



Touch Think Intelligence Product Specification

Mainboard series

CX3588-Z

V1.0

Catalogue

Chapter 1. Product Introduction.....	4
1.1 Scope of Application.....	4
1.2 Features Overview.....	4
1.3 Features.....	4
Chapter 2 Product Specifications Parameters.....	5
2.1 Parameter List.....	5
Chapter 3: Product Interface Definition.....	6
3.1 PCB Dimension Drawing.....	8
3.2 External Interface Diagram.....	9
3.2.1 DC Power Interface.....	10
3.2.2 RTC Battery.....	11
3.2.3 MIC Interface.....	11
3.2.4 Remote Control Receiver Port.....	12
3.2.5 Operational Indicator Light.....	12
3.2.6 LVDS Backlight Control Interface.....	13
3.2.7 LVDS Interface.....	13
3.2.8 EDP Backlight Control Interface.....	15
3.2.9 EDP Interface.....	16
3.3.0 MIPI Display Interface.....	17
3.3.1 IO Interface.....	19
3.3.2 TTL Interface.....	20
3.3.3 2*6-pin 3.5mm pitch Phoenix socket.....	21
3.3.4 485 Socket Interface.....	22
3.3.5 DB9 connector.....	23
3.3.6 USB 2.0 Socket.....	24

3.3.7 USB 3.0 and USB 2.0 Standard Ports.....	24
3.3.8 Touchscreen Interface.....	25
3.3.9 Camera_IN Interface.....	25
3.4.0 Speaker Interface.....	27
3.4.1 Ethernet.....	27
3.4.2 Ethernet Expansion Port.....	28
3.4.3 Key Descriptions.....	28
3.4.4 Other Standard Interfaces and Functions.....	30
3.4.5 Serial Port Jumper Cap Usage Instructions.....	30
3.4.6 Phoenix Terminal Expansion Port User Guide.....	31
Chapter 4: Electrical Performance of the Product.....	32
Chapter 5: Assembly and Usage Precautions.....	33

Chapter 1: Product Overview

1.1 Scope of Application

1.2 The CX3588-Z belongs to the high-performance Android series, featuring an advanced 8nm process; Features an octa-core 64-bit big.LITTLE architecture with four A76 big cores clocked up to 2.4GHz and four A55 little cores up to 1.8GHz; incorporates an NPU delivering 6TOPS AI processing power; utilizes a Mali-G610 MC4 GPU; supports 8K video encoding/decoding and 8K display output.

1.2 Feature Overview

The CX3588-Z supports Android 13.0, Linux 5.10, Debian 11, Ubuntu 20.04, and Ubuntu 22.04 operating systems. It features onboard dual-channel LVDS, eDP, MIPI, and HDMI display outputs; MIPI Camera and Gigabit Ethernet interfaces; plus an integrated universal backlight board connector and display voltage jumper for enhanced compatibility with diverse displays. With superior performance, faster speeds, and richer connectivity, it stands as your optimal choice for human-machine interaction, smart terminals, and industrial control projects.

1.3 Features

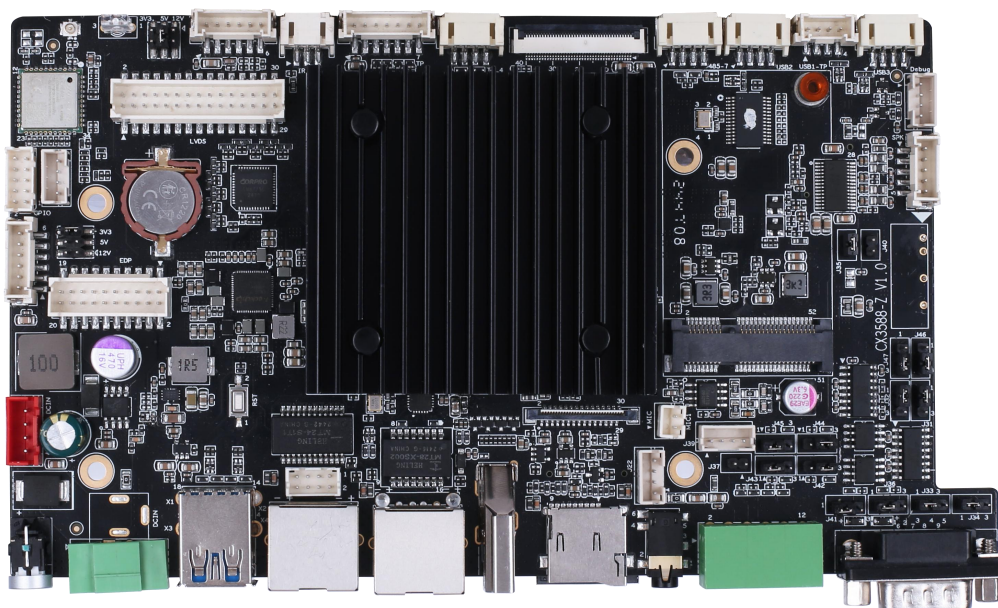
- Multi-display interfaces: Dual LVDS, eDP, MIPI, and HDMI display output interfaces.
- Extensive Expansion Interfaces: 7 USB ports (1x USB 3.0 HOST + 1x USB 3.0 OTG dual-layer Type-A socket, 5x USB 2.0 including 3x PH2.0 HOST sockets, 2x dual-layer Type-A sockets), 1x TTL serial port, 1x RS485 port, 1x RS232/TTL switchable via jumper, 2x RS232 and 2x RS485 switchable via jumper, 6x GPIO pins to meet the requirements of various peripherals on the market.
- Multiple network interfaces: 1 x 1000M Ethernet port, 1 x 100M Ethernet port, dual-band Wi-Fi support, Bluetooth 5.3 support, built-in PCI-E 4G interface
- High Definition: Supports up to 8K/60Hz video output, compatible with LCD displays featuring interfaces such as LVDS, eDP, MIPI, and HDMI.
- LVDS, EDP, TP, and speaker connectors feature snap-fit mechanisms with distinct pin configurations to prevent accidental misinsertion. This ensures secure wiring without the need for additional adhesive reinforcement.
- Customized for Android systems, providing system call interface API reference code to fully support upper-layer application development. Fully compatible with mainstream touchscreens including infrared, optical, capacitive, resistive, and touch film types.

Chapter 2 Product Specifications and Parameters

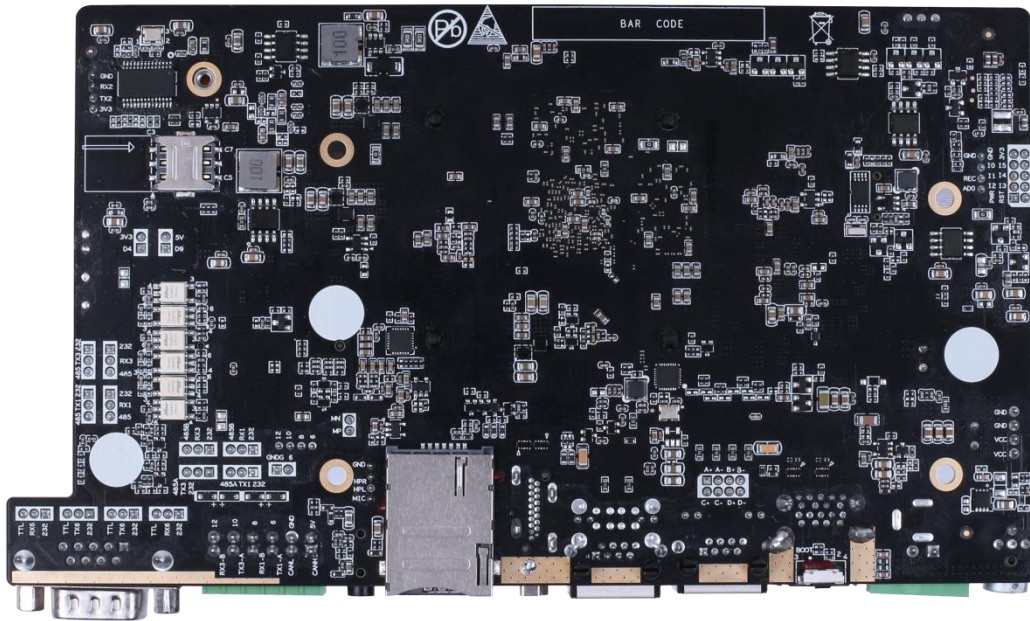
Type	Specifications
CPU	RK3588, 64-bit high-performance CPU
	Four Cortex-A76 big cores 64-bit CPU at 2.4GHz, four Cortex-A55 little cores 64-bit CPU at 1.8GHz
GPU	Mali-G610 MC4 High-Performance GPU
Memory	4GB LPDDR4X (Optional: 2GB/8GB/16GB)
Built-in memory	EMMC 64GB (Optional: 32GB/128GB/256GB)
Built-in ROM	4KB EEPROM
Decoding Resolution	Supports up to 8K/60Hz
Operating System	Android13.0、Linux5.10 、 Debian11、 Ubuntu20.04、 Ubuntu22.04
Playback Mode	Supports multiple playback modes including loop, scheduled, and ad insertion.
Network Support	4G, Ethernet, supports WiFi/Bluetooth, wireless peripheral expansion
Video Playback	Supports wmv, avi, flv, rm, rmvb, mpeg, ts, mp4, etc.
Image format	Supports BMP, JPEG, PNG, GIF
USB port	Coastline 2-Port USB 3.0 Dual-Layer Dock (1 USB 3.0 HOST port, 1 USB 3.0 OTG port)
	Three internal USB 2.0 ports, one of which features a latch mechanism for use as a USB TP port.
	Coastline 2-Port USB 2.0 Dual-Layer Female Connector
Mipi Camera	30-pin FPC interface, supports 13-megapixel camera
Serial port	The board features one standard TTL socket, one standard RS485 header, and a 12-pin Phoenix terminal with two RS232/RS485 channels switchable via jumper caps. The DB9 connector provides one TTL/RS232 channel switchable via jumper caps.
GPS	External GPS (optional)
CAN	The 12-pin Phoenix connector features one standard CAN interface.
WIFI、 BT	Built-in 2.4GHz/5GHz Wi-Fi 6, Bluetooth 5.3 support
4G	Built-in 4G Module Interface with Mini PCIe
Ethernet	1 x 1000M Ethernet port (Gigabit network: yellow light blinking; 100M network: green light blinking), 1 x 100M Ethernet port
TF card	Supports TF cards

LVDS output	1 dual-channel LVDS interface
eDP output	1 x 4-lane eDP interface
HDMI output	1 standard HDMI 2.1 output port
MIPI output	1 x 40-pin FPC socket for MIPI LCD interface
Audio Output	Built-in dual-channel amplifier with 4Ω/10W per channel and 8Ω/5W per channel
Headphone jack	Built-in 3.5mm 4-pin headphone jack
RTCReal-Time Clock	Support
ScheduledPower On/Off	Support

Chapter 3 Product interface definition



【Front】

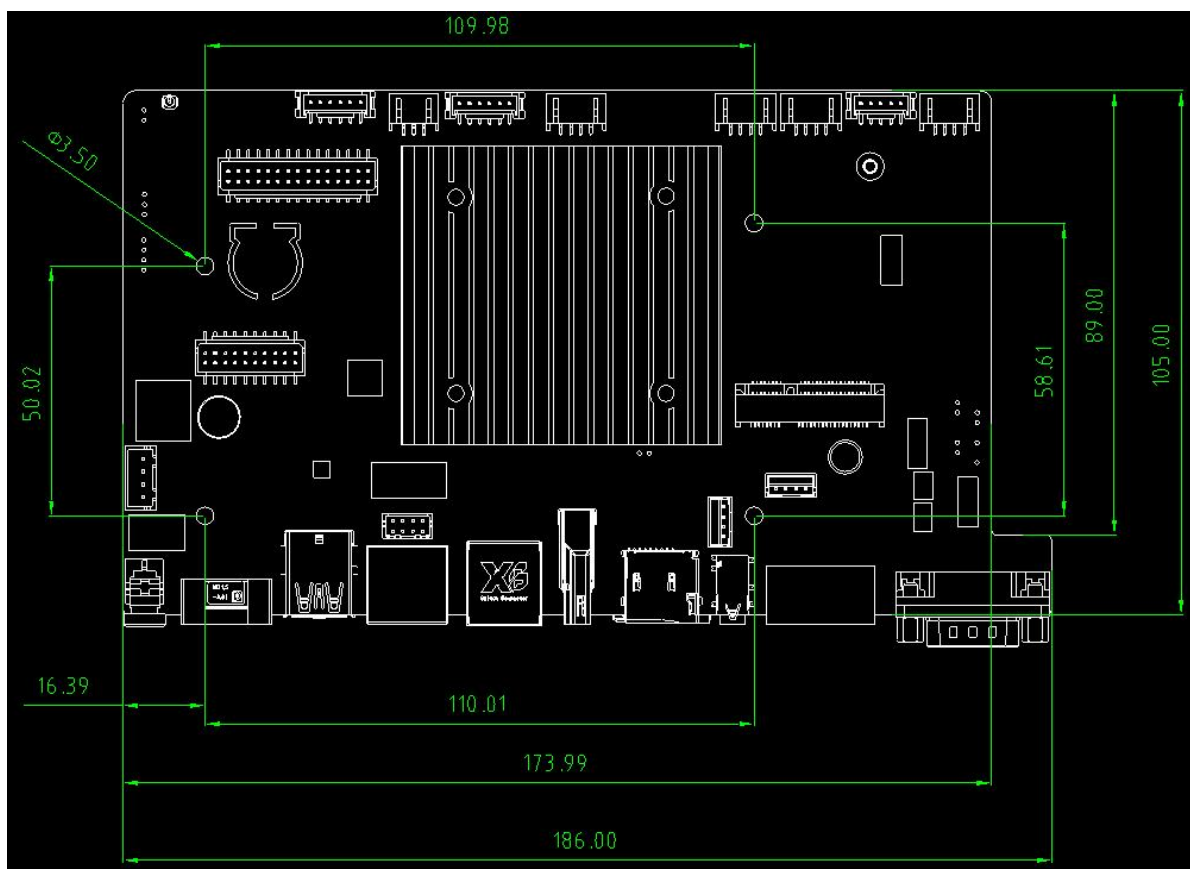


【Back】

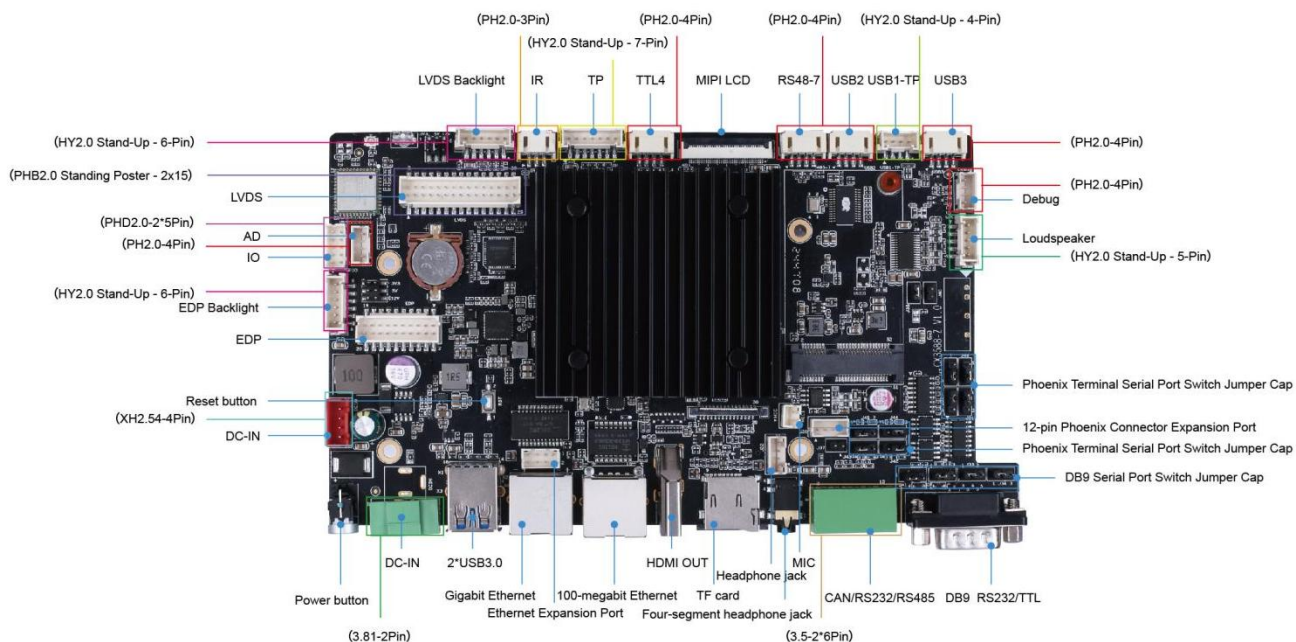


【Seaboard】

3.1 PCB Dimensions

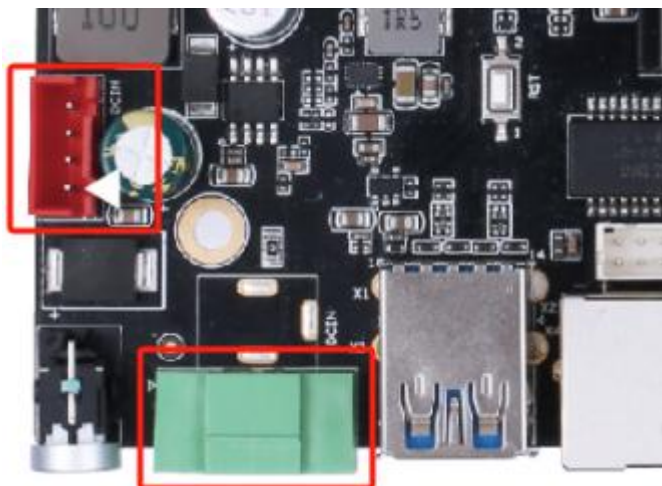


3.2 Interface parameters



◆ 3.2.1 Power Input Interface

Powered by a 12V-36V DC power supply, the input interface utilizes a 3.81mm pitch 2-pin Phoenix connector and an XH2.54-4PIN socket. When no peripherals are connected and operating under no-load conditions, the 12V DC power supply must support a minimum current of 2A. The interface definitions for the power sockets are as follows:

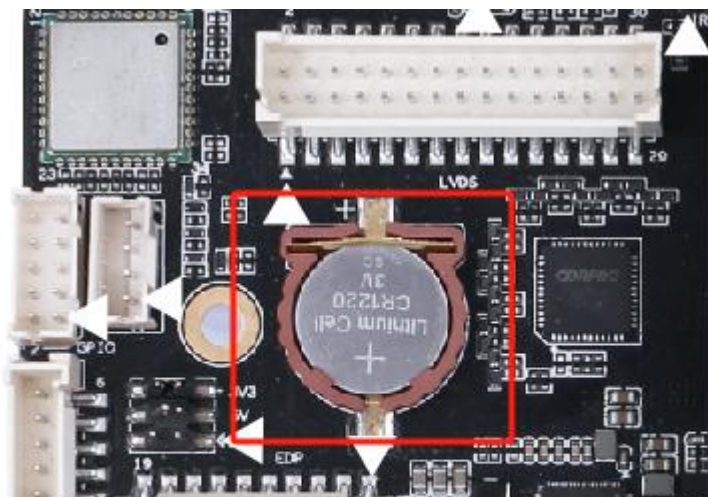


SN	Definitions	Attributes	Description
1	VCC	Input	12V-36V input
2	VCC	Input	12V-36V input
3	GND	Ground wire	Ground wire
4	GND	Ground wire	Ground wire

◆ 3.2.2 Power Input Interface

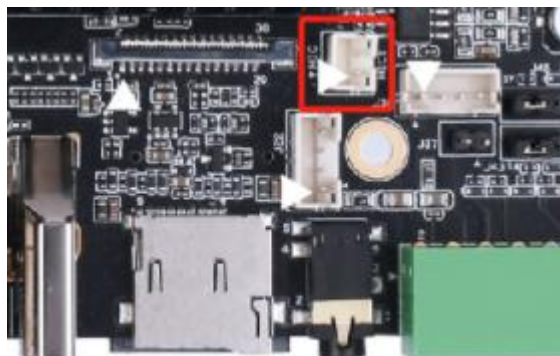
Button battery CR1220

Used to power the system clock during power outages.



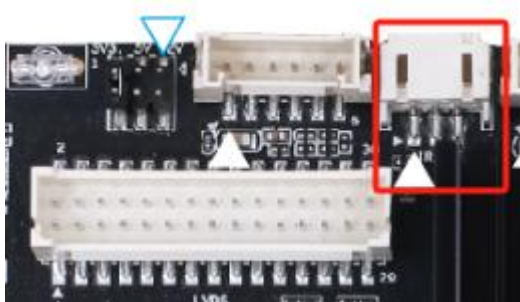
◆ 3.2.3 MIC Interface

Please note the correct polarity connection for the MIC terminals; do not reverse the polarity.



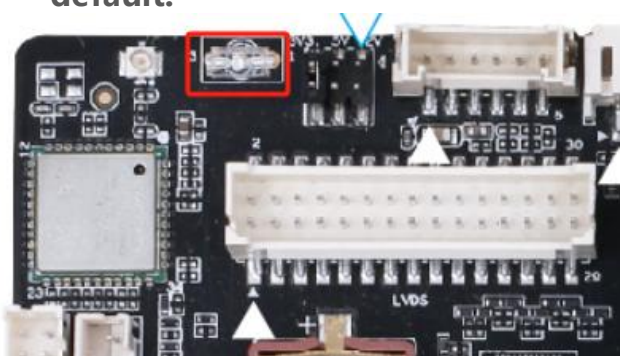
SN	Definitions	Attributes	Description
1	MICP	Input	MIC+
2	MICN	Input	MIC-

◆ 3.2.4 Remote Control Receiver Port



SN	Definitions	Attributes	Description
1	IR	Input	Remote signal input
2	GND	Ground wire	Ground wire
3	3V3	Power supply	3.3V output

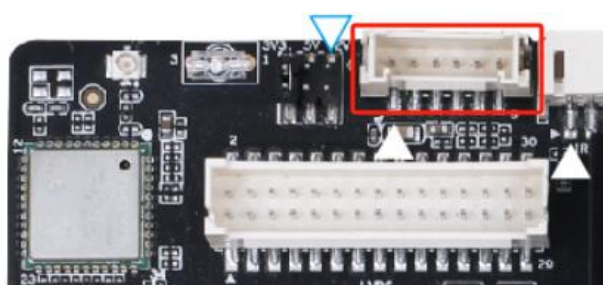
◆ 3.2.5 Operational Indicator Lights Supports dual red and blue LEDs by default.



SN	Definition	Attribute	Description
1	LED_B	Blue light	Operational Indicator Light
2	VCC	Power Supply	3.3V Output
3	LED_R	Red light	Standby Indicator

◆ 3.2.6 LVDS Backlight Control Interface

For backlight control of LVDS displays, the 12V supply current must not exceed 2A. When using displays larger than 21 inches or with backlight power exceeding 24W, the backlight power supply must be sourced from another power board to prevent system instability. The backlight enable voltage is 5V. If using a different voltage, add an IO level conversion circuit. This 12V power supply is strictly for backlight output only and must never be used as a power input for the system. This connector uses a HY2.0 vertical-mount 6-pin connector with a locking tab.

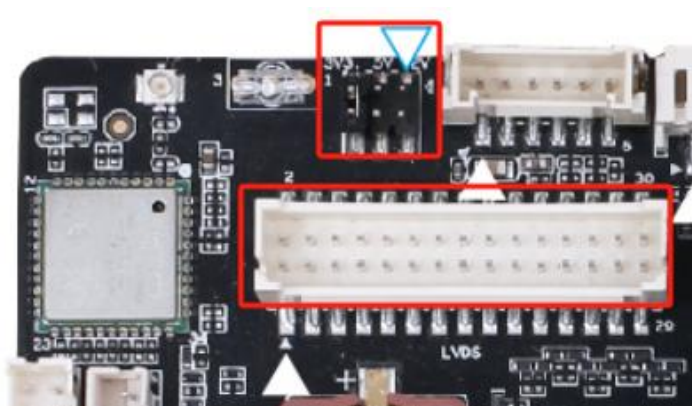


SN	Definitions	Attributes	Description
1	VCC	Power supply	12V output
2	VCC	Power supply	12V output
3	EN	Output	Backlight Enable control
4	PWM	Output	Backlight brightness control
5	GND	Ground wire	Ground wire
6	GND	Ground wire	Ground wire

◆ 3.2.7 LVDS Interface

The universal LVDS interface supports single/dual, 6/8-bit 1080P LVDS displays. Display voltage can be selected via jumper caps, supporting 3.3V/5V/12V display power supply options. The LVDS interface utilizes a PHB2.0 vertical-mount 2x15 pin header with locking tabs. To avoid burning the board and screen, please note the following precautions:

1. Please verify that the display's power supply voltage specified in the datasheet is correct and that the corresponding power supply on the board can meet the maximum operating current.
2. Use a multimeter to verify that the jumper cap is connected to the correct power source.

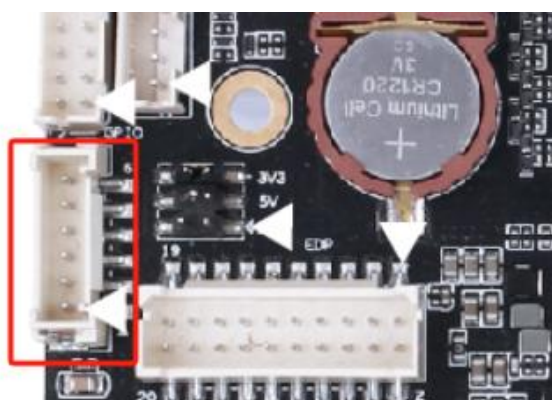


SN	Definition	Attribute	Description
1	VCC	Power Output	LCD power supply output, selectable +3.3V/+5V/+12V
2			
3			
4	GND	Ground wire	Ground wire
5			
6	GND	Ground wire	Ground wire
7	D0N	Output	Pixel0 Negative Data (Odd)
8	D0P	Output	Pixel0 Positive Data (Odd)
9	D1N	Output	Pixel1 Negative Data (Odd)
10	D1P	Output	Pixel1 Positive Data (Odd)
11	D2N	Output	Pixel2 Negative Data (Odd)
12	D2P	Output	Pixel2 Positive Data (Odd)
13	GND	Ground wire	Ground wire
14	GND	Ground wire	Ground wire
15	CLK0N	Output	Negative Sampling Clock (Odd)
16	CLK0P	Output	Positive Sampling Clock (Odd)
17	D3N	Output	Pixel3 Negative Data (Odd)
18	D3P	Output	Pixel3 Positive Data (Odd)
19	D5N	Output	Pixel0 Negative Data (Even)
20	D5P	Output	Pixel0 Positive Data (Even)
21	D6N	Output	Pixel1 Negative Data (Even)
22	D6P	Output	Pixel1 Positive Data (Even)

23	D7N	Output	Pixel2 Negative Data (Even)
24	D7P	Output	Pixel2 Positive Data (Even)
25	GND	Ground wire	Ground wire
26	GND	Ground wire	Ground wire
27	CLK1N	Output	Negative Sampling Clock (Even)
28	CLK1P	Output	Positive Sampling Clock (Even)
29	D8N	Output	Pixel3 Negative Data (Even)
30	D8P	Output	Pixel3 Positive Data (Even)

◆ 3.2.8 EDP Backlight Control Interface

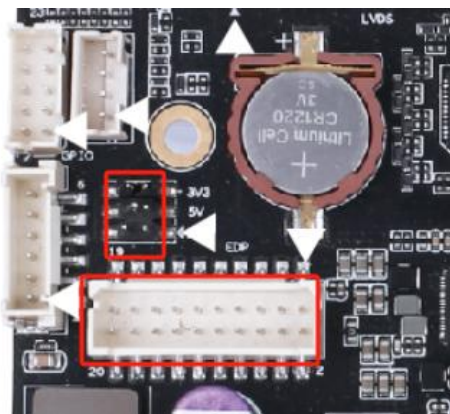
For backlight control of EDP screens, the 12V supply current must not exceed 2A. When using screens larger than 21 inches or with backlight power exceeding 24W, the backlight power supply must be sourced from another power board to prevent system instability. The backlight enable voltage is 5V. If using a different voltage, add an IO level conversion circuit. This 12V power supply is strictly for backlight output only and must never be used as a power input for the system. This connector uses a HY2.0 vertical-mount 6-pin connector with a locking mechanism.



SN	Definitions	Attributes	Description
1	VCC	Power source	12V output
2	VCC	Power supply	12V output
3	EN	Output	Backlight Enable control
4	PWM	Output	Backlight brightness control
5	GND	Ground wire	Ground wire
6	GND	Ground wire	Ground wire

◆ 3.2.9 EDP Interface

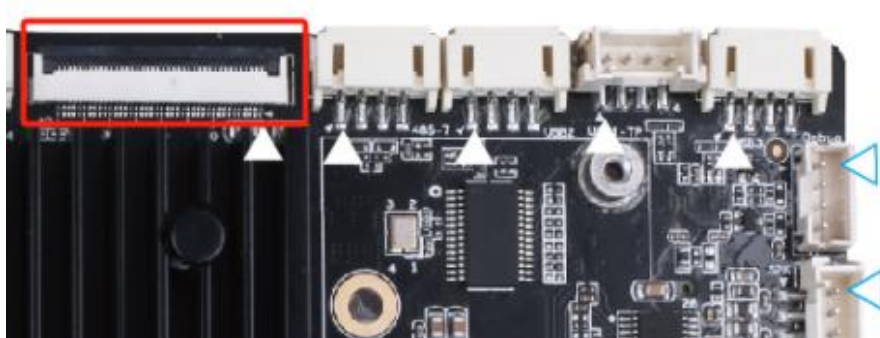
Select the shield power supply via jumper caps: 12V/5V/3.3V. The EDP interface uses PHB2.0 surface-mount 2x10 connectors with locking tabs.



SN	Definitions	Attributes	Description
1	VCC	Power Output	LCD power supply output, selectable +3.3V/+5V/+12V
2			
3	GND	Ground wire	Ground wire
4			
5	TX0P	Output	EDP Pixel0 Positive Data (Odd)
6	TX0N	Output	EDP Pixel0 Negative Data (Odd)
7	TX1P	Output	EDP Pixel1 Positive Data (Odd)
8	TX1N	Output	EDP Pixel1 Negative Data (Odd)
9	TX2P	Output	EDP Pixel2 Positive Data (Odd)
10	TX2N	Output	EDP Pixel2 Negative Data (Odd)
11	TX3P	Output	EDP Pixel3 Positive Data (Odd)
12	TX3N	Output	EDP Pixel3 Negative Data (Odd)
13	GND	Ground wire	Ground wire
14	GND	Ground wire	Ground wire
15	AUXP	Output	EDP AUX Positive Data (Odd)
16	AUXN	Output	EDP AUX Negative Data (Odd)
17	GND	Ground wire	Ground wire
18			
19			
20	HPD	Input	EDP DETECT

◆ 3.3.0 MIPI Display Interface

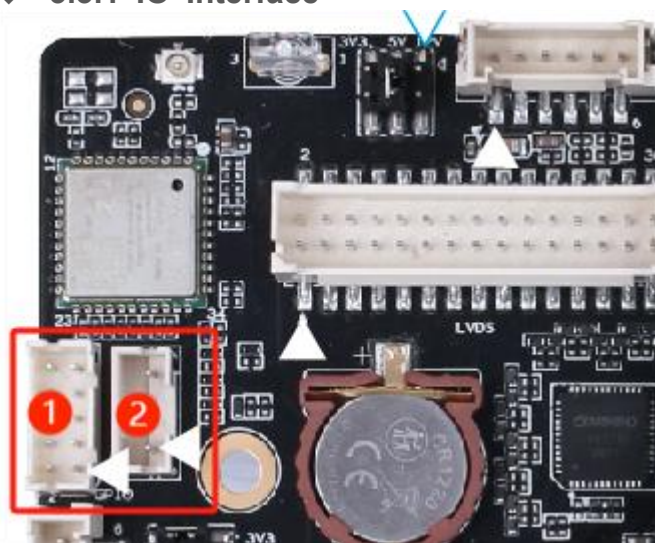
The MIPI interface supports single-channel MIPI LCD displays with a 4-wire MIPI interface.



SN	Definitions	Attributes	Description
40	NC	-	Not connect
39	VDD	Power Supply	Digital power
38	VDD	Power Supply	Digital power
37	GND	Earth	Ground
36	REST	Output	Global reset pin
35	NC	-	Not connect
34	GND	Earth	Ground
33	D0N	Output	Negative MIPI differential data output
32	D0P	Output	Positive MIPI differential data output
31	GND	Ground	Ground
30	D1N	Output	Negative MIPI differential data output
29	D1P	Output	Positive MIPI differential data output
28	GND	Earth	Ground
27	CLKN	Output	Negative MIPI differential data output
26	CLKP	Output	Positive MIPI differential data output
25	GND	Earth	Ground
24	D2N	Output	Negative MIPI differential data output
23	D2P	Output	Positive MIPI differential data output
22	GND	Earth	Ground
21	D3N	Output	Negative MIPI differential data output

20	D3P	Output	Positive MIPI differential data output
19	GND	Earth	Ground
18	NC	-	Not connect
14	NC	-	Not connect
16	GND	Earth	Ground
15	NC	-	Not connect
14	NC	-	Not connect
13	NC	-	Not connect
12	NC	-	Not connect
11	GND	Earth	Ground
10	LED-	Power Supply	LED Cathode
9	LED-	Power Supply	LED Cathode
8	NC	-	Not connect
7	NC	-	Not connect
6	NC	-	Not connect
5	NC	-	Not connect
4	NC	-	Not connect
3	NC	-	Not connect
2	LED+	Power Supply	LED Anode
1	LED+	Power Supply	LED Anode

◆ 3.3.1 IO Interface



IO1 Interface

Input/output for providing control signals to peripherals, operating at 3.3V. This connector also includes the power button component.

SN	Definition	Attribute	Description
1	PWR	Power Supply	System Power On/Off
2	RST	Input	Reset
3	I/O2	Input/Output	I/O 2
4	I/O 3	Input/Output	I/O 3
5	I/O 1	Input/Output	I/O 1
6	I/O 4	Input/Output	I/O 4
7	I/O 0	Input/Output	I/O 0
8	I/O 5	Input/Output	I/O 5
9	GND	Ground wire	Ground wire
10	3V3	Power Supply	VCC3V3 OUTPUT

IO2 Interface

To output the AD signal, the AD input level must be below 1.8V

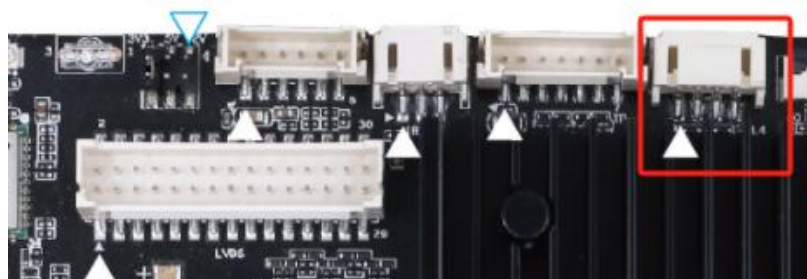
SN	Definition	Attribute	Description
1	AD0	Input	Analog signal input pin / Level below 1.8V
2	AD1/RECOVERY	Input	Analog signal input pin / Level below 1.8V
3	NC	-	Not connect
4	GND	Ground wire	Ground wire

◆ 3.3.2 TTL Interface

The board provides one set of standard TTL serial ports, compatible with commonly available TTL serial devices. TTL levels are 3.3V

Important Notes:

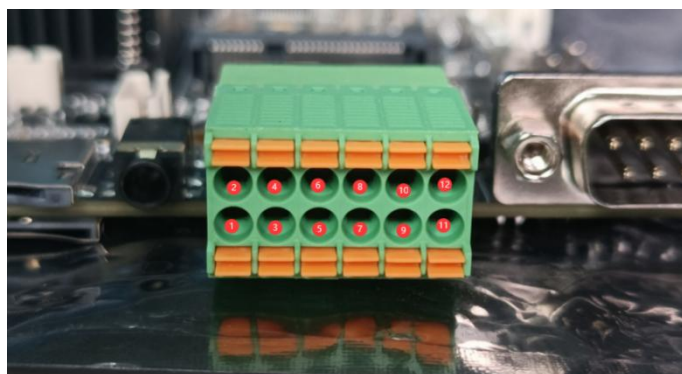
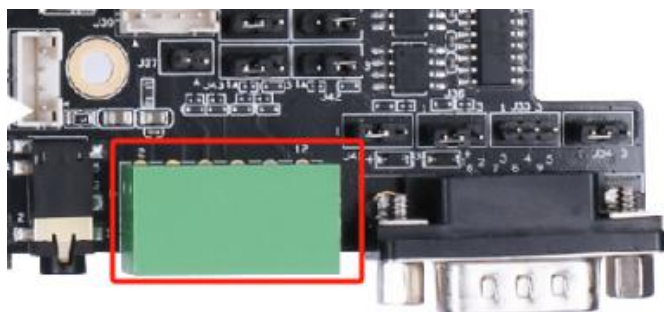
- 1.Are the serial port levels matched? Devices with RS232 serial ports cannot be directly connected.
2. Are the TX and RX connections correct



SN	Definition	Attribute	Description
1	GND	Ground wire	Ground wire
2	UART4-RX	Input	RX
3	UART4-TX	Output	TX
4	VCC	Power Supply	3.3V Output

◆ 3.3.3 2×6-pin 3.5mm pitch Phoenix connectors

The coastline features a 2x6-pin 3.5mm pitch Phoenix terminal housing two sets of RS232 and RS485 interfaces (switchable via jumper caps), one CAN interface, and four empty pins that can be expanded for additional signals using a PH2.0-4PIN connector.



12-Pin Phoenix Connector Pinout

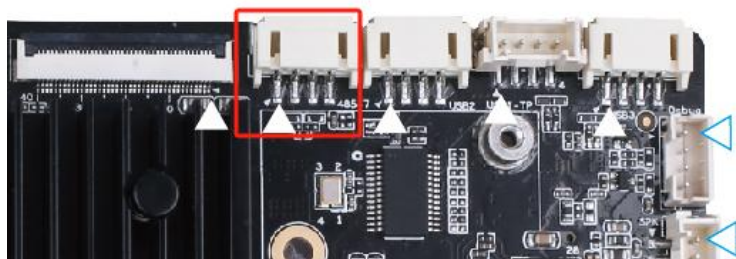
SN	Definition	Attribute	Description
1	CANH	Signal	CAN-H
2	VCC	Power Output	5V
3	CANL	Signal	CAN-L
4	GND	Earth	Earth
5	RS232TX/RS485A	Ttys1 Signal	232-TX/485-A (Default RS232)
6	PIN6	NC	Expandable empty foot
7	RS232RX/RS485B	Ttys1 Signal	232-RX/485-B (Default RS232)
8	PIN8	NC	Expandable empty foot
9	RS232TX/RS485A	Ttys3 Signal	232-TX/485-A (Default RS485)
10	PIN10	NC	Expandable empty foot
11	RS232RX/RS485B	Ttys3 Signal	232-RX/485-B (Default RS485)
12	Pin12	NC	Expandable empty foot

12-Pin Phoenix Connector Expansion Port



SN	Definitions	Attributes	Description
1	PIN6	Extension foot	Connected to pin 6 of the 12-pin Phoenix connector
2	PIN8	Extension foot	Connected to pin 8 of the 12-pin Phoenix connector
3	PIN10	Extension foot	Connected to pin 10 of the 12-pin Phoenix connector
4	PIN12	Extension foot	Connected to pin 12 of the 12-pin Phoenix connector

◆ 3.3.4 RS-485 Socket Interface



The board also supports one set of 485 communication interfaces, compatible with commercially available 485 interface devices. The interface operates at a 3.3V logic level. If the connected interface operates at a logic level higher than 3.3V, isolation circuits or level-shifting circuits must be employed to prevent potential damage to the equipment.

Important Notes:

1. Is the voltage on the 485 interface matched
2. Is the wiring sequence for lines 485A and 485B correct

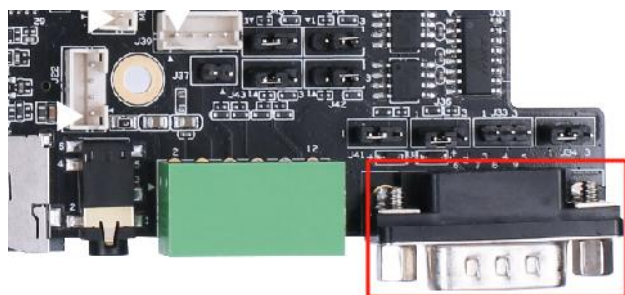
Serial port mapping ttys7

SN	Definitions	Attributes	Description
1	GND	Ground wire	Ground wire
2	485B	Input/Output	B
3	485A	Input/Output	A
4	VCC	Power Supply	3.3V Output

◆ 3.3.5 DB9 Connector

DB9 is a set of RS232 and TTL signals that can be switched via jumper caps. When all four jumper caps are inserted on the left side, it outputs RS232 signals; when all are inserted on the right side, it outputs TTL signals.

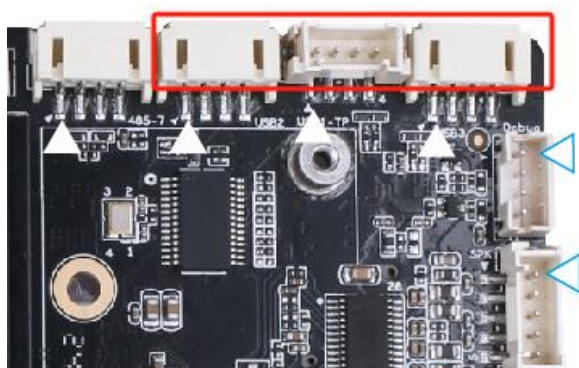
Serial port mapping port number: ttys6



SN	Definition	Property	Description
1	NC	NC	NC
2	232-RX/TTL-RX	Input	RS232-RX/TTL-RX (Default RS232)
3	232-TX/TTL-TX	Output	RS232-TX/TTL-TX (Default RS232)
4	3V3	Power Supply	By default, the jump hat is not selected
5	GND	Earth	Earth
6	NC	NC	NC
7	NC	NC	NC
8	NC	NC	NC
9	5V	Power Supply	By default, the selected jump hat is used.

◆ 3.3.6 USB 2.0 Port

The board features three USB 2.0 ports for peripheral expansion, configured as HOST by default, with each port supplying a maximum current of 500mA. Among these, USB1-TP is a snap-in connector specifically designed for USB TP interfaces.

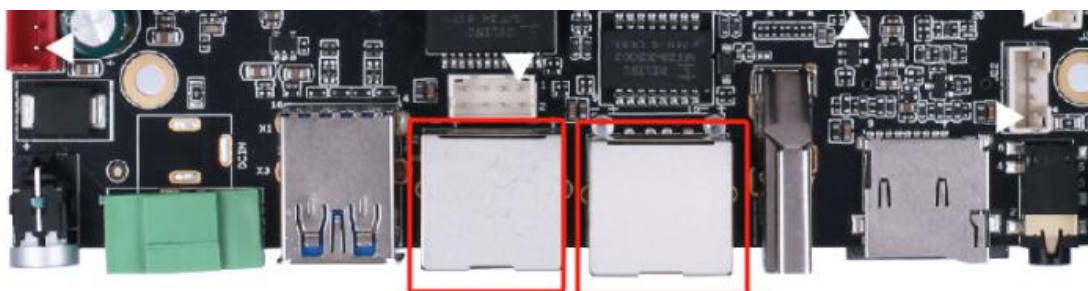


SN	Definition	Property	Description
1	GND	Ground wire	Ground wire
2	DP	Input/Output	DP
3	DM	Input/Output	DM
4	VCC	Power Supply	5V Output

◆ 3.3.7 USB 3.0 Coastline Standard Dual-Layer Type-A Port

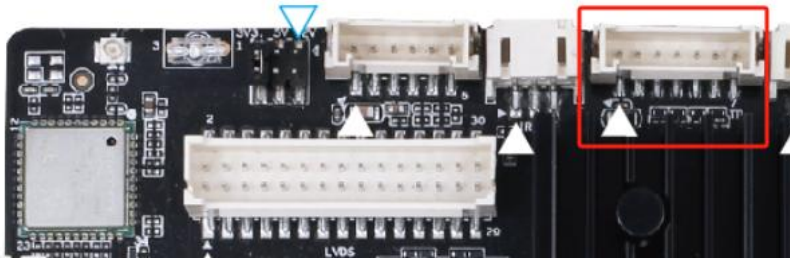
The board features two USB 3.0 dual-layer Type-A ports: one designated as HOST with a maximum power supply current of 2A, and the other as OTG with a maximum power supply current of 1A. Additionally, it includes two USB 2.0 dual-layer Type-A ports, each providing a maximum power supply current of 1A.

The USB 3.0 ports support backward compatibility with USB 2.0 and enable data storage, data import, USB mouse and keyboard connectivity, camera operation, touchscreen interaction, and more.



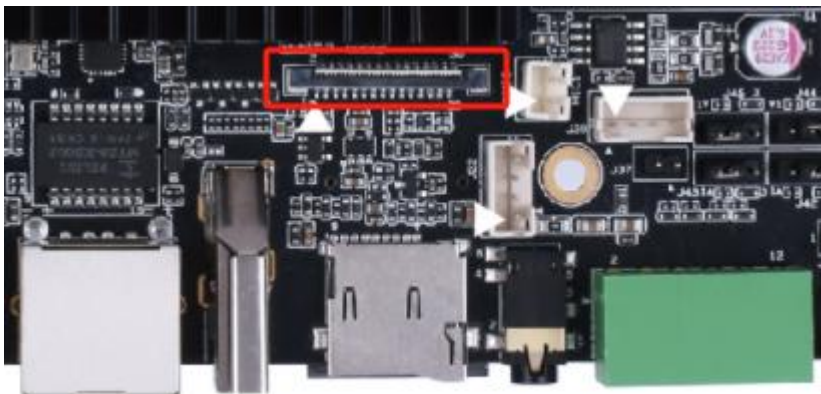
◆ 3.3.8 Touchscreen Interface

The touchscreen employs a 7-pin connector with a snap-fit mechanism.



SN	Definition	Property	Description
1	VCC	Power Supply	3.3V Output
2	SCK	Input/Output	I2C clock
3	SDA	Input/Output	I2C Data
4	INT	Input/Output	Interrupt
5	RST	Input/Output	Reset
6	GND	Ground wire	Ground wire
7	NC	NC	NC

◆ 3.3.9 Camera_IN Interface

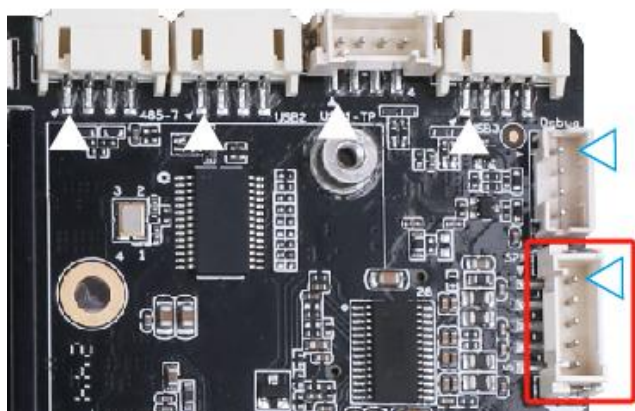


The board supports a 13-megapixel MIPI camera. The electrical definition of the socket is as follows:

SN	Definition	Property	Description
1	NC	/	/
2	VDD	Power Supply	2.8V output

3	DVDD	Power Supply	1.2V output
4	DOVDD	Power Supply	1.8V output
5	NC	/	/
6	GND	Ground wire	Ground wire
7	VDD	Power Supply	2.8V output
8	GND	Ground wire	Ground wire
9	I2C3_SDA	Input/Output	SDA Signal
10	I2C3_SCL	Output	SCL Signal
11	RST	Output	Reset signal
12	PWDN	Output	Power-off control
13	GND	Ground wire	Ground wire
14	MCLK	Output	Master clock
15	GND	Ground wire	Ground wire
16	D3P	Input/Output	MIPI Data Lane 3 Positive
17	D3N	Input/Output	MIPI Data Lane 3 Negative
18	GND	Ground wire	Ground wire
19	D2P	Input/Output	MIPI Data Lane 2 Positive
20	D2N	Input/Output	MIPI Data Lane 2 Negative
21	GND	Ground wire	Ground wire
22	D1P	Input/Output	MIPI Data Lane 1 Positive
23	D1N	Input/Output	MIPI Data Lane 1 Negative
24	GND	Ground wire	Ground wire
25	CLKP	Input/Output	MIPI Clock Channel Positive
26	CLKN	Input/Output	MIPI Clock Channel Negative
27	GND	Ground wire	Ground wire
28	D0P	Input/Output	MIPI Data Lane 0 Positive
29	D0N	Input/Output	MIPI Data Lane 0 Negative
30	GND	Ground wire	Ground wire

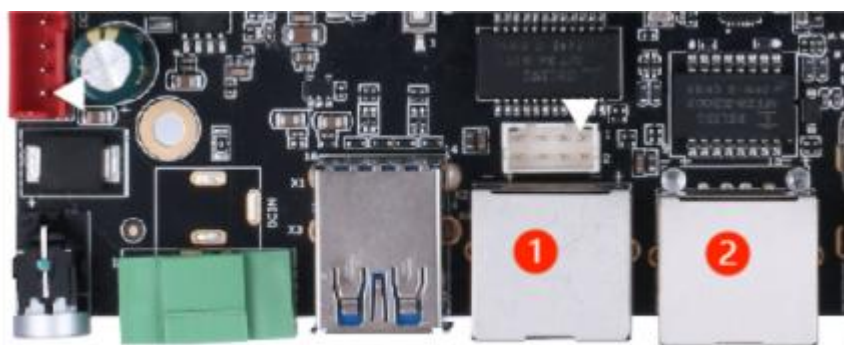
◆ 3.4.0 Speaker Interface



SN	Definition	Property	Description
1	NC	NC	NC
2	OUP-L	Output	Audio Output Left +
3	OUN-L	Output	Audio Output Left-
4	OUN-R	Output	Audio Output Right-
5	OUP-R	Output	Audio Output Right +

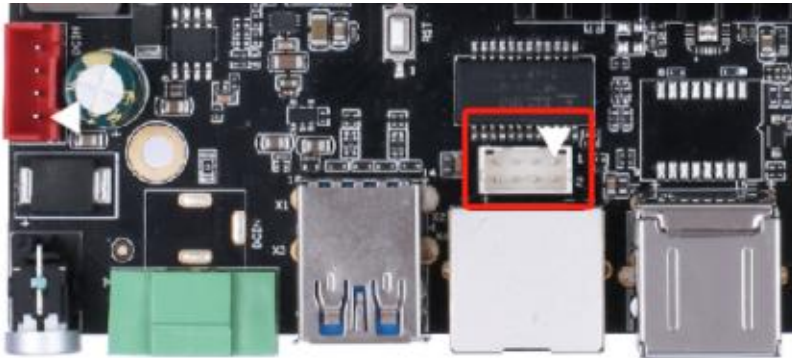
◆ 3.4.1 Ethernet

The board supports one Gigabit Ethernet port and one 100Mbps Ethernet port.



① LAN1 is a Gigabit Ethernet port. ② LAN2 is a 100Mbps Ethernet port.

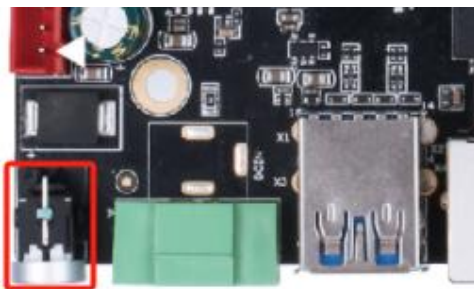
◆ 3.4.2 Ethernet Expansion Port



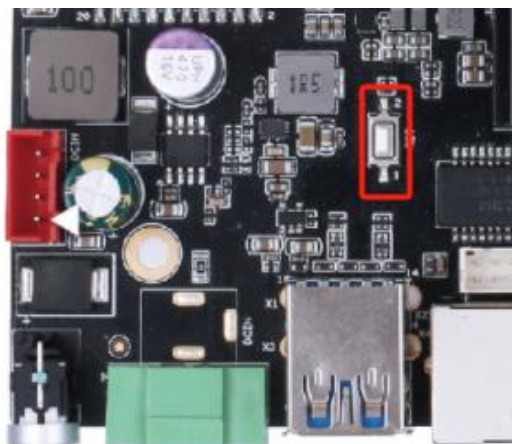
SN	Definition	Property	Description
1	DA+	RJ45 Signal	DA+ Signal
2	DC+	RJ45 Signal	DC+ Signal
3	DA-	RJ45 Signal	DA- Signal
4	DC-	RJ45 Signal	DC- Signal
5	DB+	RJ45 Signal	DB+ Signal
6	DD+	RJ45 Signal	DD+ Signal
7	DB-	RJ45 Signal	DB- Signal
8	DD-	RJ45 Signal	DD- Signal

◆ 3.4.3 Key Descriptions

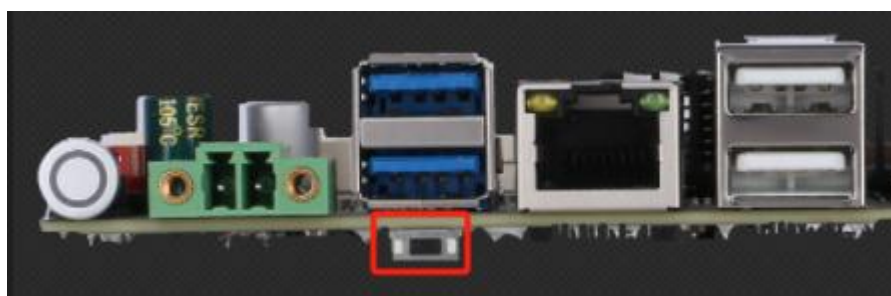
Power button



Reset button



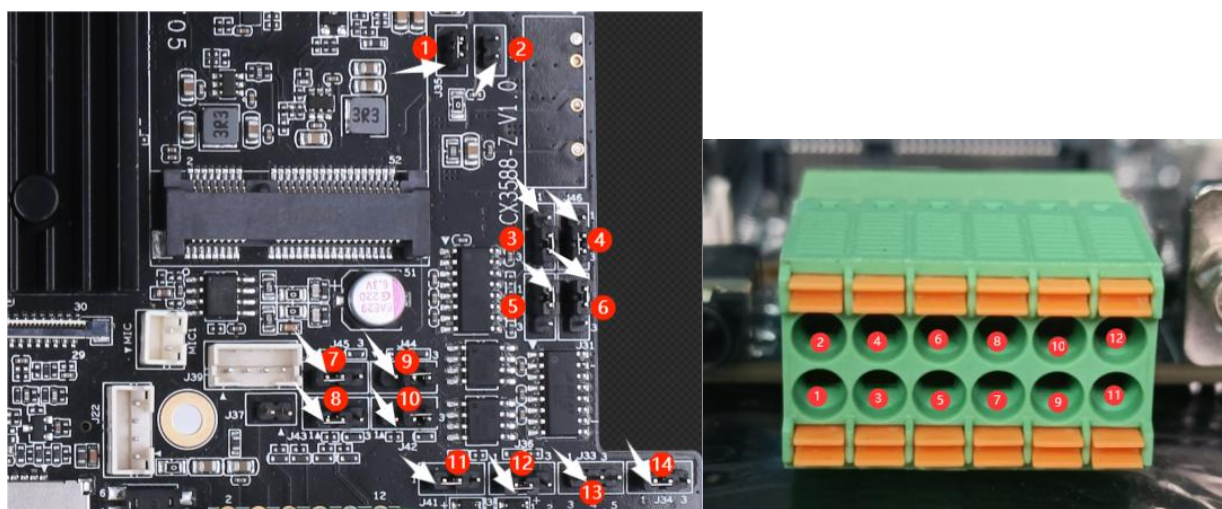
Side button for upgrading



◆ 3.4.4 Other Standard Interfaces and Functions

Storage Interface	TF card	Data storage, currently tested up to 128GB
	Standard USB port	The USB Type-A port is described above.
HDMI port	Standard Interface	Supports HDMI data output, with maximum support for 8K/60Hz
Headset Jack	Standard Interface	3.5mm standard jack
4G Interface	PCI-E Standard Interface	Supports standard 4G modules such as Quectel
SIM card slot	Standard Interface	Supports various standards (depending on the 4G module)

◆ 3.4.5 Serial Port Jumper Cap Usage Instructions



The white arrow indicates the first kick.

① J35: When the jumper cap is inserted into the DB9 socket, pin 9 is powered at 5V; when the jumper cap is not inserted, pin 9 is not powered. The default configuration is with the jumper cap inserted.

② J40: When the jumper cap is plugged into the DB9 socket, pin 4 is powered at 3.3V; when the jumper cap is not plugged in, pin 4 is not powered. By default, the jumper cap is not plugged in.

③ J47 ④ J46 ⑤ J44 ⑥ J42 - ttys3 All 4 jumpers are set to 1-2 positions. Phoenix Terminal pins 9 and 11 are RS232-TX and RS232-RX respectively.

Skip 2-3 steps by default All 4 jumper caps are set to 2-3 positions. Pins 9 and 11 of the Phoenix terminal are RS485A and RS485B respectively.

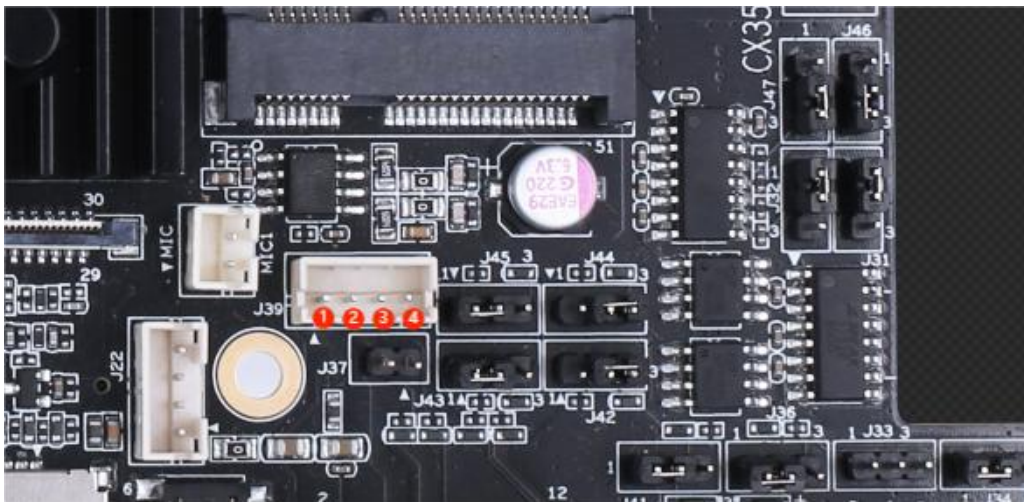
⑤ J32 ⑥ J31 ⑦ J45 ⑧ J43 -ttys1 All 4 jumper pins are set to 1-2 positions. Phoenix terminal pins 5 and 7 are RS232-TX and RS232-RX respectively.

Skip 1-2 steps by default All 4 jumper caps are set to 2-3 pins. Pins 5 and 7 of the Phoenix terminal are RS485A and RS485B respectively.

⑪ J41 ⑫ 36 ⑬ J33 ⑭ J34-ttys6 All 4 jumper caps are set to 1-2 pins. DB9 pins 2 and 3 correspond to RS232-RX and RS232-TX, respectively.

Skip 1-2 steps by default All 4 jumper caps are set to pins 2-3. DB9 pins 2 and 3 correspond to TTL-RX and TTL-TX respectively.

◆ 3.4.6 Phoenix Terminal Expansion Port User Guide



J39 Pin 1 corresponds to Phoenix Terminal Pin 6
 Pin 2 corresponds to Phoenix Terminal Pin 8
 Pin 3 corresponds to Phoenix Terminal Pin 10
 4-pin Phoenix connector with 12 pins

Chapter 4 Electrical Performance

Project		Minimum	Typical	Maximum
Power Supply Parameters	Voltage	--	12V	36V
	Ripple	--	--	100mV
	Electric current		2A	
Power Supply Current (HDMI Output, No Other Peripherals Connected)	Single-board operating current	--	600mA	1500mA
	Standby current	--	--	--
	USB Supply current	--	--	500mA
Static electricity	Contact Discharge			8KV
	Air discharge			15KV
Environment	Relative humidity	--	--	80%
	Operating Temperature	-20℃	--	70℃
	Storage temperature	-30℃		80℃

Note 1:

When LVDS screen is connected, it is necessary to select the correct backlight working voltage 3.3V, 5V, 12V, please do not apply it to the peripheral beyond the corresponding maximum current.

Note 2:

When connected to eDP/LVDS screen, the overall working current and standby current of the board depends on the connected screen, which is not listed in the table above.

Chapter 5 Precautions for assembly and use

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

1. Bare board and peripheral short circuit issues;
2. During the installation and securing process, prevent deformation of the bare board caused by the securing process.
3. When installing eDP/LVDS displays, ensure the display voltage and current specifications are compatible. Pay attention to the orientation of pin 1 on the display connector.
4. When installing eDP/LVDS displays, verify that the display backlight voltage and current meet specifications. If the display backlight power exceeds 24W, determine whether an additional power board is required for supply.
5. When installing peripherals (USB, I/O, etc.), pay attention to peripheral I/O voltage levels and current output issues.
6. When installing the serial port, ensure that 232 and 485 devices are not directly connected. Verify that the TX and RX connections are correct.
7. Verify whether the input power source is connected to the power input interface. Based on the overall peripheral assessment, ensure that the input power voltage, current, and other parameters meet the requirements. Under no circumstances should power be supplied via the backlight socket for operational convenience.



Shenzhen Touch Think Intelligence Co., Ltd.

☎ Tel: +86 755 23778483ext. 603

☎ Fax: +86 7556664 2257 ext.811

✉ E-mail: touchtec@sztouchtec.com

📍 Add: the fourth building, Xinjianxing industrial park, Yangguang second road, Nanshan district, Shenzhen City, Guangdong Province, China



web