



# PRODUCT SPECIFICATION

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LCD Display Motherboard

**HD-3566S**

V1.1

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Shenzhen Huidu Technology Co., Ltd.

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# Chapter I product description

## I. Overview

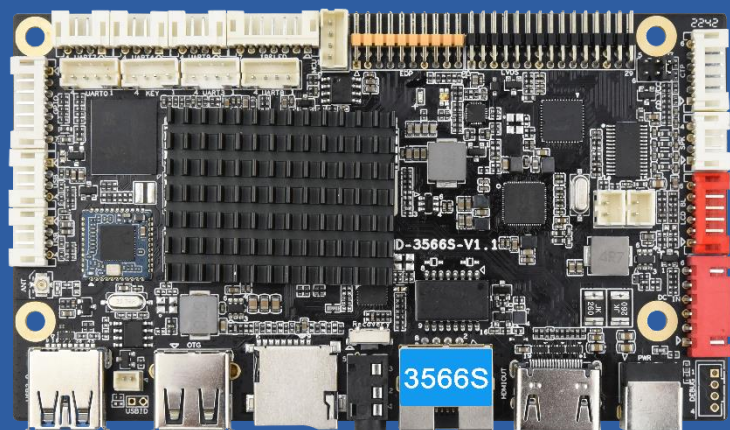
HD-3566S is a well-built all-in-one motherboard, which adopts Rockchip RK3566 quad-core chip solution, equipped with Android11 system, and the main frequency can reach up to 1.8GHz, with super performance. Adopt Mali-G52 GPU, support 1080P 60fps H.265/H.264 video encoding. Support infrared remote control, 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.

## II. 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.

### HD-3566S



# Chapter II Specifications

## I . Basic Parameters

### 1. Hardware Parameters

Hardware Specifications	
CPU	<b>RK3566, quad-core, up to 1.8GHz</b>
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°C~70°C
Operating temperature	-20°C~70°C

## 2. Software Parameters

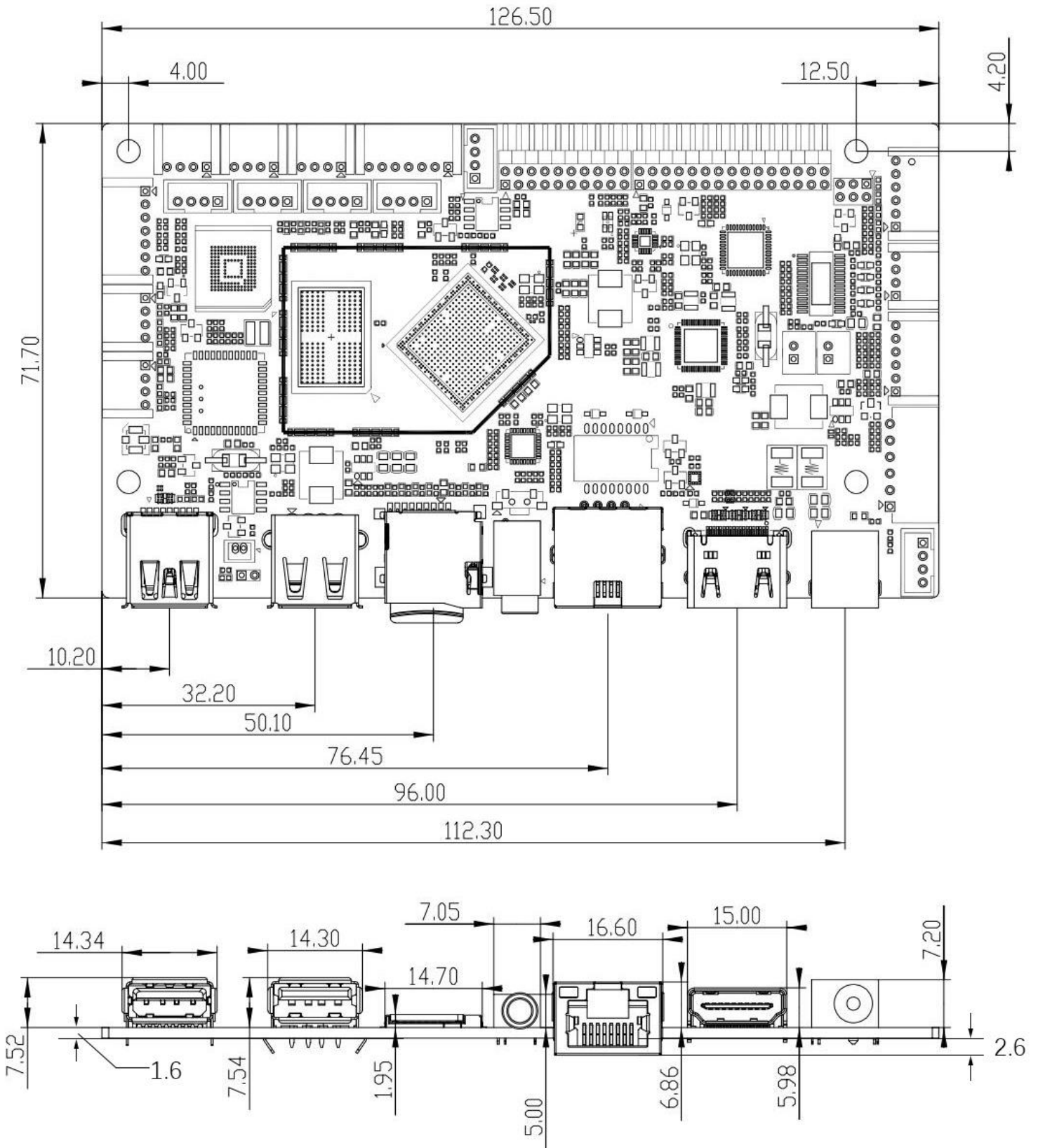
### Software Specifications

Operating system	<b>Android 11</b>
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
<b>Input method</b>	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
System watchdog	Support Wi-Fi hotspot
	Support software watchdog, hardware watchdog

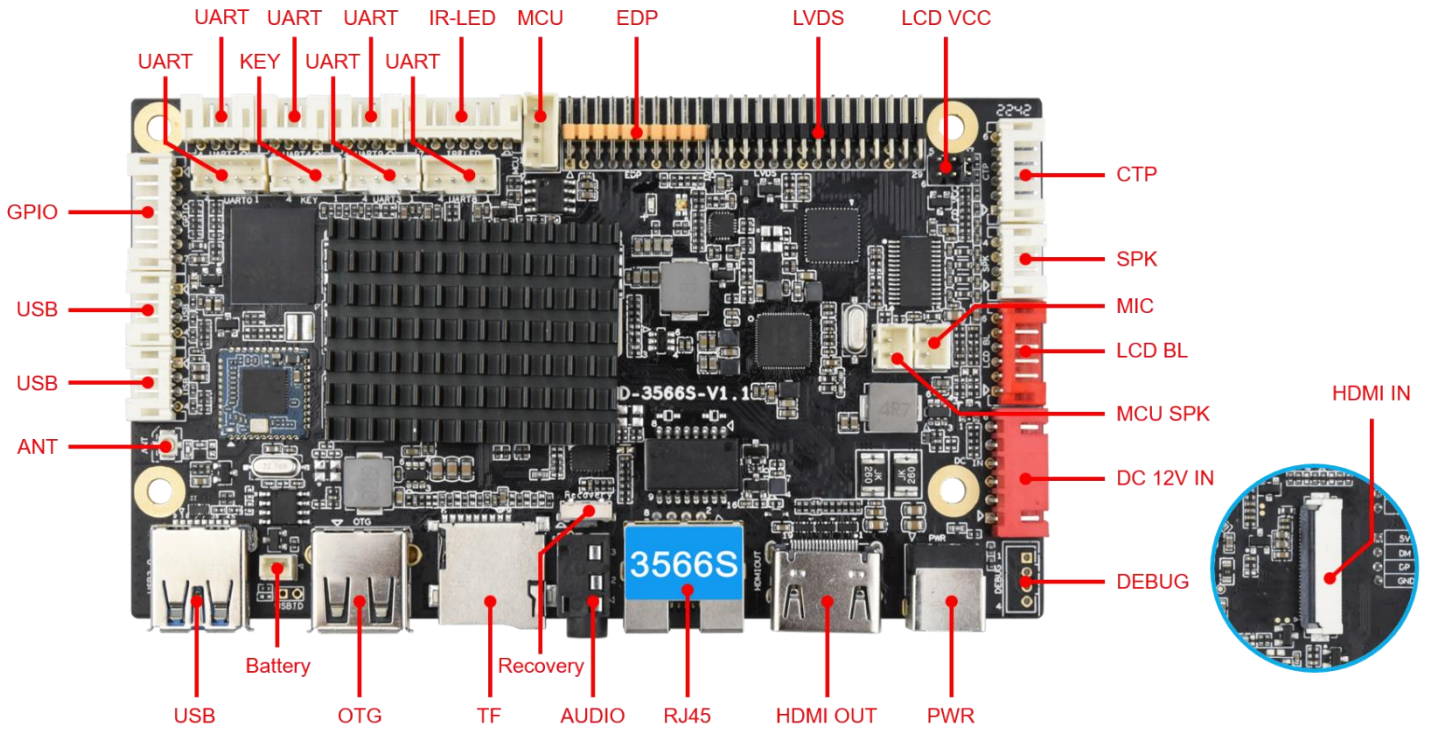


## II. Product Size Specifications

unit: (mm)



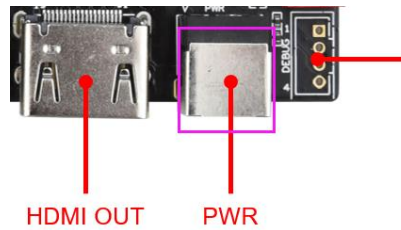
### III. Product Interface Diagram



## IV. Interface Parameter Description

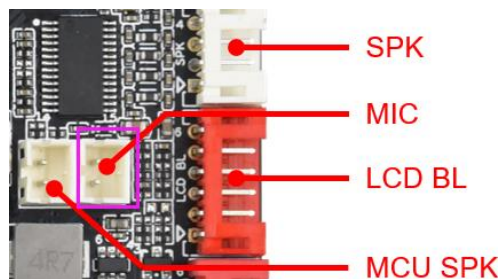
### 1. PWR / DC (Power input) Interface

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			
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

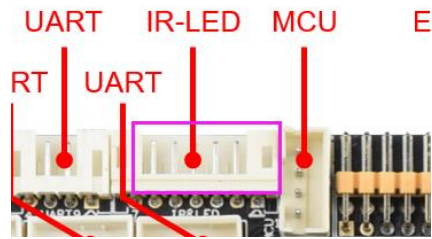
### 2. MIC Interface (Microphone)



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

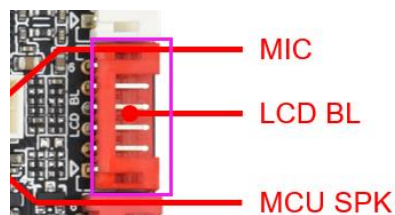


### 3. LED/IR (Remote control) Interface and Definition



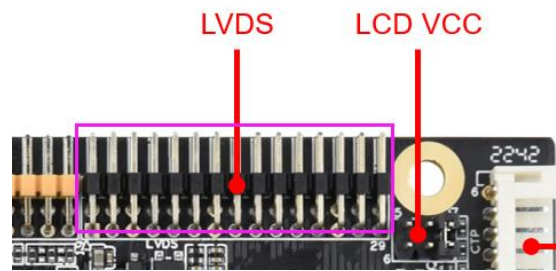
No.	Definition	Attributes	Description
1	RED	output	red light
2	3V3	power supply	3.3V output
3	GRN	output	green light
4	GPIO	output	remote control signal output
5	INT	input	remote control signal input
6	GND	ground wire	ground wire
7	3V3	power supply	3.3Voutput

### 4. BL (LVDS/ EDP 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

## 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 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	RXO0-	Output	Odd 0 -
8	RXO0+	Output	Odd 0+
9	RXO1-	Output	Odd 1 -
10	RXO1+	Output	Odd 1+
11	RXO2-	Output	Odd 2 -
12	RXO2+	Output	Odd 2+
13	GND	Ground	Ground
14	GND	Ground	Ground
15	RXOC-	Output	Odd Clock-

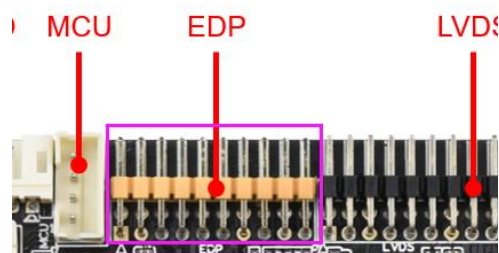
16	RXOC+	Output	Odd Clock+
17	RXO3-	Output	Odd 3 -
18	RXO3+	Output	Odd 3+
19	RXE0-	Output	Even 0 -
20	RXE0+	Output	Even 0+
21	RXE1-	Output	Even 1 -
22	RXE1+	Output	Even 1+
23	RXE2-	Output	Even 2 -
24	RXE2+	Output	Even 2+
25	GND	Ground	Ground
26	GND	Ground	Ground
27	RXEC-	Output	Even Clock -
28	RXEC+	Output	Even Clock+
29	RXE3 -	Output	Even 3 -
30	RXE3+	Output	Even 3+

## 6. EDP Interface and Definition

This interface is a common EDP screen interface, in the form of 10 \* 2 double row pins, 3.3V screen power supply.

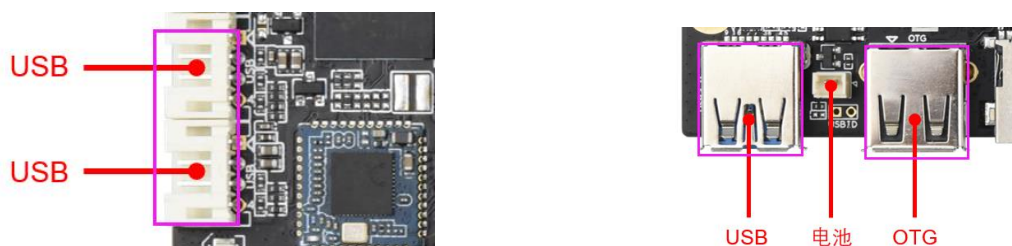
In order to avoid burning boards and screens, please note the following:

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	Display Port Lane 0 negative output
6	D0+	Output	Display Port Lane 0 positive output
7	D1-	Output	Display Port Lane 1 negative output
8	D1+	Output	Display Port Lane 1 positive output
9	D2-	Output	Display Port Lane 2 negative output
10	D2+	Output	Display Port Lane 2 positive output
11	D3-	Output	Display Port Lane 3 negative output
12	D3+	Output	Display Port Lane 3 positive output
13	GND	Ground	Ground
14	GND	Ground	Ground
15	AUX-	Output	Display Port AUX- chanenl negative singal
16	AUX+	Output	Display Port AUX+ chanenl positive singal
17	GND	Ground	Ground
18	GND	Ground	Ground
19	GND	Ground	Ground
20	HPD	Input	Screen heat plug board detection signal

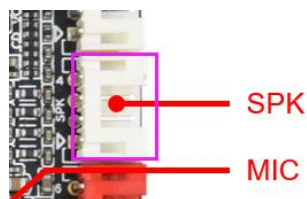
## 7. USB Interface and Definition



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

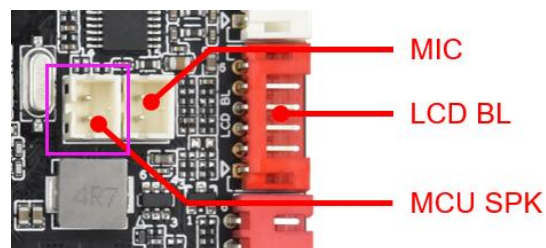
No.	Definition	Attributes	Description
1	5V	power supply	5Voutput
2	DM	input/output	DM
3	DP	input/output	DP
4	GND	ground wire	ground wire

## 8. SPK (Power amplifier) Interface



No.	Definition	Attributes	Description
1	SPK2P	output	right channel+
2	SPK2N	output	right channel-
3	SPK1N	output	left channel-
4	SPK1P	output	left channel+

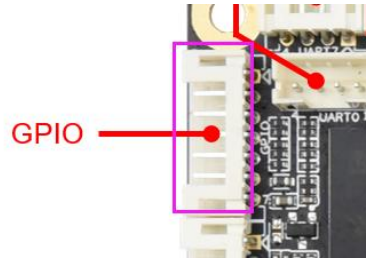
## 9. MCU SPK Interface (Audio)



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

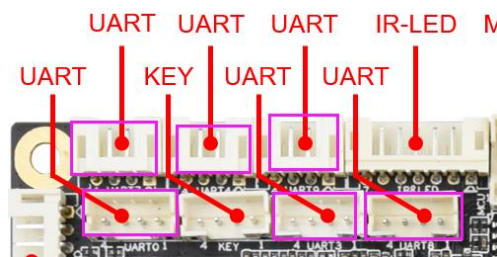


## 10. GPIO Interface (Extension) and Definition



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 have to two sets of ordinary UART serial ports, which can support the UART serial port devices on the market.

Precautions:

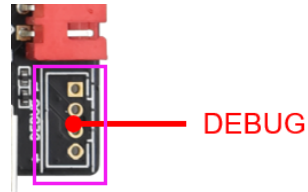
Check the serial port voltage matches or not. Cannot directly connect to RS232, RS485 serial devices.

2.TX, RX Please confirm the connection is correct or not.

No.	Definition	Attributes	Description
1	VCC	Power	3.3V output, Configurable
2	TX	Output	TX
3	RX	Input	RX
4	GND	Ground	Ground

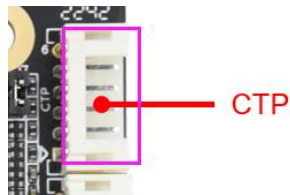
1. UART0/UART7 can adjust RS485 through hardware
2. UART3/UART4/UART8/UART9 can adjust RS232 through hardware

## 12. DEBUG Interface



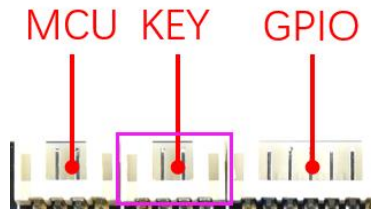
No.	Definition	Attributes	Description
1	3V3	power supply	3.3Voutput
2	TX	output	TX
3	RX	input	RX
4	GND	ground wire	ground wire

## 13. CTP Interface and Definition



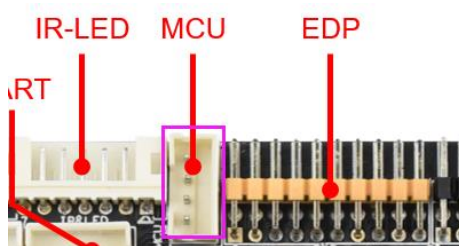
No.	Definition	Attributes	Description
1	3V3	power supply	3.3V output
2	SCL	input/output	I2Cclock
3	SDA	input/output	I2Cdata
4	INT	input/output	to interrupt
5	RST	input/output	reset
6	GND	ground wire	ground wire

## 14. KEY Interface Definition



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



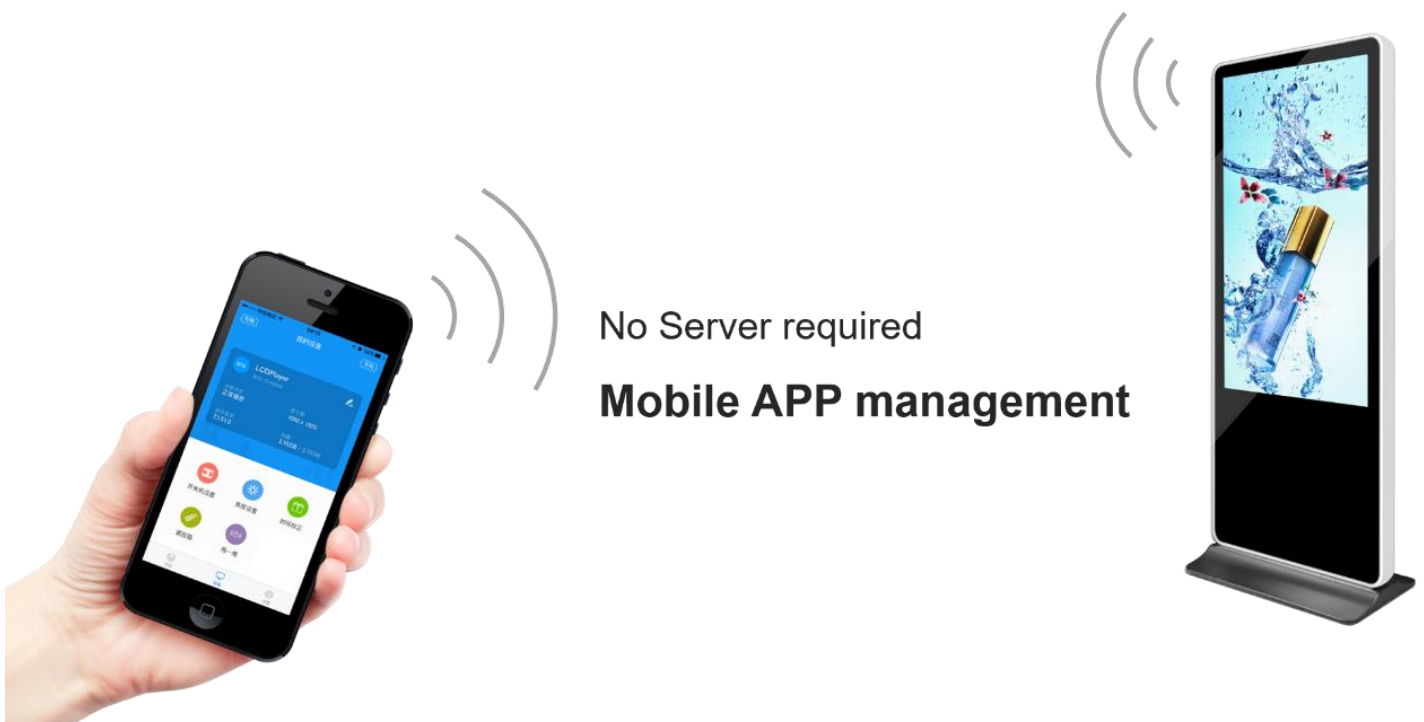
No.	Definition	Attributes	Description
1	3V3	power supply	3.3V output
2	TX	output	TX
3	RX	input	RX
4	GND	ground wire	ground wire

## 19. Other Interfaces

Storage interface	SD card	Data storage, up to 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, maximum support 4K

## Chapter III Communication Methods

### I . Wi-Fi Update Program

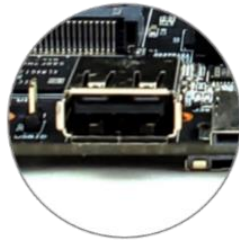


## II. U-disk update program



### U-disk update programs

Support Interstitial & memory expansion



## III. TF Card Update Program



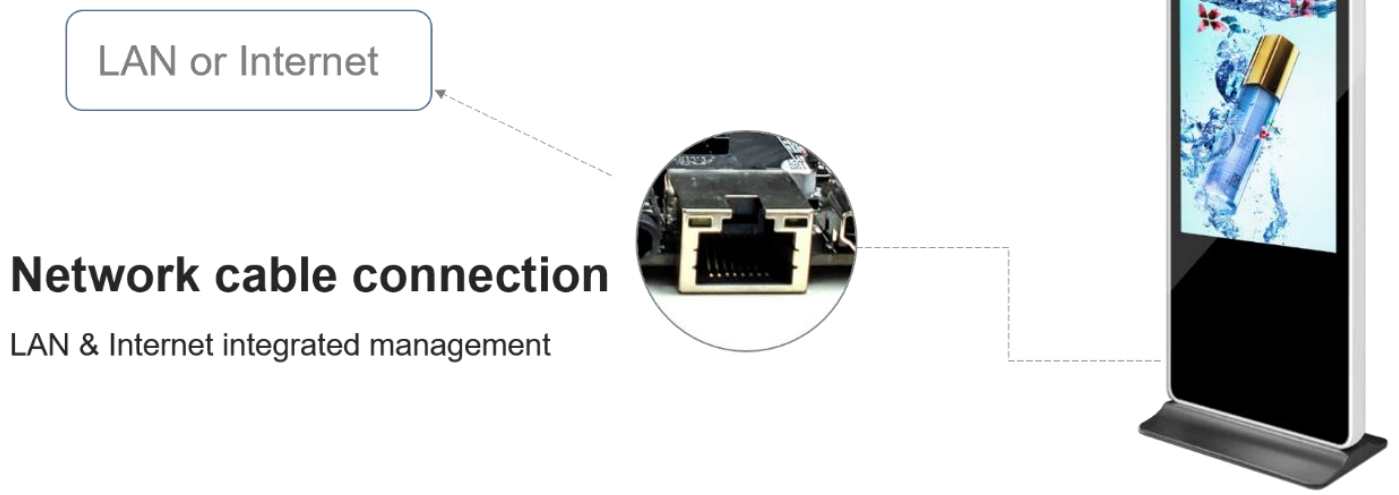
### TF card update programs

Support Interstitial & memory expansion

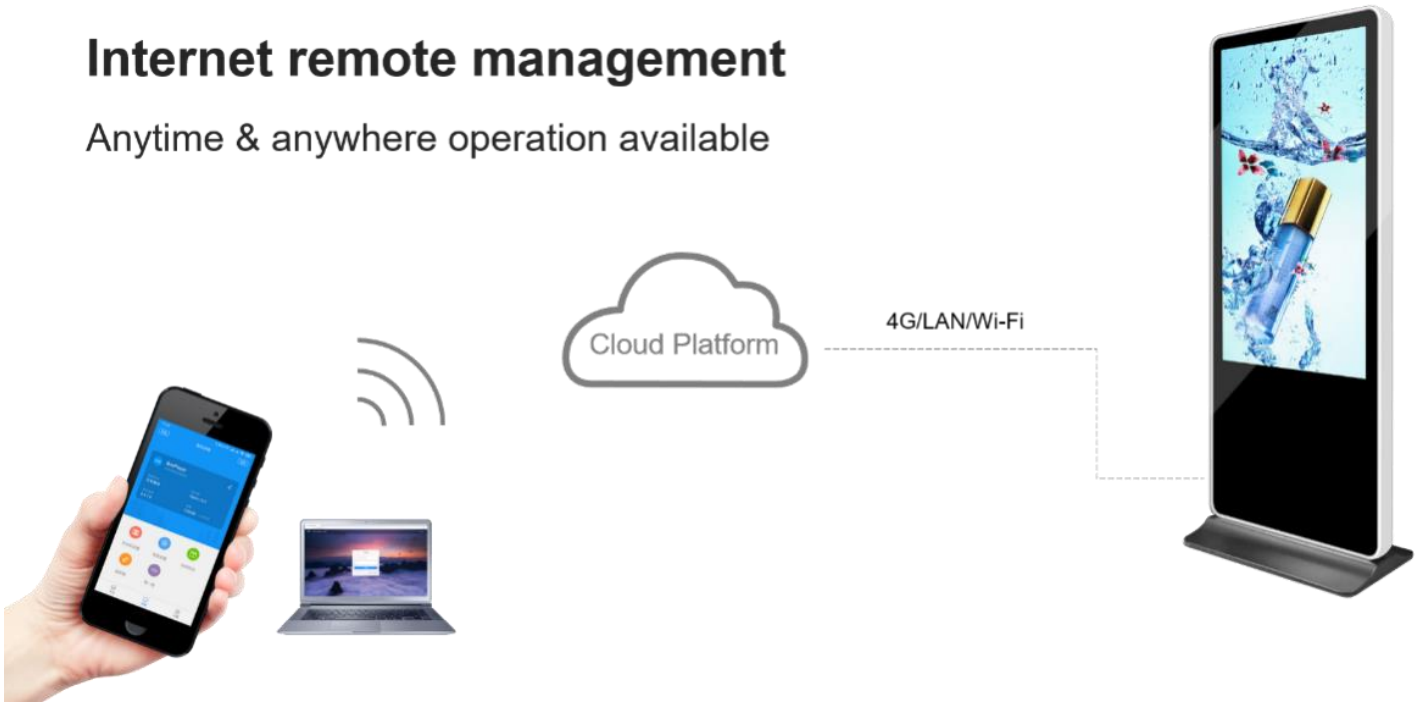




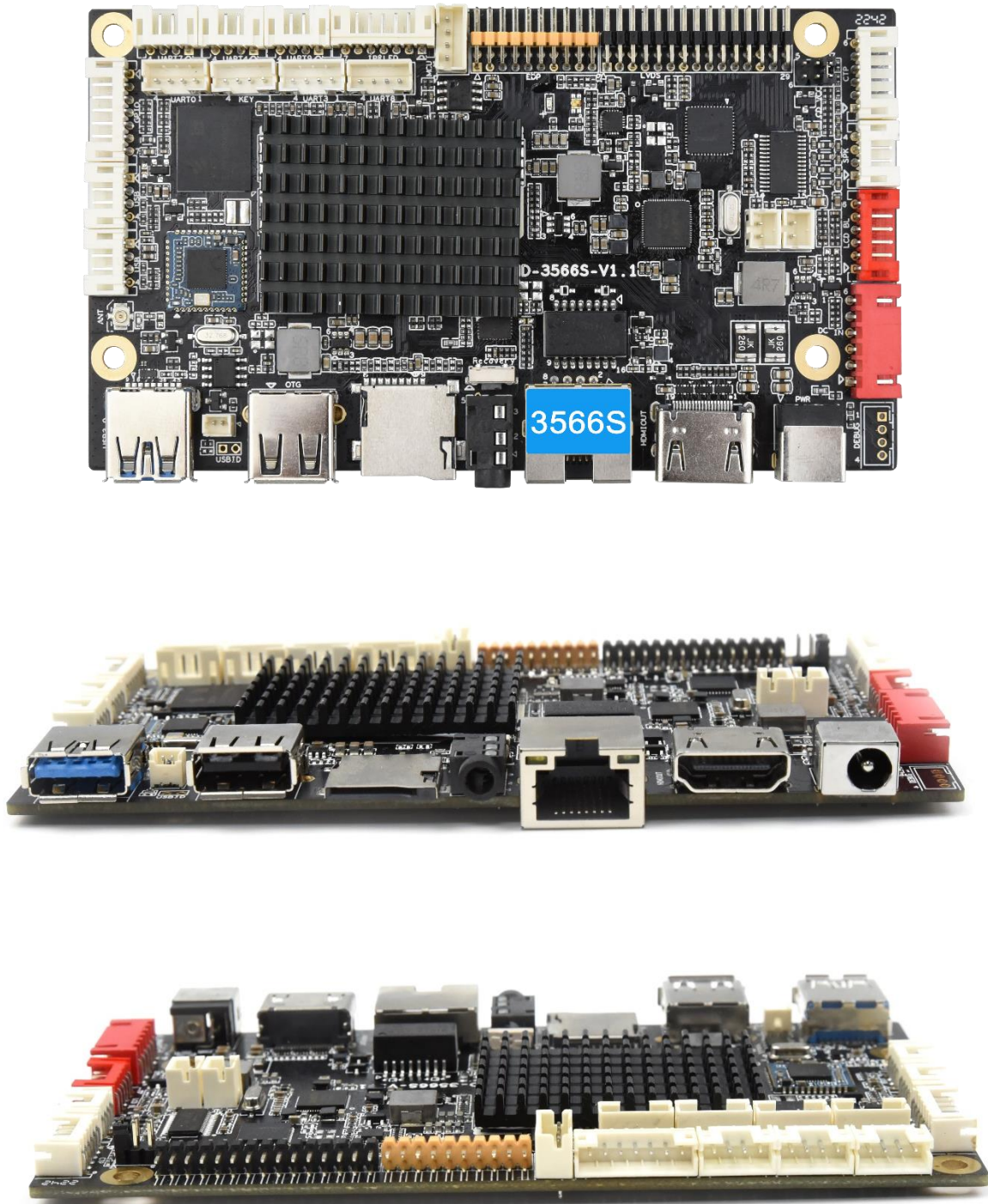
## IV. Ethernet cable to Update



## V. Internet Update



## Chapter IV Appendix: Product Appearance



### Note:

1. The 4G module is an optional accessory that is installed on the PCIE port. If the picture 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. 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.
3. Do not operate with power on, Do not hot swap.