

Product Specification

LCD Motherboard

HD-3566S

V1.2

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Chapter 1 Product Overview

I. Overview

HD-3566S is a well-built all-in-one motherboard, which adopts Rockchip RK3566 quad-core chip solution, equipped with Android11 system, and the main frequency can reach up to 1.8GHz, with super performance. Adopt Mali-G52 GPU, support 1080P 60fps H.265/H.264 video encoding. 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., can accelerate product development cycle. Due to the characteristics of its hardware platform and Android intelligence, it can be used on the main board of the smart terminal when human-computer interaction and network device interaction are required, and it can be your best choice.

HD-3566S comes standard with a 2.4 GHz Wi-Fi module, supports Bluetooth 4.2, and the mobile phone can send programs through Bluetooth.

2. Product Features

- High performance. The RK3566 chip adopts the quad-core ARM Cortex-A55 architecture, and the main frequency can reach up to 1.8GHz, which is a qualitative leap in performance. It can play high-definition video in various formats and handle complex interactive operations.
- High stability. RK3566 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. RK3566 Android all-in-one board integrates Ethernet, EDP, Wi-Fi, power amplifier, TF expansion card, USB expansion port, IR remote control function, TP, HDMI, LVDS, backlight control, microphone and other functions, which greatly simplifies the design of the whole machine.
- High scalability. 4 USB (2 pins, 2 standard), 6 serial ports + 1 scalable debug serial port + 1 MCU programming serial port, five IO expansion ports can expand more peripheral devices.
- High definition. Supports LCD displays with various LVDS/EDP/HDMI 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 2 Product Specifications

1. Basic parameters

1. Hardware parameters

Hardware specification	
CPU	RK3566, quad-core, up to 1.8GHz
GPU	Mali-G52 GPU supports OpenGL ES 1.1/2.0/3.2, OpenCL 2.0 and Vulkan 1.1
Memory	Standard 2GB, optional 4GB
Built-in storage capacity	eMMC standard 16GB optional 32GB TF Card expansion (can be used to expand SSD)
Network	Support RJ45 R/A 100M Ethernet, support Ethernet; Support 2.4GHz Wi-Fi; support Wi-Fi 802.11b/g/n protocol; Support Bluetooth 4.2.
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 3.3V/5V/12V power supply 1 channel EDP interface, 1 channel HDMI 4K display Onboard backlight control supports 12V backlight power supply
Audio	Support standard left and right channel line output; support 3.5mm audio output interface
Amplifier	2-way output (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 sound wave Touch, multi-point optical touch and more.
RTC	Built-in real-time clock function
USB	1-way USB-3.0 HOST, 1-way USB2.0 OTG, 2-way extended USB port
Infrared	Infrared receiving socket, support infrared remote control function
LED	1*power status LED (green), 1*system LED (green, flashing by default)
Button	1*upgrade key

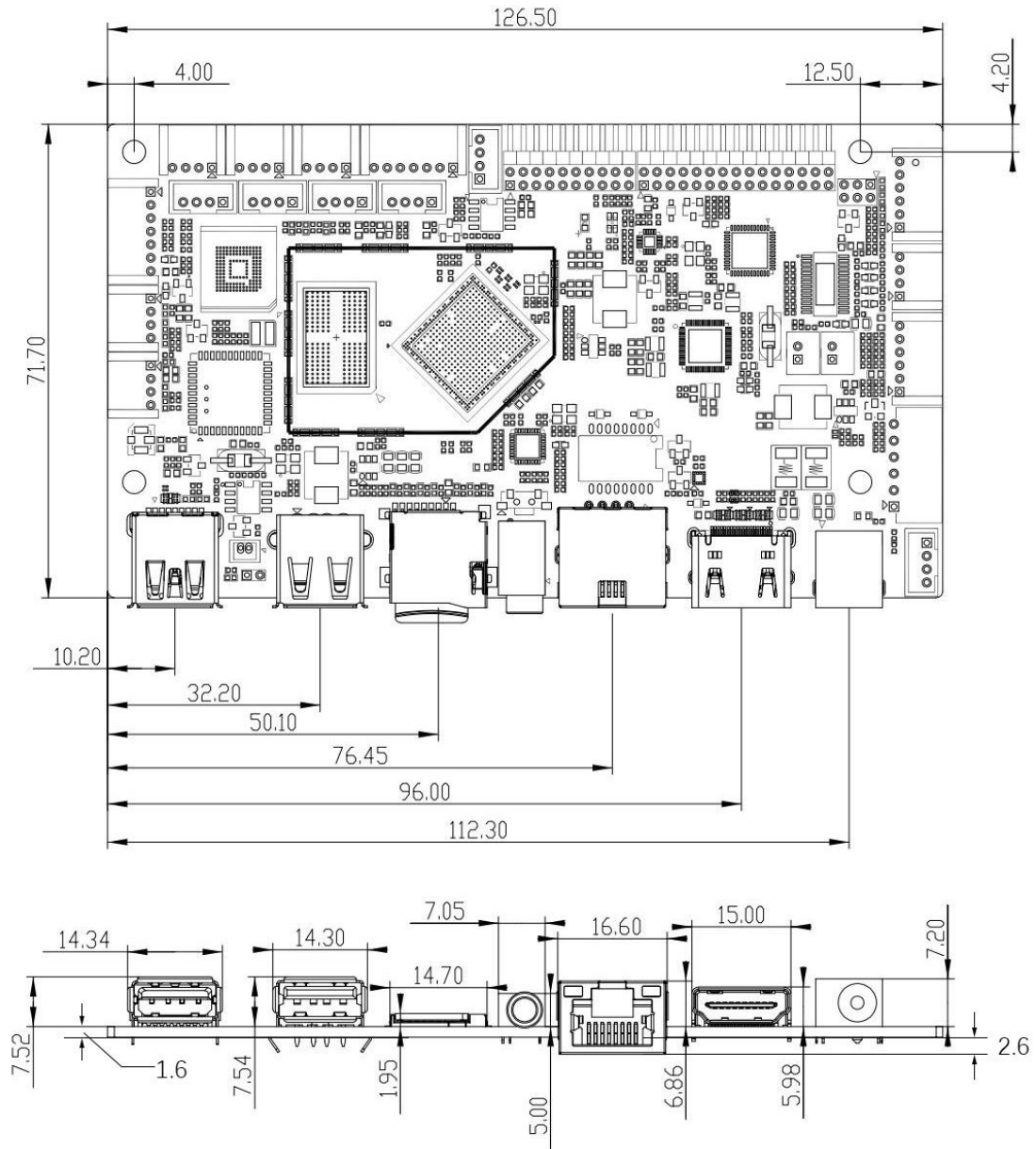
Serial port	6-way UART, 1-way DEBUG, 1-way MCU programming serial port; optional RS232, RS485
GPIO	5-way IO input and output control, can be used for key scanning control
KEY	Support physical switch
Power Adapter	Input: AC100-240V.50-60HZ, Output: DC12V 1.5A (The surge voltage is required to be less than 18V, and the ripple voltage is less than 100mV)
Storage humidity	10%~90%, no condensation
Storage temperature	-40℃~70℃
Operating temperature	-20℃~70℃

2. Software parameters

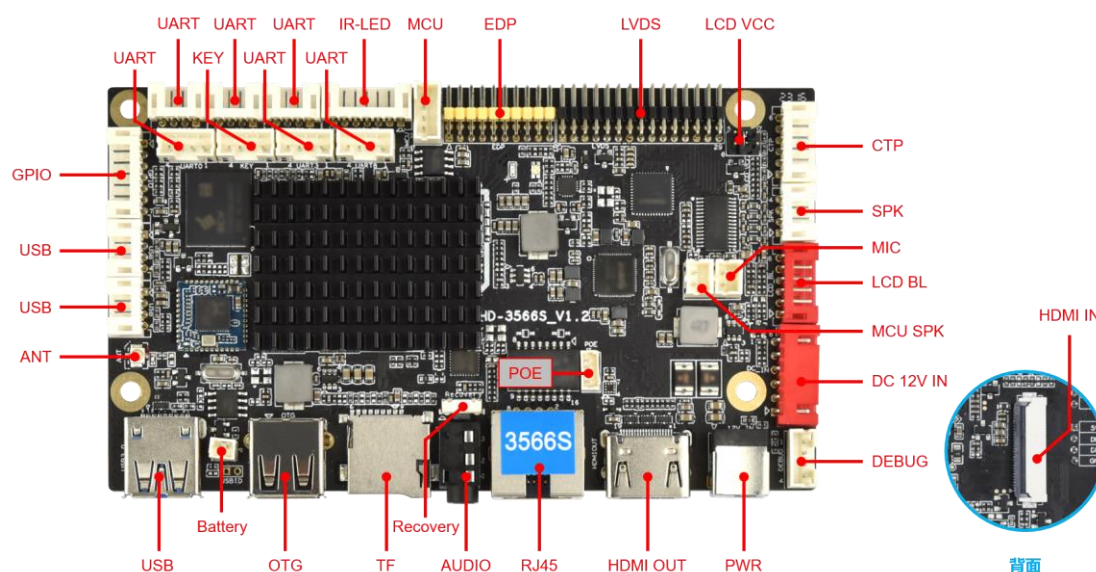
Software specification	
Operating system	Android 11
Audio	MP3,WMA,WAV, APE, FLAC, AAC, OGG,M4A,3GPP and other formats
Video	Support H.265, H.264, VP8, MAV, WMV, AVS, H.263, MPEG4 and other video formats
Picture	Support JPG, BMP, PNG and other image formats
Built-in APP default	APK Installer, Email, Calculator, Browser, Voice Recorder, Calendar, Settings, Clock, Video Player, Search, Contacts, Gallery, Downloads, Camera, Music, Explorer, etc.
Language	Support multi-languages
Input method	Standard Android keyboard, optional third-party input method
System Management	Original ecological Android system, open root privileges, and can carry out product customization development
	Real-time remote monitoring, system crash self-recovery, 7*24 hours unattended
	Support OTA remote upgrade; support U disk upgrade
	Support boot animation definition
	Support server/standalone mode switching
	Support Wi-Fi hotspot
System watchdog	Support software watchdog, hardware watchdog

2. Product size specification

1. Dimensions of bare board (unit: mm)



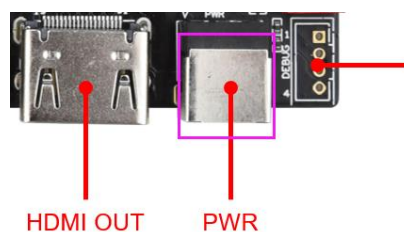
3. Schematic diagram of product interface



4. Interface parameter description

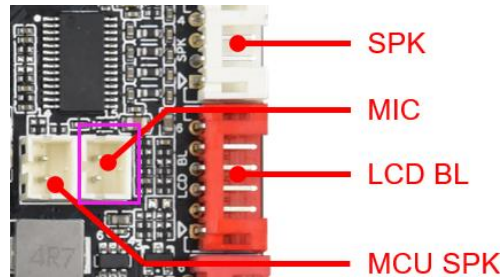
1. Power Interface

12V DC power supply is used for power supply, and only DC socket and power socket are allowed to supply power to the board system.



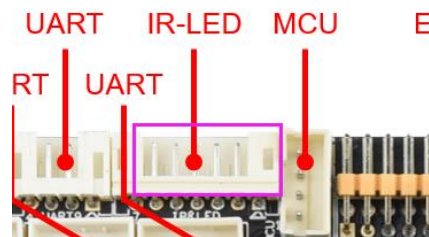
No.	Definition	Attributes	Description
6	12V	input	12V input
5	12V	input	12V input
4	GND	ground wire	ground wire
3	GND	ground wire	ground wire
2	5VS	input	standby 5V input
1	STB	output	standby signal output

2. MIC Interface (Microphone)



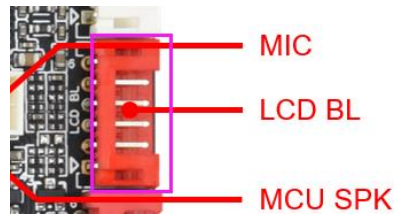
No.	Definition	Attributes	Describe
1	MIC1	input	MIC+input
2	MIC2	input	MIC-input

3. LED/IR Interface (Remote control)



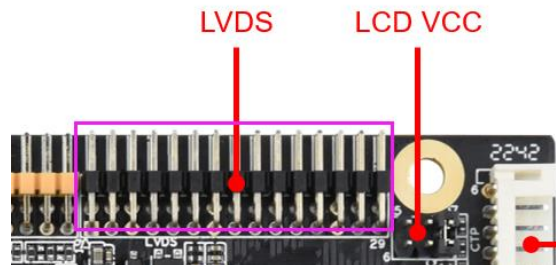
No.	Definition	Attributes	Description
1	RED	output	red light
2	3V3	power supply	3.3V output
3	GRN	output	green light
4	GPIO	output	remote control signal output
5	INT	input	remote control signal input
6	GND	ground wire	ground wire
7	3V3	power supply	3.3Voutput

4. BL Interface (LVDS/EDP Backlight)



No.	Definition	Attributes	Description
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

5. LVDS Interface



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

In order to avoid burning the board and screen, please pay attention to the following:

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

Serial number	Definition	Attributes	Description
1	VCC	power supply	3.3V/5V/12V optional output
2	VCC		
3	VCC		
4	GND	ground wire	ground wire
5	GND	ground wire	ground wire
6	GND	ground wire	ground wire
7	D0N	output	Odd 0-
8	D0P	output	Odd 0+
9	D1N	output	Odd 1-
10	D1P	output	Odd 1+
11	D2N	output	Odd 2-
12	D2P	output	Odd 2+
13	GND	ground wire	ground wire
14	GND	ground wire	ground wire
15	CKN	output	Odd Clock-
16	CKP	output	Odd Clock+
17	D3N	output	Odd 3-
18	D3P	output	Odd 3+
19	D5N	output	Even 0-
20	D5P	output	Even 0+
21	D6N	output	Even 1-
22	D6P	output	Even 1+
23	D7N	output	Even 2-
24	D7P	output	Even 2+
25	GND	ground wire	ground wire
26	GND	ground wire	ground wire
27	CKN	output	Even Clock-
28	CKP	output	Even Clock+
29	D8N	output	Even 3-
30	D8P	output	Even 3+

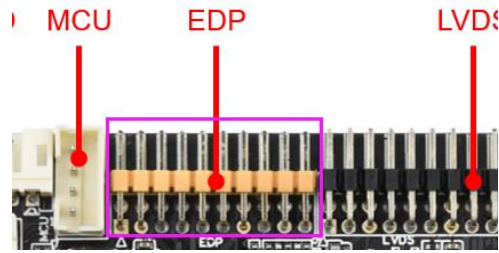
6. EDP Interface

This interface is a common EDP screen interface in the form of 10*2 double-row pins. The screen voltage can be selected through the jumper cap, and it can choose to support 3.3V/5V/12V screen power supply.

In order to avoid burning the board and screen, please pay attention to the following:

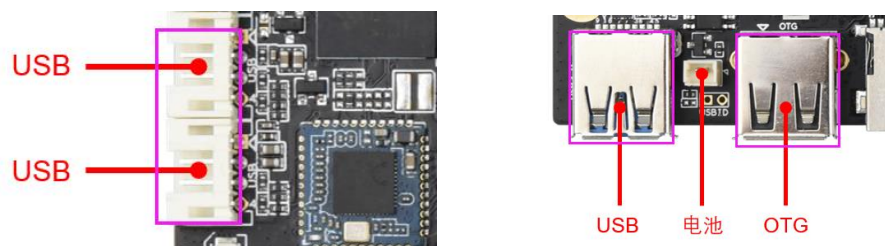
Confirm whether the screen specification book screen power supply voltage is correct,

and whether the corresponding power supply of the board can meet the maximum working current of the screen.



No.	Definition	Attributes	Description
1	VCC	power supply	output
2	VCC	power supply	output
3	GND	ground wire	ground wire
4	GND	ground wire	ground wire
5	D0N	output	Display Port Lane 0 negative output
6	D0P	output	Display Port Lane 0 positive output
7	D1N	output	Display Port Lane 1 negative output
8	D1P	output	Display Port Lane 1 positive output
9	D2N	output	Display Port Lane 2 negative output
10	D2P	output	Display Port Lane 2 positive output
11	D3N	output	Display Port Lane 3 negative output
12	D3P	output	Display Port Lane 3 positive output
13	GND	ground wire	ground wire
14	GND	ground wire	ground wire
15	AUN	output	Display Port AUX- channel negative signal
16	AUP	output	Display Port AUX+ channel positive signal
17	GND	ground wire	ground wire
18	GND	ground wire	ground wire
19	3V3	power supply	output
20	HPD	input	Screen hot plug detection signal

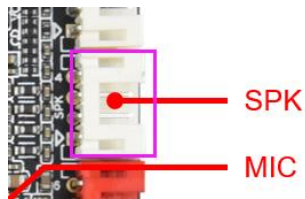
7. USB Interface



The board has 2 USB standard interfaces and 4 USB pins, one of which is shared with the 4G module.

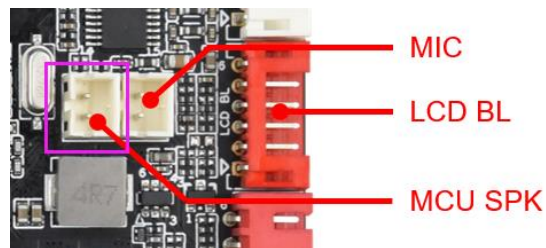
No.	Definition	Attributes	Description
1	5V	power supply	5Voutput
2	DM	input/output	DM
3	DP	input/output	DP
4	GND	ground wire	ground wire

8. SPK Interface (Amplifier)



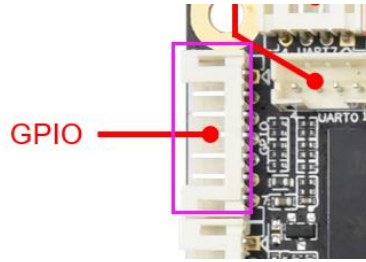
Serial number	Definition	Attributes	Description
1	SPK2P	output	right channel+
2	SPK2N	output	right channel-
3	SPK1N	output	left channel-
4	SPK1P	output	left channel+

9. MCU SPK Interface (Audio)



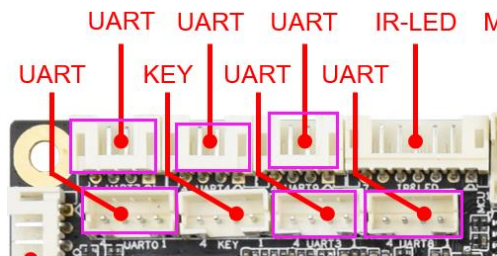
No.	Definition	Attributes	Description
1	SPKP	output	left channel
2	SPKN	output	right channel

10. GPIO Interface (Extension) 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	GPIO5	IO4	IO4
6	GPIO6	IO5	IO5
7	3V3	power supply	3.3V output

11. UART (Serial port) Interface



The board leads to two sets of ordinary UART serial ports, which can support common UART serial port devices on the market.

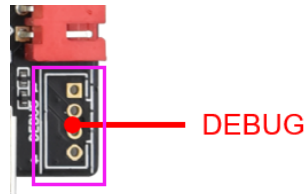
Precautions:

1. Whether the serial port voltage matches. It cannot be directly connected to RS232, RS485 serial devices.
2. Whether the connection of TX and RX is correct.

Serial number	Definition	Attributes	Description
1	3v3	power supply	3.3Voutput
2	TX	output	TX
3	RX	input	RX
4	GND	ground wire	ground wire

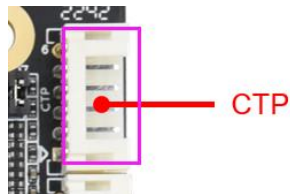
1. UART0/UART7 can adjust RS485 through hardware
2. UART3/UART4/UART8/UART9 can adjust RS232 through hardware

12. DEBUG Interface



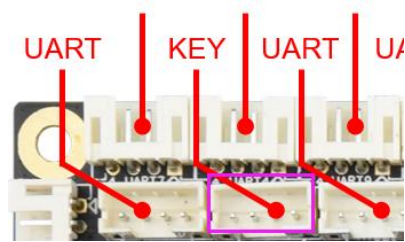
No.	Definition	Attributes	Description
1	3V3	power supply	3.3Voutput
2	TX	output	TX
3	RX	input	RX
4	GND	ground wire	ground wire

13. CTP Interface



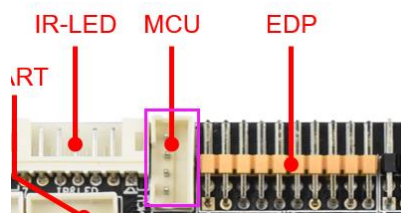
No.	Definition	Attributes	Description
1	3V3	power supply	3.3V output
2	SCL	input/output	I2Cclock
3	SDA	input/output	I2Cdata
4	INT	input/output	to interrupt
5	RST	input/output	reset
6	GND	ground wire	ground wire

14. KEY Interface



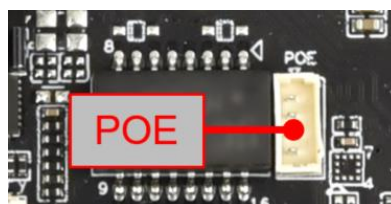
No.	Definition	Attributes	Description
1	ON	Power switch	Power switch, which can be connected to an external button to control the switch
2	EX	reset signal	Reset signal interface, reserved
3	KEY	ADC	ADC reserve
4	GND	ground wire	ground wire

15. MCU Interface



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

16. POE Interface



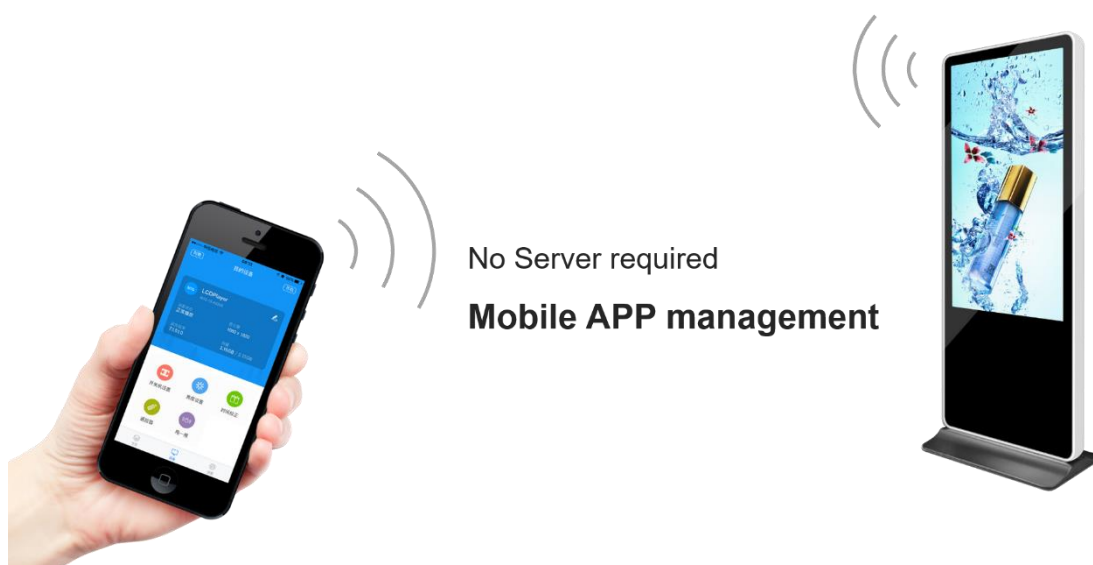
No.	Definition	Attributes	Description
1	V1	CT1	Transformer Center 1
2	V2	CT2	Transformer Center 2
3	B1	CT3	Transformer Center 3
4	B2	CT4	Transformer Center 4

17. 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 100M wired network
HDMI interface	standard interface	Support HDMI output, up to 4K

Chapter 3 Communication Methods

I . Wi-Fi Update Program

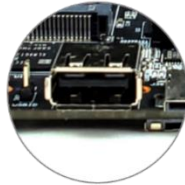


II . U-disk Update Program



U-disk update programs

Support Interstitial & memory expansion



III. TF Card Update Program

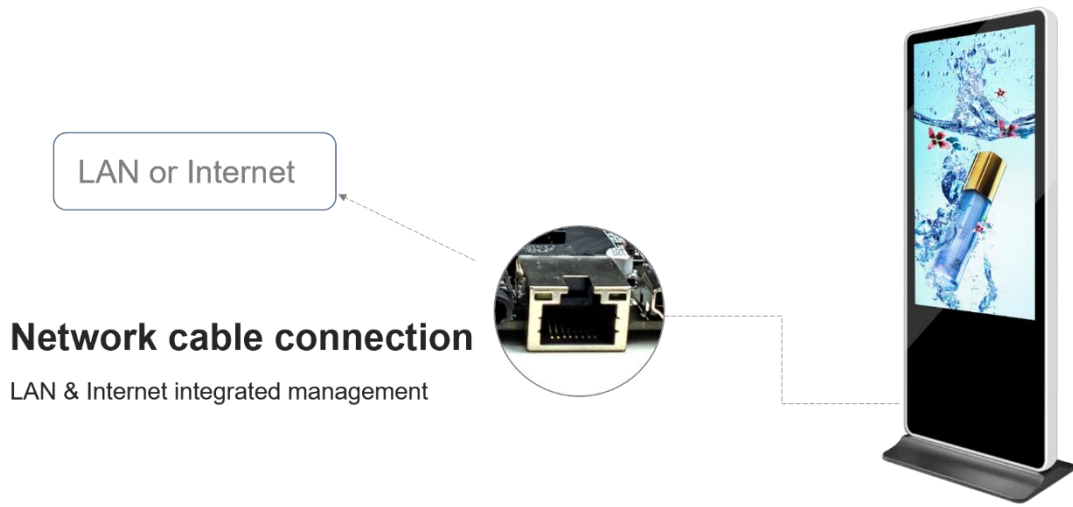


TF card update programs

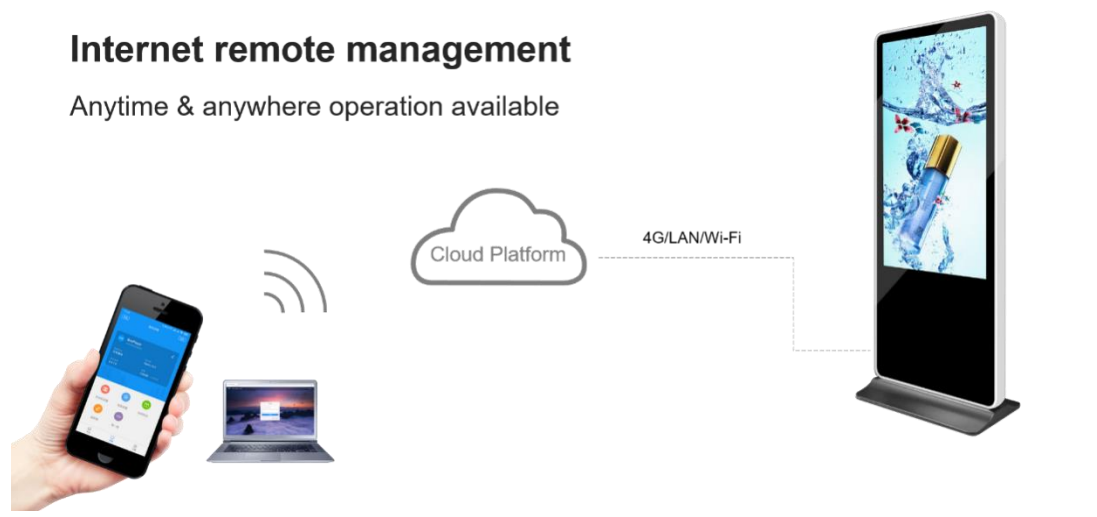
Support Interstitial & memory expansion



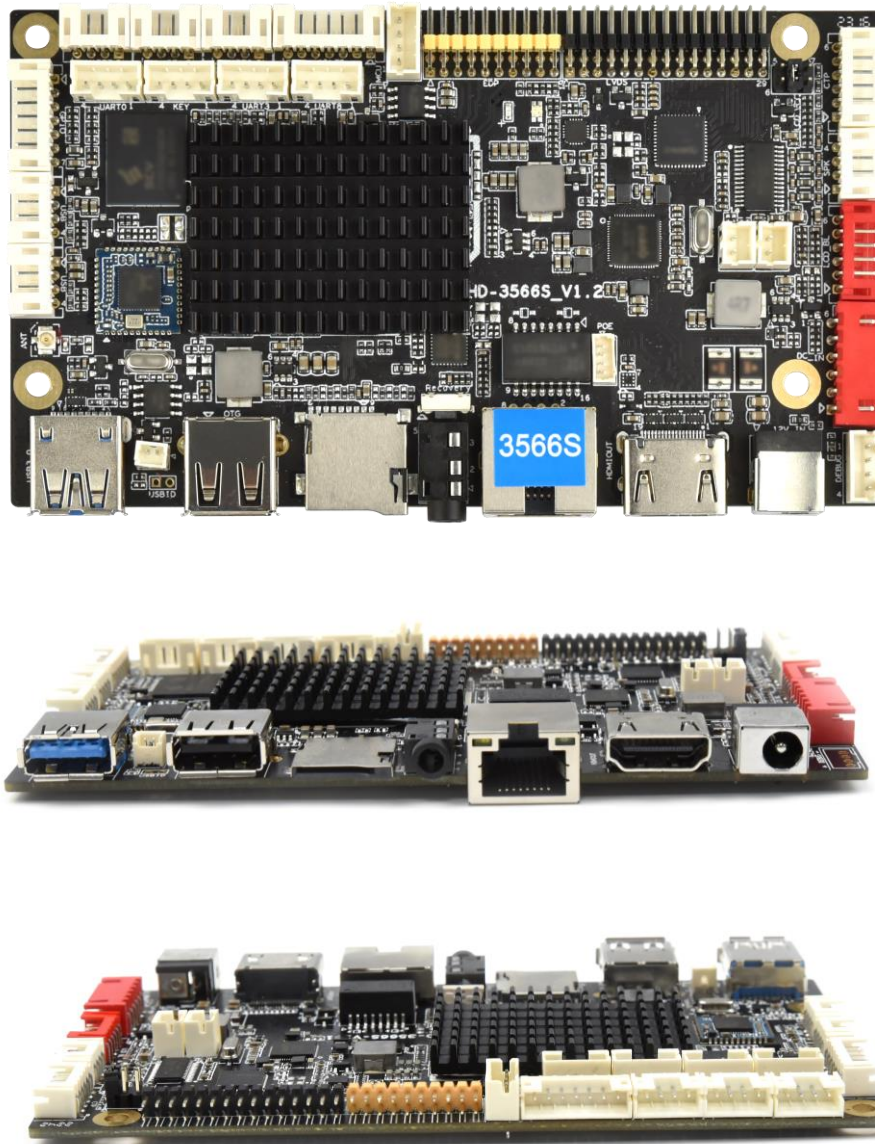
IV. Ethernet Cable to Update



V. Internet Update



Chapter 4 Attachment: Product Appearance



Special Note:

1. There are certain differences between the actual product and the picture in the specification, please refer to the actual product, if you have any questions, please contact relevant technical or business consultation.
- 2. Do not operate with power on, Do not hot swap.**

Version Description: Added POE function.