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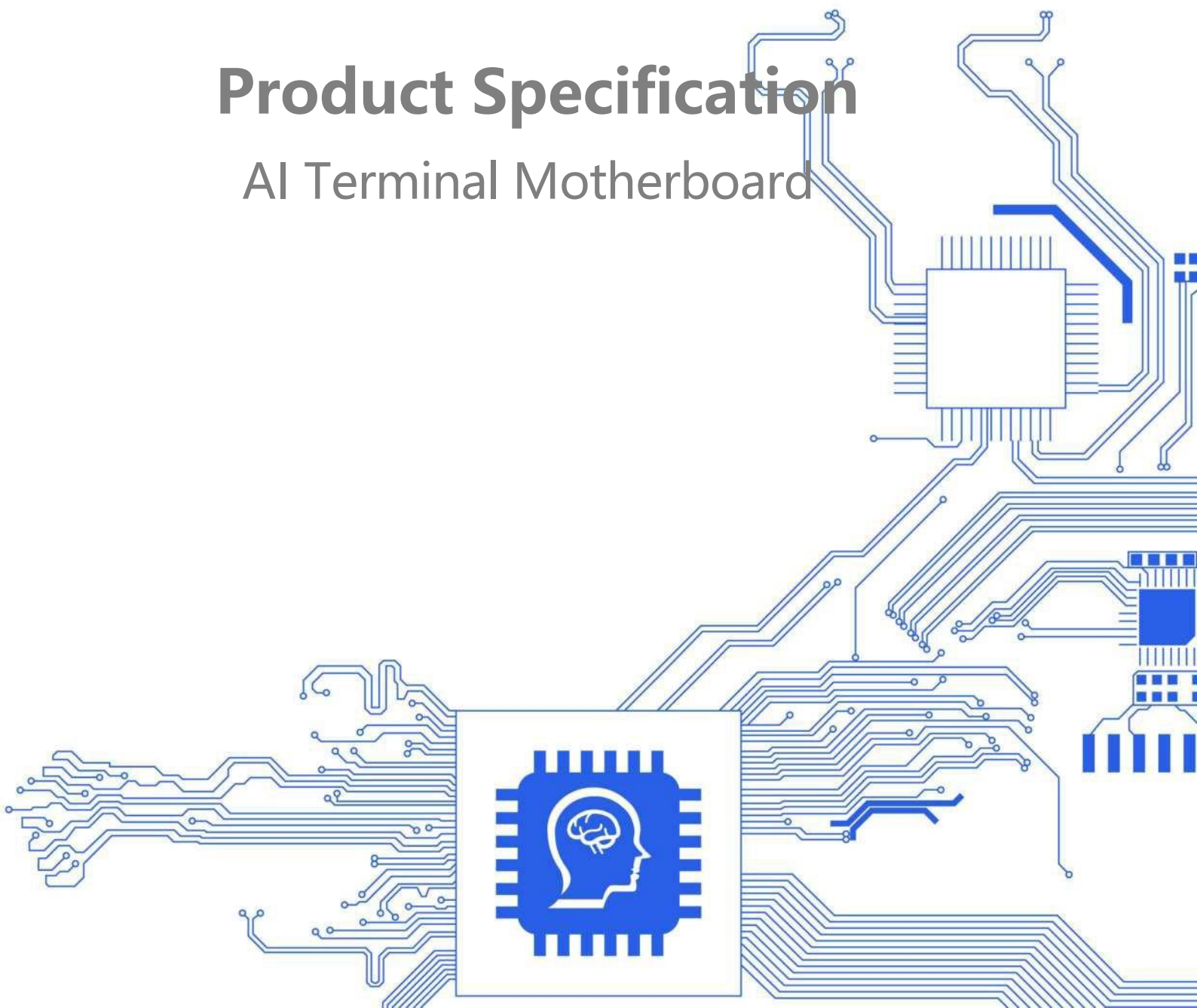
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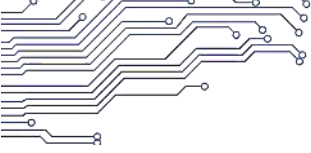
深圳市视美泰技术股份有限公司

AIoT-3576SC-V1.0

Product Specification

AI Terminal Motherboard





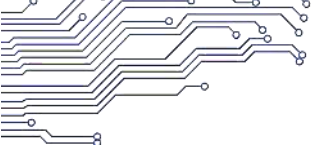
Document Modification History

Version	Revised Content	Revised by	verified by	Date
V1.0	The original version	严成彬		2025-4-14

Declaration

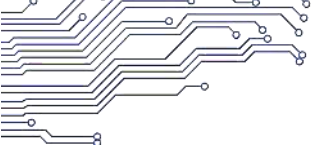
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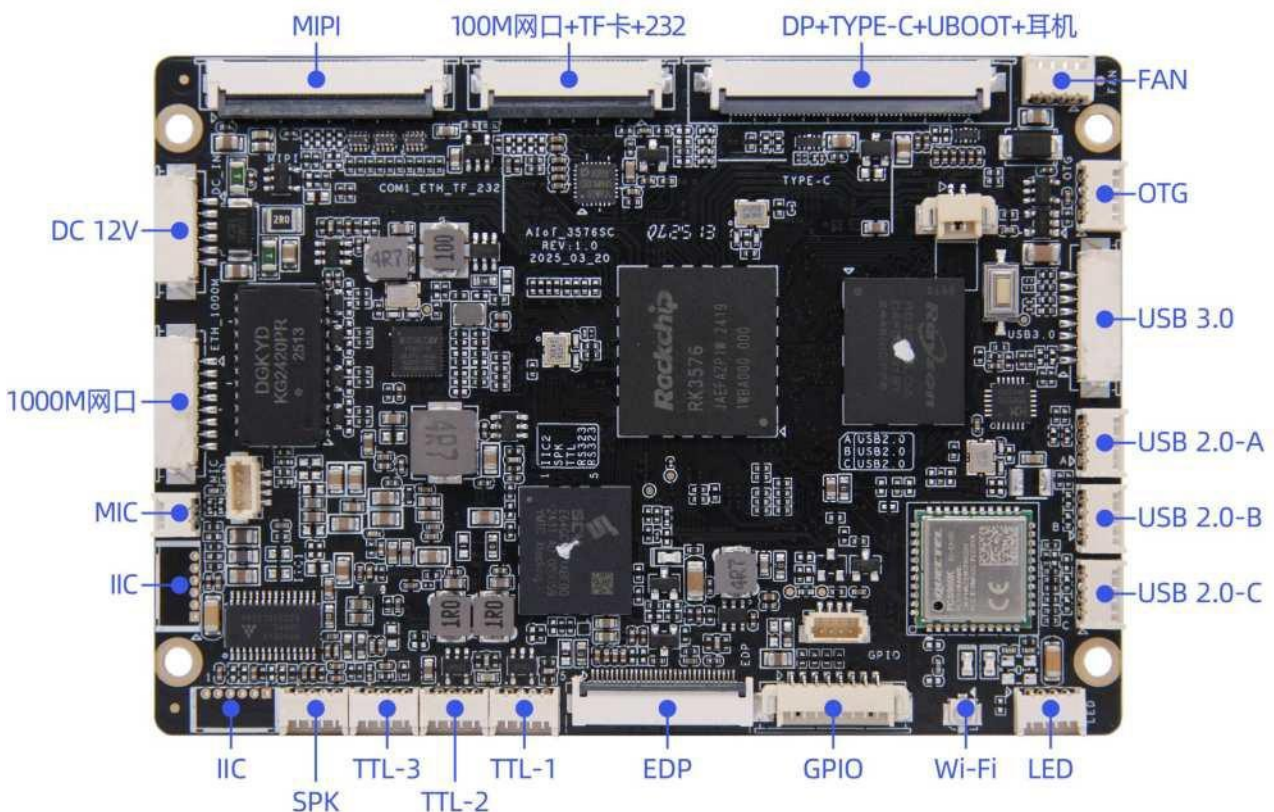
Chapter1 The Overview of the Product

2.1 Scope of Application

This product is an AI terminal motherboard, based on a RK3576 8-core processor with a maximum clock speed of 2.2 GHz. It is equipped with an AI accelerator NPU with up to 6TOPS computing power and supports the latest large model engine Transformer architecture for hardware acceleration and multiple deep learning frameworks. Equipped with the Android14.0 operating system, it can support both Linux and OpenHarmony operating systems. It also supports 4K@120Hz ultra-high-definition display and offers a rich set of expansion interfaces. This product is primarily used in edge computing, AI robots, AI cloud servers, and various high-performance AIoT devices.

2.2 Appearance and Interface Diagram

Front/Back view:



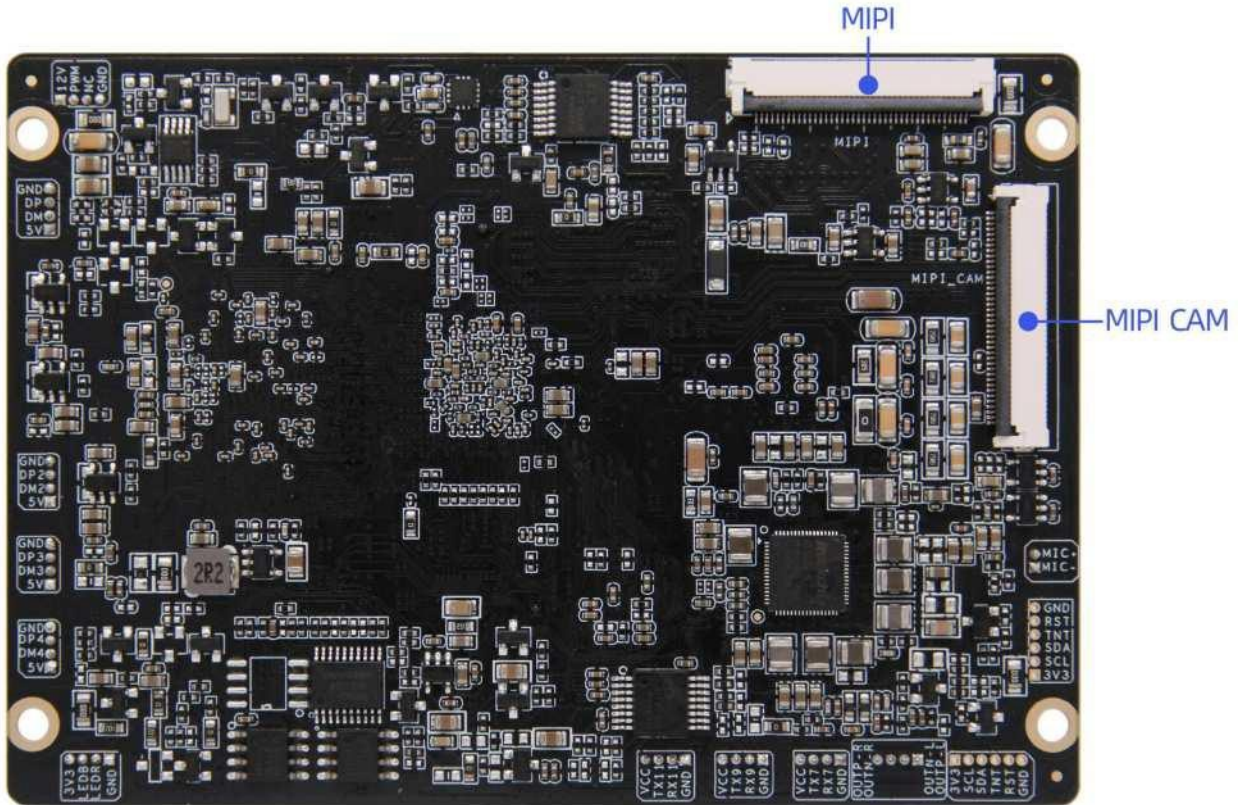
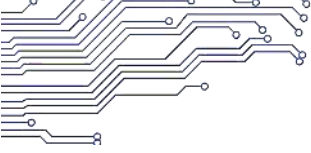
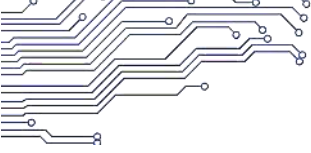


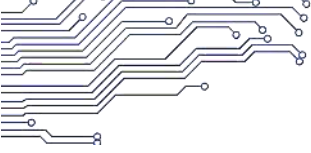
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Chapter2 Fundamental

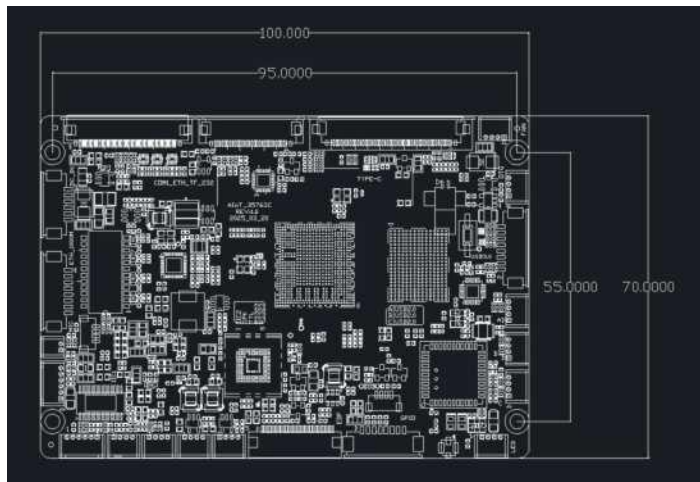
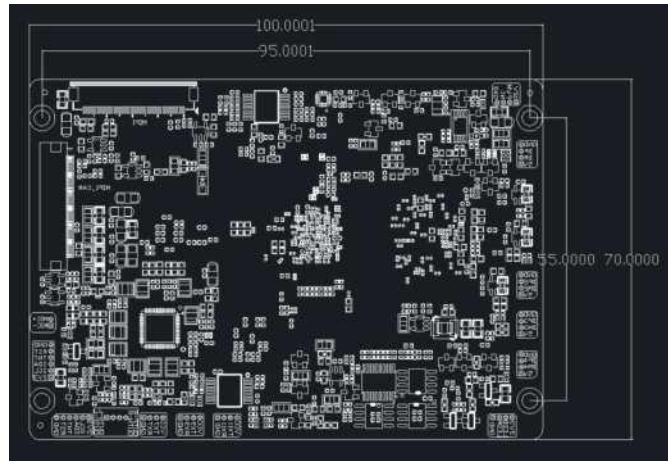
Function List

Main Function Parameters	
Board Size	100 x70mm
CPU	RK3576, 8-core (4*Cortex-A72 + 4* Cortex-A53) , with a maximum frequency of 2.2GHz
GPU	ARM Mali G52 MC3
NPU	6 TOPS
Operating System	Android 14
Memory / Storage	Standard 4G (2G/8G is optional) /Standard 32G (16/64/128G is optional)
Inbuilt ROM	2KB EEPROM (without by default, it is optional)
DP Output	1*DP, output from the cable Type-c (OTG) interface, supports 1/2/4 lanes and 1.62/2.7/5.4 and 8.1Gbps rate, with a maximum resolution of 4K@120Hz
MIPI DSI Output	1* , it can directly drive MIPI interface LCD screen with multiple resolutions, supports up to 1920*1080 resolution.
eDP Output	1* , it can directly drive LCD screens with multiple resolutions of eDP interface. It supports the resolution of 1920*1080 by measuring. In the specification of the main control chip, it supports the maximum resolution of 4K@60Hz .
Audio Input/Output	Speaker output (It supports left and right channel output, 6W by default, can be configured to 10W with resistor modification required) 、 MIC IN*1
Headphone Output	It supports 1*3.5mm 4-pole headphone interface (output by the cable)
USB Interface	1 * Type-c OTG (cable) 1* USB3.0 HOST 3 * USB2.0 HOST
Serial Port	3 * TTL interface, (It can be configured to RS232)
I2C Interface	2* , it can be connected with the TP of I2C or the peripherals.
Network Support	1、 Totally 2* Ethernet, one way supports 10M/100M/1000M adaptive Ethernet, the other supports 10M/100M adaptive Ethernet. 2、 With inbuilt Wi-Fi , supports Bluetooth
Storage	It supports USB flash disk, extended storage and TF card.
RTC (Real-time clock)	It supports low power consumption.
System Update	It supports local USB update.
Optional Function	1* CAN interface 1* MIPI camera interface



Chapter3 The Size of PCB and the Layout of Interfaces

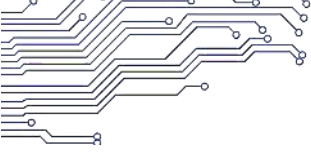
3.1 The Dimensional Picture of PCB



PCB: 8-layer board , with the thickness of1.6mm

PCBA: L * W=100 x70mm,

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3.2 The Instruction of Interface Parameters

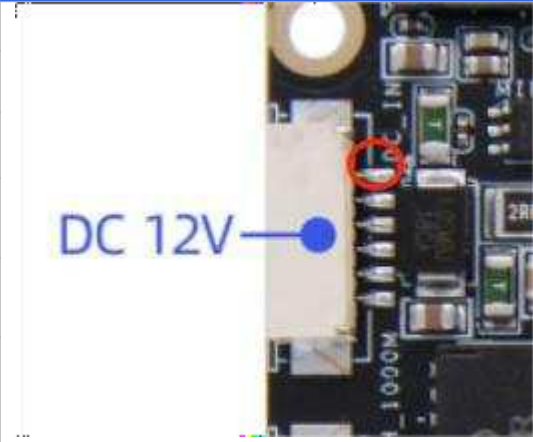
Image caption note: The circle in the socket interface “  ” symbolizes the first pin.。

◆ Power Input Interface (6pin/1.25mm)

Function description: The board is powered by 12V DC power supply, which only allows the board system to be powered from the DC socket and power socket. In the case of no external device load, the 12V DC power supply supports a minimum current of 600mA.

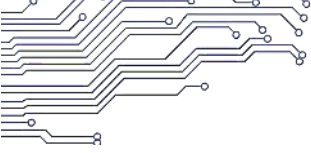
The electrical definition of the power input socket is as follows:

order	Definition	Property	Description
1	12V	input	12V input
2	12V	input	12V input
3	12V	input	12V input
4	GND	earth wire	earth wire
5	GND	earth wire	earth wire
6	GND	earth wire	earth wire



Note:

1. The power interface specification should comply with the 6pinGH1.25-6pin buckle.
2. The voltage fluctuation range of the 6pin power input port should not exceed 10% of the standard input voltage 12V, which may affect the stability of the motherboard operation.
3. It is recommended to use a power supply motherboard or adapter that meets the 3C standard, and the rated output power of the selected adapter should be able to meet the simultaneous operation of the motherboard and peripherals and leave a margin of 30%-50%, his is to say, when the total current reaches 1.5A, 2.5A-3A should be selected.



◆USB Interface (4pin/1.25mm*4 6pin/1.25mm*1)

Function description: 3 inbuilt USB2.0 socket, 1 inbuilt USB3.0 socket and 1 inbuilt OTG socket are used to expand peripherals. The default is HOST, and the supply current is 1A.

The electrical definition of the inbuilt USB socket is as follows:

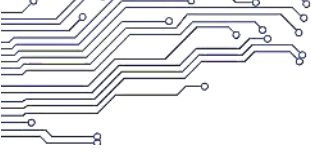
order	Definition	Property	Description	
1	VCC	Power supply	5V output	
2	DM	input/output	DM	
3	DP	input/output	DP	
4	GND	earth wire	earth wire	

Note:

1. The definition of USB terminal line should be checked before use to avoid the reverse connection between power supply and ground, which may cause the burning of peripherals and motherboard.
2. The length of the USB peripheral cable should be as short as possible to meet the requirements, and the long USB cable should not be used, otherwise it may lead to stability problems during the use of the peripheral.
3. The signal in the USB cable is a high-speed differential signal. The USB cable should be made of woven shielding layer as far as possible, which can greatly enhance the anti-interference ability of the equipment and increase the stability of the equipment.

The instruction of USB port:

Order	Silkscreen/serial number	Default power supply current	Whether power supply is controllable	Corresponding node
1	OTG	1A	controllable	OTG
2	USB3.0	1A	controllable	USBHOST1
3	USB-A	1A	controllable	USBHOST3
4	USB-B	1A	controllable	USBHOST2



◆EDP screen interface (30pin/0.5mm)

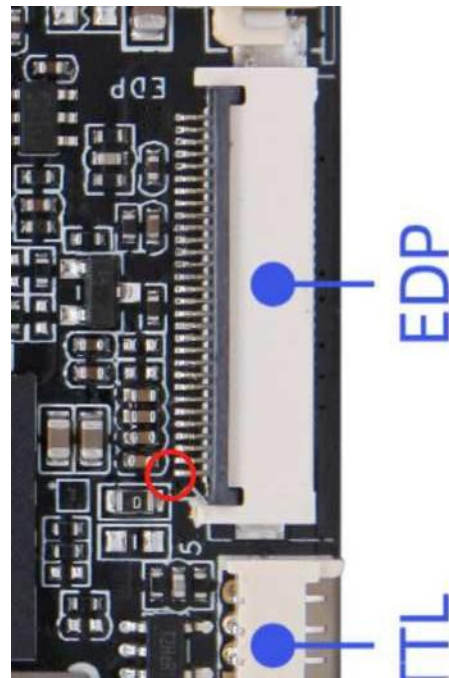
This interface is a 30pin screen interface. The default screen voltage is 3.3V, and the 5V output can be selected through the reserved resistor position R9042 on the board.

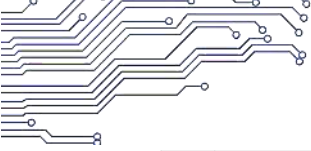
To avoid burning the board and screen, please pay attention to the following matters:

1. Please confirm whether the power supply voltage of the screen specification sheet is correct, and whether the corresponding power supply of the board can meet the requirement maximum current of the screen.
2. Use a multimeter to confirm that the actual screen power supply voltage is correct.

The electrical definition of the screen is as follows:

order	Definition	Property	Description
1	NC	--	empty connection
2	GND	earth wire	earth wire
3	D1-	output	Display Port Lane 1 negative output
4	D1+	output	Display Port Lane 1 positive output
5	GND	earth wire	earth wire
6	D0+	output	Display Port Lane 0 negative output
7	D0-	output	Display Port Lane 0 positive output
8	GND	earth wire	earth wire
9	AUX+	output	Display Port AUX+ chanenl positive singal
10	AUX-	output	Display Port AUX- chanenl negative singal
11	GND	earth wire	earth wire
12	PVCC	power supply	eDP LCD power supplyoutput 3.3V
13	PVCC	power supply	eDP LCD power supplyoutput 3.3V
14	NC	--	empty connection
15	GND	earth wire	earth wire
16	GND	earth wire	earth wire
17	eDP_HPDP	input	Screen hot plug and unplug detection signal, screen output
18	GND	earth wire	earth wire
19	GND	earth wire	earth wire
20	GND	earth wire	earth wire
21	GND	earth wire	earth wire
22	BL-EN	output	Backlight enable control
23	BL-ADJ	output	The lightness of backlight is controlled by ADJ
24	NC	--	empty connection
25	NC	--	empty connection
26	12V	power supply	12V output
27	12V	power supply	12V output
28	12V	power supply	12V output

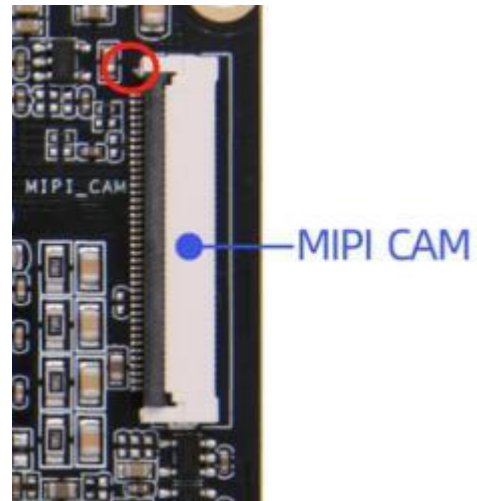


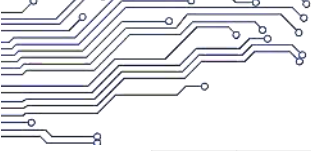


29	12V	Power supply	12V output
30	NC	--	empty connection

◆ **Binocular MIPI Camera interface (back side) (40pin/0.5mm)**

order	Definition	Property	Description
1	VDD2V8	power supply	2.8V output
2	VDD3V3	power supply	3.3V output
3	IR-PWDN	output	IR_Camera power off control signal
4	IR-RST	output	IR_Camera reset signal
5	SCL	output	SCL signal
6	SDA	input/output	SDA signal
7	GND	earth wire	earth wire
8	IR-XCLK	output	IR_Camera master clock
9	GND	earth wire	earth wire
10	IR-MCP	input/output	The mipi clock passage of IR_Camera +
11	IR-MCN	input/output	The mipi clock passage of IR_Camera -
12	GND	earth wire	earth wire
13	IR-D0P	input/output	The mipi data passage of IR_Camera 0 +
14	IR-D0N	input/output	The mipi data passage of IR_Camera 0 -
15	GND	earth wire	earth wire
16	IR-D1P	input/output	The mipi data passage of IR_Camera 1 +
17	IR-D1N	input/output	The mipi data passage of IR_Camera 1 -
18	GND	earth wire	earth wire
19	DOVDD1V8	power supply	1.8V output
20	FSYC-IN	/	NC
21	LED-GPIO	/	NC
22	IR-DVDD1V2	power supply	1.2V output
23	RGB-DVDD1V2	power supply	1.2V output
24	RGB-PWDN	output	RGB_Camera power off control signal
25	RGB-RST	output	RGB_Camera reset signal
26	GND	earth wire	earth wire
27	RGB-XCLK	output	RGB_Camera master clock

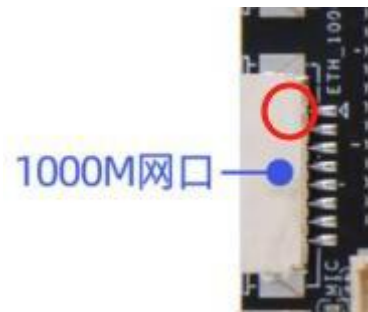




28	GND	earth wire	earth wire
29	RGB-MCP	input/output	The mipi clock passage of RGB_Camera +
30	RGB-MCN	input/output	The mipi clock passage of RGB_Camera -
31	GND	earth wire	earth wire
32	RGB-D0P	input/output	The mipi data passage of RGB_Camera 0 +
33	RGB-D0N	input/output	The mipi data passage of RGB_Camera 0 -
34	GND	earth wire	earth wire
35	RGB-D1P	input/output	The mipi data passage of RGB_Camera 1 +
36	RGB-D1N	input/output	The mipi data passage of RGB_Camera 1 -
37	GND	earth wire	earth wire
38	5V	power supply	5V output
39	5V	power supply	5V output
40	5V	power supply	5V output

◆ **1000M network port interface (8pin/1.25mm)**

order	Definition	Property	Description
1	LAN0_A+	output	Transmit Data + (send data+)
2	LAN0_A-	output	Transmit Data- (send data -)
3	LAN0_B+	input	Receive Data + (receive data +)
4	LAN0_B-	input	Receive Data- (receive signal-)
5	LAN0_C+	interrupt	SQ+ (interruption line)
6	LAN0_C-	Stop interrupt	SQ- (interruption line)
7	LAN0_D+	interrupt	D+ (interruption line)
8	LAN0_D-	interrupt	D- (interruption line)



◆ **Speaker interface (4pin/1.25mm)**

order	Definition	Property	Description
1	OUTP-L	output	Audio output left +



2	OUTN-L	output	Audio output left-
3	OUTN-R	output	Audio output right-
4	OUTP-R	output	Audio output right+

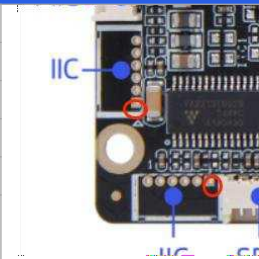


◆ TP interface (6pin/2.0mm*2)

Function description: the board supports the connection to the TP screen of I2C interface.

Electrical definition:

order	Definition	Property	Description
1	VCC	power supply	3.3V output
2	SCL	input/output	I2C clock
3	SDA	input/output	I2C data
4	INT	input/output	interrupt
5	RST	input/output	reset
6	GND	earth wire	earth wire

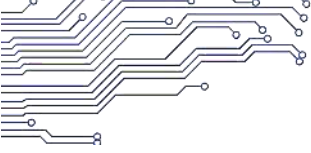


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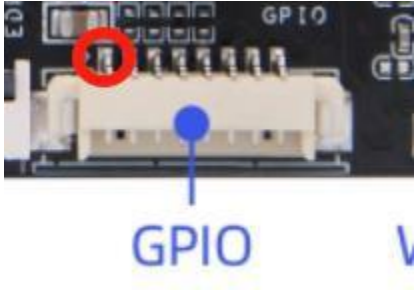
1. The interface is a 6pin 1.25mm socket.
2. The board supports the connection to I2C. Before connection, please confirm whether the interface of the touch screen is I2C or USB.
3. The level of I2C, RST and INT in the interface are 3.3V. If the touch screen with other levels is connected, level conversion should be done well.
4. Before connection, please pay attention to whether the electrical definition of the line sequence matches. The touch screen should be connected before power is applied. Do not plug or unplug the device while it is powered on.

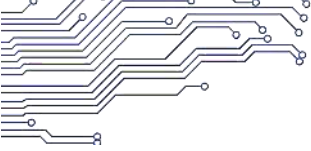
◆ IO/KEY interface (8pin/1.25mm)

The IO is used to provide the input/output of control signals to the peripheral device, with a level of 3.3V. The socket also has an interface for the power on/off button and the update button.



order	Definition	Property	Description
1	VCC	power supply	3.3V output
2	I/O	input	GPIO-1
3	I/O	input	GPIO-2
4	I/O	output	GPIO-3
5	I/O	input	GPIO-4
6	GND	earth wire	earth wire
7	PWRON	input	External connection to power supply button
8	Uboot	input	external update button





◆ RTC battery interface (2pin/1.25mm)

Function description: The motherboard has a 2pin 1.25mm spacing Wafer socket interface, which is used to power the system clock when power is cut off.

The electrical definition of the RTC battery socket is as follows:

order	Definition	Property	Description	
1	RTC	input	3V input	
2	GND	earth wire	earth wire	

Note:

1. When using the RTC battery, pay attention to whether the positive and negative terminals are correct. Reverse connection may lead to short circuit, which may cause fire and explosion.
2. If the RTC time is found to be inaccurate during use, please replace the RTC battery in time and choose the correct 3V, CR2032 button battery. If you need to use a wired battery, please contact FAE for the corresponding model specifications.

◆ TTL serial port socket interface*3 (4pin/2.0mm)

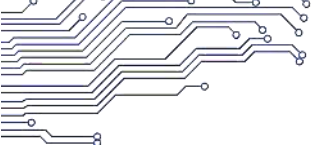
Description: The board supports 3 sets of ordinary dual-line serial ports, which can support common serial ports on the market. The level of serial ports is 0V to 3.3V.

Electrical definition:

order	Definition	Property	Description	
1	GND	earth wire	earth wire	
2	UART-RX	input	RX	
3	UART-TX	output	TX	
4	VCC	power supply	3.3V output	

Note:

1. Whether the TTL serial port voltage matches. It cannot be directly connected to RS232 or RS485 devices.
2. Whether TX and RX connections are correct.
3. If the level of the serial port is higher than 3.3V, there should be an isolation circuit or a level conversion circuit, otherwise the main control and equipment will be burned out.
4. In the development process, pay attention to the correspondence between system nodes and




hardware serial port interfaces. Please refer to the following "Serial Port and System Node Definition"

Serial port configuration and nodes are as follows:

Order	Port number	Corresponding node	Default configuration	Whether configurable
1	Serial port 1	TTY511	TTL	It can be configured as RS232
2	Serial port 2	TTY59	TTL	It can be configured as RS232
3	Serial port 3	TTY57	TTL	It can be configured as RS232

◆ FAN interface (4pin/1.25mm)

order	Definition	Property	Description
1	FAN+	power supply+	12V output
2	PWM	output	Rotation rate pwm regulation
3	NC	empty	empty
4	GND	earth wire	earth wire

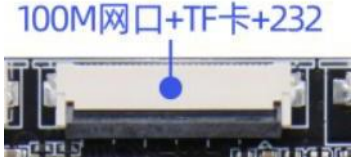


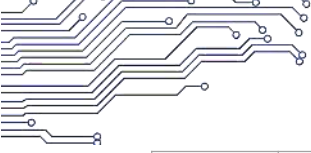
◆ 100M network port+TF card+232 interface
(30pin/0.5mm)

Function description: 100M GMAC signal, 1* TF card, 1* round function 232.

The electrical definition of 100 Mbit network port +TF card +232 interface socket is as follows:

order	Definition	Property	Description
1	GND	earth wire	earth wire
2	RXCLK_M0	input/output	GMAC clock
3	GND	earth wire	earth wire
4	TXD0_M0	output	GMAC-TX0
5	TXD1_M0	output	GMAC-TX1
6	TXCTL_M0	output	GMAC-TXCTL
7	RXD0_M0	input	GMAC-RX0
8	RXD1_M0	input	GMAC-RX1
9	GMAC1_RXCTL_M0	input	GMAC-RXCTL
10	GMAC1_MDC_M0	output	GMAC1_MDC
11	GMAC1_MDIO_M0	output	GMAC1_MDIO
12	GND	earth wire	earth wire
13	GMAC1_MCLKINOUT_M0	earth wire	GMAC1_MCLKINOUT
14	GND	earth wire	earth wire
15	SDMMC0_D0	earth wire	Data0





16	SDMMC0_D1	input/output	Data1
17	SDMMC0_D2	input/output	Data2
18	SDMMC0_D3	earth wire	Data3
19	SDMMC0_CMD	output	TF card command line
20	GND	earth wire	earth wire
21	SDMMC0_CLK	input/output	TF card clock line
22	GND	earth wire	earth wire
23	SDMMC0_PWREN_H	output	TF card power supply control line
24	SDMMC0_DET_L	input	TF card examine line
25	PC_UART1_RTS	output	UART1_RTS (send requirement)
26	PC_UART1_CTS	input	UART1_CTS (clean out sending)
27	PC_TXD1	output	232-TX
28	PC_RXD1	input	232-RX
29	GND	earth wire	earth wire
30	GND	earth wire	earth wire

Note:

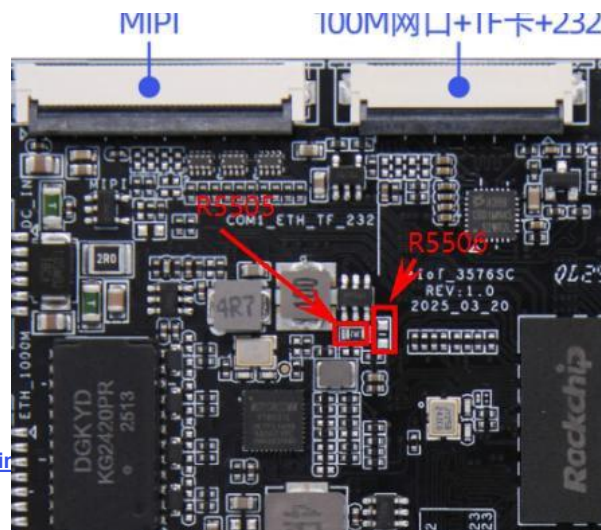
Before connection, please pay attention to whether the electrical definition of the wire sequence matches. The module should be connected before power on. It is not allowed to use the module with power on.

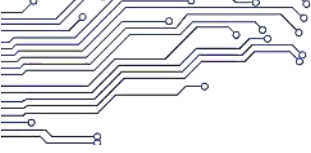
◆ **MIPI screen interface (back side) (40pin/0.5mm)**

The interface is a 40pin FPC socket with a spacing of 0.5mm, and the default back interface.

To avoid burning the board and screen, please pay attention to the following:

1. Please confirm whether the screen specifications, such as power supply voltage and current, match the board card. **The default LED backlight drive current for the board card is 90mA. If it does not meet the current requirements of the selected screen, you can adjust the output current by regulating the resistance values of R5105 and R5106. The formula is: $R=200mV / I$ (led). Here is a common list of current and resistor matching [specific values should be determined according to the actual screen specifications]:**

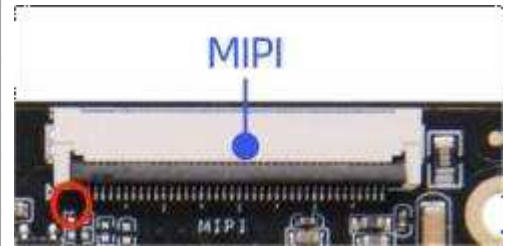


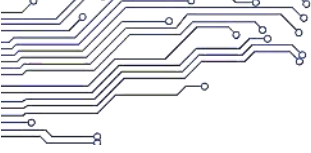


2. Confirm that the electrical definition of the screen interface and board interface is consistent, and that the FPC screen line is selected correctly.

The electrical definition of the screen interface is as follows:

order	Definition	Property	Description
1	VDD_1V8	power supply	1.8V input
2	VDD_3V3	power supply	3.3V input
3	VDD_3V3	power supply	
4	NC	NC	NC
5	Reset	output	screen reset signal, with a high level of 3.3V
6	NC	NC	NC
7	GND	earth wire	earth wire
8	MIPI_D0N	output	MIPI Port Lane 0 negative output
9	MIPI_D0P	output	MIPI Port Lane 0 positive output
10	GND	earth wire	earth wire
11	MIPI_D1N	output	MIPI Port Lane 1 negative output
12	MIPI_D1P	output	MIPI Port Lane 1 positive output
13	GND	earth wire	earth wire
14	MIPI_CKN	output	MIPI Port clock negative output
15	MIPI_CKP	output	MIPI Port clock positive output
16	GND	earth wire	earth wire
17	MIPI_D2N	output	MIPI Port Lane 2 negative output
18	MIPI_D2P	output	MIPI Port Lane 2 positive output
19	GND	earth wire	earth wire
20	MIPI_D3N	output	MIPI Port Lane 3 negative output
21	MIPI_D3P	output	MIPI Port Lane 3 positive output
22	GND	earth wire	earth wire
23	NC	NC	NC
24	NC	NC	NC
25	GND	earth wire	earth wire
26	NC	NC	NC
27	NC	NC	NC
28	NC	NC	NC



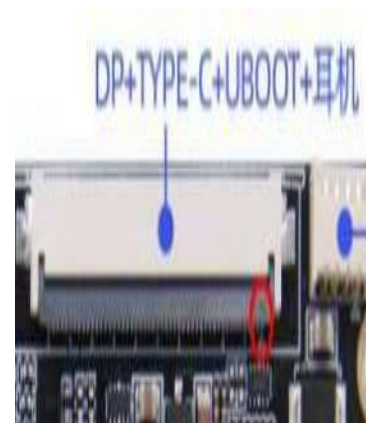


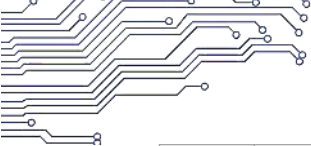
29	NC	NC	NC
30	GND	earth wire	earth wire
31	LED-	power supply	LCD backlight power supply-
32	LED-	power supply	
33	NC	NC	NC
34	NC	NC	NC
35	NC	NC	NC
36	NC	NC	NC
37	NC	NC	NC
38	NC	NC	NC
39	LED+	power supply	LCD backlight power supply+
40	LED+	power supply	

◆ TYPE-C+UBOOT+HP interface(front side) (50pin/0.5mm)

The interface is a 40pin FPC socket with a spacing of 0.5mm.

order	Definition	Property	Description
1	NC	NC	NC
2	GND	earth wire	earth wire
3	SSTX1N	output	SSTX1N
4	SSTX1P	output	SSTX1P
5	GND	earth wire	earth wire
6	SSRX1N	input	SSRX1N
7	SSRX1P	input	SSRX1P
8	GND	earth wire	earth wire
9	DP_TX_AUXP	input	DP_TX_AUXP
10	DP1TX_AUXN	input	DP1TX_AUXN
11	GND	earth wire	earth wire
12	DPANELVCC1	power supply	DP power supply
13	DPANELVCC1	power supply	DP power supply
14	NC	NC	NC
15	GND	earth wire	earth wire
16	GND	earth wire	earth wire
17	DP1_HPDP	input	DP examination
18	GND	earth wire	earth wire





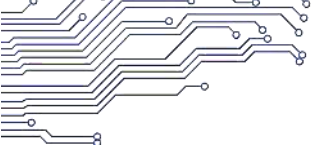
19	GND	earth wire	earth wire
20	GND	earth wire	earth wire
21	GND	earth wire	earth wire

23	DP1_PWM	output	DP backlight adj
24	NC	NC	NC
25	NC	NC	NC
26	12V	power supply	12V input
27	12V	power supply	12V input
28	12V	power supply	12V input
29	12V	power supply	12V input
30	TYPEC_TX2N	output	TYPEC_TX2N
31	TYPEC_TX2P	output	TYPEC_TX2P
32	TYPEC_RX2N	input	TYPEC_RX2N
33	TYPEC_RX2P	input	TYPEC_RX2P
34	GND	earth wire	earth wire
35	TYPEC_DP1	input/output	TYPEC_DP1
36	TYPEC_DM1	input/output	TYPEC_DM1
37	TYPEC_DP2	input/output	TYPEC_DP2
38	TYPEC_DM2	input/output	TYPEC_DM2
39	VBUS5V0_TYPEC	power supply	TYPE-C 5V power supply
40	VBUS5V0_TYPEC	power supply	TYPE-C 5V power supply
41	TYPEC_CC1	input	TYPEC_CC1
42	TYPEC_CC2	input	TYPEC_CC2
43	TYPEC_DPTX_AUX1	input	TYPEC_DPTX_AUX1
44	TYPEC_DPTX_AUX2	input	TYPEC_DPTX_AUX2
45	UBOOT-KEY	input	Uboot pin
46	HP_GND	earth wire	Headphone earth wire
47	HPOUT_L_C	output	Left channel
48	PHONE_DET	input	Headphone examination
49	HPOUT_R_C	output	Right channel
50	MIC_INP_PHONE	input	MIC

DP+TYPE-C+UBOOT+HP。

DP+TYPE-C+UBOOT+HP


The electrical definition of the interface socket is as

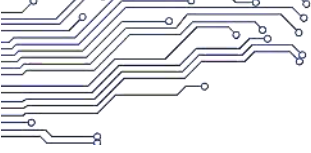


follows:

◆ MIC interface (2pin/1.25mm)

Note: Pay attention to the connection method of the positive and negative poles of MIC. Do not reverse the connections.

order	Definition	Property	Description	
1	MIC+	input	MIC+	
2	MIC-	output	MIC-	

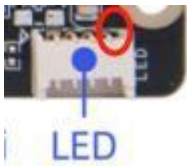


◆ LED/IR interface (5pin/2.0mm)

Function description: The LED/IR interface of motherboard is a 5-pin socket, which has two-color LED and the function of IR.

The electrical definition of the LED/IR interface socket is as follows:

order	Definition	Property	Description
5	3V3	power supply	3.3V output
1	LED_B	Blue light	Work indicator light
2	LED_R	Red light	Standby indicator light
4	GND	earth wire	Earth wire




Note:

1. The interface of the indicator light is a common anode type, and it is assumed that a common anode indicator light should be used by default.
2. The board has a default current limiting function. The LED light driving current is 6mA and the voltage is 3.3V. If an external indicator light is connected, no additional resistor needs to be added; otherwise, the brightness may be too low.

◆ Speaker interface (4pin/2.0mm)

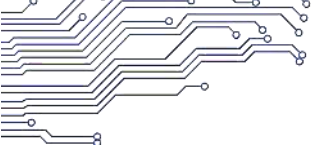
Function description: This interface can be connected to external speaker.

order	definition	Property	Description
1	OUTP-R	output	Audio output right+
2	OUTN-R	output	Audio output right-
3	OUTN-L	output	Audio output left-
4	OUTP-L	output	Audio output left+



Note:

1. This is a dual-speaker connection. When using a single speaker, pin 1 and pin 2 should be connected together, and pin 3 and pin 4 should be connected together. Do not get them mixed up.
2. For the use of speakers, connect the speakers first before powering on. It is not allowed to plug or unplug while powered on.
3. The default output power of the speaker interface is 8R/5W. If you use a 4R speaker, please note that the power should be reduced by half.
4. The maximum supported power of the power amplifier chip is up to 8R/10W. Customized hardware is required to achieve this.
5. When using, be sure to measure that the actual maximum output power should be less than the actual rated power of the speaker.

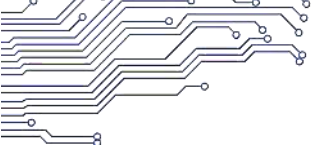


Chapter4 Electrical Properties

Item		minimum	typical	maximum
Power parameter	voltage	--	12V	--
	Ripple wave	--	--	120mV
	current	2A	3A	--
Source current(LVDS)	3.3V working current		400 mA	1A
	5V working current		550 mA	2A
	12V working current		580 mA	2A
	USB supply current	--	--	1A
Source current(MIPI)	3.3V working current		300 mA	600 mA
	USB supply current	--	--	1A
Total output	current	3.3V		800mA
Environment	Relative temperature	--	--	80%
	Working temperature	0°C	--	60°C
	Storage temperature	-10°C		70°C

Note 1: When connecting with LVDS screen, please pay attention to select the correct backlight operating voltage of 3.3V,5V and 12V. Please do not apply it to peripherals that exceed the corresponding maximum current.

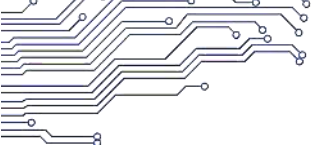
Note 2: When connected to LVDS/MIPI screen, the overall working current and standby current of the board depend on the screen connected, which is not listed completely in the table above.



Chapter5 Minimum Test Items for the Whole Device

Instruction:

Minimum Test Item of Stability and Reliability of the Whole Machine		
Serial number	Text Item	Detailed Description
1	Basic functional text	Test the main function performance of the whole machine, including WiFi, Bluetooth, Ethernet, USB, serial port, video playback and other functions.
2	Software upgrade function test	The whole product upgrade function verification, respectively test product line brush, U disk upgrade, and network remote upgrade function is normal.
3	High temperature aging test	Test the overall anti-high-temperature performance. After playing the aging work video for 3 days in a 60°C environment, the machine operates normally without any electrical malfunctions such as freezing, abnormal display or black screen.
4	Low temperature power failure test	Test the anti-low temperature ability of the whole machine. After playing the aging work video in 0°C environment for 3 days, it can run normally and there are no bad electrical phenomena such as crash, abnormal painting and black screen
5	Normal temperature short time timing switch	Test product in the ability to withstand the power on and off, programming 3 minutes to shut down, 7 minutes to start, after 7 days of normal operation, no crash, painting, black screen and other electrical adverse phenomena, abnormal record probability is not more than 4/10000.
6	Electrostatic (ESD) test	The simulation test evaluates the product's ability to protect against electrostatic discharge. According to the IEC 61000-4-2 test standard, the product is discharged in contact with ±4KV and air ±8KV. The product verification must meet the judgment of class A or B before acceptance, and the judgment of class C and D is unqualified.
7	Sweep vibration test	Test whether the anti-vibration ability of the product through the simulated transportation test and the bearing capacity of the board solder and parts to avoid the occurrence of potential problems, use the vibration tester to test the product, after the test the structure of the test product is not loose and fall off, and can operate normally, no crash, painting, black screen and other electrical defects and structural appearance damage phenomenon is judged to be OK.
8	Free drop test	Simulate the ability of transport and handling products to withstand drops, used to determine the bearing capacity of the machine mechanism, to avoid potential problem points, for design and process improvement, after the completion of the test, the test product can operate normally, no crash, painting, black screen and other electrical defects and structural appearance damage phenomenon is judged to be OK.
9	Short-term power-off shock at normal temperature	Through this test, the ability of the product to withstand the power supply is tested.
10	Automatic on/off at regular intervals under normal temperature conditions for a long time	Verify the stability of the MCU and the stability of the system operation. The timing for turning on and off the system is set as follows: the system will be turned on at 9:30 a.m. and turned off at 6:30 p.m. Log records the time interval between each startup, which is equal. The system will turn on and off at the designated time with an error less than 1 minute. The test is considered qualified.
11	Voltage overvoltage and undervoltage test	According to the power supply specifications of the Android board, the voltage bearing capacity of the board is tested through the voltage change. The whole machine is tested for 2 hours under the rated power supply of -20% +30%. After the test is carried out and completed, the test product can operate normally, and no bad electrical phenomena such as crash, abnormal drawing and black screen are judged to be OK.



Chapter6 Configurable parameters table (differences)

Type	Standard		Optional	
DDR	2G	<input type="checkbox"/>	2G	<input type="checkbox"/>
	4G	<input checked="" type="checkbox"/>	4G	<input type="checkbox"/>
	8G	<input type="checkbox"/>	8G	<input checked="" type="checkbox"/>
EMMC	16	<input type="checkbox"/>	16	<input checked="" type="checkbox"/>
	32	<input checked="" type="checkbox"/>	32	<input type="checkbox"/>
	64	<input type="checkbox"/>	64	<input checked="" type="checkbox"/>
WiFi+BT	2.4G+BT	<input type="checkbox"/>	2.4G+BT	<input checked="" type="checkbox"/>
	5G+BT	<input checked="" type="checkbox"/>	5G+BT	<input type="checkbox"/>
4G/PCIE	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
5G/M.2	<input type="checkbox"/>		<input type="checkbox"/>	
ETH/RJ45	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
SATA3.0	<input type="checkbox"/>		<input type="checkbox"/>	
LVDS	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
eDP	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
HDMI	<input type="checkbox"/>		<input type="checkbox"/>	
USB*7	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
TTL*3	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
RS232*2	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
RS485*1	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
CAN*1	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Hdmi in	<input type="checkbox"/>		<input type="checkbox"/>	
TF	<input type="checkbox"/>		<input type="checkbox"/>	
MIPI CAM	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	



01

请确保不要将板卡带电进行安装和装配外设操作，安装时务必佩戴静电手环等防静电工具；



02

通过线材连接外设时，请确保各外设的针脚定义和主板插座对应，避免因线序错误导致短路；



03

用螺丝固定主板时，注意使板卡均匀受力，避免板卡因变形导致PCB开路；



04

在安装可选择屏电压的接口时（比如LVDS、eDP等），请注意所选择的电压与屏的规格一致；



05

在外设 (USB, UART, IO .etc) 安装时，注意外设IO电平和电流输出能力问题；



06

串口安装时，着重注意电平类型匹配及TX, RX, 485-A, 485-B的对应连接；



07

输入电源的选择需根据总外设来评估输入的电源电压，总电流等是否能满足要求；



08

设计整机产品时，需考虑板卡的限高和散热问题。