4CH SD 720P MDVR User Manual

Model: HZ-VN-2001-4S

EN

SHENZHEN COOINTECH TECHNOLOGY CO., LTD.

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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

HZ-VN-2001-4S 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

★ Embedded compact design, low power, high efficient H.264 compress, high reliability.
★ 4CH 720P HD recording, supports dual 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.
★ 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
Wireless Communications	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.
Recording	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.
Storage & Playback	Support 2x 128GB SD storage
	Support 4CH AV synchronous playback
	Support PC playback
	Support remote search and playback
	Support play, pause, slow, fast etc.
Black Box Function	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
System	**Language**	English
	Operation System	Linux
	Interface	Imaging menu operation interface (OSD Menu)
	Password Security	Two levels authority: admin, user
Video	**Video Input**	4 composite video input
	Video Output	1 composite video & 1 VGA outputs
	Video standard	PAL, NTSC
	Video compression	H.264 Main profile, 100 frame / sec
	Video Display	Single/Quad screen video
Audio	**Audio Input**	4 audio input
	Audio Output	1 audio output
	Audio Code	G726
	Way of recording	Simultaneous AV recording
Image Processing & Storage	**Image format**	CIF/HD1/D1/720p optional
	Standard of Video Stream	ISO14496-10
	Video code rate	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.
	Audio Code Rate	40KB/s
	Data Storage	2x 128GB SD Card
Alarm	**Alarm input**	4x Alarm input
	Alarm output	1x Alarm output, with 12V high electrical level
Communication Port	**RS232 port**	1x RS232
	RS485 port	1x RS485
Wireless Modules	**3G WCDMA**	optional
	4G LTE	optional, support TD-LTE/FDD-LTE
	WIFI	optional, 802.11b/g/n
	GPS	Optional, embedded module, show Geo-location, speed etc. Wireless upload function (Optional)
Acceleration sensor	**G-sensor**	internal laid
Extendable Port	**Intercom**	support
	Speed pulse	External connect
	Others	LED panel
Software	**Vehicle Network Management System (VNMS / CMS)**	3G video monitoring and GPS tracking etc. PC/ Web/Android/iPhone/iPad platforms, multi-languages.
	Vehicle Analysis Software (VAS)	Video playback and analysis

Working Parameters

Item	Parameter	Instruction
Power Input	＋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.
Power Output	12V	Voltage output 12V (+/-0.2V 0), current for max. 4A
ACC	≤6V	ACC Off
	≥7.5V	ACC On
Video Input Impedance	75Ω	Average 75Ω per video channel
Video Output Voltage	2V p-p	75Ω per each 2V p-p CVBS signal
I/O Interface	0-4V	Defined as low level alarm
	> 4V	Defined as high level alarm
SD Card Interface	2x SD slots	Max. 128GB per SD card SD can be used for recording, upgrade etc.
Working Temperature	-20°C~+80°C	Temperature in well ventilated condition

3. PRODUCT OUTLOOK

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.

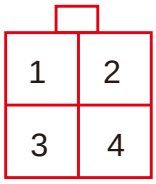
Back-Panel Overview

Camera Ports Define

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

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

IO & Power Define



1	GND
2	INPUT
3	ACC
4	NC

1	RS232-TX	2	RS232-RX
3	RS485-A	4	RS485-B
5	ALM-IN4	6	ALM-IN3
7	ALM-IN2	8	ALM-IN1
9	ALM-OUT2	10	ALM-OUT1
11	+12V	12	GND

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 & 1 channels output ports, 1 RS485 ports, 1 RS232 ports and pulse speed port
POWER	Power input, DC8-36V
GPS	GPS antenna port
3G/4G	3G/4G antenna port
WIFI	Dual WIFI antenna, one is main, one is aux

4. OPERATION

Remote Control

LOGIN	Press LOGIN to enter password of MDVR. *Note*: password cannot be reset or retrieved, make sure you remember the password.
	Power button
0-9 number keys	Switch to single channel view by pressing 1-9. It's also for volume and lightness setting.
INFO	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.
【OK】	Confirm
►/‖	Pause/Play when video playback.
PLAY	Start to play video
RETURN	Return to the previous menu
CANCEL	Cancel or backwards

- + symbols	Space delimiter when editing; Volume adjustment	
F1, F2, F3, F4	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 666666

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

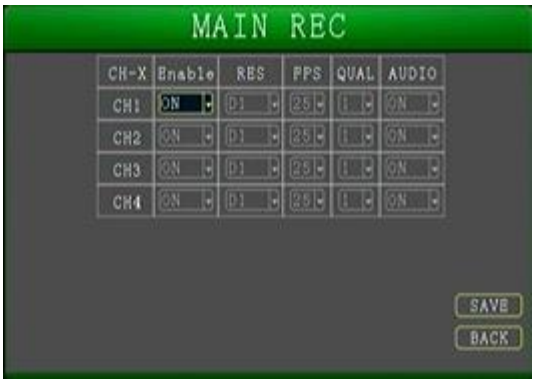
Settings incl. " GENERAL, MAIN REC, SUB REC, TIMED REC, DISK MANAGE, MIRROR REC”.

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.

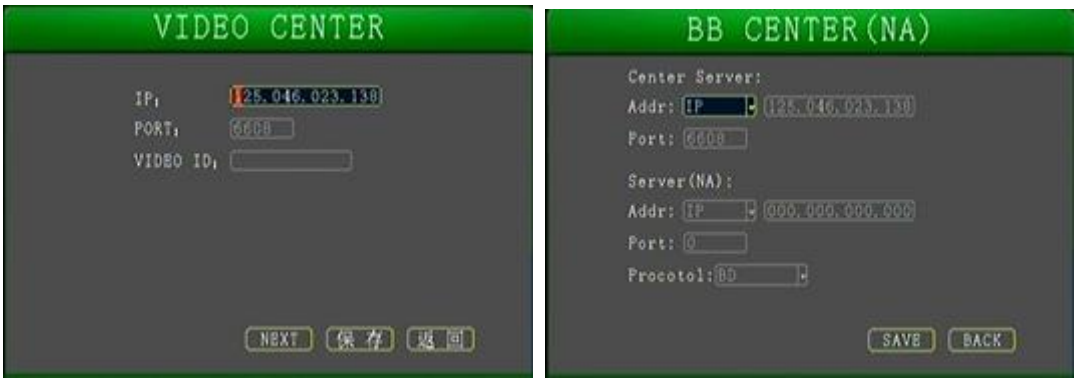
SEARCH RESULT

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".

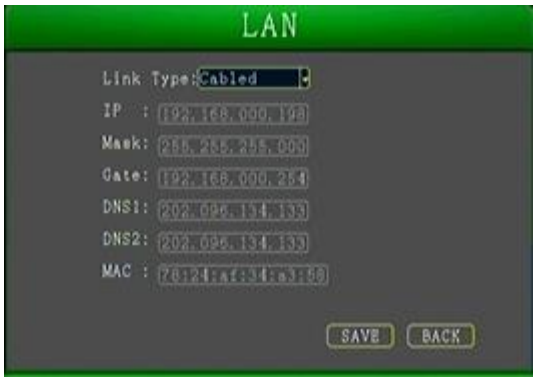
CENTER



- 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

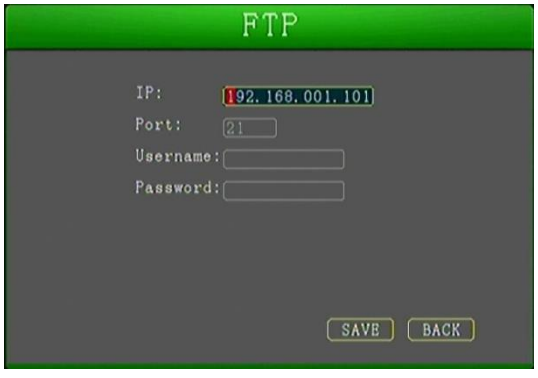
For the rest settings, pls check with your SIM card carrier accordingly.

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".

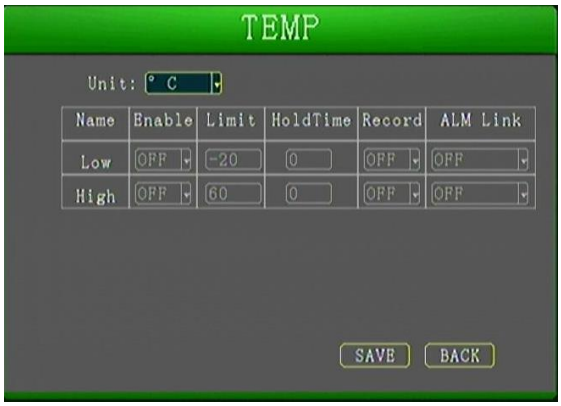
IO

- 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.

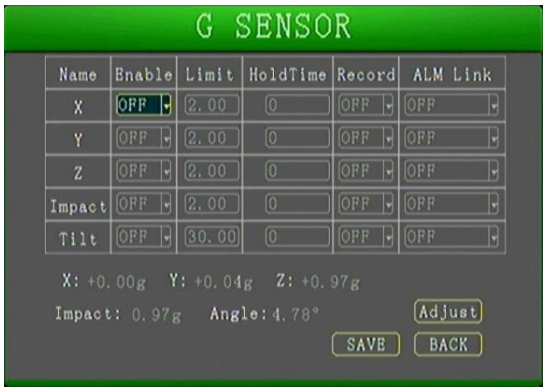
TEMP



- 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.

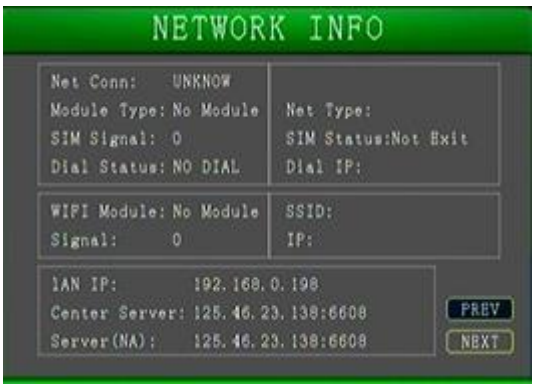
Info

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

NETWORK INFO



COM INFO

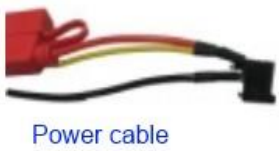
5. INSTALLATION

Power Cable Connection

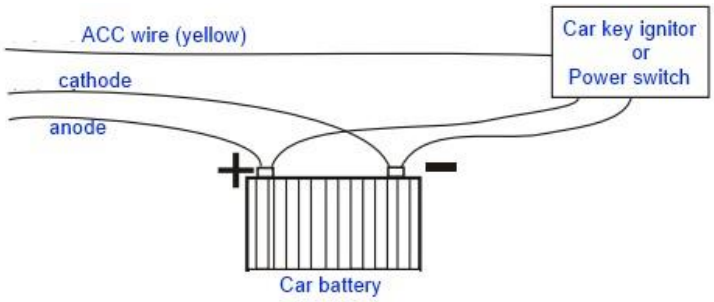
For field installation, the anode (red) and cathode (black) should directly connect to car battery.

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

After, lock the MDVR to power on.



Power cable



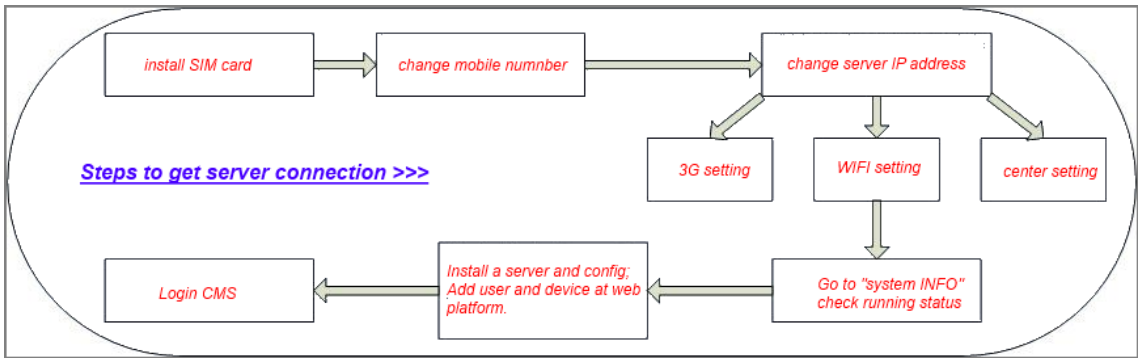
Server Connection

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.

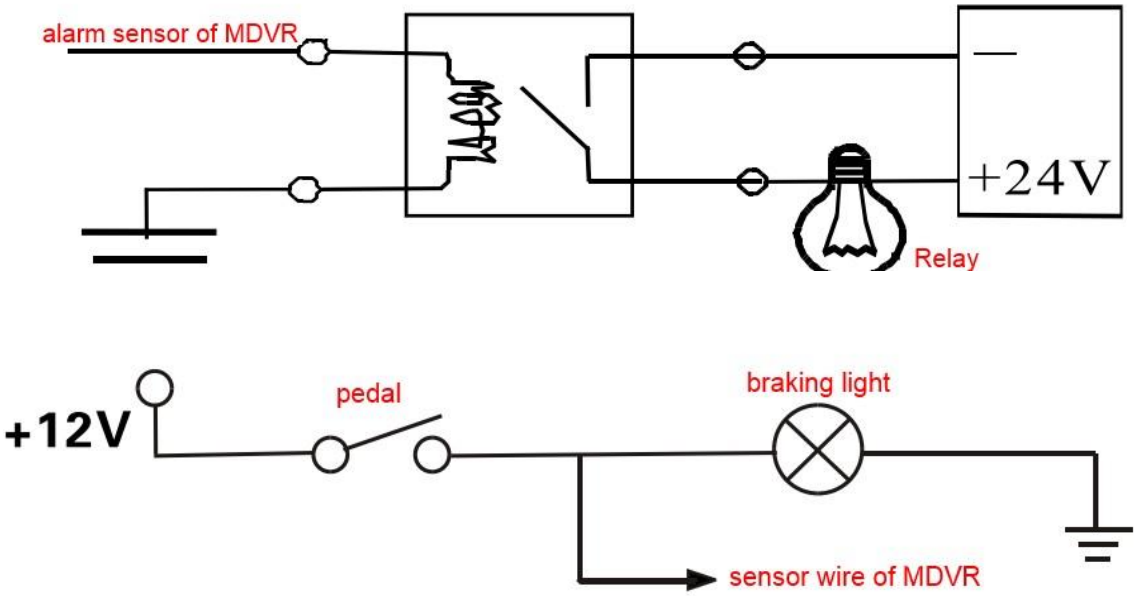


Serial Port

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.



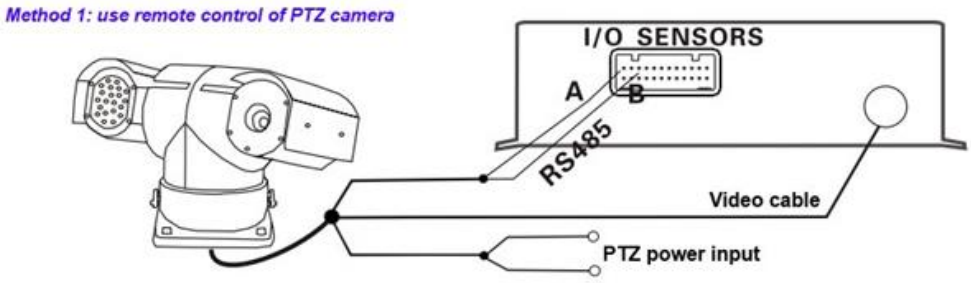
Connects to a PTZ Camera

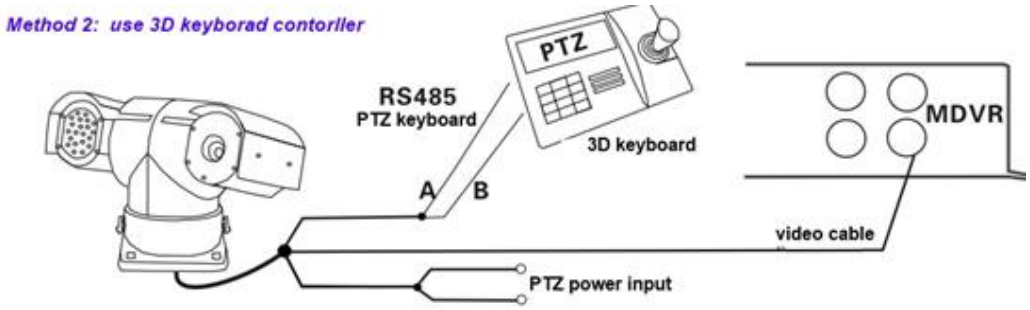
Step1, Select protocol according to PTZ camera

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).





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.