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PV135 main board instructions

Introduction

PV135 is a multimedia LCD driver integrated board based on Allwinner V40 main chip, which is equipped with 1GB/2GB DDR+8GB/16GB/32GB eMMC. It can support lvds or mipi display, CVBS input and output, VGA output, YPbPr our put and HDMI high definition output.

Its mater IC adopts TSMC's 40nm HPC manufacturing process, based on the ARM Cortex-A7 architecture and four cores, and its main frequency can reach up to 1.5GHz.

The application of Allwinner new generation SmartColor technology contributes to brilliant pictures display under the high resolution and provide a pleasant visual effect for your machine.

Main features:

ʊ   4 cores, reach up to 1.5 GHz main frequency

ʊ   Support lvds displays and mipi displays and dual display

ʊ   Support CVBS input and output

ʊ   Support VGA output and YPBPR output

ʊ   4 serial ports, 6 USB ports, TF cards and other many expansion interfaces

1 Motherboard Peripheral interfaces

All the motherboard Peripheral interfaces as below picture shows
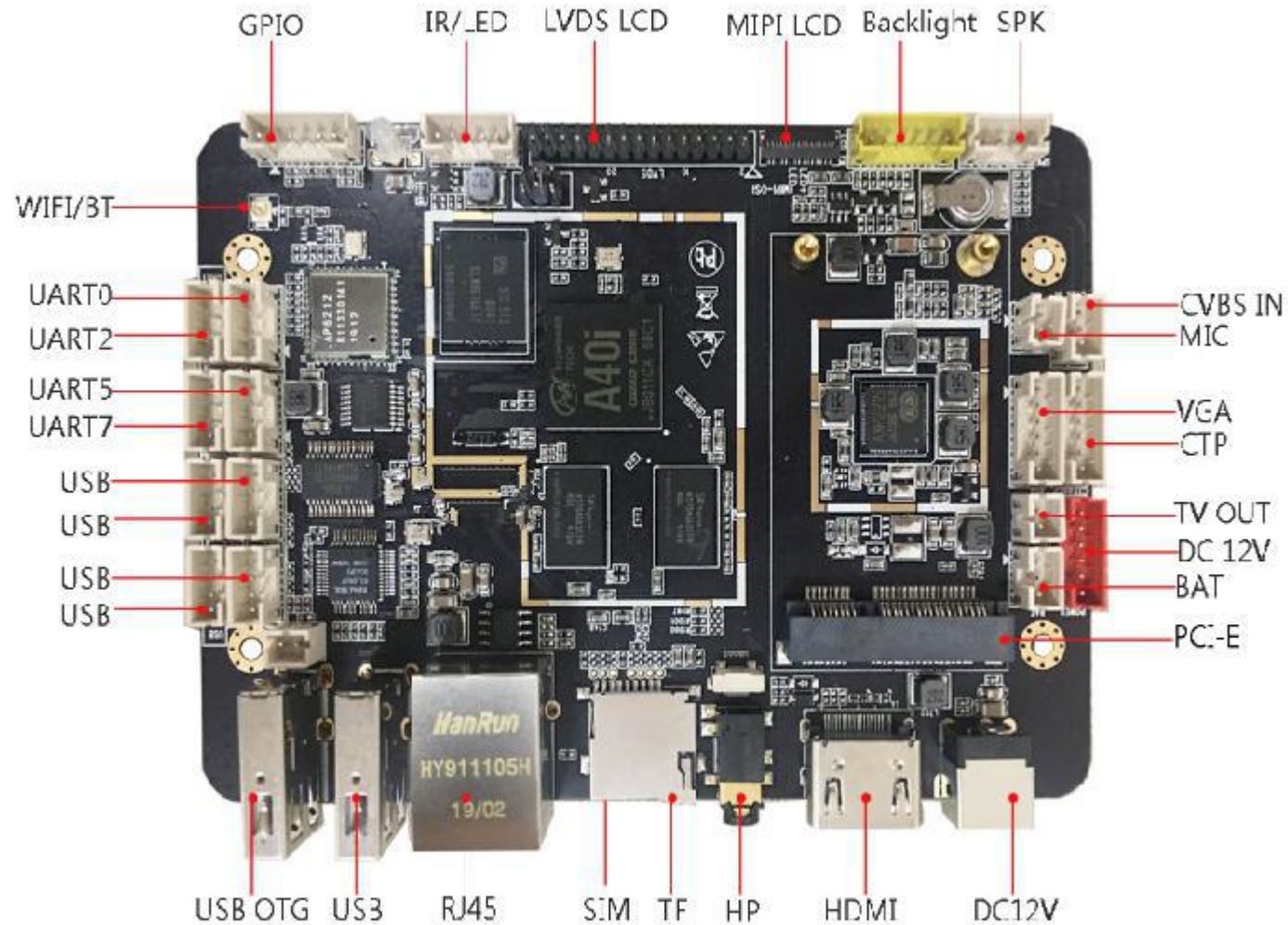
1.1 Display Interfaces

LVDS interface   (Single channel, 6-bit dual channel, 8-bit dual channel) support 7"-100" display

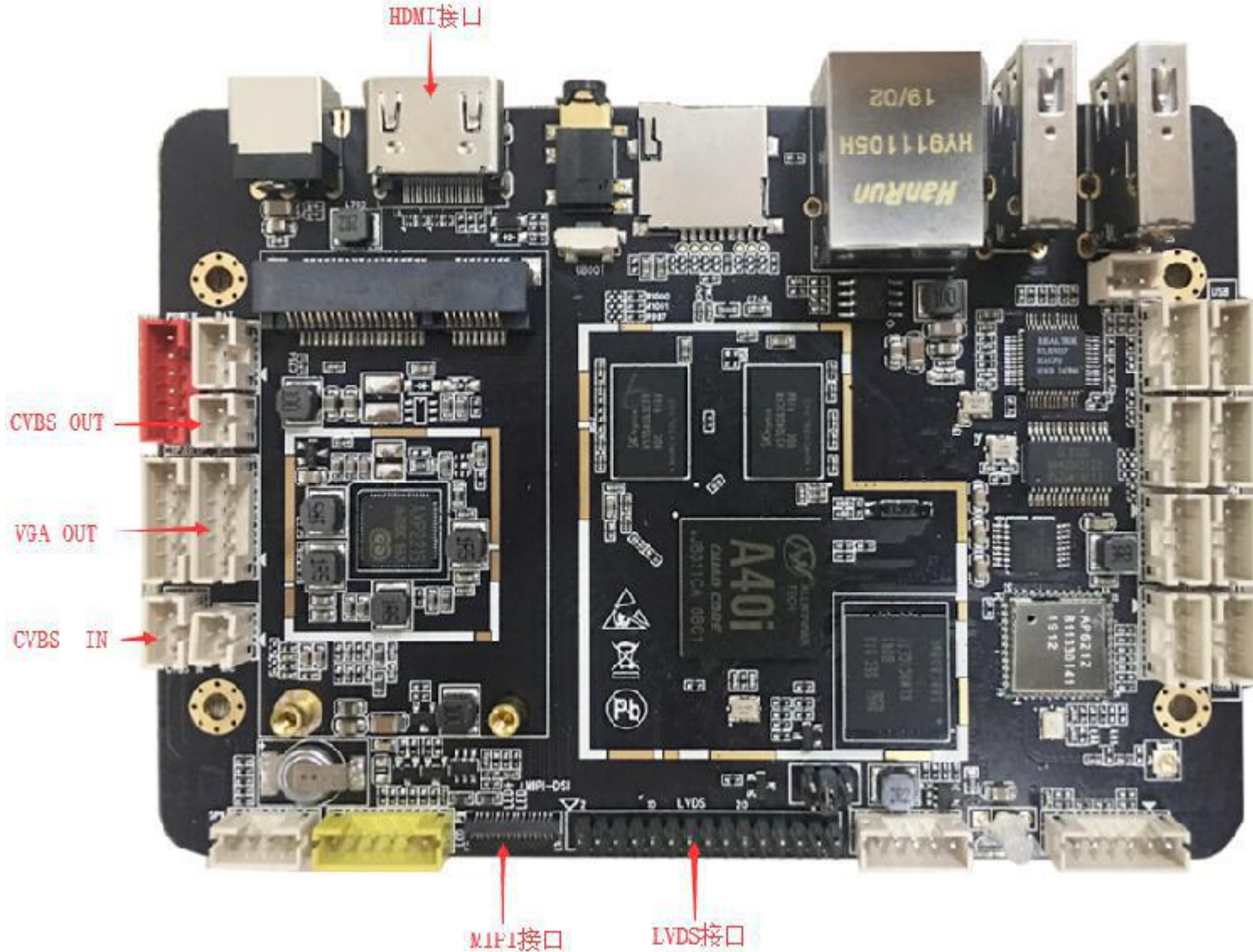MIPI interface   Support maximum resolution 1920x1080

Support CVBS output

Support Ypbpr and VGA output

Support HDMI 1.4 output, 1080p

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1.1.1 Display interfaces is showed as the below picture (The specific line sequence can be reference to the silk screen behind the motherboard)

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1.2 Interface Equipments

6 USB HOST, 2 onboard and 4 external equipment

Two onboard equipment: One of them is silk printed with the mark USB OTG & HOST, which USB port is used to Firmware updates and adb debugging

3 TTL and 1 RS232; Or 4 TTL/2 TTL and 2 RS232

Connect to uart0 when serial port capture logs

Uart 2 should be TTL, uart 5 be RS232, and uart7 be TTL or RS233.Also it can be judged according to the tr, rx electrical level measured by multimeter.(The tr, rx electrical level should be 5 V or negative level)
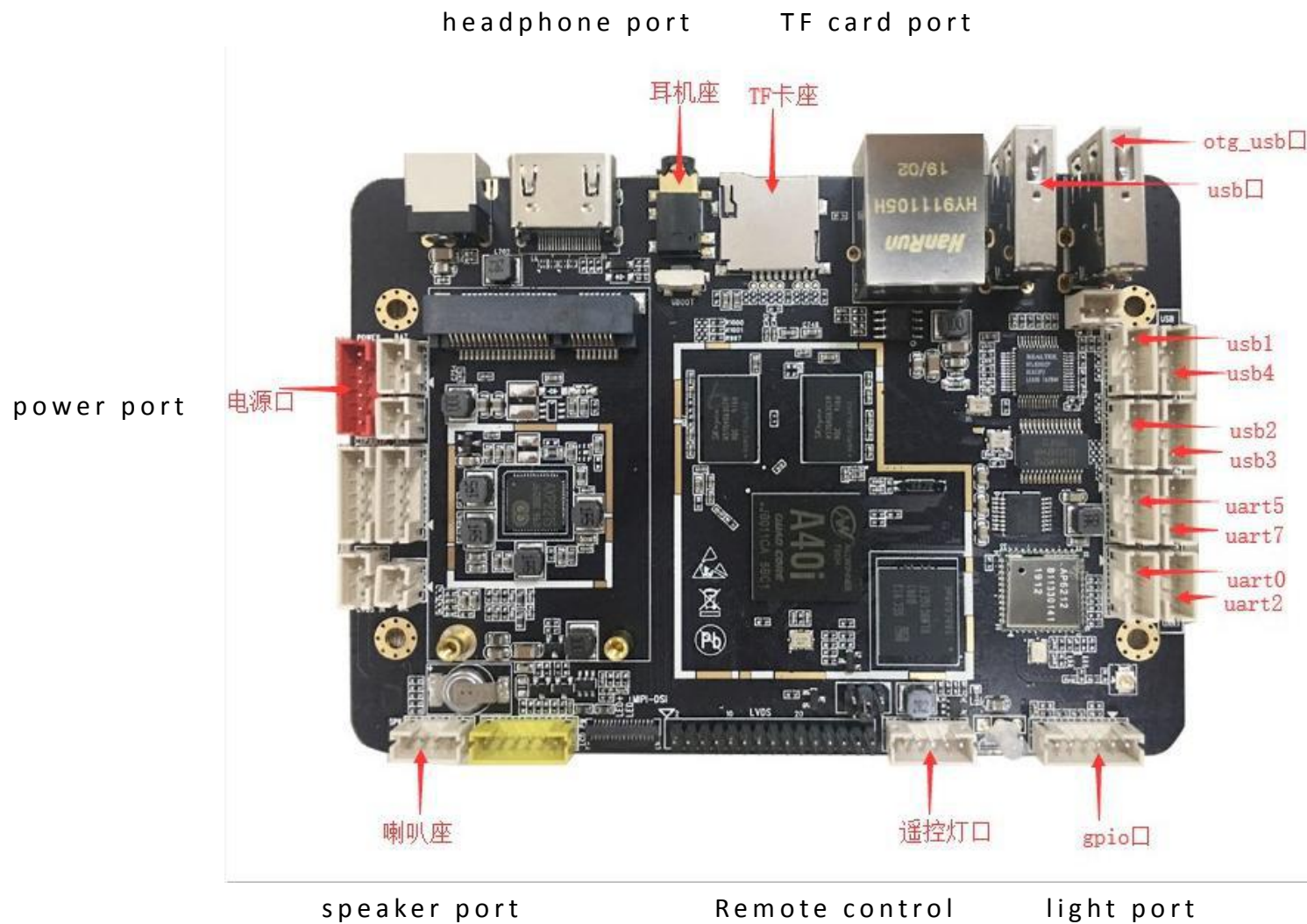
128GB TF card expansion, maximum 128GB

Support headphone output, built-in power amplifier, support 2W * 2 8Ω speakers

Support external switch button, reset button or plug-in button small board or lamp board, support gpio port

Support remote control devices

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1.2.1 Interface equipments are showed as the below picture (The specific line sequence can be reference to the silk screen behind the motherboard)

headphone port

TF card port

耳机座

TF卡座

otg_usb口

usb口

power port

电源口

usb1

usb4

usb2

usb3

uart5

uart7

uart0

uart2

喇叭座

遥控灯口

gpio口

speaker port

Remote control

light port

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1.3 Internet

Support wifi module

Support bluetooth module

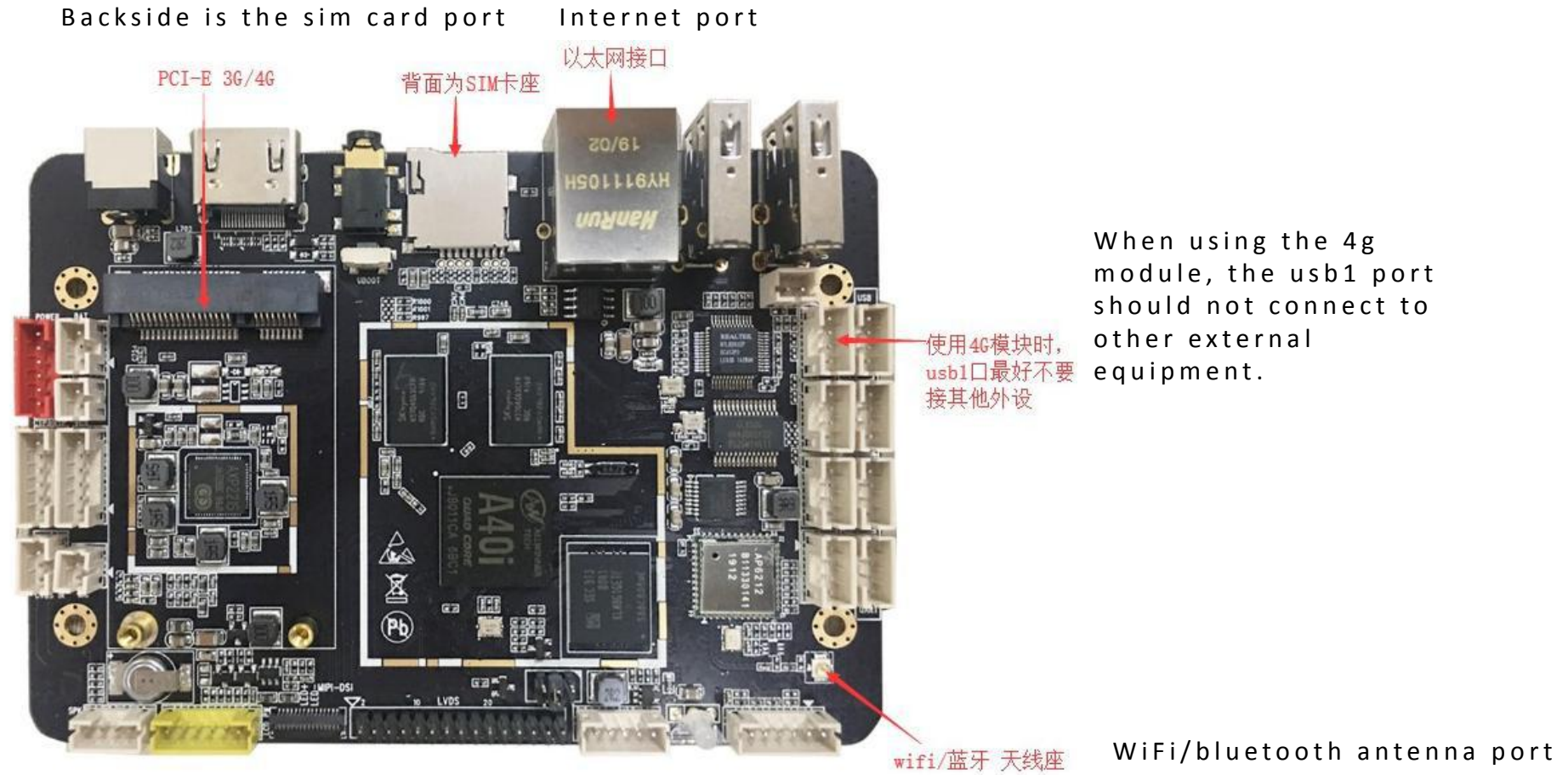RJ45 standard interface, 100M Ethernet interface, support Ethernet

Equip with 3G data / 4G data function, support WCDMA, EVDO, CDMA, GSM, 2G / 3G full band support 850/900/1800 / 1900MHz / 2100MHz (do not connect other peripherals to USB1 when using 4G module)

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1.3.1 The specific location of the internet is shown in the figure

Backside is the sim card port

Internet port

When using the 4g module, the usb1 port should not connect to other external equipment.

WiFi/bluetooth antenna port

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1.4 Touch Screen

Support infrared touch screen (USB touch screen), capacitive touch screen (as shown in the figure below, the specific wiring reference to the silk print behind)


CTP接口

CTP interface

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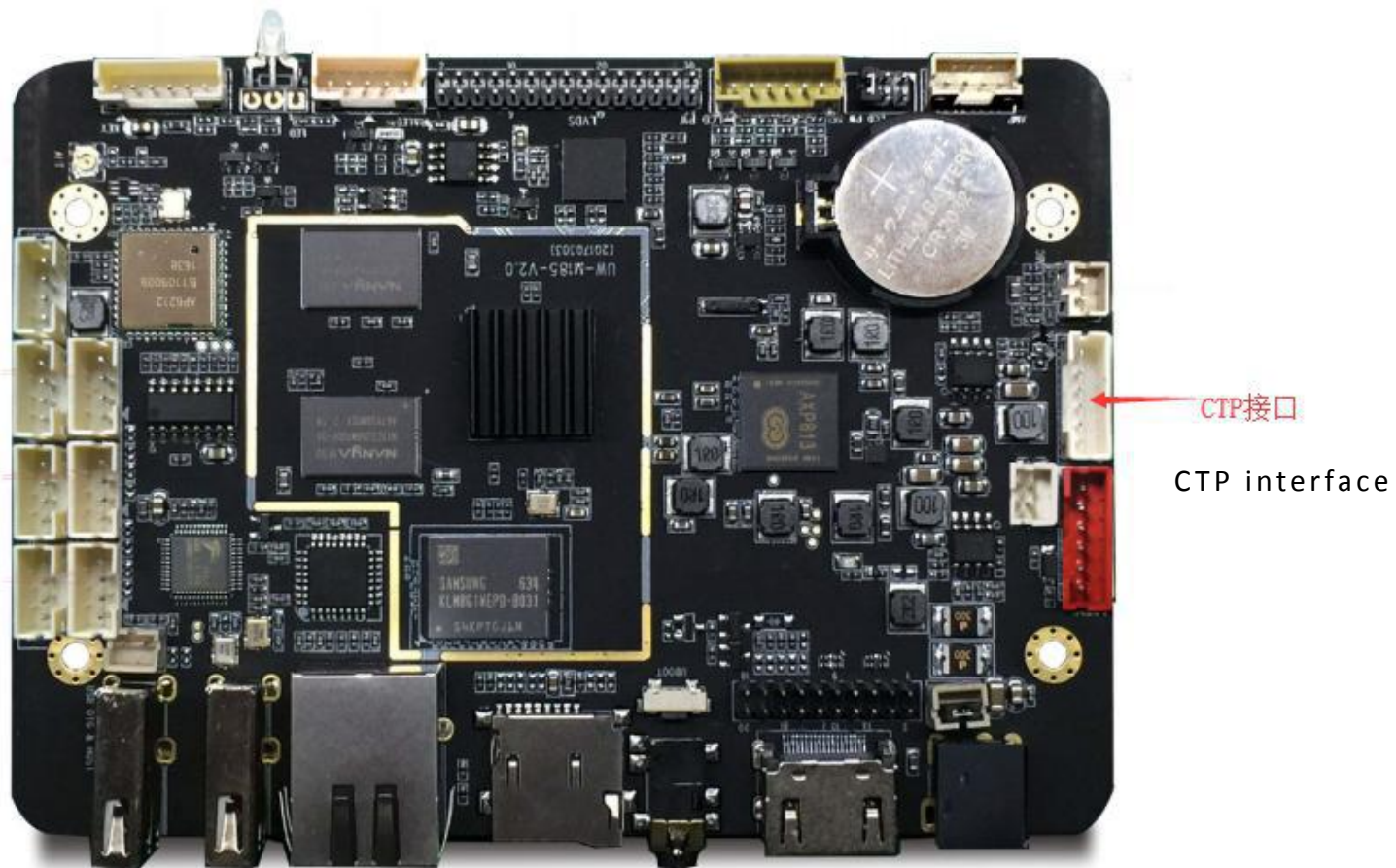
1.5 Audio Input

Support MIC, 1 microphone interface (wrong positive and negative connection will influence the sound effect), support headset microphone (lower right picture shows the internal definition of the earphone interface) (as shown in the figure below, the specific wiring can be reference to the behind the silk print)

Earphone port

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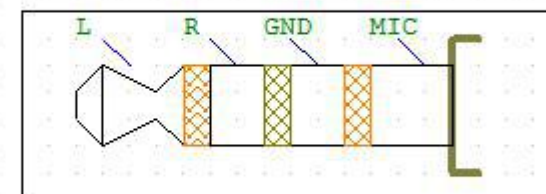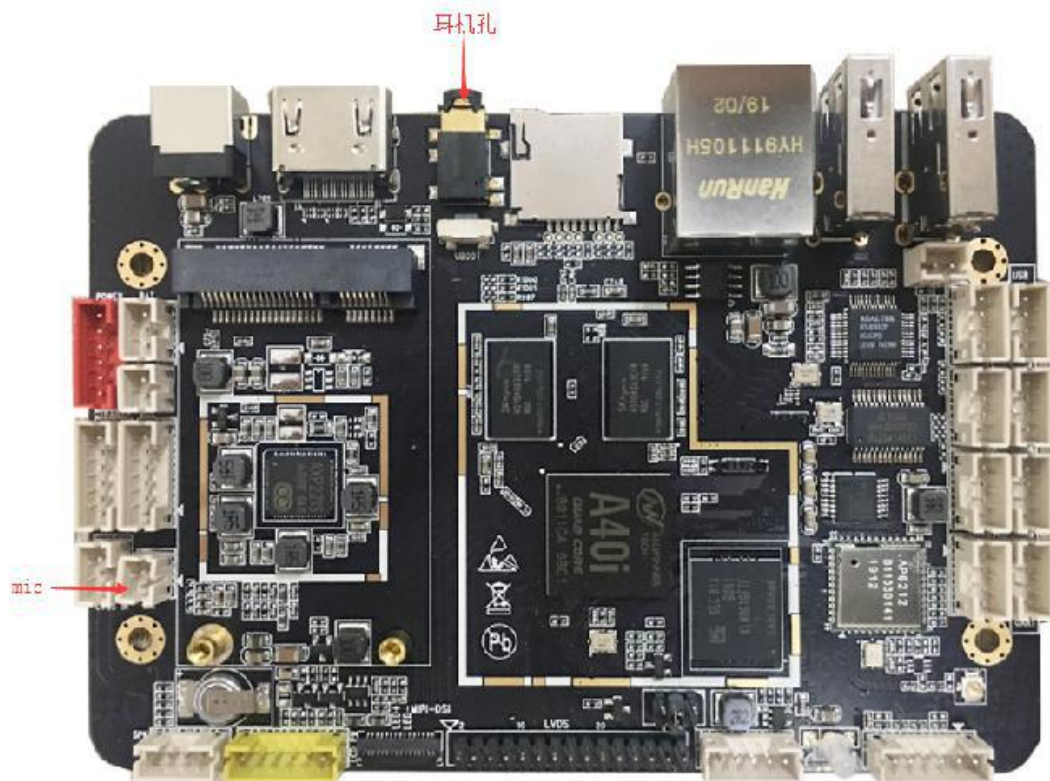
1.6 LCD Power Supply And Backlight

LCD power supply support 3.3V/5V/12V (as shown in the figure below, the specific wiring reference to the silk print behind)
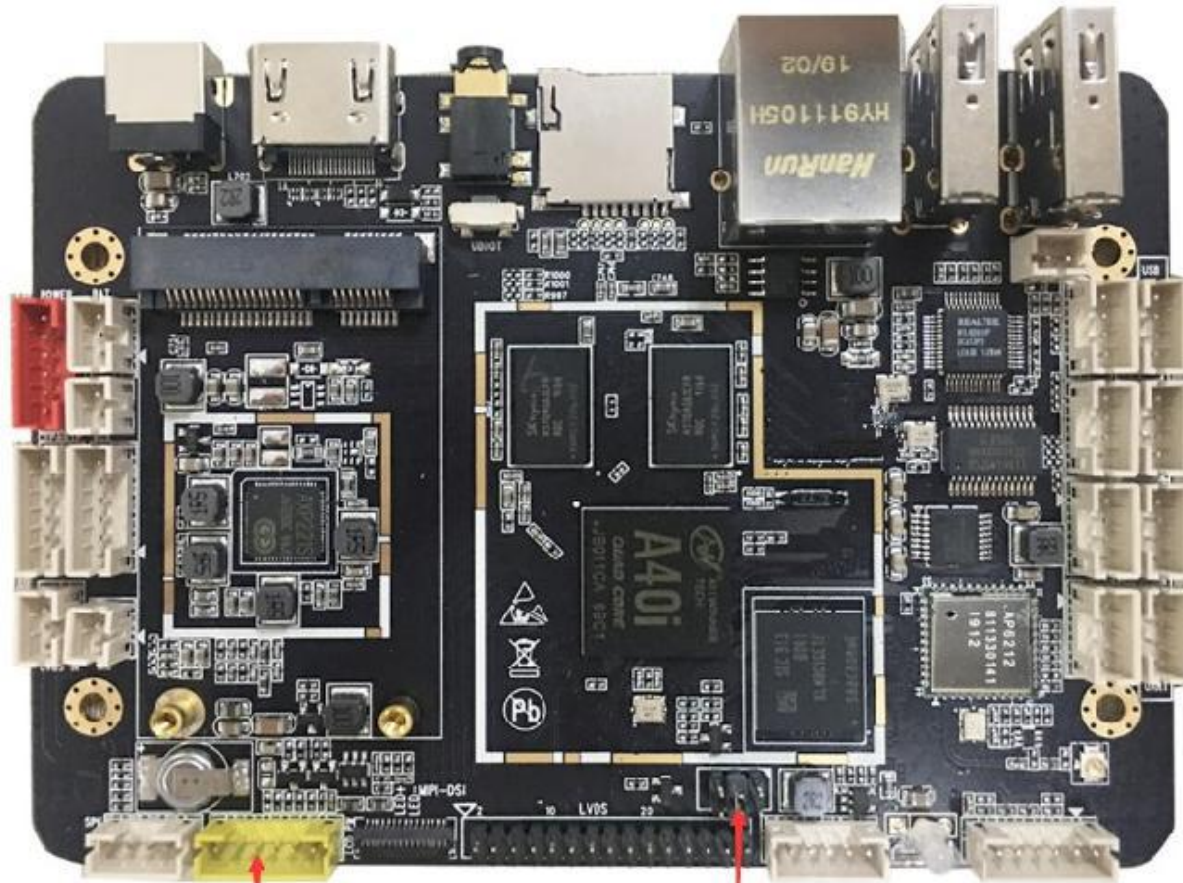
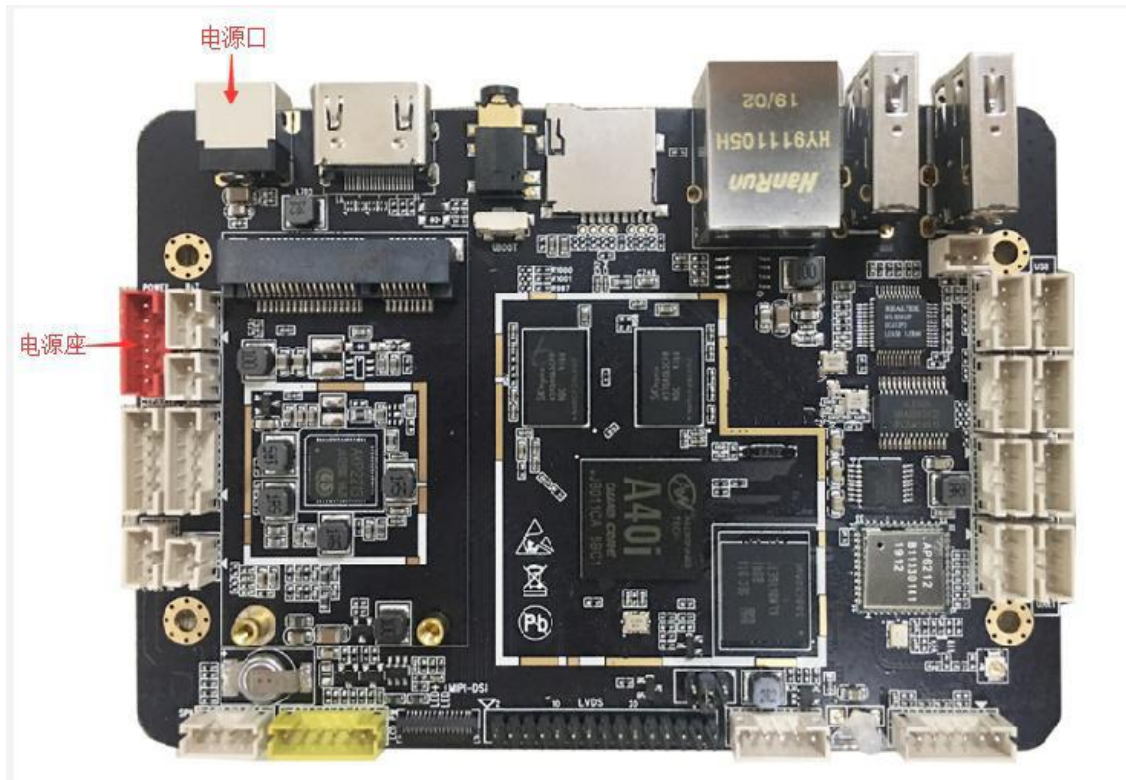背光座

屏供电选择，从左向右依次为3.3v 5v 12v

backlight socket   LCD power supply(from left to right): 3.3V/5V/12V

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1.7 Power

Power cord specifications The input voltage is 12V (recommended to use a minimum 12v 3A power supply)

Note: The diameter of the power cord port is 2.1mm

power port

power socket

1.8 Motherboard Driving LVDS Display

Prepare materialS

motherboard, lvds display, power cord

display: Confirm that the burned firmware on the motherboard is to drive LVDS display

12V Power cord specification: input voltage is 12V
Note: The diameter of the power cord port is 2.1mm

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1.8.1 Driving display notes

Pay attention to the wiring method of the screen cable and the direction of the first pin

Pay attention to the the supply voltage of the display

❖ Display ≤15 inch: choose the 3.3v supply

❖ 15inch<display≤21.5 inch：choose the 5v supply

❖ 21.5 inch<display≤32 inch：please reference to the datasheet

❖ display≥32 inch: choose the 12v supply.

Pay attention to the selection of screen power supply switch

❖ Check the datasheet of motherboard(reference to the motherboard specification)

❖ Check the silk print behind the board

❖ Check the pictures of different version

Note: the mismatch of the power cord may cause problems such as poor contact or power failure

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display cable, pay attention to the pin 1 direction

屏线，注意pin方向

背光线

backlight cable

电源

power

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1.9 Motherboard driving LVDS display

prepare material

motherboard, lvds display, power cord

display: Confirm that the burned firmware on the motherboard is to drive LVDS display

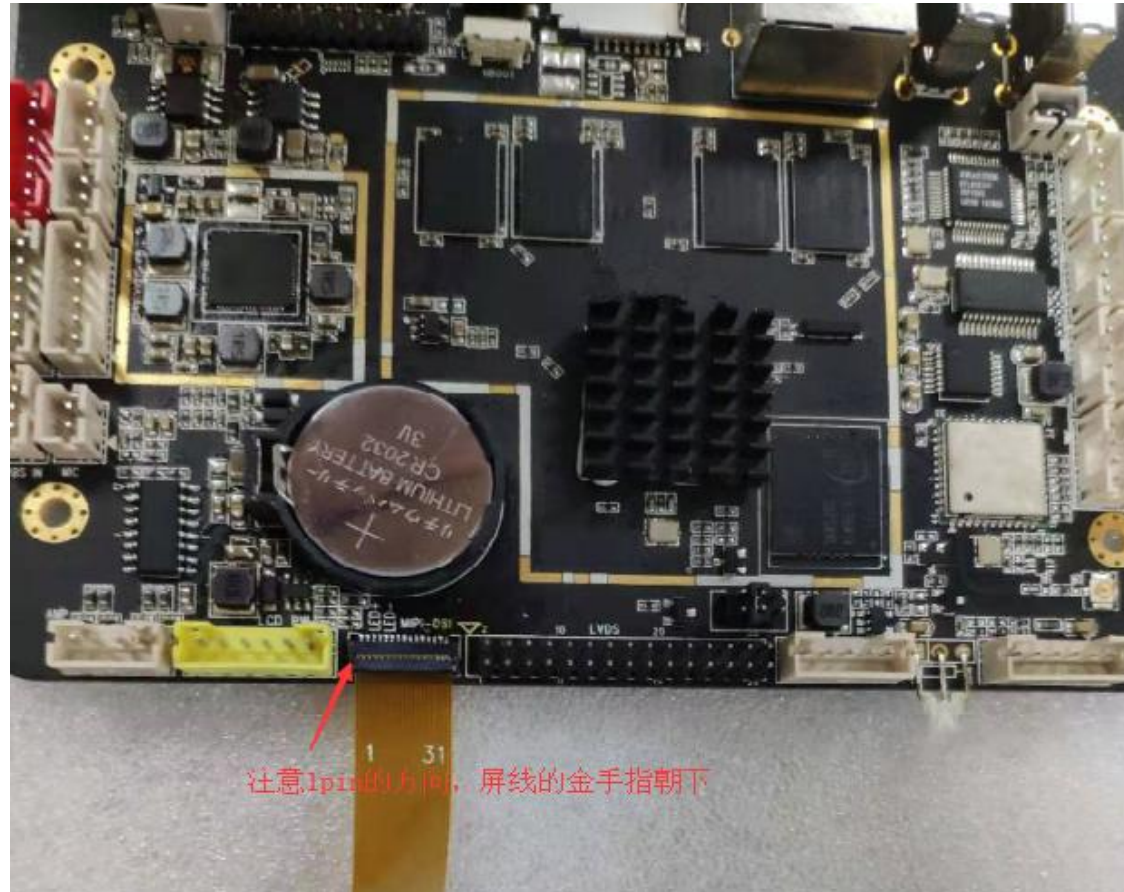12V Power cord specification: input voltage is 12V
Note: The diameter of the power cord port is 2.1mm

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1.9.1 Notes of driving display

Note the wiring method of the screen cable and the direction of the first pin

Note that the mismatch of the power cord may cause problems such as poor contact or power failure

pay attention to the pin 1 direction and the golden
finger of display cable should be face down

2.1 upgrade failure

2.1.1 usb cabe flash failure

The motherboard is not identified by the upgrade tools

❖ Check if the usb cable is connected to the upgrade port of board (silk print mark as otg_usb)

❖ Confirm if the male to male usb cable works

❖ Check if the driver is installed correct.

The motherboard is identified by the upgrade tools, but update unsuccessfully.

❖ Update unsuccessfully on the half way: 1)Confirm not touching the flash cable in the upgrade process; 2) Confirm that there is no conductor attachment on both sides of the motherboard

❖ The motherboard is identified by the upgrade tools, but the upgrade progress cannot be continued: 1) Confirm that there is no conductor attached to both sides of the motherboard, 2) Change a shorter male to male USB flash cable 3) Unplug other peripherals equipments

❖ If it's none of the above situation, please contact the sales to send back the motherboard to repair.

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2.1.2 Failure of TF card upgrade

❖ Confirm the TF card works

❖ Confirm that the firmware are burned to the TF card

❖ Confirm if the TF card is pulled out when power again

❖ If it's none of above situation, suggest changing a new TF card and try it again

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3 Update the screen parameters through TF card

Prerequisites: If the screen parameters in the firmware are not fixed, you can upgrade the screen parameters through the TF card

TF card upgrade instructions:

❖ Rename the"display_param-xxx.cfg"in the corresponding resolution folder as "display_param.cfg" and place it in the root directory of the tf card;

❖ Insert the tf card into the machine and restart it. If the screen match its parameters, it will be displayed normally during the startup animation stage;

❖ If the screen cannot work normally with these parameters, please try the cfg files one by one in each corresponding resolution according to above method until the display is normal;

❖ If the cfg files of all resolution in the folder are not displayed properly, it means that the screen is special and please contact the board manufacturer for debugging;

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