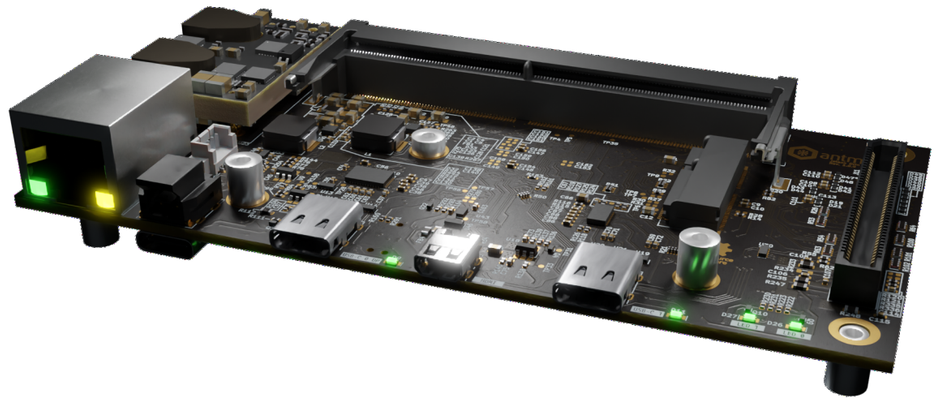
Jetson Orin Baseboard

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

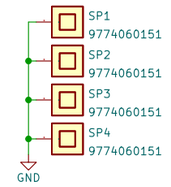
File: csi.kicad_sch

Peripherals

File: peripherals.kicad_sch

Supply

File: supply.kicad_sch



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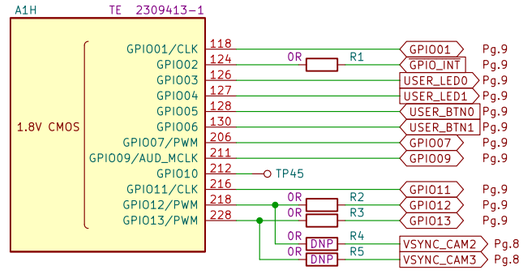
Sheet: /
File: jetson-orin-baseboard.kicad_sch

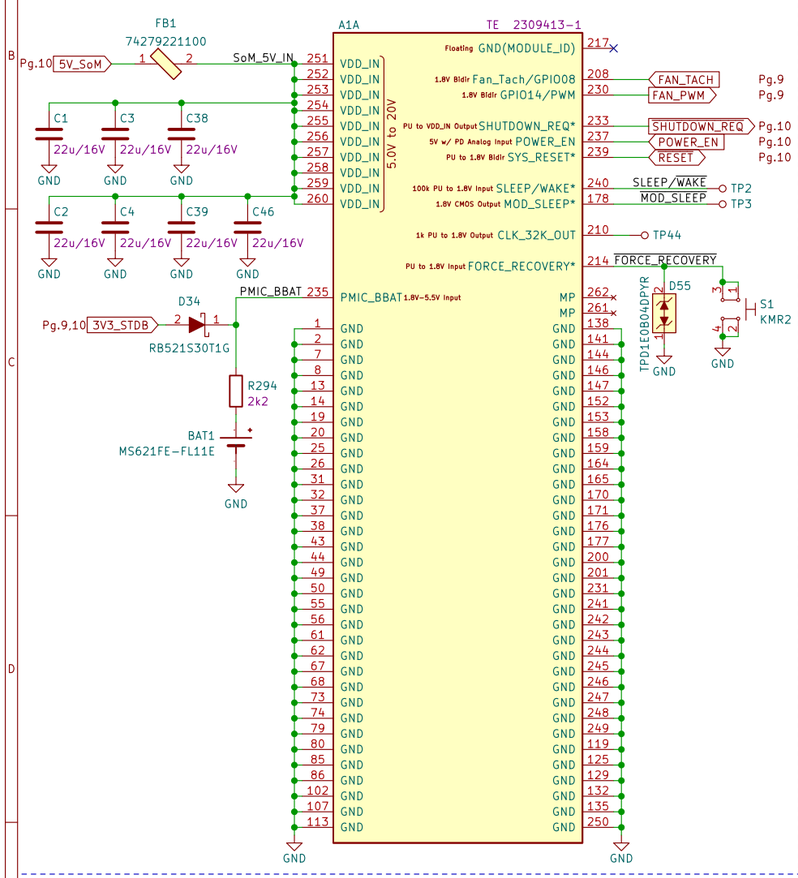
Title: Jetson Orin Baseboard

Size: A3	Date: 2023-03-03	**Rev: 1.1.0**
KiCad E.D.A.	eeschema 6.0.5+dfsg-1~bpo11+1	Id: 1/10

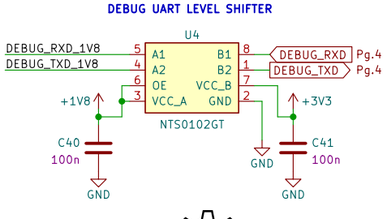
GPIO



Power & CTRL



Miscellaneous



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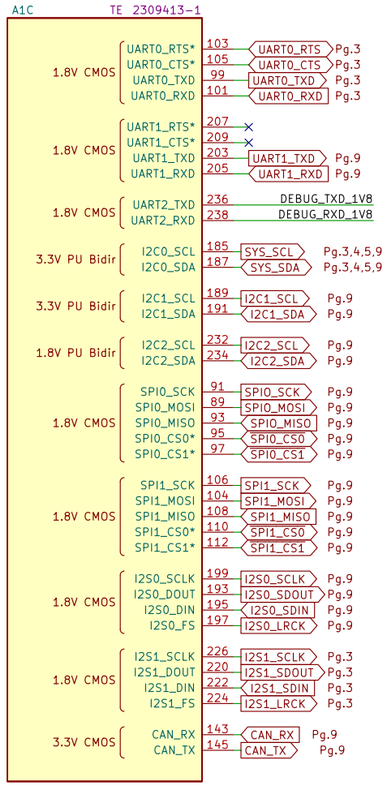
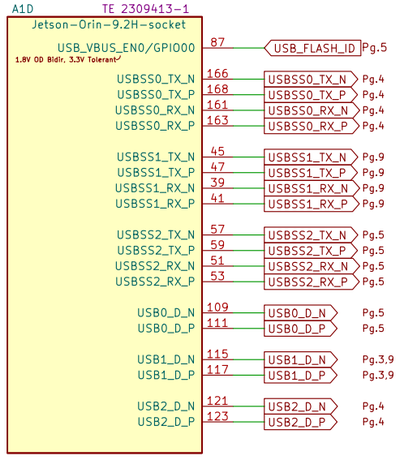
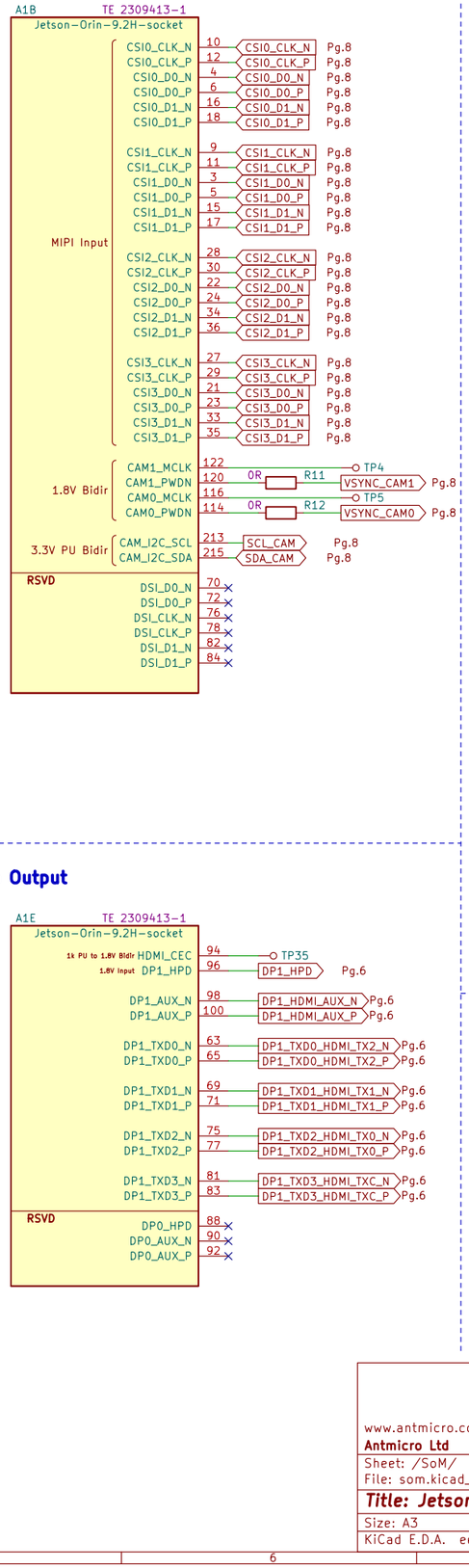
UART/I2C/SPI/I2S/CAN



USB

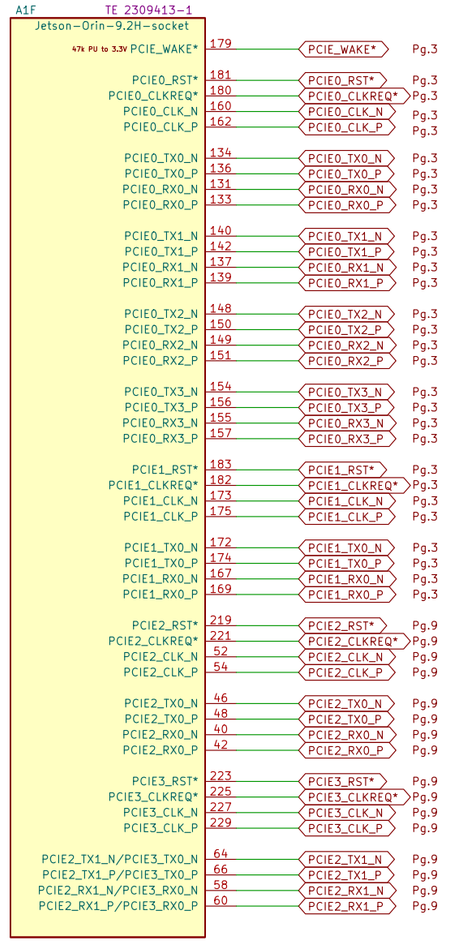


CSI

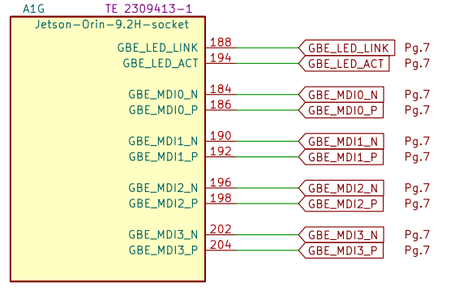


Video Output

PCIe



GbE



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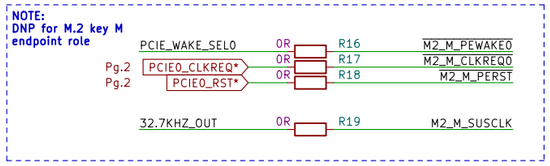
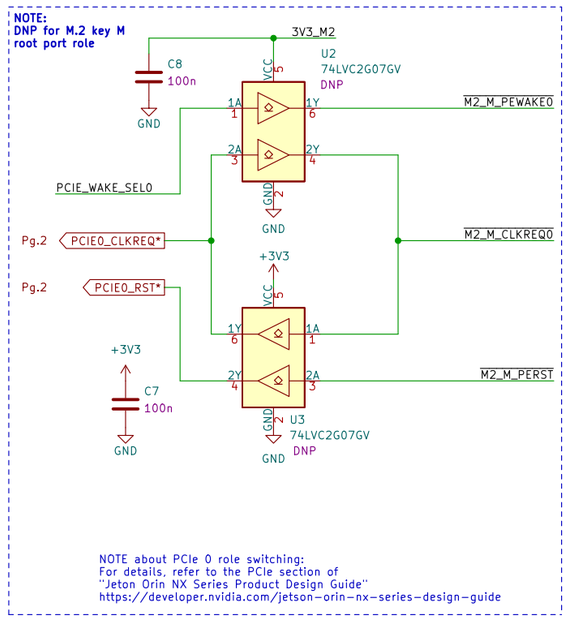
Sheet: /SoM/
File: som.kicad_sch

Title: Jetson Orin Baseboard

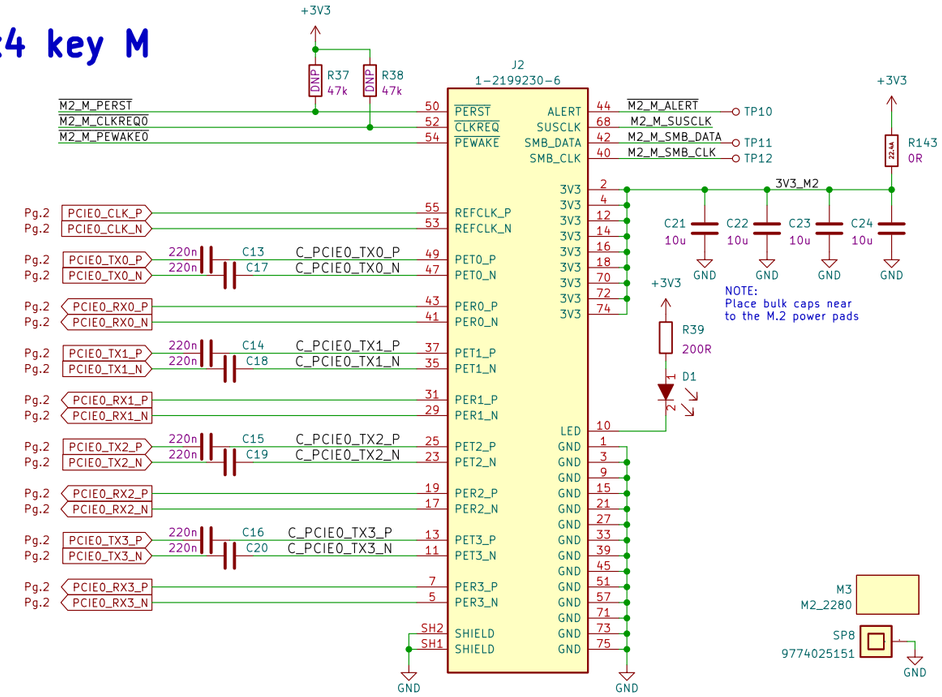
Size: A3	Date: 2023-03-03	**Rev: 1.1.0**
KiCad E.D.A. eeschema 6.0.5+dfsg-1~bpo11+1		Id: 2/10

PCIe0 Root Port / Endpoint mode selector

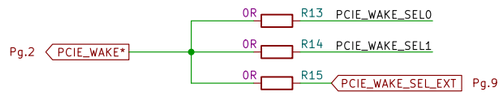




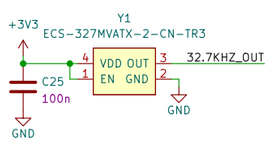
PCIe0 1x4 key M



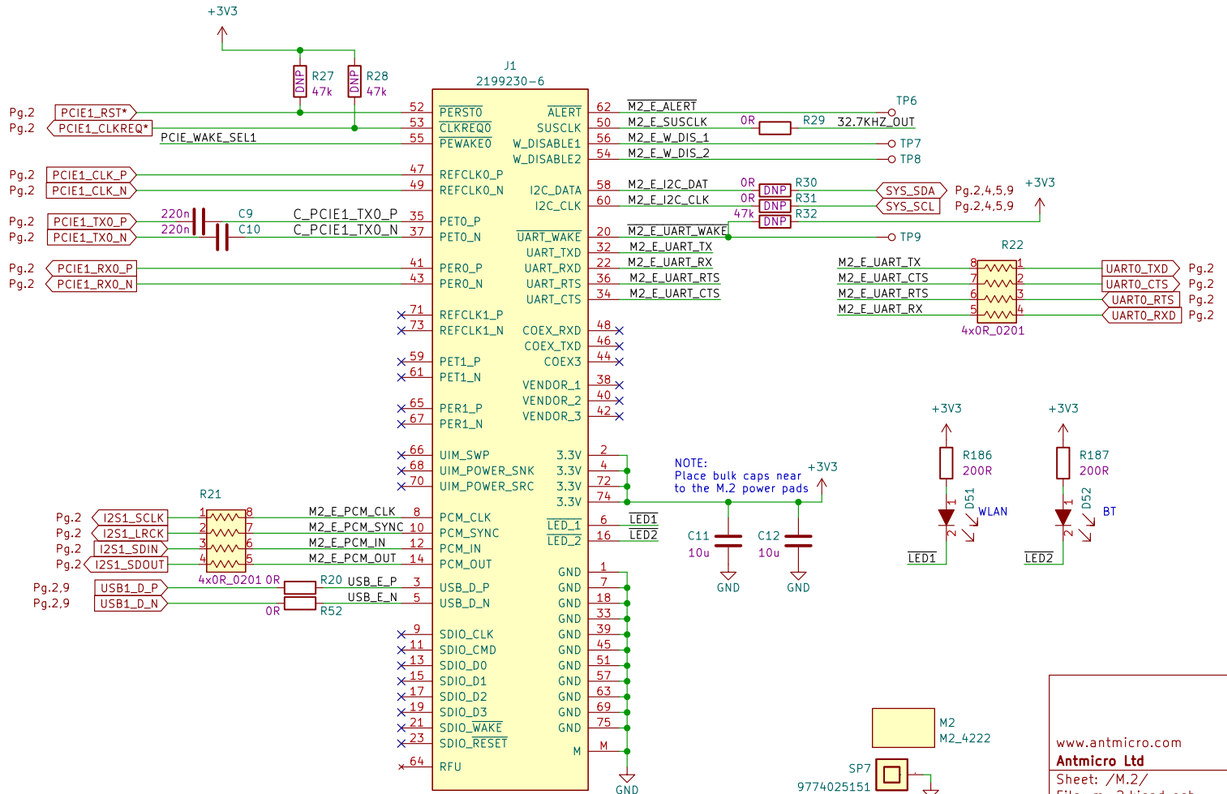
M.2 PCIE_WAKE selector



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: 2023-03-03	**Rev: 1.1.0**
KiCad E.D.A. eeschema 6.0.5+dfsg-1~bpo11+1		Id: 3/10

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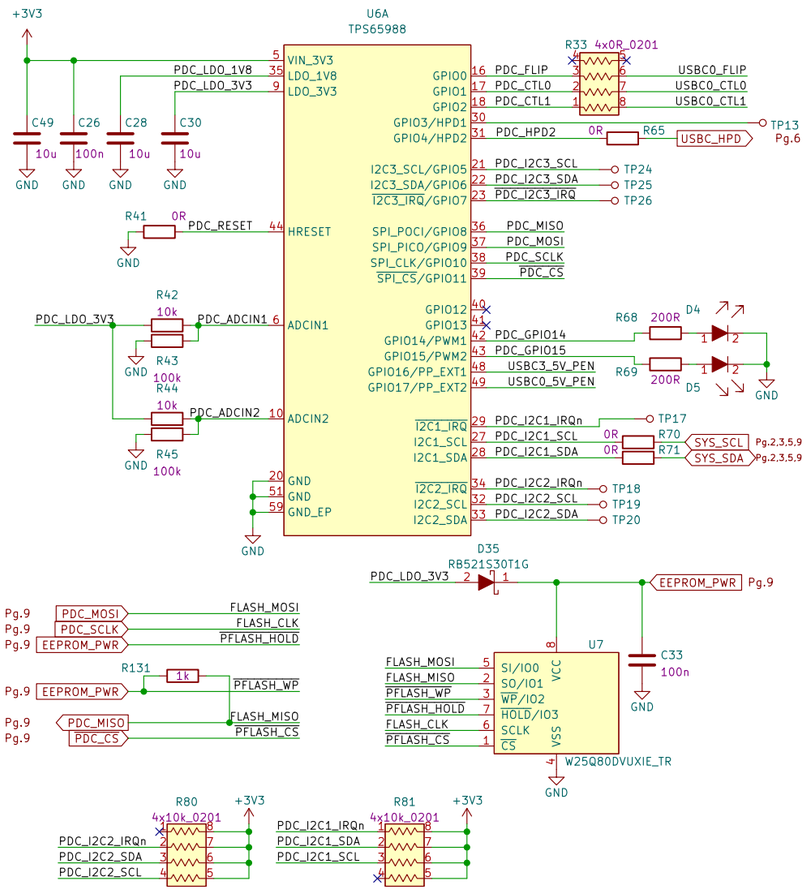
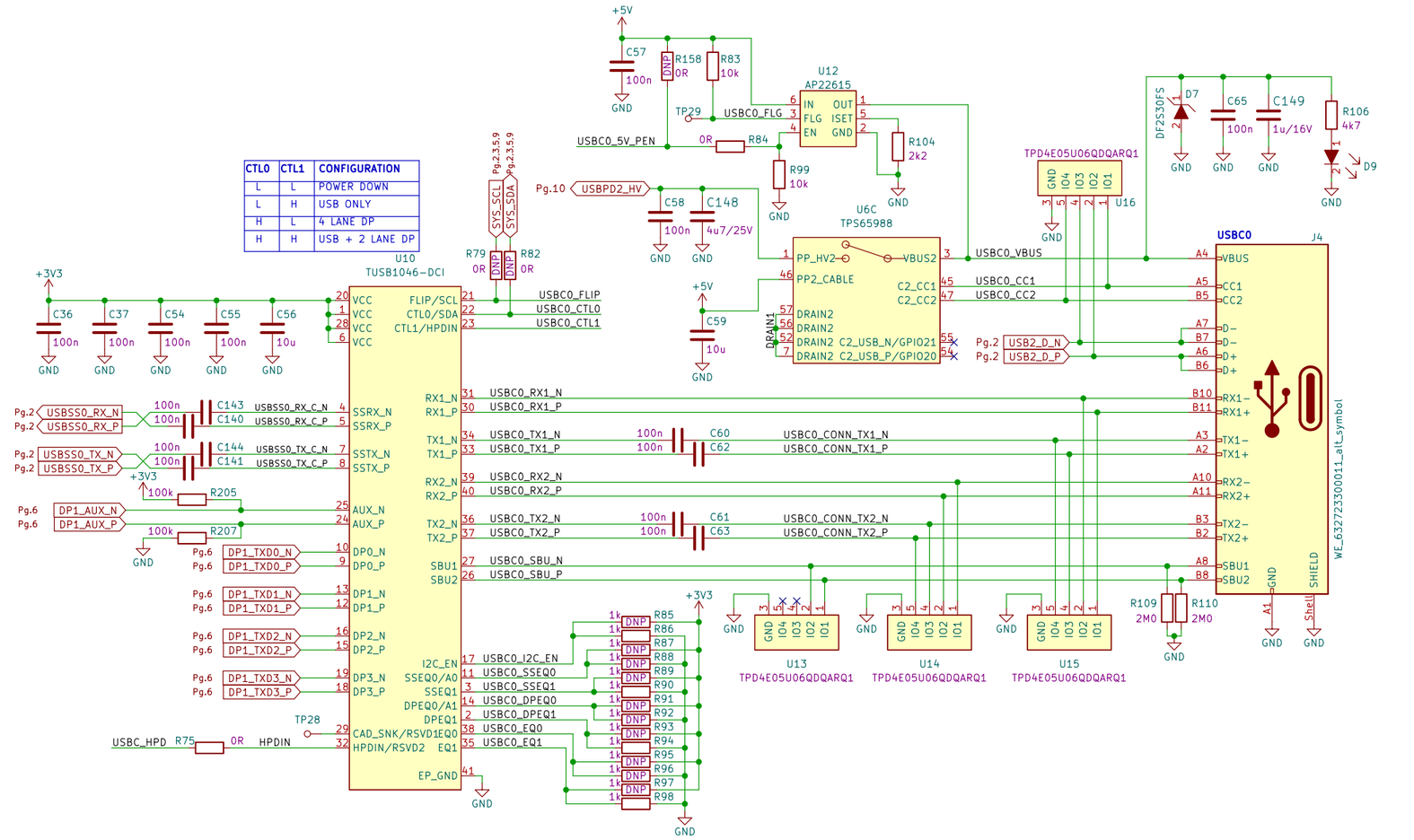
USB PD Controller



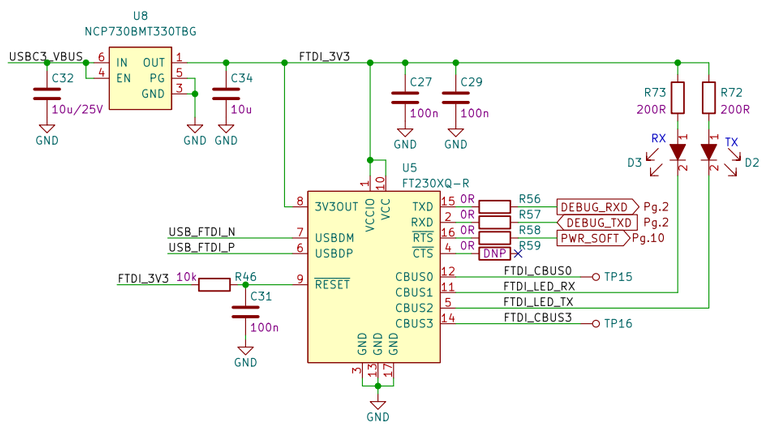
USB-C 0 Display Port alt mode

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

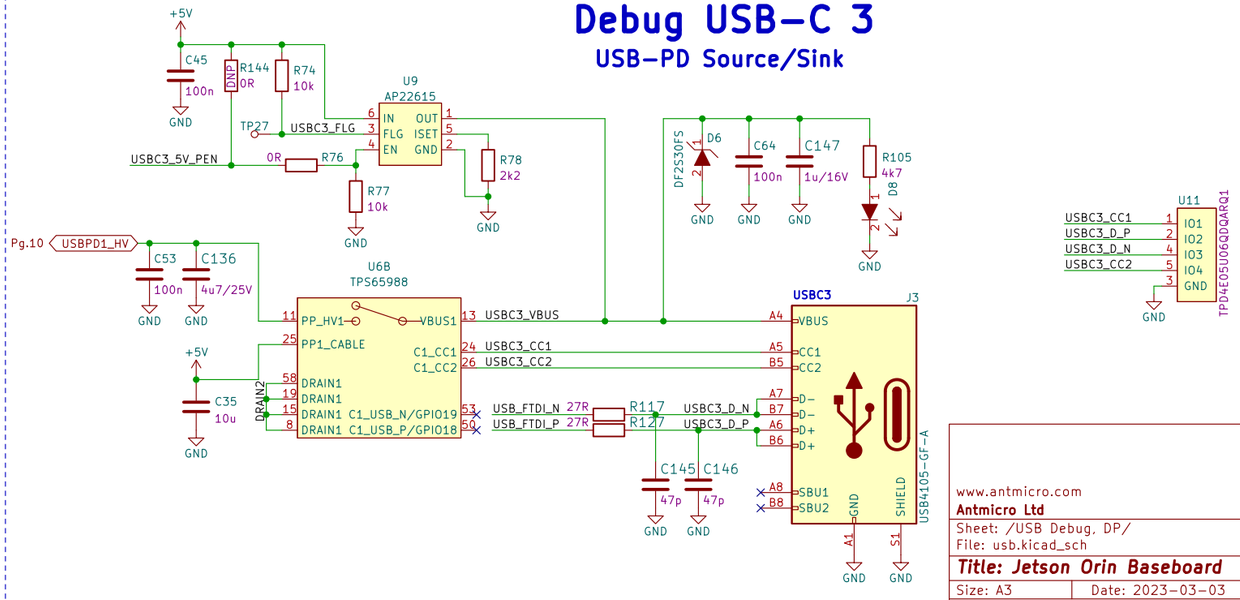


USB-UART Bridge



Debug USB-C 3

USB-PD Source/Sink



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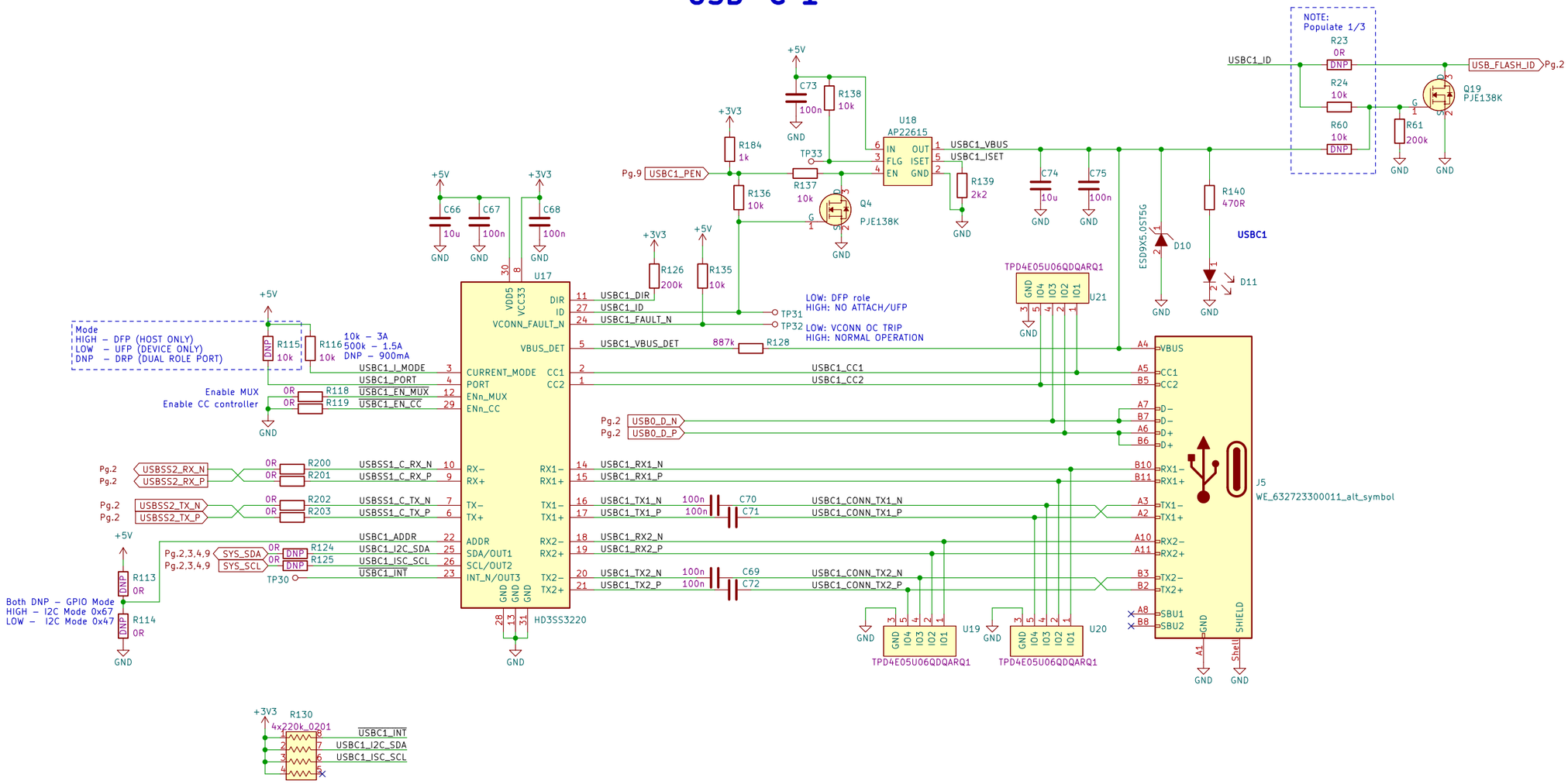
Sheet: /USB Debug, DP/

File: usb.kicad_sch

Title: Jetson Orin Baseboard

Size: A3	Date: 2023-03-03	**Rev: 1.1.0**
KiCad E.D.A.	eeschema 6.0.5+dfsg-1~bpo11+1	Id: 4/10

USB-C 1



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Sheet: /USB3/
File: usb3.kicad_sch

Title: Jetson Orin Baseboard

Size: A3	Date: 2023-03-03	**Rev: 1.1.0**
KiCad E.D.A. eeschema 6.0.5+dfsg-1~bpo11+1		Id: 5/10

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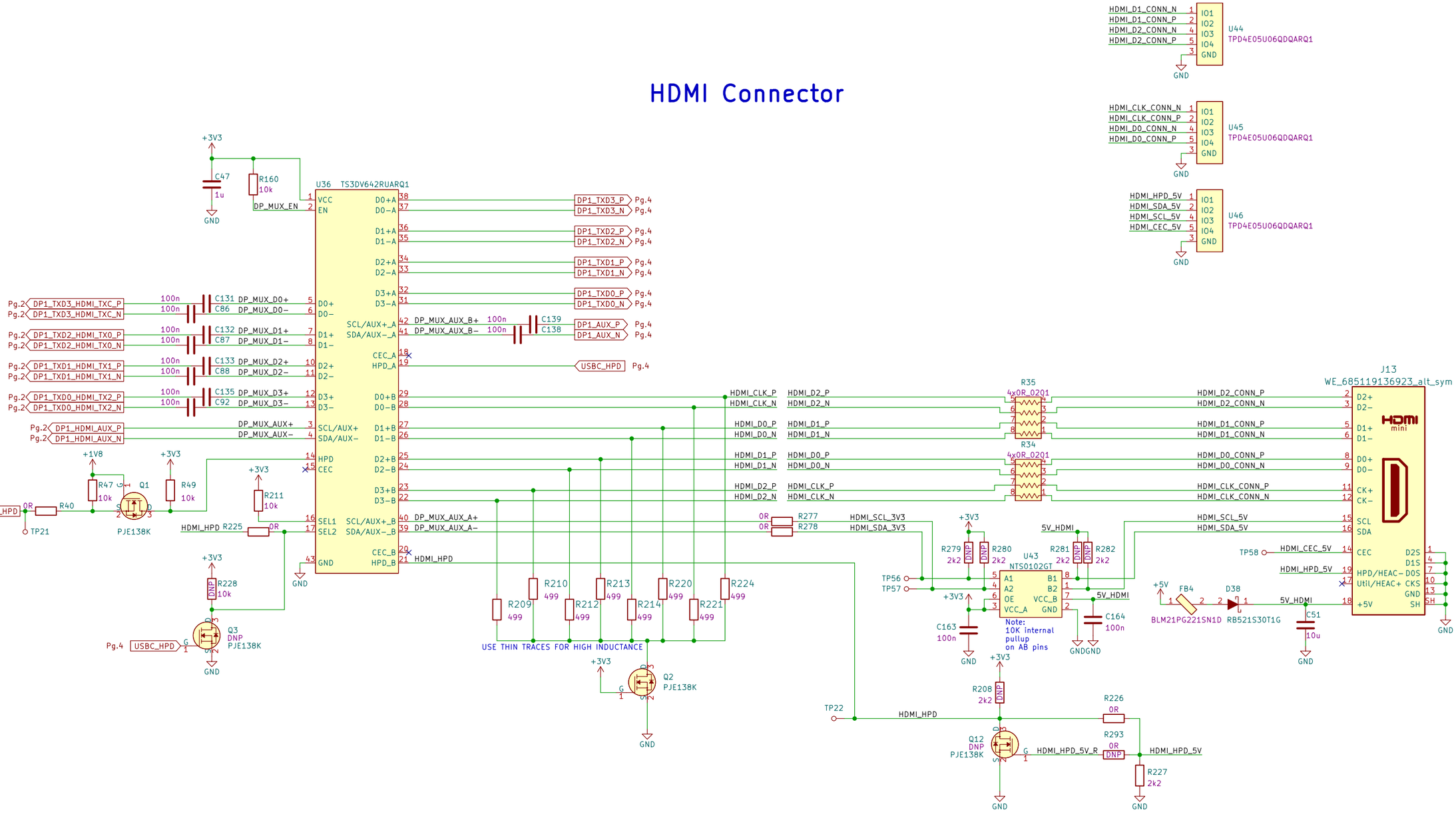
HDMI Connector



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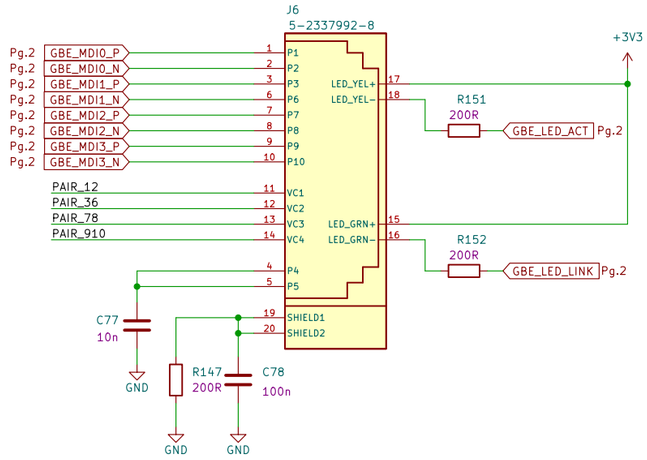
Sheet: /HDMI/
File: hdmi.kicad_sch

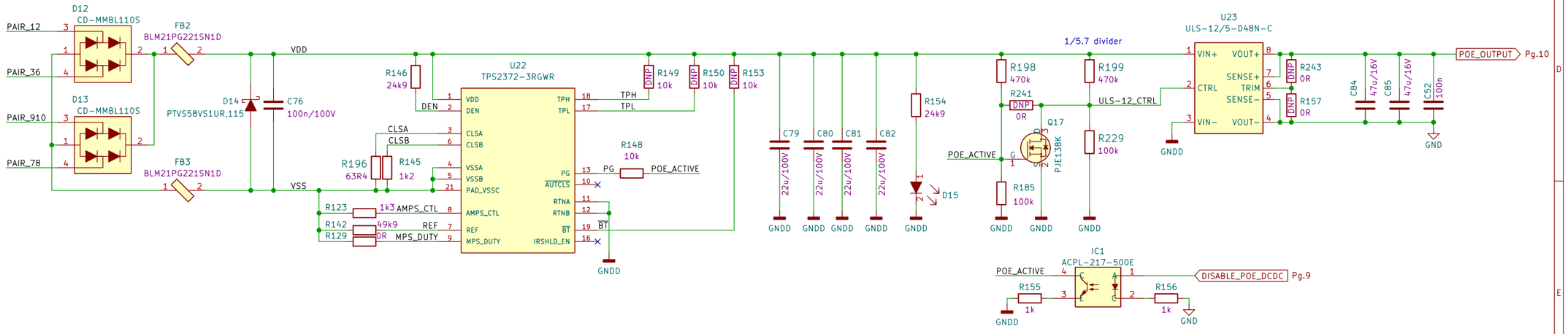
Title: Jetson Orin Baseboard

Size: A3	Date: 2023-03-03	**Rev: 1.1.0**
KiCad E.D.A.	eeschema 6.0.5+dfsg-1~bpo11+1	Id: 6/10

Ethernet Connector



Power over Ethernet



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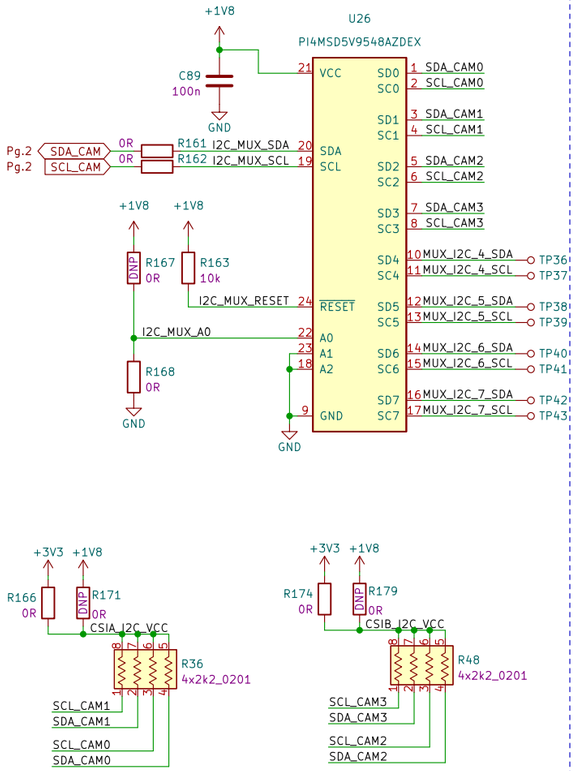
Sheet: /Ethernet/
File: ethernet.kicad_sch

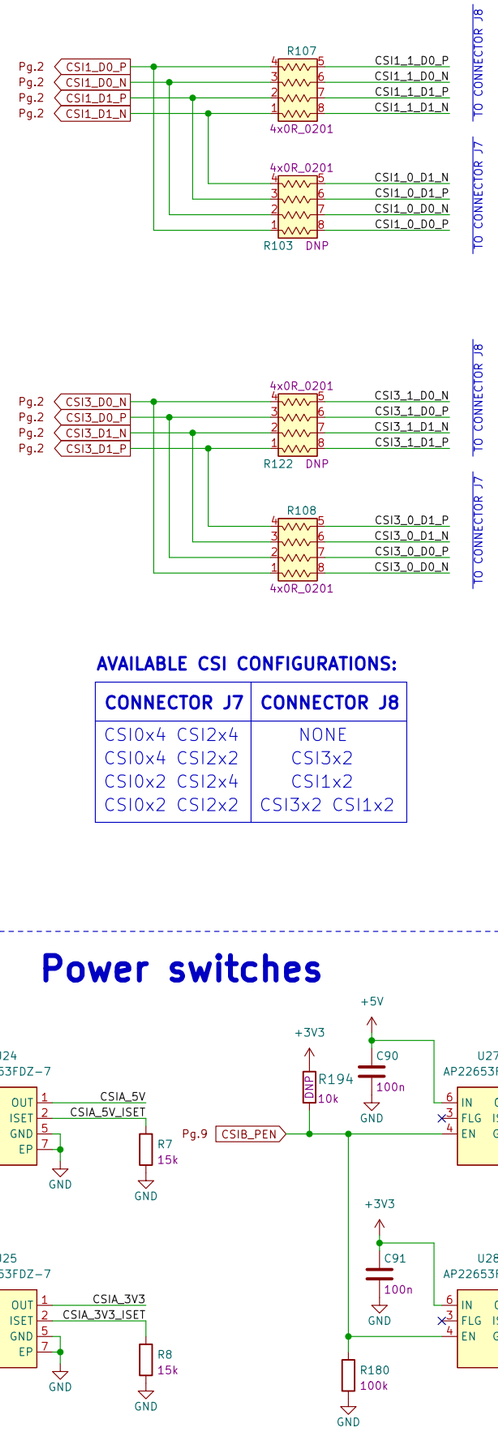
Title: Jetson Orin Baseboard

Size: A3	Date: 2023-03-03	**Rev: 1.1.0**
KiCad E.D.A.	eeschema 6.0.5+dfsg-1~bpo11+1	Id: 7/10

I2C Mux



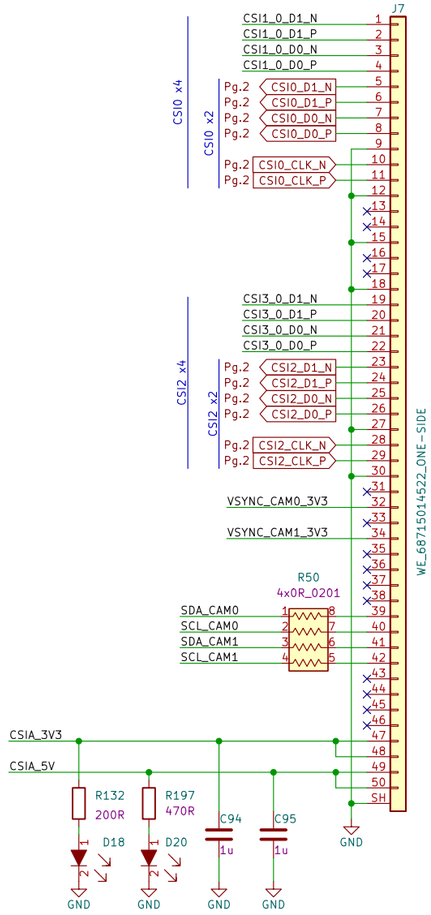
CSI Mux



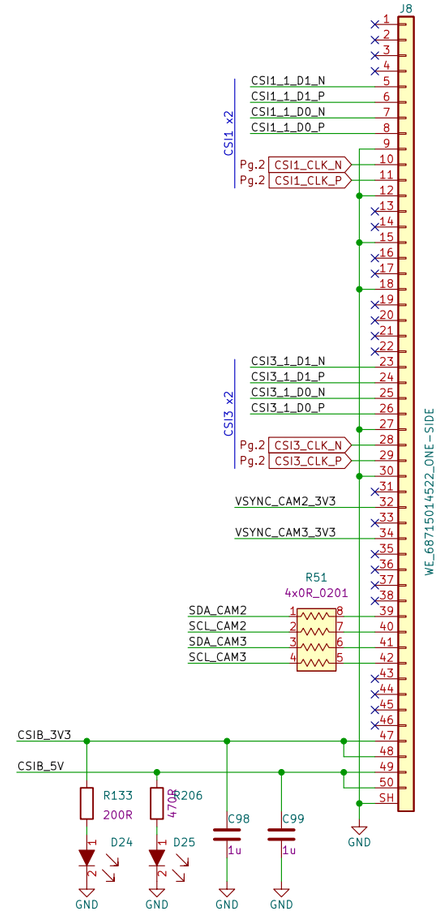
AVAILABLE CSI CONFIGURATIONS:

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

CSI connector J7



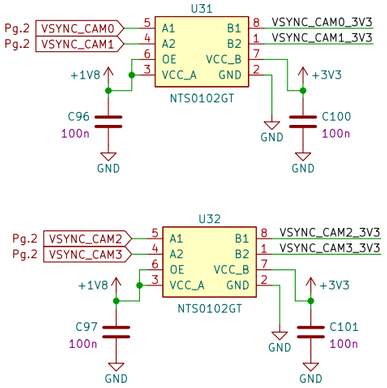
CSI connector J8



Power switches

ALL SWITCHES
1.7A CURRENT LIMIT

Level shifters



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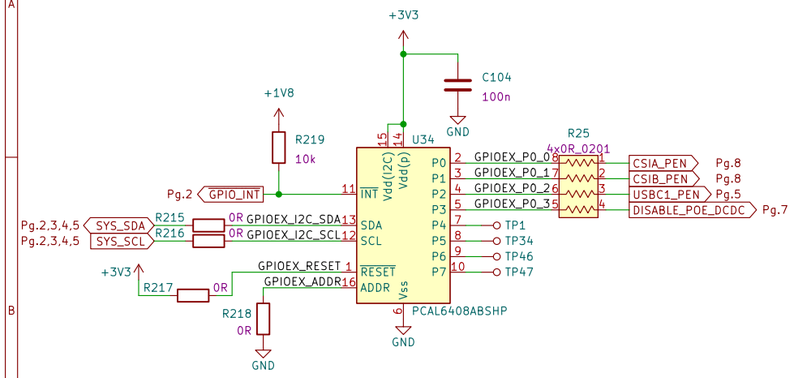
Sheet: /CSI/
File: csi.kicad_sch

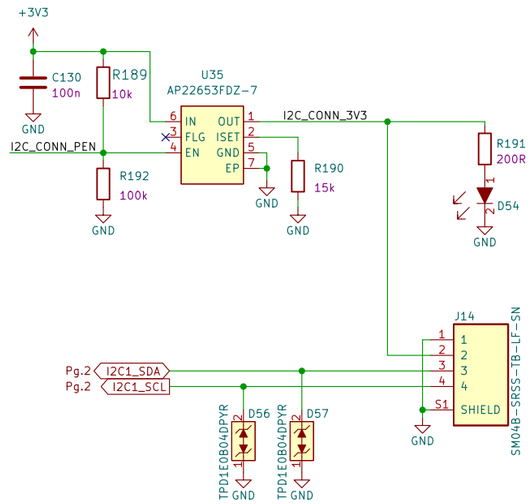
Title: Jetson Orin Baseboard

Size: A3	Date: 2023-03-03	**Rev: 1.1.0**
KiCad E.D.A.	eeschema 6.0.5+dfsg-1~bpo11+1	Id: 8/10

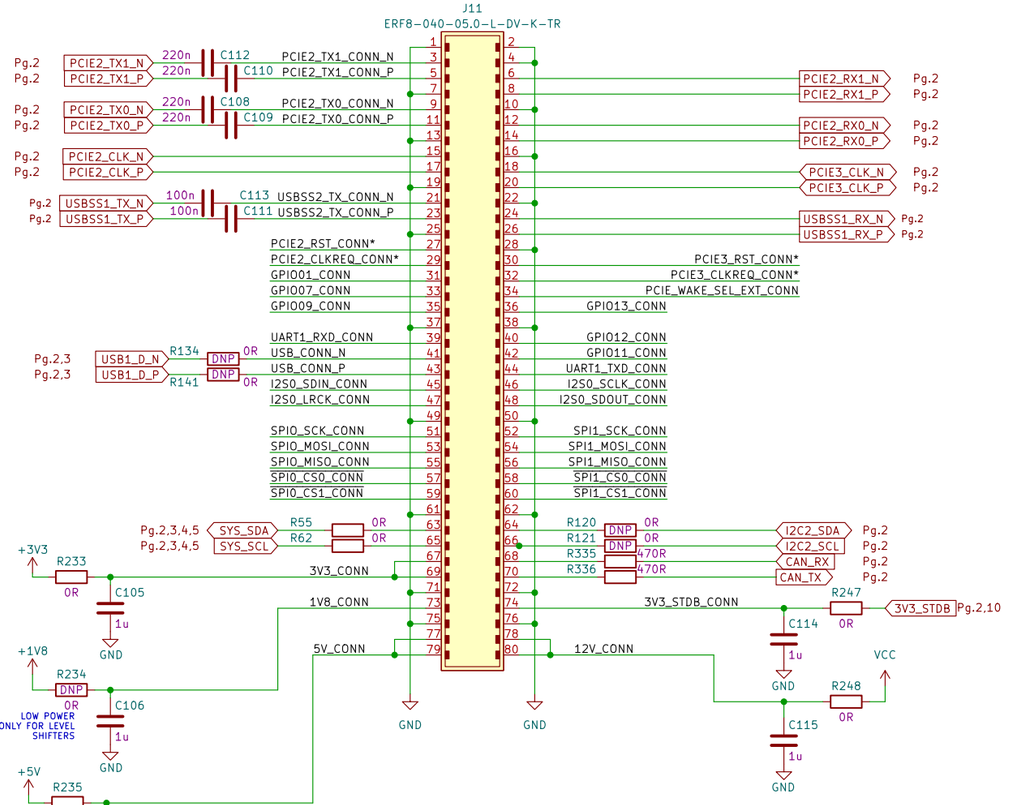
GPIO expander



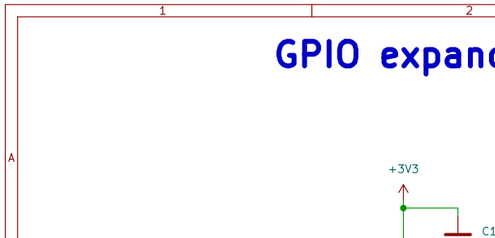
I2C connector



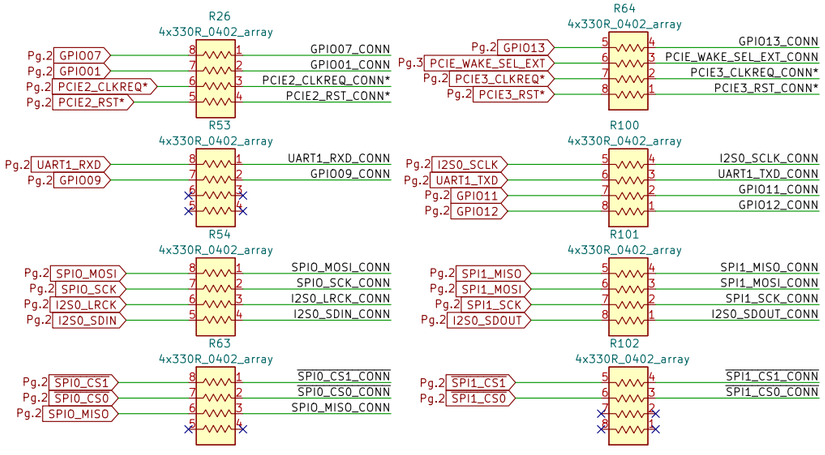
Expansion connector



Fan connector

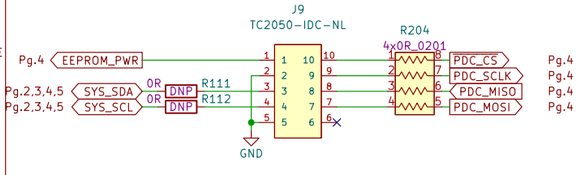


Expansion connector resistors

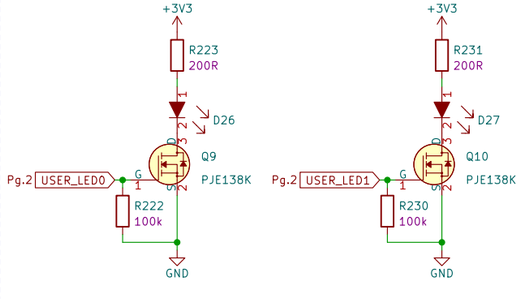


Debug connector

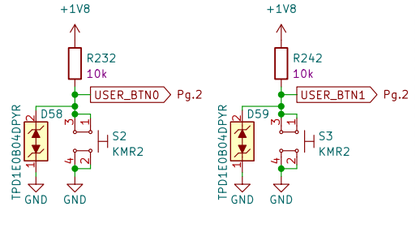
pinout compatible with
www.github.com/antmicro/ftdi-toolkit

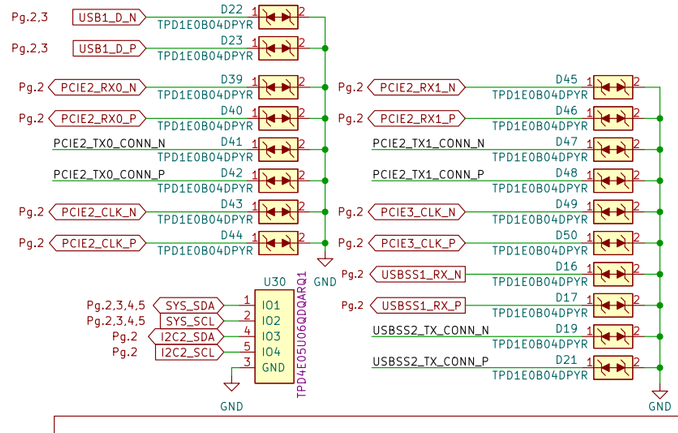


LED indicators



Buttons





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Sheet: /Peripherals/
File: peripherals.kicad_sch

Title: Jetson Orin Baseboard

Size: A3	Date: 2023-03-03	**Rev: 1.1.0**
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

NOTE:
SW1 STARTUP CRTL
1-2 AUTO
3-2 MANUAL

MODIFIED CIRCUIT
FROM TI's SCEA048B AN

RESET BUTTON

3V3 STANDBY LDO

U41 NCP730BMT330TBG
3V3_LDO
3.3V @150mA

1V8 LDO

U42 TPS7A0518PDBVT
1V8_LDO
1.8V @200mA

INPUT SELECTOR AND SOFT START

J12 1054301202 9-15V
VCC_IN

PD CONTROLLER HAS
IDEAL DIODE BUILT-IN

5V DCDC

U1 TPS56C230
5V0_EN
5V_SW
5V_FB
L1 XAL6030-182MEC 1.8u/14A
5V @12A
5V_OUT

3V3 DCDC

U29 TPS56C230
3V3_EN
3V3_SW
3V3_FB
L2 XAL6030-182MEC 1.8u/14A
3V3 @12A
3V3_OUT

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Sheet: /Supply/		
File: supply.kicad_sch		
Title: Jetson Orin Baseboard		
Size: A3	Date: 2023-03-03	**Rev: 1.1.0**
KiCad E.D.A. eeschema 6.0.5+dfsg-1~bpo11+1		Id: 10/10