Dual SD cards Mobile DVR MANUAL

Built-in G-sensor, Motion detection modules.

Contents

1. Features of Product

The MDVR (Automotive) is a cost-effective, functional and scalable device designed for video surveillance and remote monitoring of your mobile assets. It uses a high-speed processor, an embedded **Linux platform** and combines the most advanced IT processes such as **H.264** Video Compression/Decompression, networking and **GPS(excluded in this unit)** positioning technology. MDVR enables **CIF, HD1** and **D1** video formats. Drivers' driving information, recording and wireless data are uploaded to **SD Memory Cards** which are used as the storage medium. A MDVR centric software platform (**CMS**) can be realized with links to a Central Alarm monitoring system for remote management and playback analysis. The MDVR may look simple in its exterior design, provides powerful auto black box features, installation flexibility and high reliability.

MDVR Specifications Blank **1**。

Blank **1 MDVR** Specifications

Items	Parameters	Specifications
System	Language	Chinese/English
	OSD	Graphical User interface（OSD menu）
	Password	Users Password/ Administrator Password
Vision	Video input	4-CH video input 1.0Vp-p，75Ω
	Video output	1-CH video output 1.0Vp-p，75Ω
	Preview	Support 1 channel or synchronous 4 channels preview.
	Recording Ratio	PAL 25 Frame/s CCIR625 line, 50 field NTSC 30 Frame/s CCIR525 line, 60 field
	Image Compression	H.264 Main profile， 75fps D1/s
Audio	Audio input	4-ch Audio input 600Ω
	Audio output	1-ch Audio output 600Ω
	Recording mode	Audio & Video sync.
Image processing & storage	Video format	4-ch CIF: 25fps, 4-ch HD1: 25fps, 2D1: 25fps + 2CIF: 25fps,
	Video stream	ISO14496-10
	Video Rate（kbps）	CIF: 1536Kbps ~ 128Kbps，8 levels optional. Highest:1 level HD1: 2048Kbps ~ 380Kbps，8 levels optional. Highest:1 level D1: 2048Kbps ~ 400Kbps，8 levels optional. Highest:1 level

	Audio Bitrate	4Kbytes/s
	Storage	Support Dual SD card storage, 32GB for each.
Alarm	Alarm input	6 alarm input, No alarm below 4V, high level alarm above 4V.
	Alarm output	2 alarm output, high level 12V output.
Communication Port	Serial Interface	Support 1-RS232 interface
	Serial Interface	Support 2-RS485 interface
	WIFI Interface(excluded)	Support 802.11b/g
Extended interface	Auto Station reporter Interface	Support connecting Auto Station Reporter or control panel via extended interface
	Audio power amplifier	Support 2-ch audio power amplifier output
GPS(excluded in this unit)	GPS module(excluded in the unit), Geographic co-ordinates, speed can be read in coding flow, and can be wireless uploaded.	
Motion detection	Yes	
Acceleration	Built in acceleration G-Sensor	
Software	Analysis of PC playback	Video playback on PC，and analyse the vehicle info in the file.
Upgrade	Support SD cards upgrade.	

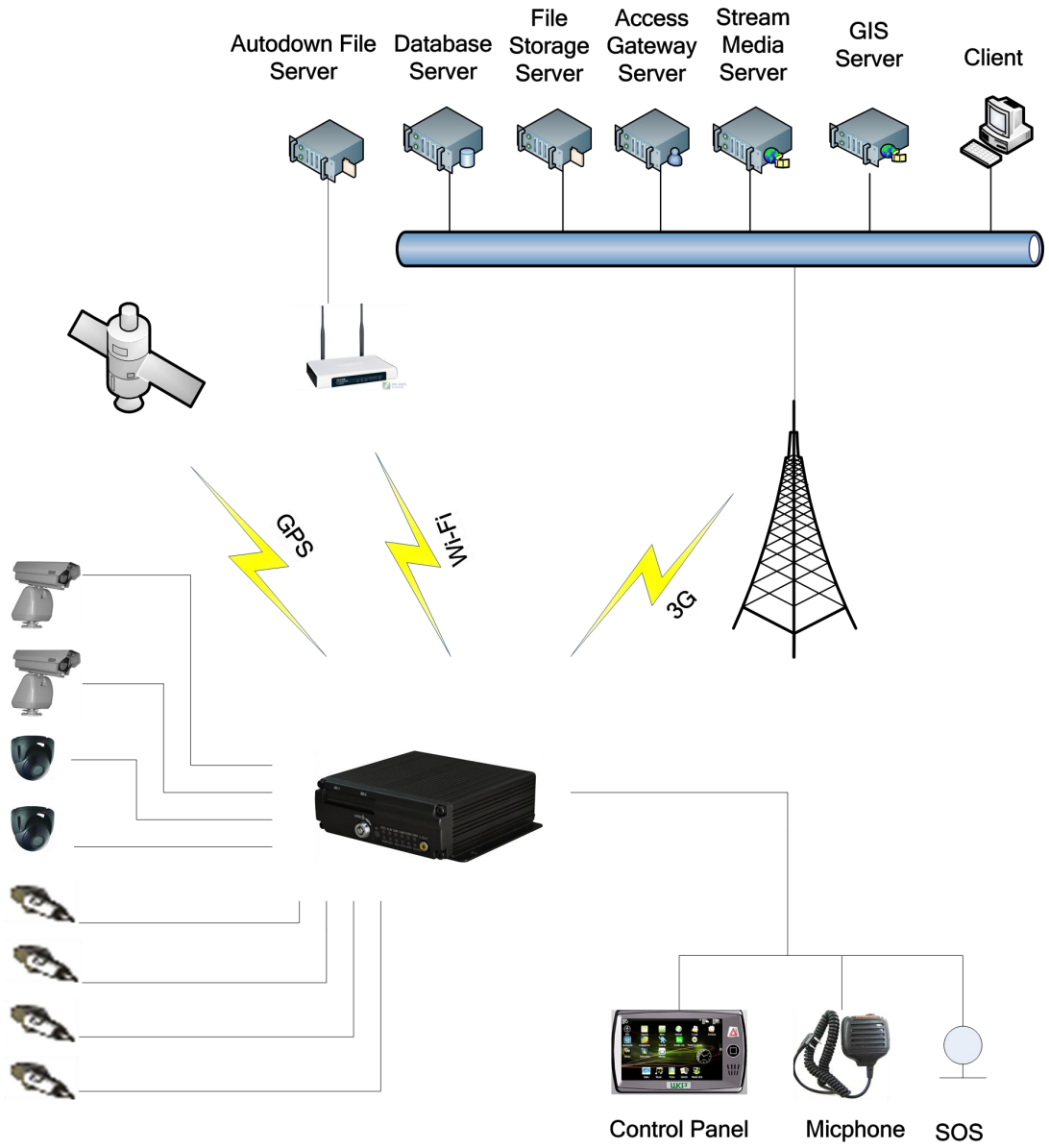
MDVR basic electrical Specifications　blank 2。

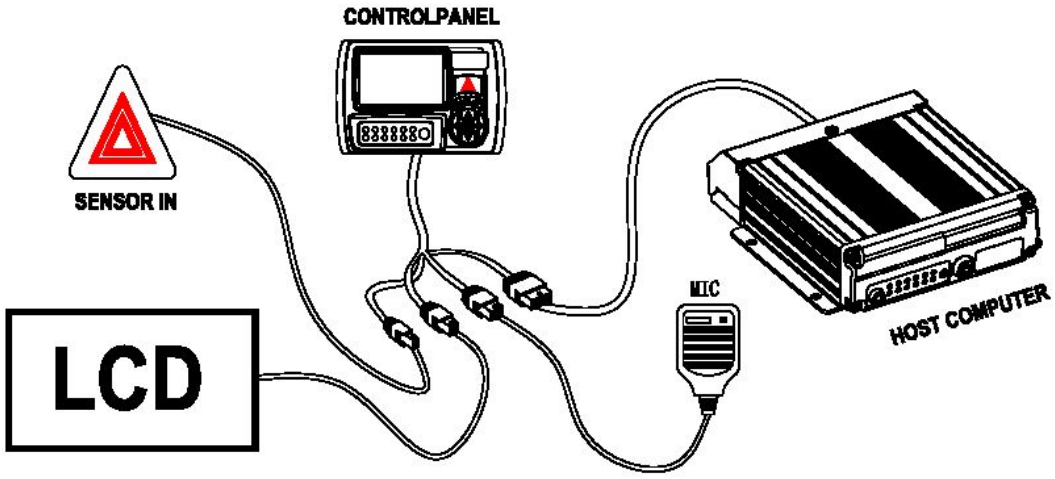
Blank 2 MDVR basic electrical Specifications

Items	Parameters	Specifications
Power input	8—36V	＋8V～＋36V, When long-term under 8V, or long-term over 36V, Auto power off, ENTER protected mode.
Power output	12V	12V（+/-0.2V），Max:2A.
Vehicle key signal	≤4V	OFF。
	≥5V	ON。
Video input impedance	75Ω	75Ω for each video input impedance
Video output Volt	2Vp-p	Input 2Vp-p CVBS analog signal, reveal device input

		need 75Ω impedance to fit
I/O interface	0—4V	Low level alarm
	Above 4V	High level alarm。
SD-card interface	2 SD cards	1.32GB for each card. 2.SD-card for storage, support recording and system upgrade, etc.
Operating Temp	-40℃-80℃	Under well-ventilated enviroment.

2. Product Applications



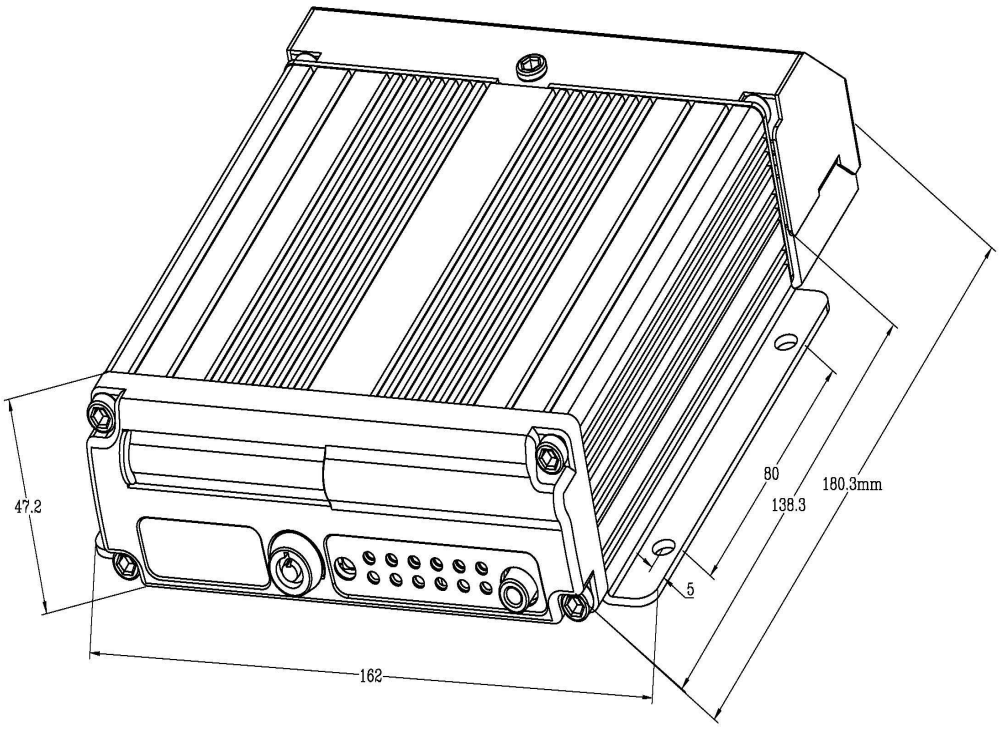


3. Appearance of Product

3. 1. Device Appearance

1.1 MDVR Device Appearance

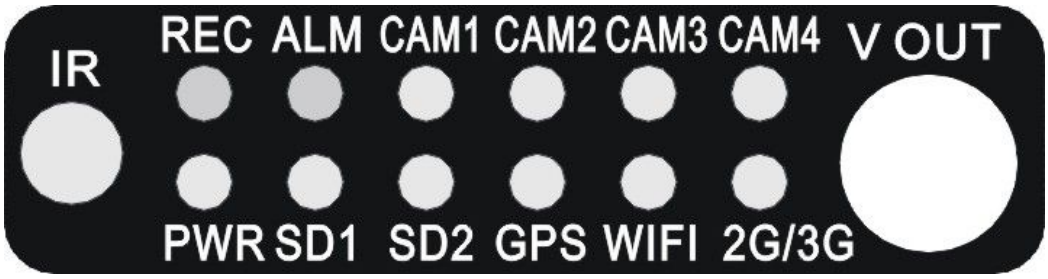
3. 2. Device drawing Dimension & Install Holes



3. 3. Device Dimension & Install Holes

3. 4.

3. 5. **Front & Back Panel led & Plug-in module.**



1.2 Front & Back Panel led & Plug-in module.

Front Panel definition as below:

3. 1. **Front & Back Panel led & Plug-in module.**

Interface	Items	Description
VIDEO-OUT	VIDEO-OUT	Video Simulation output
LED	SD1	SD1 card recording led, light on as SD1 exist.
	SD2	SD1 card recording led, light on as SD2 exist.
	REC	Recording led，light on as recording
	GPS	GPS signal led，light on as GPS module exist(excluded in the unit).
	POWER	Led, Light on as power normal
	ALM	ALM LED, light on as device abnormal
	CAM1/CAM2/CAM3/CAM4	Light on as CAM1/CAM2/CAM3/CAM4 has signal, or else, no light on
	WIFI	Light on as WIFI module exist (excluded in this unit)
	2G/3G	Light on as 2G / 3G module exist (excluded in this unit)
IR receiver	IR	IR receiver, receive remote control signal
Electronic Lock	LOCK	During working, open key lock, system will load-off 2-SD cards, load-on recording after 1min auto.

3. 2. **Back Panel interface definition**

Pic 8 Back Panel interface definition

Back Panel interface definition as followed:

Pic 8 Back Panel interface definition

Interface	Items	Description
WIFI interface	WIFI	Wireless LAN antenna interface (excluded in this unit)
GPS interface	GPS	GPS antenna interface (excluded in this unit)
2G/3G interface	2G/3G	2G/3G antenna interface (excluded in this unit)
Power input interface	DC8-36V	Power input interface
LPT	MCU	System adjust info interface
Extended interface	EXTENTION	Control panel interface
Video output interface	VIDEO- OUT	Video output
Audio output interface	AUDIO- OUT	Audio output
CAN-BUS interface	CAN-BUS	Vehicle electronic control network
Sensors interface	SENSORS	Swich input interface，high level（>4V）
Vehicle speed pulse input interface	SPEED	Input vehicle speed pulse signal, differential input

RS485/RS232 interface	RS485/RS232	RS232 / RS485 serial data communication interface
Speaker interface	SPEAKER	Audio power amplifier output

3.3. Power Cable

Figure 8 shows the power cable, one end is 6Pin with White Plug, connected to the device panel 6Pin White Connector. The Red and Black wire is connected directed to the vehicle's battery. Red wire is POSITIVE and Black is NEGATIVE. Yellow cable is FIREWIRE. The device which be turned on when the vehicle's key are in the ignition and turns off or delay turn off when the keys are taken out. The yellow cable connects the point of panel lamp key opened (point of vehicle ignition).

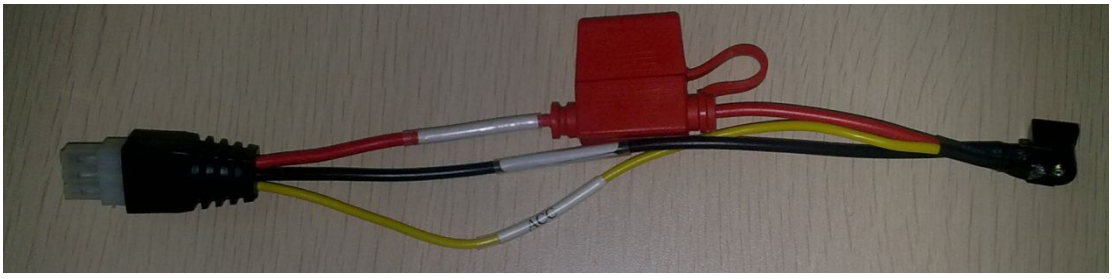
NOTES：

1）Please verify battery voltage before connecting. Voltage accepted is between 12V-36V. A higher voltage will damage the device.

2）After connecting the cables, ensure that power cables are insulated to prevent short circuiting and burning out the battery.

3）The Yellow cable must be connected to the vehicle ignition cable, otherwise the device will not be able to execute the delayed shutdown and the final moment of the video will be lost.

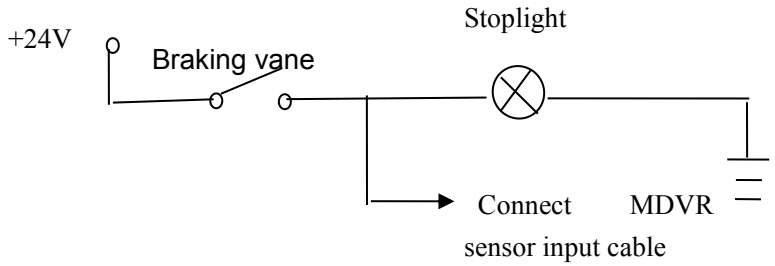
4）Note: Connection to the vehicle's engine must be connected directly to the positive anode of the battery. Do Not Use bond strap for grounding as it will produce negative pulses that would interfere the device's normal operation. The negative pole of the power code must be Φ1.5mm and above.



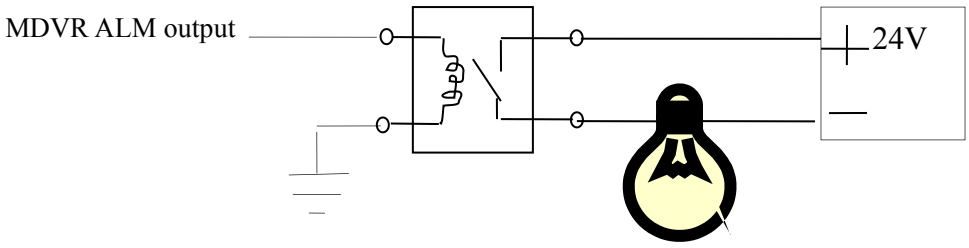
PIC10 Power Supply Diagram

3. 4. Alarm input and output

The device has 6 alarm input and 2 alarm output interfaces. Various state of alarm level can be detected while the vehicle is in motion. Action`s such as braking, steering horn etc. Below is a diagram that shows when the braking vane Is depressed, the MDVR would be able to detect the high level, otherwise, just detect the low level.



Alarm outputs are level output drive capability for the 200MA, if you want to drive relatively large power device, must be external relay. Shown below is the Alarm output photoelectric alarm wiring diagram.



1.6 Device Installation Guide

A. Inspecting the Accessories

After unpacking, please check the device for damage or deformation. If there are, please do not install the device and get in touch with the supplier. In the product box there is a packing list. Please cross check this list with the device and its accompanying accessories.

B. Installing the SD and SIM Card

SD cards are on the main board, insert SD1 & SD2 from the front board of device. SIM card is on the communication board, take down the small shield of the device. You can see SIM interface. Insert it into clip (Negative up). When system supports 3G, then there is a need to

install SIM card.

***NOTED: PLS DO NOT LOCK WHEN THE SD SLOT IS OPEN, OR ELSE, THE LOCK WILL BE DEMAGED.**

4. DEVICE USER GUIDE

4.1. Remote control function

There is no control button on MDVR panel, need remote control to fit operating.

Key-press & function as below:

a) Digit keys zone：

【0－9】key：Under setting，Use for select digit. During playback and preview，1、2、3、4 is for the switch of the channels

【＋】、【－】key：adjust digit when plus or deduct.

b) Menu guide：

▲, ▼： up, down key；

◀, ▶： left, right key；

【ENTER】key：under setting，means select and save.；

On playback condition, press ENTER can reveal parameters in OSD OVERLAY menu when it's ON on screen.

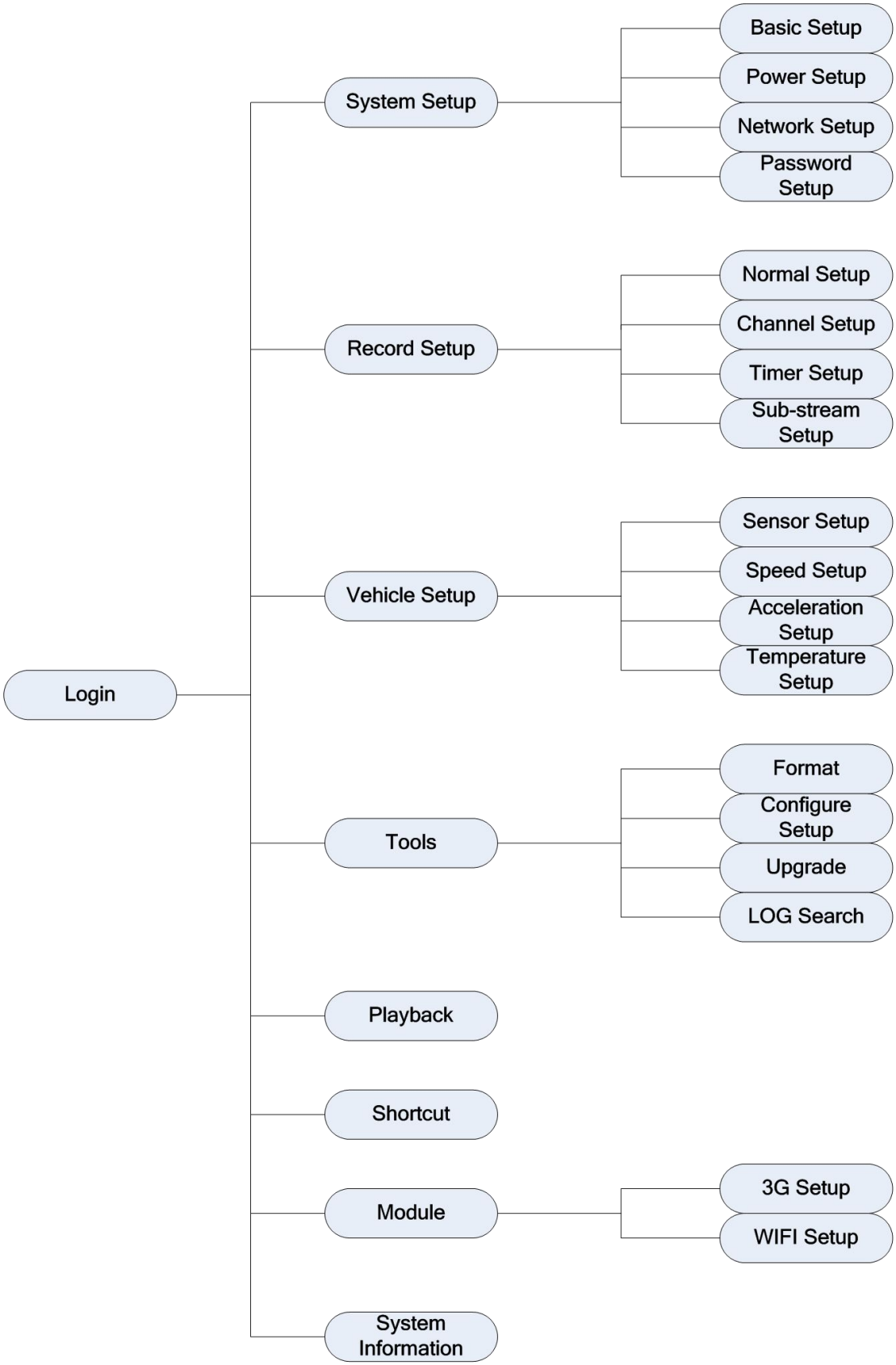
c) Other function keys：

Figure 8 Other function keys on remote control

	Through screen，2 times press for reboot（soft start key）（note：can't be use now）
LOGIN	When setting password，press LOGIN input password。 Do please remember password due to device have no reset function.
INFO	Check info
 Digit keys1,2,3,4	Switch between 1-channel and 4-channel version. Press it, show 4-channel. Press digit key 1,2,3,4, can separately switch to CH1,CH2,CH3,CH4
RETURN	Return to up grade, exit setup menu and return to screen.

PAUSE / STEP	When playback recording, press STEP, a time play a step, press PAUSE, it stop. Press play key, then normally played.
GOTO	When play back, press it can jump to designated time and play.
FRAME	Press FRAME key, then FRAME play.
▶（PLAY）	PLAY key, （when PAUSE, it will show still image）
FWD	FWD for playback recording, 4 grades: 2X，4X，8X，16X
REW	REW for playback recording, 4 grades: 2X，4X，8X,16X
■	Stop manual recording key
●	Start manual recording key
NEXT	Turn to next page/ next file when playing.
PREV	Turn to previous page/ previous file when playing
AUTO、PRESET、ZOOM+/- 、FOCUS+/- 、IRIS+/- 、 PTZ 、PRESET 、RECALL、BRUSH	PTZ function keys
F1、F2、F3	F1 is shortcut key， F2,F3 are Spare keys. (Reserved for future)

4.2. Menu Structure



4.3. Login Menu

Note：After connect the cable, press LOGIN key ENTER login, as below:：

Device No.：Users set the NO. for each device, it will show when login on the right.

Password：User psw / Admin psw, PWD:111111. user psw can only select, When using user PSW ENTER, can only find, can not login.

Set-up menu setup parameter, ADMIN login, and can setup parameters,

As the password is incorrect, press down, then press login. when password is incorrect, reveal prompt message, press up key, then press CANCEL, re-ENTER the right password.

Note：Original User Password: 111111, Original Admin Password: 111111.

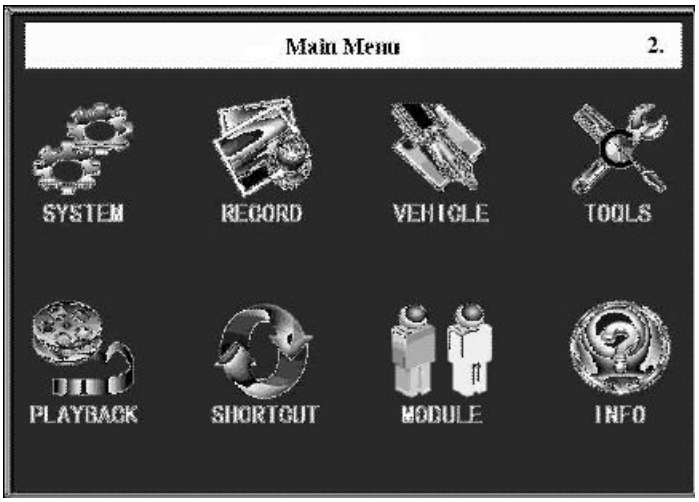
4.4. Main Menu

Main menu include: SYSTEM, RECORD, VEHICLE, TOOLS, PLAYBACK, SHORTCUT, MODULE, INFO. As below:

Note：1、All of the submenu setup, must SAVE, or else not valid.

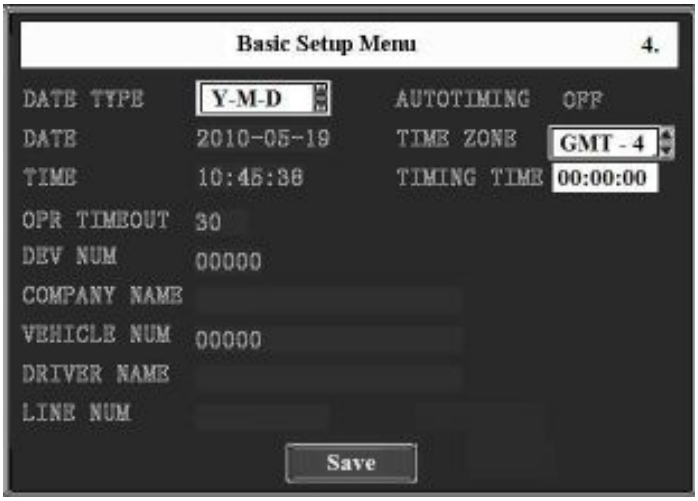
2、When check box is filled denotes select certain function, unfilled denotes not select certain function.

3、Digit input can follow digit key on the remote control input directly or using soft keyboard, the letter must be input by soft keyboard, press RETURN back to submenu.



4.5. SYSTEM SETUP

System setup including: Basic, Power, Network, Password.



Note：1．Date type: press ENTER for switch Y-M-D/ D-M-N.

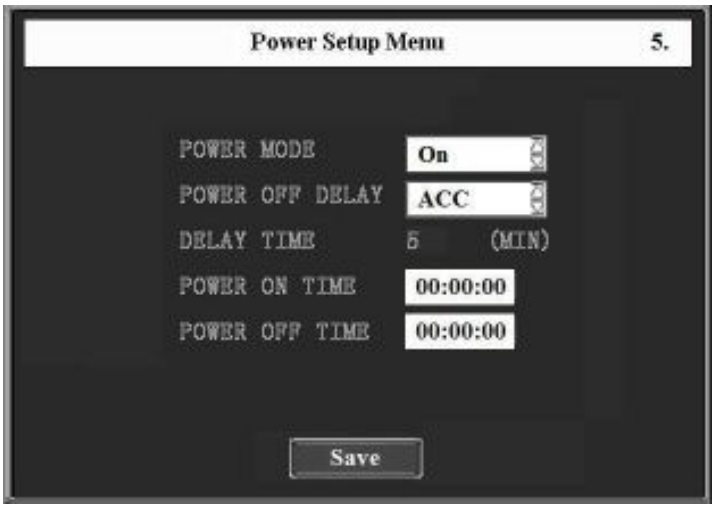
2．"DATE": system date, press 【ENTER】 , and then press【－】or【＋】 to setup, press【ENTER】again to confirm.

"TIME": Same as date setup.

3. "OPR TIMEOUT", "DEV NUM": Press CANCEL and then Press the digit keys to setup them.

4. "COMPANY NAME", "VEHICLE NO", "DRIVER NAME",”LINE NUM”: Press 【ENTER】 key to pop out keyboard window, then use left/right/up/down/ENTER key to setup.

5. Select “SAVE” and press 【ENTER】to save the settings.

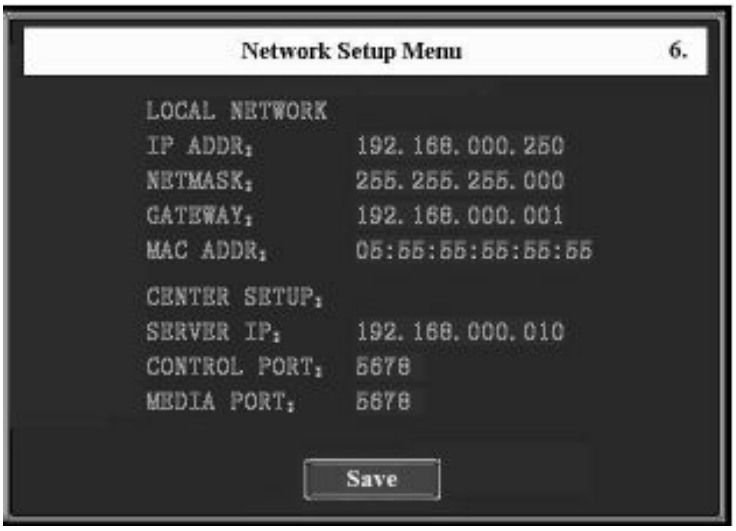


Note：1. "Power mode": on and Timing。

2. ‘’Power off delay’’: ACC/OFF。

3．Press ENTER on "Power mode" ‘’Power off delay’’ setting.

4．’’Delay time setting’’ press CANCEL then press digit key（Note：Time range:3—120min）。



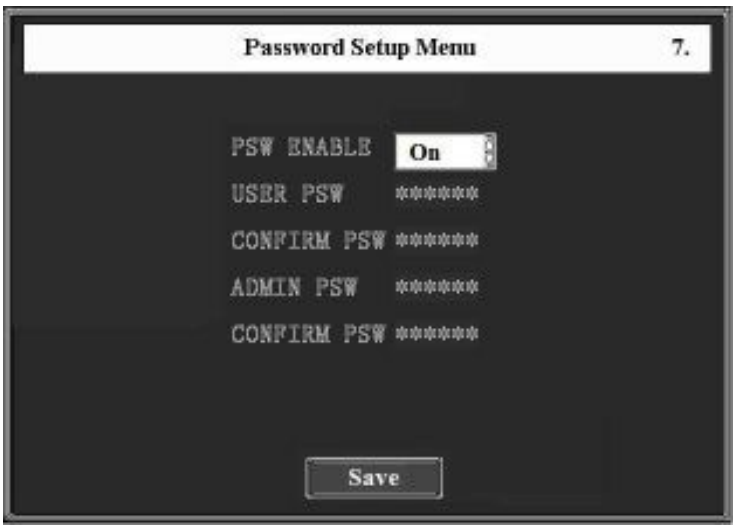
Note: It mainly for 3G and WIFI connect to the CMS system

1．’’IP ADDR、NETMASK,GATEWAY” setting: Press CANCEL，then press digit key to switch(no need setting).

2．’’MAC ADDR Setting’’ Press ENTER, to soft keyboard. Press direction key, then ENTER the related add(no need setting).

3．’’ SERVER IP, CONTROL PORT, MEDIA PORT setting: Press CANCEL, then press digit key(no need setting).

（CONTROL PORT and MEDIA PORT range 0—65535 ）。

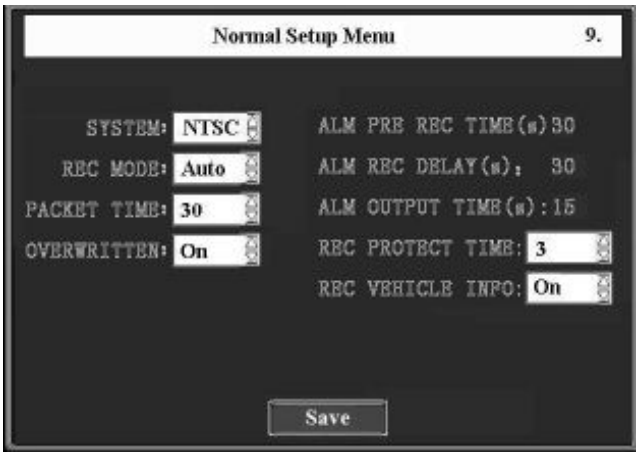


Note：1、"PASSWORD": ON---Enable password; OFF---Disable password.

2、”USER PSW’’ “ADMIN PSW”: Press CANCEL—Digit key—Save—RETURN。

4.6. RECORDING SETUP

Recording setting：NORMAL, CHANNEL, TIME LIST, SUB-STREAM。



Note:1. SYSTEM: Press ENTER select PAL/NTSC。

2. REC MODE: Press ENTER select Auto/ Alarm/Timed.

3. PACKET TIME: Press ENTER select 15/30/45/60。

4. OVER WRITTEN: Press ENTER select ON/OFF。

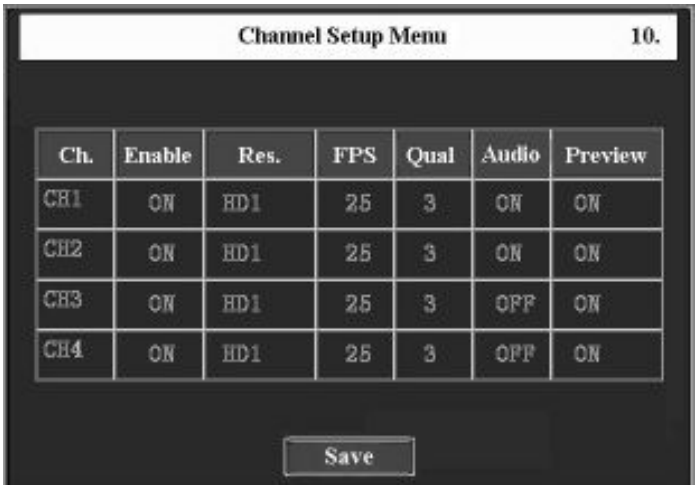
5. ALM PRE(S): Press CANCEL, then press digit key (time range 0S-- 60S).

6. ALM REC DELAY(S): Press CANCEL, then press digit key (delay range 30—900).

7. ALM OUTPUT TIME(S): Press CANCEL, then press digit key(5S---240S).

8．REC PROTECT TIME: Press ENTER, select 1/3/5/7/10/15 optional.

9．REC VEHICLE INFO: Press ON/OFF.



Note： 1、Press Direction key set up the Channel, select CH1 Enable, then press ENTER-ON/OFF, Press right key select resolution ratio, then press ENTER select D1/HD1/CIF。The same settings for FRM（01----30 optional）, QUAL（1---8 level, 1level is the best）, AUDIO, PREVIEW as Res.

2、The same setting for CH2、CH3、CH4 as CH1。

Note：1．Press  in the digit zoon, and then press digit key, press  , then press digit key set up TIME1 in turn. Press right key, with the same step for TIME2.

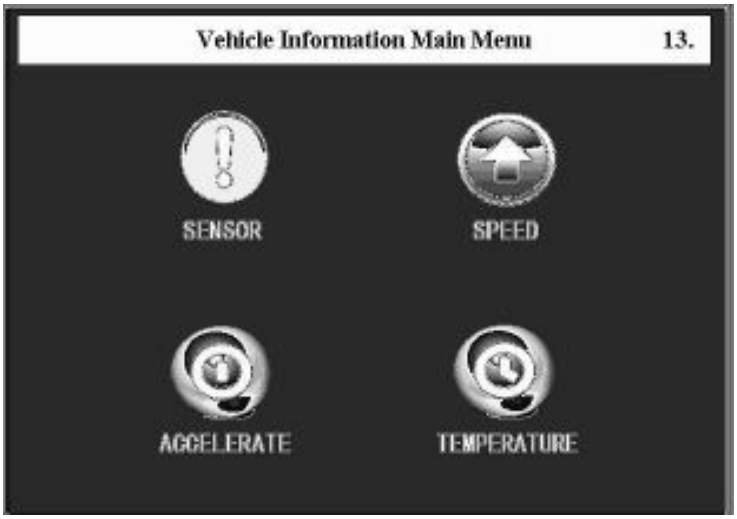
2．MONDAY----SUNDAY, the same setup steps as EVERYDAY.

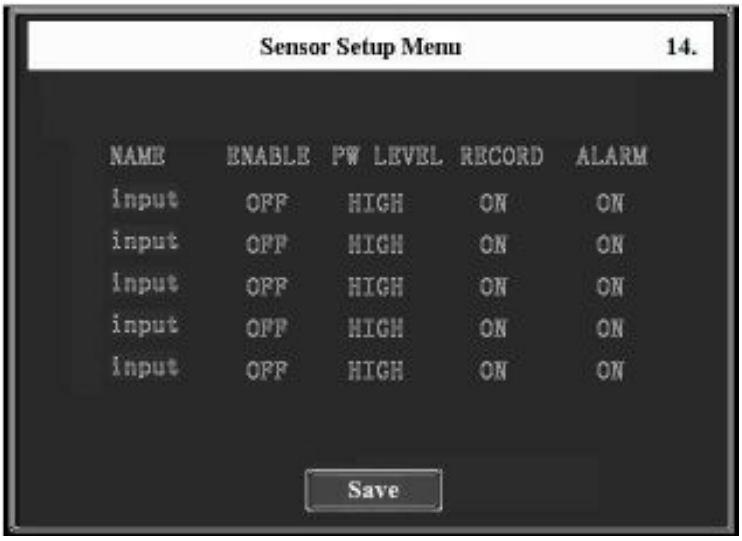
Note：1. Bit rate setting:16/24/32/40/48/56/64/72/80/96/128/160/200/256/384 optional.

2. Frame setting 01/02/03/04/05/07/10/13/15/20/23/25 optional。

4.7. VEHICLE INFO

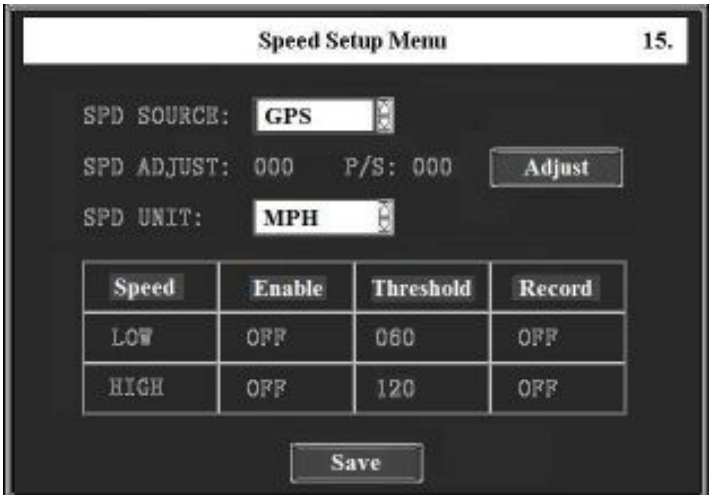
Vehicle info：Sensor, Speed, Accelerate, Temperature





Note：1．Press ENTER, then press CANCEL can modify the Name, such as setting icon is on the F-DOOR Enable, pls press ENTER select ON/OFF, Press right select PW LEVEL, press ENTER, select HIGH/LOW level.

2．The same setting with R-DOOR、BRAKE、LEFT、RIGHT Enable、PW LEVEL、RECORD、ALM as F-DOOR。



Note：1．SPD SOURDE: GPS/VEHICLE，Press ENTER to switch。

2．SPD ADJUST: Press CANCEL，then press digit key。P/S: Press CANCEL，then press digit key。

3．SPD UNIT: KM/MPH, Press ENTER for switch.

4．Low speed ALM Enable: press ENTER, select ON/OFF；then press right key,

press CANCE, then press digit key set up Threshold, press right key, then press ENTER set up the Record ON/OFF.

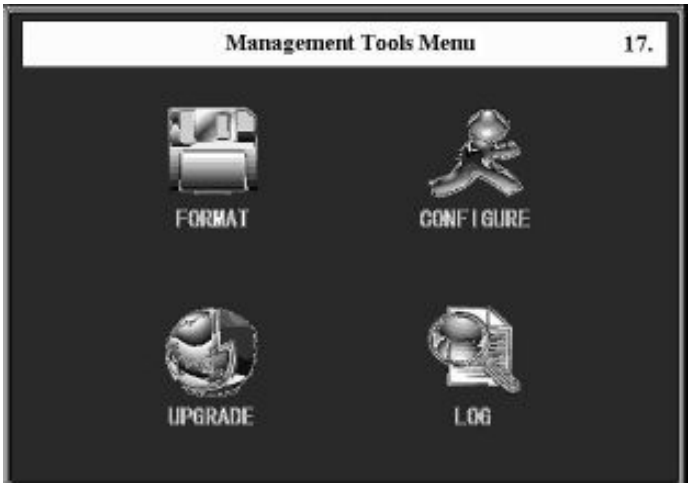
5. High speed ALM Enable: the same setting as low speed ALM Enable.

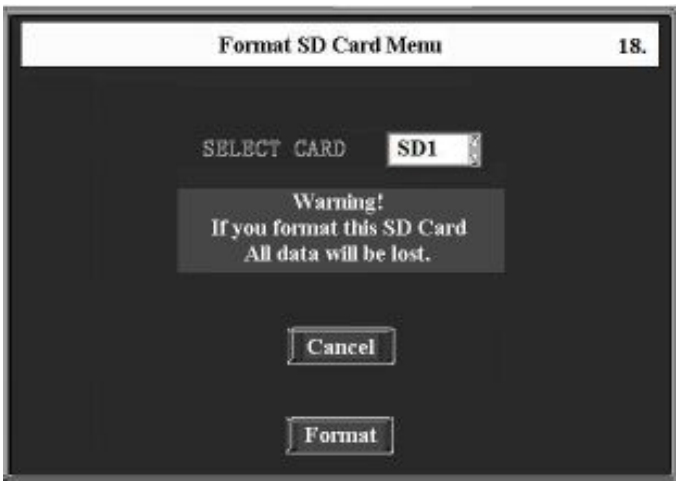
Note： 1. X setting: Press Direction key, making the setting on the X enable , then press ENTER—select ON/OFF; press right, then press CANCEL, then press digit key set up the Threshold, press right, then press ENTER---select ON/OFF.

2. Y、Z: the same setting as X。

4.8. MANAGEMENT TOOLS

Management tools：Format、Configuration、Upgrade、Log。



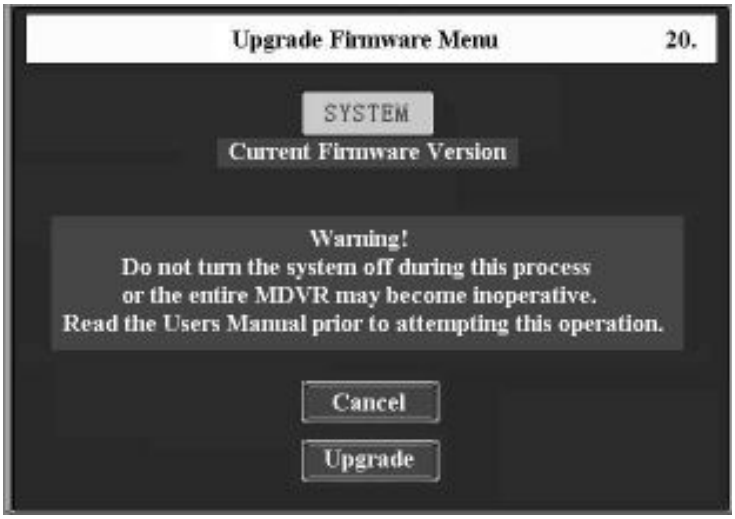


Note： Press ENTER select SD1/SD2, then press right key, press ENTER select format or not.

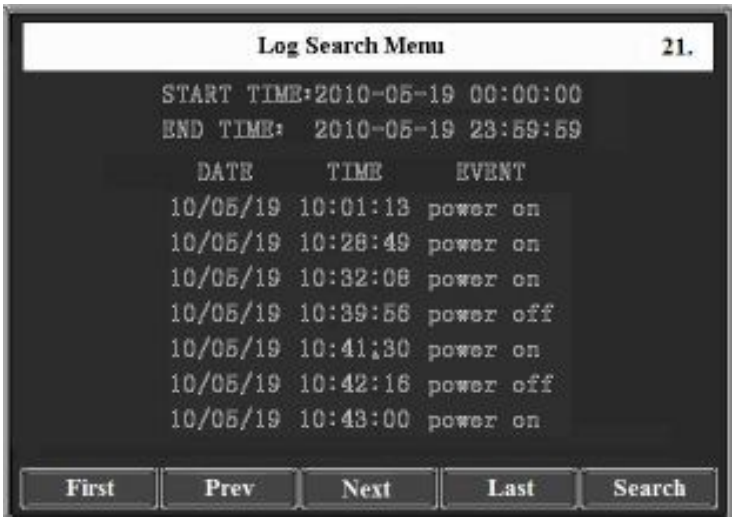
Warning：Format will lost all the data in the device. For sure, press FORMAT. Or else, press CANCEL.

Note：Press down key for Reset settings，then press ENTER，system remind message。

For sure to reset, press ENTER. Or else, select EXIT.

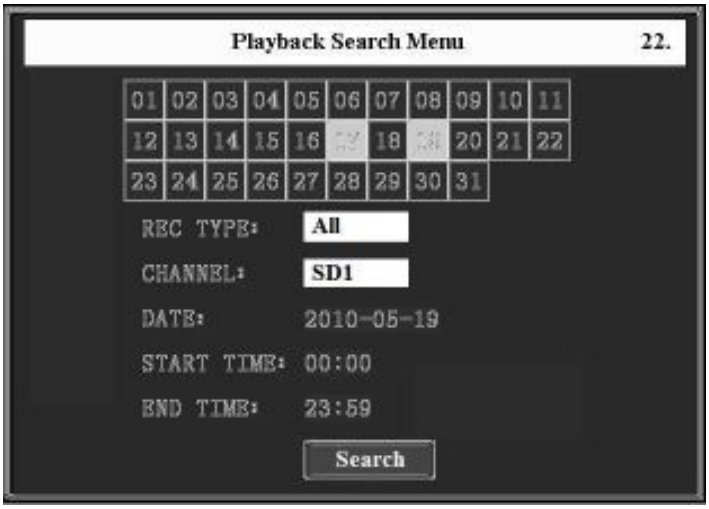


Note： System upgrade including: file system, application, Press ENTER 。



Note： Press direction key select START TIME, END TIME, then press digit key setting.

4.9. PLAYBACK MENU



Note：1．REC TYPE:ALL/ALARM（ALM REC）Press ENTER。

2．CHANNEL: SD1/SD2, Press ENTER。

3．DATE、START TIME, END TIME, Press left/right key, then press digit key. Then press SEARCH.

4.10. Shortcut setup

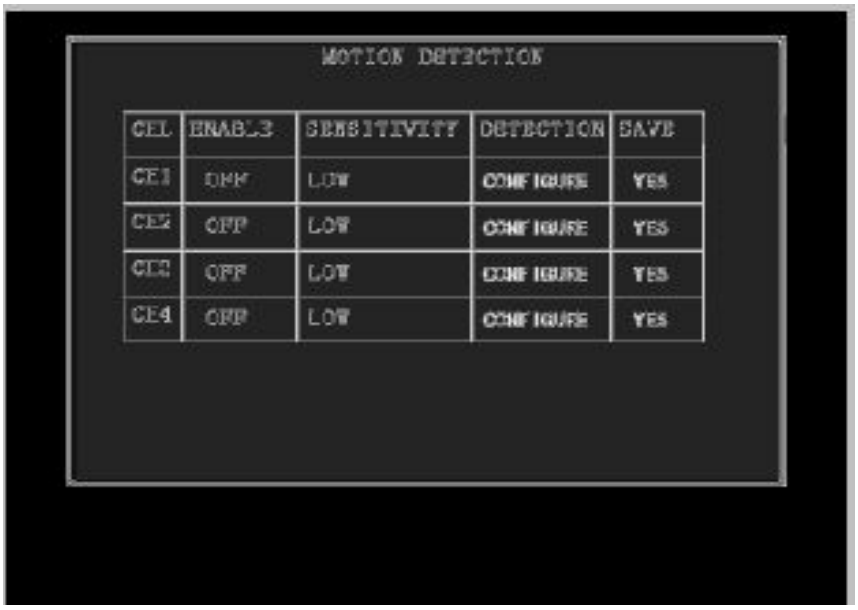
Not available now.

4.11. System Info

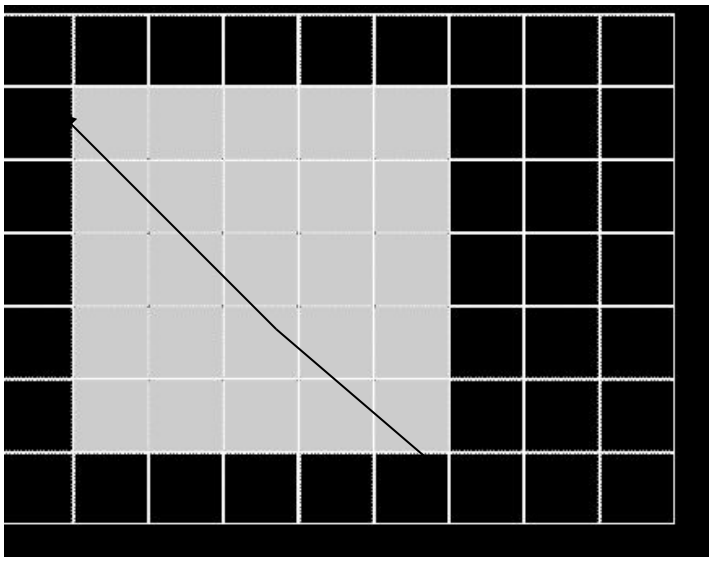
Note：Press ENTER switch previous or Exit.

4.12 Motion detection

Note: ENTER Tool. Press the detection and ENTER it. Take 1 channel for example.

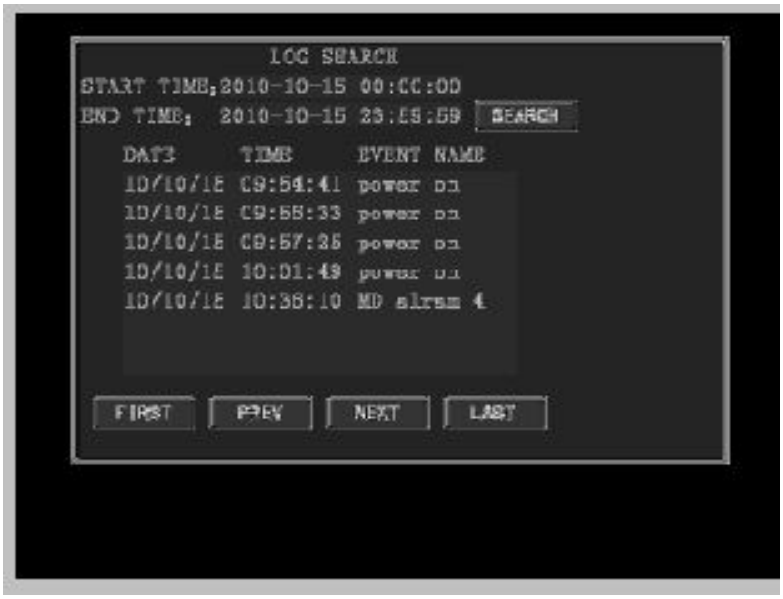


1. Enable: ON(means open the motion detection)
2. Sensitivity: low (motion objects) / mid / high (motion light) optional.



3. configuration: Press " ENTER " to select the zoom interface via direction key(the zoom marked to be dark green if selected, then select another zoom, then a rectangle of diagonal for the two zoom will be marked a motion detection zoom, press " Cancel " can cancel the selected zoom,), then press " Return " to tool menu.

4. Save: press " Yes " on save. When shows " save success " means setting implement.



5. Note: When motion is detected in the area within the gird, it will give out alarm data, and marks MD alarm in the log files, if happens continuous alarm or multi-alarm within 30sec, system will write alarm data every 30sec. Users can search the log in the tools. During the record period setting via user, if any alarms are received, all of the recording during the setting time will be packed to a alarm recording.

REMARK

APPLICATION:

Our Mobile DVR can be used for Buses, cars, coaches, cash carriers, industrial vehicles, taxi, investigation vehicles, military trucks, police vehicles, ambulances, Tourism buses, even yachts, aircraft and vessels. It can also be used in farm, construction site, vacation spot to monitor the around environment if nobody nearby, etc.

Package Including:

1X unit
1X remote control
1X CD（manual and PC view S/W）
1X Hex wrench
2X Batteries for remote control
1X sensor cable
1X power cable
4X camera cables
1X GPS module (excluded), charged additional
1X 3G module (excluded), charged additional
1X WIFI module (excluded), charged additional
CMS software (optional) charged additional
Control panel (optional), charged additional