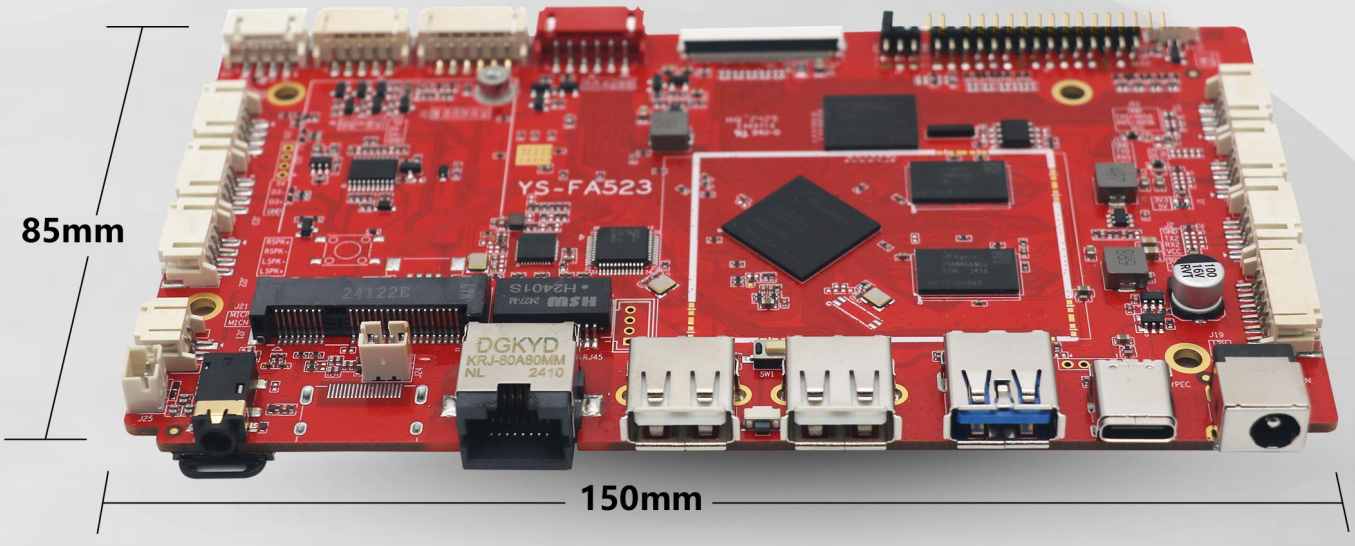
YISHENG ELECTRONICS

Specification

YS-FA523

StanbyME Screen Board



Shenzhen Yisheng Technology Co., Ltd

Contents

Declaration

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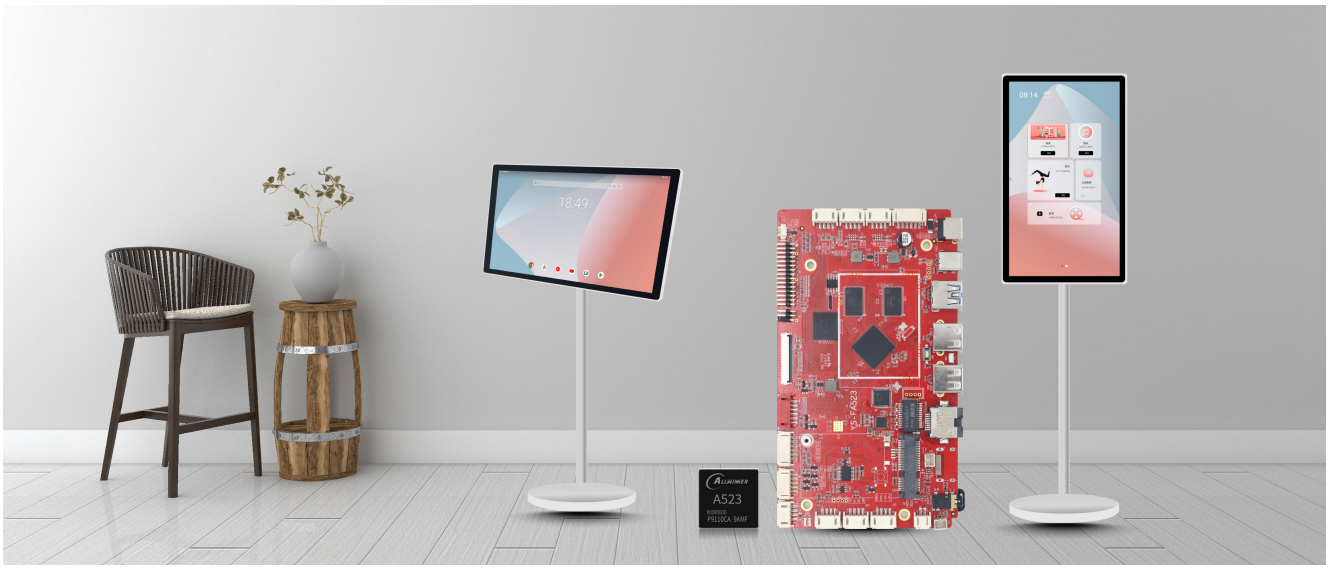
Revision History

Version	Date	Author	Approver	Description
V1.0	2023.02.28	Zhang Wenjuan	Qin Yongling	Initial version
V2.1	2024.10.22	Zhang Wenjuan	Li Quan	1. Change motherboard picture 2. Change WiFi module picture
V2.2	2024.11.6	Zhang Wenjuan	Li Quan	Change Bluetooth parameters

Chapter 1 Product Introduction

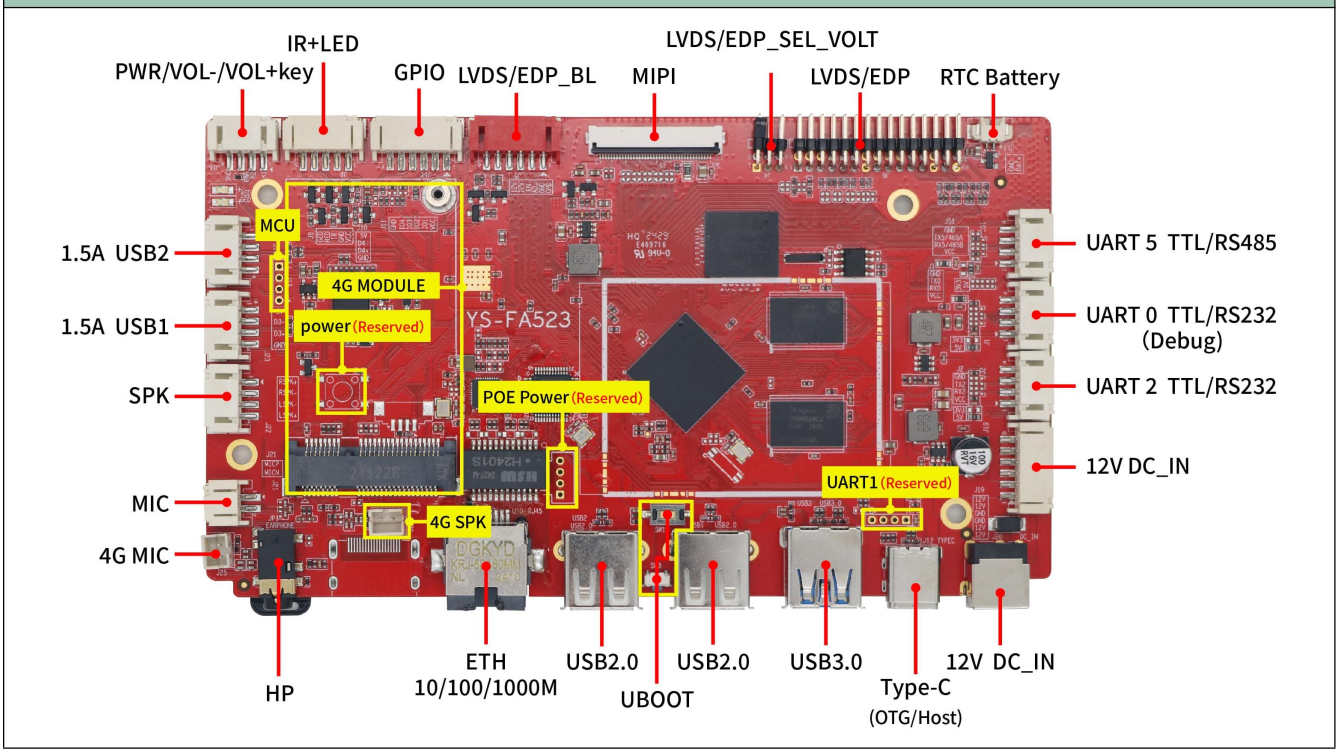
1.1 Overview



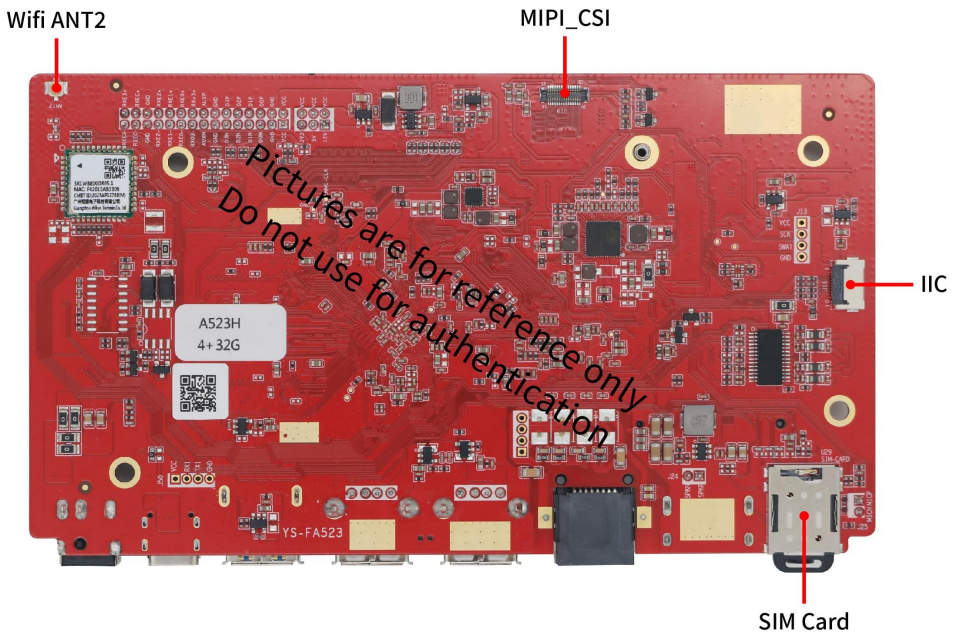
YS-FA523 is powered by Allwinner A523 chip, the CPU is octa-core Cortex-A55, max CPU frequency up to 2.0GHz, with rich peripheral interfaces, support EDP/LVDS, MIPI, GPIO, I2C, UART, etc. It can be widely used in stanbyme screen solutions.

1.2 Pictures and Dimensions

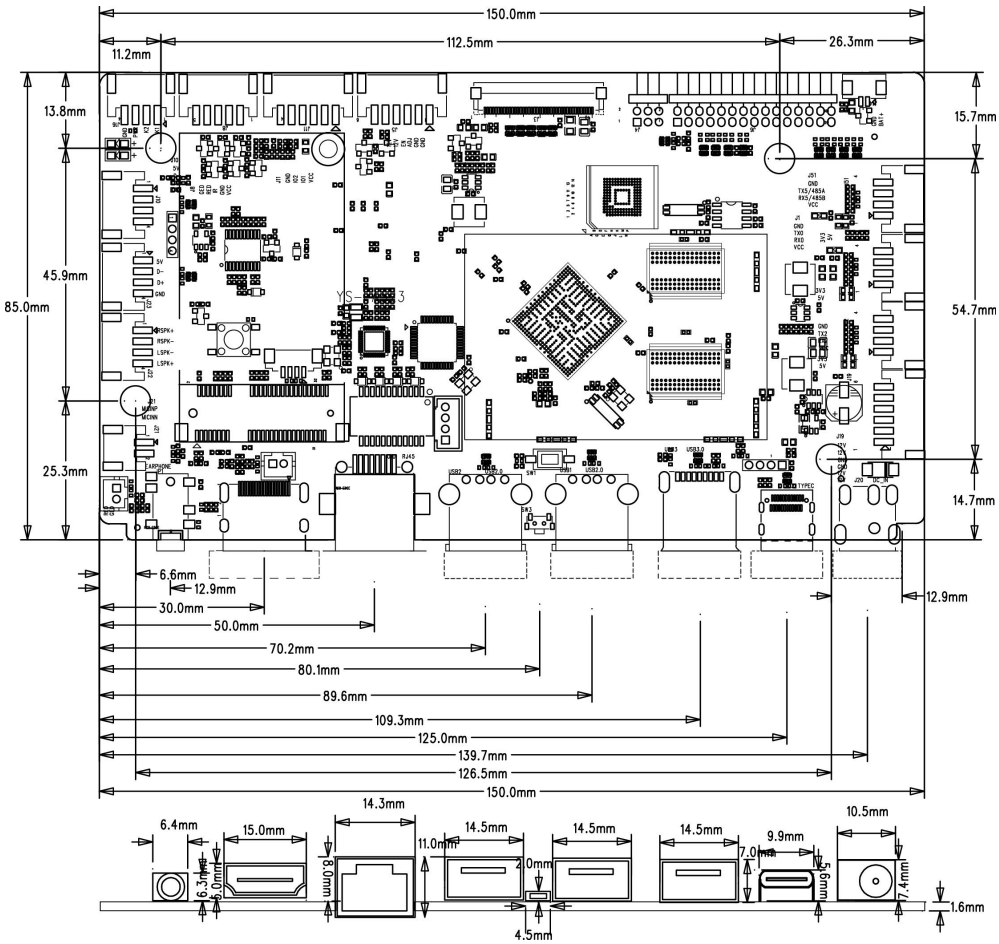
Top View



Bottom View

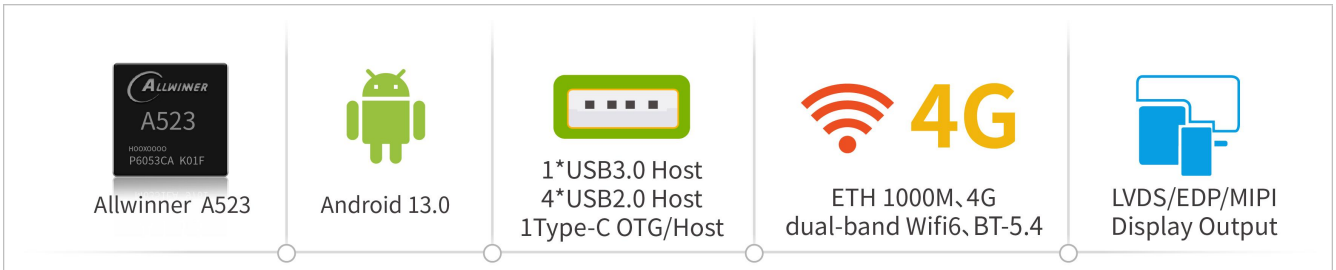


Dimensions



*PCBA L：150mm *PCBA W：85mm *PCBA H：12mm *PCBA Location Hole：Φ3.4mm x4

1.3 Product Detailed Parameters



Detail Specification	
SOC	Allwinner A523
CPU	Octa-core Cortex-A55 Max CPU frequency: 2.0GHz
GPU	ARM G57 MC01 OpenGL ES 3.2/2.0/1.1 Vulkan1.1/1.2/1.3 OpenCL2.2
OS	Android 13
Video CODEC	**Video Decoder** 4K@30fps H.265 MP/VP9 4K@25fps H.264 BL/MP/HP **Video Encoder** 1080p@60fps H.264 BL/MP/HP
ROM	2/4GB
Storage	16/32GB
Display Output	1*EDP(Up to 2.5k@60） 1*LVDS(Up to 1920x1080） 1*MIPI_DSI(1200x1920)
Audio	1*SPK(L&R audio-out， Up to 2*8Ω/5W speaker） 1*HP(CTIA） 1*MIC 1*4G MIC 1*4G SPK
Network	Ethernet: Support 10M/100M/1000M WIFI: Dual band WiFi6 Bluetooth: 5.4
USB	1*Type-C_OTG/Host 4*USB2.0 Host 1*USB 3.0
UART	3*TTL(2 optional RS232, 1 optional RS485, default TTL)

Other	1*I2C 4*GPIO 1*MIPI-CSI-30PIN-BTB 1*Backlight

1.4 Configuration & General Precautions

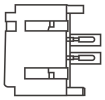
1. Relative humidity ≤ 85%
2. Storage temperature: - 30 ℃ to+70 ℃
3. Operating temperature: - 20 ℃ to+60 ℃
4. During the assembly of the whole machine, please do not operate the wiring with power to avoid short circuit between bare board and peripheral equipment.
5. Pay attention to the anti-static treatment 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

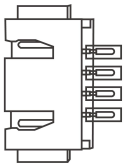
J25(2PIN/2.0) 4G MIC interface(Vertical connector）

Exterior	Pin	Definition	Description
2  1	1	MICP	MIC positive
	2	MICN	MIC negative

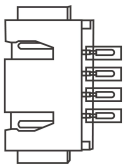
J21(2PIN/2.0) MIC interface(Horizontal connector）

Exterior	Pin	Definition	Description
1  2	1	MICP	MIC positive
	2	MICN	MIC negative

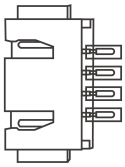
J22(4PIN/2.0) SPK interface(Horizontal connector）

Exterior	Pin	Definition	Description
1  4	1	RSPK+	Right channel+
	2	RSPK-	Right channel-
	3	LSPK-	Left channel-
	4	LSPK+	Left channel+

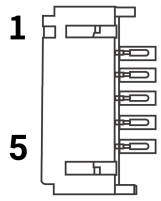
J23、J10(4PIN/2.0) 1.5A USB interface(Horizontal connector）

Exterior	Pin	Definition	Description
1  4	1	+5V	PWR
	2	D-	DM
	3	D+	DP
	4	GND	Ground

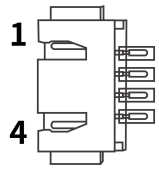
J16(4PIN/2.0) Key interface(Horizontal connector) (Master USB）

Exterior	Pin	Definition	Description
1  4	1	K1	Key1(Reserved)
	2	K2	Key2(Reserved)
	3	PWR	ON/OFF
	4	GND	Ground

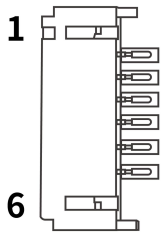
J8(4PIN/2.0) Remote Control interface(Horizontal connector)

Exterior	Pin	Definition	Description
	1	VCC	3.3V PWR
	2	GND	Ground
	3	IR	Remote control
	4	RED	Red indicator
	5	GED	Green indicator

J11(4PIN/2.0) GPIO interface(Horizontal connector）

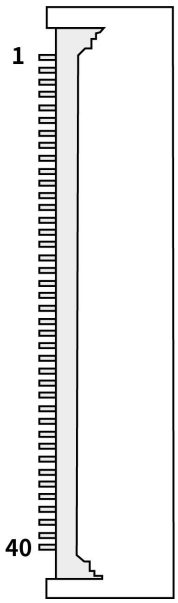
Exterior	Pin	Definition	Description
	1	VCC	3.3V PWR
	2	IO1	IO1
	3	IO2	IO2
	4	IO3	IO3
	5	IO4	IO4
	6	GND	Ground

J5(6PIN/2.0) Backlight(Horizontal connector）

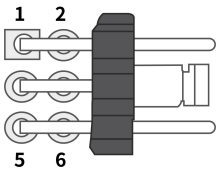
Exterior	Pin	Definition	Description
	1	GND	Ground
	2	GND	Ground
	3	ADJ	Backlight brightness adjustment
	4	EN	Backlight on/off control
	5	+12V	Backlight PWR
	6	+12V	Backlight PWR

J3(40PIN/0.5mm) MIPI_DSI interface(FPC connector）

Exterior	Pin	Definition	Description
	1	VDD1V8	+1.8V PWR
	2	VDD3V3	+3.3V PWR
	3	VDD3V3	+3.3V PWR
	4	NC	Null
	5	RESET	Reset
	6	NC	Null
	7	GND	Ground
	8	MIPI_D0-	MIPI signal

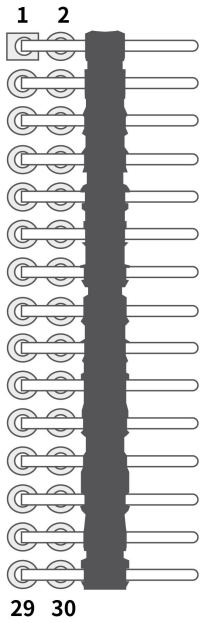
	9	MIPI_D0+	MIPI signal
	10	GND	Ground
	11	MIPI_D1-	MIPI signal
	12	MIPI_D1+	MIPI signal
	13	GND	Ground
	14	MIPI_CLK-	MIPI signal
	15	MIPI_CLK+	MIPI signal
	16	GND	Ground
	17	MIPI_D2-	MIPI signal
	18	MIPI_D2+	MIPI signal
	19	GND	Ground
	20	MIPI_D3-	MIPI signal
	21	MIPI_D3+	MIPI signal
	22	GND	Ground
	23	NC	Null
	24	NC	Null
	25	GND	Ground
	26	NC	Null
	27	NC	Null
	28	NC	Null
	29	NC	Null
	30	GND	Ground
	31-32	LEDK	Backlight PWR
	33-38	NC	Null
	39-40	LEDA	Backlight PWR

J4 (6PIN/2.0) Jumper Cat interface(Horizontal connector）

Exterior	Pin	Definition	Description
	1	12V	12V PWR
	2	VCC_LCD	Screen voltage port
	3	5V	5V PWR
	4	VCC_LCD	Screen voltage port
	5	3.3V	3.3V PWR
	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.

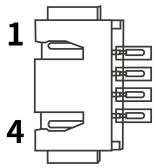
J6(30PIN/2.0) LVDS/EDP(Horizontal connector）

Exterior	Pin	Definition	Description
	1	PWR	PWR
	2	PER	PWR
	3	PWR	PWR
	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	GND	Ground
	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

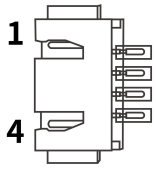
J14(2PIN/1.25) RTC Battery interface(Horizontal connector)

Exterior	Pin	Definition	Description
	1	BAT+	Battery positive
	2	GND	Ground

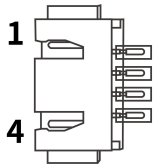
J51(4PIN/2.0) UART5 interface(Horizontal connector)（Default TTL, optional RS485， TTL power domain 5V）

Exterior	Pin	Definition	Description
	1	VCC	PWR 5V（3.3V optional）
	2	RX5/485B	Receive5/RS485B
	3	TX5/485A	Transmit5/RS485A
	4	GND	Ground

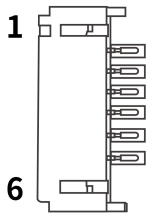
J1(4PIN/2.0) UART0 interface(Horizontal connector)（Debug UART, default TTL, RS232 optional）

Exterior	Pin	Definition	Description
	1	VCC	PWR 5V（3.3V optional）
	2	RX0	Receive0
	3	TX0	Transmit0
	4	GND	Ground

J2(4PIN/2.0) UART2 interface(Horizontal connector)（Default TTL，RS232 optional）

Exterior	Pin	Definition	Description
	1	VCC	PWR 5V（3.3V optional）
	2	RX2	Receive2
	3	TX2	Transmit2
	4	GND	Ground

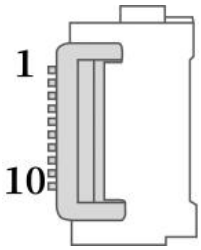
J19(6PIN/2.0) PWR interface(Horizontal connector)

Exterior	Pin	Definition	Description
	1	12V	12V PWR
	2	12V	12V PWR
	3	GND	Ground
	4	GND	Ground
	5	12V	12V PWR
	6	12V	12V PWR

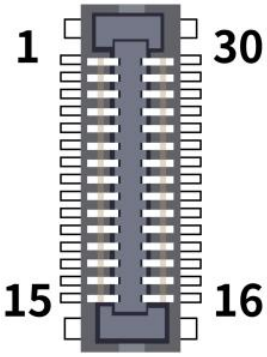
J24(2PIN/1.25) 4G SPK interface(Vertical connector)

Exterior	Pin	Definition	Description
	1	SPKP	Positive for 4G microphone
	2	SPKN	Negative for 4G microphone

J15(10PIN/FPC) IIC interface(FPC connector）

Exterior	Pin	Definition	Description
	1	GND	Ground
	2	GND	Ground
	3	RST	Reset
	4	INT	Interrupt data
	5	GND	Ground
	6	SCL	IIC clock
	7	SDA	IIC data
	8	VCC	PWR
	9	GND	Ground
	10	GND	Ground

J18(30PIN/0.4) MIPI-CSI interface(BTB connector socket)

Exterior	Pin	Definition	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 PWR
	10	GND	Ground
	11	VCC	2.8V PWR
	12	GND	Ground
	13	VCC	1.8V PWR
	14	VCC	1.8V PWR
	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	MIPI signal
	27	MIPI_D2P	MIPI signal
	28	GND	Ground
	29	MIPI_D3N	MIPI signal
	30	MIPI_D3P	MIPI signal

Chapter 3 Electrical Characteristics

◆ Standard Operating Conditions

Type		Min	Typ	Max
Standard Power Parameters	Vcc	11V	12V	13.5V
	Ripple	/	/	±3%
	Current	2A	3A	/

◆ Power Consumption

Type		Min	Typ	Max
Power Supply Current (with no display connected)	Operation Current	/	180mA	220mA
	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	1.5A
HOST_USB	5V	500mA	1.5A

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

Type	Rated Current	Max Current	Max Current
EXT 5V	/	3000mA	
EXT 3.3V	/	3000mA	
MIPI_DSI_BL	150mA	/	/

Chapter 4 System Instruction

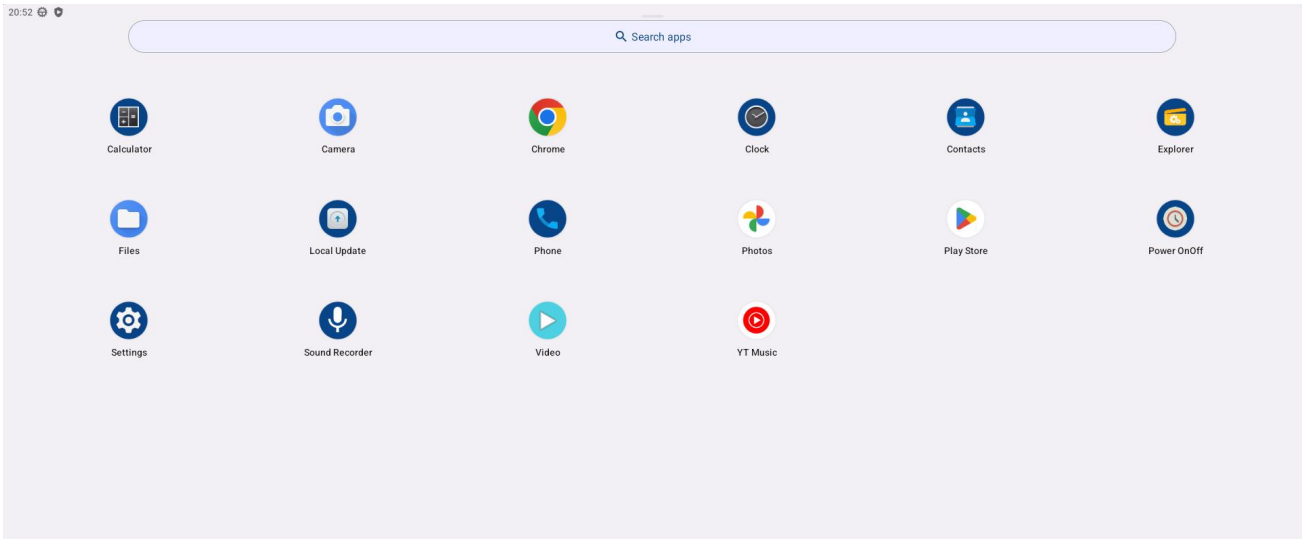
4.1 Android System Interface Description

The main menu interface of Android system is divided into six categories: Chrome, Photos, YTMusic, YouTube, Meet, PlayStore

Homepage

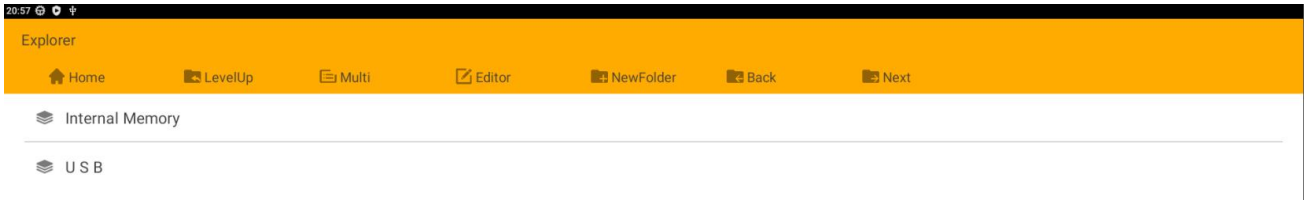
（1）Applications interface

The application interface includes: Camera, Explorer, Files, Keep, Maps, tranScreen, WhiteBoard, YouTube, etc.



Applications Interface

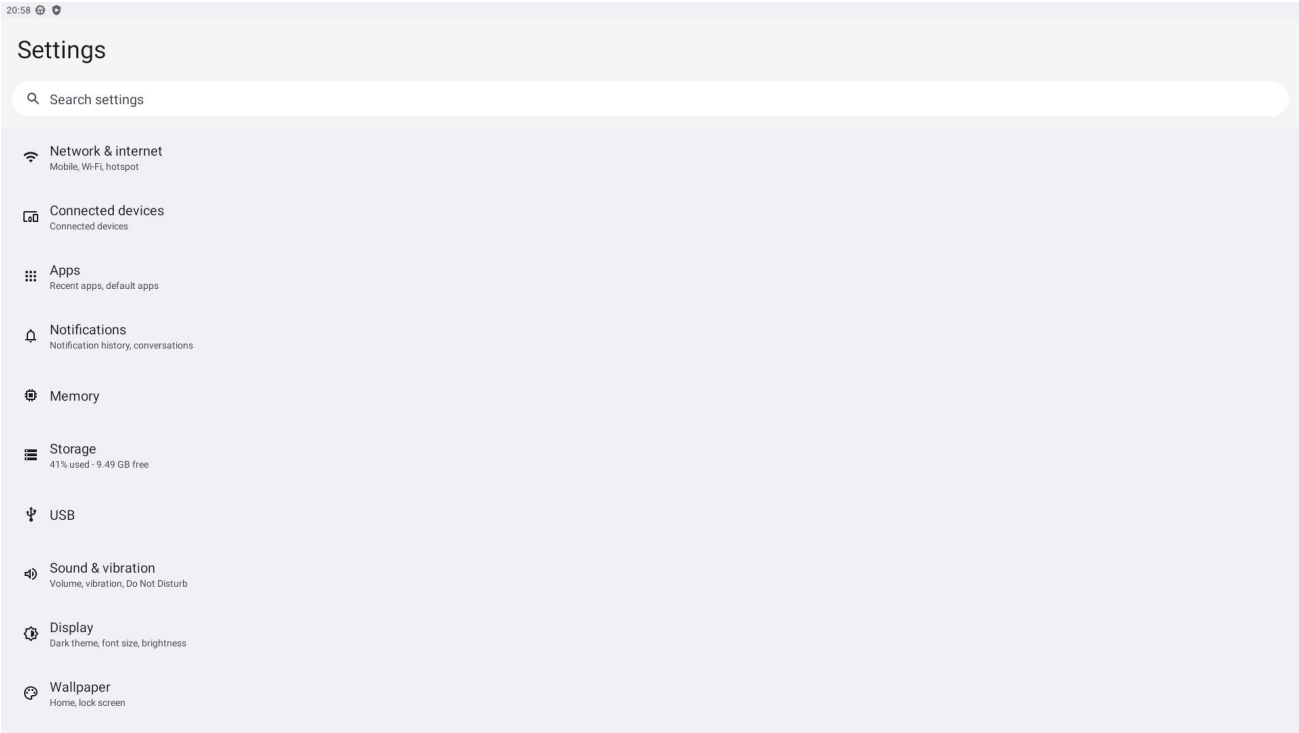
（2）FileManager interface



FileManager Interface

（3）Settings 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.

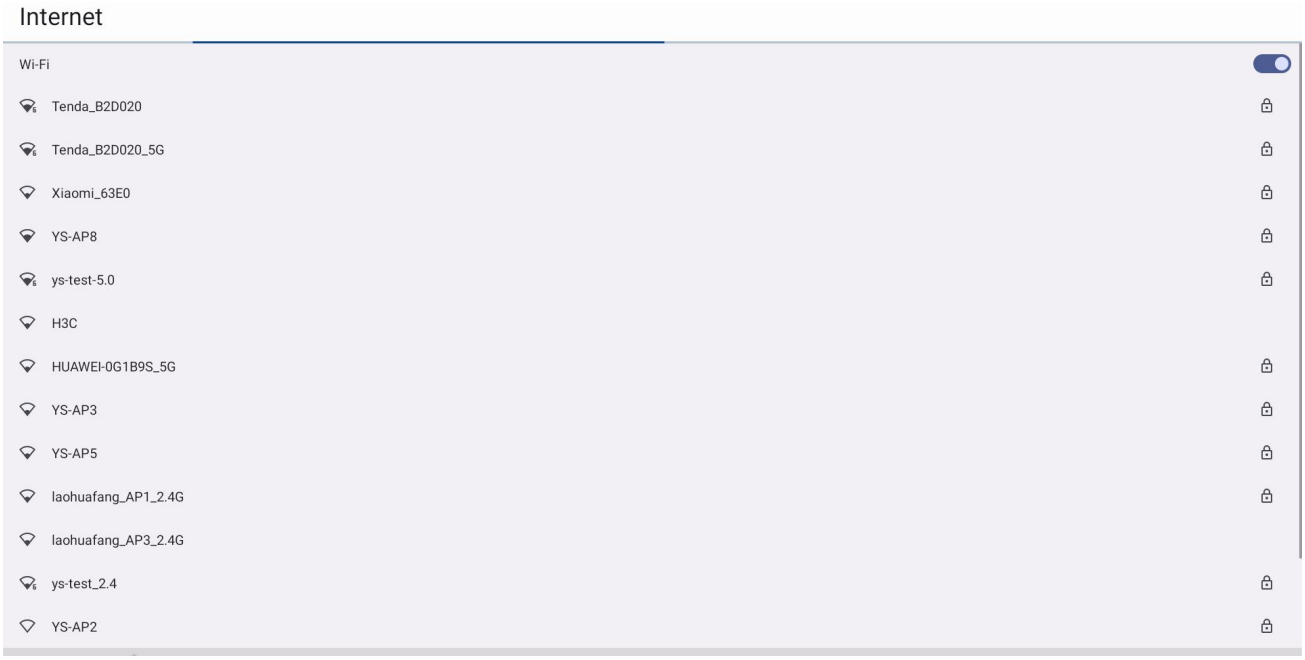


Settings Interface

4.2 Network Connection Explanation

（1）WIFI Network Signal Connection

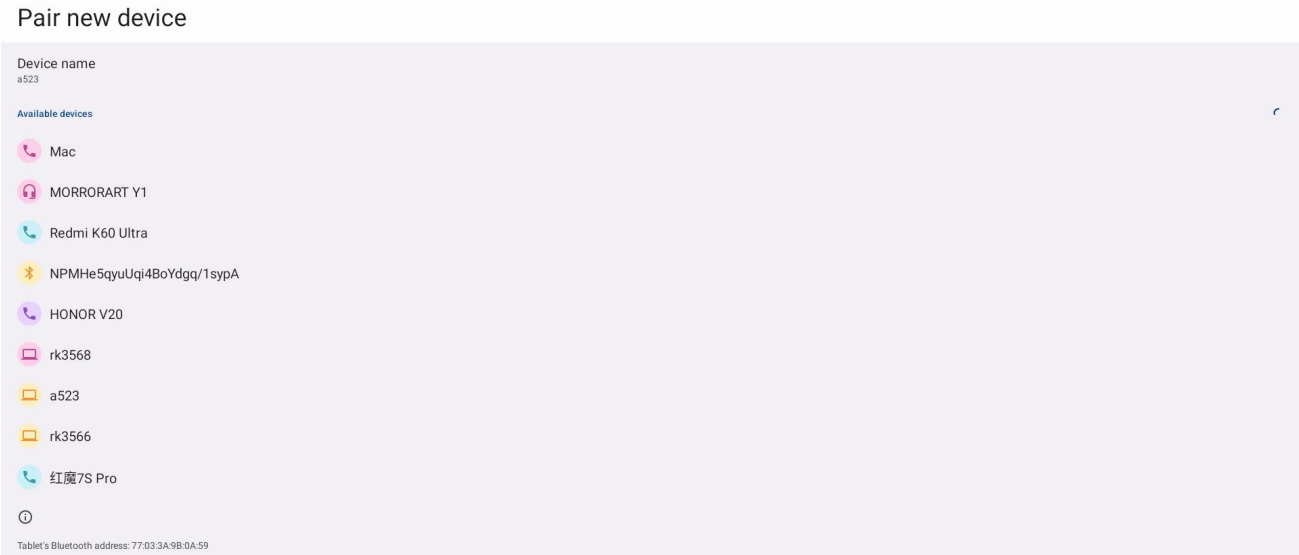
Enter the ‘Settings>Internet>WiFi’ interface to turn on the WiFi switch, as shown below, select the WiFi signal that needs to be connected, and enter the corresponding password, you can successfully connect.



WIFI Setting Interface

（2）Bluetooth Signal Connection

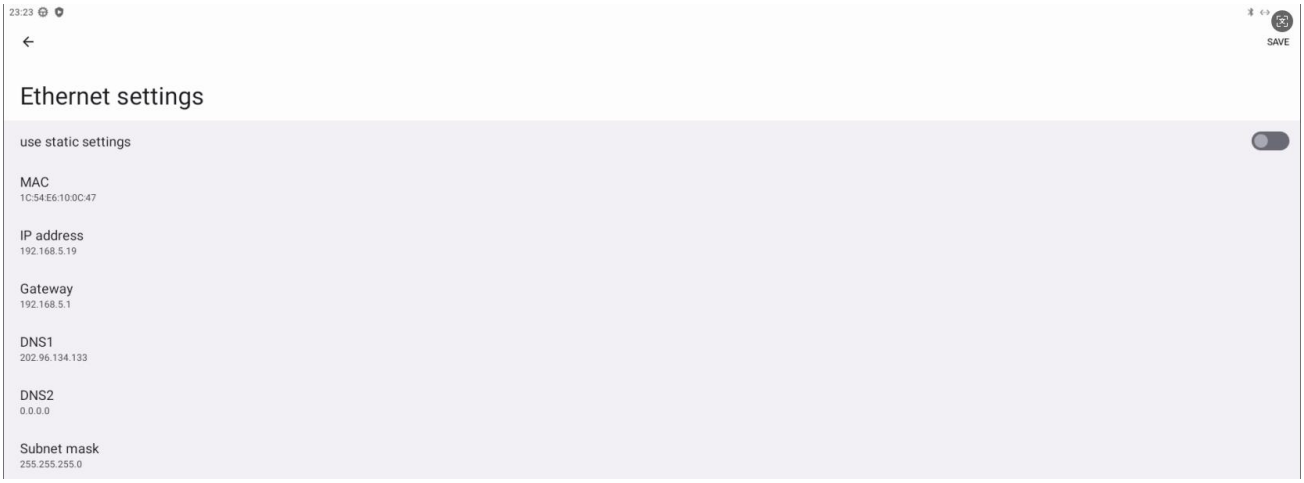
In the “Settings > Connected devices > Pair new device” interface, you can search for Bluetooth devices, as shown in the figure below, find the Bluetooth device that needs to be paired and click pairing..



Bluetooth Setting Interface

（3）Ethernet Connection

In the "Settings" interface, enter "Ethernet settings", turn on Ethernet, enter the page shown in the figure below, turn on the Ethernet switch, then plug in the network cable and automatically connect to Ethernet. You can view the IP address, Ethernet MAC address and other information in the interface shown in the figure below.



Ethernet Setting Interface

NOTICE:

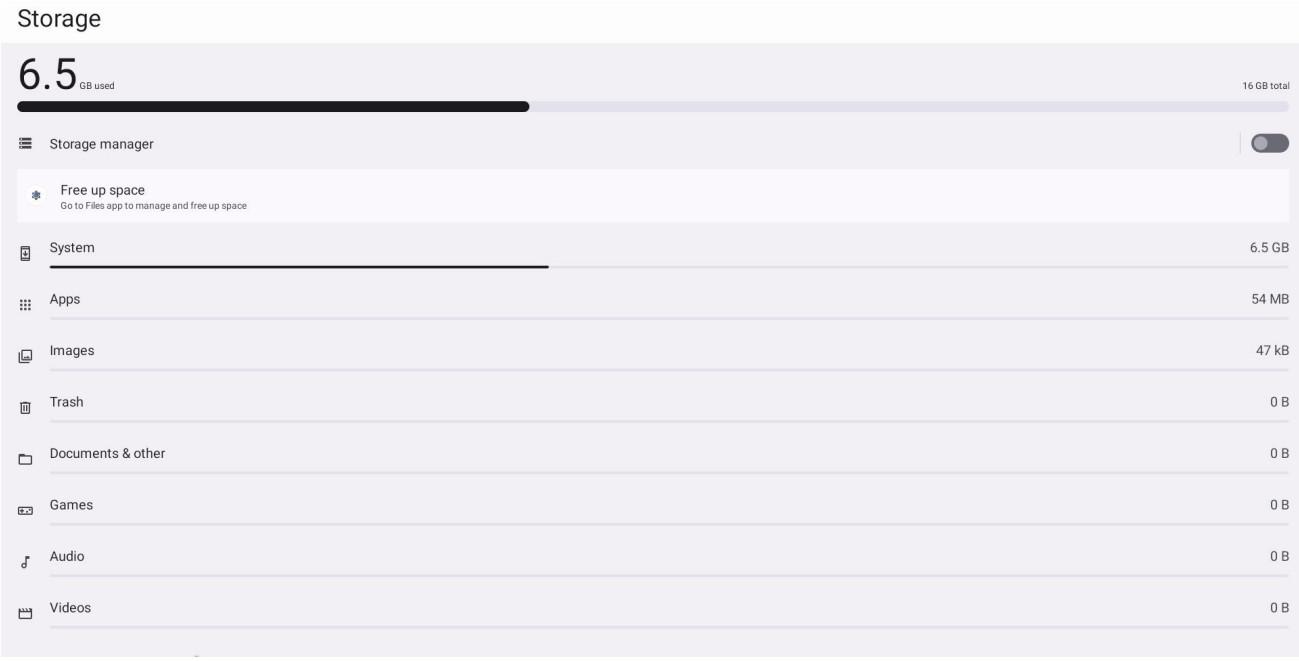
- THE USE OF THE WIRELESS NETWORK MUST BE CONNECTED TO THE WIFI ANTENNA AT THE WIFI ANTENNA HOLDER
- THE AVAILABILITY AND COVERAGE OF WIFI SIGNALS DEPENDS ON THE NUMBER OF SIGNALS, ANTENNA PERFORMANCE AND EXTERNAL ENVIRONMENT.
- THE ETHERNET MAC ADDRESS IS THE ONLY PERMANENT AND VALID DEVICE ID FOR THIS SYSTEM.

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 6.5GB capacity is the remaining available storage capacity of the board, and the display of "Total used 16GB" is the total storage capacity of the hardware.



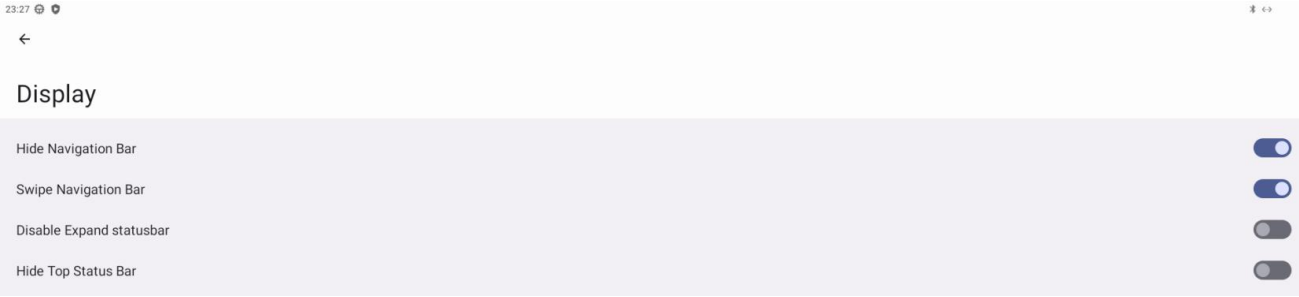
Viewing Storage Interface

In the Setting, select "Memory" to enter the interface below to display the internal storage information. The display of 1.4GB is the amount of memory already used by the board.

View Memory Interface

4.4 Setting the Notification Bar and Navigation Bar

In the Settings, 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 status bar can’t be pulled down; Check "Hide Top Status Bar" to hide the top status bar showing time and other status at the top of the interface. After hiding the status bar, the notification bar will not be pulled down by default.



Notification Bar and Navigation Bar Interface

Navigation Bar Interface

NOTE:

"Hide Navigation Bar" must be selected before "Swipe Navigation Bar" is selected;

When Hide Top Status Bar is selected, Expand statusbar is also forced to be hidden by default.

Chapter 5 Contact Us

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Looking forward to working with you, thank you