

P3737-A05

Jetson Orin Developer Kit Carrier Board

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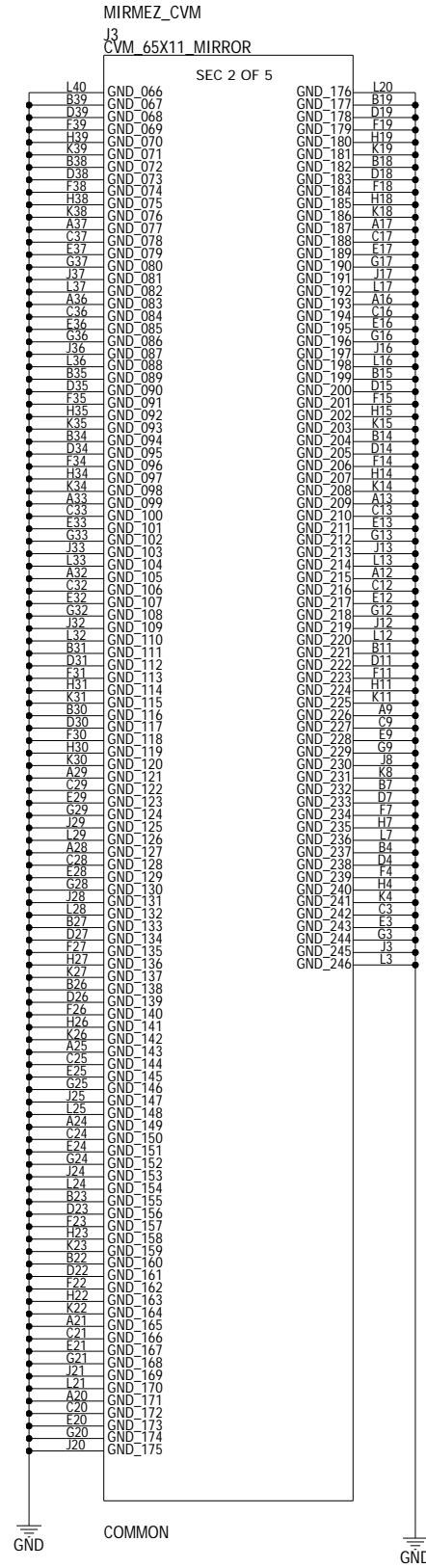
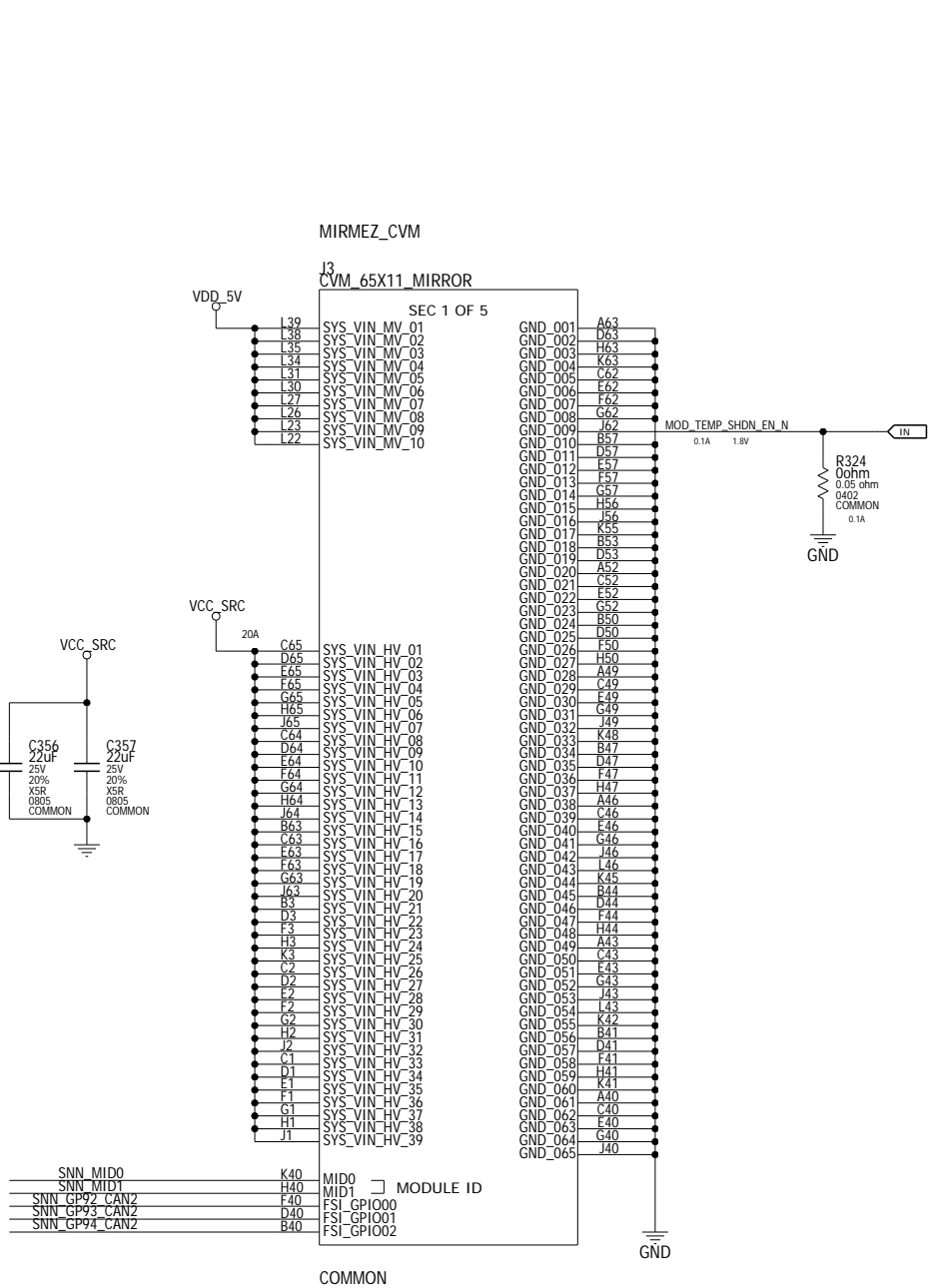
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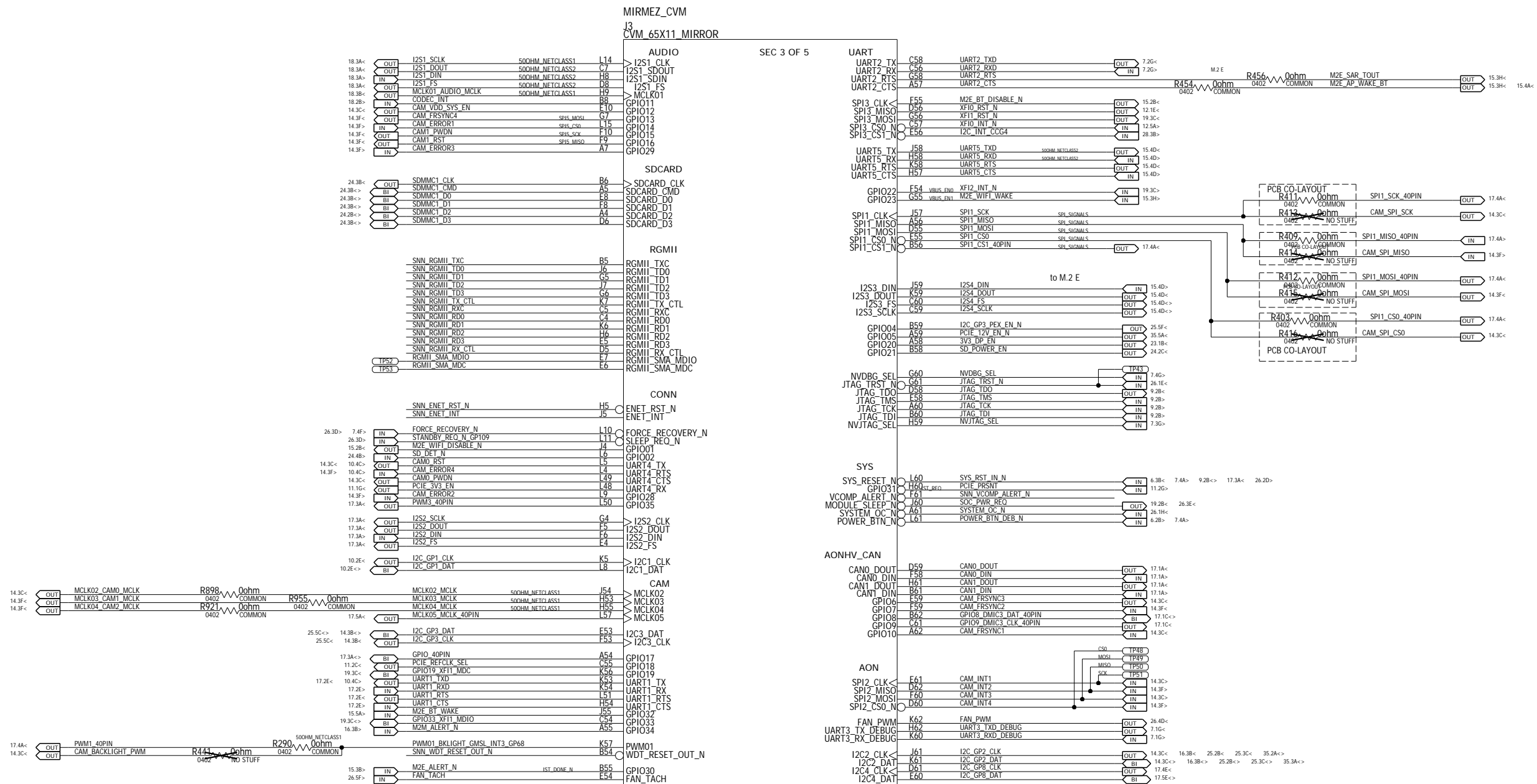
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CVM CONNECTOR 1/3



## CVM CONNECTOR 2/3

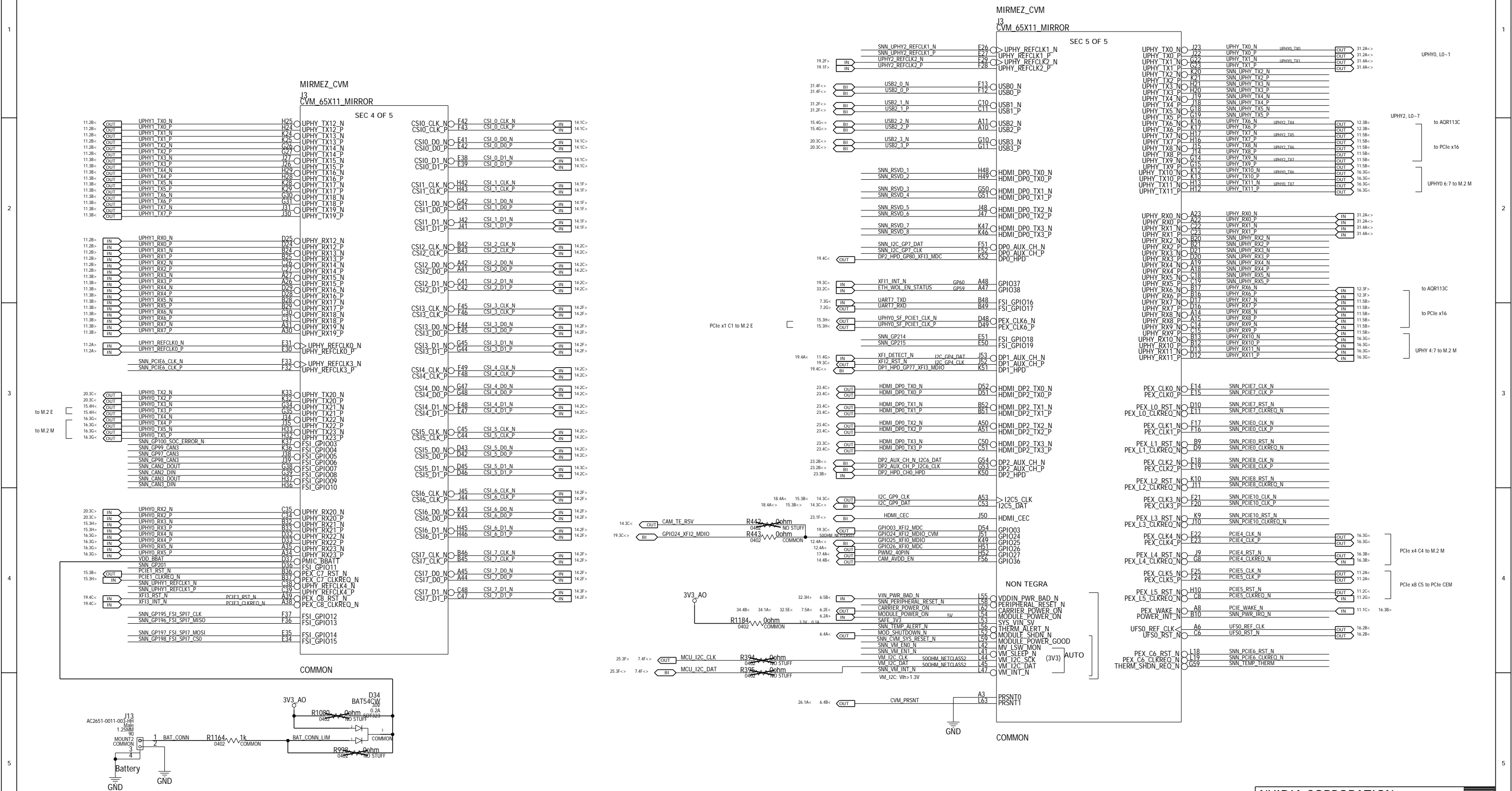


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# CVM CONNECTOR 3/3



**Button MCU**

The schematic illustrates the internal wiring of a Button MCU. The core is the U79 microcontroller, which interfaces with several peripheral blocks:

- Power Regulation:** Includes voltage regulators (U134, U102) and decoupling capacitors (C426, C773, C372, etc.) to provide stable 3V3 and 1V8 supplies.
- Signal Conditioning:** Features comparators (U102, U120, U122) and buffers (U134) to process input signals like MOD\_SHUTDOWN\_N and CVM\_PRSTN.
- Control Logic:** Utilizes logic gates (U117, U121) and inverters to manage control signals such as ACOK\_WOL and ACOK\_CON.
- Status & Output:** Incorporates LEDs (TP13, TP35) and output drivers (Q98, Q99) for system monitoring and actuation.

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**Debug MCU**

**Pin List:**

- PA00: MCU\_PA00
- PA01: SNN\_MCU\_PA01
- PA02: MCU\_PA02
- PA03: SNN\_MCU\_PA03
- PA04: MCU\_PA04
- PA05: SNN\_MCU\_PA05
- PA06: SNN\_MCU\_PA06
- PA07: SNN\_MCU\_PA07
- PA08: MCU\_PA08
- PA09: MCU\_PA09
- PA10: MCU\_PA10
- PA11: SNN\_MCU\_PA11
- PA12: UART0\_TX
- PA13: UART0\_RX
- PA14: UART1\_TX
- PA15: UART1\_RX
- PA16: I2C\_SDA
- PA17: I2C\_SCL
- PA18: SYS\_RST\_N
- PA19: PWR\_BTN\_N
- PA20: SNN\_MCU\_PA20
- PA21: SNN\_MCU\_PA21
- PA22: UART2\_TX
- PA23: UART2\_RX
- PA24: USB\_DN
- PA25: USB\_DP
- PA26: SNN\_MCU\_PA26
- PA27: FORCE\_REC\_N
- PA28: FORCE\_OFF\_N
- PA29: SNN\_MCU\_PA29
- PA30: SWCLK
- PA31: SWDIO
- PA32: SNN\_MCU\_PA32
- PA33: SNN\_MCU\_PA33
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- PA235: SNN\_MCU\_PA235
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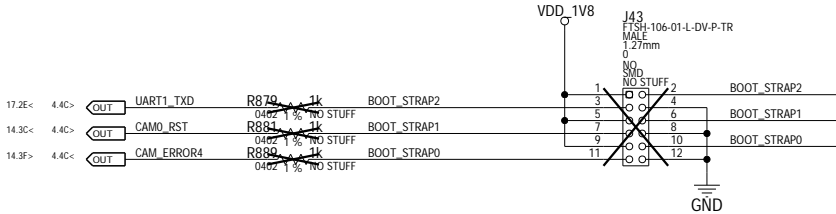
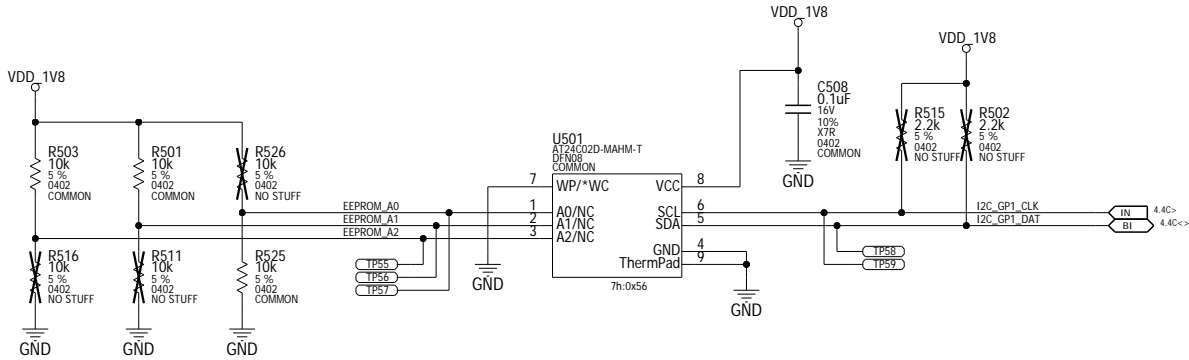


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ID EEPROM



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## UPHY1 = PCIE C5 x8



XFI

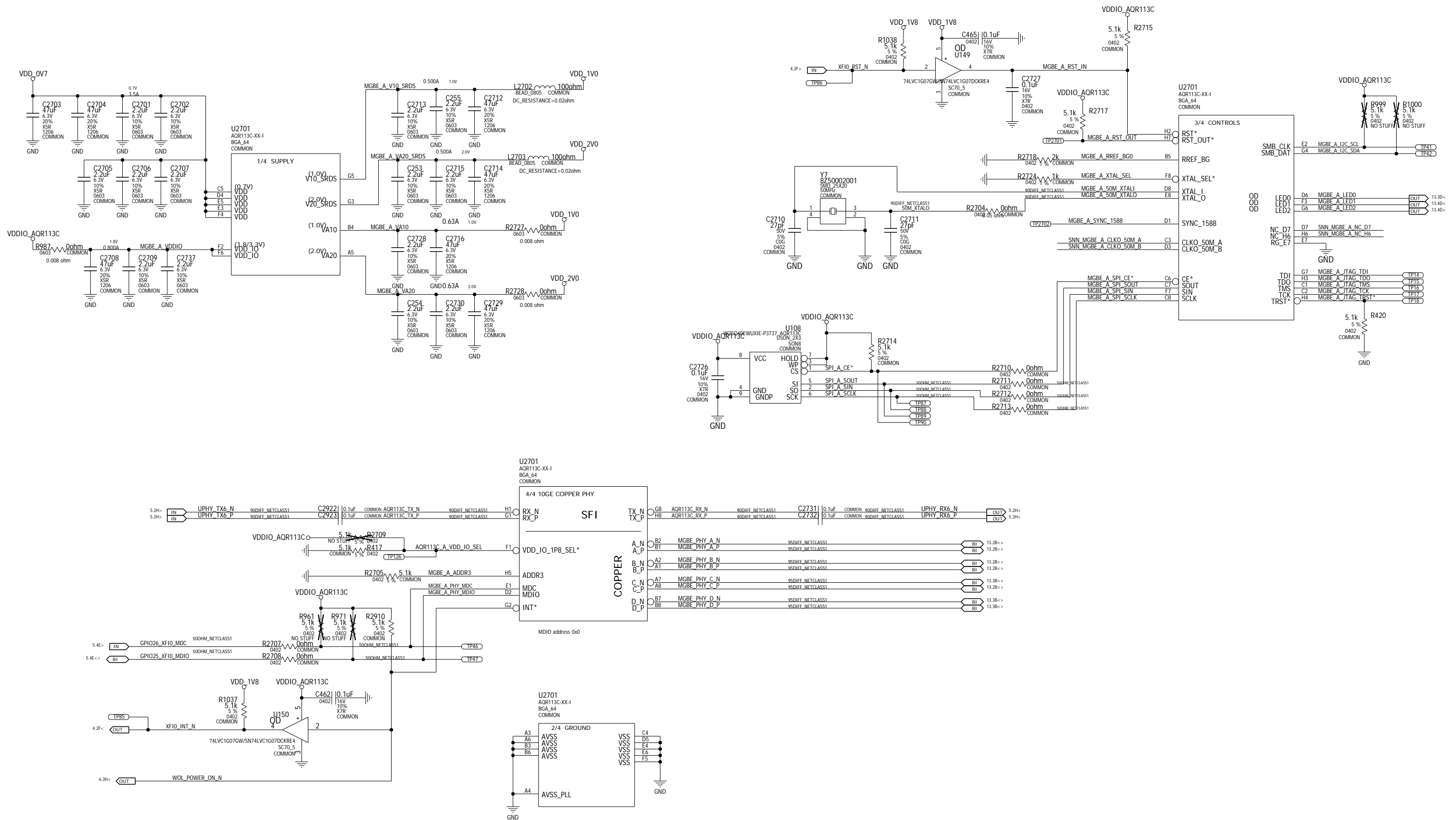
XFI

XFI connections shown on the PCIe connector are not supported

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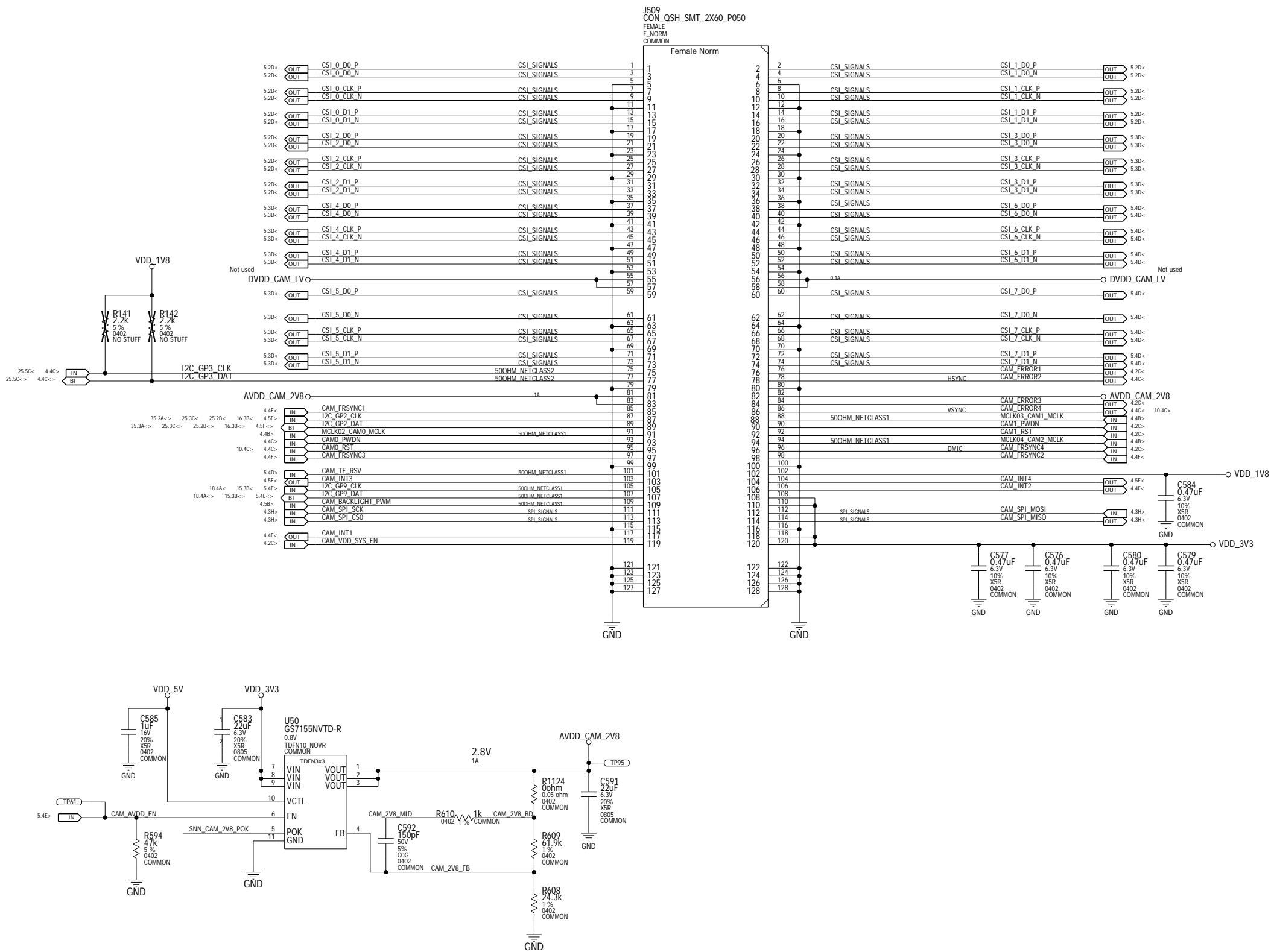
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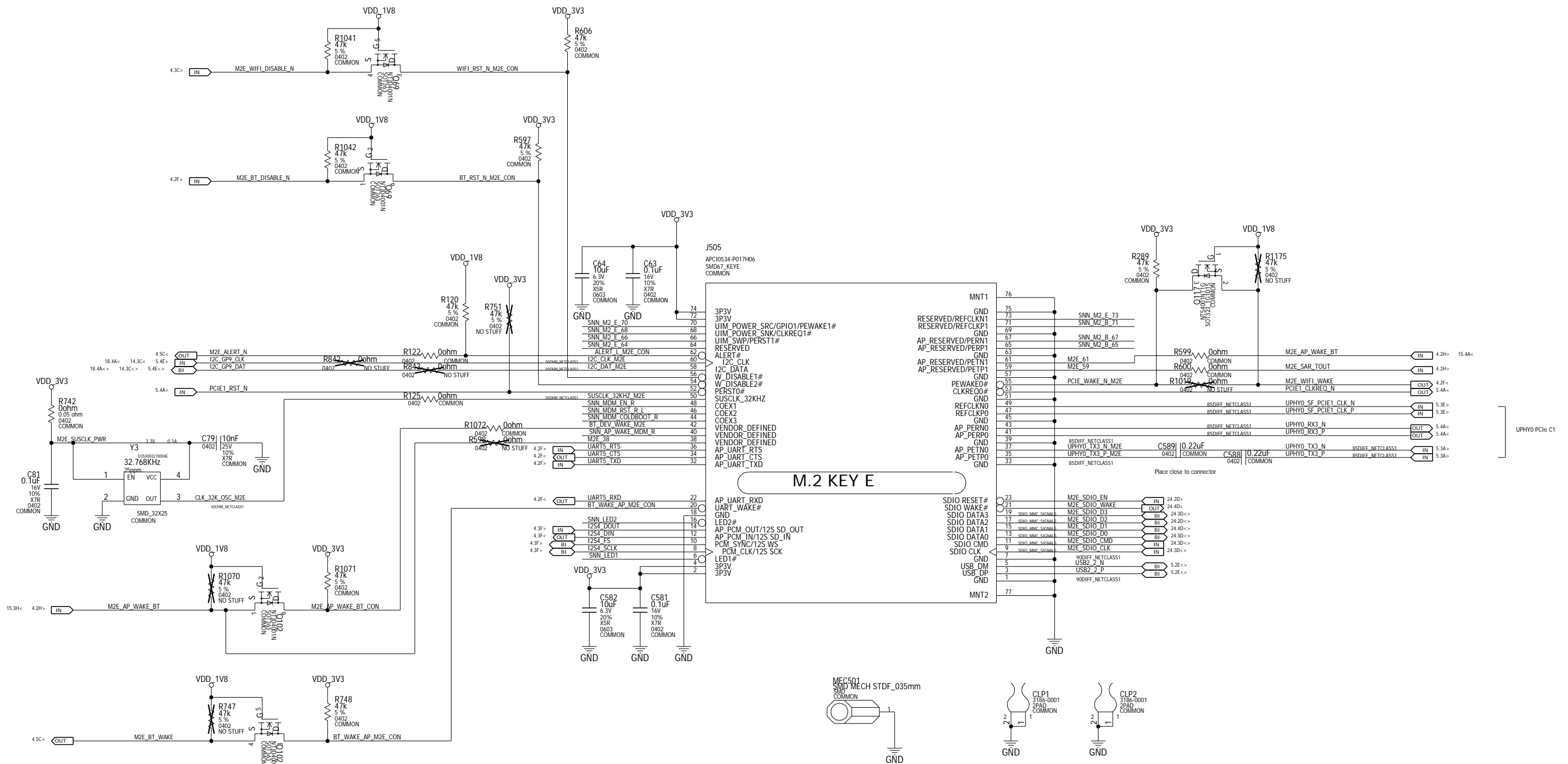



Camera Connector



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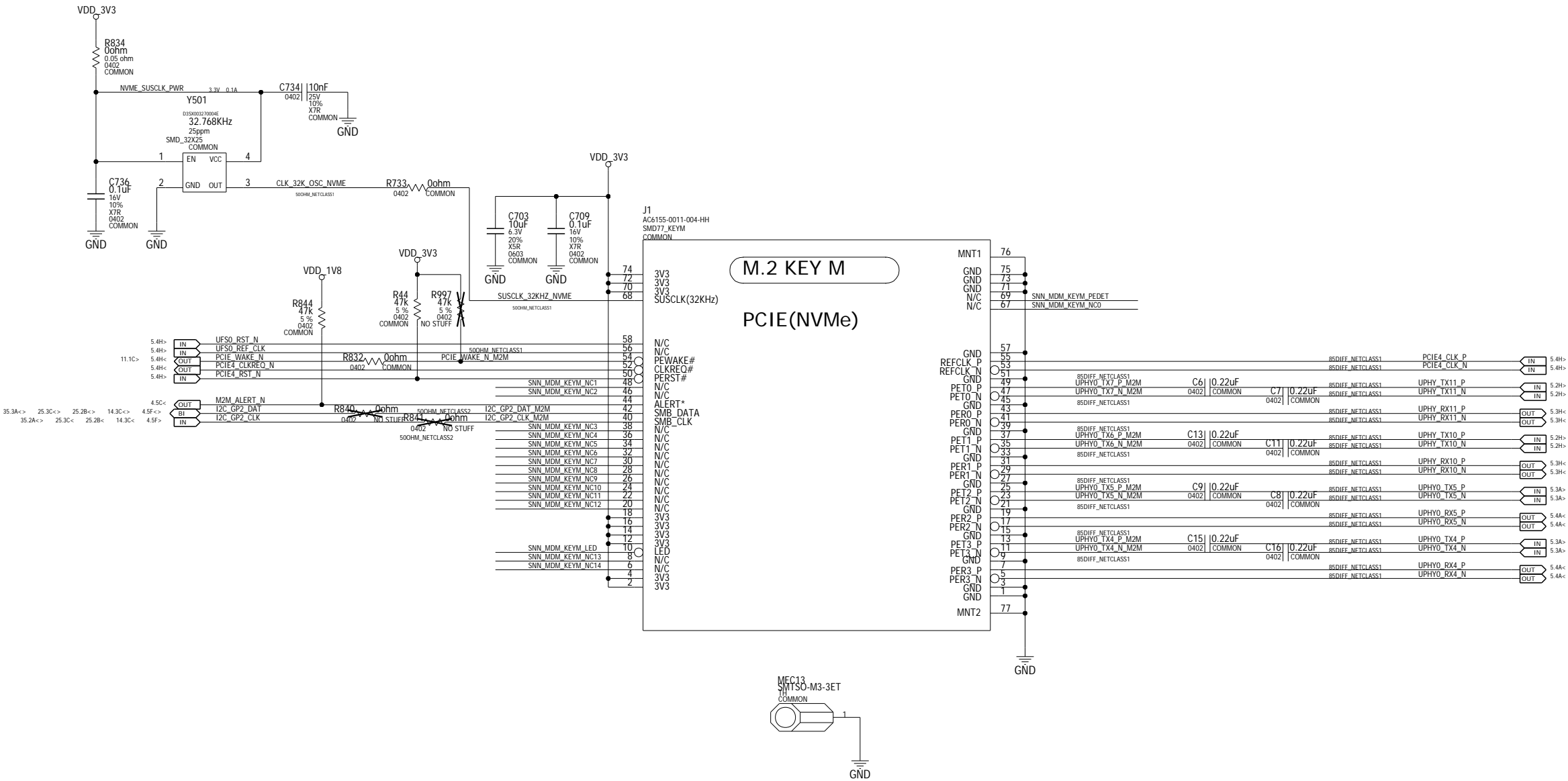
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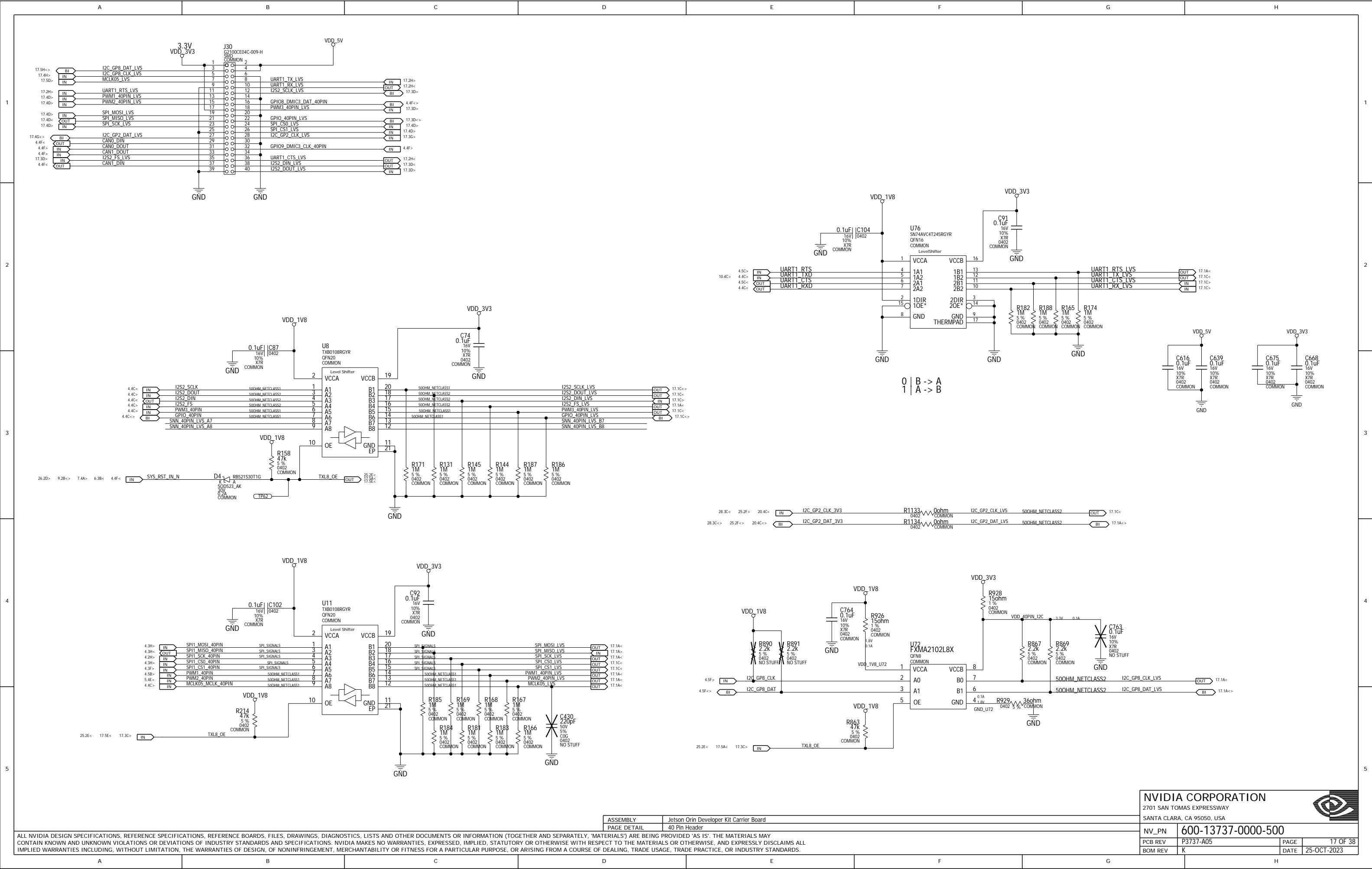
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M.2 Key M Connector







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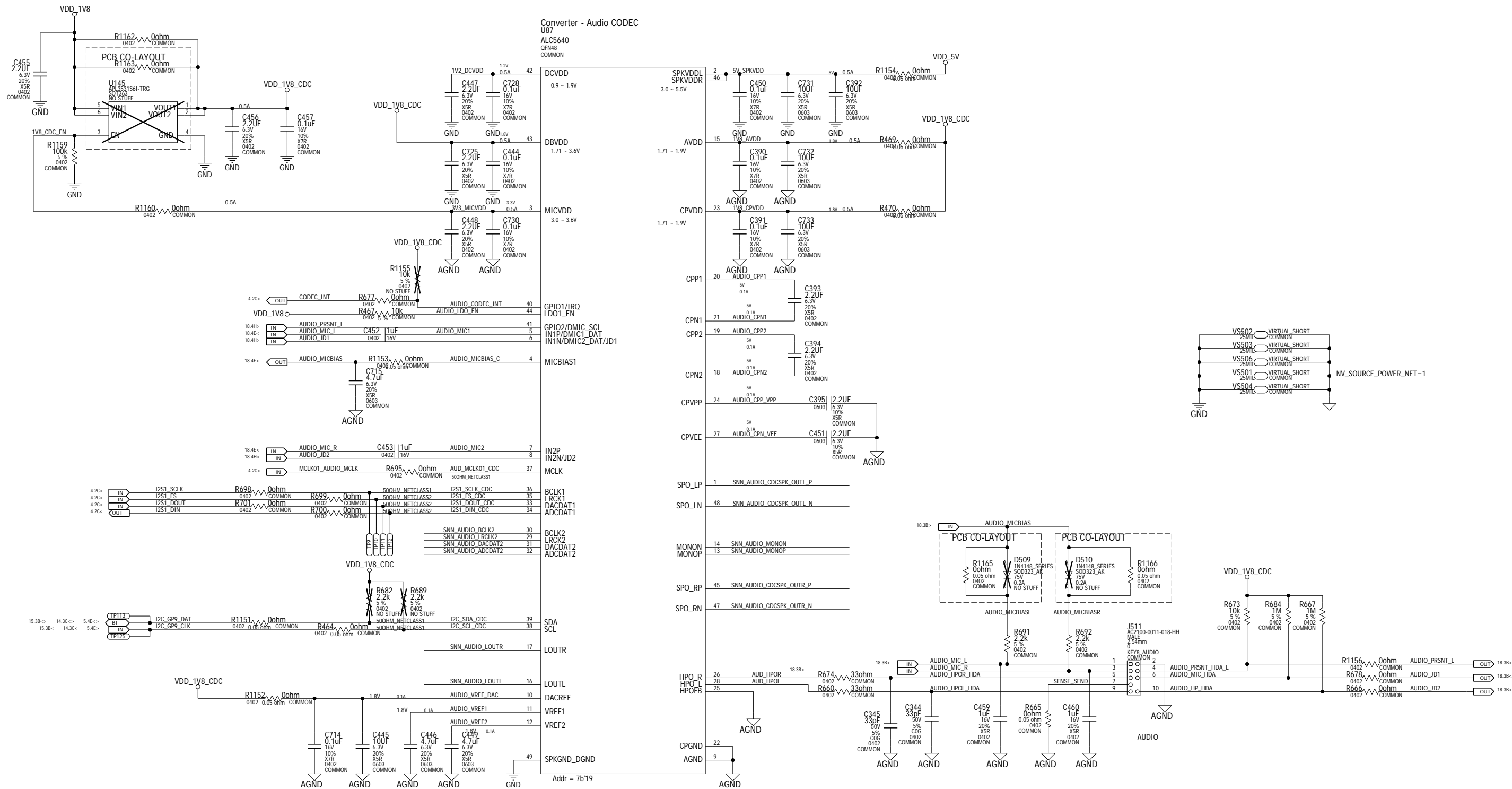


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PAGE DETAIL	40 Pin Header

## CODEC (I2S1)

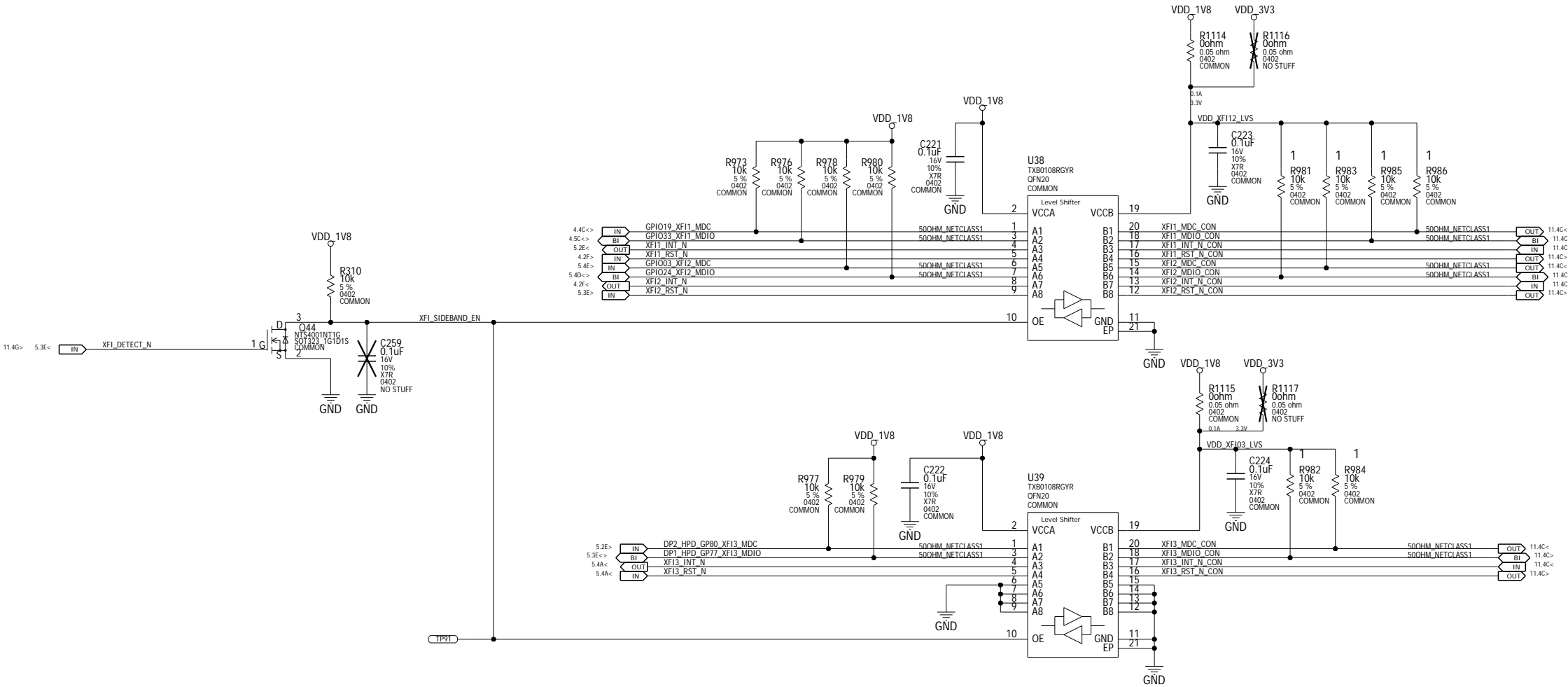
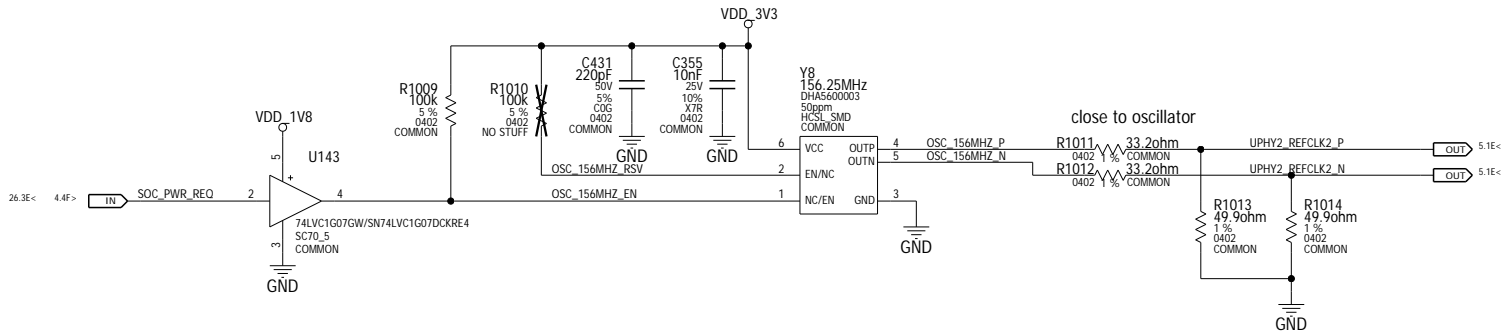


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<b>NV_PN</b>		<b>600-13737-0000-500</b>		
<b>PCB REV</b>	<b>P3737-A05</b>	<b>PAGE</b>	<b>18 OF 38</b>	
<b>BOM REV</b>	<b>K</b>	<b>DATE</b>	<b>25-OCT-2023</b>	

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MGBE

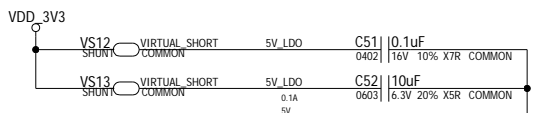
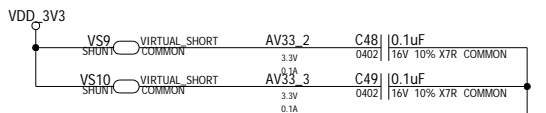
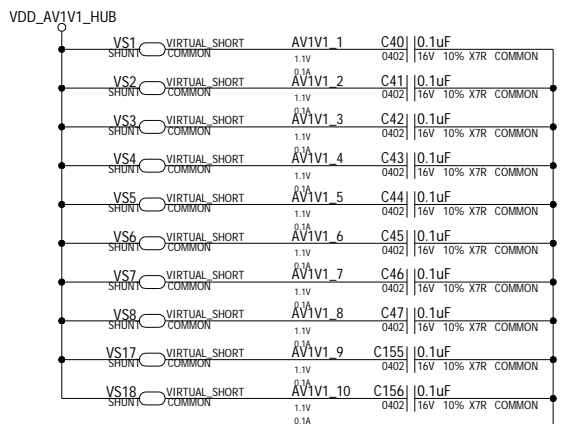
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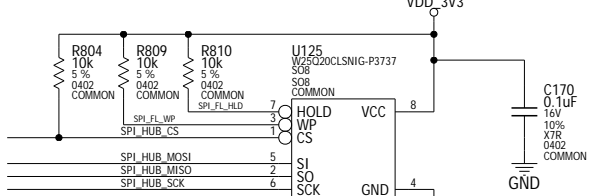
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USB3.1 GEN2 HUB x4 PORTS

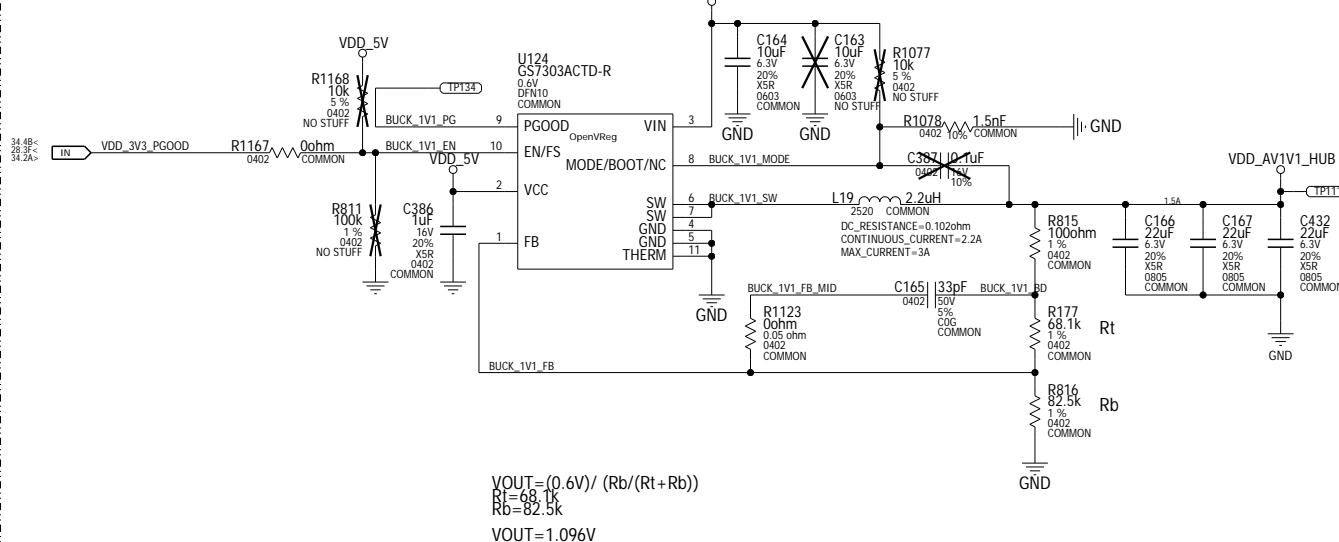
DECOUPLING CAPS



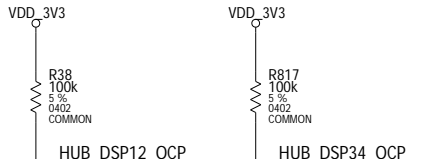
SPI FLASH



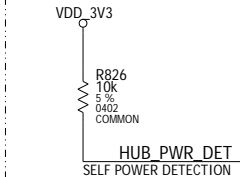
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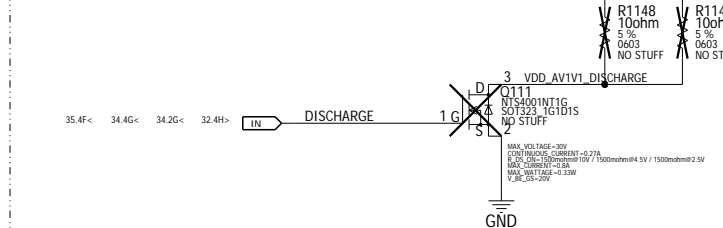
PULL-UP FOR OCP



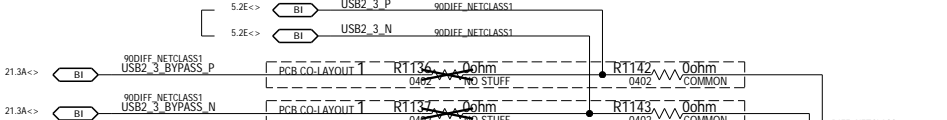
POWER ON/OFF CONTROL



DISCHARGE



HOST



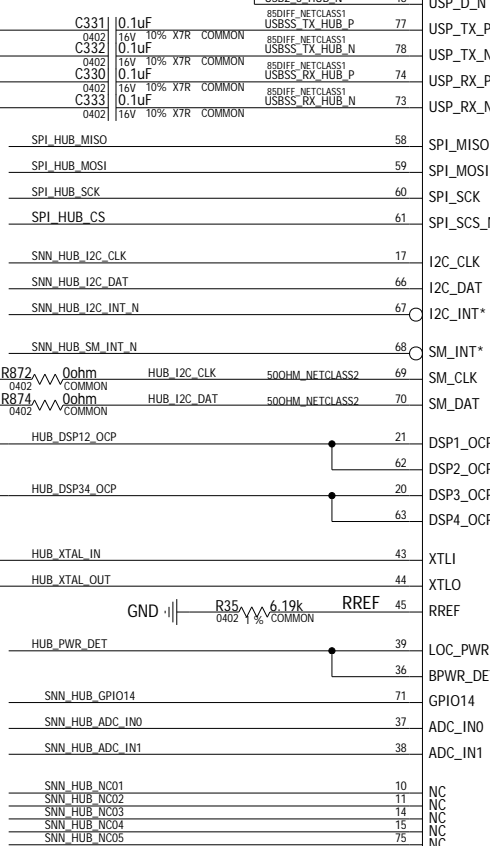
U7

RTS5420-GR

OFN88

COMMON

2 / 2



DSP1\_D\_P

DSP1\_D\_N

DSP1\_TX\_P

DSP1\_TX\_N

DSP1\_RX\_P

DSP1\_RX\_N

DSP2\_D\_P

DSP2\_D\_N

DSP2\_TX\_P

DSP2\_TX\_N

DSP2\_RX\_P

DSP2\_RX\_N

DSP3\_D\_P

DSP3\_D\_N

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DSP3\_RX\_N

DSP4\_D\_P

DSP4\_D\_N

DSP4\_TX\_P

DSP4\_TX\_N

DSP4\_RX\_P

DSP4\_RX\_N

DSP1\_PWR\_EN

DSP2\_PWR\_EN

DSP3\_PWR\_EN

DSP4\_PWR\_EN

SNN\_HUB\_NC07

SNN\_HUB\_NC08

SNN\_HUB\_NC09

SNN\_HUB\_NC10

SNN\_HUB\_NC11

SNN\_HUB\_NC12

DSP1\_DP

DSP1\_DN

DSP1\_SSTX\_P

DSP1\_SSTX\_N

DSP1\_SSRX\_P

DSP1\_SSRX\_N

DSP2\_DP

DSP2\_DN

DSP2\_SSTX\_P

DSP2\_SSTX\_N

DSP2\_SSRX\_P

DSP2\_SSRX\_N

DSP3\_DP

DSP3\_DN

DSP3\_SSTX\_P

DSP3\_SSTX\_N

DSP3\_SSRX\_P

DSP3\_SSRX\_N

DSP4\_DP

DSP4\_DN

DSP4\_SSTX\_P

DSP4\_SSTX\_N

DSP4\_SSRX\_P

DSP4\_SSRX\_N

HUB\_DSP12\_PWR\_EN

HUB\_DSP34\_PWR\_EN

I2C slave addr: 7'1101010b = 7'h6A

ASSEMBLY	Jetson Orin Developer Kit Carrier Board
PAGE DETAIL	USB3.1 HUB

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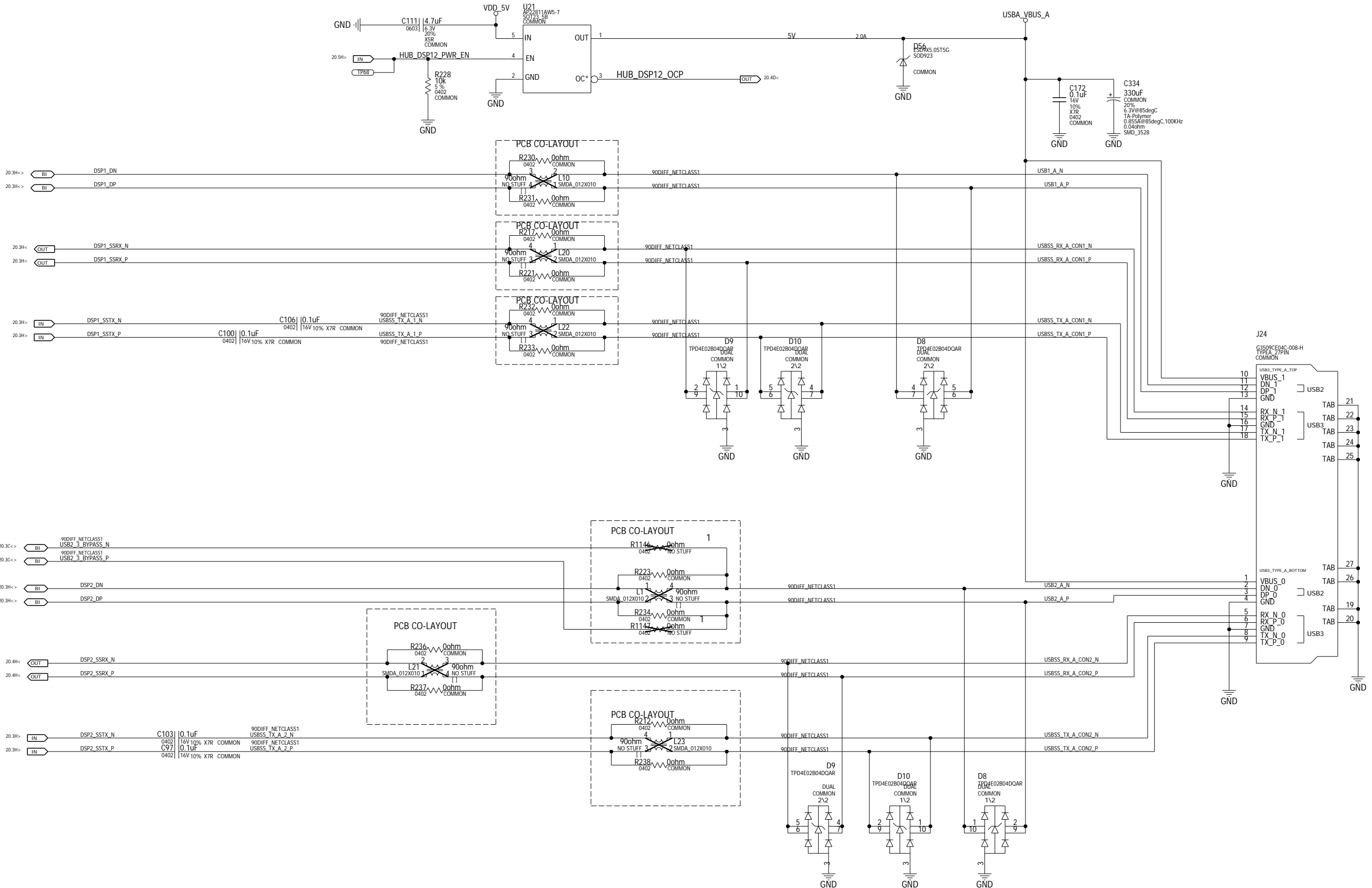
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USB3.1 TYPE-A x2 (A)

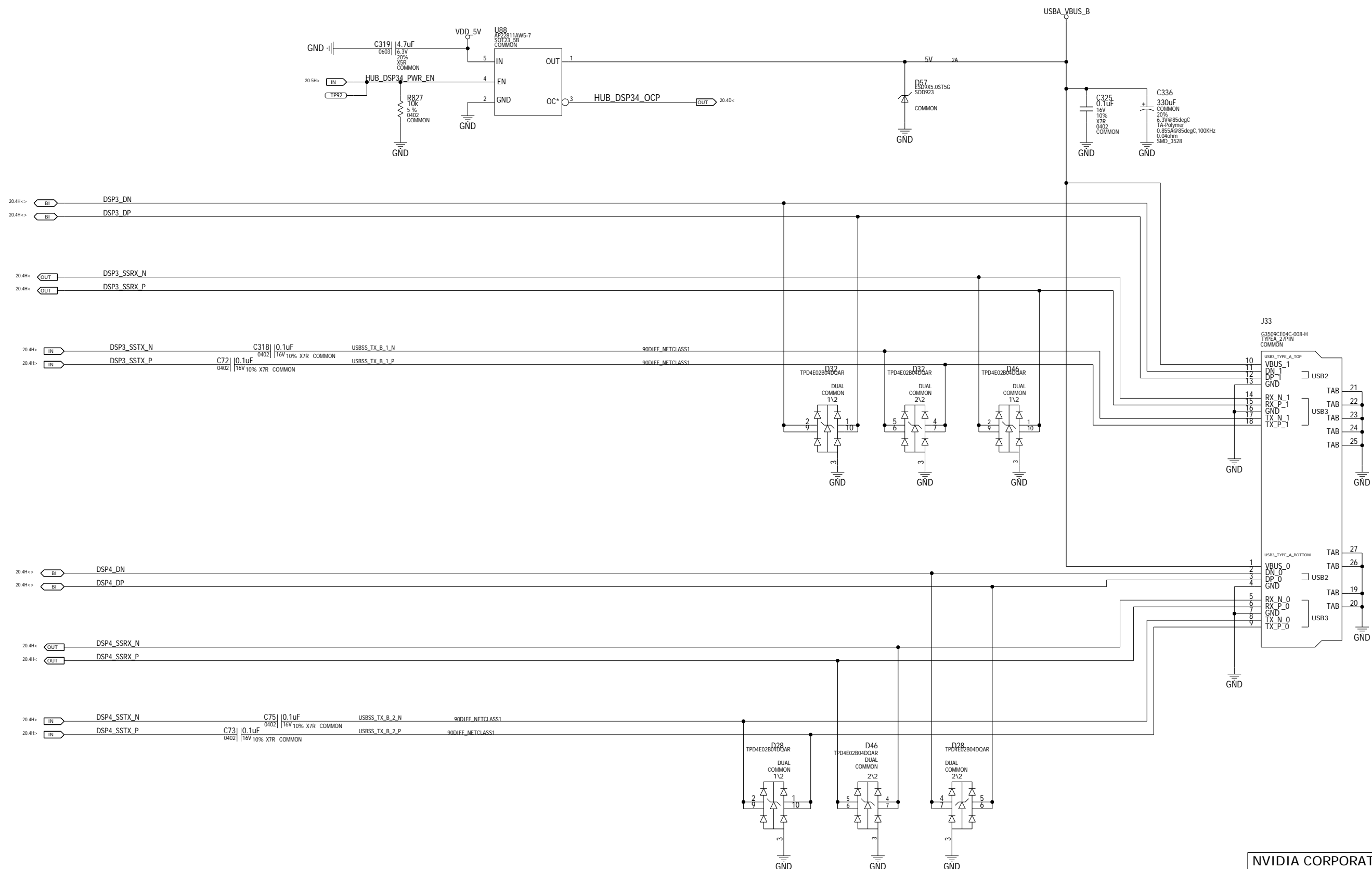


From HUB

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ASSEMBLY	Jetson Orin Developer Kit Carrier Board
PAGE DETAIL	USB3.1 TypeA x2 (A)

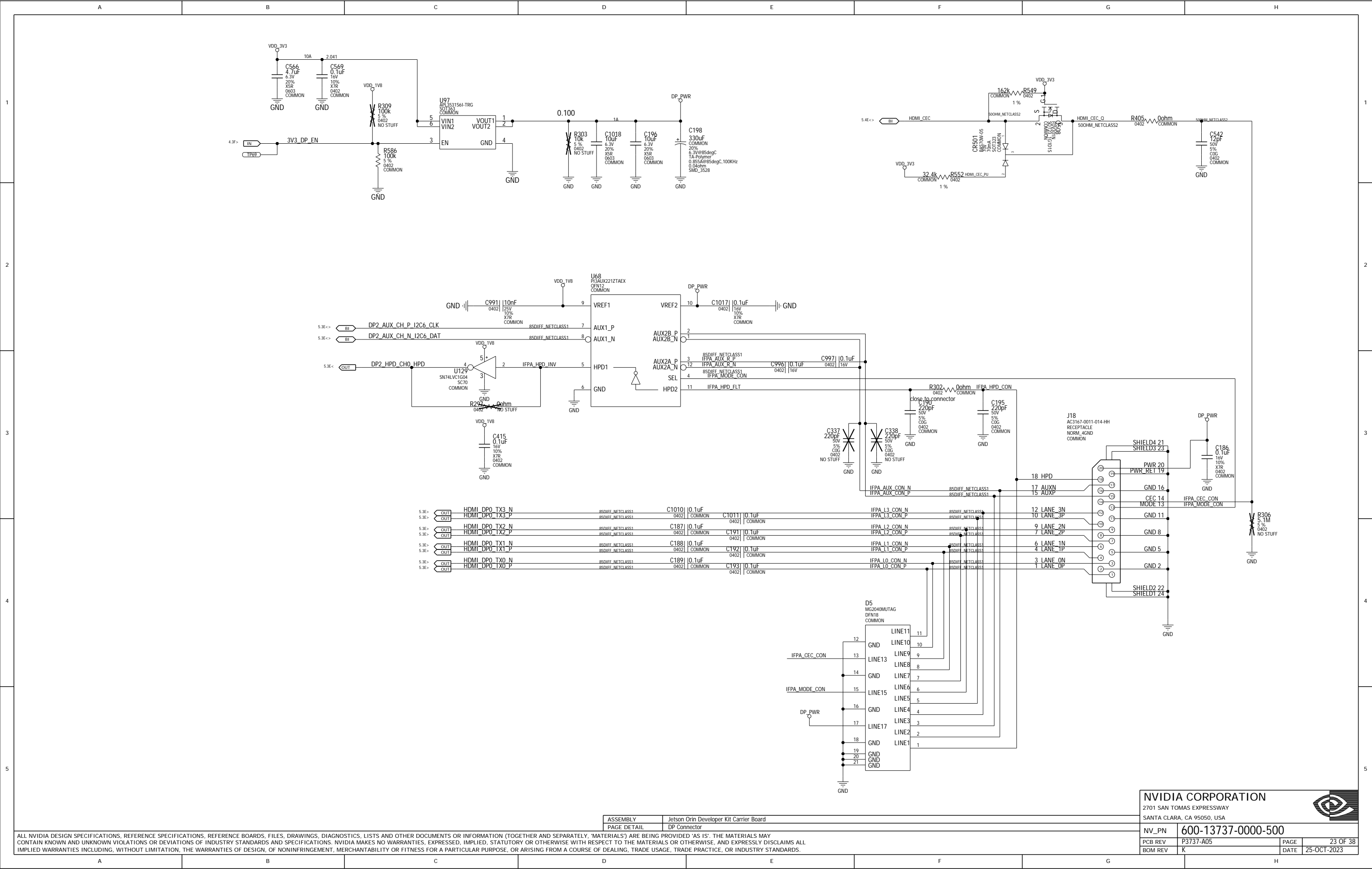
## USB3.1 TYPE-A x2 (B)



ASSEMBLY	Jetson Orin Developer Kit Carrier Board
PAGE DETAIL	USB.1 TypeA x2 (B)

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ASSEMBLY	Jetson Orin Developer Kit Carrier Board
PAGE DETAIL	DP Connector

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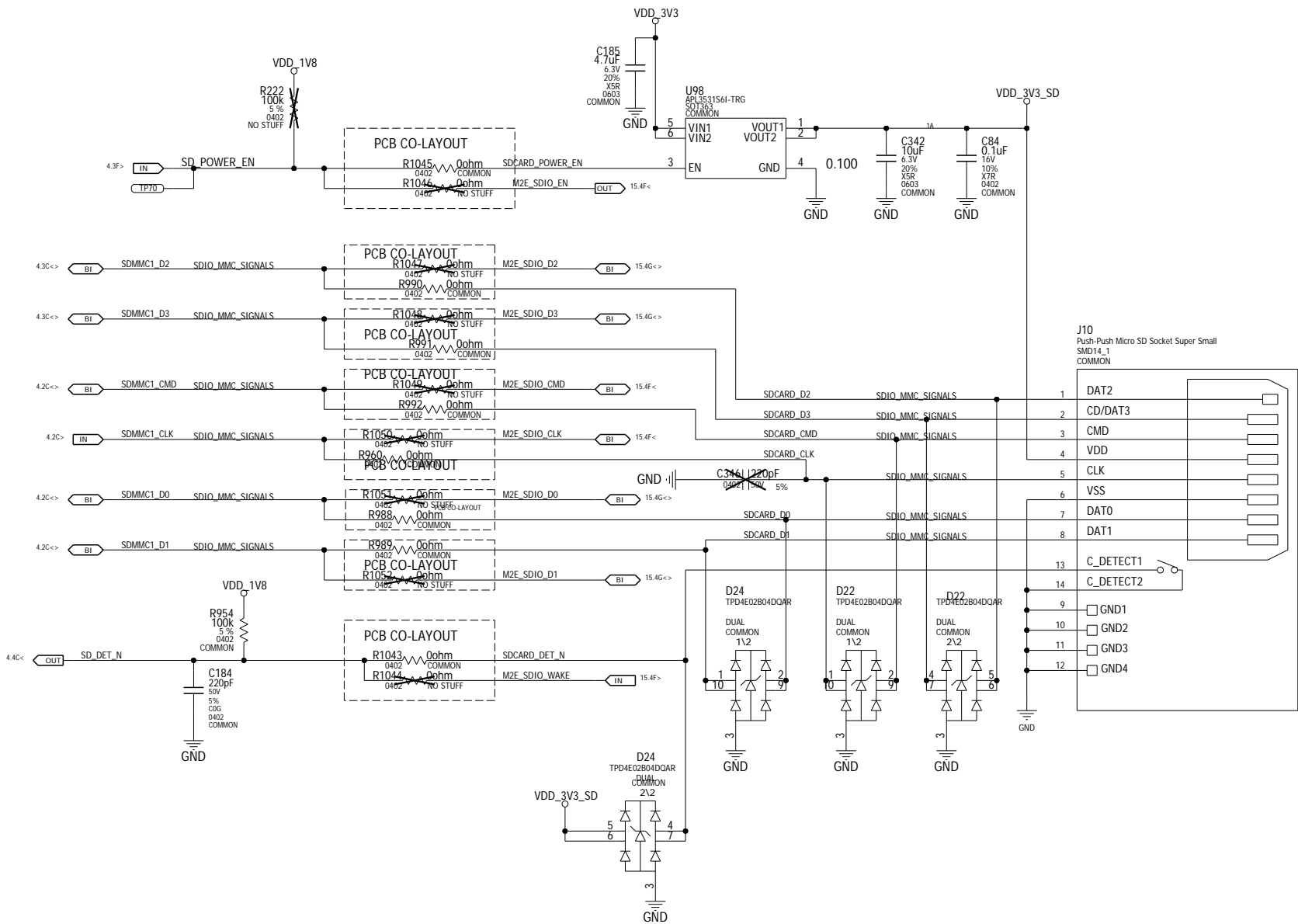
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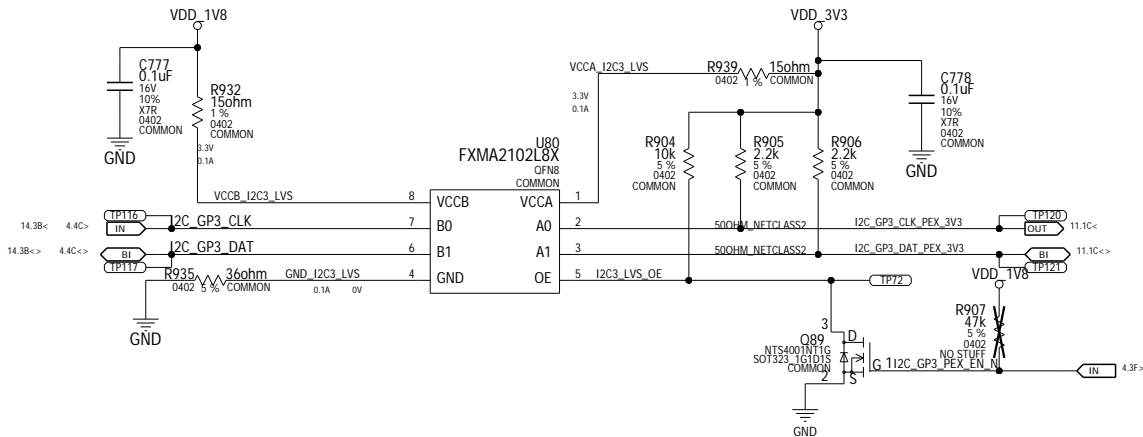
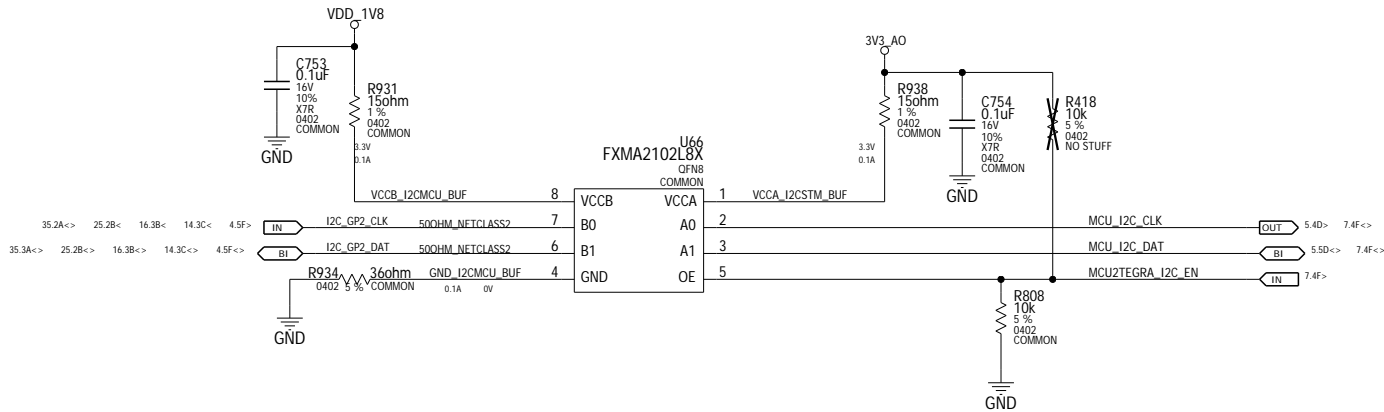
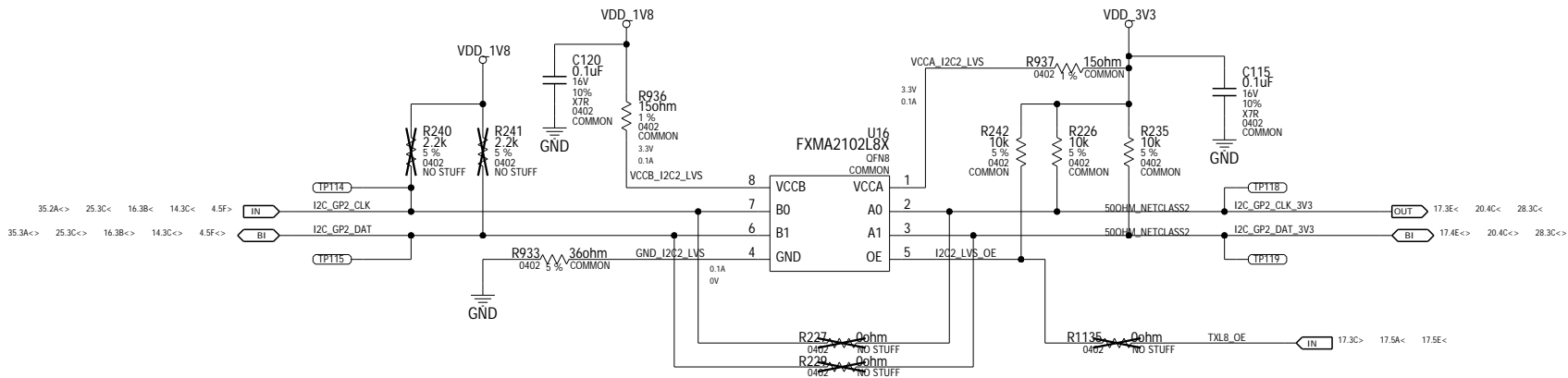
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# I2C GP2 LEVEL SHIFTER/REPEATER



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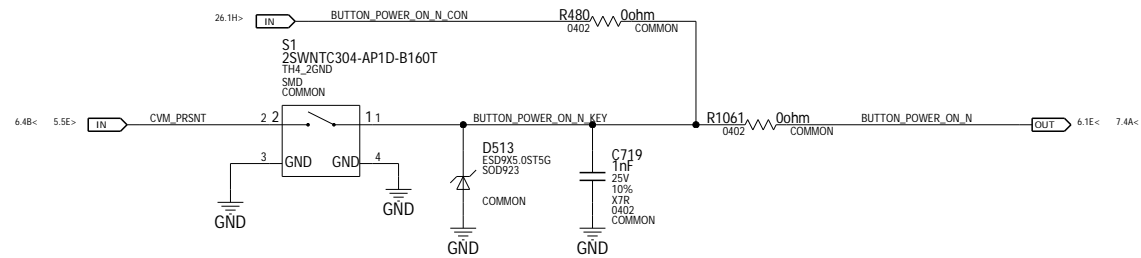
PAGE 25 OF 38

DATE 25-OCT-2023

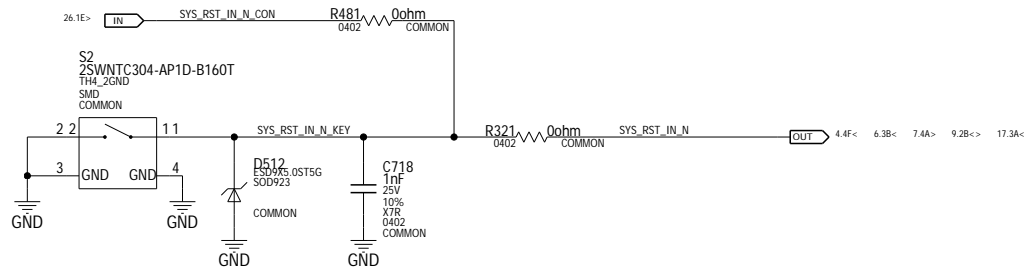
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## Buttons & Fan

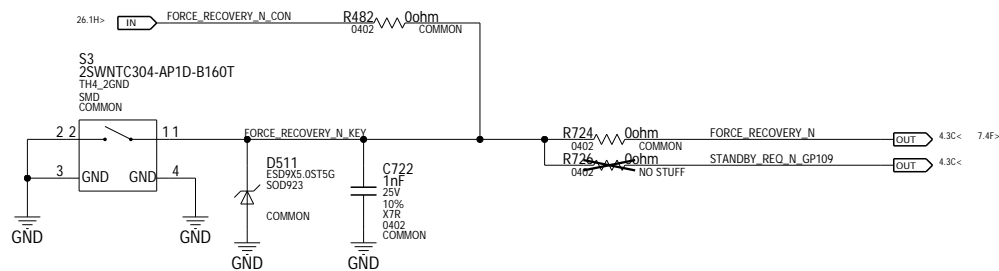
## POWER



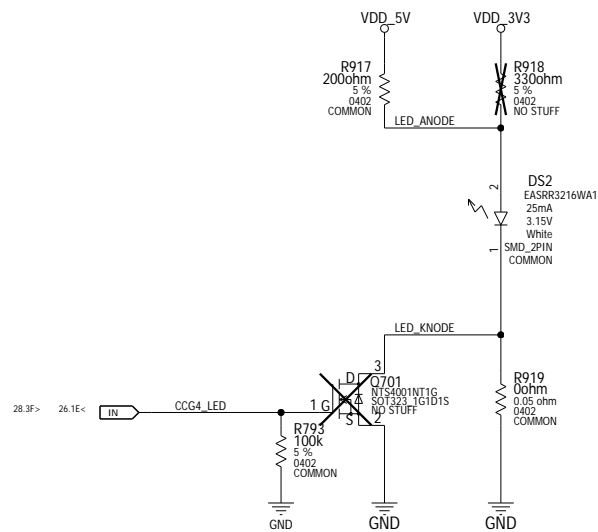
RESET



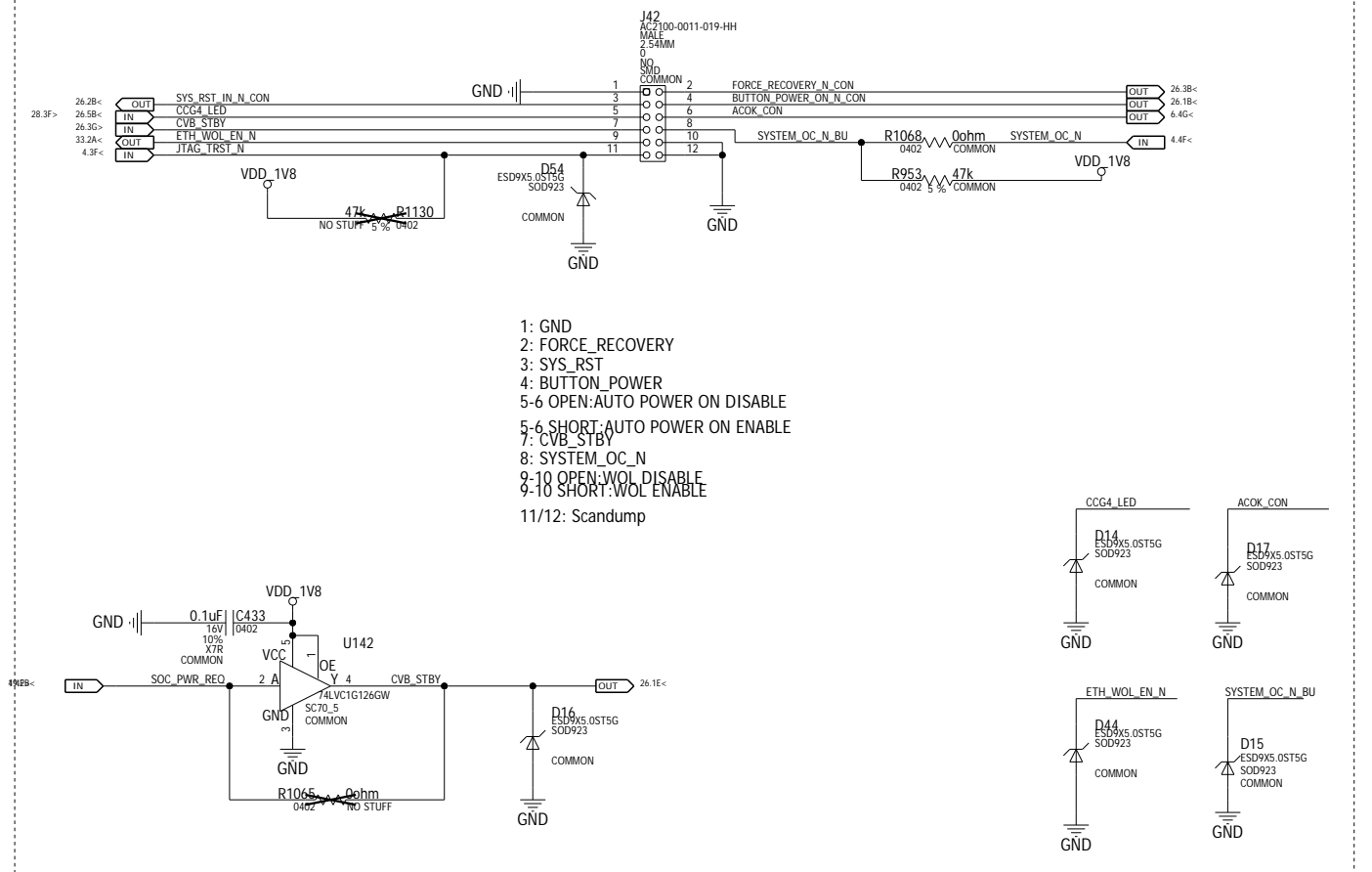
FORCE\_RECOVERY



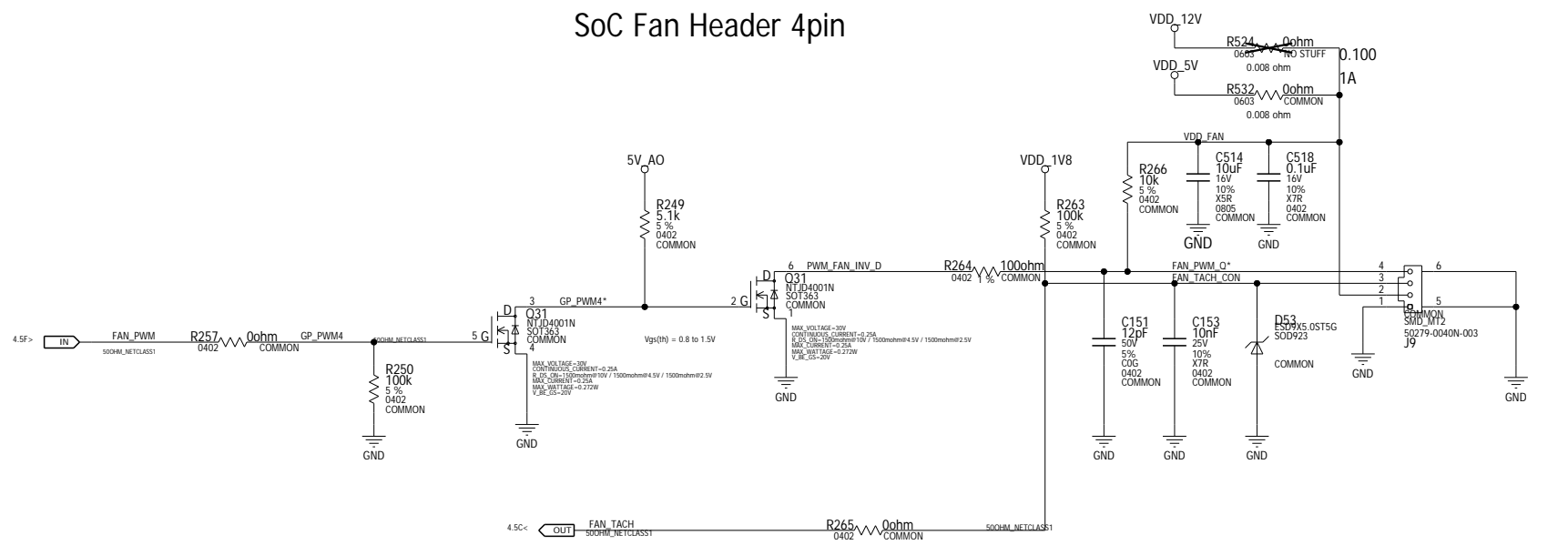
## LED



## Automation Header



## SoC Fan Header 4pin



ASSEMBLY	Jetson Orin Developer Kit Carrier Board
PAGE DETAIL	Buttons & Fan

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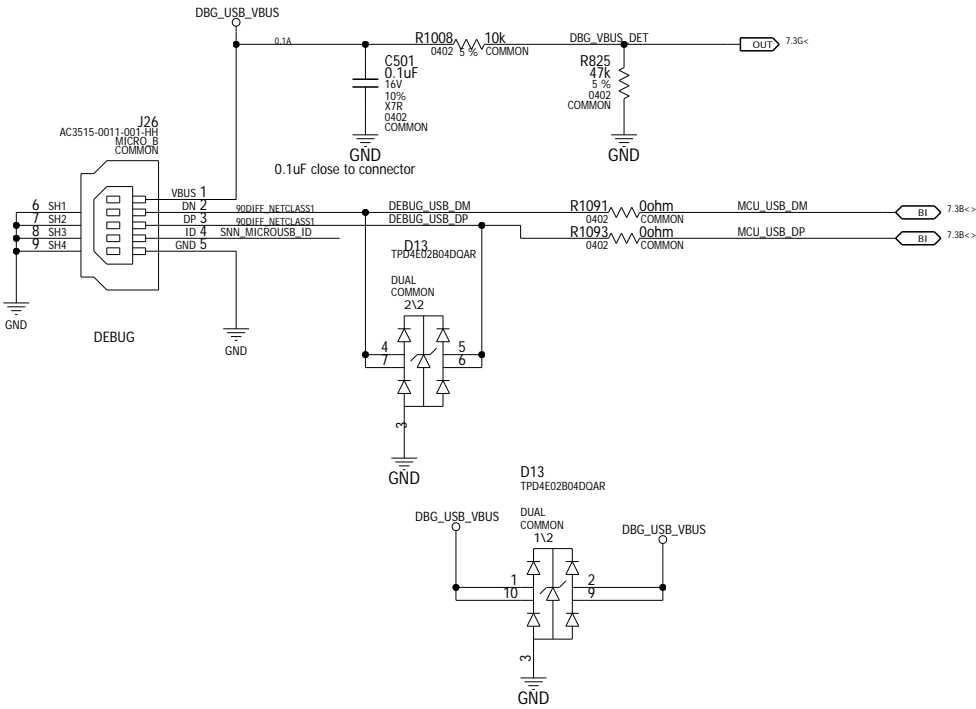
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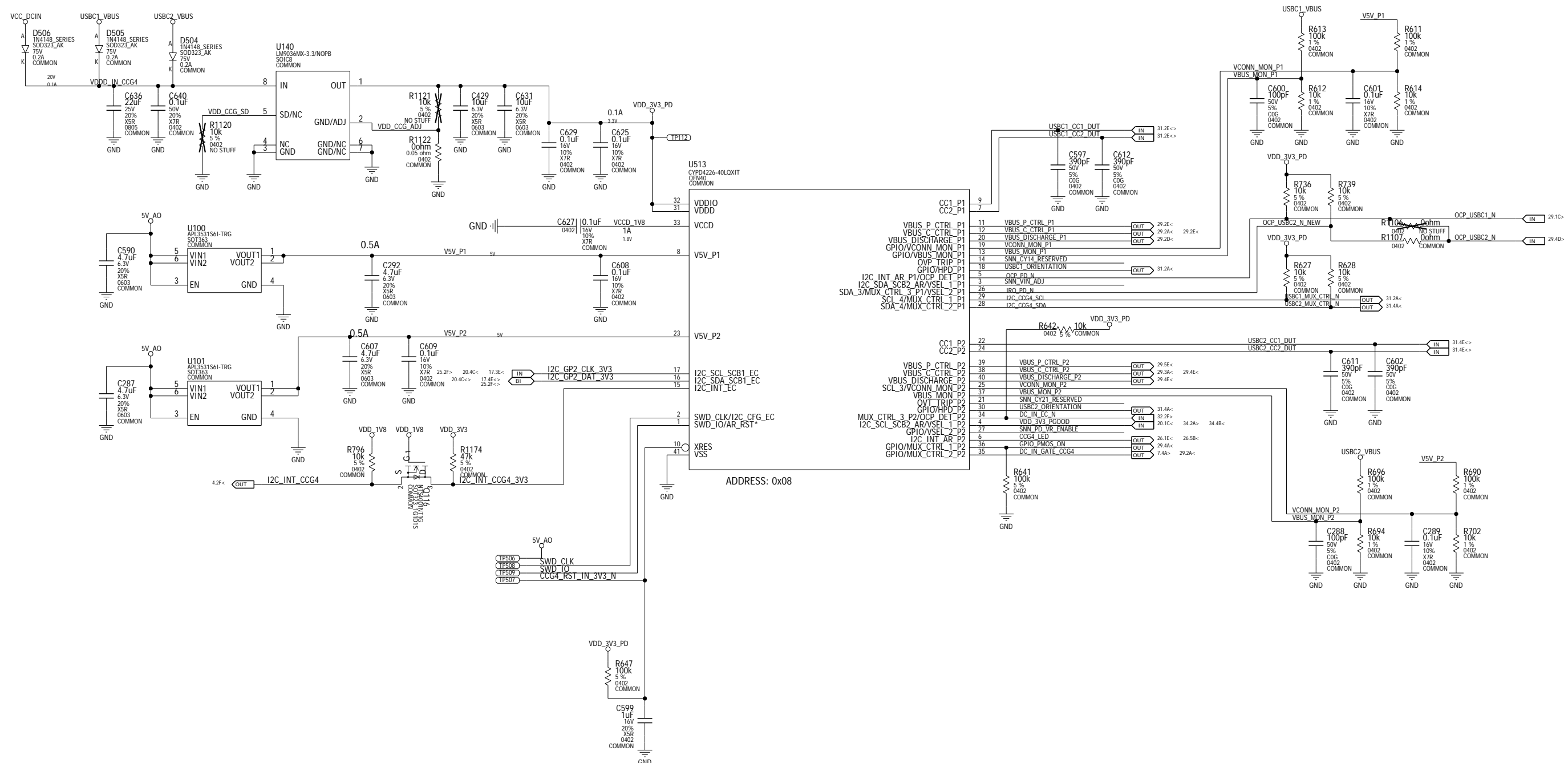
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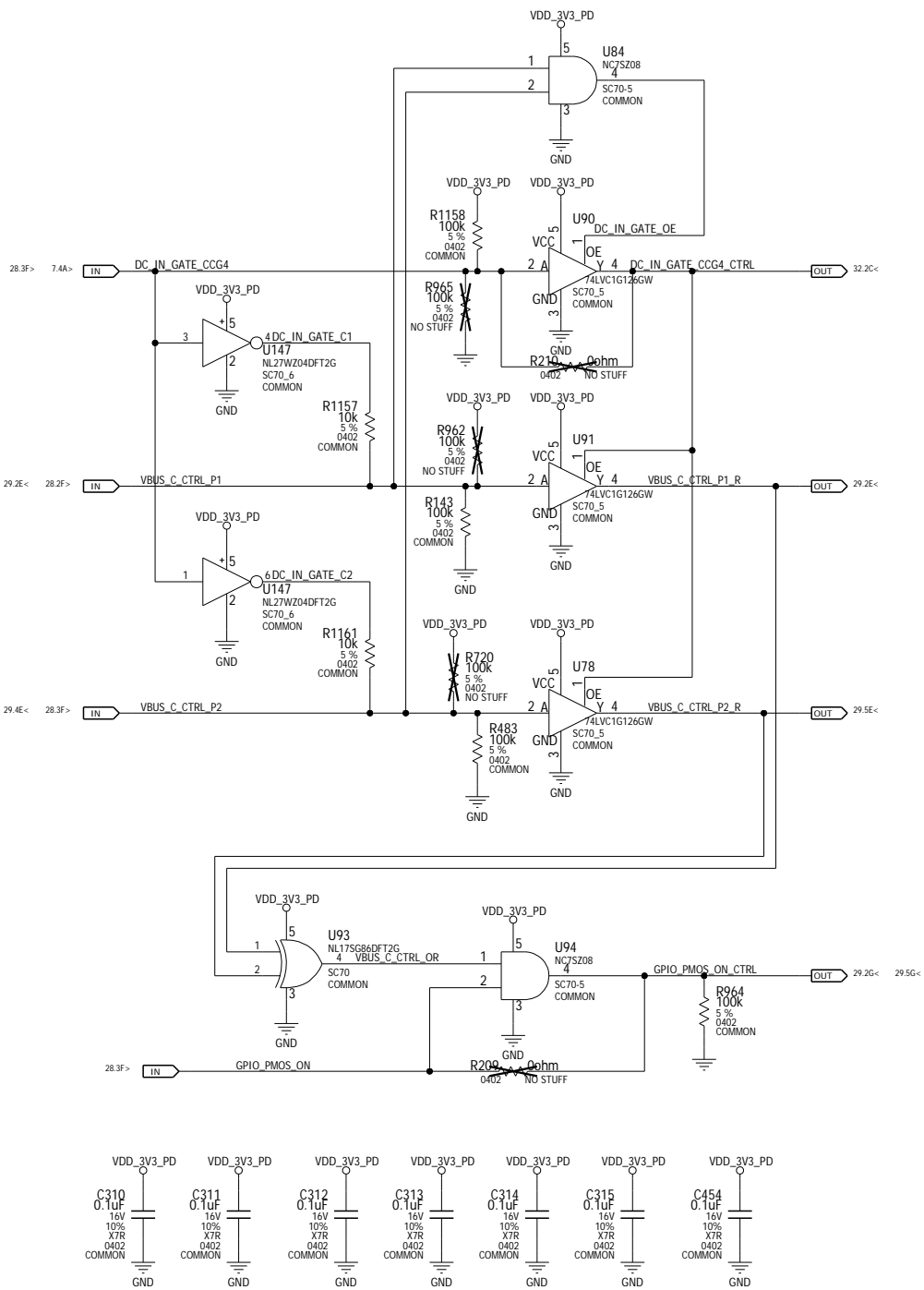
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BOM REV	K		

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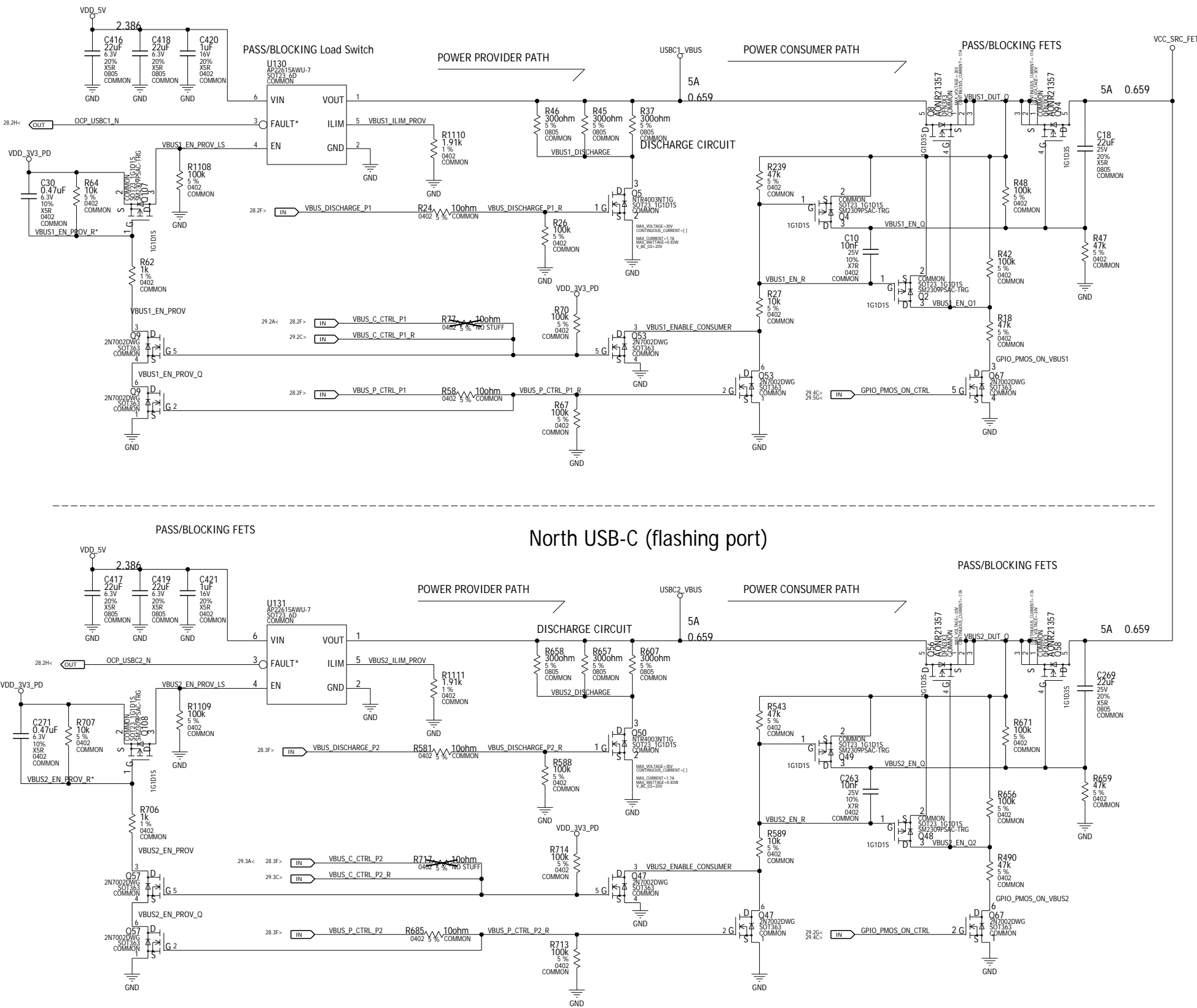
# USB PD Controller



USB PD FET logic



USB PD Power Path



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	A	B	C	D	E	F	G	H
1								
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3								
4								
5								


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ASSEMBLY	Jetson Orin Developer Kit Carrier Board
PAGE DETAIL	Reserved

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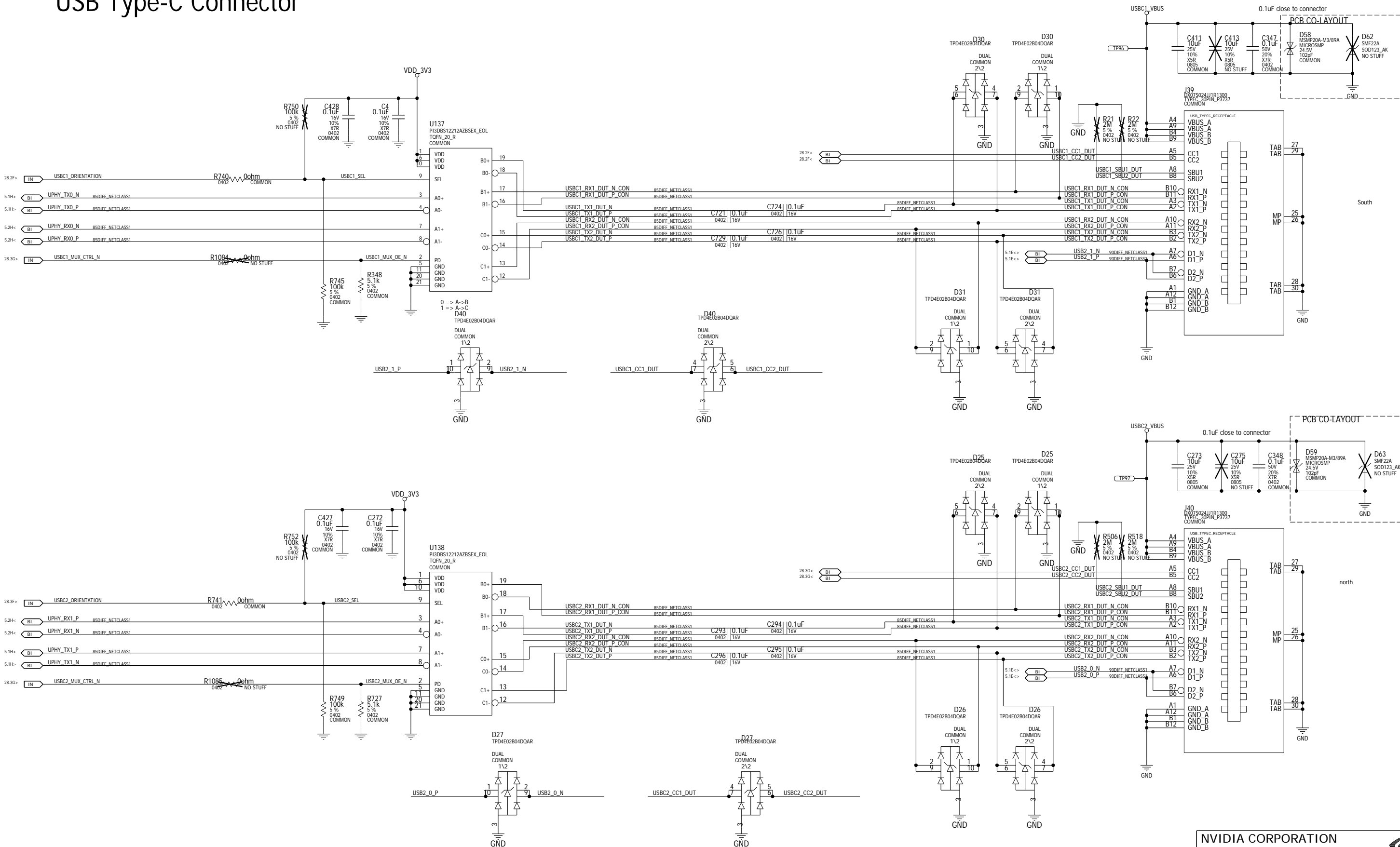
PAGE

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25-OCT-2023

# USB Type-C Connector



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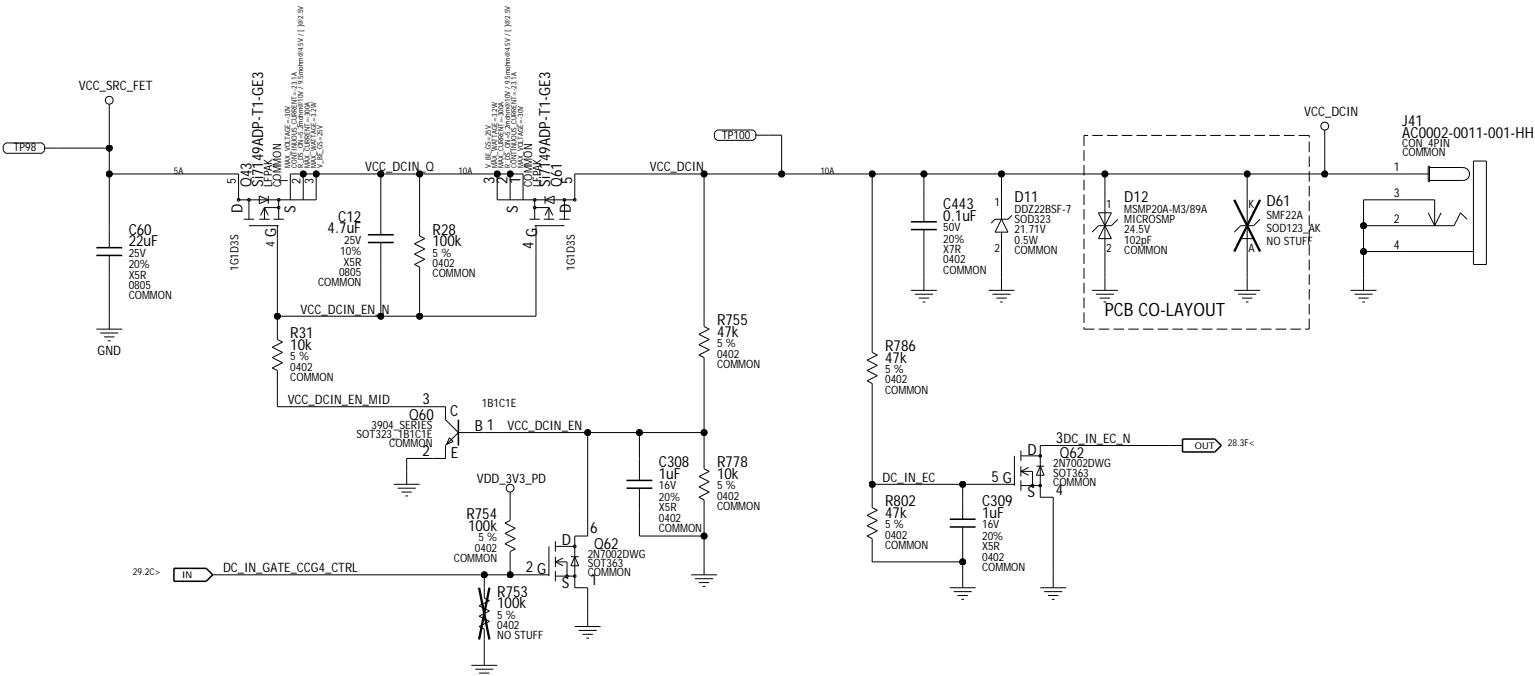
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BOM REV	K	DATE	25-OCT-2023

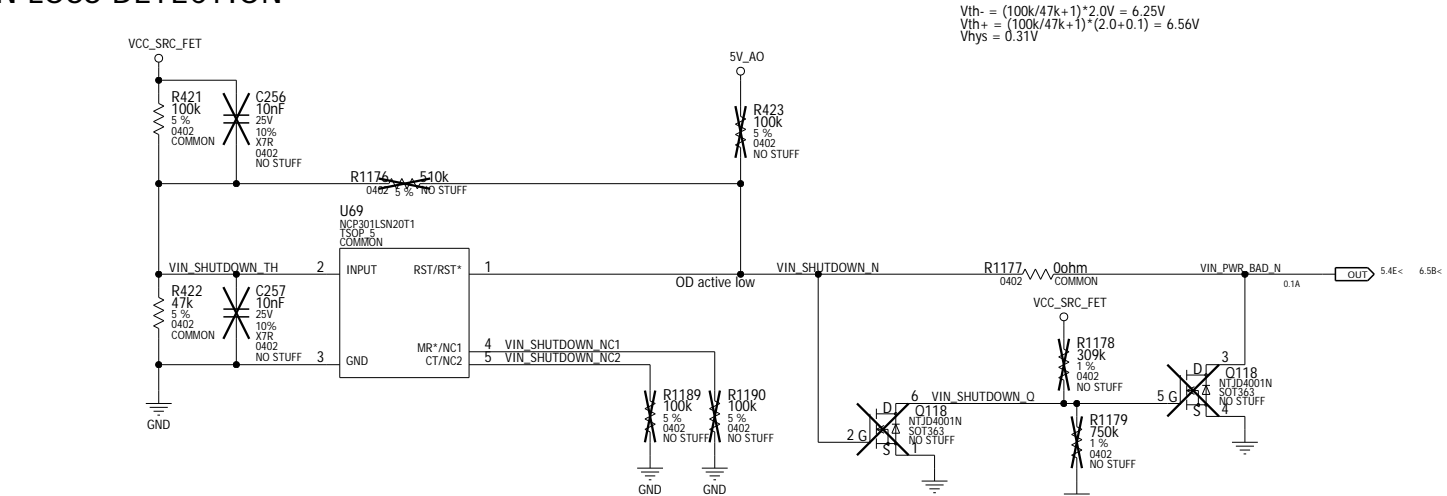
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ASSEMBLY	Jetson Orin Developer Kit Carrier Board
PAGE DETAIL	USB type-C Connector

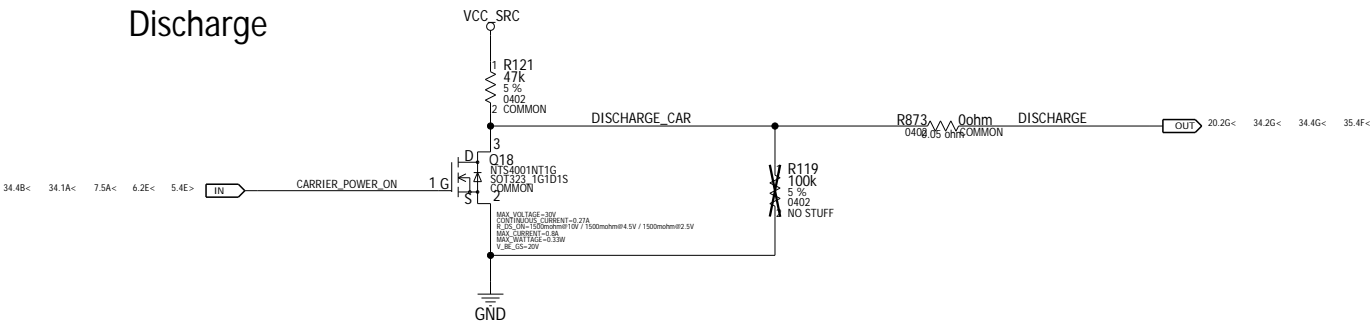
Input Power Source



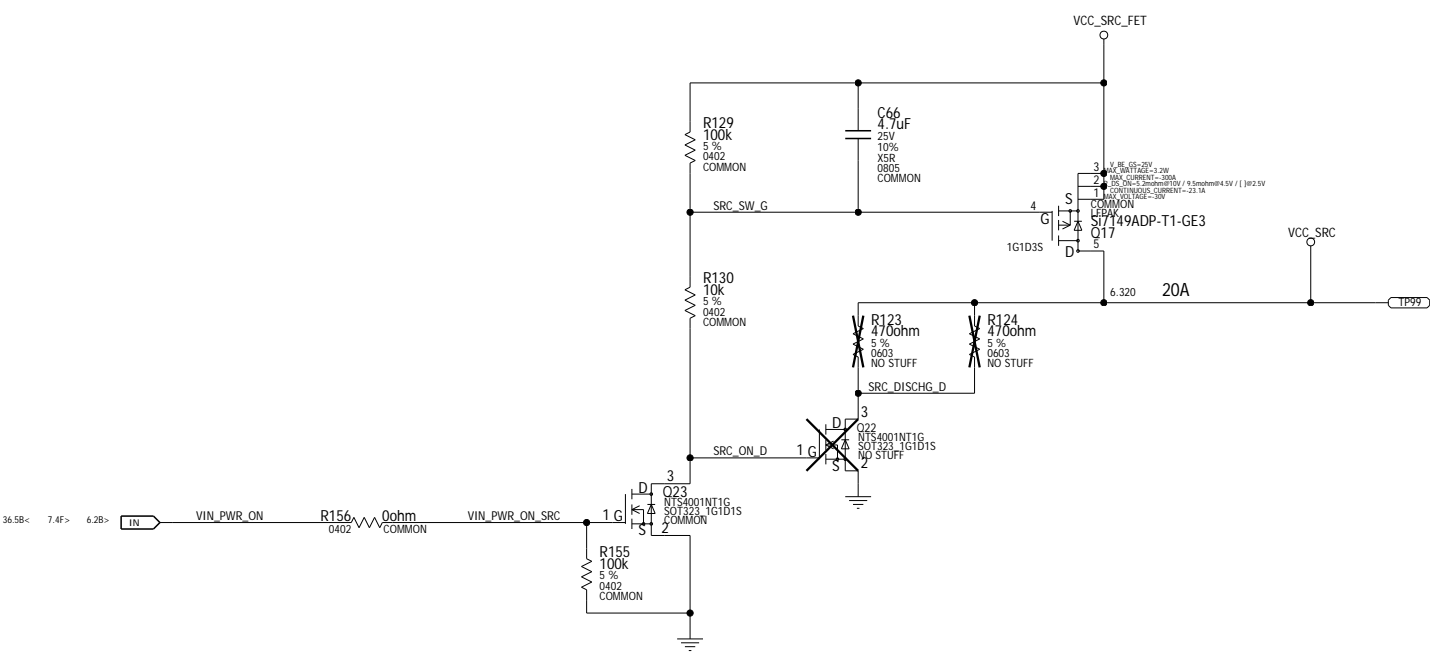
VIN LOSS DETECTION



Discharge



Input control



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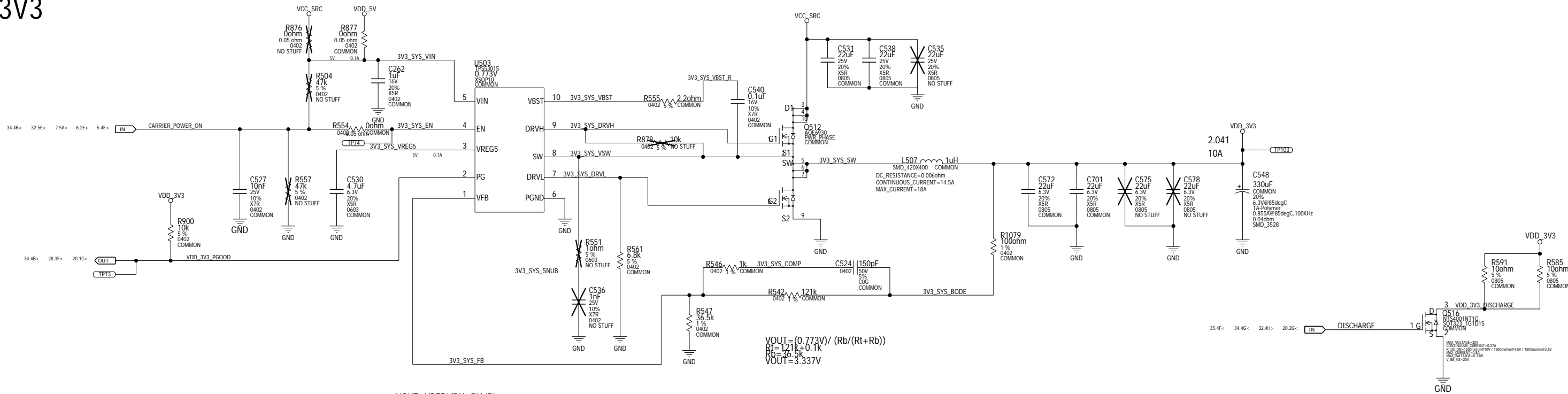
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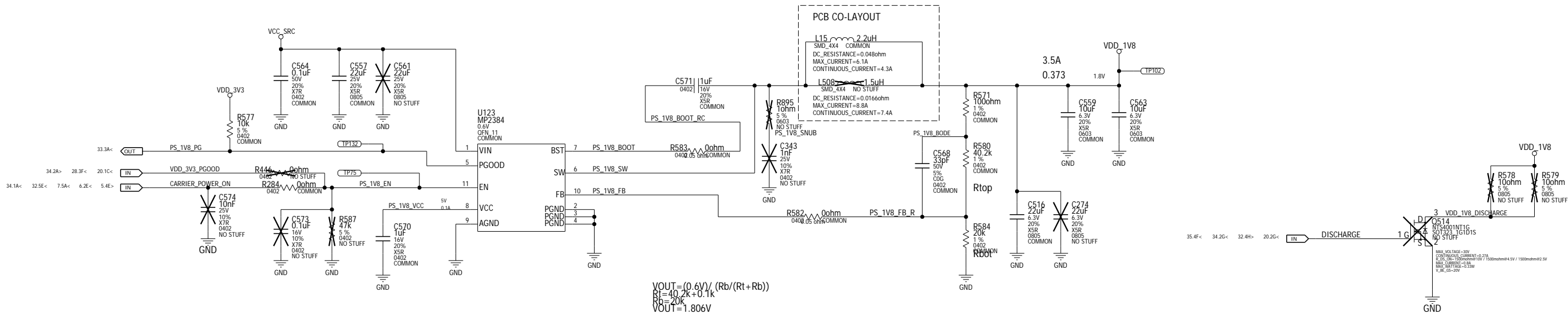
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# 3V3



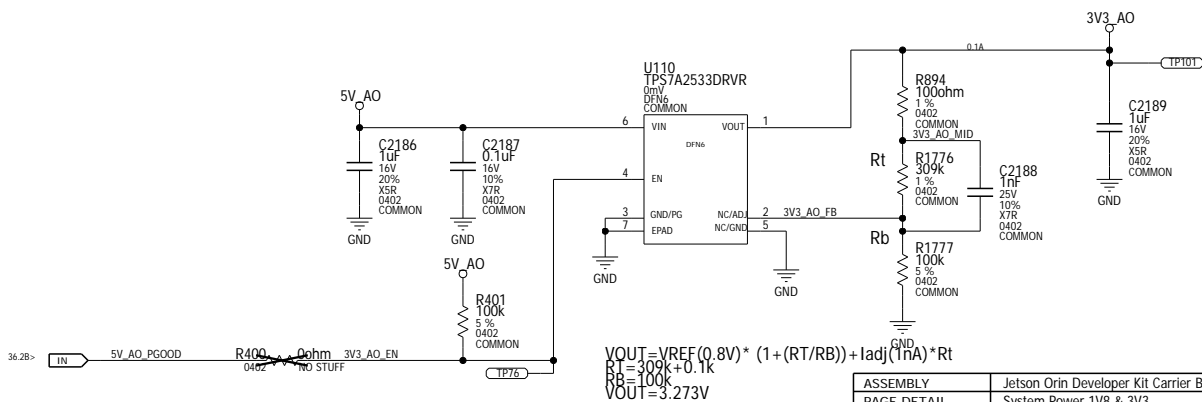
$$VOUT = VREF * (RH + RL) / RL$$

# 1V8



$$VOUT = (0.6V) / (Rb / (Rt + Rb))$$
$$Rt = 40.2k + 0.1k$$
$$Rb = 20k$$
$$VOUT = 1.806V$$

# 3V3\_AO



$$VOUT = VREF * (0.8V) * (1 + (RT/RB)) + Iadj * (1nA) * Rt$$
$$Rt = 309k + 0.1k$$
$$RB = 100k$$
$$VOUT = 3.273V$$

ASSEMBLY	Jetson Orin Developer Kit Carrier Board
PAGE DETAIL	System Power 1V8 & 3V3

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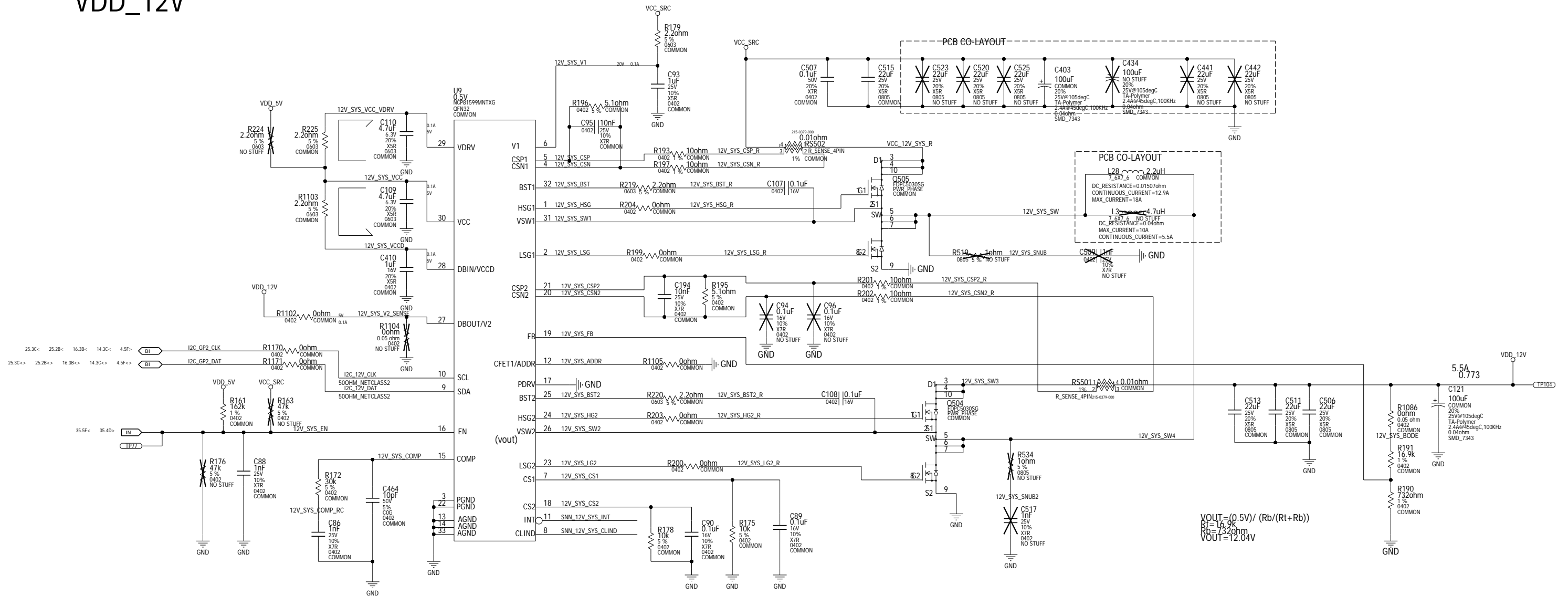
SANTA CLARA, CA 95050, USA



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VDD\_12V



Raddr	I2C address (7bit)	
0ohm	0x74	<-- default
26.1k	0x75	
44.2k	0x76	
71.5k	0x77	



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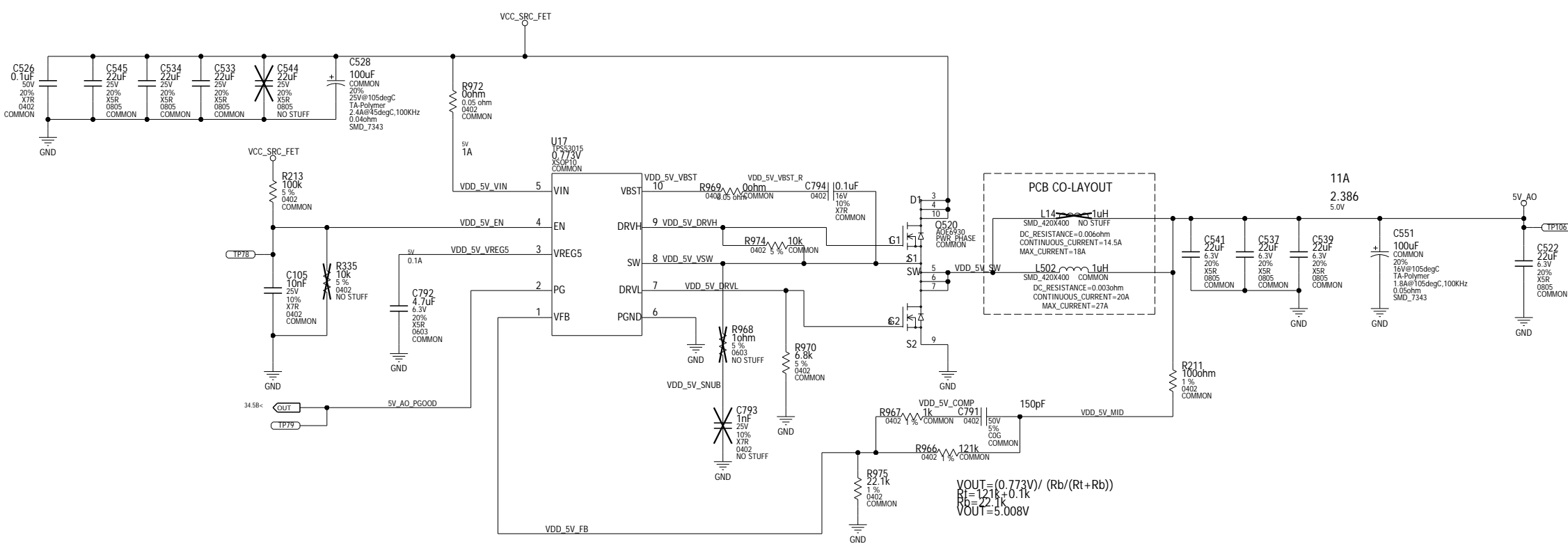
SANTA CLARA, CA 95050, USA

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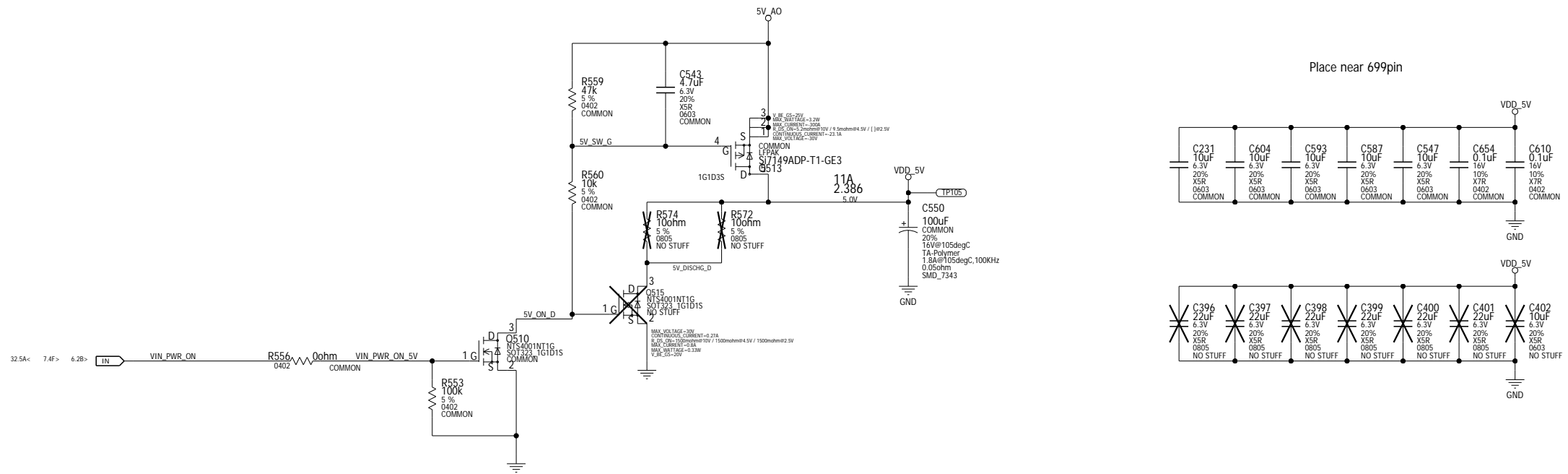
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BOM REV	K	DATE	25-OCT-2023

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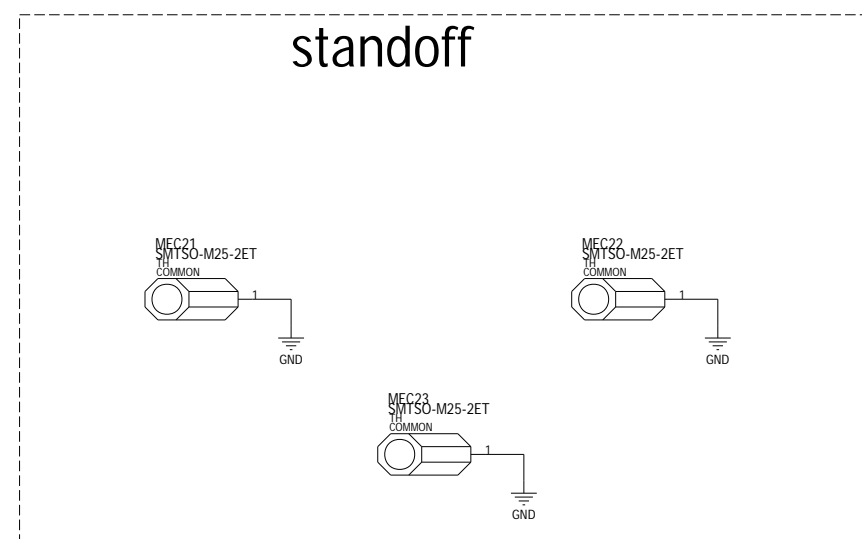
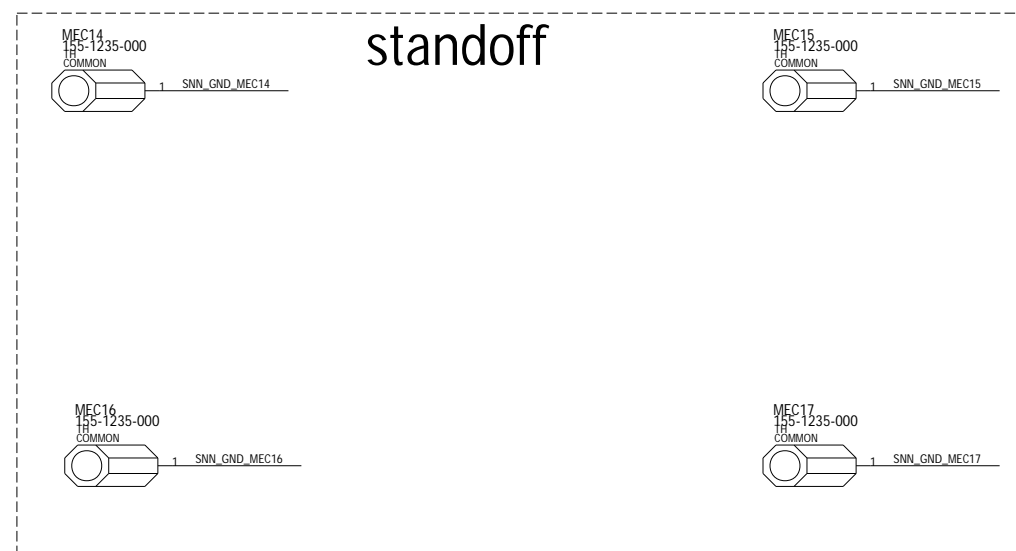
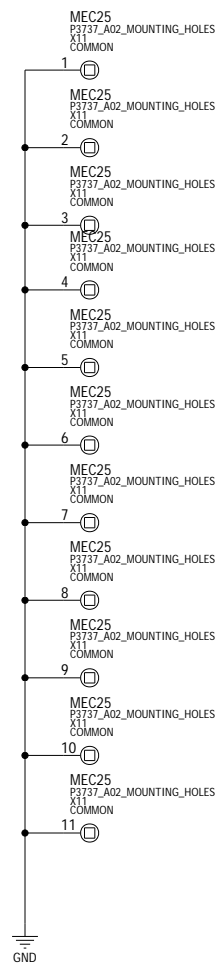
5V\_AO



VDD\_5V




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ASSEMBLY	Jetson Orin Developer Kit Carrier Board
PAGE DETAIL	Mechanical

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ASSEMBLY	Jetson Orin Developer Kit Carrier Board
PAGE DETAIL	Reserved

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