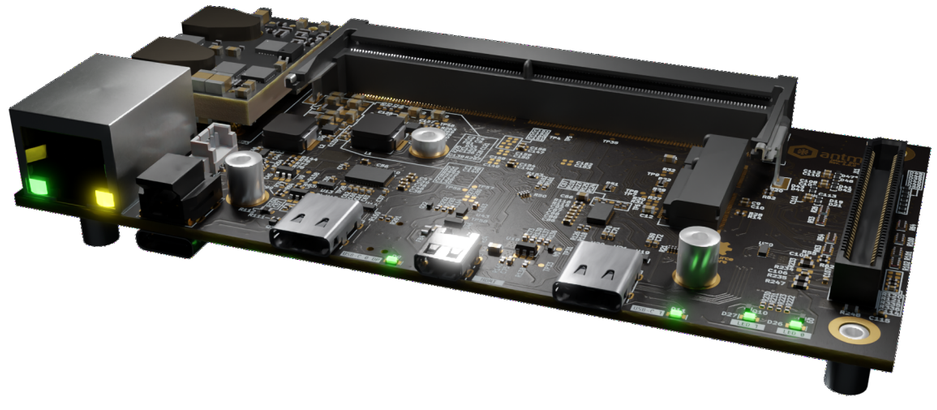
Jetson Orin Baseboard

github.com/antmicro/jetson-orin-baseboard



SoM
File: som.kicad_sch

M.2
File: m-2.kicad_sch

USB Debug, DP
File: usb.kicad_sch

USB3
File: usb3.kicad_sch

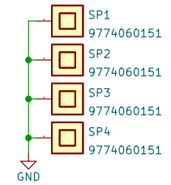
HDMI
File: hdmi.kicad_sch

Ethernet
File: ethernet.kicad_sch

CSI
File: csi.kicad_sch

Peripherals
File: peripherals.kicad_sch

Supply
File: supply.kicad_sch



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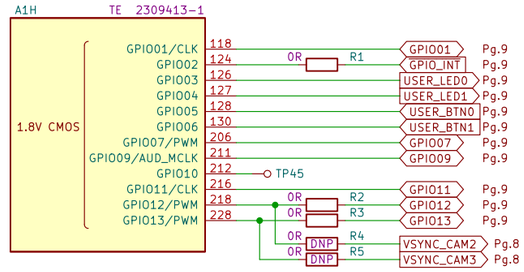
Sheet: /
File: jetson-orin-baseboard.kicad_sch

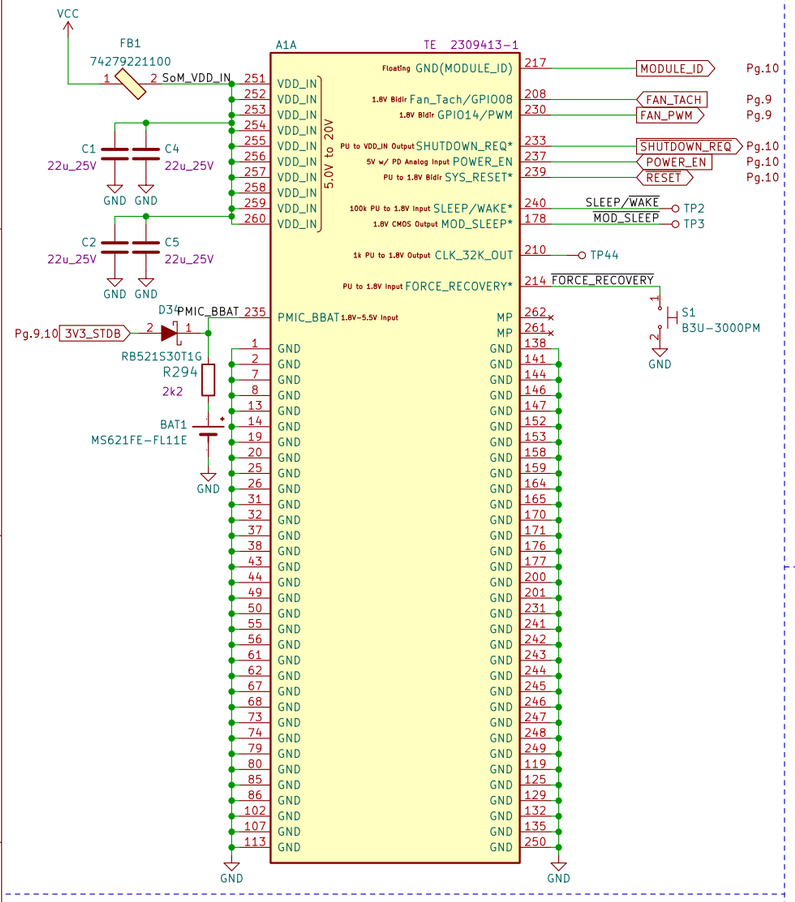
Title: Jetson Orin Baseboard

Size: A3	Date: 2022-10-07	**Rev: 1.0.0**
KiCad E.D.A.	eeschema 6.0.5+dfsg-1~bpo11+1	Id: 1/10

GPIO

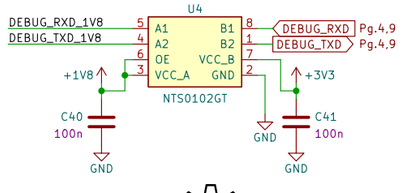


Power & CTRL

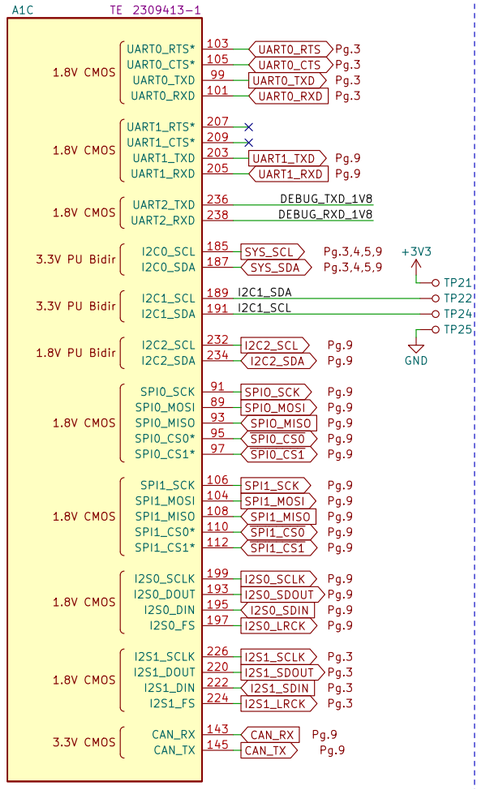


Miscellaneous

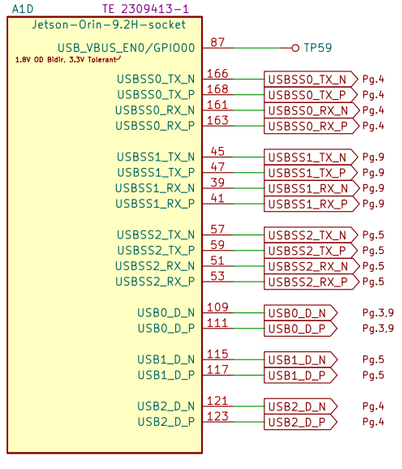
DEBUG UART LEVEL SHIFTER

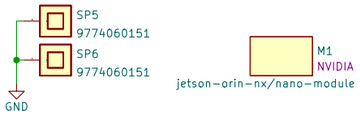


UART/I2C/SPI/I2S/CAN

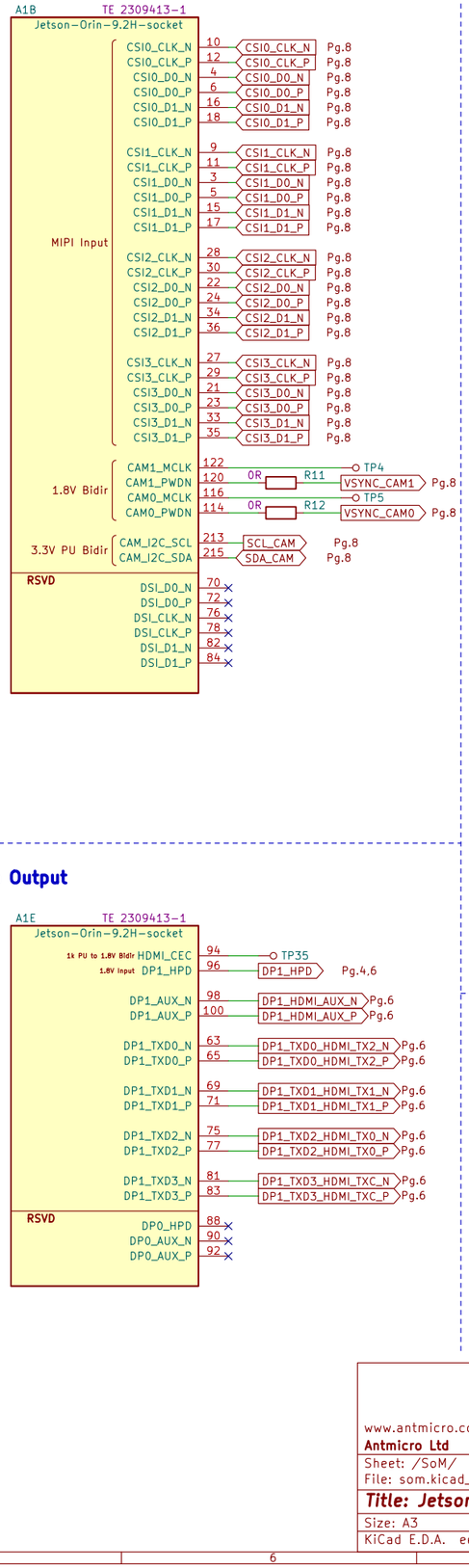


USB



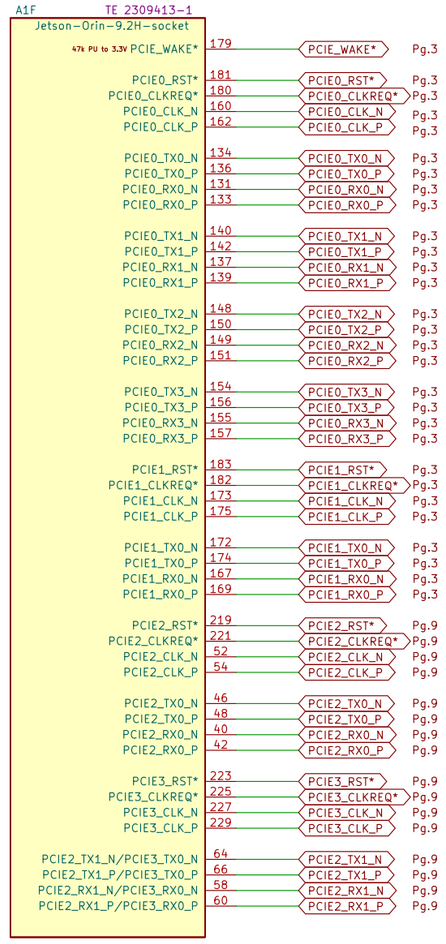


CSI

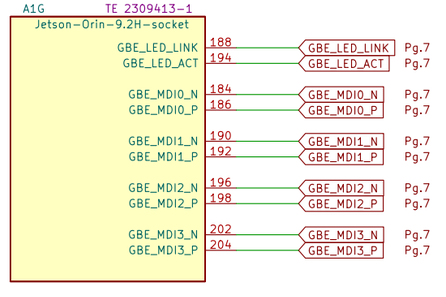


Video Output

PCIe



GbE



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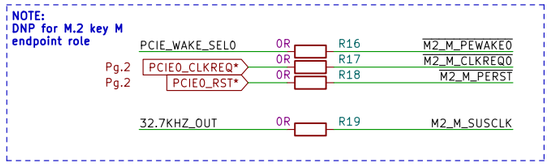
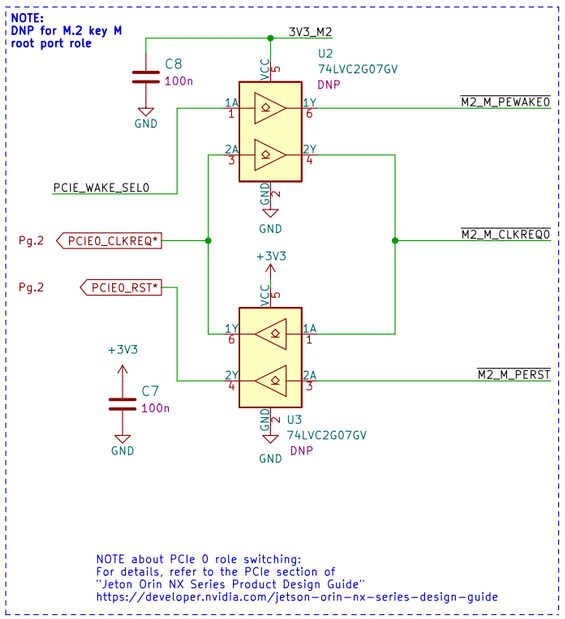
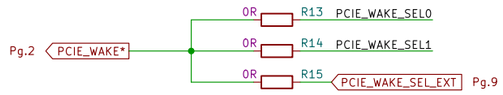
Sheet: /SoM/		
File: som.kicad_sch		
Title: Jetson Orin Baseboard		
Size: A3	Date: 2022-10-07	**Rev: 1.0.0**
KiCad E.D.A. eeschema 6.0.5+dfsg-1~bpo11+1		Id: 2/10

PCIe0 Root Port / Endpoint mode selector

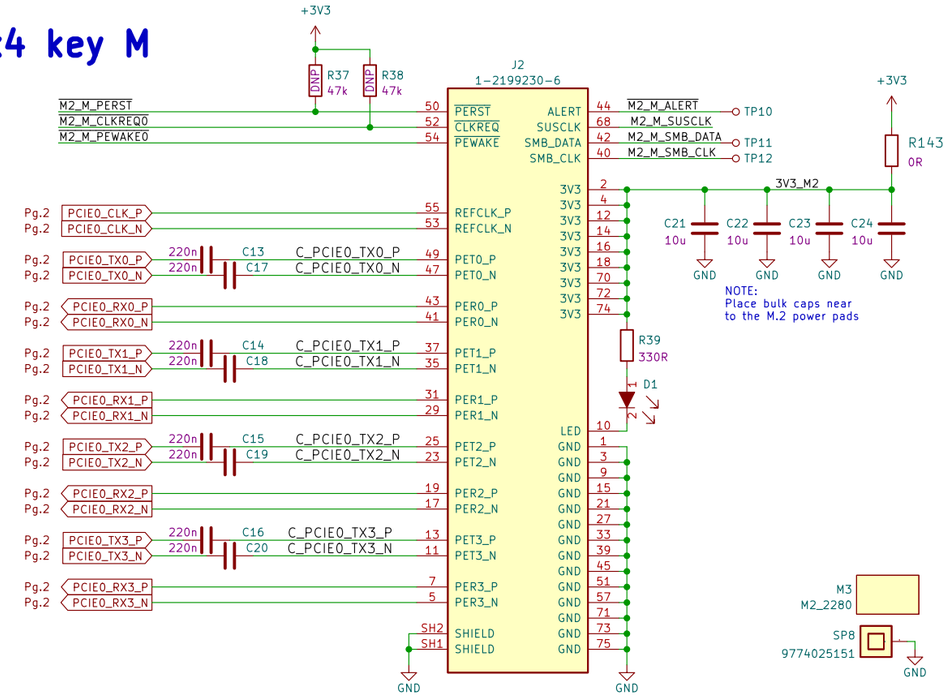




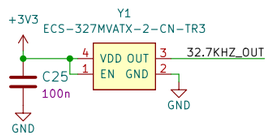
M.2 PCIE_WAKE selector



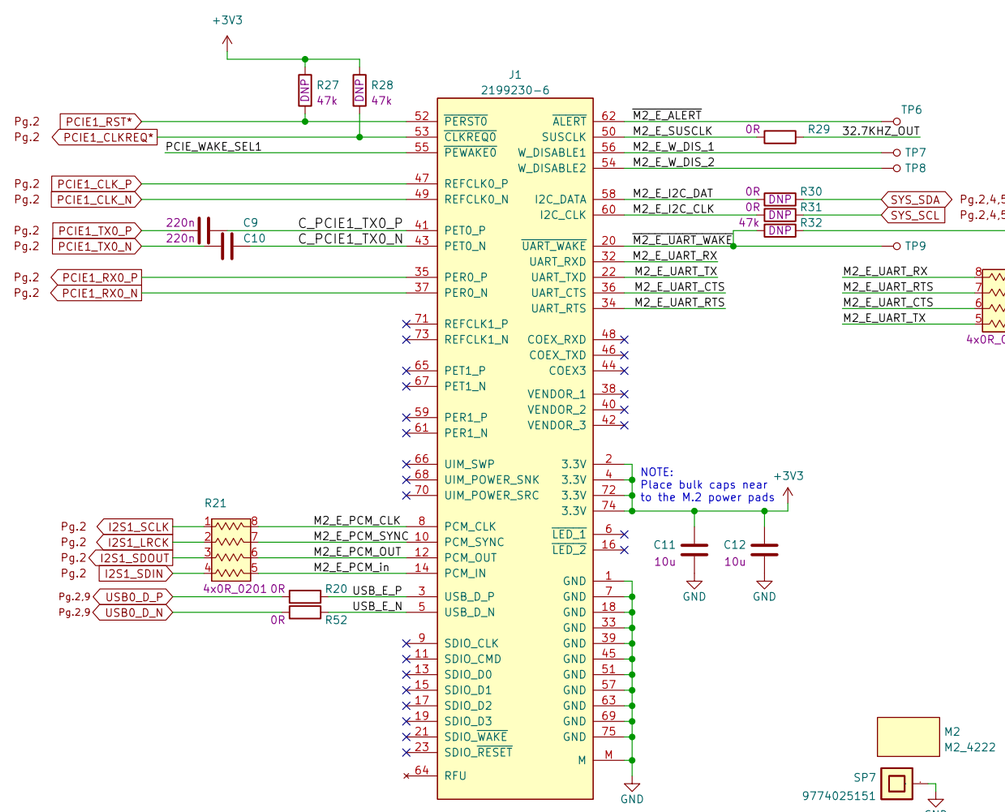
PCIe0 1x4 key M



SUSCLK SOURCE



PCIe1 1x1 key E



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Sheet: /M.2/
File: m-2.kicad_sch

Title: Jetson Orin Baseboard

Size: A3	Date: 2022-10-07	Rev: 1.0.0
KiCad E.D.A. eeschema 6.0.5+dfsg-1~bpo11+1		Id: 3/10

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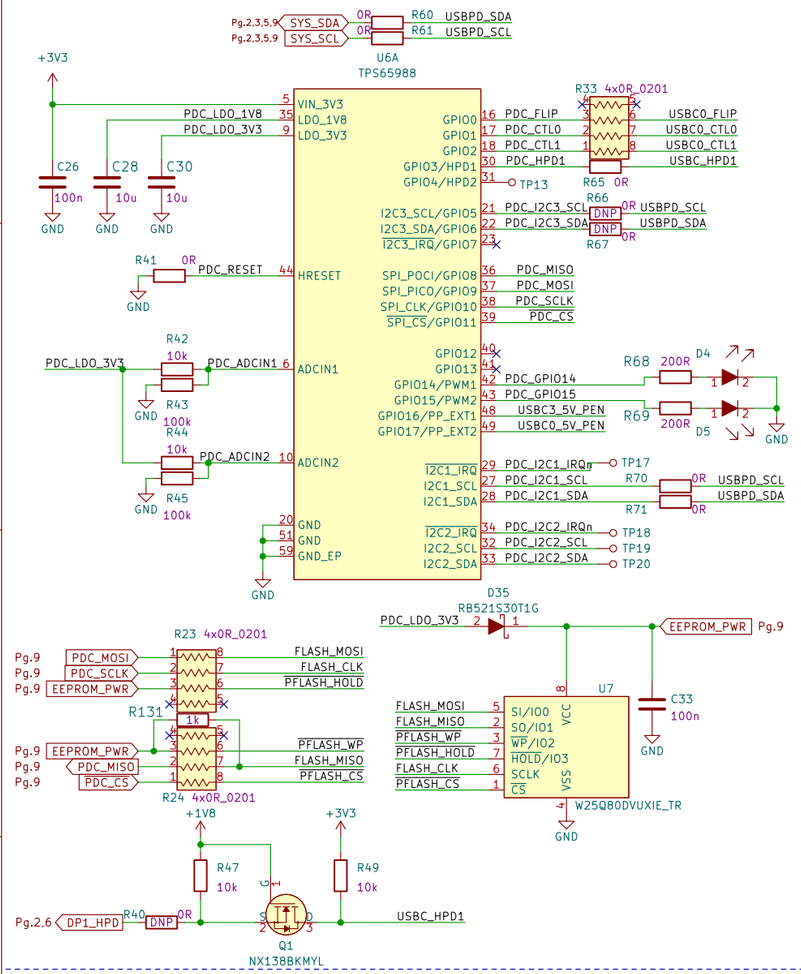
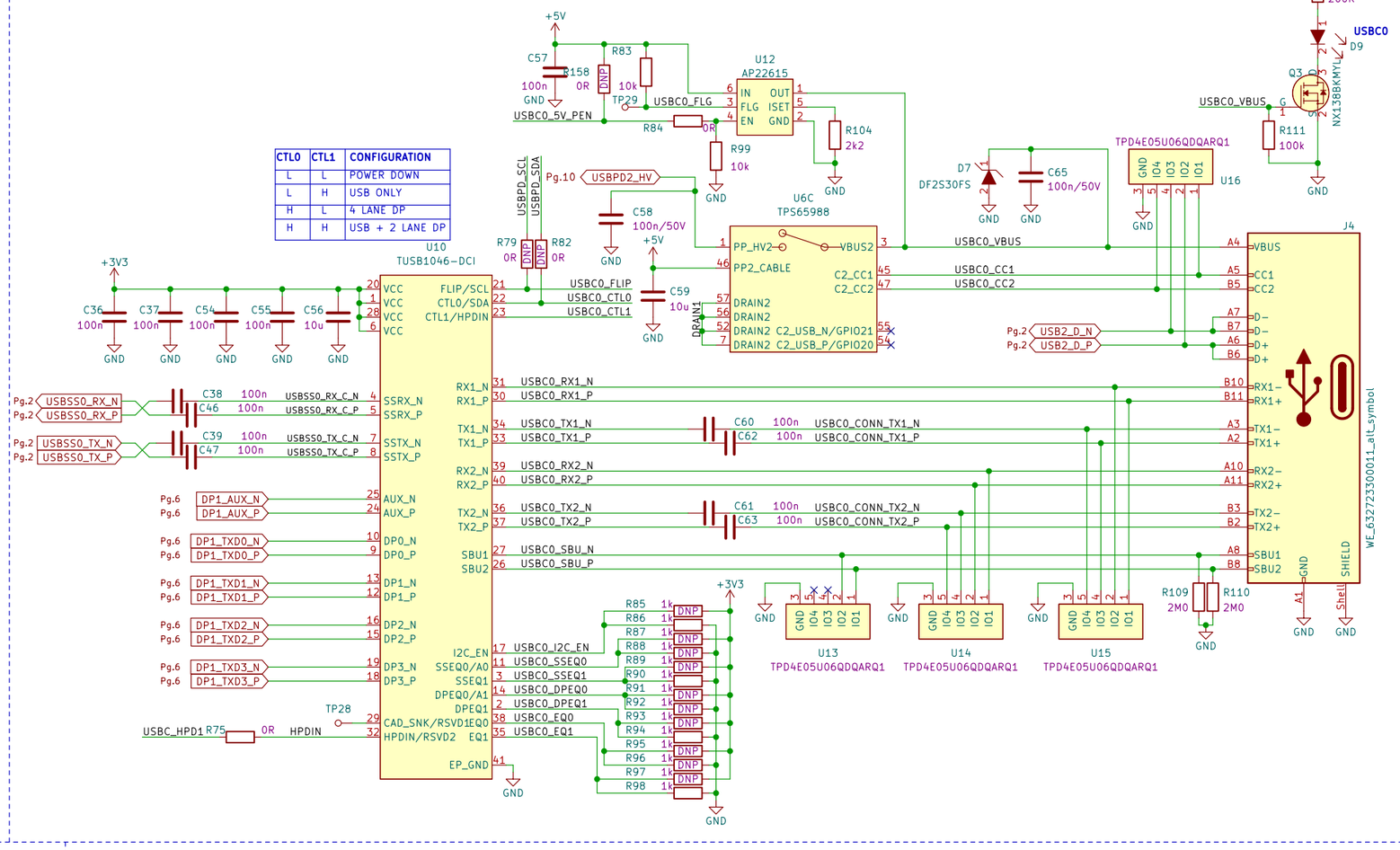
USB PD Controller



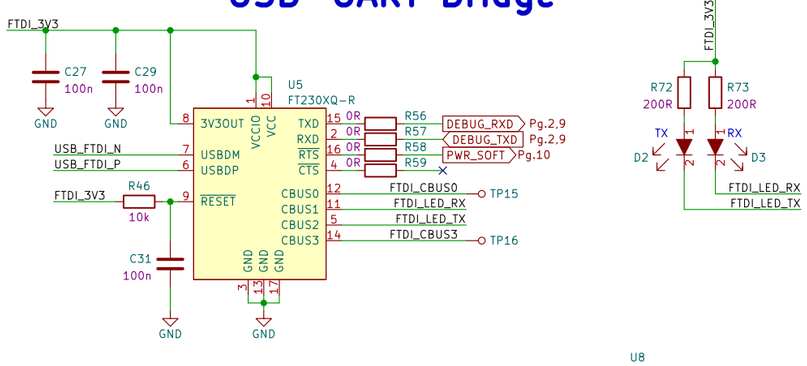
USB-C 0 Display Port alt mode

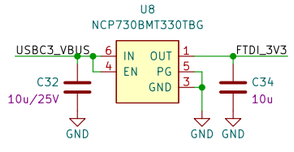
USB-PD Source/Sink



CTL0	CTL1	CONFIGURATION
L	L	POWER DOWN
L	H	USB ONLY
H	L	4 LANE DP
H	H	USB + 2 LANE DP

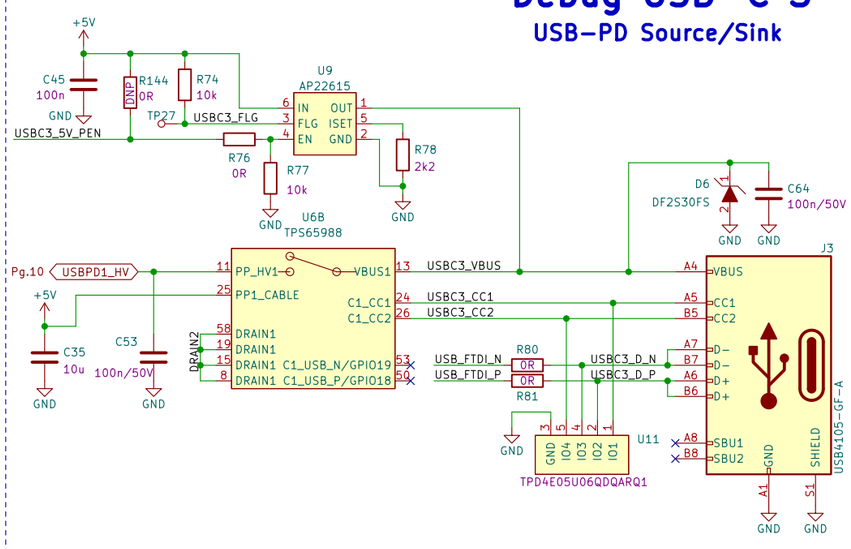
USB-UART Bridge





Debug USB-C 3

USB-PD Source/Sink



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Sheet: /USB Debug, DP/
File: usb.kicad_sch

Title: Jetson Orin Baseboard

Size: A3	Date: 2022-10-07	**Rev: 1.0.0**
KiCad E.D.A.	eeschema 6.0.5+dfsg-1~bpo11+1	Id: 4/10

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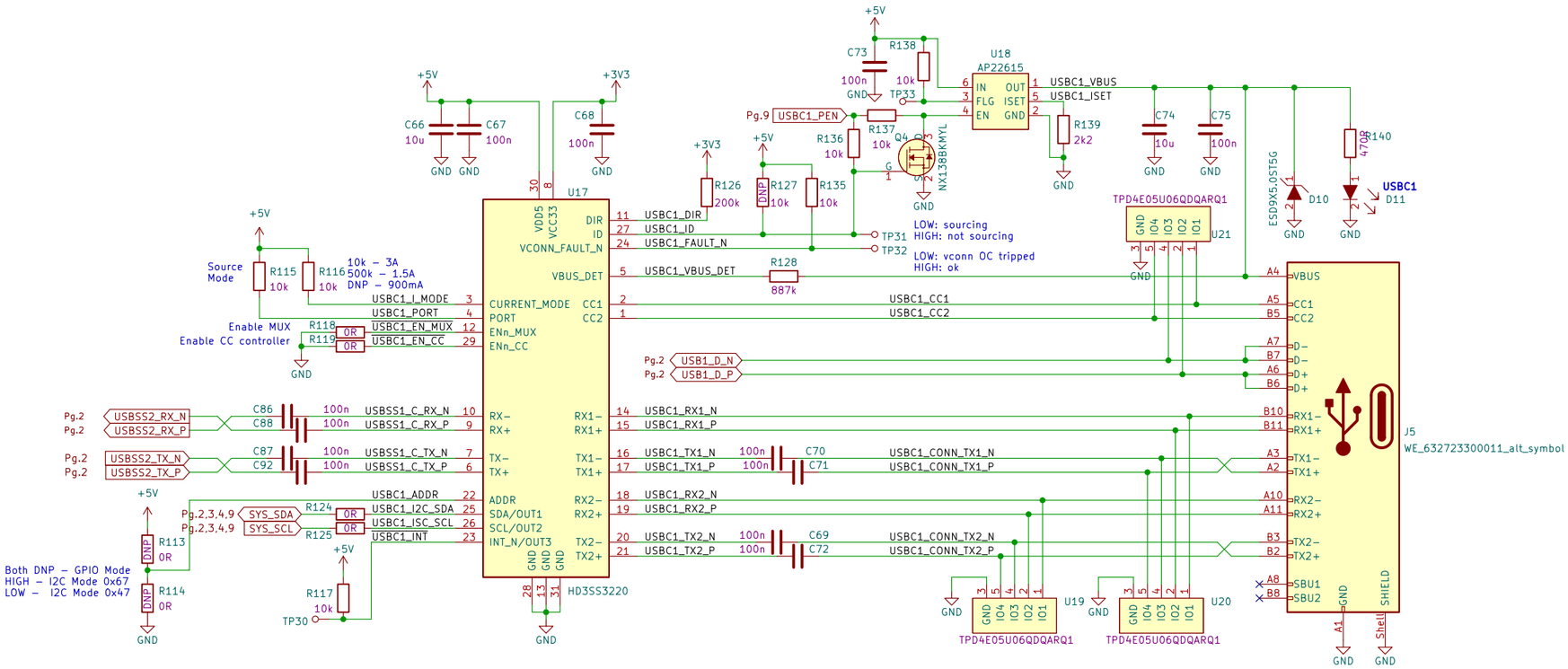
USB-C 1



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Sheet: /USB3/
File: usb3.kicad_sch

Title: Jetson Orin Baseboard

Size: A3	Date: 2022-10-07	**Rev: 1.0.0**
KiCad E.D.A. eeschema 6.0.5+dfsg-1~bpo11+1		Id: 5/10

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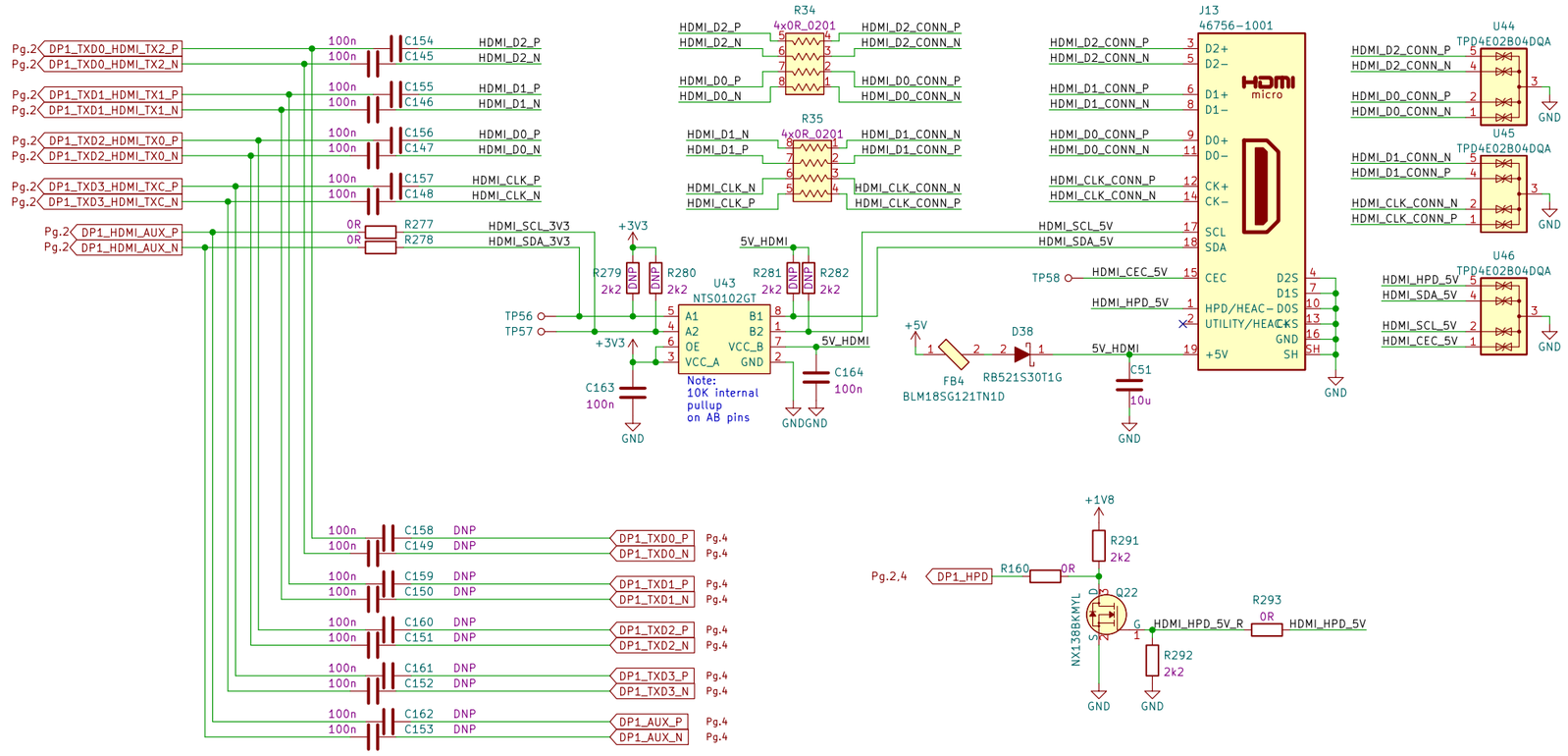
HDMI Connector

Output selection



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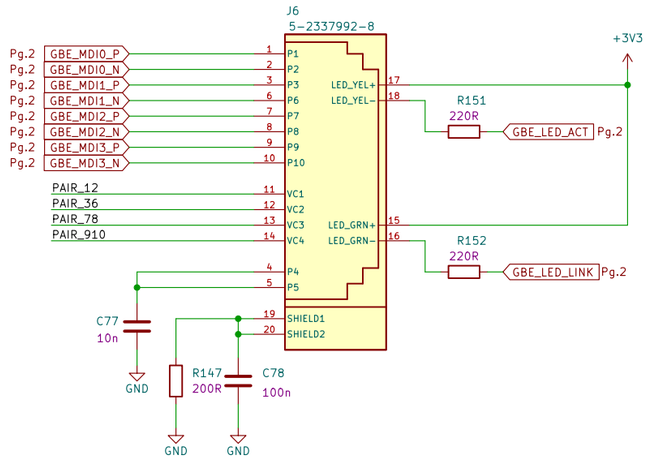
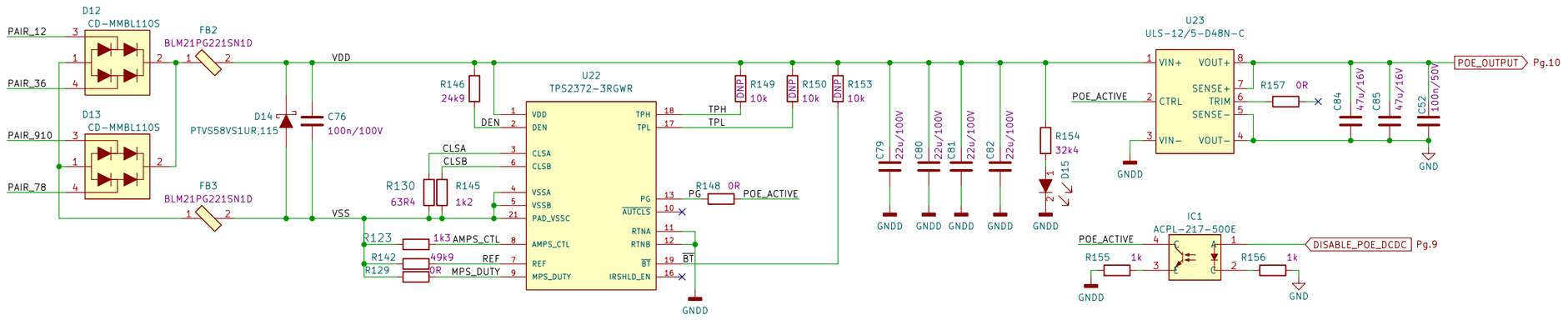
Sheet: /HDMI/		
File: hdmi.kicad_sch		
Title: Jetson Orin Baseboard		
Size: A3	Date: 2022-10-07	**Rev: 1.0.0**
KiCad E.D.A. eeschema 6.0.5+dfsg-1~bpo11+1		Id: 6/10

Ethernet Connector



Power over Ethernet



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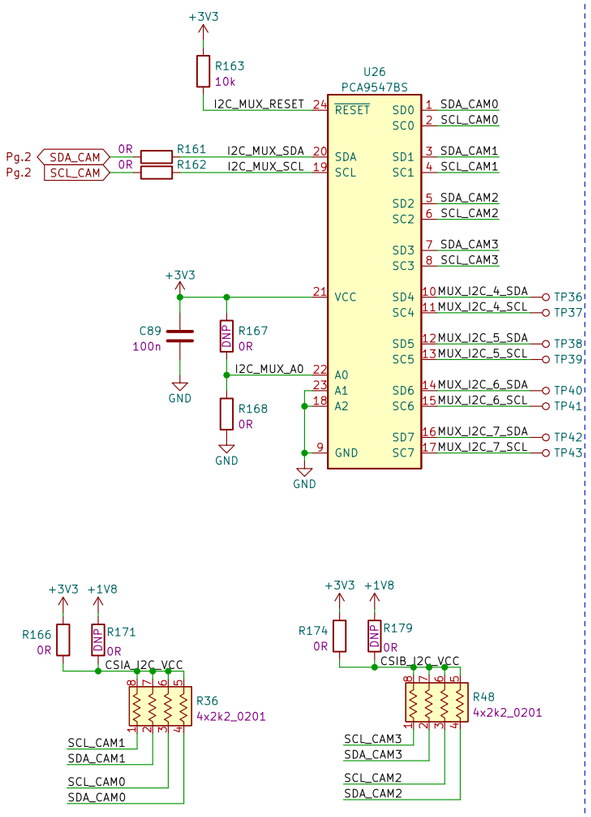
Sheet: /Ethernet/
File: ethernet.kicad_sch

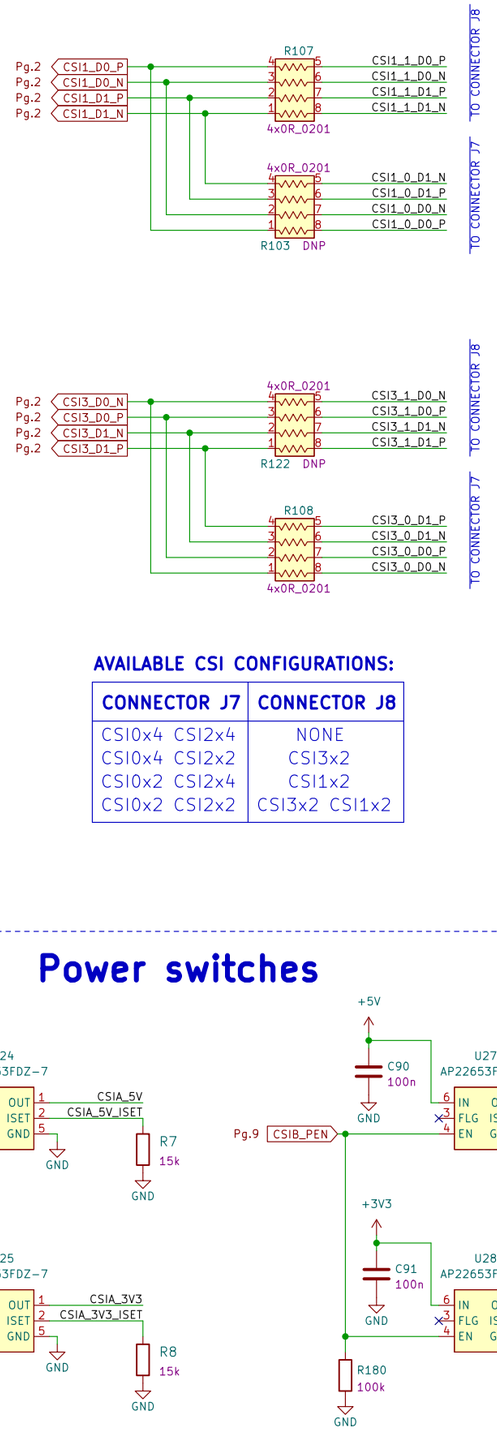
Title: Jetson Orin Baseboard

Size: A3	Date: 2022-10-07	**Rev: 1.0.0**
KiCad E.D.A.	eeschema 6.0.5+dfsg-1~bpo11+1	Id: 7/10

I2C Mux



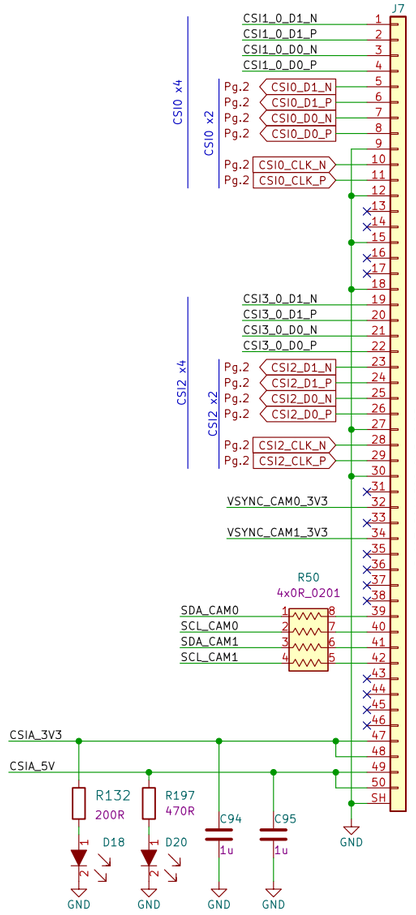
CSI Mux



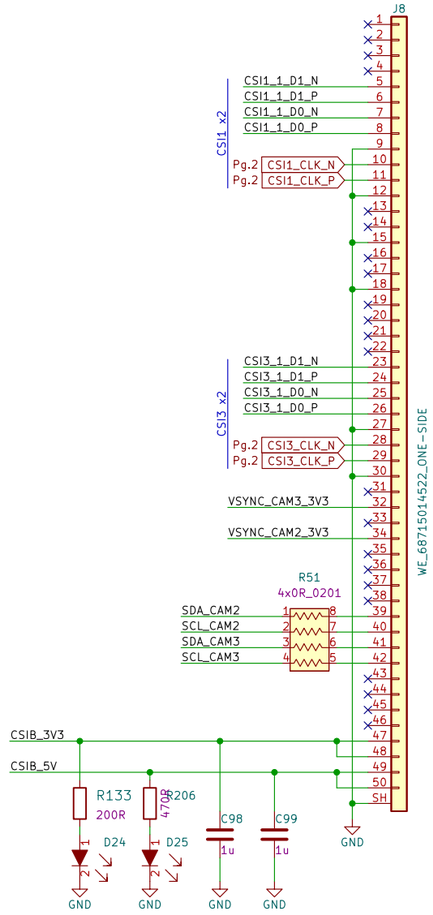
AVAILABLE CSI CONFIGURATIONS:

CONNECTOR J7	CONNECTOR J8
CSI0x4 CSI2x4	NONE
CSI0x4 CSI2x2	CSI3x2
CSI0x2 CSI2x4	CSI1x2
CSI0x2 CSI2x2	CSI3x2 CSI1x2

CSI connector J7

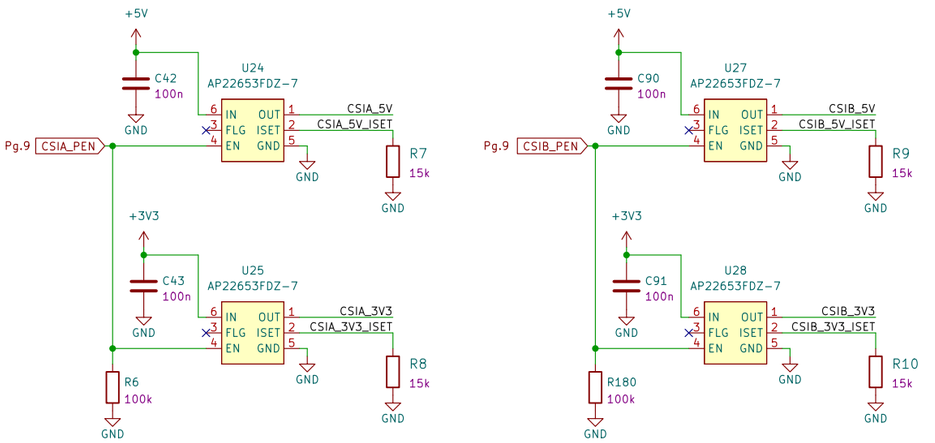


CSI connector J8

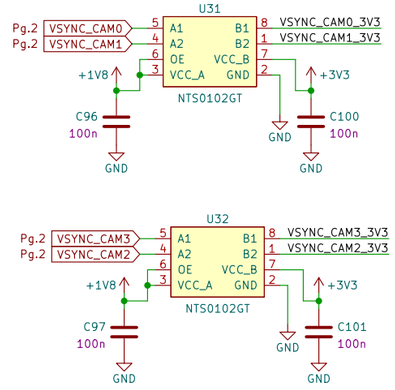


Power switches

ALL SWITCHES
1.7A CURRENT LIMIT



Level shifters



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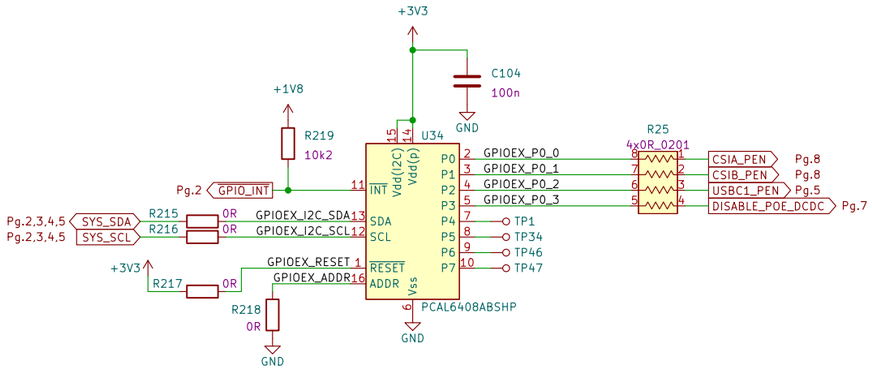
Sheet: /CSI/
File: csi.kicad_sch

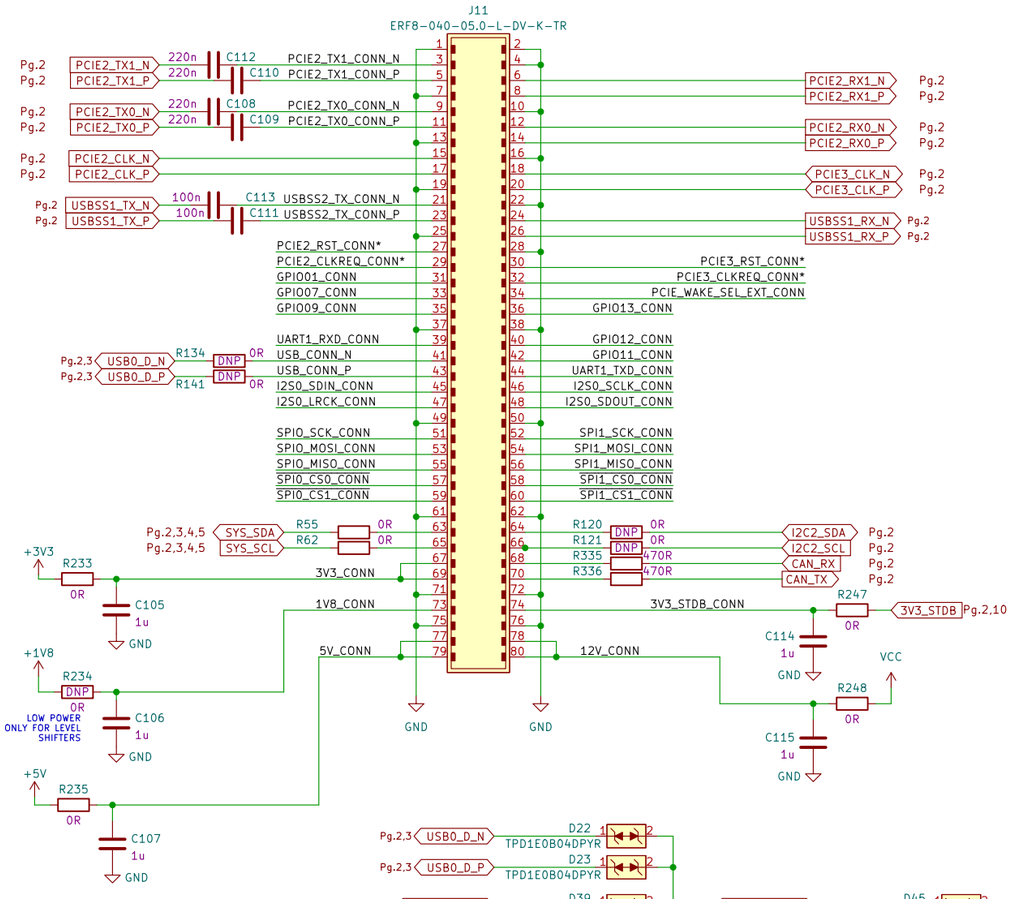
Title: Jetson Orin Baseboard

Size: A3	Date: 2022-10-07	**Rev: 1.0.0**
KiCad E.D.A. eeschema 6.0.5+dfsg-1~bpo11+1		Id: 8/10

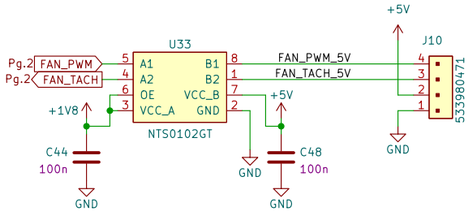
GPIO expander



Expansion connector



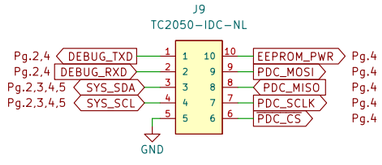
Fan connector



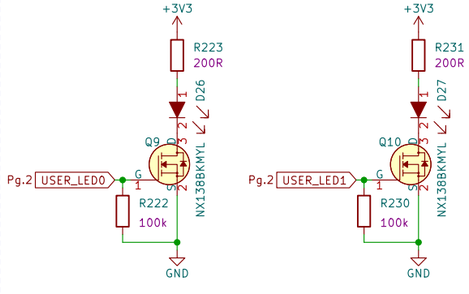
Expansion connector resistors

Debug connector

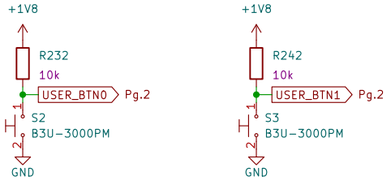
TAG-CONNECT

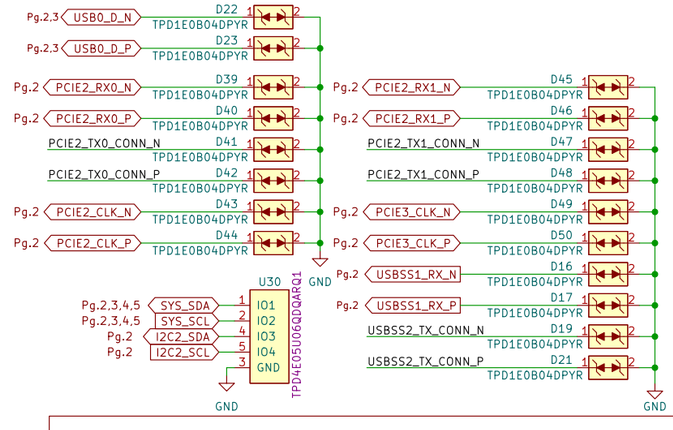


LED indicators



Buttons





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Sheet: /Peripherals/
File: peripherals.kicad_sch

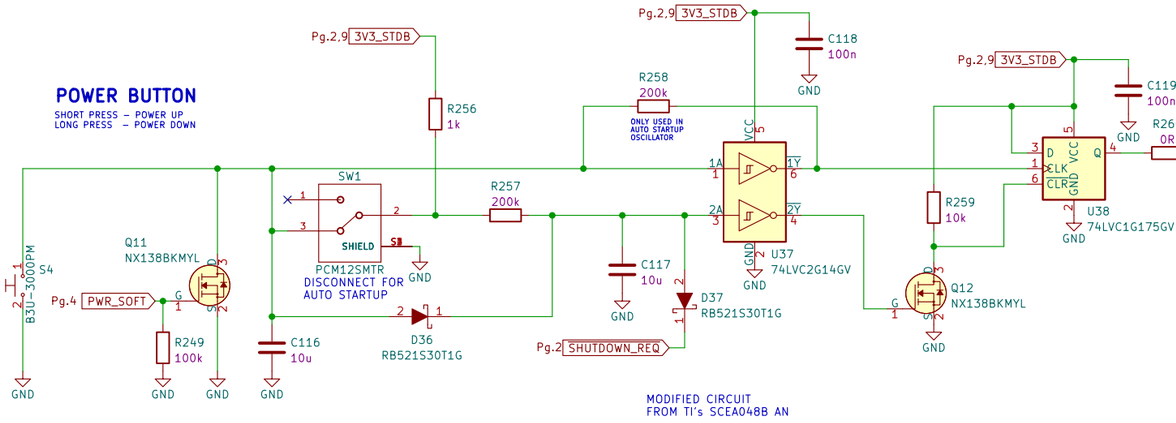
Title: Jetson Orin Baseboard

Size: A3	Date: 2022-10-07	**Rev: 1.0.0**
KiCad E.D.A.	eeschema 6.0.5+dfsg-1~bpo11+1	Id: 9/10

POWER-UP AND RESET CIRCUITRY

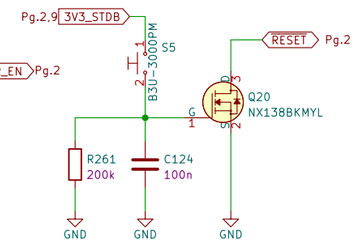
POWER BUTTON

SHORT PRESS - POWER UP
LONG PRESS - POWER DOWN

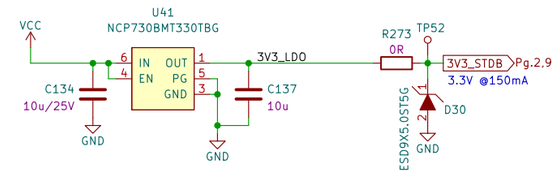


MODIFIED CIRCUIT
FROM TI's SCEA048B AN

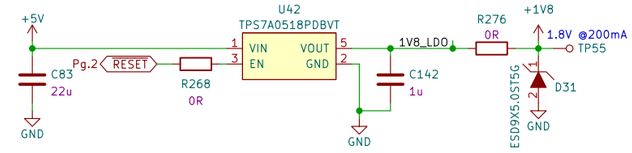
RESET BUTTON



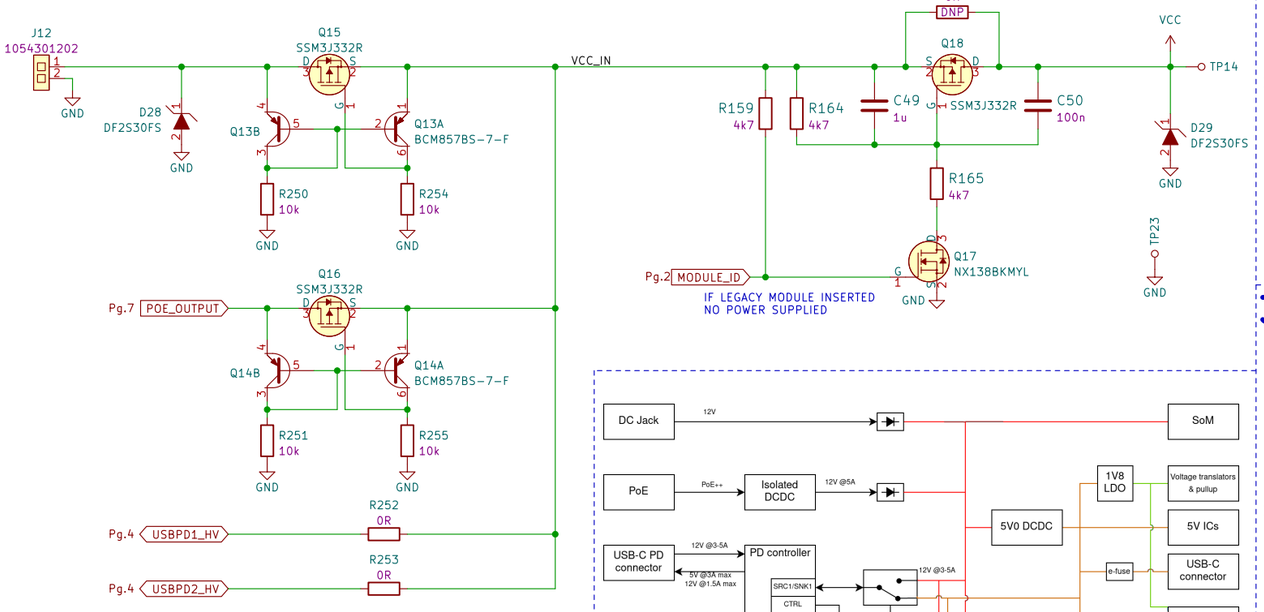
3V3 STANDBY LDO

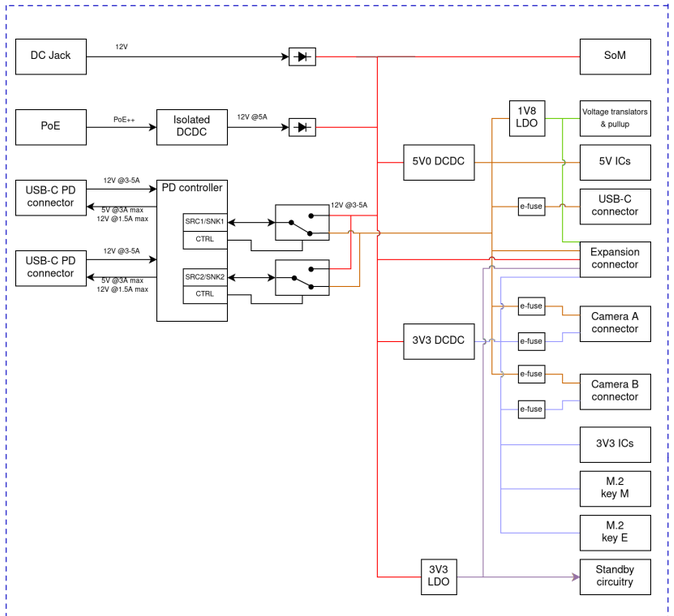


1V8 LDO

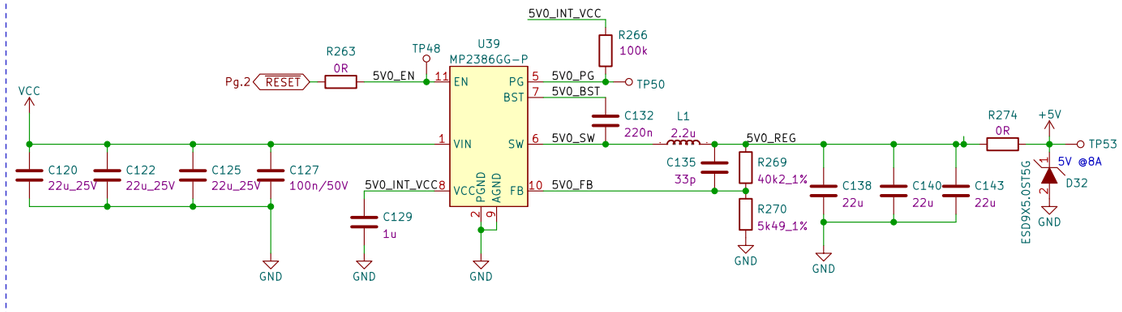


INPUT SELECTOR AND SOFT START

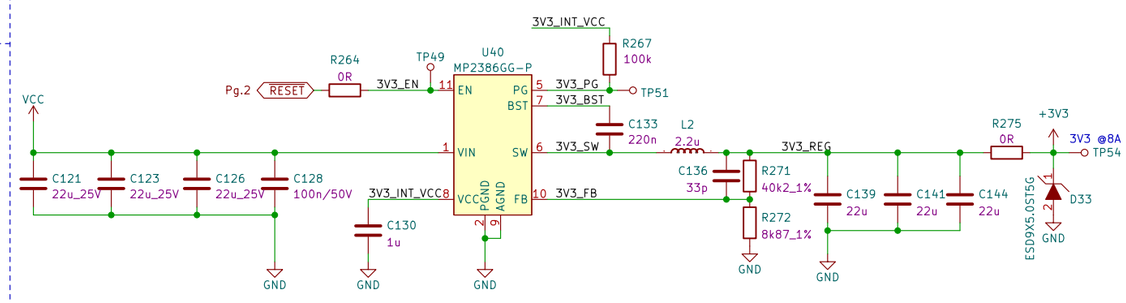




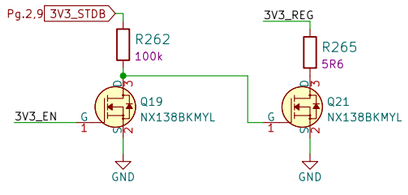
5V DCDC



3V3 DCDC



3V3 rail discharge



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