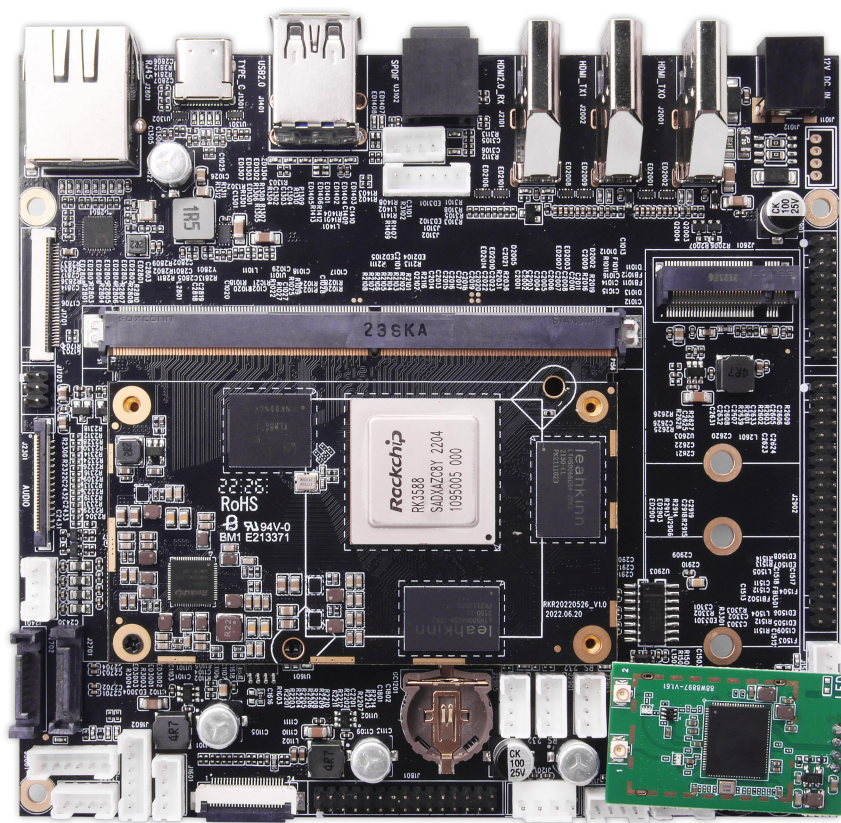


深圳金亚太科技有限公司

Shenzhen Geniatech Co.,Ltd.

HARDWARE USER GUIDE

MODEL:DB3588-V2



Confirmation

REVISION HISTORY					
VERSION	DATE	BOARD ID	PAGE	DESCRIPTION	AUTHOR
V1.0	2022/8/19	RKR20220526_V1.0			

APPROVED BY GENIATECH		
PREPARED BY 编写	CHECKED BY 审核	APPROVED BY 批准

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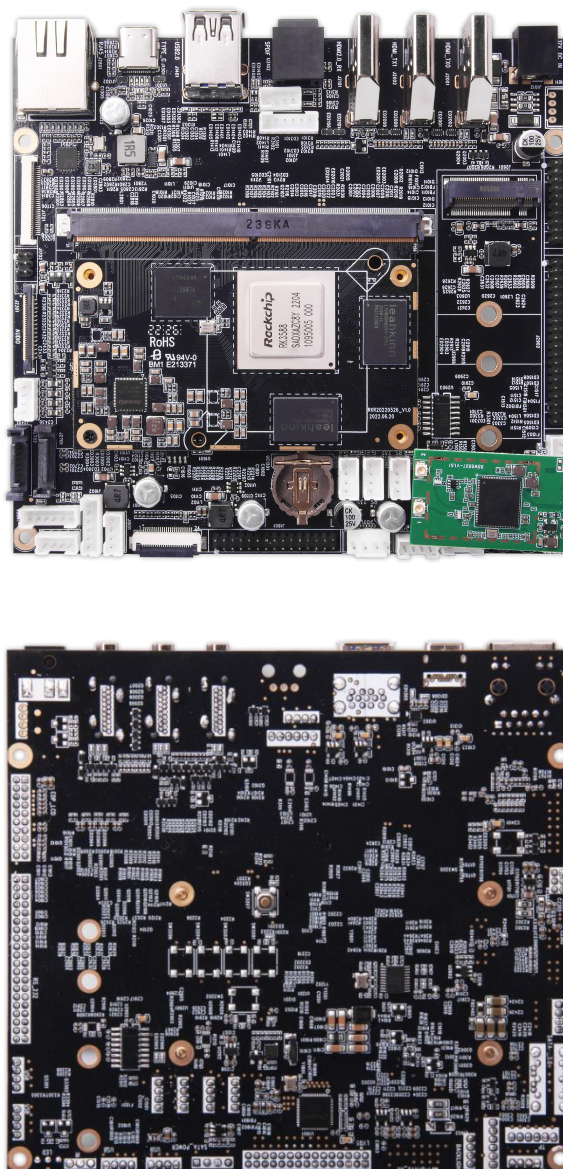
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1 Introduction

The DB3588-V2 motherboard is composed of the SOM3588 core board and the CBD_SOM3588 carrier board. Based on Rockchip RK3588 scheme, it is equipped with quad-core Cortex-A76 and quad-core Cortex-A55 with main frequency up to 2.4GHz, integrated ARM Mali-G610 MP4 quad-core GPU and built-in AI accelerator NPU, which can provide 6TOPs computing power. It supports Bluetooth, Wi-Fi, audio and video, camera and other functions, and it has a variety of video input and output interfaces. It is suitable for intelligent NVR, cloud terminal, industrial control, information release terminal, multimedia advertising machine and other scenarios.

2 What's in the DB3588-V2 board



3 Getting started

3.1 Prerequisites

Before you power up your DB3588-V2 for the first time you will need the following:

- SOM3588,CBD-SOM3588 ,
- DB3588-V2 compliant power supply (sold separately by Geniatech).
- DB3588-V2 compliant IR remote (sold separately by Geniatech).
- EDP or LVDS LCD Monitor that supports a resolution of 8K/60Hz.
- EDP cable or LVDS cable to connect the board to the LCD.
- A computer keyboard/mouse with USB interface.

3.2 Starting the board for the first time

To start the board, follow these simple steps:

step 1. Connect the EDP / LVDS cable to the DB3588-V2 connector (marked) and to the LCD Monitor.

step 2. Connect the keyboard to the boards USB connector marked or connect the mouse to the USB connector marked. (It doesn't matter which order you connect it in. You can also connect via an external USB Hub.)

step 3. Connect the power supply to power connector marked.

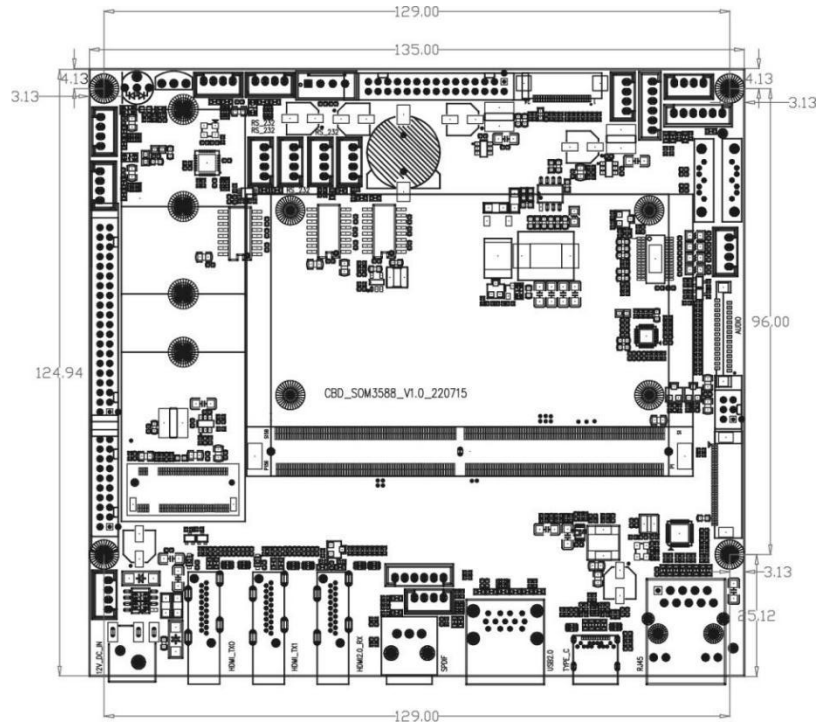
Power on (Plug power adapter), toggle the power switch, then the board will boot up and you will see the boot up logo with Android.

Please note that the first boot takes several minutes due to Androids initialization. Subsequent boot times should be faster.

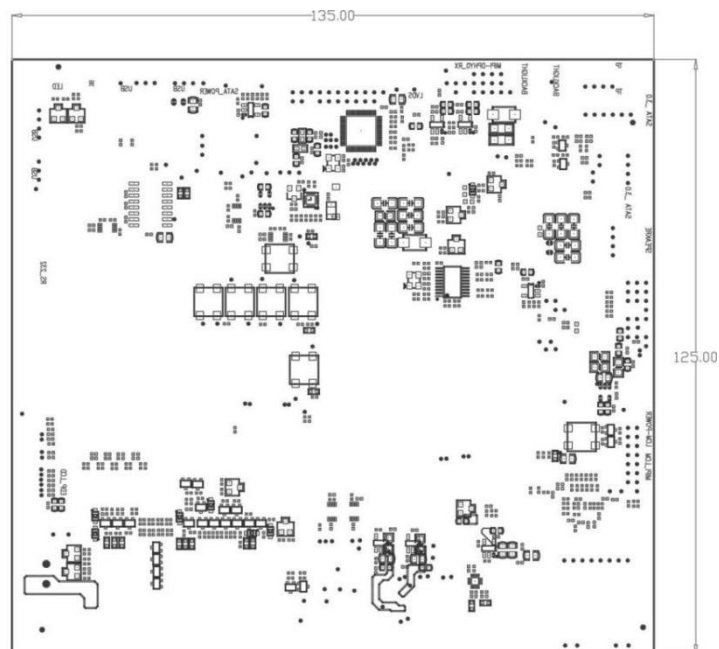
4 Board View

4.1 Product Diagram

TOP View:

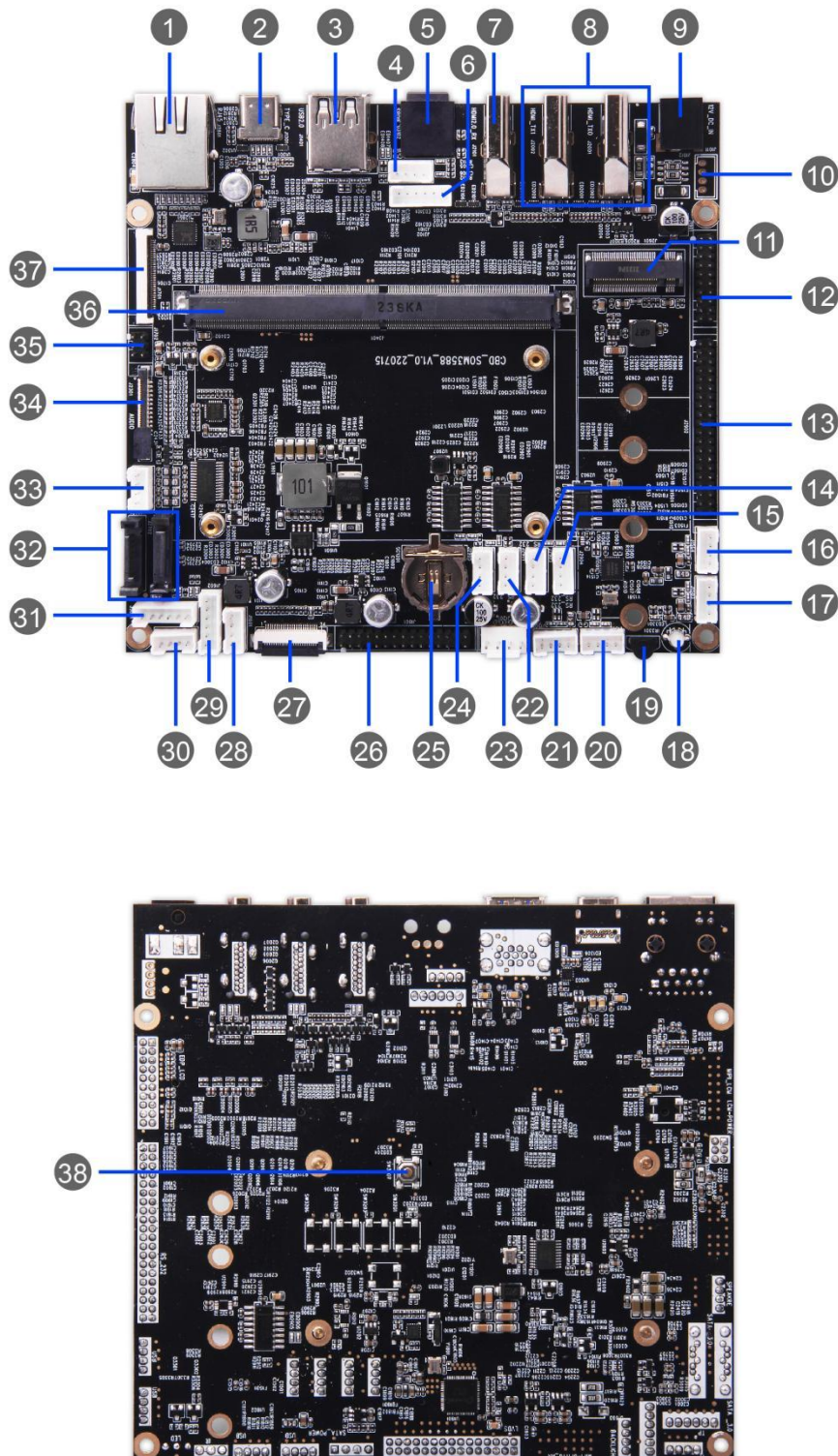


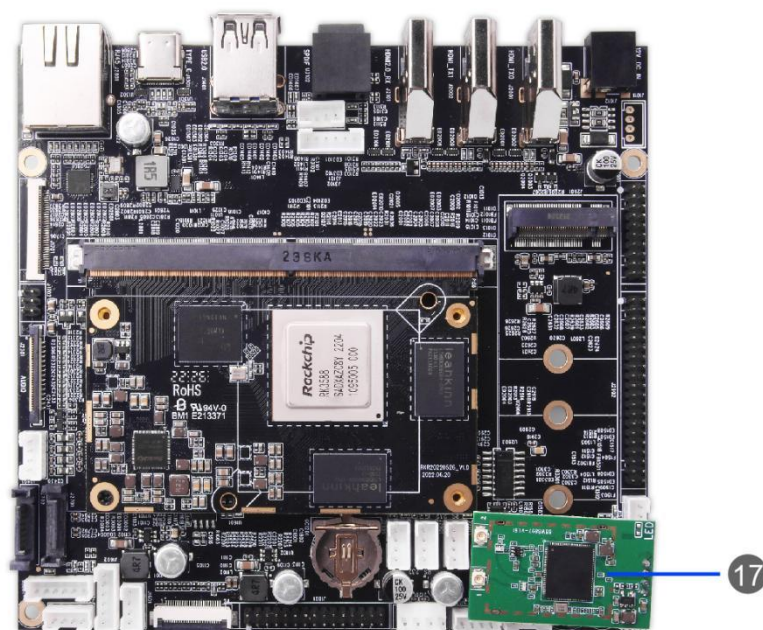
Bottom View:



4.2 Internal Connectors, Headers & Jumpers

Description: Connector MXM 314Pin 0.5mm H7.8 SMD AS0B821-S78B-7H Foxconn

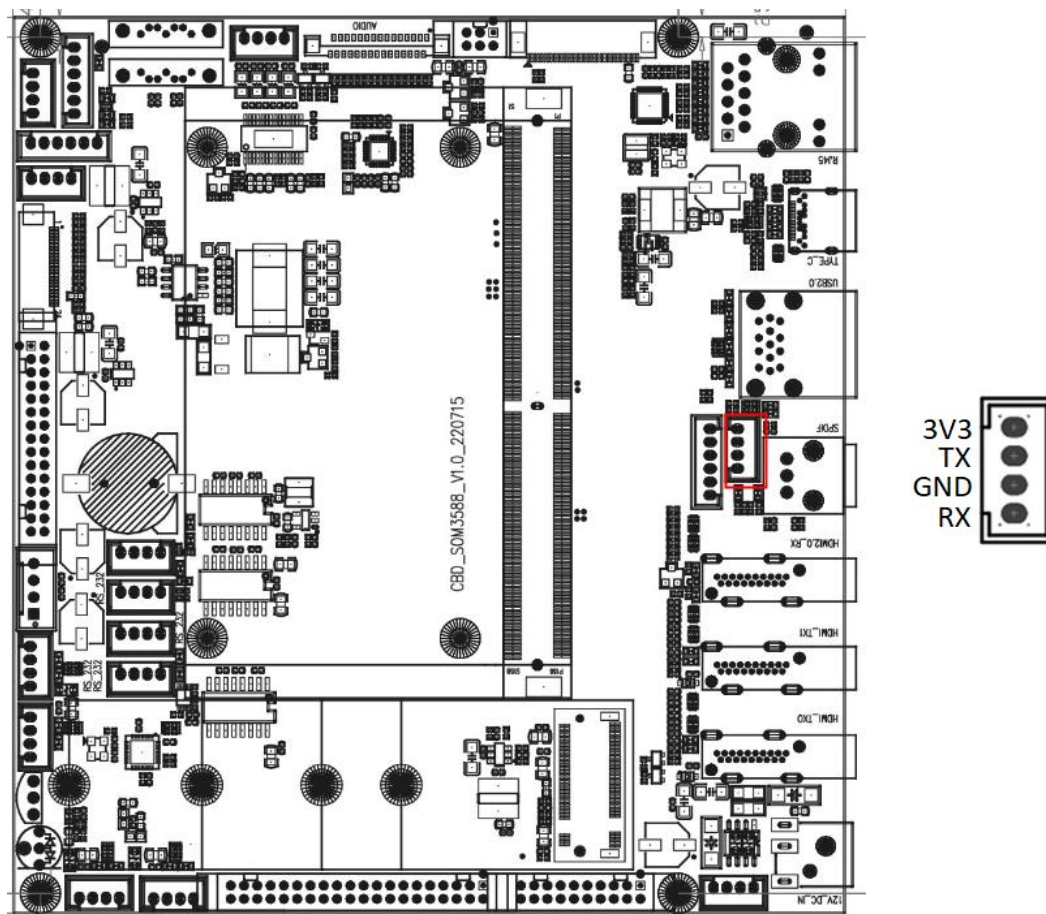




Label	Function	Note
1	LAN	100M/1000M Ethernet
2	Type-C	*1
3	USB 2.0 Type A, USB 3.0 Type A	USB2.0*1 (top), USB3.0*1 (Bottom)
4	DEBUG	1 * 4P Header , pitch 2.0mm
5	SPDIF	*1
6	SPI	1 * 6P Header, pitch 2.0mm
7	HDMI IN	*1
8	HDMI OUT 1, HDMI OUT 2	*2 (HDMI 2a)
9	DC Jack connector	12V/2A
10	POWER SOCKET	1 * 4P Header, pitch 2.0mm
11	M.2 Key-M	NGFF 75Pin
12	EDP Screen Connector	2 *10P header, pitch 2.0mm
13	GPIO	2* 20P header, pitch 2.00mm (GPIO/UART/SPI/I2C)
14	RS232	1 * 4P Header, pitch 2.0mm
15	RS232	1 * 4P Header, pitch 2.0mm
16	USB2.0	1 * 4P Header, pitch 2.0mm
17	WiFi Module	2.4G/5G, BT4.0
18	LED LIGHT	*1
19	IR	*1
20	USB2.0	1 * 4P Header, pitch 2.0mm
21	USB2.0	1 * 4P Header, pitch 2.0mm

22	RS232	1 * 4P Header, pitch 2.0mm
23	SATA_POWER	1 * 4P Header, pitch 2.0mm
24	RS232	1 * 4P Header, pitch 2.0mm
25	Battery socket	*1
26	LVDS Screen Connector	2* 15P header, pitch 2.0mm
27	MIPI Screen Connector	1 * 24P Header, pitch 0.5mm
28	Backlight1	1 * 4P Header, pitch 2.0mm
29	Backlight2	1 * 6P Header, pitch 2.0mm
30	I2C	1 * 4P Header, pitch 2.0mm
31	I2C TP	1 * 6P Header, pitch 2.0mm
32	SATA3.0	*2
33	Speaker	1 * 4P Header, pitch 2.0mm
34	AUDIO	1*30P, pitch 0.5mm (Mic array)
35	LCM-POWER	2*3PHeader, pitch 2.0mm (3.3V/5V/12V optional)
36	SODIMM SOCKET	MXM 314P 0.5mm H7.8 SMD
37	MIPI_LCM	34 * 1 Header, pitch 0.50mm
38	Update Button	*1

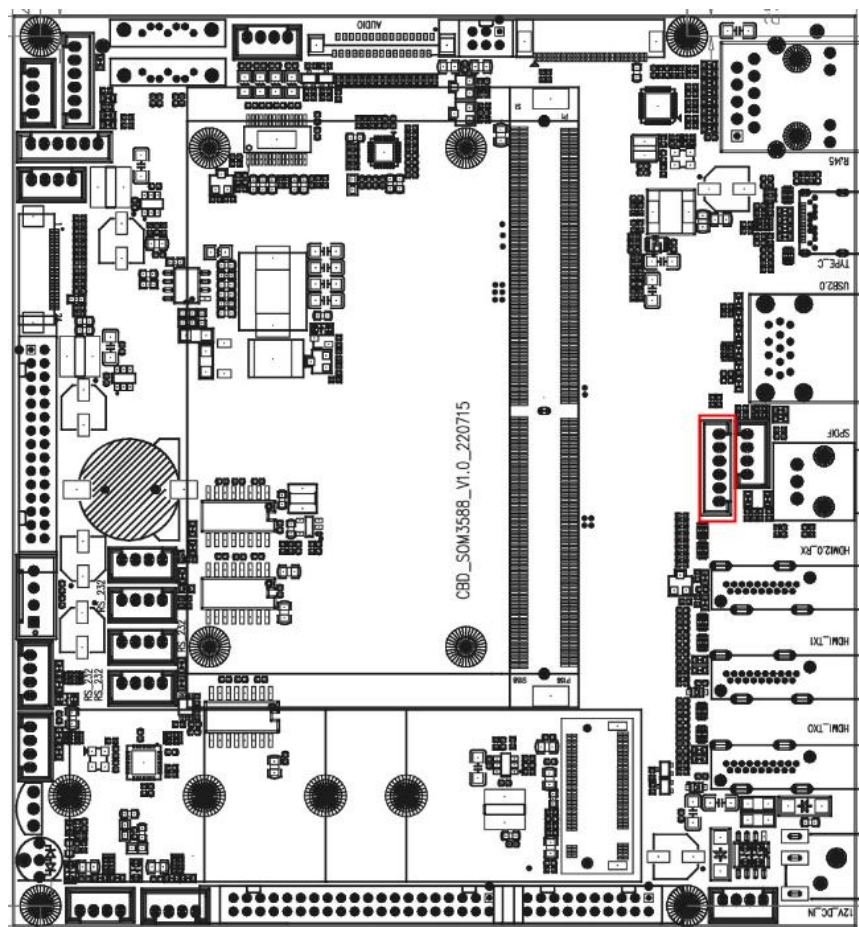
4.2.1 Debug (J3101)



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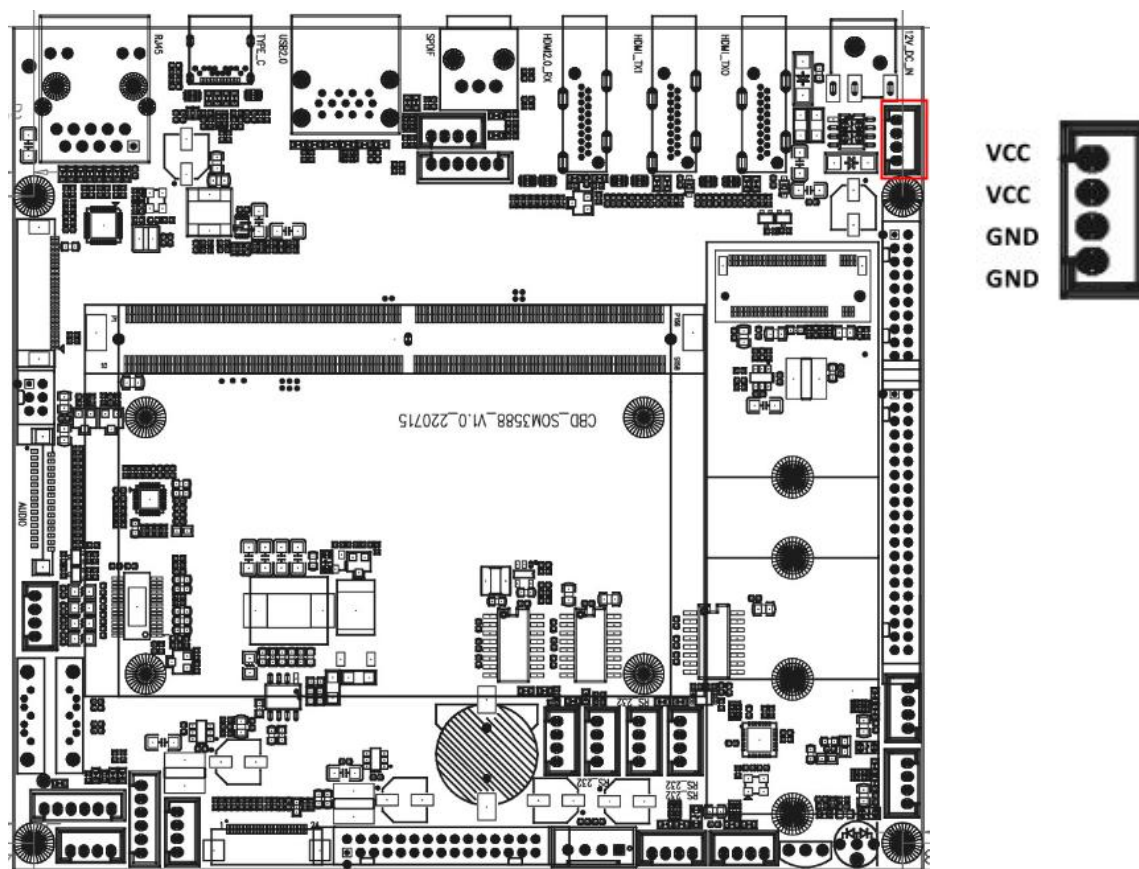
4.2.2 SPI(J3102)



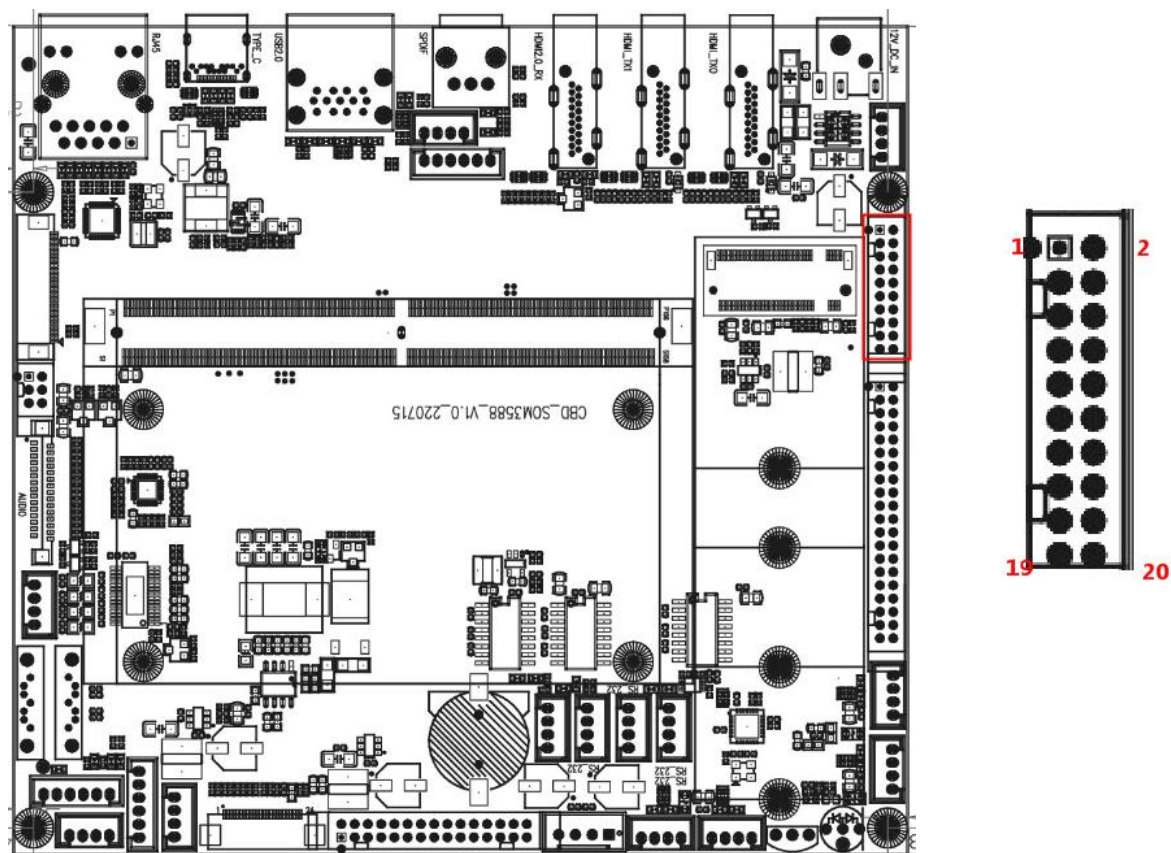
GND
SPI_MOSI
SPI_MISO
SPI_CLK
SPI_CS
VCC_SPI



4.2.3 DC IN(J1011)

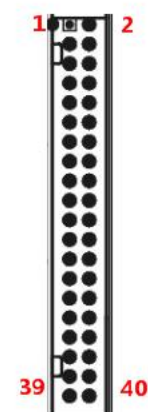
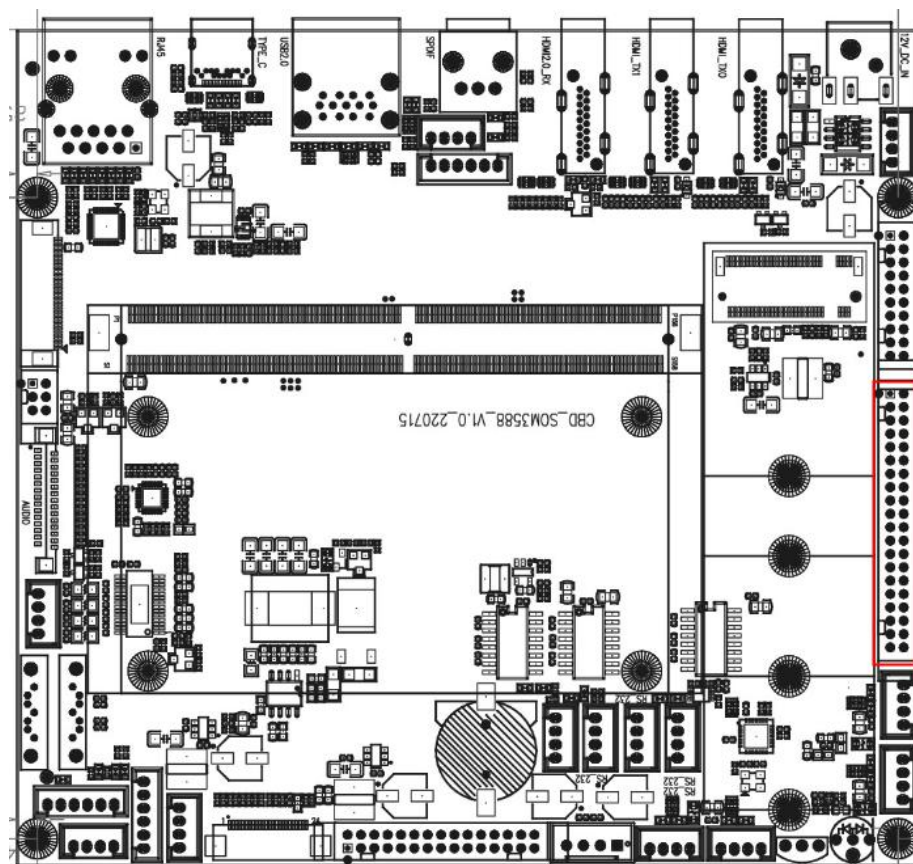


4.2.4 EDP (J1901)



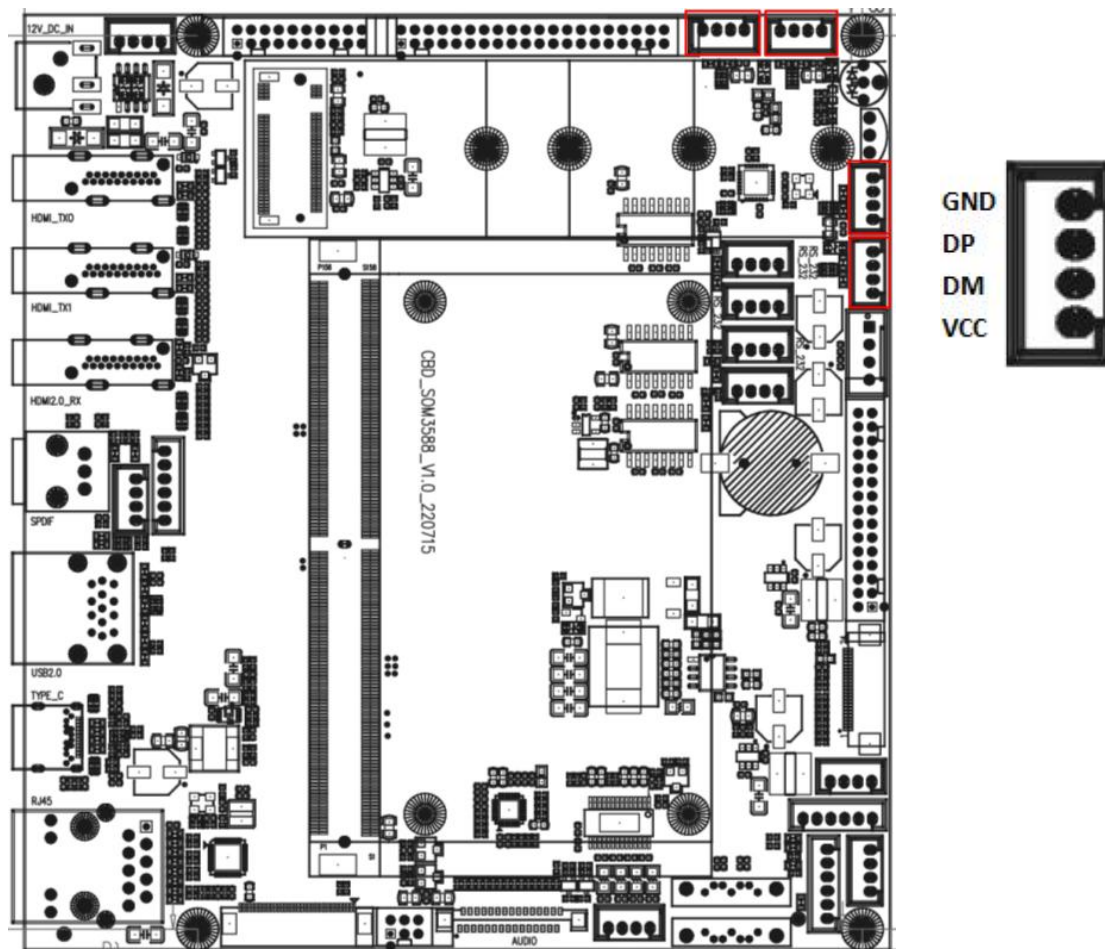
1	VCC_LCD_PWOER	2	VCC_LCD_PWOER
3	EDP_TX0N	4	GND
5	EDP_TX1N	6	EDP_TX0P
7	EDP_TX2N	8	EDP_TX1P
9	EDP_TX3N	10	EDP_TX2P
11	GND	12	EDP_TX3P
13	EDP_AUXN	14	GND
15	GND	16	EDP_AUXP
17	NC	18	GND
19	EDP_TX0N	20	EDP_HPD

4.2.5 GPIO(J2902)

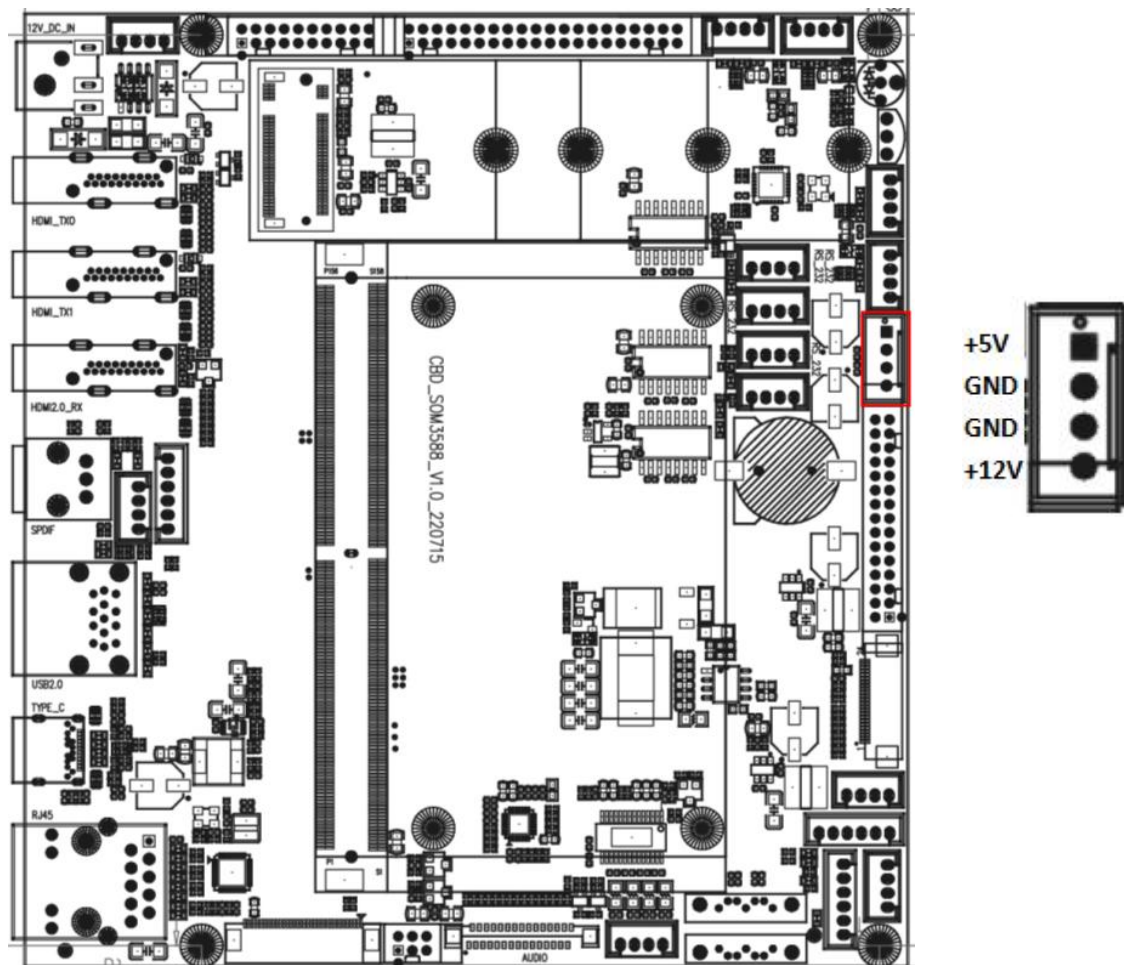


1	SDMMC0_D3	2	I2C4_SCL_M1_SENSOR
3	SDMMC0_D2	4	I2C4_SDA_M1_SENSOR
5	SDMMC0_D1	6	I2C0_SCL_M2
7	SDMMC0_D0	8	I2C0_SDA_M2
9	SD_CLK	10	I2C1_SCL_M2
11	GND	12	I2C1_SDA_M2
13	SDMMC0_CMD	14	I2S2_SCLK_M0_BT
15	SDMMC_DET_L	16	I2S2_LRCK_M0_BT
17	SDMMC_PWREN	18	I2S2_SDI_M0_BT
19	SARADC_IN6	20	SDIO_D2_M0_WIFI
21	SARADC_IN4	22	SDIO_D3_M0_WIFI
23	SARADC_IN2	24	SDIO_CLK_M0_WIFI
25	SARADC_IN7	26	SDIO_CMD_M0_WIFI
27	SARADC_VIN3_HP_HOOK	28	BT_REG_ON_H
29	TYPEC1_USB20_OTG_ID	30	BT_WAKE_HOST_H
31	TYPEC1_USB20_VBUSDET	32	RTC_INT_L
33	PCIEX1_1_PERSTn_M1_L	34	WIFI_WAKE_HOST_H
35	PCIEX1_1_CLKREQn_M1_L	36	VCC_5V0
37	PWM11_IR_M3	38	VCC_3V3_S0
39	GND	40	GND

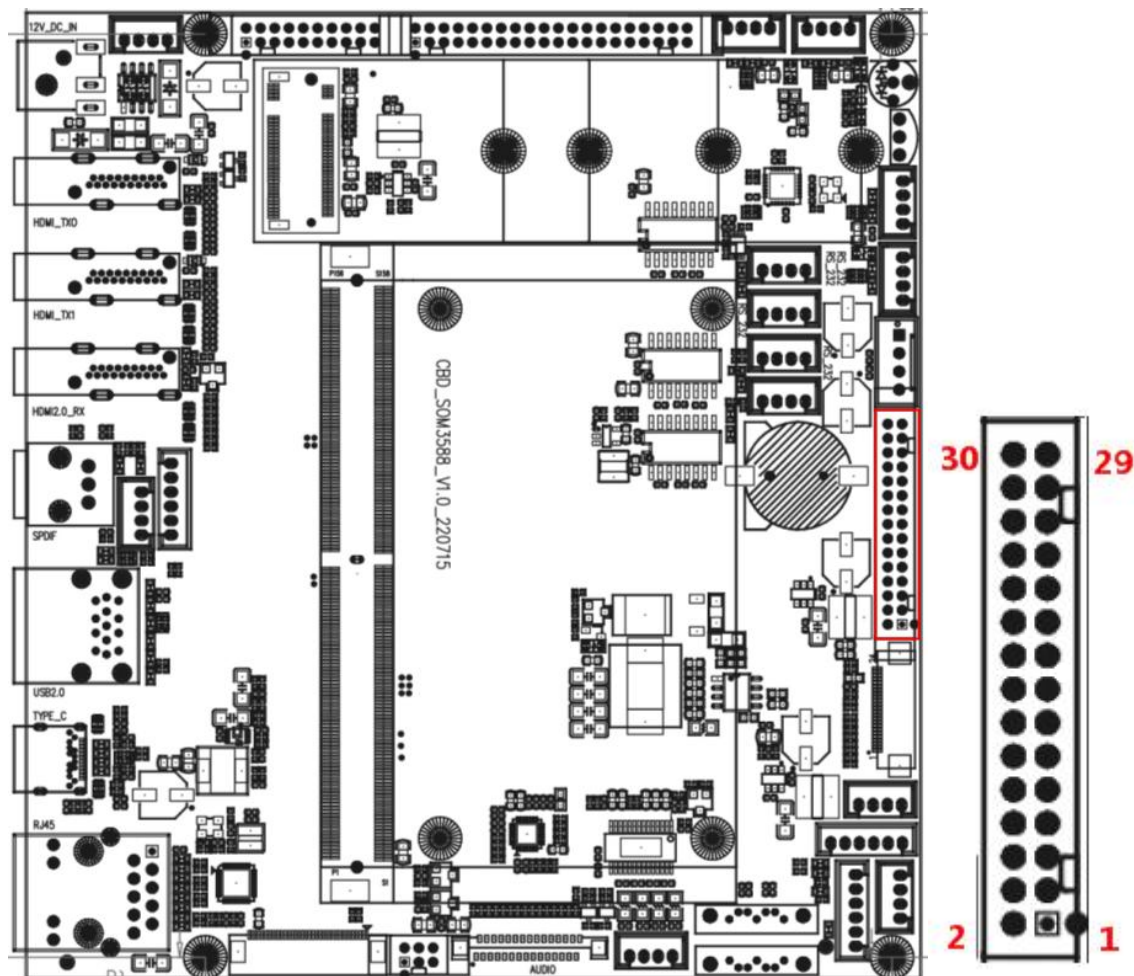
4.2.6 USB2.0(J1504,J1503,J1502,J1501)



4.2.7 SATA POWER(J1201)

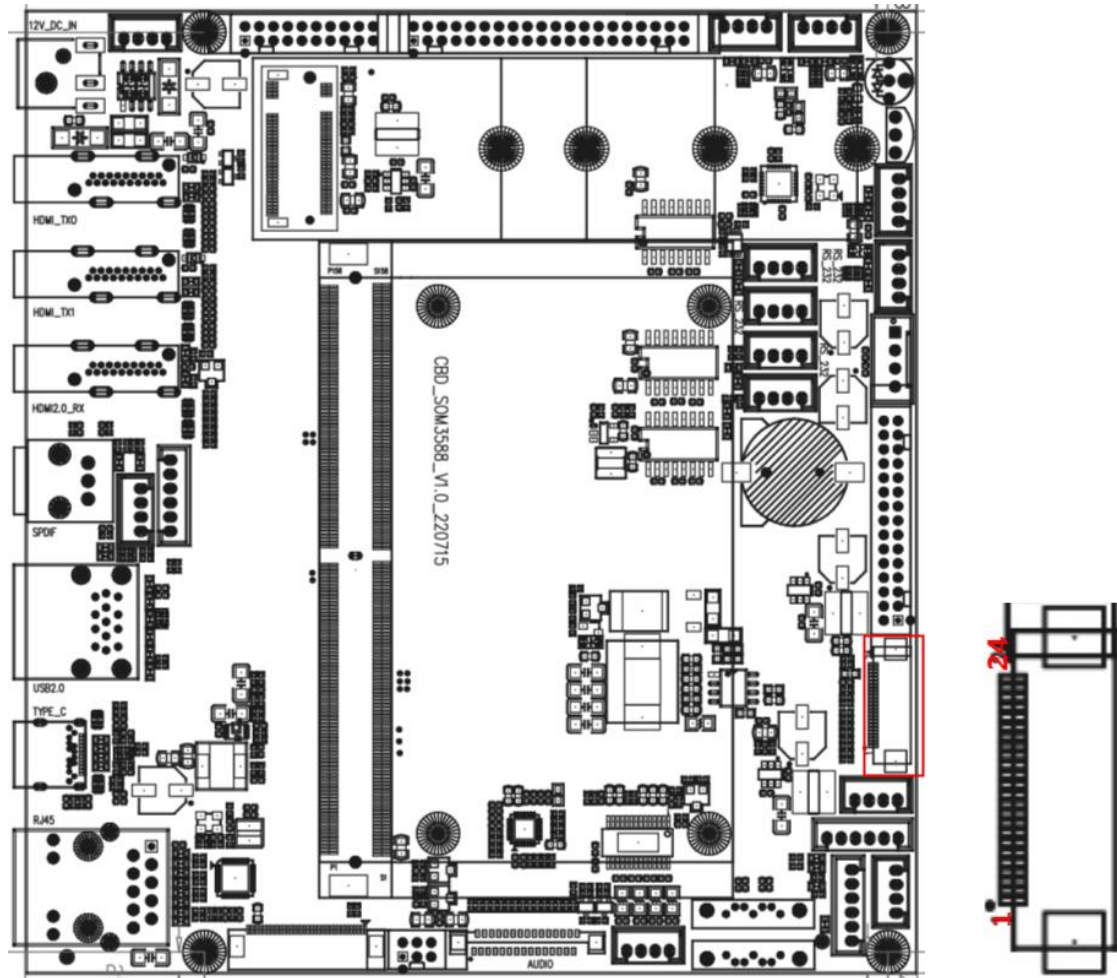


4.2.8 LVDS(J1801)



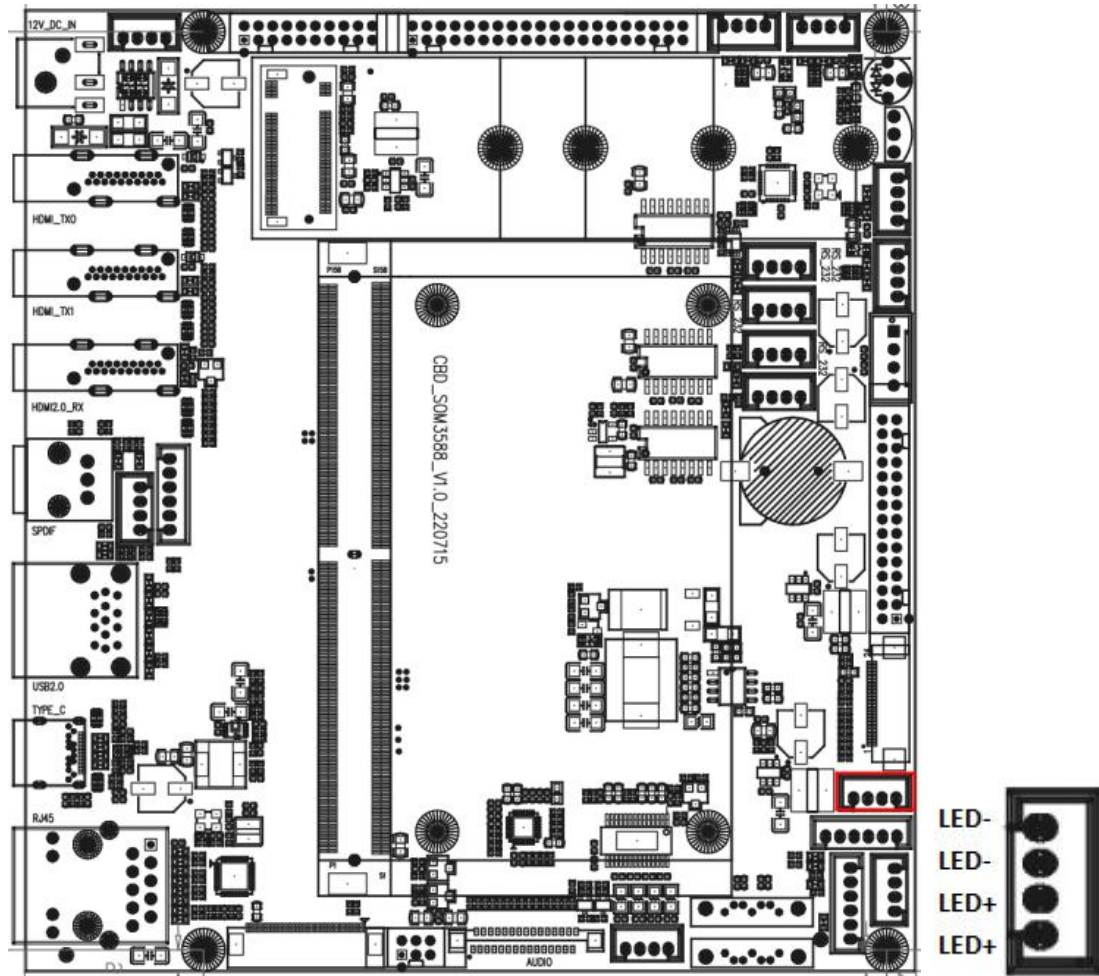
1	3.3V/5V/12V	2	3.3V/5V/12V
3	3.3V/5V/12V	4	GND
5	GND	6	GND
7	LVDS_LA0N	8	LVDS_LA0P
9	LVDS_LA1N	10	LVDS_LA1P
11	LVDS_LA2N	12	LVDS_LA2P
13	GND	14	GND
15	LVDS_LACN	16	LVDS_LACP
17	LVDS_LA3N	18	LVDS_LA3P
19	LVDS_LB0N	20	LVDS_LB0P
21	LVDS_LB1N	22	LVDS_LB1P
23	LVDS_LB2N	24	LVDS_LB2P
25	GND	26	GND
27	LVDS_LBCN	28	LVDS_LBCP
29	LVDS_LB3N	30	LVDS_LB3P

4.2.9 MIPI DPHY0_RX(J2201)

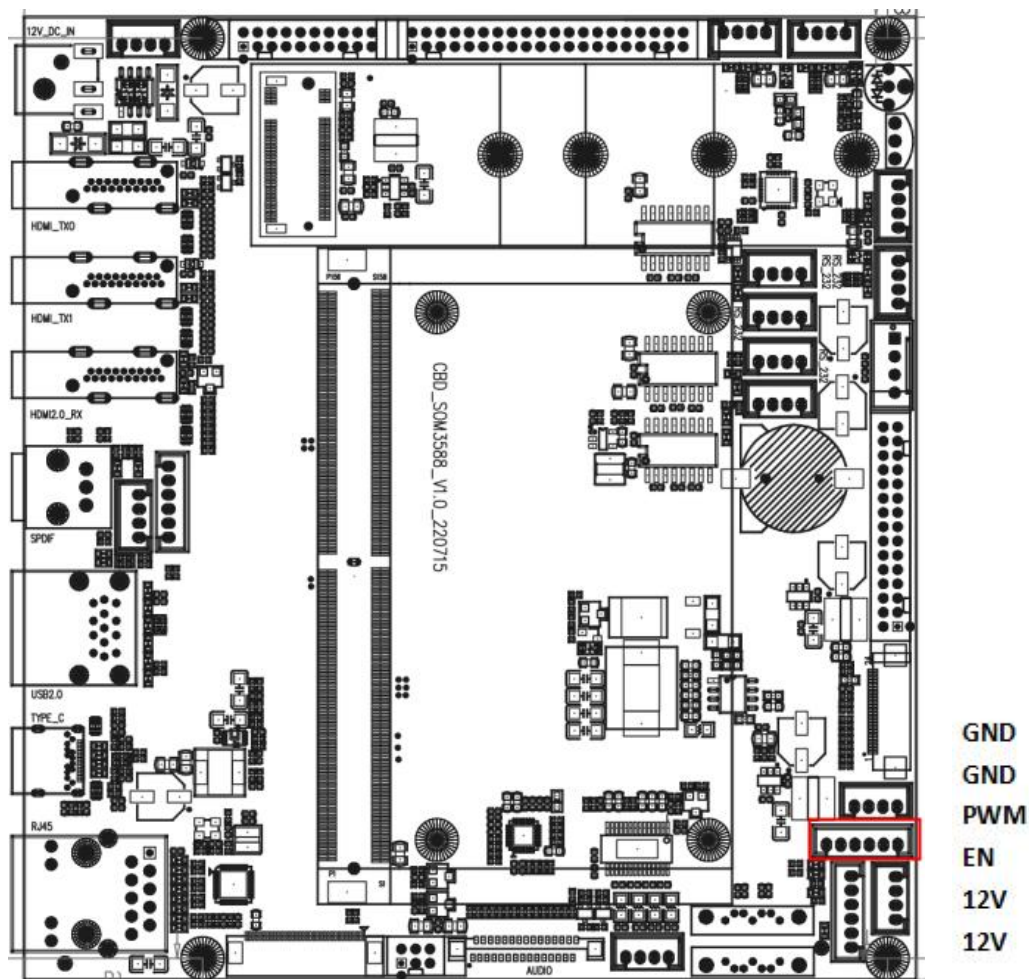


1	RX0_D3N	2	RX0_D3P
3	RX0_D1N	4	RX0_D1P
5	GND	6	RX0_CLKN
7	RX0_CLKP	8	GND
9	RX0_D0N	10	RX0_D0P
11	RX0_D2N	12	RX0_D2P
13	GND	14	MIPI_CAM3_CLKOUT
15	GND	16	VCC_1V8_CAM3
17	CAM3_RST_L	18	VCC_1V2_CAM3
19	GND	20	I2C3_SDA_M0
21	I2C3_SCL_M0	22	GND
23	VCC_2V8_CAM3	24	VCC_2V8_CAM3

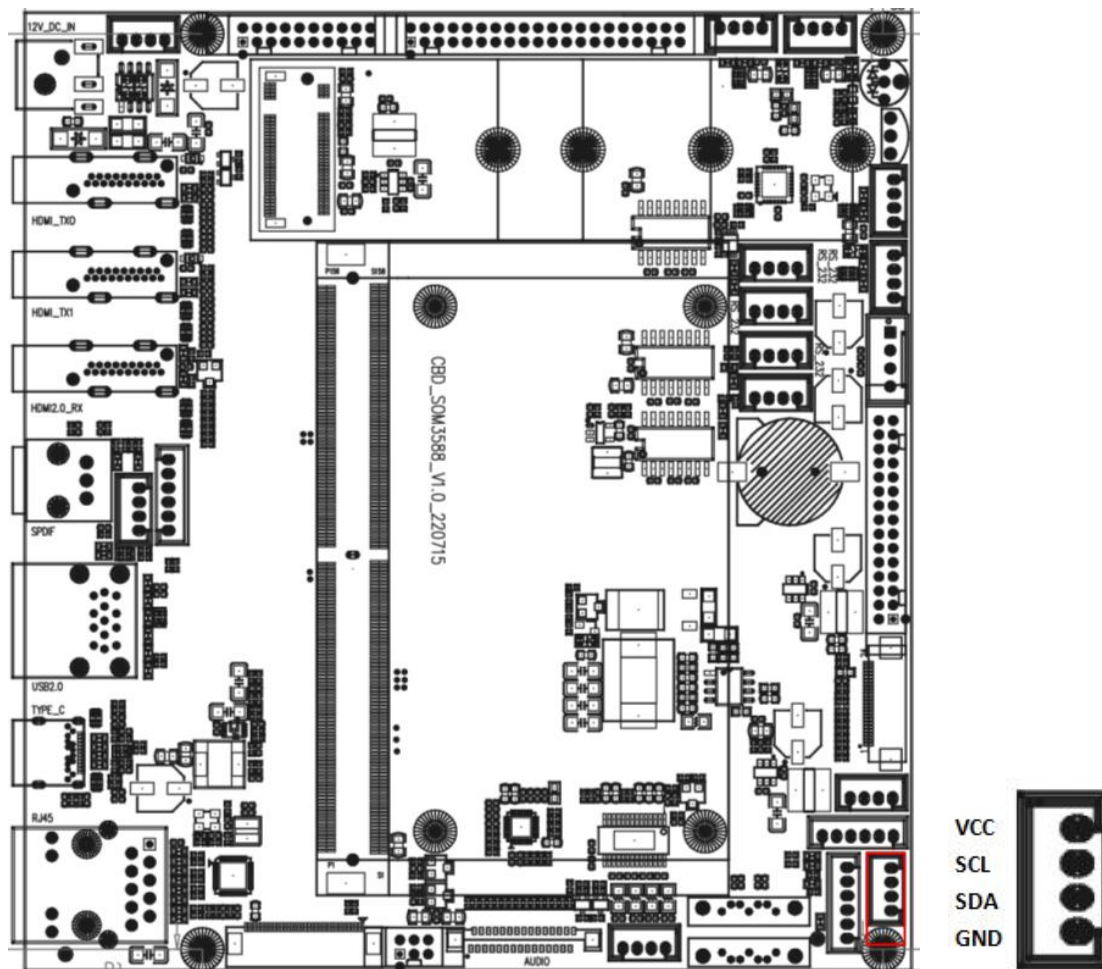
4.2.10 BACKLIGHT 1(J1601)



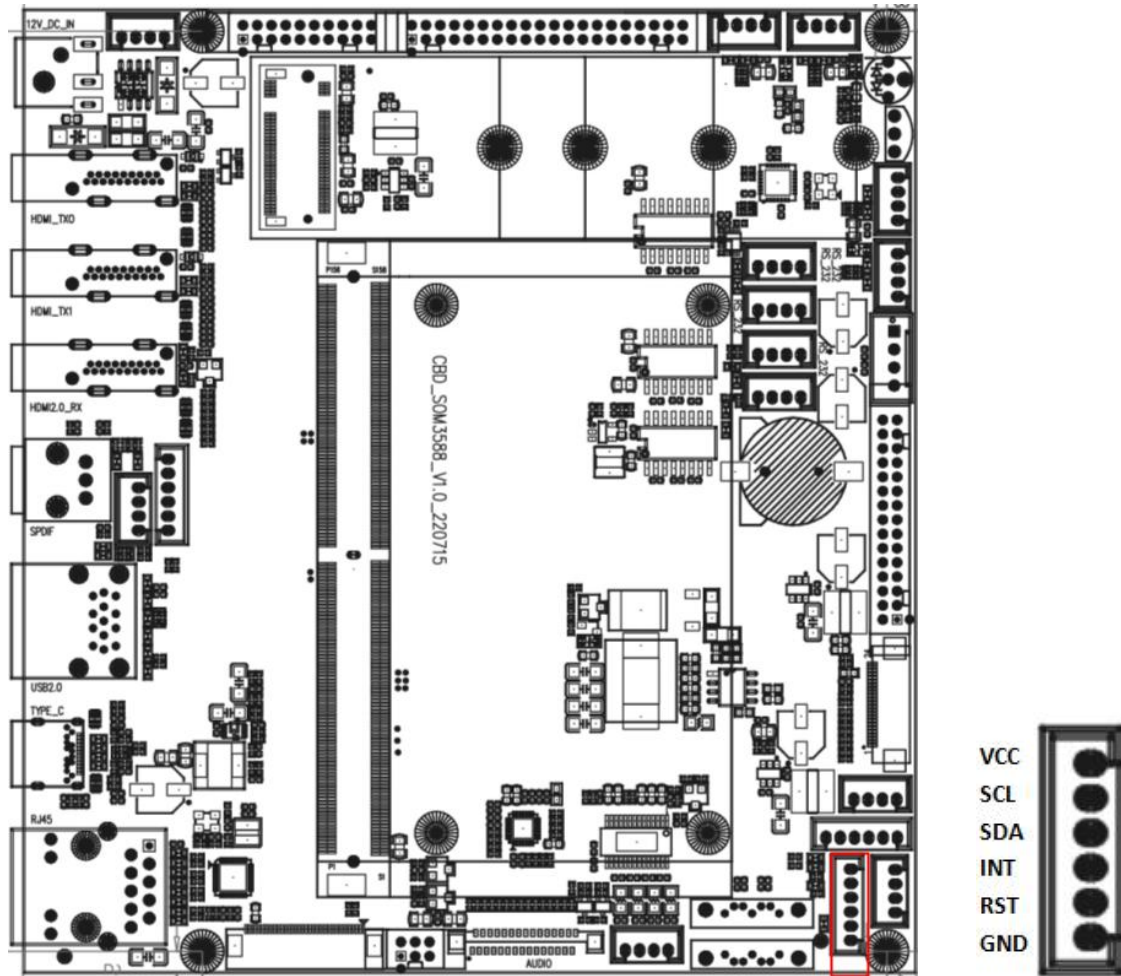
4.2.11 BACKLIGHT 2(J1602)



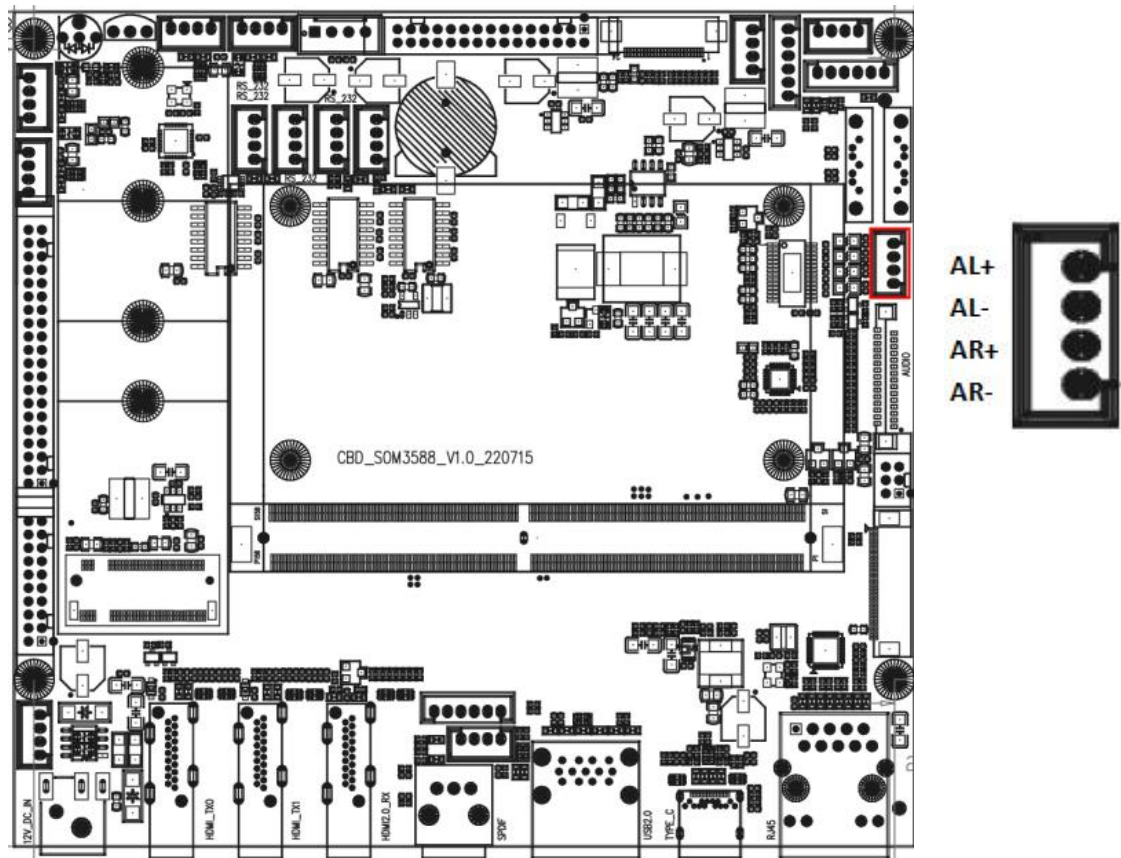
4.2.12 TP(J3002)



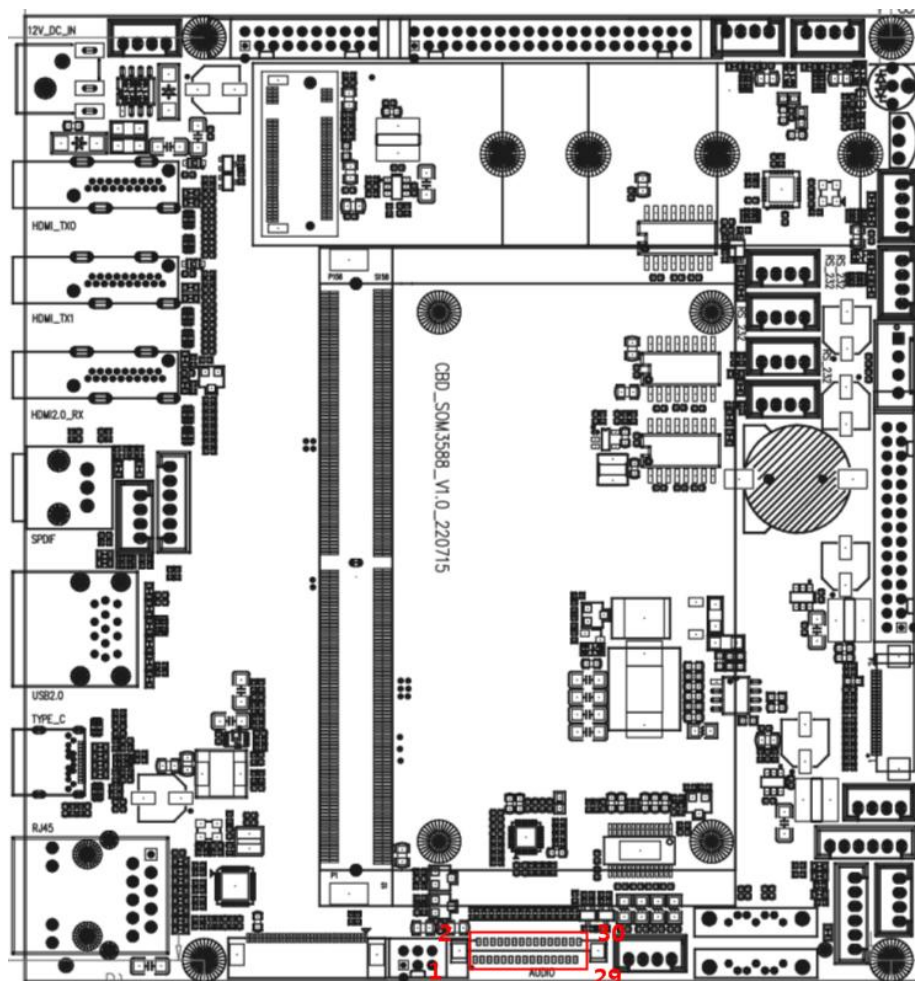
4.2.13 TP(J3001)



4.2.14 SPEAKER(J2401)

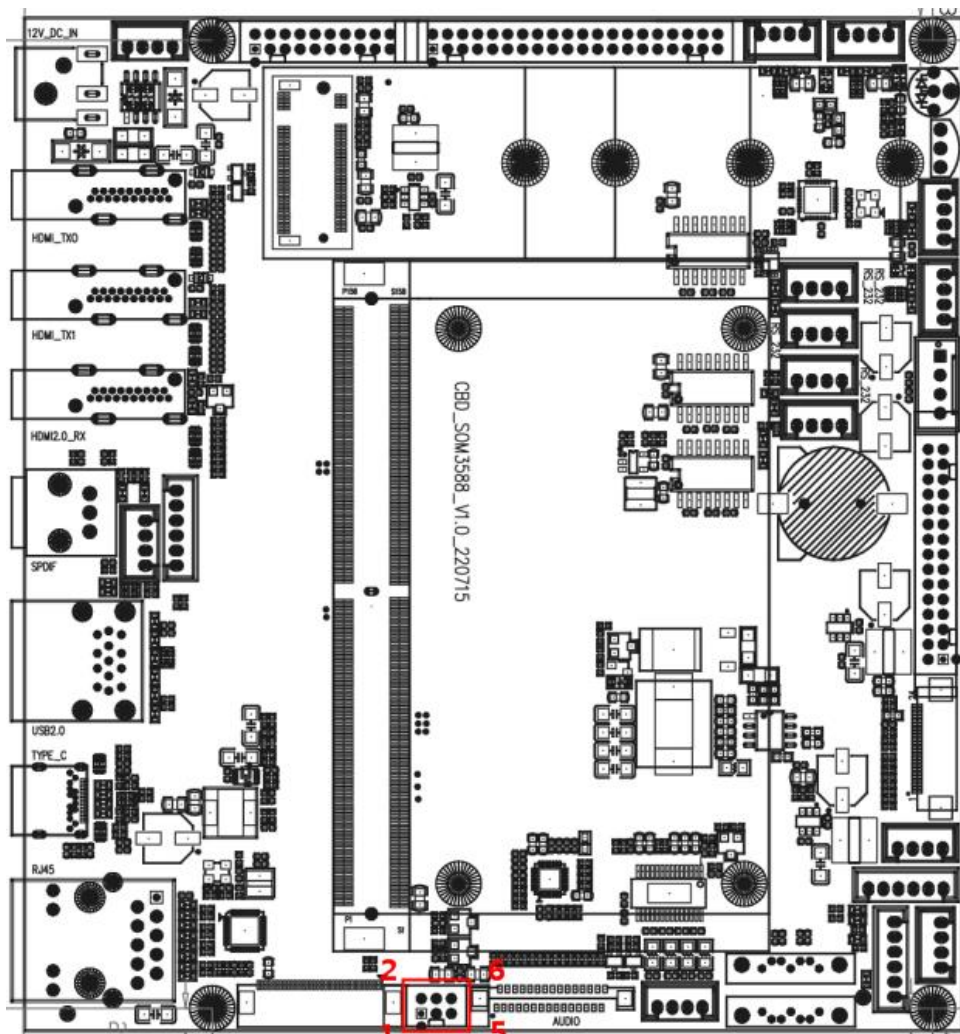


4.2.15 AUDIO(J2301)



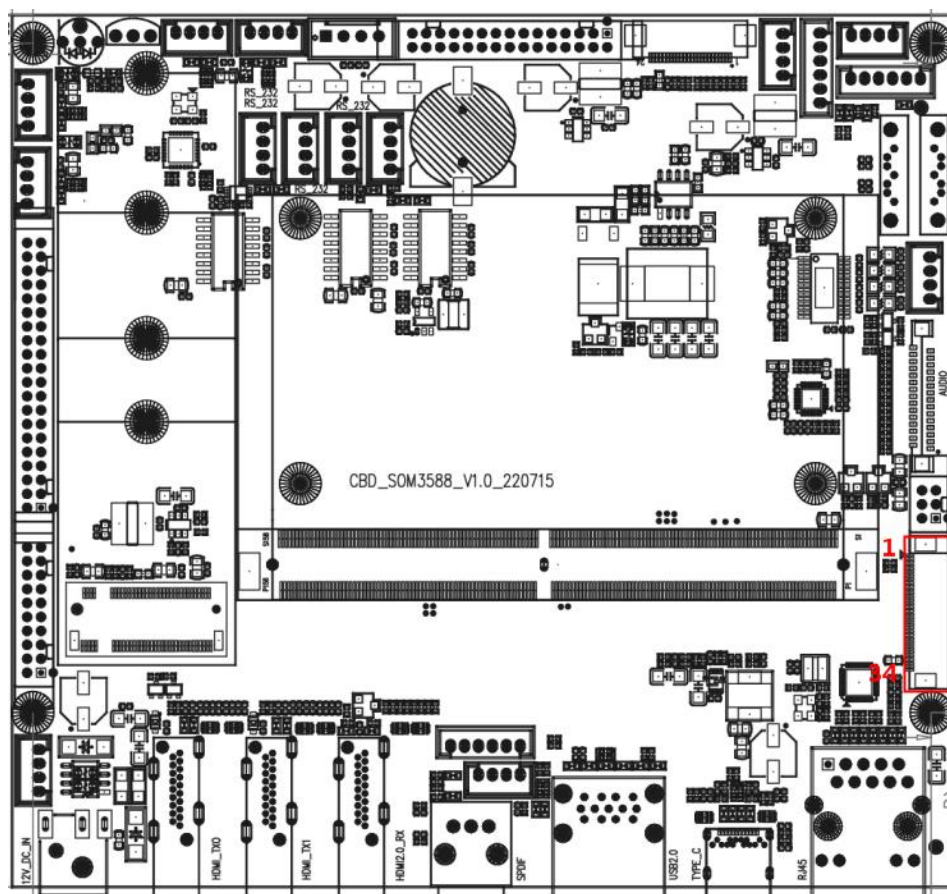
1	VCC_5V_MIC	2	VCC_5V_MIC
3	VCCA3V0_CODEC	4	GND
5	GND	6	VCC_3V3_MIC
7	GND	8	Codec_EN/GPIO_A
9	GND	10	I2C_MCLK
11	GND	12	I2C_SCLK_RX/PDM_CLK1
13	GND	14	I2C_SCLK_TX
15	GND	16	I2C_LRCK_RX/PDM_CLK0
17	GND	18	I2C_LRCK_TX
19	I2S_SDO0	20	I2S_SDO1
21	I2S_SDO2	22	I2S_SDO3
23	I2S_SDI0/PDM_SDI0	24	I2S_SDI1/PDM_SDI1
25	I2S_SDI2/PDM_SDI2	26	I2S_SDI3/PDM_SDI3
27	GND	28	PA_EN/GPIO_B
29	I2C_SDA_MIC	30	I2C_SCL_MIC

4.2.16 LCM_POWER(J1702)



PIN	电压
1-2	LVDS PANEL=3.3V
3-4	LVDS PANEL=5.0V
5-6	LVDS PANEL=12V

4.2.17 MIPI_LCM(J1701)



1	VCC3V3_LCD	2	VCC3V3_LCD
3	NC	4	LCD_BL_EN_H
5	LCD_BL_PWM1	6	I2C2_SDA_MIPI
7	I2C2_SCL_MIPI	8	NC
9	MIPI_DPHY0_TX_D2P	10	MIPI_DPHY0_TX_D2N
11	GND	12	MIPI_DPHY0_TX_D1P
13	MIPI_DPHY0_TX_D1N	14	GND
15	MIPI_DPHY0_TX_CLKP	16	MIPI_DPHY0_TX_CLKN
17	GND	18	MIPI_DPHY0_TX_D0P
19	MIPI_DPHY0_TX_D0N	20	GND
21	MIPI_DPHY0_TX_D3P	22	MIPI_DPHY0_TX_D3N
23	GND	24	GND
25	GND	26	GND
27	MIPI_DPHY0_TX_LCD_ID	28	GND
29	GND	30	NC
31	VCC_LCD_PWOER	32	VCC_LCD_PWOER
33	VCC_LCD_PWOER	34	VCC_LCD_PWOER

5 System Block Diagram

