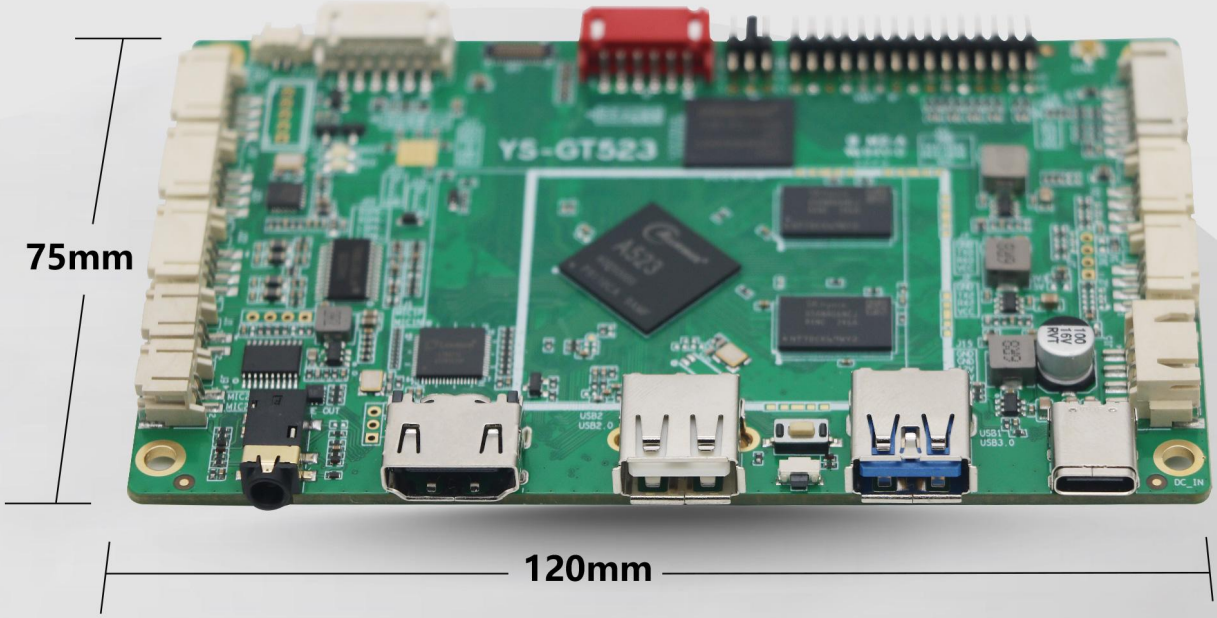
YISHENG ELECTRONICS

Specification

YS-GT523

StanbyME Board



Shenzhen Yisheng Technology Co., Ltd

Contents

Declaration

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Revision History

Version	Date	Author	Approver	Description
V1.1	2024.08.20	Wenjuan Zhang	Dan Zhang	Initial version
V1.2	2024.10.22	Wenjuan Zhang	Dan Zhang	Change wifi module picture
V1.3	2024.11.06	Wenjuan Zhang	Dan Zhang	Change Bluetooth parameters

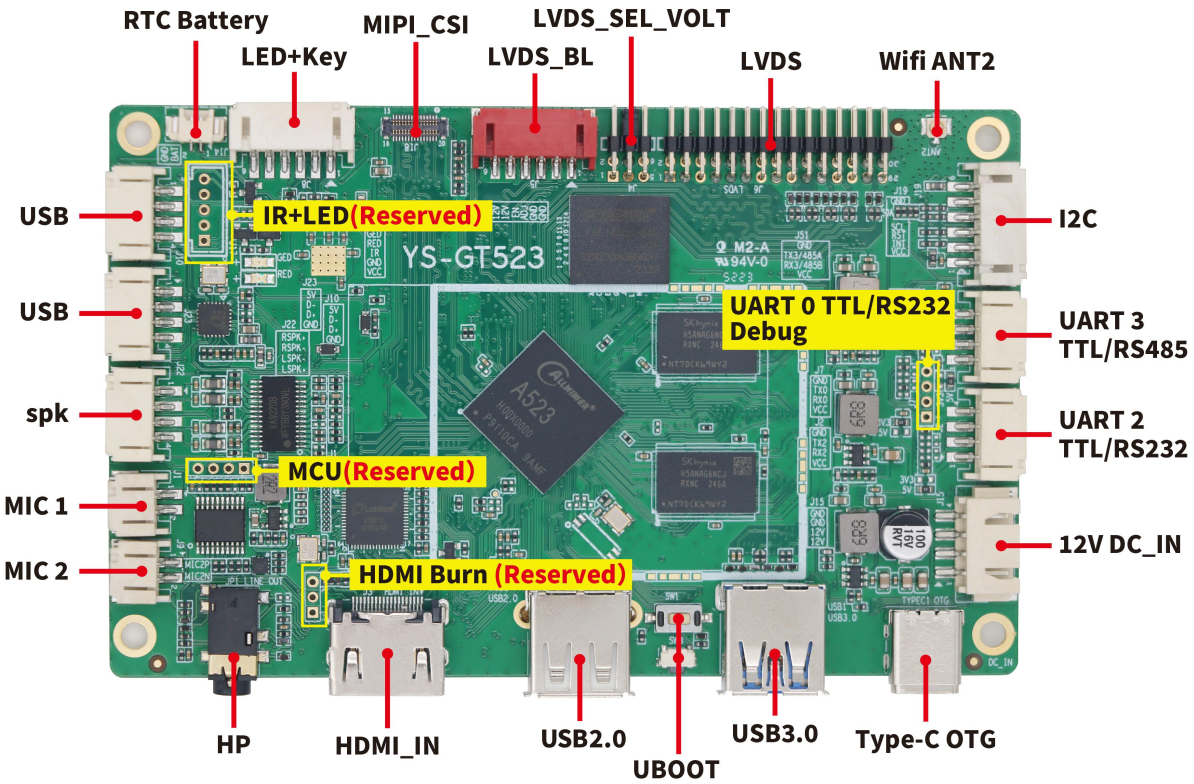
Chapter 1 Product Introduction

1.1 Overview

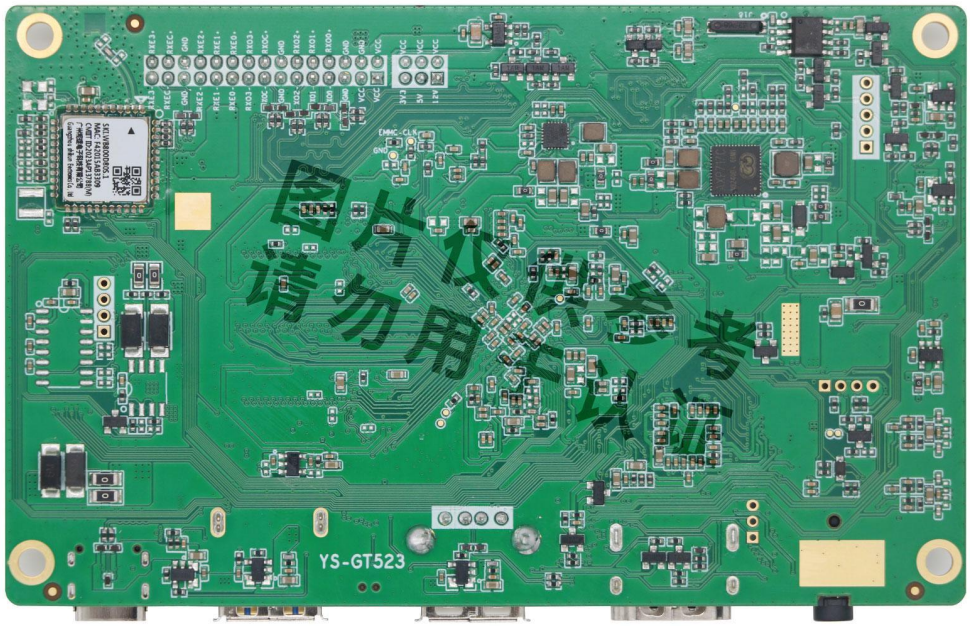
YS-GT523 is developed based on Allwinner A523, the CPU is Octa-core Cortex-A55, CPU clock speed up to 2.0GHz, with rich peripheral interfaces, support LVDS, HDMI in, GPIO, I2C, UART, etc.It can be widely applied to StanbyME and AIoT devices.

1.2 Pictures and Dimensions

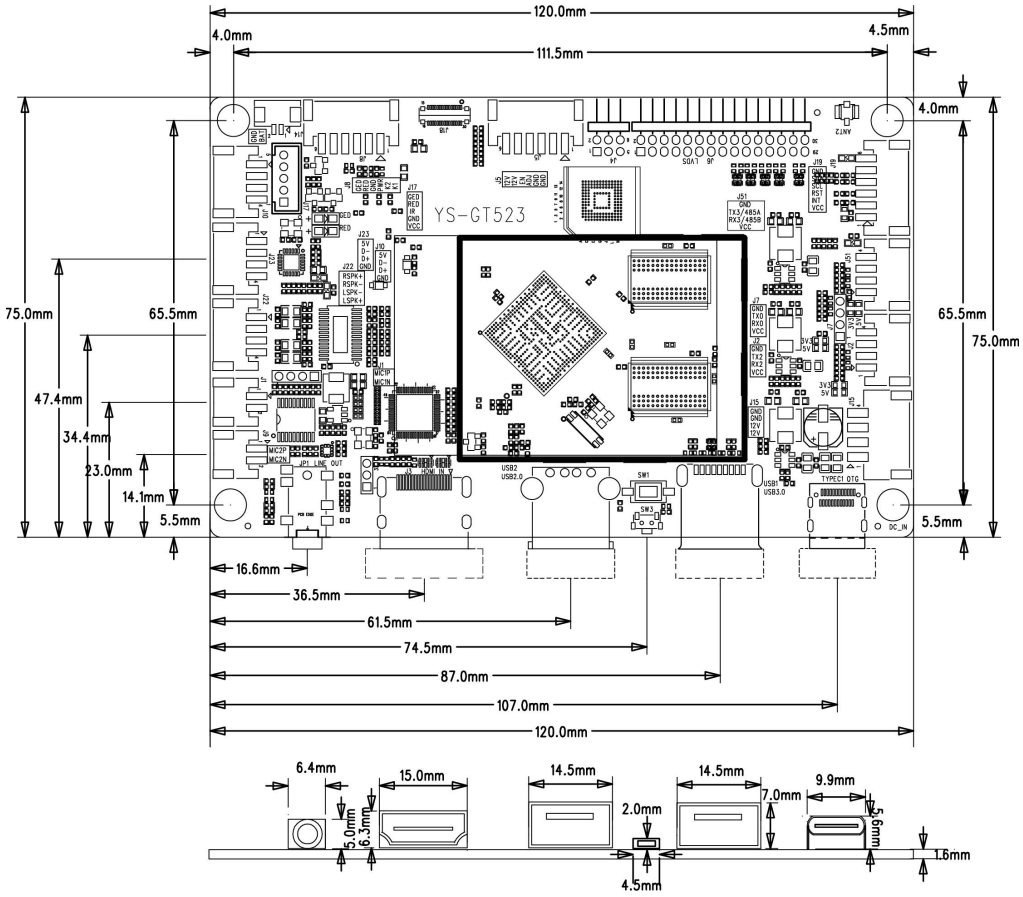
Top View



Bottom View

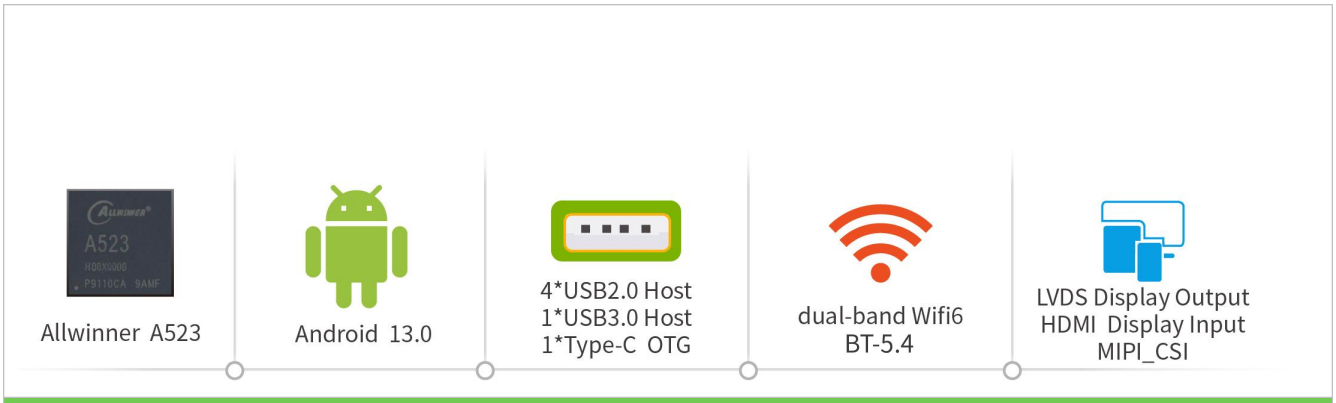


Dimension



*PCBA L：120mm *PCBA W：75mm *PCBA H：12mm *PCBA Location Hole：Φ3.4mm x4

1.3 Product Detailed Parameters



Detail Specification

SOC	Allwinner A523
CPU	Octa-Core Cortex-A55 64-bit Max CPU frequency: 2.0GHz
GPU	ARM G57 MC01 OpenGL ES 3.2/2.0/1.1, OpenCL2.2,Vulkan1.1/1.2/1.3
OS	Android 13.0
Video CODEC	**Video Decoder** 4K@60fps VP9&H.265, 4K@30fps H.264 **Video Encoder** 4K@25fps H.264, 4K@15fps MJPEG
ROM	2GB/4GB DDR
Storage	16GB/64GB（Up to 256GB）eMMC
Display Output	1*LVDS (Up to 1920x1080 , optional)
Display Input	1*HDMI2.0 IN （Up to 2K@60fps）
Camera	1*MIPI-CSI-30PIN-BTB
Audio	1*SPK（L&R audio-out，Up to 1*8Ω/5W speaker） 1*HP（CTIA） 2*MIC
Network	WIFI: Support dual-band wifi6 Bluetooth: 5.4
USB	3*USB2.0 1*Type-C OTG/HOST 1*USB3.0
COM	3*TTL(1 optional TTL or RS485, 2 optional or TTL/ RS232, Which is an debug serial port)
Other	1*I2C 1*IR+LED 1*LED+Key

1.4 Configuration & General Precautions

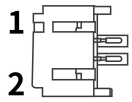
1. Relative humidity ≤ 85%
2. Storage temperature: - 30 ℃ to +70℃
3. Operating temperature: - 15 ℃ to +60 ℃
4. During the assembly of the whole machine, please do not operate the wiring with power to avoid short circuit between bare board and peripheral equipment.
5. Pay attention to the anti-static treatment during the assembly and transportation of the whole machine, and it is necessary to wear electrostatic protection tools such as electrostatic bracelet (sleeve).
6. When assembling the whole machine, it can be installed at the bottom or side, but do not deform or twist the board, and do not bear heavy pressure.
7. Proper distance shall be reserved at the wiring position of each terminal to avoid squeezing the terminal during installation.
8. The connecting line between this board and the supporting module board should not be too long, otherwise it may affect the image quality.
9. The internal wiring of the whole machine shall be reasonable, and the connecting wires shall not pass through the PCB board directly as far as possible.
10. In order to achieve better EMC effect for the whole machine, it is recommended that the screen wire between the main board and the screen should be shielded wire.
11. The specifications of the peripherals connected to the installation shall be confirmed with our company, including but not limited to: voltage limit, current limit, timing, power domain, etc.

Chapter 2 Interface Pin Name

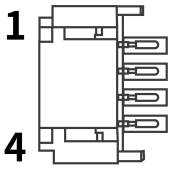
J9（2PIN/2.0mm）MIC2

Exterior	Pin No.	Pin Name	Description
	1	MIC2P	Positive input for 4G microphone
	2	MIC2N	Negative input for 4G microphone

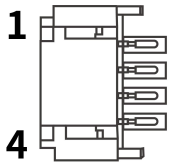
J1（2PIN/2.0mm）MIC1

Exterior	Pin No.	Pin Name	Description
	1	MIC1P	Positive input for local microphone
	2	MIC1N	Negative input for local microphone

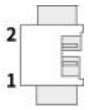
J22（4PIN/2.0mm)

Exterior	Pin No.	Pin Name	Description
	1	RSPK+	Positive output for right Channel
	2	RSPK-	Negative output for right Channel
	3	LSPK-	Negative output for left Channel
	4	LSPK+	Positive output for left Channel

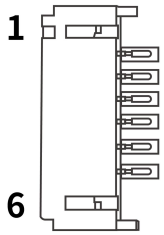
J23, J10（4PIN/2.0mm) USB

Exterior	Pin No.	Pin Name	Description
	1	+5V	USB Power Supply
	2	D-	USB data-
	3	D+	USB data+
	4	GND	Ground

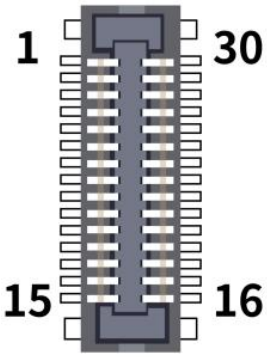
J14（2PIN/1.25mm）RTC Battery

Exterior	Pin No.	Pin Name	Description
	1	BAT+	Battery Positive
	2	GND	Ground

J8（6PIN/2.0mm）PWR/VOL-/VOL+ Key

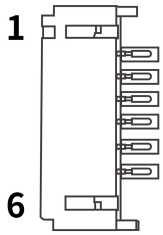
Exterior	Pin No.	Pin Name	Description
	1	K1	Volume up
	2	K2	Volume down
	3	PWR	Power on/off
	4	GND	Ground
	5	RED	Red Light
	6	GED	Green Light

J18(30PIN/0.4mm) MIPI-CSI（BTB)

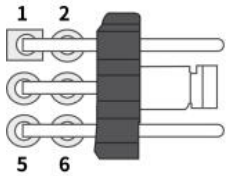
Exterior	Pin No.	Pin Name	Description
	1	GND	Ground
	2	MIPI_MCLK	MIPI Signal
	3	GND	Ground
	4	GIF_PDN1	GIF_PDN1
	5	MIPI_RST	Reset
	6	SDA	IIC Data
	7	SCL	IIC Clock
	8	GND	Ground
	9	VCC_DVP	2.8V Power Supply
	10	GND	Ground
	11	VCC	2.8V Power Supply
	12	GND	Ground
	13	VCC	1.8V Power Supply
	14	VCC	1.8V Power Supply
	15	GND	Ground
	16	GND	Ground
	17	MIPI_DON	MIPI Signal
	18	MIPI_DOP	MIPI Signal
	19	GND	Ground
	20	MIPI_D1N	MIPI Signal
	21	MIPI_D1P	MIPI Signal
	22	GND	Ground
	23	MIPI_CLKN	MIPI Signal
	24	MIPI_CLKP	MIPI Signal
	25	GND	Ground
	26	MIPI_D2N	MMIPI Signal
	27	MIPI_D2P	MIPI Signal
	28	GND	Ground

	29	MIPI_D3N	MIPI Signal
	30	MIPI_D3P	MIPI Signal

J5（6PIN/2.0mm）LVDS_BL

Exterior	Pin No.	Pin Name	Description
	1	GND	Ground
	2	GND	Ground
	3	ADJ	Backlight Brightness Adjustment
	4	EN	Backlight On/Off Control
	5	+12V	Screen Backlight Power Supply
	6	+12V	Screen Backlight Power Supply

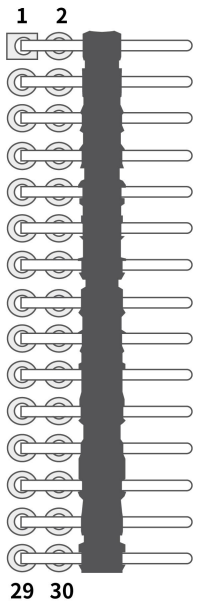
J4(6PIN/2.0mm) LVDS_SEL_VOLT

Exterior	Pin No.	Pin Name	Description
	1	12V	12V Power Supply
	2	VCC_LCD	Screen Voltage Port
	3	5V	5V Power Supply
	4	VCC_LCD	Screen Voltage Port
	5	3.3V	3.3V Power Supply
	6	VCC_LCD	Screen voltage port

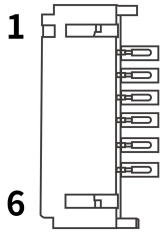
Note: The LVDS screen uses a jumper cap to select the screen power supply. Connect 3.3V to VCC_LCD, then the screen voltage is 3.3V.

J6 (30PIN/2.0mm) LVDS

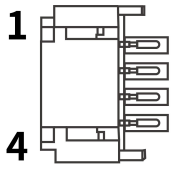
Exterior	Pin No.	Pin Name	Description
	1	VCC	Power Supply
	2	VCC	Power Supply
	3	VCC	Power Supply
	4	GND	Ground
	5	GND	Ground
	6	GND	Ground
	7	DON	LVDS Signal
	8	DOP	LVDS Signal
	9	D1N	LVDS Signal
	10	D1P	LVDS Signal
	11	D2N	LVDS Signal
	12	D2P	LVDS Signal
	13-14	GND	Ground

	15	CLKON	LVDS Signal
	16	CLKOP	LVDS Signal
	17	D3N	LVDS Signal
	18	D3P	LVDS Signal
	19	D5N	LVDS Signal
	20	D5P	LVDS Signal
	21	D6N	LVDS Signal
	22	D6P	LVDS Signal
	23	D7N	LVDS Signal
	24	D7P	LVDS Signal
	25	GND	Ground
	26	GND	Ground
	27	CLK1N	LVDS Signal
	28	CLK1P	LVDS Signal
	29	D8N	LVDS Signal
	30	D8P	LVDS Signal

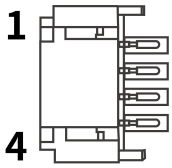
J19（6PIN/2.0mm）IIC (Power Domain3.3V)

Exterior	Pin No.	Pin Name	Description
	1	VCC	3.3V Power Supply
	2	INT	Interrupt
	3	RST	Reset
	4	SCL	IIC Clock
	5	SDA	IIC Data
	6	GND	Ground

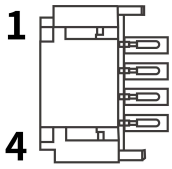
J51（4PIN/2.0mm）UART 3（TTL, Optional RS485, Power Domain3.3V）

Exterior	Pin No.	Pin Name	Description
	1	VCC	Power Supply 5V（Optional 3.3V）
	2	RX3/RS485B	UART Receive 3/RS485 Signal B
	3	TX3/RS485A	UART Transmit 3/RS485 Signal A
	4	GND	Ground

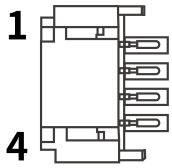
J2（4PIN/2.0mm）UART 2（TTL, Optional RS232, Power Domain3.3）

Exterior	Pin No.	Pin Name	Description
	1	VCC	Power Supply 5V（Optional 3.3V）
	2	RX2	UART Receive 2
	3	TX2	UART Transmit 2
	4	GND	Ground

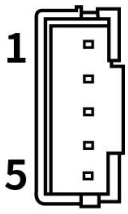
J7（4PIN/2.0mm）UART 0（Debug，TTL，Optional RS232，Power Domain3.3V）

Exterior	Pin No.	Pin Name	Description
	1	VCC	Power Supply 5V (Optional 3.3V)
	2	RX0	UART Receive
	3	TX0	UART Transmit
	4	GND	Ground

J15（4PIN/2.54mm）12V PWR_IN

Exterior	Pin No.	Pin Name	Description
	1	12V	12V Power Input
	2	12V	12V Power Input
	3	GND	Ground
	4	GND	Ground

J17（5PIN/2.0）IR+LED （Optional)

Exterior	Pin No.	Pin Name	Description
	1	VCC	+5V Power Supply
	2	GND	Ground
	3	IR	Remote Control Infrared
	4	RED	Red Light
	5	GED	Green Light

Chapter 3 Electrical Characteristics

◆ Normal Operating Conditions

Interface Type		Min	TYP	Max
Standard power parameters	Vcc	11V	12V	13.5V
	Ripple	/	/	±3%
	Current	2A	3A	/

◆ Power Consumption

Interface Type		Min	TYP	Max
Power Supply Current (with no display connected)	Operation Current	/	180mA	400mA
	Stand By Current	/	15mA	20mA
	Battery Operation Current	/	0.0024mA	/

◆ USB Power Supply

USB Interface Type	Voltage	Typical Current	Max Current
OTG_USB	5V	500mA	1500mA
HOST_USB	5V	500mA	1500mA

Note: It is recommended that the total current of USB peripheral should not exceed 3000 mA,otherwise the machine will be unable to operate normally.

◆ Other

Interface Type	Rated Current	Max Current	Max Current
EXT 5V	/	3000mA	
EXT 3.3V	/	3000mA	

Chapter 4 System Instruction

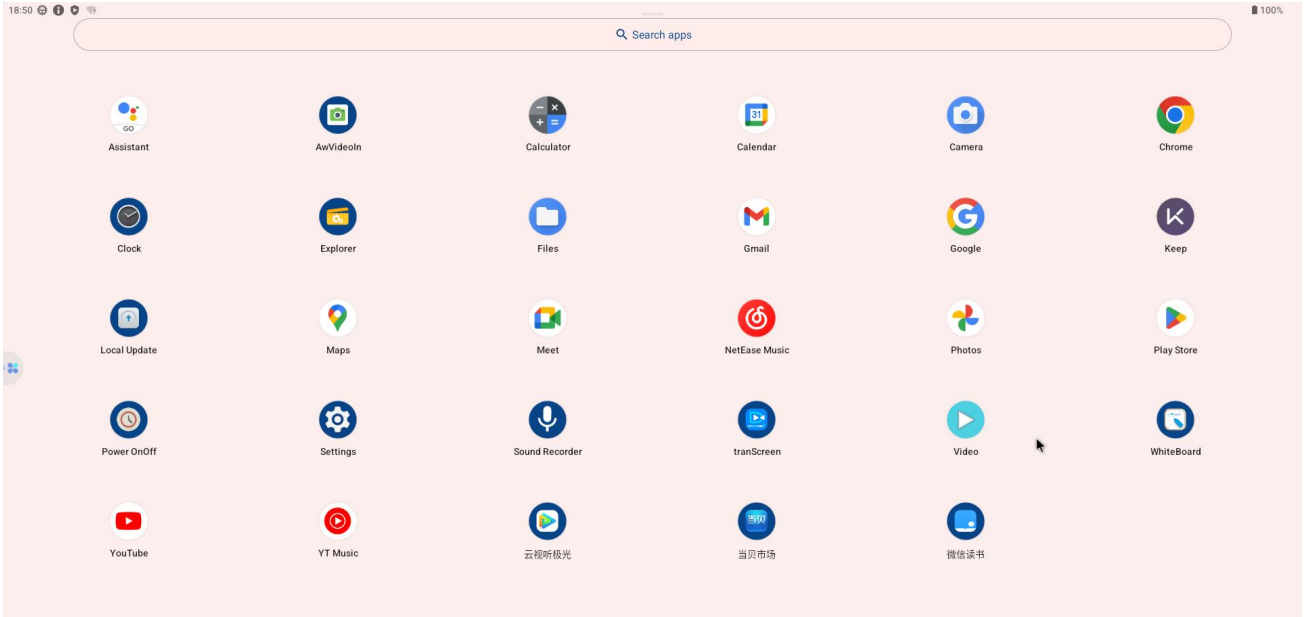
4.1 Android System Interface Description

The main menu interface of the Android system is divided into six categories: Search Bar, Date & Chrome , Photos, YT Music, YouTube, Meet and Play Store

Homepage

（1）Application interface

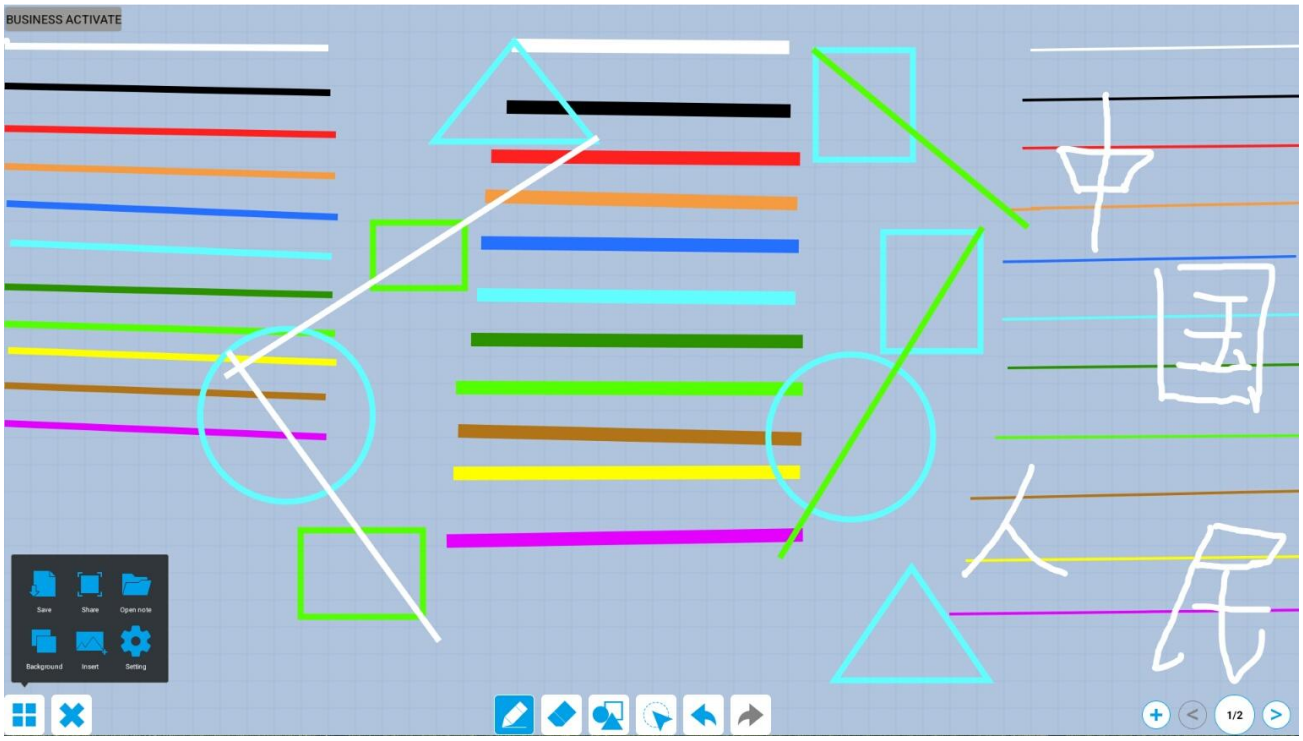
The application interface includes: Camera、Explorer、Files、Keep、Maps、Transcreen、Whiteboard、YouTube, etc.



Application Interface

（2）Whiteboard Application Overview

As shown below, the Whiteboard application includes Brush, Eraser, Graphic Material, Box Selection, Undo and Resume. It supports settings such as saving files, QR code sharing, opening source files, changing backgrounds, inserting images, etc.



（3）Wireless Screen Mirror Application Overview

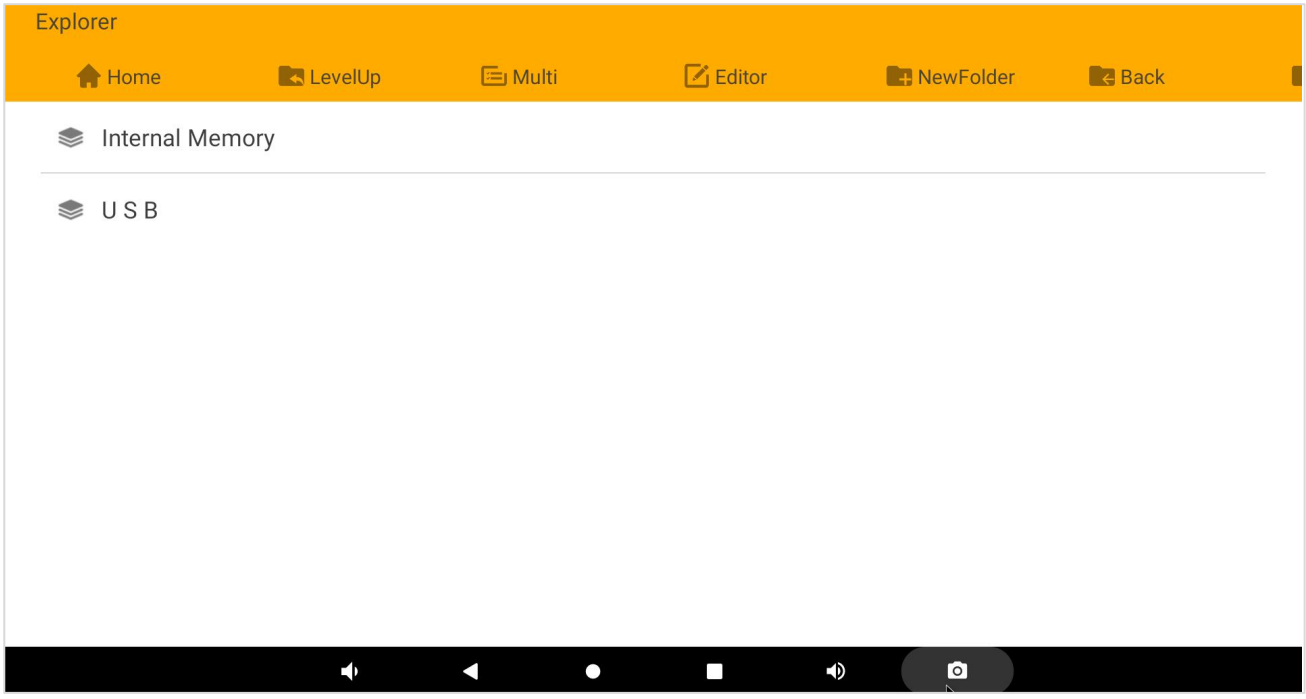
Download and install tranScreen screen projection software on the device, and keep it on the same LAN with the motherboard, which can realize the functions of file transfer, mirror reverse control and so on.

（4）AwVideoIn Application Overview

Use the motherboard or computer as the input source, connect the HDMI output interface of the input source to the HDMI input interface of the motherboard, open the AwVideoIn application of the motherboard, and the screen of the motherboard displays the content of the input source.

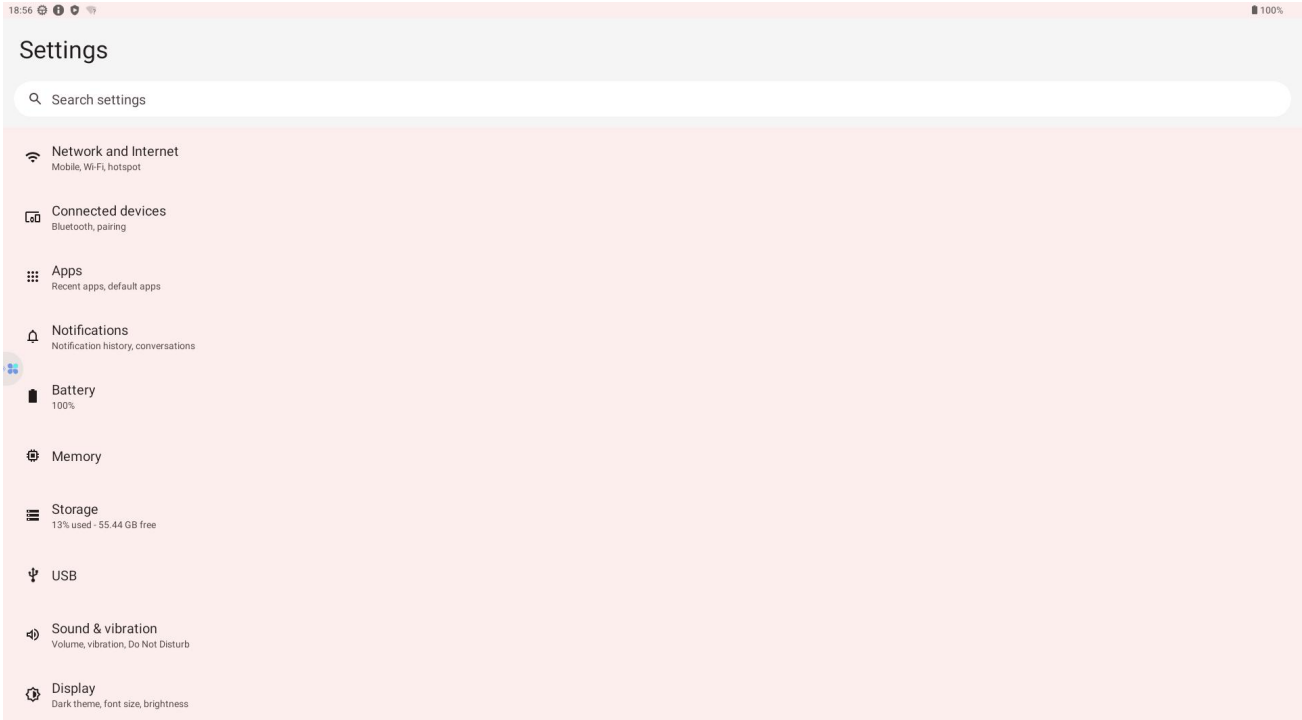
（5）Application interface

The application interface includes: Camera、Explorer、Files、Keep、Maps、Transcreen、Whiteboard、YouTube, etc.



（6）Setting Menu Interface

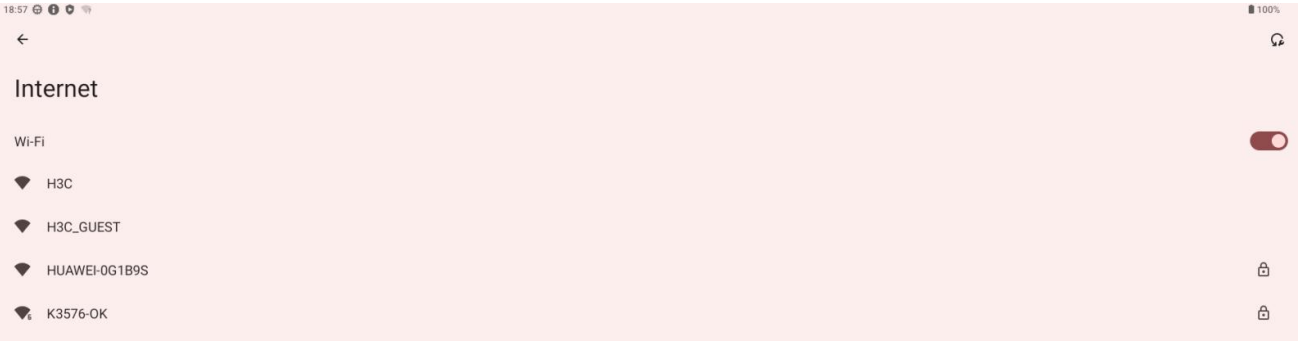
It supports the settings of wireless network and device display sound, and can also view the program applications installed on the device, storage memory, etc.



4.2 Network Interface Explanation

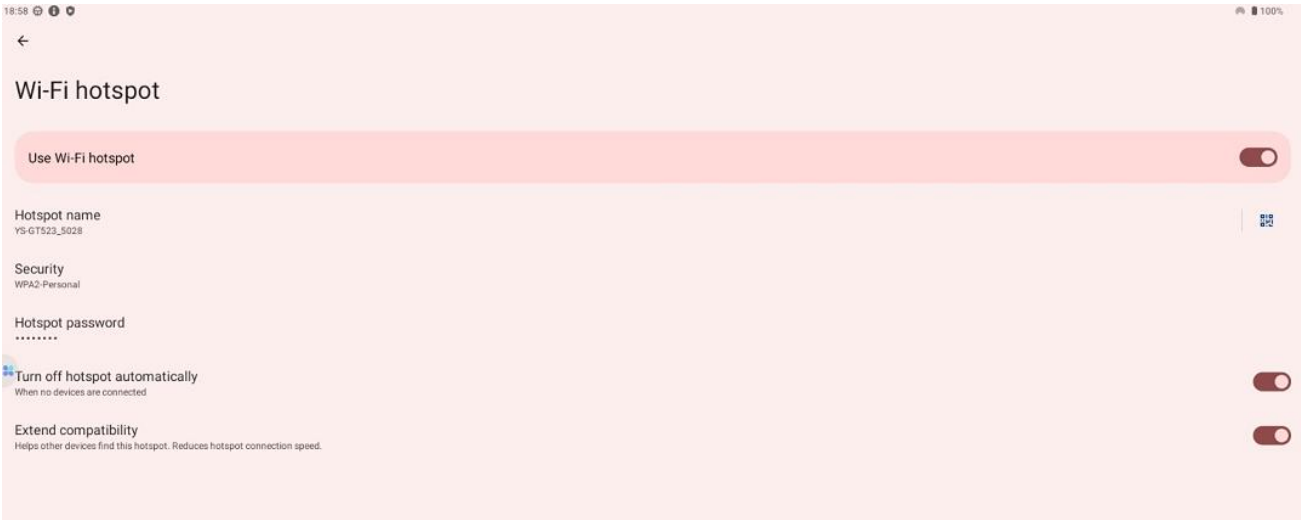
（1）WIFI Network Signal Connection

Turn on the WiFi switch in the "Settings" interface, as shown in the following figure; Select the WiFi signal to be connected and enter the corresponding password to successfully connect.



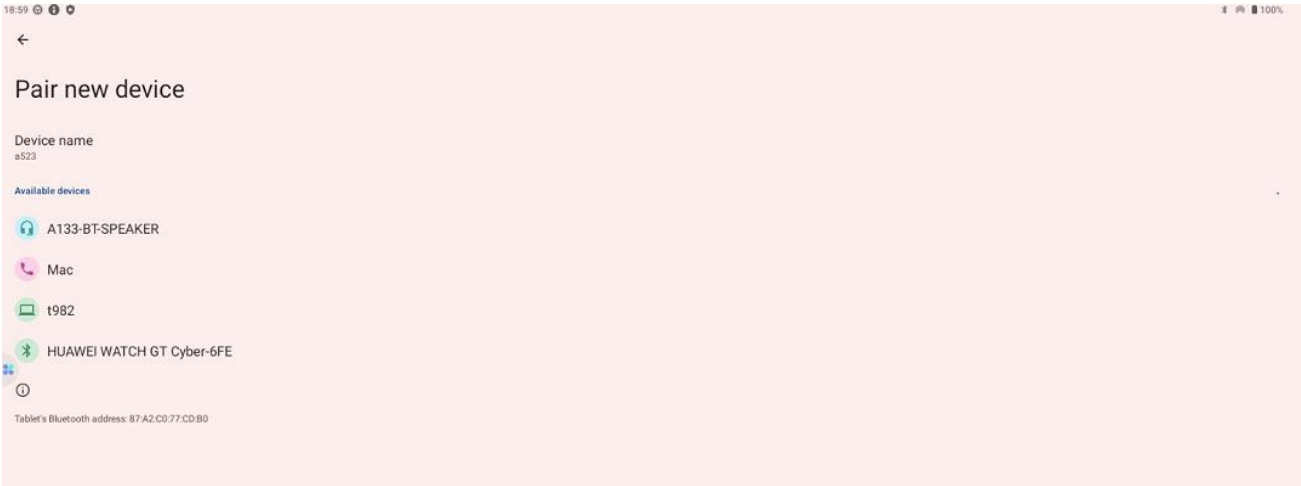
（2）WiFi Hotspot

As shown in the figure below, in the "Settings" interface, turn on the "WIFI hotspot" function, enter the interface in the figure below, you can send out WIFI signals, and the device can successfully connect to the hotspot by entering the password.



（3）Bluetooth Signal Connection

In the "Settings" interface, turn on the "connected devices" function and enter the "pairing with new devices" interface shown in the figure below to search for Bluetooth devices and pair them.



NOTICE：

▪ THE USE OF THE WIFI AND BLUETOOTH MUST BE CONNECTER TO THE WIFI ANTENNA AT THE WIFI ANTENNA HOLDER.

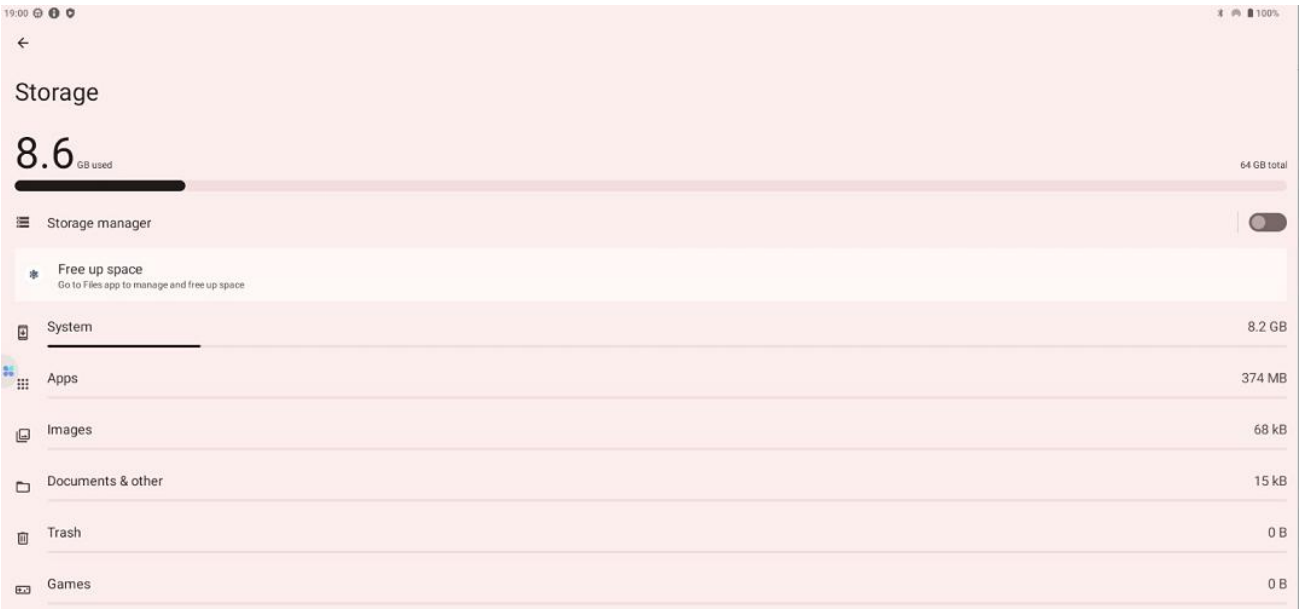
▪ The availability and coverage of WIFI signals depends on the number of signals, antenna performance and external environment.

THE NETWORK PRIORITY ORDER FOR ALL ANDROID DEVICES IS:

1. **ETH Ethernet network**
2. **WIFI wireless network**
3. **3G/4G/5G mobile network**

4.3 Viewing Storage and Memory

In Settings, select "Storage" to enter the following interface, where the storage information of the storage space will be displayed. The display of 8.6GB capacity is the remaining available storage capacity of the board, and the display of "Total used 64GB" is the total storage capacity of the hardware.



4.4 Setting the Notification Bar and Navigation Bar

In the setting, select "Display": check "Hide navigation bar", and the navigation bar will be hidden; Check "Swipe navigation bar", and the navigation bar can be slid out by sliding the mouse up from the bottom. The navigation bar will disappear 5 seconds after no operation. If disable expand statusbar is checked, expand statusbar cannot be pulled down; Check "Hide top statusbar" to hide the top statusbar showing time and other statuses at the top of the interface.

NOTE：

"Hide navigation bar" must be selected before "Swipe navigation bar" is selected;

When hide top statusbar is selected, expand statusbar is also forced to be hidden by default.

Chapter 5 Contact Us

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Guangzhou Branch: Room 318, Jiangrun Building, No. 565, Xingnan Avenue, Panyu District, Guangzhou

Looking forward to working with you, thank you