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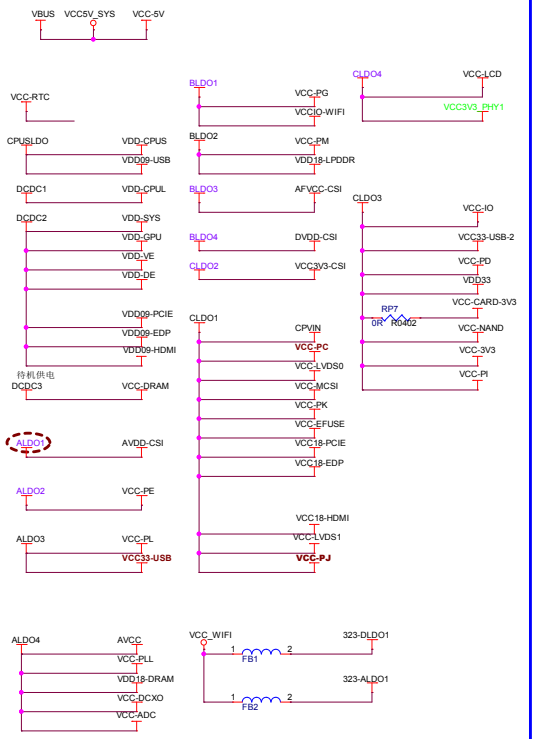

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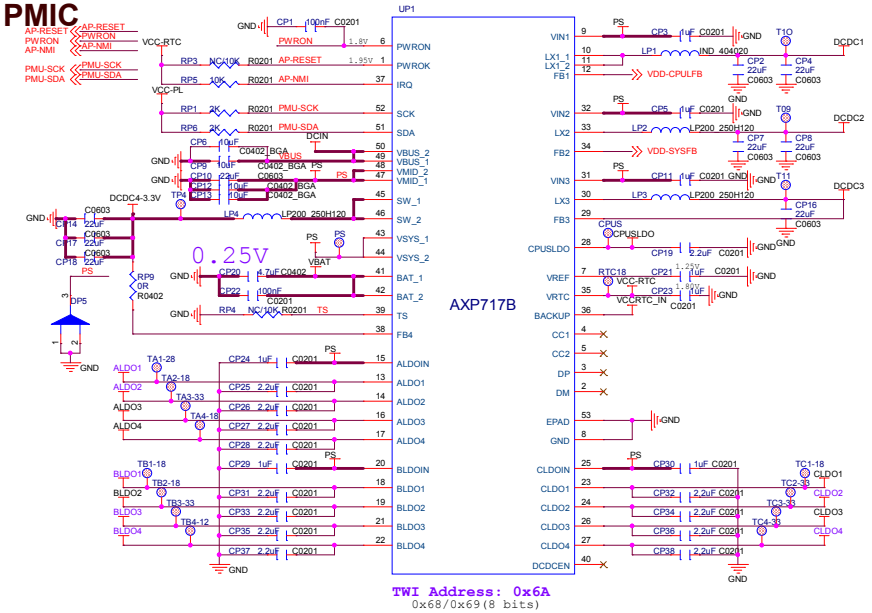

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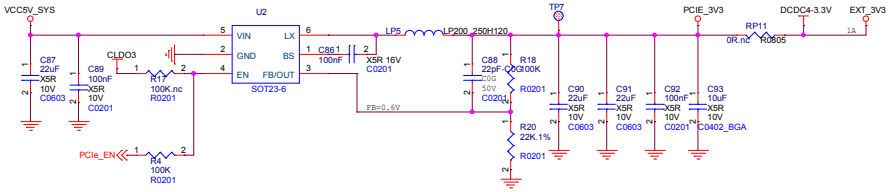

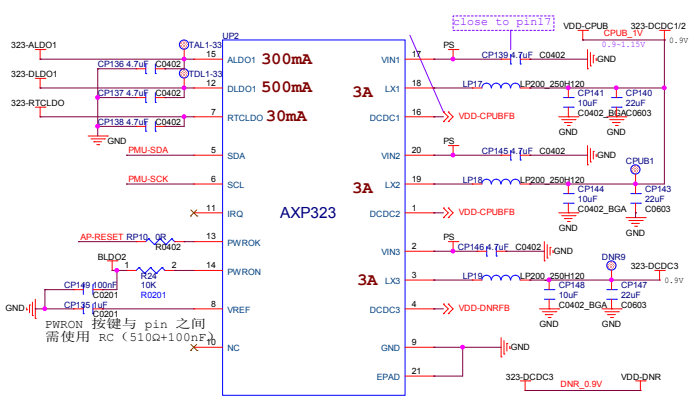

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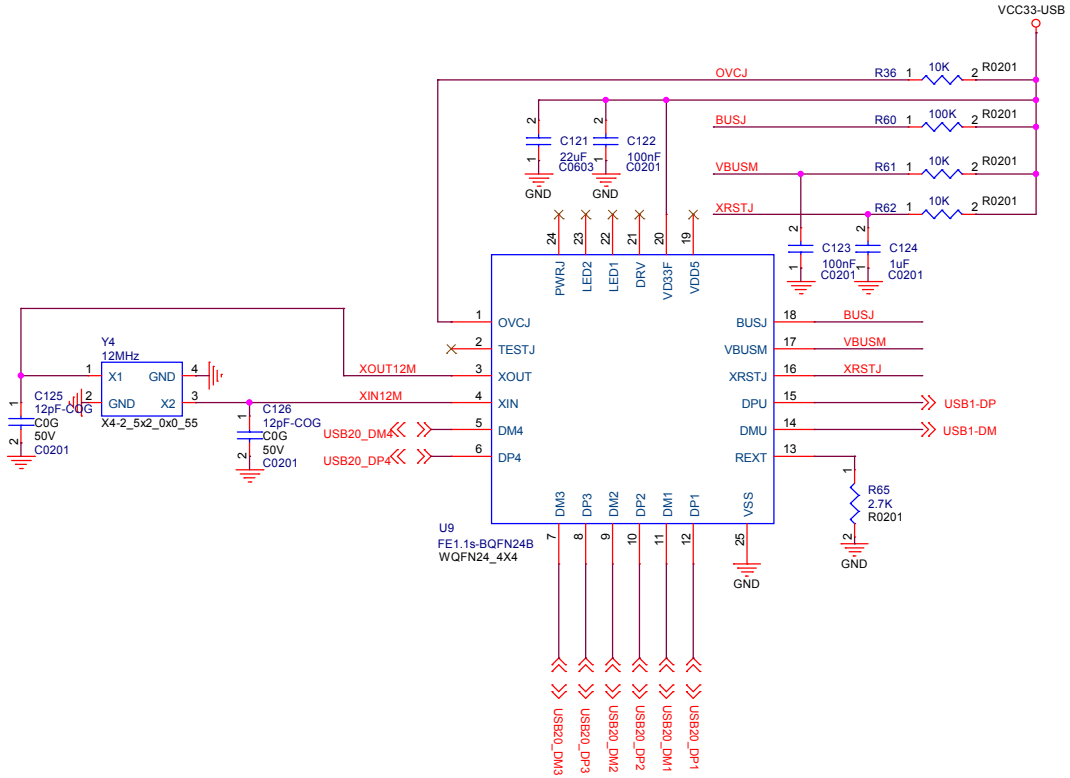

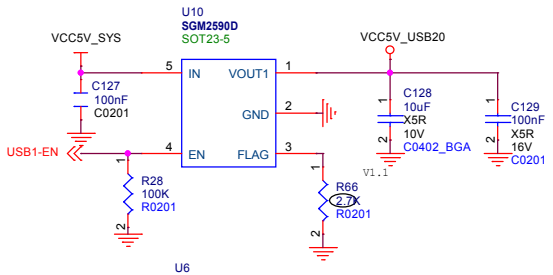

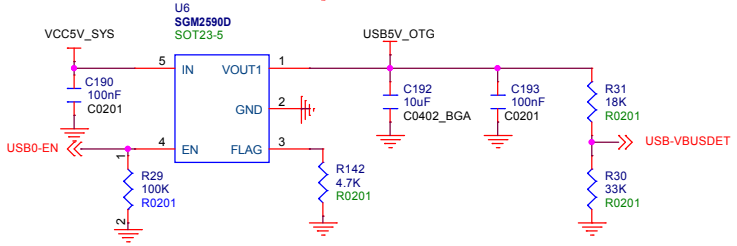

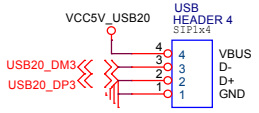

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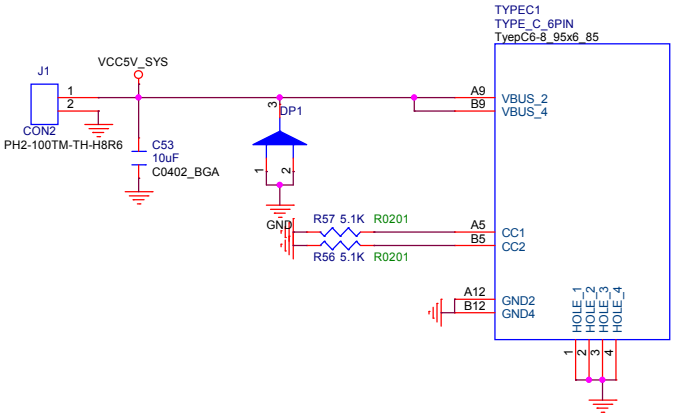

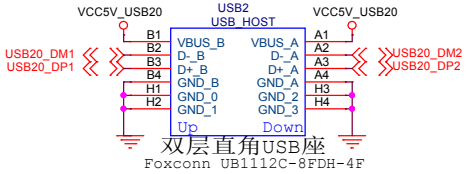

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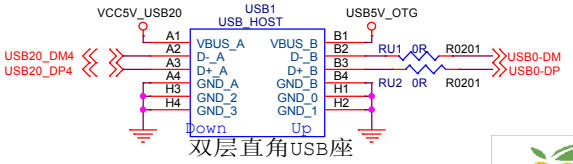

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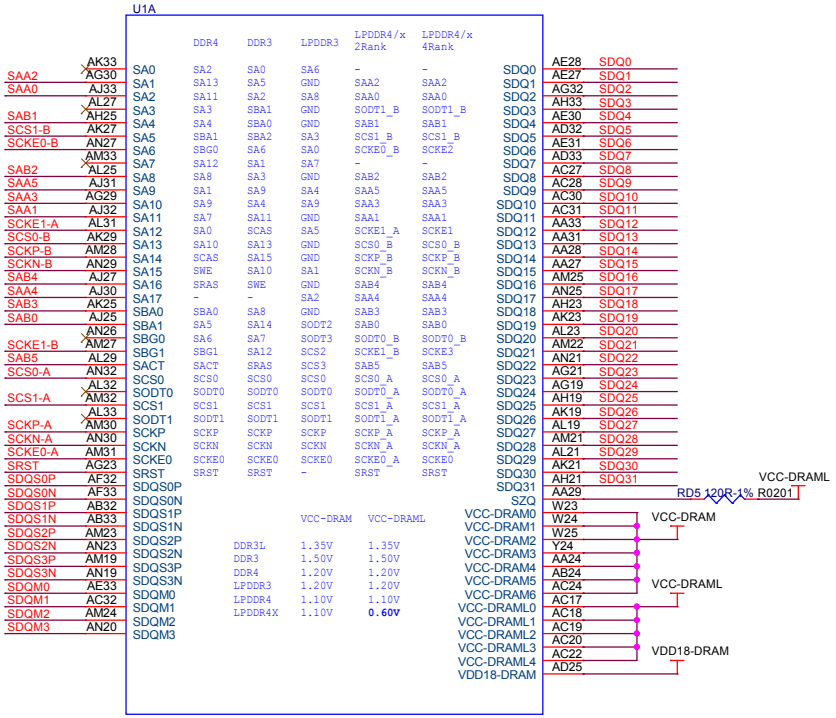

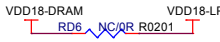

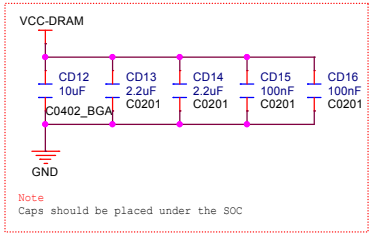

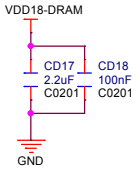

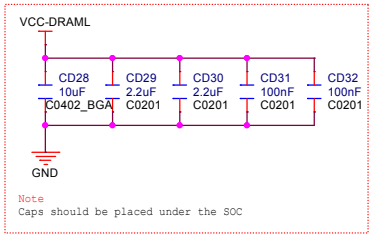

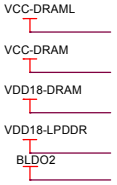

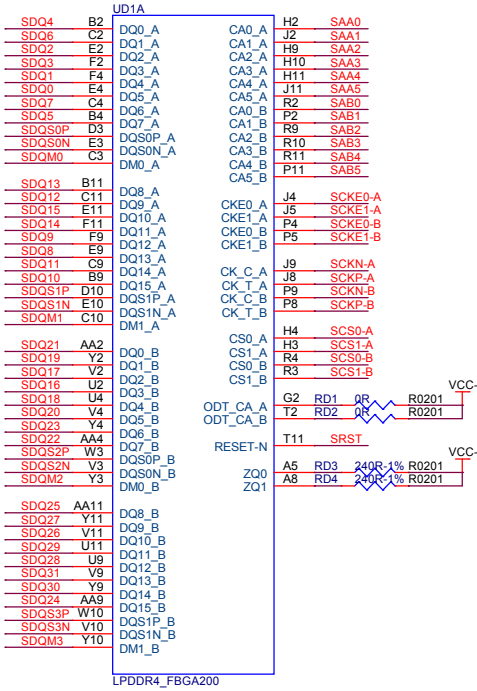

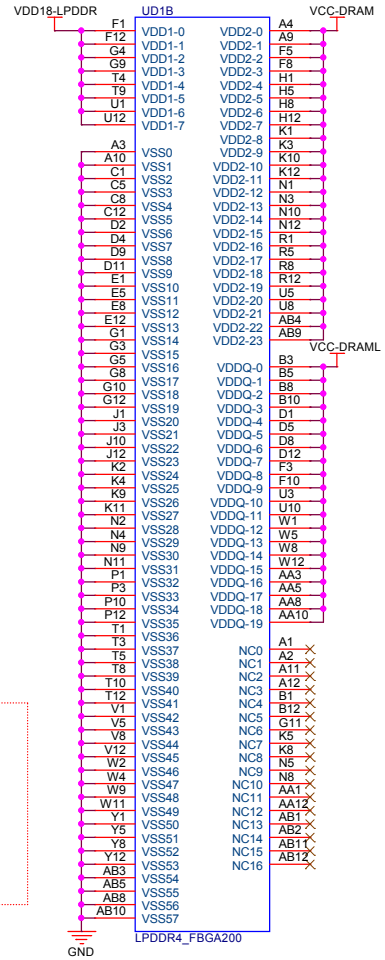

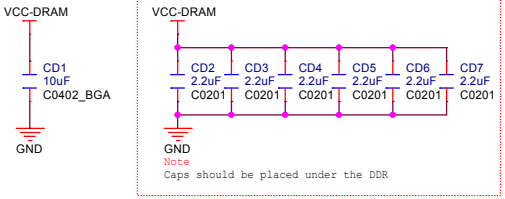

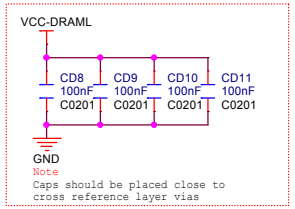

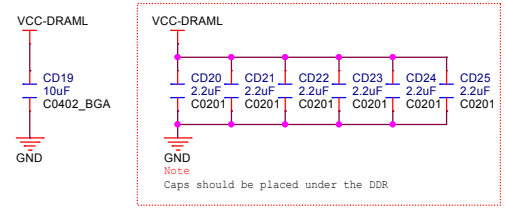

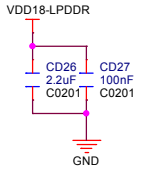

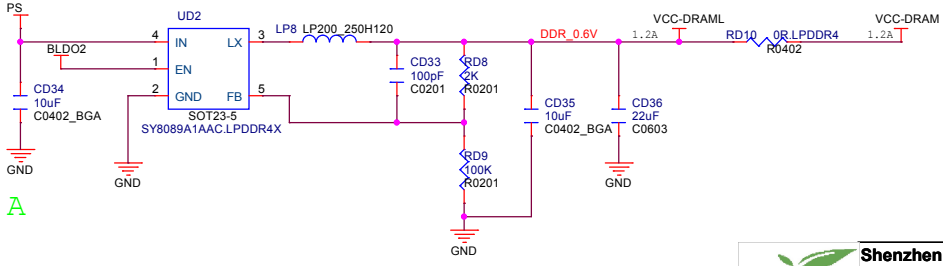

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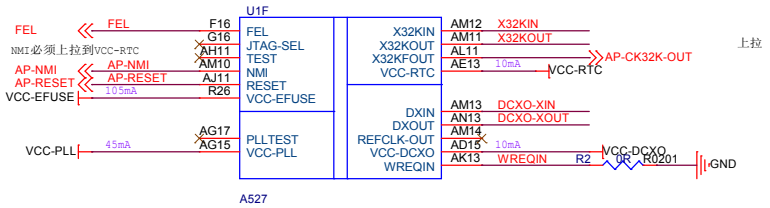
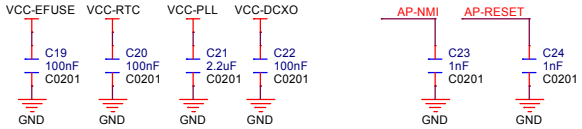
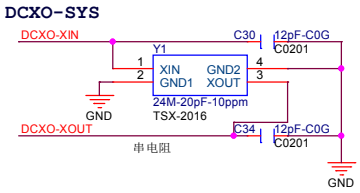
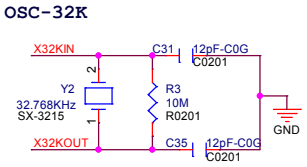
SYS









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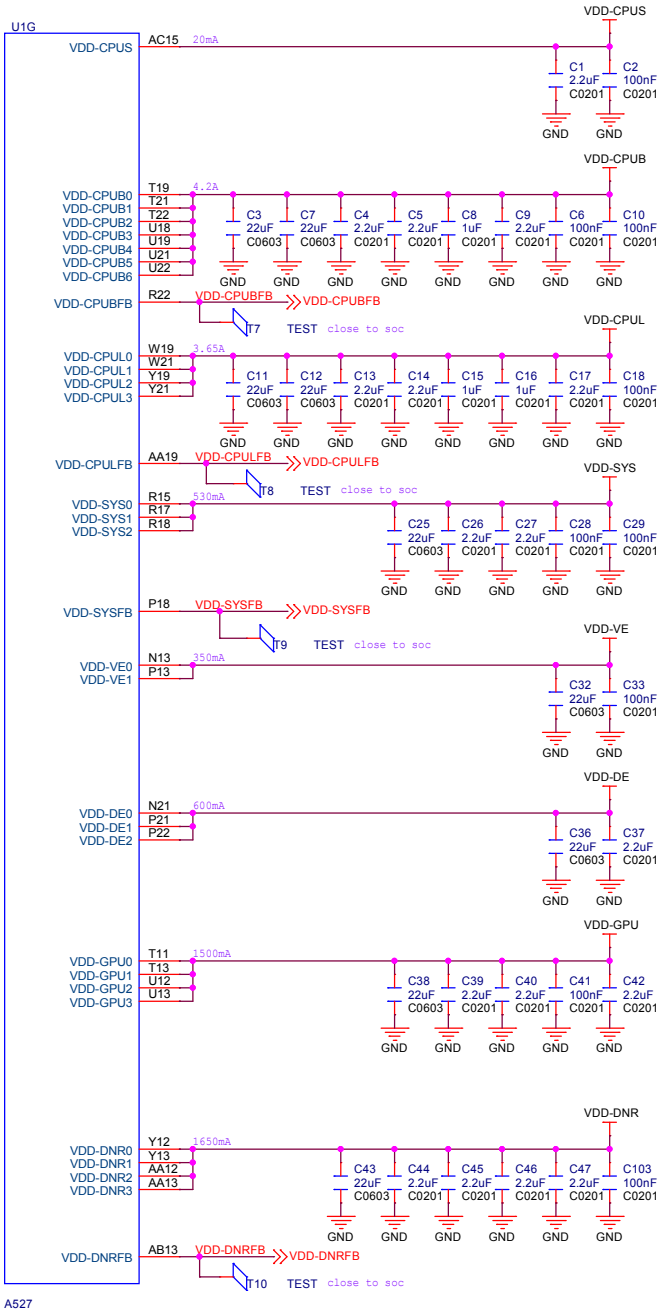

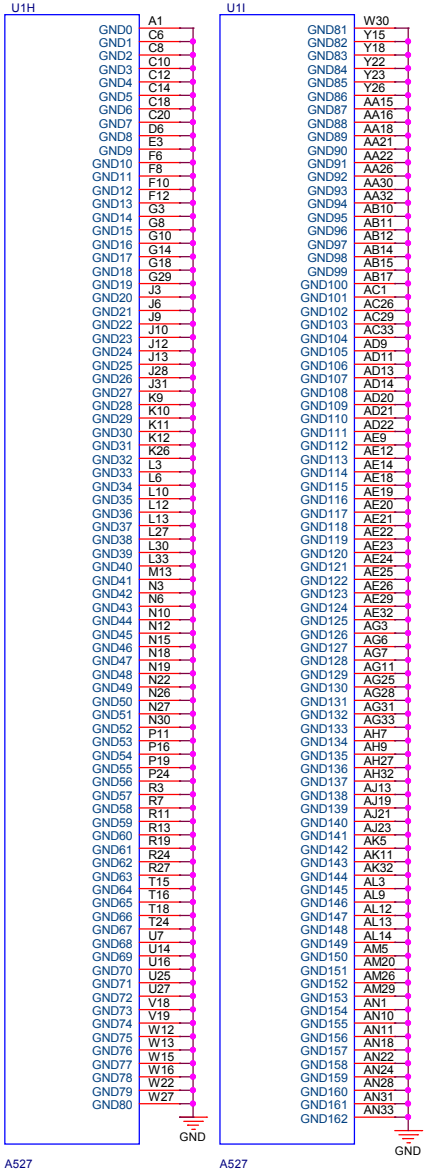

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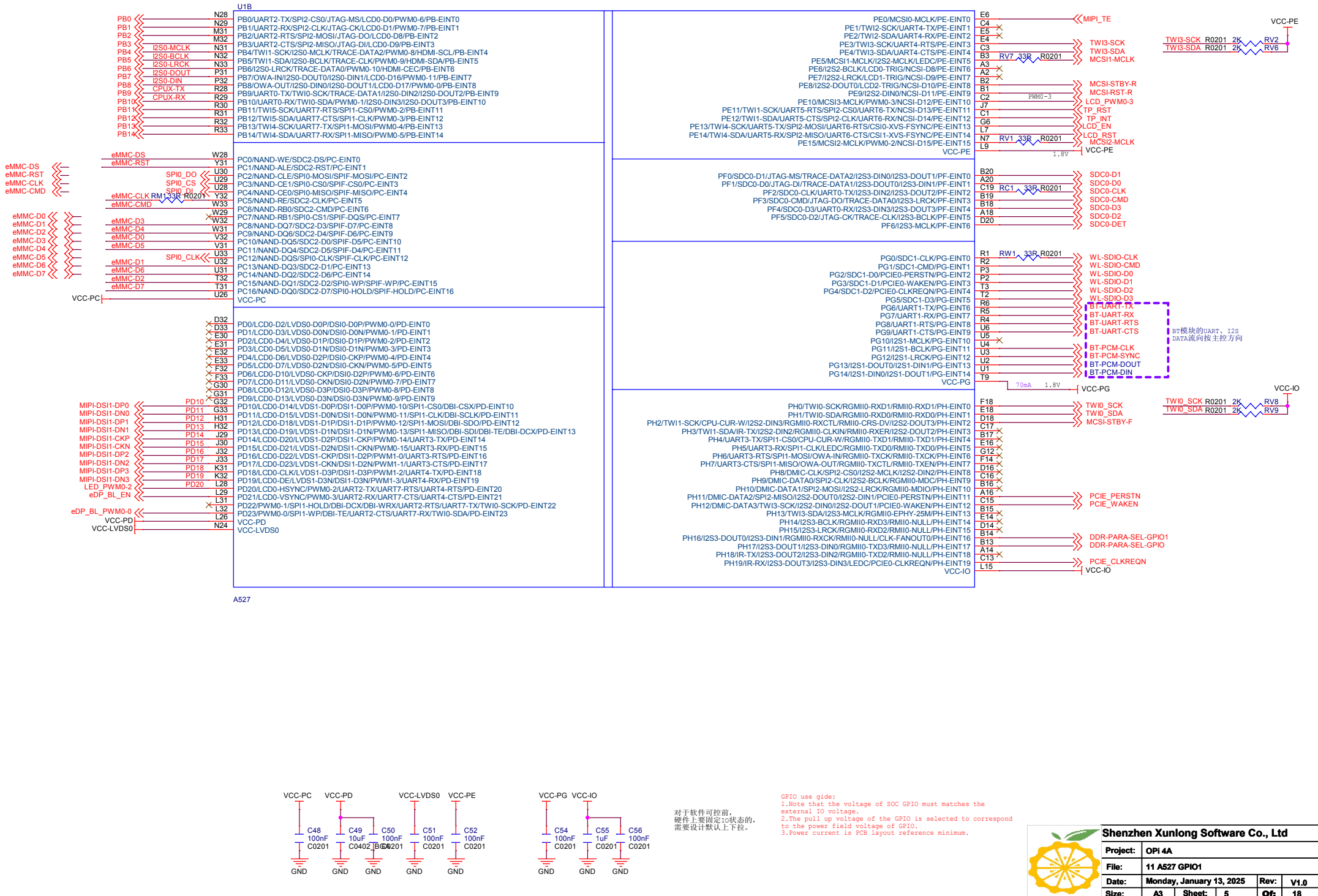
GPIO



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GPIO

U1C

PI0/TWI4-SCK/UART4-TX/PWM0-1/I2S2-DIN3/I2S2-DOUT3/PI-EINT0
PI1/TWI4-SDA/UART4-RX/PWM0-2/I2S2-DIN2/I2S2-DOUT2/PI-EINT1
PI2/UART5-TX/SPI1-CS0/PWM0-3/I2S2-BCLK/PI-EINT2
PI3/UART5-RX/SPI1-CLK/PWM0-4/I2S2-LRCK/PI-EINT3
PI4/UART5-RTS/SPI1-MOSI/PWM0-5/I2S2-DOUT0/I2S2-DIN1/PI-EINT4
PI5/UART5-CTS/SPI1-MISO/PWM0-6/I2S2-DIN0/I2S2-DOUT1/PI-EINT5
PI6/UART6-TX/UART4-RTS/PWM0-7/SPI2-CS0/PI-EINT6
PI7/UART6-RX/UART4-CTS/PWM0-8/SPI2-CLK/PI-EINT7
PI8/TWI5-SCK/IR-RX/PWM0-9/SPI2-MOSI/PI-EINT8
PI9/TWI5-SDA/DMIC-DATA2/PWM0-10/PI-EINT9
PI10/OWA-OUT/DMIC-DATA1/PWM0-11/I2S2-MCLK/PI-EINT10
PI11/UART3-TX/DMIC-DATA0/PWM0-12/PI-EINT11
PI12/UART3-RX/PWM0-13/SPI2-MISO/PI-EINT12
PI13/UART6-CTS/DMIC-DATA3/PWM0-14/I2S2-MCLK/PI-EINT13
PI14/UART6-RTS/DMIC-CLK/PWM0-15/PI-EINT14
PI15/UART3-RTS/TWI2-SCK/PWM1-0/PI-EINT15
PI16/UART3-CTS/TWI2-SDA/PWM1-1/PI-EINT16
VCC-PI

PJ0/LCD1-D0/LVDS2-D0P/RGMII1-RXD1/RMII1-RXD1/PJ-EINT0
PJ1/LCD1-D1/LVDS2-D0N/RGMII1-RXD0/RMII1-RXD0/PJ-EINT1
PJ2/LCD1-D2/LVDS2-D1P/RGMII1-RXCTL/RMII1-CRS-DV/PJ-EINT2
PJ3/LCD1-D3/LVDS2-D1N/RGMII1-CLKIN/RMII1-RXER/PJ-EINT3
PJ4/LCD1-D4/LVDS2-D2P/RGMII1-TXD1/RMII1-TXD1/PJ-EINT4
PJ5/LCD1-D5/LVDS2-D2N/RGMII1-TXD0/RMII1-TXD0/PJ-EINT5
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PJ7/LCD1-D7/LVDS2-CKN/RGMII1-TXCTL/RMII1-TXEN/PJ-EINT7
PJ8/LCD1-D8/LVDS2-D3P/RGMII1-MDC/PJ-EINT8
PJ9/LCD1-D9/LVDS2-D3N/RGMII1-MDIO/PJ-EINT9
PJ10/LCD1-D10/LVDS3-D0P/RGMII1-EPHY-25M/PJ-EINT10
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PJ19/LCD1-D19/LVDS3-D3N/PJ-EINT19
PJ20/LCD1-D20/UART2-TX/UART3-RTS/SPI0-CS0/PJ-EINT20
PJ21/LCD1-D21/UART2-RX/UART3-CTS/SPI0-CLK/PJ-EINT21
PJ22/LCD1-D22/UART2-RTS/UART3-TX/SPI0-MOSI/PJ-EINT22
PJ23/LCD1-D23/UART2-CTS/UART3-RX/SPI0-MISO/PJ-EINT23
PJ24/LCD1-CLK/TWI4-SCK/UART4-TX/SPI0-CS1/PJ-EINT24
PJ25/LCD1-DE/TWI4-SDA/UART4-RX/SPI0-WP/PJ-EINT25
PJ26/LCD1-HSYNC/TWI5-SCK/UART4-RTS/SPI0-HOLD/PJ-EINT26
PJ27/LCD1-VSYNC/TWI5-SDA/UART4-CTS/PJ-EINT27
VCC-PJ
VCC-LVDS1

PK0/MCSIA-D0N/PK-EINT0
PK1/MCSIA-D0P/PK-EINT1
PK2/MCSIA-D1N/PK-EINT2
PK3/MCSIA-D1P/PK-EINT3
PK4/MCSIA-CKN/TWI2-SCK/PK-EINT4
PK5/MCSIA-CKP/TWI2-SDA/PK-EINT5
PK6/MCSIB-D0N/PK-EINT6
PK7/MCSIB-D0P/PK-EINT7
PK8/MCSIB-D1N/PK-EINT8
PK9/MCSIB-D1P/PK-EINT9
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PK13/MCSIC-D0P/UART7-RX/TWI4-SDA/NCSI-MCLK/PK-EINT13
PK14/MCSIC-D1N/UART7-RTS/UART5-RTS/NCSI-HSYNC/PK-EINT14
PK15/MCSIC-D1P/UART7-CTS/UART5-CTS/NCSI-VSYNC/PK-EINT15
PK16/MCSIC-CKN/TWI5-SCK/UART5-TX/NCSI-D0/PK-EINT16
PK17/MCSIC-CKP/TWI5-SDA/UART5-RX/NCSI-D1/PK-EINT17
PK18/MCSID-D0N/MCSI0-MCLK/UART6-TX/NCSI-D2/PK-EINT18
PK19/MCSID-D0P/TWI2-SCK/UART6-RX/NCSI-D3/PK-EINT19
PK20/MCSID-D1N/TWI2-SDA/UART6-RTS/NCSI-D4/PK-EINT20
PK21/MCSID-D1P/MCSI1-MCLK/UART6-CTS/NCSI-D5/PK-EINT21
PK22/MCSID-CKN/TWI3-SCK/PWM0-6/NCSI-D6/PK-EINT22
PK23/MCSID-CKP/TWI3-SDA/PWM0-7/NCSI-D7/PK-EINT23
VCC-PK
VCC-MCSI

PL0/S-TWI0-SCK/S-PL-EINT0
PL1/S-TWI0-SDA/S-PL-EINT1
PL2/S-UART0-TX/S-UART1-TX/MCU-PWM0-0/S-PL-EINT2
PL3/S-UART0-RX/S-UART1-RX/MCU-PWM0-1/S-PL-EINT3
PL4/S-JTAG-MS/MCU-PWM0-2/I2S0-BCLK/S-PL-EINT4
PL5/S-JTAG-CK/MCU-PWM0-3/I2S0-LRCK/DMIC-DATA3/S-PL-EINT5
PL6/S-JTAG-DO/MCU-PWM0-4/I2S0-DIN1/I2S0-DOUT0/DMIC-DATA2/S-PL-EINT6
PL7/S-JTAG-DI/MCU-PWM0-5/I2S0-DOUT1/I2S0-DIN0/DMIC-DATA1/S-PL-EINT7
PL8/S-TWI1-SCK/S-RJTAG-MS/I2S0-MCLK/DMIC-DATA0/S-PL-EINT8
PL9/S-TWI1-SDA/S-RJTAG-CK/S-PWM0-1/DMIC-CLK/S-PL-EINT9
PL10/S-PWM0-0/S-RJTAG-DO/DMIC-DATA0/S-SPI0-CS0/S-PL-EINT10
PL11/S-IR-RX/S-RJTAG-DI/DMIC-DATA1/S-SPI0-CLK/S-PL-EINT11
PL12/S-TWI2-SCK/MCU-PWM0-6/S-UART0-TX/DMIC-DATA2/S-SPI0-MOSI/S-PL-EINT12
PL13/S-TWI2-SDA/MCU-PWM0-7/S-UART0-RX/DMIC-DATA3/S-SPI0-MISO/S-PL-EINT13
VCC-PL

PM0/S-UART0-TX/S-UART1-TX/MCU-PWM0-0/S-PM-EINT0
PM1/S-UART0-RX/S-UART1-RX/MCU-PWM0-1/S-PM-EINT1
PM2/S-TWI1-SCK/S-RJTAG-MS/MCU-PWM0-4/S-PM-EINT2
PM3/S-TWI1-SDA/S-RJTAG-CK/MCU-PWM0-5/S-PM-EINT3
PM4/MCU-PWM0-6/S-RJTAG-DO/S-TWI2-SCK/S-PM-EINT4
PM5/S-IR-RX/S-RJTAG-DI/S-TWI2-SDA/MCU-PWM0-7/S-PM-EINT5
VCC-PM

A527

C104 100nF C0201
C105 10uF C0402_BC0
C106 100nF C0201
C107 100nF C0201
C57 100nF C0201
C58 100nF C0201
C59 100nF C0201
C60 100nF C0201

Shenzhen Xunlong Software Co., Ltd					
Project:	OPi 4A				
File:	12 A527 GPIO2				
Date:	Monday, January 13, 2025			Rev:	V1.0
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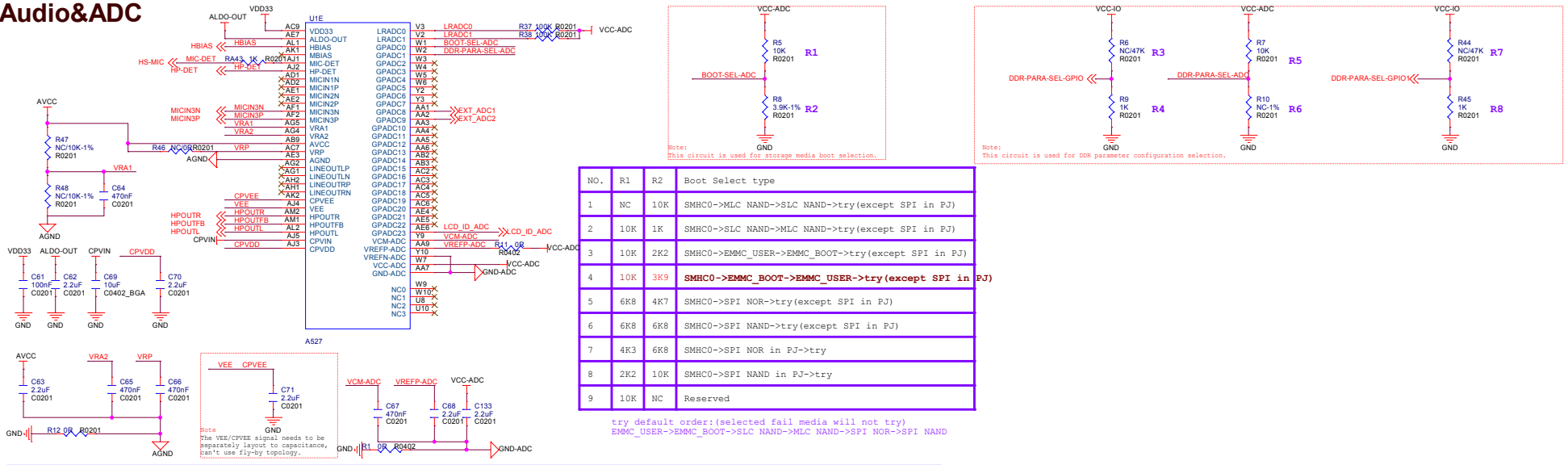
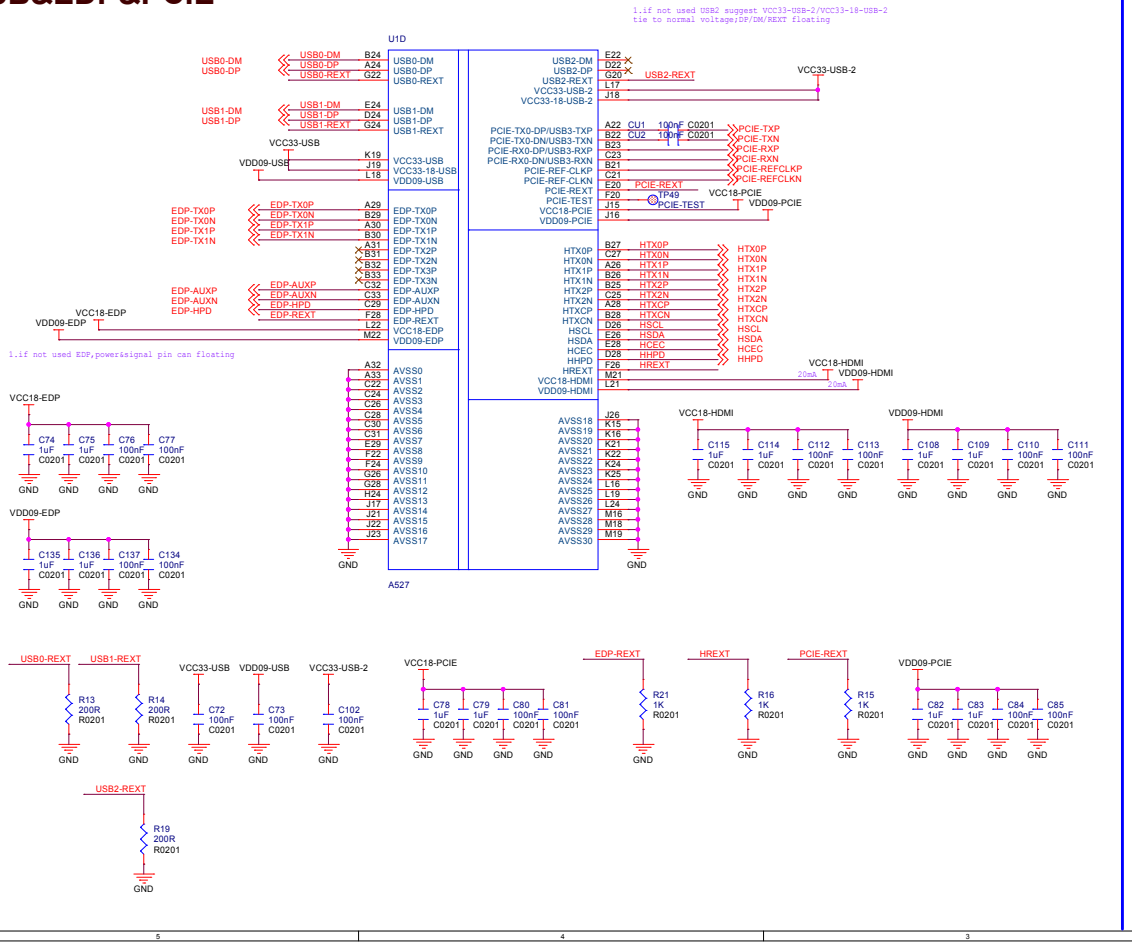
Audio&ADC



NO.	R1	R2	Boot Select type
1	NC	10K	SMHC0->MLC NAND->SLC NAND->try(except SPI in PJ)
2	10K	1K	SMHC0->SLC NAND->MLC NAND->try(except SPI in PJ)
3	10K	2K2	SMHC0->EMMC_USER->EMMC_BOOT->try(except SPI in PJ)
4	10K	3K9	**SMHC0->EMMC_BOOT->EMMC_USER->try(except SPI in PJ)**
5	6K8	4K7	SMHC0->SPI NOR->try(except SPI in PJ)
6	6K8	6K8	SMHC0->SPI NAND->try(except SPI in PJ)
7	4K3	6K8	SMHC0->SPI NOR in PJ->try
8	2K2	10K	SMHC0->SPI NAND in PJ->try
9	10K	NC	Reserved

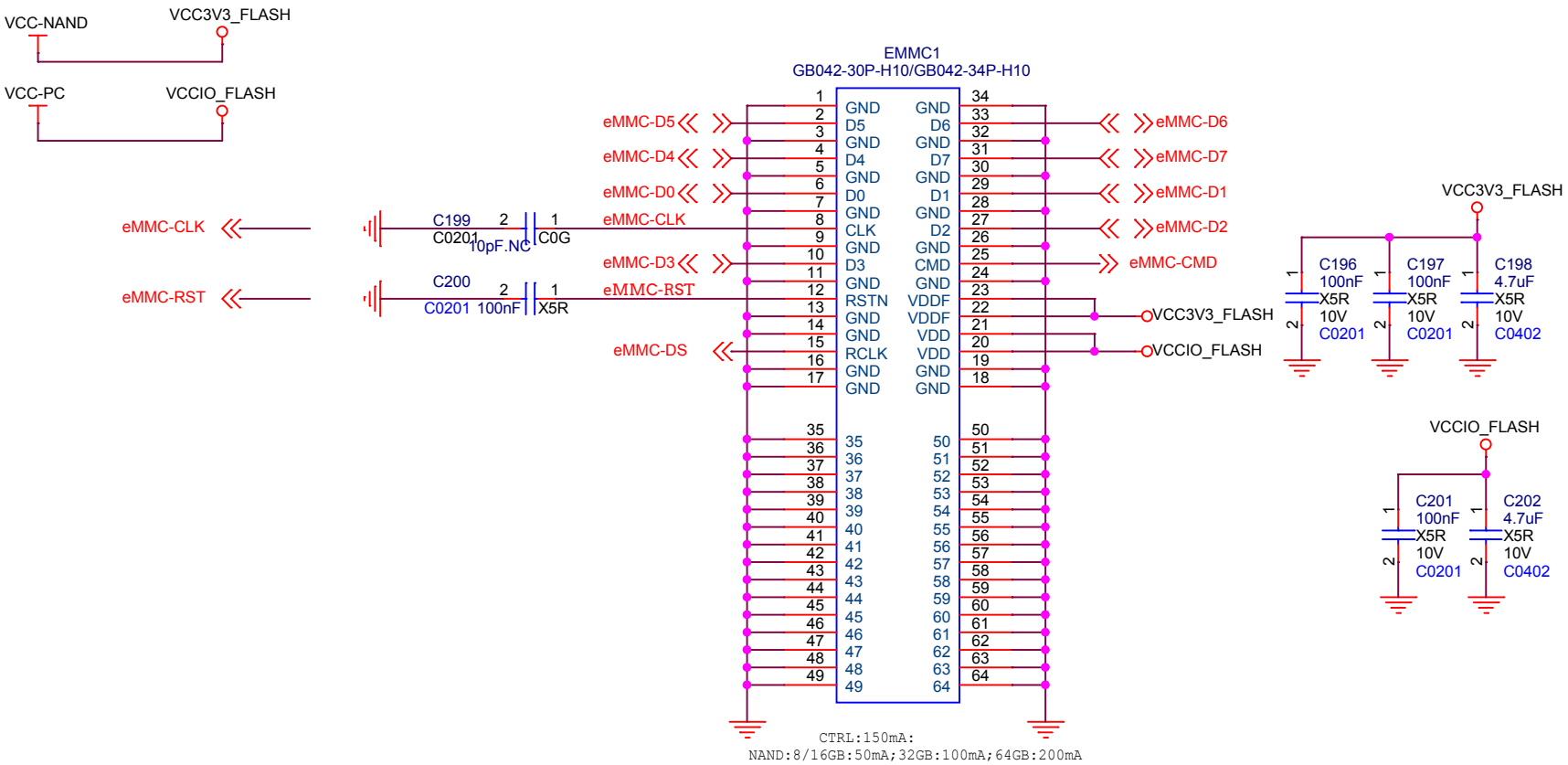
try default order:(selected fail media will not try)
EMMC_USER->EMMC_BOOT->SLC NAND->MLC NAND->SPI NOR->SPI NAND

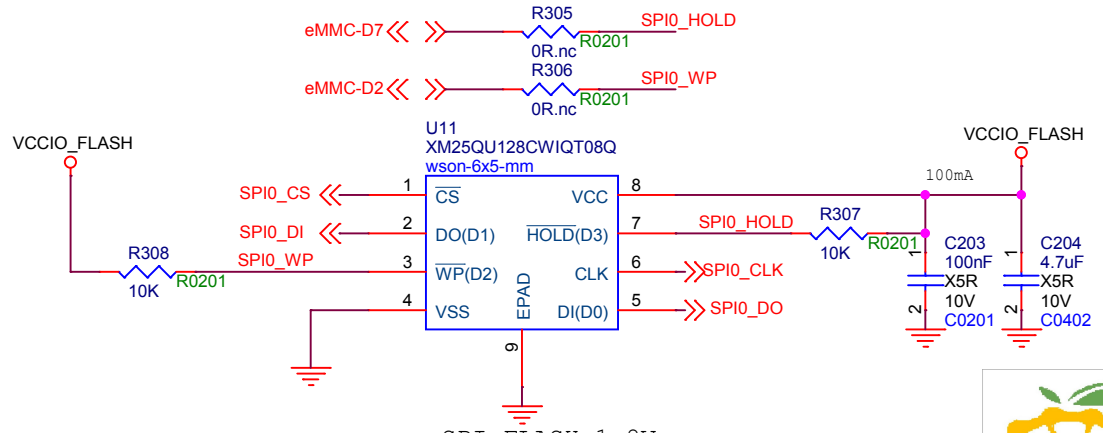
USB&EDP&PCIE



Shenzhen Xunlong Software Co., Ltd	
Project:	OPi 4A
File:	13 A527 Analog&High-speed
Date:	Monday, January 13, 2025
Rev:	V1.0
Size:	A3
Sheet:	7
Of:	18

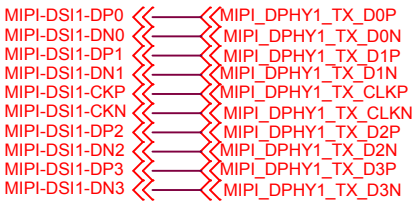
eMMC



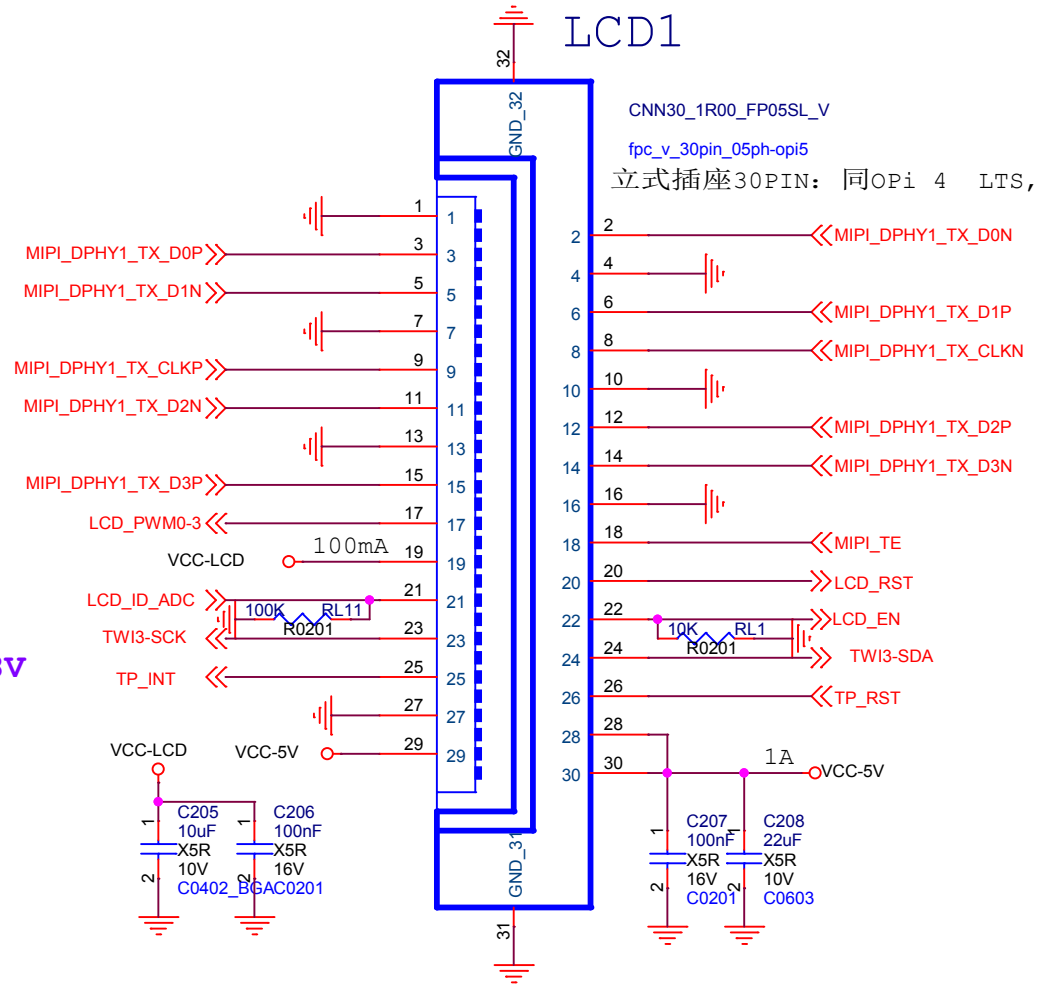


Shenzhen Xunlong Software Co., Ltd					
Project:	**OPi 4A**				
File:	**14 SPI_Flash&eMMC_Flash**				
Date:	**Monday, January 13, 2025**			**Rev:**	**V1.0**
Size:	**A3**	**Sheet:**	**8**	**Of:**	**18**

MIPI DPHY1 TX



IO:1.8V



FPC Pin List

```
Pin1 :GND
Pin2 :D0N
Pin3 :D0P
Pin4 :GND
Pin5 :D1N
Pin6 :D1P
Pin7 :GND
Pin8 :CLKN/AUXN
Pin9 :CLKP/AUXP
Pin10:GND
Pin11:D2N
Pin12:D2P
Pin13:GND
Pin14:D3N
Pin15:D3P
Pin16:GND
Pin17:LCD_PWM_BL
Pin18:LCD_TE
Pin19:VCC3V3_LCD
Pin20:LCD_RST
Pin21:LCD_ID
Pin22:LCD_PWREN
Pin23:TP_I2C_SCL
Pin24:TP_I2C_SDA
Pin25:TP_INT
Pin26:TP_RSTIO:1.8V
Pin27:GND
Pin28:5V0
Pin29:5V0
Pin30:5V0
```

Shenzhen Xunlong Software Co., Ltd					
Project:	OPi 4A				
File:	15 VO-MIPI_LCD				
Date:	Monday, January 13, 2025			Rev:	V1.0
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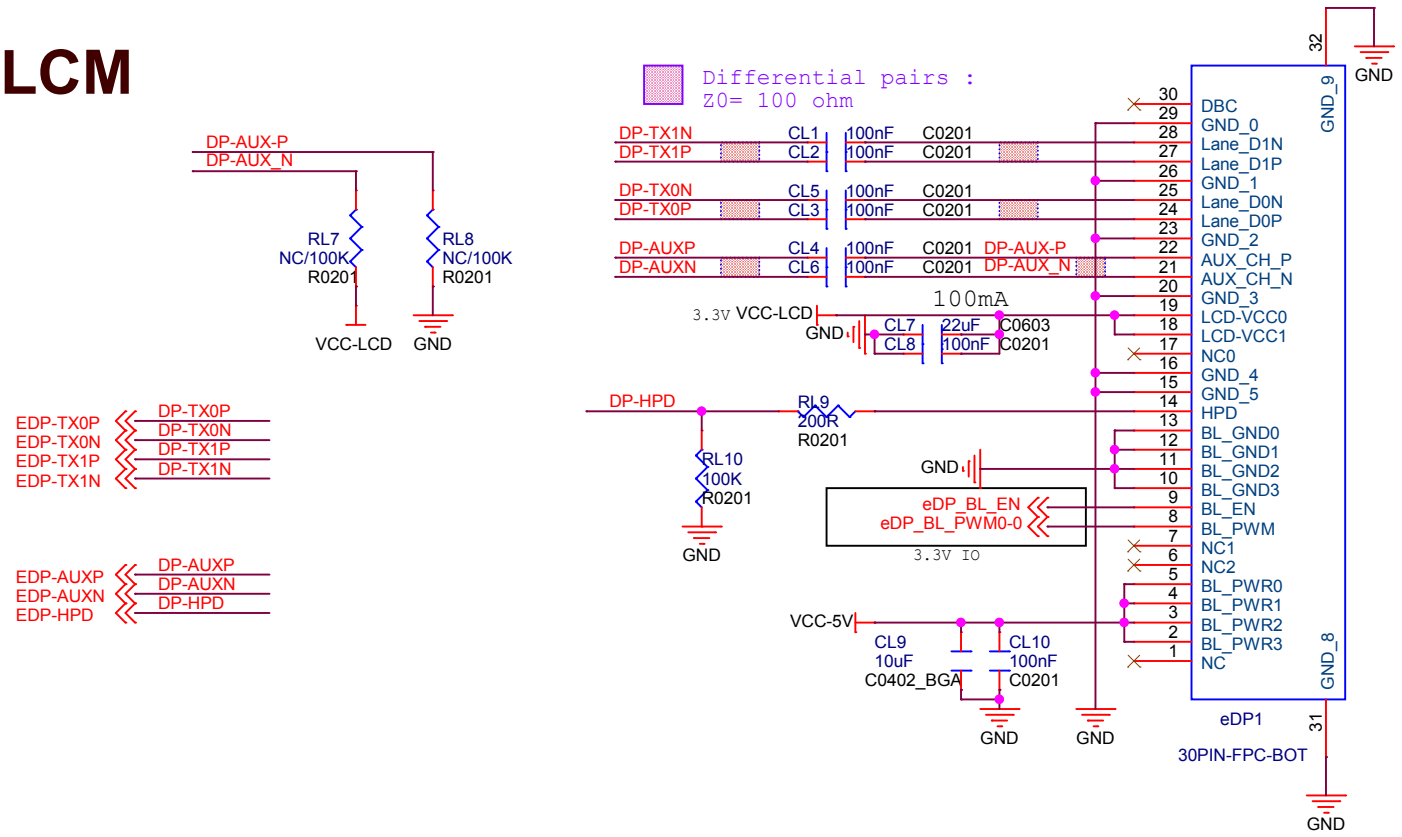
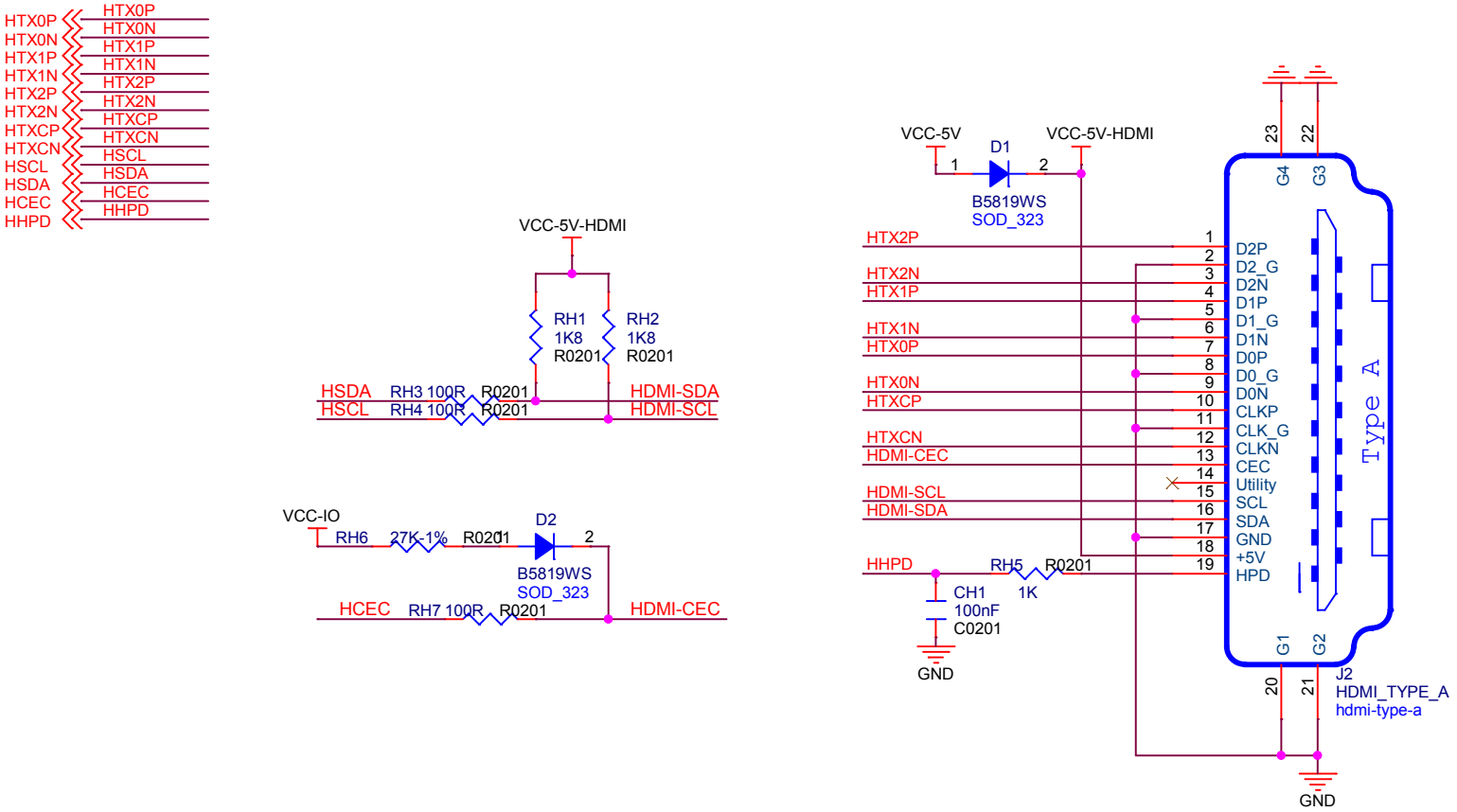
EDP LCM



Shenzhen Xunlong Software Co., Ltd					
Project:	**OPi 4A**				
File:	**16 EDP LCM 2LANE**				
Date:	**Monday, January 13, 2025**			**Rev:**	**V1.0**
Size:	**A3**	**Sheet:**	**10**	**Of:**	**18**

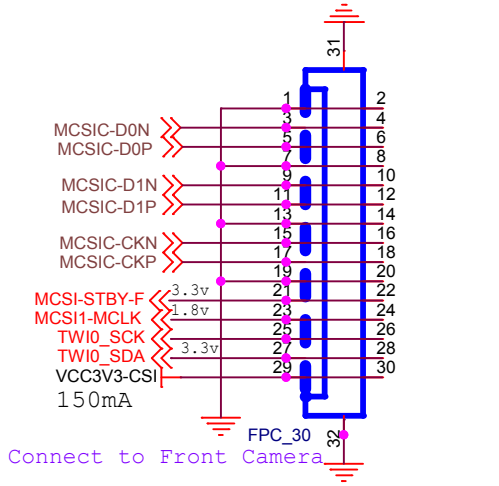
HDMI

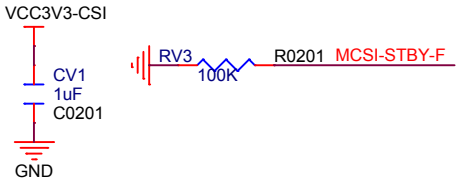


Shenzhen Xunlong Software Co., Ltd					
Project:	OPi 4A				
File:	17 VO-HDMI2.0_TX				
Date:	Monday, January 13, 2025			Rev:	V1.0
Size:	A3	Sheet:	11	Of:	18

CAMERA

CAM1





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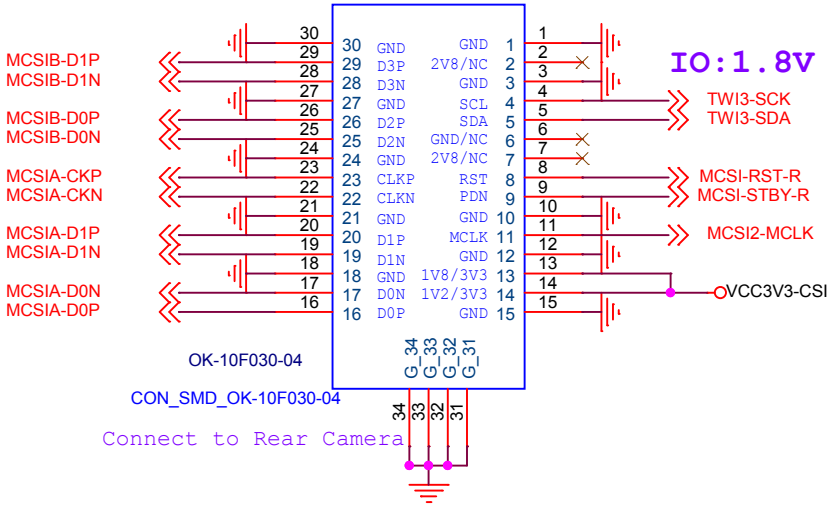
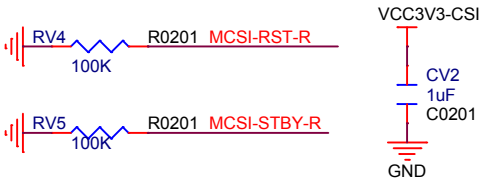
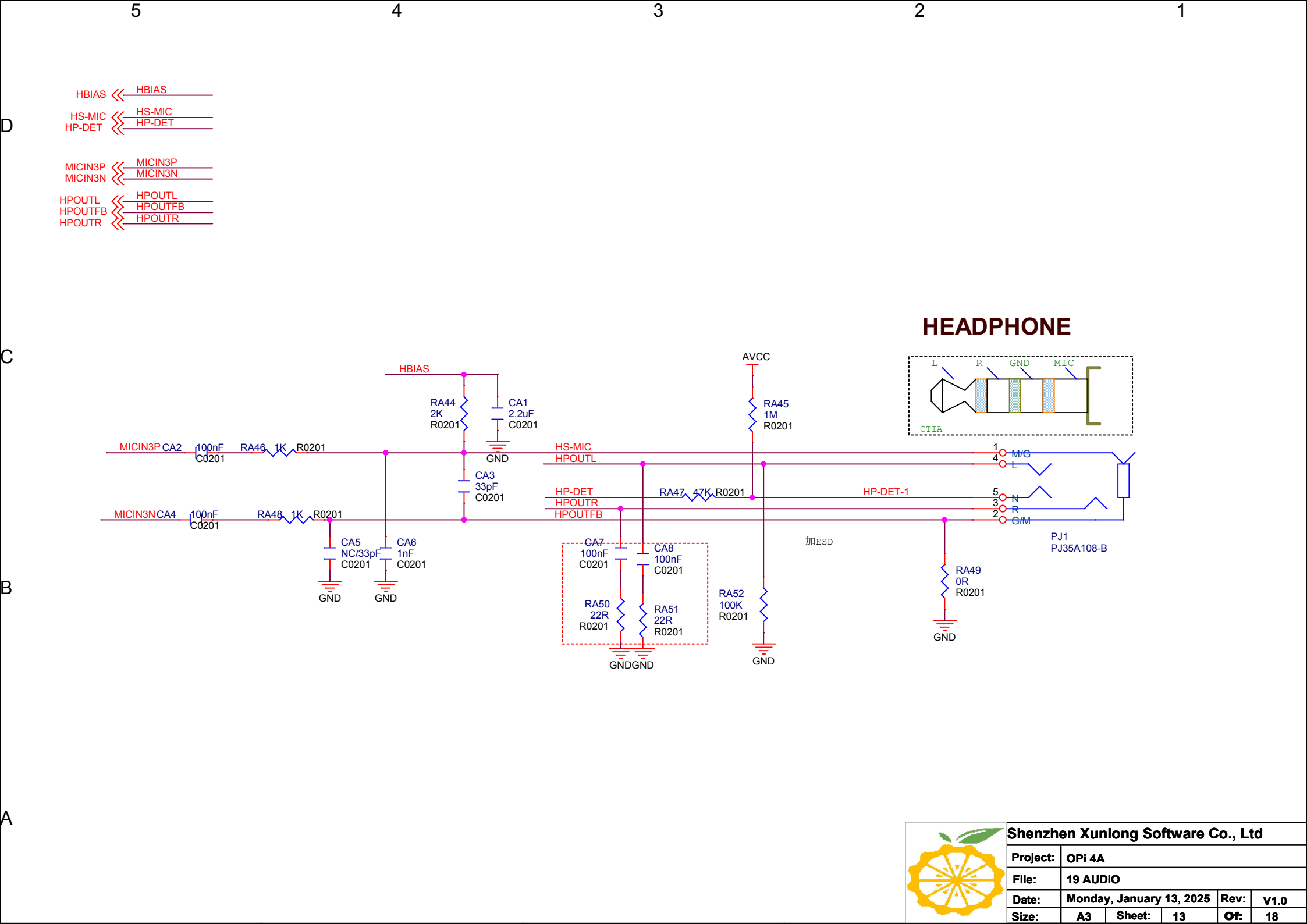
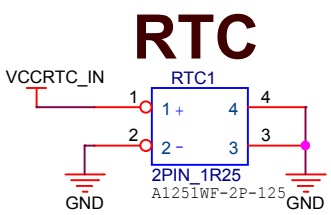


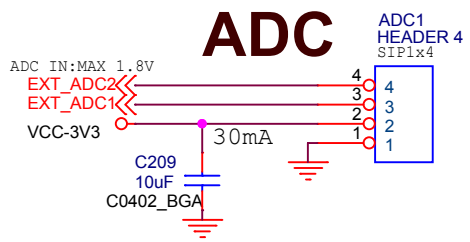


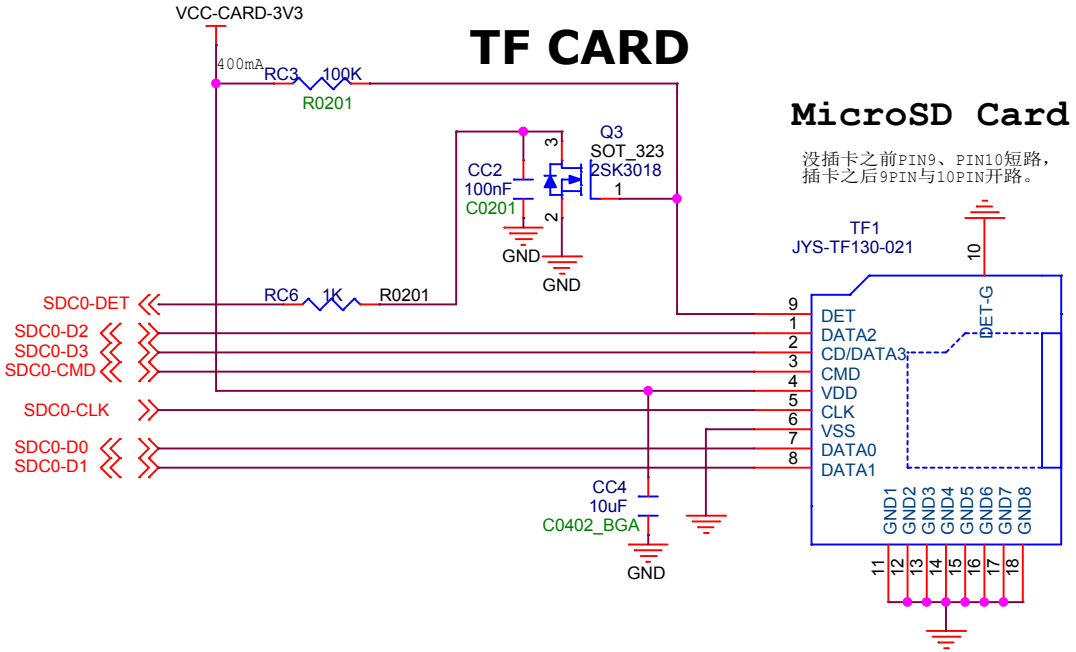
Shenzhen Xunlong Software Co., Ltd					
Project:	OPi 4A				
File:	18 CAMERA				
Date:	Monday, January 13, 2025			Rev:	V1.0
Size:	A3	Sheet:	12	Of:	18

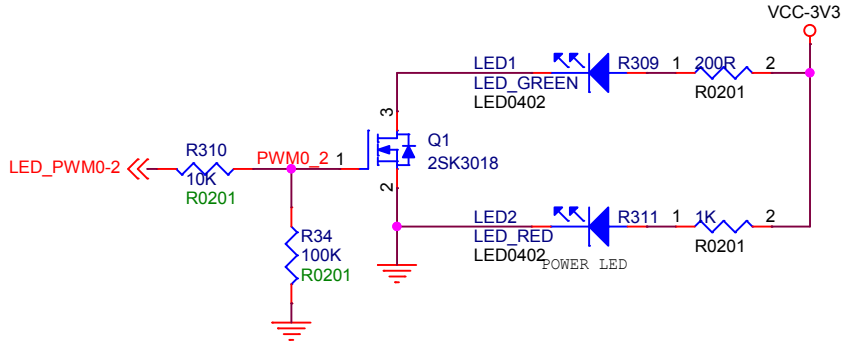


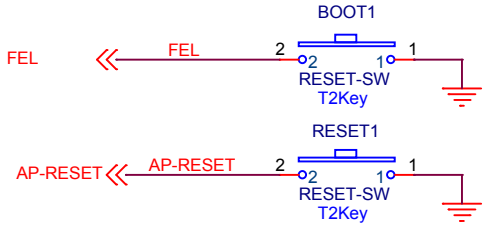
Shenzhen Xunlong Software Co., Ltd			
Project:	OPi 4A		
File:	19 AUDIO		
Date:	Monday, January 13, 2025	Rev:	V1.0
Size:	A3 Sheet: 13	Of:	18

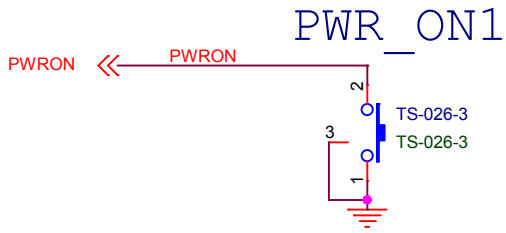












Shenzhen Xunlong Software Co., Ltd					
Project:	OPi 4A				
File:	20 TF&RTC&KEY&LED				
Date:	Monday, January 13, 2025			Rev:	V1.0
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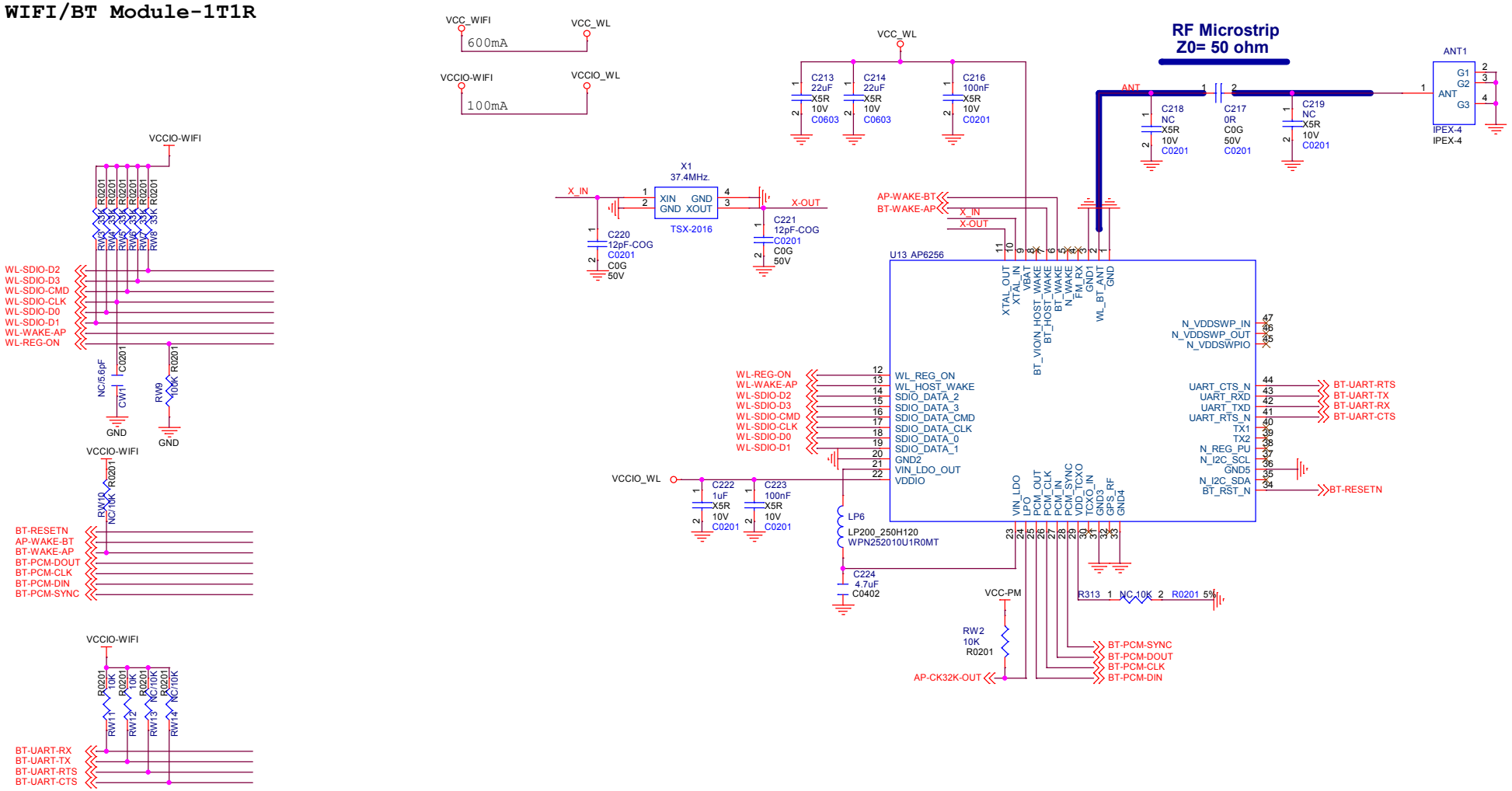
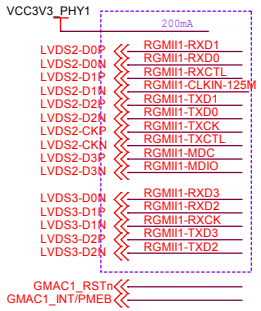
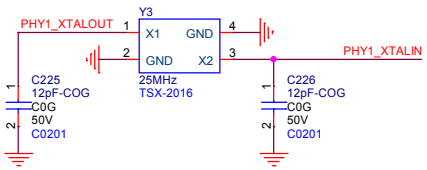
SDIO WIFI/BT Module-1T1R

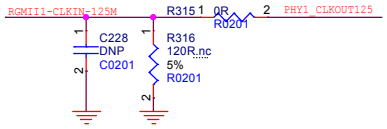


Shenzhen Xunlong Software Co., Ltd					
Project:	OPi 4A				
File:	21 WIFI/BT-SDIO_1T1R+UART				
Date:	Monday, January 13, 2025			Rev:	V1.0
Size:	A3	Sheet:	15	Of:	18

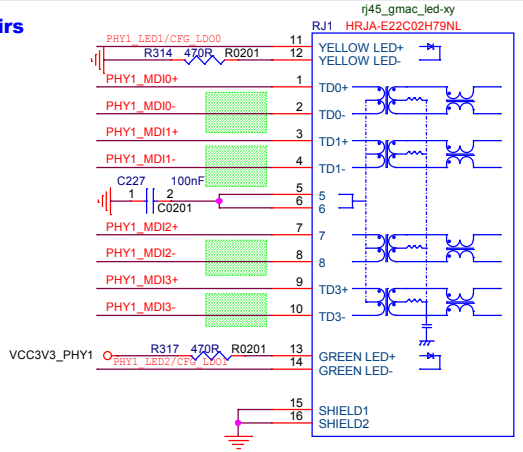
Giga PHY

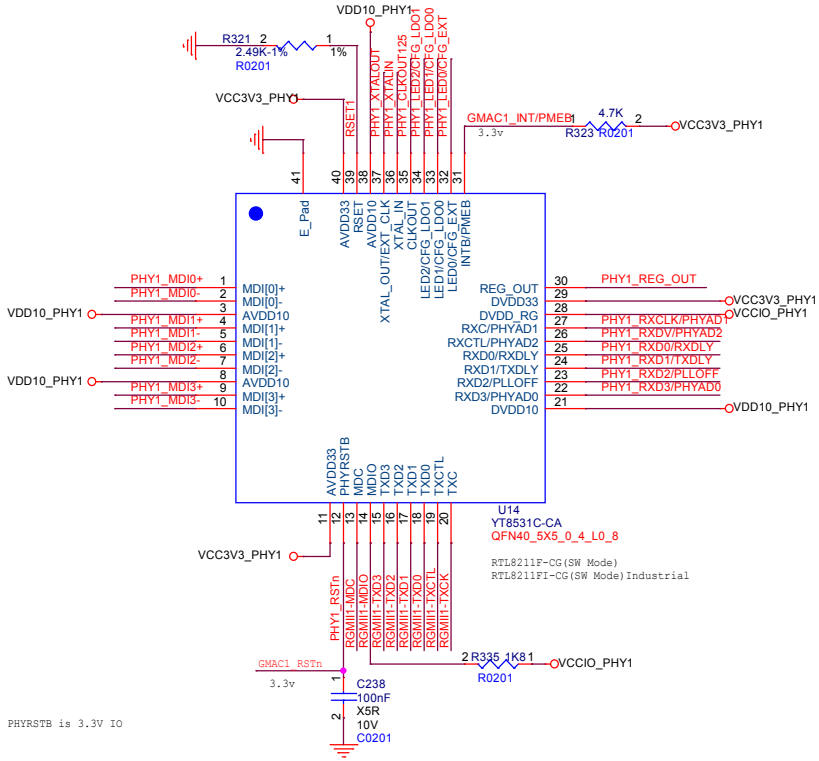


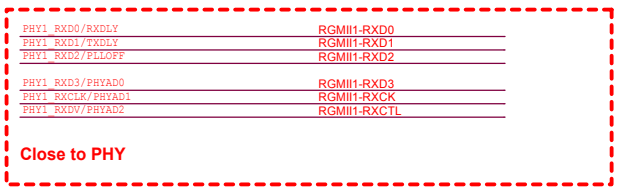


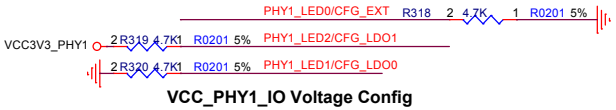


Differential pairs
Z0= 100 ohm

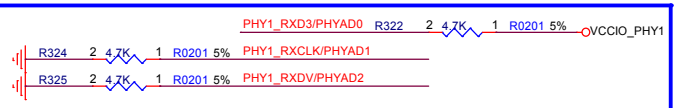








VCC_PHY1_IO Voltage Config



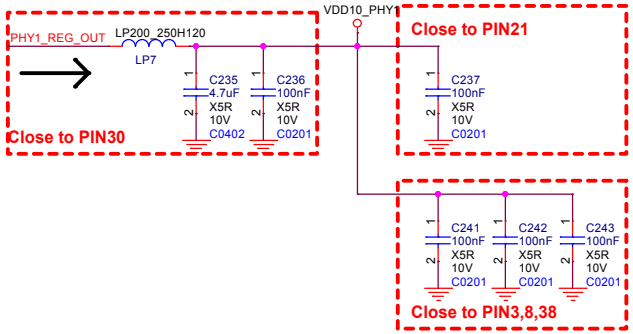
PHY Address Config

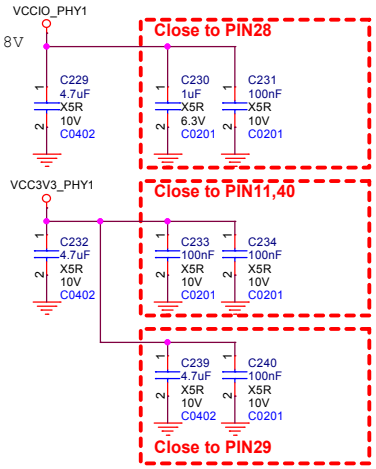
PHY Address	PHYAD[2:0]
1 (default)	3'b001

Pull-up for additional 2ns delay to RXC for data latching

Pull-up for additional 2ns delay to TXC for data latching

Pull-up to disable PLL @ ALDPS mode(Low power mode)





Shenzhen Xunlong Software Co., Ltd					
Project:	OPi 4A				
File:	22 Ethernet-GEPHY_RGMII				
Date:	Monday, January 13, 2025			Rev:	V1.0
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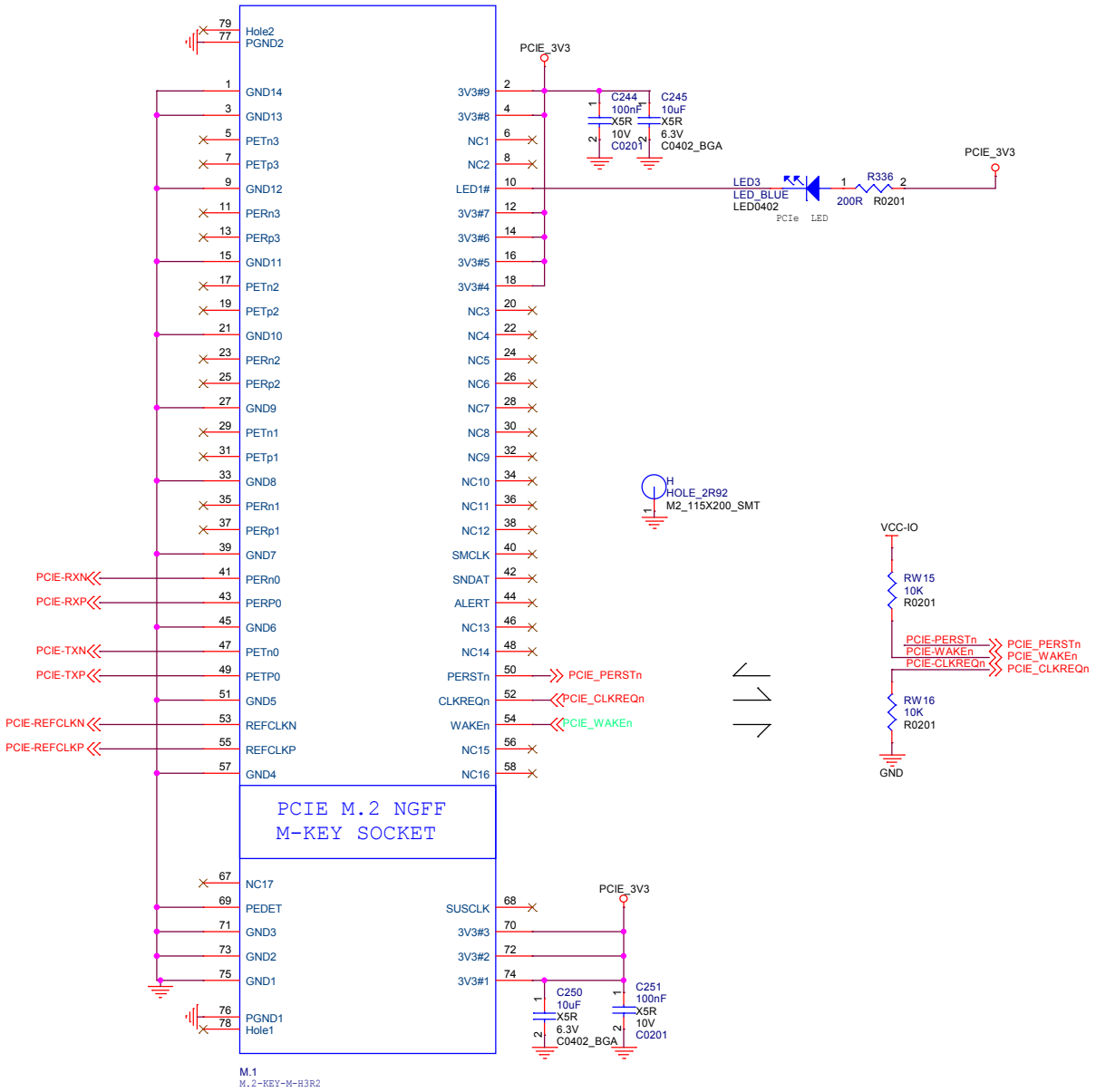
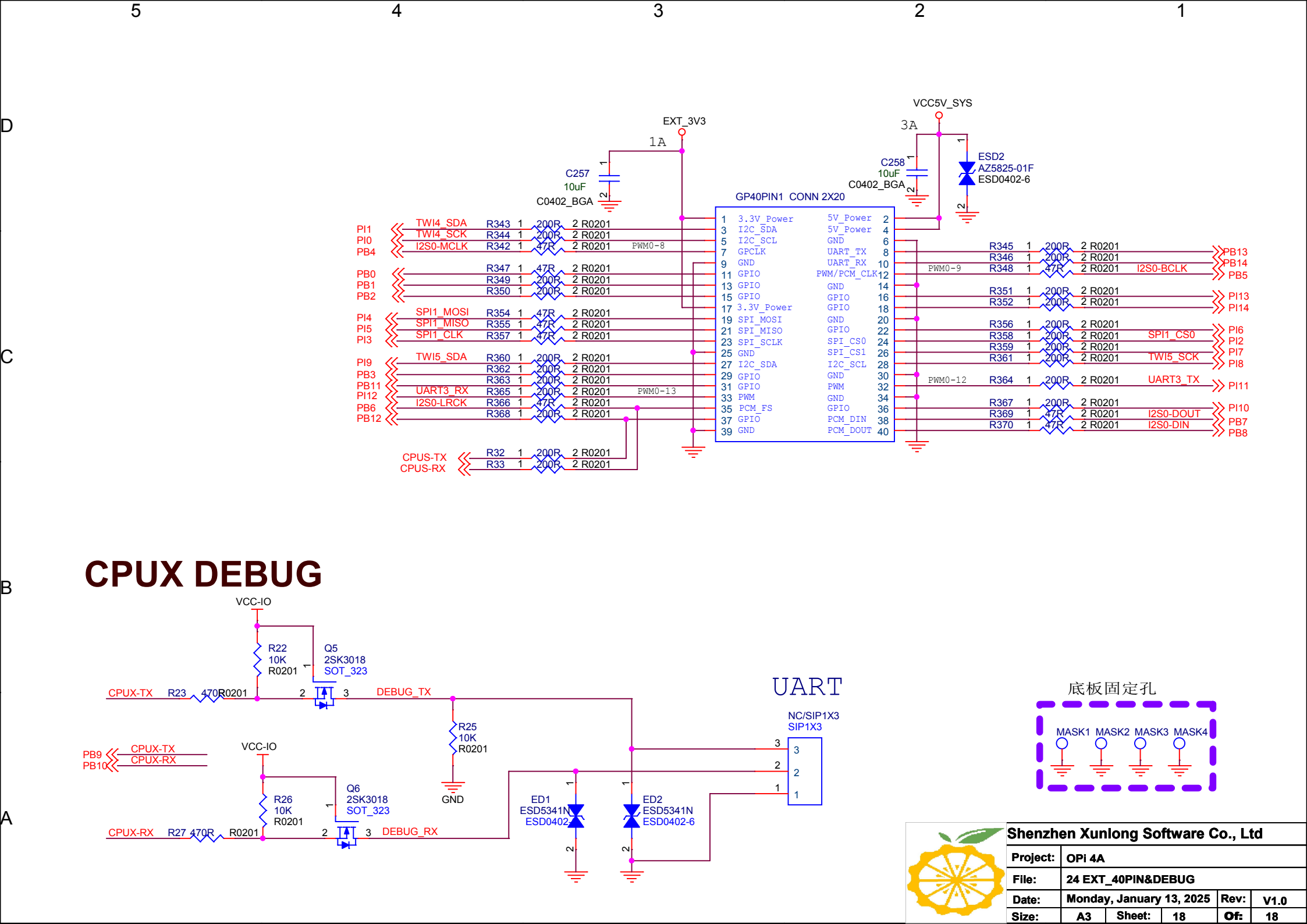


Shenzhen Xunlong Software Co., Ltd					
Project:	OPi 4A				
File:	23 M.2 M key PCIe/LED				
Date:	Monday, January 13, 2025			Rev:	V1.0
Size:	A3	Sheet:	17	Of:	18



Shenzhen Xunlong Software Co., Ltd					
Project:	OPi 4A				
File:	24 EXT_40PIN&DEBUG				
Date:	Monday, January 13, 2025			Rev:	V1.0
Size:	A3	Sheet:	18	Of:	18