

HDD MOBILE DVR MANUAL



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1 Cautions

Before you install and use, be sure to read instructions carefully so that you can properly use and protect your machines. The preview parts of this manual are information about caution and installation, please read first.

➤ Cautions

- To protect your interests, please read this manual carefully before installation.
- This product is a device used in car,which should not be put in rainy or humid environment for fear of the short circuit or electrical shock.
- Any solid or liquid enters the machine, please cut off the power immediately and fetch the qualified technicians to have a check before re-starting.
- This product is an high-tech device, almost no original part of which can be repaired by users themselves. Please do ask qualified technicians to examine or contact distributor when something goes wrong.
- The user’s initial password is 111111.

➤ Installation environment

- The MDVR’s working power range is DC7V--DC36V, please confirm local voltage before using.
- You’d better cut off the power completely if you do not want to use the machine for a long time
- Please choose a proper install location,and avoid using under water, moisture, dust and other harsh environments.
- Do not install the machine in the locations where exist direct sunlight, excessive dust, mechanical vibration and shock,either where near the heat source like radiator,air ducts,etc.
- Placement and use in 0℃-40℃ is acceptable.
- Please install the product in a well-ventilated place,and keep the air vents unblocked.
- Do not disassemble the product at will.

2 Product specification

MDVR is a cost-effective, functional and scalability device designed for video surveillance and remote monitoring vehicles of car, train, bus, medical treatment, logistics, etc. It uses a high-speed processor, an embedded Linux platform and combines the most advanced H.264 video compression/decompression technology in IT field. With SD memory card and hard disk as storage medium, the MDVR enables 4-CH CIF/HD1/ D1 video format recording and vehicle information recording. The MDVR may look simple in its exterior design but it provides powerful features such as anti-vibration, simple installation, flexibility of use and high reliability, etc.

MDVR Specifications are as below:

Items	Parameters	Performance index
System	Language	Chinese/English
	Operation Menu	Graphical menu interface(OSD menu)
	Password	User password and Admin password
Video	Video input	4-CH composite video input
	Video output	2-CH composite video output
	Video display	1 channel/4 channel
	Video signal	PAL/NTSC
	Video compression	H.264 Main profile, 75f at D1/s, 300f at CIF/s
Audio	Audio input	4-CH audio input
	Audio output	1-CH audio output
	Recording mode	Audio & video sync recording
Image processing & storage	Video format	AHD/D1 optional
	Video stream standard	ISO14496-10
	Video bitrate	1080N: 607kbps, 911kbps, 1214kbps, 1518kbps, 1822kbps, 2429kbps; 720P: 607kbps, 911kbps, 1214kbps, 1518kbps, 1822kbps, 2429kbps; 960H: 531kbps, 607kbps, 911kbps, 1214kbps, 1822kbps, 2429kbps;

		D1: 303kbps, 455kbps, 607kbps, 911kbps, 1214kbps, 1518kbps; HD1: 228kbps, 303kbps, 456kbps, 607kbps, 911kbps, 1214kbps; CIF: 38kbps, 114kbps, 228kbps, 303kbps, 456kbps, 607kbps
	Audio bitrate	8KB/s
	Storage	Supports two 256GB SD cards/one 2.5 " Max 2T HDD
Alarm	Alarm input	4 alarm input, below 4V is low level alarm, above 4V is high level alarm
	Alarm output	2 alarm output, output high level of 12V & 5V
Communication interface	RS485 interface	Supports one RS485 interface
	RS232 interface	Supports one RS232 interface
Acceleration sensor	Sensor interface	Built in acceleration G-sensor
Software	Analysis of PC playback	Playbacks recording on PC and analyzes the vehicle recording info
Software upgrade	Supports USB flash disk to upgrade	

Table 1: MDVR specifications

MDVR electrical specifications are as below:

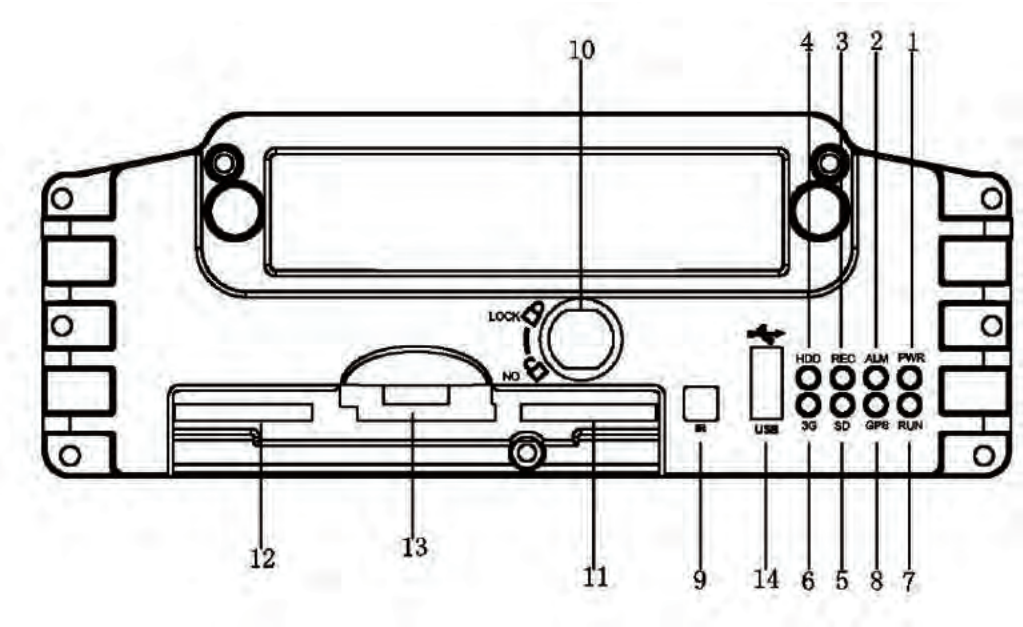
Items	Parameters	Specifications
Power input	DC7—DC36V	+7V~+36V, when long-term below 8V or long-term above 36V, auto power off, enter protective mode
Power output	DC12V	12V（+/-0.2V）, Max: 2A
Vehicle key signal	≤ 4V	OFF
	≥5V	ON
Video input impedance	75Ω	75Ω for each video input impedance
Video output Volt	2Vp-p	outputs 2Vp-p CVBS analog signal, display device input needs 75Ω impedance to fit.
I/O interface	0—4V	Low level alarm
	Above 4V	High level alarm

SD card interface	2 SD cards	Supports Max 256GB, SD card for storage, recording & system upgrade
Working temp	-40℃～80℃	Under well ventilated environment

Table 2: MDVR electrical specifications

3 Front /back panel and DVR installation instruction

3.1 Front panel interface



Picture 1: Front panel

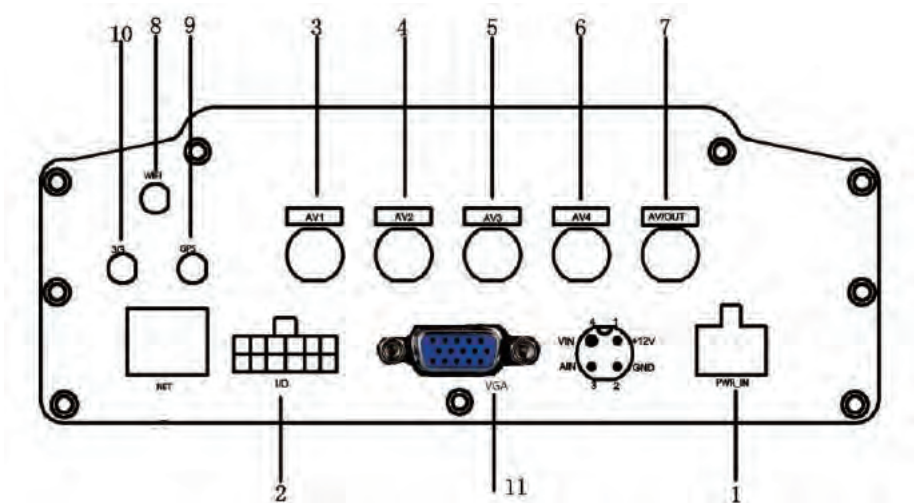
Front Panel definition is as below:

Interface	Serial number	Silk print of panel	Description
Indicator (LED)	1	PWR	Power LED, light on when power works normally
	2	ARM	Alarm LED, light on when device works

			abnormally
	3	REC	Recording LED, light on when recording
	4	HDD	Light on when 2.5 " HDD is working
	5	SD	Light on when SD card exists
	6	3G	Light on when 3G network connected
	7	RUN	Light on when single-chip microcomputer runs normally
	8	GPS	GPS signal LED, light on when GPS exists and works effectively.
IR Remote Control Receiver	9	IR	Infrared receiver module used to receive remote control signals
LOCK	10	LOCK<-> ON	Switch lock, remove the card(Note: remove the HDD on "ON" position)
SIM	11	SIM	3G SIM card
SD1	12	SD1	The first SD card, commonly used
SD2	13	SD2	The second SD card, USB transfers to SD storage
USB	14	USB	USB port to plug in Mouse

Table 3: Front Panel definition drawing

3.2 Back panel interface



Picture 2: Back panel interface

Back panel interface definition is as below:

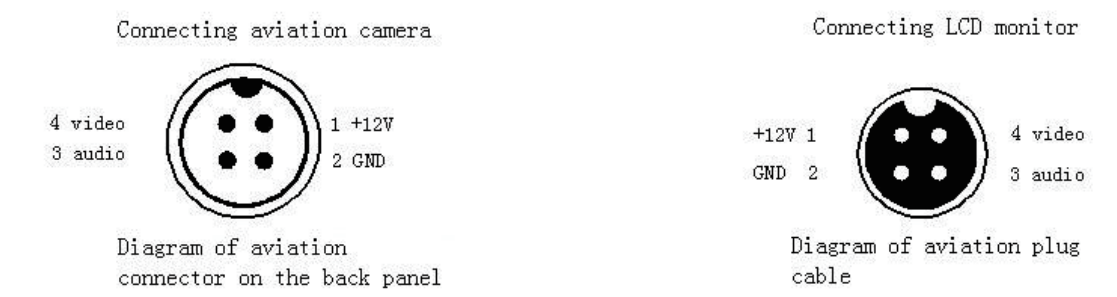
Name	Serial number	Machine silkprint	Description
Power interface	1	PWR_IN	Power input interface, DC7V~DC36V
Alarm I/O interface	2	I/O	Input vehicle speed pulse signal, differential input; RS232 and RS485 serial data communication interface; alarm interface; 12V and 5V power output interface
Video and audio input interface	3	AV1	Pin 1 is VDD(+12V), pin 2 is GND,pin 3 is audio input, pin 4 is video input.
	4	AV2	
	5	AV3	
	6	AV4	
Video output & audio output interface	7	V_Out	Video analog output interface, connects display device like CVBS TV
		A_Out	Audio output

Antenna	8	WIFI	WIFI,GPS,3G antenna interface
	9	GPS	
	10	3G	
Network	11	VGA	VGA connection

Table 4: Back panel interface definition

3.3 Wiring instruction

3.3.1 AV input cable



Picture 3: Diagram of AV input cable

Wire	Serial number	Mark on the cable end
12V power supply for video camera	1	12V
Ground wire	2	GND
Audio pickup input wire	3	A-IN
Video input wire	4	V-IN

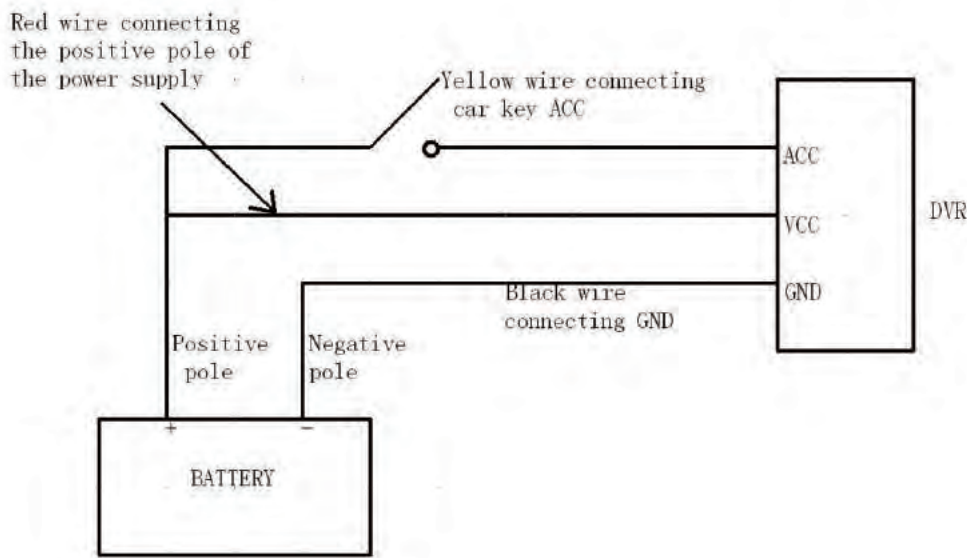
Table 5

3.3.2 Power Cable



Picture 4: Power input cable picture

Power cable as picture 4, one end is 6pin white plug, it connects the 6pin white socket on device back panel. The red and black cables connect the vehicle’s battery directly. Red cable to positive and black cable to negative. The yellow connects ignition cable. The device starts automatically when turn on the vehicle key and delays to close after turn off the vehicle key. Yellow wire connects the gear from which vehicle key opens all dashboard(the gear before which the car motor starts up).



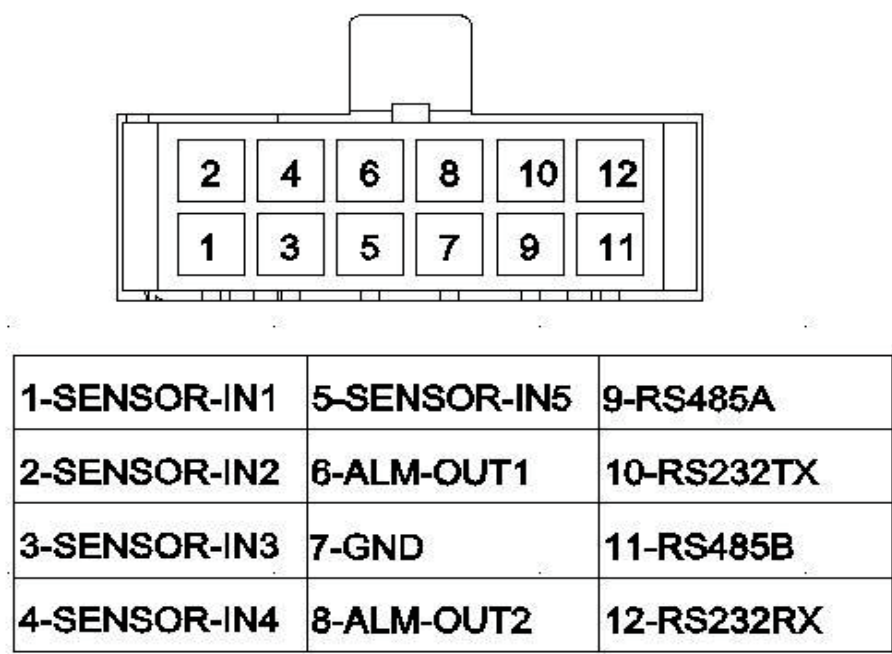
Picture 5: Installation wiring diagram

Notes:

- 1) Before connecting, confirm the voltage is between DC 7V—36V or else, if over this range, the device will be burnt.
- 2) After connecting the cables, ensure that power cables are insulated to prevent short circuiting and burning out of the battery.

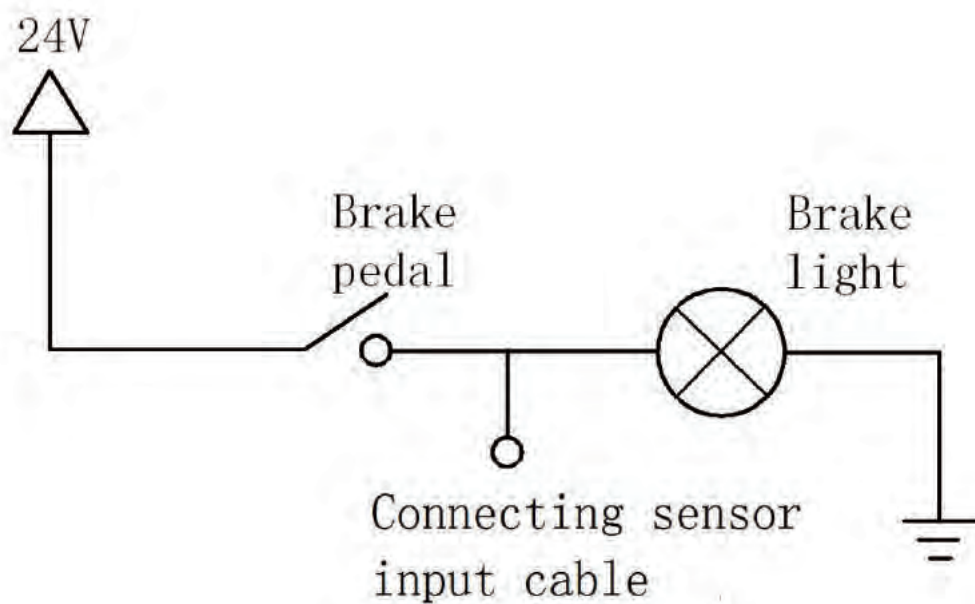
- 3) The yellow cable must be connected to the vehicle ignition cable, otherwise the device will not be able to execute the delayed shutdown and the final moment of the video will be lost .
- 4) Note: The vehicle mounted machine must be connected directly to the positive and negative terminals of the battery. Do not use bond strap for grounding as it will produce negative pulses that would interfere the device's normal operation. The wire diameter must be above 1.5mm.

3.3.3 Alarm I/O



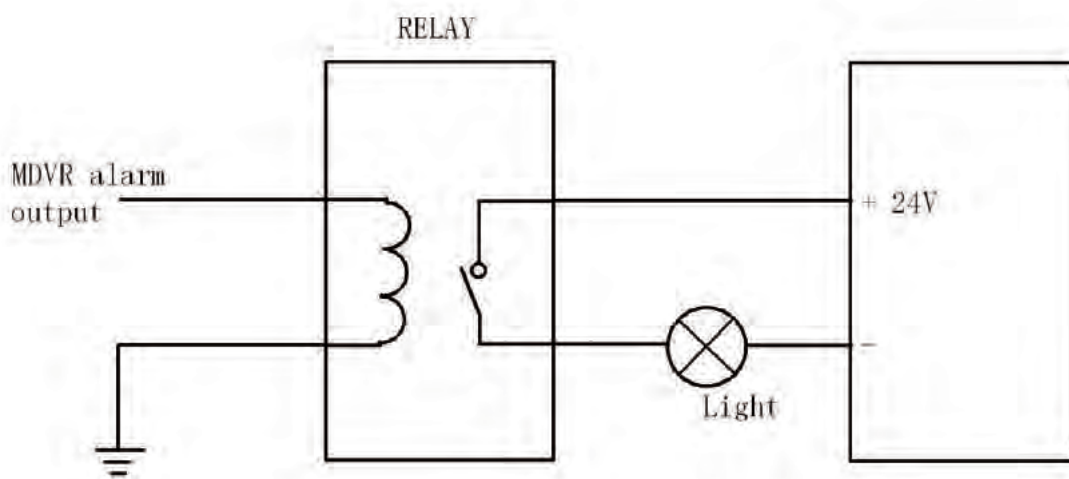
Picture 6: Definition of alarm connector

The device has an interface with 4 alarm inputs and 2 alarm outputs. Various state of alarm level can be detected while the vehicle is in motion, such as braking, steering horn, etc. The principle diagram of brake detection is as shown below. When the brake pedal is depressed, MDVR is able to detect the high level or the low level otherwise.



Picture 7: The principle diagram of the brake detection

All the alarm outputs are level output. They have a maximum current capability of 200MA. If you want to drive a device with higher current requirement, you must connect external relay. Shown below is the alarm output photoelectric alarm wiring diagram.



Picture 8: Alarm principle diagram