Manual

Rocktech

M PC-1911

Manual

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Product Quality Assurance (18 months)

From the date of purchase, Ruixun Technology provides the original buyer with 18 months of product quality assurance. However, the quality assurance shall not be provided for those products repaired by unauthorized maintenance personnel. Ruixun technology for the incorrect use, disaster, wrong installation problems have the right to exemption.

FCC warning:

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

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. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

catalogue

1 Product overview **5**
1.1 Product profile 6
1.2 Specification description 7
1.3 product size 8
1.4 work environment 8
2 functional interface **9**
2.1 product appearance 10
2.2 Interface line order description 12
2.2.1 convenienve receptacle 12
2.2.2 LVDS jack 12
2.2.3 The LVDS backlight socket 13
2.2.4 The RS232 interface 14
2.3 Installation hole position 15
3 Operation and use **16**
3.1 SD card upgrade 17
3.1.1 Upgrade under the Android system run ..... 错误！未定义书签。
3.1.2 Power-on automatic detection and upgrade ..... 错误！未定义书签。
3.2 U disk upgrade 错误！未定义书签。
3.2.1 Upgrade under the Android system run ..... 错误！未定义书签。
3.3 System upgrade failure information 错误！未定义书签。
3.3.1 Failure prompt ..... 错误！未定义书签。
3.3.2 Log view ..... 错误！未定义书签。
3.3.3 Common reasons for failure ..... 错误！未定义书签。
4 matters need attention **22**
4.1 handling safety 23
4.2 electrostatic protection 23
4.3 Storage and transportation 24
5 After sale and service **25**
5.1 Product quality assurance 26
5.2 Support and service 26
Attached: Product packaging list **28**

Chapter 1

Product overview

1.1 Product profile

MPC-1911-R12 is an industrial-grade embedded master control equipment, using Rockchip high-performance RK3399K C PU, providing excellent computing and graphics performance, suitable for stringent conditions or high requirements of industrial occasions and public space applications. The MPC-1911 series products are wide-temperature products, and provide rich peripheral interfaces for users to expand their functions.

Rockchip RK3399 K Main characteristics of the processor:

- ARM double Cortex-A72 + four Cortex-A53 size nuclear CPU structure, with the highest frequency of 1.8GHz;
- Mali-T864 GPU, supported by OpenGL ES1.1/2.0/3.0/3.1, OpenVG1.1, OpenCL, DX11;
- Support for AFBC (frame buffer compression);
- Dual-channel DDR 3-1866 / DDR 3 L-1866 / LPDDR3-1866 / LPDDR4;
- Support 4K VP9 and 4K 10bits H265 / H264 video decoding, up to 60 fps;
- Support for dual-channel MIPI-DSI (4 lines per channel);
- Display support: eDP 1.3 (4-lines, 10.8Gbps);
- HDMI 2.0a Support 4K 60Hz display, support HDCP 1.4 / 2.2;

On the basis of the excellent computing and graphics processing capabilities of RK3399 K processor, combined with the strong research and development and quality control capabilities of Ruixun Technology, MPC-1911 has stable and good operation performance. Typical applications are as follows:

- Human-machine interface interaction equipment
- rail transit
- industrial automation
- Intelligent terminal of medical devices
- Unattended intelligent terminal
- portable set

1.2 Specification description

Product specifications are shown in the table below:

model		MPC-1911
operating system	OS	Linux Ubuntu16.04/Android 7.1.2
processor	CPU	RK3399 K, 64-bit CPU, with a maximum main frequency of 1.8GHz
internal storage	technology	Onboard: 2GB DDR3 1600 MHz
memory	form	Onboard, 16GB eMMC, extended to 32GB / 64GB
show	LVDS	1-way 30 Pin double 8 LVDS interface
	HDMI	1 type A HDMI interface
IO	Mini PCIe	1-road Mini PCIe (support 4G full netcom standard module)
	USB	The 6-way Type-A USB2.0 interface The 1-way Type-COTG interface
	Audio	1 Line out, 1 MIC, all for 3.5mm standard socket; 2-way 3.5mm 8 Ω / 5W horn socket
	gorge line	4-way RS-232 (DB9) 2-way RS-485 (3 Pin green terminal)
	TF block	1 TF card slot
	SIM block	2 Micro SIM card slot double card single standby
CI	Ethernet	5-way 100Mbps RJ45 interface (1 WAN + 4 LAN)
	Wifi& PDA	WiFi IEEE802.11b/g/n+BT4.0 Share the module
Safety features	Watchdog timer	1-way CPU watchdog with 0128 seconds
source	voltage range	12V DC, with overvoltage and overcurrent protection, prevention and reverse connection protection
environment	temperature	Operating temperature: -20℃ -70℃ Storage temperature: -40℃ -85℃
	humidity	From 0% to 90% relative humidity, non-condensation
size	size	194 m m (length) * 120mm (W) * 47mm (height)

Table 1 MPC-1911 specification sheet

1.3 product size

Size of the product: 194mm (length) * 120mm (width) * 47mm (height), as shown in the following figure:

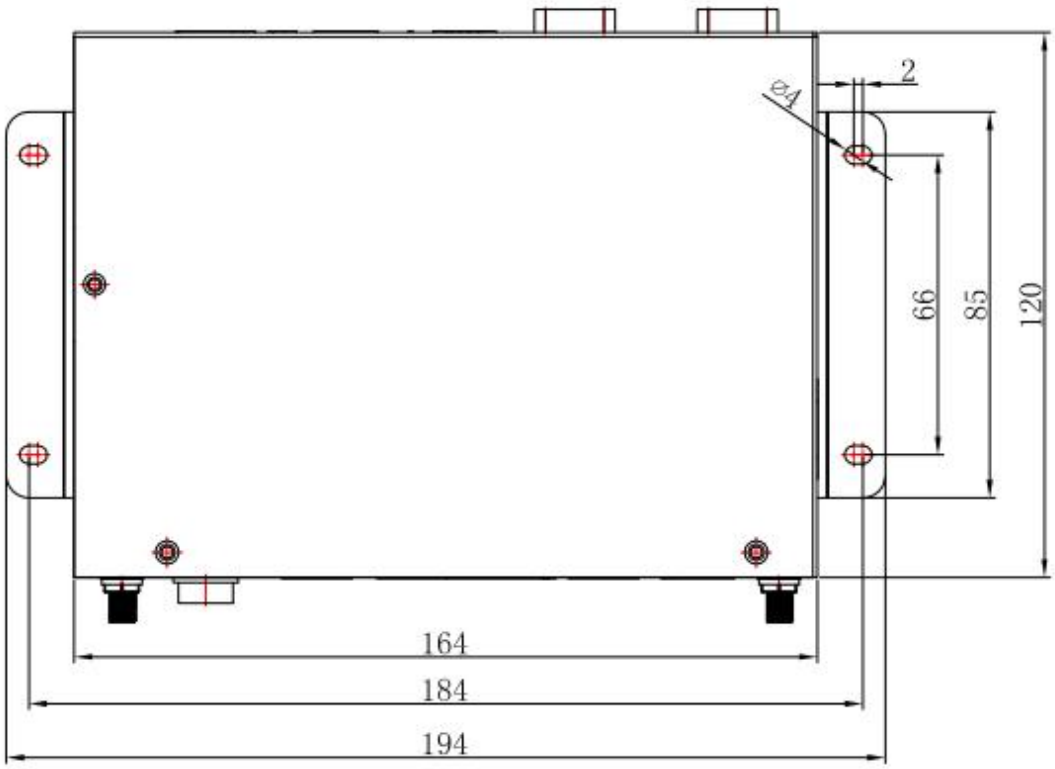


Figure 2 MPC-1911 Outline dimensions

1.4 work environment

Operating temperature: -20℃ ~70℃
Working humidity: 0%~90% relative humidity, non-condensing
Storage temperature: -40℃ ~85℃
Relative humidity: 95%@60℃
Weight (net weight): approximately 700g

Chapter 2

Functional interface.

Functional interface

2.1 product appearance

The appearance of the MPC-1911 is shown below:

Figure 3. Product front view

Figure 4. Post-image view of the product

Figure 5. Left view of the product

Figure 6. Right view of the product

Note: The SIM card function is not available.

Each layout interface is specifically described as follows:

order number	name	Silk mark	remarks
1	convenienve receptacle	12V DC	4 The PinS terminal
2	System status indicator light	STATUS	green LED
3	power light	P WR	red LED
5	The WiFi status indicator light	WiFi	yellow LED
6	The USB Type-C interface	Type- C	
7	Cable network interface	L AN	
8	The USB Type-A interface	USB2.0*2	Front panel: 2 double-layer Type-A interfaces Rear panel: 1 double-layer Type-A interface
9	Audio output	Line-out	3.5mm jack headphones
10	Audio input	M IC	The 3.5mm jack is connected to the microphone
11	return key	Return	Returns to the last operation that it was used in
12	The WiFi antenna interface	W iFi	Connect the WiFi antenna
13			
14	The RS232 interface	COM1 COM2 COM3 COM4	DB9 interface
15	The RS485 interface	COM5/RS485 COM6/RS485	3 Pin 3.81 mm spacing Front panel 1 way; rear panel 1 way
16	Display screen backlight interface	B KL	
17	LVDS joggle	L VDS	

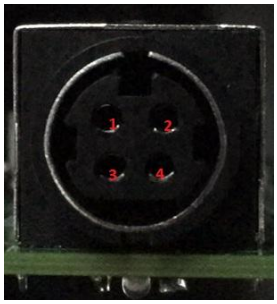
18	Audio output terminal	SPK-L SPK-S	Pick up the horn
19	HDMI joggle	H DMI	
20	System reset button	R eset	
21	TF card slot	T F	Note: The gap faces outward
22	SIM card slot	Micro SIM	Double card single stay Note: The gap faces outward

2.2 Interface line order description

In order to facilitate the use of this product, the sequence definition of each functional interface line is explained in detail. Such as USB, SIM card slot, TF card slot, these are the standard ports, without special instructions.

2.2.1 convenienve receptacle

Power outlet, external power supply DC12V input interface, screen mark: PWR.



P in	Needle foot definition
1	12V power supply
2	GND

Figure 7 Power socket chart 3 Definition of power socket pin

2.2.2 LVDS jack

LVDS socket, 2.0mm spacing 30 Pin interface, screen mark: LVDS.

Figure 8. The LVDS socket diagram

Pin	Needle foot definition	Pin	Needle foot definition	Pin	Needle foot definition
1	LVDS source	11	LVDS_D2N	21	LVDS_D5N
2	LVDS source	12	LVDS_D2P	22	LVDS_D5P
3	LVDS source	13	GND	23	LVDS_D6N
4	GND	14	GND	24	LVDS_D6P
5	GND	15	LVDS_CLK0N	25	GND
6	GND	16	LVDS_CLK0P	26	GND
7	LVDS_D0N	17	LVDS_D3N	27	LVDS_CLK1N
8	LVDS_D0P	18	LVDS_D3P	28	LVDS_CLK1P
9	LVDS_D1N	19	LVDS_D4N	29	LVDS_D7N
10	LVDS_D1P	20	LVD S_D4P	30	LVDS_D7P

Table 4 Definition of the LVDS socket pins

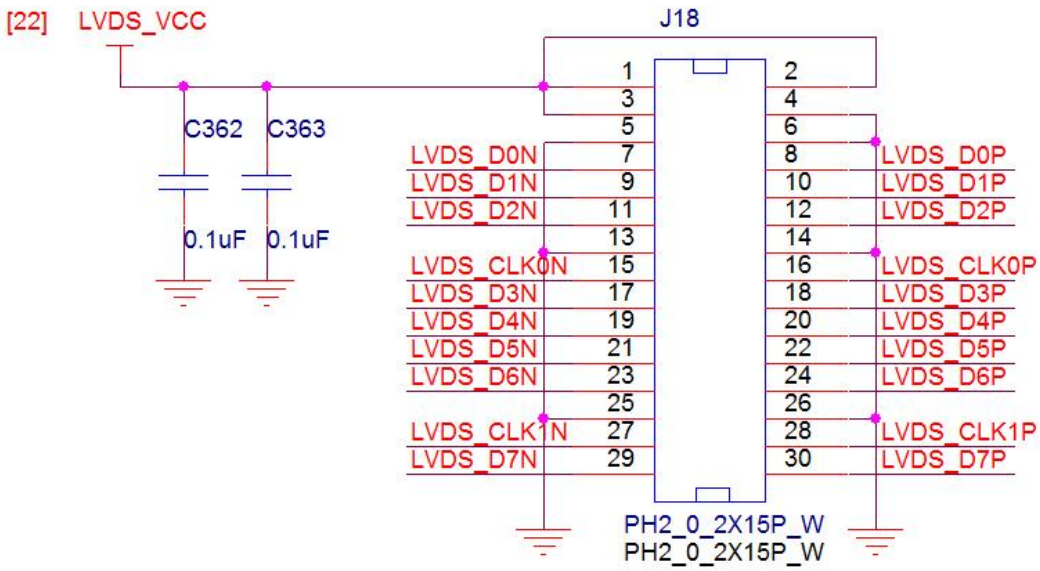


Figure 9. Schematic diagram of the LVDS socket design

2.2.3 The LVDS backlight socket

LVDS backlight socket, 2.0mm spacing 6 Pin touch screen interface, screen mark: BKL.

Figure 10. The LVDS backlight socket diagram

Pin	Needle foot definition
1	BLK_OUT
2	BLK_OUT
3	LCDBKL_ EN
4	LCDPWM
5	GND
6	GND

Table 5 Definition of the LVDS backlight socket pin

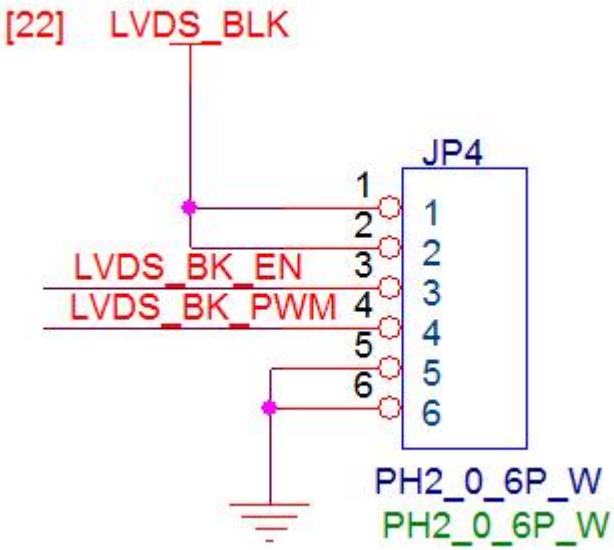


Fig. 11 Schematic design diagram of the LVDS backlight socket

2.2.4 The RS232 interface

Standard DB9 interface, screen mark identification: COM1 COM2 COM3 COM4.

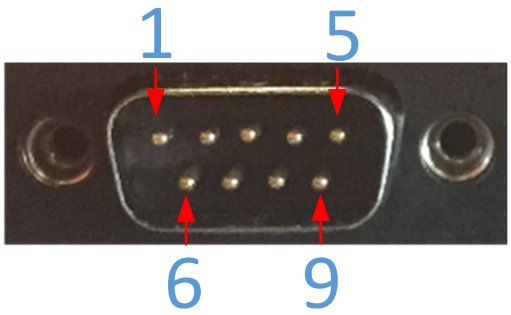


Figure 12 Interface diagram of DB 9

2.3 Installation hole position

MPC-1911 is designed to facilitate installation and fixation. The specific hole position is as follows:

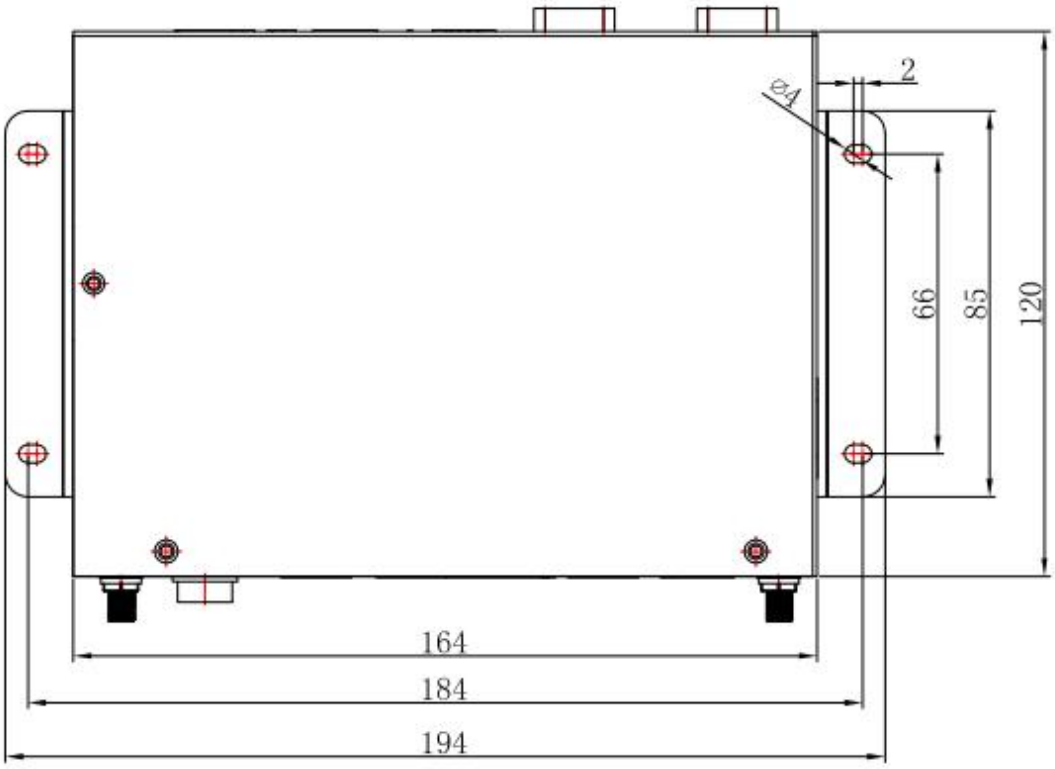


Figure 13 MPC-1911 Mechanical mounting hole position diagram (in mm)

The four corners of the product. The user can design the shell according to the actual use scenario and install and fix it with φ 4mm screws.

Chapter 3

Operation Use

MPC-1911, as an embedded main control board for industrial use, MPC-1911 can match peripheral interface parts according to the actual product functions of users to form products with different functions and applications.

MPC-1911 series products, factory pre-installed Android 7.1.2 operating system, users can upgrade the system according to the actual needs.

Software upgrade can be divided into SD card and U disk two categories, now described in detail.

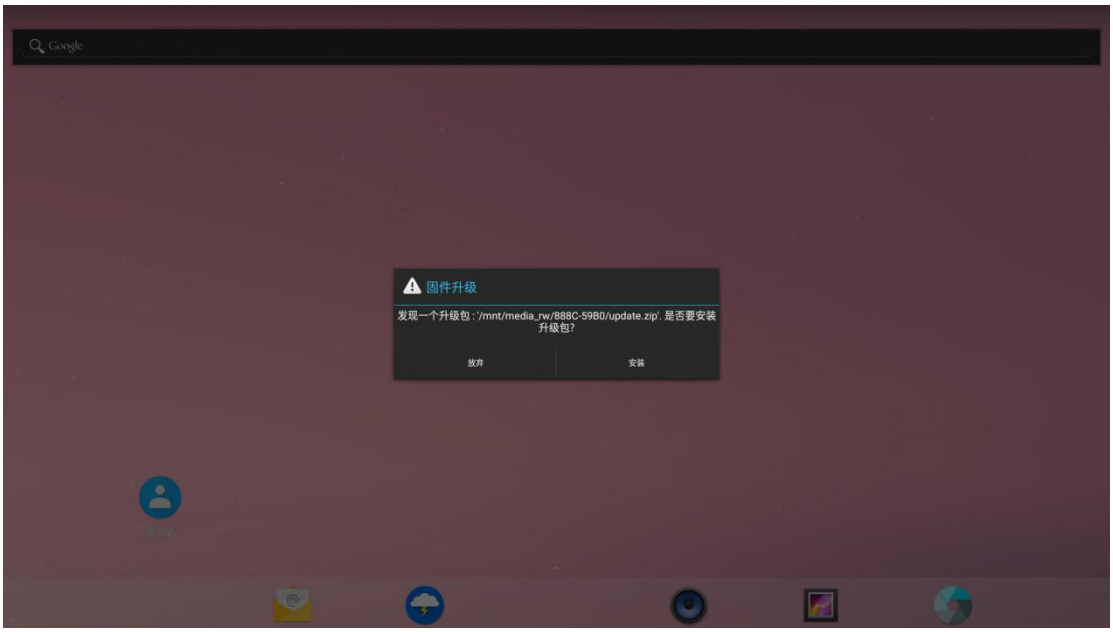
Tip: Before upgrading, please assemble the product components and use the standard 1080P display or the standard monitor.

3.1 SD card upgrade

MPC-1911 supports SD card and U disk upgrade support two upgrade ways, users can choose their own appropriate upgrade way according to their needs.

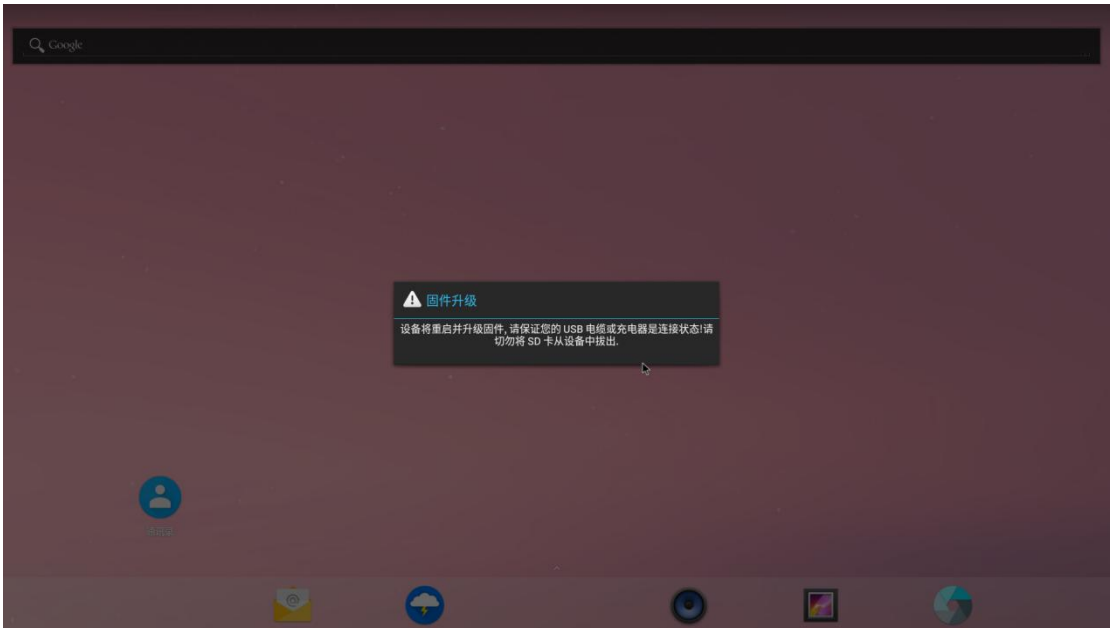
1. Rename the upgrade package to update.zip and then copy it to the U disk or under the sd card root directory.

2. Power off to restart the machine, wait shortly after restart the machine, the following window pop up on the system interface.



Select: Install.

3、The system comes down to the popup of the following window, please wait patiently.

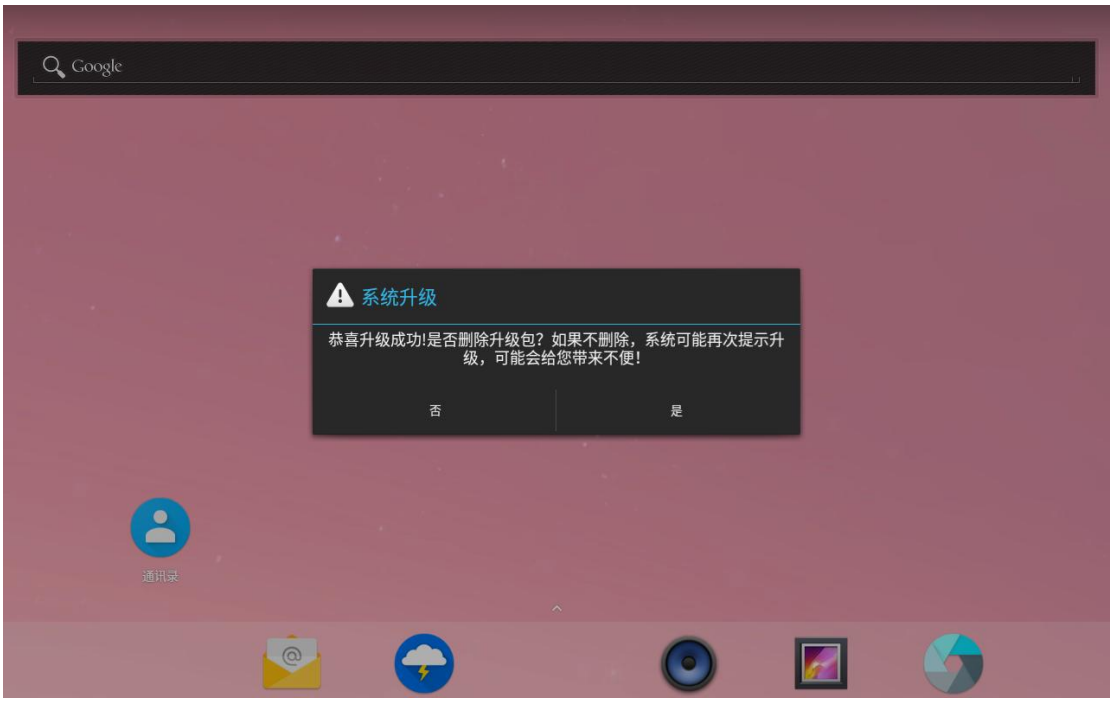


After waiting for a little while, the system then pop up the following window. Android System update, ready for the update.

Then the system will restart, and the upgrade page shown below appears.

4. The system will restart after the progress bar of the system update that is being installed above is loaded.

The following window pops up. The system upgrade is successful.



Choose: "Yes"

Note: Pull out the U disk after success. It is best to restore the factory Settings once, and if the upgrade fails, contact the machine manufacturer.

3.1.1 Log view

Restart the device, open the upgrade software, and click the "copy log" button to copy the log file to the yyyy.MM.dd-HH.mm.ss_last_log and yyyy.MM.dd-HH.mm.ss_last_install in the recovery directory in the U disk or SD card. After the copy is successful, the desktop will have prompt information.

3.1.2 Common reasons for failure

The failure of software upgrades is usually several,

1) Upgrade package selection error

A, the selected upgrade package does not match with the current system hardware onboard;

B, The upgrade package version varies greatly from the software version. For example, the system version 2.1.9 was upgraded to 2.2.0 , Check to restore the factory, otherwise the upgrade fails, the main interface display black screen;

C, different Android platforms (such as Android 4.4.2 to 5.1);

D, Upgrade of different system platforms (Android upgrade to linux).

For the above phenomenon, users can consult the accurate configuration information of the product before upgrading, select the corresponding upgrade package to download, and strictly install the operation instructions for the upgrade operation.

2) Unplug the U disk / SD card during the upgrade process

Unplugging the U disk / SD card during the upgrade may cause not only the system upgrade failure, but also the risk of damage of the product or U disk / SD card. Therefore, it is recommended to check and ensure reliable contact with

the U disk / SD card before the upgrade, and do not artificially remove the U disk / SD card during the upgrade process.

The reasons for the failure of the system upgrade are not the same, in order to quickly, accurate and efficient positioning reasons, you can timely contact the after-sales technical personnel to help you solve the problem.

Chapter 4

Precautions

Notes

Electronic products have strict requirements on the working environment and operation methods, please strictly abide by the instructions in the manual for use, so as not to cause product damage or harm to personal safety.

4.1 handling safety

1. Keep the product surface clean, dust and liquid will cause short circuit and damage to functional devices; but do not make Equipment cleaning with a liquid or a decontamination spray;
2. Please disconnect the power supply before product replacement, plugging and surface cleaning;
3. In order to avoid damage to product components and lines, please do not replace function modules, interface plug and plug and other operations, if necessary Must be live plug and pull operation, please be careful operation;
4. Before powering on, ensure that the product is reliably grounded. If supporting the shell, please connect the shell to the earth;
5. The product will produce heat, please ensure the air convection above the CPU, if there is a shell, please do not cover the cooling hole;
6. Please use the recommended DC12V power adapter, AC power supply 200V~240V, frequency 50 Hz;
7. The product is equipped with a battery-powered clock circuit, and if the battery is not replaced correctly, there will be a risk of explosion. Please use manufacturing The same battery or the same model is replacement. And dispose of the old batteries by following the manufacturers recommendations.
8. Please do not open or disassemble the products by yourself. If necessary, please operate by a certified engineer;
9. Before use, please carefully check the product interface, power supply / data cable and connector head, to ensure that no damage can be normal.
10. Note the safety warning signs on the product or box and comply with these operational requirements;

4.2 electrostatic protection

MPC-1911 is sensitive and fragile to static electricity. Please pay attention to the following electrostatic protection reminder:

⚠ Do not touch the disassembly device or fingers or metal objects directly touch the internal surface of the product. If necessary, please wear / install anti-static equipment (electrostatic ring, electrostatic protective clothing, etc.) before operation;

⚠ The product is reliably grounded, especially in a dry use environment.

⚠ When the product is not in use, it should be stored in antistatic plastic bag to effectively prevent static electricity; better use metal container or metal foil packaging;

4.3 Storage and transportation

Storage temperature: -40℃ ~85℃

Relative humidity: 0% to 90% relative humidity, non-condensing

Products not used should be stored in anti-static, sealed packaging belt, to avoid static electricity, dust and other damage to the product.

If there is transportation needs, please package the products, if necessary, plus foam protection and other collision protection, waterproof measures, to ensure that the products will not cause damage to the product parts. Reasonable storage and transportation can protect the normal work of the product, and improper operation may cause irreversible damage to the product, and may cause potential safety risks.

Chapter 5

After sales and service

After sales and service

5.1 Product quality assurance

From the date of purchase, Ruixun Technology for the original buyer to provide two years of product quality assurance.

No quality guarantee shall be provided for the products maintained by unauthorized maintenance personnel.

Ruixun Technology has the right to exempt the problems caused by the manual.

5.2 Support and service

For the products within the warranty period, Ruixun Technology provides free repair or replacement services.

For the products that need to be repaired, we will charge material fees and labor service fees as appropriate.

If you believe that the purchased product is faulty, follow these steps:

1. Collect information about the problems you have encountered (such as, CPU main frequency, used by Ruixun technology products, and other software, hardware, etc.). Please note and record any abnormal information display appearing on the screen.
2. Contact your supplier to describe the problem and use the description of the product in this manual to confirm the fault.
3. If your product is diagnosed as failing, obtain the RMA (ReturnMaterial Authorization) serial number from your supplier. This allows us to recycle the faulty products as soon as possible.
4. Please carefully package the faulty product and attach a complete aftermarket service card and proof of purchase date (e. g. sales invoice). We do not provide quality assurance services for products that cannot provide proof of purchase date.

5. Write the relevant RMA serial number on the outer package and ship it to the salesperson.

If users need technical support, please contact your local distributor, sales representative or Ruixun Technology customer service center. Before conducting the technical consultation, please complete the following information by yourself:

- Product name and serial number
- Description of the peripheral additional equipment
- Description of the user software (operating system, version, application software, etc.)
- Complete description of the problem occurring with the product
- Complete content of each error message

For the product questions or the latest information, please call the Ruixun Technology service hotline: 400 602 5060

Or log on to the official website of Ruixun Technology:www.rockemb.com

Attached: Product packaging list

order number	name	quantity	unit	remarks
1	MPC-1911	1	short for Taizhou	
2	users manual	1	portion	This manual
3	Certificate of qualification / warranty card	1	portion	
4	Product packaging box	1	cover	Contains all the factory accessories of this product

www.rockemb.com

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