灰度科技
HUIDU TECHNOLOGY

PRODUCT SPECIFICATION

LCD Android Board

HD-3568V

Version: V1.3

Update History

Version	Release time	Description
V1.3	Aug. 2, 2025	Added support for Android 14.0 system
V1.2	Jan. 2, 2024	Update V-By-One Interface Definition Description.
V1.1	Oct. 10, 2023	First official release.

Contents

Chapter Ⅰ Product description

Ⅰ. Overview

HD-3568V is a well-built all-in-one motherboard, which adopts Rockchip RK3568 quad-core chip solution, equipped with Android11 system, and the main frequency can reach up to 2.0GHz, with super performance. Adopt Mali-G52 GPU, support 4K 60fps H.265/H.264 video decoding. Support infrared remote control, Wi-Fi, RJ45 and other rich interfaces, making the product more versatile and widely used in intelligent control fields such as advertising machines, interactive all-in-one machines, security, medical, transportation, finance, industrial control, etc.

Ⅱ. Features

- High performance. The RK3568 chip adopts the quad-core ARM Cortex-A55 architecture, and the main frequency can reach up to 2.0GHz, it can play high-definition video in various formats and handle complex interactive operations.
- High stability. RK3568 Android all-in-one board adds unique technology to ensure product stability in terms of hardware and software, and can make the final product reach 7*24 hours unattended.
- High integration. RK3568 Android all-in-one board integrates Ethernet, EDP, Wi-Fi, power amplifier, and TF expansion card, USB expansion port, IR remote control function, TP, LVDS/ V-By-One, HDMI IN interface, backlight control, microphone and other functions.
- High scalability. 6 USB (4 pins, 1 standard USB 3.0 HOST and 1 USB OTG), 4 serial ports + 1 scalable debug serial port + 1 MCU programming serial port, 5 IO expansion ports can expand more peripheral devices.
- High definition. Supports LCD displays with various LVDS/ V-By-One, EDP interfaces, and supports cutting screens of various sizes and resolutions.
- It perfectly supports multiple mainstream touch screen functions such as multi-point infrared touch, multi-point capacitive touch, multi-point nano-film touch, multi-point acoustic wave touch, and multi-point optical touch.

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
Network	Support RJ45 R/A 1000M Ethernet, support Ethernet; Support 2.4GHz/5GHz, Wi-Fi 6, support Wi-Fi 802.11b/g/n protocol; Support Bluetooth 5.0
Image rotation	Support 0 degree, 90 degree, 180 degree, 270 degree manual rotation; optional gravity sensor, support automatic rotation
Display interface	1 * LVDS interface (single / dual, 6-bit / 8-bit) ,support 7”-108” display screen 1 * V-By-One interface 1 * HDMI IN interface Onboard backlight control supports 12V backlight power supply.
Audio	Support standard left and right channel line output; support 3.5mm audio output interface
Power amplifier	2 outputs (8 ohms, 5 watts dual audio amplifier output)
Microphone	Differential MIC input
Touch screen	Support USB multi-point infrared touch, multi-point capacitive touch, multi-point Nano film touch, multi-point acoustic wave Touch, multi-point optical touch and more.。
RTC	Built-in real-time clock function
USB	1 * USB 3.0 HOST, 1 * USB OTG，4-way extended USB 2.0
Infrared	Infrared receiver, support infrared remote control function

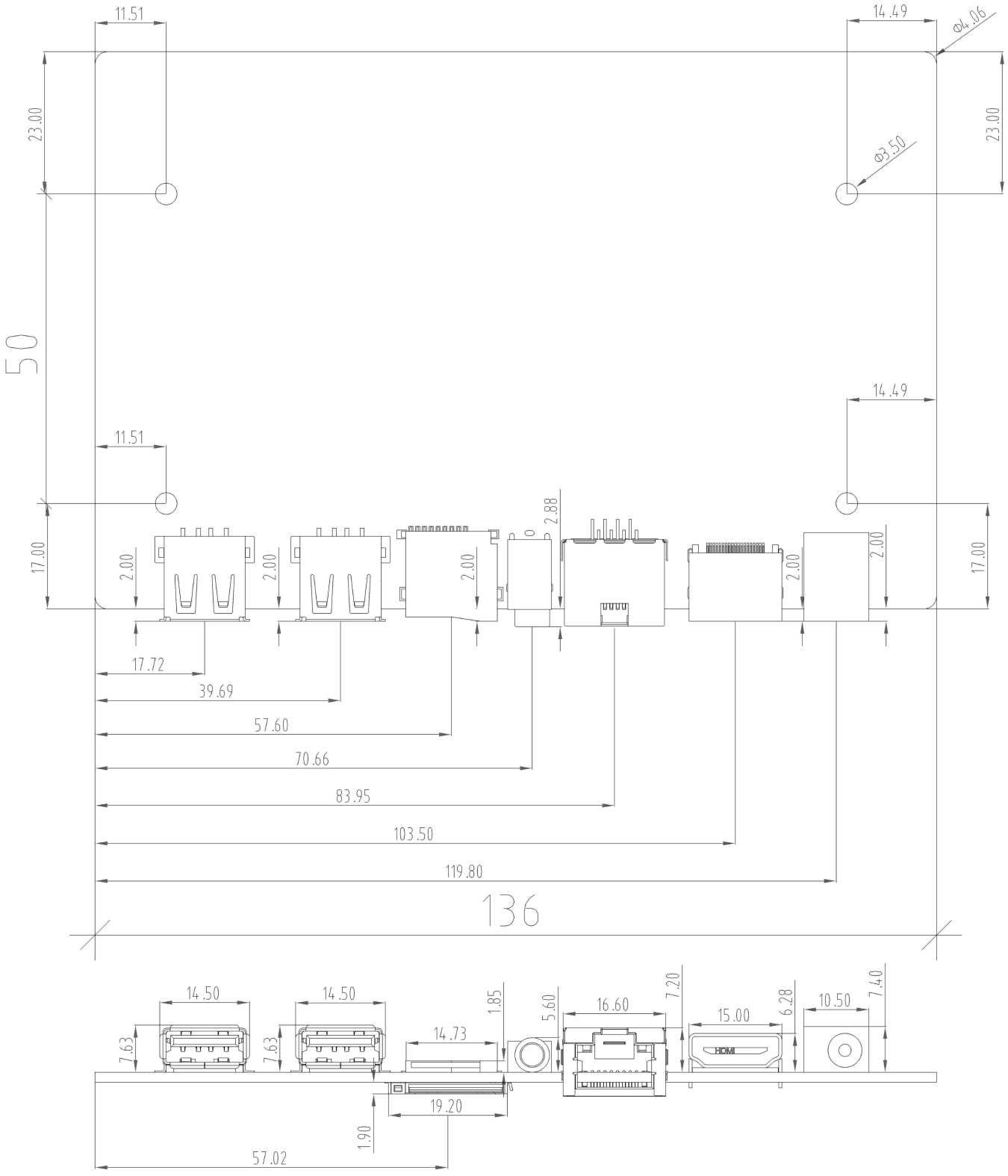
LED	1*power status LED(green),1*system LED(green blinking in default)
Button	1*upgrade key
Serial port	4 * UART，1 * DEBUG，1 * MCU programming serial port; optional RS232, RS485 Note: ttys3 needs to be configured by the software before it can be used
GPIO	5-way IO input and output control, can be used for key scanning control
KEY	Physical switch support
Power Adapter	Input: AC100-240V.50-60HZ, Output: DC12V 1.5A (Acceptable range of use is between 10.2-13.8V, do not use a power adapter that exceeds this range)
Storage Humid	10%~90% RH, no condensation
Storage Temp	-40℃~70℃
Work Temp	-20℃~70℃

2. Software Parameters

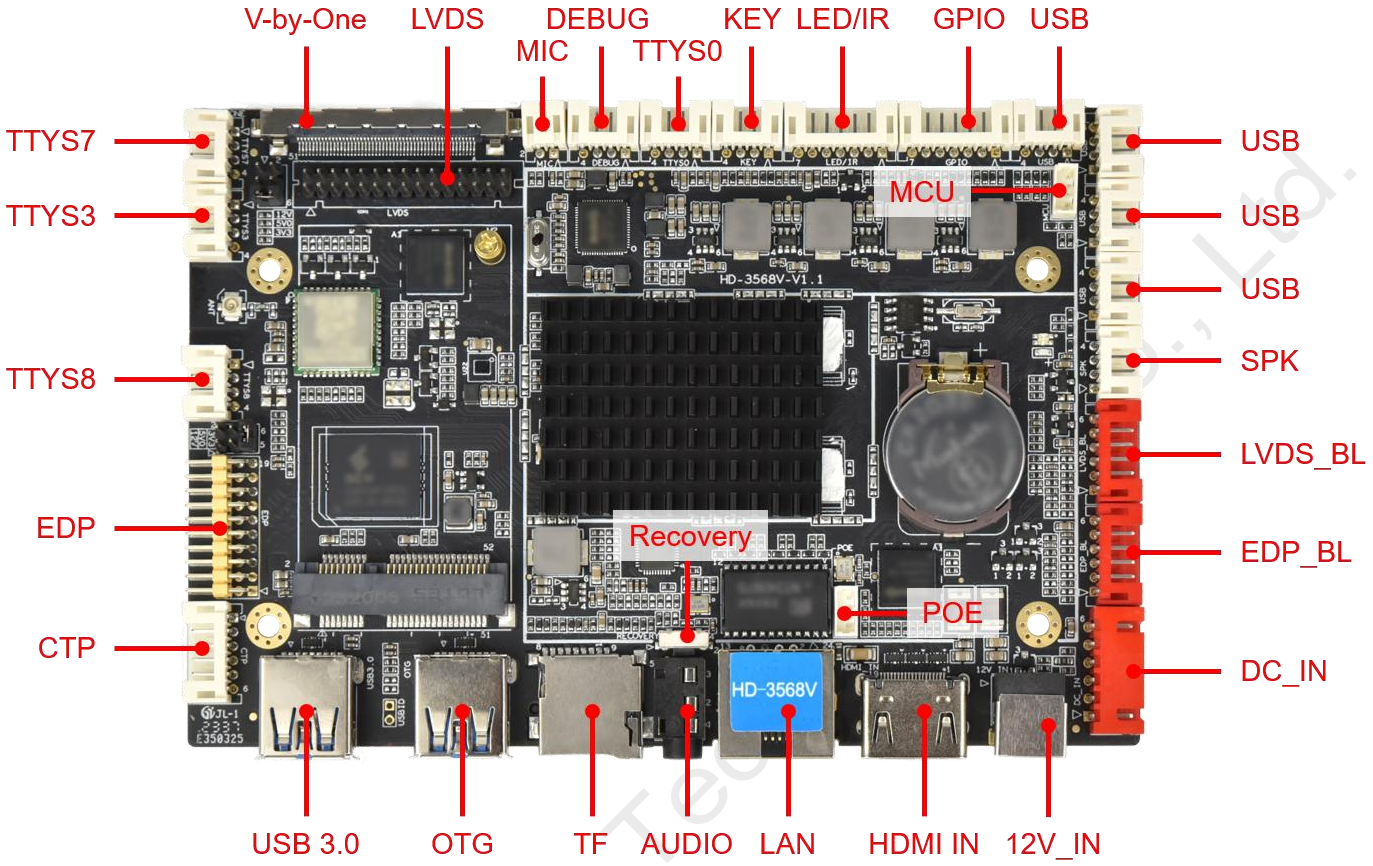
Software Specifications	
Operating system	Android 14.0 or Android 11.0 Note: Android 14 has higher memory requirements and requires at least 4GB of RAM
Audio	MP3,WMA,WAV, APE, FLAC, AAC, OGG,M4A,3GPP and other formats
Video	Support H.265, H.264, VP8, MAV, WMV, AVS, H.263, MPEG4 and other video formats
Image	Support various image formats such as JPG、BMP、PNG
System comes with application software	APK Installer, Email, Calculator, Browser, Recorder, Calendar, Settings, Clock, Video Player, Search, Contacts, Gallery, Download, Camera, Music, Explorer, etc.
Language	Support multi-language
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	Support software watchdog

Ⅱ. Product size specifications

Bare board size specification, unit: mm, Screw hole specifications：φ3.5mm x 4, PCB board thickness：1.6mm ± 10%



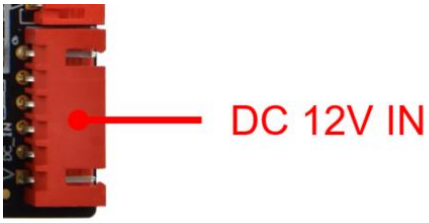
Ⅲ. Product interface diagram



Ⅳ. Interface Parameter Description

1. PWR/DC（power input）Interface

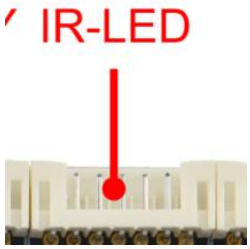
It adopts 12V DC power supply and only allows the board subsystem to be powered from the DC socket and power socket.



No.	Definition	Attributes	Description
6	12V	Input	12V Input
5	12V	Input	12V Input
4	GND	Ground	Ground
3	GND	Ground	Ground
2	5VS	Input	Standby 5V Input
1	STB	Output	Standby signal output

Note: The inner diameter of the DC power port is 2.0mm, and the outer diameter is 5.8mm.

2. LED/IR（Remote control）interface and definition

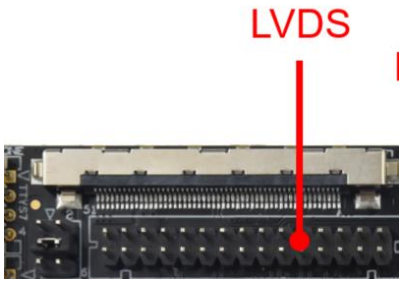


No.	Definition	Attributes	Description
1	RED	Output	Red light
2	3V3	Power	3V3 Output
3	GRN	Output	Green light
4	IO	Output	Remote signal output
5	IR	Input	Remote signal Input
6	GND	Ground	Ground
7	3V3	Power	3V3 Output

3. LVDS_BL（LVDS backlight）Interface

No.	Definition	Attributes	Description
1	GND	Ground	Ground
2	GND	Ground	Ground
3	ADJ	Output	Backlight brightness control
4	EN	Output	Backlight enable control
5	12V	Power	12V output
6	12V	Power	12V output

4. LVDS Interface and Definition



General LVDS interface definition, support single / dual, 6/8 / 10-bit 1080P LVDS screen. The screen voltage can be selected through a jumper cap, and it can be selected to support 3.3V / 5V / 12V screen power supply.

In order to avoid burning boards and screens, please note the following:

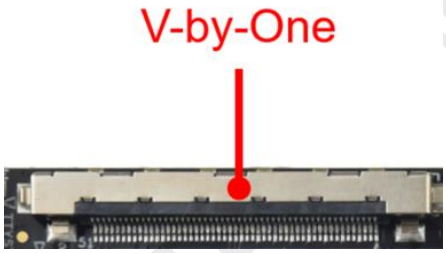
1. Please confirm whether the screen specification book screen supply voltage is correct, whether the board's corresponding power supply can meet the maximum working current of the screen.
2. Please use a multimeter to confirm that the power supply selected by the jumper cap is correct.
3. When connecting the 6 / 8-bit LVDS screen cable, install it near pin1.

No.	Definition	Attributes	Description
1	VCC	Power	3.3V/5V/12V optional output
2	VCC		
3	VCC		
4	GND	Ground	Ground
5	GND	Ground	Ground
6	GND	Ground	Ground
7	RX00-	Output	Odd 0-
8	RX00+	Output	Odd 0+
9	RX01-	Output	Odd 1-
10	RX01+	Output	Odd 1+
11	RX02-	Output	Odd 2-
12	RX02+	Output	Odd 2+
13	GND	Ground	Ground
14	GND	Ground	Ground
15	RX0C-	Output	Odd Clock-
16	RX0C+	Output	Odd Clock+
17	RX03-	Output	Odd 3-
18	RX03+	Output	Odd 3+
19	RX10-	Output	Even 0-
20	RX10+	Output	Even 0+

21	RX11-	Output	Even 1-
22	RX11+	Output	Even 1+
23	RX12-	Output	Even 2-
24	RX12+	Output	Even 2+
25	GND	Ground	Ground
26	GND	Ground	Ground
27	RX1C-	Output	Even Clock-
28	RX1C+	Output	Even Clock+
29	RX13-	Output	Even 3-
30	RX13+	Output	Even 3+

Note： Do not operate with power on, Do not hot swap

5. V-By-One Interface and Definition



No.	Definition	Attributes	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	Pixel3 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	Pixel5 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		TCON
29	AGP		TCON
30	SCN-EN		TCON
31	Bit-SEL		TCON
32	LD-EN2		TCON
33	BOE-SCL		TCON
34	BOE-SDA		TCON
35	2D/3D		TCON
36	L/R-IN		TCON
37	L/R OUT		TCON
38			NC
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
44	VCC-VX1	Power	Power
45	VCC-VX1	Power	Power
46	VCC-VX1	Power	Power
47	VCC-VX1	Power	Power
48	VCC-VX1	Power	Power
49	VCC-VX1	Power	Power
50	VCC-VX1	Power	Power
51	VCC-VX1	Power	Power

6. EDP_BL（EDP backlight）Interface and Definition

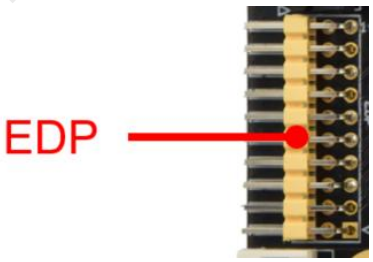
No.	Definition	Attributes	Description
1	GND	Ground	Ground
2	GND	Ground	Ground
3	ADJ	Output	Backlight brightness control
4	EN	Output	Backlight enable control
5	12V	Power	12V output
6	12V	Power	12V output

7. EDP Interface and Definition

This interface is a common EDP screen interface, in the form of 10 * 2 double row pins, can optional 3.3V/5V/12V screen power supply.

In order to avoid burning boards and screens, please note the following:

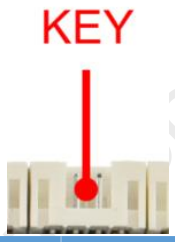
Confirm that the screen specification book screen supply voltage is correct and whether the board's corresponding power supply can meet the screen's maximum working current.



No.	Definition	Attributes	Description
1	PVCC	Power	output
2	PVCC	Power	output
3	GND	Ground	Ground
4	GND	Ground	Ground
5	D0-	output	True Signal Link Lane 0
6	D0+	output	Complement Signal Link Lane 0
7	D1-	output	True Signal Link Lane 1
8	D1+	output	Complement Signal Link Lane 1

9	D2-	output	True Signal Link Lane 2
10	D2+	output	Complement Signal Link Lane 2
11	D3-	output	True Signal Link Lane 3
12	D3+	output	Complement Signal Link Lane 3
13	GND	Ground	Ground
14	GND	Ground	Ground
15	AUX-	output	True Auxiliary Channel
16	AUX+	output	Complement Signal Link Lane 0
17	GND	Ground	Ground
18	GND	Ground	Ground
19	GND	Ground	Ground
20	GND	Ground	Ground

8. KEY Interface and Definition

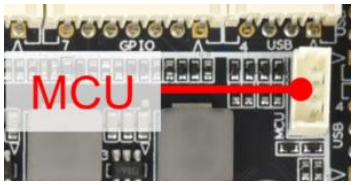


No.	Definition	Attributes	Description
1	GND	Ground	Ground
2	K5	K5	K5
3	K4	K4	K4
4	K3	K3	K3
5	K2	K2	K2
6	K1	K1	K1
7	3V	Power	3V output

9. MIC Interface and Definition

No.	Definition	Attributes	Describe
1	MIC+	input	MIC+input
2	MIC-	input	MIC-input

10. MCU Interface and Definition



No.	Definition	Attributes	Description
1	3V3	power supply	3.3V output
2	TX	output	TX
3	RX	input	RX
4	GND	ground wire	ground wire

11. UART Interface and Definition

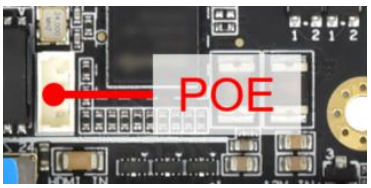
1 set of ordinary two-wire serial ports, which can support common serial devices on the market. The level of the serial ports is 0V to 3.3V. If the level of the connected serial port is higher than 3.3V, there must be an isolation circuit or a level conversion circuit, otherwise the main control and equipment will be burned out.

Precautions:

1. Whether the TTL serial port voltage matches. Cannot directly connect to MAX232, 485 devices.
2. Whether the TX and RX connections are correct.

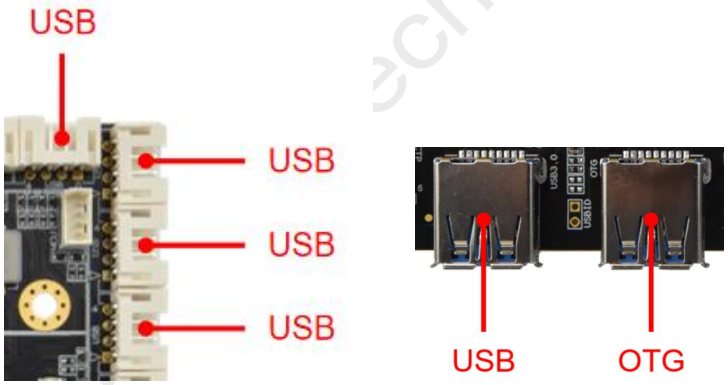
NO.	Definition	Attributes	Description
1	3V3	Power	3V3 Output
2	TX	Output	TX
3	RX	Input	RX
4	GND	Ground	Ground

12. POE Interface and Definition



No.	Definition	Attributes	Description
1	V1	CT1	Transformer Center 1
2	V2	CT2	Transformer Center 2
3	B1	CT3	Transformer Center 3
4	B2	CT4	Transformer Center 4

13. USB Interface and Definition



The board has 1 * USB 3.0 HOST, 1 * USB OTG, 4 build-in USB2.0 sockets for peripheral expansion.

NO.	Definition	Attributes	Description
1	5VS	Power	5V output
2	DM	Input / output	DM
3	DP	Input/output	DP
4	GND	Ground	Ground

14. SPK Interface and Definition

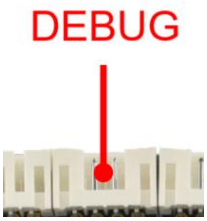
NO.	Definition	Attributes	Description
1	P-L	Output	Left channel+
2	N-L	Output	Left channel-
3	N-R	Output	Right channel-
4	P-R	Output	Right channel +

15. Audio 3.5 Interface

16. GPIO Interface and Definition

No.	Definition	Attributes	Description
1	GND	ground wire	ground wire
2	GPIO1	IO1	IO1
3	GPIO2	IO2	IO2
4	GPIO3	IO3	IO3
5	GPIO4	IO4	IO4
6	GPIO5	IO5	IO5
7	3V3	power supply	3.3V output

17. DEBUG interface and Definition



No.	Definition	Attributes	Description
1	3V3	power supply	3.3Voutput
2	TX	output	TX
3	RX	input	RX
4	GND	ground wire	ground wire

18. Other Interface

Storage interface	SD card	Data storage, maximum support 32G
	USB	HOST interface, support data storage, data import, USB mouse keyboard, camera, touch screen, etc.
Ethernet interface	RJ45 interface	Support 1000M wired network
HDMI interface	standard interface	Support HDMI input
4G	PCI-E standard interface	Support 4G module
SIM card interface	standard interface	Support for various standards (depending on 4G module)

Chapter III Communication Methods

Ⅰ. Wi-Fi Update Program

No Server required

Mobile APP management

Ⅱ. U-disk update program

U-disk update programs

Support Interstitial & memory expansion

Ⅲ. TF Card Update Program

TF card update programs

Support Interstitial & memory expansion

Ⅳ. Ethernet cable to Update

LAN or Internet

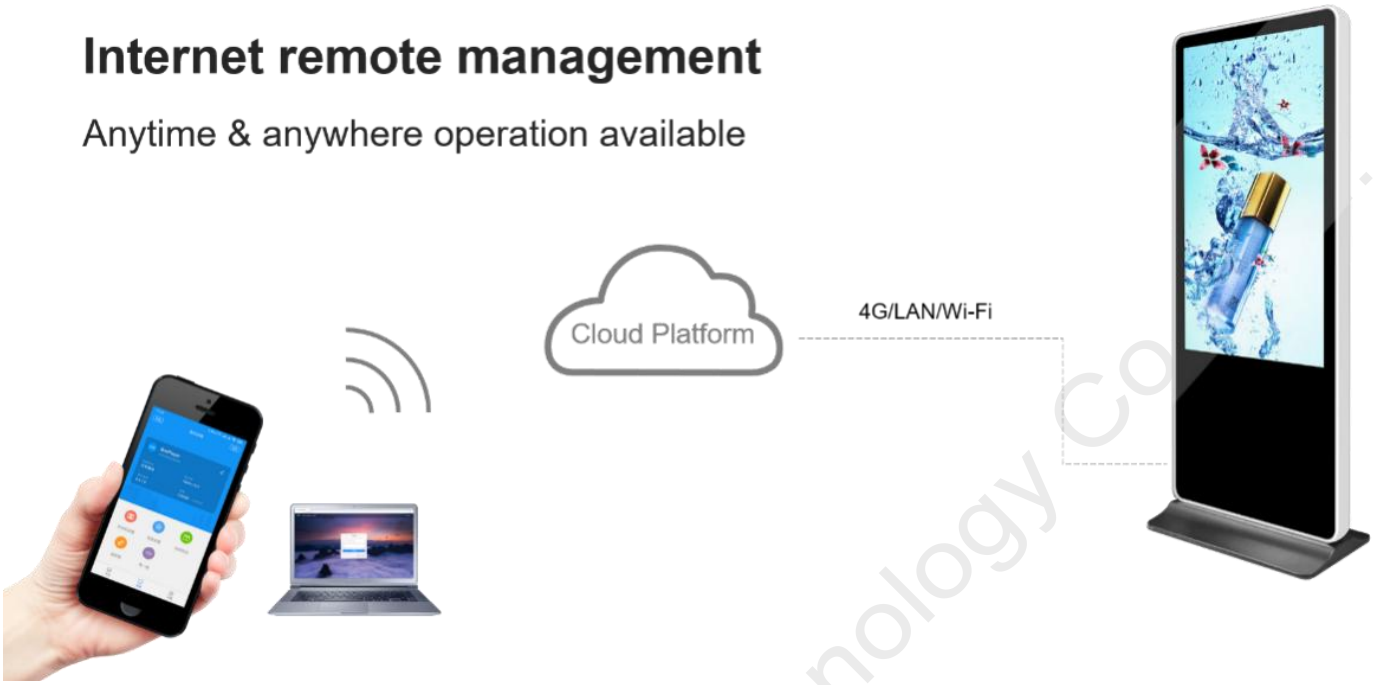
Network cable connection

LAN & Internet integrated management

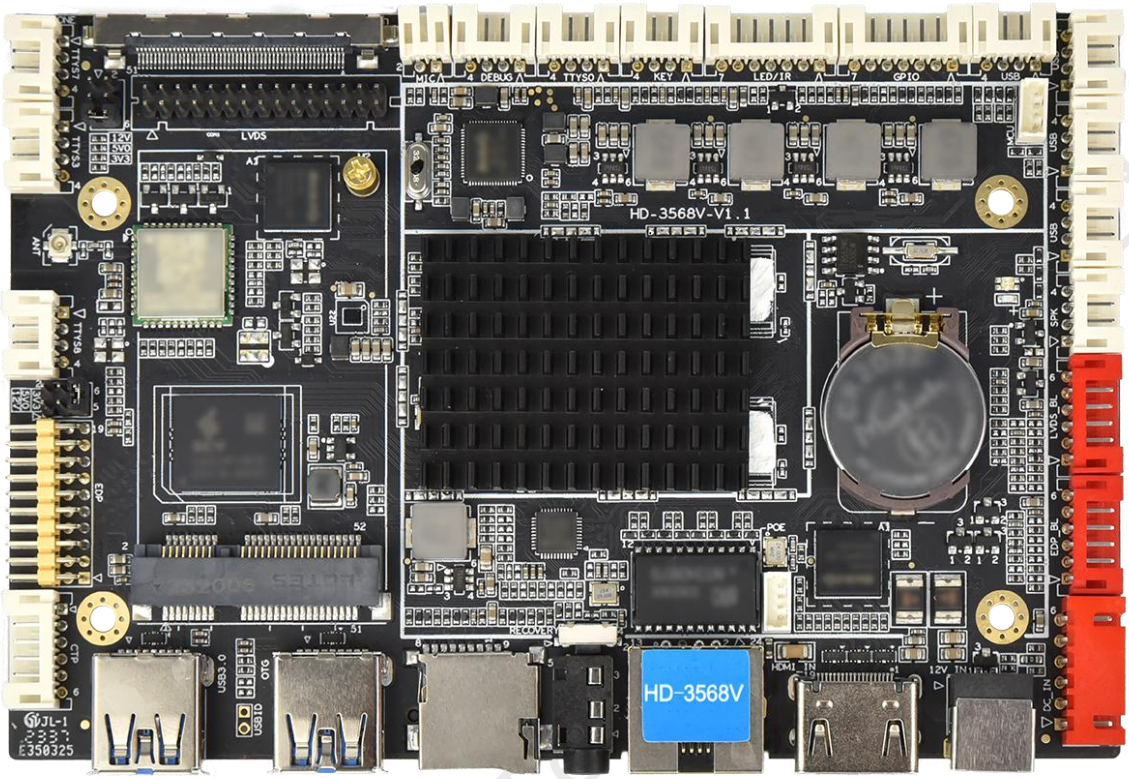
V. Internet Update

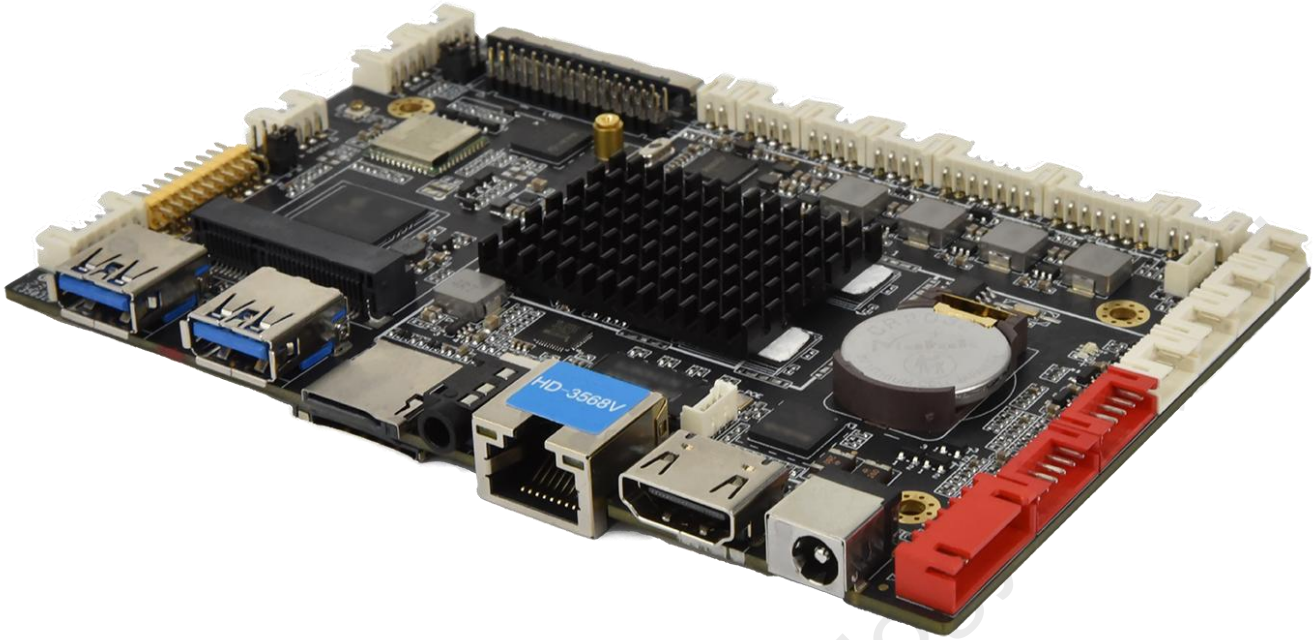
Internet remote management

Anytime & anywhere operation available



Chapter IV Appendix: Product Appearance





Note:

1. The model label is attached to the sales product. The product picture in the specification is different from the actual product. It is not a fake or inferior product. If you have any questions, please contact us for confirmation.

2. Do not operate with power on, Do not hot swap.