

Mobile DVR

Model:LZE500

User Manual

www.xmlenz.com

Xiamen Lenz Communication Co.,Ltd

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Warning

- This equipment complies with CE radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.
- Restrictions in the 5 GHz band

According to Article 10 (10) of Directive 2014/53/EU, the packaging shows that this radio equipment will be subject to some restrictions when placed on the market in Belgium (BE), Bulgaria (BG), the Czech Republic (CZ), Denmark (DK), Germany (DE), Estonia (EE), Ireland (IE), Greece (EL), Spain (ES), France (FR), Croatia (HR), Italy (IT), Cyprus (CY), Latvia (LV), Lithuania (LT), Luxembourg (LU), Hungary (HU), Malta (MT), Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Romania (RO), Slovenia (SI), Slovakia (SK), Finland (FI), Sweden (SE), the United Kingdom (UK), Turkey (TR), Norway (NO), Switzerland (CH), Iceland (IS), and Liechtenstein (LI).

The WLAN function for this device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range.

DECLARATION OF CONFORMITY

Applier certifies that the following designated product

Product Name: Mobile DVR

Model No.: LZE500

Is in conformity with the standard(s)

EN60950-1: 2006+A11:2009+A1:2010+A12:2011+A2:2013

EN62311:2008

Draft ETSI EN301489-1 V2.2.1

Draft ETSI EN 301 489-17 V3.2.0

Draft ETSI EN301489-19 V2.1.0

Draft ETSI EN301489-52 V1.1.0

EN303 413 V1.1.1

EN301908-1 V11.1.1

EN301908-13 V11.1.2

EN300 328V2.1.1

EN301 893V2.1.1

EN300 440V2.1.1

Complies with the essential protection requirements of Directives on Radio Equipment Directive 2014/53/EU.

The designated product was subject to sample testing for which **CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd.**

issued test report number:

SET2019-05455; SET2019-05183; SET2019-05184;SET2019-05226;

SET2019-05445;SET2019-05446;SET2019-05447;SET2019-05478

The declaration is the sole responsibility of the applier.

Xiamen LENZ Communication Co.,Ltd

20F, Block A04,NO.365 Chengyi Street, Software Park 3, Xiamen,China

Date: 2019-05-17

Signature & Company stamp: LV HEPING

The device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range.

	AT	BE	BG	HR	CY	CZ	DK
	EE	FI	FR	DE	EL	HU	IE
	IT	LV	LT	LU	MT	NL	PL
	PT	RO	SK	SI	ES	SE	UK

Chapter 1 Product Introduction

1.1 About E500

LZE500 Mobile DVR is a compact, full-featured recording system that uses SD card, hard disk (HDD) and solid state disk (SSD) as the storage device. It provides H.264 high-quality and max 8 channels of 720P/1080P AHD recording, and 8 channels of 720P/1080P high definition video surveillance and fleet management for police car, ambulance, fire engine, public buses, tourist buses, etc.

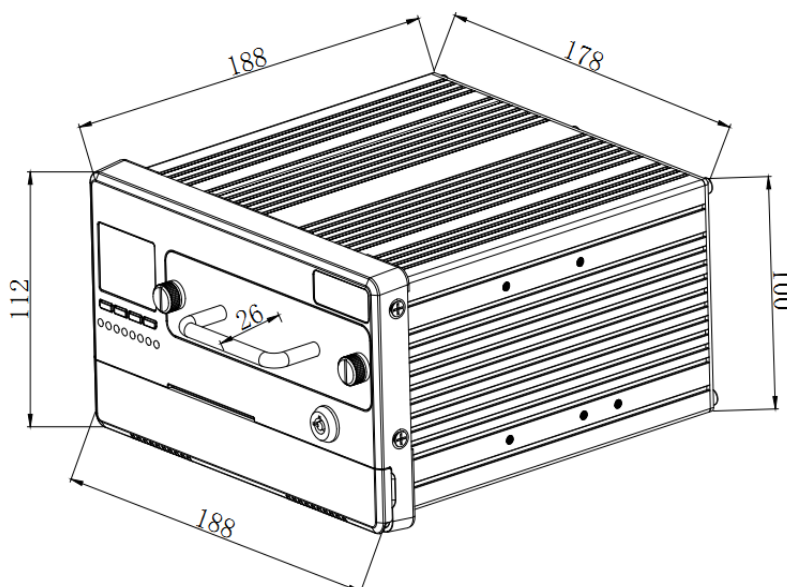
The industrial-quality and fanless design of LZE500 enables the easy dissipation of heat. It could endure the voltage surge in vehicle due to the advance power module design and strict quality testing, which is an ideal solution for vehicle surveillance.

1.2 Features

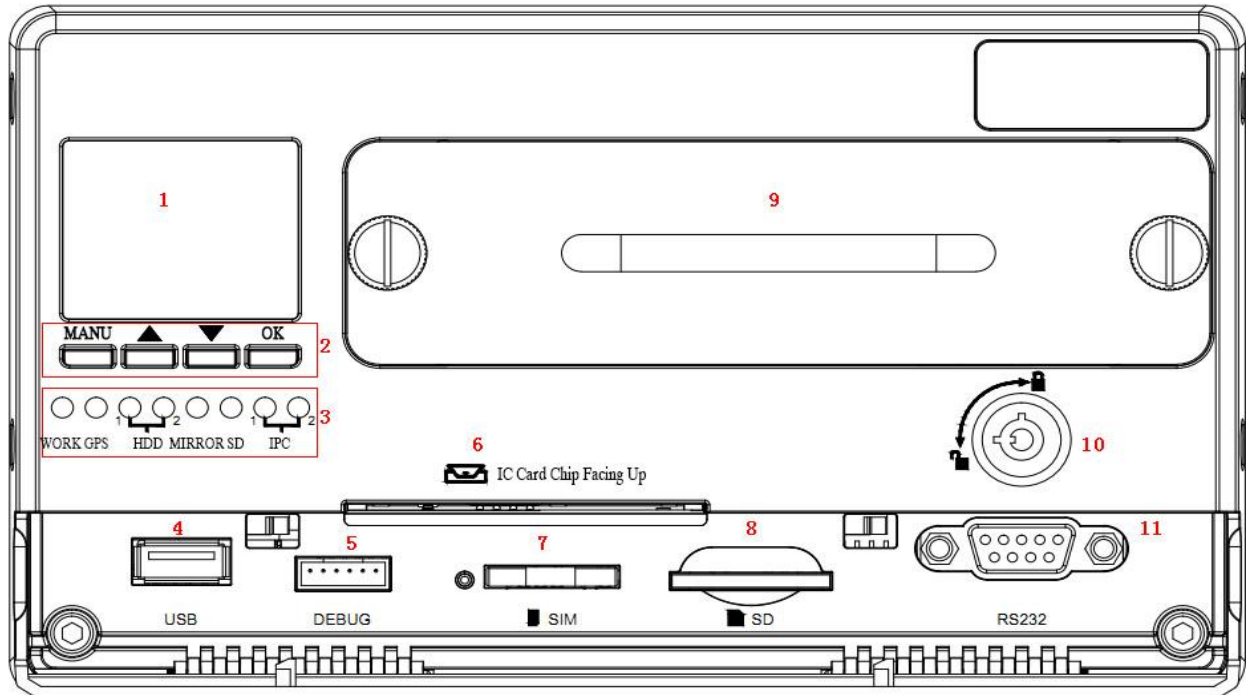
- 1) 8 channels 720P/1080P AHD +2 channels 1080P IPC video recording
- 2) Or 8 channels 1080P IPC video recording if connect with PON switch (for option)
- 3) Dual-stream technology adopted
- 4) AVL (automatic vehicle location) tracking by GPS and real-time dispatching
- 5) Support automatic bus stop announcement (for option)
- 6) Support to talk with control center through TTS speaker and microphone
- 7) Receive or send the message and display on driver monitor
- 8) OSD: overlay date, time, speed..on the footage
- 9) Alarms: over speed alarm, panic alarm, door open/close alarm, route deviation alarm, etc.
- 10) Patented vibration reduction technology
- 11) Configurable working parameters and firmware remotely or locally
- 12) The software is upgradable without replacing a new device.

1.3 Size

188mm (L) *188mm (W) *112mm (H)



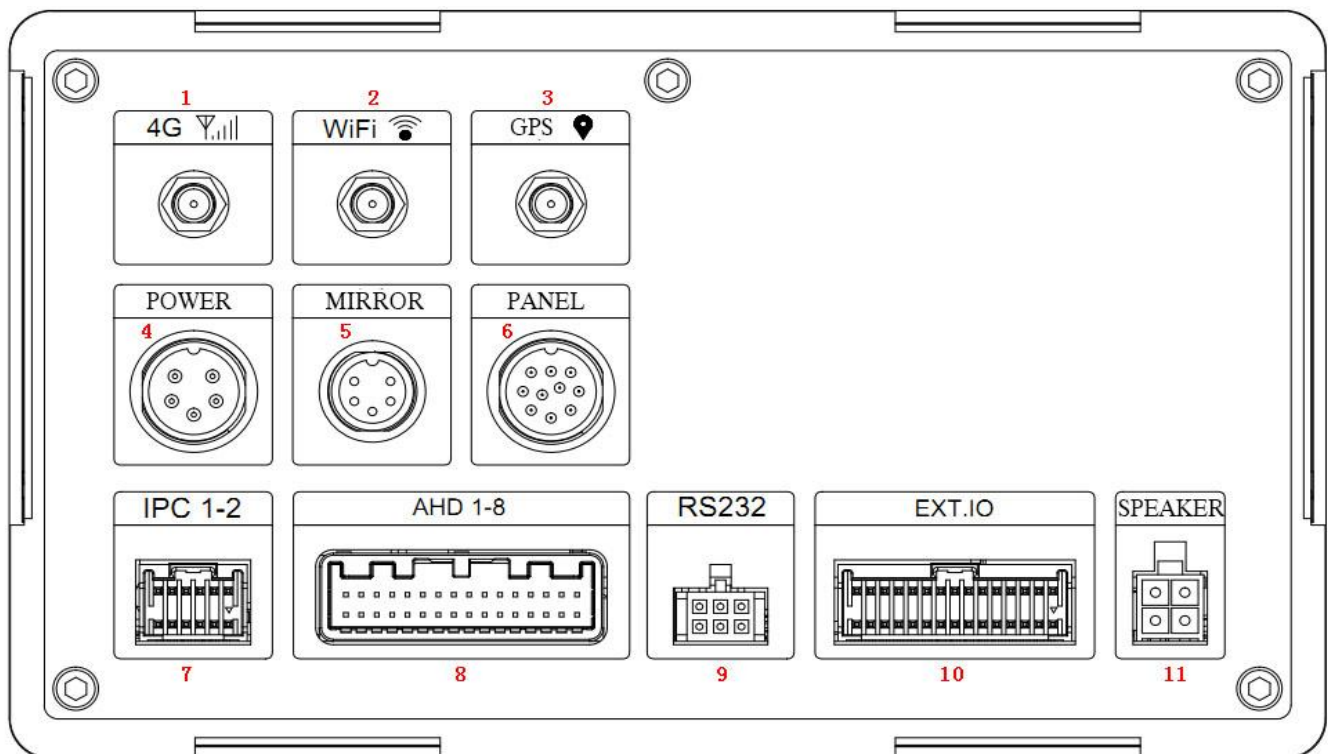
1.4 Front Panel



No.	Item	Interface	Function
1	LCD	LCD	For Display
2	Button	Button	“MANU”, “▲”, “▼”, “OK”
3	WORK	Red LED	Indicates the device power-on and wireless network connection status; Fast flash: device registration network Slow flash: The device is registered on the network.
	GPS	Green LED	Indicating GPS/BDS positioning signal receiving status; Fast flash: device is not positioned Slow flash: The device is positioned
	HDD1	Green LED	HDD1 indicator (located on the upper layer of the hard disk box); Light off: no storage medium recognized Light on: recognize storage medium Flashing: indicates that the storage medium is in the read/write state.
	HDD2	Green LED	HDD2 indicator (located on the down layer of the hard disk box); Light off: no storage medium recognized Light on: recognize storage medium Flashing: indicates that the storage medium is in the read/write state.
	MIRROR	Green LED	Black box light; Light off: no device is recognized Light on: recognize device Flashing: indicates that the device is on work
	SD	Green LED	Light off: no storage medium recognized Light on: recognize storage medium Flashing: indicates that the storage medium is in the read/write state.
	IPC1	Green LED	IPC1 indicator; Light off: IPC is not connected Light on: IPC Ethernet is connected

			Flashing: IPC Ethernet has data transmission and reception
	IPC2	Green LED	IPC2 indicator; Light off: IPC is not connected Light on: IPC Ethernet is connected Flashing: IPC Ethernet has data transmission and reception
4	USB	USB Interface	Local upgrade
5	debug	Debugging	CPU serial port print information, Can be used for upgrade
6	IC Card	Contact IC card	Driver identification card
7	SIM	With drawer type card holder	Install SIM card for remote video and voice calls
8	SD	Self-elastic SD card holder	For SD card auxiliary recording
9	Hard disk Box	Hard disk Box	Dual hard drive, pluggable
10	Hard disk lock		From open to closed, the hard disk box and the lower cover can be locked at the same time.
11	RS232	DB9	External serial printer

1.5 Back Panel



No.	Item	Interface	Function
1	4G	SMA	4G Communication
2	3G	SMA	3G Communication
3	GPS	SMA	GPS/BD Positioning

4	POWER	M16 5P	Power Input
5	MIRROR	M12 5P	Black Box
6	PANEL	M16 10P	Driver console power support and communicating, Speaker access, microphone access, CVBS video output
7	IPC1-2	12 PIN interface	2 channels IPC access
8	AHD1-8	32 PIN interface	8-channel AHD camera access
9	RS232	6 PIN interface	Serious port
10	EXT.IO	30 PIN interface	RS232 interface, RS485 interface, CAN Bus interface, High and low level detection, speed detection etc
11	SPEAKER	4PIN interface	Audio out

1.6 Specifications

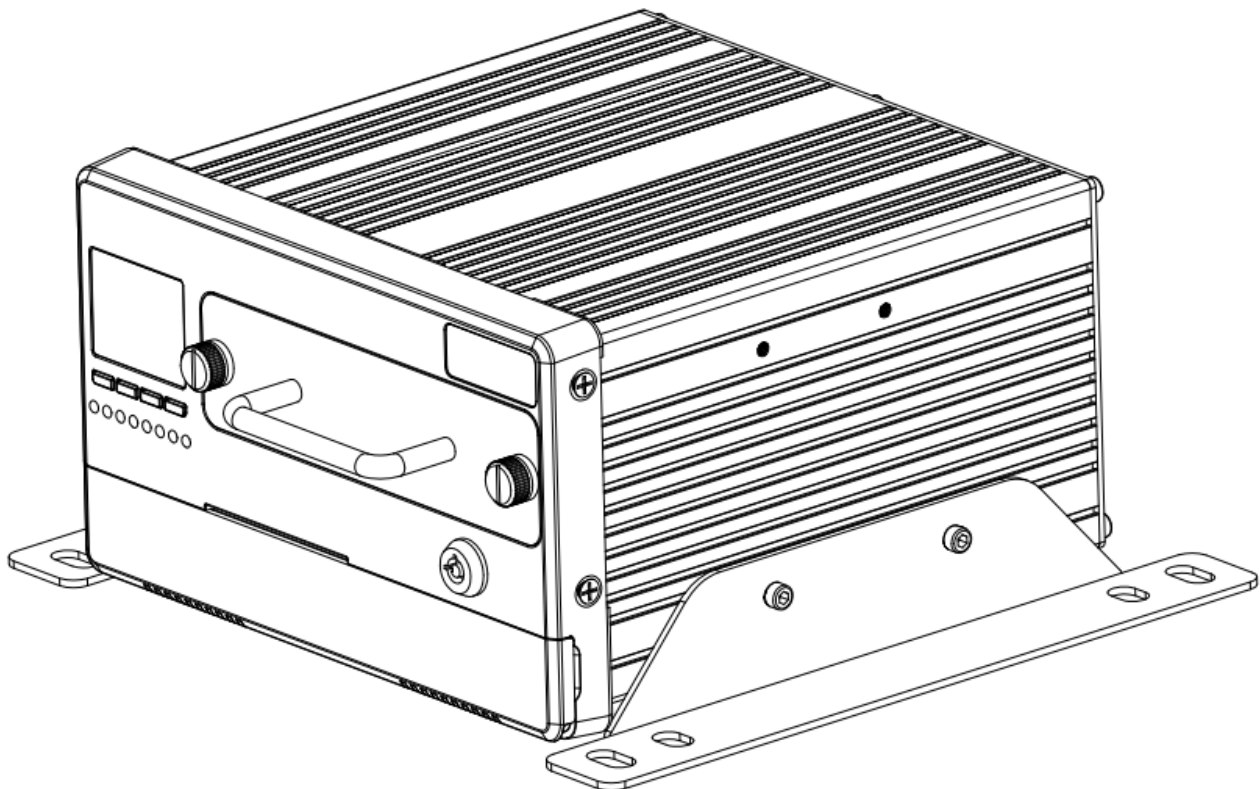
	ITEM	TECHNICAL SPECIFICATION
SYSTEM	CPU Processor	ARM 9, 32 bit high performance CPU
	Operation System	Linux
NETWORK	Wan	4G LTE
	Wi-Fi	NC
GPS TRACKING	Cold Start	<35 s
	Hot Start	<2 s
	Recapture	<2 s
	Velocity Precision	≤1.0 m/s
	Positioning Accuracy	≤5M
	Tracking Sensitivity	Capture -144dBm, tracking -159dBm
VIDEO	Video Input	8 channels AHD+ 2 channels IPC
	Image Resolution	CIF/D1/720P/1080P
	IPC Solution (For Option)	8 channels IPC (powered by PON)
	Image Resolution	CIF/D1/720P/1080P
	Video Output	1 channel, CVBS
	Video Format	ISO14496-10, PAL
	Video Compression	H.264 main profile
	Frame Rate	1-25 fps
AUDIO	Audio Input	10 channels
	Audio Output	1 channel for speaker, 2 channels for PA
	Audio Compression	8ch ADPCM for AHD, 2 ch G711 for IPC
STORAGE	HDD	Max 2*1TB 2.5' SATA HDD/SSD
	SD Card	Max 1*256G SD card
	Black Box	Max 1* 64G for disaster backup
I/O	Sensors	7-CH DI, 2-CH DO
	Com Port	3-CH RS232, 2-CH RS485
	Can-Bus	1-CH CAN-bus, another 1CH for option

	Network	1-CH RJ45 Ethernet converter interface
	USB	1-CH USB, type A
POWER SUPPLY	Input Power	DC 9V ~ 36V, typical 12V/24V
	Power Output-1	+5V@2A
	Power Output-2	8CH +12V@500mA (analog cameras)
	Power Output-3	2CH +12V@500mA (IP cameras)
	Power Consumptions	<25W (not connect with accessories and HDD/SSD)
OTHERS	Operating Temperature	-20°C~+70°C
	Size	188mm(L) *188mm(W)*112mm(H)
	Weight	2.4kg
	Certification	CE, RoHS, CCC

Chapter 2 Installation

2.1 Installation

The E500 is not allowed to be placed on the side. It should be laid flat. It is better to have some elevated positions to prevent water from entering the car. The equipment is best installed on an outer protective box, which is sealed around the protective box to prevent people from modifying the equipment, neat the wire harness and waterproof when cleaning. The installation diagram is as follows:



2.2 Hard Disk Box Installation

Note:

- Please use a 2.5-inch hard drive and purchase it from a regular store to ensure the quality of the hard drive.
- After the hard disk is installed, you need to format it before you can record it, otherwise the system will judge the hard disk error.



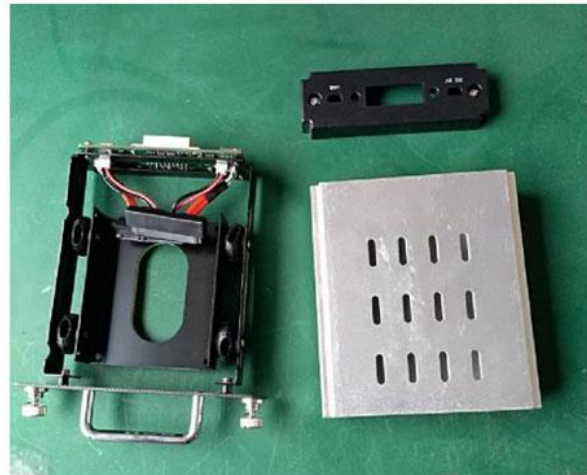
1、 Prepare the tools and materials needed for installation: hard drive base, 2.5-inch hard disk, anti-static gloves, hard drive lock key, screwdriver, 8 M3*5 screws, 4 M3*6 screws



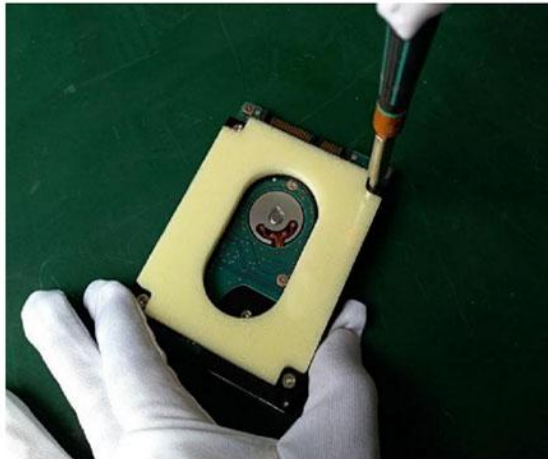
2、 As shown in the figure, open the hard disk lock with the key, unscrew the fixing screw of the hard disk box, and pull out the hard disk.



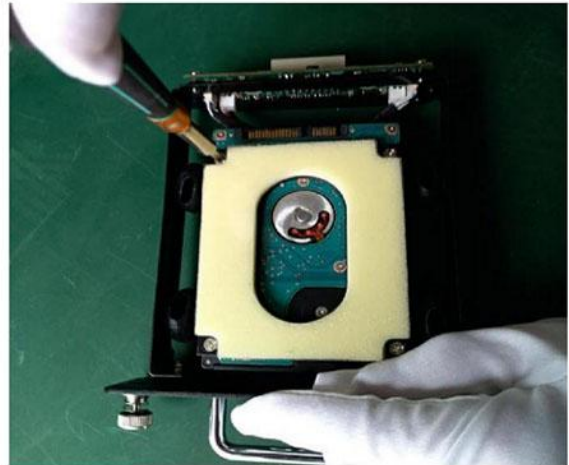
3、 As shown in the figure, unscrew the two fixing screws with a screwdriver to disassemble the entire hard disk box.



4、 The above picture shows the status of the hard disk box after disassembly.



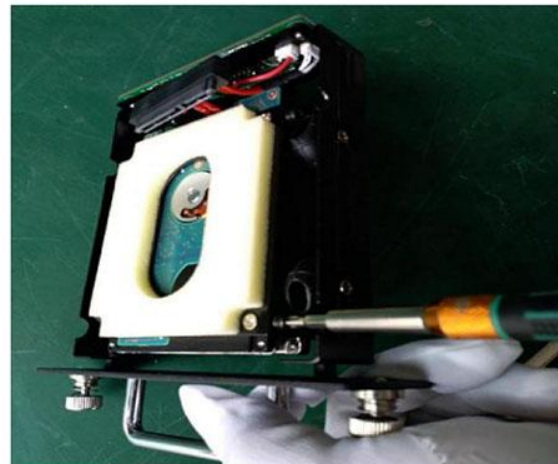
5. As shown in the figure, the PCB of the first hard disk is facing up, fastened to the base of the hard disk, and locked with four M3*5 screws.



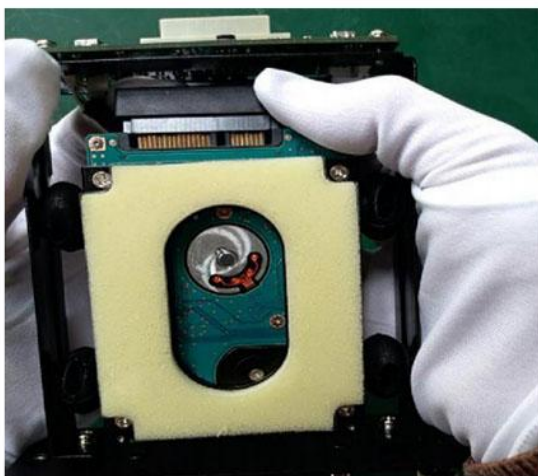
6. Turn the hard disk base 180° and lock the second hard disk with 4 M3*5 screws. (If only one hard disk is installed, this step can be omitted)



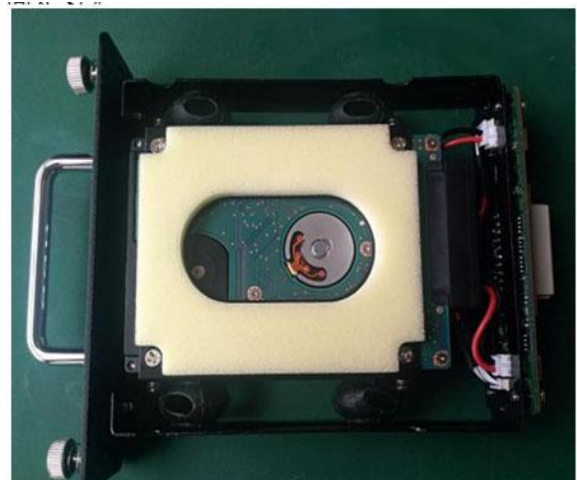
7. Fasten the fixed hard disk drive to the hard disk box



8. Hold the hard disk box with your hand and lock the hard disk base to the hard disk box from the side with 4 M3*6 screws.



9. Connect the SATA interface of the hard disk to the SATA of the hard disk box.



10. The effect after installation is as shown in the figure above.



11、 As shown in the figure, put on the hard disk cover



12、 After fixing the hard disk cover, fix it with screws

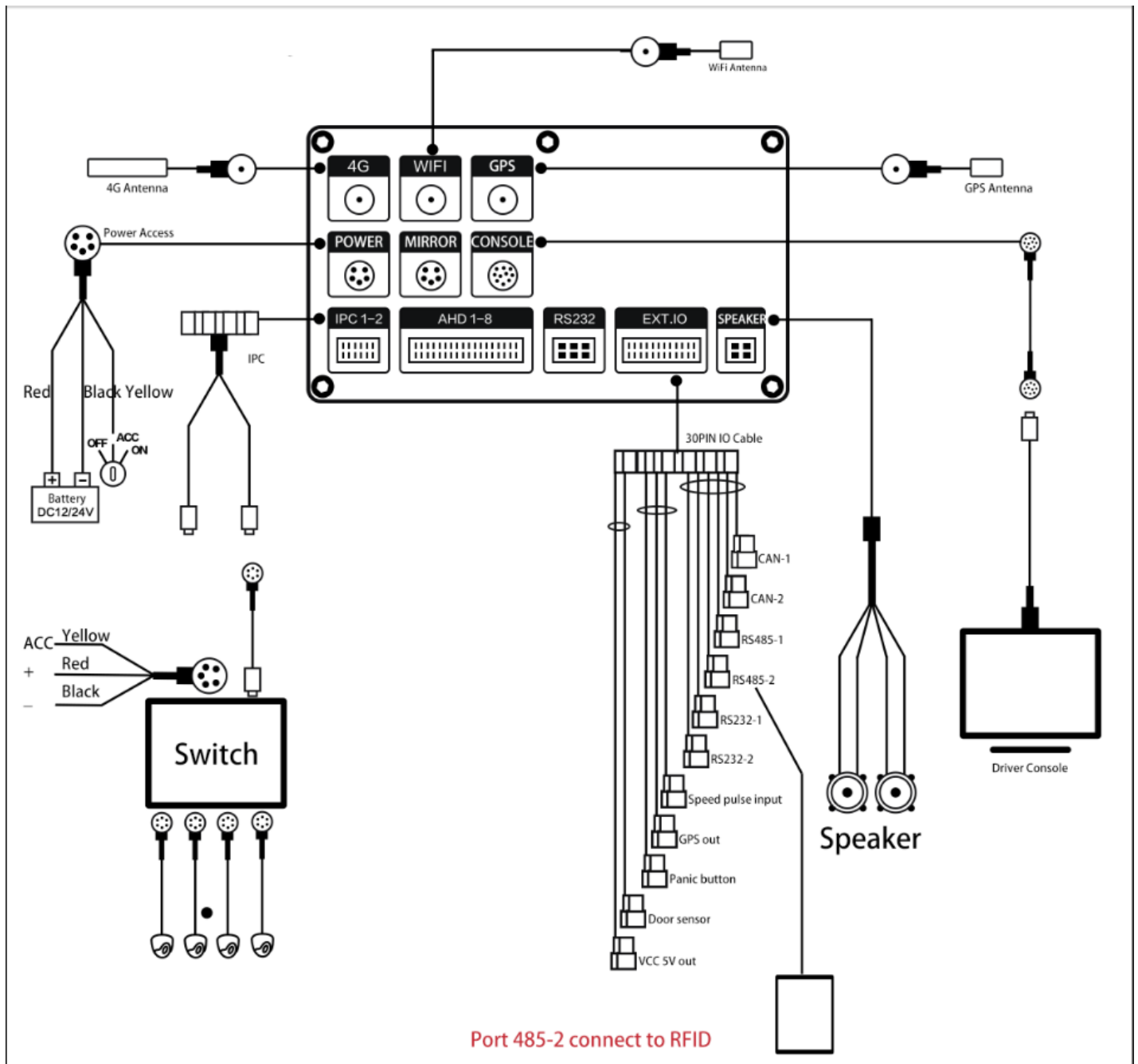


13、 The figure above shows the effect of the installed hard disk box. Note: The HDD keyhole should be close to the front panel of the hard disk box.



14、 Insert the assembled hard disk box into the device, tighten the fixing screws, and lock the hard disk lock. Note: If the hard disk box cannot be inserted, the hard disk box is reversed. Please adjust the front and back sides before inserting to prevent damage to the hard disk.

2.3 Wiring Diagram



2.4 Interface

2.4.1 4G Antenna

The interface standard of the antenna port is SMA male
External Antenna Antenna gain: 3.5 dBi



2.4.2 GPS Antenna

The GPS antenna adopts the standard SMA interface. The curved side of the GPS antenna is facing upwards, and the flat side is facing downward. The fixed position must make the arc of the antenna face the sky, and there should be no obstruction on the upper side. The metal-covered explosion-proof membrane will affect the reception of the satellite signal, and the explosion-proof membrane at this position should be avoided or dug;

External Antenna Antenna gain: 3.5 dBi



2.4.4 Power

The following picture shows the 5-pin power cable, 5-pin connector to connect the device power interface, bare wire part: the red wire is connected to the positive pole, the black wire is grounded, and the yellow wire is connected to the ACC (required)

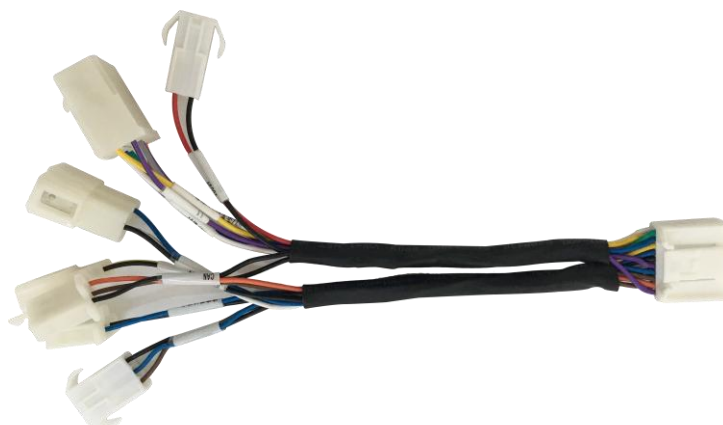


2.4.5 10-PIN Console

Can transfer speakers, microphone, Driver console;



2.4.6 30-PIN I/O Cable



2.4.7 SIM Card Installation

To purchase a SIM/UIM card from a telecom carrier, the card must be opened for data services; if voice calls are required, voice services must be activated. Remove the SIM card slot and insert the SIM/UIM card as shown below. Note that the side of the chip is facing down.

Step 1



Step 2



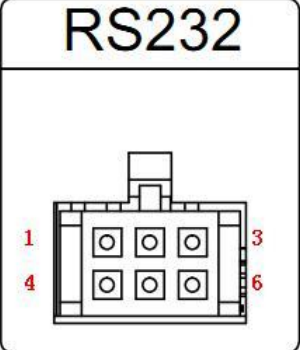
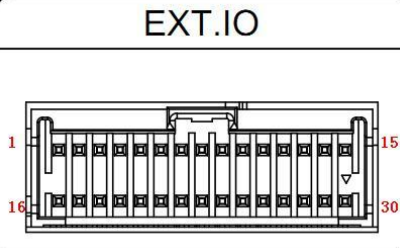
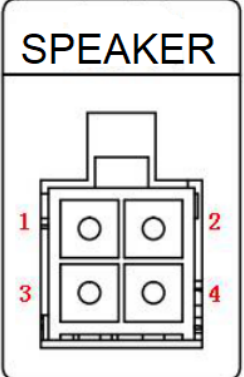
Step 3



The side of the chip is facing down.

Step 4



	<p>9.12Vcamera 4 power 10.Camera 4 11.12Vcamera 3 power 12.Camera 3 13.12Vcamera 2 power 14.Camera 2 15.12Vcamera 1 power 16.Camera 1</p> <p>25.GND 26.Audio 4 27.GND 28.Audio 3 29.GND 30.Audio 2 31.GND 32.Audio 1</p>																															
<p style="text-align: center;">RS232</p> 	<p>1.Reserved 2.Reserved 3.GND 4.232_TX 5.232_RX 6.GND</p>	RS232																														
<p style="text-align: center;">EXT.IO</p> 	<table border="0"> <tr> <td>1. Debug_TX</td> <td>16. Debug_RX</td> </tr> <tr> <td>2. GND</td> <td>17. GND</td> </tr> <tr> <td>3. RS232-2-TX</td> <td>18. RS232-2-RX</td> </tr> <tr> <td>4. A RS485+</td> <td>19. A RS485-</td> </tr> <tr> <td>5. B RS485+</td> <td>20. B RS485-</td> </tr> <tr> <td>6. GPS-TX</td> <td>21. GND</td> </tr> <tr> <td>7. Door sensor</td> <td>22. Horn</td> </tr> <tr> <td>8. CANH1</td> <td>23. CANL1</td> </tr> <tr> <td>9. CANH2</td> <td>24. CANL2</td> </tr> <tr> <td>10. Brake</td> <td>25. Left turn</td> </tr> <tr> <td>11. Right turn</td> <td>26. High beam</td> </tr> <tr> <td>12. Low beam</td> <td>27. Low level sensor</td> </tr> <tr> <td>13. Panic button</td> <td>28. SPEED+</td> </tr> <tr> <td>14. Oil circuit control</td> <td>29. DC5V</td> </tr> <tr> <td>15. GND</td> <td>30. GND</td> </tr> </table>	1. Debug_TX	16. Debug_RX	2. GND	17. GND	3. RS232-2-TX	18. RS232-2-RX	4. A RS485+	19. A RS485-	5. B RS485+	20. B RS485-	6. GPS-TX	21. GND	7. Door sensor	22. Horn	8. CANH1	23. CANL1	9. CANH2	24. CANL2	10. Brake	25. Left turn	11. Right turn	26. High beam	12. Low beam	27. Low level sensor	13. Panic button	28. SPEED+	14. Oil circuit control	29. DC5V	15. GND	30. GND	
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<p style="text-align: center;">SPEAKER</p> 	<p>1.External speaker 2.Inner speaker 3.External speaker GND 4.Inner speaker GND</p>																															

FCC Caution.

(1)§ 15.19 Labelling requirements.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

§ 15.21 Changes or modification warning

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

§ 15.105 Information to the user.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.
- This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
- RF warning for Mobile device:
 - This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
 - This equipment should be installed and operated with minimum distance 30cm between the radiator & your body.