4CH Dual SD Card 720P MDVR User Manual

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*Specifications are subject to change without prior notice.

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IMPORTANT REMINDRE

1)Please use 12V/5A DC adapter for testing in office.

2)Please use SD card(range 16GB-128GB) which the speed is CLASS 10 or above.

3)Please in strict accordance with the provisions that connect Power Cable and ACC Testing Cable when install the device.

4)Please in strict accordance with the provisions that install GPS Antenna near the glass of car or place without metal cover. 3G/4G/WIFI Antenna can be hidden but can not in metal closed space.

5)Please do not use USB for normal recording. USB is only for exporting recording.

6)12V output can connect low-power external device only.

GUARANTEE & WARNINGS

1) Electrical Apparatus Safety

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

2) Transportation

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

3) Installation

Please be carefully to install the equipment in accordance with the requirements. 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 are not liable for any damage 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.

Please make sure that the connection circuit has a reliable ground wire connection.

Please open the package and ensure that all parts are included before installation.

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

1.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. It can support 4ch AHD or 8ch D1 optional, the advanced H.264 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 compress, high reliability.

★ 4CH 720P AHD recording , supports dual 128GB SD card.

★ Optional 3G/4G, GPS, WIFI functions.

★ Built-in G-sensor.

★ Data protection when in sudden power off, optional built-in UPS battery.

★ Rich external ports, incl. 1x RS232, 1x RS485, 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
Wireless Communications	Through WIIF/3G/4G network, multi functions are achieved such as: real-time monitoring, video download, 2-way audio, parameter config, remote upgrade, remote control etc.
Recording	1-4CH 720p or 1-8ch D1 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,
		Image quality: Grade 1(best quality) - 8(worst)
	Audio Code Rate	40KB/s
	Data Storage	2x 128GB SD Card
Alarm	**Alarm input**	4x Alarm input
	Alarm output	2x 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**	Built-in
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 to 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

2.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.

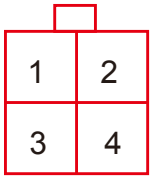
Back-Panel Overview

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

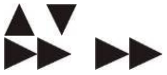
1	RS232-TX	2	RS232-RX
3	RS485-A	4	RS485-B
5	ALM-IN4	6	ALM-IN3
7	ALM-IN2	8	ALM-IN1
9	ALM-OUT2	10	ALM-OUT1
11	+12V	12	GND

Description of Back Panel

Panel Interface	Definition
A/V1,2,3,4	4 channels of AV inputs
AV-OUT	AV outputs
IO	4 channels alarm inputs & 1 channels output port, 1 RS485 port, 1 RS232 port 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

1.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. Also for volume and lightness setting.
INFO	A hot 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 The LEFT and RIGHT is also used to control the speed of player. The UP and DOWN is also used to switch 1-4, 5-8 image.
【OK】	Confirm Button
▶/‖	Pause/Play when video playback.
PLAY	Start to play video
RETURN	Return to the previous menu
CANCEL	Cancel or backwards
- + symbols	Volume adjustment
F1, F2, F3, F4	Reserved Button

LOGIN

There are two levels for login: ADMIN, USER

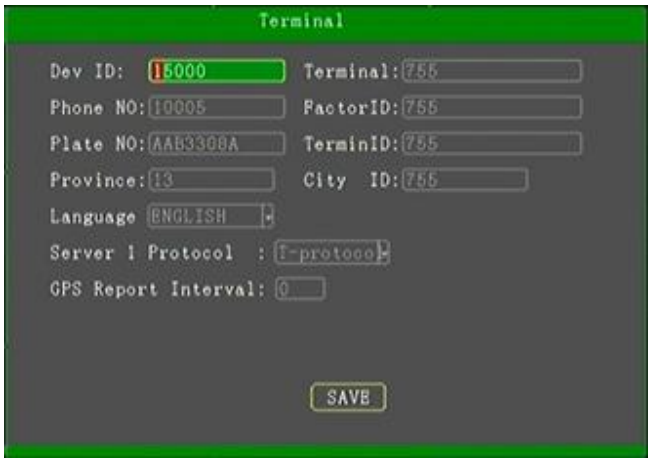
MAIN MENU

Settings incl. “Search, System, Record, Network, Alarm, Info”

SYSTEM

Settings incl. Terminal, Password, Time, Power, Parameter, Format.

Terminal



- Dev ID.: device number, factory appointed, cannot change
- Phone NO: an unique ID recognized by server
- Plate NO: car plate number
- Server 1 Protocol: choose T-protocol

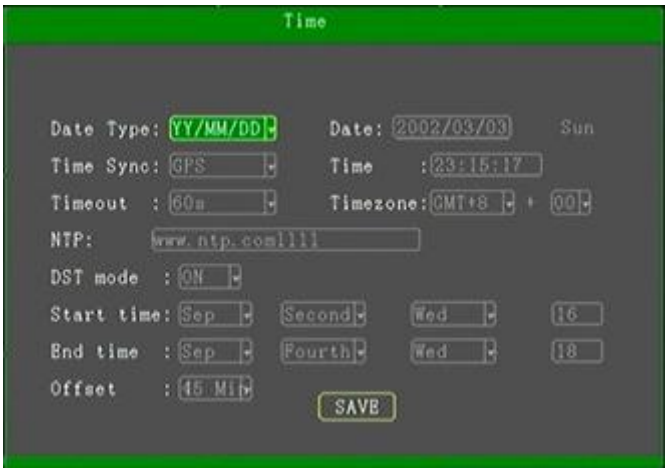
Password

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

Note

Only ADMIN can change password; USER can only view. The password must 6 digit numbers and cannot be same. Default password for admin is 111111, user is 000000

Time



- Date Type: incl. YY/MM/DD, M/D/YY, DD/MM/YY. Press OK to choose.
- Date: press number keys to enter
- Time: format “hour/minute/second”. Press number keys to enter
- Time Sync: OFF/GPS/NTP for choice according to need
- Time Out: incl. 60/120/300/600s. The screen will auto back to booting image if no operation of remote controller within the set time.
- NTP: Network Time Protocol, auto adjust time via internet
- DST mode: Daylight Saving Time

Power Management

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

  Acc: power on/off controlled by car key switch

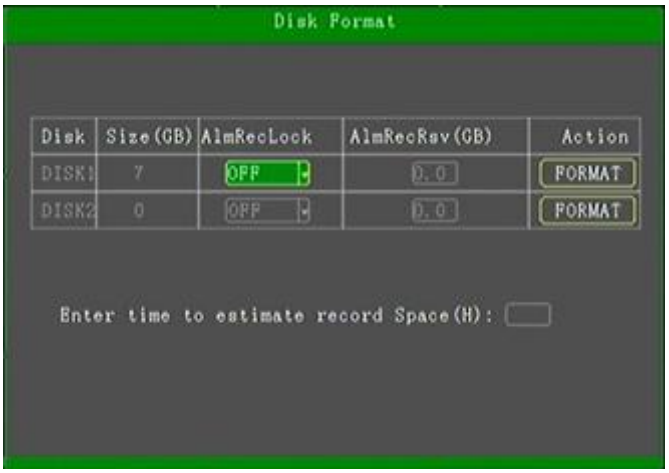
  Timed mode: power on/off controlled by the set time.
- Delay off: only effected under ignition mode. After car key is closed, device will continue working till set delay time comes an end, after, device is back to standby status.
- ScreenTime: No video or image if no operation of remote controller within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

- Record: choose which channel for recording for "RecDelay".

Parameter Management

- Import: to import current parameter settings to SD card, for batch applying
- Export: to export external parameter settings from SD card, for batch applying
- Save setting: Save current setting as future default.
- Factory default: Restore current setting to factory default.
- Recover setting: Restore current setting to saved default.

Disk Format



DISK1 is SD card; DISK2 is hard disk.

IMPORTANT: Pls do consider data backup before operation because all data will be wiped off after format.

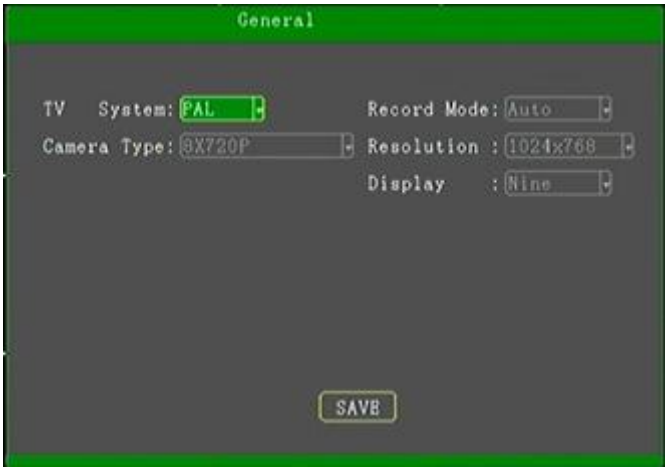
Auto disk format upon booting: Usually if the inserted disk is brand new, or it's not MDVR's recognized FAT32 type, MDVR will auto format the disk during power on process which may take up to 10min depending on hard disk size. Once format is complete, a red dot recording lights will appear on screen.

The MDVR may not recognize the format complete from computer (PC).

RECORD

Settings incl. “General, Main Rec, Sub Rec, Timed Rec, Storage, OSD”.

General

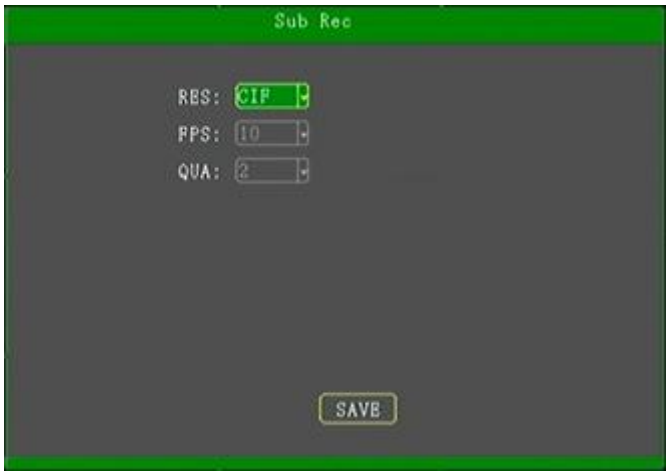


- TV System: incl. PAL/NTSC, press OK to choose
- Record Mode: incl. auto/time/alarm. Press OK to choose. In “auto mode”, recording will auto begins when device is power on. In “time mode”, recording only happens in set time. For “alarm mode”, recording only happens when alarm appears.
- Camera Type: allows max 4x 1080P/720P/D1 camera input
- Resolution: VAG output, resolution supports 720*576, 1024*768, 1280*720, 1920*1080
- Display: optional 4/5/6/9 frames of view.

Main Rec

- EN: 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
- FLIP: options incl. mirror(left-right), flip(up-down), or mirror/flip mixed mode.
- QuickSet: one click quick setting for all channels.

Sub Rec



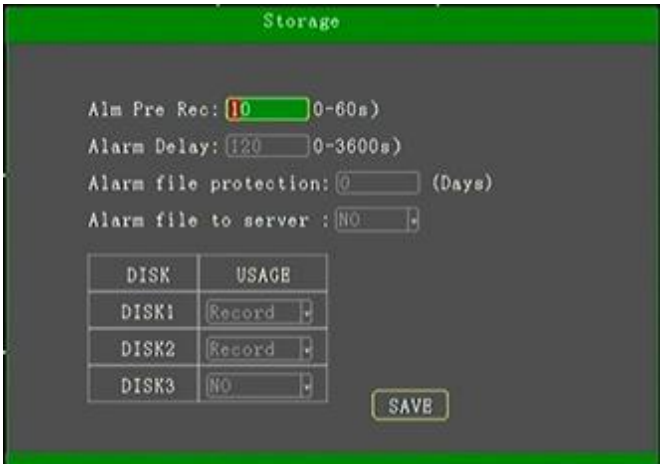
- RES: resolution incl. D1, HD1 and CIF. For example, in PAL system, D1 is 704*576, HD1 is 704*288; CIF is 352*288.
- FPS: the frames taken per second. PAL range 1-25fps, NTSC range 1-30fps
- QUA: image quality (grade 1-7). Grade 1 being the best quality

Timed Record

- 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.

Storage



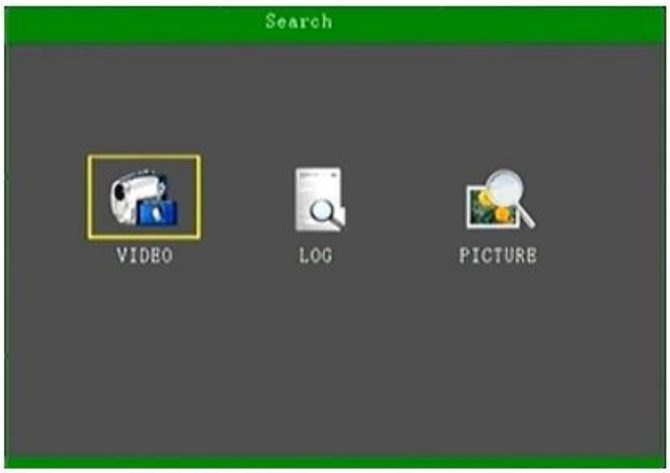
- Alm Pre Rec: the time for recoding before alarm is triggered
- Alarm Delay: the time for recoding after alarm is aborted
- Alarm file protection: optional 3-45 days, files within protecting period won't be auto covered.
- Alarm file to server: ways incl. ”NO(turn off), CMS, FTP”.
- Usage: choose use of chosen disk incl. “NO(turn off), Record, Mirror, Backup”

OSD

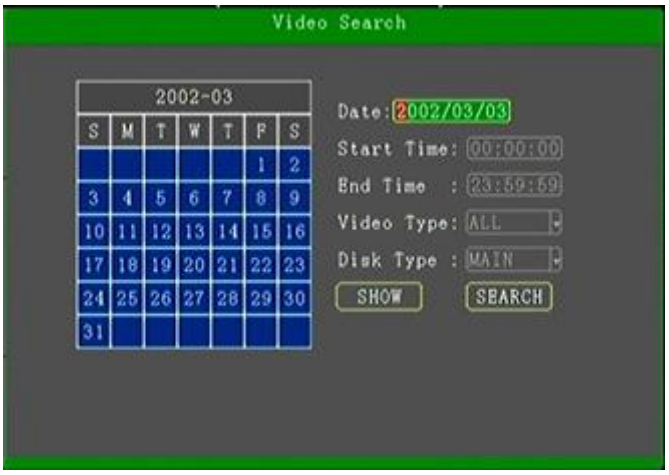
- Enable: ON to enable and OFF to disable info to show on recordings.
- X/Y pixel: not necessary to set, except when output resolution mismatch the terminal screen resolution.

SEARCH

Settings incl. “Video, Log, Picture”.



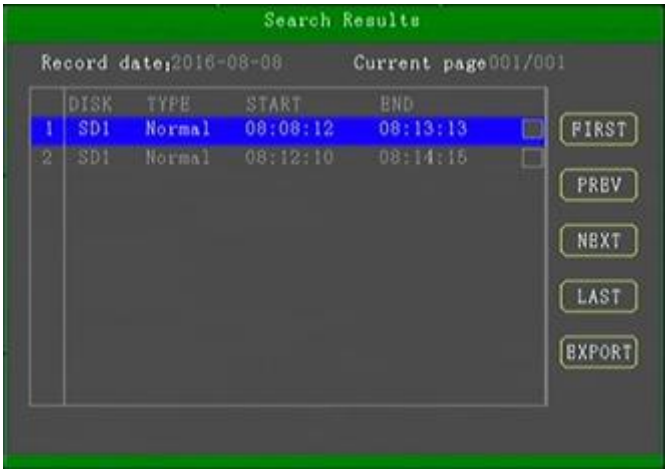
Video Search



- Calendar: green means normal recording, red means alarm recording, blue means no recording on selected date.
- Date: date of recordings
- Start time: starting time of recordings
- End time: ending time of recordings
- Video type: incl. All/Alarm
- Disk type: search recordings of selected disk, incl. main/mirror(disk being used for mirror recording)/spare(external storage from usb port)

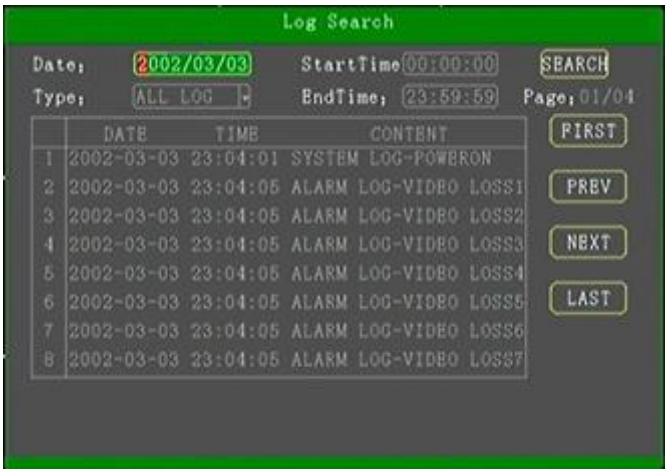
Move cursor to “Search” and press OK, to enter into search result page.

Search Results



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

Log Search



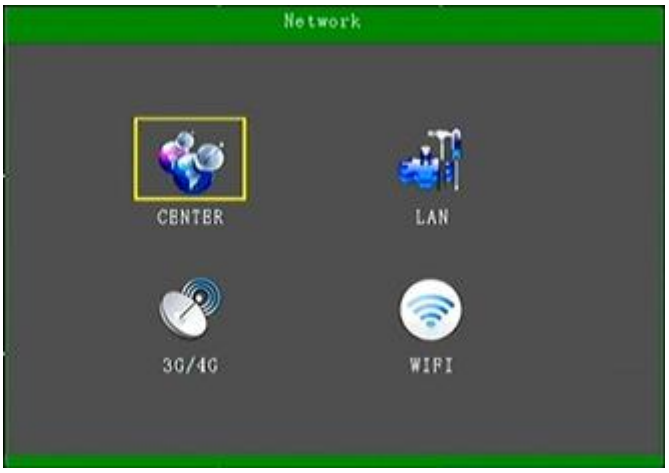
To check running status from results based on parameters selected.

Picture Search

To check pictures which are saved into disk based on certain parameter setting. The picture can also be "exported" to an external u-disk.

Network

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



Center

- Center 1: parameters for connecting server
- Center 2: parameters for connecting certain server (*reserved)
- Port: port number for connecting server
- Upgrade: parameters for remote upgrading local device.

  IP: IP address of ftp server

  Port: port number of ftp server

  User/Password: login info of ftp server

LAN

- Type: way of connection incl. Local/WIFI/Peripheral(external way).

  Cabled: connection via RJ45 network port

  WIFI: connection via outer laid WIFI

  External: connection by using MDVR's internal net card as router, which depends on module capability.
- IP: IP address of MDVR.

For rest parameters pls set accordingly.

3G/4G

- 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.

WIFI

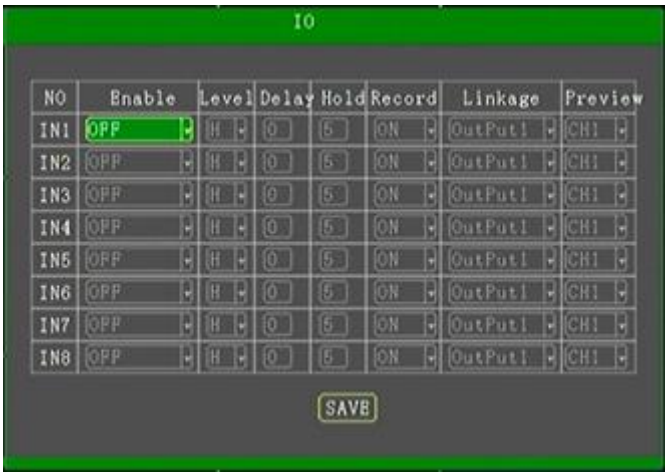
- Enable: ON/OFF means to enable or disable WIFI connection.
- AuthMode: the authority type, incl. Open/Share/WPA/WAP-PSK to choose accordingly.
- EncType: the encryption type incl. NONE/WEP/TKIP/AES to choose accordingly.
- IP: here the IP should not be in a same segment with the IP at “LAN set”. E.g.,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

For rest parameters pls set accordingly.

ALARM

Settings incl." IO, Speed, G-Sensor, VD Detect, Voltage, Serial, PTZ "**.**

IO



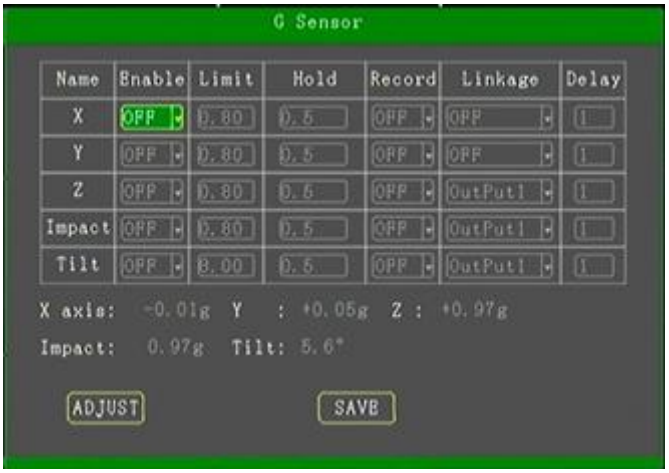
- Enable: incl. “OFF, Emergency, Front Door, Middle Door, Back Door, Driver Door, Other Door, Near Beam, Distant Beam, Right Beam, Left Beam, Braking, Reverse, Fog Lamp, Position Light, Horn, Air Conditioner, Neutral Gear, Retarder, ABS, Heater, Clutch, Door Sensor, Smoke Sensor, Customize”
- Level: 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.
- Hold: be treated as an alarm when alarm length surpassing the set period.
- Record: enable or disable recording when there’s alarms
- Linkage: means ”alarm linkage”. OFF or user defined to an external device like alarm lamp etc.
- Preview: assign a channel for alarm live video with full screen image.

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.
- L-ALM: alarm be triggered when speed surpassing limit value
- L-Warn: alarm be triggered when speed surpassing limit value
- H-Warn: alarm be triggered when speed surpassing limit value
- H-ALM: alarm be triggered when speed surpassing limit value

- Limit: the edge value for alarm trigger
- Hold: be treated as an alarm when alarm length surpassing the set period.
- Record: choose whether to activate alarm recording or not.
- Linkage: means ”alarm linkage”. OFF or user defined to an external device like alarm lamp etc.

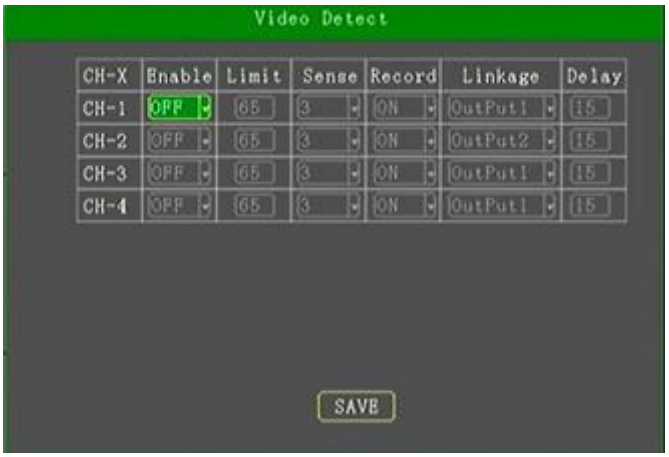
G-Sensor



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
- Hold: be treated as an alarm when alarm length surpassing the set period.
- Record: choose whether to activate alarm recording or not.
- Linkage: means "alarm linkage”. OFF or user defined to an external device like alarm lamp etc.
- Delay: if triggered event is longer than preset time, then it's considered as an alarm.
- Adjust: reset X Y Z value to normal reaction.

Video Detect



- Enable: the enable or disable video detection.
- Limit: alarm threshold
- Sense: 3 levels to choose about sensitivity
- Record: whether to need recording when alarm appears

- Linkage: connection of external alarm device.
- Delay: if triggered event is longer than preset time, then it's considered as an alarm.

Voltage

- L-V: alarm be triggered if voltage is lower than threshold value
- H-V: alarm be triggered if voltage is higher than threshold value
- Limit: edge value for alarm triggering
- Hold: 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.
- Delay: if triggered event is longer than preset time, then it's considered as an alarm.

Serial

- COM1/COM3: the RS232, usually for short distance transmission with POS, Printer etc
- COM2/COM4: 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.

PTZ

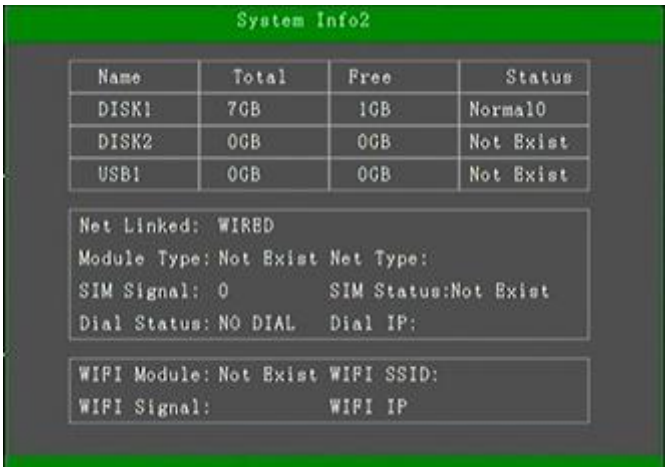
- Protocols: optional PELCO-D, PELCO-P
- AddressNum: address code of PTZ

Press F2 of remote controller for PTZ control.

INFO

System Info

Press INFO key to show running status or performance.



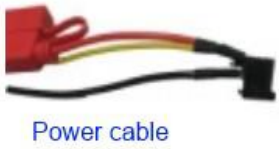
1. INSTALLATION

Power Cable Connection

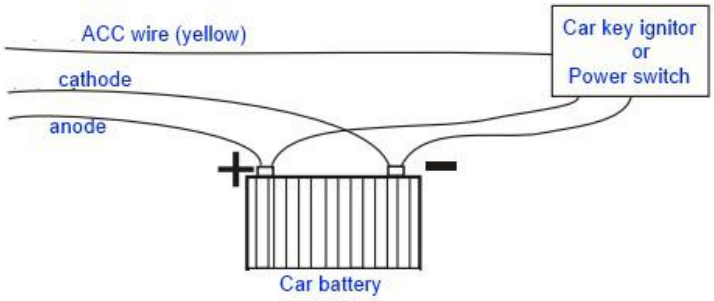
For field installation, the anode (red) and cathode (black) should directly connect to car battery.

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



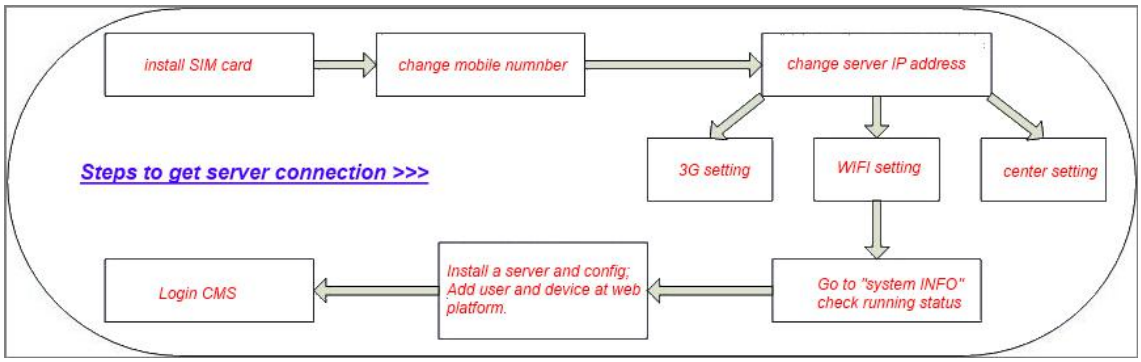
Server Connection

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.

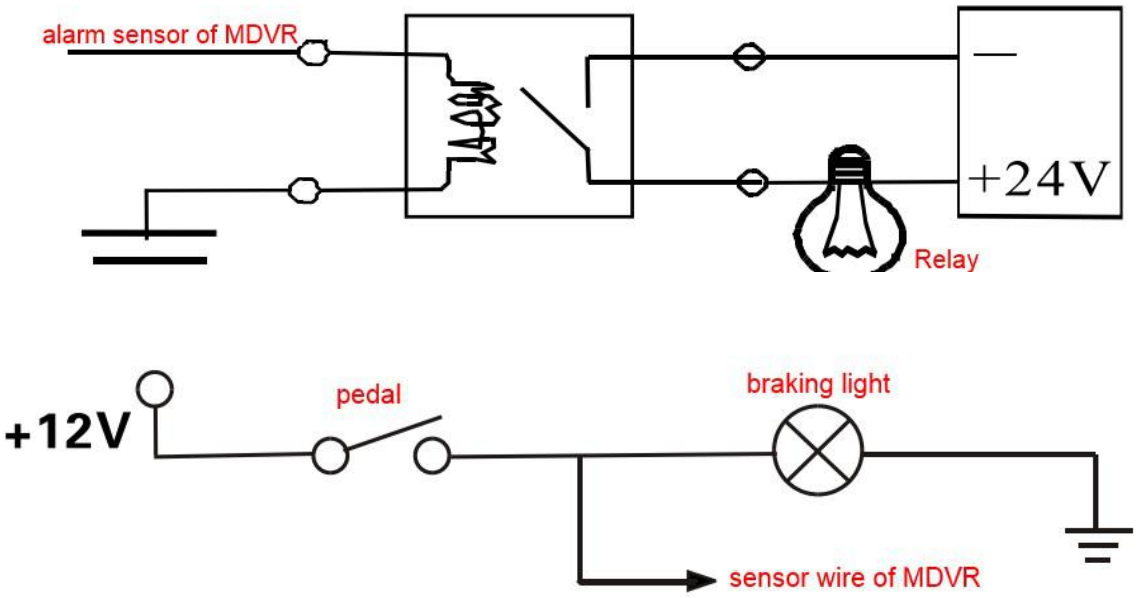


Serial Port

The MDVR is offered with 4x alarm input and 1x 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.



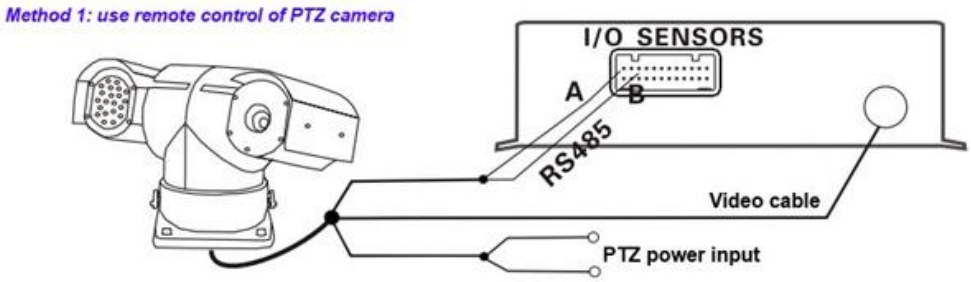
Connects to a PTZ Camera

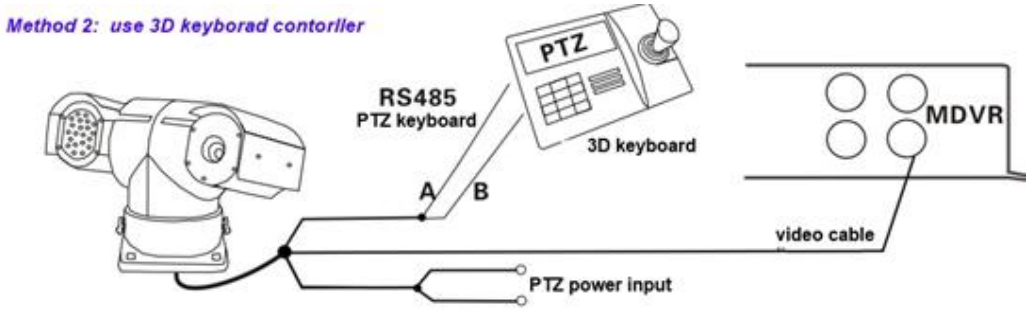
Step1, Select protocol according to PTZ camera

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).





2. 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.