

A

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B

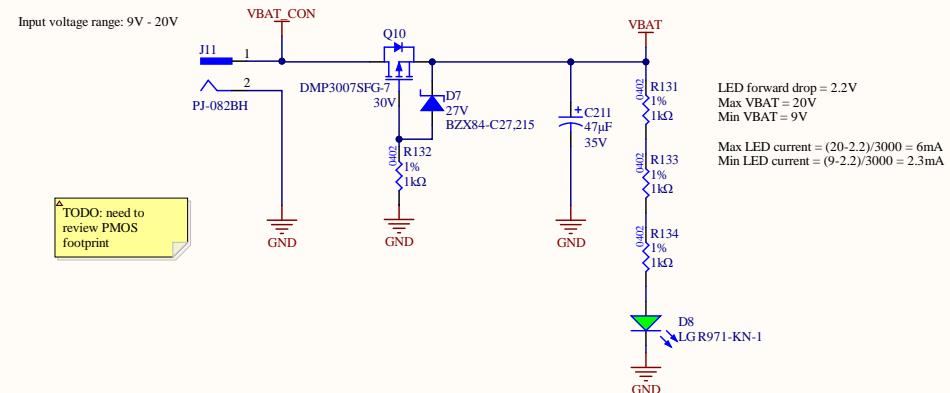
C

C

D

D

Power Jack Reverse Polarity Protection

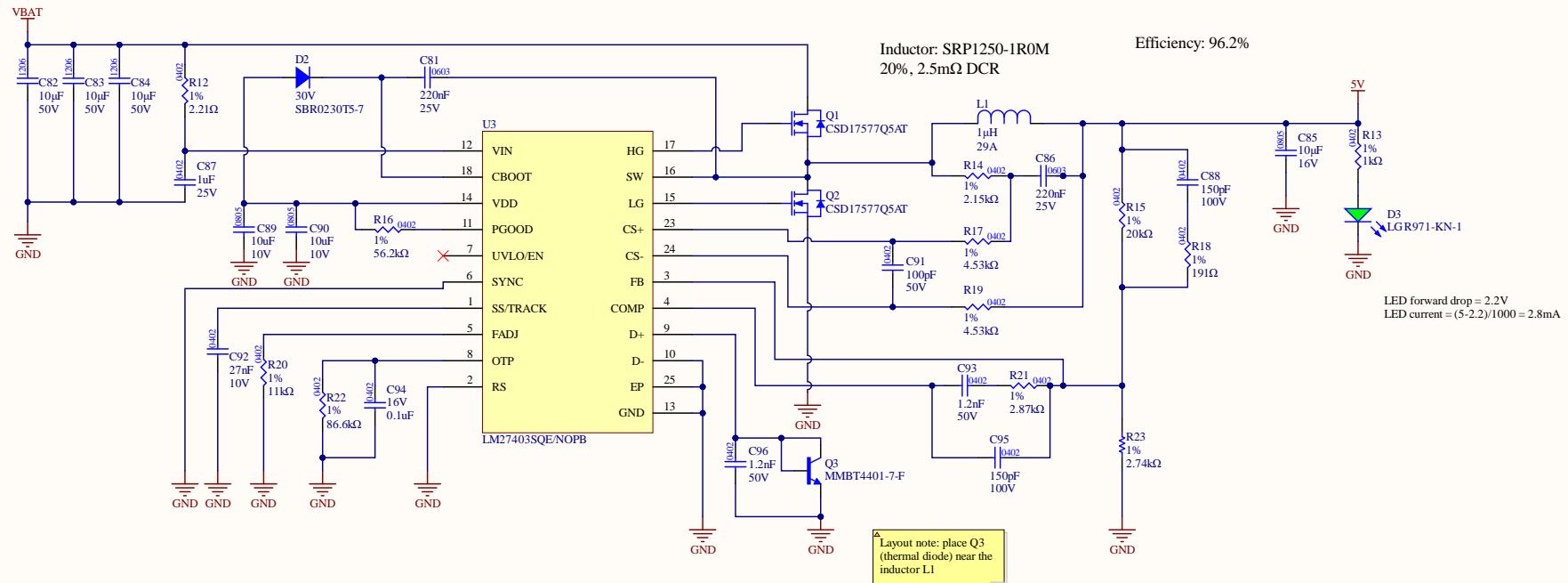


Title: Power Connector	
Project: Jetson AGX Xavier Carrier Board.PnjPcb	
Rev: 1	Reviewer: Lance Bantoto
Engineer: Cindy Li	
Date: 2021-07-29	Sheet: 1 of 26



5V Buck Converter @ 16A

Input voltage range: 9V - 20V



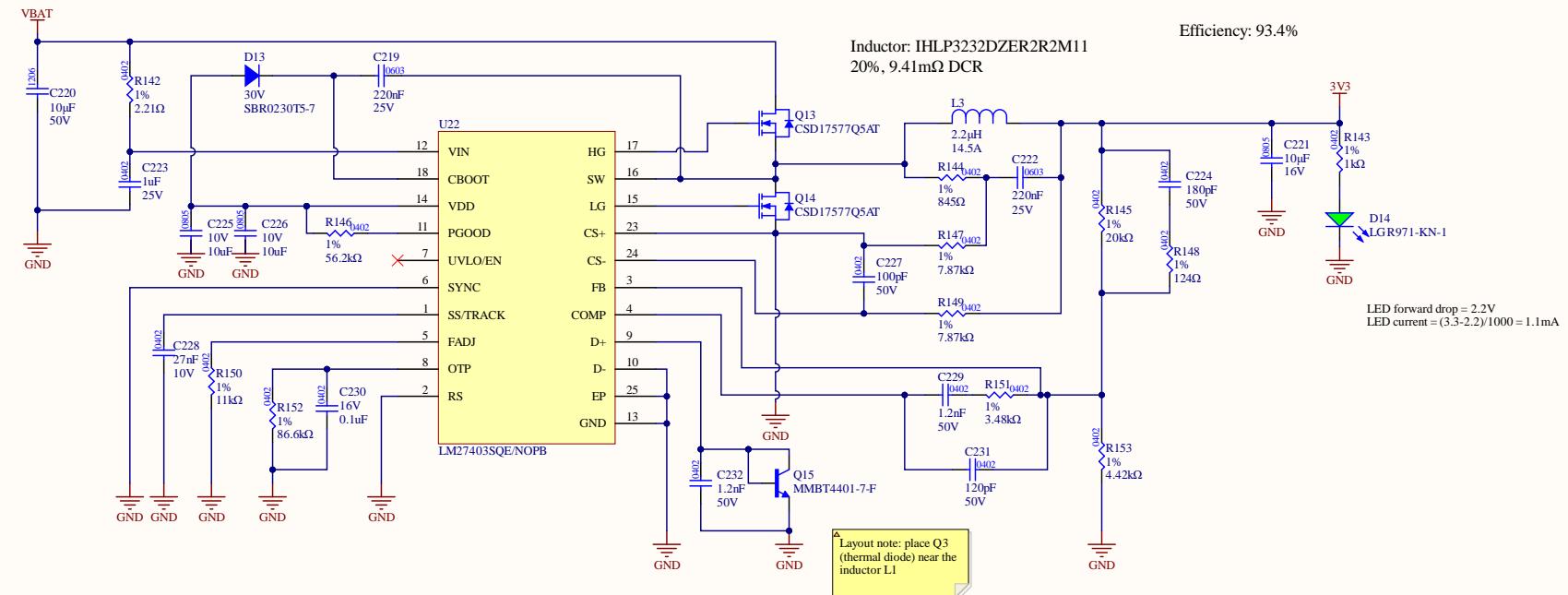
Webbench reference design: <https://webbench.ti.com/appinfo/webbench/scripts/SDP.cgi?ID=E23207869D5F0DD4>

Title:	5V Power
Project: Jetson AGX Xavier Carrier Board.PrtPcb	
Rev: 1	Reviewer: Lance Bantoto
	Engineer: Cindy Li
Date: 2021-07-29	Sheet: 2 of



3.3V Buck Converter @ 6A

Input voltage range: 9V - 20V



Title:	3.3V Power		
Project:	Jetson AGX Xavier Carrier Board.PnjPcb		
Rev:	1	Reviewer:	Lance Bantoto
Engineer:	Cindy Li		
Date:	2021-07-29	Sheet:	3 of 26



A

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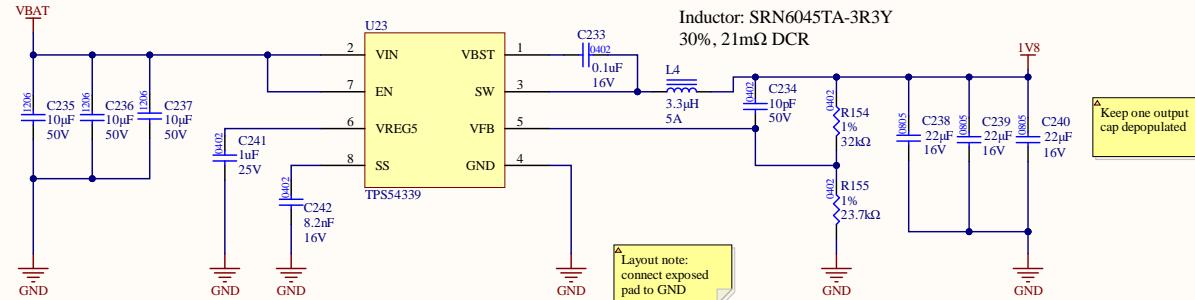
D

D

1.8V Buck Converter @ 2A

Input voltage range: 9V - 20V

Efficiency: 82.5%



Webench reference design: <https://webench.ti.com/appinfo/webench/scripts/SDP.cgi?ID=57C269DE61431294>

Title: 1.8VPower	
Project: Jetson AGX Xavier Carrier Board.PjPcb	
Rev: 1	Reviewer: Lance Bantoto
Engineer: Cindy Li	
Date: 2021-07-29	Sheet: 4 of 26



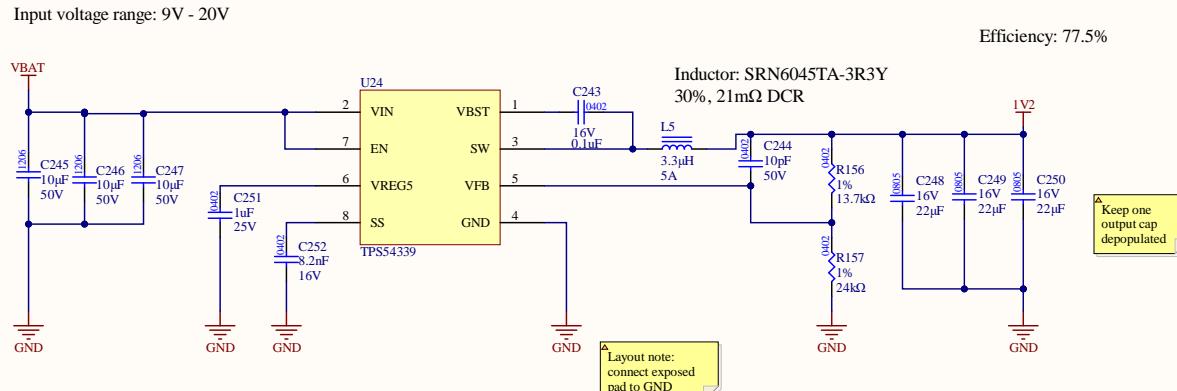
A

A

1.2V Buck Converter @ 2A

B

B



C

C

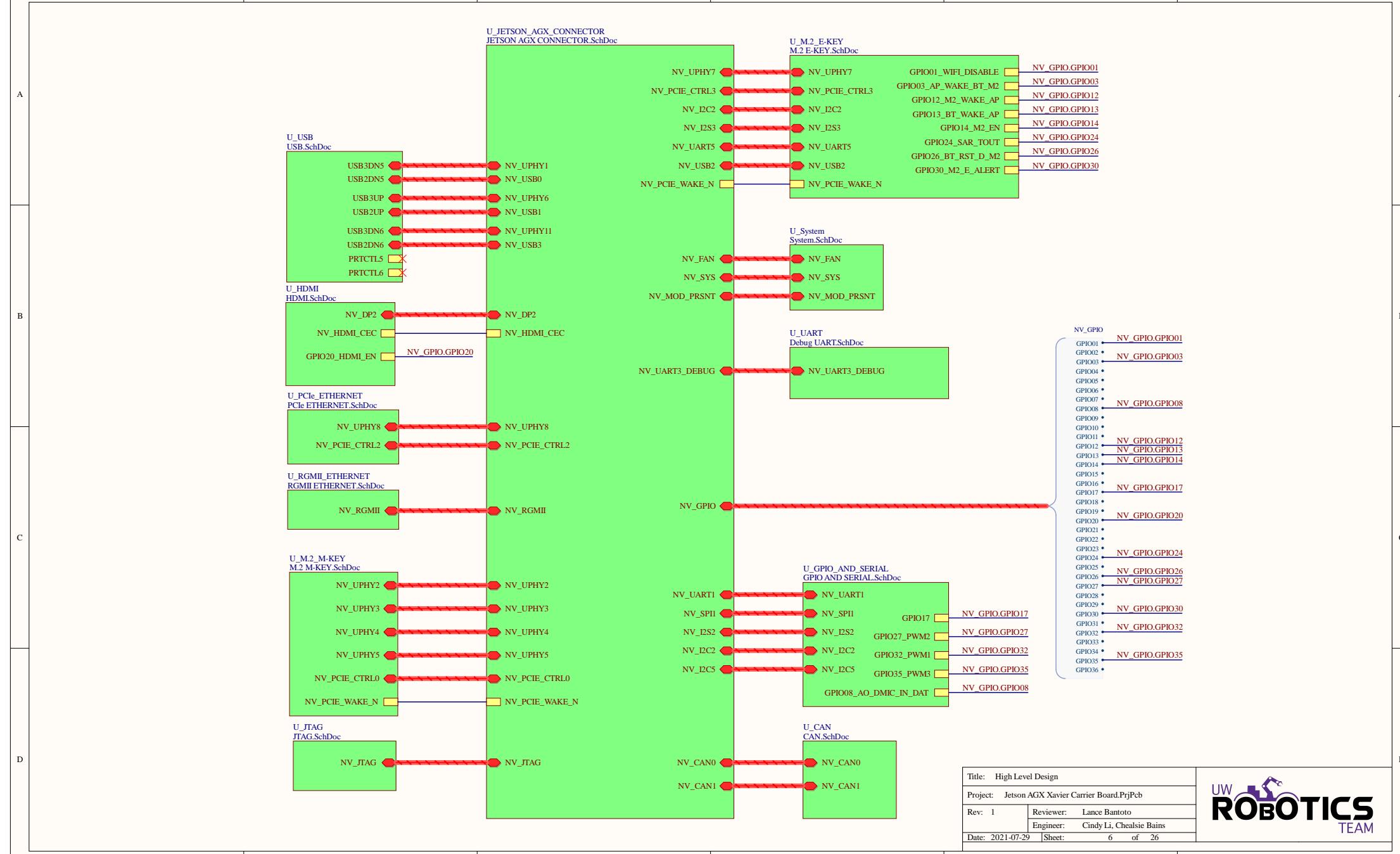
[Webench reference design: https://webench.ti.com/appinfo/webench/scripts/SDP.cgi?ID=348A2FAA81A09D71](https://webench.ti.com/appinfo/webench/scripts/SDP.cgi?ID=348A2FAA81A09D71)

D

D

Title: 1.2VPower	
Project: Jetson AGX Xavier Carrier Board.PjPcb	
Rev: 1	Reviewer: Lance Bantoto
Engineer: Cindy Li	Date: 2021-07-29 Sheet: 5 of 26







1

2

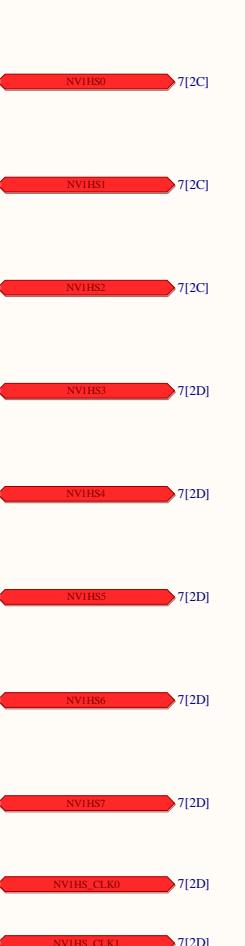
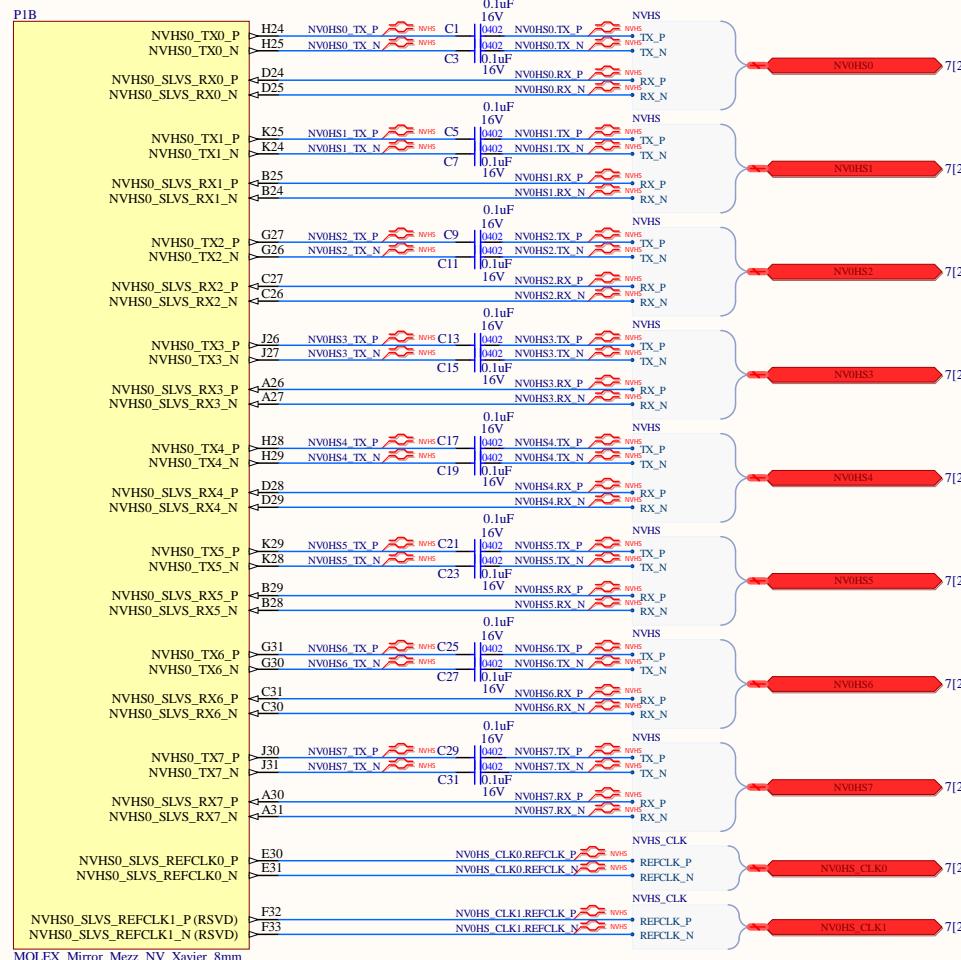
3

4

5

6

A



Title:	Jetson AGX NVHS		
Project:	Jetson AGX Xavier Carrier Board.PnjPcb		
Rev:	1	Reviewer:	Lance Bantoo
Engineer:	Cindy Li, Chealaine Bains	Date:	2021-07-29
Sheet:	8	of	26



1

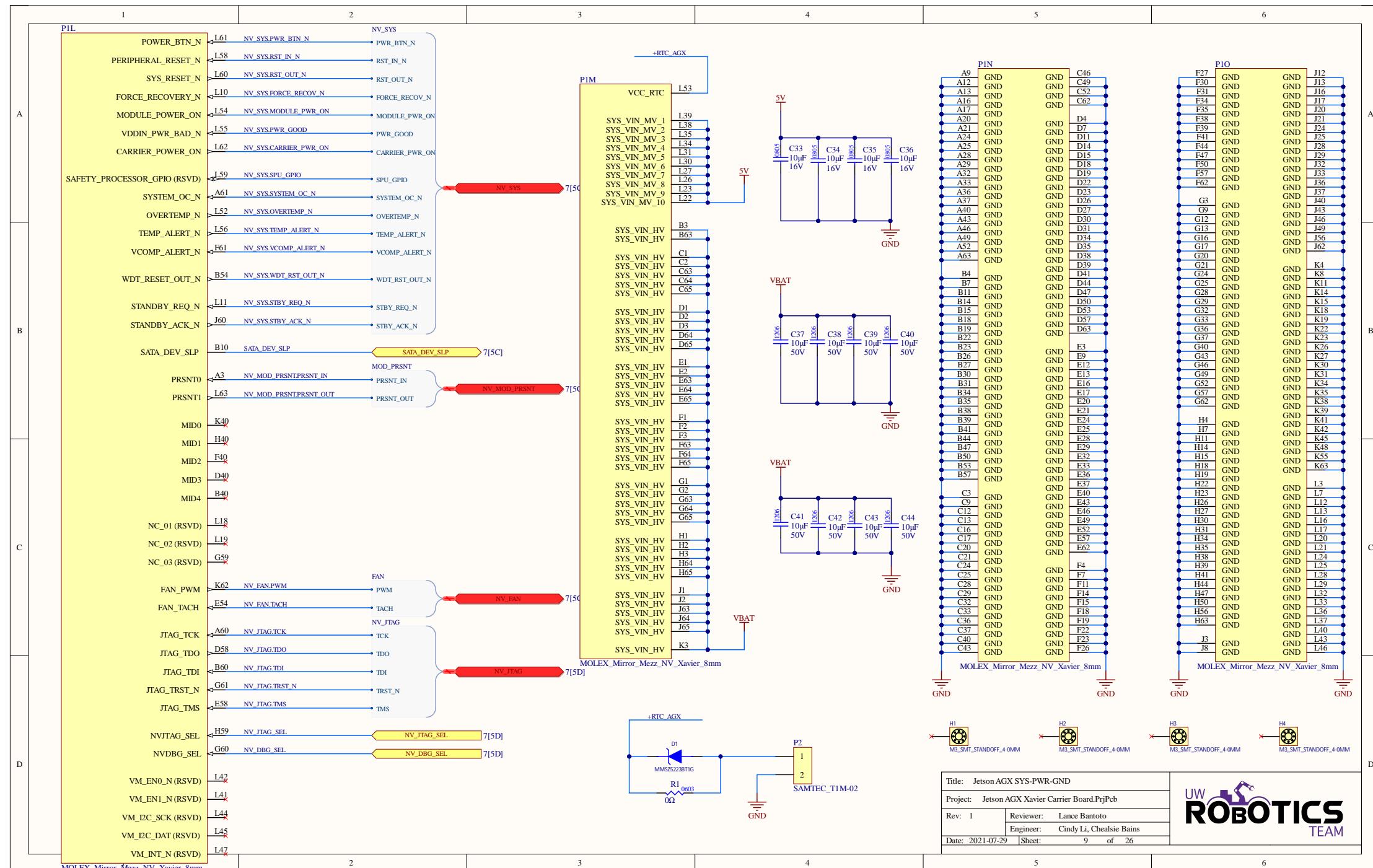
2

3

4

5

6



1 2 3 4 5 6



Title: Jetson AGX SDIO-SPI-UART-CAN-GPIO	
Project: Jetson AGX Xavier Carrier Board.PnjPcb	
Rev: 1	Reviewer: Lance Bantoto
Engineer: Cindy Li, Chealsie Bains	
Date: 2021-07-29	Sheet: 10 of 26



1 2 3 4 5 6

1 2 3 4 5 6



NVIDIA Jetson AGX Dev Kit Configuration		
CSI	I2C	I2S
0 CAM Expansion	-	-
1 CAM Expansion	ID EEPROM / Debug	-
2 CAM Expansion	PoE x16 / M.2 E-Key	40 Pin Expansion
3 CAM Expansion	CAM Expansion	M.2 E-Key WiFi/BT
4 CAM Expansion	M.2 NVMe	-
5 CAM Expansion	-	40 Pin Expansion
6 CAM Expansion	-	-
7 CAM Expansion	-	-

NVIDIA Jetson AGX Design Configuration		
CSI	I2C	I2S
0 -	-	-
1 -	-	-
2 -	M.2 E-Key + GPIO	GPIO
3 -	M.2 NVMe	M.2 E-Key WiFi/BT
4 -	-	-
5 -	-	GPIO
6 -	-	-
7 -	-	-

Title: Jetson AGX CSI-I2C-I2S

Project: Jetson AGX Xavier Carrier Board.PjPcb

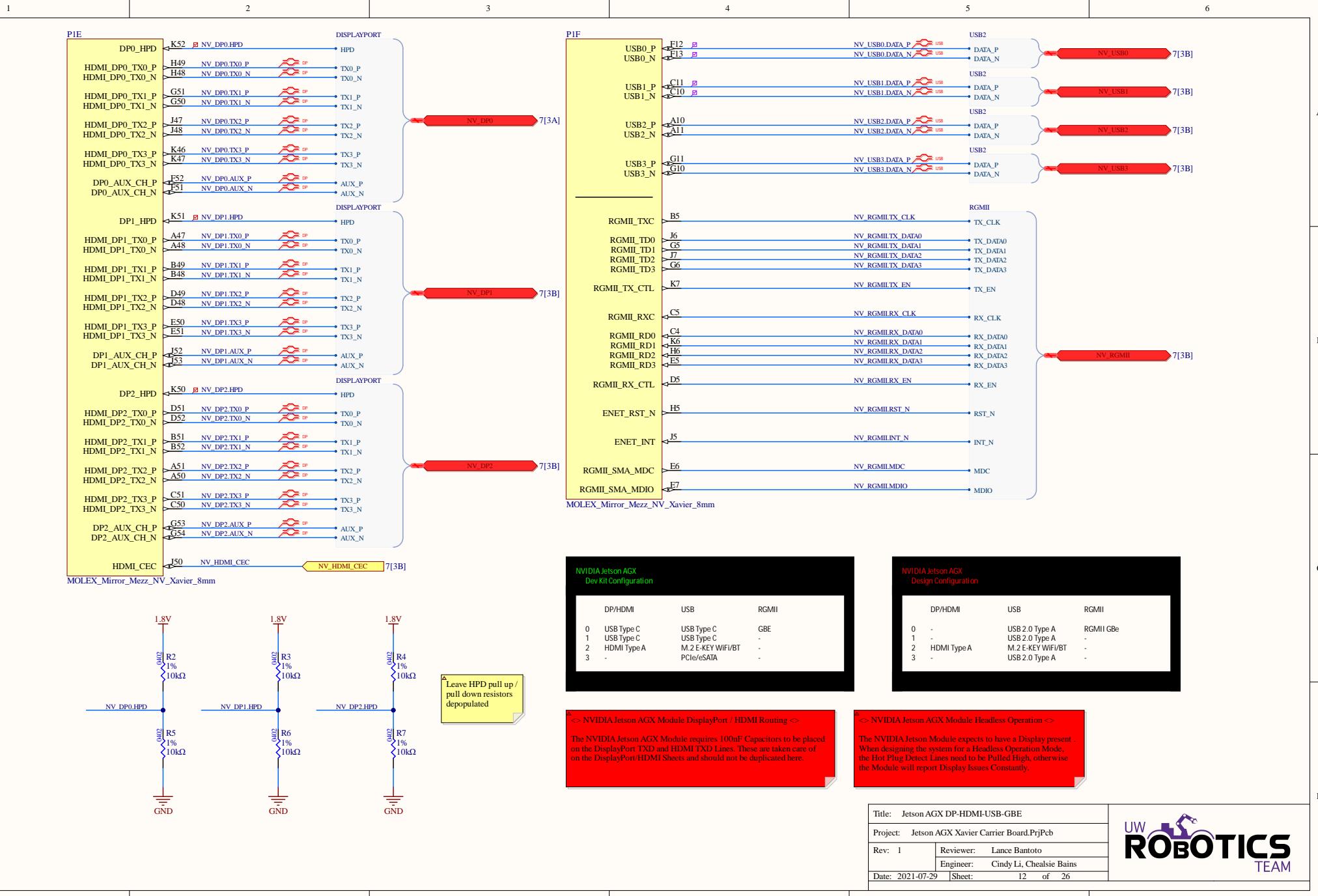
Rev: 1 Reviewer: Lance Bantoto

Engineer: Cindy Li, Chealsie Bains

Date: 2021-07-29 Sheet: 11 of 26



1 2 3 4 5 6



A

A

B

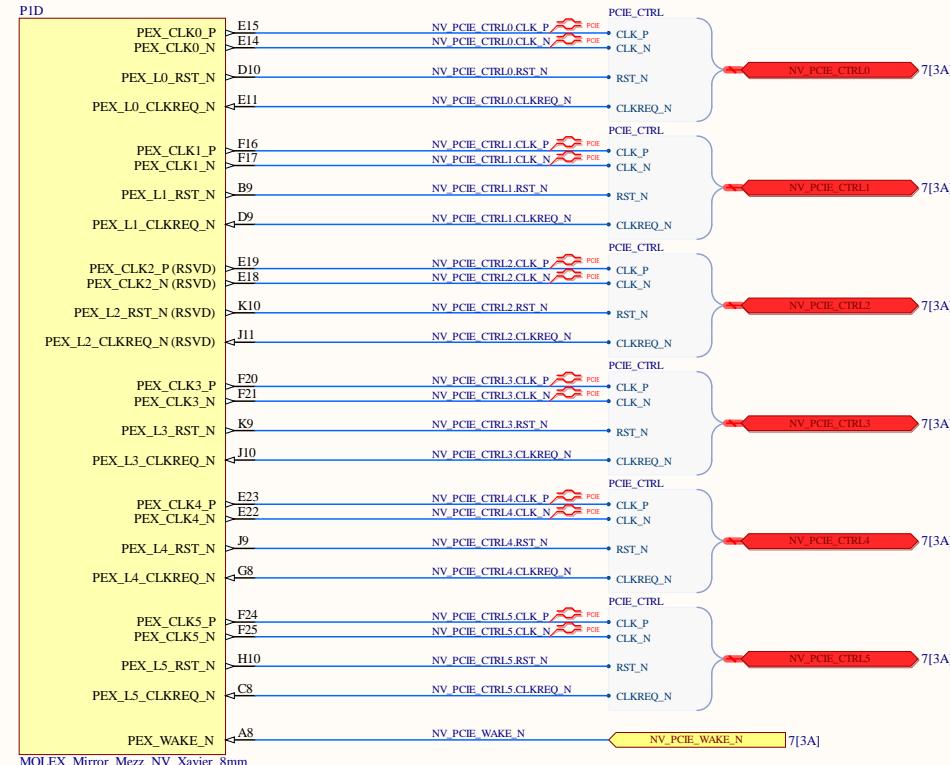
B

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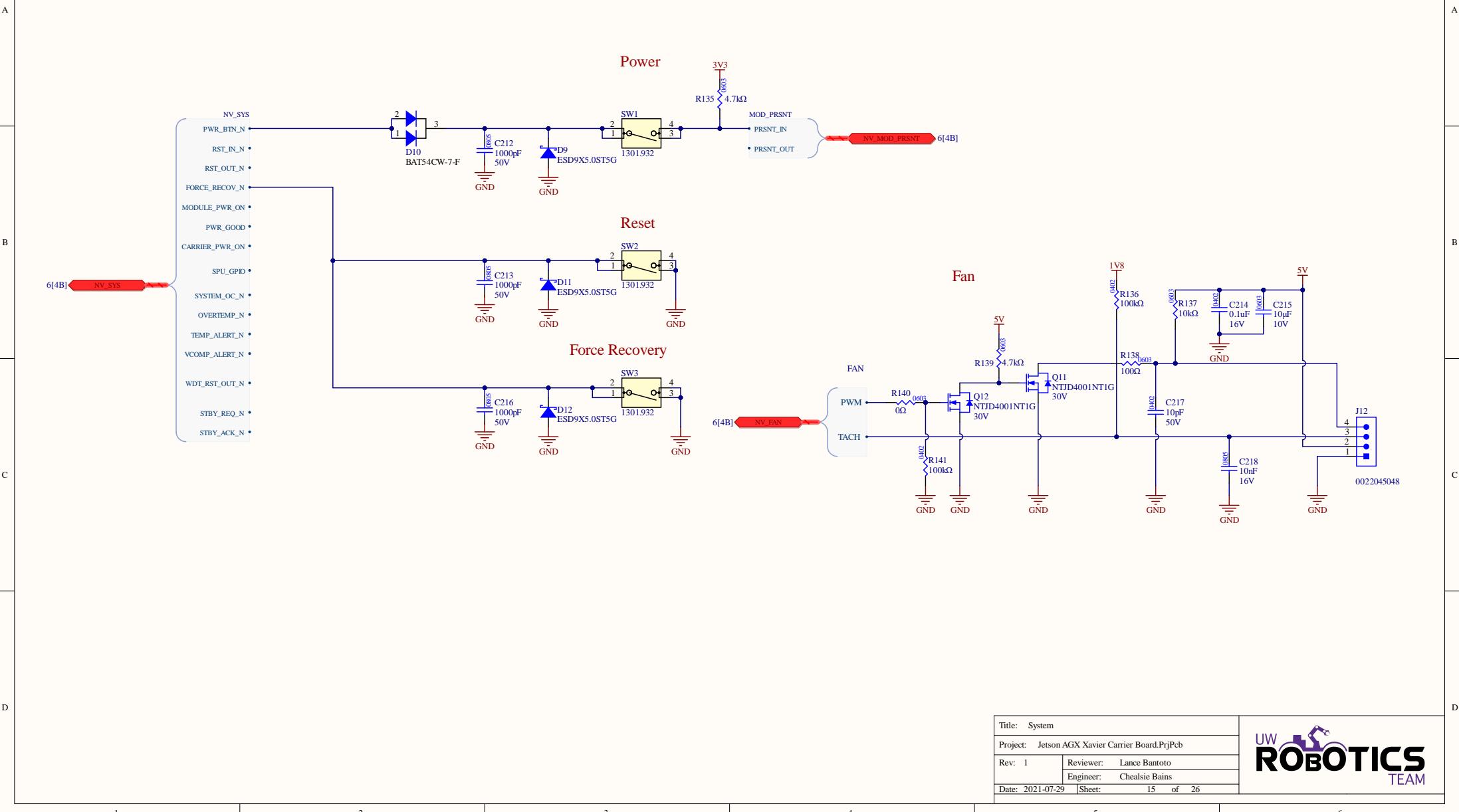
D



Title: Jetson AGX PCIe	
Project: Jetson AGX Xavier Carrier Board.PnjPcb	
Rev: 1	Reviewer: Lance Bantoto
Engineer: Cindy Li, Chealsie Bains	Date: 2021-07-29 Sheet: 13 of 26







Title: System	
Project: Jetson AGX Xavier Carrier Board.PnjPcb	
Rev: 1	Reviewer: Lance Bantoto
Engineer: Chealsie Bains	Date: 2021-07-29 Sheet: 15 of 26

A

A

B

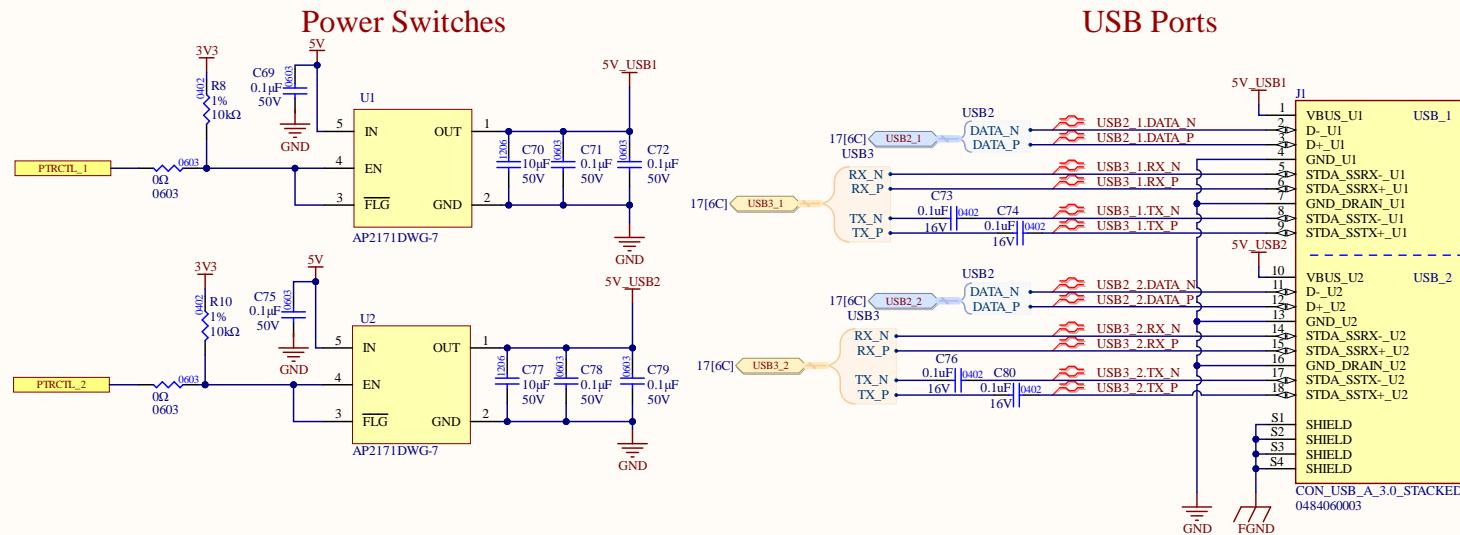
B

C

C

D

D



Title: USB Port	
Project: Jetson AGX Xavier Carrier Board.PnjPcb	
Rev: 1	Reviewer: Lance Bantoto
Engineer: Cindy Li	
Date: 2021-07-29	Sheet: 16 of 26



1

2

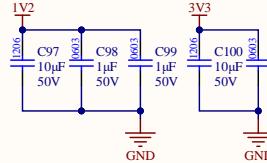
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4

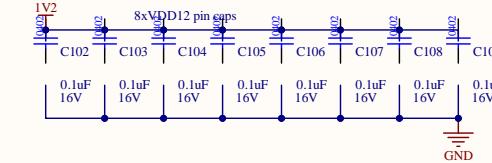
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6

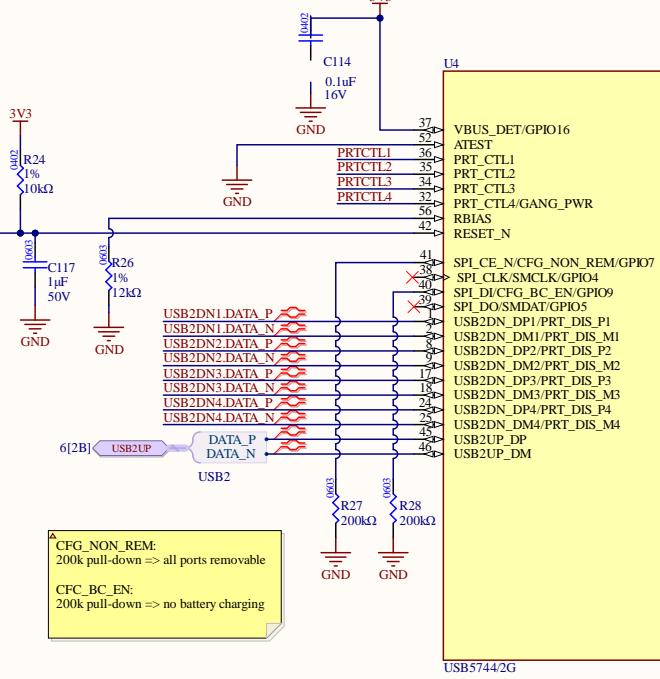
Bulk Capacitors



Decoupling Capacitors

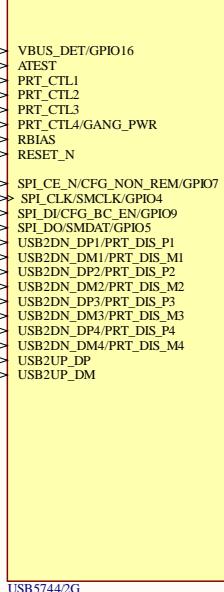
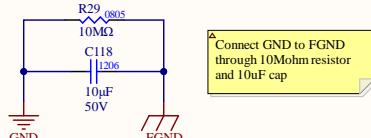


USB Controller



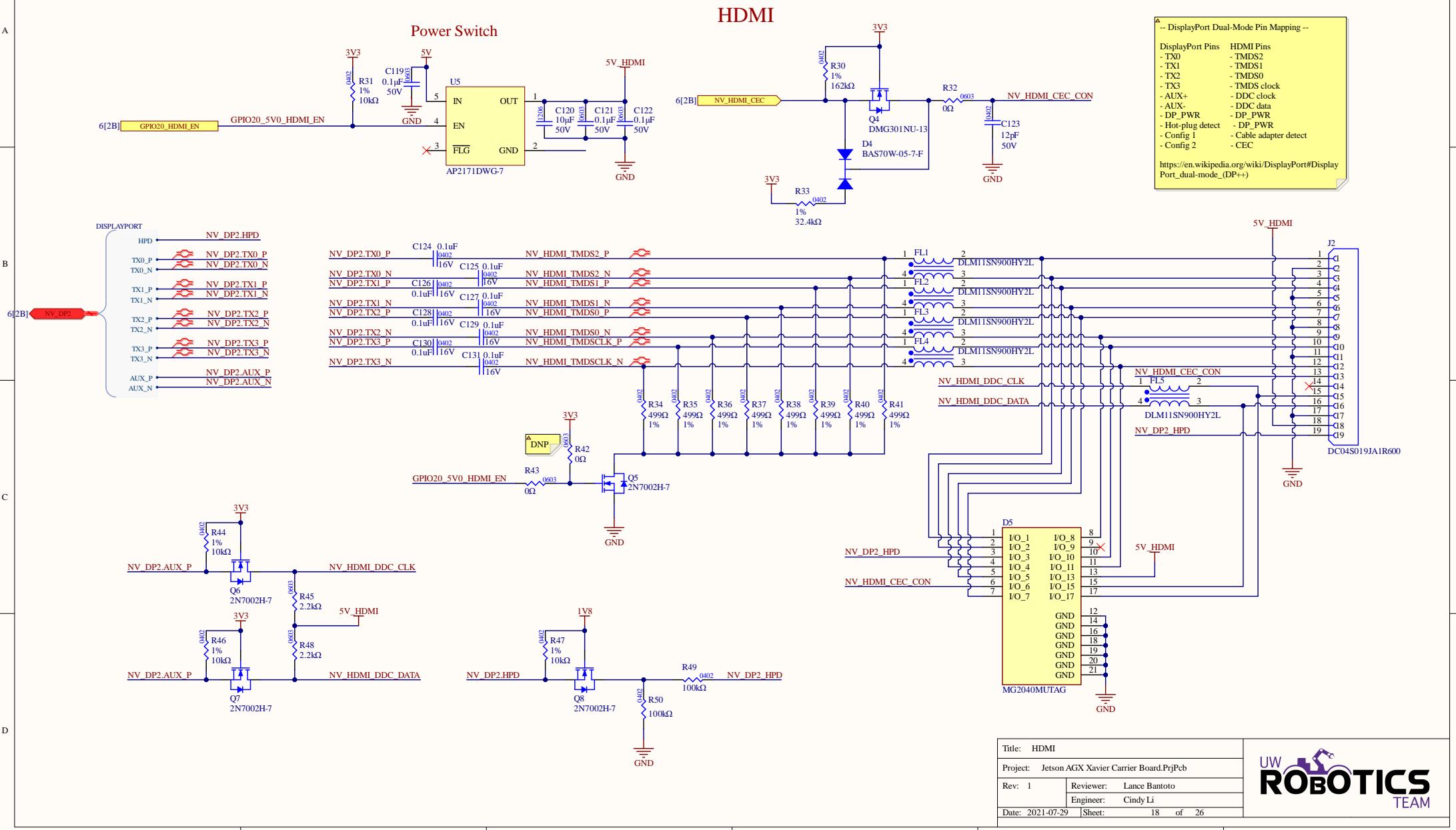
U5744/2G

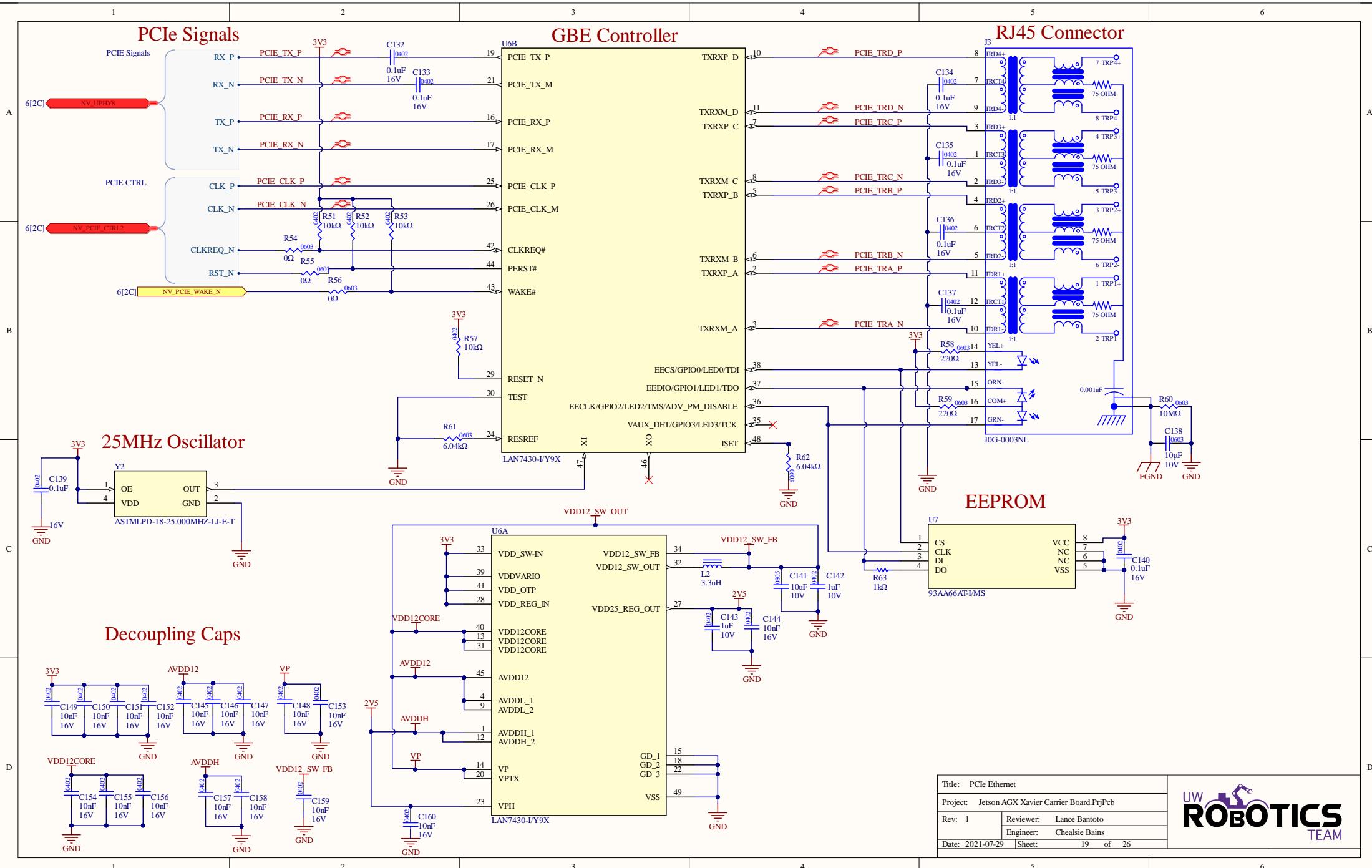
VSS



Title: USB	
Project: Jetson AGX Xavier Carrier Board.PjPcb	
Rev: 1	Reviewer: Lance Bantoto
Engineer: Cindy Li	
Date: 2021-07-29	Sheet: 17 of 26

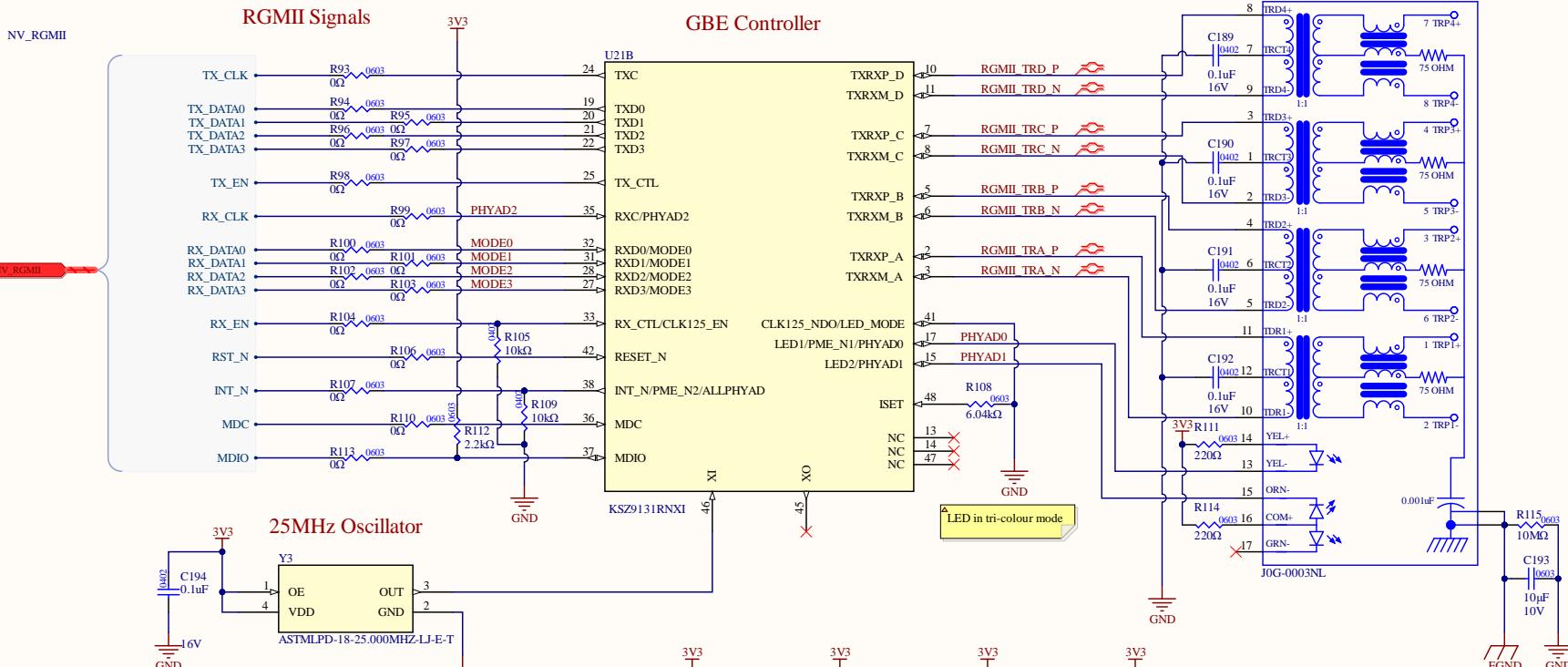






Title: PCIe Ethernet	
Project: Jetson AGX Xavier Carrier Board.PjPcb	
Rev: 1	Reviewer: Lance Bantoto
Engineer: Chealsie Bains	Date: 2021-07-29

RJ45 Ethernet Connector



Title: RGMII Ethernet

Project: Jetson AGX Xavier Carrier Board.PjPcb

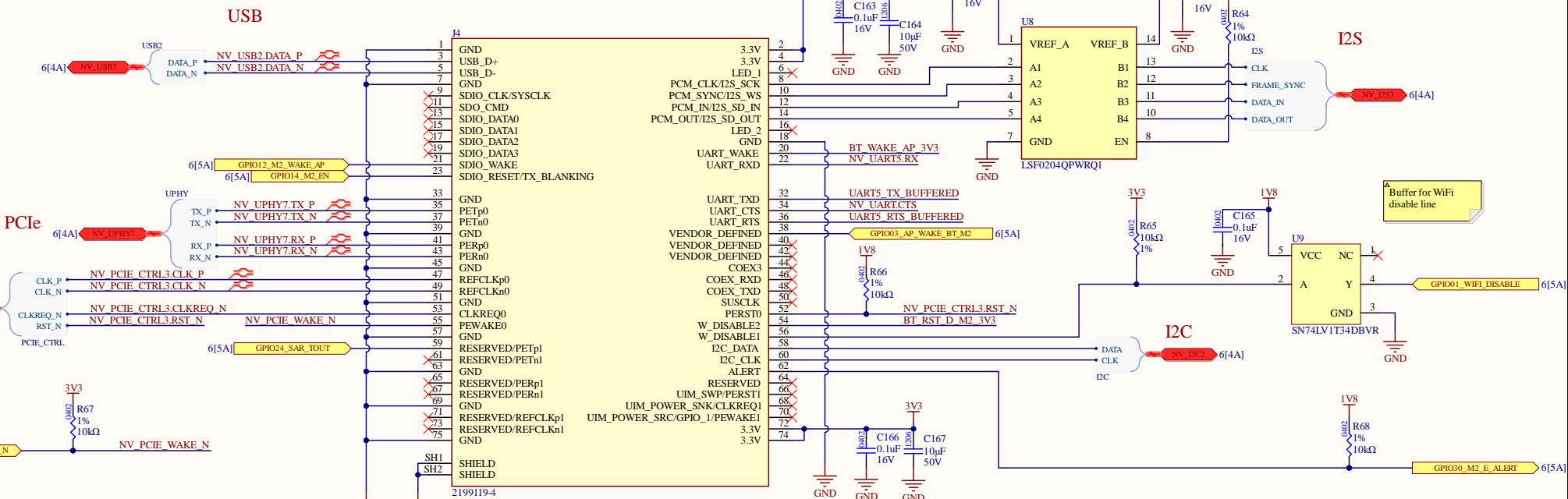
Rev: 1 Reviewer: Lance Bantoto

Engineer: Chealsie Bains

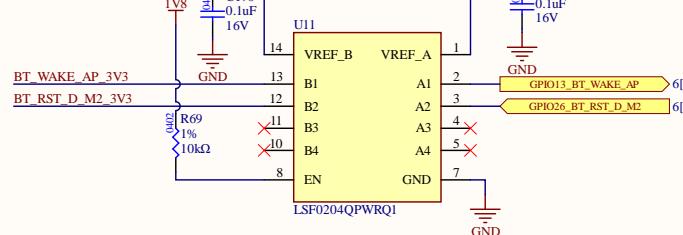
Date: 2021-07-29 Sheet: 20 of 26

1.8V - 3.3V Level Shifter

M.2 E-Key Wifi/Bluetooth Connector



1.8V - 3.3V Level Shifter



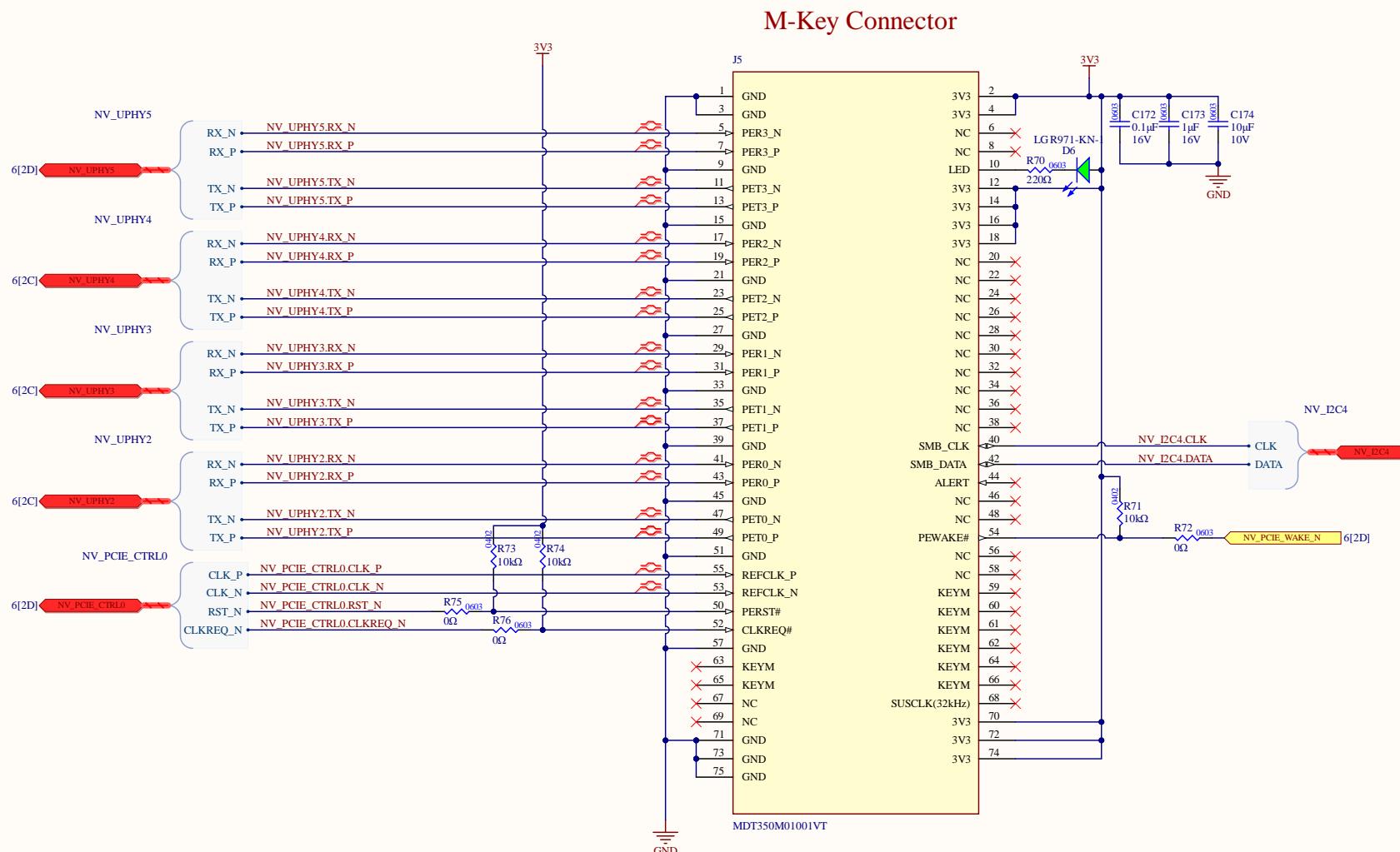
Title: M.2 E-Key

Project: Jetson AGX Xavier Carrier Board.PjPcb

Rev: 1 Reviewer: Lance Bantoto

Engineer: Cindy Li

Date: 2021-07-29 Sheet: 21 of 26



Title: M.2 M-Key	
Project: Jetson AGX Xavier Carrier Board.PnjPcb	
Rev: 1	Reviewer: Lance Bantoto
Engineer: Chealsie Bains	Date: 2021-07-29 Sheet: 22 of 26

A

A

B

B

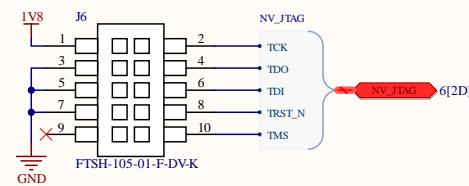
C

C

D

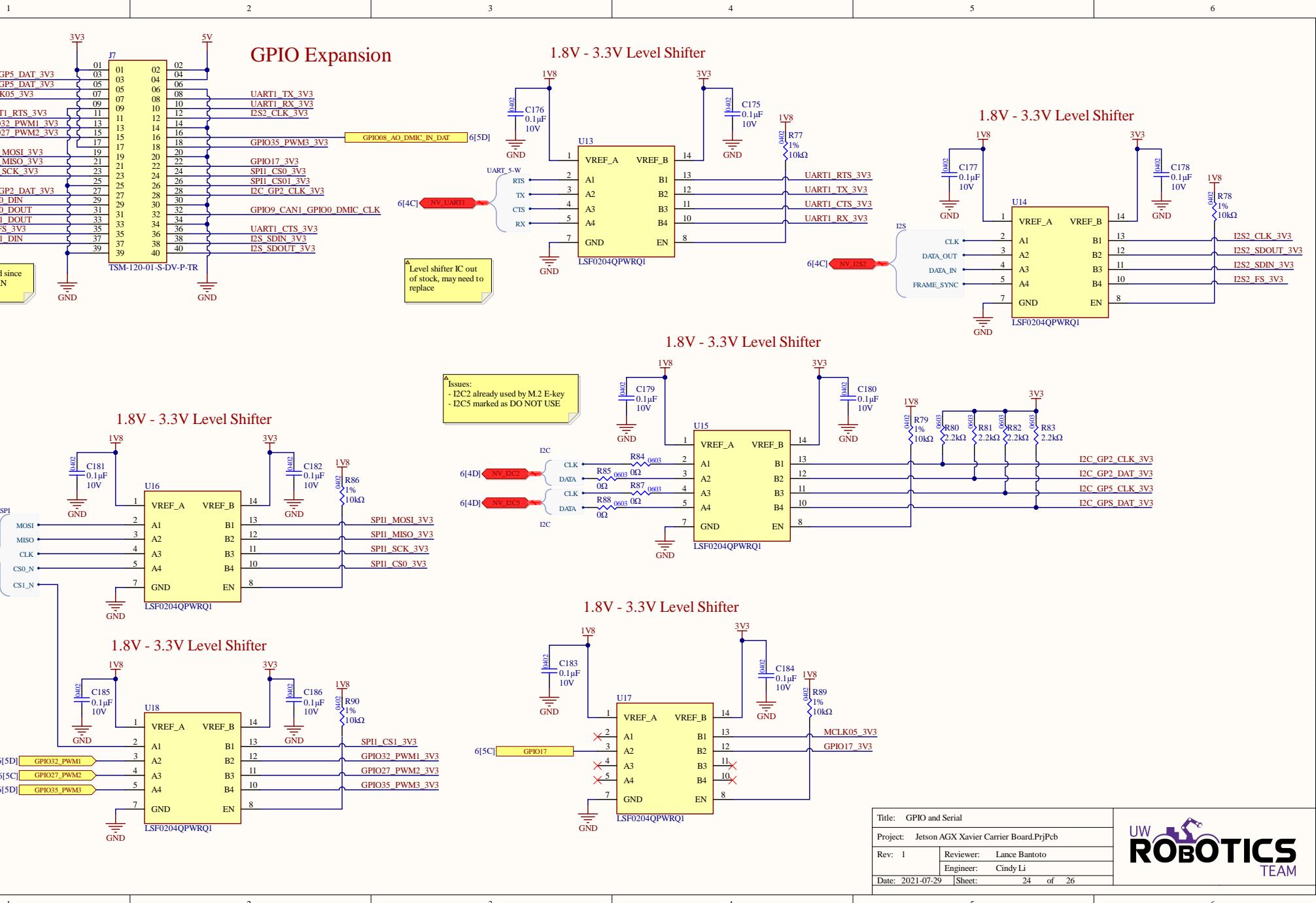
D

JTAG

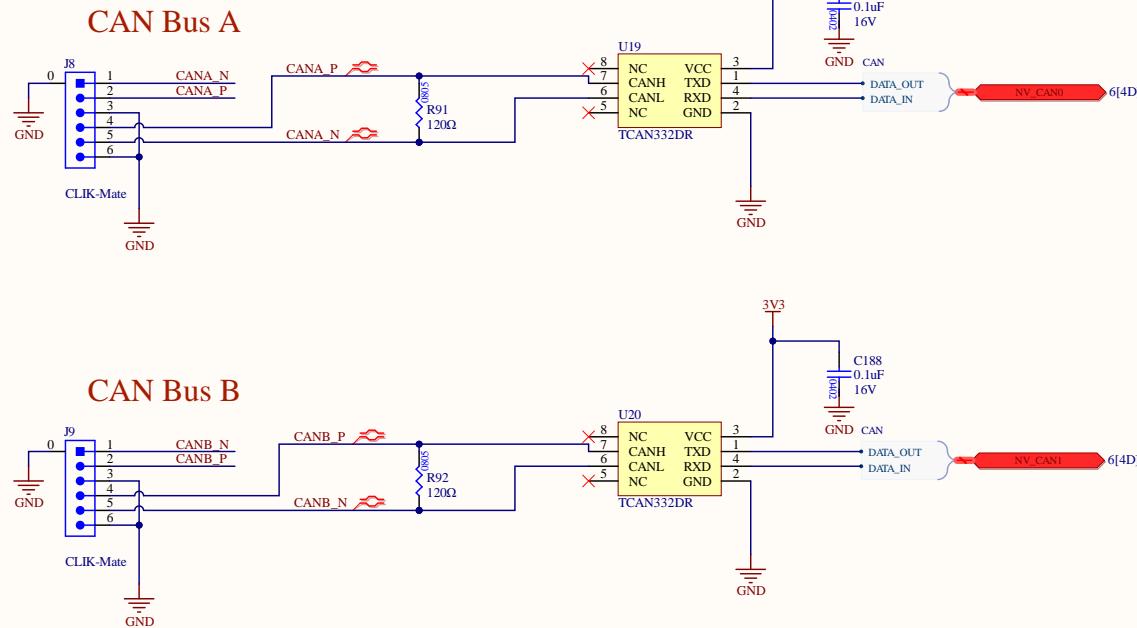


Title: JTAG	
Project: Jetson AGX Xavier Carrier Board.PjPcb	
Rev: 1	Reviewer: Lance Bantoto
	Engineer: Cindy Li
Date: 2021-07-29	Sheet: 23 of 26





CAN Transceivers

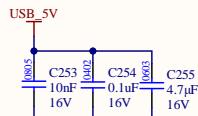


Title: CAN	
Project: Jetson AGX Xavier Carrier Board.PjPcb	
Rev: 1	Reviewer: Lance Bantoto
Engineer: Cindy Li	
Date: 2021-07-29	Sheet: 25 of 26



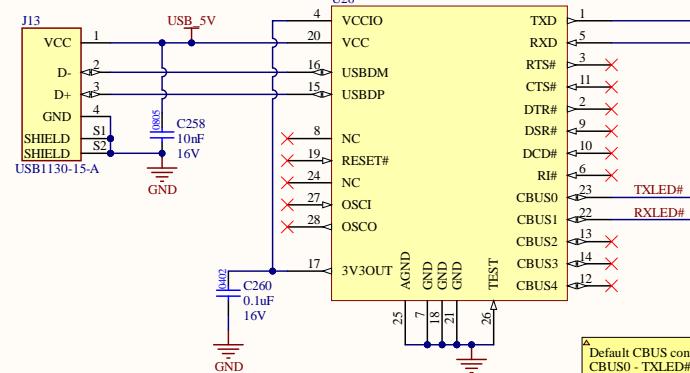
A

A



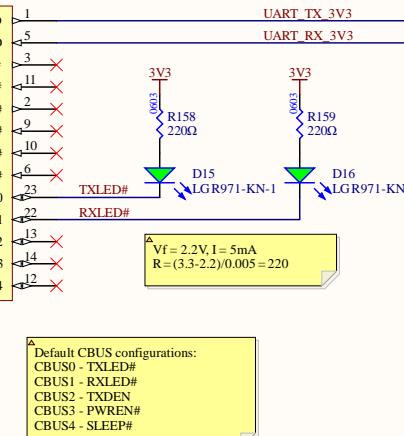
UART to USB

USB-A 2.0 Connector



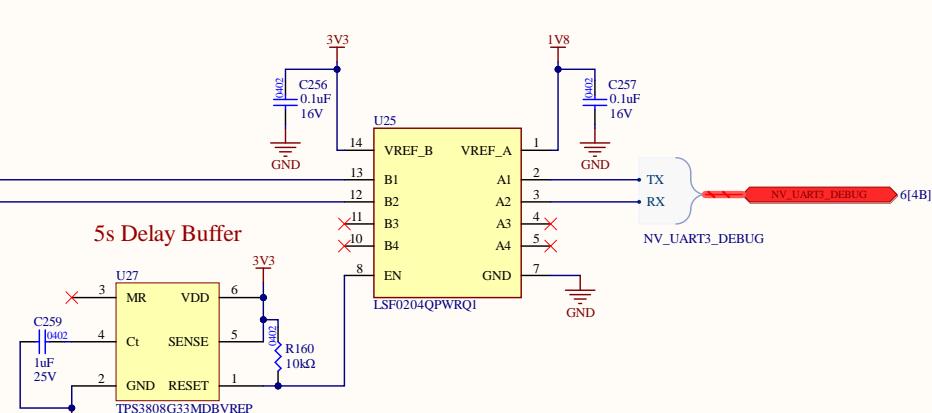
The power descriptors in the internal EEPROM of the FT232R should be programmed to match the current drawn by the device.

UART to USB



Default CBUS configurations:
CBUS0 - TXLED#
CBUS1 - RXLED#
CBUS2 - TXDEN
CBUS3 - PWREN#
CBUS4 - SLEEP#

1.8V - 3.3V Level Shifter



5s Delay Buffer

Vf = 2.2V, I = 5mA
R = (3.3-2.2)/0.005 = 220

For a 5s delay:
Ct = (5 - 0.5E-3) * 175n = 875nF
Can use 1000nF ie 1uF for a 5.7 s delay which is close enough

Title: Debug UART

Project: Jetson AGX Xavier Carrier Board.PjPcb

Rev: 1 Reviewer: Lance Bantoto

Engineer: Chealsie Bains

Date: 2021-07-29 Sheet: 26 of 26



Board Stack Report