MERIVA TECHNOLOGY








User Manual
For

MX3 MDVR

Mobile Digital Video Recorder

Notice

The information in this manual was current when published. The manufacturer reserves the right to revise and improve its products. All specifications are therefore subject to change without any notice.

The purpose of this manual is to kindly aid the user for the operation for our MDVR. The user should have a basic understanding of computer operation and basic knowledge of how to connect peripherals and make some settings.

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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 recommended in the attachment.
   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.

1. Product Characteristics

1.1. Overview

MX3 is a functional Mobile Digital Video Recorder specially designed for vehicle video surveillance and remote monitoring. It has a high-speed processor and embedded operating system, combining with the most advanced H.265 video compression / decompression technology, 3G/4G network, GPS positioning technology, as well as WIFI. It supports not only video recording in 108OP, 720P, WD1, WHD1, WCIF, D1, HD1 and CIF formats, but also vehicle travel information recording and wireless data upload. With center software it also achieves alarm linkage central monitoring, remote management and playback analysis. It is easy to use with simple design, multi-functions, superior anti-vibration, anti-electromagnetic interference, radiation protection, hard disk storage, SD backup, flexible installation and high reliability.

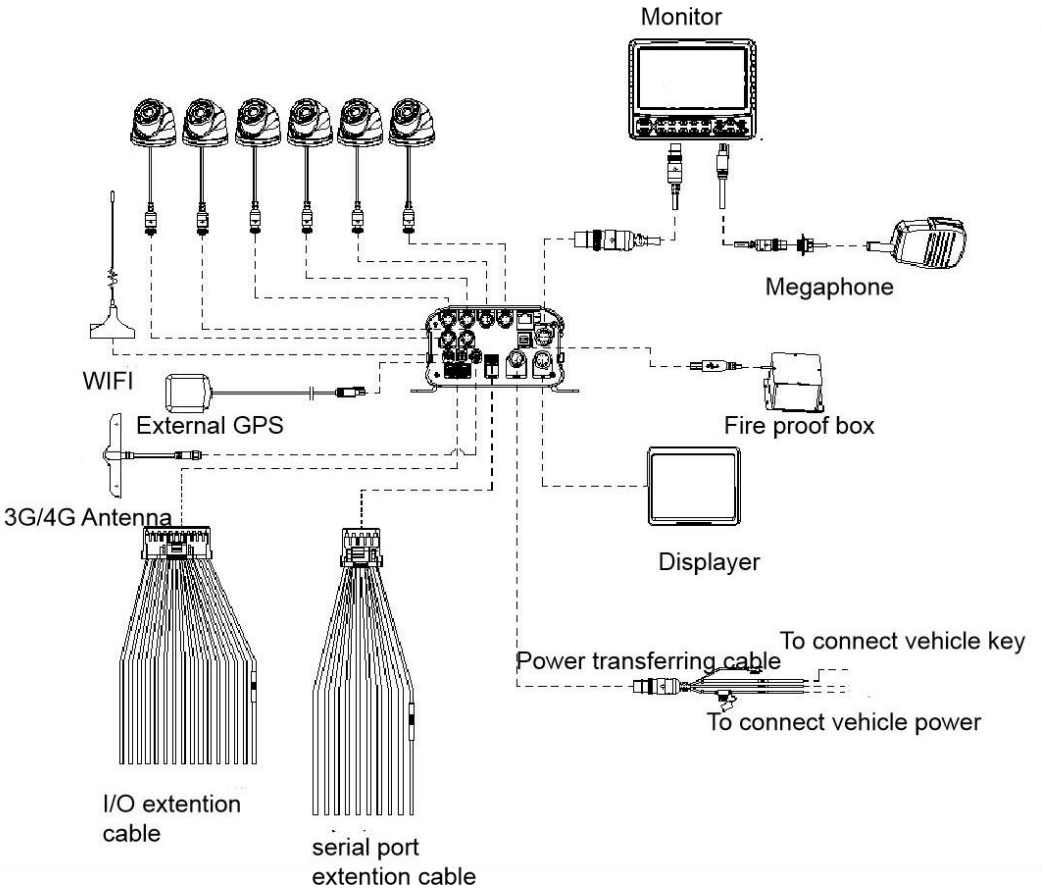
1.2. Specifications

Technical Items		Technical Indicators
Product Model		MX3
Function Overview		Preview, Recording, Playback, Network, Locating
System	Operating System	Linux 3.18.20
	Control Mode	CP4, mouse, EasyCheck, network(3G/4G/WIFI)
Video	Input	6 x AHD
	Output	2 CH (CP4+VGA)
	Total Resource	PAL: 6*720P@15fps(AHD)+2*1080P@30fps(IPC) or4*1080P@10fps(AHD)+2*1080P@30fps(IPC) or4*720P@25fps(AHD)+2*1080P@30fps(IPC) NTSC : 6*720P@15fps(AHD)+2*1080P@30fps(IPC) or4*1080P@12fps(AHD)+2*1080P@30fps(IPC) or4*720P@30fps(AHD)+2*1080P@30fps(IPC)
	Video Signal Standard (Needs external switch)	Electrical level: 1Vpp Impedance: 75Ω NTSC/PAL Optional
Audio	Input	6 CH (6 x AHD)
	Output	1 CH
	Audio Signal Standard	Electrical level: 2Vpp Input impedance: 4.7kΩ
Display	Display Split	1/4/9 Image display
	OSD	GPS, Alarm, Vehicle plate, Speed, Time, etc.
	Operation Interface	Semi-transparent GUI

Recording	Video/Audio Compression	Video	H.264/H.265
		Audio	ADPCM, G.711A G.711U
	Image Resolution	PAL: 1080P(1920X1080), 720P(1280X720), WD1(928X576), WHD1(928X288), WCIF(464X288), D1(704X576), HD1(704x288), CIF(352x288) NTSC: 1080P(1920X1080), 720P(1280X720), WD1(928X480), WHD1(928X240), WCIF(464X240), D1(704x480), HD1(704x240),CIF(352x240); Digital: 1080P(1920X1080), 720P(1280X720)	
	Image Quality	8 Levels adjustable (Level 1 is the best)	
	Recording Mode	Boots up/schedule/alarm event recording	
	Pre-recording	0-60min	
	Post-recording	0-30min	
Playback	Playback Channel	1/4 channel by local playback, supports WEB 1/4/8 channel by local playback	
	Search Mode	Date/time, channel, event	
Network	3G/4G	Optional EVDO/TD-SCDMA/WCDMA/TDD-LTE/FDD-LTE	
	WIFI	802.11b/g/n	
	Ethernet	RJ45 x 1(10/100M)	
Locating	GPS	Location tracking, speed detection and time sync	
Sensor	G-Sensor	Built-in 6-axis inertial sensor	
Storage	HDD/SSD	1 x2.5"SATA HDD or SSD, thickness 7mm/9.5mm/15mm, supports hard disk heating	
	SD	Support SDXC 32GB/64GB/128GB/256GB, plug and play	
Interface	USB	1 x USB2.0(Type A)+ 1 x USB2.0(Type B)	
	SD	1 x SD slot	
	SIM	1 x SIM slot	
	Serial	2 x RS232, 1 x RS485	
	CAN	1 x CAN	
	I/O	8 inputs, 2 outputs	
	Speed	1 channel pulse speed detection	
	Control Panel	CP4	

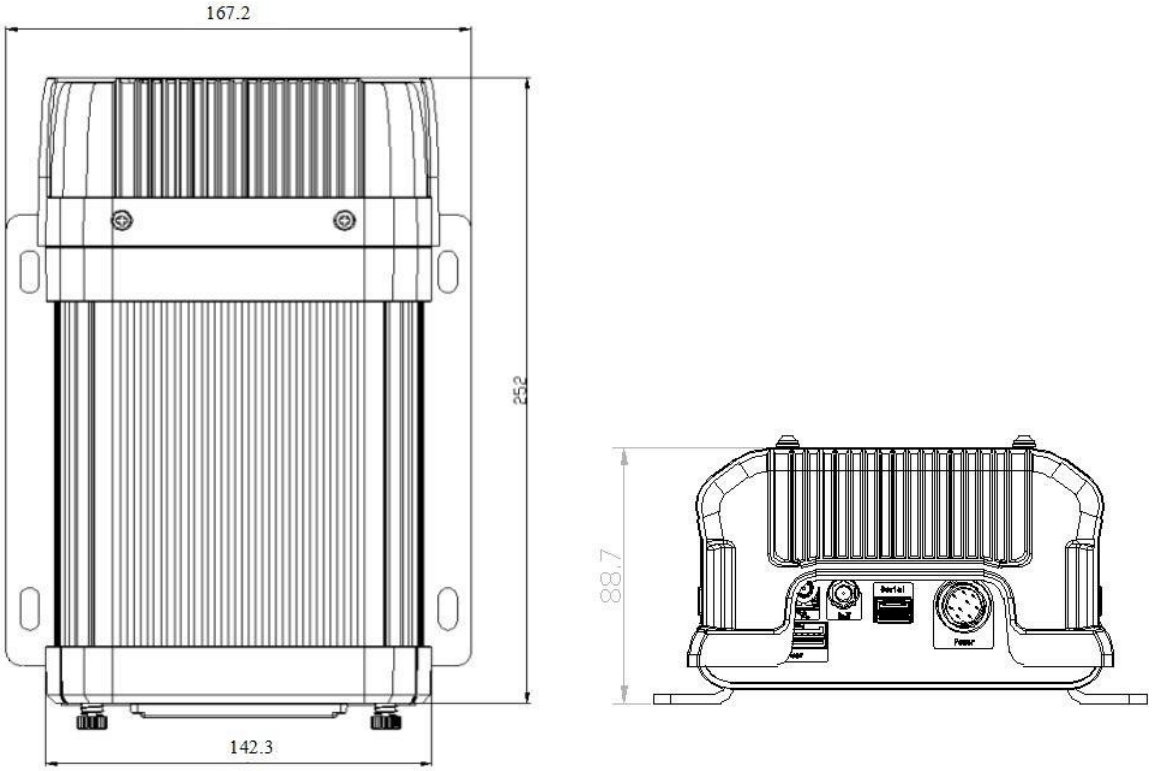
	Intercommunication	1 MIC port(CP4)
Power	Input	DC 8~36V
	Output	5V@500mA & 12V@500mA
	Max Power Consumption	6.75W (not include cameras, screen and HDD)
	Standby Power Consumption	≈0W
Physical characteristics	Dimension(mm)	252x167.2x88.7 (with bracket and rear shield)
	Weight(KG)	2.2KG (not include HDD)
Environment	Operating Temperature	-40℃ ~+70℃ (with heating and no HDD) -40℃~ +55℃ (with heating and HDD)
	Operating Humidity	8%-95%(No condensation)

1.3. System diagram

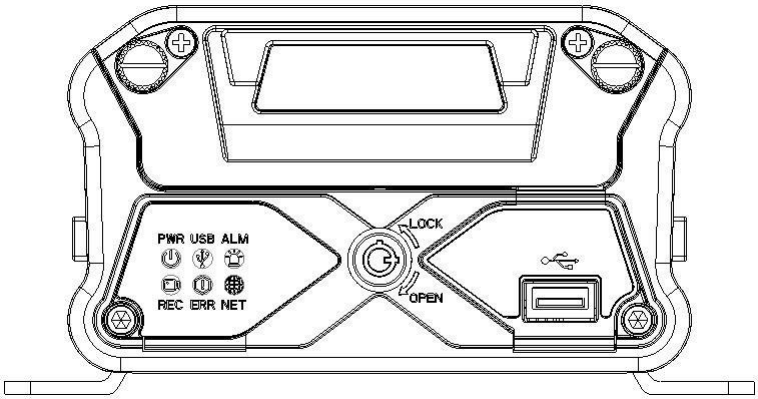


1.4. External interface

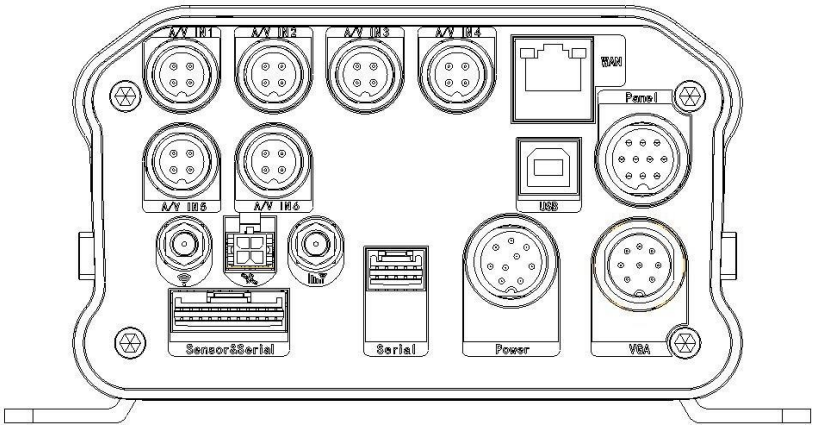
Dimension (Unit: mm)



Front panel



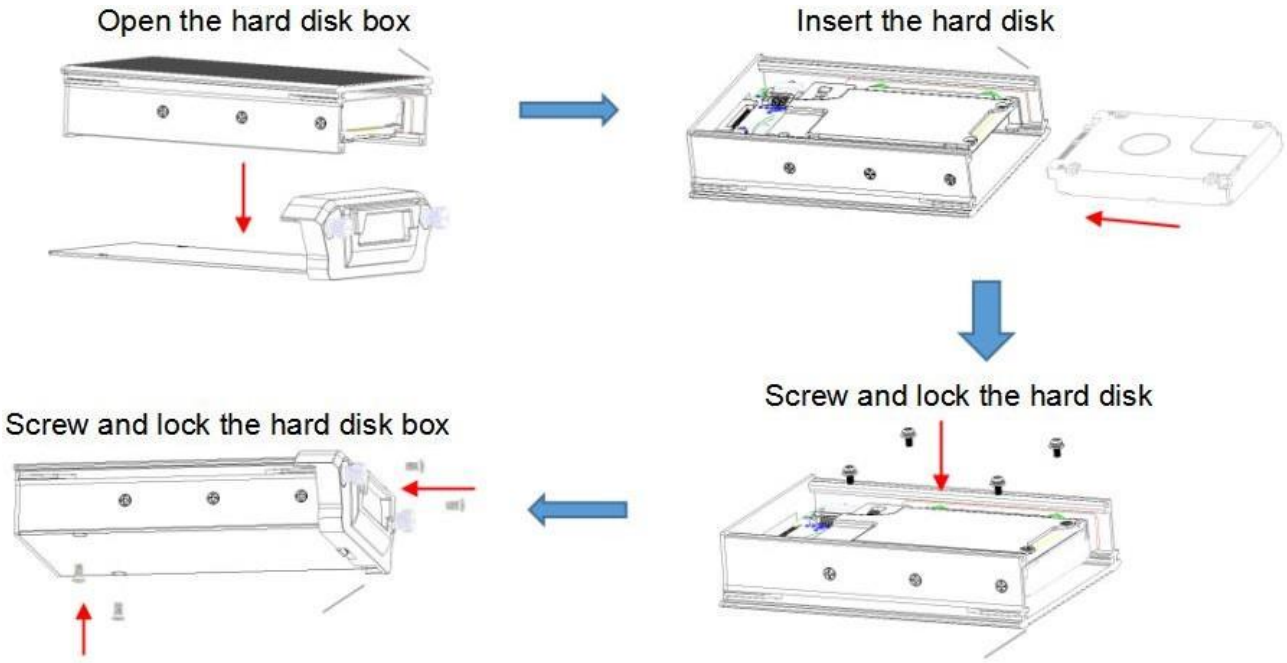
Rear panel



Serial No.	Print	Description
1	A/V IN1~6	Analog audio/video input 1~6
2	VGA	VGA video interface
3	WAN	100Mbps network interface
4	USB	USB 2.0 interface (Type B)
5		3G/4G antenna interface
6		GPS antenna interface
7		WIFI antenna interface
8	Sensor&Serial	Sensor & serial interface
9	Serial	Serial interface
10	Panel	Control panel interface(CP4)
11	Power	DC8-36V power input

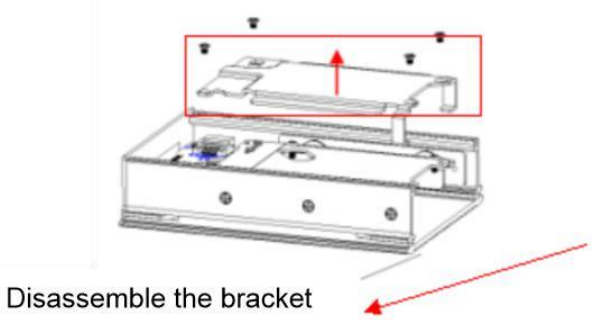
1.5. Hard disk installation

The procedure to install the hard disk of 9.5mm/7.5mm



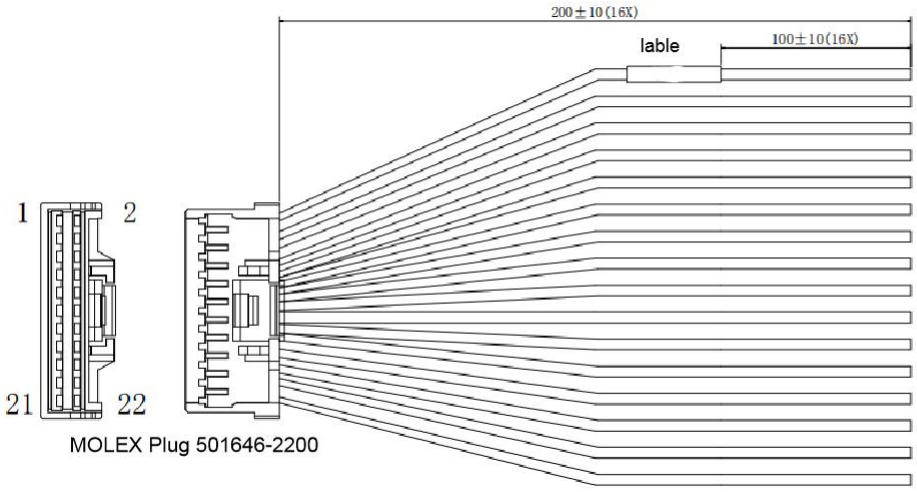
The procedure to install the hard disk of 15mm

To install the hard disk of 15mm, user needs to disassemble the brackets, and then insert it.



1.6. Definition and pictures of external cables

Alarm cable definition

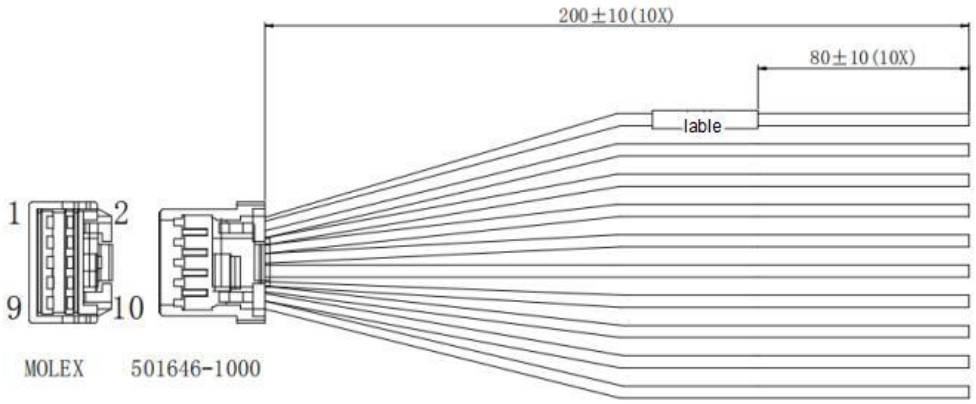


Diagram

501646-2200

1	red	SENSOR IN1
3	gray	SENSOR IN2
5	light green	SENSOR IN3
7	light blue	SENSOR IN4
9	gray	SENSOR IN5
11	orange	SENSOR IN6
13	blue&black	SENSOR IN7
15	blue&white	SENSOR IN8
17	blue	SPEED IN
12	red&white	SENSOR OUT1
14	red&yellow	SENSOR OUT2
19	black	GND
21	red	+5V
18	black	GND
10	green	232RX-1
8	whiten	232TX-1

Serial port definition



diagram

501646-1200

1	white&yellow	232TX-1
2	green&yellow	232RX-1
3	white&black	CAN-H
4	green&black	CAN-L
5	red	+5V
6	black	GND
7	black	GND
8	red	+12V
9	white&blue	485A-1
10	green&blue	485B-1

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2.FAQ

1) The system can't start?

Usually this problem results from the incorrect power connection. Please follow below steps to check the power connection:

1. Check the input power, whether the power wire is connected correctly, whether the ground wire is connected back to the battery, and whether the fuse on the power wire is in good condition.
2. Check whether the ACC signal wire input to the power is with voltage higher than 7 V.
3. Check whether the device key is closed.

2) The MDVR restarts uninterruptedly?

Please follow below steps to check it:

1. Check whether the voltage of MDVR is insufficient. If the voltage is less than the start-up voltage of the device, the device would always restart.
2. The problem in hard disk/SD card may cause the failure to start. Take off the storage part and check whether it is broken down.

3) The device can't record?

Usually this problem results from the storage disk or camera. Please follow below steps to check it:

1. Check whether the storage disk is installed, whether it is in good contact, and whether the disk can be read normally in computer.
2. Check whether the storage disk is formatted. The storage disk should be formatted before normally storing record files.
3. Check whether there is video signal input into the device from camera, and whether there is video/image on the screen.

4) There is no voice in record file?

Please follow below steps to check it:

1. Check whether there is an external pickup, or whether the camera features with the function of audio collection.
2. Access to Video Channel Settings, check if Audio is set on.
3. There must be video input into the channel for recording and it must record normally.

5) The GPS works abnormally?

Please follow below steps to check it:

1. Check whether the GPS antenna is installed correctly. There is a silk print logo on the GPS antenna holder behind the host device.
2. Check whether the antenna receiver is sheltered. It should not be covered by any stuff, which may cause it not to receive signals.
3. Environmental influence such as tree shades, being inside tunnel, driving near tall building or elevated roads, thunderstorms or other weather influence, etc. can also cause signal loss or receiving wrong signals.

6) The device can't shutdown in ignition switch mode?

1. Check if the ACC line connection mode is correct; and check whether there is voltage on ACC yellow line when the key is turned off.
2. If the device has been set with schedule recording, it can't shutdown if it is still during recording time of the task table.