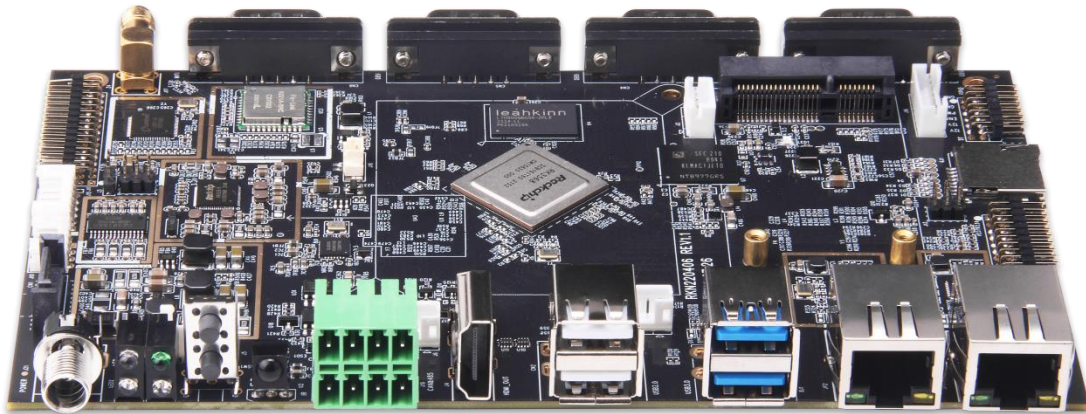


# DS-3568

## 硬件用户指南



Powered by:

**Geniatech**

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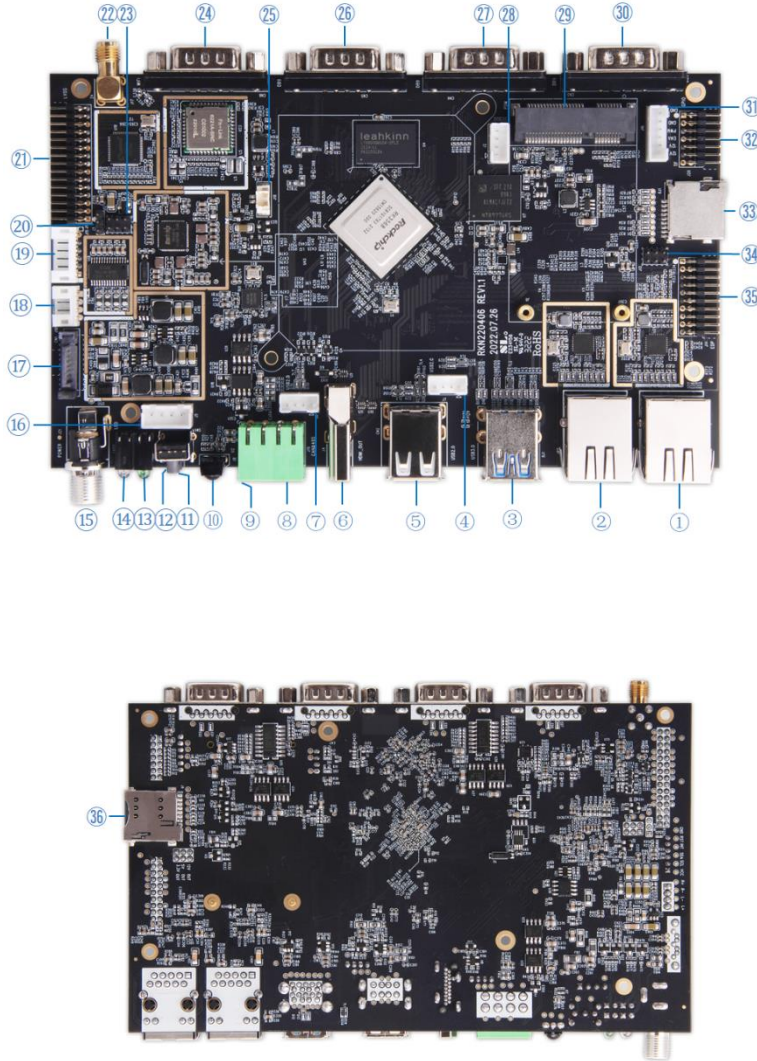
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## 1. 概述

DS-3568 是一款安卓快递柜定制主板，具有以下特点功能：

- (I) 瑞芯微 RK3568 四核 Cortex-A55 主频最高可达@2.0GHz
- (II) Mali-G52 GPU,支持 OpenGL ES1.1/2.0/3.2, OpenCL2.0 and Vulkan 1.1
- (III) 神经网络加速引擎处理性能高达 0.8 TPOS
- (IV) 支持安卓 11.0 / Linux Debian/Ubuntu 系统
- (V) 支持 2GB/4GB/8GB LPDDR4, 8~128GB eMMC, 可扩展 Micro SD/SATA3.0/USB 存储
- (VI) 双路 10/100/1000M 以太网
- (VII) IEEE 802.11b/g/n/ac (2.4G&5G ) +蓝牙 4.2 (可选蓝牙 5.0)
- (VIII) 支持 Mini PCIE 4G (移远/广和通等模组)
- (IX) 1 \* HDMI 输出, 支持 4K 视频播放
- (X) 1 \* LVDS, 1 \* eDP, 同时兼容 3.3V/5V/12V 液晶屏跳帽电压灵活设计, 支持多屏同显、多屏异显、多屏旋转拼接、多路视频源同时解码等显示方式
- (XI) 支持 4 \* RS232(DB9) + 1 \* RS485 + 1 \* Can + 2 \* GPIO 工业控制总线
- (XII) 2 \* USB3.0 + 4 \* USB2.0 (两个内置)
- (XIII) 支持硬件看门狗&实时时钟 + 1\*SATA3.0 +1\*触摸接口(I2C)+1\*喇叭接口 (最大: 2\*5W8Ω)
- (XIV) 支持宽压 9~24V 电源输入, 规范的 EMC 和 ESD 防护设计
- (XV) 专为智能快递柜、智能商显、智能售卖机、数字标牌, 智能家居等设计

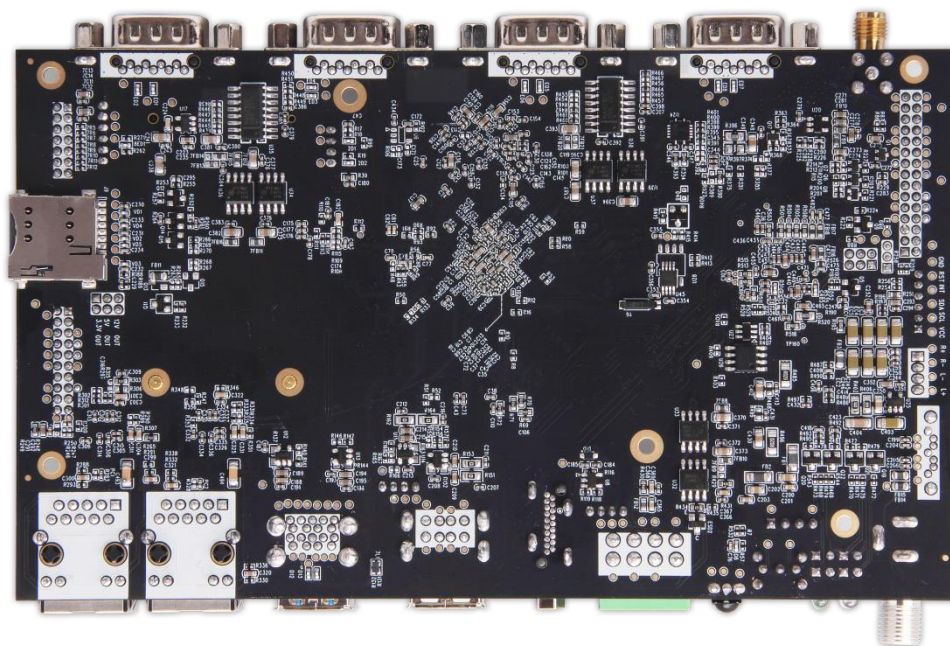
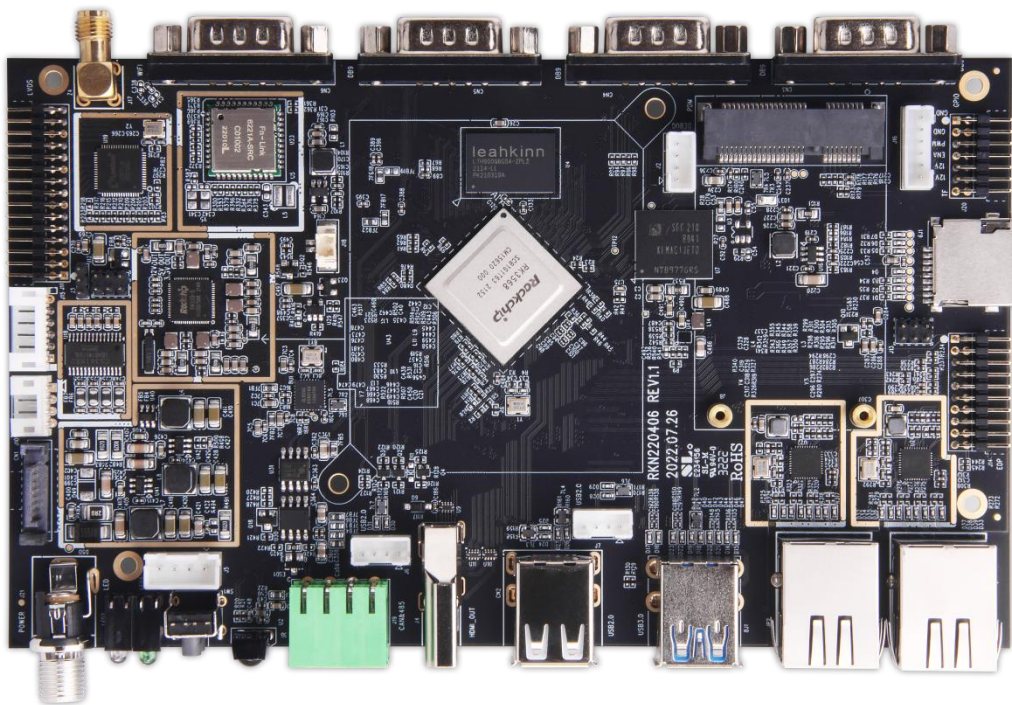
## 1.1 主板简介



No	Name	Description
1	以太网-1	1* RJ45
2	以太网-2	1* RJ45
3	USB3.0	2*USB3.0-Type A
4	USB 2.0-1	1* 4Pin 2.0mm
5	USB2.0-(2~3)	2*USB2.0-Type A
6	HDMI 输出	1*HDMI
7	USB2.0-4	1* 4Pin 2.0mm
8	RS485 (上)	1 * (3P 3.81mm)
9	CAN (下)	1 * (4P 3.81mm)
10	红外接口头	1* IR
11	复位键 (上)	1 * 按键
12	升级键 (下)	1 * 按键
13	故障灯	2 * 灯 (红/绿)
14	状态灯	2 * 灯 (红/蓝)
15	电源输入	1*(DCΦ5.5mm / φ2.1mm)
16	SATA 电源	1 * 4Pin 2.54mm
17	SATA3.0	1 * SATA3.0
18	喇叭	1 * 4Pin 2.0mm
19	I2C(触摸屏)	1* 6pin 2.0mm
20	液晶屏类型识别	1 * 3Pin 2.0mm
21	LVDS	1 * (2x15Pin 2.0mm)
22	WIFI/BT 接口	1 * SMA
23	LVDS 电压调节	1 * (3x2Pin 2.0mm)
24	RS232-1	1*DB9
25	RTC_电池接口	1 * 2Pin 1.27mm
26	RS232-2	1*DB9
27	RS232-3	1*DB9
28	Debug	1 * 4Pin 2.0mm
29	4G	1 * Mini PCIE
30	RS232-4	1*DB9
31	背光接口	1 * 6Pin 2.0mm
32	GPIO	1 * (2x7Pin 2.0mm)
33	Micro SD	1 * Micro SD
34	eDP 电压调节	1 * (3x2Pin 2.0mm)
35	eDP	1 * (2x10Pin 2.0mm)
36	Micro SIM	1* Micro SIM

## 2 开发板有什么？

开发板包含一片 DS-3568



## 3 入门

### 3.1 前提条件

在您首次启动 DS-3568 之前，您需要以下内容：

- DS-3568 主板
- DS-3568 板兼容电源（由 Geniatech 单独销售）
- 符合 DS-3568 板的红外遥控器（由 Geniatech 单独销售）
- 支持 2560x1600@60Hz 分辨率的 LVDS 或 eDP 液晶屏
- LVDS-LVDS 电缆或 eDP-eDP 电缆，用于将板连接到液晶屏
- 带 USB 接口的电脑键盘/鼠标

### 3.2 首次启动事项

要启动该主板，请按照以下简单步骤操作：

步骤 1. 将 LVDS / eDP 电缆连接到 DS-3568 连接器（标有 ）和液晶屏。

步骤 2. 将键盘连接到板上标记的 USB 连接器或将鼠标连接到标记的 USB 连接器。（连接的顺序无关紧要，您可以通过外部 USB 集线器连接。）

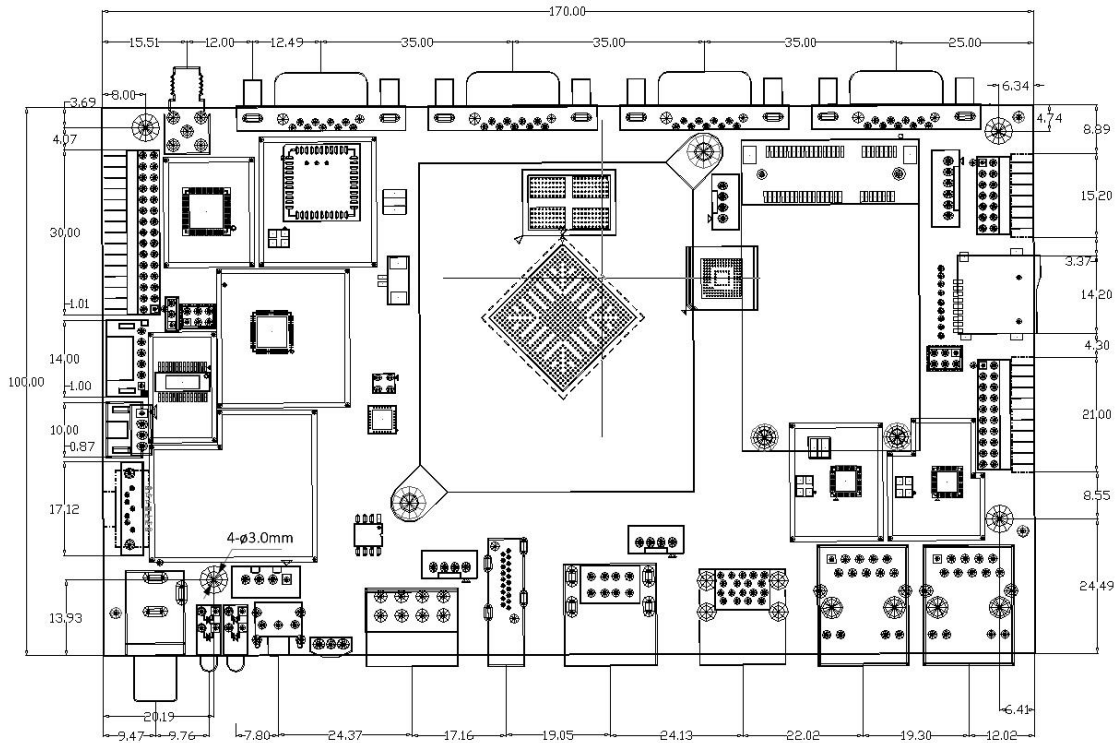
步骤 3. 将电源连接到标记的电源连接器。

打开电源（插入电源适配器），拨动电源开关，然后板子将启动，您将看到 Android 的启动标志。请注意，由于 Android 初始化，首次启动需要几分钟时间。随后的启动时间应该更快。

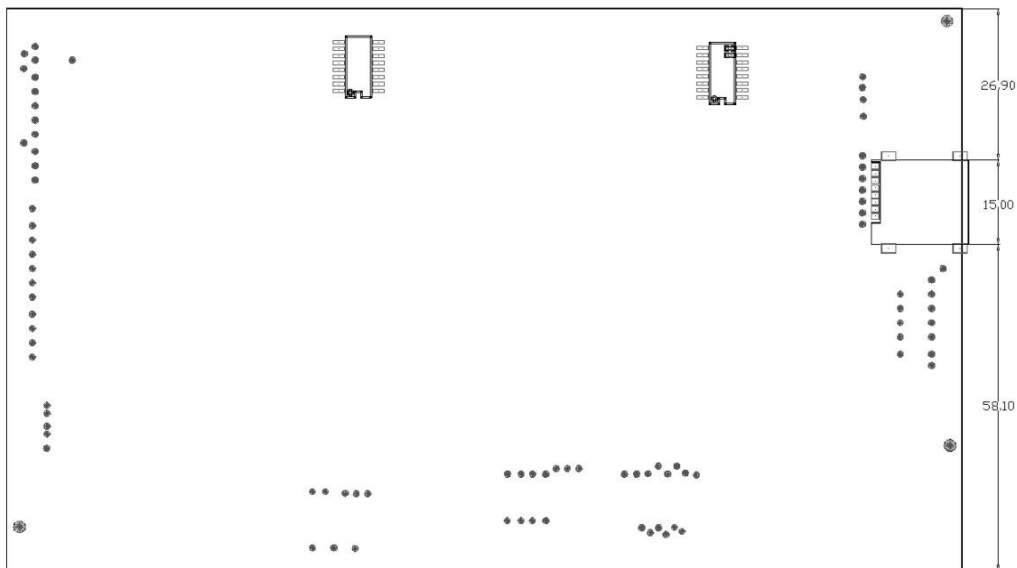
## 4. DS-3568 概述

### 4.1 产品图片

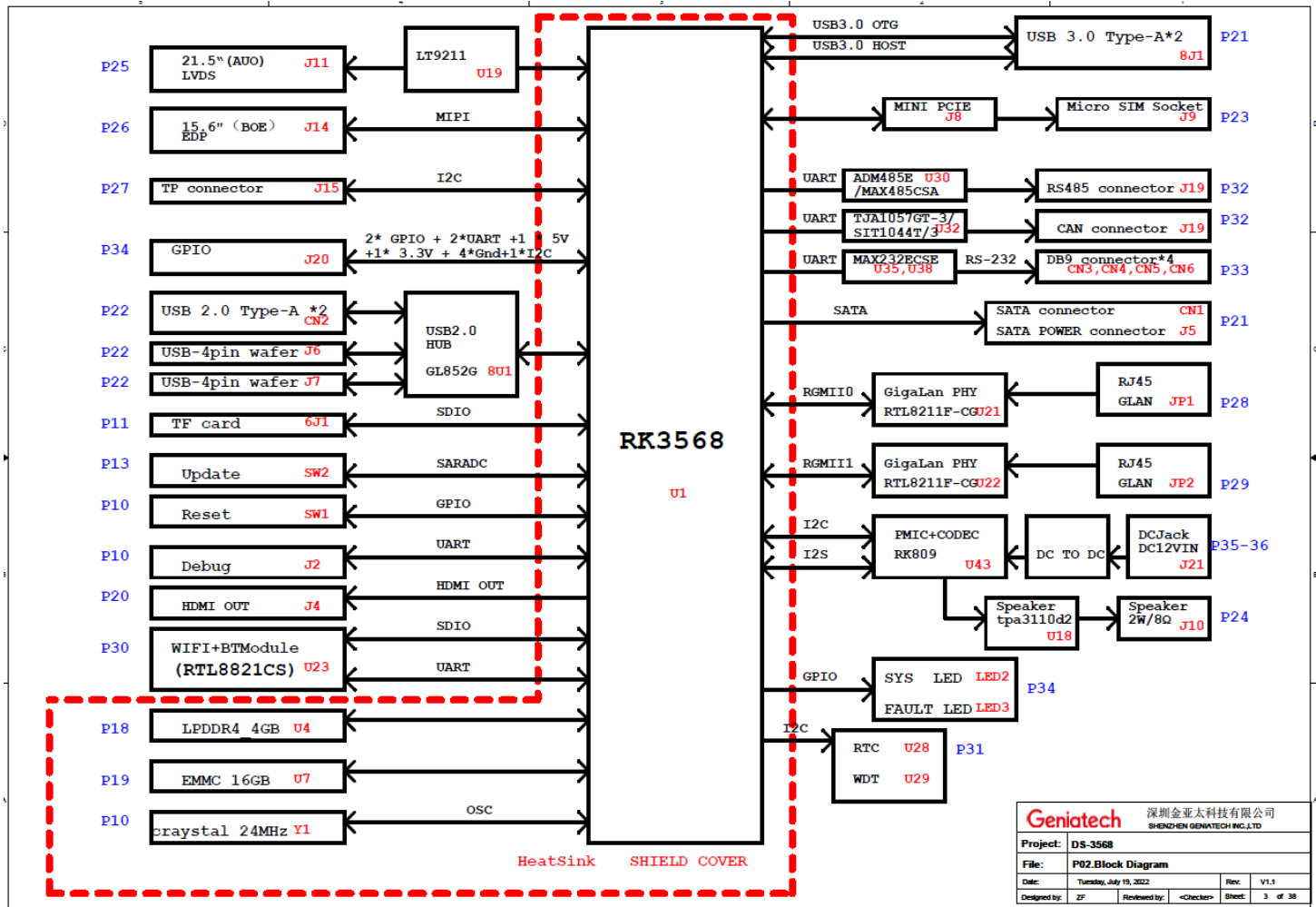
正面图:



背面图:

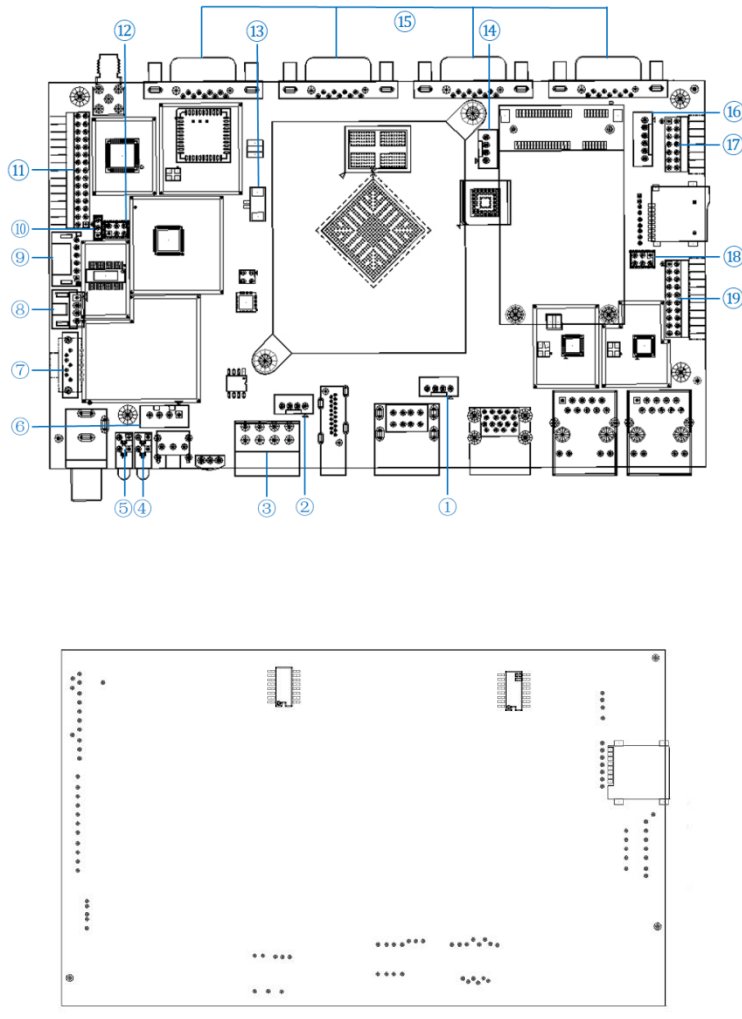


方框图:



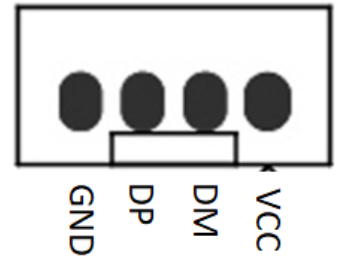
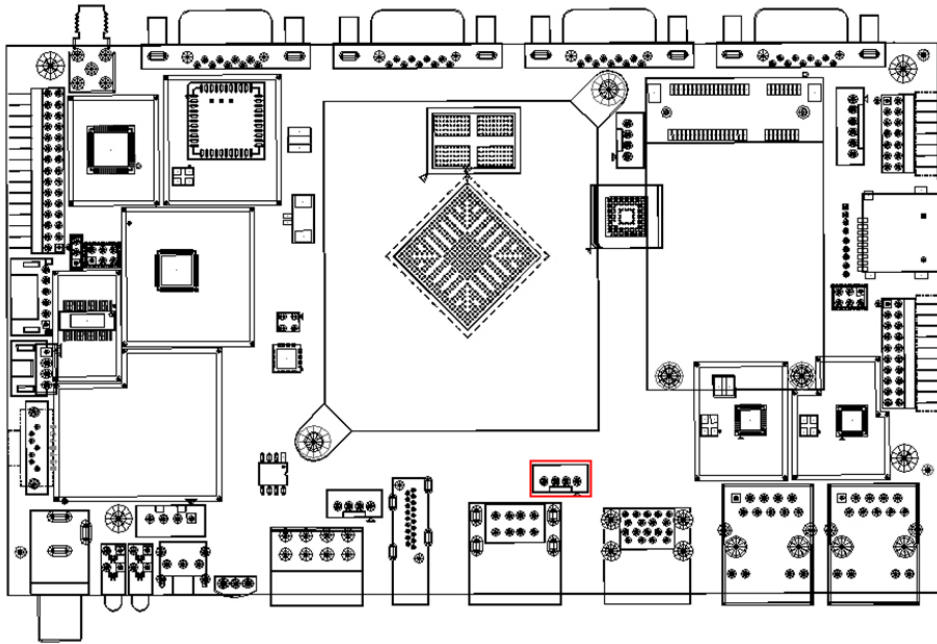


## 4.2 内部连接器/接口/跳线

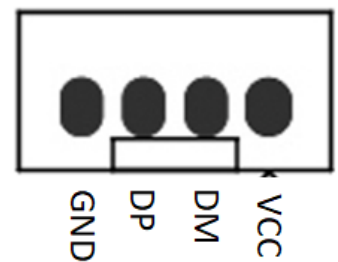
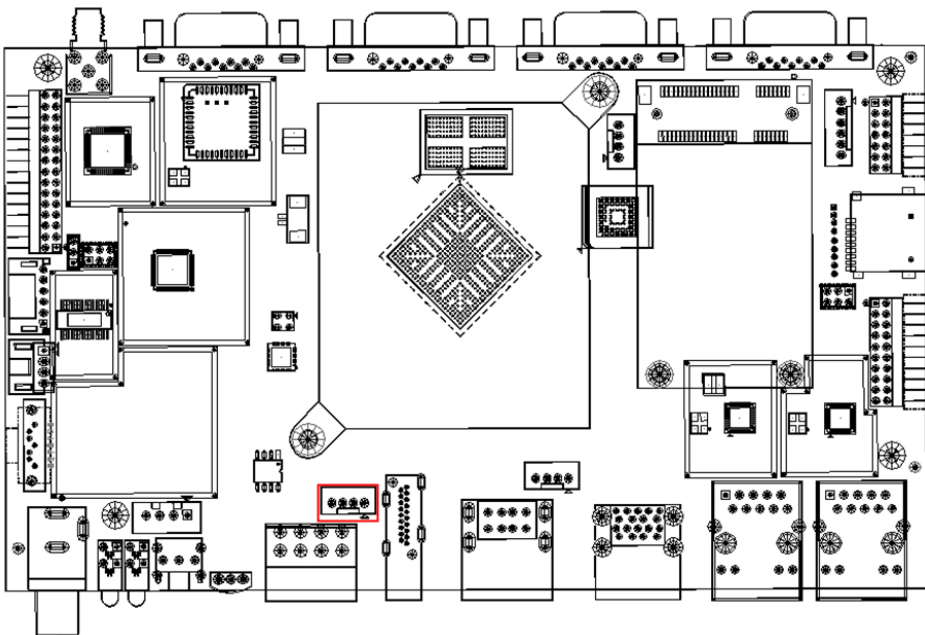


No	名称	描述
1	USB2.0-1	1*4Pin2.0mm
2	USB2.0-2	1*4Pin2.0mm
3	RS485&CAN	1*(2*4pin 3.81mm)
4	故障灯	2*灯 (红+绿)
5	状态灯	1*灯 (红+蓝)
6	SATA 电源	1*4Pin2.54mm
7	SATA3.0	1*SATA3.0
8	喇叭	1*4Pin2.0mm
9	I2C(触摸)	1*6Pin2.0mm
10	液晶屏类型识别	1*3pin 2.0mm
11	LVDS	1*(2*15Pin2.0mm)
12	LVDS 电压调节	1*(3*2pin 2.0mm)
13	RTC 电池接口	1*2Pin1.25mm
14	Debug	1*4pin 2.0mm
15	RS232	4*DB9
16	背光接口	1*6Pin2.0mm
17	GPIO	1*(2*7Pin2.0mm)
18	eDP 电压调节	1*(3*2pin 2.0mm)
19	eDP	1*(2*10Pin2.0mm)

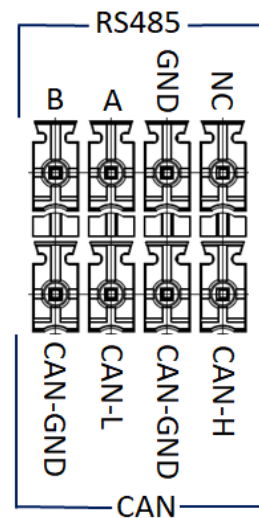
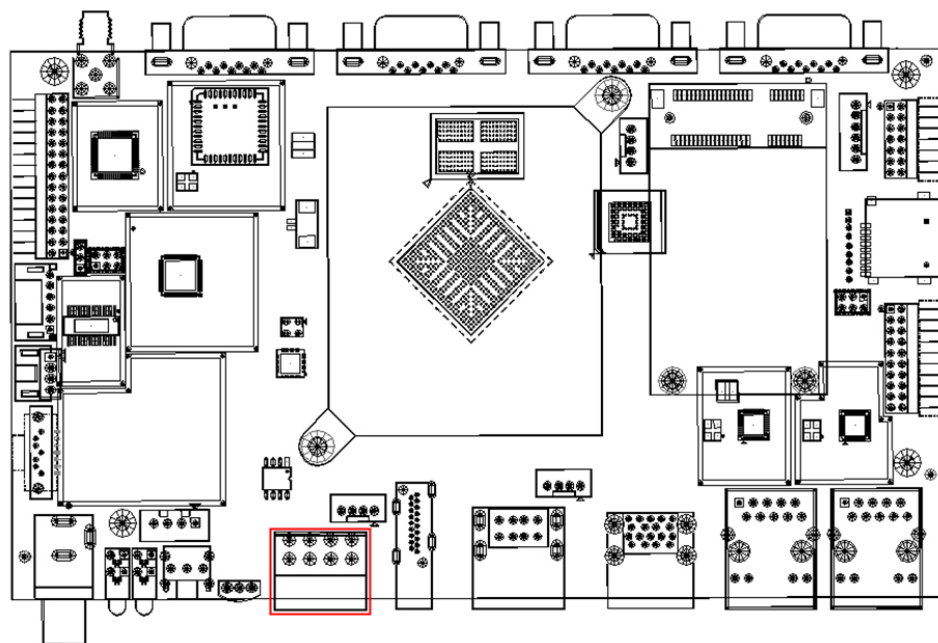
## 4.2.1 USB2.0-1 (J7)



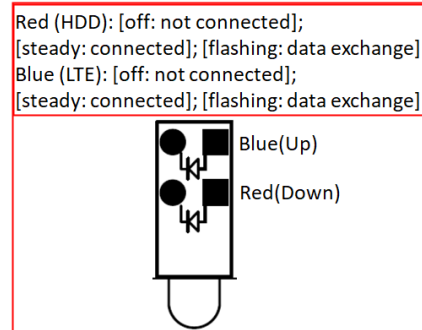
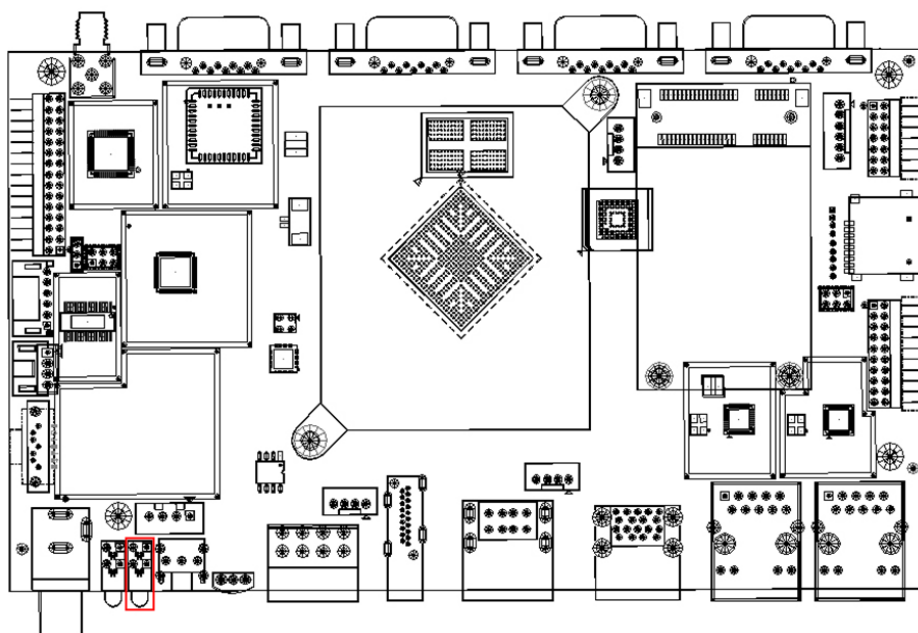
## 4.2.2 USB2.0-2 (J6)



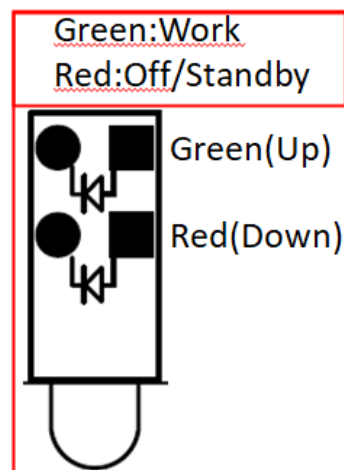
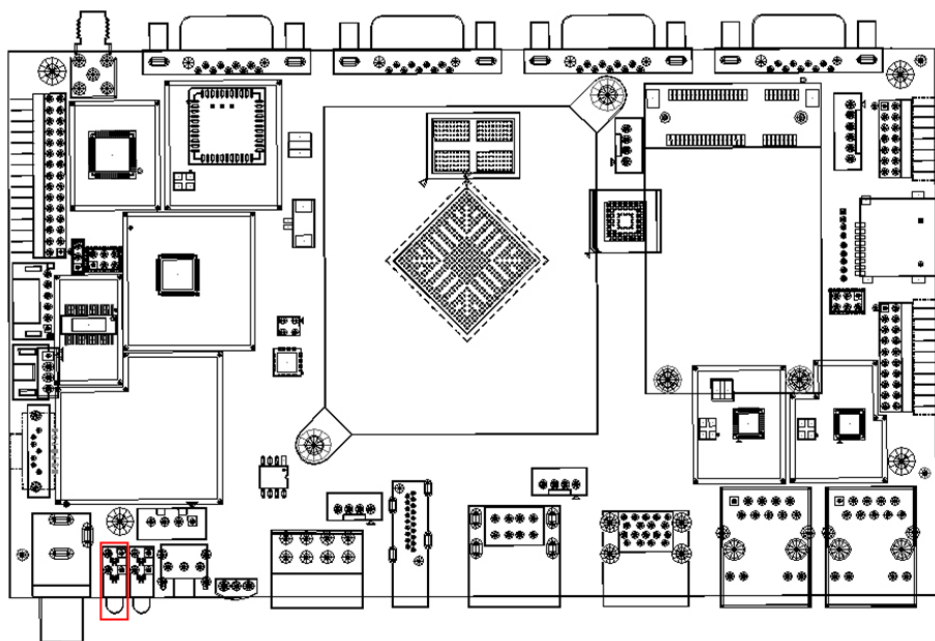
## 4.2.3 RS485&CAN (J19)



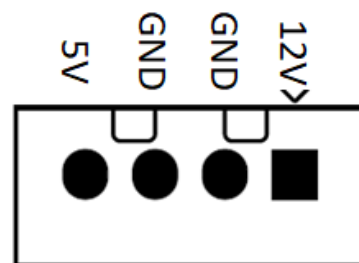
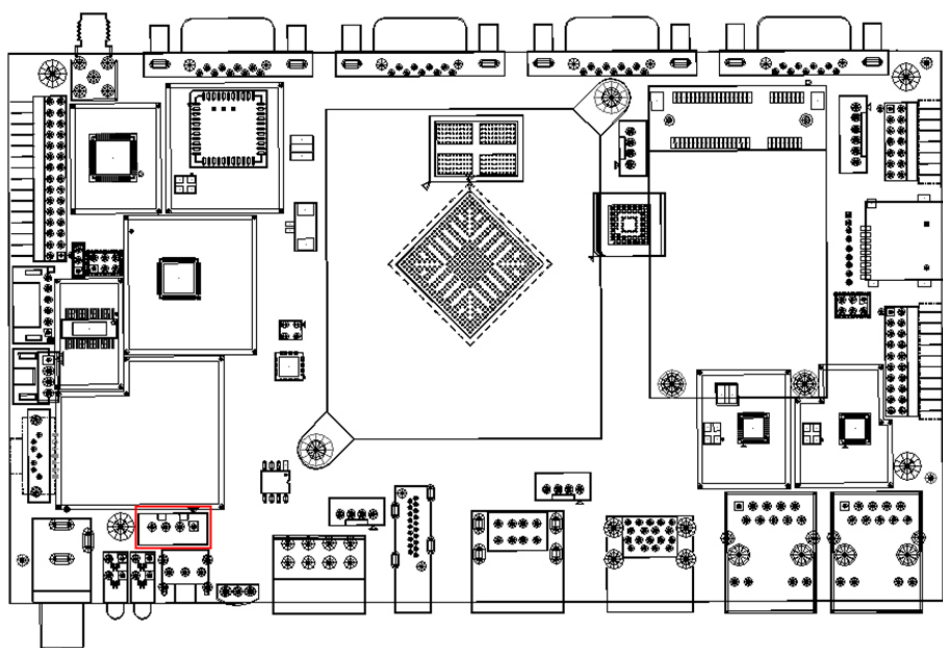
## 4.2.4 故障灯 (LED3)



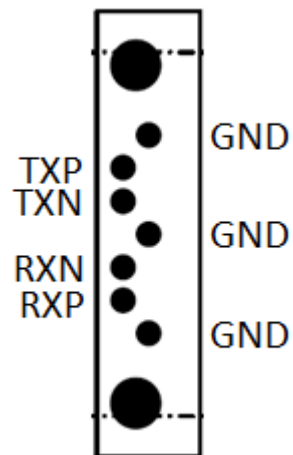
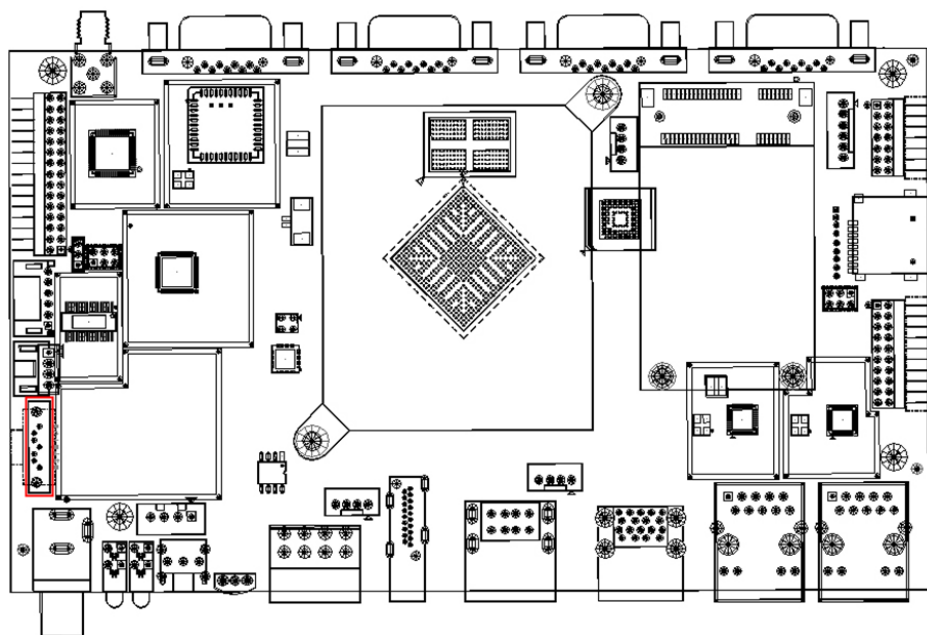
## 4.2.5 状态灯 (LED2)



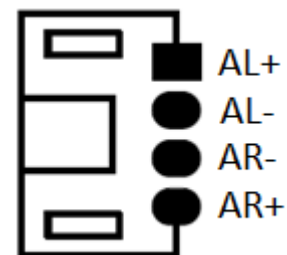
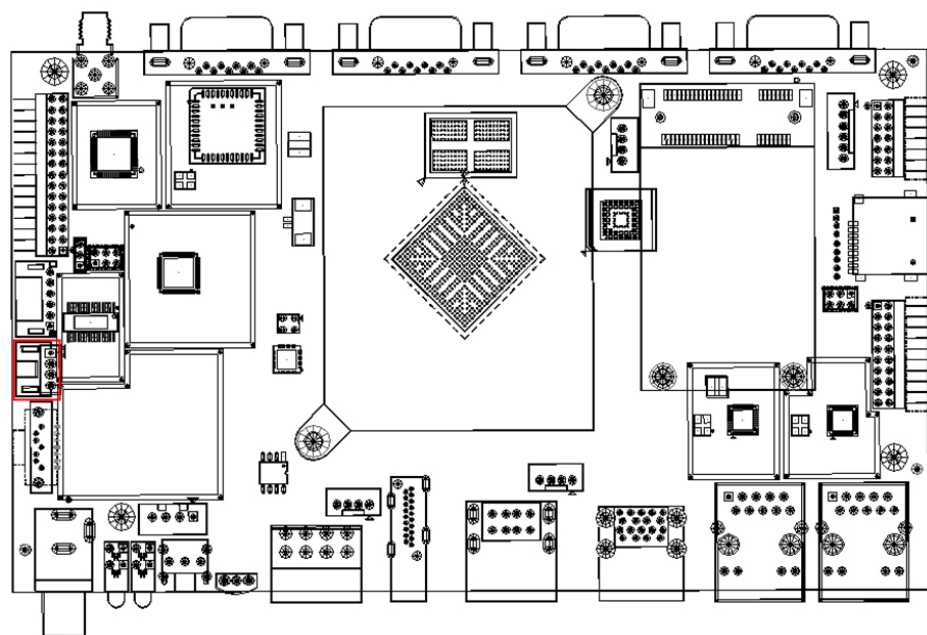
## 4.2.6 SATA 电源 (J5)



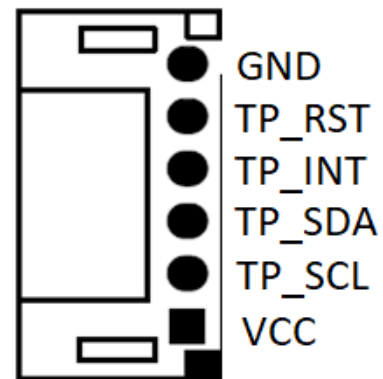
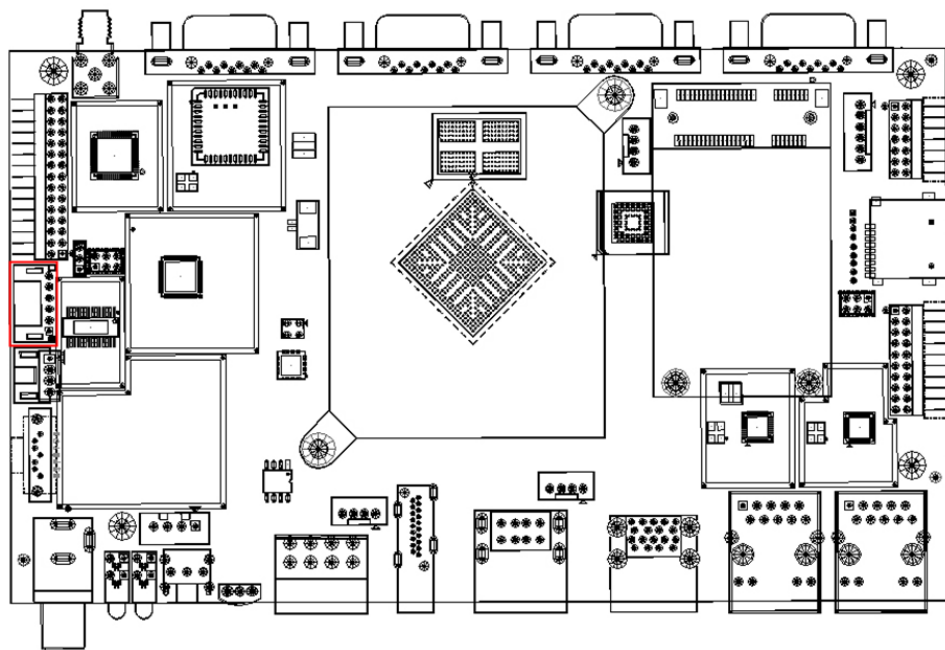
## 4.2.7 SATA3.0 (CN1)



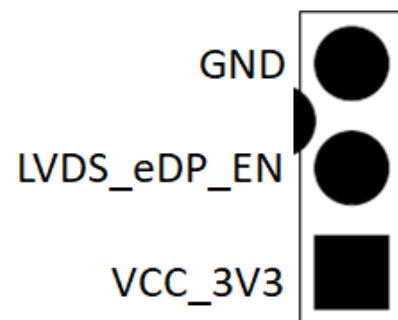
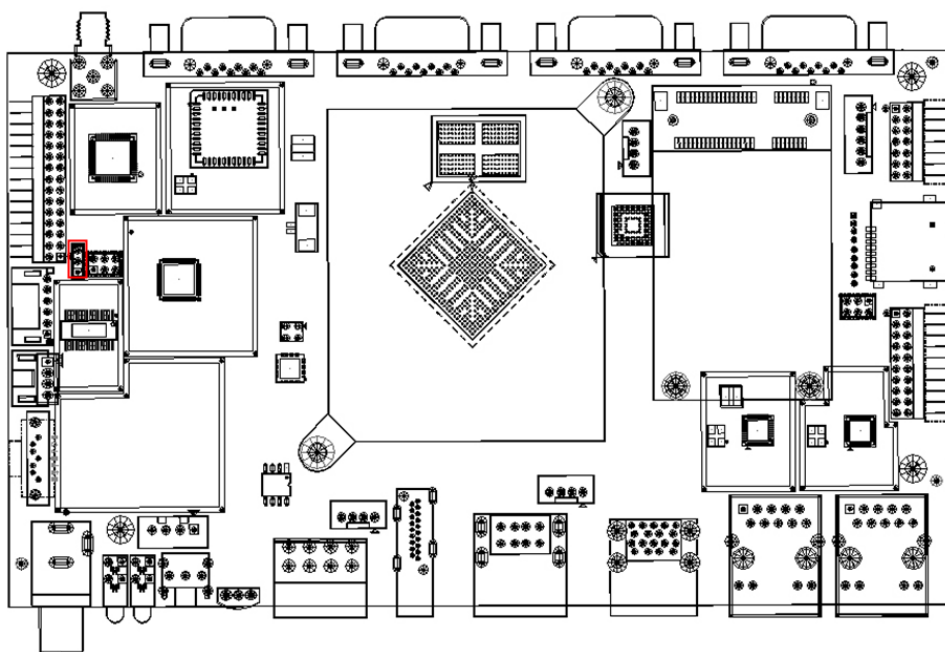
## 4.2.8 喇叭 (J10)



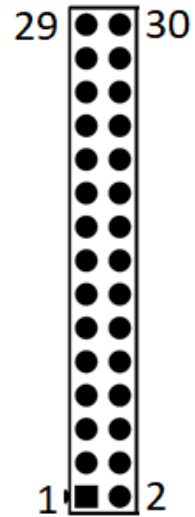
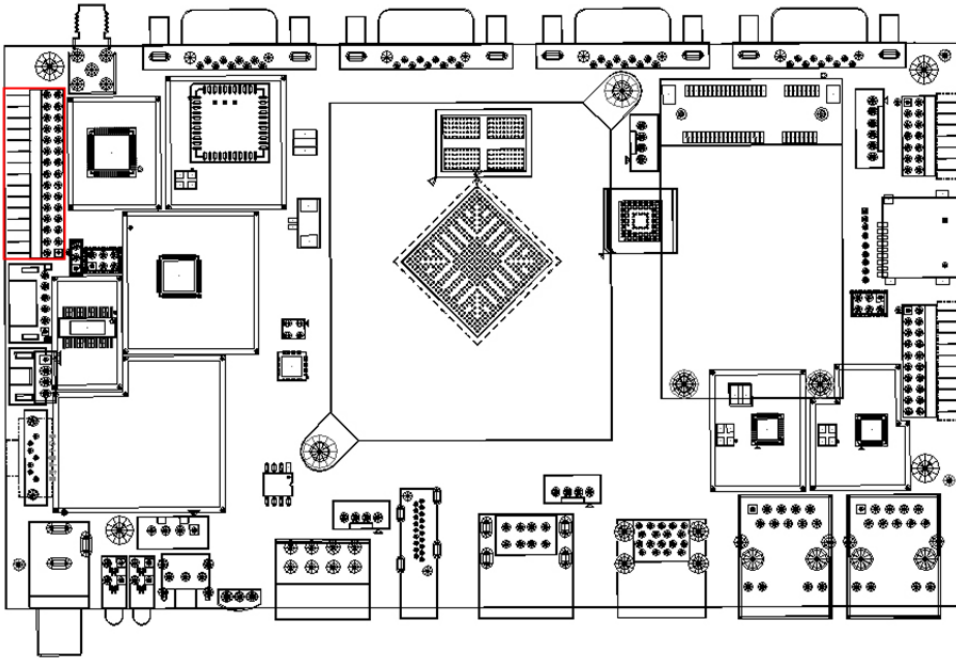
## 4.2.9 I2C/触摸 (J15)



## 4.2.10 液晶屏类型识别 (J3)

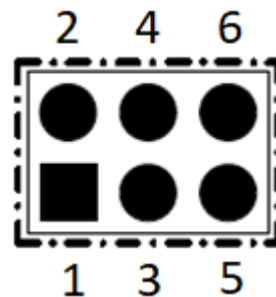
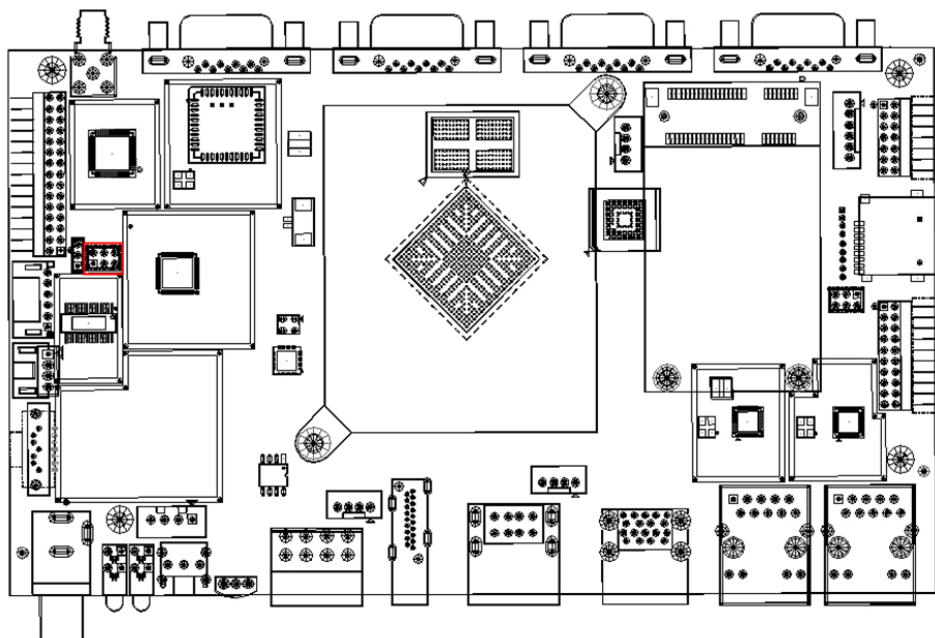


## 4.2.11 LVDS (J11)



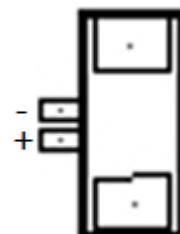
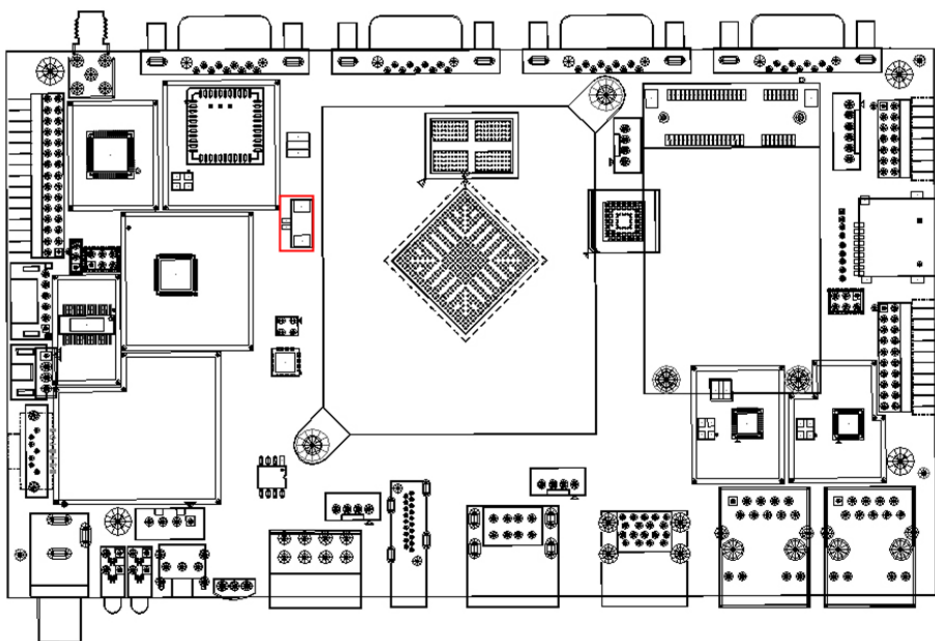
Pin Name	Pin No.	Pin No.	Pin Name
VCC_PANEL	1	2	VCC_PANEL
VCC_PANEL	3	4	GND
GND	5	6	GND
LVDS_A0_N	7	8	LVDS_A0_P
LVDS_A1_N	9	10	LVDS_A1_P
LVDS_A2_N	11	12	LVDS_A2_P
GND	13	14	GND
LVDS_ACLK_N	15	16	LVDS_ACLK_P
LVDS_A3_N	17	18	LVDS_A3_P
LVDS_B0_N	19	20	LVDS_B0_P
LVDS_B1_N	21	22	LVDS_B1_P
LVDS_B2_N	23	24	LVDS_B2_P
GND	25	26	GND
LVDS_BCLK_N	27	28	LVDS_BCLK_P
LVDS_B3_N	29	30	LVDS_B3_P

## 4.2.12 LCD 电压调节 (J12)



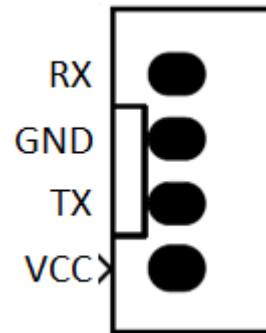
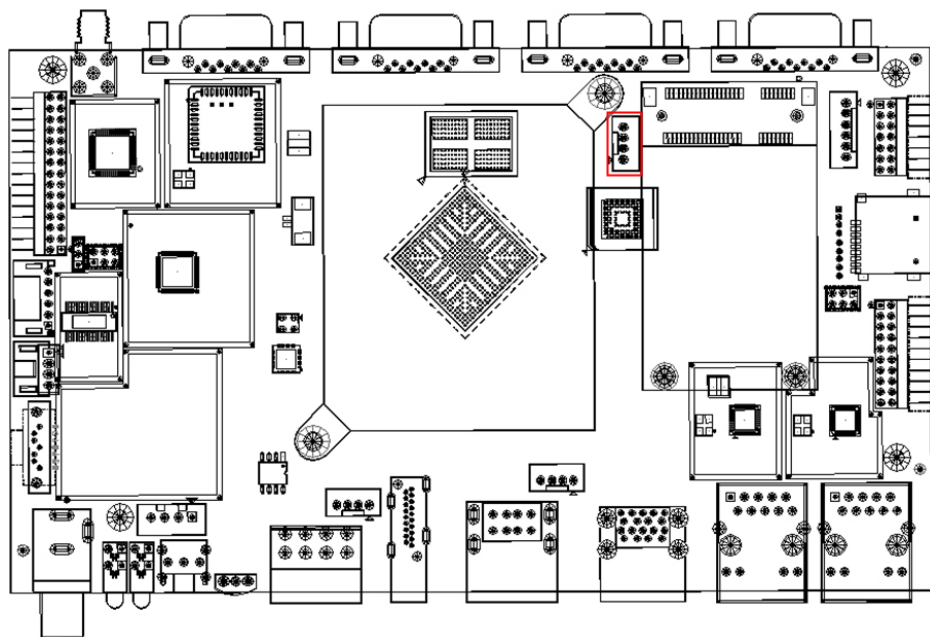
1-2	3.3V
3-4	5V
5-6	12V

## 4.2.13 RTC 电池接口 (J18)

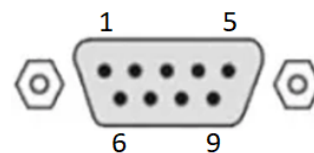
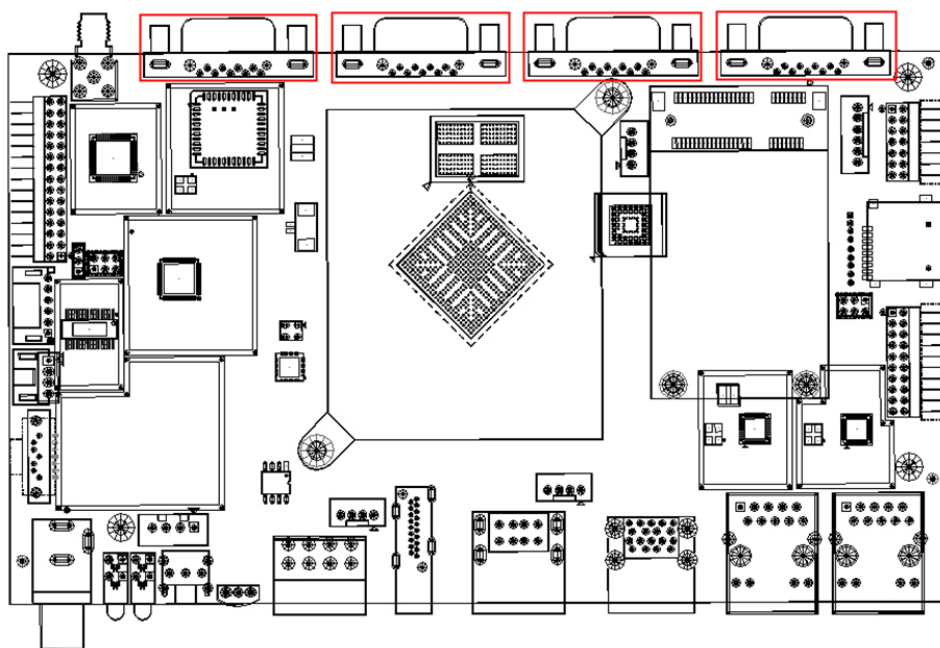




## 4.2.14 Debug (J2)

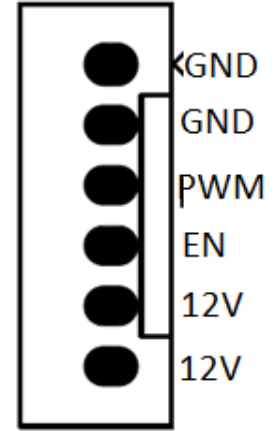
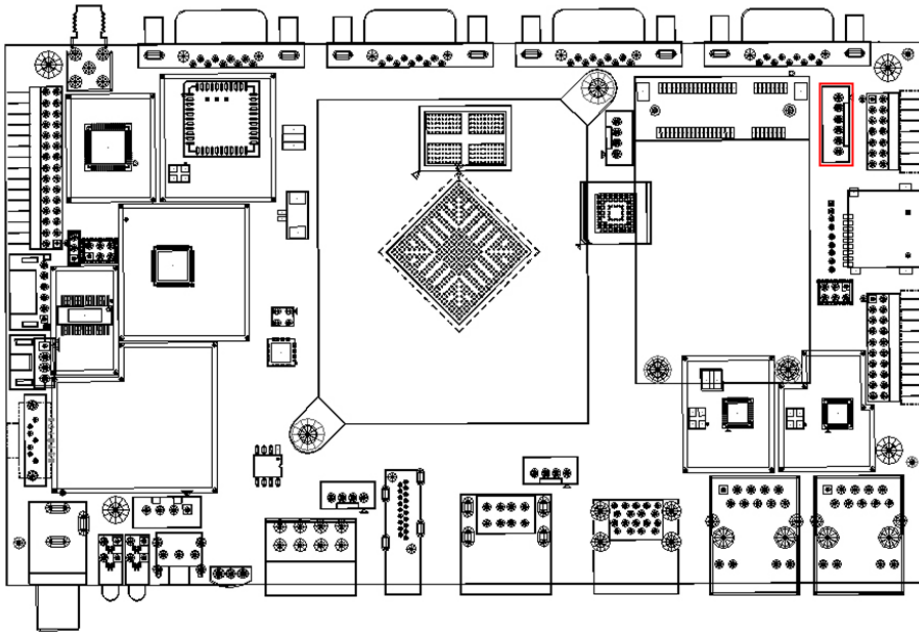


## 4.2.15 RS232/DB9 (CN3/CN4/CN5/CN6)

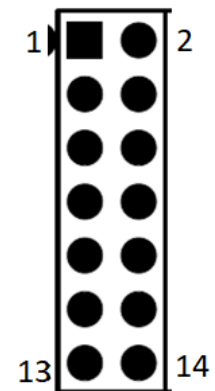
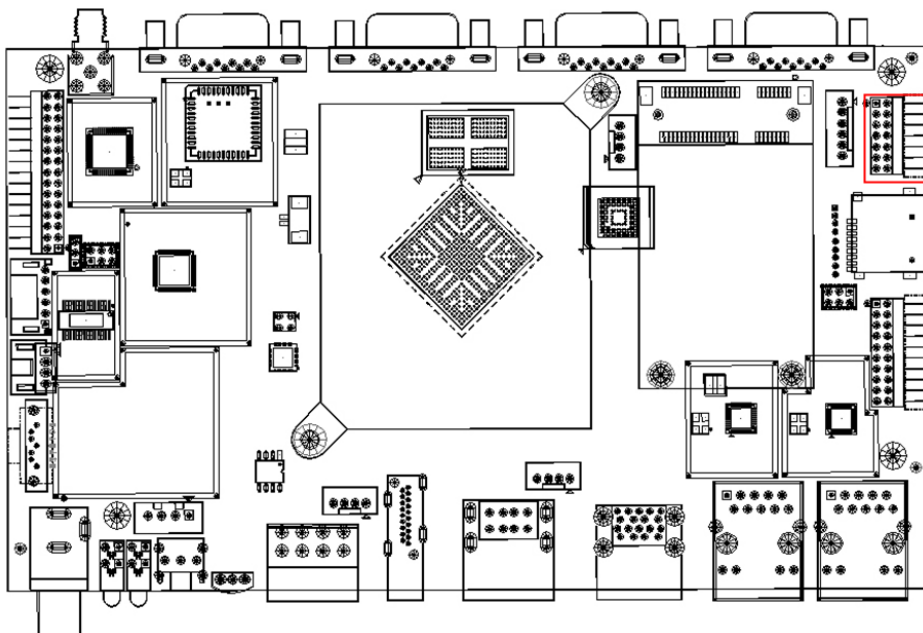


Pin No.	Pin Define
1	NC
2	RX
3	TX
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

## 4.2.16 背光 (J16)

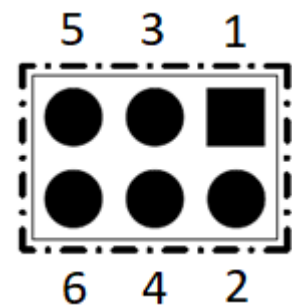
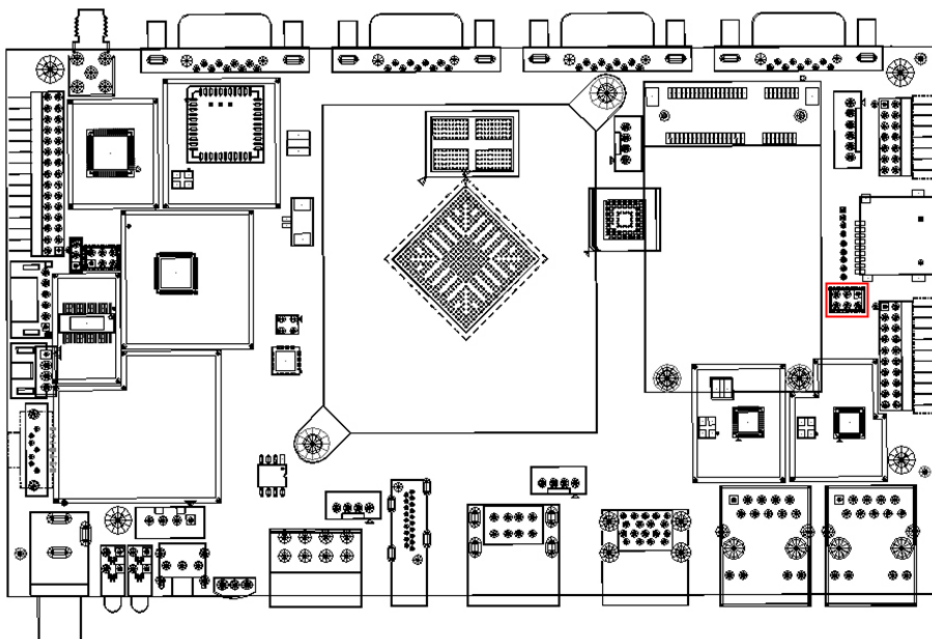


## 4.2.17 GPIO (J20)



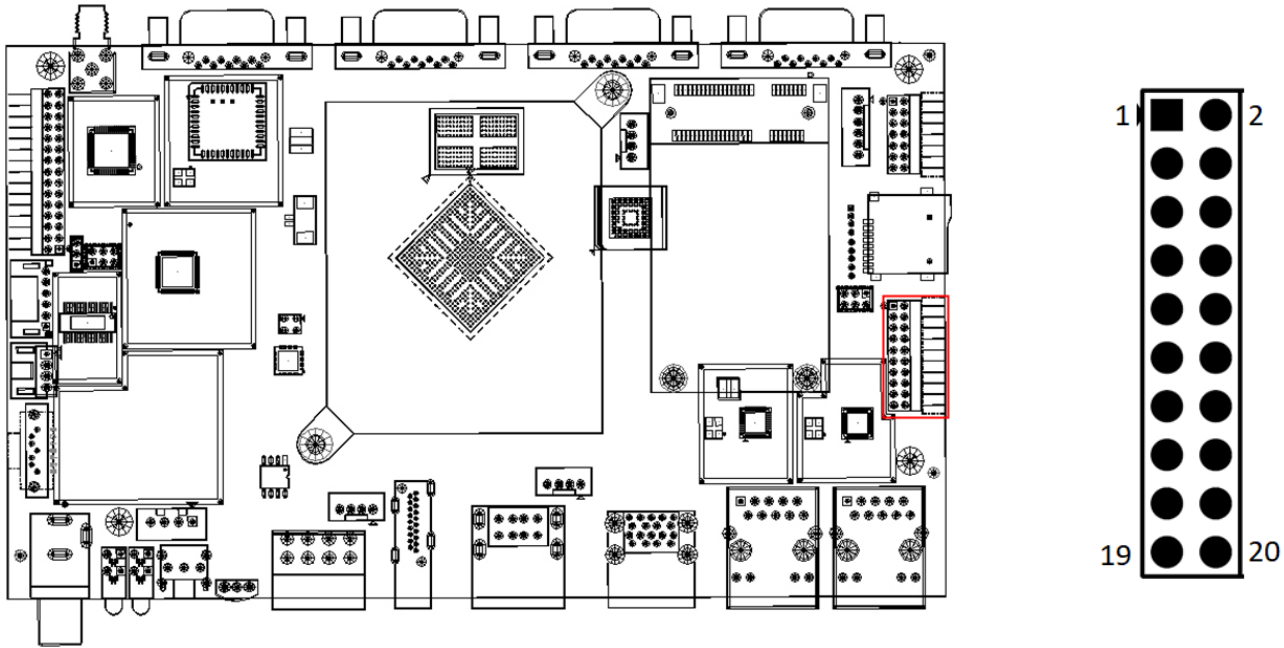
Pin Name	Pin No.	Pin No.	Pin Name
VCC_3V3	1	2	VCC_5V0
GND	3	4	GND
UART9_TX_M1	5	6	I2C2_SDA_M1
UART9_RX_M1	7	8	I2C2_SCL_M1
GPIO0_D3	9	10	I2C3_SDA_UART_RX
GPIO4_C4	11	12	I2C3_SCL_UART_TX
GND	13	14	GND

#### 4.2.18 eDP 电压调节 (J13)



1-2	3.3V
3-4	5V
5-6	12V

## 4.2.19 eDP (J14)



Pin Define	Pin No.	Pin No.	Pin Define
VCC_EDP	1	2	VCC_EDP
GND	3	4	GND
EDP_TX_D0N	5	6	EDP_TX_D0P
EDP_TX_D1N	7	8	EDP_TX_D1P
EDP_TX_D2N	9	10	EDP_TX_D2P
EDP_TX_D3N	11	12	EDP_TX_D3P
GND	13	14	GND
EDP_TX_AUXN	15	16	EDP_TX_AUXP
GND	17	18	GND
VCC3V3/GND (optional)	19	20	EDP_HPD

## 4.3 系统框图

