

SHENZHEN SUNCHIP TECHNOLOGY CO.,LTD

Quad-core RK3288 Android Decoding Driver All-in-One Board Specification

(Modle No.: AD-Z33-V1.5)

Contents

1	Chapter 1 Product Overview	3
1.1	Overview	3
1.2	Characteristic	3
2	Chapter ii product specifications	4
2.1	Product picture	4
2.2	Basic hardware specifications	5
2.3	Basic software specifications	6
2.4	PCBA Structure	7
2.5	Electric	8
3	Appendix	15

Chapter 1 product overview

Overview

The big board of intelligent industrial all-in-one machine adopts Rockchip RK3288 quad-core chip solution. Support Android8.0 and above system. Enhanced power management circuitry. Support common external devices. Rich interfaces and stable performance. Suitable for intelligent remote network control: industrial, medical, large advertising machines, educational video terminals and other equipment.

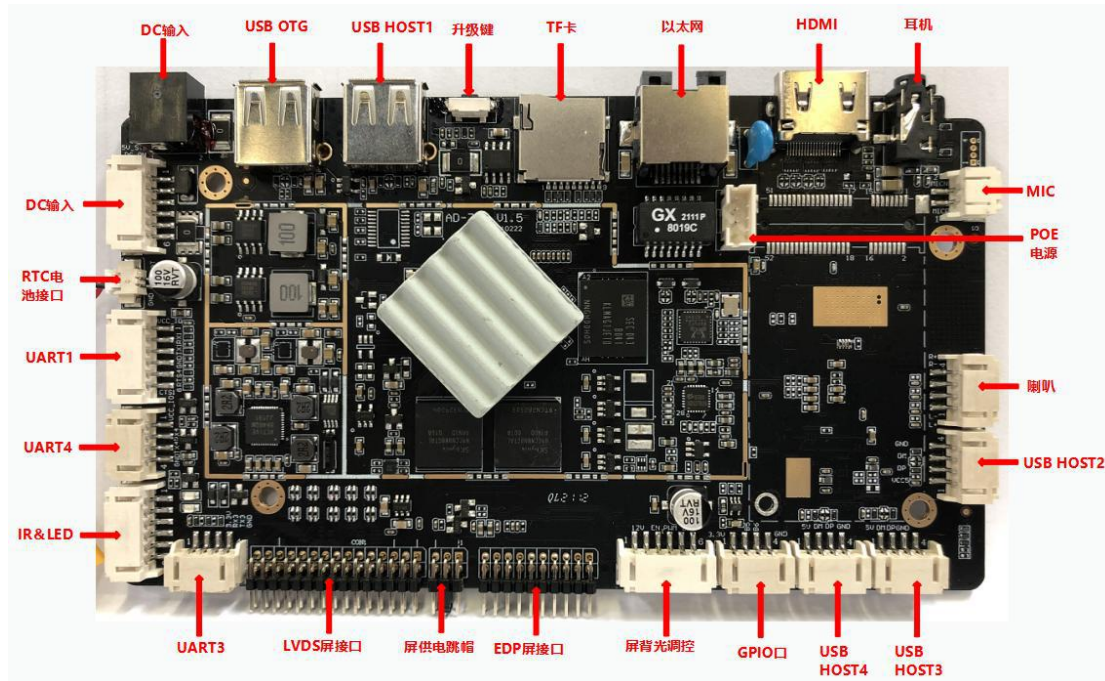
Characteristics

- ◆ Support 7-inch to 84-inch various LVDS interface displays (point-to-point full HD display 1920*1080).
- ◆ Support EDP interface display screen.
- ◆ Multiple interactive mode interfaces: capacitive touch, infrared touch, infrared remote control, USB keyboard and mouse, multi-point optical touch.
- ◆ Multiple network interfaces: Ethernet, wireless Wifi, Bluetooth.
- ◆ Multi-channel USB interface, serial port.
- ◆ Strong anti-electromagnetic interference and electromagnetic compatibility.

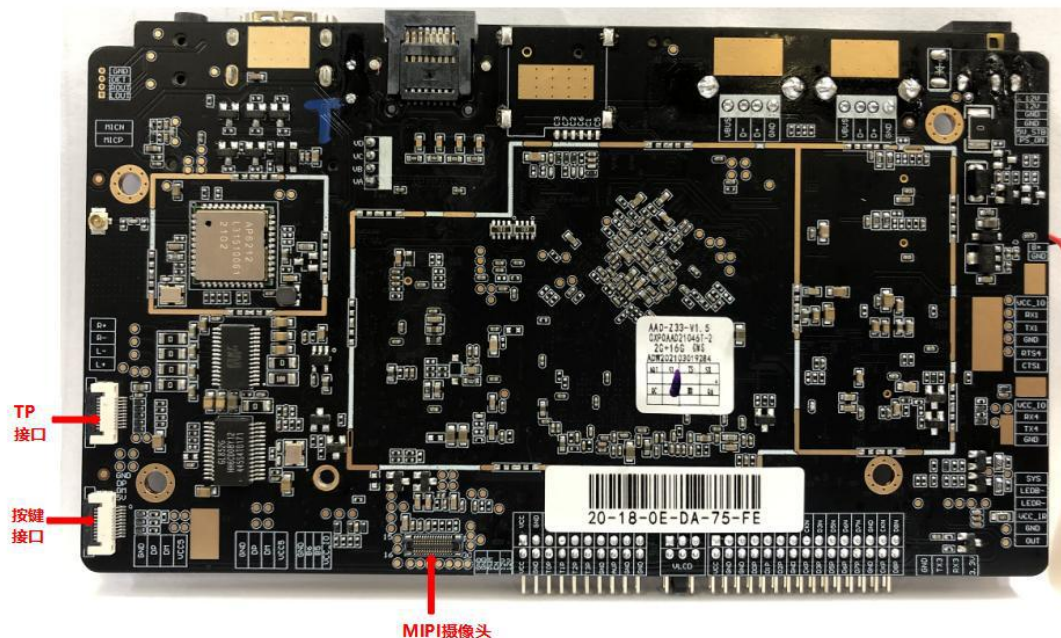
Chapter 2 Product Specifications

Product pictures

Front:



Back:



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Basic hardware specifications

CPU	Rockchip RK3288 Quad-core Cortex-A17 Quad-core GPU Mali-T764
Main Frequency	1.8 GHz
RAM	LPDDR3 2G/4G optional
Built-in storage capacity	EMMC 8GB/16G/32G/64G optional
Display interface	LVDS interface (single-channel, 6-bit dual-channel, 8-bit dual-channel). Support maximum resolution 1920x1080, support 7"-84" display
	EDP interface
Screen Voltage	Support 3.3V/5V/12V optional
Touch screen	Provide I2C interface (can support multi-point resistive touch, multi-point capacitive touch). Support USB multi-point infrared touch, multi-point acoustic wave touch, multi-point optical touch.
Internet	With RJ45 interface, Support 10/100M Ethernet。
	With Wifi&BT Module, support Wi-Fi 802.11b/g/n protocol. Support BT4.0
Image rotation	Support 0 degree, 90 degree, 180 degree, 270 degree manual/auto rotation, support gravity sensor function
Real Time Clock	Built-in (optional external) real-time clock power supply battery
Interface device	Support MIPI interface camera, up to 500W pixels
	4 USB HOST, 1 USB OTG (Support usb camera @500W usb printer , U disk , mouse , keyboard standard usb external equipment)
	3groups of serial ports. Support external serial port device modules (3G module, NFC module, printer, card reader, etc.)
	TF card, Support Max 32GB
	Class D power amplifier: 3W*2 8 ohms, support microphone
	HDMI 2.0 Output
Audio	MP3,WMA,WAV,APE,FLAC,AAC,OGG,M4A,3GPP 格式
Video	Support H.264, MPEG2, VP6, VP8, MVC and other video formats 2160P@24FPS decoding. YouTube and other online videos, up to 4K, HTML5 video playback, Flash 10.1 playback
Image	Support JPG, BMP, PNG and other image format browsing and support rotation/slide show/picture zoom function
Power Adapter	Inout: AC100-240V.50-60HZ, Output: DC12V 3A

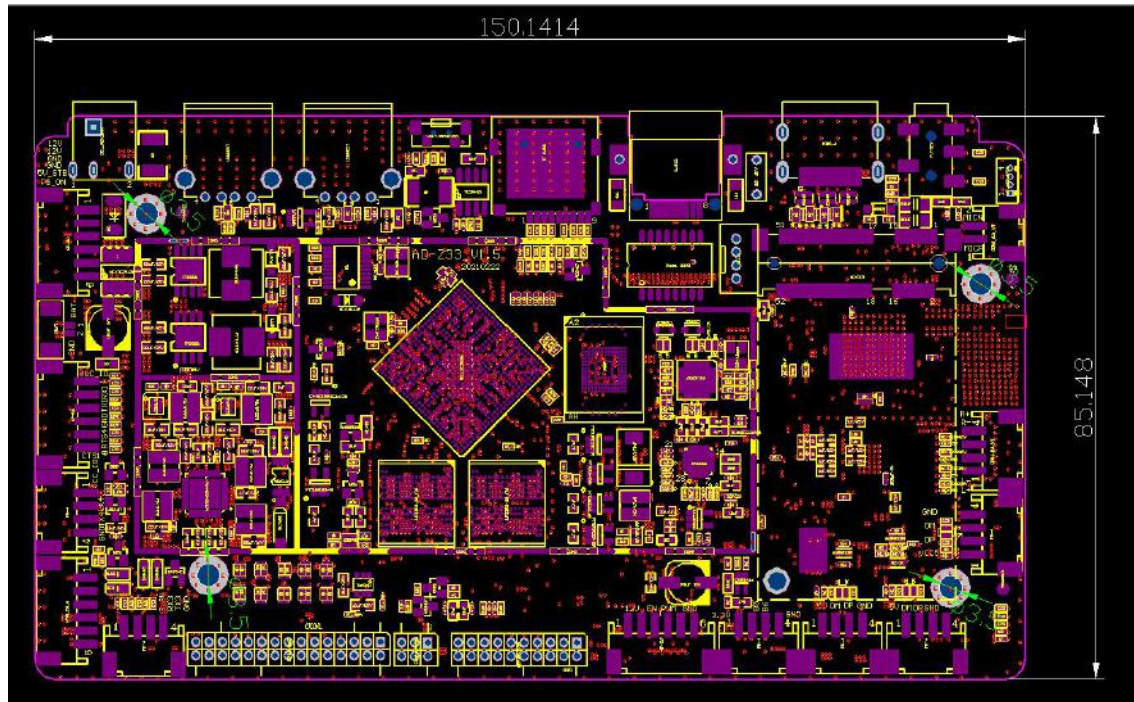
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Basic software specifications

Operation System	Android 8.0 and above
Basic software functions	Web browsing, web chat, email, e-book, resource manager
Sound effect mode	Clock, alarm clock, calculator, recording
Language support	multi-lingual
Recording	Support MP3, WMA format recording
Tool	Calendar
	Alarm Clock
	Calculator
	note
	Weather + clock
	recording
Word processing	EPUB, WORD, EXCEL, POWERPOINT, PDF, TXT
Ebook	PDF/TXT/CHM/DOC/EXCEL/EPUB/RTF/FB2
Schedule	calendar
Input	Standard Andriod keyboard, optional third-party input method (Chinese, Korean, Japanese, etc.)
Network	Browser -ChromeLite
	GOOGLE Market
	Email
	Gmail
	Google talk
System Management	Support OTA remote upgrade, U disk upgrade, SD upgrade (silent installation)
	The original ecological Android system, open root permissions, can be customized product development
	Customizable local or remote server management system
	Support a variety of third-party Android remote advertising publishing systems
	Support multi-channel serial devices, USB devices, IO control devices

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PCBA structure



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Electric

● Power interface (DC IN 12V)

No.	Definition	Attributes	Description
1	12V_IN	Power supply	12V Power supply Input
2	12V_IN	Power supply	12V Power supply Input
3	GND	GND	GND
4	GND	GND	GND
5	5V_STB	Input	Control
6	PS-ON	Input	Control

● RTC battery port (RTC)

No.	Definition	Attributes	Description
1	BAT+	Power supply	Positive Input
2	GND	GND	GND

● Serial port (UART1 JACK)

No.	Definition	Attributes	Description
1	VCC_IO	Output	3.3V Voltage Output
2	UART1_RX	Input	Take over (5-B0)
3	UART1_TX	Output	Send (5-B1)
4	GND	GND	GND
5	UART1_RTS	Input	Request Send (5-B3)
6	UART1_CTS	Output	Request Send (5-B2)

● Serial port (UART4 JACK)

No.	Definition	Attributes	Description
1	VCC_IO	Output	3.3V Voltage Output
2	UART4_RX	Input	Take over (5-B7)
3	UART4_TX	Output	Send (5-B6)
4	GND	GND	GND

● IR & LED (IR & LED JACK)

No.	Definition	Attributes	Description
1	VCC_SYS	Output	5.0 V Output
2	LED_B-	Output	Negative Blue light
3	LED_R-	Output	Positive Red light
4	VCC_IR	Output	5 V Output
5	GND	GND	GND

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6	IR_OUT	Input	IR Signal Input
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● Serial port (UART3 JACK)

No.	Definition	Attributes	Description
1	VCC_IO	Output	3.3V Voltage Output
2	UART3_RX	Input	Take over (7-A7)
3	UART3_TX	Output	Send (7-B0)
4	GND	GND	GND

● Microphone port (MIC1)

No.	Definition	Attributes	Description
1	MIC+	Input	MIC Positive Input
2	MIC-	Input	MIC Negative Input

● Speaker Output port (SPEAKER)

No.	Definition	Attributes	Description
1	LP	Output	left channel Output Positive
2	LN	Output	left channel OutputNegative
3	RN	Output	Right channel OutputNegative
4	RP	Output	Right channel Output Positive

● POE port (POE JACK)

No.	Definition	Attributes	Description
1	VA	Output	Power supply
2	VB	Output	Power supply
3	VC	Output	Power supply
4	VD	Output	Power supply

● USB-HOST port(USB_HOST1)

No.	Definition	Attributes	Description
1	VCC_5V	Output	5V Voltage Output
2	HOST_DM	Output	Data
3	HOST_DP	Input	Data
4	GND	GND	GND

● USB-HOSTport(USB_HOST2)

No.	Definition	Attributes	Description
1	VCC_5V	Output	5V Voltage Output

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2	HOST_DM	Output	Data
3	HOST_DP	Input	Data
4	GND	GND	GND

● USB-HOST port(USB_HOST3)

No.	Definition	Attributes	Description
1	VCC_5V	Output	5V Voltage Output
2	HOST_DM	Output	Data
3	HOST_DP	Input	Data
4	GND	GND	GND

● USB-HOSTport(USB_HOST4)

No.	Definition	Attributes	Description
1	VCC_5V	Output	5V Voltage Output
2	HOST_DM	Output	Data
3	HOST_DP	Input	Data
4	GND	GND	GND

● Reserved GPIOport(GPIO JACK)

No.	Definition	Attributes	Description
1	VCC_IO	Output	3.3V Voltage Output
2	GPIO0-B5	Input	Data
3	GPIO0-B6	Input	Data
4	GND	GND	GND

● Screen backlight port (LCD BL JACK)

No.	Definition	Attributes	Description
1	12V	Output	12V Output
2	12V	Output	12V Output
3	LCD-EN	Output	backlight Control (5-C2)
4	LCD-ADJ	Output	Backlight adjustable (7-A0)
5	GND	GND	GND
6	GND	GND	GND

● LVDSport (LVDS Panel)

No.	Definition	Attributes	Description
1	POWER	Output	3V/5V/12V Power supply Output
2	POWER		
3	POWER		

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4	GND	GND	GND
5	GND		
6	GND		
7	RX0-	Output	Data
8	RX0+	Output	Data
9	RX1-	Output	Data
10	RX1+	Output	Data
11	RX2-	Output	Data
12	RX2+	Output	Data
13	GND	GND	GND
14	GND		
15	TCLK3-		
16	TCLK3+	Output	Clock
17	RX03-	Output	Data
18	RX03+	Output	Data
19	RXE0-	Output	Data
20	RXE0+	Output	Data
21	RXE1-	Output	Data
22	RXE1+	Output	Data
23	RXE2-	Output	Data
24	RXE2+	Output	Data
25	GND	GND	GND
26	GND		
27	TCLK2-		
28	TCLK2+	Output	Clock
29	RXE3-	Output	Data
30	RXE3+	Output	Data

● Screen Voltage option port (LCD JP JACK)

No.	Definition	Attributes	Description
1	3.3V	Output	3.3V Output
2	VCC_IN_LCD	Input	LCD Voltage Input
3	5.0V	Output	5.0 V Output
4	VCC_IN_LCD	Input	LCD Voltage Input
5	12V	Output	12V Output
6	VCC_IN_LCD	Input	LCD Voltage Input

● EDP Screen port (eDP Panel)

No.	Definition	Attributes	Description
1	POWER	Output	3V/5V/12V Power

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2	POWER		supply Output
3	GND		
4	GND	GND	GND
5	EDP_TX0N	Output	Data
6	EDP_TX0P	Output	Data
7	EDP_TX1N	Output	Data
8	EDP_TX1P	Output	Data
9	EDP_TX2N	Output	Data
10	EDP_TX2P	Output	Data
11	EDP_TX3N	Output	Data
12	EDP_TX3P	Output	Data
13	GND	GND	GND
14	GND	GND	GND
15	EDP_AUXN	Output	Data
16	EDP_AUXP	Output	Data
17	GND	GND	GND
18	GND	GND	GND
19	EDP_HPD	Input	Data
20	GND	GND	GND

● Camera port (CAMERA JACK)

No.	Definition	Attributes	Description
1	GND	GND	GND
2	MIPI_MCLK	Clock	Clock Signal port
3	GND	GND	GND
4	CIF_PDN1	Output	Front Camera Control port
5	MIPI_RST	Output	Reset Signal port
6	SDA	Data	Data Signal port
7	SCL	Clock	Clock Signal port
8	GND	GND	GND
9	VCC_DVP	Power supply	2.8V power supply port
10	GND	GND	GND
11	AVDD_DVP	Power supply	2.8V power supply port
12	GND	GND	GND
13	VCC_DVP	Power supply	1.8V power supply port
14	VCC_DVP	Power supply	1.5V power supply port
15	GND	GND	GND
16	GND	GND	GND

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17	MIPI_D0N	Data	Data Signal port
18	MIPI_D0P	Data	Data Signal port
19	GND	GND	GND
20	MIPI_D1N	Data	Data Signal port
21	MIPI_D1P	Data	Data Signal port
22	GND	GND	GND
23	MIPI_CLKN	Clock	Clock Signal port
24	MIPI_CLKP	Clock	Clock Signal port
25	GND	GND	GND
26	MIPI_D2N	Data	Data Signal port
27	MIPI_D2P	Data	Data Signal port
28	GND	GND	GND
29	MIPI_D3N	Data	Data Signal port
30	MIPI_D3P	Data	Data Signal port

● TPport (Touch Panel connector)

No.	Definition	Attributes	Description
1	GND	GND	GND
2	GND	GND	GND
3	VCC_TP	Input	TPPower supply Input (3.3V)
4	SDA	Output	Data (I2C4)
5	SCL	Output	Clock (I2C4)
6	GND	GND	GND
7	TP_INT	Input	External Interrupt 7-A6)
8	TP_RST	Input	External reset (7-A5)
9	GND	GND	GND
10	GND	GND	GND

● Keyboard port (KEY)

No.	Definition	Attributes	Description
1	VOL+/RECOVER	volume +/-upgrade key	Default high level volume + Key
2	VOL-	volume -	Default high level volume - Key
3	KEY1	Input	Default high level (6-A5)
4	KEY2	Input	Default high level (6-A6)
5	KEY3	Input	Default high level (6-A7)
6	PLAY_ON	Input	Default high level

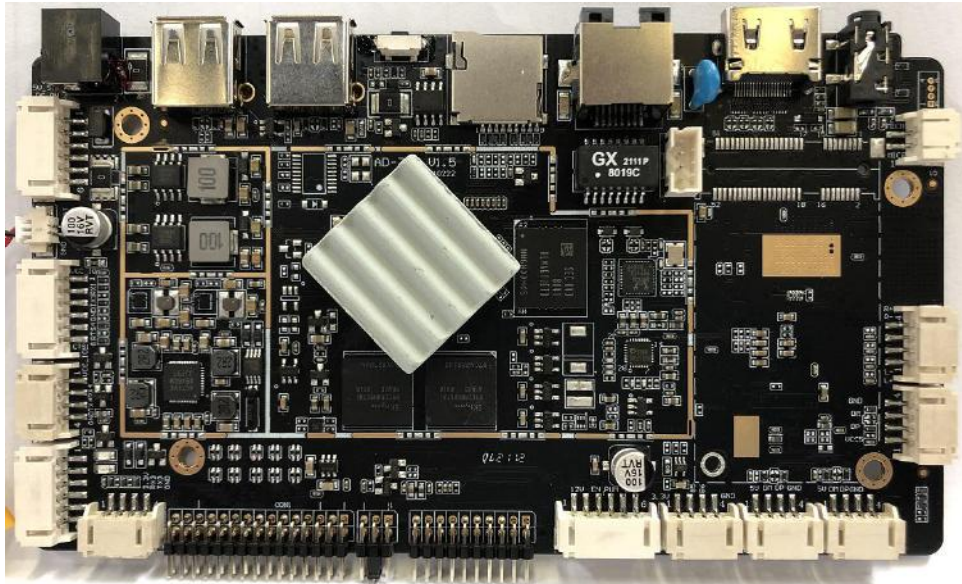
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			Boot Key
7	VCC33_RTC	Power supply	3.3V Output
8	GND	GND	GND
9	GND	GND	GND
10	GND	GND	GND

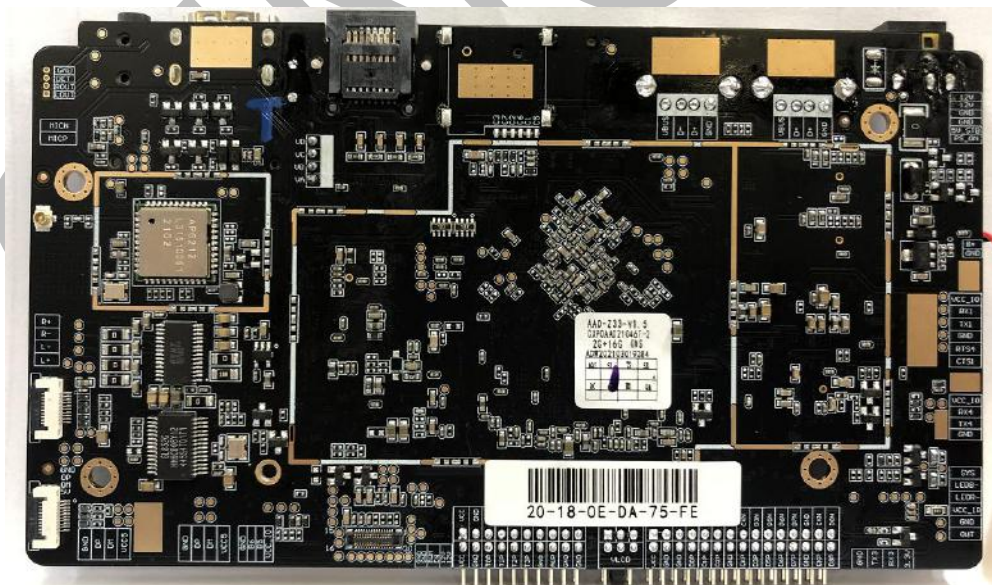
Appendix

◆ Product picture

- Front



- Backside



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◆ Motherboard installation instructions:

1. Take the board and install the wristband. If the working environment is dry, the wristband must wear a wired static bracelet.
2. When installing the board, pay attention to the finger should be placed on the side of the board, do not touch the center of the board, the center of the board is an important device and components that are extremely sensitive to ESD, easily damaged by ESD static electricity.
3. When installing the peripheral pin header type interface device, it should be inserted under the motherboard, and inserted; it can not be forced to insert, it is easy to deform the motherboard, and it is easy to damage the components of the BGA package on the motherboard.
4. Before the screw is screwed, the motherboard must be leveled to ensure the height of the positioning post. Otherwise, the motherboard may be deformed, causing the solder ball to crack and damage the components.

◆ Tips

Pay special attention to the power supply used by the board. The power supply voltage requirement of our board is DC_12V, the working voltage range is 9V-15V, and the ripple is less than 100mV. When selecting the power supply, pay attention to the power surge voltage PP value can not exceed 15V, once the power supply voltage or power supply The surge voltage PP value exceeds the range of the board voltage to 15V, the board will be permanently burned or open circuit breaker, the power supply ripple is greater than 100mV. It is easy to interfere with the board or work unstable, especially for the sensor device and touch screen. Point phenomenon, we recommend the use of power supply 12V / 3A, such as the use of peripheral equipment is more recommended to use 12V/5A. Before powering on the motherboard, please make sure that the power supply voltage is within the required range, whether the power supply wiring is

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correct, whether the screen line and voltage jump cap of the display are correct, and whether the connection and pin of each socket are correct, and ensure the power supply voltage. The power supply can be used under the condition that the socket wiring is completely correct.