SHENZHEN SUNCHIP TECHNOLOGY CO., LTD

Quad-core RK3566 Android Decoding Driver Integrated Board Specification

（**Product Model：AD-C36-V1.1**）

Add:2nd&3rd Floor, Building 4, Fu'an Industry Park, No. 90, Dayang Road, Fuyong Town, Baoan District, Shenzhen City, China 518103

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Chapter I　Product Overview

Overview：

Intelligent industrial all-in-one large board, using Rockchip RK3566 quad-core chip solution. Support Android 11 system. Enhanced power management circuit. Support common external devices. Rich interface and stable performance. Suitable for intelligent remote network control: class industrial, medical, large advertising machines, educational video terminals and other equipment.

Characteristic：

◆ Support MIPI interface display + EDP interface display + LVDS interface display + HDMI 2.0 (4K display)

◆ Multiple interaction mode interface: capacitive touch, infrared touch, USB keyboard and mouse, multi-point optical touch.

◆ Multiple network interfaces: Ethernet, wireless Wifi, Bluetooth.

◆ Multiple USB ports, serial ports.

◆ Strong resistance to electromagnetic interference and electromagnetic compatibility.

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Chapter 2 Product Specifications

Product picture

Front:

Back：

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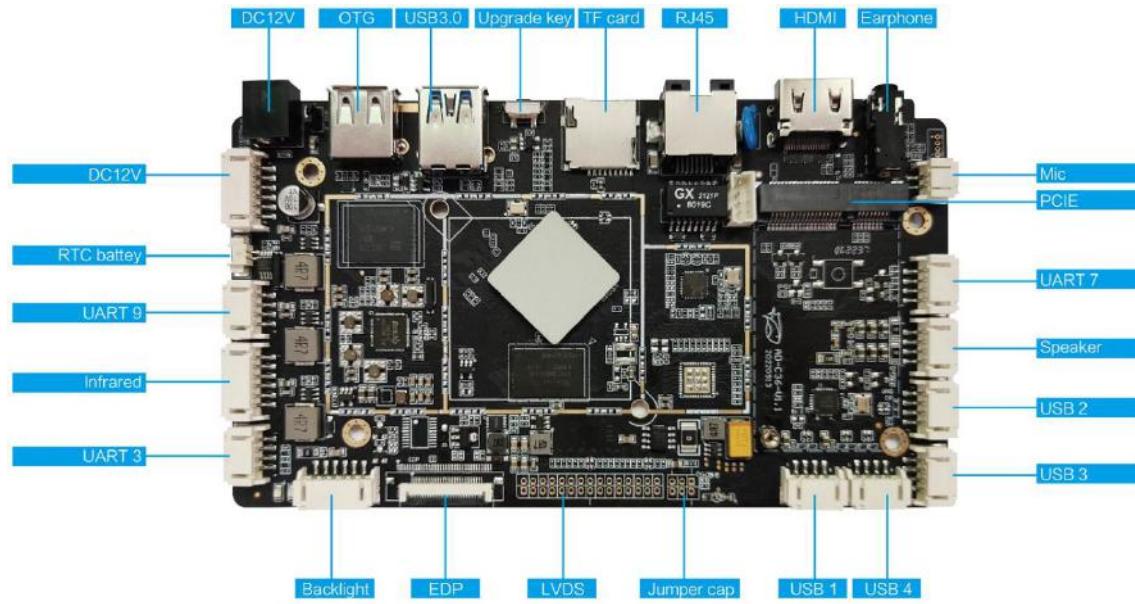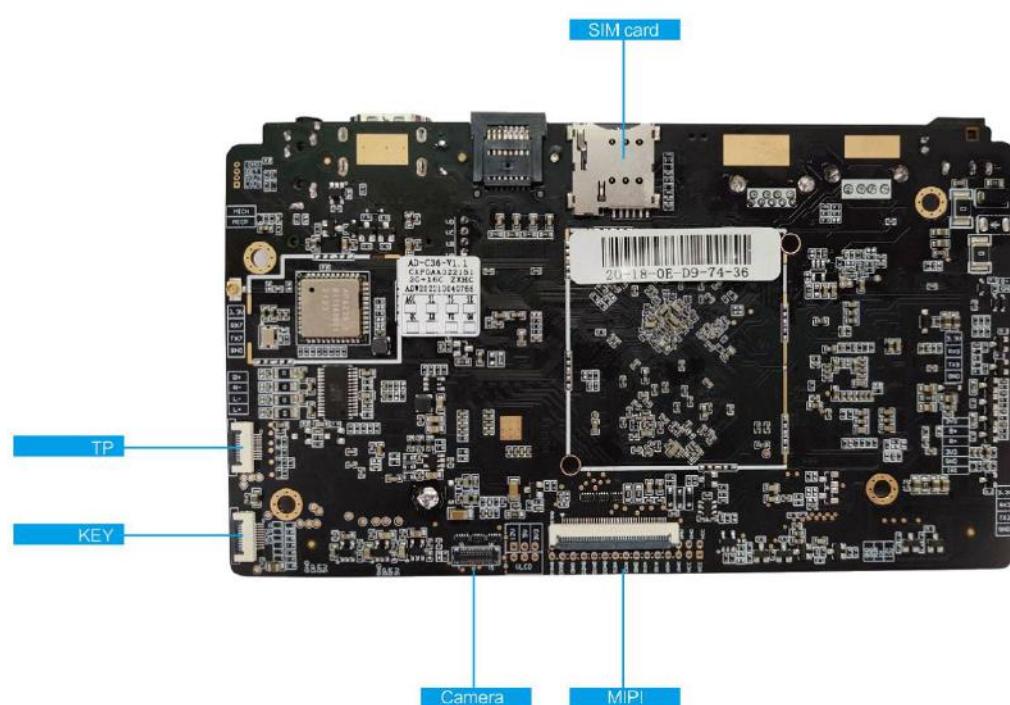
Basic hardware specifications：

CPU	Rockchip RK3566 Quad-core A55 architecture
Main frequency	1.8GHz
GPU	ARM Mali-G52 2EE
	OpenGL ES 1.1/2.0/3.2
	Vulkan 1.1
	OpenCL 2.0
	Embedded with high performance 2D acceleration hardware
NPU	1TOPS computing power, support int8/int16
RAM	2G DDR4
Built-in storage capacity	EMMC 16G/32G/64G optional
Display Interface	HDMI2.0（maximum support 4K@60FPS）
	MIPI display interface (MIPI and LVDS can only be selected as one)
	LVDS display interface (MIPI and LVDS can only be selected as one)
	EDPdisplay interface
Screen voltage	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 touch, multi-point optical touch.
Network	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 degrees, 90 degrees, 180 degrees, 270 degrees manual / automatic rotation, support gravity sensing function
Real-time clock	Built-in real-time clock powered battery
Interface device	Support MIPI interface camera, support up to 500W pixels
	4 USB HOST 2.0, 1 USB HOST3.0, 1 USB OTG (support usb camera @ 500W usb printer , USB stick , mouse , keyboard standard usb peripherals)
	2 groups of serial ports, support external serial device modules (NFC modules, printers, card swipes, etc.)
	TF card, supports up to 32GB
	Class D amplifier: 3W*2 8 ohms, microphone support
Audio	MP3,WMA,WAV, APE, FLAC, AAC, OGG,M4A,3GPP
Video	Support H.265/H.26/VP9 video decoding, up to 4K60FPS Support H.264/H.265 video encoding, up to 4K30FPS
Picture	Support JPG, BMP, PNG and other image formats to browse and support rotation / slideshow / image zoom function
Power adapter	Input：AC100-240V.50-60HZ， output： DC12V 3A（Internal positive and external negative）

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Basic software specifications：

Operating system	Android 11 and above
Basic software functions	Web browsing, web chat, email, e-book, resource manager
Sound mode	Clock, alarm clock, calculator, recording
Language	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
E-book	PDF/TXT/CHM/DOC/EXCEL/EPUB/RTF/FB2
schedule	Calendar
Input	Standard Android keyboard, optional third-party input method (Chinese, Korean, Japanese, etc.)
Internet	Browser -ChromeLite
	GOOGLE Market
	Email
	Gmail
	Google talk
System Management	Support OTA remote upgrade, U disk upgrade, SD upgrade (silent installation)
	Original Android system with open root access for product customization and development
	Customizable local or remote server management system
	Support multiple third-party Android remote ad distribution systems
	Support multi-channel serial devices, USB devices, IO control devices

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PCBA structure

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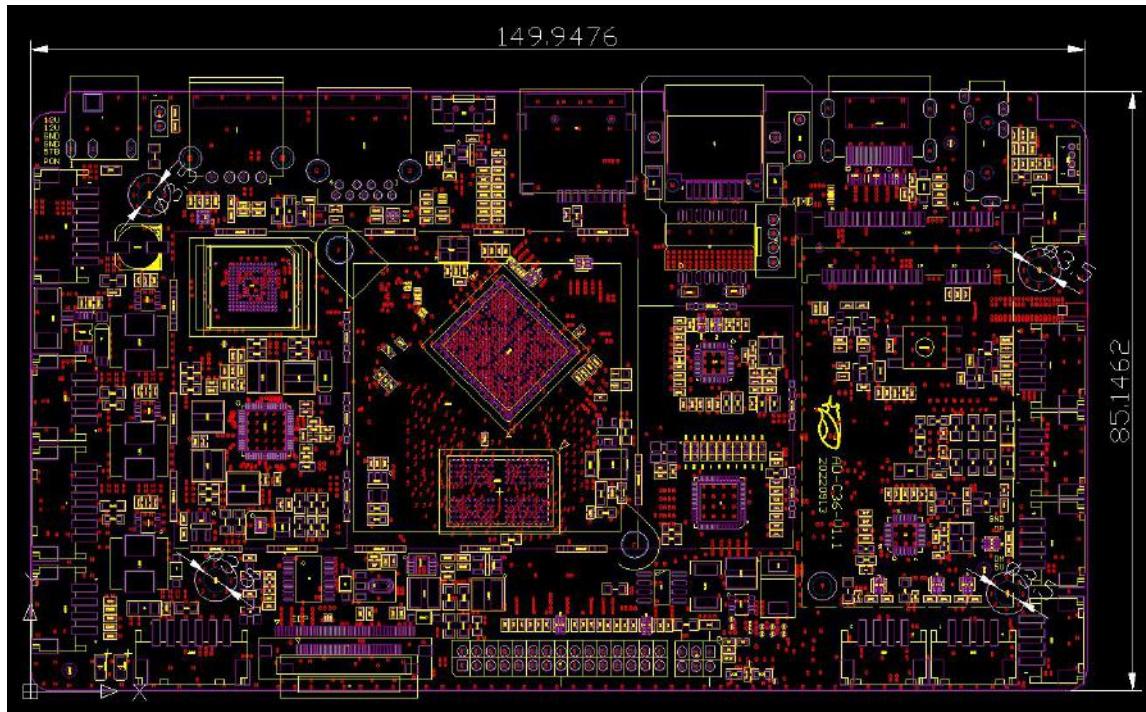
Electric

- **Power Port（DC IN 12V）**

No.	Definition	Attributes	Description
1	12V_IN	power	12V power Input
2	12V_IN	power	12V power Input
3	GND	Ground wire	Ground wire
4	GND	Ground wire	Ground wire
5	5V_STB	Input	control
6	PS_ON	Input	control

- **RTC battery**

No.	Definition	Attributes	Description
1	BAT	power	RTC Battery Positive
2	GND	Ground wire	Ground wire

- **UART9**

No.	Definition	Attributes	Description
1	3.3V	power	Power Output
2	UART9_RX	Input	Data
3	UART9_TX	Output	Data
4	GND	Ground wire	Ground wire

- **IR interface**

No.	Definition	Attributes	Description
1	VCC_IR	power	Power Output
2	LED_B+	Output	LED positive
3	LED_R+	Output	LED positive
4	VCC_IR	power	Power Output
5	GND	Ground wire	Ground wire
6	IR_OUT	Output	Infrared Output

- **UART3**

No.	Definition	Attributes	Description
1	3.3V	power	Power Output
2	UART3_RX	Input	Data
3	UART3_TX	Output	Data
4	GND	Ground wire	Ground wire

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● **Screen backlight Port**

No.	Definition	Attributes	Description
1	VCC12V_BL	power	Power Output
2	VCC12V_BL	power	Power Output
3	EN	Output	Backlight Enable
4	PWN	Output	PWM control
5	GND	Ground wire	Ground wire
6	GND	Ground wire	Ground wire

● **EDP display interface**

No.	Definition	Attributes	Description
1	NC	/	/
2	GND	Ground wire	Ground wire
3	EDP_D1N	Output	Data
4	EDP_D1P	Output	Data
5	GND	Ground wire	Ground wire
6	EDP_D0N	Output	Data
7	EDP_D0P	Output	Data
8	GND	Ground wire	Ground wire
9	EDP_AUXP	Output	Data
10	EDP_AUXN	Output	Data
11	GND	Ground wire	Ground wire
12	VCC_EDP33	power	Power Output
13	VCC_EDP33	power	Power Output
14	NC	/	/
15	GND	Ground wire	Ground wire
16	GND	Ground wire	Ground wire
17	EDP_HPD	Output	Data
18	GND	Ground wire	Ground wire
19	GND	Ground wire	Ground wire
20	GND	Ground wire	Ground wire
21	GND	Ground wire	Ground wire
22	EN	Output	Enable
23	ADJ	Output	Brightness adjustment
24	NC	Output	Data
25	NC	/	/
26	VCC12V_BL	power	12V power Output
27	VCC12V_BL	power	12V power Output
28	VCC12V_BL	power	12V power Output
29	VCC12V_BL	power	12V power Output
30	NC	/	/

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- **LVDS display interface**

No.	Definition	Attributes	Description
1	VDD_LCD	power	powerOutput
2	VDD_LCD	power	powerOutput
3	VDD_LCD	power	powerOutput
4	GND	Ground wire	Ground wire
5	GND	Ground wire	Ground wire
6	GND	Ground wire	Ground wire
7	TX_A0N	Output	Data
8	TX_A0P	Output	Data
9	TX_A1N	Output	Data
10	TX_A1P	Output	Data
11	TX_A2N	Output	Data
12	TX_A2P	Output	Data
13	GND	Ground wire	Ground wire
14	GND	Ground wire	Ground wire
15	TXACN	Output	clock
16	TXACN	Output	clock
17	TX_A3P	Output	Data
18	TX_A3N	Output	Data
19	TX_B0N	Output	Data
20	TX_B0P	Output	Data
21	TX_B1N	Output	Data
22	TX_B1P	Output	Data
23	TX_B2N	Output	Data
24	TX_B2P	Output	Data
25	GND	Ground wire	Ground wire
26	GND	Ground wire	Ground wire
27	TXBCN	Output	clock
28	TXBCN	Output	clock
29	TX_B3N	Output	Data
30	TX_B3P	Output	Data

- **Backlight jump port**

No.	Definition	Attributes	Description
1	VCC_12V	power	12V power Output
2	VCC_LCD	power	LVDS backlight Input
3	VCC_5V	power	5V power Output
4	VCC_LCD	power	LVDS backlight Input
5	VCC_3.3V	power	3.3V power Output
6	VCC_LCD	power	LVDS backlight Input

● **MIPI Screen Port**

No.	Definition	Attributes	Description
1	NC	/	/
2	VDD_LCD	power	3.3VpowerOutput
3	VDD_LCD	power	3.3VpowerOutput
4	NC	/	/
5	RST	Output	Reset
6	NC	/	/
7	GND	Ground wire	Ground wire
8	TX_D0N	Output	Data
9	TX_D0P	Output	Data
10	GND	Ground wire	Ground wire
11	TX_D1N	Output	Data
12	TX_D1P	Output	Data
13	GND	Ground wire	Ground wire
14	TX_CLKN	Output	clock
15	TX_CLKP	Output	clock
16	GND	Ground wire	Ground wire
17	TX_D2N	Output	Data
18	TX_D2P	Output	Data
19	GND	Ground wire	Ground wire
20	TX_D3N	Output	Data
21	TX_D3P	Output	Data
22	GND	Ground wire	Ground wire
23	NC	/	/
24	NC	Output	Data
25	GND	Ground wire	Ground wire
26	NC	/	/
27	NC	/	/
28	NC	/	/
29	VCC_LCD1_18	power	1.8V power Output
30	GND	Ground wire	Ground wire
31	LED-	power	Backlight negative
32	LED-	power	Backlight negative
33	NC	/	/
34	NC	/	/
35	AVEE	power	Screen negative
36	NC	/	/
37	NC	/	/
38	AVDD	power	Screen positive
39	LED+	power	Backlight positive

40	LED+	power	Backlight positive

● **Speaker Port**

No.	Definition	Attributes	Description
1	L+	Output	Left channel positive
2	L-	Output	Left channel negative
3	R+	Output	Right channel positive
4	R-	Output	Right channel negative

● **USB HOST4 Port**

No.	Definition	Attributes	Description
1	USB_5V	power	Power Output
2	DM4	Output	Data
3	DP4	Input	Data
4	GND	Ground wire	Ground wire

● **USB HOST3 Port**

No.	Definition	Attributes	Description
1	USB_5V	power	Power Output
2	DM3	Output	Data
3	DP3	Input	Data
4	GND	Ground wire	Ground wire

● **USB HOST2 Port**

No.	Definition	Attributes	Description
1	USB_5V	power	Power Output
2	DM2	Output	Data
3	DP2	Input	Data
4	GND	Ground wire	Ground wire

● **USB HOST1 Port**

No.	Definition	Attributes	Description
1	USB_5V	power	Power Output
2	DM1	Output	Data
3	DP1	Input	Data
4	GND	Ground wire	Ground wire

● **UART7 Port**

No.	Definition	Attributes	Description
1	3.3V	power	Power Output
2	UART7_RX	Input	Data
3	UART7_TX	Output	Data
4	GND	Ground wire	Ground wire

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- **MIC Port**

No.	Definition	Attributes	Description
1	MIC_INP	Input	Record Input
2	GND	Ground wire	Ground wire

- **Camera Port**

No.	Definition	Attributes	Description
1	GND	Ground wire	Ground wire
2	MIPI_MCLK	clock	Clock signal interface
3	GND	Ground wire	Ground wire
4	CIF_PDN1	Output	Front CAM control
5	MIPI_RST	Output	Reset signal interface
6	SDA	Data	Data signal interface
7	SCL	clock	Clock signal interface
8	GND	Ground wire	Ground wire
9	VCC_DVP	power	2.8Vpower interface
10	GND	Ground wire	Ground wire
11	AVDD_DVP	power	2.8Vpower interface
12	GND	Ground wire	Ground wire
13	VCC_DVP	power	1.8Vpower interface
14	VCC_DVP	power	1.5Vpower interface
15	GND	Ground wire	Ground wire
16	GND	Ground wire	Ground wire
17	MIPI_D0N	Data	Data signal interface
18	MIPI_D0P	Data	Data signal interface
19	GND	Ground wire	Ground wire
20	MIPI_D1N	Data	Data signal interface
21	MIPI_D1P	Data	Data signal interface
22	GND	Ground wire	Ground wire
23	MIPI_CLKN	clock	Clock signal interface
24	MIPI_CLKP	clock	Clock signal interface
25	GND	Ground wire	Ground wire
26	MIPI_D2N	Data	Data signal interface
27	MIPI_D2P	Data	Data signal interface
28	GND	Ground wire	Ground wire
29	MIPI_D3N	Data	Data signal interface
30	MIPI_D3P	Data	Data signal interface

- **TP Port（Touch Panel connector）**

No.	Definition	Attributes	Description
1	GND	Ground wire	Ground wire

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2	GND	Ground wire	Ground wire
3	VCC_TP	Output	TPpowerInput（3.3V）
4	SDA	Output	Data（I2C5）
5	CLK	Output	clock（I2C5）
6	GND	Ground wire	Ground wire
7	TP_INT_L	Input	External Interrupts
8	TP_RST_L	Input	External Reset
9	GND	Ground wire	Ground wire
10	GND	Ground wire	Ground wire

- **Button Key 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	ADC key
4	KEY2	Input	ADC key
5	KEY3	Input	ADC key
6	PWRON_L	Input	Default High Sleep button
7	GND	Ground wire	Ground wire
8	GND	Ground wire	Ground wire
9	GND	Ground wire	Ground wire
10	GND	Ground wire	Ground wire

Appendix

◆ Product picture

- Front

- Back：

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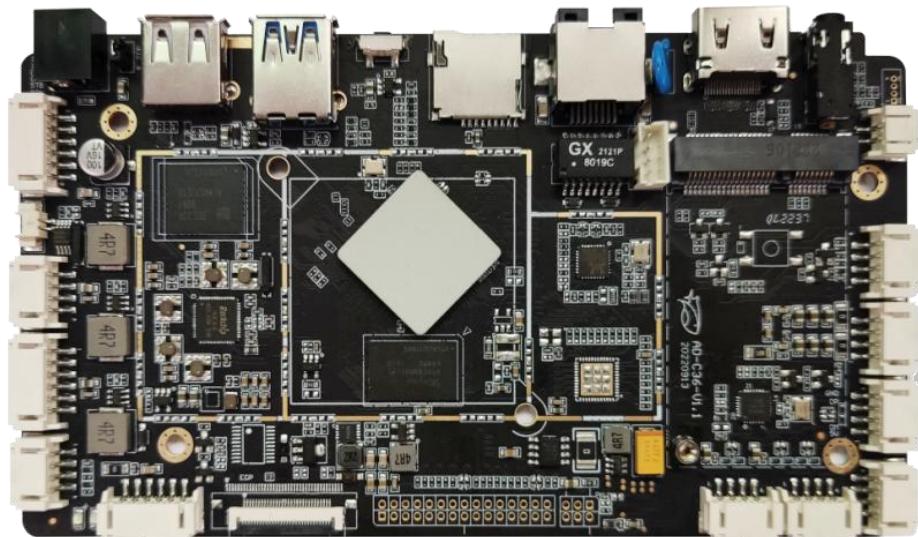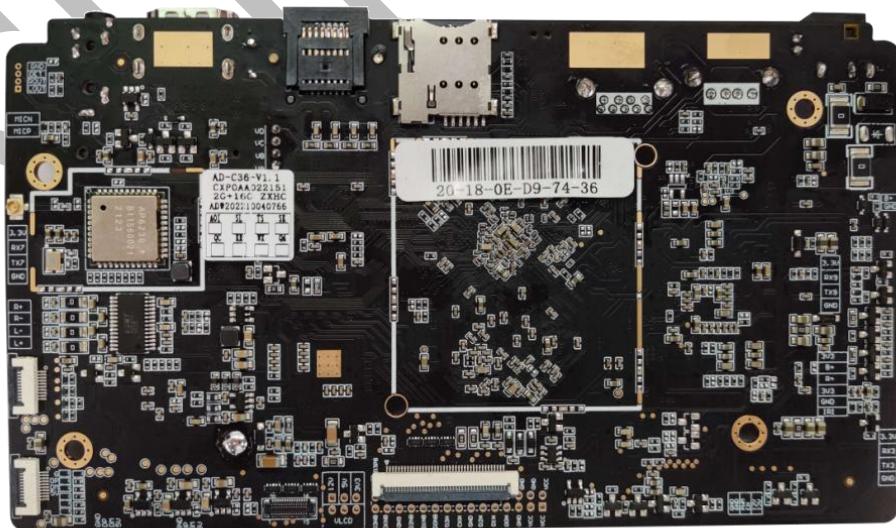
◆ Mainboard installation instructions：

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 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.