

# 4CH HDD 720P MDVR User Manual



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*\*Specifications are subject to change without prior notice.*

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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

HDD MDVR 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 video compression and decompression, wireless transmission, GPS location make it to be a very powerful and perfect solution for vehicles.

## Features

\*4CH 720P HD recording, supports 2TB hard disk & 128GB SD card.

\*Optional 3G/4G, GPS, WIFI functions.

\*Built-in G-sensor.

\*Data protection when in sudden power off, optional inside-laid UPS battery.

\*Rich external ports, incl. 2x RS232, 2x RS485, 8x alarm in & 2x alarm out ports, VGA etc.

\*Auto image switch of car left/right turning, backing change.

\*Unique hard disk loading method for great convenience with patent rights.

\*Directly mouse controlled menu entering.

\*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/3G/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>	1-4CH 720p real-time AV recording both locally and remotely.
	PAL for example: support 4CH CIF/HD1/D1/720p @25fps.
	Support PAL; NTSC
	OSD overlay info incl. time, channel, vehicle ID, GPS, speed etc.
<b>Storage &amp; Playback</b>	Support 1x 2TB HDD & 1x 128GB 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 6x 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 Main profile, 100 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
	<b>Way of recording</b>	Simultaneous AV recording
<b>Image Processing &amp; Storage</b>	<b>Image format</b>	CIF/HD1/D1/720p optional
	<b>Standard of Video Stream</b>	ISO14496-10
	<b>Video code rate</b>	CIF: 1536Kbps ~ 128Kbps,
		HD1: 2048Kbps ~ 380Kbps,
		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>	Support 1x 2TB HDD & 1x 128GB SD storage
<b>Alarm</b>	<b>Alarm input</b>	8x Alarm input
	<b>Alarm output</b>	2x Alarm output, with 12V high electrical level
<b>Communication Port</b>	<b>RS232 port</b>	2x RS232
	<b>RS485 port</b>	2x RS485
	<b>RJ45 Port</b>	1x 10M/100M auto adjust Ethernet port
<b>Extendable Port</b>	<b>Intercom</b>	support
	<b>Speed pulse</b>	External connect
	<b>Others</b>	LED panel
<b>Wireless Modules</b>	<b>3G WCDMA</b>	optional
	<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>	internal laid
<b>Software</b>	<b>Vehicle Network Management System (VNMS / CMS)</b>	3G video monitoring and GPS tracking etc. PC/ Web/Android/iPhone/iPad platforms, multi-languages.
	<b>Vehicle Analysis Software (VAS)</b>	Video playback and analysis

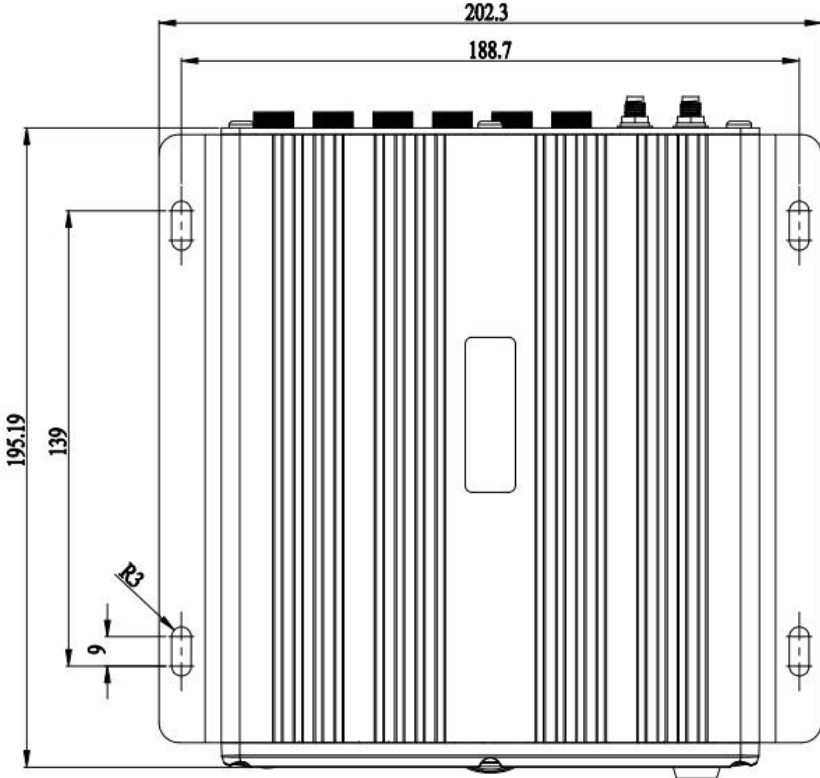
## Working Parameters

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>	1x HDD slots 1x SD slots	HDD (Hard Disk) of 2.5" SATA, 2TB max. SD card of current brands, 128GB max. SD card can be used for recording, upgrade etc.
<b>Working Temperature</b>	-20°C~+80°C	Temperature in well ventilated condition

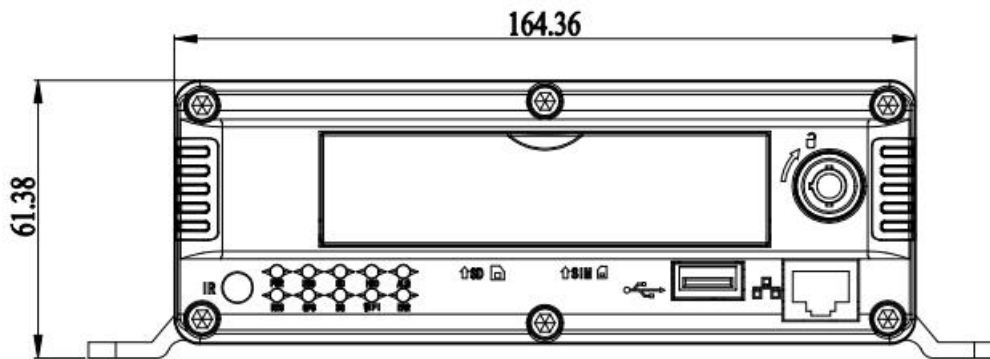
### 3. PRODUCT OUTLOOK



### Dimension



## Front-Panel Overview

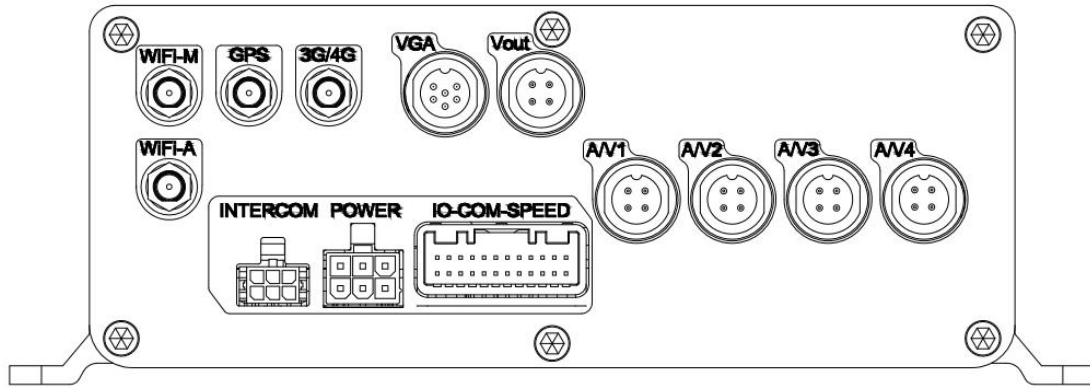


## Description of Front Ports & Indicator

TYPE	ITEM	DEFINITION
Panel Ports	SD	SD card slot
	SIM	3G/4G SIM card slot, for network connection
	RJ45	Ethernet port
	USB	For data copy, upgrade etc.
Indicator	PWR	Power indicator, lighted (blue) if power input is connected
	USB	Indicator of "USB device connection"
	SD	Indicator of "SD card", lighted (green) if SD card is detected, otherwise led is off.
	HDD	Indicator of HDD card", lighted (green) if HDD is reading data
	REC	Recording indicator, lighted (green) if device in recording, otherwise led is off.
	ALM	Alarm indicator, lighted (red) if alarm happens, otherwise led is off.
	GPS	GPS indicator, lighted (green) if GPS module is detected, otherwise led is off.
	3G	3G/4G indicator, flash (green) if module exists, constant lighted if server connection is successful, otherwise led is off.
	WIFI	WIFI indicator light (green) if module exists, constant lighted if server connection is successful, otherwise led is off.
	ERR	Error indicator, lighted (red) if disk meets error
IR	IR	Receiving signals from remote controller
e-Lock	LOCK	1. Lock for HDD/SD and SIM slots. 2. Lock as a switch to enable power on or power off. <b>Important:</b> Power off before removing HDD, otherwise it may be burned or cause data loss.

## Back-Panel Overview





### Camera Ports Define

A/V1,2,3,4 & Vout:



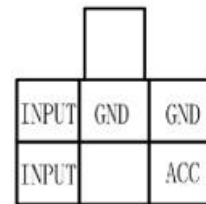
1.	12V
2.	GND
3.	AIN
4.	VIN

### IO & Power Define

#### IO-COM-SPEED

12V	SPEEDB	SPEEDA	GND	ALM-IN1	ALM-IN2	ALM-IN3	ALM-IN4	ALM-IN5	ALM-IN6	ALM-IN7	ALM-IN8
GND	ALM-OUT2	ALM-OUT1	GND	RS232_RX_N02	RS232_TX_N02	RS232_RX_N01	RS232_TX_N01	CANL	CANH	RS485B-N01	RS485A-N01

#### POWER








### Description of Back Panel

Panel Interface	Definition
A/V1,2,3,4	4 channels of AV inputs
Vout	AV outputs
VGA	For external VGA display
IO-COM-SPEED	8 channels alarm input & 2 channels output ports, 2 RS485 ports, 2 RS232 ports and pulse speed port
INTERCOM	For external intercom
POWER	Power input, DC8-36V
GPS	GPS antenna port
3G/4G	3G/4G antenna port
WIFI-M/WIFI-A	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	

### LOGIN



Two levels for login: ADMIN, USER

## MAIN MENU

Settings incl. "SYSTEM, RECORD, PLAYBACK, TOOLS, SERIAL, NET, ALARM, INFO etc."



## SYSTEM

Settings incl. "TIME, USER, POWER, TERMINAL"



## TIME



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

- Sync Type: incl. OFF/GPS/NTP
- Date: press number keys to enter
- Time: with format “hour/minute/second”. Press number keys to enter
- Time Out: incl. 60/120/300/600s. Upon power on, if no operation from remote controller within set time, the screen is back to live video.
- Timezone: the local time
- 

## USER



- Psw: incl. ON/OFF. It means to enable/disable password when login.

## Note

Only ADMIN has rights to change password; USER only can view with no rights of configuration.

Default password: for user 000000, for admin 111111

## POWER



- Power Mode: ignition/timing mode, press OK to show the options: 1) Ignition: power on/off controlled by car key switch 2) Timing: 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.
- Screen on: choose display way of booting image
- Screen Hold: if no remote controller operation after booting within the set time, then no video image to display.
- Power on: the power on time under “timing mode”
- Power off: the power off time under “timing mode”
-

## TERMINAL



- Dev ID.: device number, factory appointed, cannot change
- Phone: an unique ID recognized by server
- Plate: car plate number
- Terminal: user defined number for MDVR
- Serv Tel: service phone number
- Model No: model name of MDVR
- DriveLic: driver license number
- Auth Num: serial number of product at factory, usually unique
- Reminder: Except "Phone" is necessary, the rest settings are optional. Press OK to enter.
- 

## Record

Settings incl. " GENERAL, MAIN REC, SUB REC, TIMED REC, DISK MANAGE, MIRROR REC".



## GENERAL



- TV System: incl. PAL/NTSC, press OK to choose

- Record Mode: incl. power/timed. Press OK to choose. In “power mode”, recording will auto begins when device is power on. In “timed mode”, recording only happens in set time. For “alarm recording”, recording only happens when alarm appears.
- Audio Gain: voice volume (range 0-15), press OK and choose.
- ALM Pre-Rec: alarm recording begins earlier with set time before alarm is triggered.
- Alarm Delay: alarm recording is prolonged with set time after alarm is ended.
- ALM RecKeep: within set days the alarm files won’t be auto covered in storage.
- Camera type: incl. “analog/HD/mixed”. The MDVR can be connected 4x analog cameras, or 4x 720p HD camera, or 1x 720p with 3x analog cameras.
- Resolution: VAG output resolution, incl. 720\*576, 1024\*768, 1280\*720
- 

## MAIN REC



- Enable: ON means the channel recording is open; OFF means the channel recording is closed.
- RES: resolution incl. 720p, D1, HD1 and CIF. For example, in PAL system, 720p is 1208\*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
- QUAL: image quality (grade 1-8). Grade 1 being the best quality
- AUDIO: enable/disable audio recording with video recording
- 

## SUB REC



- RES: resolution incl. 720p, D1, HD1 and CIF. For example, in PAL system, 720p is 1208\*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
- QUAL: image quality (grade 1-8). Grade 1 being the best quality

•

## TIMED REC



- ALL: 7 days from Monday to Sunday.

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

## DISK MANAGE



- Record Type: incl. None/Main /Mirror/Sub.
- Priority: incl. Low/Mid/High. It decides which one is processed first when there're two disks with same record type.

## MIRROR REC



- Enable: ON means the channel recording is open; OFF means the channel recording is closed.
- RES: resolution incl. 720p, D1, HD1 and CIF. For example, in PAL system, 720p is 1208\*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
- QUAL: image quality (grade 1-8). Grade 1 being the best quality

- AUDIO: enable/disable audio recording with video recording
- 

## Playback

### RECORD SEARCH



- Calendar: green means normal recording, red means alarm recording, blue means no recording during the current day.
- Date: choose which date for search
- Start: starting time of recordings
- End: ending time of recordings
- Video type: incl. All/Normal/Alarm
- Disk: choose disk types, incl. All/SD1/SD2/HDD/USB

Move cursor to "Search" and press OK, to enter into search result page.

### SEARCH RESULT



Each file includes 4 channels video. For video loss case, recordings are still generated but playback screen is black with only date/time info.

## NET

Settings incl. "CENTER, LAN, 3G/4G, WIFI".





## CENTER



- Address: IP or domain name of center server
- Port: port number of center server
- FTP: IP address of ftp server
- Port: port number of ftp server
- Username: username of FTP login
- Password: password of FTP login
- Note: The "BB Center" is available for manufacture use only.
- 

## LAN



- Link Type: incl. Cabled/WIFI/External. The "External" will uses MDVR's internal net card as a router, which depends on module capability.

For rest parameters pls set accordingly.

## 3G/4G

- Enable: ON/OFF means to enable or disable 3G/4G connection.
  - Type: For overseas users, 3G SIM choose WCDMA, 4G SIM choose FDDLTE-W
- For the rest settings, pls check with your SIM card carrier accordingly.

## WIFI

- Enable: ON/OFF means to enable or disable WIFI connection.
- 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.

## FTP

## ALARM

Settings incl. "IO, SPEED, TEMP, G SENSOR, VOLTAGE".



## 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"
- Elec: 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.
- Record: enable or disable recording when there's alarms
- ALM Link: means "alarm linkage". OFF or user defined to an external device like alarm lamp etc.
- View: assign a channel for alarm live video with full screen image.
- HoldTime: be treated as an alarm when alarm length surpassing the set period.
- 

## 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.
- Unit: Km/h or MPH
- Mileage: the mileage calculated
- Parking: alarm be triggered if set time exceeds
- Low-ALM: alarm be triggered when speed surpassing limit value
- LowWarn: alarm be triggered when speed surpassing limit value
- HighWarn: alarm be triggered when speed surpassing limit value
- High-ALM: alarm be triggered when speed surpassing limit value
- Limit: the edge value for alarm trigger
- HoldTime: be treated as an alarm when alarm length surpassing the set period.
- Record: choose whether to activate alarm recording or not.
- ALM Link: means “alarm linkage”. OFF or user defined to an external device like alarm lamp etc.

## TEMP



- Unit: Celsius / Fahrenheit
- Low: alarm be triggered if temp lower than limit value
- High: alarm be triggered if temp higher than limit value
- Enable: choose whether to detect temperature alarm.
- Limit: the edge value for alarm trigger
- HoldTime: be treated as an alarm when alarm length surpassing the set period.
- Record: choose whether to activate alarm recording or not.
- ALM Link: means “alarm linkage”. OFF or user defined to an external device like alarm lamp etc

## G SENSOR



G-Sensor alarm is detected by changes from x, y and z axis. For first time of use, "Adjust" is required.

- Enable: enable or disable
- Limit: set the edge value for alarm triggering
- HoldTime: be treated as an alarm when alarm length surpassing the set period.
- Record: choose whether to activate alarm recording or not.
- ALM Link: means "alarm linkage". OFF or user defined to an external device like alarm lamp etc.
- 

## VOLTAGE



- Abnormal Off Delay: when voltage is abnormal, shutdown will be prolonged to set time.
- Loss: voltage lower than the set value will be considered as power failure
- Low: alarm be triggered if voltage is lower than threshold value
- High: alarm be triggered if voltage is higher than threshold value
- Enable: choose ON/OFF to enable or disable.
- Limit: edge value for alarm triggering
- HoldTime: be treated as an alarm when alarm length surpassing the set period.
- Record: choose whether to activate alarm recording or not.
- ALM Link: means "alarm linkage". OFF or user defined to an external device like alarm lamp etc.

## SERIAL

Settings incl." PTZ, SERIAL".



## PTZ



- Protocols: PELCO-D, PELCO-P optional
- Address code: address code of PTZ

## SERIAL



- RS232: usually it's for short distance transmission, link such as POS, Printer etc
- RS485: usually it's for long distance transmission, link PTZ camera
- If the default parameters don't work for the chosen outer device, user needs config the parameters manually.
- 

## Tools

Settings incl. "FORMAT, CONFIG, LOG SEARCH, IMAGE SEARCH".



**FORMAT**



Choose a disk, press OK and confirm.

After formatting is ok, FAT32 files will be pre-allocated in disk.

Note: If disk format is not FAT32, before first time of recording, MDVR will auto format the disk during

Pls backup files before formatting, or data will be erased.

**CONFIG**



- Export: export current configuration to SD card for bulk settings to multi MDVRs.
- Import: import configuration from SD card. It simplifies the configuration work at multi MDVRs.
- Save as default: save the current setting as default
- Restore to default: change current setting back to default setting.
- Restore to factory: recover all settings to factory default.
- 

**LOG SEARCH**



Choose a date, search and export the data to an external USB disk.

## IMAGE SEARCH



Choose a date, search and export the data to an external USB disk.

## Info

This section incl. ""SYSTEM INFO, DISK INFO, NETWORK INFO, COM INFO ", to show multi info about MDVR running status or performance.

## SYSTEM INFO



## DISK INFO



DISK INFO					
Disk	Total Size	Free Size	Status		
HAND:	1.19GB	1.06GB	Normal		
HDD:	0KB	0KB	No Exist		
SD1:	117.88GB	297MB	Normal		
SD2:	0KB	0KB	No Exist		
USB:	0KB	0KB	No Exist		
RBC	DISK	CODE	BUF	WRITE	LOST
MAIN		6.3	30%	3471.4	0.0
MIRROR		0.0	30%	0.0	0.0

60s RBC INFO(UNIT:KB)     

## NETWORK INFO

NETWORK INFO	
Net Conn: UNKNOW	Net Type:
Module Type: No Module	SIM Status: Not Exit
SIM Signal: 0	Dial IP:
Dial Status: NO DIAL	
WIFI Module: No Module	SSID:
Signal: 0	IP:
LAN IP: 192.168.0.198	
Center Server: 125.46.23.138:6608	<input type="button" value="PREV"/>
Server(NA): 125.46.23.138:6609	<input type="button" value="NEXT"/>

## COM INFO

COM INFO	
RS232-1	OFF
RS485-1	OFF
RS232-2	OFF
RS485-2	OFF

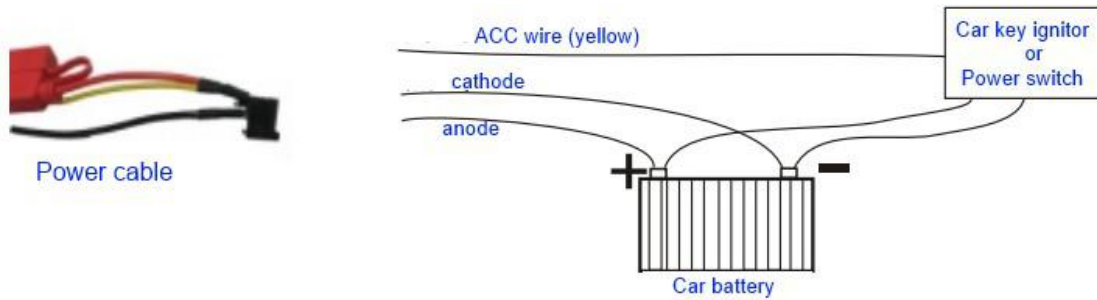
## 5. INSTALLATION

### 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.



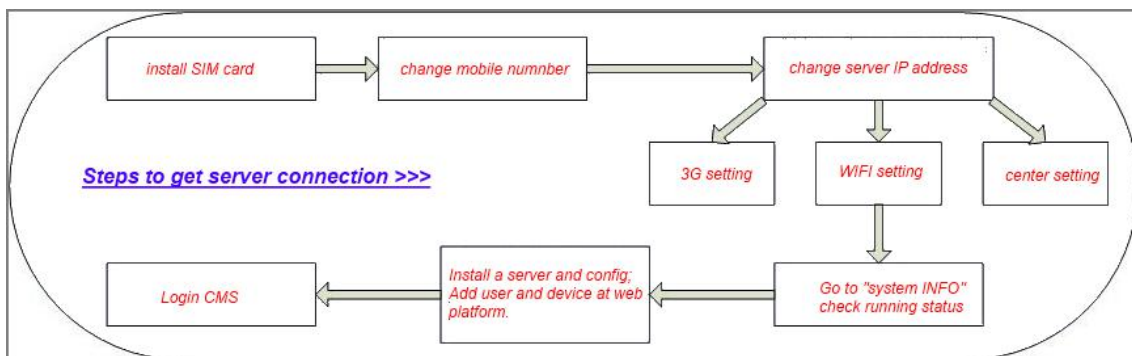
## Server Connection

**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.

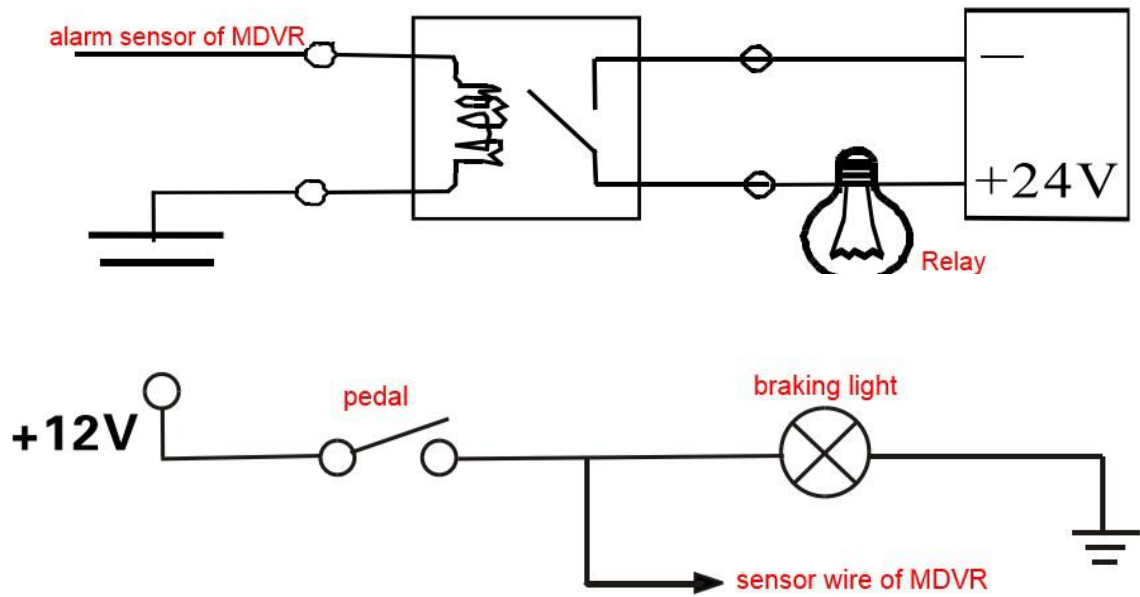


## Serial Port

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

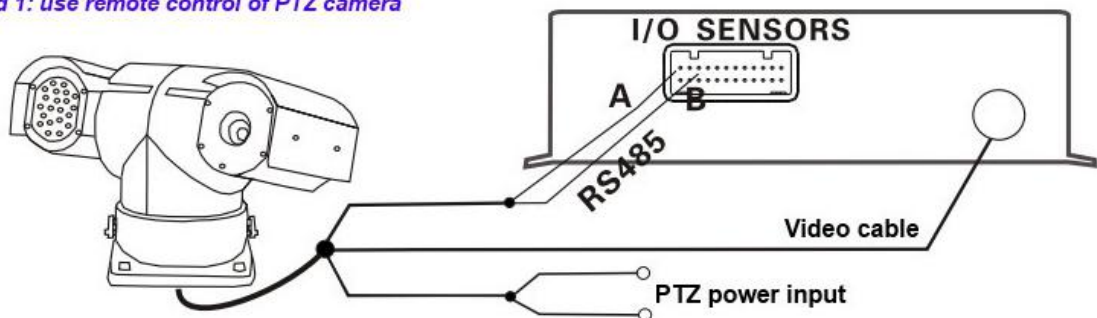
Step1, Select protocol according to PTZ camera

Step2, Select baud rate according to PTZ camera.

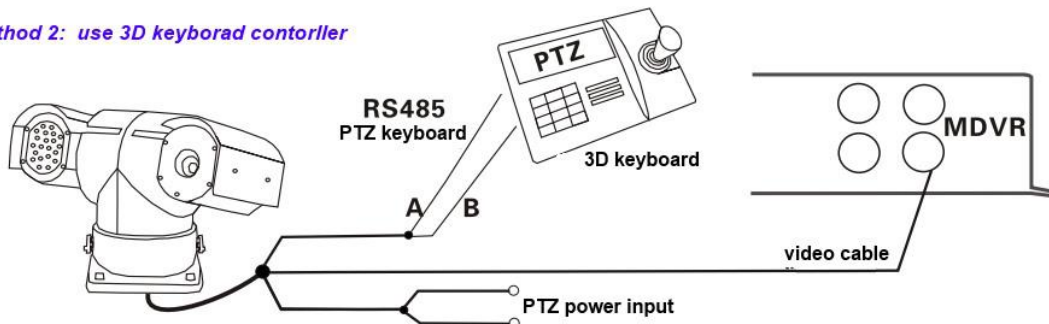
Step3, Select address code according to PTZ

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



## 6. 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.

## **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.