灰度科技
HUIDU TECHNOLOGY

PRODUCT SPECIFICATION

LCD Android Board

HD-3566P

Version: V1.1

Update History

Version	Release time	Description
V1.0	Jul. 11, 2025	First official release.
V1.1	Sep. 11, 2025	Update product image

Contents

Chapter Ⅰ Product Description

Ⅰ. Overview

HD-3566P is an LCD display Android mainboard that uses Rockchip RK3566 quad-core chip solution. It is equipped with Android 14.0 system, with a main frequency up to 1.8GHz and super performance. It uses Mali-G52 GPU and supports 1080P 60fps H.265/H.264 video decoding. It supports infrared remote control, Wi-Fi, RJ45 and other rich interfaces, and is widely used in advertising machines, interactive all-in-one machines, security, medical care, transportation, finance, industrial control and other intelligent control fields. Due to its hardware platform and Android intelligence, it can be used on the smart terminal motherboard when human-computer interaction and network device interaction are required, which can be your best choice.

Ⅱ. Features

- High performance : The RK3566 chip adopts a quad-core ARMCortex-A55 architecture with a maximum main frequency of 1.8GHz, which is a qualitative leap in performance. It can play high-definition videos in various formats and handle complex interactive operations.
- High stability : RK3566 Android board adds unique technology in hardware and software to ensure product stability, which can make the final product unattended 24/7.
- High integration : 3566P Integrated board integrates Ethernet, Wi-Fi, power amplifier, TF expansion card, USB expansion port, IR remote control function, TP, HDMI, LVDS, eDP, MIPI-DSI backlight control, microphone and other functions, which greatly simplifies the overall design.
- High scalability : 7 USBs (5 4pin*2.0mm built-in USBs , 2 standard ones), 4 serial ports + 1 expandable debugging serial port + 1 MCU burning serial port, and five IO expansion ports can expand more peripheral devices.
- High definition. Supports LCD displays with various LVDS/ eDP /HDM /MIPI-DSI interfaces, and supports screen cropping of various sizes and resolutions.
- Perfectly supports multiple mainstream touch screen functions such as multi-point infrared touch, multi-point capacitive touch, multi-point nanofilm touch, multi-point acoustic wave touch, and multi-point optical touch.

Chapter II Specifications

Ⅰ. Basic Parameters

1. Hardware parameters

Hardware Specifications	
CPU	RK3566 , Quad-core, main frequency up to 1.8GHz
GPU	Mali-G52 GPU supports OpenGLES1.1/2.0/3.2, OpenCL2.0 and Vulkan1.1
NPU	1TOPS
RAM/ Storage	Standard 2GB + 32GB , 4GB + 32GB
Network	Support RJ45R/A 100M Ethernet Support 2.4GHz _5GHz dual-band Wi-Fi, support IEEE802.11b/g/n/ax protocol Supports Bluetooth 5.2
Image rotation	Supports manual rotation at 0, 90, 180 and 270 degrees; optional gravity sensor to support automatic rotation
Display interface	1*LVDS 1920*1080@60Hz (single/dual, 6-bit/8-bit) , support 3.3V/5V/12V power supply 1-way eDP 2560*1600 @60Hz 1 HDMI OUT 3840*2160@60Hz (HDMI-IN and HDMI-OUT function can be selected) 1-way MIPI-DSI 1920*1080@60Hz 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 ohm 3 watts , compatible with 8 ohm 2 watts ~ 8 ohm 10 watts)
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, etc.
RTC	Built-in real-time clock function
USB	1-way USB 3.0 HOST , 1-way USB 2.0 OTG , 5-way expansion USB port

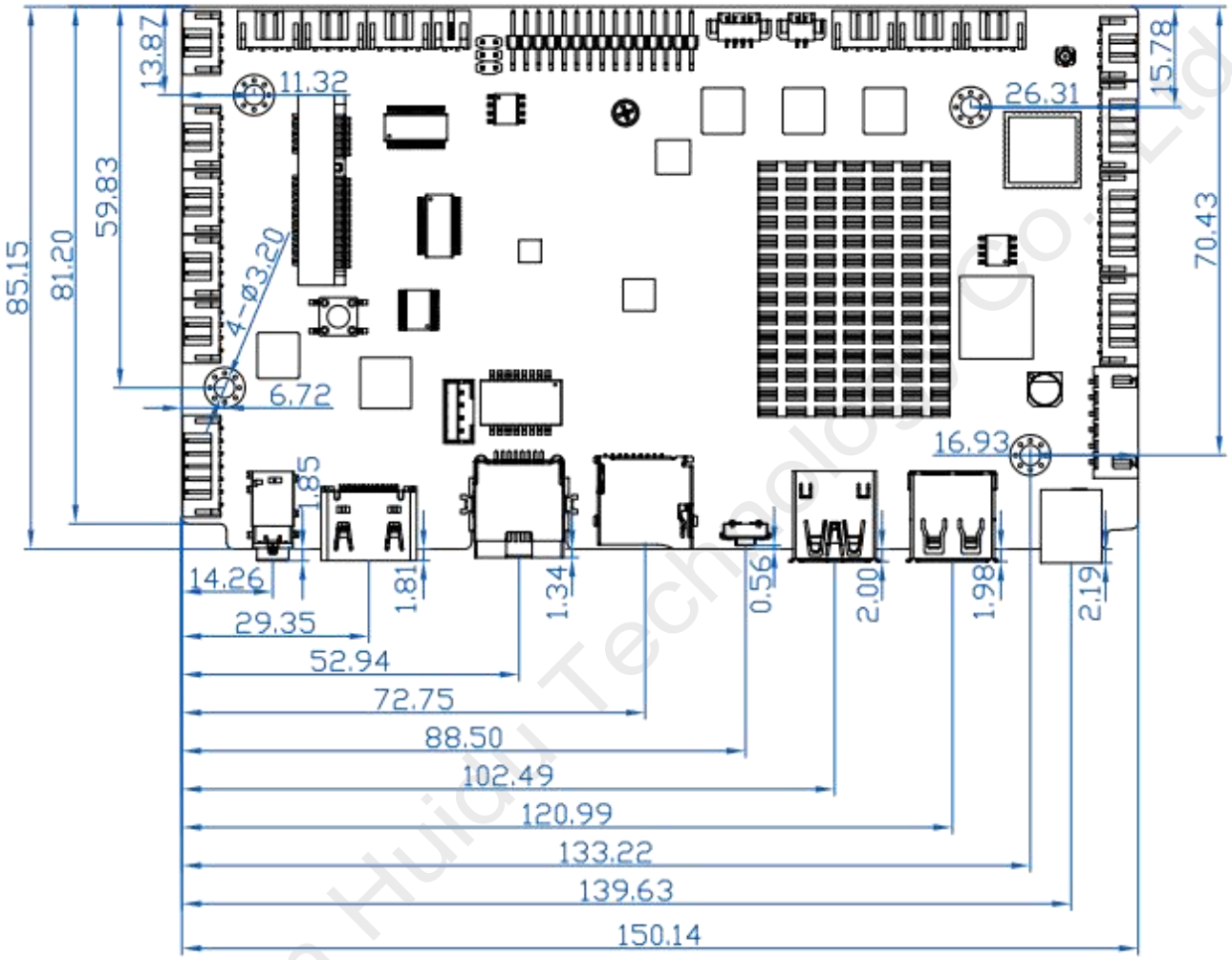
Infrared	Infrared receiver , supports infrared remote control function
LED	1*power status LED (green) , 1*system LED (green , flashing by default)
Button	1*Recovery key , 1 *Standby key (Press for 3 seconds to display the shutdown pop - up window, press for 6 seconds to force shutdown, short press after shutdown to restart)
Serial port	4-channel UART (optional RS232, RS485) , 1-channel DEBUG, 1-channel MCU burning serial port
GPIO	5-way IO input and output control, can be used for key scanning control
KEY	Support standby, shutdown and restart functions
SD Card	Data storage , maximum support 512G
Storage Humid	10% ~ 90%, no condensation
Storage Temp	-40 ℃ ~70 ℃
Work Temp	-20 ℃ ~70 ℃
System watchdog	Support hardware watchdog

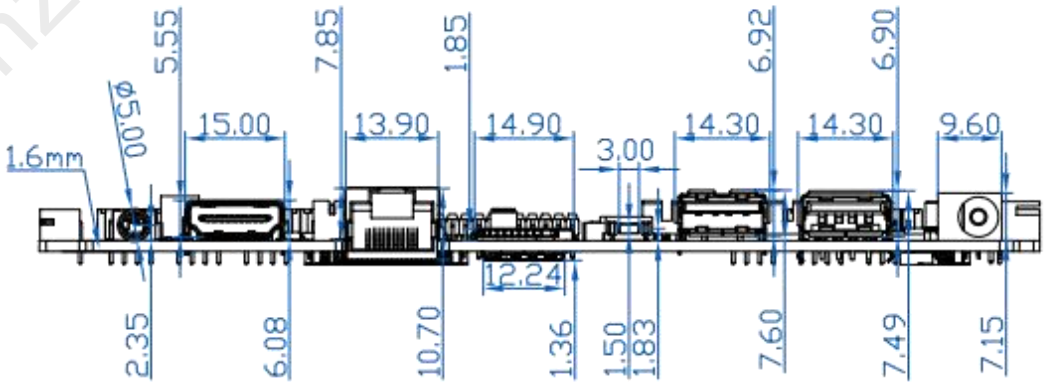
2. Software Parameters

Software Specifications	
Operating system	Android14.0 Note: Android 14 has relatively high memory requirements, and it is recommended to have 4GB of RAM or more.
Audio	MP3 , WAV , APE , FLAC , OGG , M4A , 3GPP and other formats
Video	Support H.265, H.264, VP8 , MAV , H.263 , MPEG4 and other video formats
Image	Support various image formats such as JPG, BMP, PNG, etc.
System comes with application software	Video player, camera, Chrome, clock, gallery, music, HDMIIN, recorder, settings, calculator, files, Android keyboard, resource manager , etc.
Language	Support multiple languages
Input	Standard Android keyboard, optional third-party input method
System Management	Android 14 system, open root permissions, can carry out product customization and development
	Real-time remote monitoring, system crash self-recovery, 7*24 hours unattended
	Support OTA remote upgrade; support USB flash drive upgrade
	Support boot animation definition
	Support server/stand-alone mode switching
	Support Wi-Fi hotspot

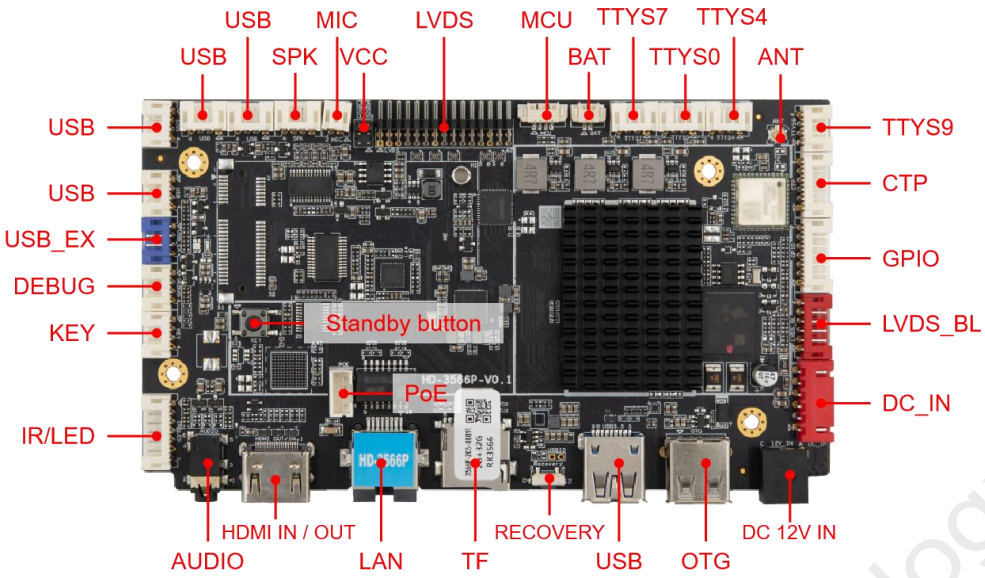
Ⅱ. Product Size Specifications

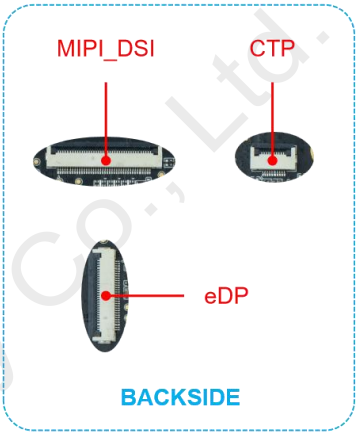
Bare board size specification, unit: mm, Screw hole specifications：φ3.2mm x 4, PCB layer number: 4 layers, board thickness: 1.6mm±10%





Ⅲ. Product Interface Diagram

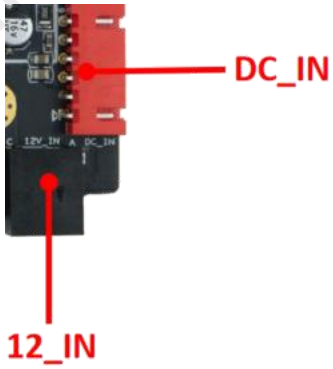




Ⅳ. Interface Parameter Description

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.



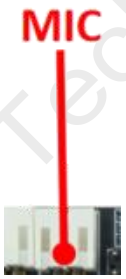
No.	Definition	Attributes	Description
1	STB	Output	Standby signal output
2	5VS	Input	Standby 5V input
3	GND	Ground	Ground
4	GND	Ground	Ground
5	12V	Input	12V input
6	12V	Input	12V input

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

2. LVDS_BL (6pin*2.0mm)

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

3. MIC Interface (microphone) (2pin*2.0mm)



No.	Definition	Attributes	Description
1	MIC1	Input	MIC+Input
2	MIC2	Input	MIC-Input

4. LED/IR（Remote control） (7pin*2.0mm)

No.	Definition	Attributes	Description
1	RED	Output	Red indicator light
2	3V3	Power	3.3V output
3	GRN	Output	Green indicator light
4	GPIO	Output	Remote control signal output

5	INT	Input	Remote control signal input
6	GND	Ground	Ground
7	3V3	Power	3.3V output

5. 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	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	Ground
14	GND	Ground	Ground
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	Ground
26	GND	Ground	Ground
27	CKN	Output	Even Clock-
28	CKP	Output	Even Clock+
29	D8N	Output	Even 3-
30	D8P	Output	Even 3+

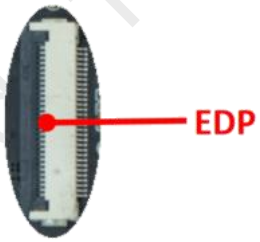
Note： Do not operate with power on, Do not hot swap

6. eDP Interface and Definition（30pin*0.5mm）

This interface is a common eDP screen interface and can optionally support 3.3V screen power supply.

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

Confirm whether the screen power supply voltage in the screen specification 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	NC	null	NC
2	BL_POWER	Backlight Power	12V output
3	BL_POWER	Backlight Power	12V output
4	BL_POWER	Backlight Power	12V output
5	BL_POWER	Backlight Power	12V output
6	NC	null	NC
7	NC	null	NC
8	BL_PWM	Output	Backlight brightness control
9	BL_EN	Output	Backlight enable control
10	GND	Ground	Ground
11	GND	Ground	Ground
12	GND	Ground	Ground
13	GND	Ground	Ground

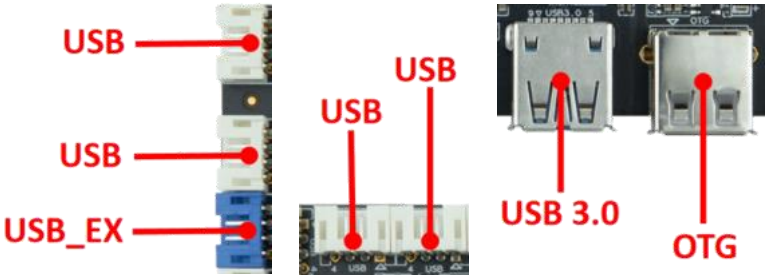
14	HPD	Output	Hot plug signal
15	GND	Ground	Ground
16	GND	Ground	Ground
17	NC	null	NC
18	LCD_VCC	power supply	Output
19	LCD_VCC	power supply	Output
20	GND	Ground	Ground
21	AUX_CH_N	Output	True Auxiliary Channel
22	AUX_CH_P	Output	Complement Signal Link Lane0
23	GND	Ground	Ground
24	LANE0_P	Output	True SignalLinkLane0
25	LANE0_N	Output	Complement Signal Link Lane0
26	GND	Ground	Ground
27	LANE1_P	Output	True Signal Link Lane1
28	LANE1_N	Output	Complement Signal Link Lane1
29	GND	Ground	Ground
30	NC	Output	NC

7. MIPI_DSI Interface (40*0.5mm)

No.	Definition	Attributes	Description
1	NC	LED+	Output
2	BL_POWER	LED+	Output
3	BL_POWER	NC	null
4	BL_POWER	NC	null
5	BL_POWER	NC	null
6	NC	NC	null
7	NC	NC	null
8	BL_PWM	NC	null
9	BL_EN	LED-	Output
10	GND	LED-	Output
11	GND	GND	Ground
12	GND	NC	null
13	GND	NC	null
14	HPD	NC	null

15	GND	NC	null
16	GND	GND	Ground
17	NC	NC	null
18	LCD_VCC	NC	null
19	LCD_VCC	GND	Ground
20	GND	RXE3+	Output
21	AUX_CH_N	RXE3-	Output
22	AUX_CH_P	GND	Ground
23	GND	RXE2+	Output
24	LANE0_P	RXE2-	Output
25	LANE0_N	GND	Ground
26	GND	RXECLK+	Output
27	LANE1_P	RXECLK-	Output
28	LANE1_N	GND	Ground
29	GND	RXE1+	Output
30	NC	RXE1-	Output
31	AUX_CH_N	GND	Ground
32	AUX_CH_P	RXE0+	Output
33	GND	RXE0-	Output
34	LANE0_P	GND	Ground
35	LANE0_N	NC	null
36	GND	RST	Output
37	LANE1_P	GND	Ground
38	LANE1_N	VCC	Output
39	GND	VCC	Output
40	NC	NC	null

8. USB Interface (4pin*2.0mm)

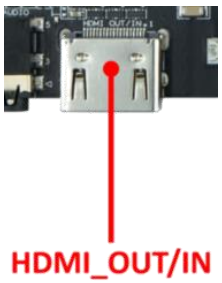


No.	Definition	Attributes	Description
1	5V	Power	5V output
2	DM	Input/Output	DM
3	DP	Input/Output	DP

4	GND	Ground	Ground

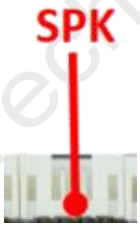
9. HDMI Interface

HDMI OUT supports 3840*2160@60Hz, HDMI IN supports 3840*2160@30Hz



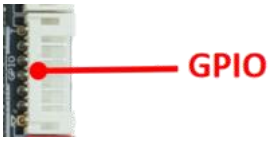
Note: HDMI OUT and HDMI IN (optional) are optional.

10. SPK Interface (power amplifier) (4pin*2.0mm)



NO.	Definition	Attributes	Description
1	SPK2P	Output	Right Channel+
2	SPK2N	Output	Right Channel -
3	SPK1N	Output	Left Channel -
4	SPK1P	Output	Left Channel+

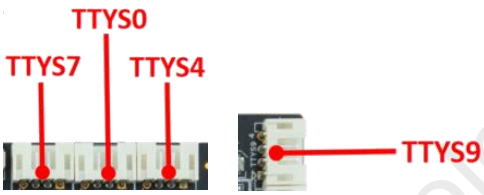
11. GPIO Interface (expansion) and Definition(7pin*2.0mm)



No.	Definition	Attributes	Description
1	GND	Ground	Ground

2	IO1	IO1	volume-
3	IO2	IO2	Volume +
4	IO3	IO3	return
5	IO 4	IO4	Back to Home
6	IO 5	IO5	Short touch 1S: Turn on/off the screen Long press 3S: "Restart/Shutdown" pop-up window Reusable ADC (need to change hardware)
7	3V3	Power	3V3 output

12. UART (serial port) Interface (4pin*2.0mm)



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

Note:

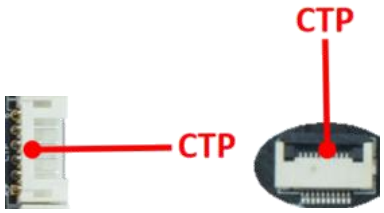
1. Check whether the serial port voltage matches. It cannot directly connect to RS232 or RS485 serial port devices.
2. Check whether the TX and RX connections are correct.

NO.	Definition	Attributes	Description
1	3v3	Power	3.3V output
2	TX	Output	TX
3	RX	Input	RX
4	GND	Ground	Ground

13. DEBUG Interface (4pin*2.0mm)

NO.	Definition	Attributes	Description
1	3V3	Power	3.3V output
2	TX	Output	TX
3	RX	Input	RX
4	GND	Ground	Ground

14. CTP Interface (6pin*2.0mm)



No.	Definition	Attributes	Description
1	3V3	Power	3.3V output
2	SCL	Input/Output	I2C Clock
3	SDA	Input/Output	I2C Data
4	INT	Input/Output	Interrupt
5	RST	Input/Output	Reset
6	GND	Ground	Ground

Two CTPs, only one of them can be selected for use

15. KEY Interface (4pin*2.0mm)

No.	Definition	Attributes	Description
1	PER ON	Power switch	Long press to shut down
2	RST	Reset signal	Long press to restart
3	KEY	RECOVERY	RECOVERY
4	GND	Ground	Ground

16. MCU Interface (4pin*2.0mm)

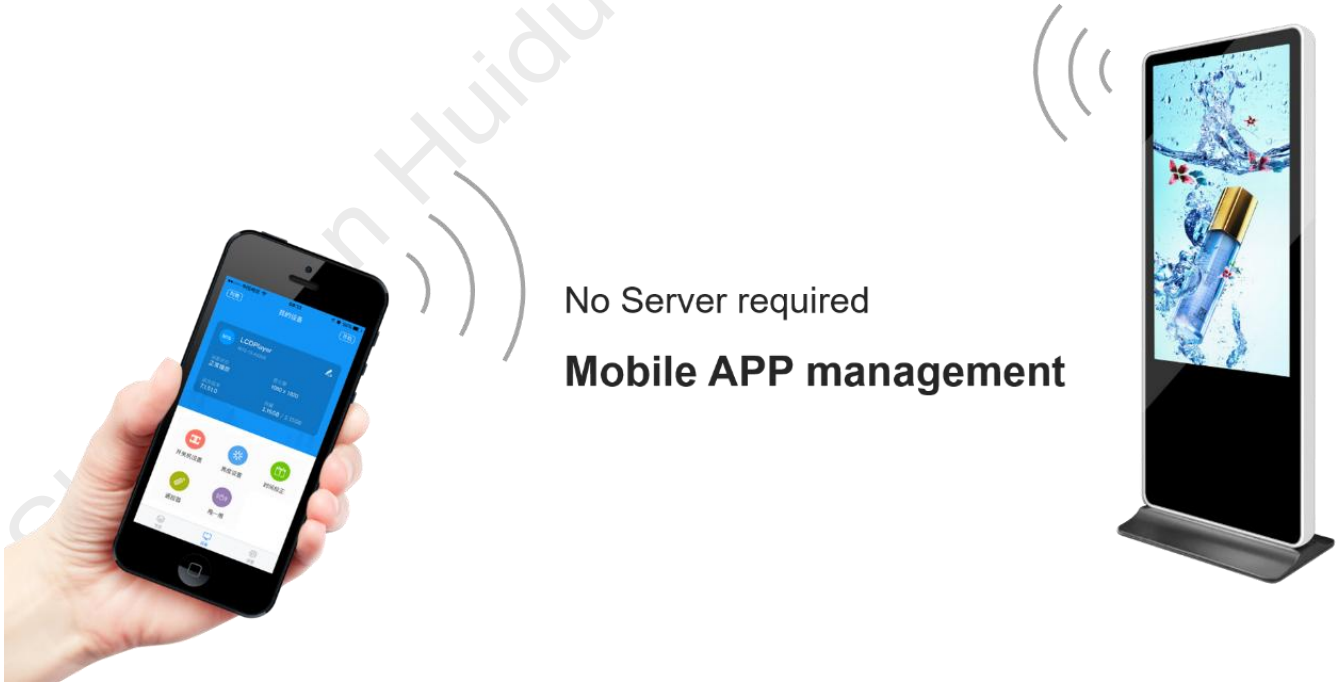
No.	Definition	Attributes	Description
1	3V3	power supply	3.3V output
2	SWDIO	Output	TX
3	SWDLK	Input	RX
4	GND	Ground	Ground

17. PoE Interface (4pin* 2.0mm)

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

Chapter III Communication Methods

I . Wi-Fi Update Program



Ⅱ. U-disk Update Program

U-disk update programs

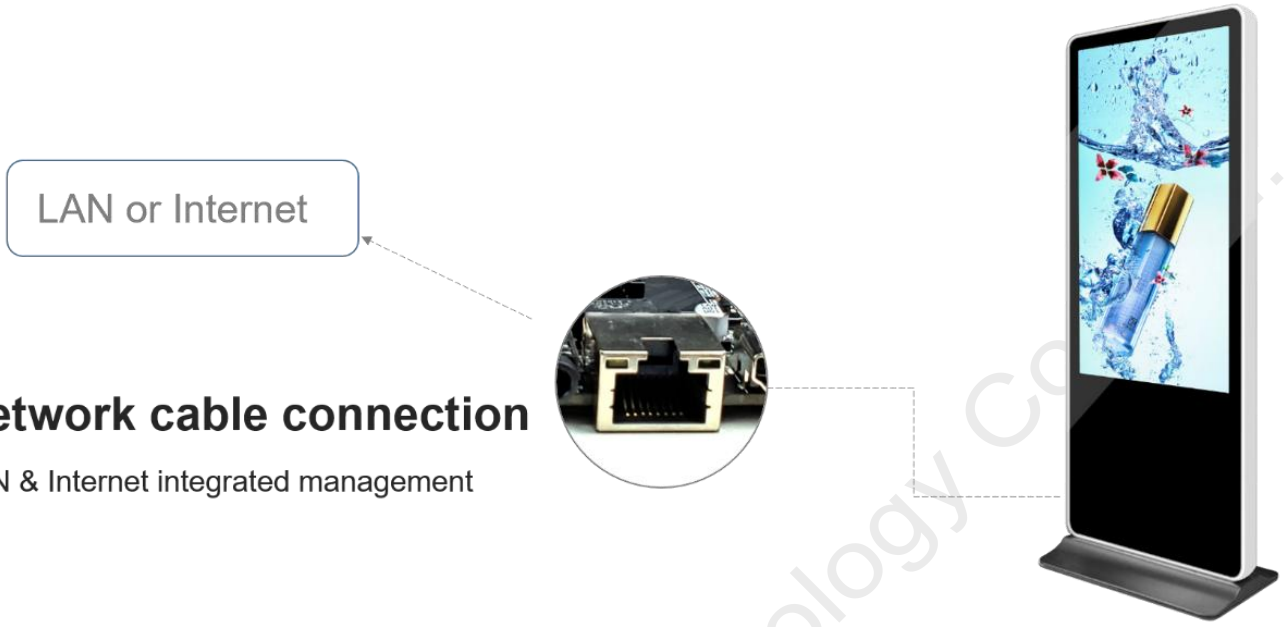
Support Interstitial & memory expansion

Ⅲ. TF Card Update Program

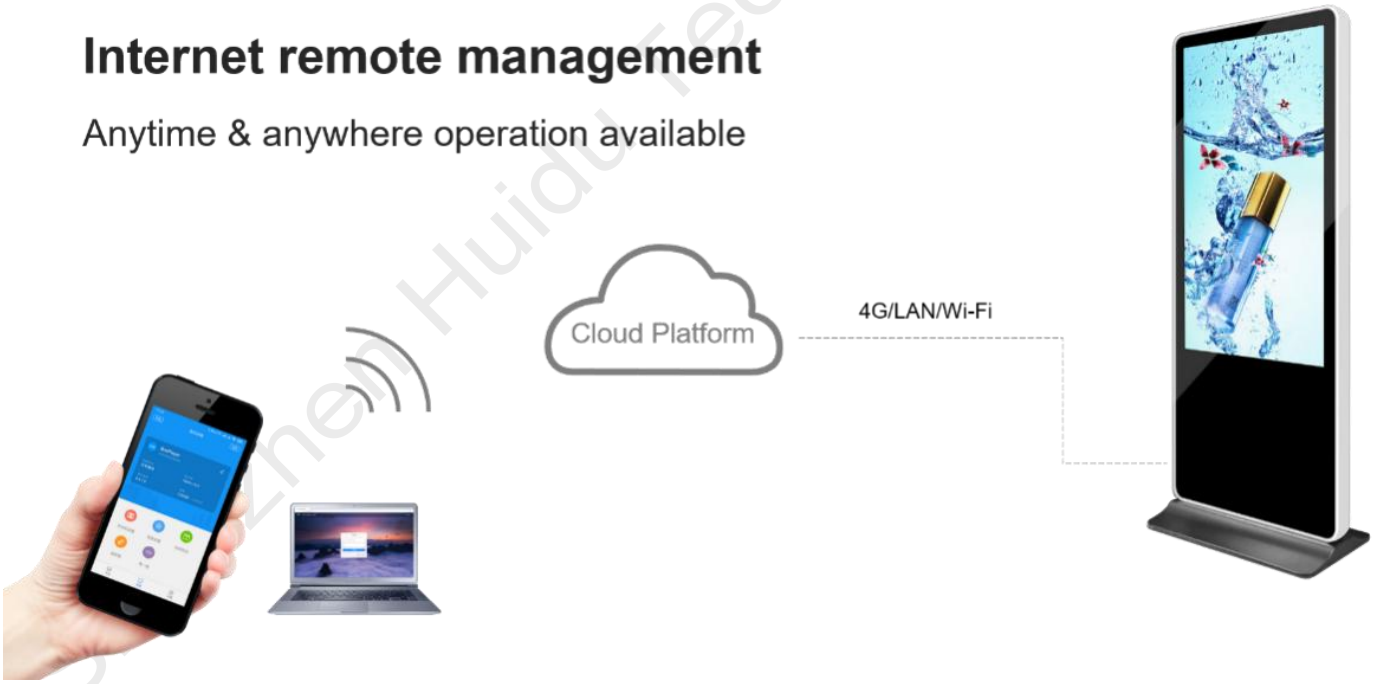
TF card update programs

Support Interstitial & memory expansion

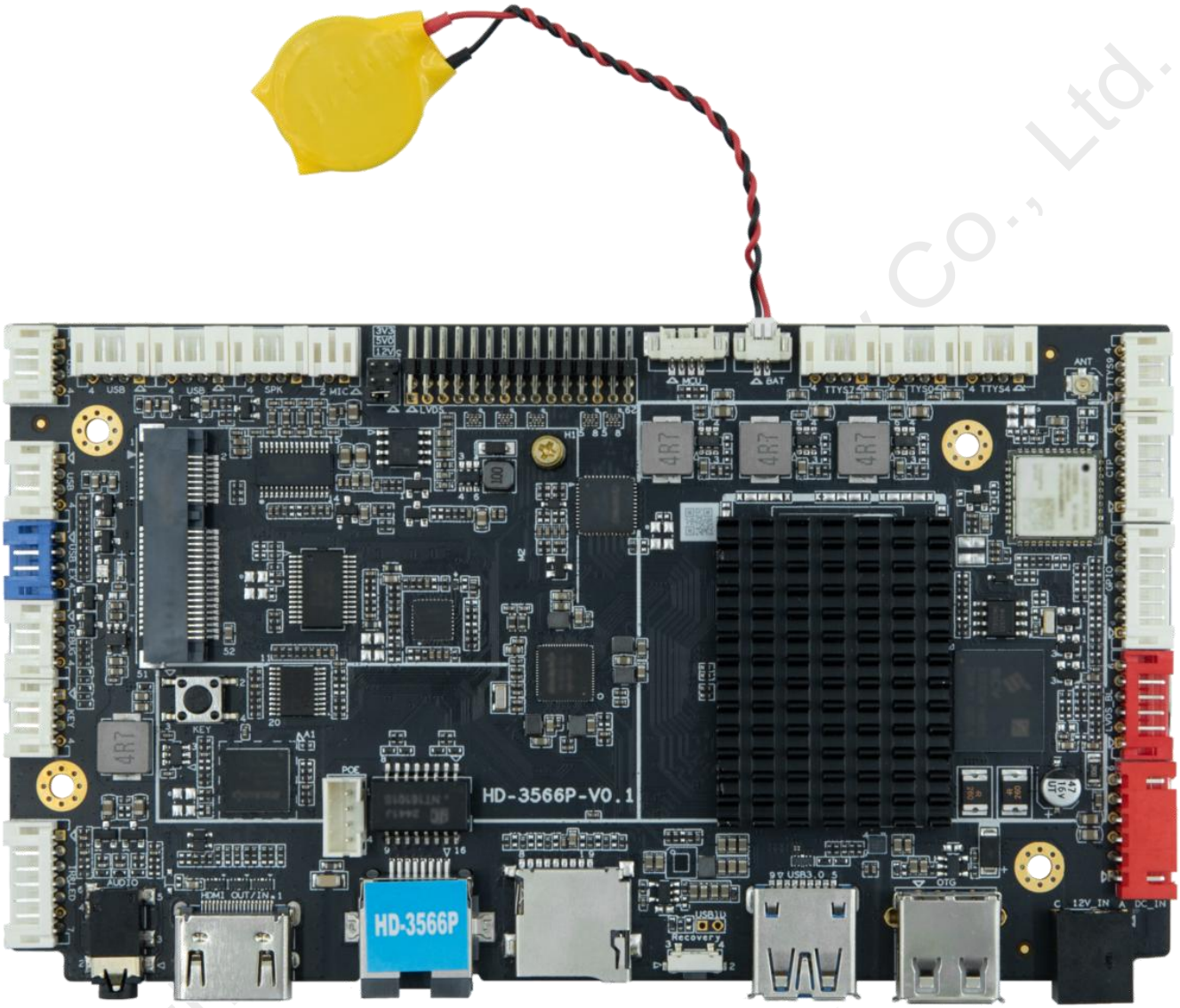
IV. Ethernet Cable to Update

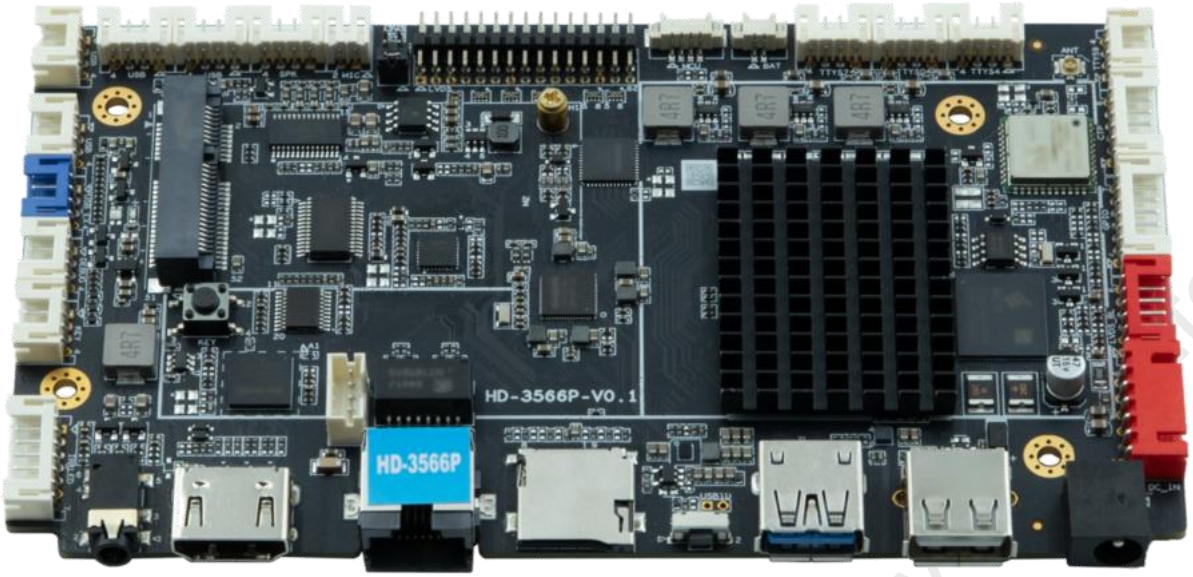


V. Internet Update



Chapter 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.