

# SD4HDE, SD4HWE & SD4HCE User Manual

Version 20211101



## **AMERICAN BUS VIDEO INC.**

**Toll Free 866.468.8042**

[sales@AmericanBusVideo.com](mailto:sales@AmericanBusVideo.com)

[AmericanBusVideo.com](http://AmericanBusVideo.com)

[VehicleVideoCameras.com](http://VehicleVideoCameras.com)

[FleetDriverRiskManagement.com](http://FleetDriverRiskManagement.com)

10-Year Camera Warranty Standard

Testudo Lifetime System Warranty Available

30+ Years of Mobile Digital Sales & Service Experience

## **Important User Information**

### **About On Screen GPS Mapping**

This feature requires unrestricted access to Google maps, so some highly restricted proxies servers may prevent this. If the Internet access is prevented at the customer side, the free On Screen Mapping feature may be prevented from functioning. This does not affect the speed of the vehicle recorded on the screen during the trip. Also we have found the GPS antenna location needs to be on the vehicle roof to assure the best function.

### **Memory Storage Required**

The SD4HDE, SD4HWE and SD4HCE series are sold WITHOUT memory storage device, as the size of the Full Size (Not micro) SD memory cards will not only be up the customer but in many cases customers can source the cards at a lower cost than ABV can. ABV recommends use of Transcend Full Size (Not micro) SD memory cards Class "U3" or faster, for optimum use as some other brands have had issues with several mobile DVR brands over the last 10 years.

### **Basic PC Skills Are Required**

The Mobile Digital Video Recorders (MDVR) we provide operate on a PC program viewer program called a Graphical User Interface aka GUI. These programs have been designed to be intuitive and require no formal training to operate the program, include a manual for those who seek additional guidance, as long as the user possesses basic PC skills. This is where some problems with PC skills begin for some who are not well versed in the use of their district or company computers. Use of these GUI programs are predicated on the assumption/requirement that the customer of this high tech video file evidence management tool has authorized personnel who will be operating this program who are competent with the basic operation of their own company PCs.

Companies lacking a trained PC competent authorized user for this system will need to have their designated persons trained on the basic use of their company PC prior to using this product, as lack of basic PC operation skills and use could compromise the integrity of the product application, the video files and possibly their admissibility as evidence in a court litigation procedure. The manufacturer and their representatives are not responsible, licensed or certified to train users of this program on the basic functions of a customer or company's own company PCs.

ABV does not supply the resources required to teach customers how to operate their PCs to a degree that they may then operate programs running on them. It is the customer's responsibility to learn how to operate their own PC before implementing a product that requires operation on their PC. Simply stated; if the intended customer system operator is incapable of downloading files from the internet, opening programs under Administration access, running or executing application files under Administration access, cannot download Media Player Program codec plug-ins, cannot save a file, cannot transfer a file or browse for a file, nor make a screen capture of the program viewer GUI, cannot send a saved file by e-mail, cannot plug a USB SD card Reader into a removed memory storage device, cannot save a file to a portable digital storage device, then you are not ready for a digital vehicle surveillance system. Basic PC skills are a requirement of all who intend to operate these products.

### **Network System Administrator (In-House) Required for CMS Operation (Wi-Fi & Cellular)**

Should you have Wi-Fi equipped DVRs but are not using the Wi-Fi Wireless function then this does not apply, as you will not be using the CMS software.

Those customers incorporating the Central Management Software (CMS) Server or Client Software in order to enable the Wi-Fi or Cellular functionality in their mobile video application must have in-house a Network Administrator with at least the training and certification of Microsoft Certified Systems Administrator (MCSA) or Microsoft Certified Systems Engineer (MCSE) to manage all aspects of the Network Server operation including; CMS software install, CMS Network Server configuration, CMS Network Server operation, CMS Network Server Maintenance, troubleshoot the DVR Server & CMS software, and or operate the higher functions of the program capabilities as they require access to your Wi-Fi or Cellular network, your mail server, creating SQL databases and many other network administrator functions. (1<sup>st</sup> Warning)

It is solely the responsibility of the purchaser to provide competent certified Network Administrator with at least the training and certification of Microsoft Certified Systems Administrator (MCSA) or better yet Microsoft Certified Systems Engineer (MCSE) to install, configure, operate, maintain and troubleshoot the DVR Server & CMS software, and or operate the higher functions of the program capabilities as they require access to your Wi-Fi or Cellular network, your mail server, creating SQL databases and many other network administrator functions. This is a Customer CMS Server Hosted solution for those who wish to maintain all data in-house, with free software intended for those who know what they are doing only. Cellular CMS Server Network driven solution is not for those who know a little about networks and feel lucky. (2<sup>nd</sup> Warning)

American Bus Video Inc (ABV) provides network solutions that require at a minimum Microsoft Certified Systems Administrator (MCSA) or better yet Microsoft Certified Systems Engineer (MCSE) in house, to assure you are competent and able to assume all functions of the network server and DVR that communicates with it without assistance, as ABV provides no support, training, technical service, phone support for CMS Server/DVR Server or Client Server software for Wi-Fi/3G/4G /4G LTE/5G systems that we offer. (3<sup>rd</sup> Warning)

In simple terms, if you do not have a competent in house certified Network Administrator with at least the training and certification of Microsoft Certified Systems Administrator (MCSA) or better yet Microsoft Certified Systems Engineer (MCSE) to install, configure, operate, maintain and troubleshoot the DVR Server & CMS software, and or operate the higher functions of the program capabilities as they require access to your Wi-Fi or Cellular network, your mail server, creating SQL databases and many other network administrator functions, then you should not be purchasing a Wi-Fi or Cellular Network driven system that requires a CMS Server, DVR Server or Client Server. (Final Warning)

### **Operational Verification**

It is solely the responsibility of the user of the product to provide verification of product functionality when installed, each time the vehicle is operated, as well as pulling video files for viewing weekly, as a way to verify the system is operating properly, in order to prevent missing the documentation of important events due to operational problems, that could have been detected before they prevented important video evidence from being documented. Operational verification can be a simple daily visual verification of the DVR LED Status LEDs displaying on the unit faceplate to verify the unit is powered up and recording, or by use of the Remote DVR Status module (option). ABV Recommends weekly verification via memory card files playback test, to insure the cameras are all properly aimed, that the camera lenses are clean, that the audio is functional for each camera, and that the DVR is recording when the ignition is on. "Agency implies

Stewardship" is a time proven principal, meaning if you own a product, it is your responsibility to maintain the product to insure you are able to obtain value from the use or operation of that product.

ABV recommends daily LED DVR status and weekly video recording system check, to insure all systems are recording properly so when you need them most in an incident you do not learn the DVR blew a 10 cent fuse 7 years ago (actual case) and has not worked a day since.

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## 1. GUARANTEE & WARNINGS

### 1) Electrical Apparatus Safety

All installation and operation should comply with local electrical safety norms.

### 2) Transportation

In the process of transportation, storage and installation, please avoid heavy stress, violent vibration, impact and water splashing.

### 3) Installation

Install the equipment in accordance with the requirements, handle carefully. Do not heavily press the equipment before the MDVR installation is finished.

### 4) Requirements on Engineers & Technicians

All the work of checking and maintenance should be done by qualified technicians and engineers.

We do not undertake any responsibility caused by unauthorized modifications.

### 5) Requirements on Environment

The equipment should be installed and stored in a cool and dry place, away from direct sunlight, flammable or explosive substances, etc. Keep gaps not less than 3cm around the device to facilitate ventilation for cooling.

### 6) Accessories

Make sure to use accessories from the manufacturer.

Insulate circuit ground and metal shell for all the peripherals.

Before installation, please open the package and ensure that all parts are included.

If there are any problems, please contact us as soon as possible.

## 2. PRODUCT OVERVIEW

This model is a superior MDVR model specially designed for vehicle surveillance and remote monitoring, combined with high-speed processor and embedded operating system. the advanced H.264/H.265 video compression and decompression, wireless transmission, GPS location which make it to be a very powerful and perfect solution for vehicles.

### Features

- ★ Embedded compact design, low power, high efficient H.264/H.265 compress, high reliability.
- ★ 4CH 1080P 720P AHD Camera input, 720P HD recording, supports dual 256GB SD card.
- ★ Optional 4G, GPS, WIFI functions.
- ★ Built-in G-sensor.
- ★ Data protection when in sudden power off.
- ★ Rich external ports, incl. 1x RS232, 4x alarm in & 2x alarm out ports, VGA etc.
- ★ Auto image switch of car left/right turning, backing change.
- ★ Export of video recordings directly via USB port.
- ★ CMS platform ability for big fleet and user management.
- ★ Simple easy to operate video playback software.

## Main Functions

FUNCTIONS	DESCRIPTIONS
<b>Wireless Communications</b>	Through WIIF/4G network, multi functions are achieved such as: real-time monitoring, video download, two way talk, parameter config, remote upgrade, remote control etc.
<b>Recording</b>	4CH 1080P 720P Camera Input ,4CH 720p real-time AV recording .
	PAL for example: support 4CH 720p@25fps
	Support PAL; NTSC
	OSD overlay info incl. time, channel, vehicle ID, GPS, speed etc.
<b>Storage &amp; Playback</b>	Support 2x 256GB SD storage
	Support 4CH AV synchronous playback
	Support PC playback
	Support remote search and playback
	Support play, pause, slow, fast etc.
<b>Black Box Function</b>	Recording incl. speed, GPS, temperature, oil level etc.
	Support 4x switches with data collect
	Support local recording with vehicle info display
	Support real-time upload remotely, and history search and check

## Specifications

ITEM	PARAMETER	PERFORMANCE
<b>System</b>	<b>Language</b>	English
	<b>Operation System</b>	Linux
	<b>Interface</b>	Imaging menu operation interface (OSD Menu)
	<b>Password Security</b>	Two levels authority: admin, user
<b>Video</b>	<b>Video Input</b>	4 composite video input
	<b>Video Output</b>	1 composite video & 1 VGA outputs
	<b>Video standard</b>	PAL, NTSC
	<b>Video compression</b>	H.264/H.265 Main profile, 100 /120 frame / sec
	<b>Video Display</b>	Single/Quad screen video
<b>Audio</b>	<b>Audio Input</b>	4 audio input
	<b>Audio Output</b>	1 audio output
	<b>Audio Code</b>	G726/G711A
	<b>Way of recording</b>	Simultaneous AV recording
<b>Image Processing &amp; Storage</b>	<b>Image format</b>	D1/720p/1080p optional
	<b>Standard of Video Stream</b>	ISO14496-10
	<b>Video code rate</b>	D1: 2048Kbps ~ 400Kbps,
		720p: 2048Kbps ~ 4096Kbps,
		8 levels of image quality: class 1 the highest and class 8 the lowest.
	<b>Audio Code Rate</b>	40KB/s
<b>Data Storage</b>	2x 256GB SD Card	
<b>Alarm</b>	<b>Alarm input</b>	4x Alarm input
	<b>Alarm output</b>	2x Alarm output, with 12V high electrical level

<b>Communication Port</b>	<b>RS232 port</b>	1x RS232
	<b>RS485 port</b>	/
	<b>4G LTE</b>	optional, support TD-LTE/FDD-LTE
	<b>WIFI</b>	optional, 802.11b/g/n
	<b>GPS</b>	Optional, embedded module, show Geo-location, speed etc. Wireless upload function (Optional)
<b>Acceleration sensor</b>	<b>G-sensor</b>	Built-in 6 axis
<b>Extendable Port</b>	<b>Intercom</b>	support
	<b>Speed pulse</b>	External connect
	<b>Others</b>	LED panel
<b>Software</b>	<b>Vehicle Network Management System (VNMS / CMS)</b>	4G video monitoring and GPS tracking etc. PC/ Web/Android/iPhone/iPad platforms, multi-languages.
	<b>Vehicle Analysis Software (VAS)</b>	Video playback and analysis

## Working Parameters

Item	Parameter	Instruction
<b>Power Input</b>	+8V~+36V	Voltage Input: +8V~+36V Power will be auto off upon self-protection activated if device is out of this range for long time.
<b>Power Output</b>	12V	Voltage output 12V (+/-0.2V 0), current for max. 4A
<b>ACC</b>	≤6V	ACC Off
	≥7.5V	ACC On
<b>Video Input Impedance</b>	75Ω	Average 75Ω per video channel
<b>Video Output Voltage</b>	2V p-p	75Ω per each 2V p-p CVBS signal
<b>I/O Interface</b>	0-4V	Defined as low level alarm
	> 4V	Defined as high level alarm
<b>SD Card Interface</b>	2x SD slots	Max. 256GB per SD card SD can be used for recording, upgrade etc.
<b>Working Temperature</b>	-30°C~+75°C	Temperature in well ventilated condition

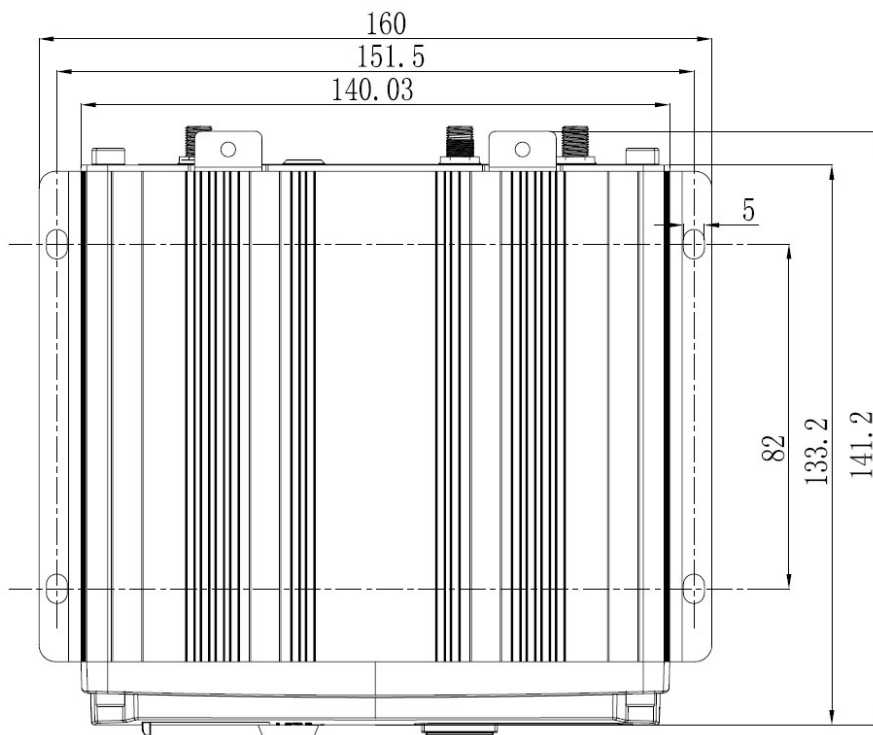


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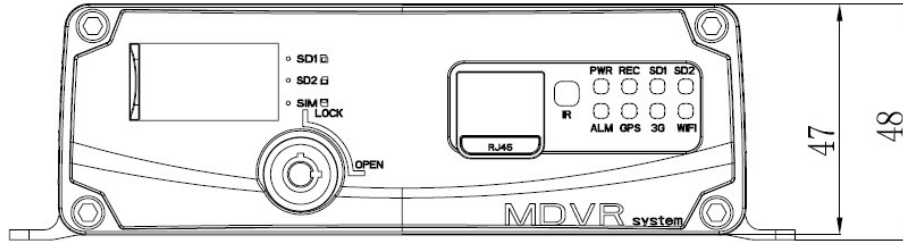
### 3. PRODUCT OUTLOOK



#### Dimension



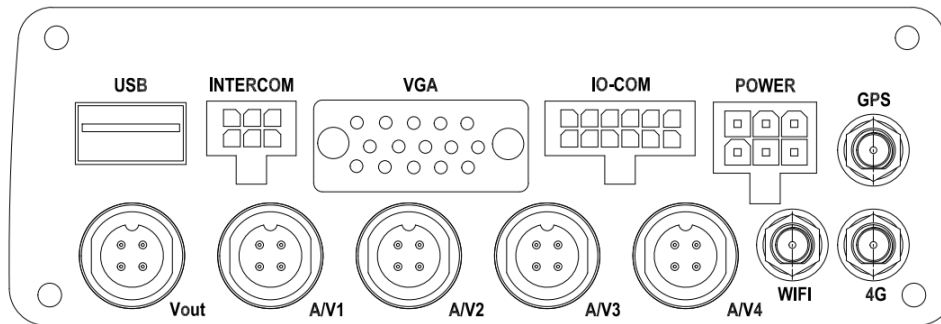
## Front-Panel Overview



## Description of Front Ports & Indicator

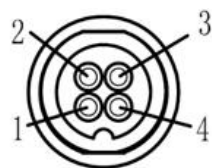
TYPE	ITEM	DEFINITION
Panel Ports	SD1/SD2	2 SD cards for cycle recording
Indicator	PWR	Power indicator, lighted (blue) if power input is connected
	SD1/SD2	Indicator of "SD card", lighted (green) if SD card is detected, otherwise led is off.
IR	IR	Receiving signals from remote controller
e-Lock	LOCK	Lock for SD and SIM slots and power on/off for MDVR. If unlocked, the MDVR will be auto into standby status.

## Back-Panel Overview



## Camera Ports Define

A/V1,2,3,4 & AV-OUT:





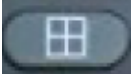


1. 12V
2. GND
3. AIN
4. VIN

## Description of Back Panel

Panel Interface	Definition
A/V1,2,3,4	4 channels of AV inputs
AV-OUT	AV outputs
IO	4channels alarm input & 2 channels output ports, 1 RS232 ports and pulse speed port
POWER	Power input, DC8-36V
GPS	GPS antenna port
4G	4G antenna port
WIFI	Dual WIFI antenna, one is main, one is aux

## 4. OPERATION

### Remote Control

<b>LOGIN</b>	Press LOGIN to enter password of MDVR. <i>Note:</i> password cannot be reset or retrieved, make sure you remember the password.	
	Power button	
<b>0-9 number keys</b>	Switch to single channel view by pressing 1-9. It's also for volume and lightness setting.	
<b>INFO</b>	A short key to check device running status, includes: 3G/GPS, alarm, disk recording and device version etc.	
	Switch 4-8-1 image.	
	UP, DOWN, LEFT, RIGHT. It also is used to control fast and slow speed of player. The UP and DOWN also be used to switch 1-4, 5-8 image.	
<b>【OK】</b>	Confirm	
	Pause/Play when video playback.	
<b>PLAY</b>	Start to play video	
<b>RETURN</b>	Return to the previous menu	
<b>CANCEL</b>	Cancel or backwards	
<b>- + symbols</b>	Space delimiter when editing; Volume adjustment	
<b>F1, F2, F3, F4</b>	Reserved	

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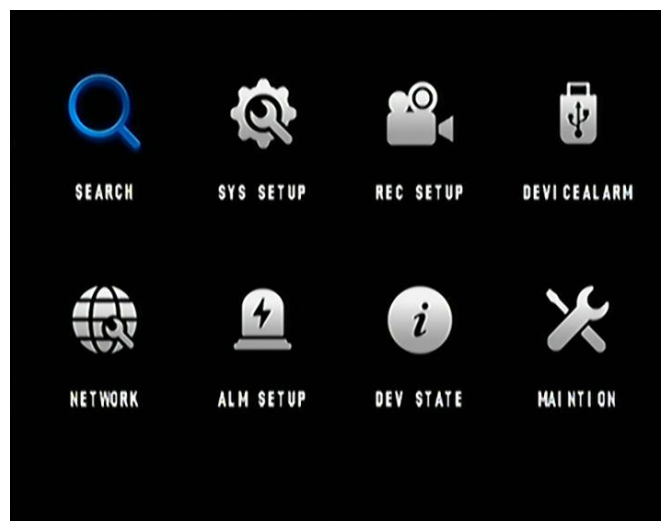
## LOGIN



There are two levels for login: ADMIN, USER  
Password:111111

## MAIN MENU

Settings incl. "Search, System, Record, Serial, Network, Alarm, Device status, maintion"



## SYSTEM SETTING

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### Settings incl. Register--maintain

□



### Settings incl. Register--vehicle



- Plate NO: car plate number
- License1: Driver ID 1
- License2: Driver ID 2
- Motor No.: Engine number

### Settings incl. Register--standard(ignore)

### Settings incl. menuset--menuset



- Language: System language
- Gui Alpha: Menu transparency
- Time out: Menu operation timeout

#### Settings incl. menuset--Pageset(ignore)

#### Settings incl. User set



- Password: ON/OFF, to enable or disable password login.

#### Settings incl. Time set--Base set



- Date Type: incl. YY/MM/DD, M/D/YY, DD/MM/YY. Press OK to choose.

#### Settings incl. Time set--Sync set



- Time Zone: Time zone setting for vehicle location
- Time Sync: GPS/NTP for choice according to need
- NTP Addr: Network time server address setting

#### Settings incl. Time set--Daylight

Daylight saving time setting

#### Settings incl. Power set--ON/OFF

- Power Mode: incl. Acc/timed mode, press OK to show the options

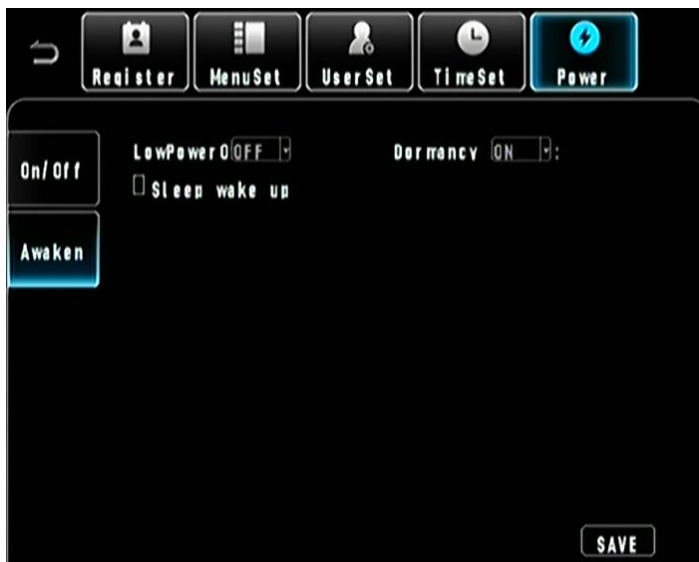


Acc: power on/off controlled by car key switch

Timed mode: power on/off controlled by the set time.

- Delay off: only effected under ignition mode. After car key is closed, device will continue working till set delay time comes an end, after, device is back to standby status.
- ScreenTime: No video or image if no operation of remote controller within the set time.
- Power on: time to power on under “timing mode”
- Power off time to power off under “timing mode”

#### Settings incl. Power set--Awaken



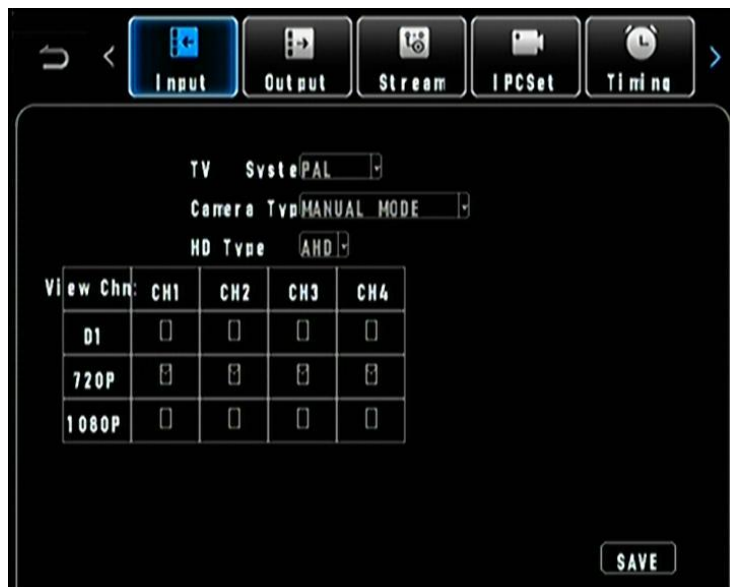
- Low Power: Low voltage automatic shutdown press OK to show
- Dermancy: **(ignore)**
- Sleep wakeup: **(ignore)**



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## RECORD SETTING

Settings incl. input



- TV System: incl. PAL/NTSC, press OK to choose
- Camera Type: allows max 4x 1080p/720P/D1 camera input  
MANUAL MODE: Manually select the camera type for each channel below
- HD Type: Camera type (AHD/CVI/TVI)

Settings incl. output

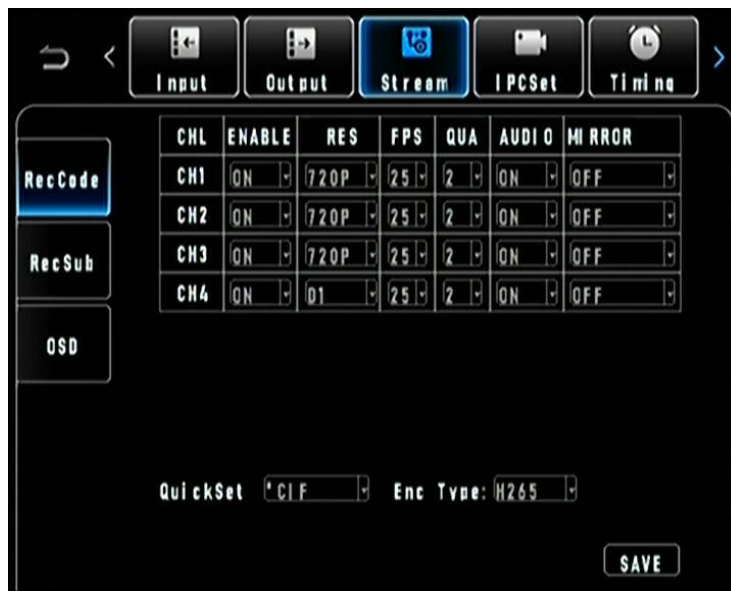


- Resolution: VAG output, resolution supports 720\*576, 1024\*768, 1280\*720, 1920\*1080
- View Mode: Video display screen layout
- View Chn: Screen to be displayed on the monitor

Settings incl. OSD(ignore)

Settings incl. AV LOOP(ignore)

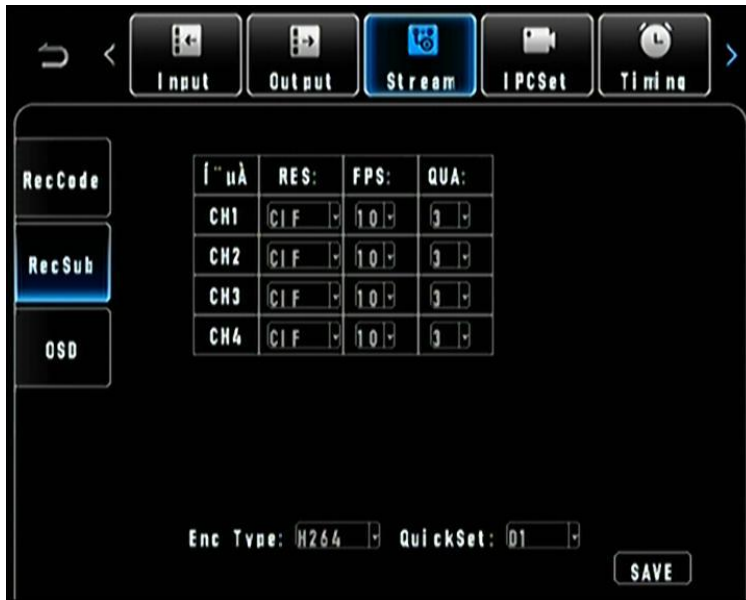
Settings incl.stream---Rec code



- ENABLE: ON means the channel recording is open; OFF means the channel recording is closed.
- RES: resolution incl. 1080, 720p, D1, HD1 and CIF. For example, in PAL system, 1080 is 1920\*1080, 720p is 1280\*720, D1 is 704\*576, HD1 is 704\*288; CIF is 352\*288.
- FPS: the frames taken per second. PAL range 1-25fps, NTSC range 1-30fps
- QUA: image quality (grade 1-8). Grade 1 being the best quality

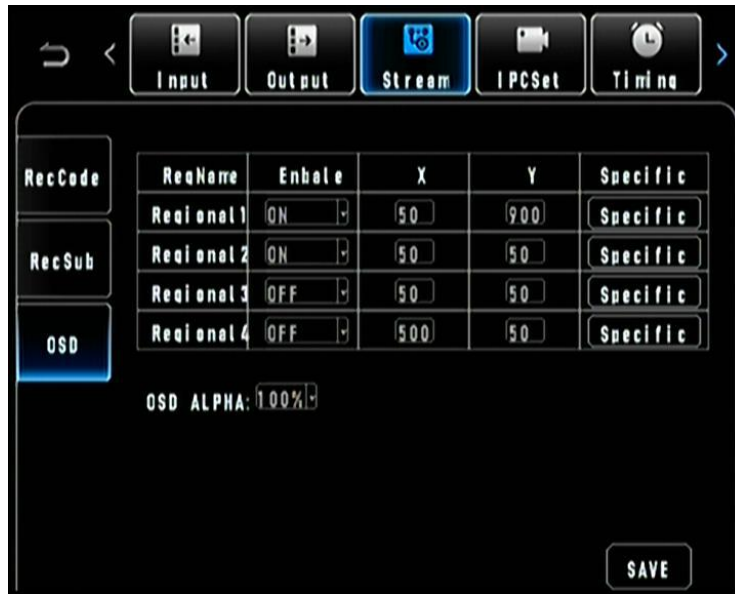
- AUDIO: enable/disable audio recording with video recording
- MIRROR: options incl. mirror(left-right), flip(up-down), or mirror/flip mixed mode.
- QuickSet: one click quick setting for all channels.
- Enc type: Video coding mode, h.265/h.264

**Settings incl. stream---Rec sub**



- RES: resolution incl. D1, HD1 and CIF. For example, in PAL system, D1 is 704\*576, HD1 is 704\*288; CIF is 352\*288.
- FPS: the frames taken per second. PAL range 1-25fps, NTSC range 1-30fps
- QUA: image quality (grade 1-7). Grade 1 being the best quality

**Settings incl. stream---OSD**



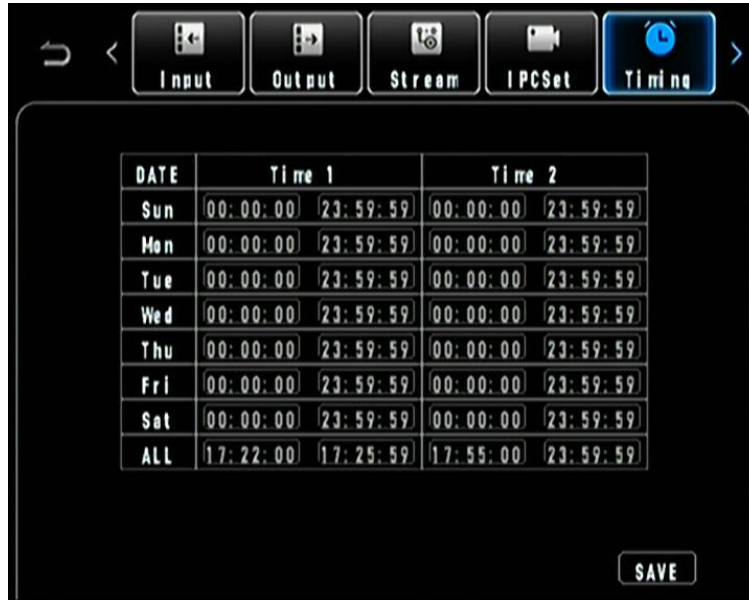
- Enable: ON to enable and OFF to disable info to show on recordings.
- X/Y pixel: not necessary to set, except when output resolution mismatch the terminal screen resolution.

#### Settings incl.ipc set



- Enable: ON to enable and OFF to disable IPC.
- Res: Ipc resolution.
- IP: IPC IP address
- Port: IPC Port
- SET: Set IPC protocol and IP address information, only support XM

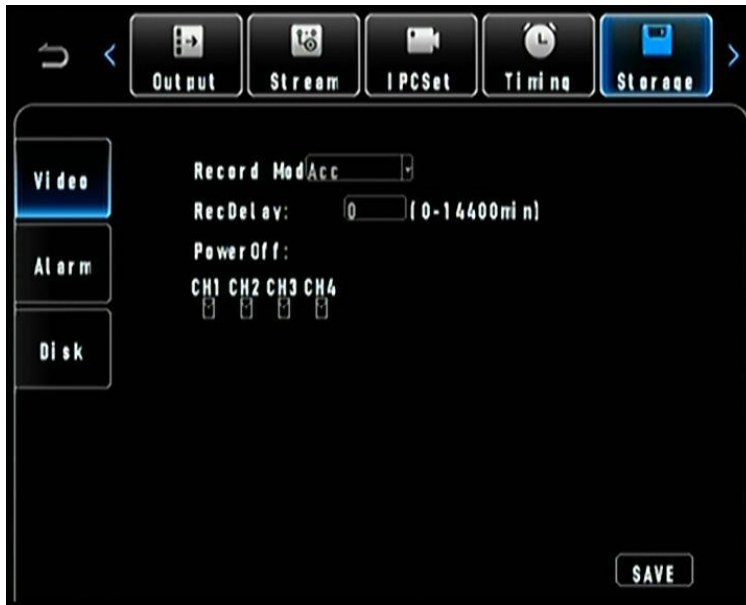
## Settings incl. Timing



- Users can set up to 4x period for each day's schedule recording.
- ALL: setting for all 7 days from Monday to Sunday.

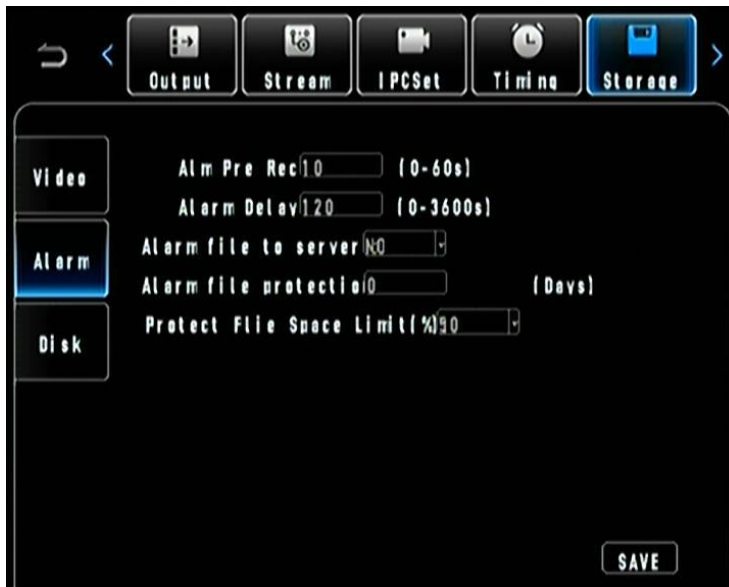
**Note:** start time cannot be later than the finish time.

## Settings incl. Storage---Video



- Record Mode: incl. auto/time/alarm. Press OK to choose. In “auto mode”, recording will auto begins when device is power on. In “time mode”, recording only happens in set time. For “alarm mode”, recording only happens when alarm appears.
- RecDelay: the time for allowing recording within "delay off time"
- Power off: choose which channel for recording for "RecDelay".

#### Settings incl.Storage---Alarm



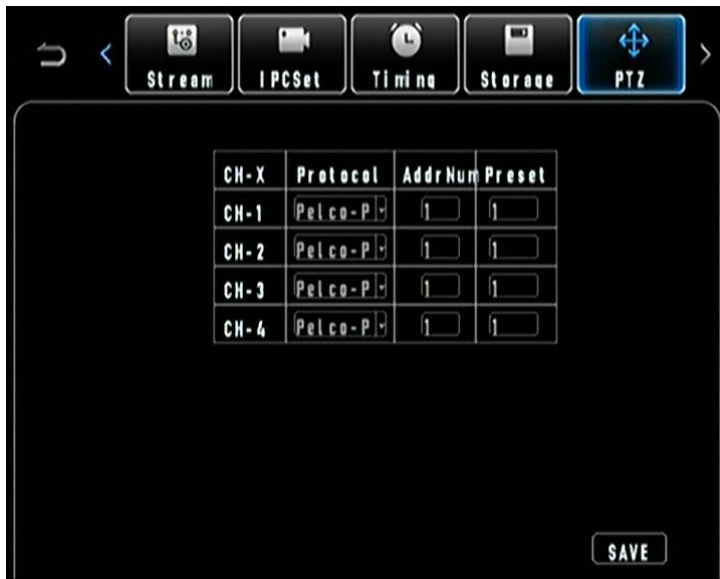
- Alm Pre Rec: the time for recoding before alarm is triggered
- Alarm Delay: the time for recoding after alarm is aborted
- Alarm file to server: ways incl. "NO(turn off), CMS, FTP".
- Alarm file protection: optional 3-45 days, files within protecting period won't be auto covered.
- Protect File Space Limit: Disk space ratio of locking video recording

Settings incl.Storage---Disk



- Usage: choose use of chosen disk incl. "NO(turn off), Record, Mirror, Backup"

Settings incl.PTZ



- Protocols: optional PELCO-D, PELCO-P
  - AddressNum: address code of PTZ
- Press F2 of remote controller for PTZ control.

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## SERIAL SETTING

Settings incl.

Name	External	Baud	DataB	StopB	CheckB
COM1	GPS-EX	9600	8	1	None
COM2	GPS-EX	9600	8	1	None

SAVE

□ COM1: the RS232, usually for short distance transmission with POS, Printer etc

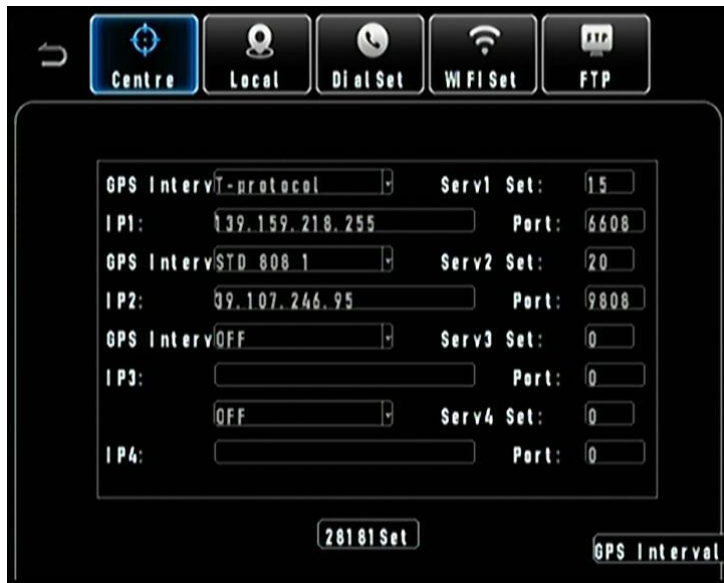
□ COM2: the RS485, usually for long distance transmission with PTZ camera etc

Choosing external device accordingly, the Baud will auto set itself; or set manually if external device mismatch the parameters.

## NETWORK SETTING

Settings incl.Center





- IP 1: parameters for connecting server
- IP 2: parameters for connecting certain server (\*reserved)
- Port: port number for connecting server
- 28181Set (**ignore**)

**Settings incl.Local**



- IP: Local IP address of MDVR.

**Settings incl.Dial set**



- Enable: ON/OFF means to enable or disable 3G/4G connection.
  - NetType: 3G pls choose WCDMA, 4G pls choose FDDLTE-2
- For the rest settings pls consult with your SIM card carrier accordingly.

#### Settings incl.WIFI set



- Enable: ON/OFF means to enable or disable WIFI connection.
  - AuthMode: the authority type, incl. Open/Share/WPA/WAP-PSK to choose accordingly.
  - EncType: the encryption type incl. NONE/WEP/TKIP/AES to choose accordingly.
  - IP: here the IP should not be in a same segment with the IP at "LAN set". E.g., if LAN set IP is 192.168.AAA.001, here the "AAA" should be different in this place.
- For rest parameters pls set accordingly.

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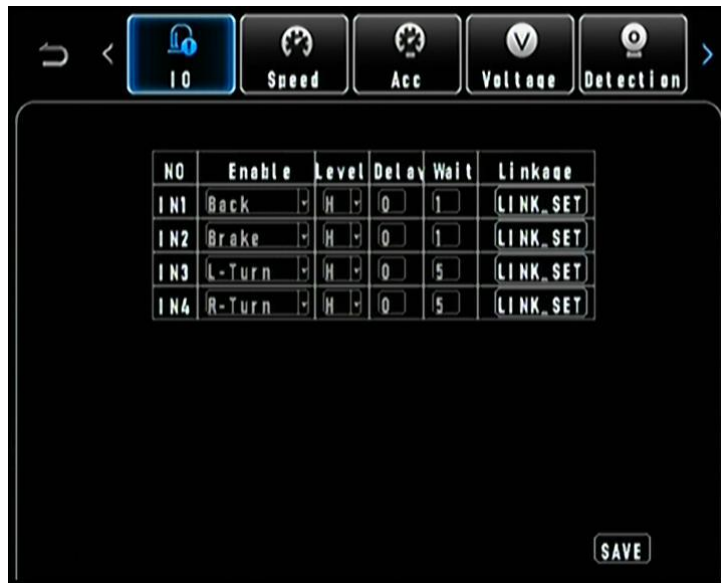
## Settings incl.FTP set

The screenshot shows a control interface with a top navigation bar containing five buttons: 'Centre', 'Local', 'DialSet', 'WIFISet', and 'FTP'. The 'FTP' button is highlighted in blue. Below the navigation bar is a settings panel titled 'FTP SBRVBR'. It contains several input fields and dropdown menus: 'IP:' with a numeric keypad showing '000.000.000.000', 'Port:' with a numeric keypad showing '0', 'User:' with a text input field, 'StatePort:' with a numeric keypad showing '0', 'Password:' with a text input field, 'AvType:' with a dropdown menu showing 'AV', 'StreamType' with a dropdown menu showing 'ALL', 'StoreType:' with a dropdown menu showing 'All', and 'NetType:' with a dropdown menu showing 'WiFi'. A 'SAVE' button is located at the bottom right of the settings panel.

- IP:FTP server IP address
- Port: FTP server IP port
- user: FTP user name
- Password: FTP password
- **The above items must be set for the device to upgrade automatically through FTP, and other parameters can be ignored**

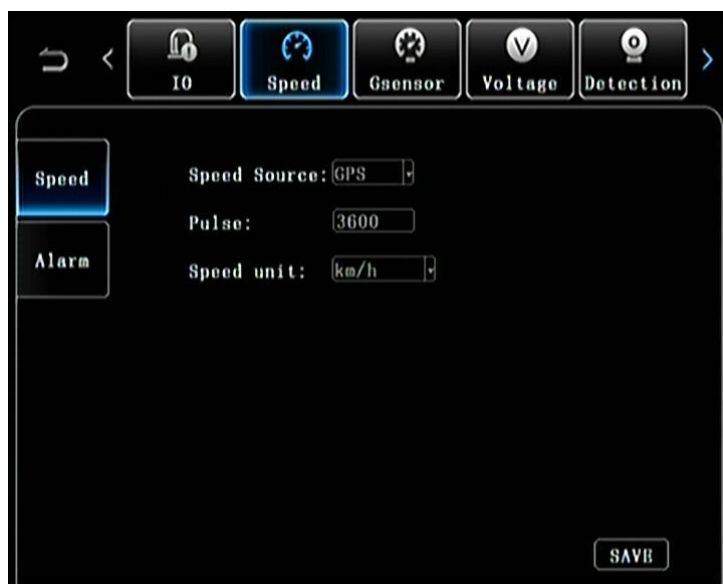
## ALARM SETTING

### Settings incl.IO



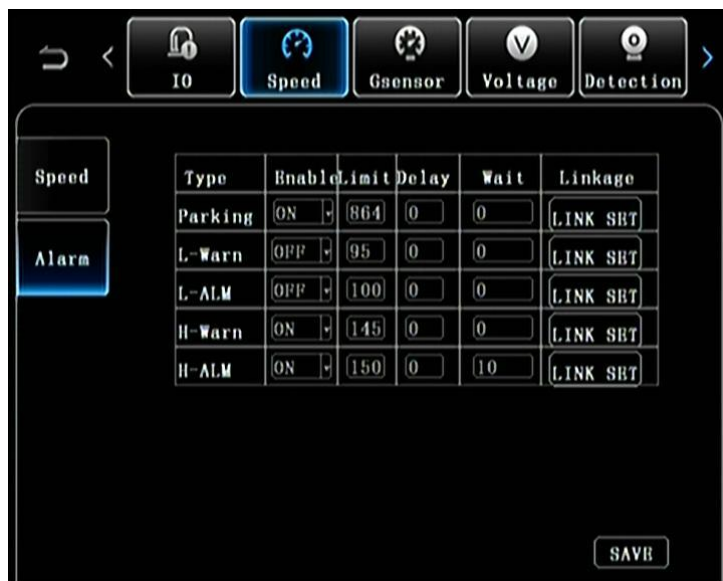
- Enable: incl. "OFF, Emergency, Front Door, Middle Door, Back Door, Driver Door, Other Door, Near Beam, Distant Beam, Right Beam, Left Beam, Braking, Reverse, Fog Lamp, Position Light, Horn, Air Conditioner, Neutral Gear, Retarder, ABS, Heater, Clutch, Door Sensor, Smoke Sensor, Customize"
- Level: the "Electrical level". User defined whether high or low electrical level treated as alarm. By default, 0~4V is low level, 4~25V is high level.
- Delay: the set period ensures only one alarm is processed during the set period, instead of the same alarm be read more than once, which is especially useful when a same alarm be triggered too frequently or wrongly triggered in a short time.
- Wait: be treated as an alarm when alarm length surpassing the set period.
- Linkage: means "alarm linkage". OFF or user defined to an external device like alarm lamp etc.

Settings incl.Speed---speed



- Speed Source: incl. GPS/Vehicle/Mix. **Note:** the “vehicle” needs work together with “Pulse”.
- Pulse: the pulse rotation rate per a kilometer. It works when “vehicle” is set as speed source.
- Speed unit

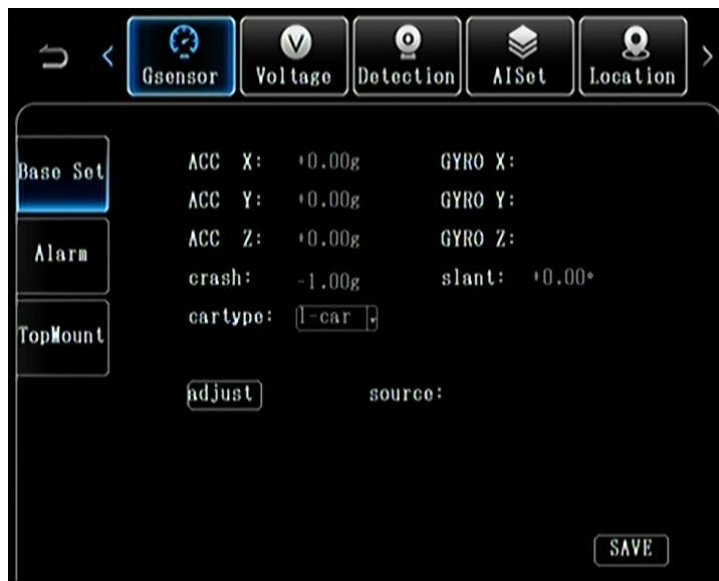
**Settings incl.Speed---alarm**



- Type: alarm type(parking/Low-speed warning/low-speed alarm/over speed warning/over speed alarm)
- Enable: Corresponding alarm function switch
- Limit: the edge value for alarm trigger
- Delay: the set period ensures only one alarm is processed during the set period, instead of the same alarm be read more than once, which is especially useful when a same alarm be triggered too frequently or wrongly triggered in a short time.
- Wait: be treated as an alarm when alarm length surpassing the set period.

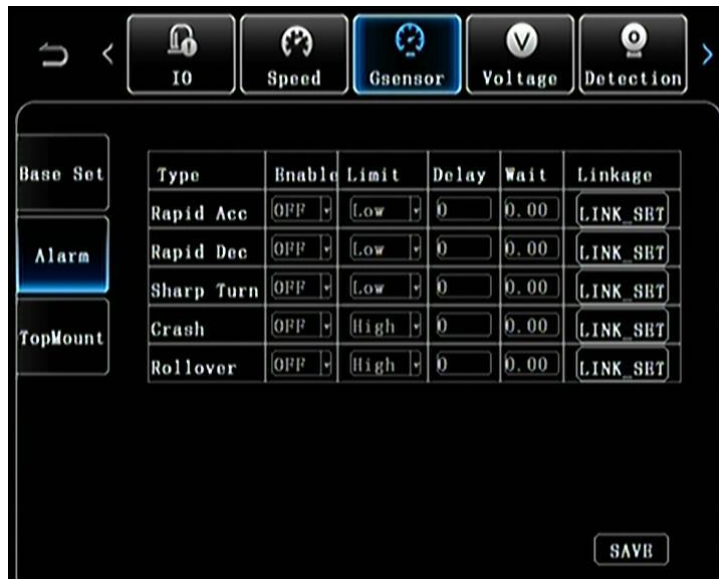
- Linkage: means "alarm linkage". OFF or user defined to an external device like alarm lamp etc.

### Settings incl.G-Sensor--Base set



- Car-type: For vehicle type, G-sensor alarm value will change according to vehicle type
- adjust:adjust G-sensor install

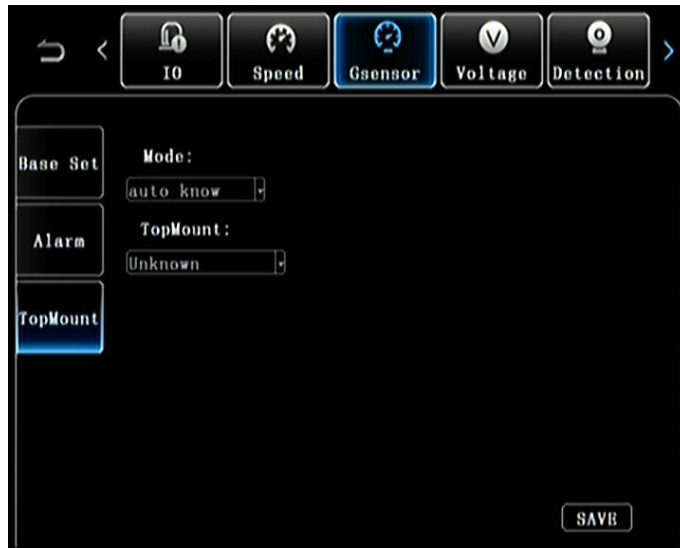
### Settings incl.G-Sensor--Alarm



- Type: alarm type(Urgent acceleration/Urgent deceleration/sharp turn/crash/rollover)
- adjust:adjust G-sensor install
- Enable: Corresponding alarm function switch
- Limit: the edge value for alarm trigger
- Delay: the set period ensures only one alarm is processed during the set period, instead of the same alarm be read more than once, which is especially useful when a same alarm be triggered too frequently or wrongly triggered in a short time.
- Wait: be treated as an alarm when alarm length surpassing the set period.

- Linkage: means "alarm linkage". OFF or user defined to an external device like alarm lamp etc.

### Settings incl.G-Sensor--TopMount



- Mode: Sensor direction mode setting, auto sensing is recommended
- Topmount:Set sensor direction manually

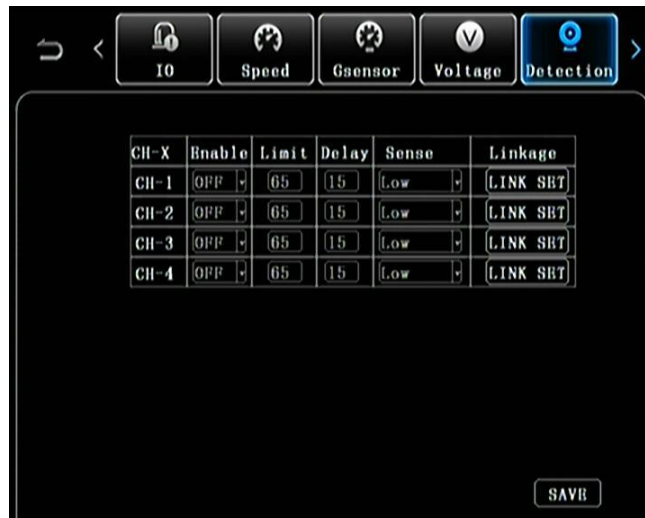
### Settings incl.Voltage



- name: alarm type(Low-voltage/High-voltage)
- Enable: Corresponding alarm function switch
- Limit: the edge value for alarm trigger
- Delay: the set period ensures only one alarm is processed during the set period, instead of the same alarm be read more than once, which is especially useful when a same alarm be triggered too frequently or wrongly triggered in a short time.
- Wait: be treated as an alarm when alarm length surpassing the set period.

- Linkage: means "alarm linkage". OFF or user defined to an external device like alarm lamp etc.

### Settings incl.Detection



- Enable: Corresponding alarm function switch
- Limit: the edge value for alarm trigger
- sense: Detection sensitivity of motion detection.
- Linkage: means "alarm linkage". OFF or user defined to an external device like alarm lamp etc.

### Settings incl.location(ignore)

## SYSTEM MANTION

### incl.Power





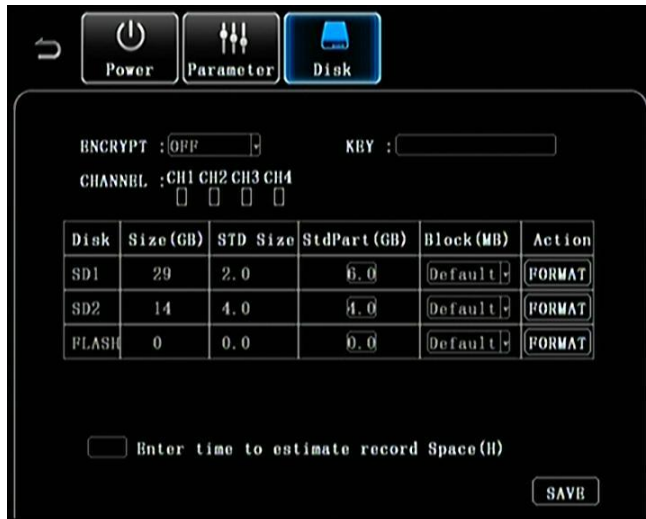
- Auto reboot: Is it necessary to restart the device regularly
- Reboot time: Time of scheduled restart

#### incl.Parameter



- Import: Import configuration files from disk
- Export: Export device configuration files to disk
- Save User Setting: Save the current device settings as user settings
- Back to Default: Restore the device to factory settings
- Back to User Setting: Restore device to saved user settings

#### incl.Disk



- Encrypt: Video encryption mode switch
- KEY: Video encryption code
- Channel: Channels that need to be encrypted
- FORMAT: Format the selected disk

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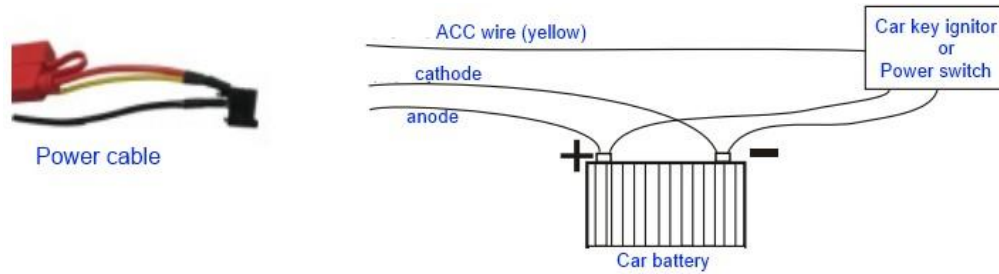
## INSTALLATION

### Power Cable Connection

For field installation, the anode (red) and cathode (black) should directly connect to car battery.

For office testing, the anode (red) and ACC (yellow) can be combined as a anode wire.

After, lock the MDVR to power on.



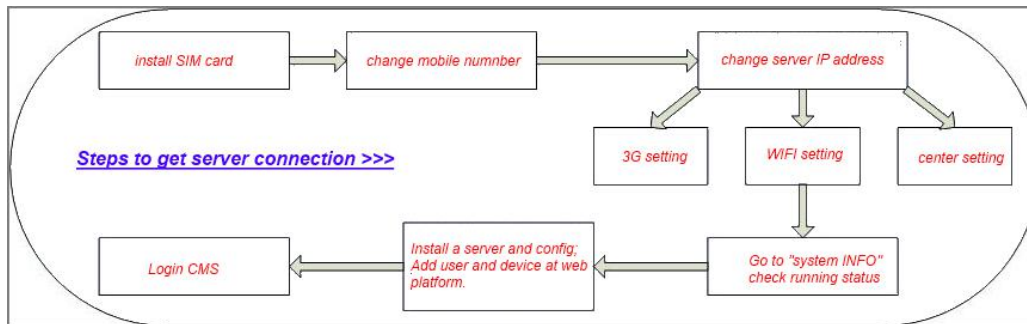
### Server Connection

**Note:** this setting is for MDVR with WIFI/3G/4G functions.

Step 1, Be ready a 3G/4G sim card inserted at MDVR

Step 2, Go to MDVR's "terminal set", input a phone number. Pls note this ID is a unique number recognized by server.

Step 3, Go to MDVR's "center set", input phone number, input server IP and port number accordingly.

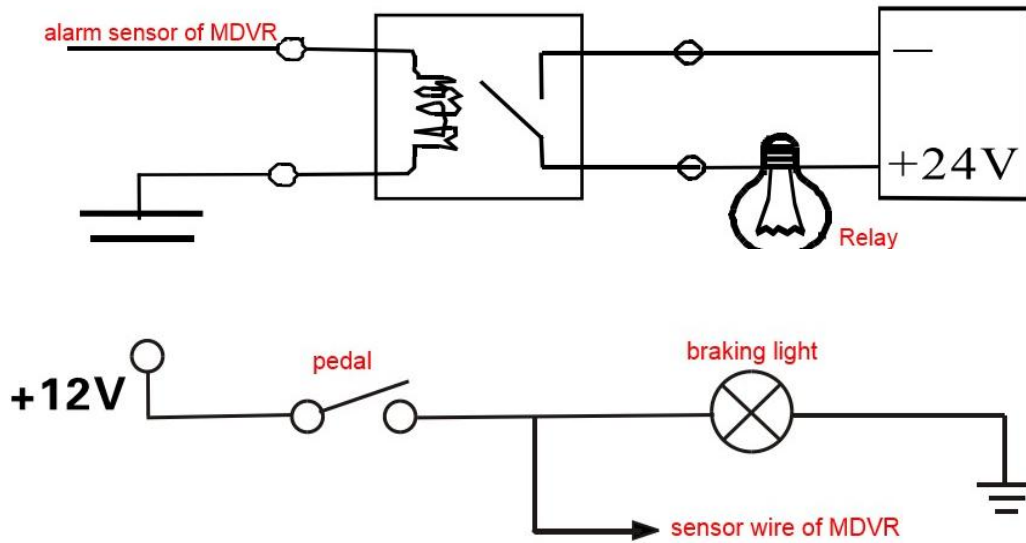


### Serial Port

The MDVR is offered with 8x alarm input and 2x alarm output.

An alarm is detected upon changes from high and low electrical level, which can link to multi vehicle parts incl. "car brake, steering, on/off switch, alarm button" etc. For example, when braking vane is treaded, MDVR detects a high electrical level signal and output an alarm depending on setting, otherwise it's detected as low electrical level.

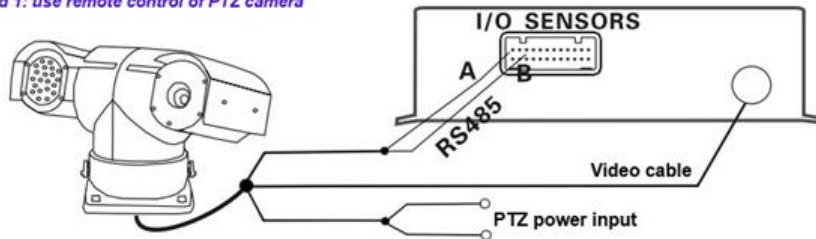
The standard current is 200mA. A relay will be needed if higher power consumption is used for operation.



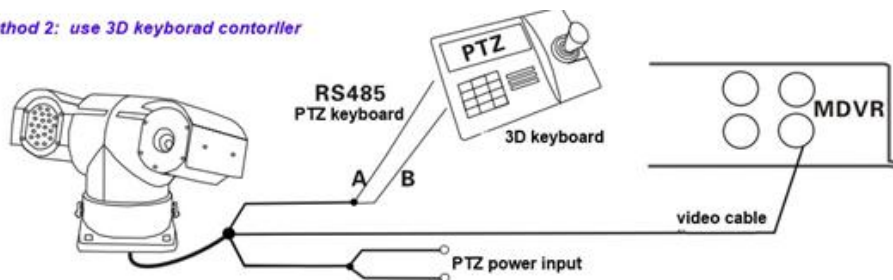
### Connects to a PTZ Camera

- Step1, Select protocol according to PTZ camera
- Step2, Select baud rate according to PTZ camera.
- Step3, Select address code according to PTZ
- Step4, Cabling: one 485 wire of PTZ connects RS485-A (anode), the other PTZ wire connects RS485-B (cathode).

*Method 1: use remote control of PTZ camera*



*Method 2: use 3D keyboard controller*



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## FAQ

### Recording Questions

#### 1. Why MDVR doesn't record after power on?

Check if SD card exist; if exist, check disk status.

Types of disk status: nonexistence, unformatted, normal volume of under usage, normal volume of full usage.

- Nonexistence: no detect of SD card. Pls check at computer, or change a different SD card to decide whether problem is from SD card or MDVR.
- Unformatted: pls try formatting at MDVR menu page, and check if SD storage is shown normal after formatting.
- Normal volume of under usage: disk being normal but storage is not full. Pls check recording mode to confirm if recording is enabled.
- Normal volume of full usage: disk being normal with storage is full. Pls check if disk cycle cover is open.

#### 2. Why MDVR frequently reboots when it is on vehicle?

The common display is: frequent online and offline, recording interrupt, recording not in sequence

Reasons:

- Unstable power supply: this is most possible reason, pls test input voltage when the problems appear
- Disk error: 1.try to format disk; 2.change a different or new disk
- Software or hardware problems: pls remove off the sd card or disk, to see if reboot issue still happen under normal power supply. If problem continues, pls send the version to technicians, or return to factory for repair if necessary.

### GPS Questions

#### 1. Why no GPS location info?

- Check if GPS module exist.
- Check if GPS antenna is well installed. It's recommended to put antenna in a open place with no shield, for better signals. Though, it's normal that GPS signals may be lost when car is passing by tunnel, big trees, or high buildings.

#### 2. Why no positioning info when car is online?

- Check GPS interval
- Only GPS signal being normal, there will be positioning info, make sure GPS signal is normal

### 3G Questions

#### Why 3G dial up failed?

- Check module status, and 3G setting.
- Check if the antenna is installed well, and how strong the 3G signal.
- Check SIM card status, make sure network and talk/sms services to support with enough fee.

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## Server Questions

### Why can't connect to servers when the MDVR is running?

- Make sure 3G/4G has dialed up successfully.
- Check if server config correct at local menu, such as IP, port, and ID being unique.
- Check if there's online vehicle to confirm if server is working normally.