

PRODUCT SPECIFICATION

LCD Android Board

HD-3568VC

Update History

Version	Release time	Description
V1.0	Apr. 23, 2026	First official release.

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Chapter I Product description

I. Overview

HD-3568VC is an LCD-based Android smart motherboard featuring a Rockchip RK3568 quad-core CPU with a clock speed of up to 2.0 GHz. It features a Mali-G52 GPU and runs on the Android 11.0 operating system, supporting 4Kp60 H.265/H.264/VP9 video decoding and 1080p 60fps H.265/H.264 video encoding.

It supports infrared remote control and Wi-Fi connectivity, and is equipped with a range of interfaces, including an RJ45 port, making the product highly versatile. It is widely used in digital signage, touchscreen all-in-one computers, interactive large screens, security, healthcare, transport, finance, industrial control and other smart control sectors.

Thanks to its platform-based hardware and Android-powered intelligence, it is ideal for use in smart terminal motherboards where human-machine interaction or network device interaction is required, making it your optimal choice.

II. Features

- High performance. The RK3568 chip features a quad-core ARM Cortex-A55 architecture with a clock speed of up to 2.0GHz, enabling the playback of high-definition video in various formats and the handling of complex interactive operations.
- High stability. The RK3568 Android all-in-one board incorporates proprietary hardware and software technologies to ensure product stability, enabling the final product to operate unattended 24/7.
- High integration. The RK3568 Android All-in-One Board integrates Ethernet, eDP, Wi-Fi, an amplifier, a TF card slot, USB expansion ports, IR remote control functionality, TP, HDMI IN, LVDS, V-by-One, backlight control and a microphone.
- High expandability. Six USB ports (four pin headers, one standard USB 3.0 host, one USB OTG), four serial ports + one expandable debug serial port + one MCU programming serial port, and five I/O expansion ports to support a wider range of peripheral devices.
- High definition. Supports various LCD displays with LVDS, V-by-One and eDP interfaces, and is compatible with customised screens of different sizes and resolutions.
- Supports a wide range of mainstream touchscreens, including infrared, capacitive, resistive, acoustic and optical types, and supports multi-touch functionality.

Chapter II Specifications

I. Basic parameters

1. Hardware parameters

Hardware Specifications	
CPU	RK3568, quad-core, up to 2.0GHz
GPU	Mali-G52 GPU supports OpenGL ES 1.1/2.0/3.2, OpenCL 2.0 and Vulkan 1.1
NPU	1TOPS
RAM/ Storage	Standard 2GB+32GB,4GB+32GB
Network	Support RJ45 R/A 1000M Ethernet, support Ethernet(A third-party PoE module must be purchased); Support 2.4GHz/5GHz, Wi-Fi 6, support Wi-Fi 802.11 a/b/g/n/ac/ax protocol; Support Bluetooth 5.4
Image rotation	Support 0 degree, 90 degree, 180 degree, 270 degree manual rotation; optional gravity sensor, support automatic rotation
Display interface	1 x LVDS interface, 1920×1080@60Hz 1 x eDP interface, 1920×1080@60Hz 1 x V-by-One interface (frame rate 4K 30Hz, refresh rate 4K 60Hz) 1 x HDMI IN 1.4 port, 3840×2160@30Hz with audio output On-board backlight control supports 12V backlight power supply

	Note: V-by-One and LVDS are multiplexed; the ports share the same channel, and only one of the two can be used at a time
Audio	Support standard left and right channel line output; support 3.5mm audio output interface
Power amplifier	2 outputs (Default 8 ohms, 5 watts; compatible with 8 ohms, 10 watts; dual-channel audio amplifier output)
Microphone	Differential MIC input
Touch screen	Supports a wide range of mainstream touchscreens, including infrared, capacitive, nano-film, acoustic and optical types, and is compatible with multi-touch functionality
RTC	Built-in real-time clock function, with support for scheduled power on/off
USB	1 x USB 3.0 host port, 1 x USB 3.0 OTG port, 4 x USB expansion ports
Infrared	Infrared receiver, support infrared remote control function
LED	1*power status LED(green),1*system LED(green blinking in default)
Button	1*upgrade key
Serial port	4 UART ports, 1 debug port, 1 MCU programming port; optional RS232 and RS485 ports; Note: ttys3 requires software configuration before use
GPIO	5-way IO input and output control, can be used for key scanning control
KEY	Physical switch support
Storage Humid	10%~90% RH, no condensation

Storage Temp	-40°C~70°C
Work Temp	-20°C~70°C

2. Software Parameters

Software Specifications	
Operating system	Android 11.0
Audio	MP3, WMA, WAV, APE, FLAC, AAC, OGG, M4A, 3GPP and other formats (licensing to be arranged by the device manufacturer)
Video	Supports video decoding for H.265, H.264, VP8, MAV, WMV, AVS, H.263, MPEG-4 and other formats (licensing is the responsibility of the device manufacturer)
Image	Support various image formats such as JPG. BMP. PNG
System comes with application software	APK Installer, Email, Calculator, Browser, Voice Recorder, Calendar, Settings, Clock, Video Player, Search, Contacts, Gallery, Downloads, Camera, Music, File Manager, etc.
Language	Chinese (Simplified and Traditional) and English are supported by default; customisation for multiple languages is available
Input	Standard Android keyboard with optional third-party input method
System Management	Original ecological Android system, open root permissions, and can customize product development
	Real-time remote monitoring, system crash self-recovery, unattended 7 * 24 hours

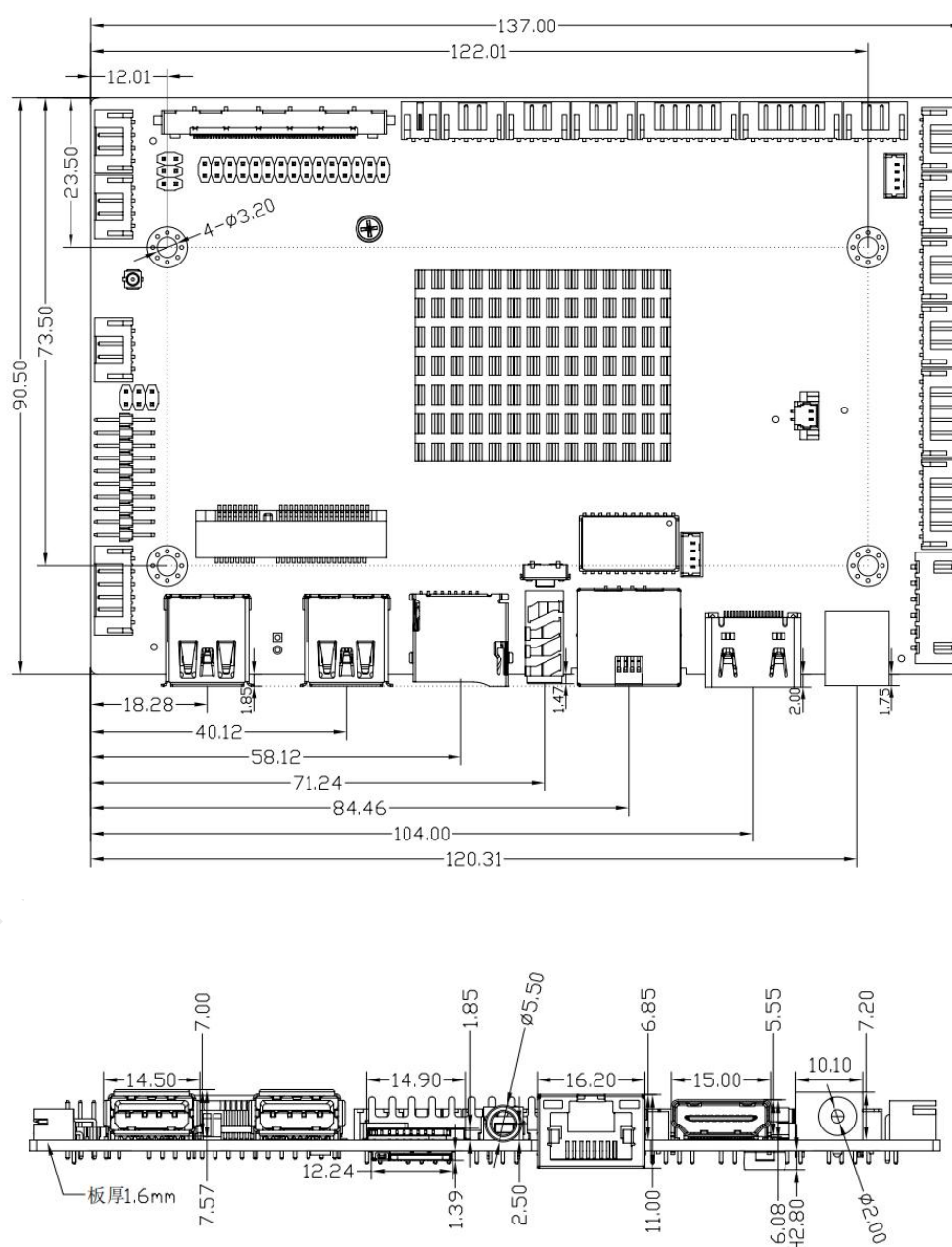
	Support OTA remote upgrade; support U disk upgrade
	Support boot animation definition
	Support server / stand-alone mode switching
	Support Wi-Fi hotspot
System watchdog	Supports hardware watchdog and software watchdog

II. Product size specifications

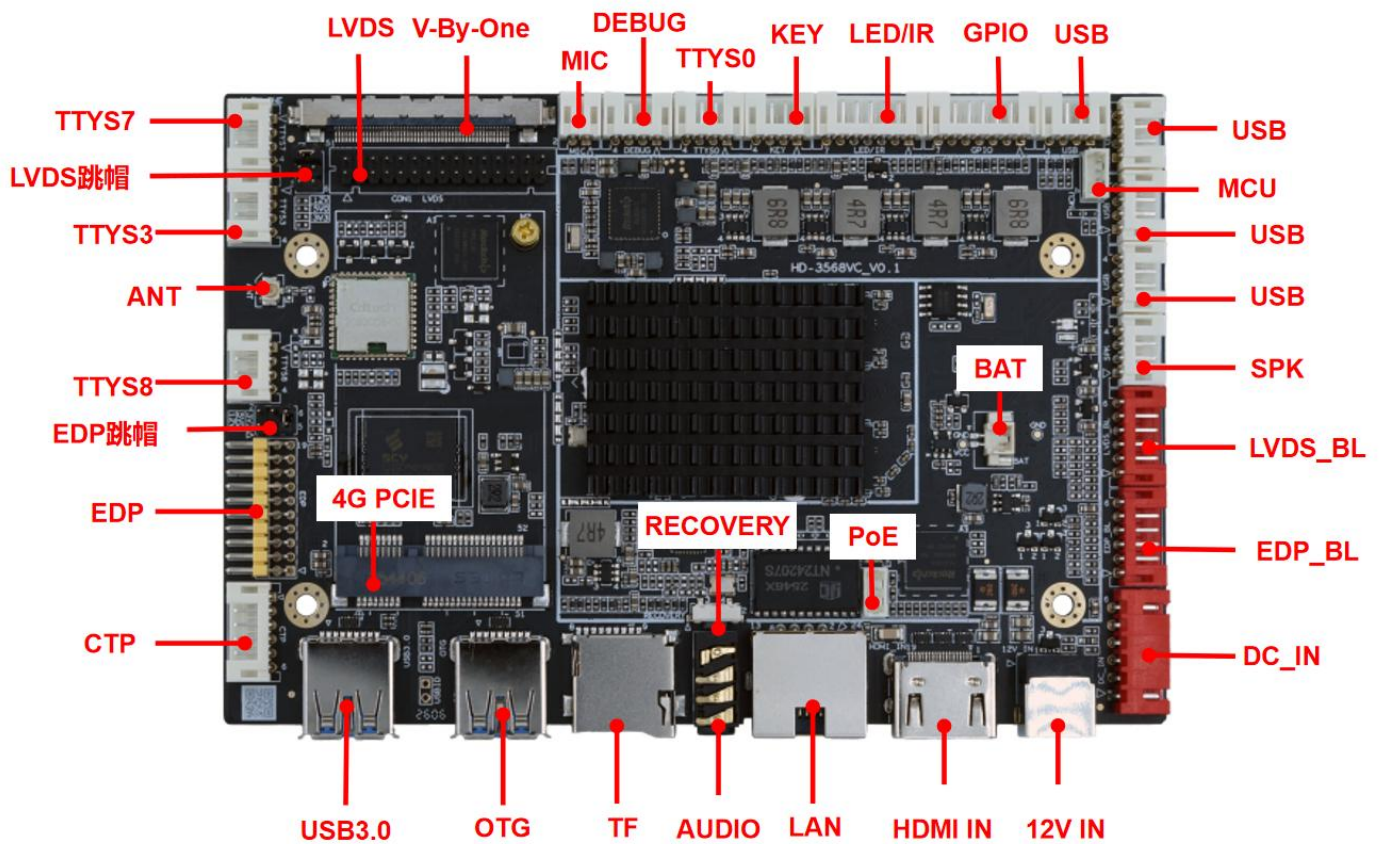
Bare board dimensions: PCBA dimensions: 137 × 90.5 mm; Board thickness: 1.6 mm; Screw hole

specifications: $\phi 3.2 \text{ mm} \times 4$

Note: The DC connector socket is an eccentric circle. Please note the dimensions: the female socket has a 5.8 mm outer diameter, a 2.0 mm inner pin, and the inner pin is positive whilst the outer pin is negative.



III. Product interface diagram

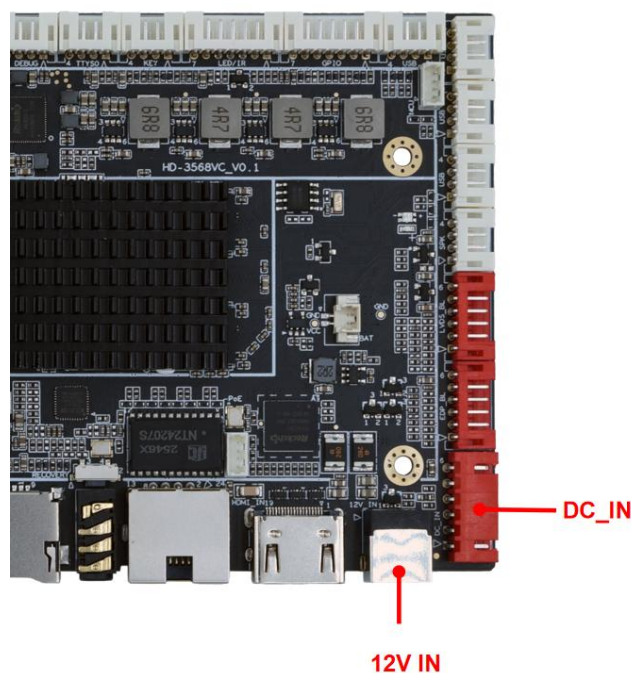


Disclaimer:

1. The images above were taken of a specific batch (with a specific feature set) of our company's motherboards. As our products are subject to ongoing updates and maintenance, the motherboards actually shipped may differ slightly from those shown in the photographs; the sample received by the customer shall serve as the standard.
2. Pin 1 of all external interfaces on this product is indicated by a nearby triangular symbol [◁].

IV. Interface Parameter Description

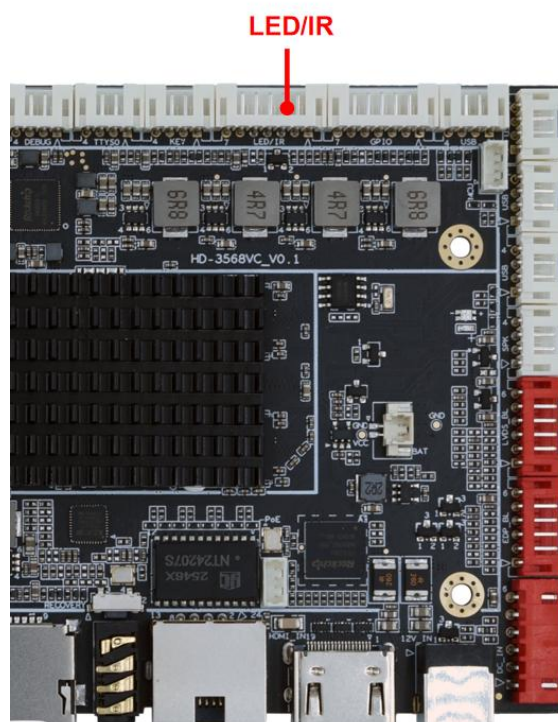
1. DC_IN power horizontal connector (6pin*2.54mm)



No.	Definition	Property	Describe
1	STB	Output	Standby signal output
2	5VB	enter	Standby 5V input
3	GND	ground wire	ground wire
4	GND	ground wire	ground wire
5	12V	enter	12V input
6	12V	enter	12V input

1. Standard 12V DC socket with a 5.8mm round head and a 2.0mm inner pin.
2. It uses a 12V DC power supply and only allows the DC socket and power outlet to supply power to the motherboard system. **It supports a wide voltage range of 9.6V to 14.4V.**

2. LED/IR remote control horizontal interface (7pin*2.0mm)

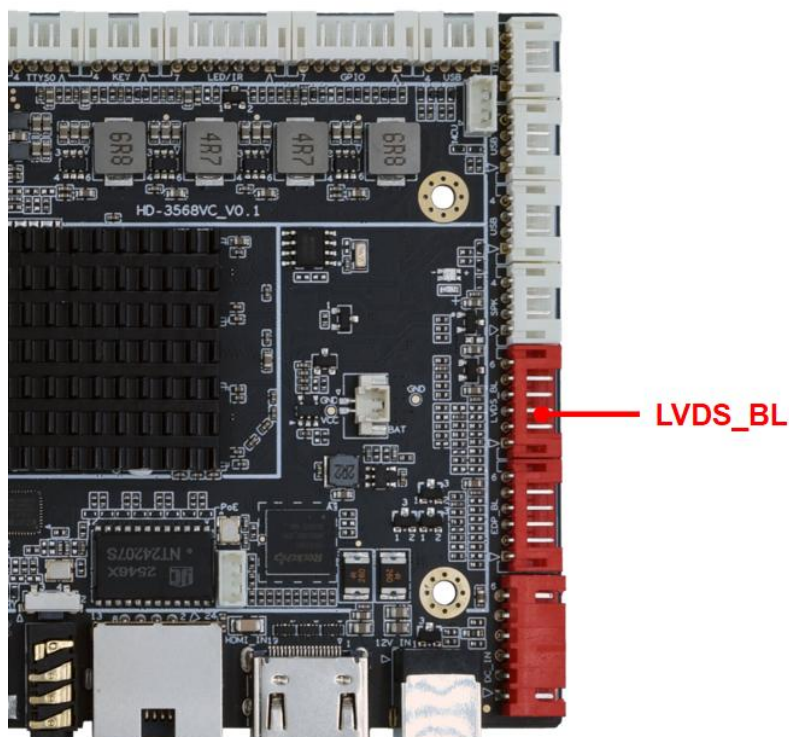


No.	Definition	Property	Describe
1	RED	Output	Red indicator light
2	3V3	power supply	3V3 output
3	GRN	Output	Green indicator light
4	IO6	Output	Remote control signal output
5	IR	enter	Remote control signal input
6	GND	ground wire	ground wire
7	3V3	power supply	3V3 output

1. If you are using a remote control that is not certified by our company, you need to communicate and confirm with our sales staff in advance .

2. Indicator light description: Red light is solid when the device is off or the screen is off; red light flashes during startup; blue light is solid during operation.

3. LVDS screen backlight horizontal interface (6pin*2.0mm)



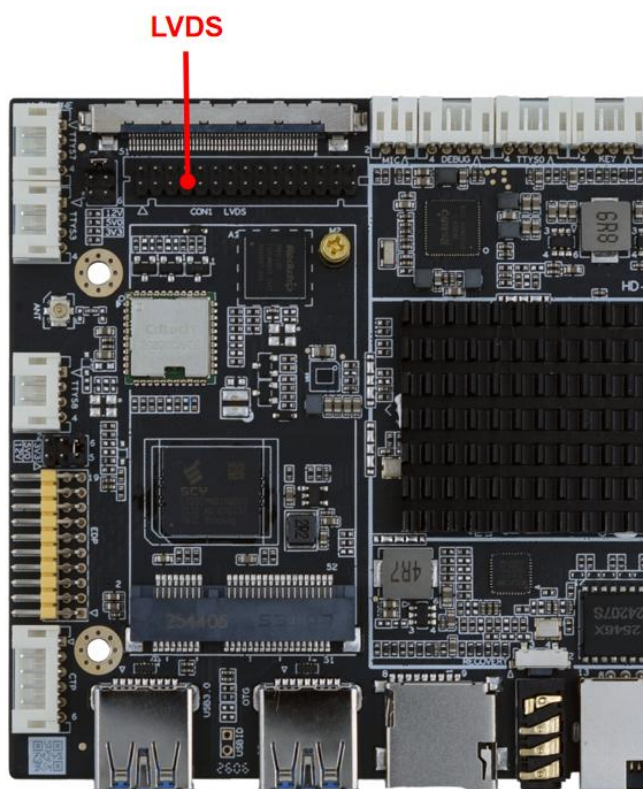
No.	Definition	Property	Describe
1	GND	ground wire	ground wire
2	GND	ground wire	ground wire
3	ADJ	Output	Backlight brightness control
4	EN	Output	Backlight enable control
5	12V	power supply	12V output
6	12V	power supply	12V output

Please confirm the pin order. Reversing the positive and negative terminals is strictly prohibited to avoid

damaging the device.

2. The power supply is a direct DC socket, 6-pin 2.0-pin connector, **rated output voltage: 12V; maximum supported operating current: 4A.**

4. LVDS screen vertical interface (2*15pin*2.0mm)



No.	Definition	Property	Describe
1	VCC	power supply	3.3V/5V/12V selectable output
2	VCC		
3	VCC		
4	GND	ground wire	ground wire
5	GND	ground wire	ground wire

6	GND	ground wire	ground wire
7	D0 -	Output	Odd 0 negative signal
8	D 0+	Output	Odd 0 positive signal
9	D 1-	Output	Odd 1 negative signal
10	D 1+	Output	Odd 1 positive signal
11	D 2-	Output	Odd 2 negative signal
12	D 2+	Output	Odd 2 positive signal
13	GND	ground wire	GND
14	GND	ground wire	GND
15	CK -	Output	Odd Clock negative signal
16	CK +	Output	Odd Clock positive signal
17	D 3-	Output	Odd 3 negative signal
18	D 3+	Output	Odd 3 positive signal
19	D4 -	Output	Even 0 negative signals
20	D4 +	Output	Even 0 positive signal
21	D5 -	Output	Even 1 negative signal
22	D5 +	Output	Even 1 positive signal
23	D6 -	Output	Even 2 negative signals
24	D6 +	Output	Even 2 positive signals
25	GND	ground wire	ground wire
26	GND	ground wire	ground wire

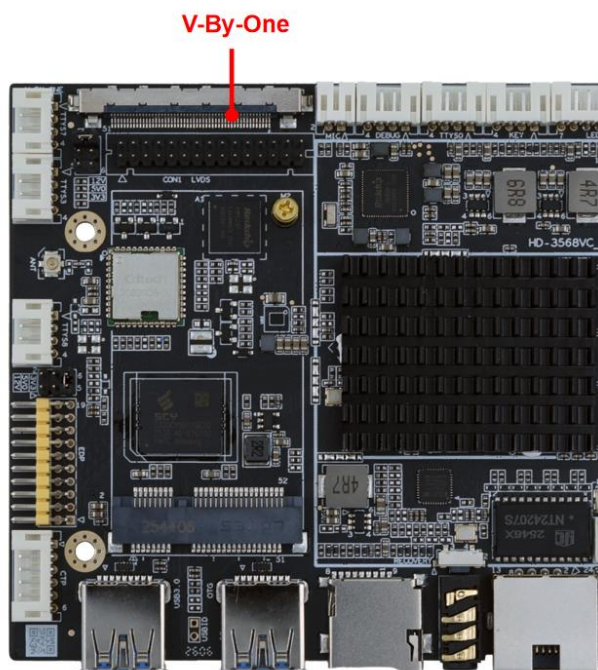
27	CK -	Output	Even Clock negative signal
28	CK +	Output	Even Clock positive signal
29	D7 -	Output	Even 3 negative signals
30	D7 +	Output	Even 3 positive signals

1. **V-by-One/LVDS multiplexing uses the same channel for both interfaces, and only one of them can be used at a time.**
2. A universal LVDS interface definition supports single/dual- channel LVDS and 6/8/10- bit depth 1080P LVDS screens. The screen voltage can be selected via a jumper cap, supporting 3.3V/5V/12V screen power supply.
3. To avoid damage to the motherboard and display screen, please strictly adhere to the following precautions:
 - 3.1. Please confirm whether the power supply voltage of the screen is correct in the screen specifications and whether the corresponding power supply of the motherboard can meet the maximum operating current of the screen.
 - 3.2. Please use a multimeter to confirm that the power supply selected by the jumper cap is correct.
4. Cap rotation parameters :

Cap shift	Rated output voltage
3V3	DC 3.3V
5V0	DC 5.0V
12V	DC 12V

Note: Do not operate while the circuit is powered on, and do not hot-plug.

5. V-by-One screen horizontal interface (51pin*0.5mm FPC interface)



No.	Definition	Property	Describe
1	GND	ground wire	ground wire
2	VBX-7P	Output	Pixel0 Positive Data
3	VBX-7N	Output	Pixel0 Negative Data
4	GND	ground wire	ground wire
5	VBX-6P	Output	Pixel1 Positive Data
6	VBX-6N	Output	Pixel1 Negative Data
7	GND	ground wire	ground wire
8	VBX-5P	Output	Pixe2 Positive Data

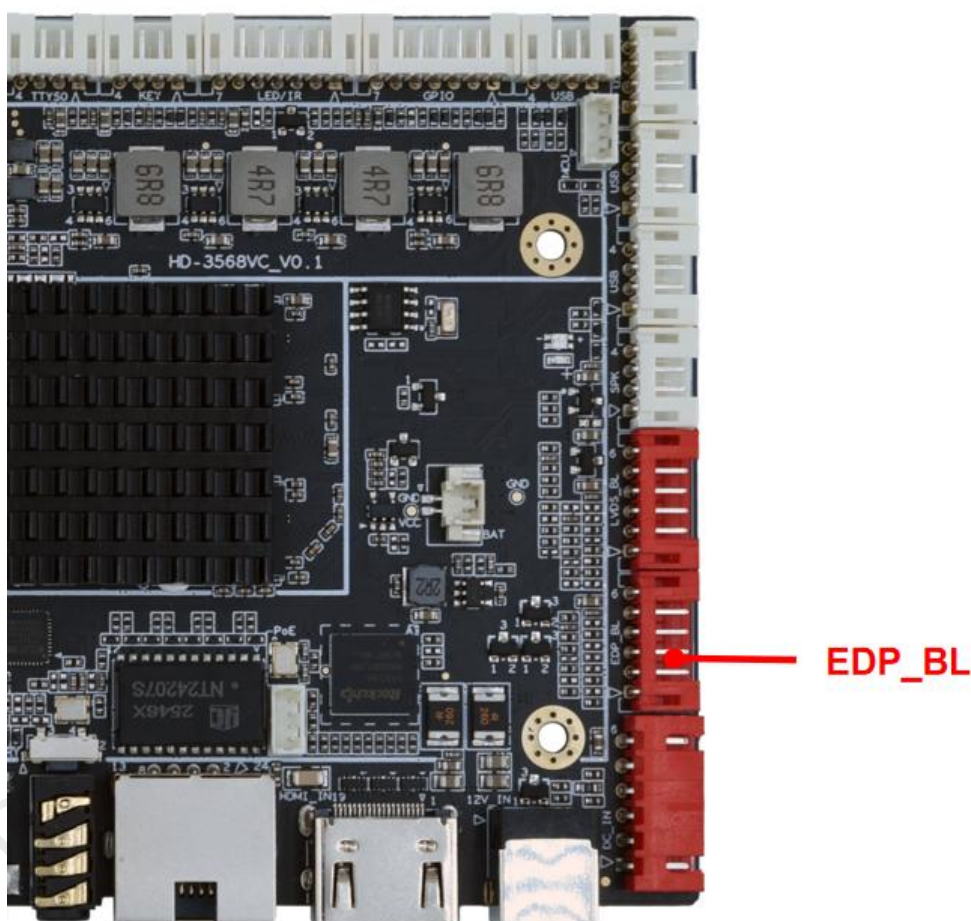
9	VBX-5N	Output	Pixel2 Negative Data
10	GND	ground wire	ground wire
11	VBX-4P	Output	Pixel 3 Positive Data
12	VBX-4N	Output	Pixel3 Negative Data
13	GND	ground wire	ground wire
14	VBX-3P	Output	Pixel4 Positive Data
15	VBX-3N	Output	Pixel4 Negative Data
16	GND	ground wire	ground wire
17	VBX-2P	Output	Pixel 5 Positive Data
18	VBX-2N	Output	Pixel5 Negative Data
19	GND	ground wire	ground wire
20	VBX-1P	Output	Pixel6 Positive Data
21	VBX-1N	Output	Pixel6 Negative Data
22	GND	ground wire	ground wire
23	VBX-0P	Output	Pixel7 Positive Data
24	VBX-0N	Output	Pixel7 Negative Data
25	GND	ground wire	ground wire
26	LOCKN-OUT	Output	CLOCK
27	HTPDN	Output	TCON
28	SEL	Suspended	TCON
29	AGP	Suspended	TCON

30	SCN-EN	Suspended	TCON
31	Bit-SEL	Suspended	TCON
32	LD-EN2	Suspended	TCON
33	BOE-SCL	Suspended	TCON
34	BOE-SDA	Suspended	TCON
35	2D/3D	Suspended	TCON
36	L/R-IN	Suspended	TCON
37	L/R OUT	Suspended	TCON
38	NC	Suspended	Suspended
39	GND	ground wire	ground wire
40	GND	ground wire	ground wire
41	GND	ground wire	ground wire
42	GND	ground wire	ground wire
43	NC	Suspended	Suspended
44	VCC-VX1	power supply	power supply
45	VCC-VX1	power supply	power supply
46	VCC-VX1	power supply	power supply
47	VCC-VX1	power supply	power supply
48	VCC-VX1	power supply	power supply
49	VCC-VX1	power supply	power supply
50	VCC-VX1	power supply	power supply

51	VCC-VX1	power supply	power supply
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1. **V-by-One/LVDS multiplexing: The interfaces share the same channel, and only one of them can be used at a time .**
2. V-by-One interface outputs a frame rate of 4K 30Hz and a refresh rate of 4K 60Hz.

6. eDP screen backlight horizontal interface (6pin*2.0mm)

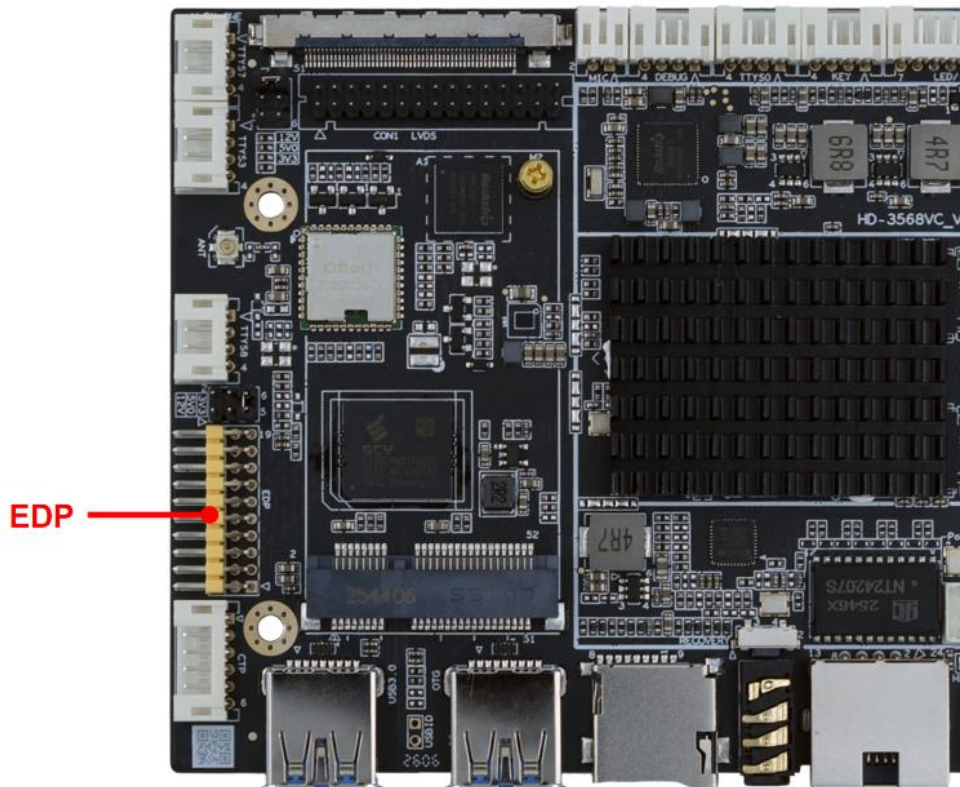


No.	Definition	Property	Describe
1	GND	ground wire	ground wire
2	GND	ground wire	ground wire

3	ADJ	Output	Backlight brightness control
4	EN	Output	Backlight enable control
5	12V	power supply	12V output
6	12V	power supply	12V output

Please confirm the pin order. Reversing the positive and negative terminals is strictly prohibited to avoid damaging the device.

7. eDP screen horizontal interface (2*10pin*2.0mm)



No.	Definition	Property	Describe
1	VCC	power supply	Output
2	VCC	power supply	Output

3	GND	ground wire	ground wire
4	GND	ground wire	ground wire
5	D0-	Output	True Signal Link Lane 0 Negative Signal
6	D0+	Output	Complement Signal Link Lane 0 Positive Signal
7	D1-	Output	True Signal Link Lane 1 Negative Signal
8	D1+	Output	Complement Signal Link Lane 1 Positive Signal
9	D2-	Output	True Signal Link Lane 2 Negative Signal
10	D2+	Output	Complement Signal Link Lane 2 Positive Signal
11	D3-	Output	True Signal Link Lane 3 Negative Signal
12	D3+	Output	Complement Signal Link Lane 3 Positive Signal
13	GND	ground wire	ground wire
14	GND	ground wire	ground wire
15	AU-	Output	True Auxiliary Channel negative signal
16	AU+	Output	Complement Signal Link Lane 0 Positive Signal
17	GND	ground wire	ground wire
18	GND	ground wire	ground wire
19	3V3	power supply	Output
20	HPD	enter	Screen hot-plug detection signal

1. A universal eDP interface definition. The screen voltage can be selected via a jumper cap, supporting 3.3V/5V/12V screen power supply.
2. The eDP interface supports 1920*1080@60Hz output .

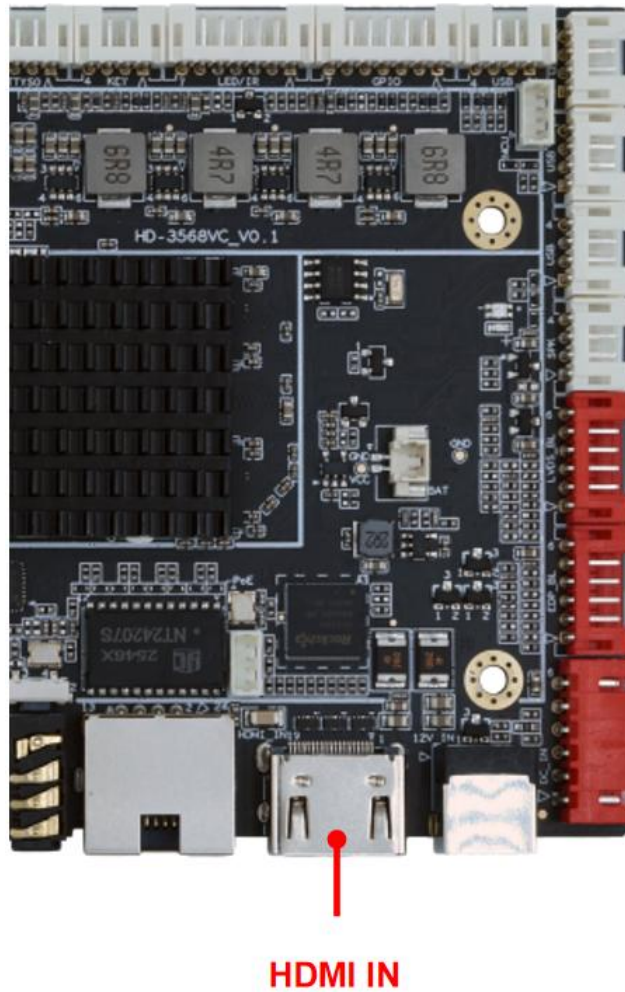
3. To avoid damage to the motherboard and display screen, please strictly adhere to the following precautions:

3.1. Please confirm whether the power supply voltage of the screen in the screen specifications is correct, and whether the corresponding power supply of the motherboard can meet the maximum operating current of the screen.

3.2. Please use a multimeter to confirm that the power supply selected by the jumper cap is correct.

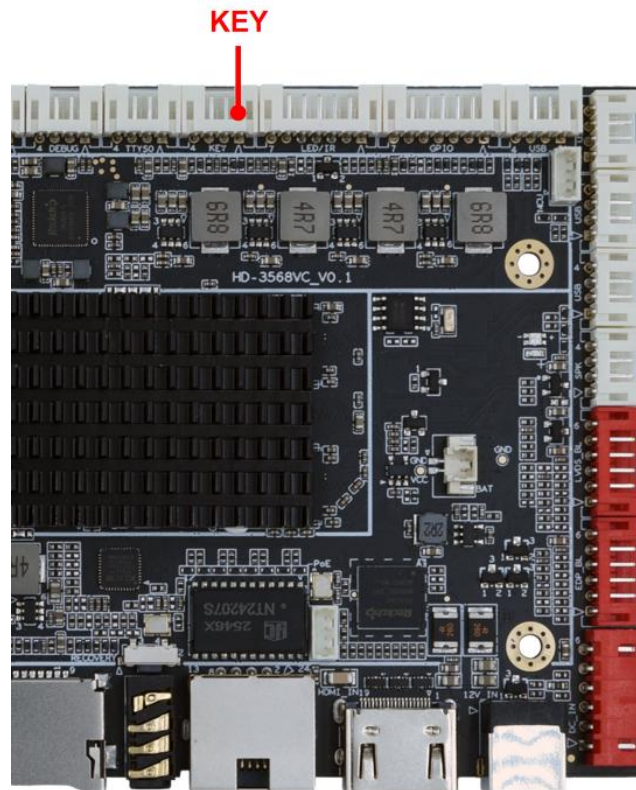
4. Operation with live power is strictly prohibited, and hot-swapping is also prohibited.

5. HDMI IN interface



1. One HDMI IN 1.4 port. HDMI IN supports 3840*2160@30Hz.
2. HDMI Type-A standard interface.

6. KEY external horizontal interface (4pin*2.0mm)

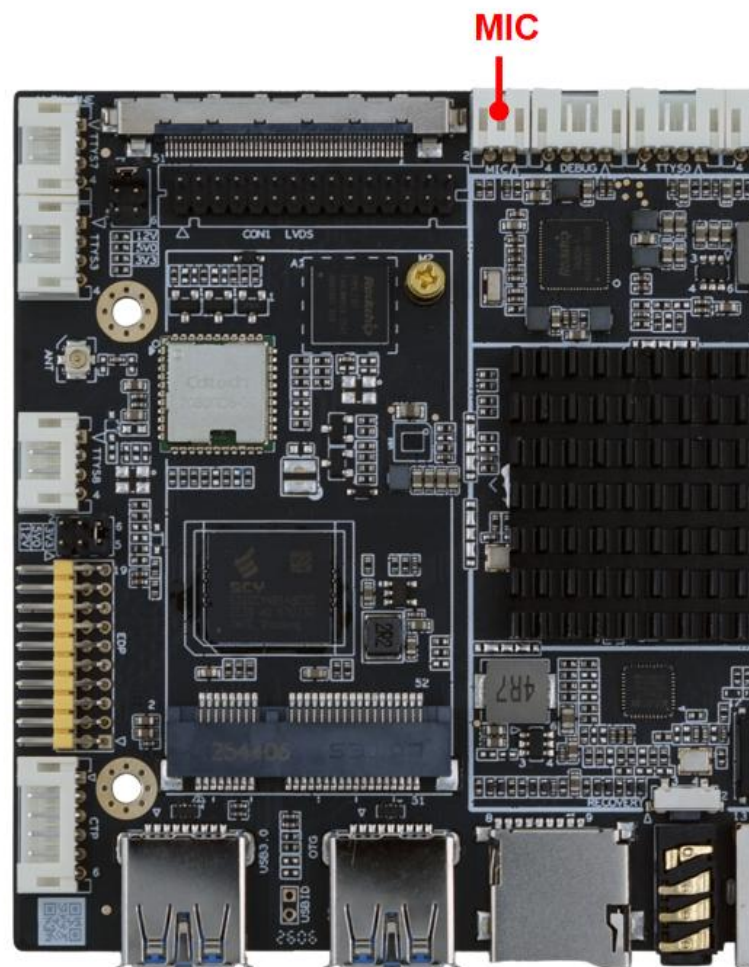


No.	Definition	Property	Describe
1	PWRON	power switch	The power switch can be connected to an external button to control the power on and off.
2	RST	Reset signal	Reset signal interface, reserved
3	KEY	FEL	Programming signal interface, reserved
4	GND	ground wire	ground wire

1. Supports standby, shutdown , and restart functions .

2. The button configuration can be adjusted, and the specific configuration will be based on actual communication needs .

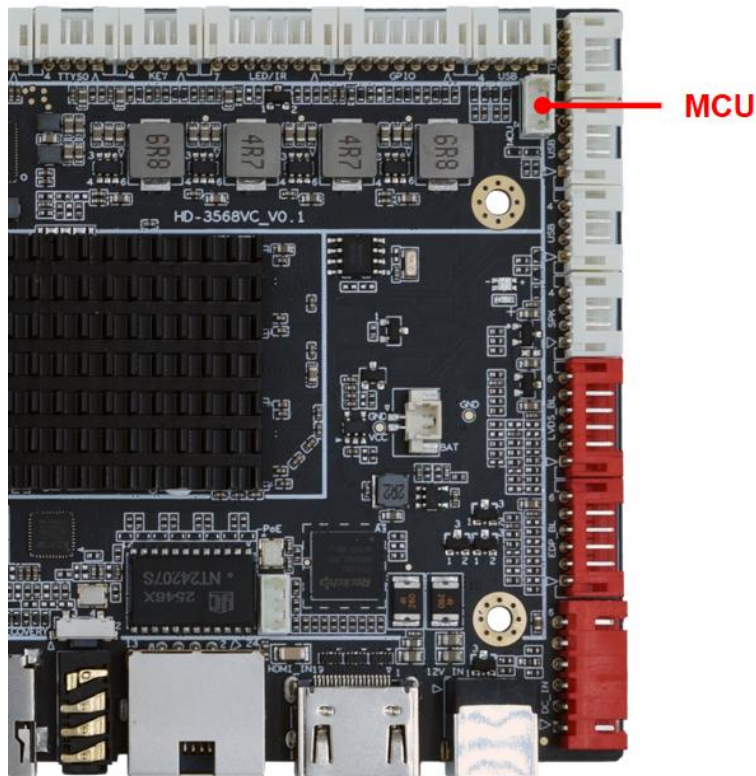
7. MIC horizontal connector (microphone) (2pin*2.0mm)



No.	Definition	Property	Describe
1	MIC +	enter	MIC positive signal input
2	MIC -	enter	MIC negative signal input

The MIC interface is a differential input interface used for recording input.

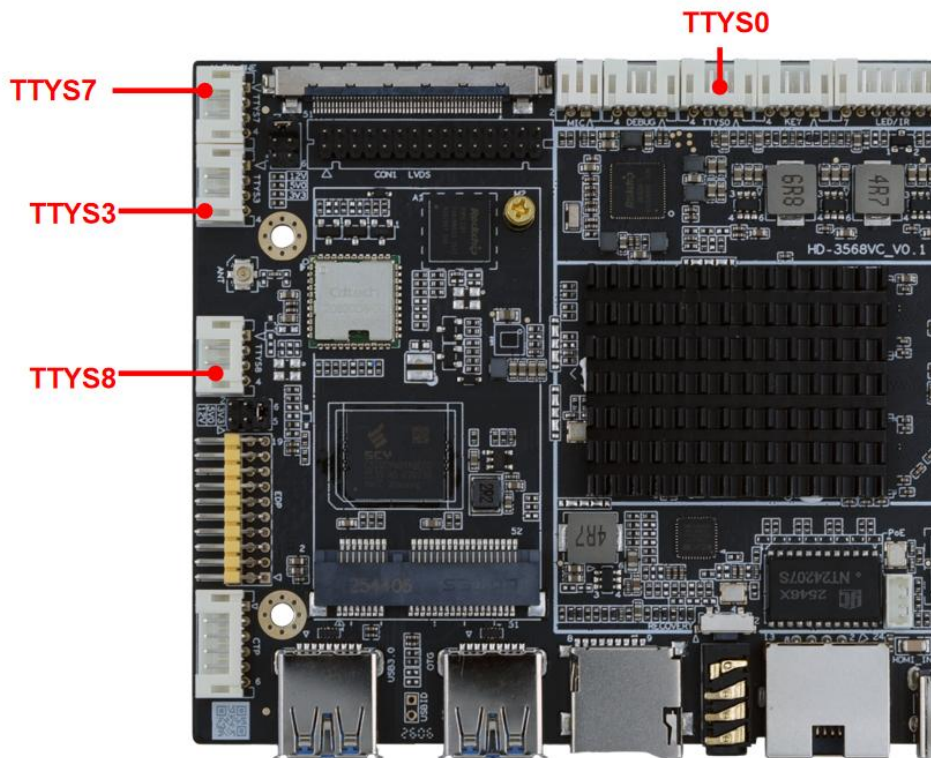
8. MCU horizontal interface (4 pin * 1.25mm)



No.	Definition	Property	Describe
1	3V3	power supply	3.3V output
2	TX	Output	TX
3	RX	enter	RX
4	GND	ground wire	ground wire

Used for programming MCUs.

9. UART RS232/RS485 serial horizontal interface (4 pin * 2.0mm)



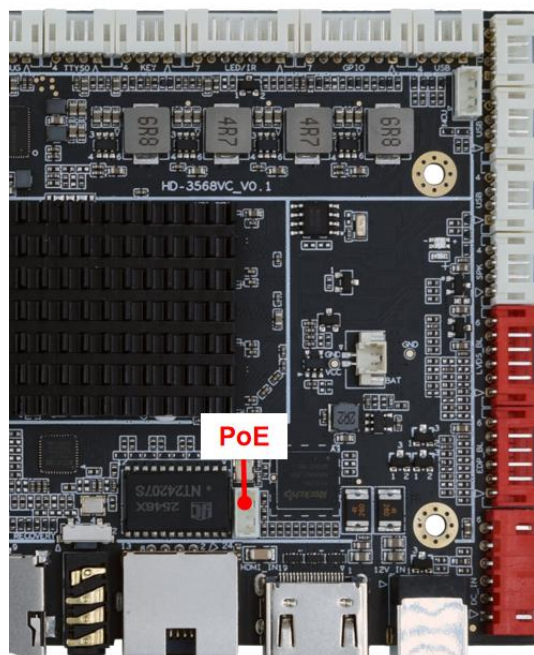
No.	Definition	Property	Describe
1	3V3	power supply	3V3 output
2	TX	Output	TX
3	RX	enter	RX
4	GND	ground wire	ground wire

1. The board has four standard UART serial ports, which can support commonly used UART serial port devices on the market.
2. Precautions:
 - 2.1. This product 's serial port is TTL level and cannot be directly connected to RS232 level devices.
It needs to be adapted through a level conversion module (such as MAX232) before it can be

connected and used .

- 2.2. Please strictly verify the wiring of the TX (transmit) and RX (receive) pins, and follow the cross-wiring principle of "local TX to remote RX, local RX to remote TX" to ensure normal communication .
- 2.3. TTYS0 and TTYS7 can be adjusted via hardware for RS485 communication, with a voltage level of 3.3V.
- 2.4. TTYS3 and TTYS8 can be configured via hardware to communicate RS232 at a voltage level of 3.3V.

10. PoE vertical connector (4 pins * 1.25mm)

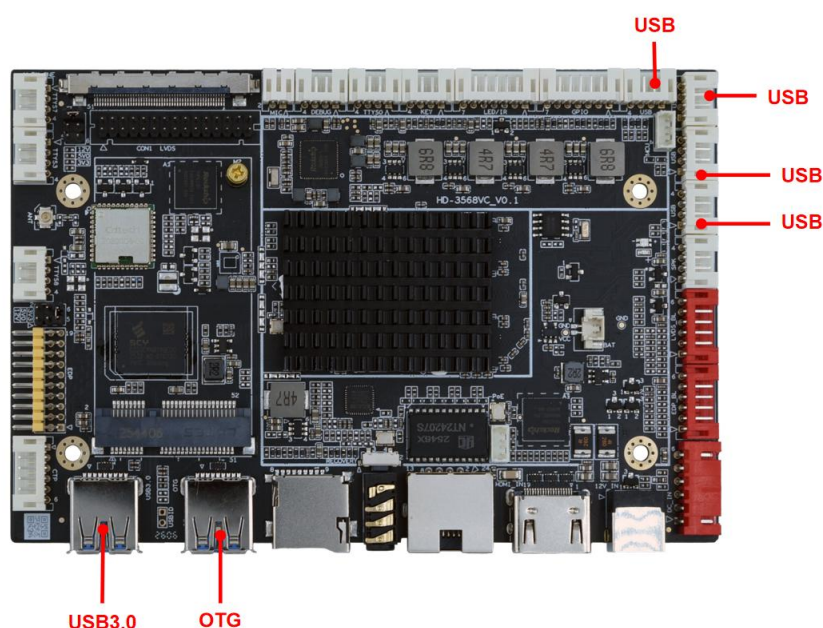


No.	Definition	Property	Describe
1	V1	CT1	Center tap TransformerCenter1
2	V2	CT2	Center tap TransformerCenter2
3	B1	CT3	Center tap TransformerCenter3
4	B2	CT4	Center tap TransformerCenter4

PoE power input , connected to an external PoE power board .

This device supports Mode A, Mode B, and PoE++ standards. The maximum input power of the PD port is 25.5W, the input voltage range is 42.5V ~ 57V DC, and the rated operating voltage is 48V DC .

11. USB horizontal connector (4 pins * 2.0mm)



USB 2.0

No.	Definition	Property	Describe
1	5V	power supply	5V output
2	DM	Input/Output	DM
3	DP	Input/Output	DP
4	GND	ground wire	ground wire

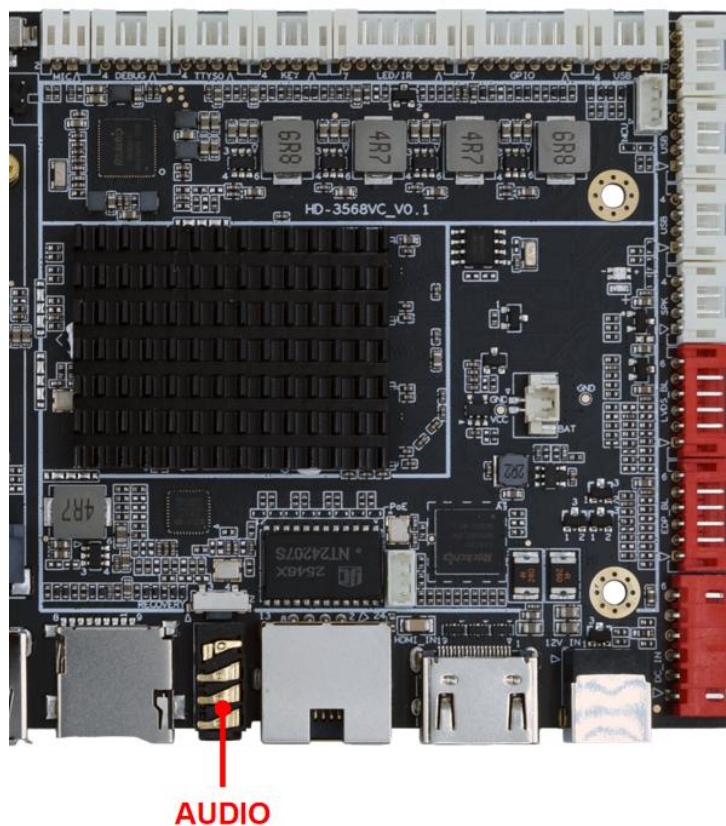
USB 3.0

No.	Definition	Property	Describe
1	5V	power supply	5V output
2	DM	Input/Output	DM
3	DP	Input/Output	DP

4	GND	ground wire	ground wire
5	TX1-	enter	USB 3.0 data negative signal
6	TX1+	enter	USB 3.0 data positive signal
7	GND	ground wire	ground wire
8	RX1-	Output	USB 3.0 data negative signal
9	RX1+	Output	USB 3.0 data positive signal

1. The board has two standard USB ports and four built-in (4pin*2.0mm) USB headers.
2. When OTG is set to Host mode, it can directly read USB flash drives, connect USB peripherals such as mice, and more; the OTG interface supports DP output, allowing connection to an external DP monitor.
3. of the OTG interface **is 5V 3A 15W** . The USB 3.0 4- pin USB interface **has a rated voltage of 5V, a power supply range of +10%, and a maximum output of 1A 5W** .
4. USB flash drive formats: FAT32 supports reading and writing, while exFAT/NTFS only supports reading.

12. AUDIO 3.5mm dual-channel audio interface



1. Supports a 3.5mm audio output jack and includes insertion detection.

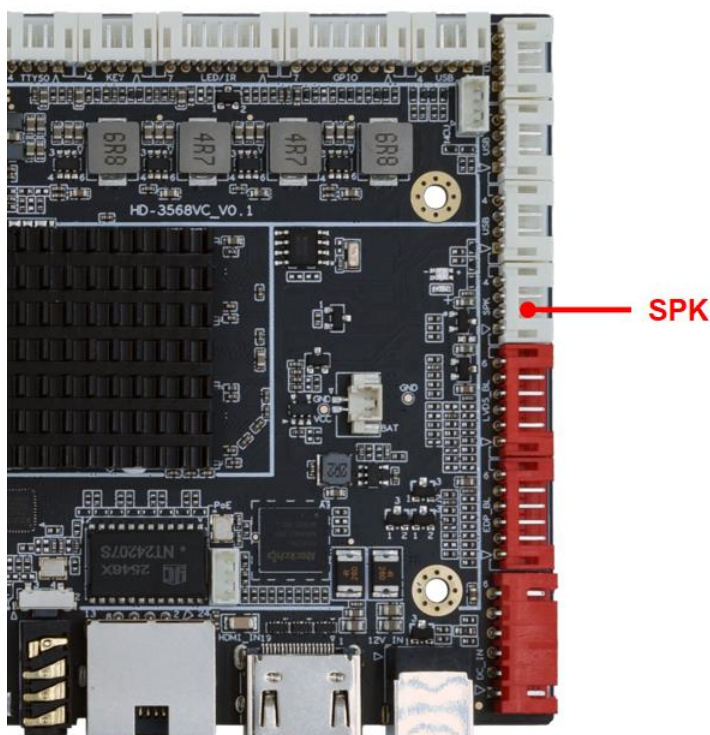
The 3.5mm headphone jack conforms to the CTIA (American standard) interface specification.

2. Supports microphone audio recording function.

3. The pin definitions of the headphone jack are shown in the following figure:

Contact position	English signage	Function definition	Signal flow direction
tip	Tip (T)	Left channel audio signal (L)	Output
First Ring	Ring 1 (R1)	Right channel audio signal (R)	Output
Second Ring	Ring 2 (R2)	Common ground (GND)	Common circuit
sleeve	Sleeve (S)	Microphone signal (MIC)	enter

13. SPK power amplifier horizontal connector (4 pin * 2.0mm)

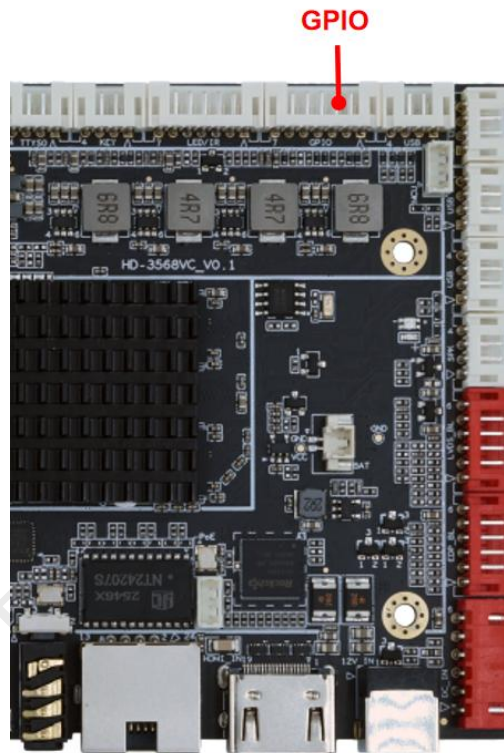


No.	Definition	Property	Describe
1	SPKL+	Output	Left channel positive signal
2	SPKL-	Output	Left channel negative signal
3	SPKR-	Output	Right channel negative signal
4	SPKR+	Output	Right channel positive signal

1. This interface is for dual speaker connection. When using a single speaker, PIN1 and PIN2 are one group, and PIN3 and PIN4 are another group. Please do not connect them in the wrong order .
2. When using the speaker, the speaker must be connected before turning on the device. Do not unplug or plug in while the power is on. The default speaker is an 8-ohm speaker .
3. Speaker interface power output characteristics (limited conditions: TA = 25°C, DC=12.0V) .
4. The built - in speaker is a default dual-channel speaker with an impedance of 8Ω and a maximum output

power of 5W. Please use a speaker of the corresponding specification, and the rated power of the speaker must not be less than 5W. The speaker can be customized up to 10W output, but the panel parameters need to be adjusted accordingly.

14. GPIO General Horizontal Interface (Extension) and Definition (7pin*2.0mm)

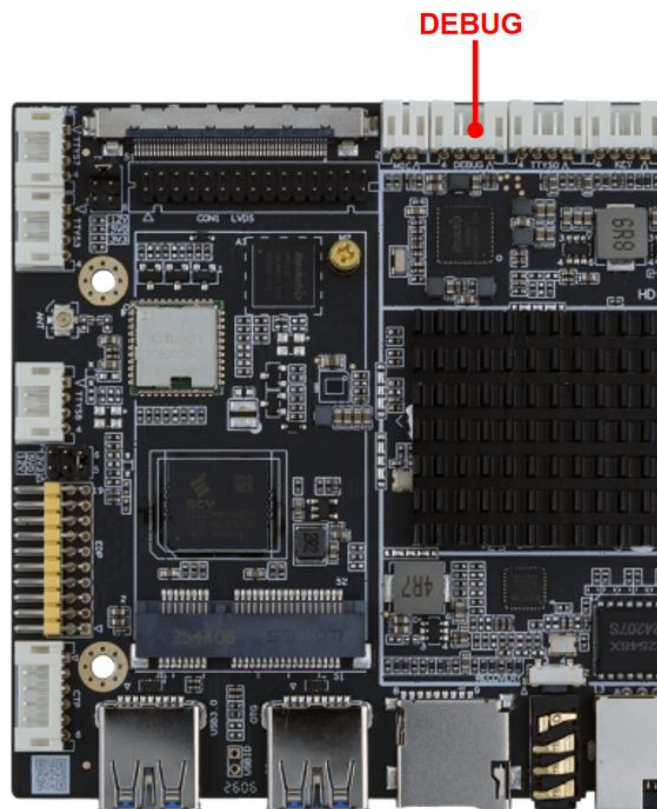


No.	Definition	Property	Describe
1	GND	ground wire	ground wire
2	IO 1	IO 1	volume-
3	IO 2	IO 2	Volume +
4	IO3	IO3	return

5	IO 4	IO 4	Return to homepage
6	IO 5	IO 5	Short touch for 1 second: Turn the screen on/off Long touch 3S: "Restart/Shutdown" pop-up window Reusable ADC (hardware modification required)
7	3V3	power supply	3V3 output

The port signal level is 3.3V by default. Please pay attention to level matching.

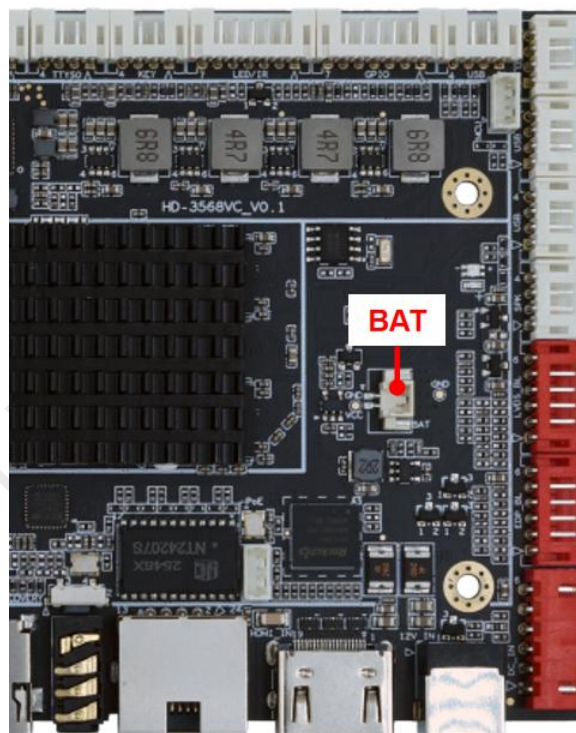
15. DEBUG serial port debugging horizontal interface (4 pin * 2.0mm)



No.	Definition	Property	Describe
1	3V3	power supply	3.3V output
2	TX	Output	TX
3	RX	enter	RX
4	GND	ground wire	ground wire

It is used as a debug device by default, with a baud rate of 115200 and a voltage level of 3.3V.

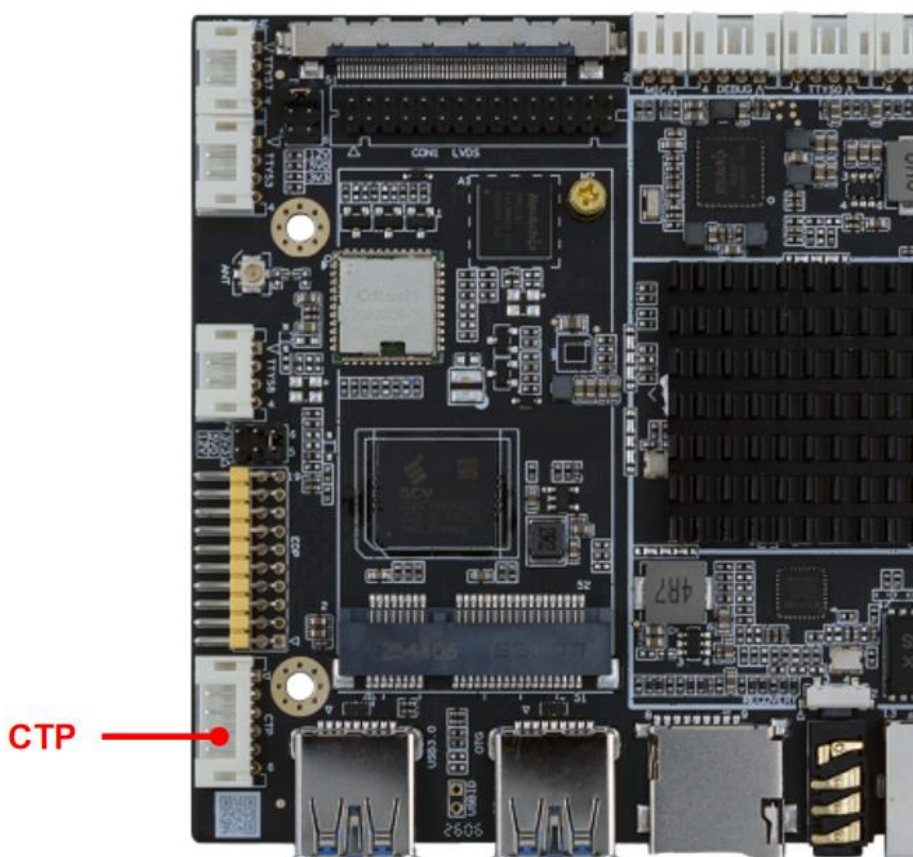
16. BAT Vertical RTC Battery Interface (2pin*1.25mm)



No.	Definition	Property	Describe
1	GND	ground wire	ground wire
2	VCC	power supply	Power input (3V ~ 3.3V)

1. Backup power for RTC real-time clock: compatible with 3.0V rated voltage button cell battery.
2. Rated operating voltage: 3.0V; Normal operating voltage range: **3.0V ~ 3.3V**.
3. **It is recommended to replace the battery when the voltage is below 3.0V to ensure timing accuracy.**

17. CTP touchscreen horizontal interface (6pin*2.0mm)

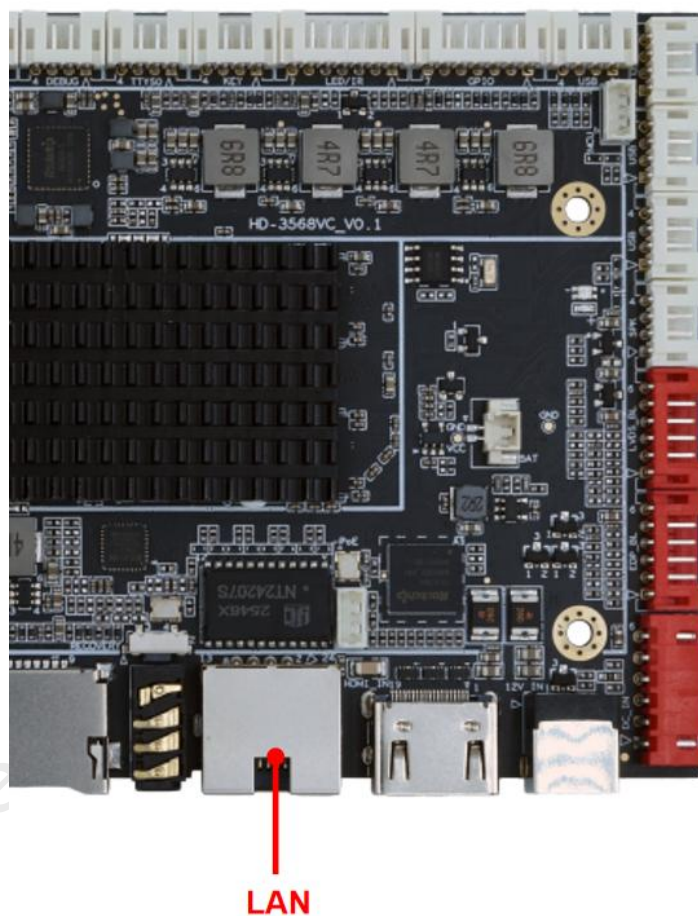


No.	Definition	Property	Describe
1	3V3	power supply	3.3V output
2	SCL	Input/Output	I2C clock
3	SDA	Input/Output	I2C data
4	INT	Input/Output	Interruption

5	RST	Input/Output	Reset
6	GND	ground wire	ground wire

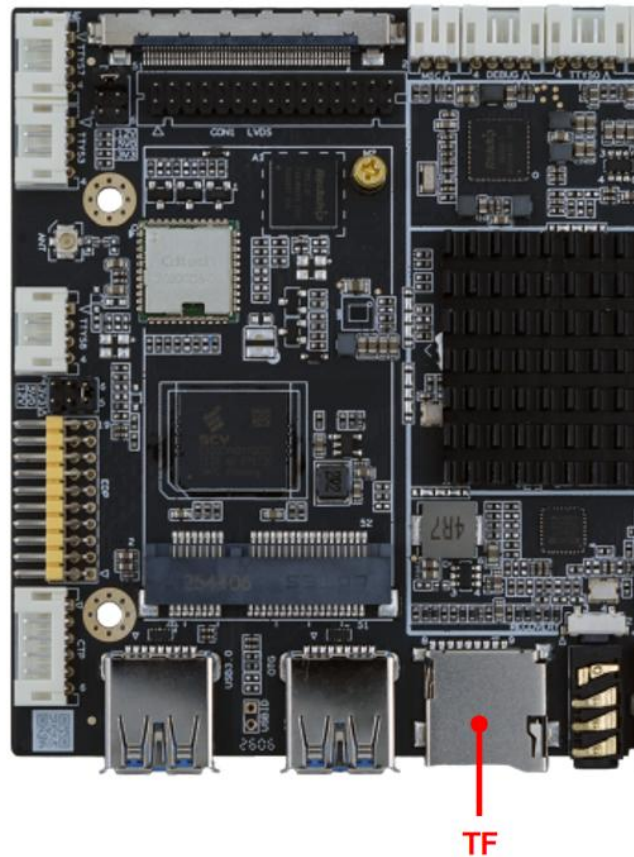
External capacitive touchscreen, supporting multiple mainstream touchscreens such as infrared, capacitive, nanofilm, acoustic wave, and optical, and adapted for multi-touch functionality.

18. LAN interface



Supports RJ45 Gigabit Ethernet.

19. TF interface



1. Data storage, maximum support 512GB.
2. Only the SDIO protocol is supported.

20. Other interfaces

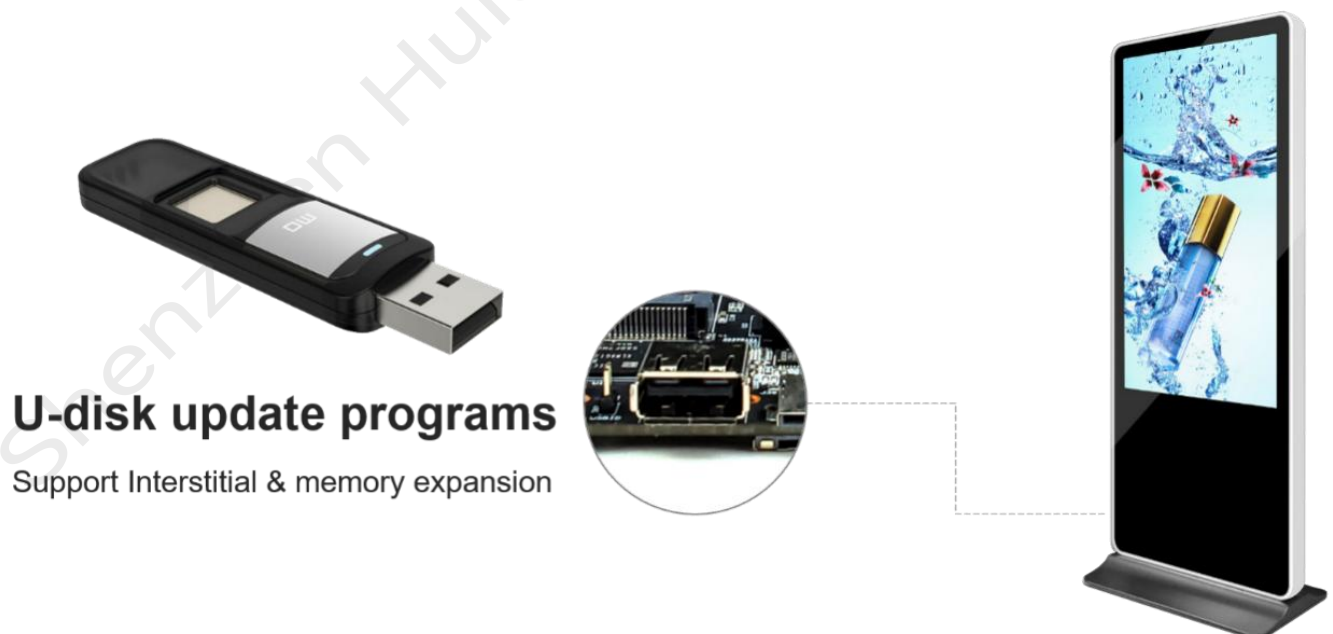
4G	MINI PCI e interface	Supports 4G module
SIM card interface	Standard Interface	Supports various standards (depending on the 4G module).

Chapter III Communication Methods

I. Wi-Fi Update Program



II. U-disk update program



III. TF Card Update Program



TF card update programs

Support Interstitial & memory expansion

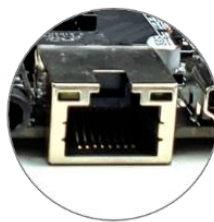


IV. Ethernet cable to Update

LAN or Internet

Network cable connection

LAN & Internet integrated management



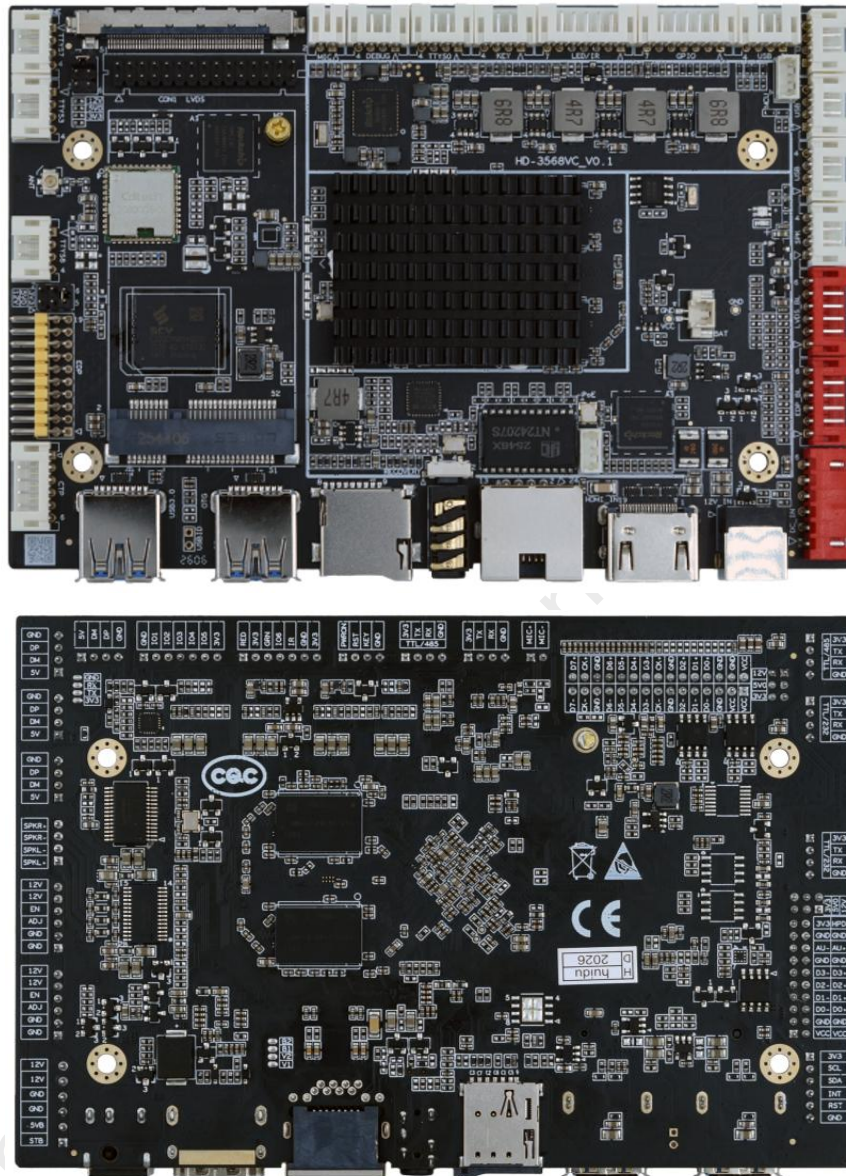
V. Internet Update

Internet remote management

Anytime & anywhere operation available



Chapter IV Appendix: Product Appearance



Illustrate:

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Do not operate with power on

The font used in this document is HarmonyOS Sans.