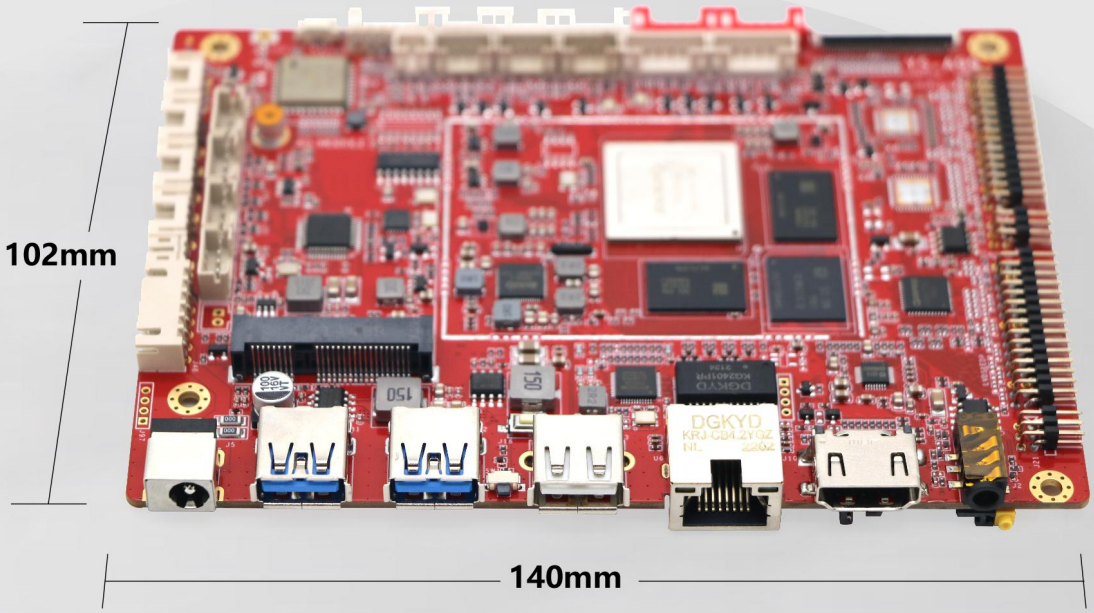
YISHENG ELECTRONICS

Acknowledgement

YS-A99

Intelligent Terminal



Shenzhen Yisheng Technology Co., Ltd

CATALOGUE

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Historical Version

Revision	Date	Prepared	Reviewed by	Description
V1.0	2023.02.28	Zhang Wenjuan	Qin Yongling	Initial version

Chapter 1 Product Summary

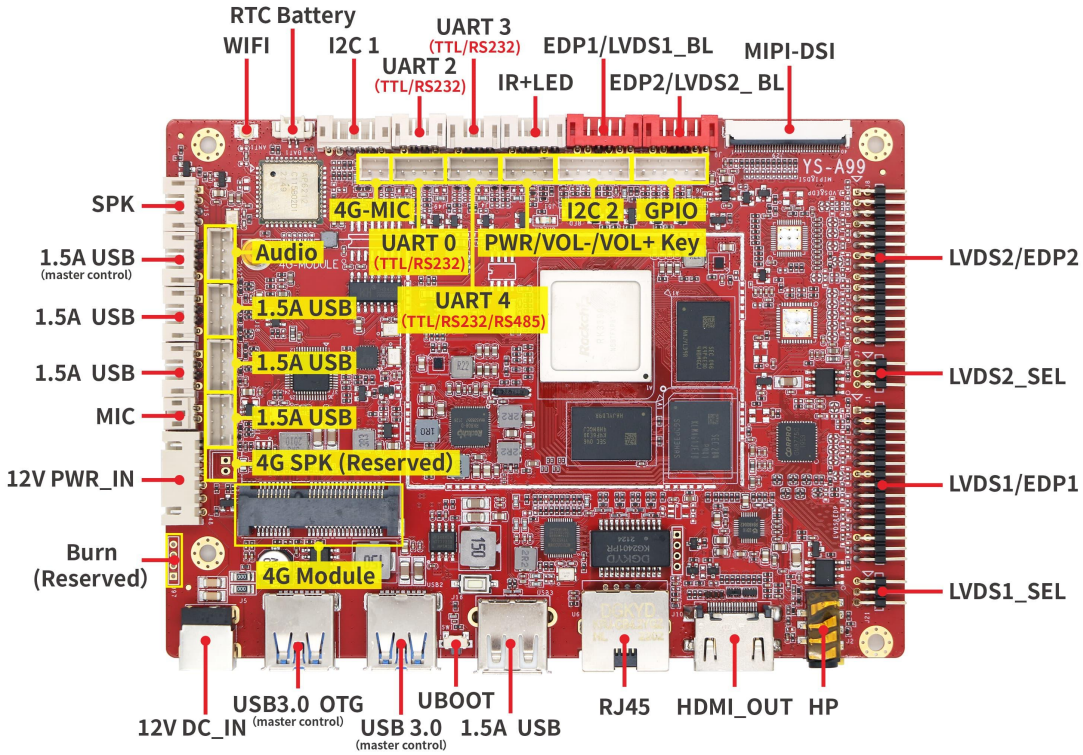
YS-A99

1.1 Application Industry

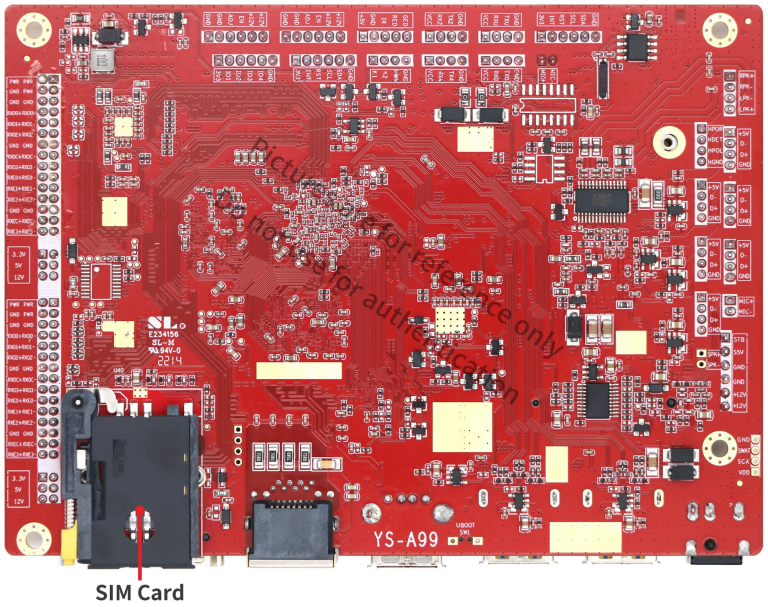
YS-A99 has RK3399 low power, high performance processor for computing, personal mobile internet devices and other smart device applications. Based on Big.Little architecture, it integrates dual-coreCortex-A72and quad-core Cortex-A53 with separate NEON coprocessor.

1.2 Appearance and Measurement

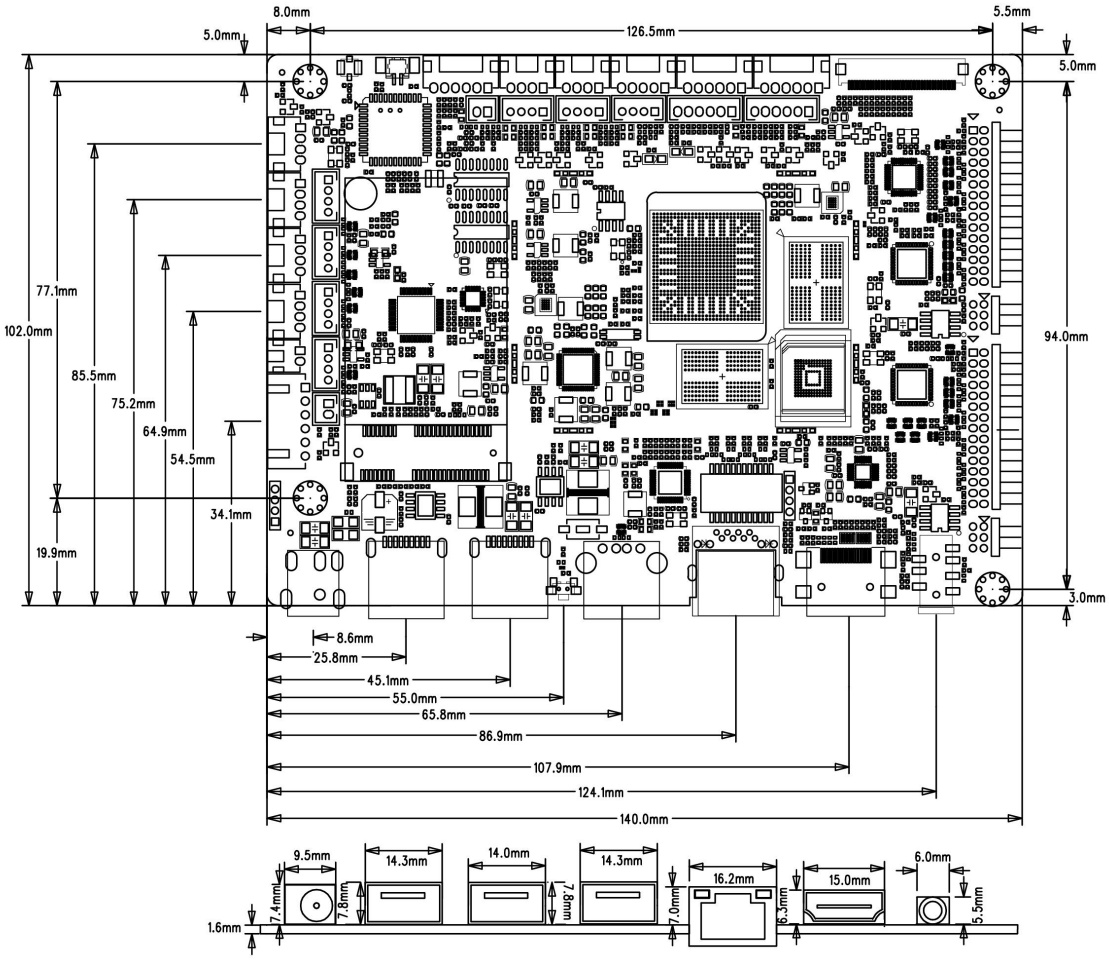
Front Interface Diagram



Back Interface Diagram



Dimension Drawing



*PCBA L：140mm *PCBA W：102mm *PCBA H：12mm *PCBA Screw hole diameter：Φ3.2mm x4

1.3 Product Detailed Parameters

Detail Specification	
SOC	RockChip RK3399
CPU	Dual-core Cortex-A72 up to 1.8GHz Quad-core Cortex-A53 up to 1.4GHz 64bit CPU
GPU	Mali-T860 OpenGL ES 1.1/2.0/3.0/3.1/3.2 OpenCL1.2 DirectX 11.1 Special 2D hardware engine with MMU
OS	**Android:** Android 7.1/9.0/10.0 **Linux:** Ubuntu Desktop
Video CODEC	**Video Decoder** 4K@60fps H.265/HEVC/VP9 4K@60fps H.264/AVC 1080P@60fps MPEG-4/-2/-1/VC-1/MVC **Video Encoder** 1080P@30fps H.264/MVC/VP8
ROM	2GB/4GB（Up to 4GB）LPDDR4
Storage	8/16GB（Up to 64GB）EMMC
Display Output	1*HDMI2.0（Up to 4K@60HZ） 2*LVDS or 2*EDP or 1*LVDS+1*EDP（Up to 1920x1080） 1*MIPI_DSI-40PIN-FPC（Up to 1200x1920）
Audio	1*SPK（L&R audio-out，Up to 2*8Ω/5W speaker） 1*HP（OMTP） 1*MIC 1*4G MIC 1*4G SPK（Single Track ）
Network	Ethernet：Support 10/100/1000M GMAC WIFI：Support 2.4GHz Band,System:IEE Std.802.11b/g/n Bluetooth：4.2(Up to 5.2) 4G：Support Mini_PCIE Module

USB	1*Type-A USB3.0 (OTG or HOST) 1*Type-A USB3.0 HOST 1*Type-A USB2.0 HOST 6*USB2.0 HOST(4Pin*2.0mm Wafer)
UART	4*TTL(1*TTL/RS232/RS485,3* TTL/RS232)
Other	2*I2C 4*GPIO 1*IR+LED 3*Key（1*PWR_Key,2*Vol_Key）

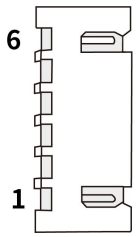
1.4 Precautions for assembly and use

During assembly and use, please pay attention to the following (but not limited to) problems.

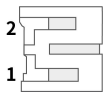
1. Relative humidity ≤ 85%
2. Storage temperature: - 30 ℃ to+70 ℃
3. Operating temperature: - 20 ℃ to+60 ℃
4. During the assembly of the whole machine, please do not operate the wiring with power to avoid short circuit between bare board and peripheral equipment.
5. Pay attention to the anti-static treatment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

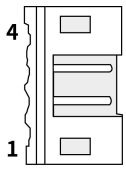
J48（6PIN/2.54）12V PWR_IN

Exterior	Pin	Definition	Description
	1	STB	Power supply enable, connect to PSON
	2	S5V	5V constant power supply (standby), connect to 5VS
	3	GND	Ground
	4	GND	Ground
	5	+12V	12V Power Input
	6	+12V	12V Power Input

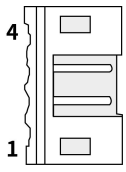
J71（2PIN/2.0）MIC

Exterior	Pin	Definition	Description
	1	MIC+	MIC+
	2	MIC-	MIC-

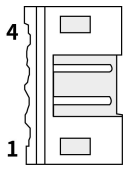
J12（4PIN/2.0）USB

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

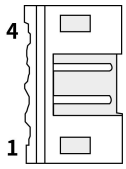
J11（4PIN/2.0）USB

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

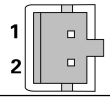
J13（4PIN/2.0）USB

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

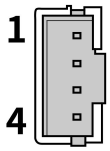
J15（4PIN/2.0）SPK

Exterior	Pin	Definition	Description
	1	RPK+	Right Channel+
	2	RPK-	Right Channel-
	3	LPK-	Left Channel-
	4	LPK+	Left Channel+

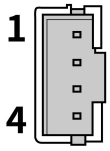
J9116（2PIN/2.0）4G SPK

Exterior	Pin	Definition	Description
	1	SPK+	4G SPK+
	2	SPK-	4G SPK -

J14、J20、J18（4PIN/2.0）USB

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

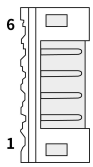
J57（4PIN/2.0）Audio

Exterior	Pin	Definition	Description
	1	HPOL	Left Channel
	2	HDET	Test
	3	HPOR	Right Channel
	4	HGND	Ground

BAT1（2PIN/1.25）RTC Battery

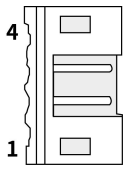
Exterior	Pin	Definition	Description
	1	BAT+	Battery Positive
	2	BAT-	Battery Negative

J32（6PIN/2.0）IIC 1（Power Domain 3.3V）

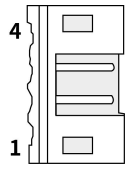
Exterior	Pin	Definition	Description
	1	3.3V	Power Supply
	2	INT	interrupt
	3	RST	Reset
	4	SCL	12C Data

	5	SDA	12C Clock
	6	GND	Ground

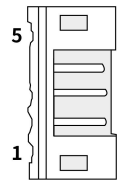
J46（4PIN/2.0）UART 2-DEBUG（Optional TTL/RS232,TTL Power Domain 3.3V）

Exterior	Pin	Definition	Description
	1	VCC	3.3V Power Supply（Optional 5V）
	2	RX2	receive 2
	3	TX2	send 2
	4	GND	Ground

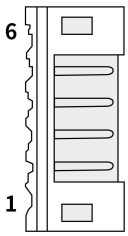
J25（4PIN/2.0）TTL UART 3（Optional TTL/RS232 UART，TTL Power Domain 3.3V）

Exterior	Pin	Definition	Description
	1	VCC	Power Supply 5V (Optional 3.3V)
	2	RX3	receive 3
	3	TX3	send 3
	4	GND	Ground

J19（5PIN/2.0）IR+LED

Exterior	Pin	Definition	Description
	1	5V	Power Supply
	2	GND	Ground
	3	IR	Remote Control Infrared
	4	RED	Red Light
	5	GED	Green light

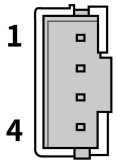
J24、J9（6PIN/2.0）EDP/LVDS_BL

Exterior	Pin	Definition	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

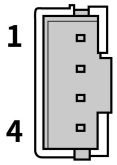
J55（2PIN/2.0）4G-MIC

Exterior	Pin	Definition	Description
	1	MIC+	4G MIC+
	2	MIC-	4G MIC-

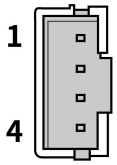
J49（4PIN/2.0）UART 0（Optional TTL/RS232 UART，Power Domain3.3V）

Exterior	Pin	Definition	Description
	1	VCC	Power Supply 5V (Optional 3.3V)
	2	RX0	receive 0
	3	TX0	send 0
	4	GND	Ground

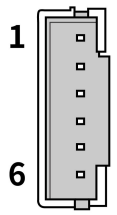
J4（4PIN/2.0）UART 4（Optional TTL/RS232/RS485 UART，TTL Power Domain 3.3V）

Exterior	Pin	Definition	Description
	1	VCC	Power Supply 5V (Optional 3.3V)
	2	RX4	receive 4
	3	TX4	send 4
	4	GND	Ground

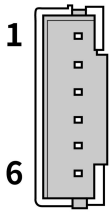
J51（4PIN/2.0）PWR/VOL-/VOL+ Key

Exterior	Pin	Definition	Description
	1	K1	Vol+
	2	K2	Vol-
	3	PWR	PWR ON/OFF
	4	GND	Vol+

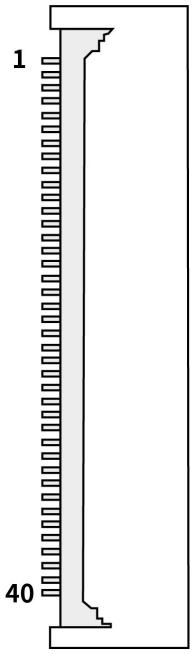
J64（6PIN/2.0）IIC 2 (Power Domain 3.3V)

Exterior	Pin	Definition	Description
	1	3.3V	Power Supply
	2	INT	interrupt
	3	RST	Reset
	4	SCL	12C Clock
	5	SDA	12C Data
	6	GND	Ground

J6（6PIN/2.0）GPIO (Power Domain 3.3V)

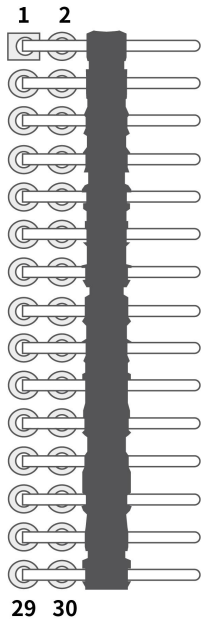
Exterior	Pin	Definition	Description
	1	3.3V	Power Supply
	2	IO1	GPIO1
	3	IO2	GPIO2
	4	IO3	GPIO3
	5	IO4	GPIO4
	6	GND	Ground

J29 (40PIN/0.5mm) MIPI_DSI（FPC）

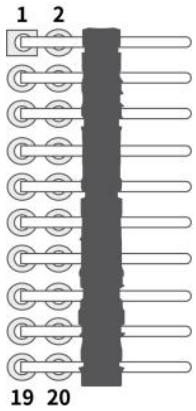
Exterior	Pin	Definition	Description
	1	VDD1V8	+1.8V Power Supply
	2	VDD3V3	+3.3V Power Supply
	3	VDD3V3	+3.3V Power Supply
	4	NC	Null
	5	RESET	Reset
	6	NC	Null
	7	GND	Ground
	8	MIPI_D0-	MIPI Signal
	9	MIPI_D0+	MIPI Signal
	10	GND	Ground
	11	MIPI_D1-	MIPI Signal
	12	MIPI_D1+	MIPI Signal
	13	GND	Ground
	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
	23-24	NC	Null
	25	GND	Ground
	26	NC	Null
	27	NC	Null
	28	NC	Null

	29	NC	Null
	30	GND	Ground
	31-32	LEDK	Backlight Power Supply
	33-38	NC	Null
	39-40	LEDA	Backlight Power Supply

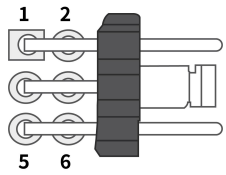
J8、J1 (30PIN/2.0) LVDS

Exterior	Pin	Definition	Description
	1	PWR	Power Supply
	2	PWR	Power Supply
	3	PWR	Power Supply
	4	GND	Ground
	5	GND	Ground
	6	GND	Ground
	7	RXO0-	LVDS Signal
	8	RXO0+	LVDS Signal
	9	RXO1-	LVDS Signal
	10	RXO1+	LVDS Signal
	11	RXO2-	LVDS Signal
	12	RXO2+	LVDS Signal
	13	GND	Ground
	14	GND	Ground
	15	RXOC-	LVDS Signal
	16	RXOC+	LVDS Signal
	17	RXO3-	LVDS Signal
	18	RXO3+	LVDS Signal
	19	RXEO-	LVDS Signal
	20	RXEO+	LVDS Signal
	21	RXE1-	LVDS Signal
	22	RXE1+	LVDS Signal
	23	RXE2-	LVDS Signal
	24	RXE2+	LVDS Signal
	25	GND	Ground
	26	GND	Ground
	27	RXEC-	LVDS Signal
	28	RXEC+	LVDS Signal
	29	RXE3-	LVDS Signal
	30	RXE3+	LVDS Signal

J8、J1 (20PIN/2.0) EDP

Exterior	Pin	Definition	Description
	1	PWR	Power Supply
	2	PWR	Power Supply
	3	GND	Ground
	4	GND	Ground
	5	TXON	EDP Signal
	6	TXOP	EDP Signal
	7	TX1N	EDP Signal
	8	TX1P	EDP Signal
	9	TX2N	EDP Signal
	10	TX2P	EDP Signal
	11	TX3N	EDP Signal
	12	TX3P	EDP Signal
	13-14	GND	Ground
	15	AUXN	EDP Signal
	16	AUXP	EDP Signal
	17-19	GND	Ground
	20	HPD	Plug and Pull Detection

J21、J7 (6PIN/2.0) LVDS/EDP

Exterior	Pin	Definition	Description
	1	3.3V	3.3V Power Supply
	2	VCC_LCD	Screen Voltage Port
	3	5V	5V Power Supply
	4	VCC_LCD	Screen Voltage Port
	5	12V	12V 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.

Chapter 3 Electronic Specification

◆ Standard power supply

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

◆ Operating current when no other peripherals are connected

Interface Type		Min	Typ	Max
Power Supply Current (with no display connected)	Operation Current	/	280mA	600mA
	STAND-BY CURRENT	/	15mA	30mA
	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

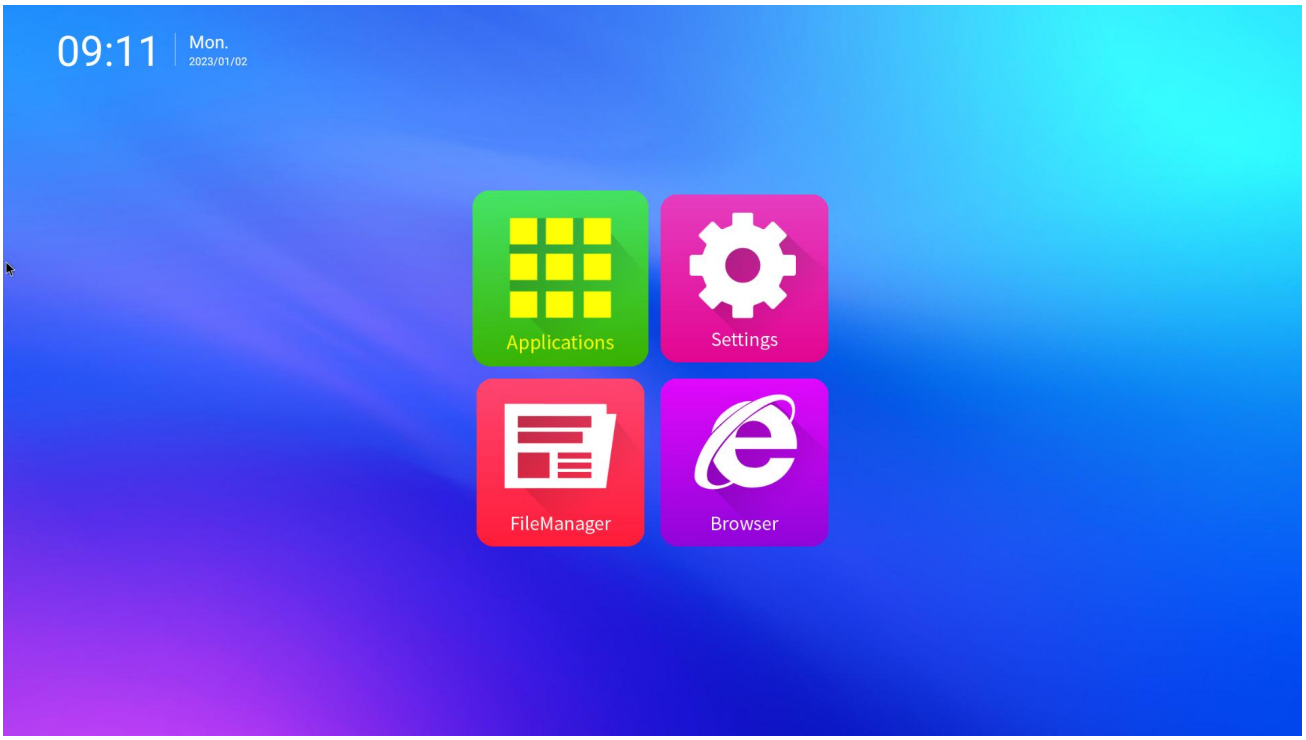
◆ Other

Interface 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

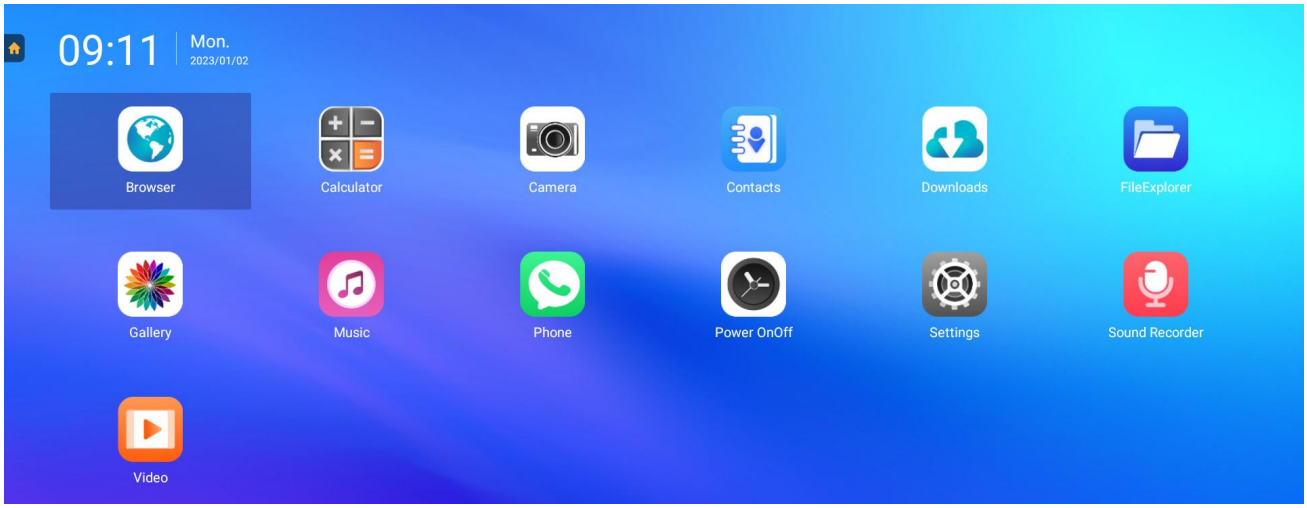
The main menu interface of Android system is divided into four categories: application, settings, file management and browser.



Homepage

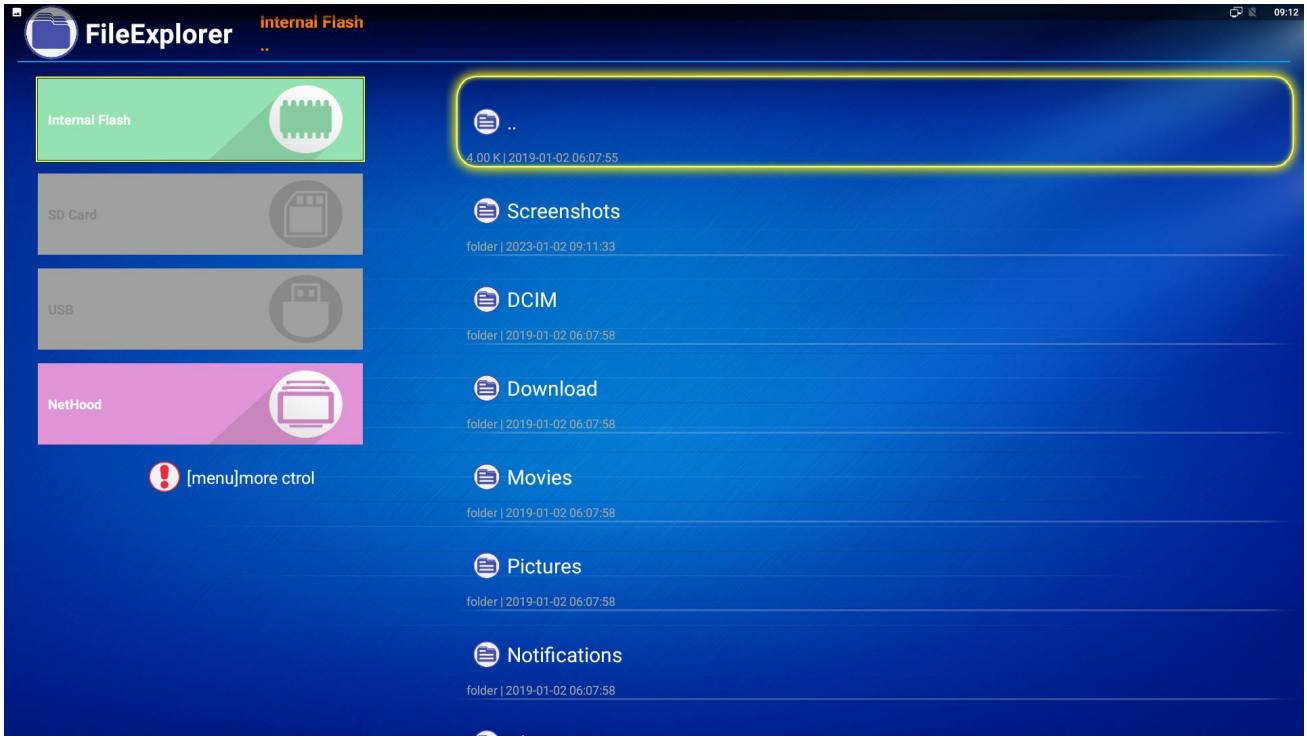
（1）Application interface

The application interface includes: Power on / off,settings, gallery, file, camera, music, explorer, browser, etc.



Application Interface

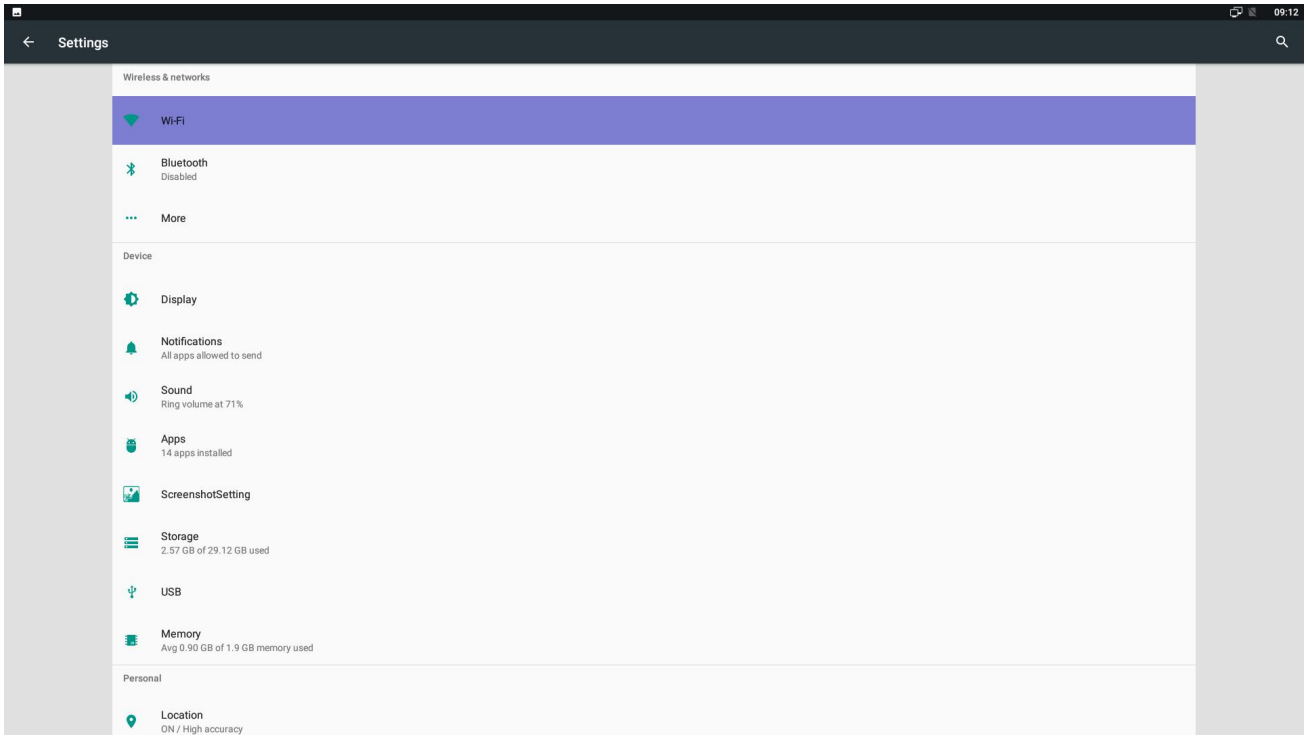
（2）File Management Interface



File Management Interface

（3）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.

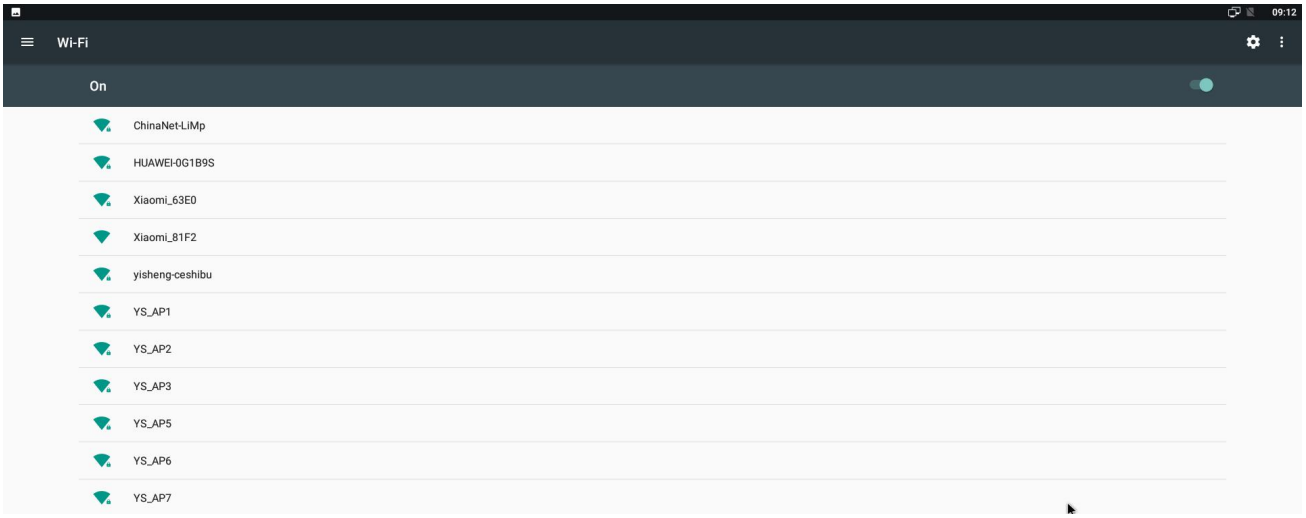


Setting Menu Interface

4.2 Network Interface Explanation

（1）WIFI Network Signal Connection

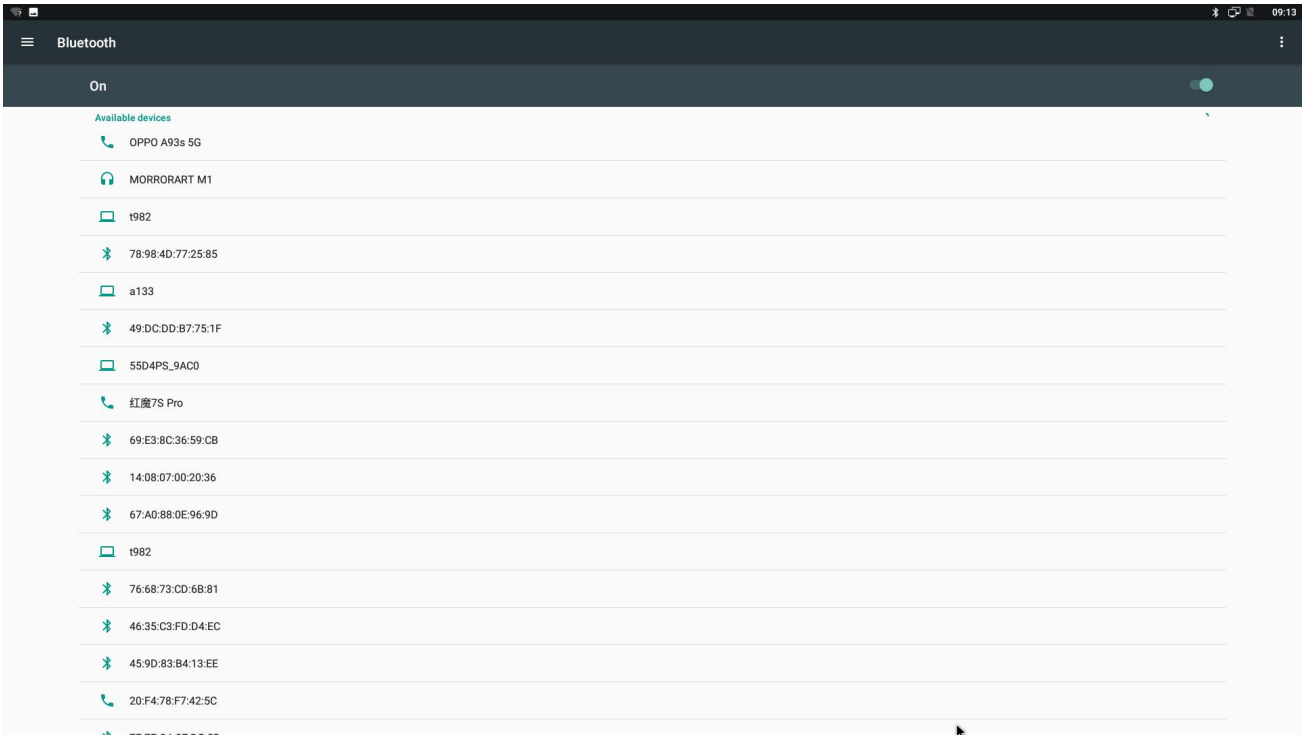
Turn on the WiFi switch in the "setting" interface, as shown in the following figure; Select the WiFi signal to be connected and enter the corresponding password to successfully connect.



WIFI Setting Interface

（2）Bluetooth Signal Connection

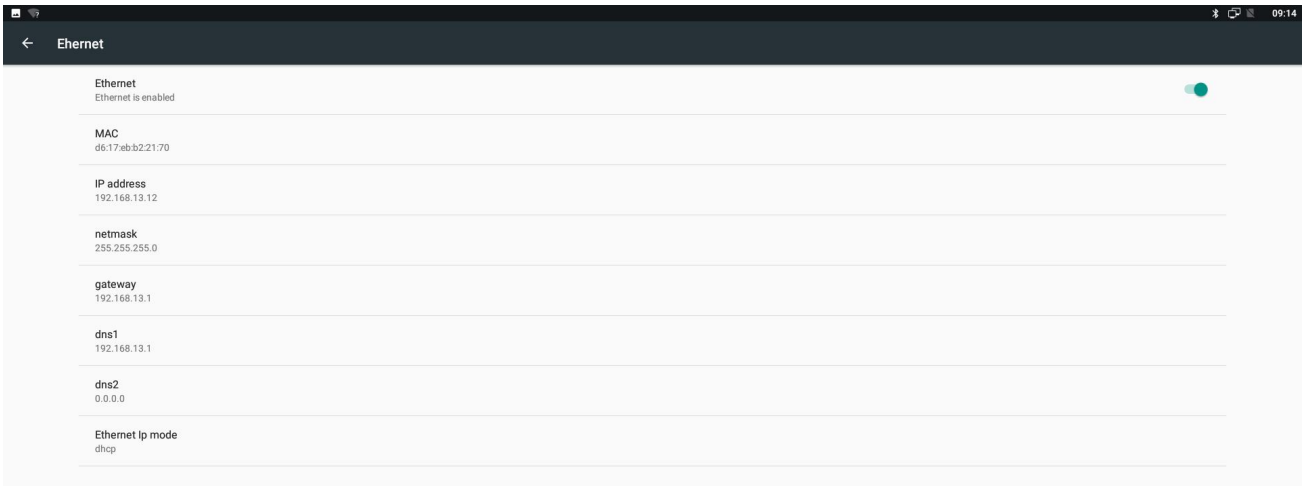
In the "Settings" interface, open the "Bluetooth" function and enter the "pairing with new devices" interface shown in the figure below to search for Bluetooth devices and pair them.



Bluetooth Setting Interface

（3）Ethernet Connection

In the "Settings" interface, open "More", 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：

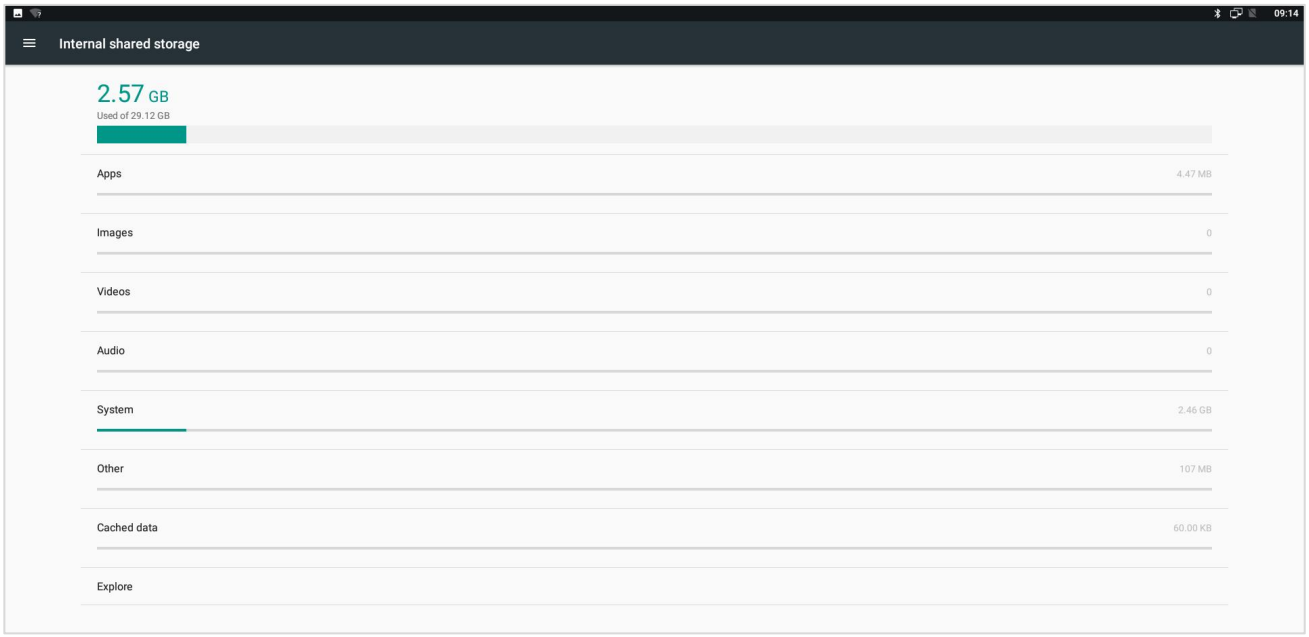
- THE USE OF THE WIRELESS NETWORK MUST BE CONNECTED TO THE WIFI ANTENNA AT THE WIFI ANTENNA HOLDER
- THE AVAILABILITY AND COVERAGE OF WIFI SIGNALS DEPENDS ON THE NUMBER OF SIGNALS, ANTENNA PERFORMANCE AND EXTERNAL ENVIRONMENT.
- THE ETHERNET MAC ADDRESS IS THE ONLY PERMANENT AND VALID DEVICE ID FOR THIS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

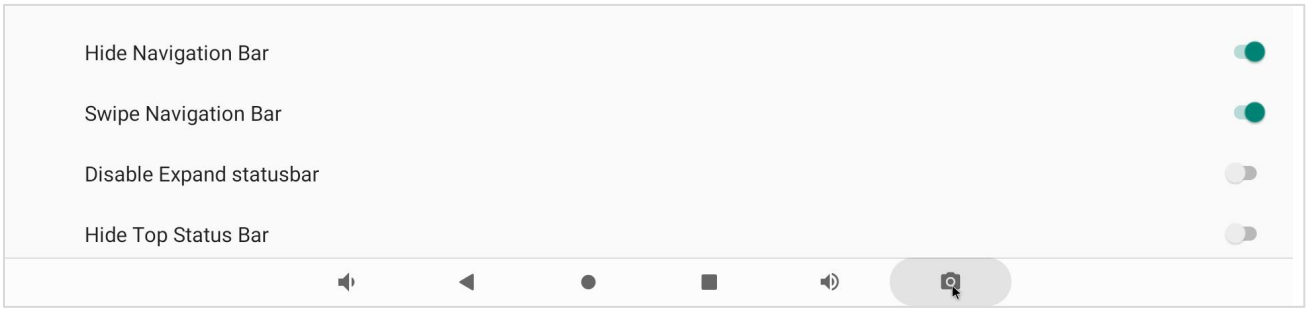
In settings, select "storage" to enter the following interface, where the storage information of the storage space will be displayed. The display of 2.57GB is the used storage space, and 29.12GB is the remaining storage space.



Viewing Storage Interface

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.



Navigation Bar

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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Looking forward to working with you, thank you