

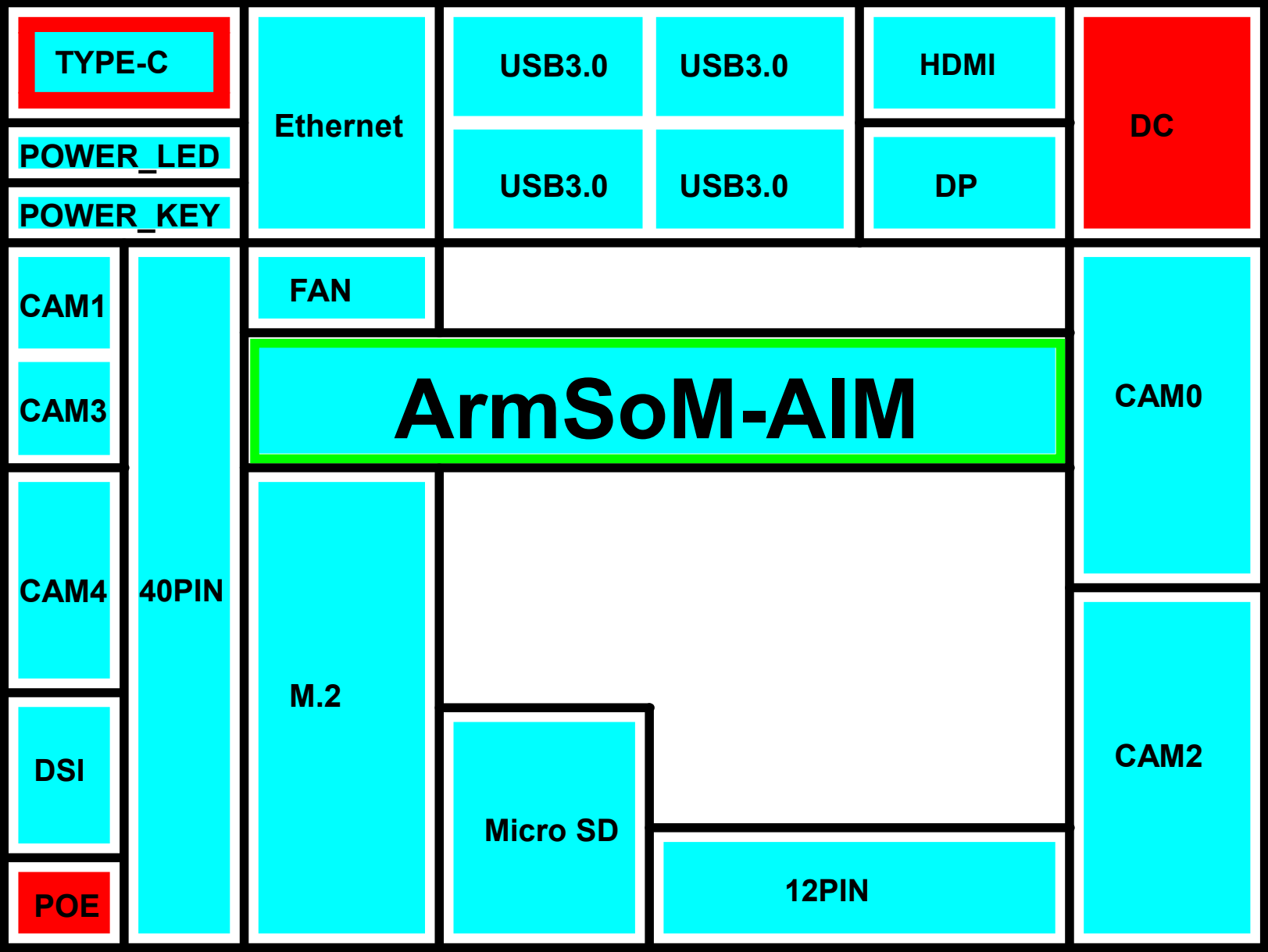
# Table of Content

|         |                                |
|---------|--------------------------------|
| Page 1  | 01.Table of Contents           |
| Page 2  | 02.REVISION HISTORY            |
| Page 3  | 03.Block Diagram               |
| Page 4  | 04.Power Tree                  |
| Page 5  | 05.SODIMM connector 1/3        |
| Page 6  | 06.SODIMM connector 2/3        |
| Page 7  | 07.SODIMM connector 3/3        |
| Page 8  | 08.USB2.0 Type-C               |
| Page 9  | 09.USB3.1 x4 HUB               |
| Page 10 | 10.USB3.1 Type-A x2 (A)        |
| Page 11 | 11.USB3.1 Type-A x2 (B)        |
| Page 12 | 12.DC Jack                     |
| Page 13 | 13.3V3 DCDC and 1V8 LDO        |
| Page 14 | 14.Power ON/OFF Logic          |
| Page 15 | 15.M.2 Key-E                   |
| Page 16 | 16.Gigabit Ethernet POE        |
| Page 17 | 17.HDMI                        |
| Page 18 | 18.DisplayPort                 |
| Page 19 | 19.DSI                         |
| Page 20 | 20.CAM_0_2_Connector           |
| Page 21 | 21.CAM_1_3_4_Connector         |
| Page 22 | 22.TF Card                     |
| Page 23 | 23.40Pin GPIO expansion header |
| Page 24 | 24.Fan, Debug and EEPROM       |
| Page 25 | 25.Loop Back Test              |

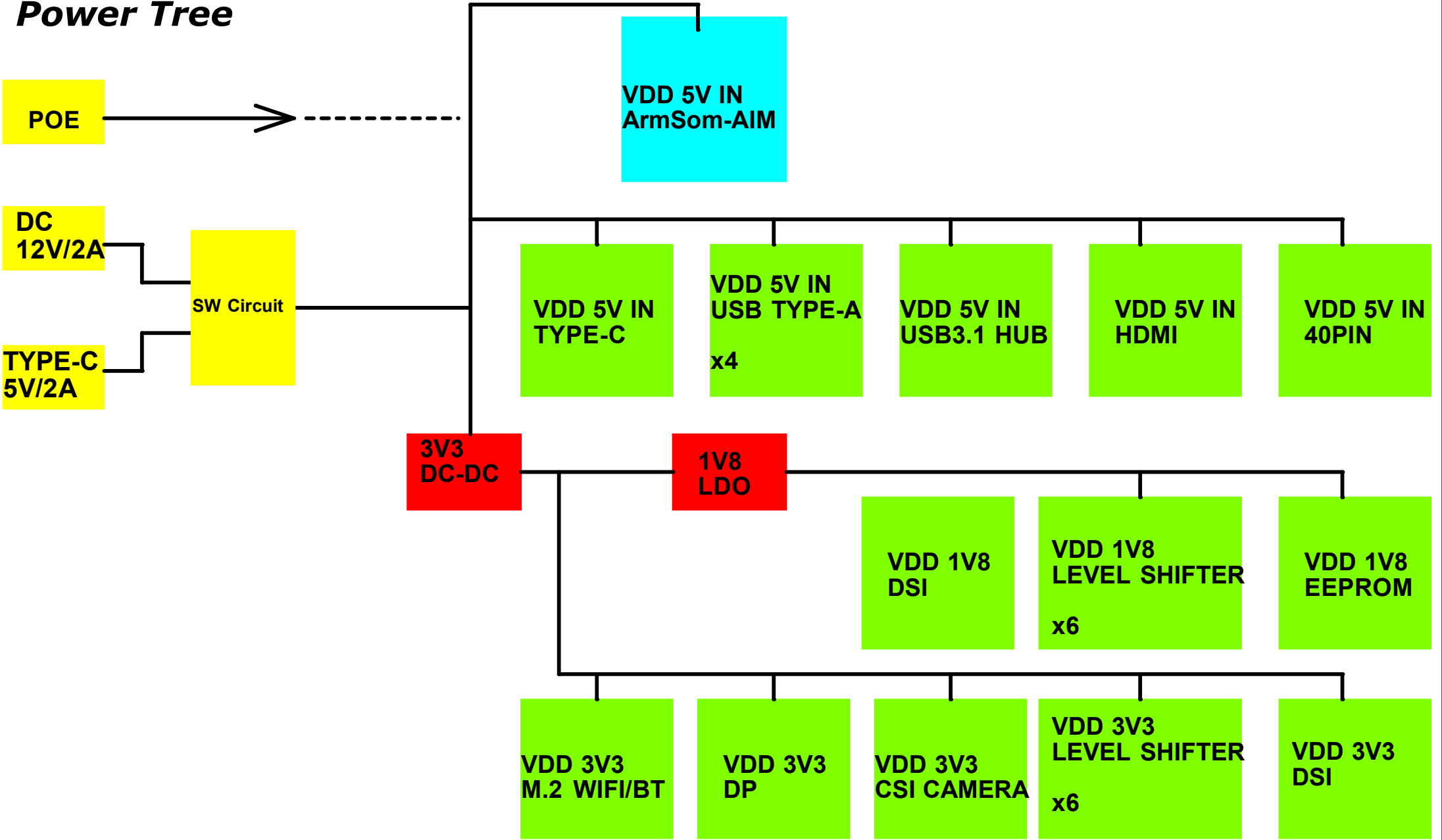
# Revision History

| Version | Date       | By          | Change Dscription  | Approved |
|---------|------------|-------------|--|----------|
| V1.0    | 2024-03-18 | Liu Xinglin | 1: First release;  |          |
| V1.1    | 2024-11-19 | Park        | 1: TypeC DET: add R6370; USBHUB:add Jump testpoint VS1-VS15;<br>2: DSI: Lcd&tp two connectors change to one connector; DP:add R6371&R6372;<br>3: CAM: Cam2&Cam3&Cam4 RST singal change to uart0_rts&uart0_cts ;<br>4: DCIN: change DC-DC IC ; USB SW change to MOS;<br>5: MEC5/MEC6A/MEC6B change PCB Footprint; |          |
|         |            |             |  |          |
|         |            |             |  |          |

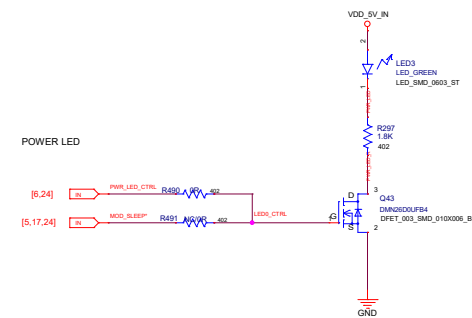
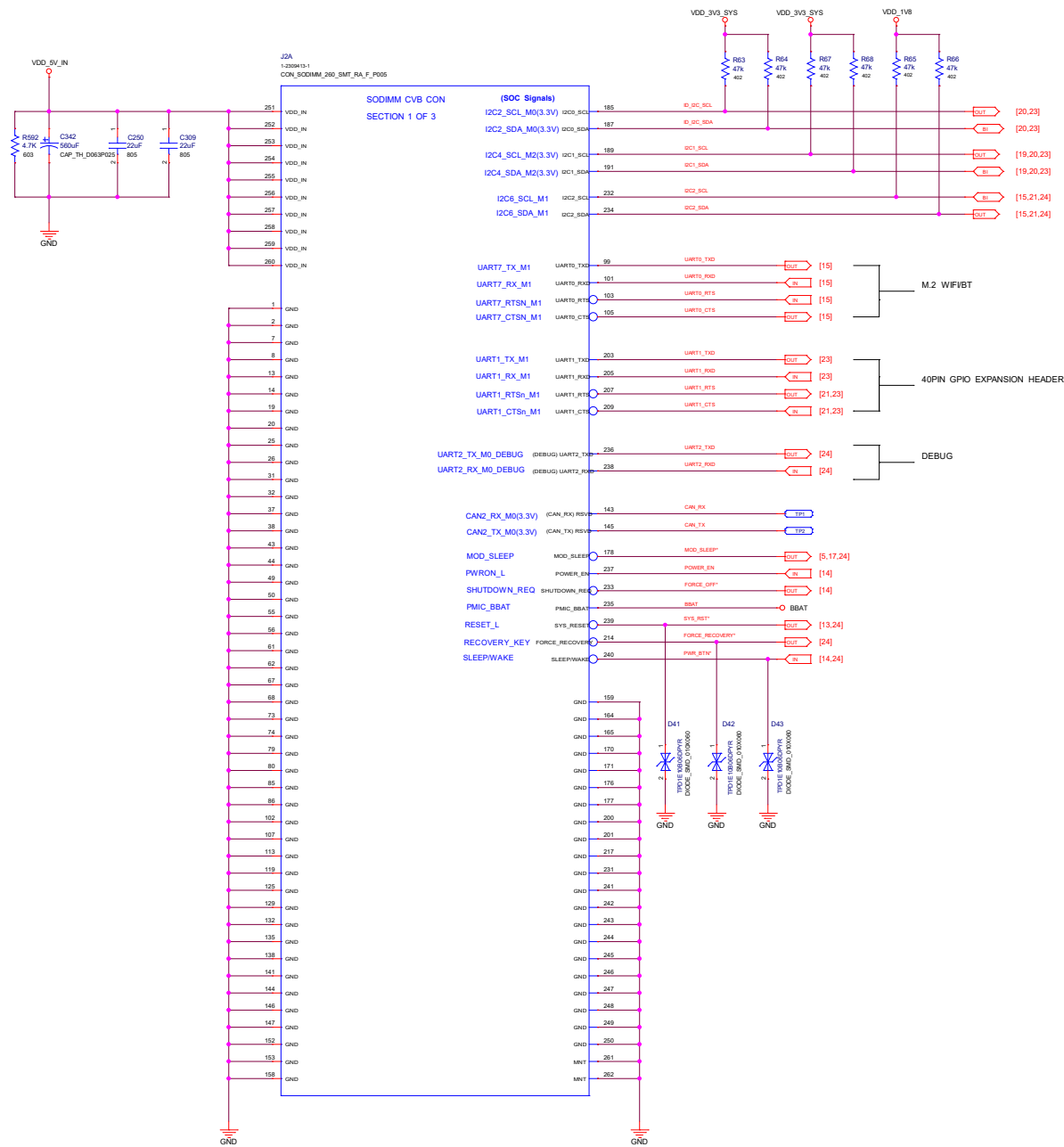
Block Diagram



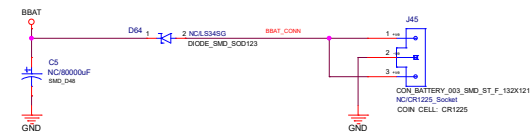
Power Tree



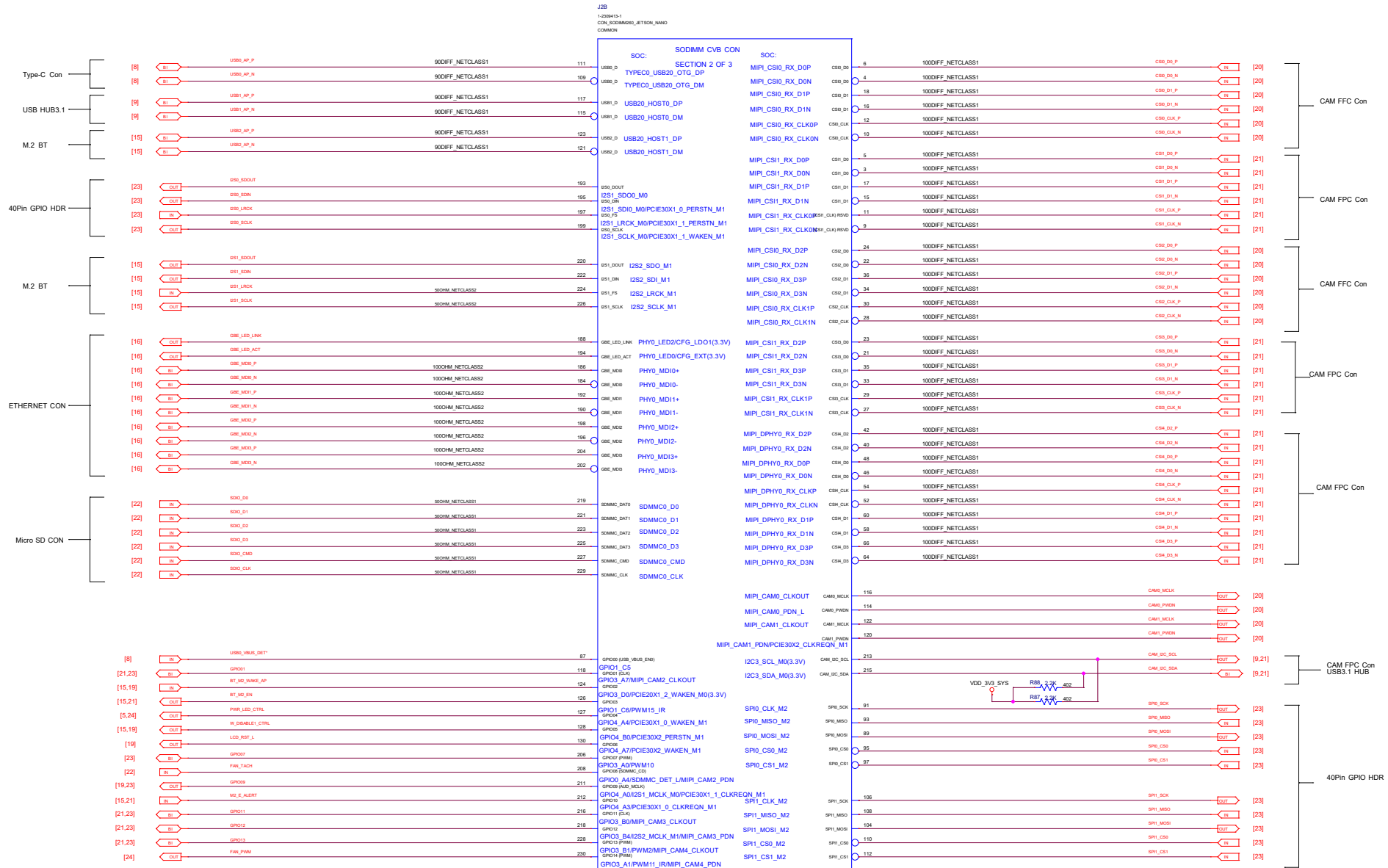
## UART/ I2C/CAN/POWER\_GPIO



USE EITHER SUPERCAP OR COIN CELL BATTERY

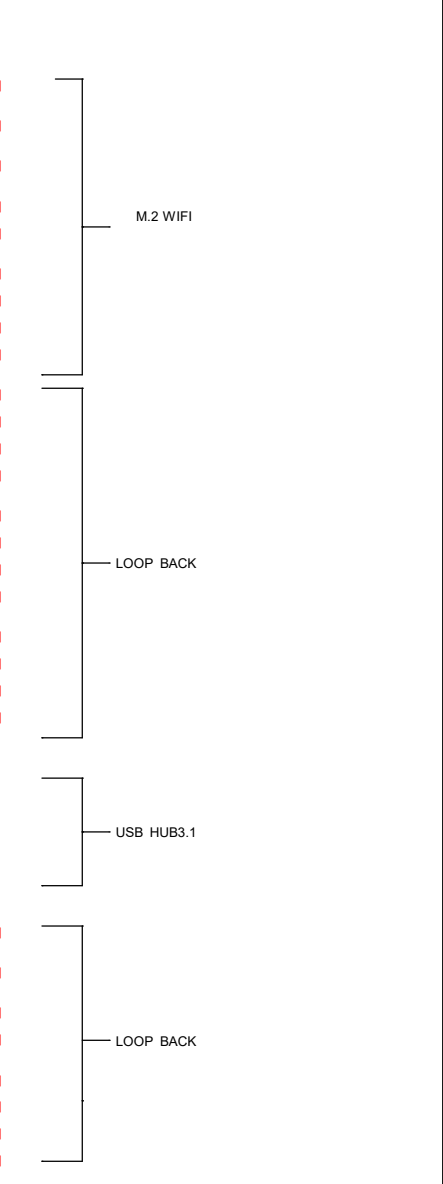
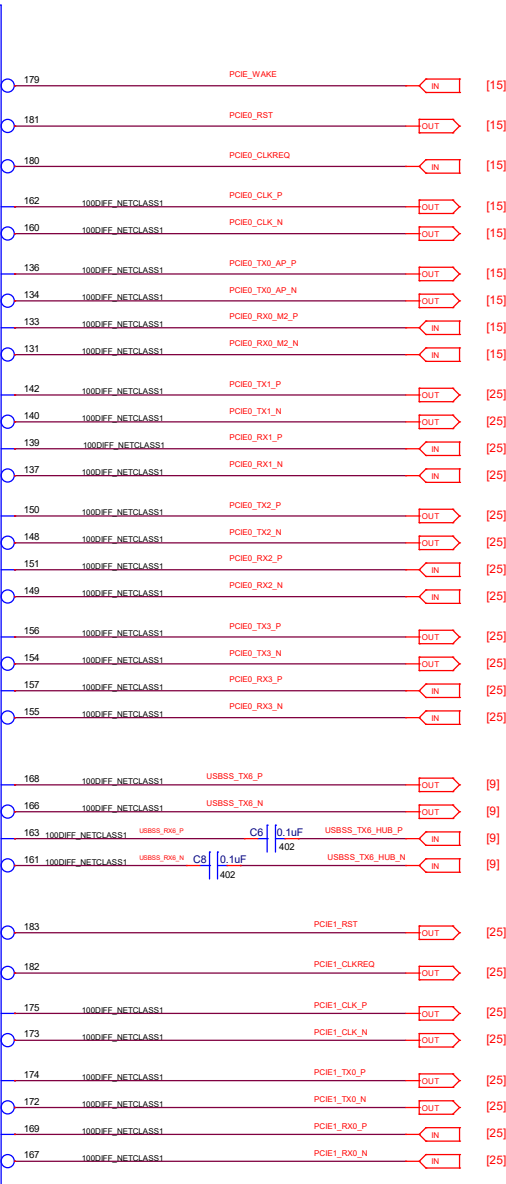


**USB2.0/I2S/Ethernet/SDIO/GPIO/CSI/SPI**

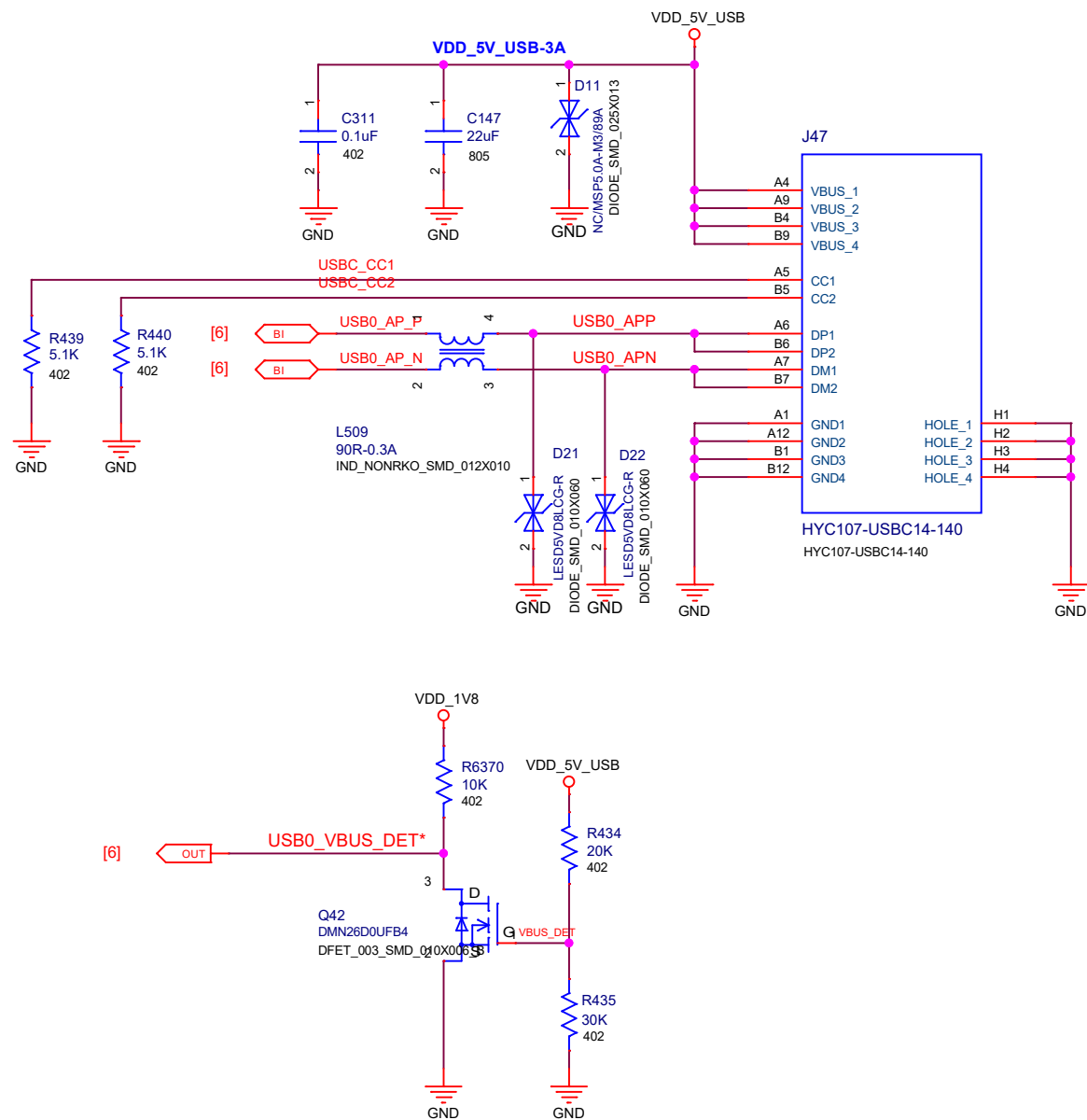



DSI/DP/HDMI/M.2/USB3.1/LOOP BACK

J2C  
1-2309413-1  
CON\_SODIMM260\_JETSON\_NANO  
COMMON



Type-c





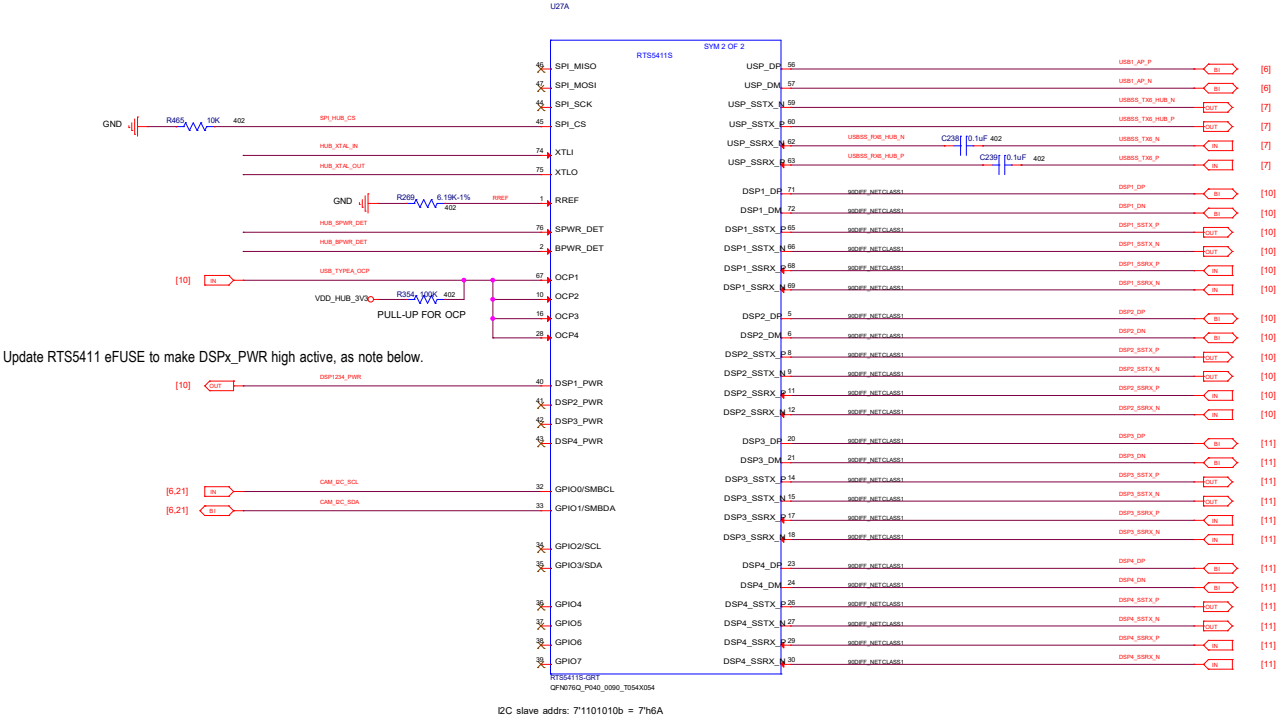
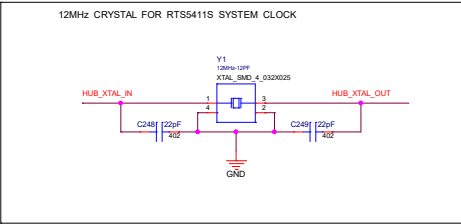
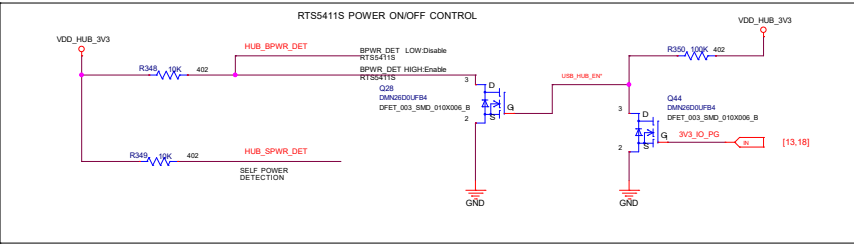
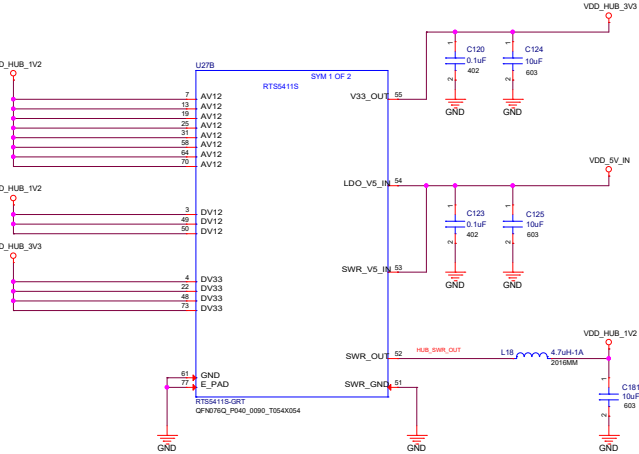
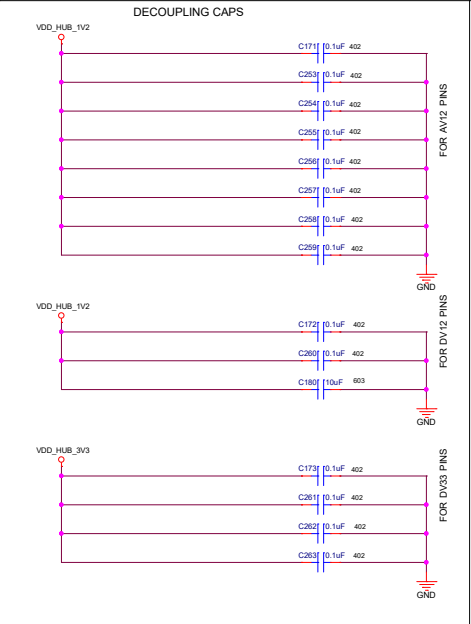
armsom

ArmSoM

|              |                            |              |           |
|--------------|----------------------------|--------------|-----------|
| Project:     | AIM_IO_Board               |              |           |
| File:        | USB2.0 Type-C              |              |           |
| Date:        | Tuesday, December 10, 2024 | Rev:         | V1.1      |
| Designed by: | Park                       | Reviewed by: | <Checker> |
| Sheet:       | 8                          | of           | 25        |

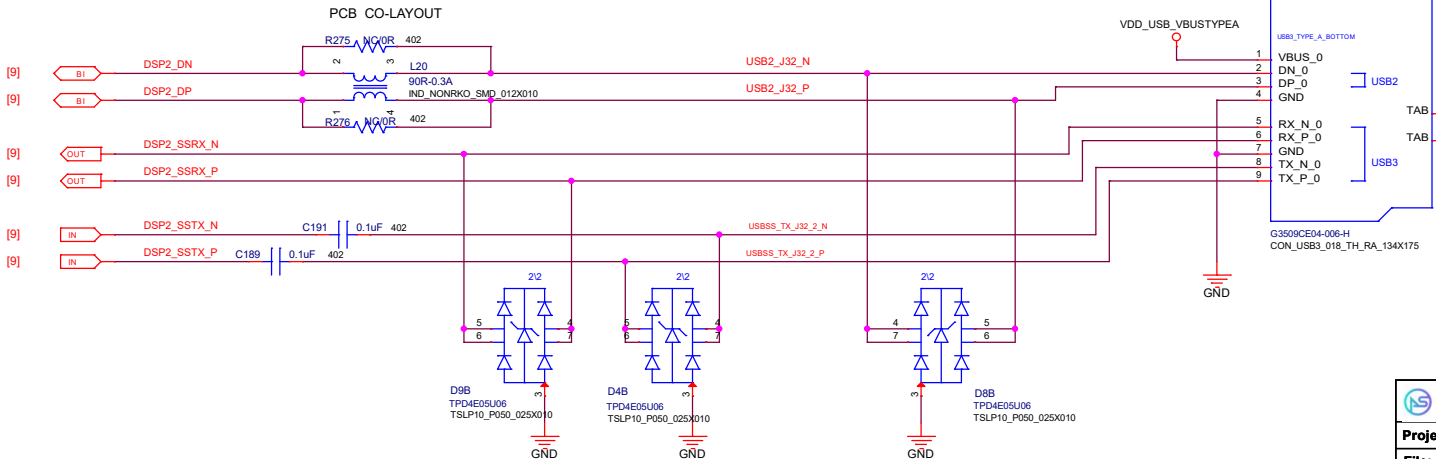
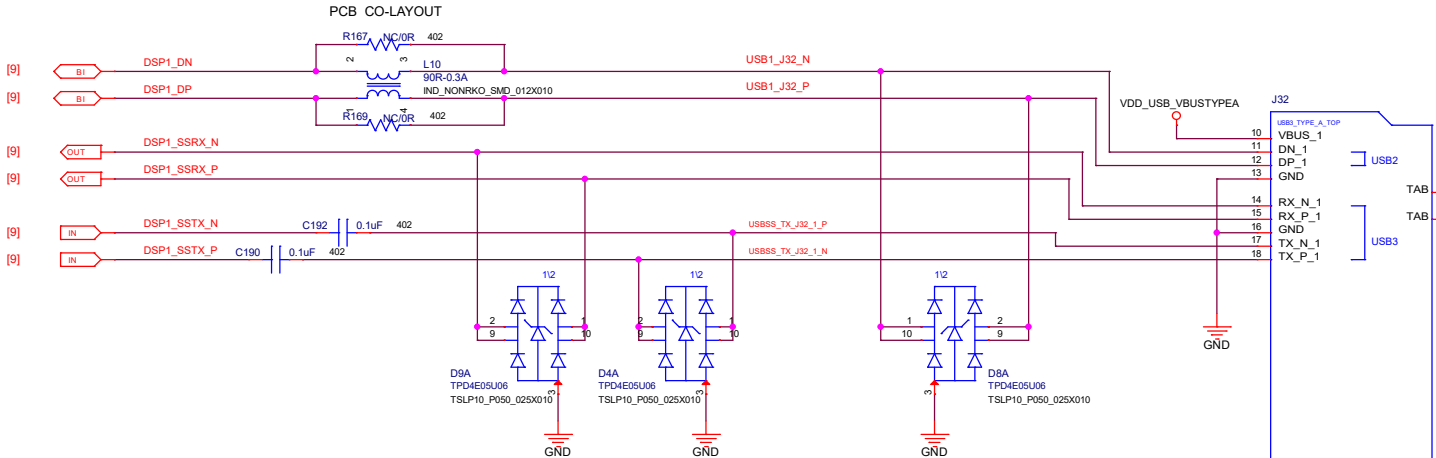
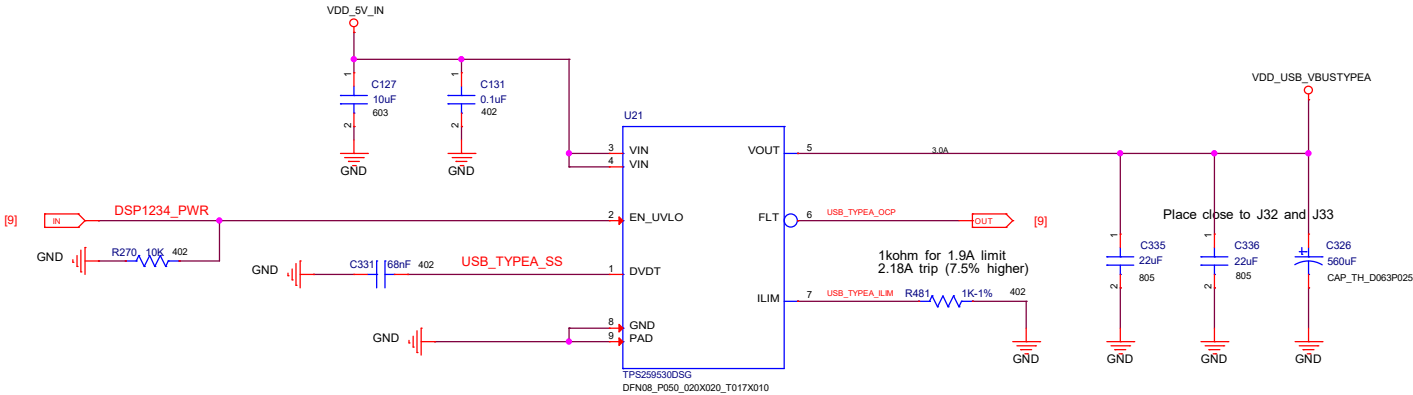


USB3.1 HUB

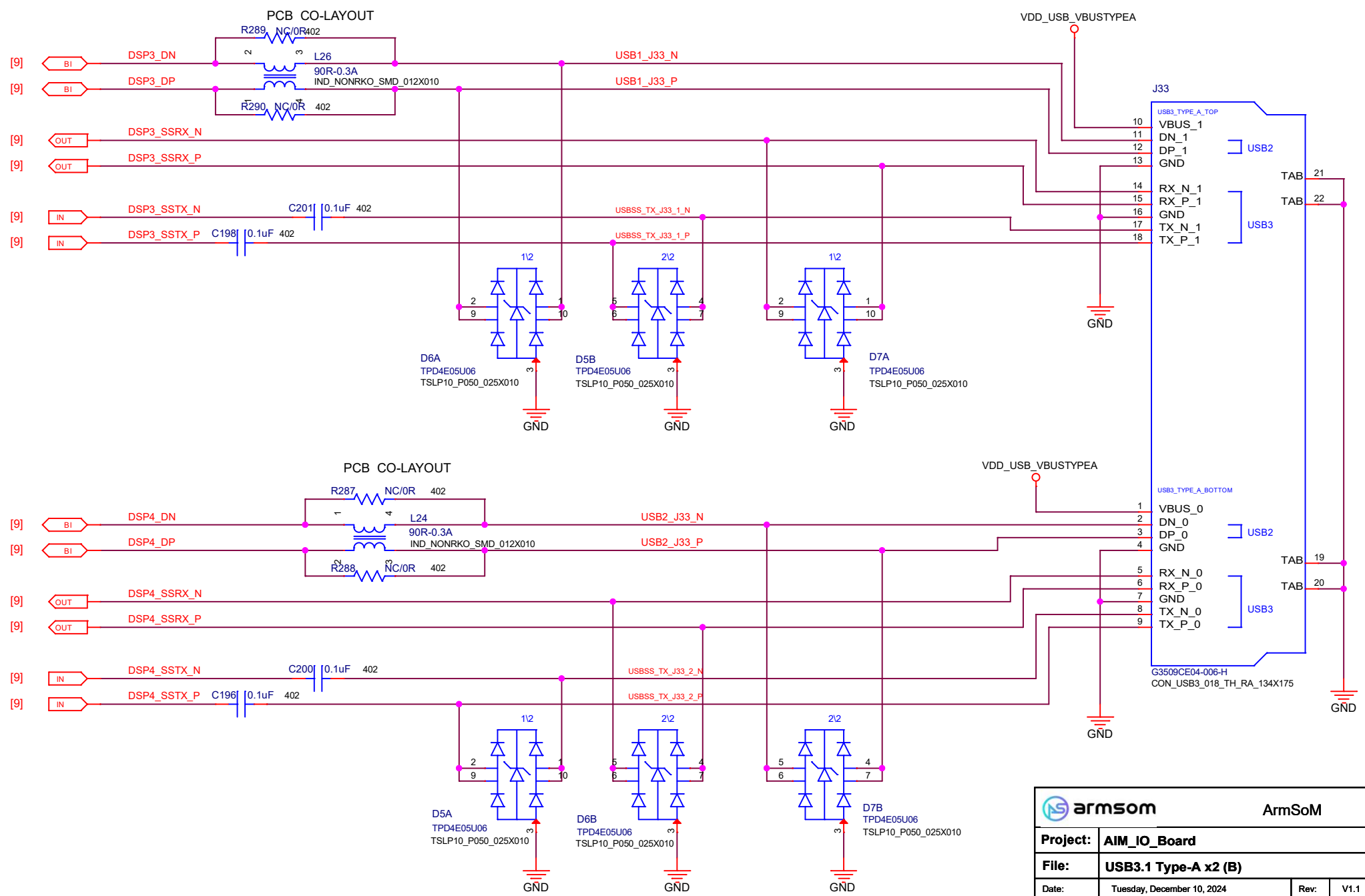


SPI Flash was removed from B01, customize RTS5411 internal eFuse (DSP1/2/3/4\_PWR High active, disable charging feature, SSC valid) with Realtek tool.

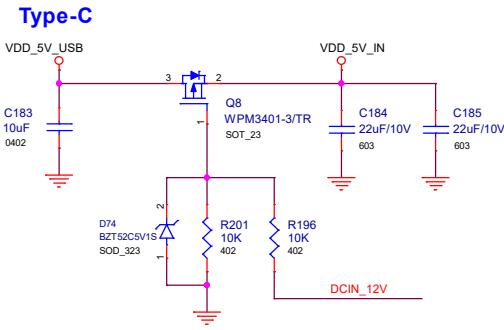
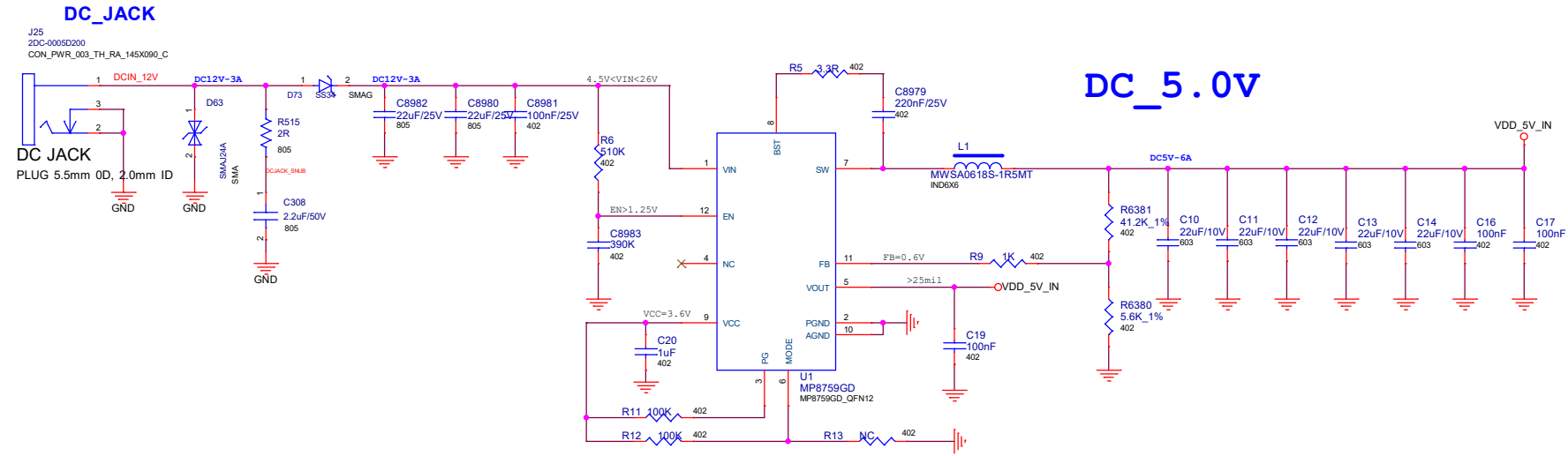
USB 3.0 TYPE A x2 CONNECTOR (1/ 2)



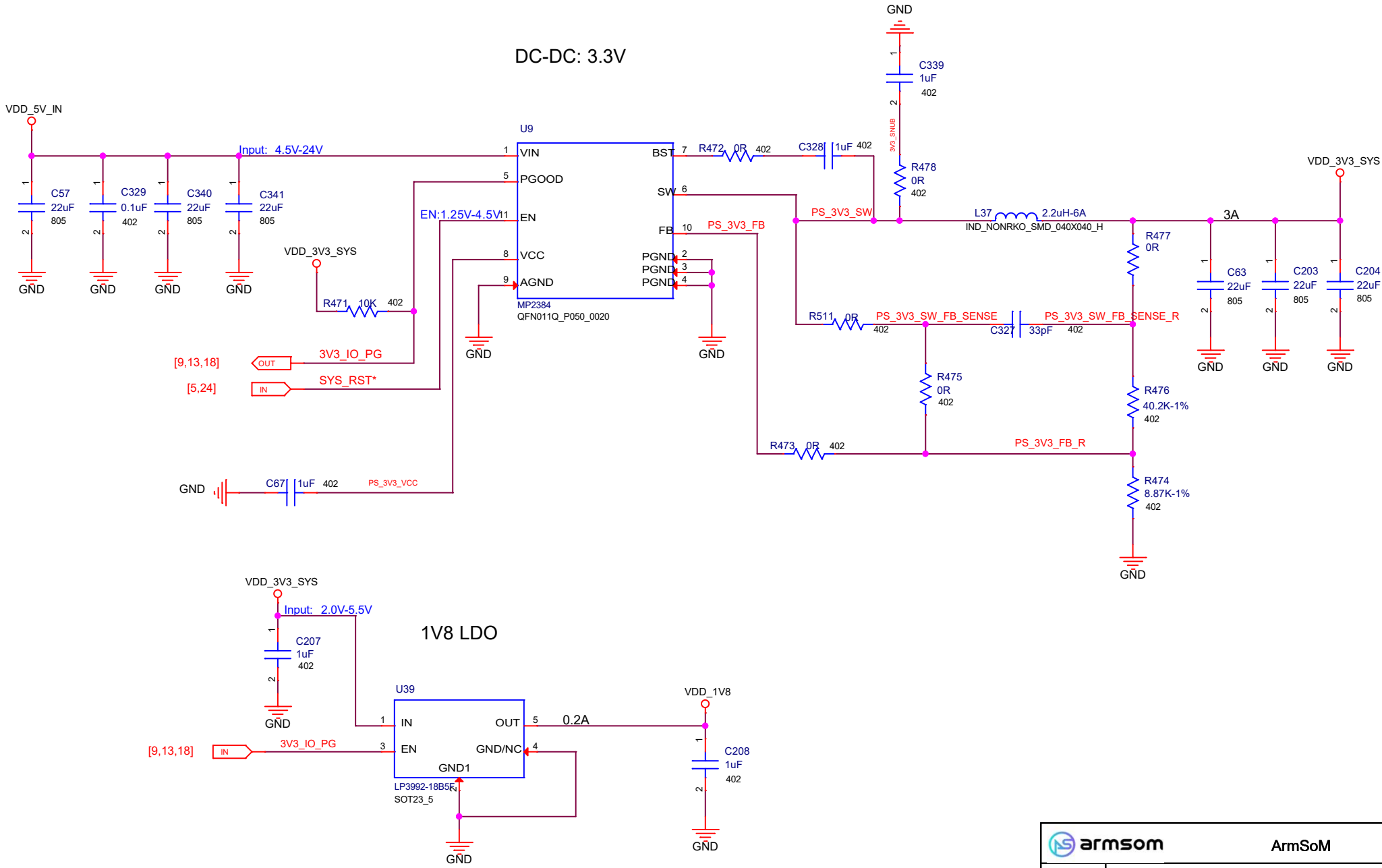
# USB 3.0 TYPE A x2 CONNECTOR (2/2)




# DC JACK & Type C POWER

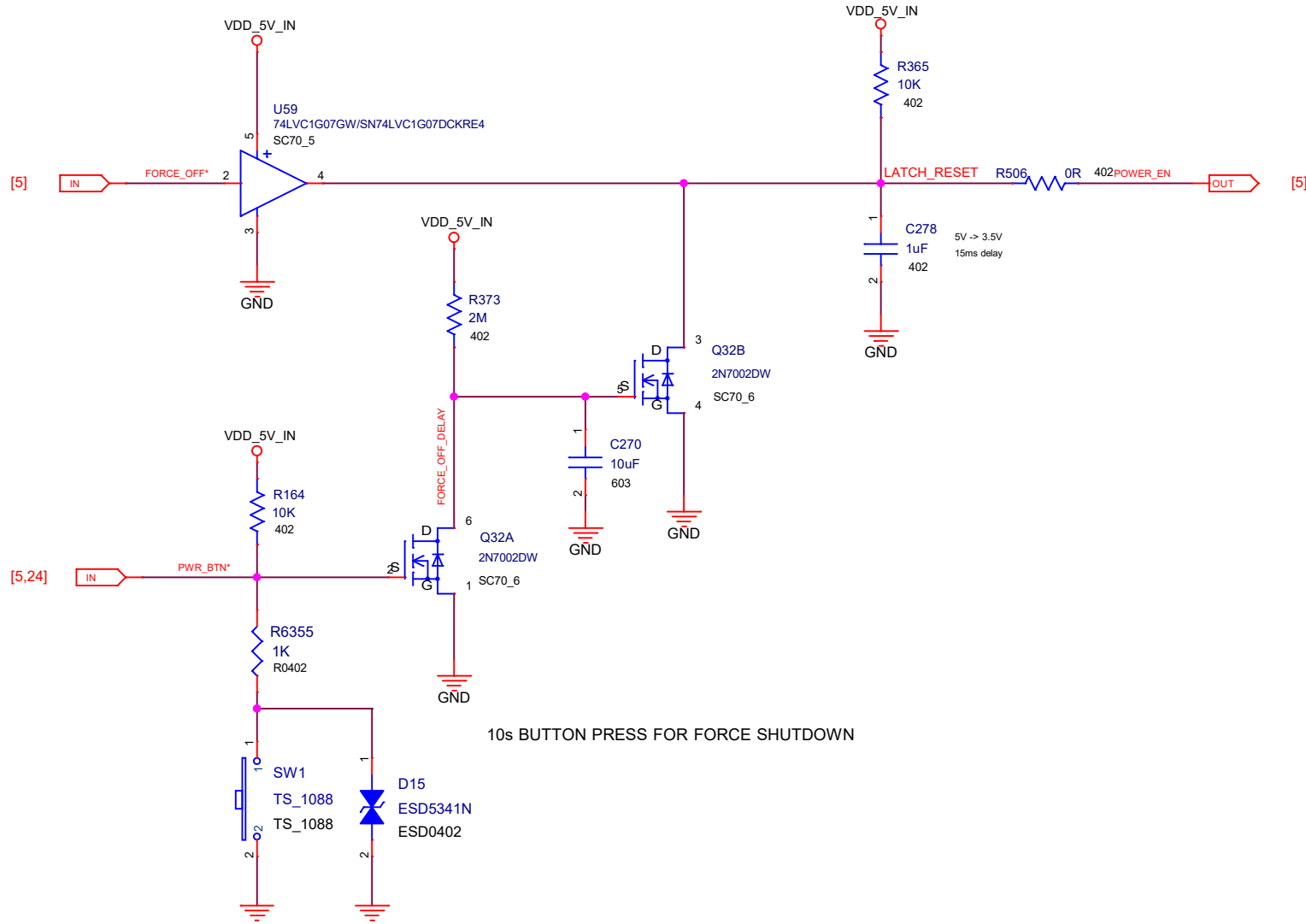


# 3V3/1V8

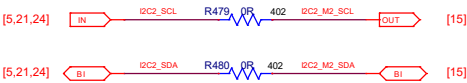
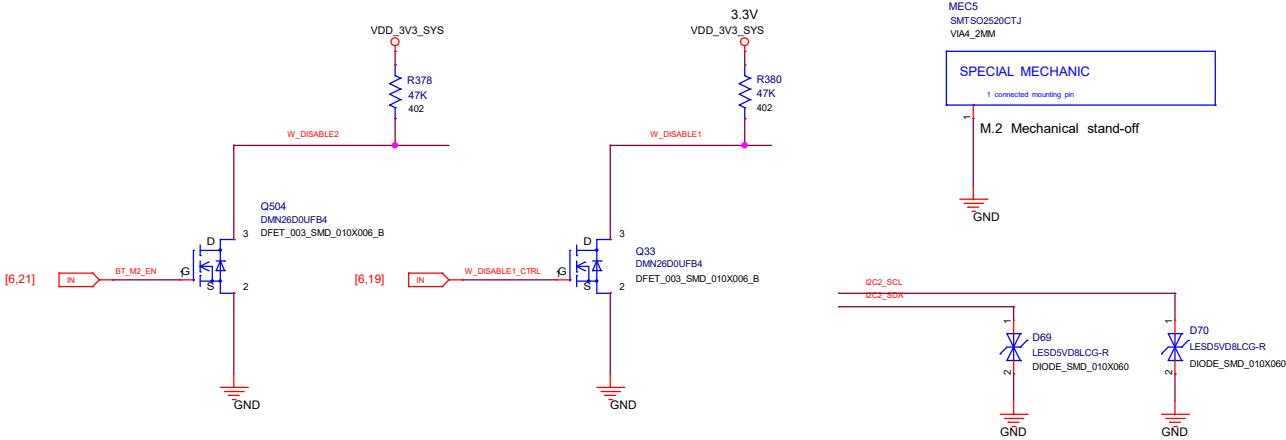
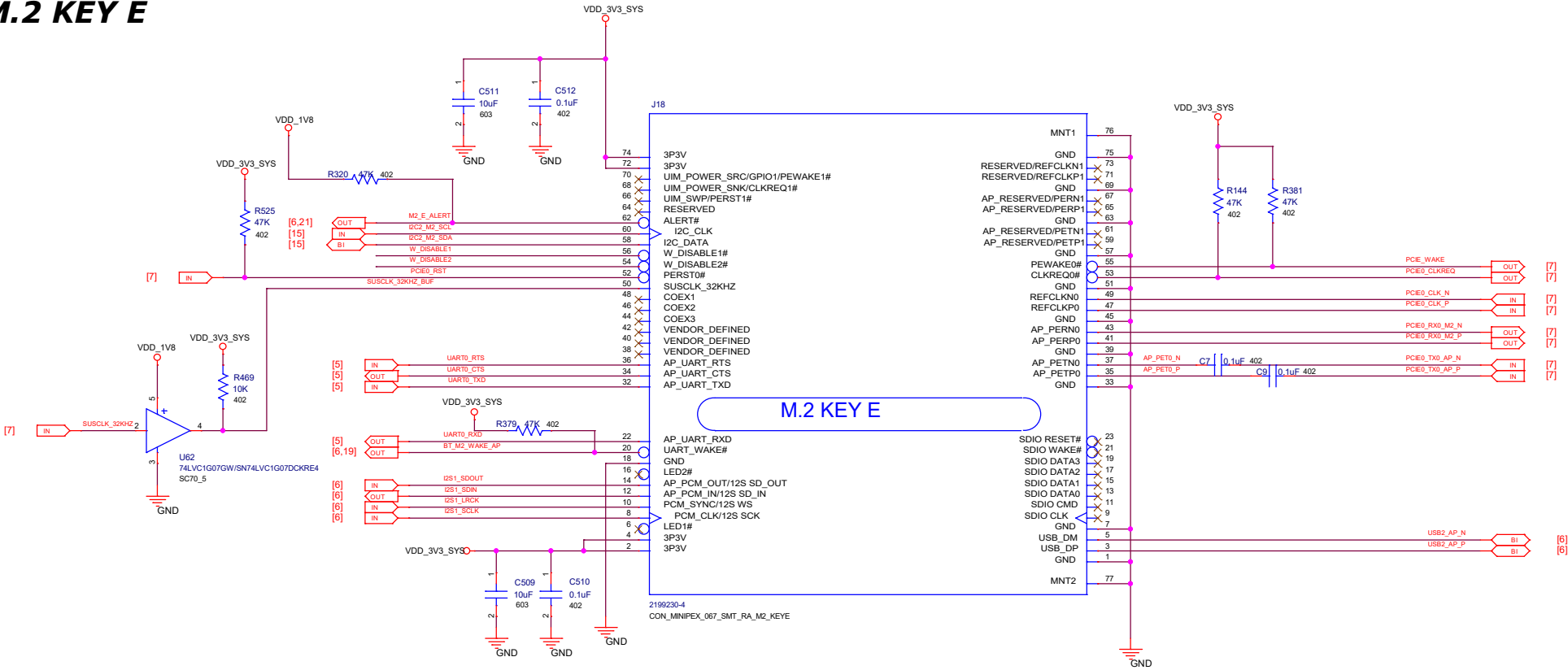


|   |                             |                     |                  |
|---|-----------------------------|---------------------|------------------|
|  <b>armsom</b> |                             | <b>ArmSoM</b>       |                  |
| <b>Project:</b>   | <b>AIM_IO_Board</b>         |                     |                  |
| <b>File:</b>  | <b>3V3 DCDC and 1V8 LDO</b> |                     |                  |
| <b>Date:</b>  | Tuesday, December 10, 2024  |                     | <b>Rev:</b> V1.1 |
| <b>Designed by:</b>   | Park                        | <b>Reviewed by:</b> | <Checker>        |
| <b>Sheet:</b>   |                             | 13 of 25            |                  |

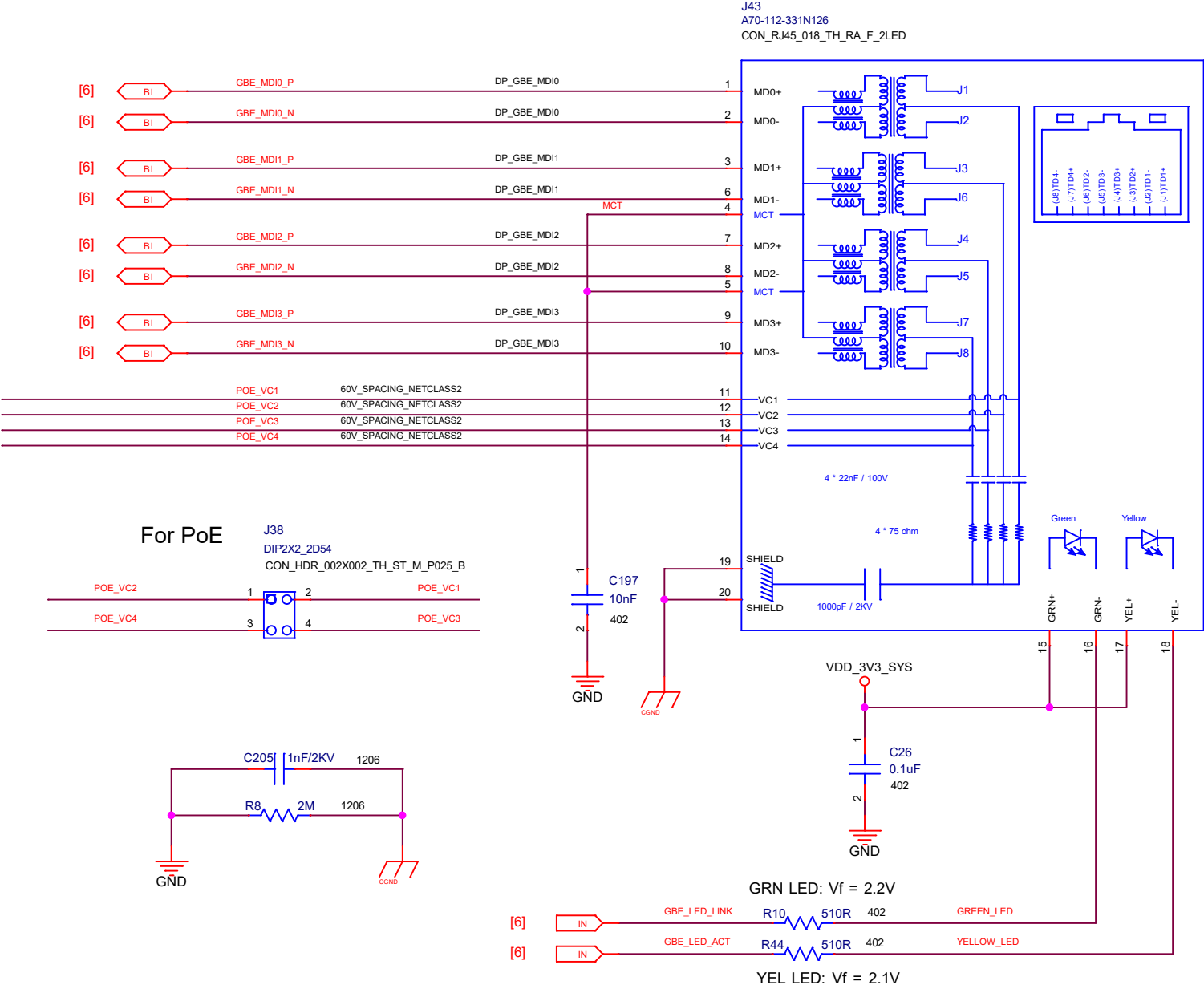
## Module Power ON/OFF logic




M.2 KEY E

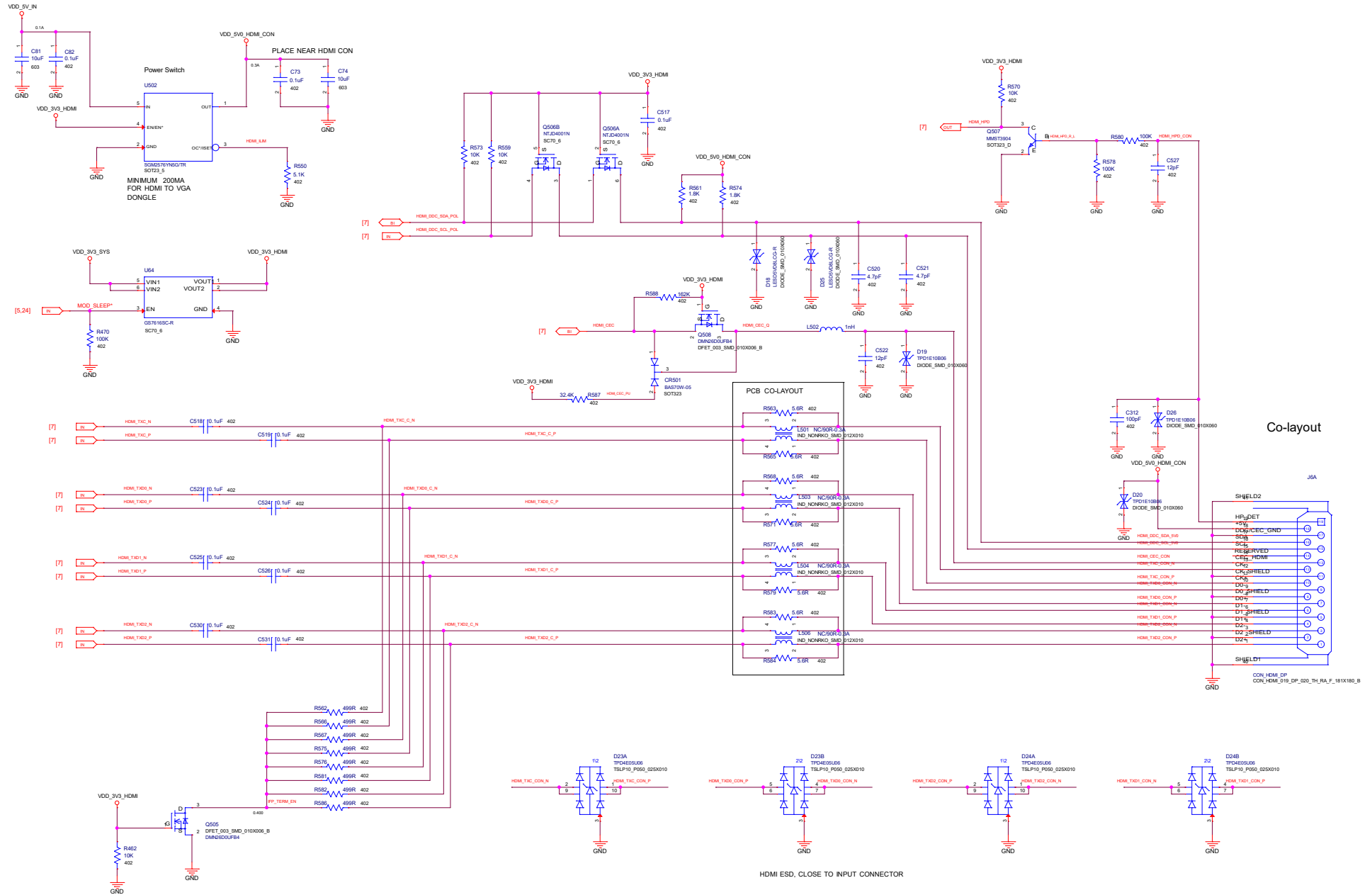


# Gigabit Ethernet with PoE

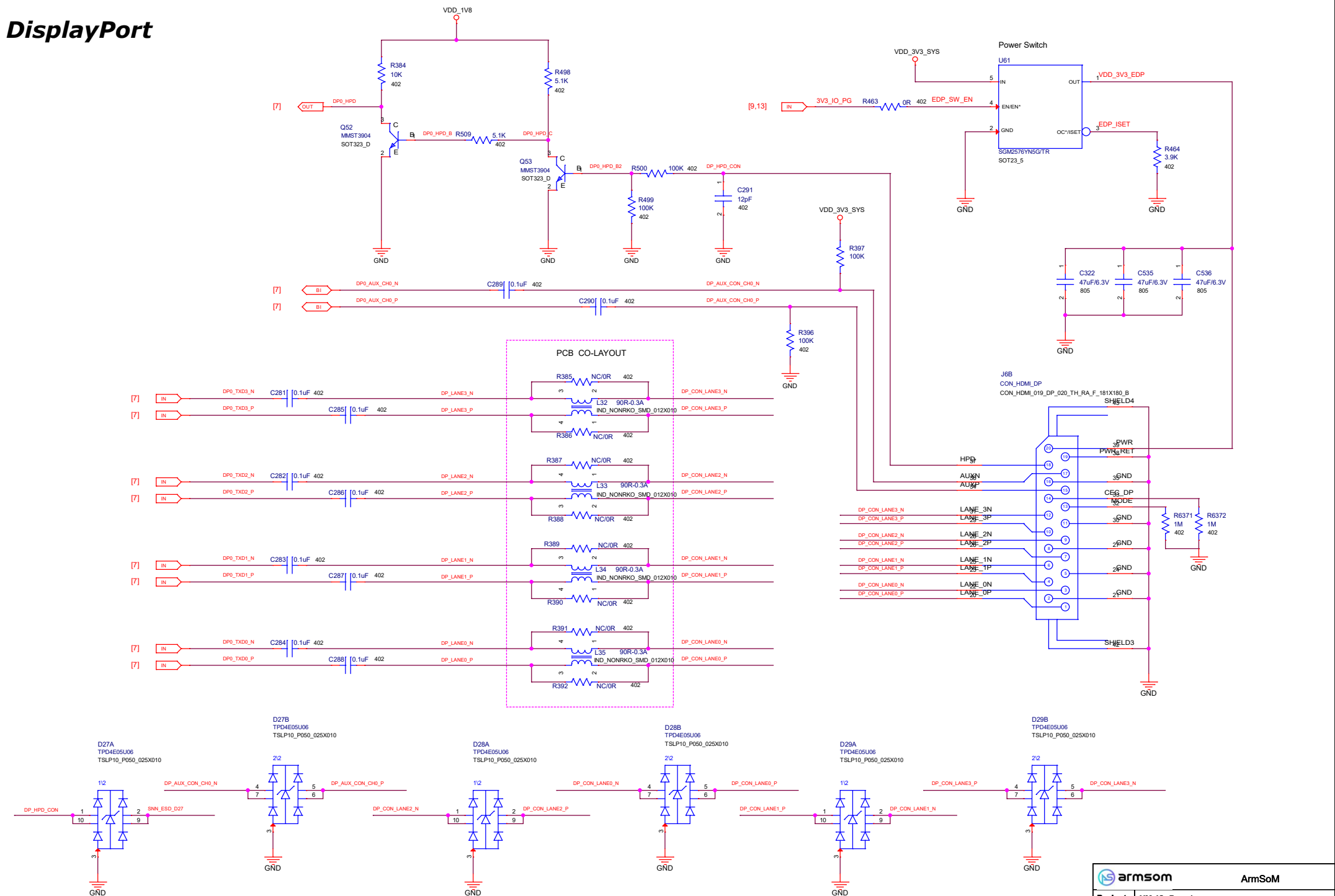


|   |                            |              |           |        |          |
|---|----------------------------|--------------|-----------|--------|----------|
|  |                            | ArmSoM       |           |        |          |
| Project:  | AIM_IO_Board               |              |           |        |          |
| File:   | Gigabit Ethernet POE       |              |           |        |          |
| Date:   | Tuesday, December 10, 2024 |              |           | Rev:   | V1.1     |
| Designed by:  | Park                       | Reviewed by: | <Checker> | Sheet: | 16 of 25 |





## DisplayPort



**MIPI DSI**

**Power Management:**

- U13:** SGM2576YN5G/TR, SOT\_23\_5. Input: VDD\_3V3\_SYS (5), Output: VCC3V3\_LCD (1). EN: 4, GND: 2, OCB: 3. Biasing: R191 (8.9K, R0402) to GND, C182 (10uF/10V, C0402) to VCC3V3\_LCD.
- U503:** SY7201ABC, SOT23-6. Input: VDD\_5V\_IN (6), Output: VCC\_LEDA (1). EN: 4, GND: 2, FB: 3. Biasing: R6364 (1K, R0402) to GND, C8978 (100nF/10V, C0402) to VCC3V3\_LCD, C8975 (100nF/50V, C0402) to VCC\_LEDA.

**DSI Interface:**

- J51:** 24-pin connector. Pins 1-22 are labeled with signal names and pin numbers. Pins 23-24 are labeled S1 and S2.
- Signal Lines:** DSI\_D0\_P, DSI\_D0\_N, DSI\_D1\_P, DSI\_D1\_N, DSI\_CLK\_P, DSI\_CLK\_N, LCD\_RST\_L\_3V3, VCC3V3\_LCD, VCC\_LEDA, VCC\_LEDK, GPIO09, TP\_RST, TP\_INT, I2C1\_SCL, I2C1\_SDA, VCC3V3\_LCD.

**LED Driver:**

- Q2408:** 2SK3018, SOT\_323. Input: VDD\_1V8 (2), Output: VCC\_LEDA (3). Biasing: R6378 (10K, R0402) to VDD\_1V8, R6379 (10K, R0402) to VDD\_3V3\_SYS.
- Q2407:** 2SK3018, SOT\_323. Input: VDD\_1V8 (2), Output: BT\_M2\_WAKE\_AP (3). Biasing: R6366 (10K, R0402) to VDD\_1V8, R6367 (10K, R0402) to VDD\_3V3\_SYS.

**Other Components:**

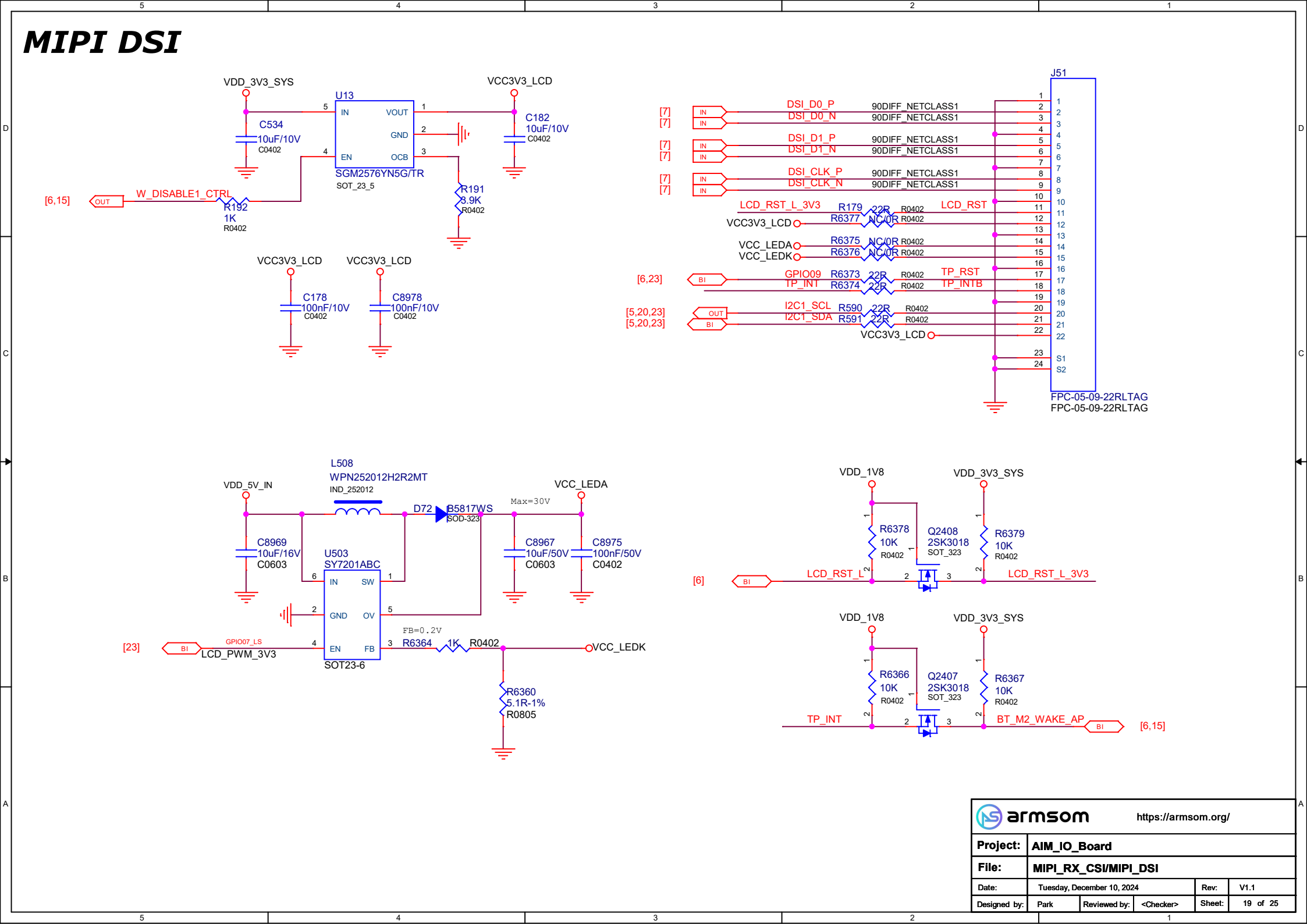
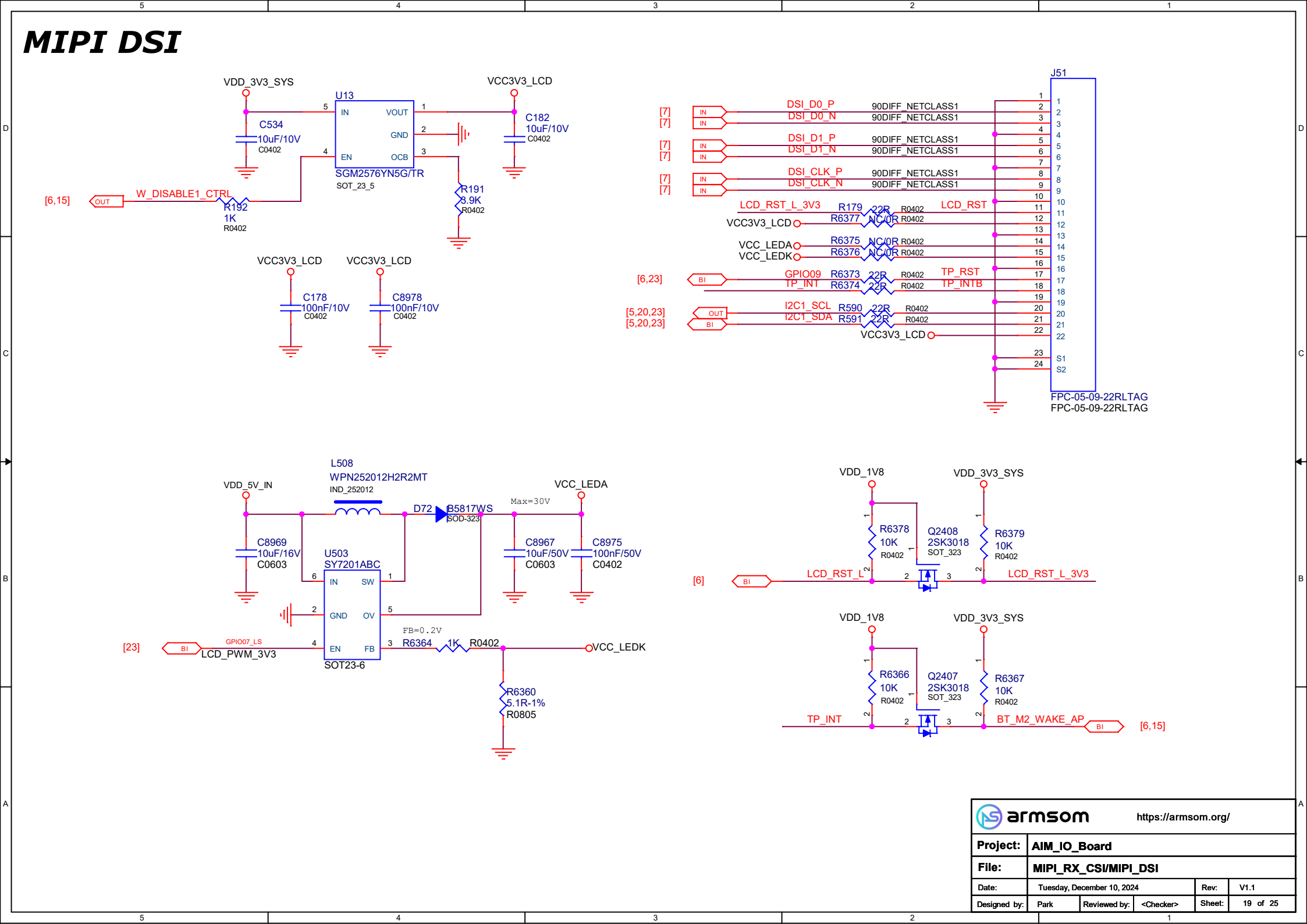
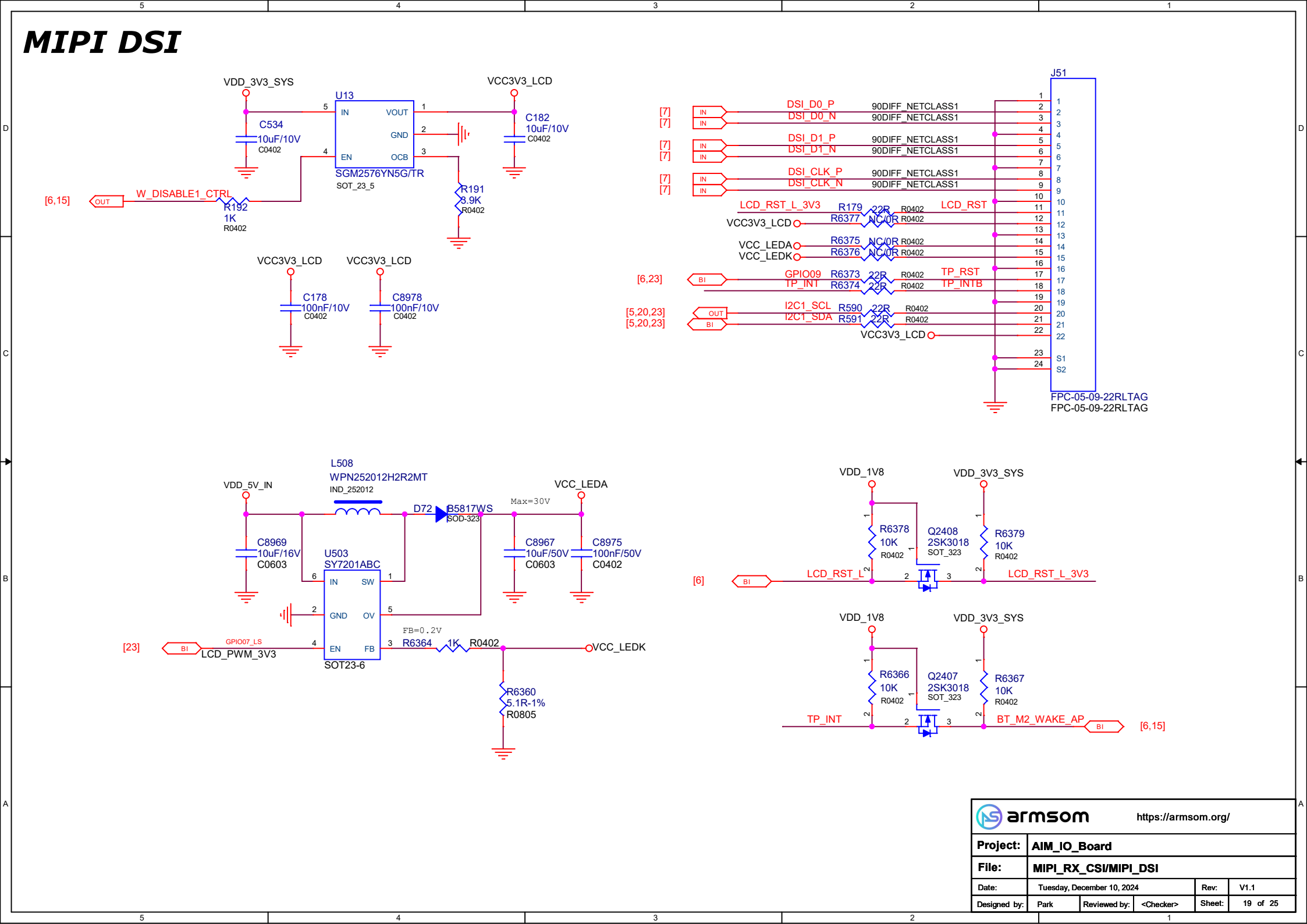
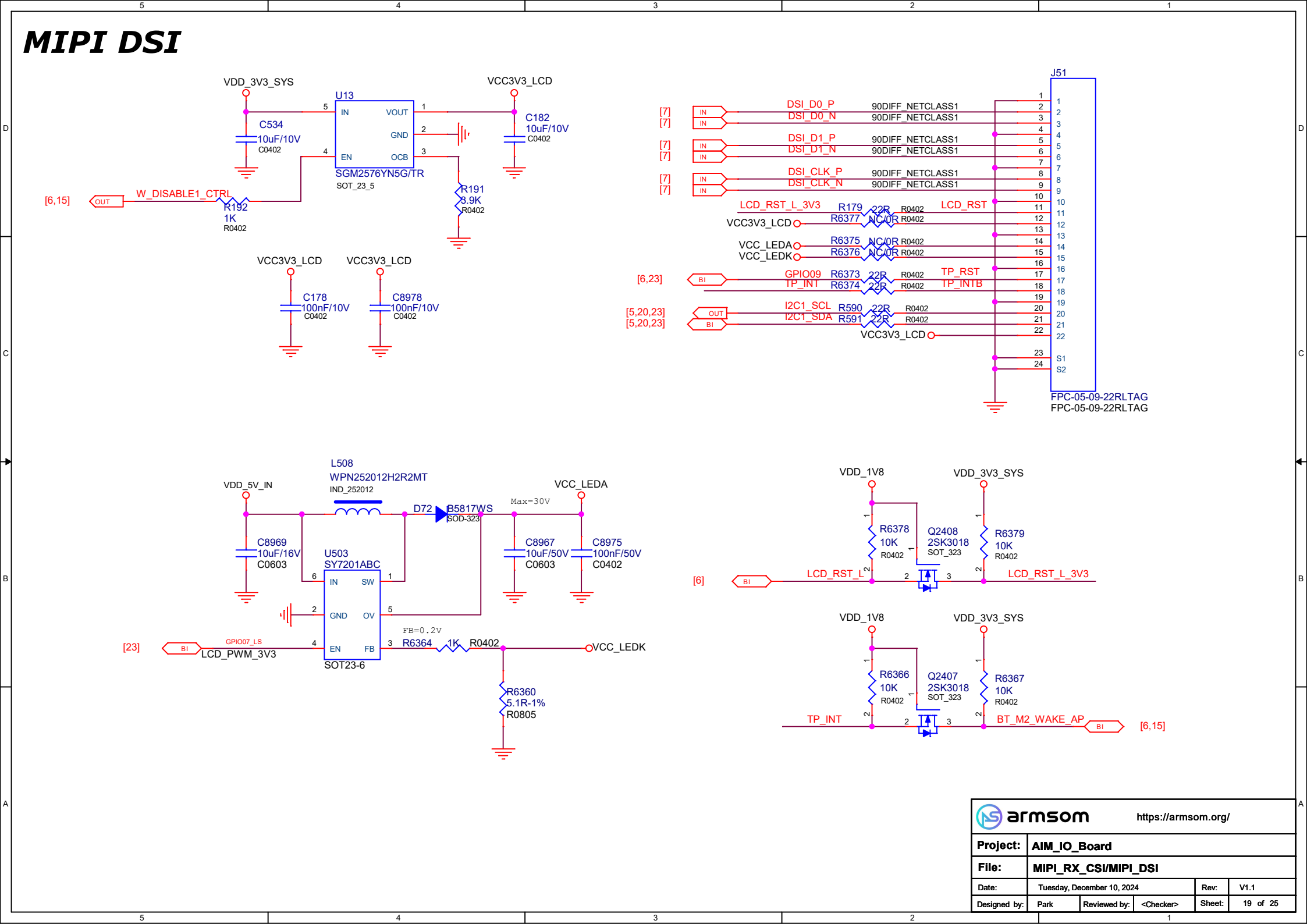
- C534:** 10uF/10V, C0402. Input: VDD\_3V3\_SYS (5), Output: W\_DISABLE1\_CTRL (6,15).
- C178:** 100nF/10V, C0402. Input: VCC3V3\_LCD, Output: GND.
- C8969:** 10uF/16V, C0603. Input: VDD\_5V\_IN, Output: GND.
- C8967:** 10uF/50V, C0603. Input: VCC\_LEDA, Output: GND.
- C8975:** 100nF/50V, C0402. Input: VCC\_LEDA, Output: GND.
- R192:** 1K, R0402. Input: W\_DISABLE1\_CTRL (6,15), Output: GND.
- R179:** 22R, R0402. Input: LCD\_RST\_L\_3V3, Output: LCD\_RST.
- R6377:** NC, R0402. Input: VCC3V3\_LCD, Output: LCD\_RST.
- R6375:** NC, R0402. Input: VCC\_LEDA, Output: LCD\_RST.
- R6376:** NC, R0402. Input: VCC\_LEDK, Output: LCD\_RST.
- R6373:** 22R, R0402. Input: GPIO09, Output: TP\_RST.
- R6374:** 22R, R0402. Input: TP\_INT, Output: TP\_INTB.
- R590:** 22R, R0402. Input: I2C1\_SCL, Output: GND.
- R591:** 22R, R0402. Input: I2C1\_SDA, Output: GND.
- R6360:** 5.1R-1%, R0805. Input: VCC\_LEDK, Output: GND.

**Legend:**

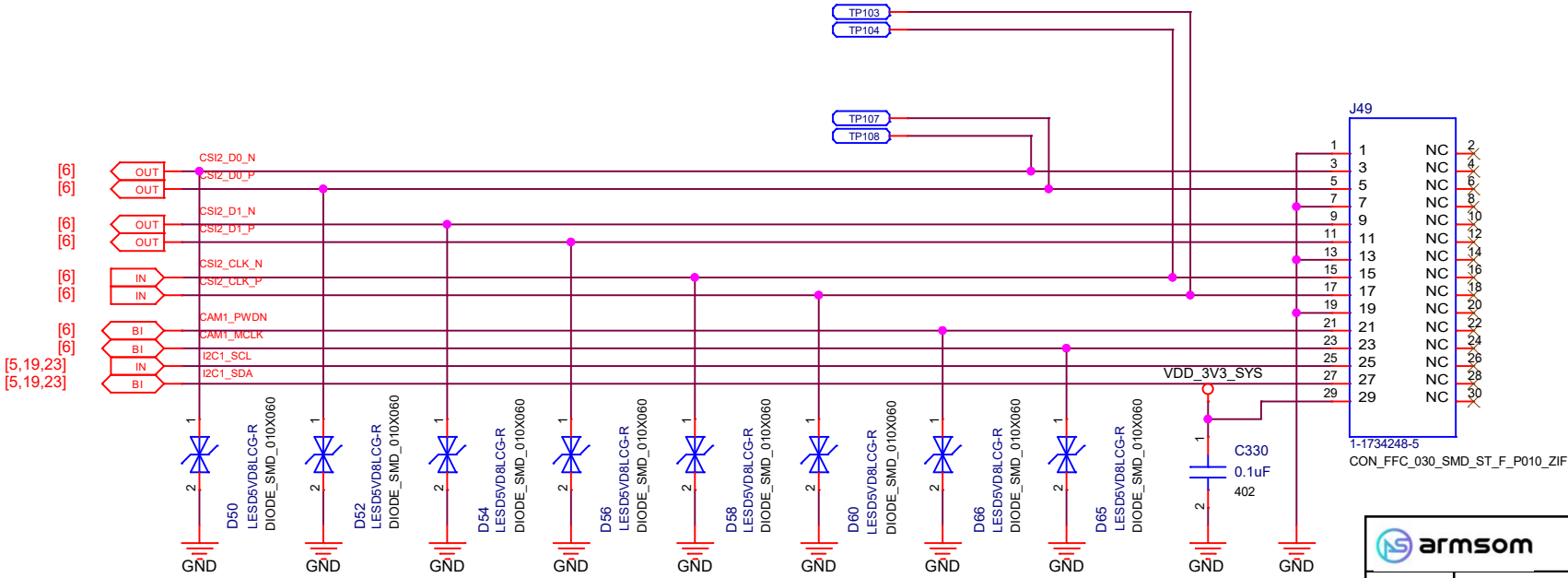
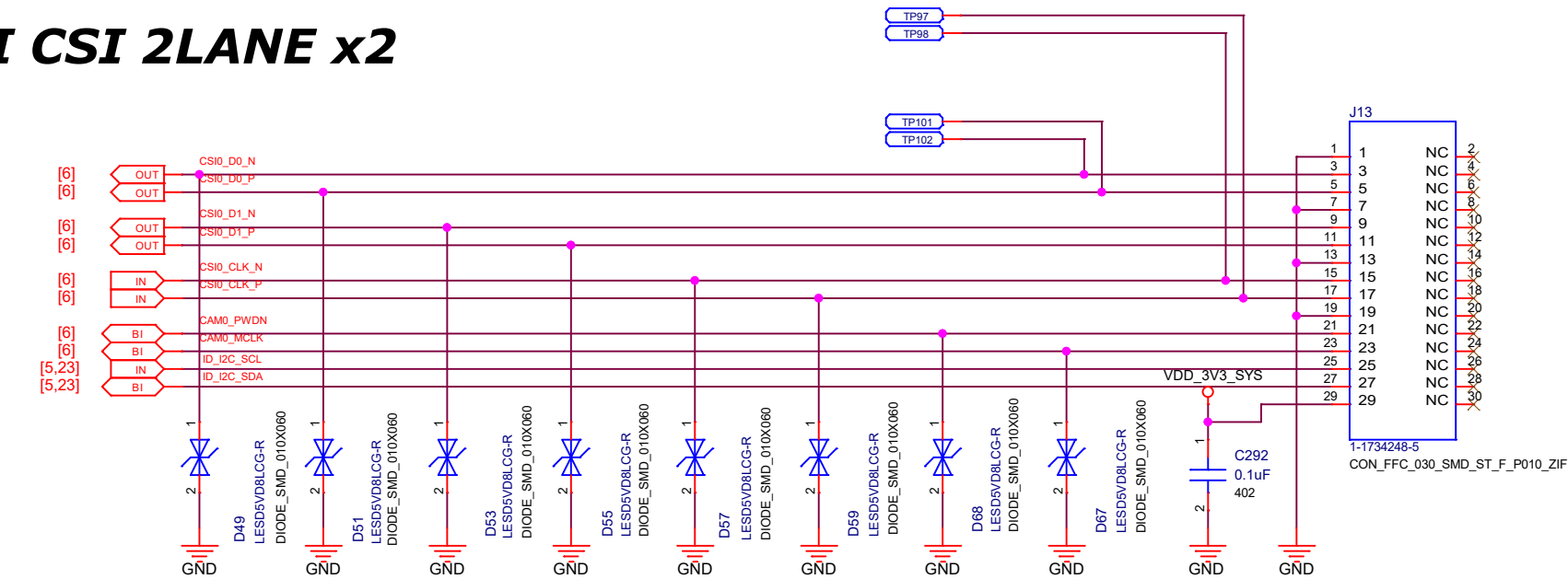
- [6,15]: OUT
- [7]: IN
- [6,23]: BI
- [5,20,23]: OUT
- [5,20,23]: BI
- [6]: BI
- [6,15]: BI


**Project Information:**

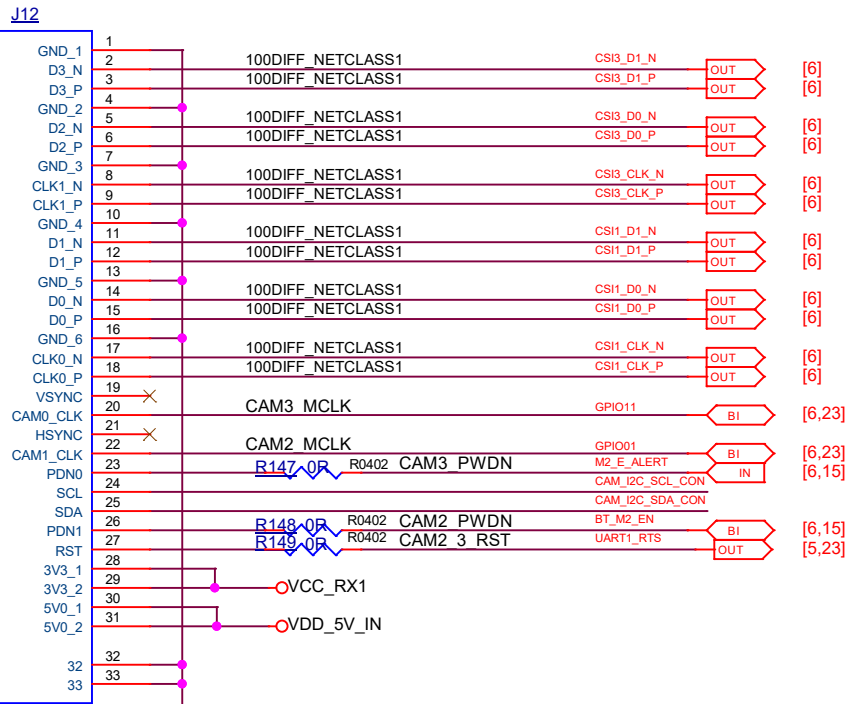
- Project:** AIM\_IO\_Board
- File:** MIPI\_RX\_CSI/MIPI\_DSI
- Date:** Tuesday, December 10, 2024
- Rev:** V1.1
- Designed by:** Park
- Reviewed by:** <Checker>
- Sheet:** 19 of 25



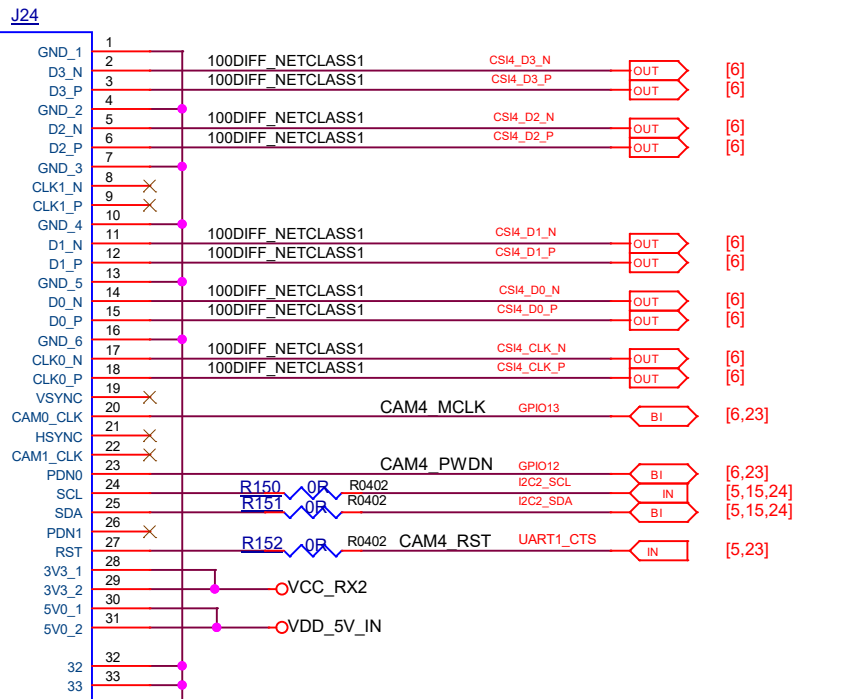
MIPI CSI 2LANE x2



|   |                           |                     |           |
|---|---------------------------|---------------------|-----------|
|  <b>armsom</b> |                           | <b>ArmSoM</b>       |           |
| <b>Project:</b>   | <b>AIM_IO_Board</b>       |                     |           |
| <b>File:</b>  | <b>CAM_0_2_Connector</b>  |                     |           |
| <b>Date:</b>  | Friday, November 29, 2024 | <b>Rev:</b>         | V1.1      |
| <b>Designed by:</b>   | Park                      | <b>Reviewed by:</b> | <Checker> |
|   |                           | <b>Sheet:</b>       | 20 of 25  |

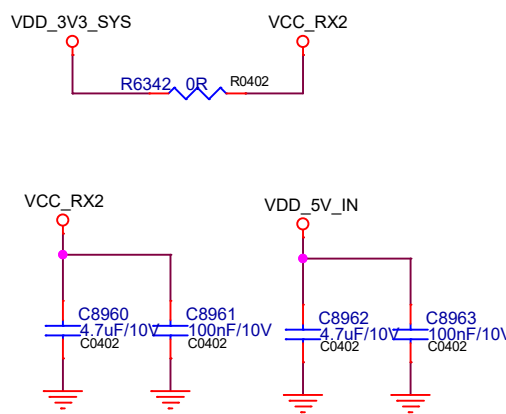
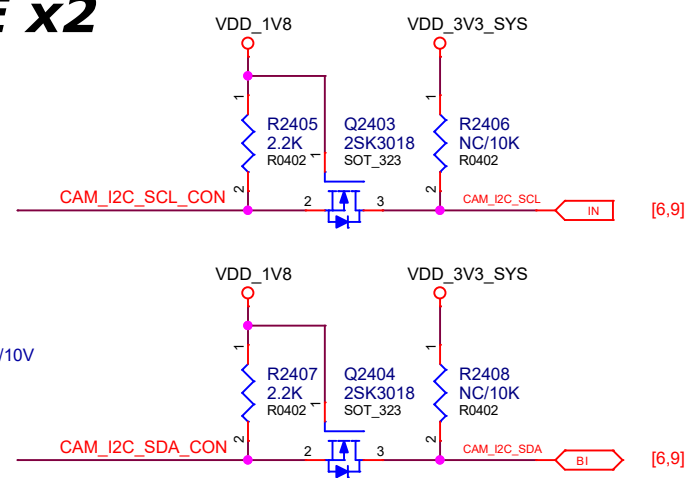
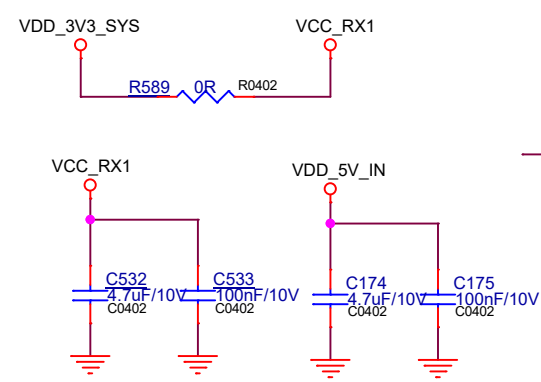



FPC31PIN\_0.5MM\_L  
FPC31PIN\_0.5MM\_L



FPC31PIN\_0.5MM\_L  
FPC31PIN\_0.5MM\_L

# MIPI CSI 4LANE x2



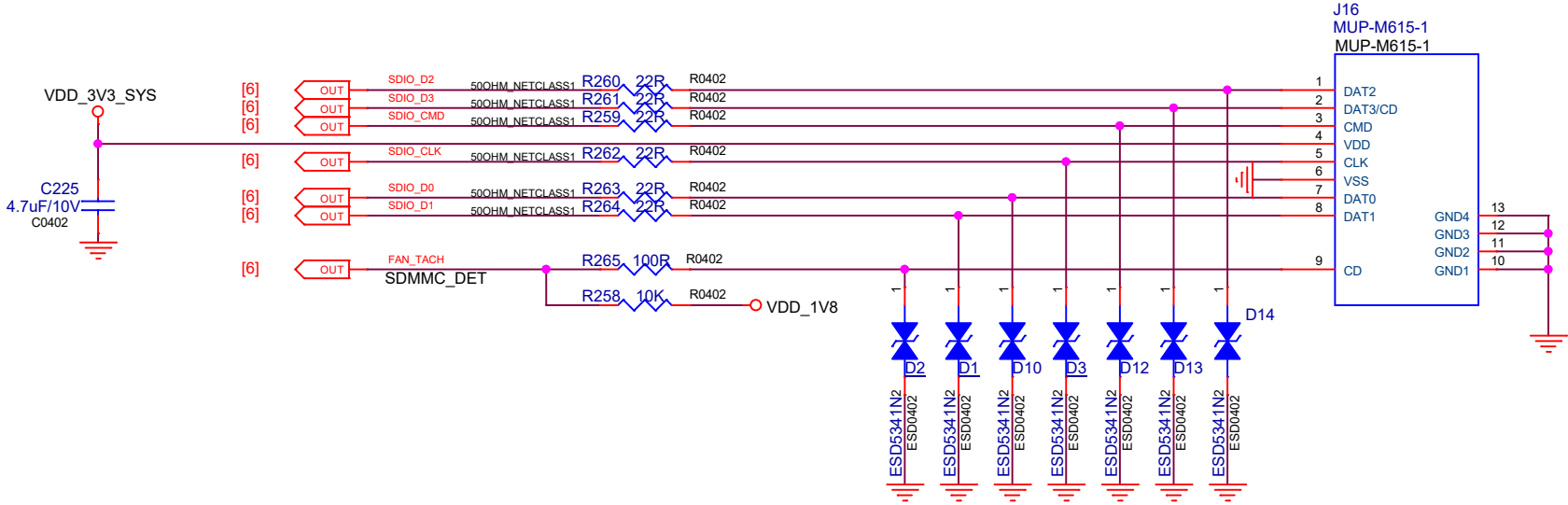


armsom

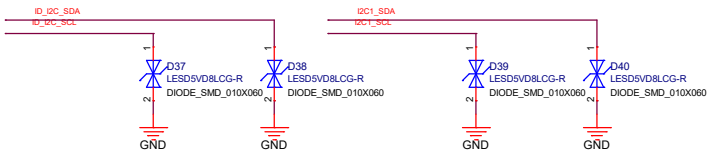
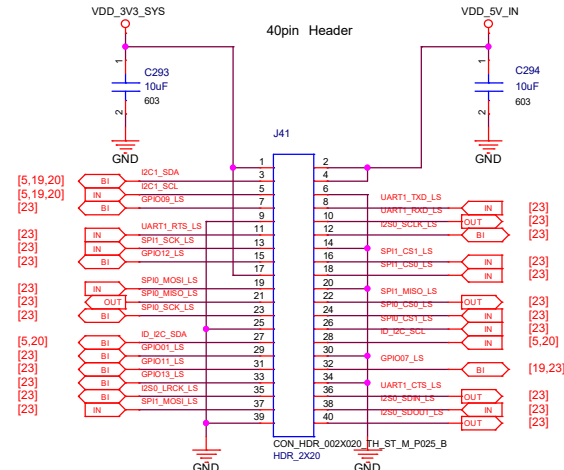
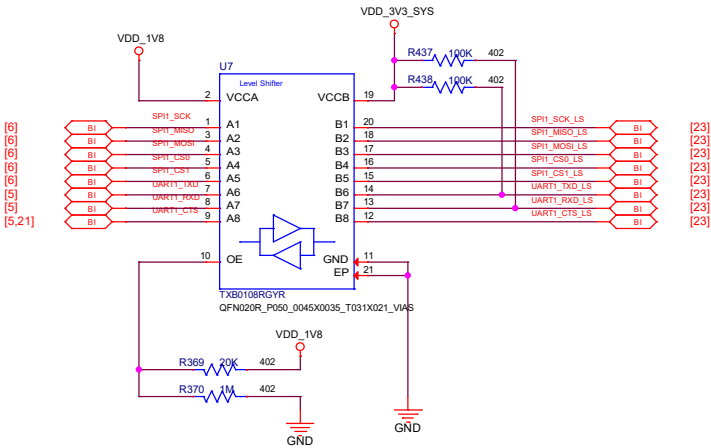
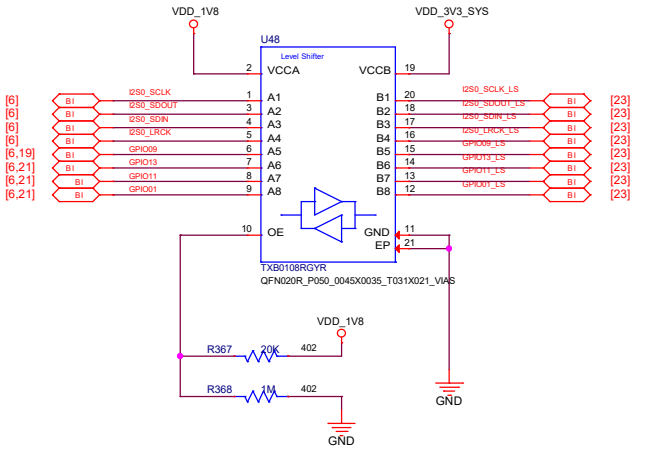
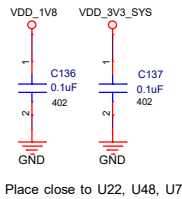
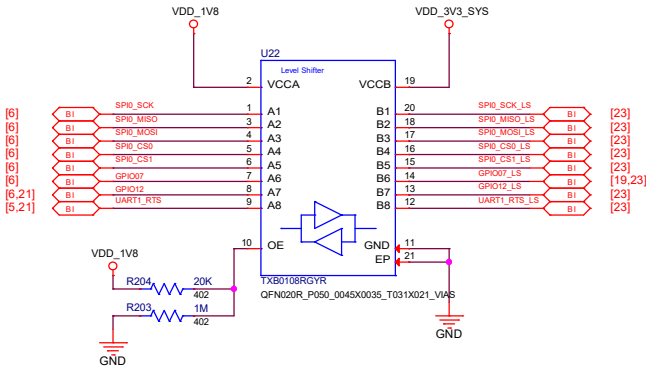
<https://armsom.org/>

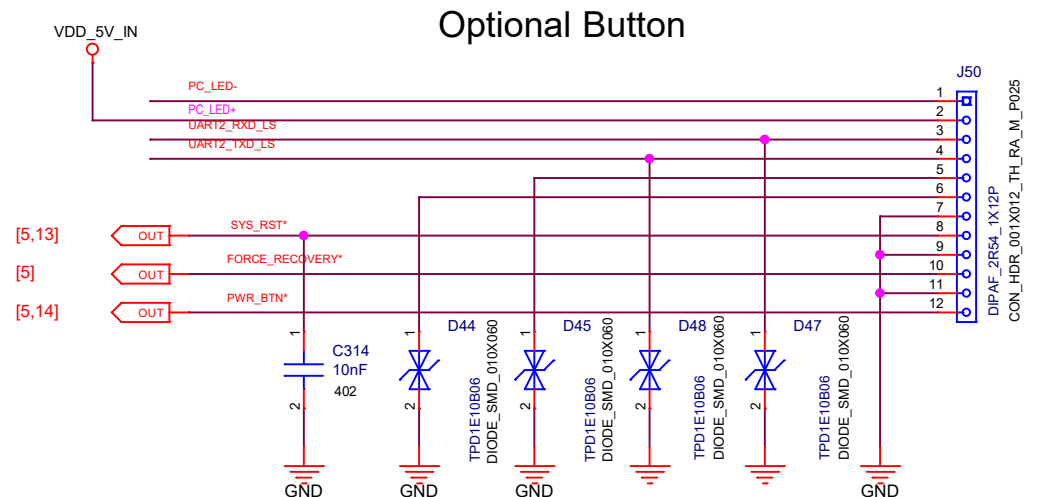
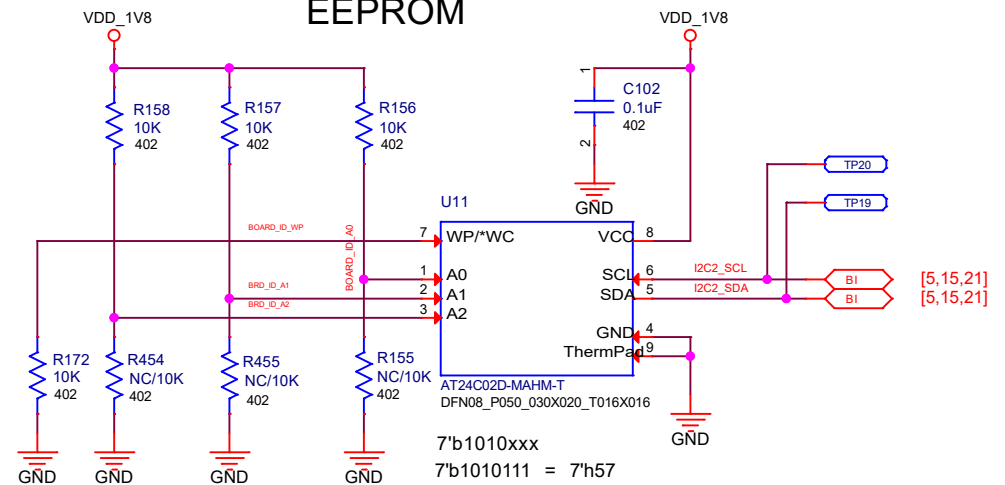
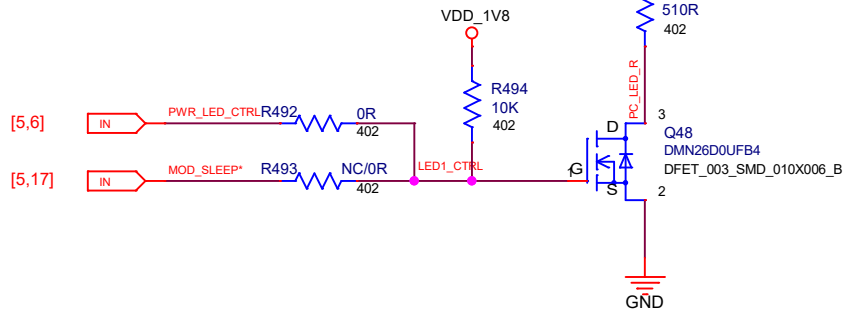
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|--------------|----------------------------|--------------|-----------|--------|----------|
| Project:     | AIM_IO_Board               |              |           |        |          |
| File:        | CAM_1_3_4_Connector        |              |           |        |          |
| Date:        | Tuesday, December 10, 2024 |              |           | Rev:   | V1.1     |
| Designed by: | Park                       | Reviewed by: | <Checker> | Sheet: | 21 of 25 |

TF CARD



40PIN Header

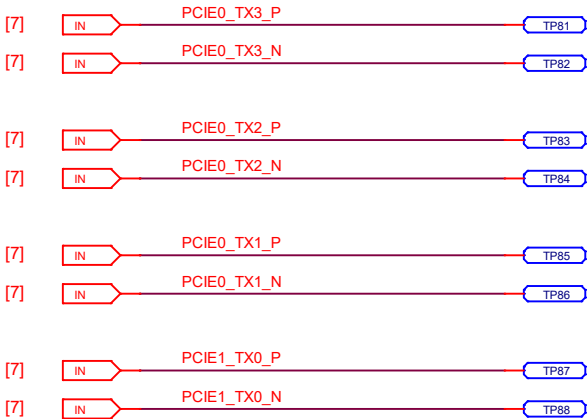




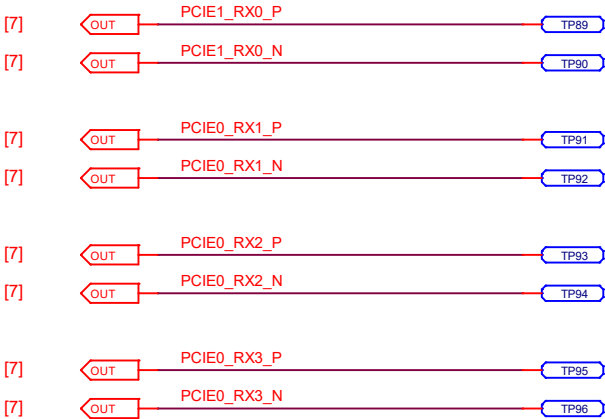


# LOOP BACK

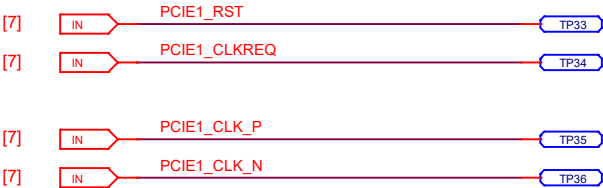
## PCIe LOOP BACK TO TEST UNUSED PCIe SIGNALS



## PLACE ALL TESTPOINTS ON THE BOTTOM OF THE BOARD FOR TEST ONLY!!!



## PLACE TESTPOINT ON THE BOTTOM OF THE BOARD



## Mounting holes for Module

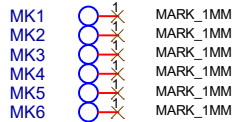
MEC7  
SMTSO2565CTJ  
VIA4\_2MM




MEC8  
SMTSO2565CTJ  
VIA4\_2MM



## MARK



|   |                            |              |           |        |          |
|---|----------------------------|--------------|-----------|--------|----------|
|  |                            | ArmSoM       |           |        |          |
| Project:  | AIM_IO_Board               |              |           |        |          |
| File:   | LOOP BACK                  |              |           |        |          |
| Date:   | Tuesday, December 10, 2024 |              |           | Rev:   | V1.1     |
| Designed by:  | Park                       | Reviewed by: | <Checker> | Sheet: | 25 of 25 |