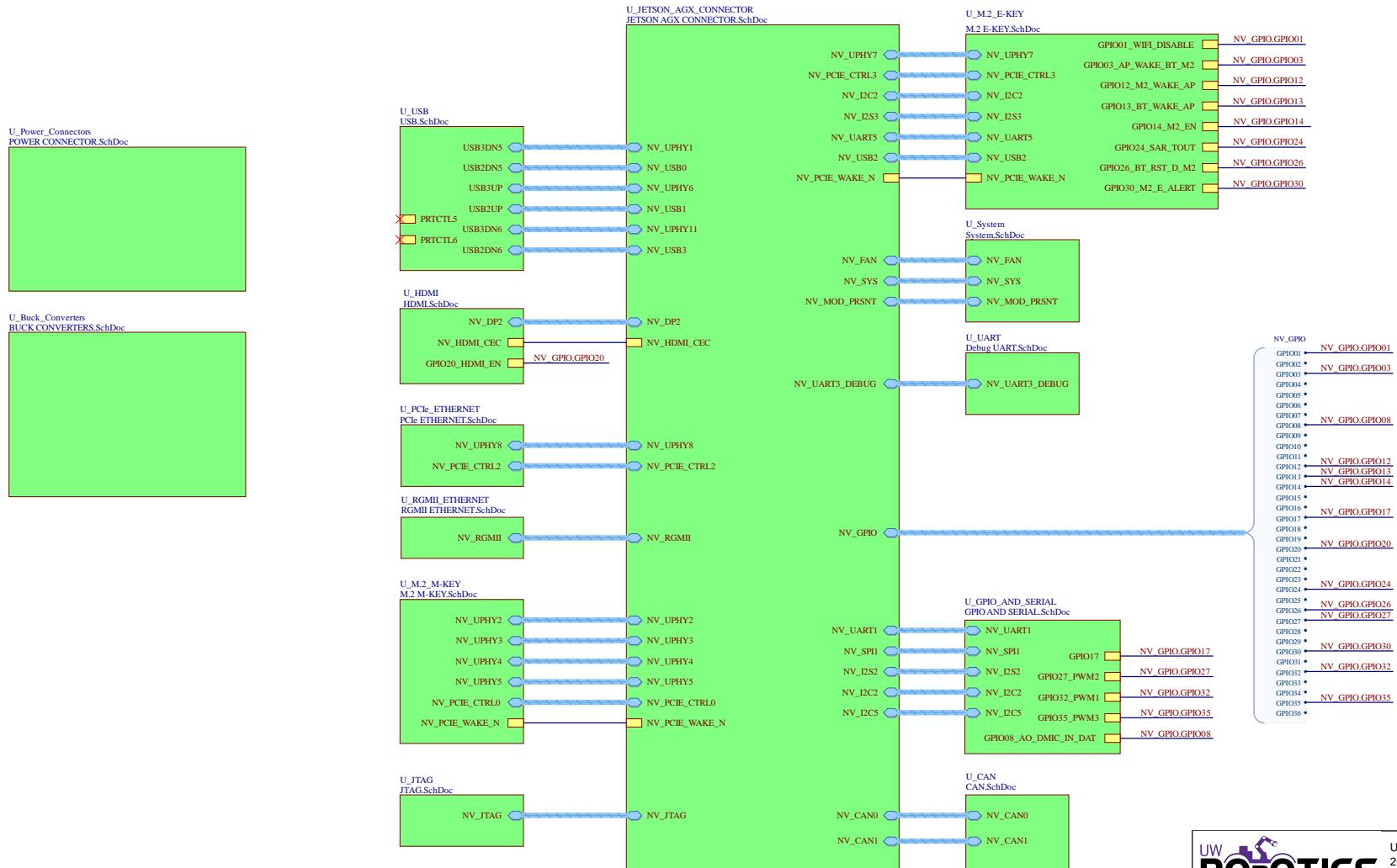


Block Diagram



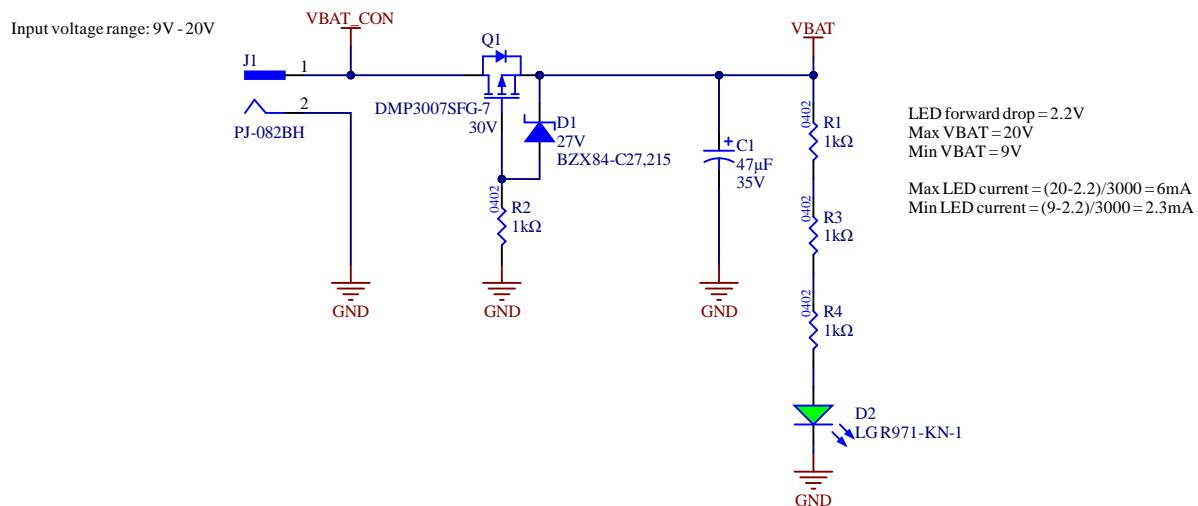
University of Waterloo Robotics Team
200 University Ave W
Waterloo, Ontario, Canada
N2L 3G1

REV 1

PROJECT	Jetson AGX Xavier Carrier Board.PrjPcb, [No Variations]	
DOCUMENT	BLOCK DIAGRAM.SchDoc	MODIFIED 8/2/2021
ENGINEER	Cindy Li, Chealsie Bains	REVIEWER Lance Bantito

Power Connector

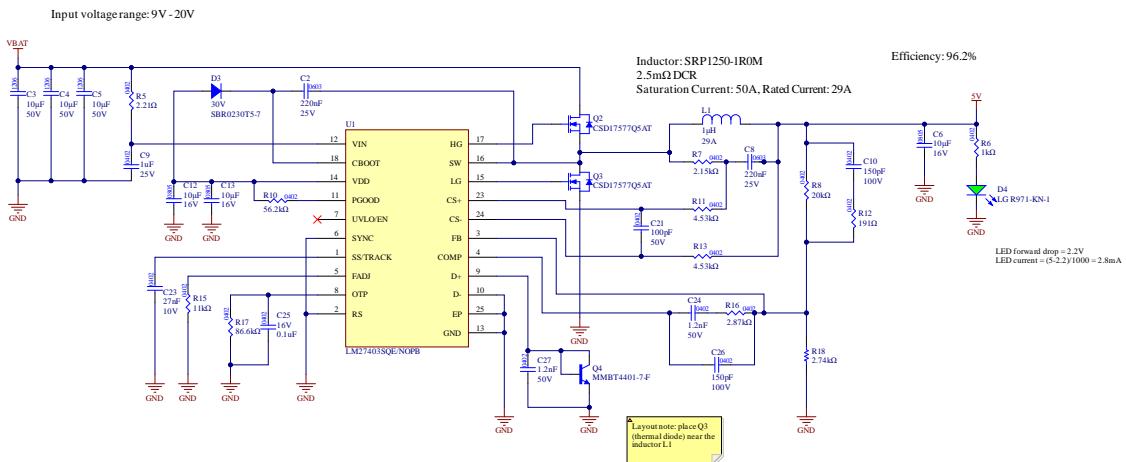
Power Jack Reverse Polarity Protection



ROBOTICS TEAM		University of Waterloo Robotics Team 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV 1
PROJECT <i>Jetson AGX Xavier Carrier Board.PrjPcb, [No Variations]</i>			
DOCUMENT <i>POWER CONNECTOR.SchDoc</i>		MODIFIED <i>8/3/2021</i>	
ENGINEER <i>Cindy Li</i>	REVIEWER <i>Lance Bantoto</i>	SHEET <i>2 OF 23</i>	

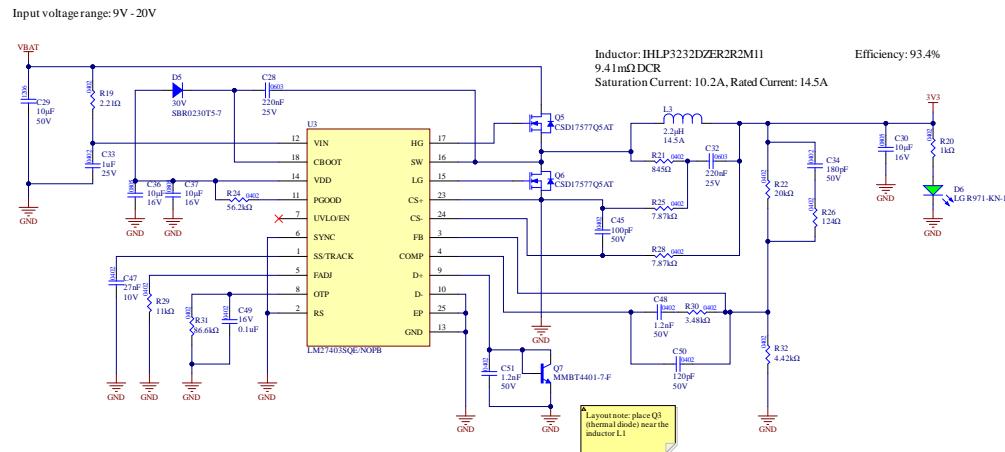
Buck Converters

5V Buck Converter @ 16A



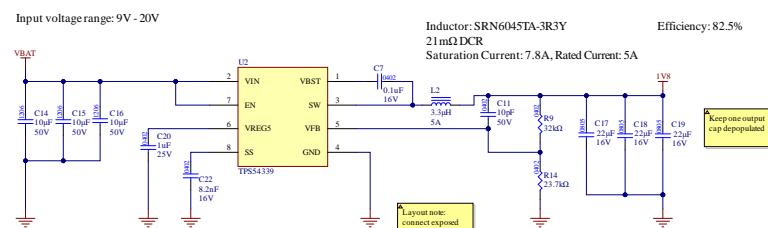
Webench reference design: <https://webench.ti.com/appinfo/webbench/scripts/SDP.cgi?ID=E23207869DSF0DD4>

3.3V Buck Converter @ 6A



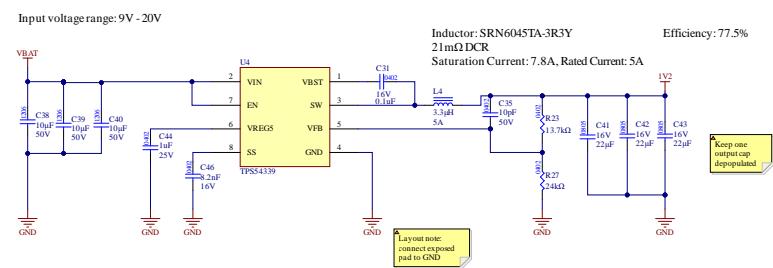
Webench reference design: <https://webench.ti.com/appinfo/webbench/scripts/SDP.cgi?ID=97FD766931642B43>

1.8V Buck Converter @ 2A



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

1.2V Buck Converter @ 2A



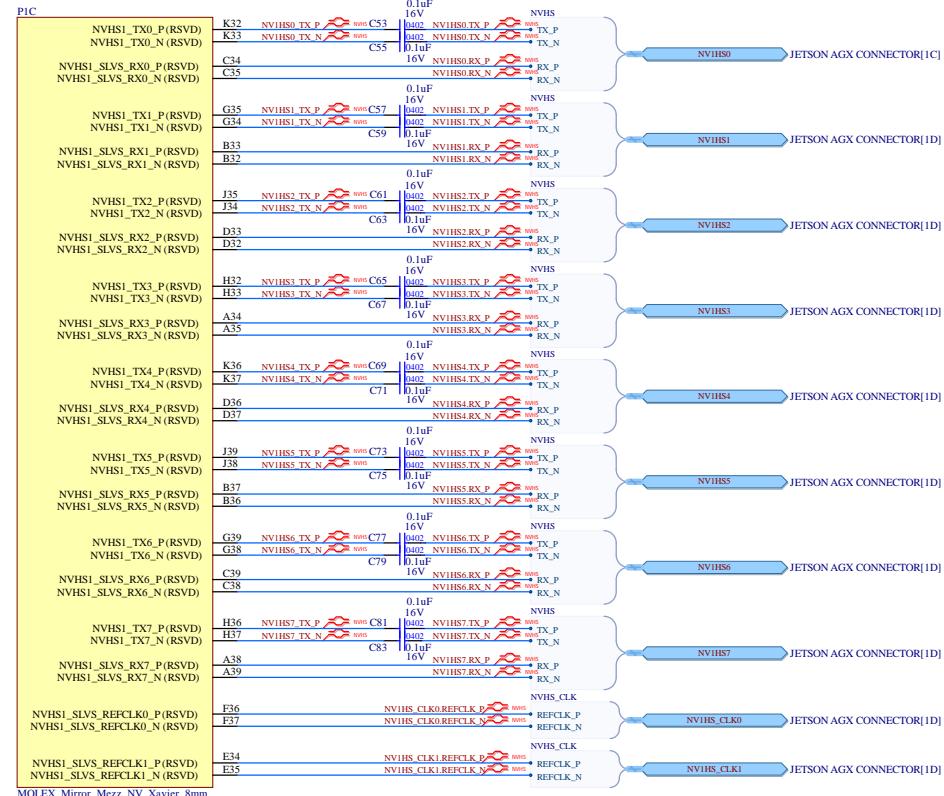
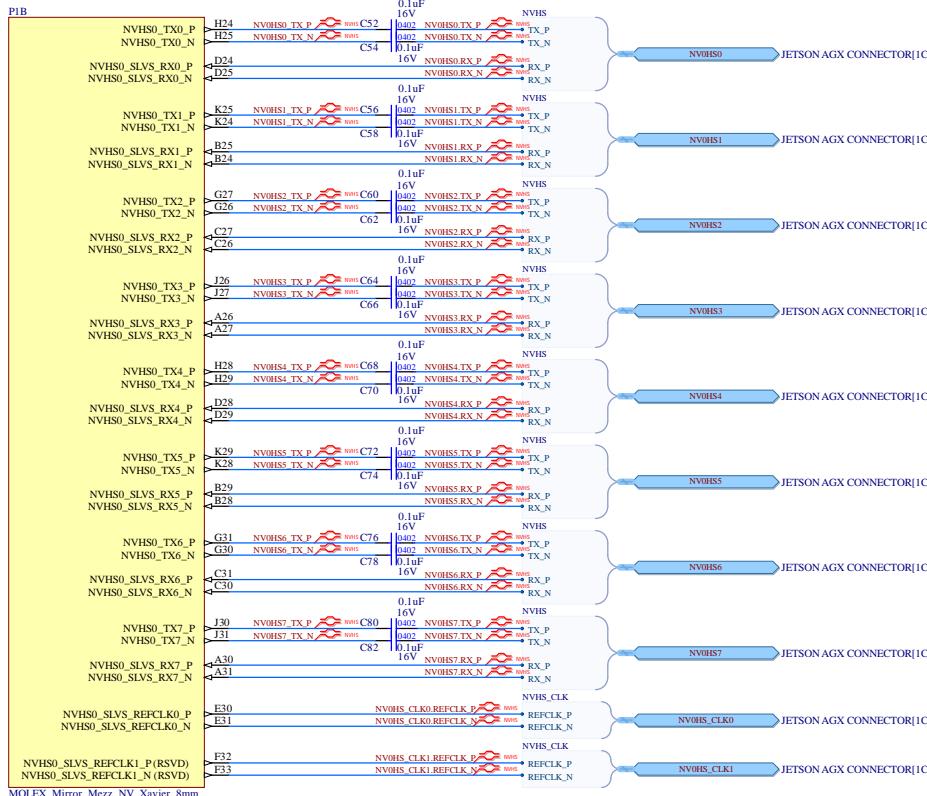
Webench reference design: <https://webench.ti.com/appinfo/webbench/scripts/SDP.cgi?ID=348A2FAA81A09D71>

Jetson AGX Connector

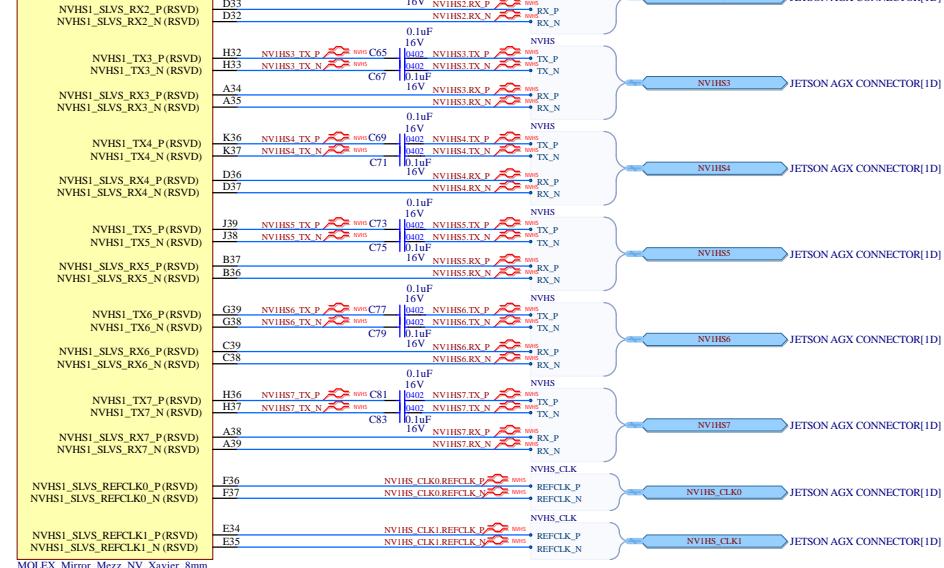


Jetson AGX -NVHS

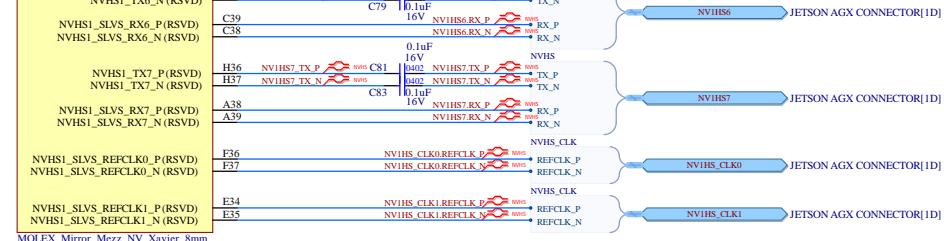
A



B



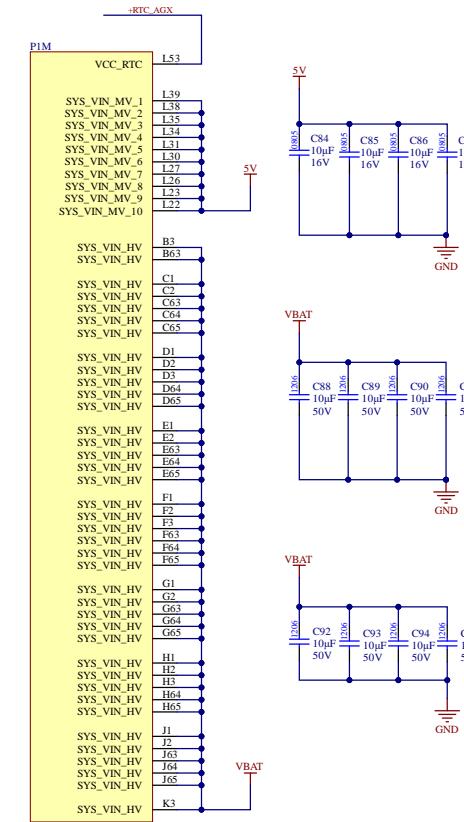
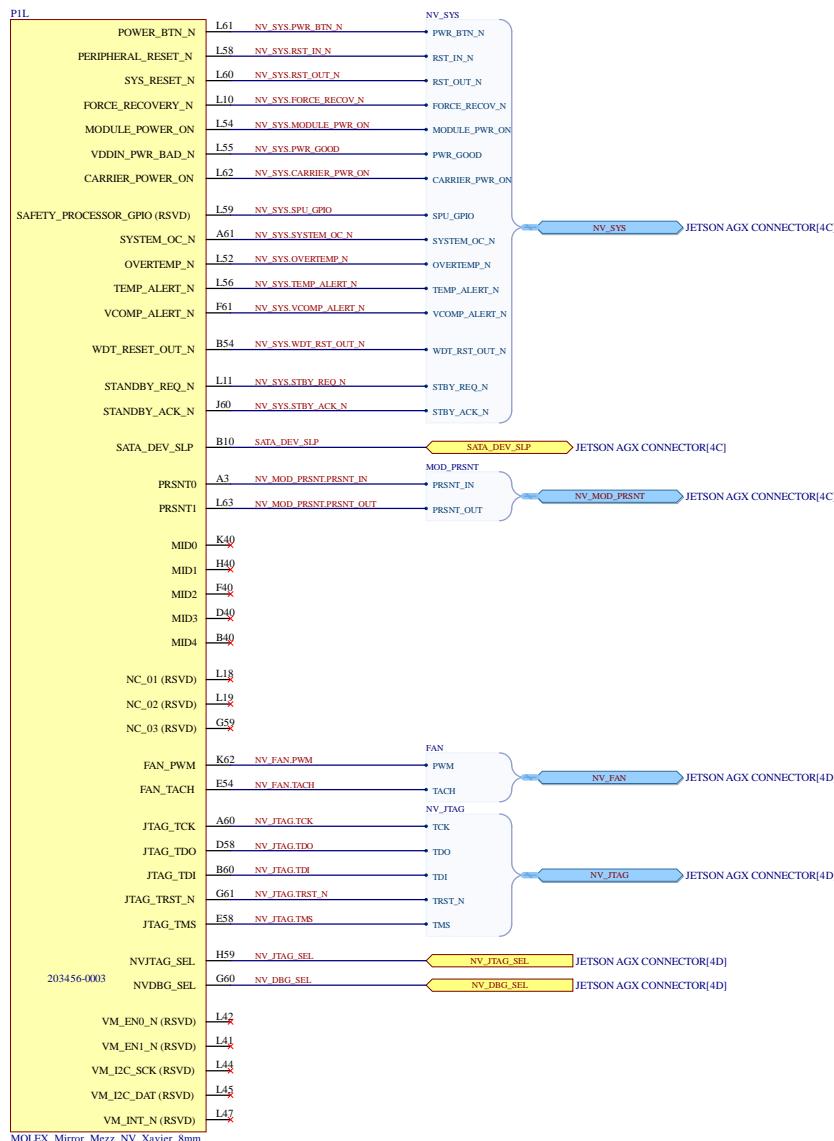
C



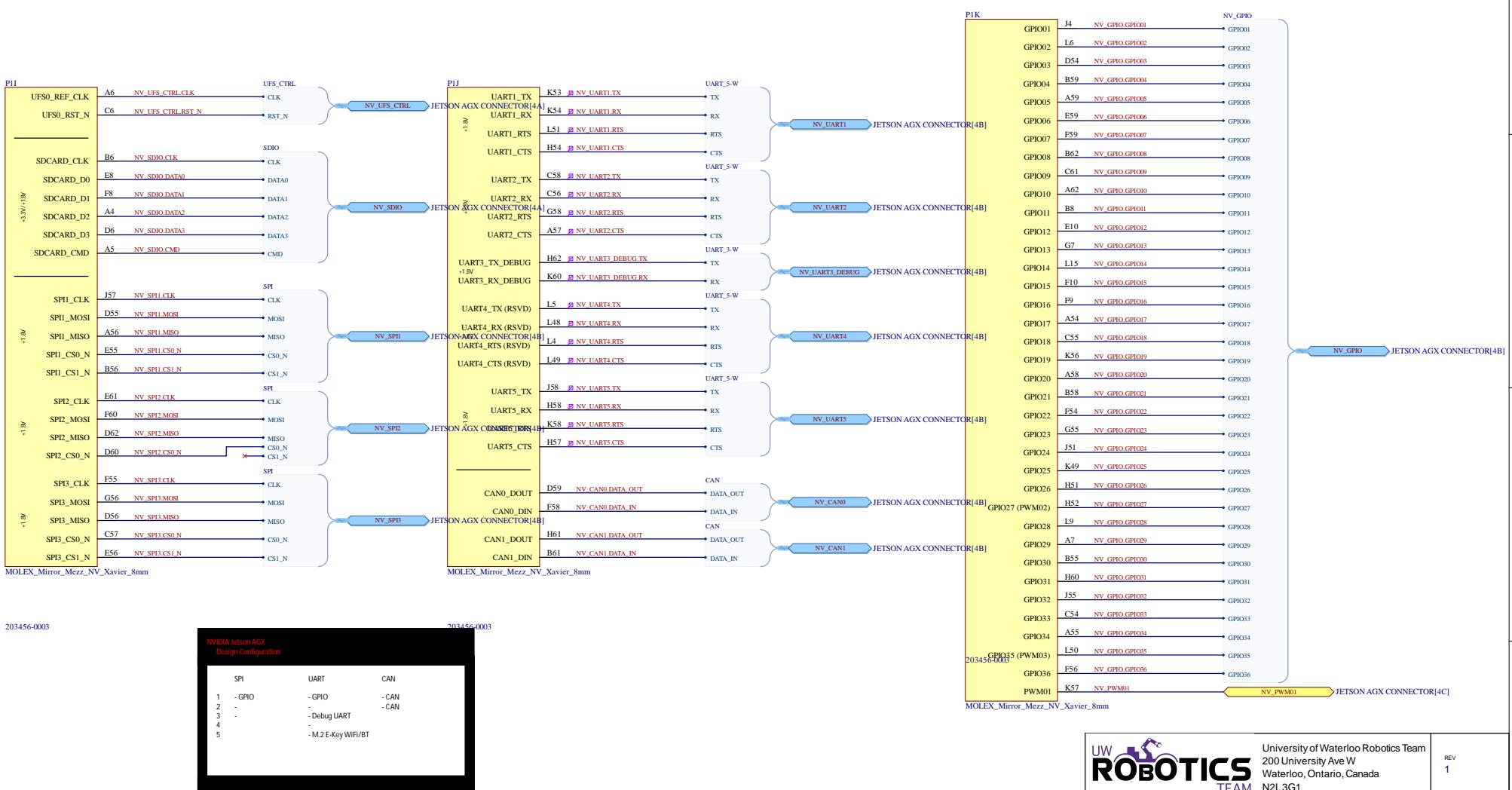
D

UW ROBOTICS TEAM	University of Waterloo Robotics Team 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV 1
PROJECT ,[No Variations]		
DOCUMENT JETSON AGX NVHS SchDoc		
ENGINEER	REVIEWER Lance Bantito	SHEET 5 OF 23

Jetson AGX SYS-PWR-GND

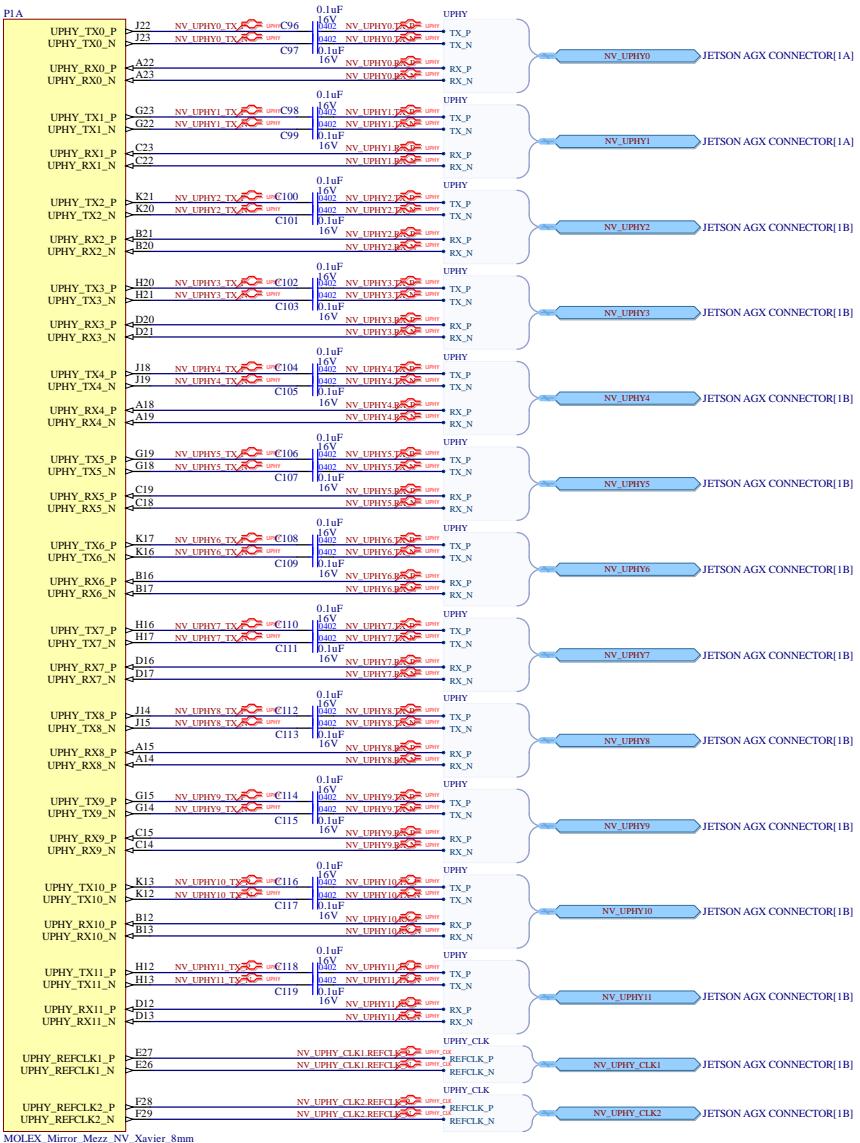


Jetson AGX SDIO-SPI-UART-CAN-GPIO



UW ROBOTICS TEAM	University of Waterloo Robotics Team 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV 1
PROJECT	Jetson AGX Xavier Carrier Board.PrtPcb, [No Variations]	
DOCUMENT	JETSON AGX SDIO-SPI-UART-CAN-GPIO.SchDoc	MODIFIED 8/3/2021
ENGINEER	Cindy Li, Chelsie Bains	REVIEWER Lance Bantito
		SHEET 7 OF 23

Jetson AGX - UPHY

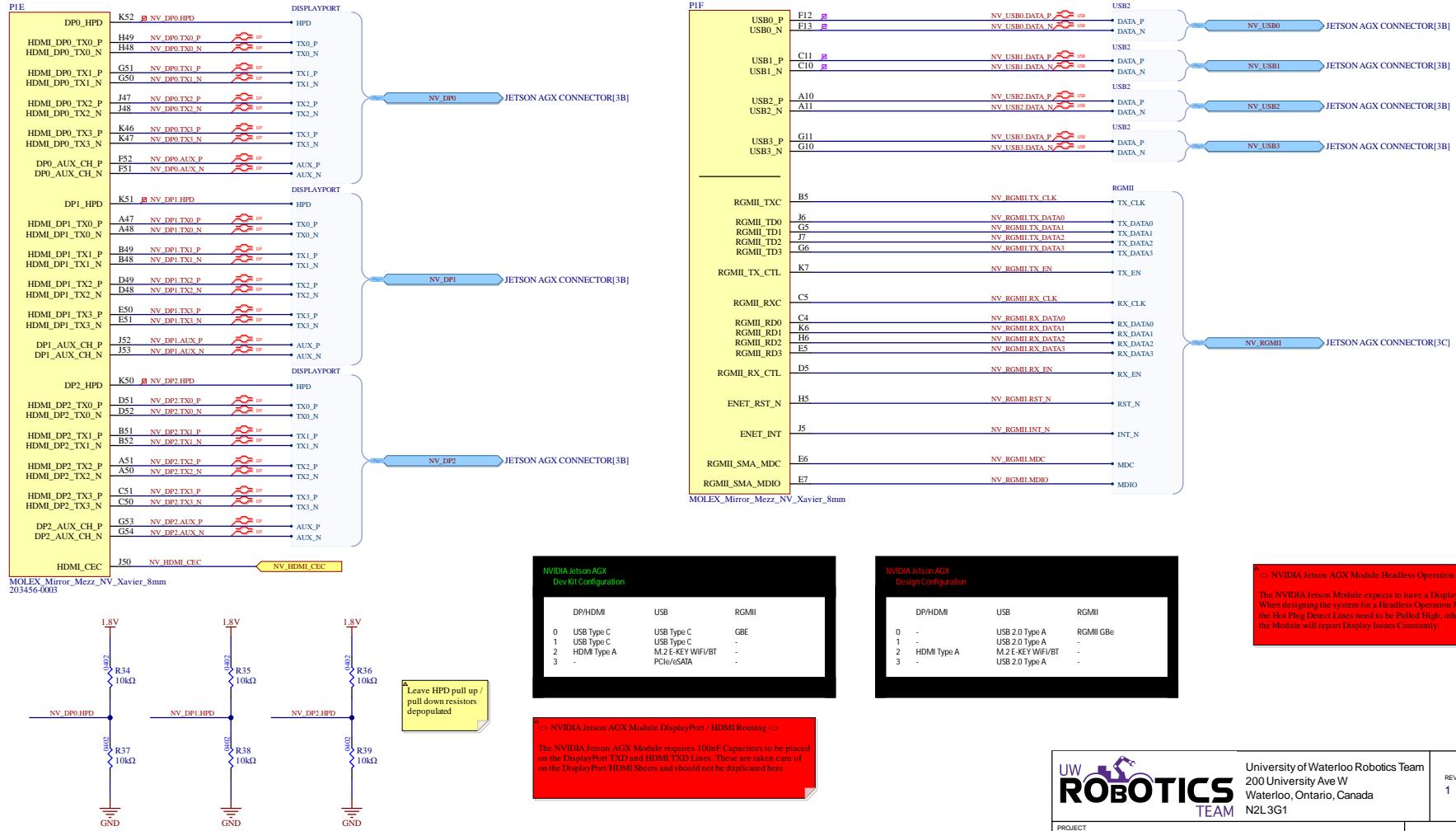


NVIDIA Jetson AGX Dev Kit Configuration			
UPHY	NVHS0	NVHS1	PCIE_CTRL
0	PCIe x4/0x40	Pcie x16	-
1	USB Type C	Pcie x16	-
2	M.2 M-Key NVMe	Pcie x16	-
3	M.2 M-Key NVMe	Pcie x16	M.2 E-Key WiFi/BT
4	M.2 M-Key NVMe	Pcie x16	-
5	M.2 M-Key NVMe	Pcie x16	-
6	USB Type C	Pcie x16	Pcie x16
7	M.2 E-Key WiFi/BT	Pcie x16	-
8	-	-	-
9	-	-	-
10	UFS/MicroSD	-	-
11	PCIe x4/SATA	-	-

NVIDIA Jetson AGX Design Configuration			
UPHY	NVHS0	NVHS1	PCIE_CTRL
0	USB 3.0 Type A	-	-
1	M.2 M-Key Lane 0	-	-
2	M.2 M-Key Lane 1	-	PCIE Gigabit Ethernet
3	M.2 M-Key Lane 2	-	M.2 E-Key WiFi/BT
4	M.2 M-Key Lane 3	-	-
5	USB 3.0 Type A	-	-
6	M.2 E-Key WiFi/BT	-	-
7	PCI-E Gigabit Ethernet	-	-
8	-	-	-
9	-	-	-
10	-	-	-
11	USB 3.0 Type A	-	-

UW ROBOTICS TEAM	University of Waterloo Robotics Team 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV 1
	PROJECT Jetson AGX Xavier Carrier Board.PnJpcb,[No Variations]	
DOCUMENT JETSON AGX UPHY.SchDoc		MODIFIED 8/3/2021
ENGINEER Cindy Li, Chealsie Bains	REVIEWER Lance Bantoto	
SHEET 9 OF 23		

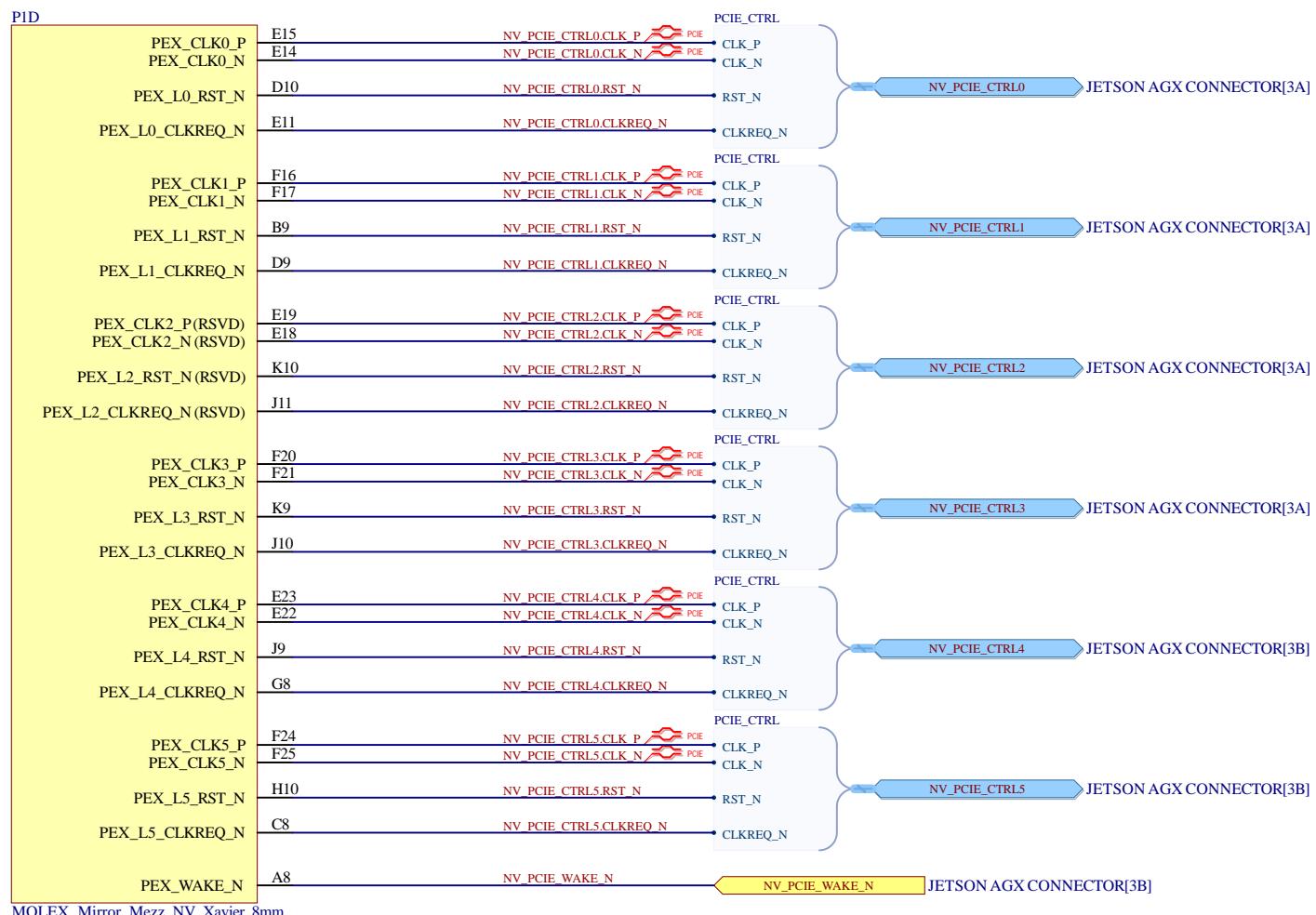
Jetson AGX DP-HDMI-USB-GBE



UW ROBOTICS TEAM	University of Waterloo Robotics Team 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV 1
	PROJECT Jetson AGX Xavier Carrier Board.PnjPcb, [No Variations]	
DOCUMENT JETSON AGX DP-HDMI-USB-GBE.SchDoc	MODIFIED 8/3/2021	
ENGINEER Cindy Li, Chelsie Bains	REVIEWER Lance Bantito	SHEET 10 OF 23

Jetson AGX PCIe

A



B

A

B

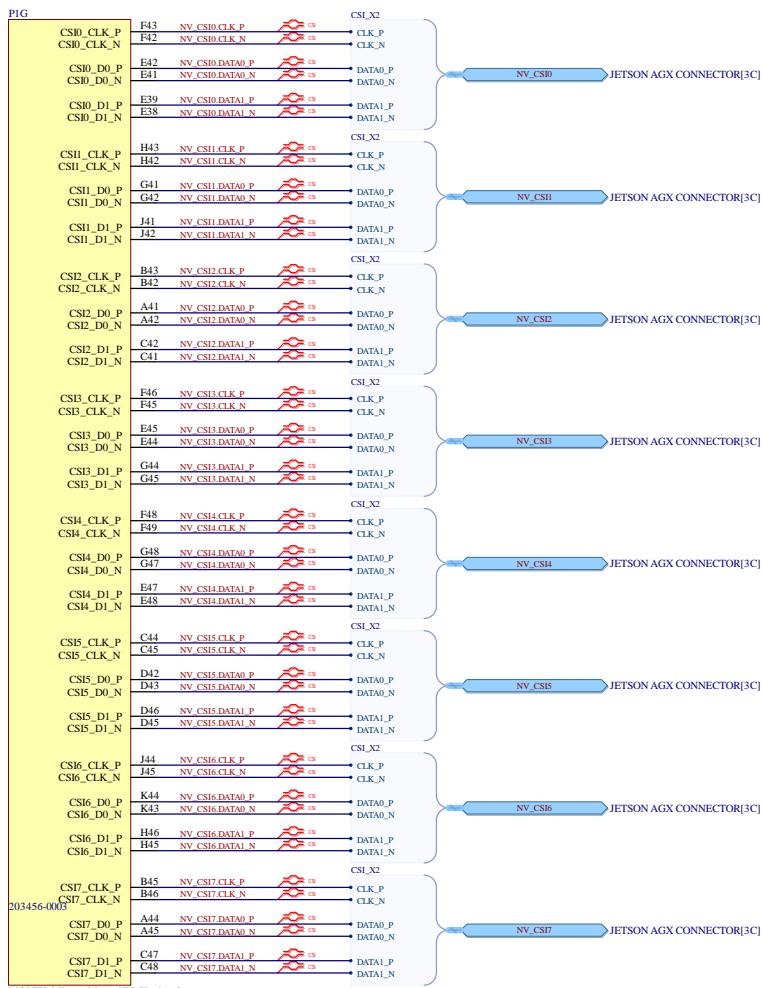
C

C

203456-0003

	University of Waterloo Robotics Team 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV 1
PROJECT Jetson AGX Xavier Carrier Board.PnjPcb, [No Variations]		
DOCUMENT JETSON AGX PCIe.SchDoc		MODIFIED 8/3/2021
ENGINEER Cindy Li, Chealsis Bains	REVIEWER Lance Bantoto	SHEET 11 OF 23

Jetson AGX CSI-I2C-I2S



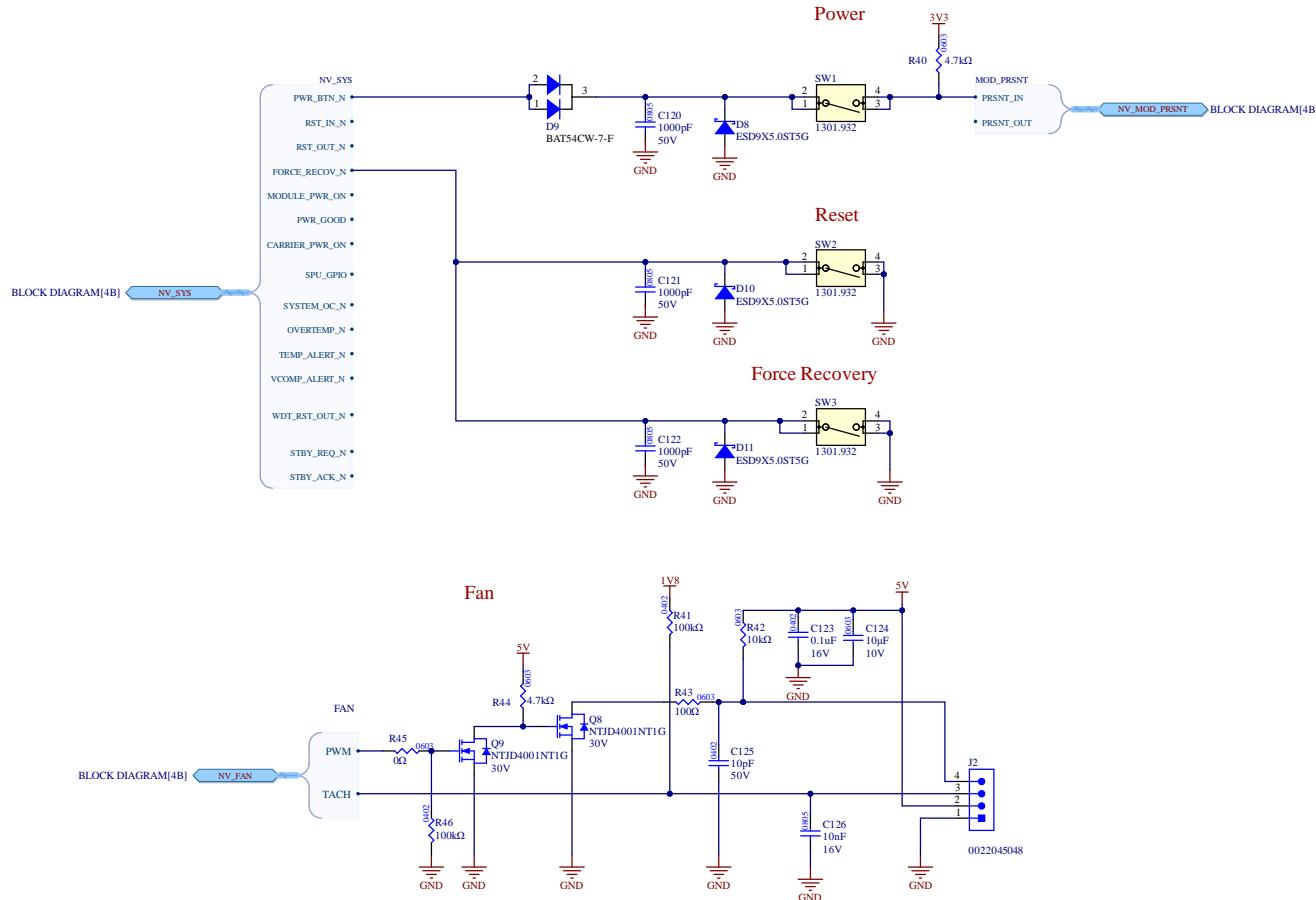
+1.8V +1.8V +1.8V +1.8V +1.8V +1.8V
+3.3V

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

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

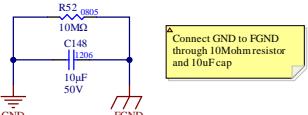
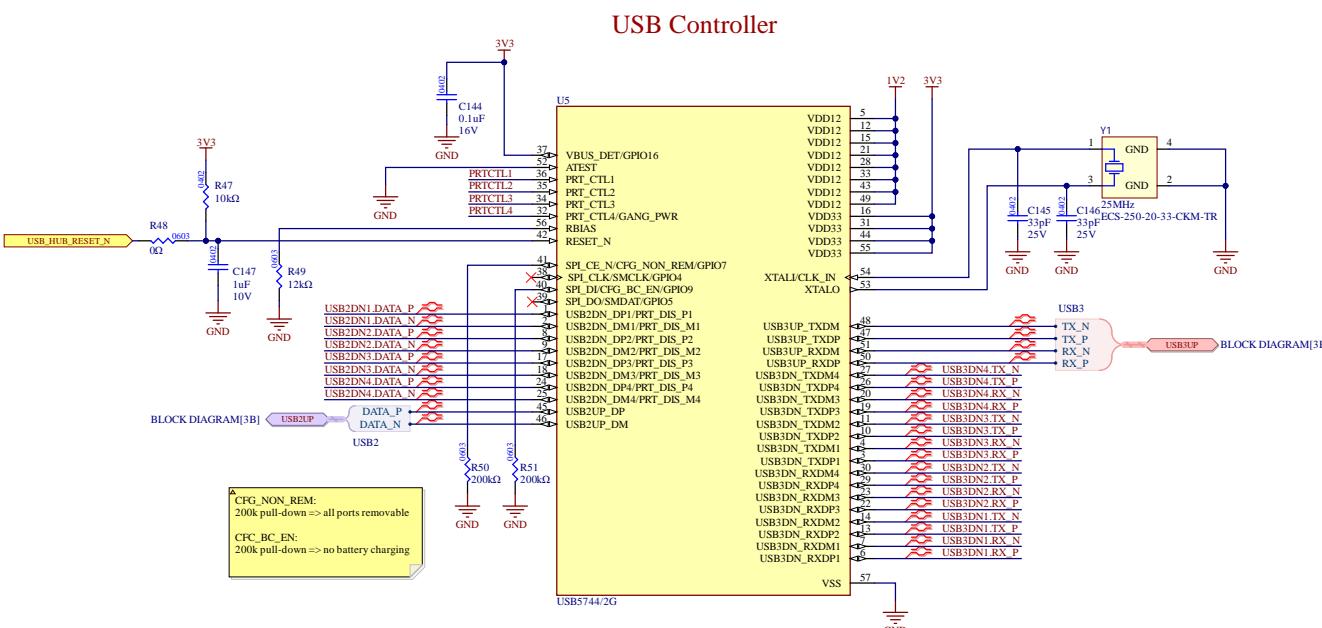
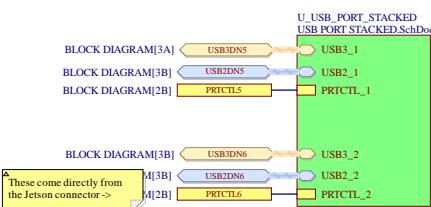
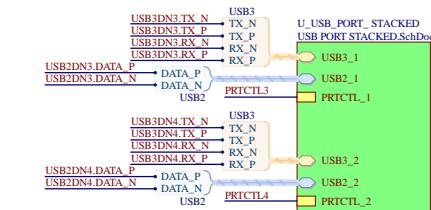
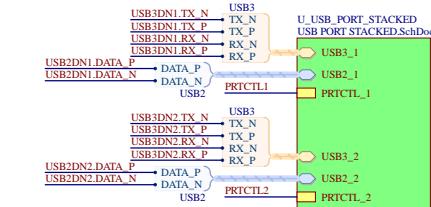
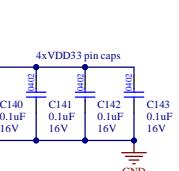
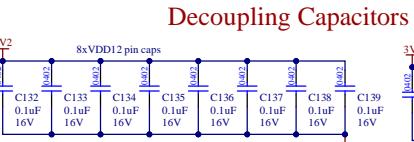
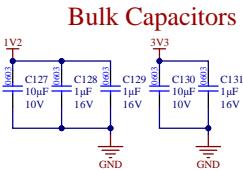
UW ROBOTICS TEAM	University of Waterloo Robotics Team 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV 1
PROJECT Jetson AGX Xavier Carrier Board.PrtPcb,[No Variations]		
DOCUMENT JETSON AGX CSI-I2C-I2S.SchDoc		
ENGINEER Cindy Li, Chealsie Bains	REVIEWER Lance Bantito	SHEET 11 OF 23

System



UW ROBOTICS TEAM University of Waterloo Robotics Team 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV 1
	PROJECT Jetson AGX Xavier Carrier Board.PrjPcb, [No Variations]
	DOCUMENT System.SchDoc
	MODIFIED 8/3/2021
ENGINEER Chealsie Bains	REVIEWER Lance Bantto
SHEET 12 OF 23	

USB

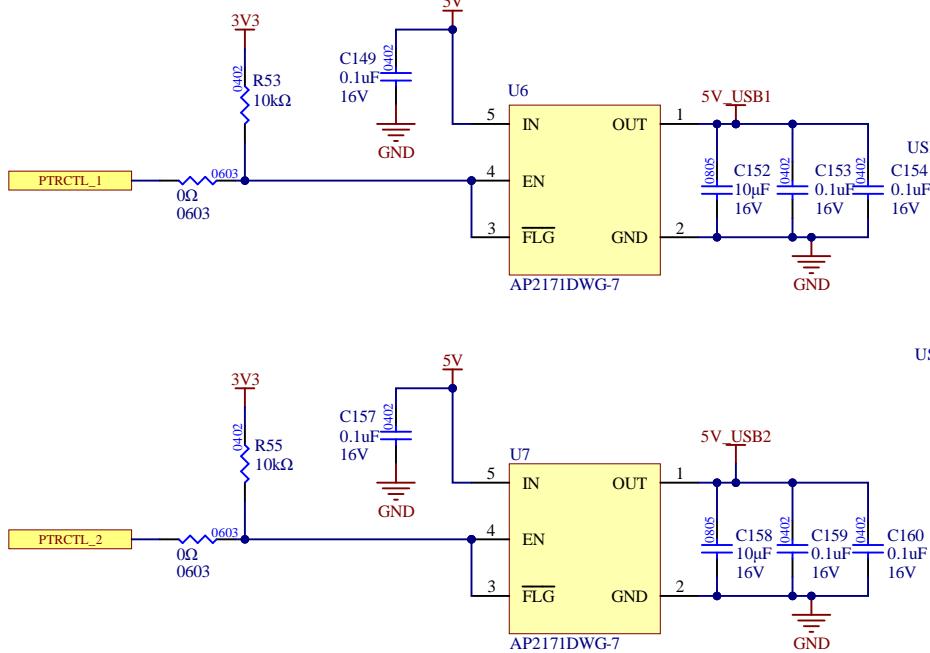


USB Port

A

A

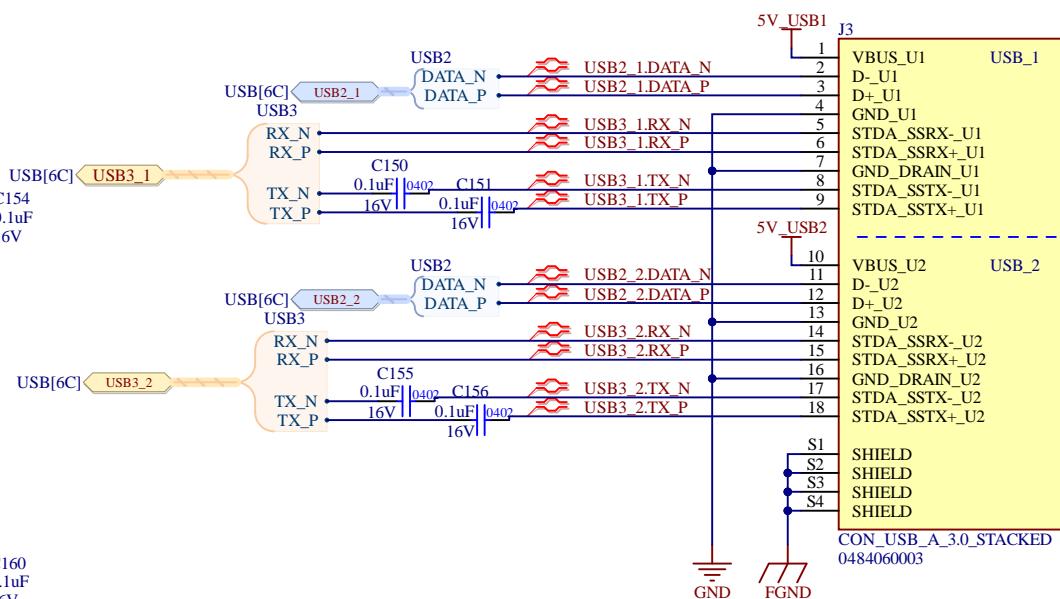
Power Switches



B

B

USB Connector



C

C



University of Waterloo Robotics Team
200 University Ave W
Waterloo, Ontario, Canada
N2L 3G1

REV
1

PROJECT
Jetson AGX Xavier Carrier Board.PnjPcb, [No Variations]

MODIFIED
8/3/2021

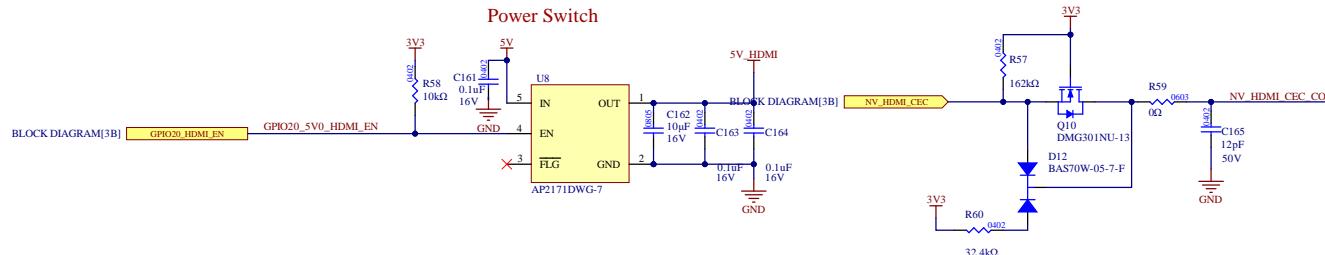
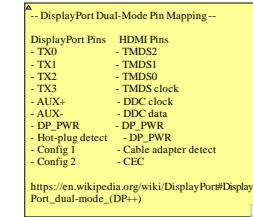
DOCUMENT
USB PORT STACKED.SchDoc

ENGINEER
Cindy Li

REVIEWER
Lance Bantoto

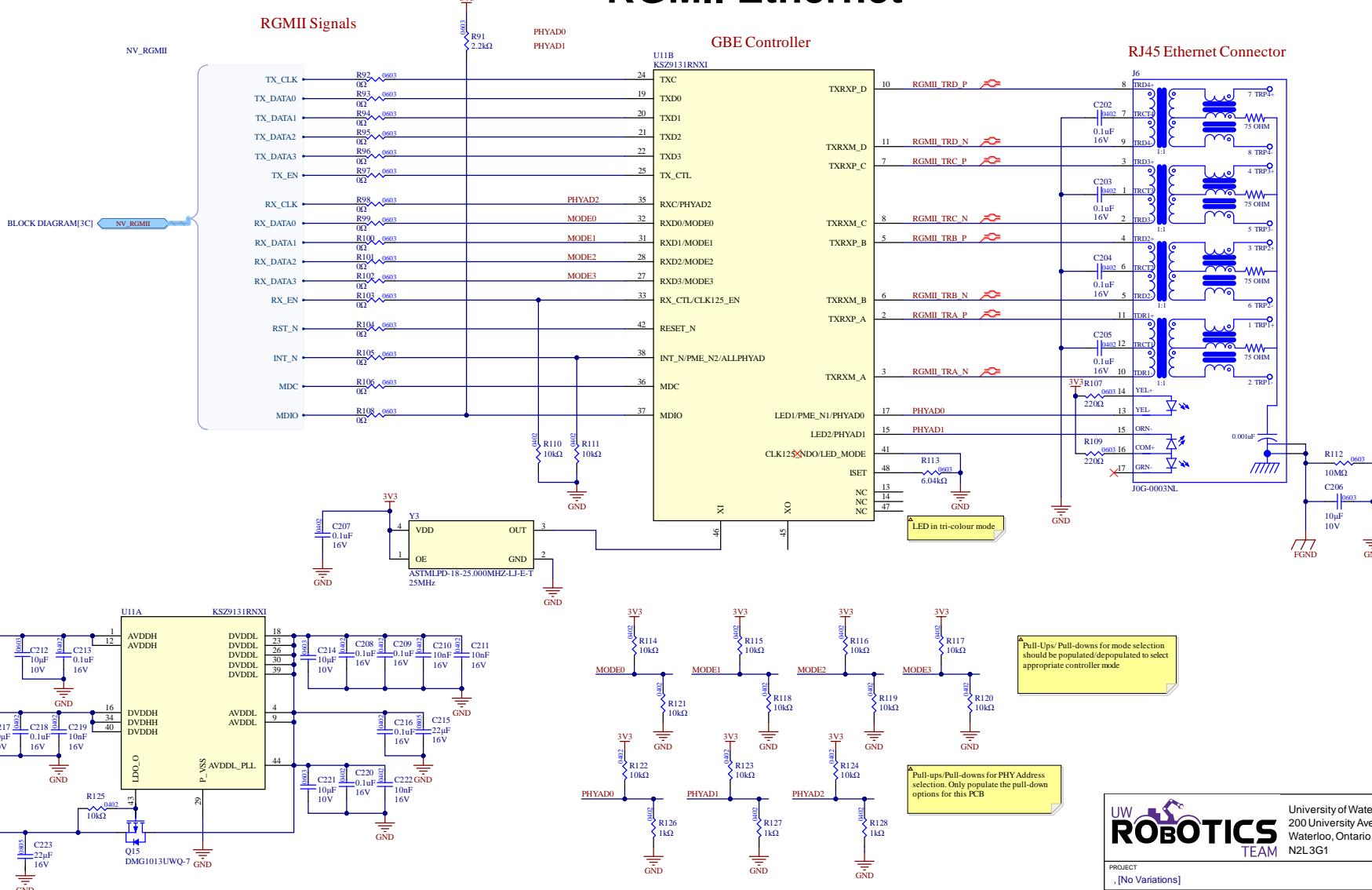
SHEET 14 OF 23

HDMI

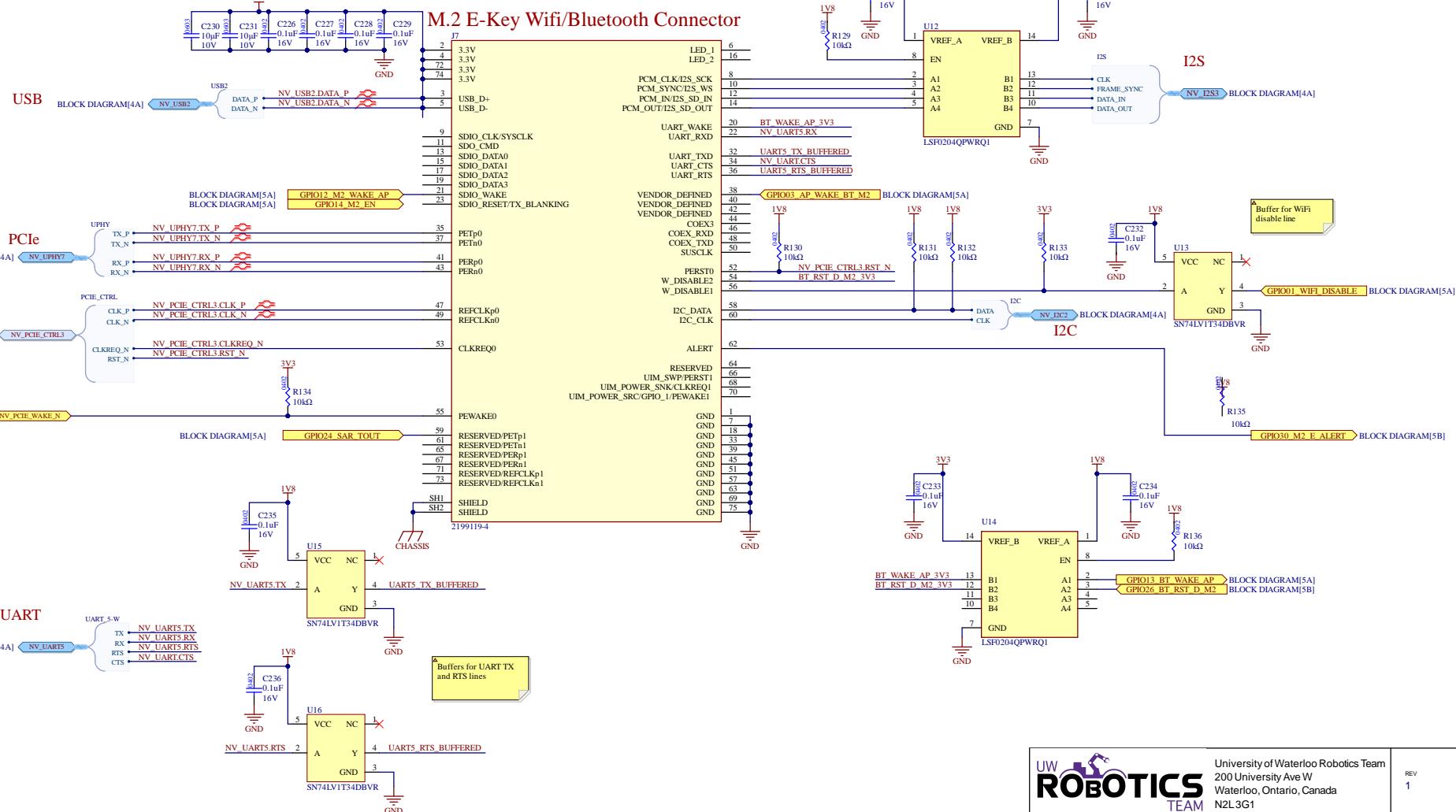


UW ROBOTICS TEAM	University of Waterloo Robotics Team	REV 1
	200 University Ave W Waterloo, Ontario, Canada N2L 3G1	
PROJECT	Jetson AGX Xavier Carrier Board.PrtPcb,[No Variations]	
DOCUMENT	HDMI.SchDoc	MODIFIED 8/3/2021
ENGINEER	Cindy Li	REVIEWER Lance Bantito
		SHEET 15 OF 23

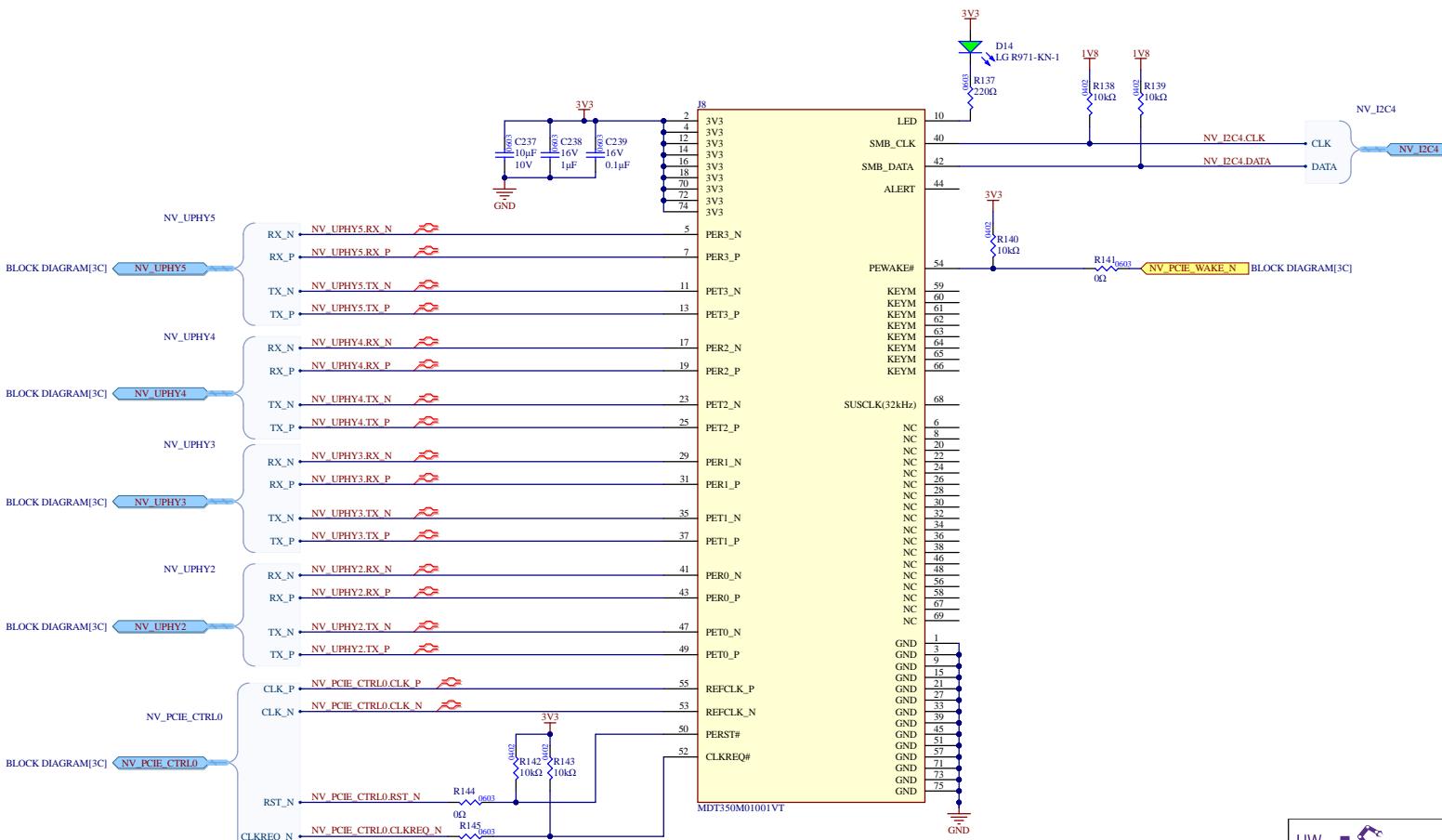
RGMII Ethernet



M.2 E-Key Connector

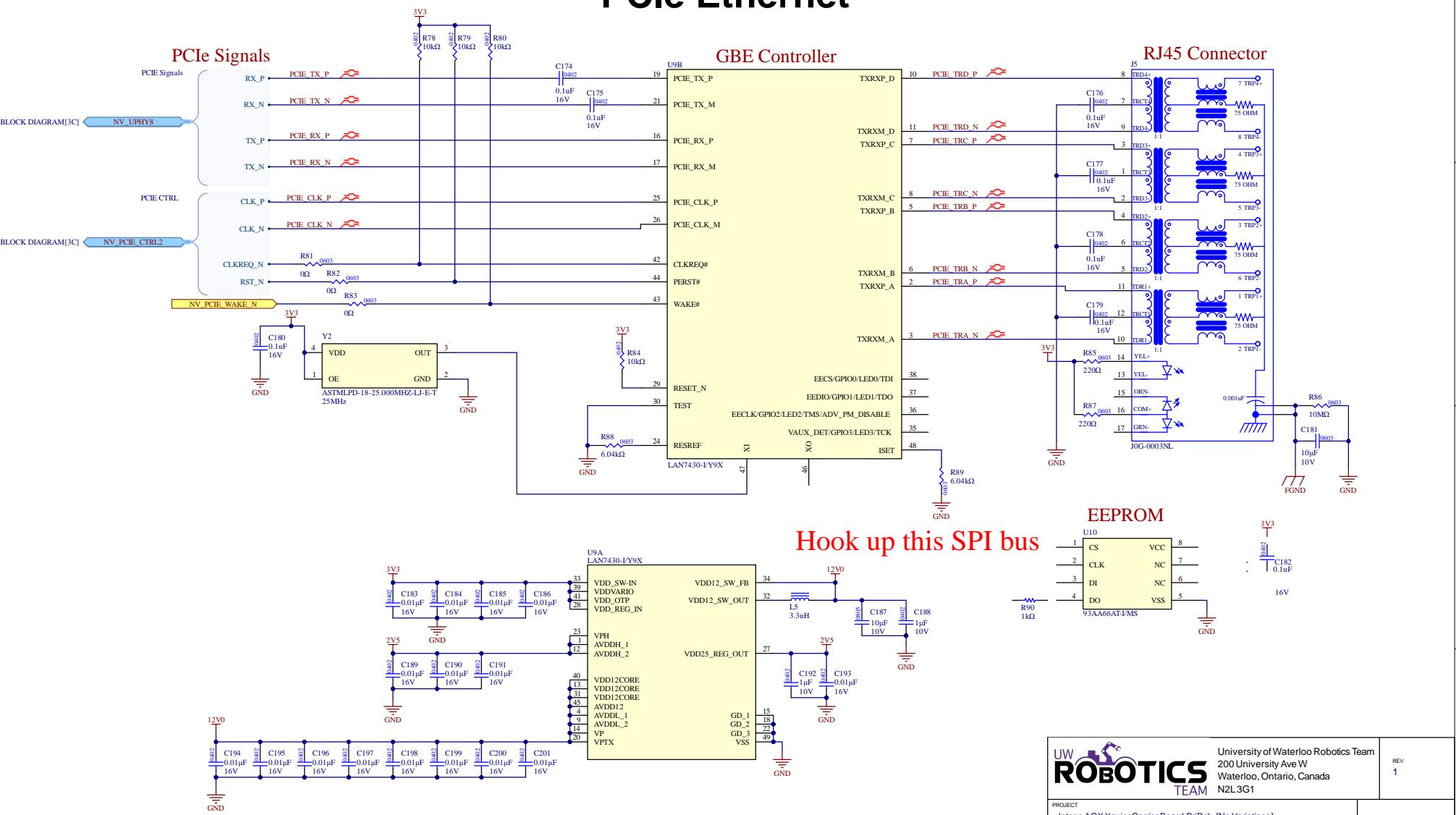


M.2 M-KEY Connector



UW ROBOTICS TEAM	University of Waterloo Robotics Team	REV 1
	200 University Ave W Waterloo, Ontario, Canada N2L 3G1	
PROJECT	Jetson AGX Xavier Carrier Board.PrtPcb, [No Variations]	
DOCUMENT	M.2 M-KEY.SchDoc	MODIFIED 8/3/2021
ENGINEER	Chealsie Bains	REVIEWER Lance Bantito
		SHEET 19 OF 23

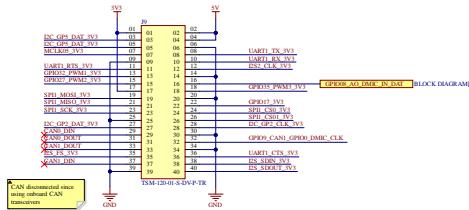
PCIe Ethernet



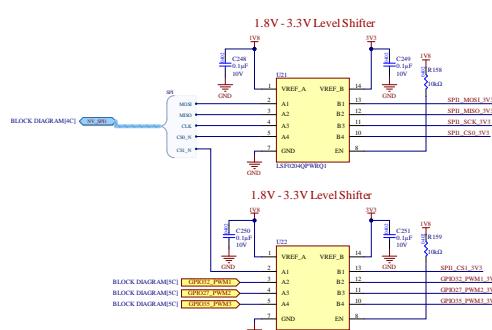
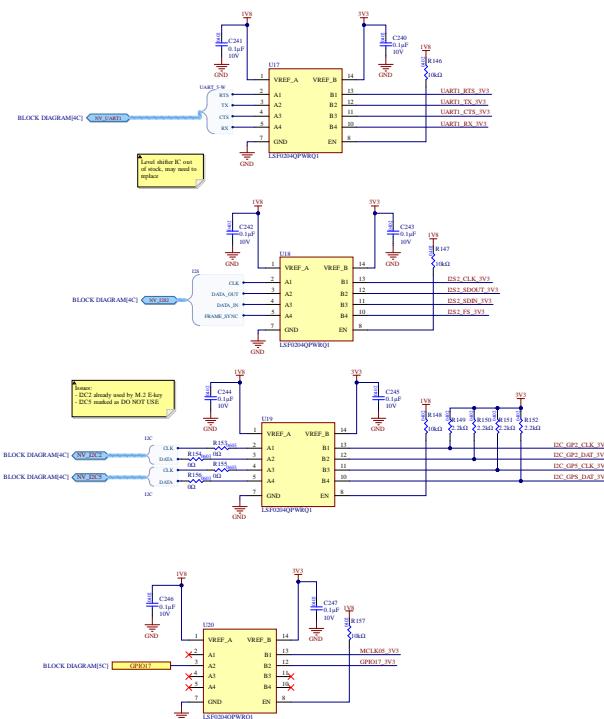
UW ROBOTICS TEAM	University of Waterloo Robotics Team 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV 1
PROJECT	Jetson AGX Xavier Carrier Board.PrtPcb, [No Variations]	
DOCUMENT	PCIe ETHERNET.SchDoc	MODIFIED 8/3/2021
ENGINEER	Chaleesi Bains	REVIEWER Lance Bantito
		SHEET 19 OF 23

GPIO and Serial

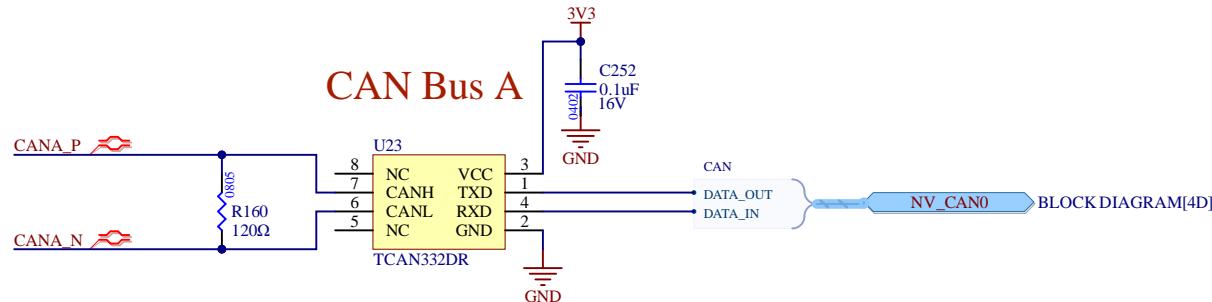
GPIO Expansion



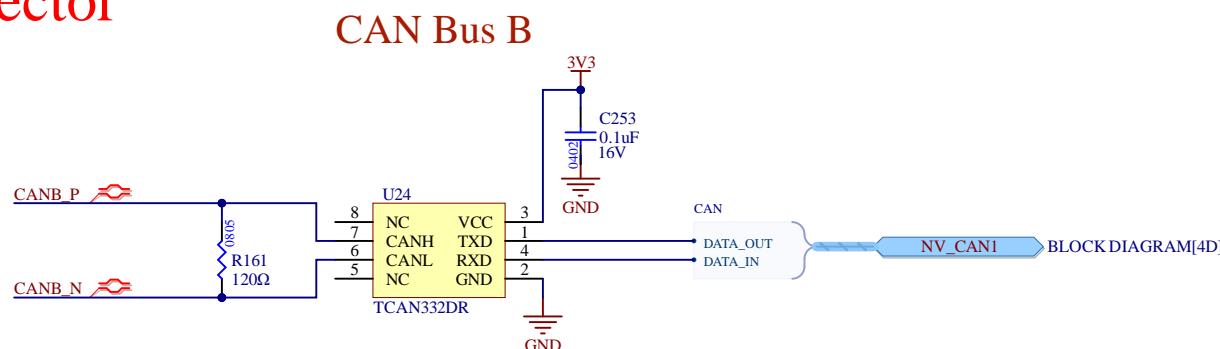
Level Shifters



CAN

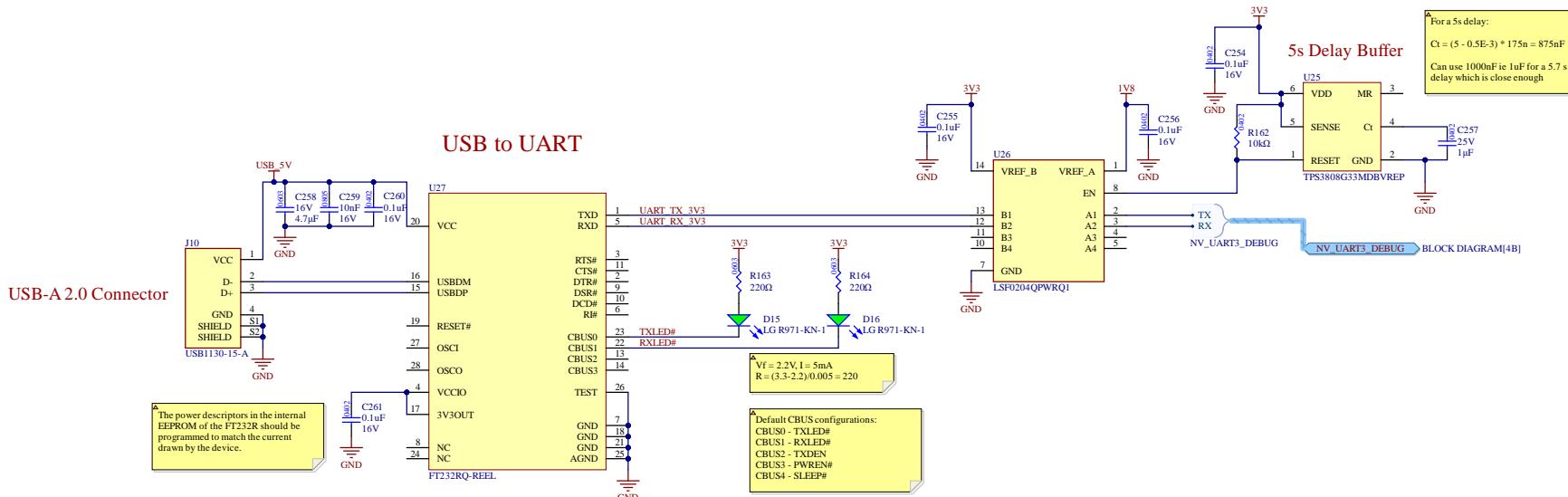


Select 8 pin connector



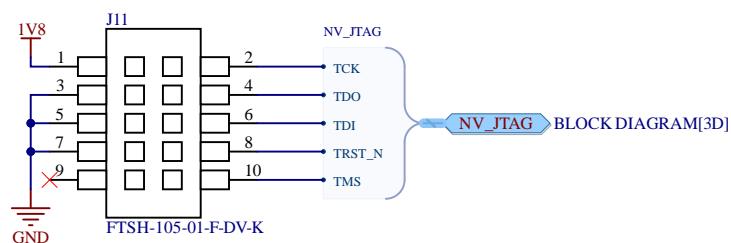
ROBOTICS TEAM	University of Waterloo Robotics Team 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV 1
PROJECT		
Jetson AGX Xavier Carrier Board.PrjPcb, [No Variations]		MODIFIED
DOCUMENT	CAN.SchDoc	8/3/2021
ENGINEER	Cindy Li	REVIEWER
	Lance Bantoto	SHEET 21 OF 23

Debug UART



UW ROBOTICS TEAM	University of Waterloo Robotics Team	REV 1
	200 University Ave W Waterloo, Ontario, Canada N2L 3G1	
PROJECT	Jetson AGX Xavier Carrier Board.PrtPcb, [No Variations]	
DOCUMENT	Debug UART.SchDoc	MODIFIED 8/3/2021
ENGINEER	Chelsie Bains	REVIEWER Lance Bantto
		SHEET 22 OF 23

JTAG



ROBOTICS TEAM		University of Waterloo Robotics Team 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV 1
PROJECT Jetson AGX Xavier Carrier Board.PrjPcb, [No Variations]			
DOCUMENT JTAG.SchDoc		MODIFIED 8/3/2021	
ENGINEER Cindy Li	REVIEWER Lance Bantoto	SHEET 23 OF 23	