined as the line sequence for the vehicle device.

问：设备开机，硬盘也已经安装，但是不录像怎么办？

**Q: What shall we do if recording is unavailable even when the device is powered on and HDD is installed?**

答：1.检查硬盘安装后是否已经格式化，未格式化的硬盘不能使用。进入主菜单-管理工具-格式化，对新装硬盘进行一次格式化。

A: 1. Check that the HDD is formatted after HDD is installed and HDD without formatting cannot be used. From the Main Menu-Management Tool-Formatting, format the newly-installed HDD.

2.是否关闭了录像通道，是否设置了定时录像，不再录像时间段内是不会录像的。

2. Check if the record channel is off or if timing record is set. Recording is unavailable when it is not within the recording time frame.

3.检查硬盘是否接触良好，前面板 HDD 等是否点亮。

3. Check if the HDD is properly contacted, and the HDD on the front panel is lit up.

问：录像文件丢失，或者某一段时间内无录像文件？

**Q: A record file is lost or no record file is found within a certain period of time?**

答：1.通过分析最终视频文件之前丢失和恢复后的第一视频文件中确定的时间段。

A: 1. Analyze to define the period of time between the final video file is lost and the first video file is recovered.

2.确认主机在那段时间内是否未开机，比如死机中途停车、装卸货等主机未设置延时录像。

2. Check if the device is power on within this period of time, for example, delay record not set during mid-way shutdown or unloading & loading.

问：车载云台控制不了，上下左右都不能转动？

**Q: The vehicle PTZ cannot be controlled and cannot be rotated to up, down, right and left?**

答：云台的协议和波特率是否设置正确，地址吗是否对应，控制云台的时候是否把通道的视频选定为最大化。比如控制第二通道，那必须把第二通道图像最大化至屏幕才能控制。

A: Check if the protocol and baud rate of the PTZ are set correctly, the address is consistent and if the channel video is selected to be maximized when controlling the PTZ. For example, when controlling the second channel, you shall maximize the image in the second channel to control the PTZ.

## GPS 相关问题

### GPS related problems

**问：GPS 模块存在但是无坐标信息？**

**Q: GPS module is present but no coordinate information is available?**

答：1.查看 GPS 模块是否存在，如果 GPS 模块都不存在，请检查硬盘是否安装或者接触良好。

A: 1. Check if the GPS module is present; if not, please check if the HDD is installed or properly contacted.

2.确认 GPS 天线接触是否良好，天线是否断开，建议放置在信号较强的地方，注意有些车玻璃屏蔽膜会组个 GPS 信号。

2. Check if GPS antenna is properly contacted and if the antenna is broken. The antenna is recommended to be placed in an area having strong signal. Note that some car glass shielding film may form a GPS signal.

3.如果是在房间内测试，GPS 天线在房间内，信号被屏蔽，建议吧 GPS 天线放置与室外。

3. If the test is conducted indoors and the GPS antenna set indoors is shielded, it is recommended to place the GPS antenna outdoors.

**问：GPS 地理位置在地图山显示有偏差？**

**Q: GPS geographic position is not accurately displayed on the map?**

答：如果 GPS 模块已经定位则表示信号有效，出现偏差的问题原因很多，政府限制、误差允许、GPS 信号中断等；实际卫星地图出于安全考虑是会出现偏差，一般地图采用 GPS 校正就可以解决问题。

A: if the GPS module is positioned, it indicates that the signal is valid. Government limitation, error tolerance or GPS signal interrupt may cause deviation; The satellite map may have some deviation by for the sake of safety.

In general, this problem can be solved by using GPS correction.

## 3G/4G 无线模块相关问题

## 3G/4G wireless related problems

问：如果采用 3G 无线模块拨号，需要注意哪些？

**Q: What shall be noted if 3G wireless module is used for dial up?**

答：1.选择内置无线模块 WCDMA 或者 EVDO，相应的模块设置不一样，不同的机器型号支持的模块不一样，所以请确定您的模块和 SIM 是否对应。千万不要拿 WCDMA 的机器使用电信 SIM 卡。

A: If built-in wireless module WCDMA or EVDO is selected, the module settings are different and also depend on the model used; thus, please check the consistency between the module used and SIM card. Do not use Telecom Card in WCDMA-enabled devices.

2.服务器 IP 和端口设置是否正确，3G/4G 信号强度是否足够拨号，在查询 3G/4G 是否拨号成功。

2. Check if the server IP or port is correctly set, if 3G/4G signal is intense enough for dial up, and if dial up via 3G/4G is successful.

3.拨号不成功的时候请检查 3G/4G 天线是否接触良好。信号很弱有可能拨不上号；另外查询 SIM 卡是否存在足够的流量，如果没有流量了，拨号也不会成功。

3. Please check if the 3G/4G antenna is properly contacted when dial up fails. Weak signal may result in failure to dial up; in addition, check if the SIM card has sufficient traffic; if not, dial up will also fail.

问：一般遇到 3G/4G 无上报无视频的问题，首先应该做些什么？

**Q: What shall we do when no video is reported via 3G/4G?**

答：按 INFO 键进入系统信息页面，查看 SIM 卡是否存在和信号好强弱以及拨号状态，天线是否接触良好。再查查 SIM 卡是否已经没有流量，更换一张 SIM 卡来判断，这是最基本的判断。如果有信号但是拨不上号，那就查看中心号码和端口是否设置正确。再看看产品的设备号是否已经被占用。

A: press the "INFO" key to enter the System Information page, where you can check if the SIM card is present, inspect signal intensity and dial-up status, and check if the antenna is properly contacted. Then, check if the SIM card has traffic and replace it will a new one to re-check it. This is a most basic judgment criteria. If a signal is available, while dial up fails, check if the center number and port are set correctly. Then, check if the device number is unique.

问：3G/4G 信号时断时续，视频很卡？

**Q: 3G/4G signal is intermittent and video is not smooth**

答：目前 WCDMA 和 EVDO 的信号覆盖面已经比较广泛(4G 覆盖不全面)。在有些山区上存在信号覆盖

不到的情况，有些城郊地区也由于各个地方的网络制约存在信号很弱的情况，这个时候会出现看视频卡或者看不到视频，此情况受当地网络影响比较大；其次查看子码流设置的帧率是否过高，在网络状态不佳而帧率设置高的情况下，视频也有可能出现此种情况。

A: So far, WCDMA and EVDO has good coverage (4G is desired to be improved). In case where signal is not covered in some mountainous areas or signal is weak due to local network restrictions in some suburban areas, the video may not be smooth or even cannot be viewed. In this case, it is largely affected by the local network; in addition, check if the frame rate for the sub stream is set too high. This may occur when the network condition is poor while the frame rate is high.

**问：WIFI 信号有-60db 以上却连接不上？**

**Q: Connection is impossible even when WiFi signal is up to -60db**

答：如果你的 WIFI 设置正确的话，一般情况信号达到-60db 以上连接是没有问题的。如果主机在局域网中找不到，那就需要查查你的 SSID 和密码是否设置，当然基本的 IP 地址也必须要设置好的；另外再看看加密类型和认证模式是否按照要求设定。

A: If your WiFi is correctly set, connection is generally not a problem when signal intensity is up to -60db. If the device cannot be found within LAN, check if SSID and password are correctly set. Of course, the IP address shall be properly set; in addition, check the encryption type and authentication mode are set to requirements.

CMS 相关问题

CMS related problems

**问：设备已经启动，可是在 CMS 客户端看不到车辆和视频？**

**Q: The device is powered on while the CMS client displays no vehicle information and video**

答：首先确认中心的注册服务器是否开启并且在网，在查看主机设备号是否已经被占用引起冲突；其次查看服务器中心 IP 和端口是否设置正确；设备是通过内置 3G 模块、还是通过 WIFI 上报道中心，如果选择看内置的 3G，请检查 3G 模块的种类选择是否正确，如 WCDMA 和 EVDO 模块要相应的 SIM 卡支持，查查天线是否接触不良、数据接入点、中心号码设置是否正确，最终仍不行，请收集尽可能多的信息提交给技术支持人员分析，提交的数据越多，越方便技术人员解决问题。

A: Firstly, check the central registration server is powered on and online and then check if the device number is used, thereby causing conflict; secondly, check if the IP and port number are set correctly for the server center; Check if the device reports information to the central server via built-in 3G module or WiFi. If the built-in 3G is used, check if the right type is selected; for example, WCDMA and EVDO corresponds to related SIM cards.

Check if the antenna is properly contacted, if data access point and center number are correctly set. If it still does not work, please collect information as much as possible and submit it to technical support for analysis to facilitate troubleshooting.

**问：设备在线，但是无法看到视频图像？**

**Q: the device is online but video image is not displayed?**

答：请设置较低的子码流传输图像，当子码流码率设置很高的情况会受网络的上传限制而产生阻塞或者传输速度变慢的情况；网络信号不好或者时断时续会严重影响视频传输。

A: Please set a lower sub-stream to transmit images. When the sub-stream is set too high, block or slower transmission rate may result due to upload limit of the network; the video transmission may be seriously affected due to weak network signal or intermittence.

**问：设备再 CMS 上正常上报，使用一段时间后看不了视频了？**

**Q: the device normally reports information to the CMS while video cannot be displayed after a period of time?**

答：首先查看主机端的信息是否显示拨号，如果一直拨号状态，有可能是 SIM 卡的流量已经用完，更换 SIM 卡进行测试；其次检查主机的设备号是否被死机篡改，修改了设备号的主机需要重新上报添加车辆信息；再次，换卡也不行的状态则需要检查是否主机的 3G 模块出现故障。

A: Firstly, check if the device information displays dial-up. If yes, the traffic for the SIM card may be used up. Please replace with a new one for test; secondly, check if the device number is tampered. If yes, your vehicle information shall be reported again to the server; thirdly, if card replacement cannot still solve this problem, check if the device 3G module is faulty.



## Appendix 2: FM MDVR-IP4/IP8 Memory Space Reference

Correspondence of Picture Quality and Record Space

	画质 Picture Quality	1	2	3	4	5	6	7	8
	分辨率 Resolution								
录像空间	CIF	675	563	450	338	225	167	113	56
Record space M/h	HD1	900	788	675	563	450	338	225	169
	D1	900	788	675	563	450	338	225	169
	960H	900	788	675	563	450	338	225	169
	720P	1800	1350	900	675	450	338	225	169

一路图像每小时录像所占空间如上表所示，此表仅供参考，实际录像文件的大小和当前通道的光线变化、物体移动等诸多因素有关，那录像文件会小很多，为节省空间，可以设置关闭音频或者关闭不需要的视频通道录像。

The above table shows the record space required for one-way image per hour. This table is for reference only. The size of video file is related to illumination change and object motion of the current channel. Video file may be much smaller. To save space, you can disable audio or undesirable video channel.

### MDVR 安装前的工具准备

#### Tool Preparation before MDVR Installation

设备安装：在安装之前需要准备好必要的安装孔距。线面图标是通用的工具类型介绍：

Installation: please prepare necessary mounting hole pitches before installation. The following introduces common tools that may be used:

序号 S/N	名称 Name	规格 Specification	说明 Description
1	万用表 Multimeter	根据要求 As required	测试电路 Test the electric circuit

3	钻头 Drill bit	根据要求 As required	用于穿孔 For perforation
4	遥控器 Remote control	专用 Special tool	用于调试主机 For device debugging
5	电笔 Electroprobe	根据要求 As required	检测电路 Test the electric circuit
6	显示器 Display	专用 Special tool	用于调试主机 For device debugging
7	剥线钳 Wire stripper	根据要求 As required	For stripping
8	螺丝刀 Screwdriver	根据要求 As required	用于维修设备 For device maintenance
9	六角扳手 Allen wrench	根据要求 As required	用于维修设备 For device maintenance
11	卷尺 Tape	根据要求 As required	用于测量 For measurement
12	剪钳 Cutting plier	根据要求 As required	剪线 For cutting
13	老虎钳 Pincer plier	根据要求 As required	剪线 For cutting
14	电批 Electric screwdriver	根据要求 As required	用于维修设备 For device maintenance


### MDVR 安装之前的辅助检查

#### Auxiliary Inspection before MDVR Installation

设备安装：在安装前，要准备好一些必要的安装配件，配件类如下表所示：

Installation: Please prepare some necessary fittings before installation as follows:

序号 S/N	名称 Name	图标 Icon	序号 S/N	名称 Name	图标 Icon
1	电源线 Power cord		2	ACC 线 cable	
3	自攻螺钉 Self-tapping screw		4	线扣 Buckle	
5	结 Tie		6	阻燃波 纹管 Fire resistant bellow	

7	绝缘电工胶 带 Electrical insulating tape				
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### 版本升级记录

### Revision History

序号 S/N	版本 Revision	升级/变更内容具体说明 Upgrade / Change Description	发布日期 Issue Date	修订人 Revised by	备注 Note
1					
2					
3					

