Mobile DVR

Instructions

Contents

1 Specification

FEATURES:

- Built-in high performance Hisilicon chipsets, coded with H.264 standard, high compression rate and image quality
- 4CH AV Inputs with AHD 1080p/720P/960H/D1/CIF optional, 1CH synchronized AV output, 1CH VGA output, 1CH HDMI output.
- 4CH (or 8CH) local recording with 1080p (1080N) resolution in real time

Power:

- Professional In-Vehicle power design,8-36V DC Wide Voltage Range
- Multi protection circuits like under-voltage, short, reversed plug-in
- Smart power management system, shutdown under low voltage, low consumption

Data Storage:

- Special file management system to encrypt and protect the data
- Proprietary technology to detect the bad track of the hard drive which can make sure the continuity of video and long service life of the hard drive
- Built-in ultra-capacitor, avoid data loss and SD card damage caused by sudden outage
- Support 2.5 inch HDD/SSD, maximum 2TB
- Support 2 SD card storage, each SD supports maximum 512GB
- Support hard disk heating

Transmission Interface:

- Support 4G transmission
- Support GPS/BD optional, high sensitivity, fast positioning

MDVR Specification

Technical parameter:

Item	Device parameter	Performance
System	Main processor	Hi3520DV300
	Operating system	Embedded Linux OS
	Operating language	Chinese/English
	Operating interface	GUI, support mouse
	Password security	User password/Admin password
Audio & Video	Video standard	PAL/NTSC
	Video compression	H.264
	Image resolution	1080P/1080N/720P/960H/D1/CIF
	Playback quality	1080P/1080N/720P/960H/D1/CIF
	Compound mode	A variety of ways
	Decoding ability	1ch 1080p (1080N)real time
	Recording quality	Class 1-6 optional
	Image display	Single/QUAD display optional

	Audio Compression	G.726
	Audio recording	Audio & Video synchronized recording
Recording & Playback	Recording mode	Manual/Alarm
	Video bit rate	Full frame 4096Mbps，6 classes image quality optional
	Audio bit rate	8KB/s
	Storage media	SD card + HDD/SSD storage
	Video inquiry	Inquiry by channel/Recording type
	Local playback	Playback by file
Firmware upgrading	Upgrading mode	Manual/Automatically/Remote/Emergency Recovery
	Upgrading method	USB disk/Wireless network/SD card
Interface	AV input	4ch (or 8ch) aviation interface
	AV output	1ch VGA video output, 1ch aviation AV output
	Alarm input	4 digital inputs (4 Positive/Negative trigger)
	HDD/SSD	1 HDD/SSD (up to 2TB, support hot plug/unplug)
	SD card	2 SDXC High speed card (up to 512GB)
	USB interface	1 USB 2.0 (support U disk/mouse)
	Ignition input	1 ACC signal
	UART	1 LVTTL Level
	LED Indication	PWR/RUN
	Disk /SD card lock	1
	Debug port	1
Function extention	GPS/BD	Support detecting antenna Plug in/Unplug/Short circuit
	4G	Supports
Others	Power input	8~32V DC
	Power consumption	Standby 3mA Maximum consumption 30W @12V 2.5A @24V 1.25A
	Working temperature	-20 --- 70℃
	Storage	1080P 1.5G/h/channel 1080N 1.2G/h/channel 720P 1G/h/channel 960H 750M/h/channel
	Dimension	148mm*188mm*60mm (Hard disk MDVR) 147mm*180mm*41mm (SD card MDVR)

Project	Spe.	Feature
Power Input	8—36V	DC＋8V～＋36V，if lower than 8V，or higher than 36V，the MDVR will be shutdown, into protect status
Power Output	12V	Output :12V（+/-0.2V），max 2A。

Key Signal	≤4V	Key off。
	≥5V	Key on。
Video Input(Ω)	75Ω	75Ω/CH。
Video Output	2Vp-p	One 2Vp-p　CVBS One 75Ω
I/O	0—4V	Low voltage alarm
	>4V	High voltage alarm
SD Card Slot	SD Card	Support SD Card up to 1TB, **Support two SD Card** Support upgrade MDVR software
Temperature	-40℃-80℃	-40℃-80℃ with good environment

2.Feature

2.1Remote control application

Picture.3 Remote control

Key Function:

1.”Info”: view network status

2.”Login”: main menu

3.Number：

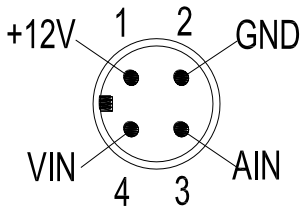
【0－9】:Under the configuration mode, 0~9 stand for numbers; under the playback mode, 1, 2, 3 and 4 are for switching between related single channel,

4. “↑ ↓”： up,down;

“←→”： left,right;

NOTE: The remote controller does not contain battery. Please buy the battery in local market. Battery Model: CR2025.

2.2 MDVR interface

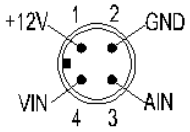


1、12V：For camera and voice record，2、Negative，3、AIN：For Audio；4、VIN：For Video

Picture.4 MDVR interface

Back Panel

Back Panel

Interface	item	Feature
Power	DC8-36V	Power input（red for positive，black is for negative，yellow is connect to ignition cable, when switch mode set up in ignition mode）
Video/Audio input	**CAM1-4（AV1-AV4）**	Video/Audio Input interface 
Video output	VOUT	Video output
Audio output	AOUT	Audio output
IO/ALARM	IO/ALARM	IO/ALARM
USB	USB	Mouse, USB Disk

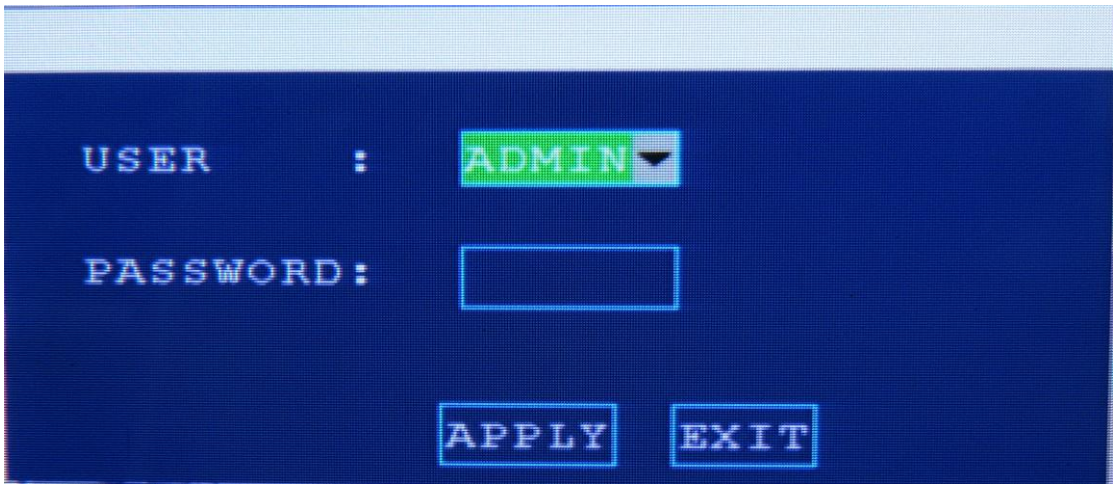
3. Power

Picture.5 Power

- **Make sure the volt is 8-36V before you connect with the battery , or the MDVR will be burn up**
- **Yellow cable must to connect with the ACC , or the DMVR cannot be delay shut down, the video will be lose.**

4 System User login

After connect the power, press “Login” to login without password. **(There is no password before you setup). USER account cannot change settings. Only ADMIN account can change menu.**



Picture.6 Login

5 Main Menu

Picture 7 Main Menu

< SEARCH>: Search for video files stored in the hard disk/SD card and perform playback operations;

<RECORD>：Set the audio and video parameters, working mode, etc.;

<BASIC>：Set alarms, ptz, time, network, disk, system, etc.;

<INFO>：Display device serial number, version number, SIM card, GPS module, etc.;

<VEHICLE>：Set vehicle number, switch settings, wireless settings, etc.;

<DISPLAY>：Set monitor screen and video data content, channel name, time overlay, boot preview screen, etc.;

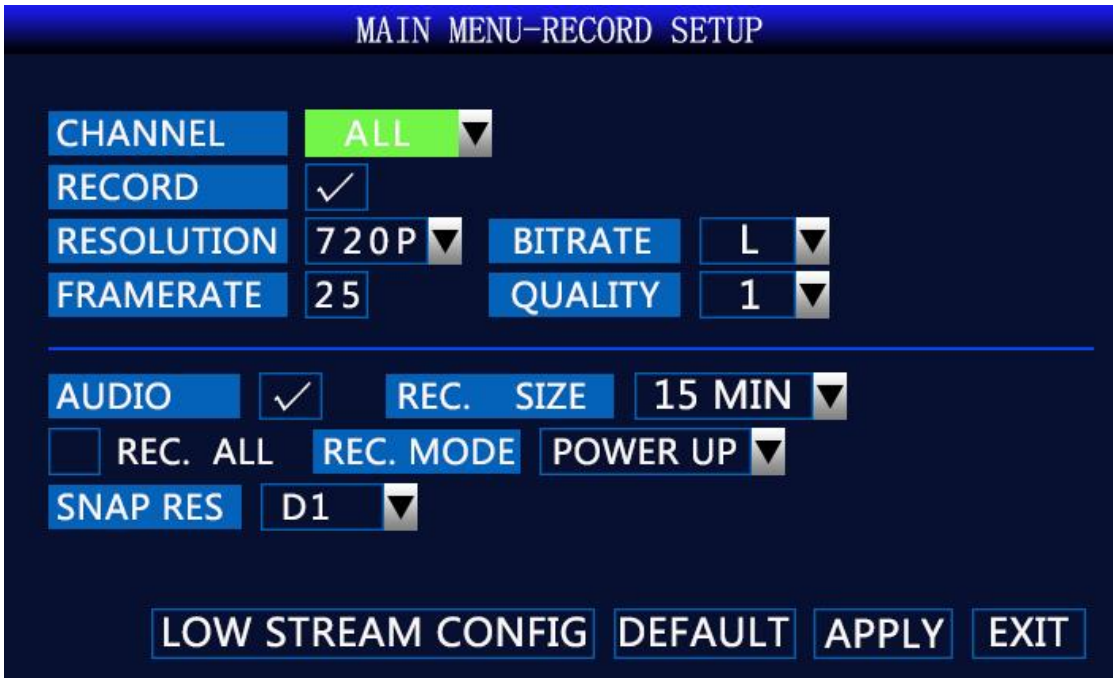
<PASSWORD>：Set menu password.

5.1 Record Search

Picture.8 Record Search

Record Search: Search, playback, and backup of video files on disk. It cannot Fast forward and rewind when playback on MDVR.

5.2 Record Setup



Picture.9 Record Setup

<RECORD>: You can select on/off to select whether the channel is recording;
<RESOLUTION>: D1 / HD1 / CIF / 720P / 1080N / 1080P resolution optional;
<BITRATE>: High / medium / low optional;
<FRAMERATE>: 1 to 25 (or 30) optional;
<QUALITY>: 1 to 6 optional; the smaller the value, the better the image quality;
<AUDIO>: Optional on/off;
<REC. SIZE>: 3minutes / 15 minutes / 30 minutes / 45 minutes / 60 minutes optional;
<REC.MODE>: Optional boot recording / timer recording; when setup to timer, you can schedule the time that start and stop the recording. Also you can just record on alarm videos.
<SNAP RES>: D1/CIF/HD1/960H/720P/1080P optional.

5.3 Basic Setup

Picture.10 Basic Setup

<Alarm>: Set the switches and parameters of various alarm inputs;
<PTZ>: Set the PTZ parameters;
<Date/Time>: Set system time, daylight saving time;
<Disk>: Display disk status, provide hard disk, SD card, U disk formatting function;
<Maintain>: Set automatic restart, system upgrade, factory reset;
<Network>: Set network, server IP;
<System>: Set system language, camera format, output resolution, camera type.

5.3.1 Alarm Setup

Picture.11 Alarm Setup

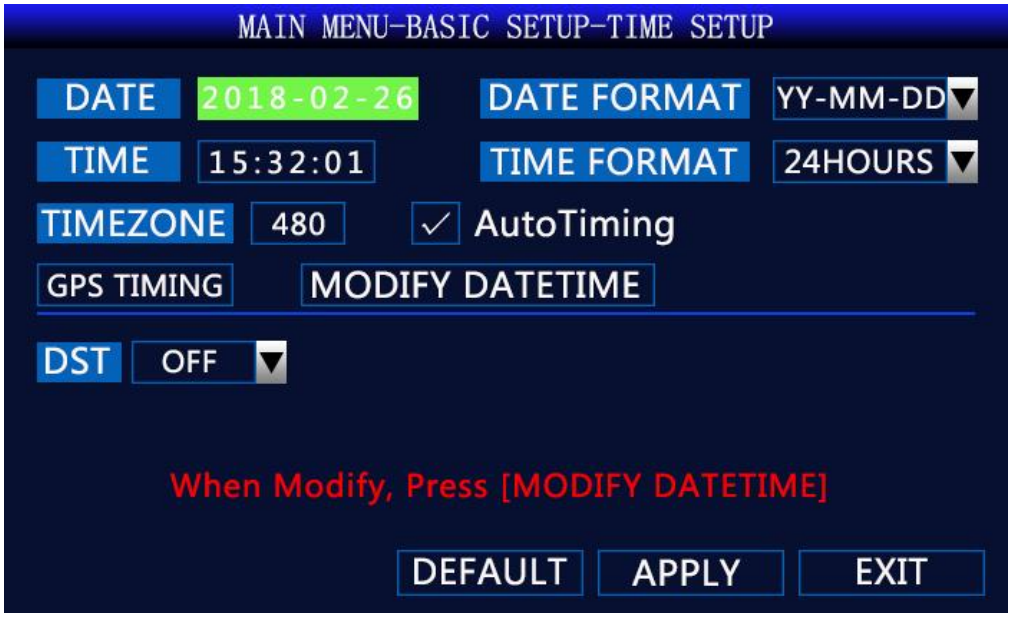
<IO>: Select interface;
<Trigger>: High and low optional;
<CHN Switch>: "YES/NO": switch or not when level is triggered;
<Disk Failure>: Alarm when there is no disk or the device does not recognize the disk;
<Disk Space>: Alarm when the disk is out of memory;
<Video Loss>: Alarm when there is no video input.

5.3.2 PTZ Setup

Picture.12 PTZ Setup

<Protocol>: Support PELCO-D and PELCO-P;
<Baud Rate>: 1200/2400/4800/9600 bps optional;
<Data Bit>: 5,6,7,8 optional;
<Verify>: Odd/Even/Mark/Spac/None optional;
<Stop Bit>: 1/1.5/2 optional;
<Address>: 001～255.

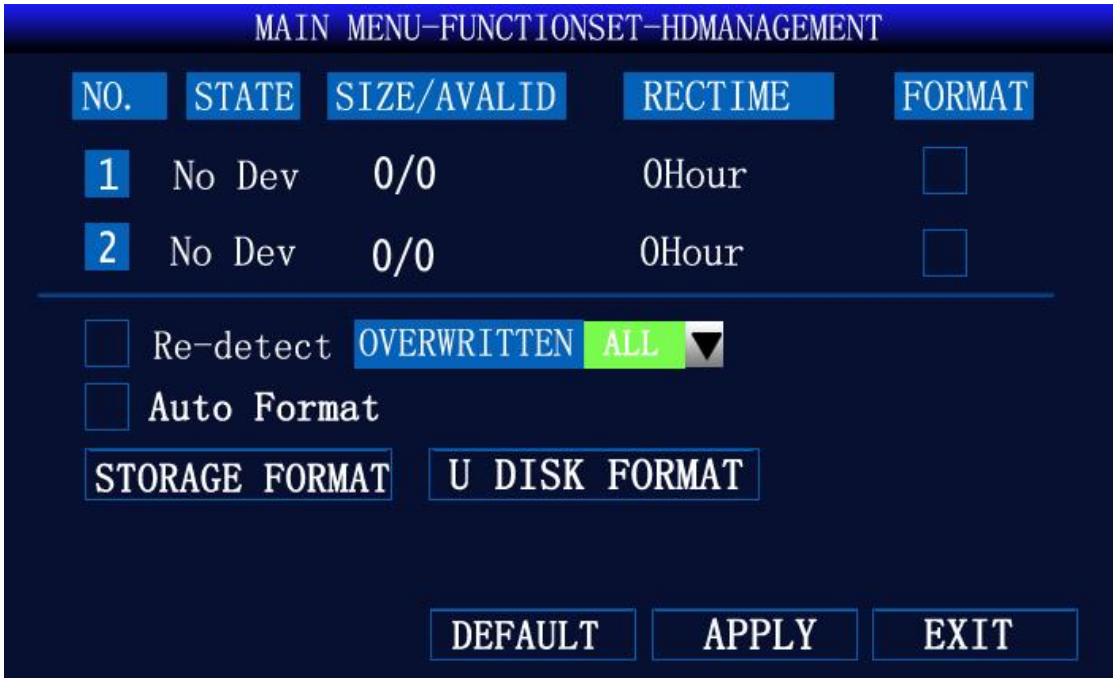
5.3.3 Time Setup



Picture.13 Time Setup

<Date>: Set year, month, day;
<Time>: Set hour, minute, second;
<Date Format>: MM/DD/YY or YY-MM-DD;
<Time Format>: 12-hour system or 24-hour system;
<Auto Tining>: Automatically synchronize with GPS satellite time; Please do not check it,
<Modify Datetime>: After modifying the time, click “Modify Datetime” to take effect.

5.3.4 HD Management



Picture.14 HD Management

<Auto Format>: Automatically formatted when a new hard disk or SD card is powered on;
<Overwritten>: Automatically overwrite the oldest video file when it is full.
NOTE: When mdvr shows “HDD ERR” on screen, please enter menu, check the SD/HDD/SSD, and click “STORAGE FORMAT” to format the SD/HDD/SSD, then it will start to record.

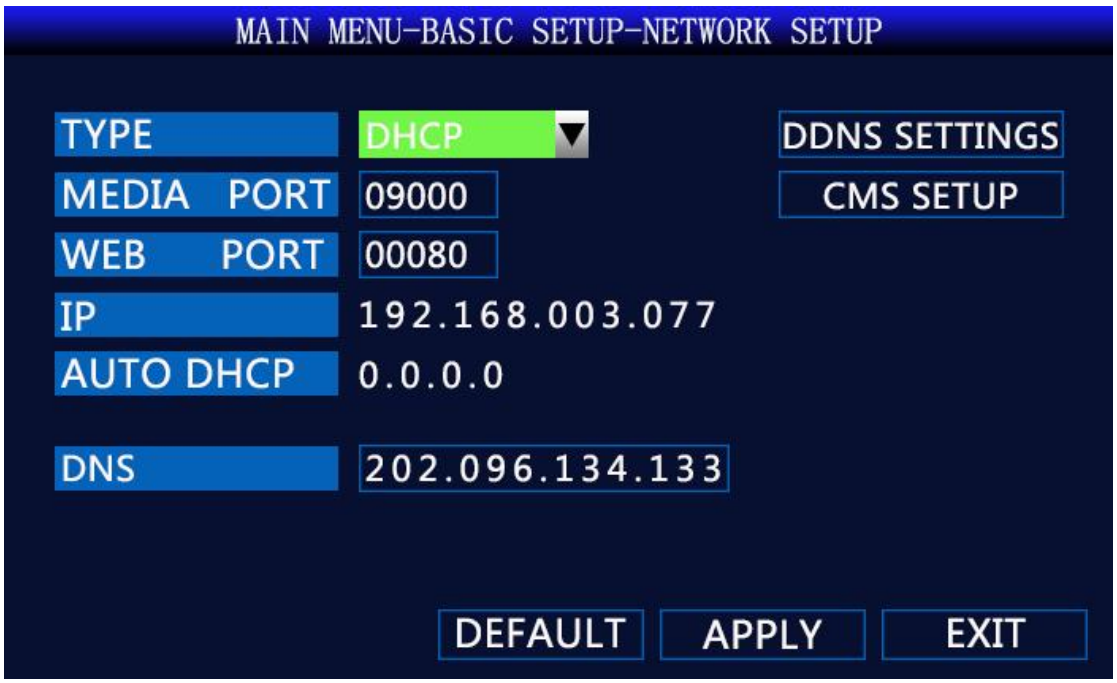
5.3.5 System Maintain

Pictures.15 System Maintain

<System Update>:

1. Copy the files to be upgraded to the update DVR directory of the SD card.
2. Insert the SD card into the device.
3. Click the <System Upgrade> button.

5.3.6 Network Setup

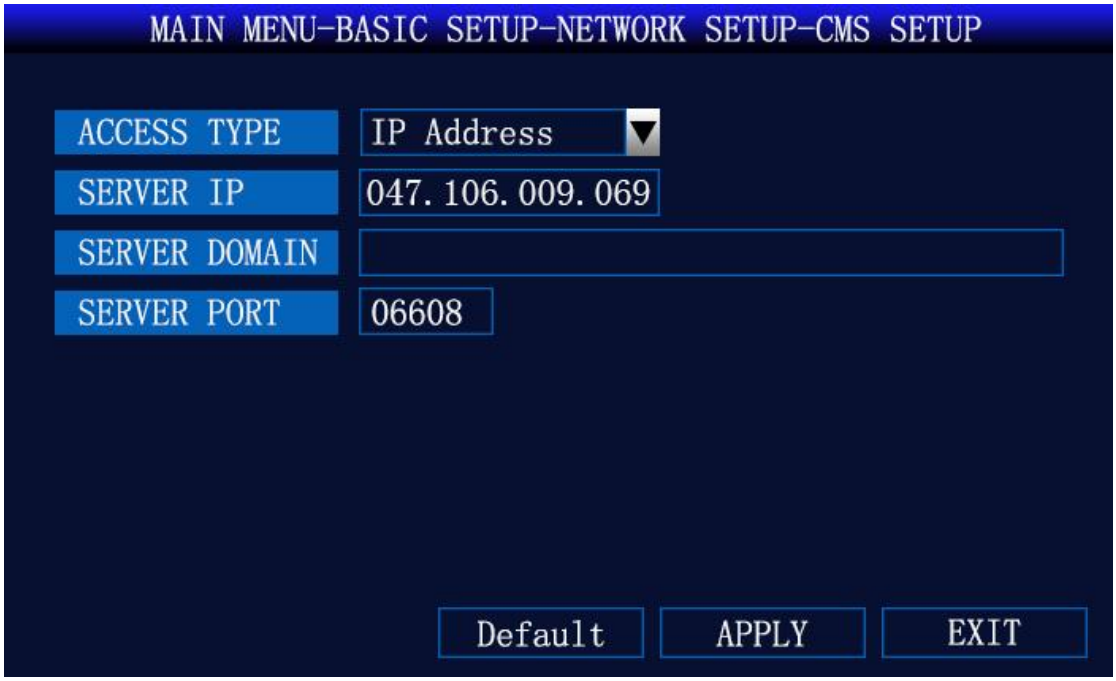


Picture.16 Network Setup

<Media Port>: Generally not modified

<WEB Port>: Generally not modified

<CMS Setup>: Set the server IP address, port



Picture.17 CMS Setup

<Access Type>: select ”IP Address”

<Server IP>:47.106.9.69 (Configure according to your own server IP)

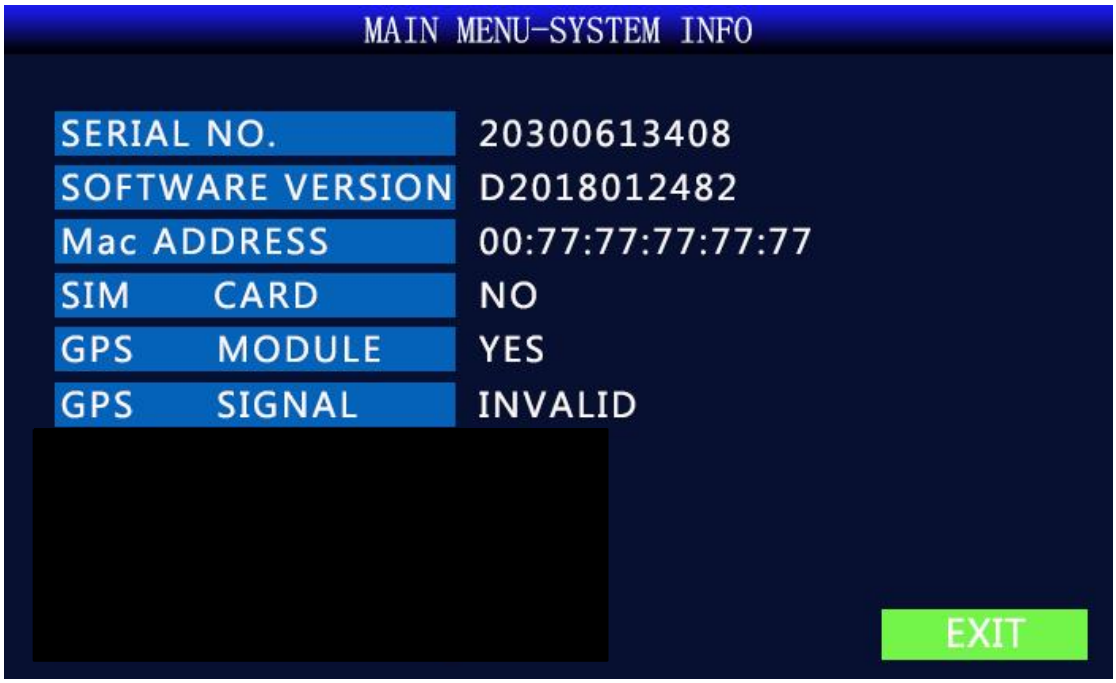
NOTE: 47.106.9.69 is IP of our free server. When you setup your own server, change the IP to the IP of your own server.

5.3.7 System Setup

Picture.18 System Setup

<Video System>: PAL/NTSC (DEFAULT)
<VGA RES>: VGA output display resolution
<Camera Type>: “SD” stands for analog camera, ”720P” stands for AHD 720P camera, “1080N/1080P” stands for AHD 1080P camera, Select the corresponding camera type to display properly
<System Language>: Set system language, including Chinese, English, and Traditional Chinese
NOTE: Switch system mode, system restart
Default setting on mdvr is for NTSC mode 1080P AHD camera. Please setup the menu according to the specification of your own cameras.

5.4 System Info



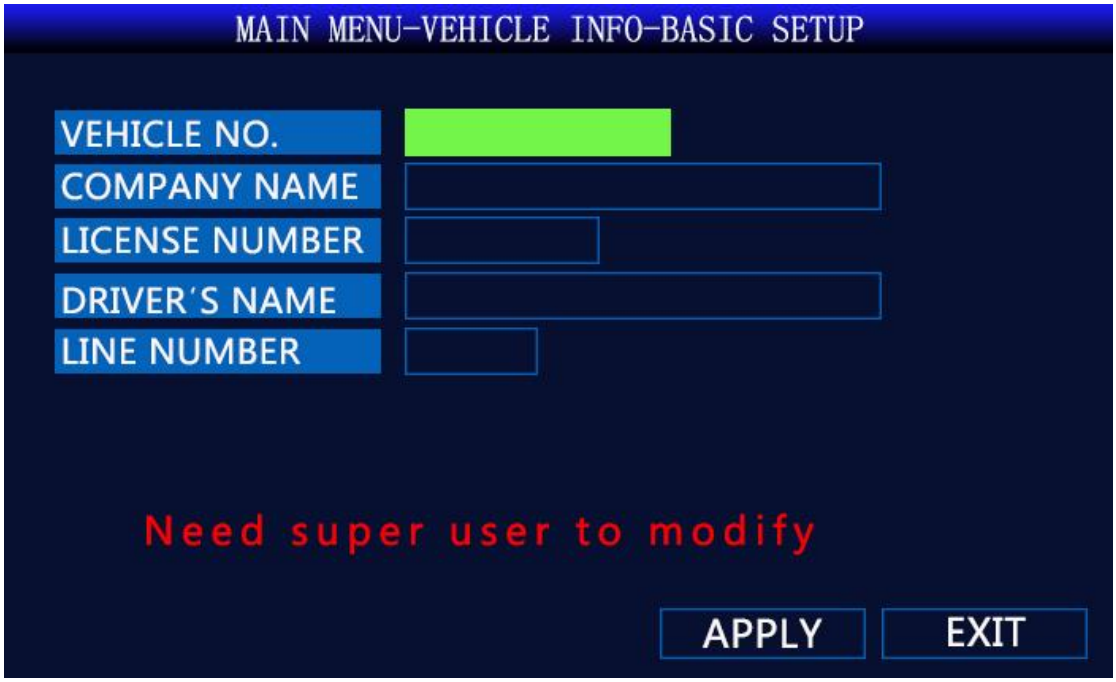
Picture.19 System Info

<SIM Card>: “Yes” means the SIM card is recognized, “NO” means not
<GPS Module>: “Yes” means the GPS module is recognized, “NO” means not
<GPS Signal>: “INVADLID” indicates that there is a signal
<Wireless Module>: “Yes” means the 4G module is recognized, “NO” means not
<Wireless Connect>:”Yes” means successful networking, ”NO” means not

5.5 Vehicle Info

Picture .20 Vehicle Info

5.5.1 Basic Setup

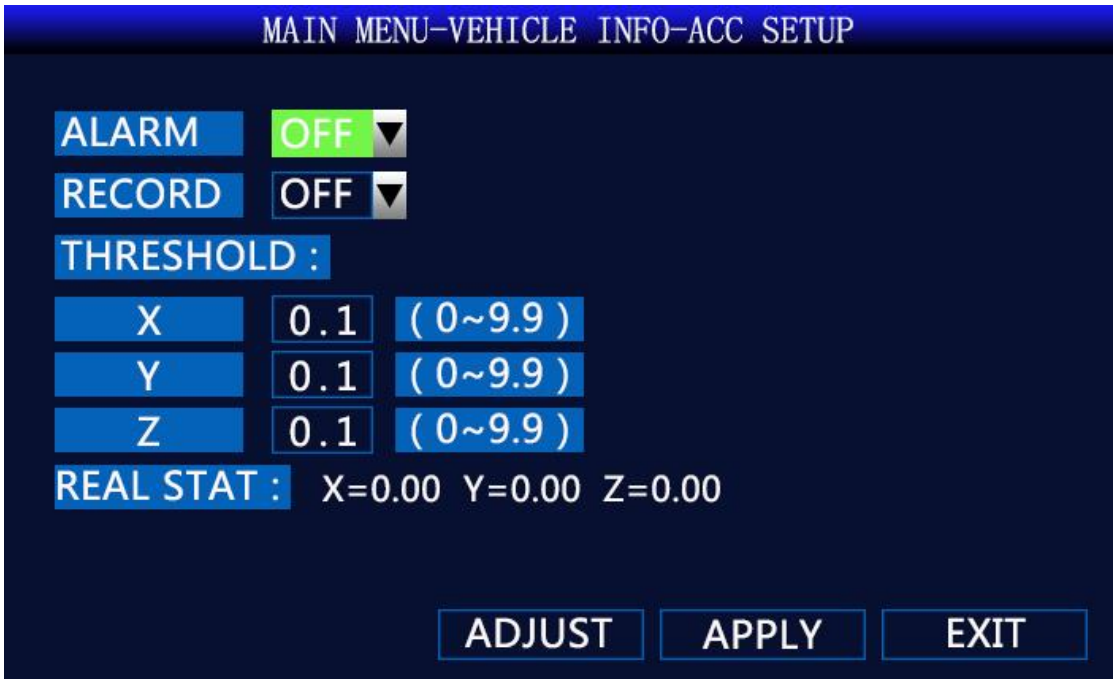


Picture.21 Basic Setup

<Vehicle NO.>: Set the number of the machine (4G function device requires super administrator

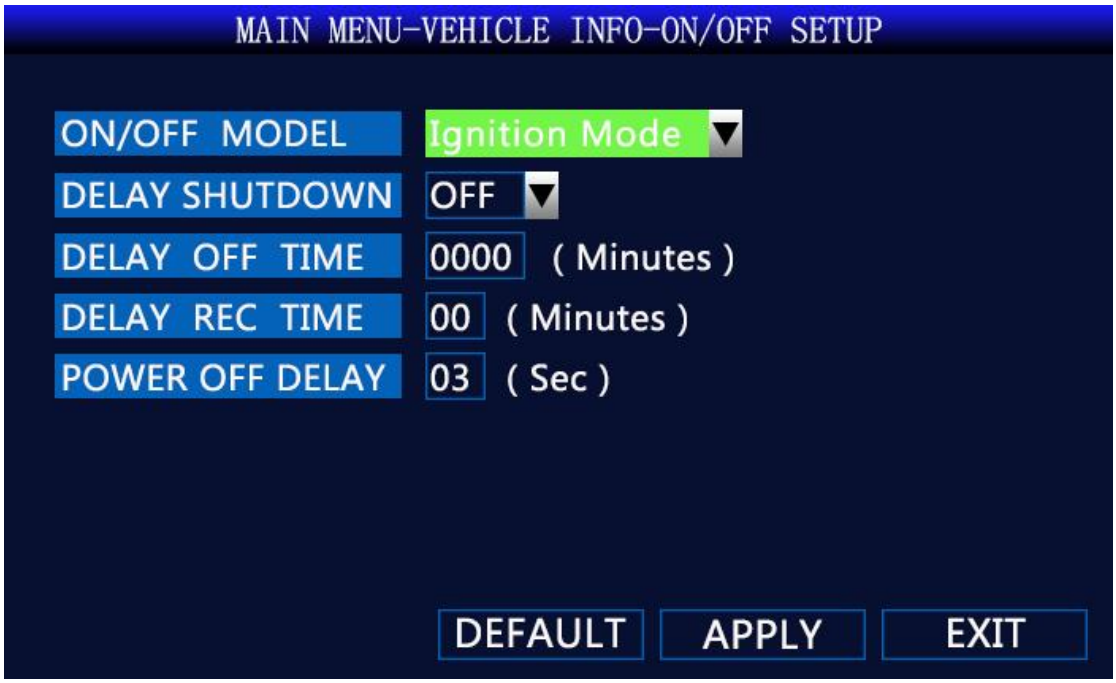
setting). PLEASE DO NOT CHANGE UNLESS USE YOUR OWN SERVER.
<Company Name>: Enter your company's name;
<License Number>: Enter license number of the car;
<Driver's Name>: Enter driver's name;
<Line Number>: Enter line number.

5.5.2 ACC Setup



Picture.22 ACC Setup

5.5.3 ON/OFF Setup



Pictures.23 ON/OFF Setup

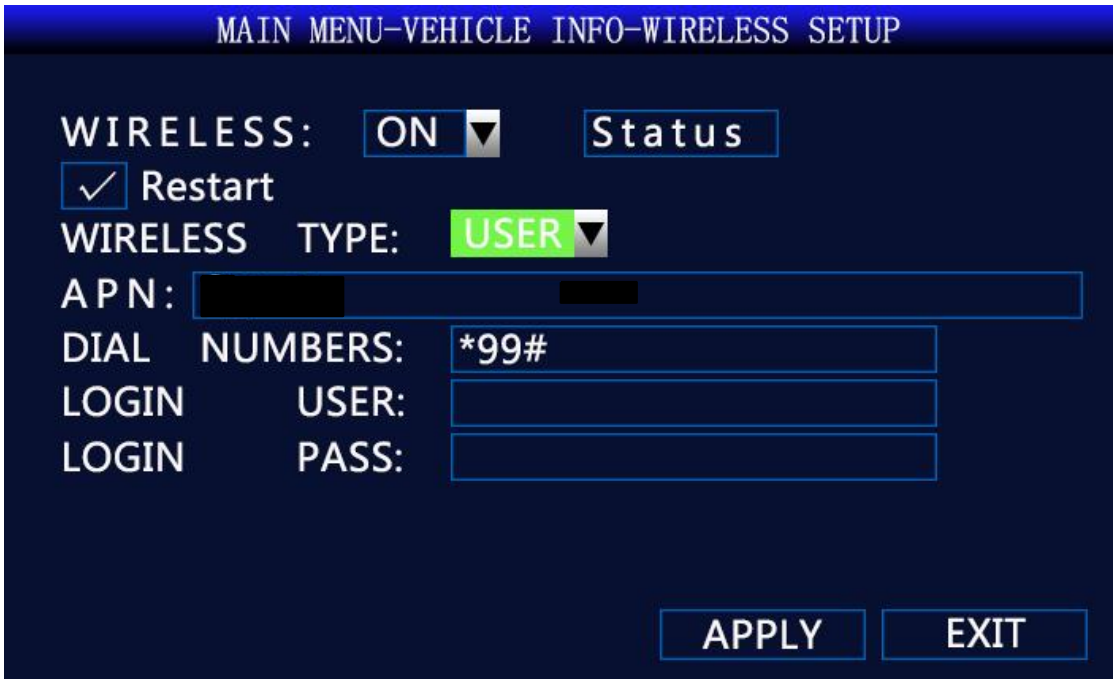
<ON/OFF Model>:Ignition Mode / Timing Mode（In the ignition mode, the MDVR will automatically turn on after the car is started, and in the timing mode, the MDVR will be turned on at the time set by the user.）

<Delay off Time>:1~1440 minutes (Effective after restarting)

<Delay REC Time>:1~1440 minutes (Effective after restarting)

Pictures.24 Timing Model

5.5.4 Wireless Setup

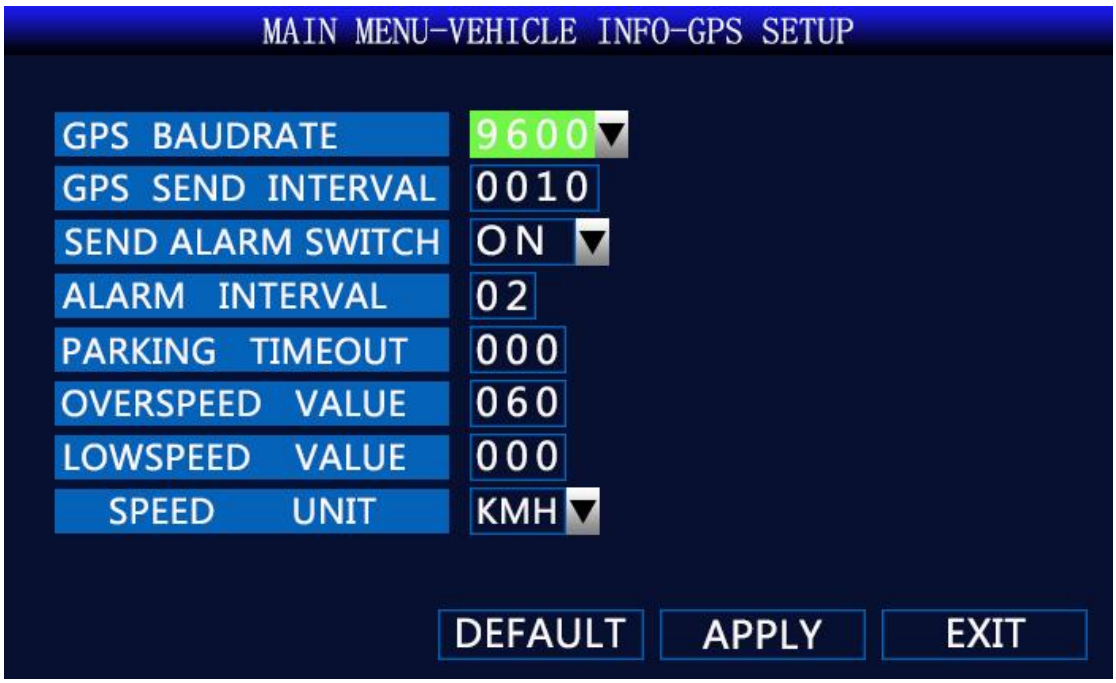


Picture.25 Wireless Setup

<Restart>: When the module cannot be reconnected after disconnection, the module will automatically power off and reset.

APN: Please input according to the 4G SIM card you use.

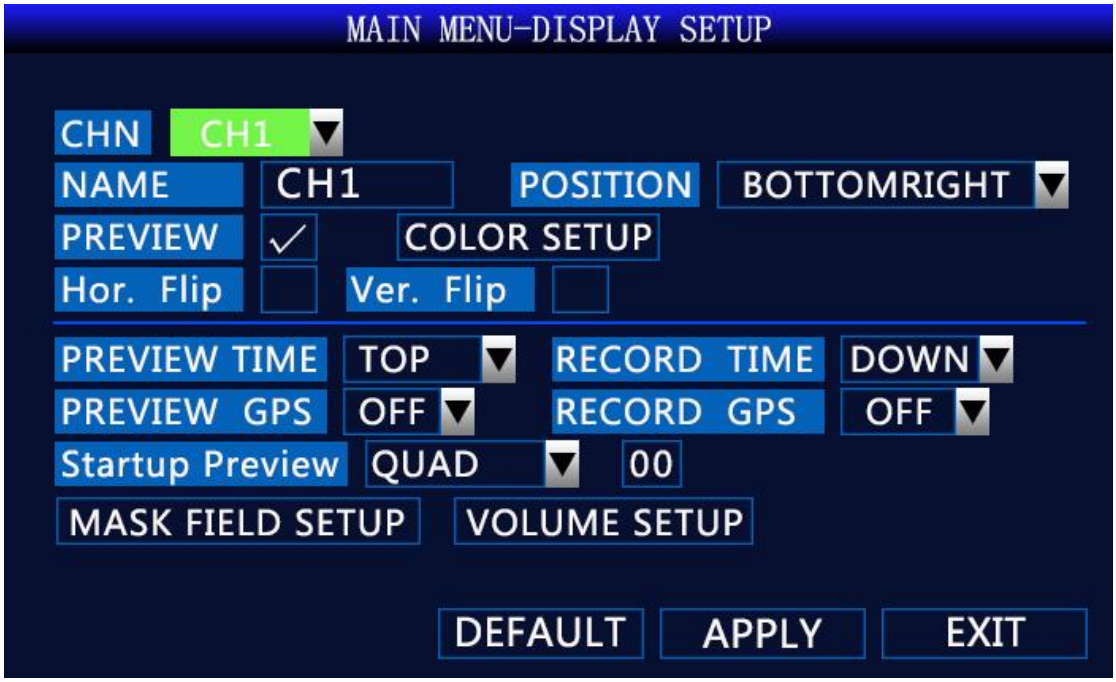
5.5.5 GPS Setup



Picture.27 GPS Setup

<Overspeed Value>: Above the set speed, the device will alarm
<Lowspeed Value>: Below the set speed, the device will alarm

5.6 Display Setup



Picture.28 Display Setup

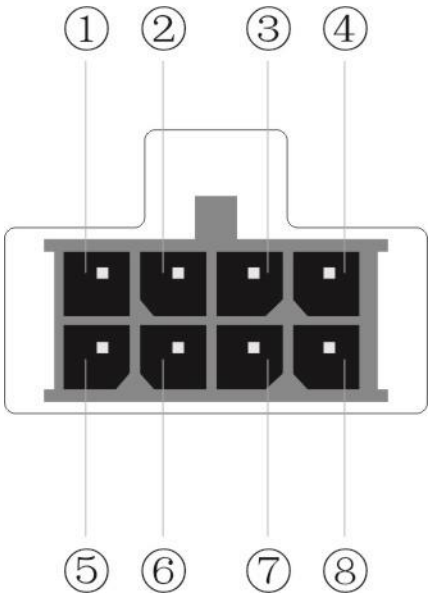
<Hor. Flip>: Flip the video image horizontally
<Ver. Flip>: Flip the video image vertically

5.7 Password Setup

Picture.29 Password Setup

Only “Admin” can set “Admin Password” and “User Password”

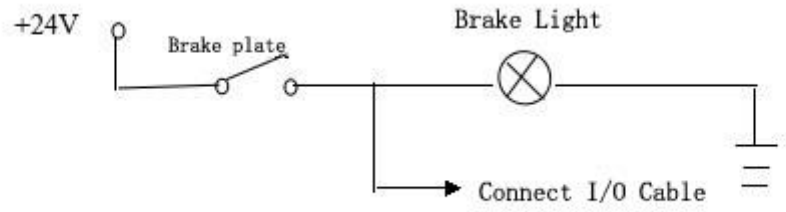
6 I/O Interface



Picture.30 IO Interface

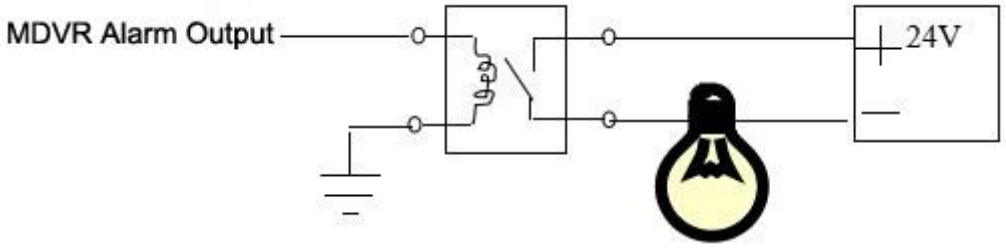
① Alarm-2 ② Alarm-4 ③Alarm Output ④ 485B
⑤ Alarm-1 ⑥ Alarm-3 ⑦GND ⑧ 485A

There is 4 alarm input,2 alarm output. Alarm input detection are voltage; can be accessed by variety of vehicles driving status, such as brakes, steering ,horn and so on. Brake testing schematic shown below, when the brake pedal is depressed, MDVR able to detect high or low voltage.



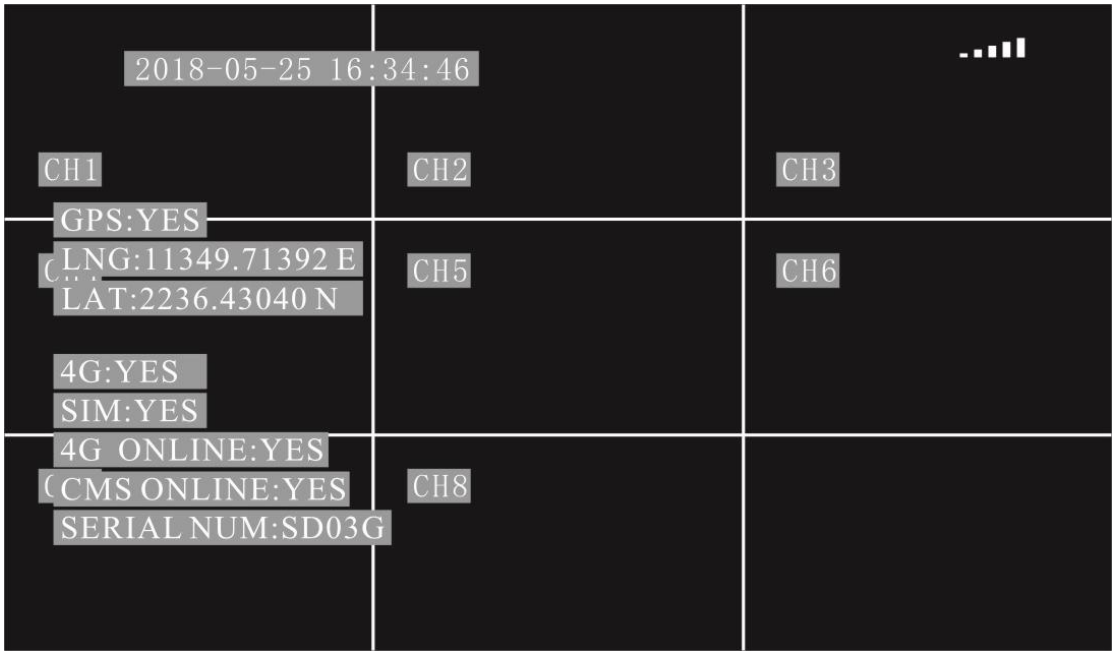
Picture.31 Brake testing schematic

Alarm outputs are voltage output. Drive capability of 200mA, if you want large power devices, must be externally relays. Alarm output photoelectric schematic shown below.



Picture.32 Alarm Schematic

7 Check Networking(Online) Status



Picture.33 Check Networking(Online) Status

Press the button “Info” on remote control, will be showed the online information.
GPS:YES means recognize the GPS module; **GPS:NO** means not recognize GPS module
LNG:11349.71392 E Display longitude, **0.0** means GPS not working
LAT:2236.43040 N Display latitude, **0.0** means GPS not working
4G:YES means recognize module, **4G:NO** means not recognize module
SIM:YES means recognize the SIM card, **SIM:NO** means not recognize the SIM card
4G ONLINE:YES means networked, **4G ONLINE:NO** means no connecting network
CMS ONLINE:YES means connected the server, **CMS ONLINE:NO** means not connect the server

8 FCC Caution

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

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment 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 equipment 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 equipment 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.

*RF warning for Mobile device:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.