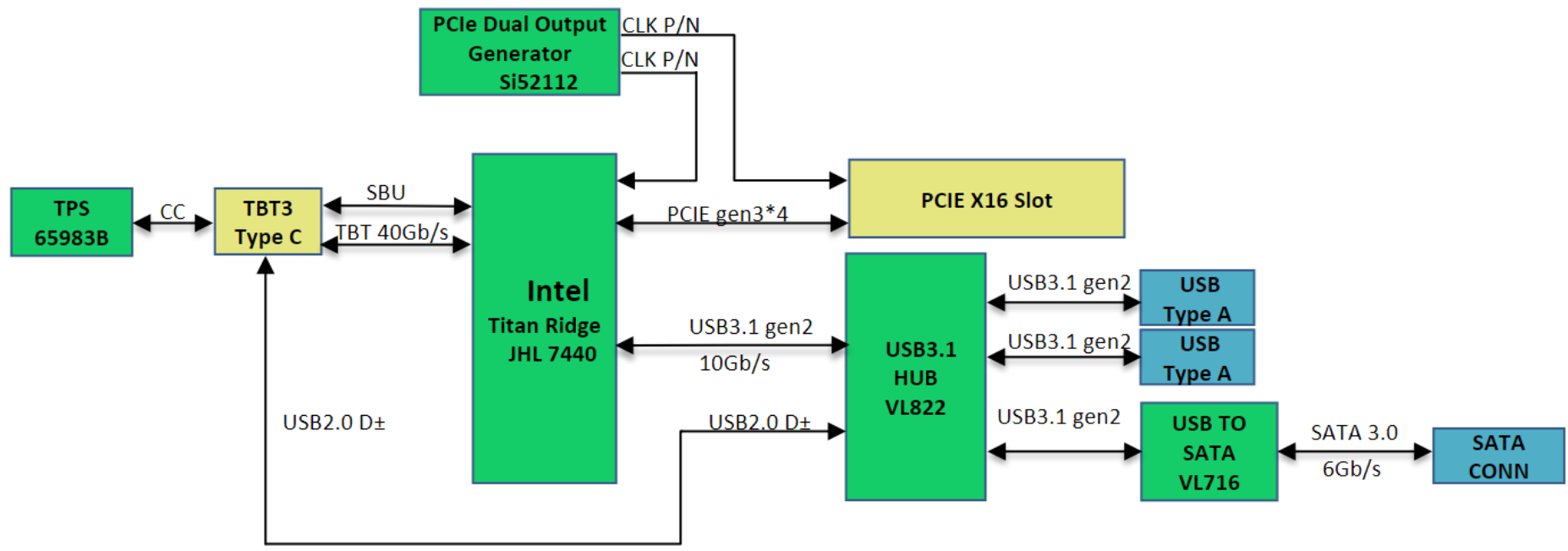
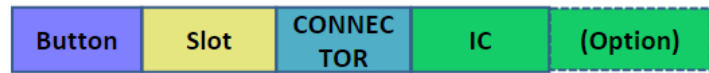
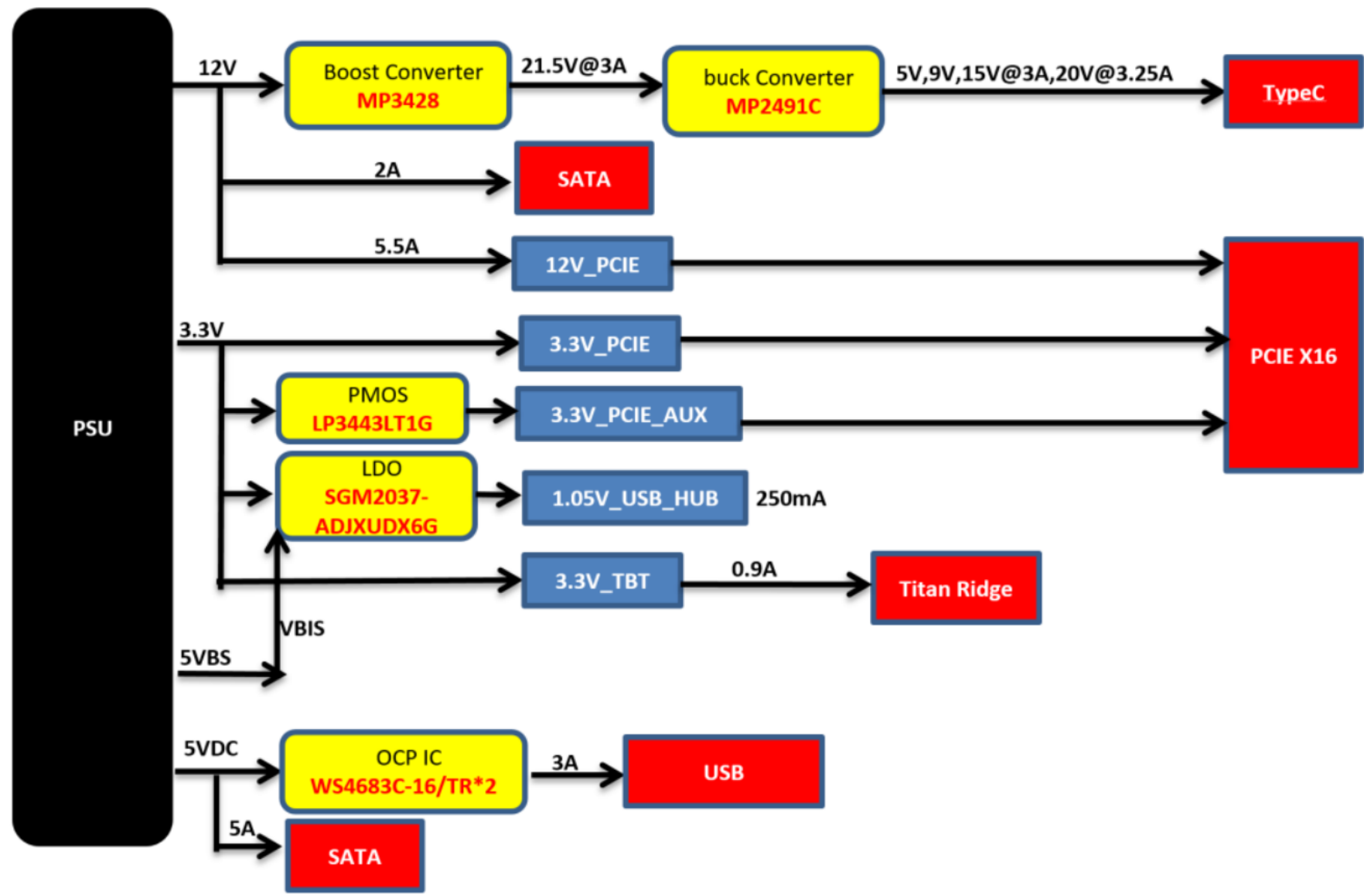


Block Diagram & Index

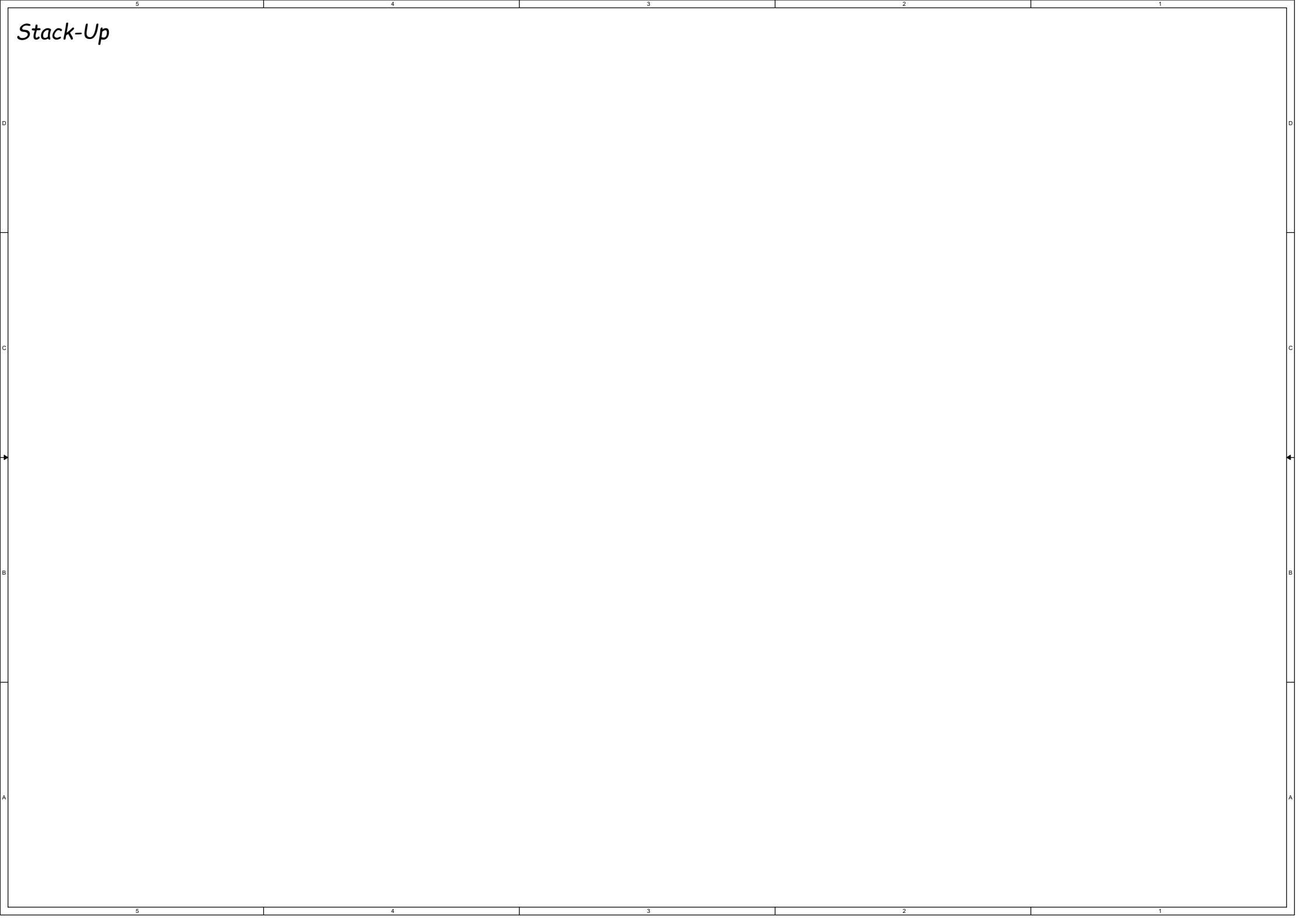
- Page 01: Block Diagram
- Page 02: Power Diagram
- Page 03: Stack Up
- Page 04: TR DD-High Speed
- Page 05: TR DD-Misc
- Page 06: TR DD-Power & GND
- Page 07: USBC Ports
- Page 08: Port Controller
- Page 09: PCIE
- Page 10: Power_3.3V/TBTA VBUS
- Page 11: BLANK
- Page 12: USB3.1 POWER
- Page 13: USB3.1 HUB VL822 1OF 2
- Page 14: USB3.1 HUB VL822 2OF 2
- Page 15: Mechanical Parts
- Page 16: USB TO SATA 1OF 2
- Page 17: USB TO SATA 2OF 2
- Page 18: FAN/IO



Power Diagram

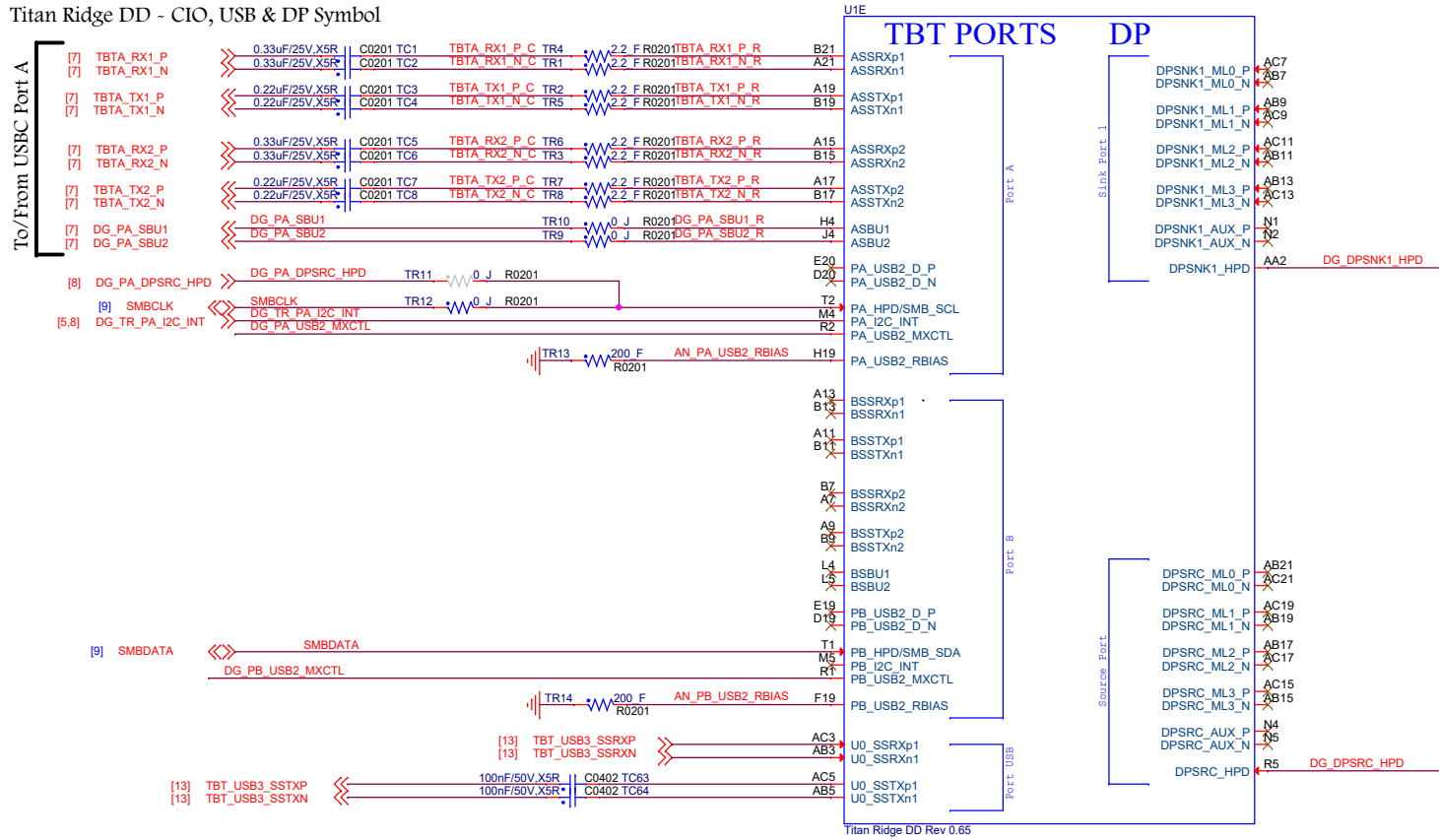


Stack-Up

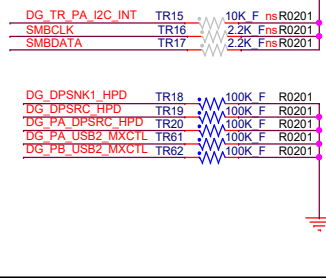


Titan Ridge DD - High Speed (CIO, USB, DP and PCIe) Parts

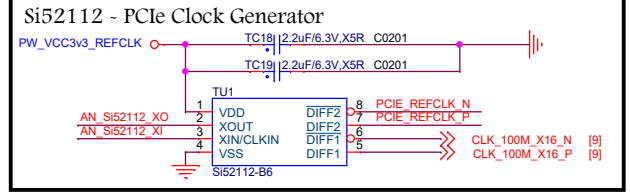
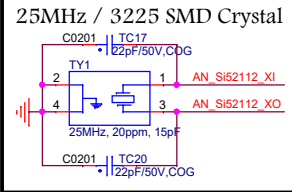
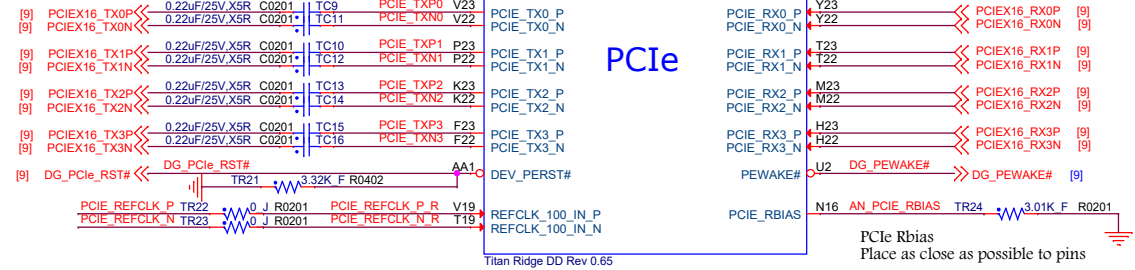
Titan Ridge DD - CIO, USB & DP Symbol



HW Pull-Up/Pull-Down

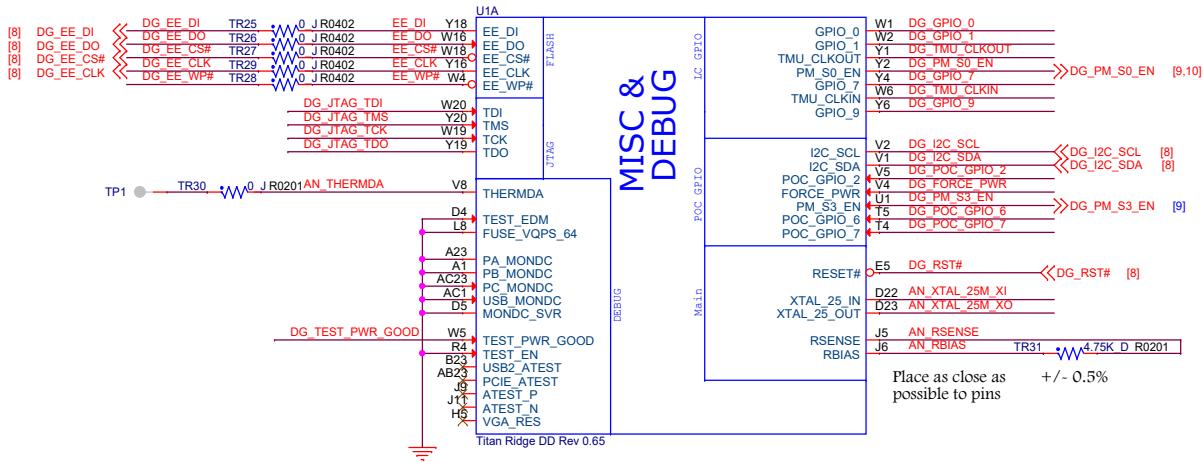


Titan Ridge DD - PCIe Symbol

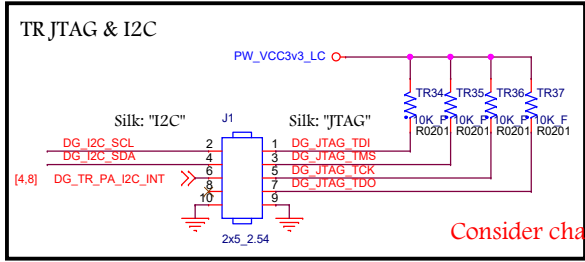
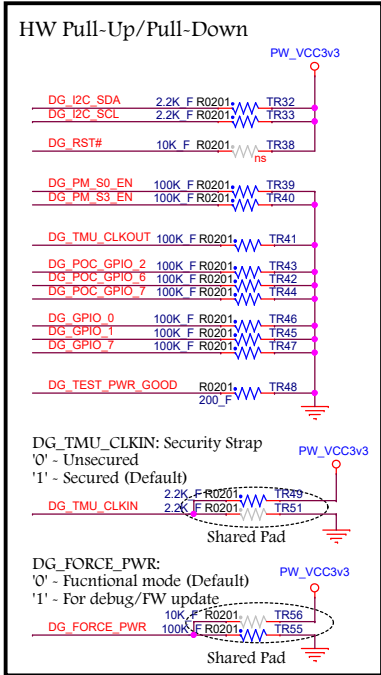
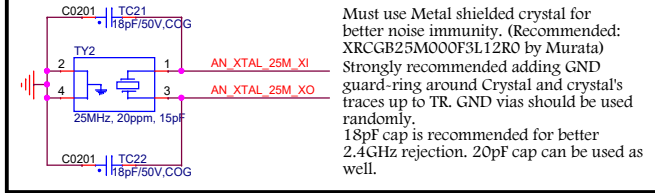


Titan Ridge DD - Misc Part

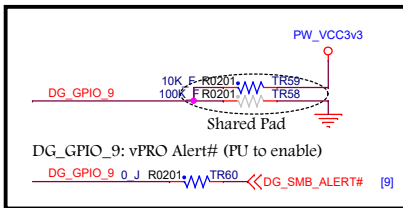
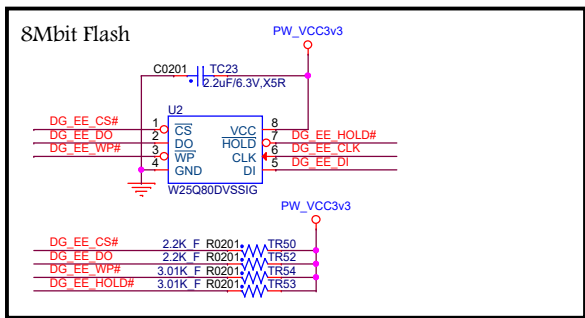
Titan Ridge DD - Misc Symbol



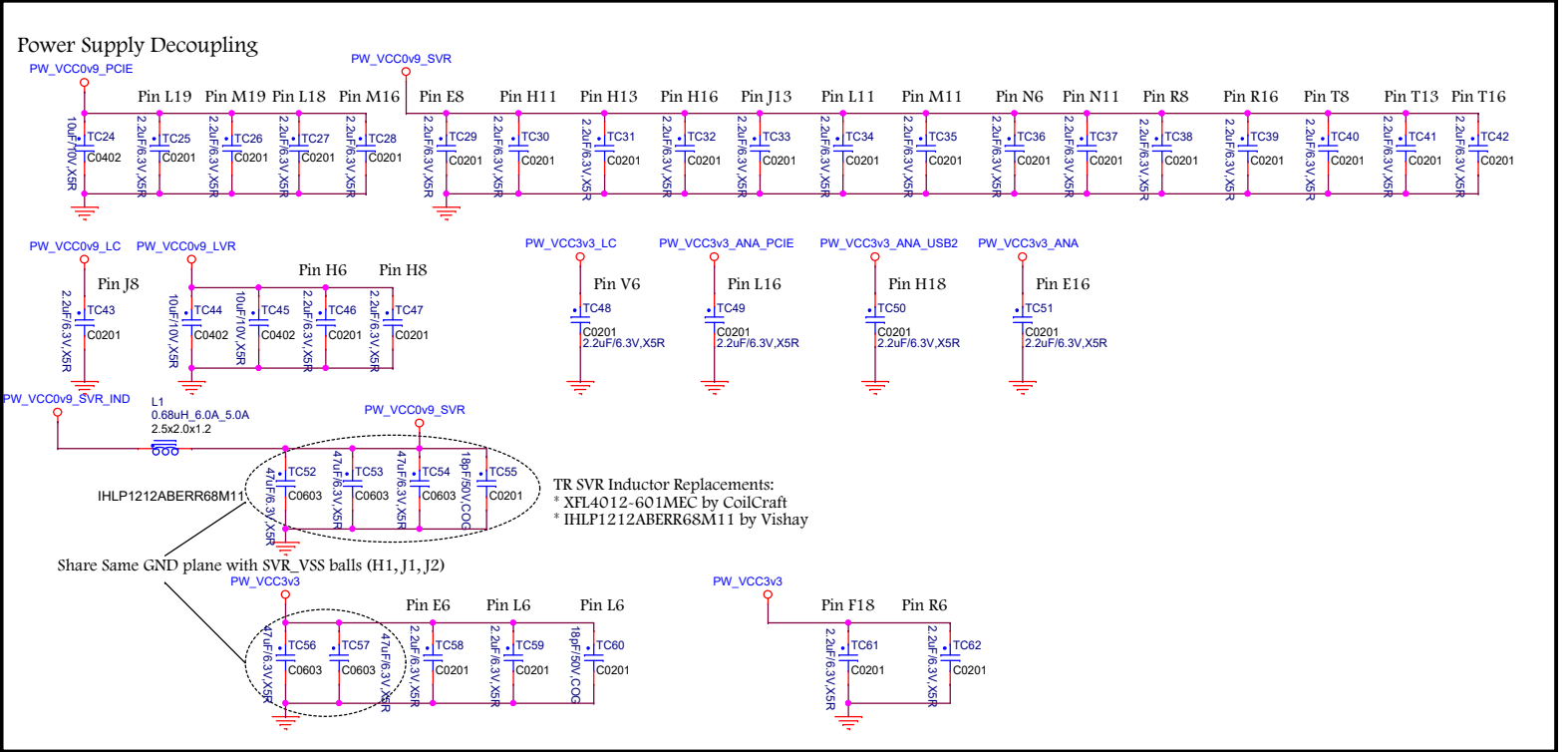
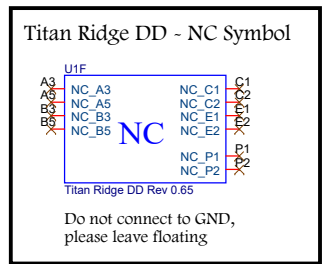
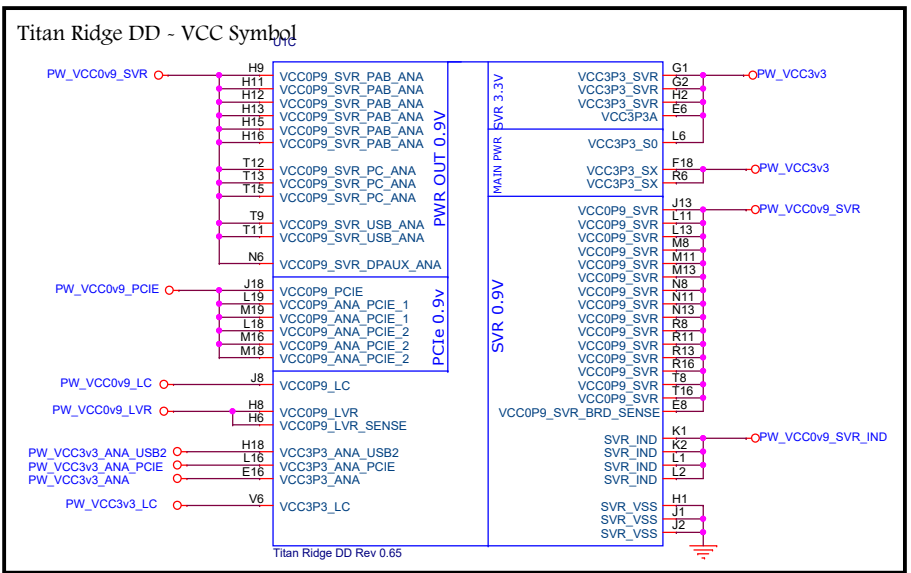
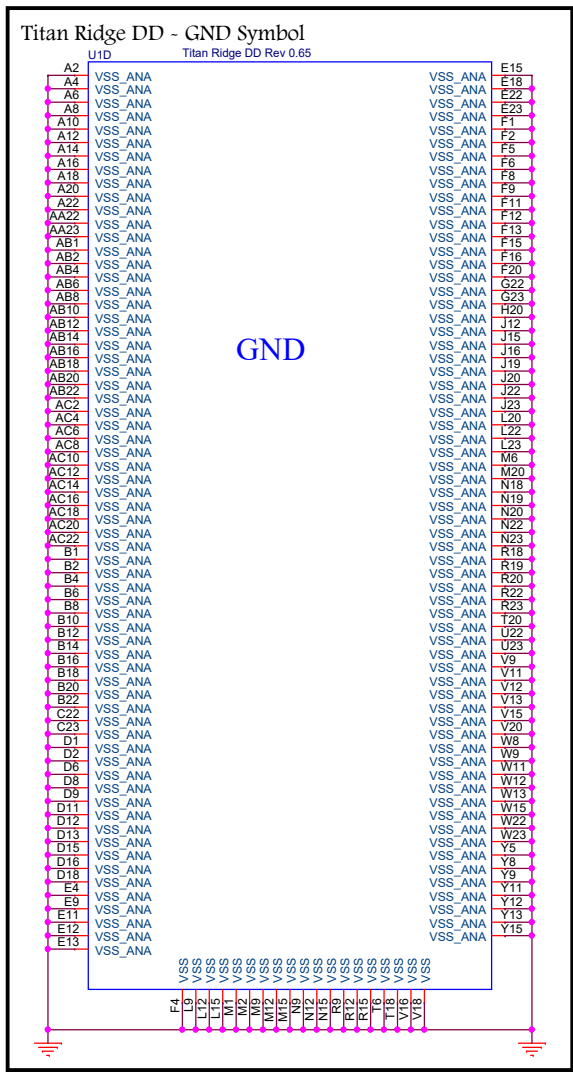
25MHz, 30ppm, 20pF TR Crystal



Consider changing header to 0603 pads

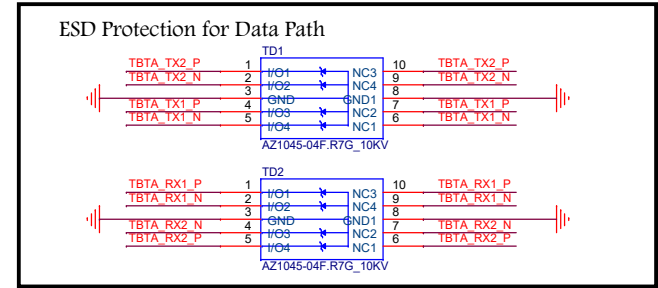
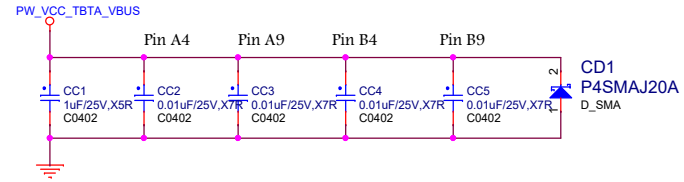
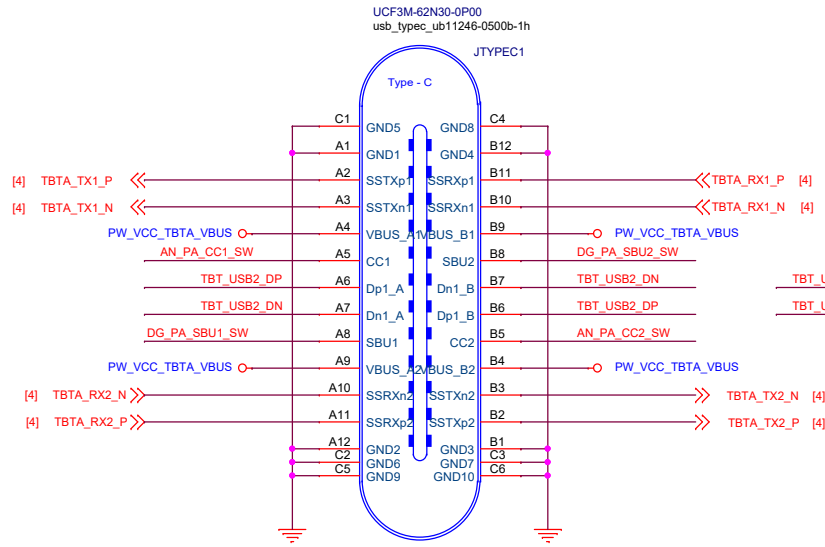


Titan Ridge DD - Power Supply & GND Parts



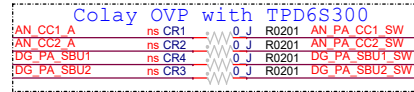
TBT USBC Port

TBT Type C Rec - Port A

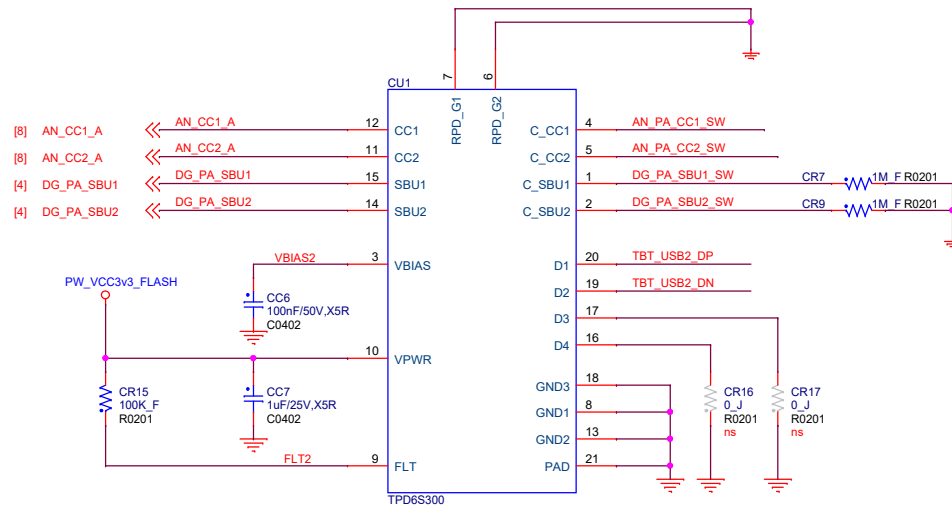
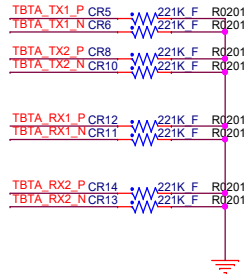


VBUS-Short Protection for SBUx/CCx

TPD6S300 is recommended for VBUS-short protection on low speed signals to/from USBC.



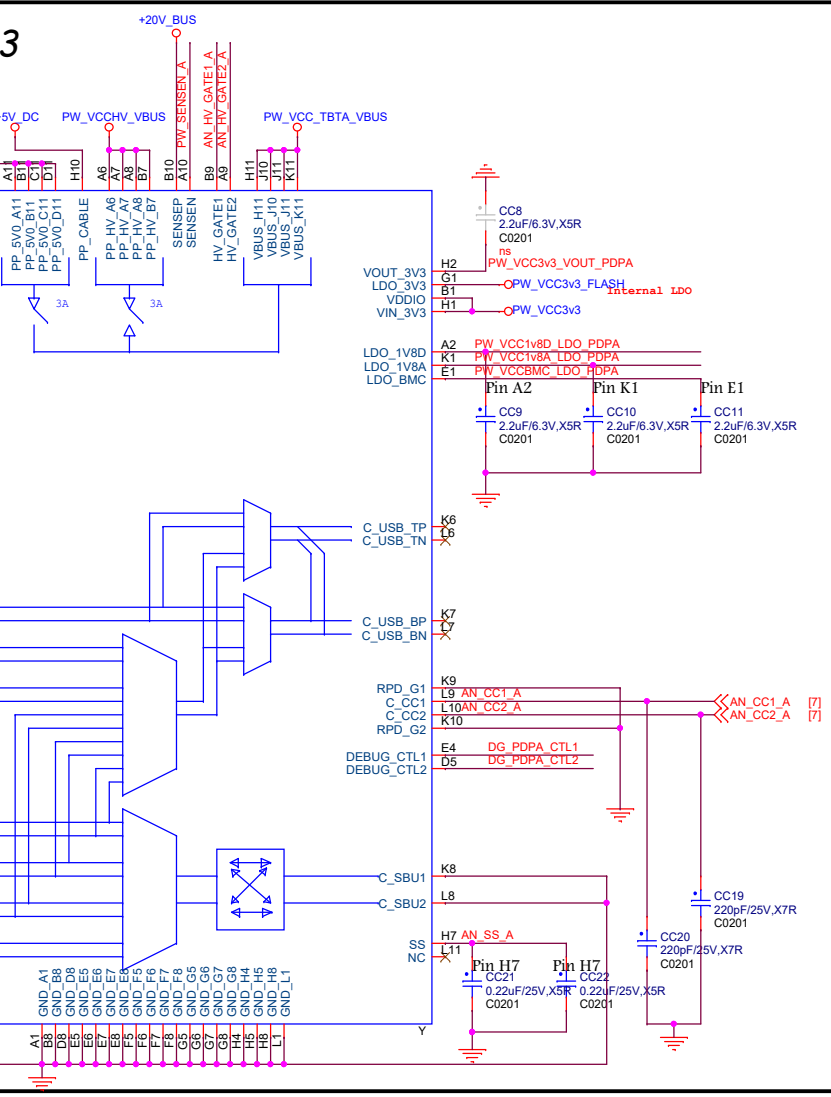
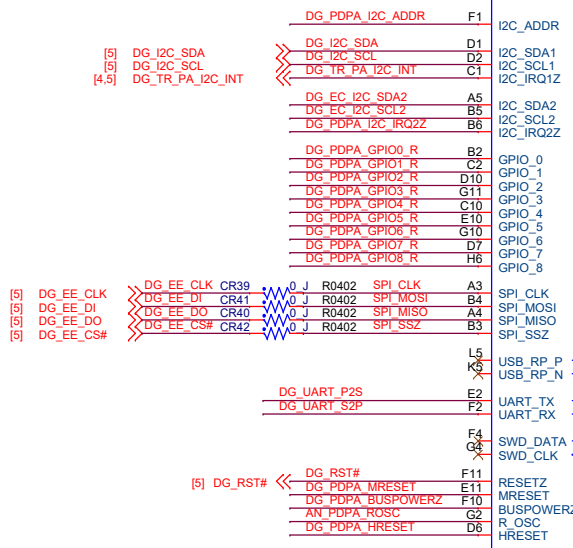
Bleeding Resistors



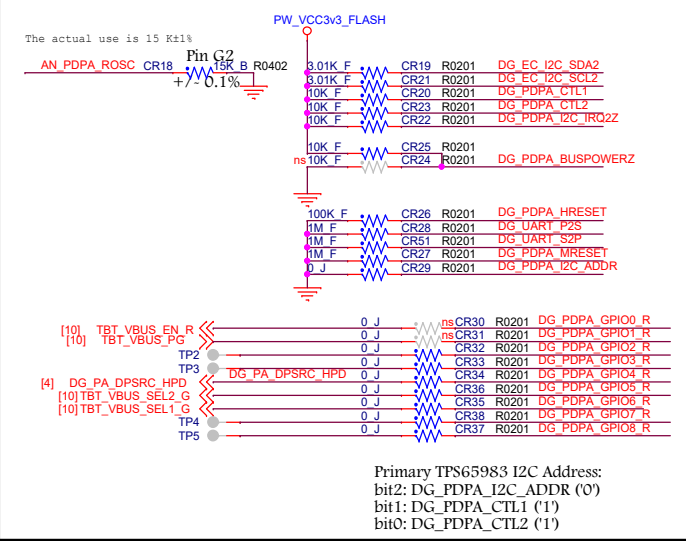
Port Controller - Primary TPS65983

TPS65983 - USB3.1 PD

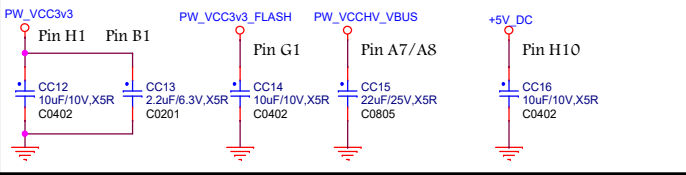
I2C1: TPS65983 to/from TR
 I2C2: Primary TPS65983 to/from Secondary TPS65983
 SPI/EE: TPS65983 to/from NVM & AR
 UART: Primary TPS65983 to/from Secondary TPS65983



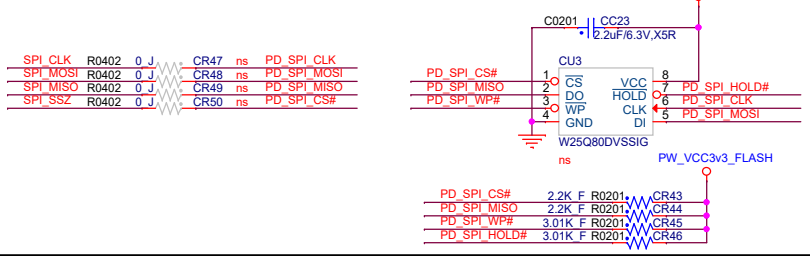
HW Pull-Up/Pull-Down



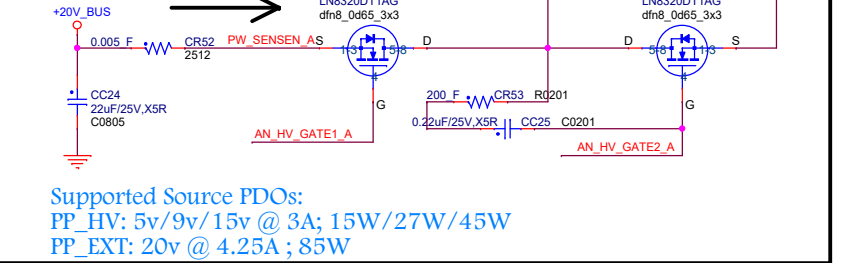
Power Supply Decoupling

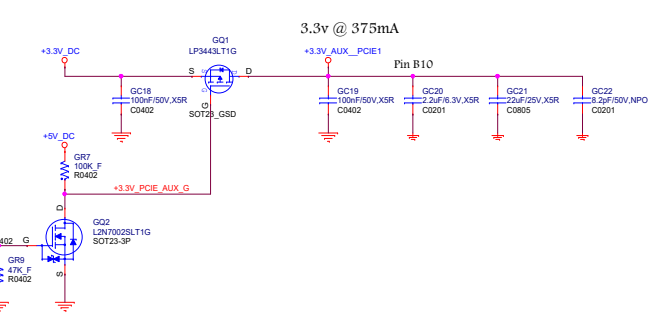
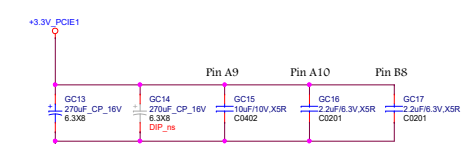
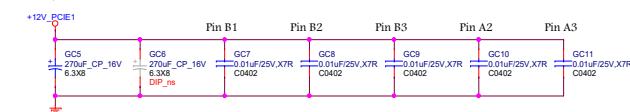
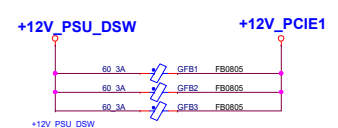
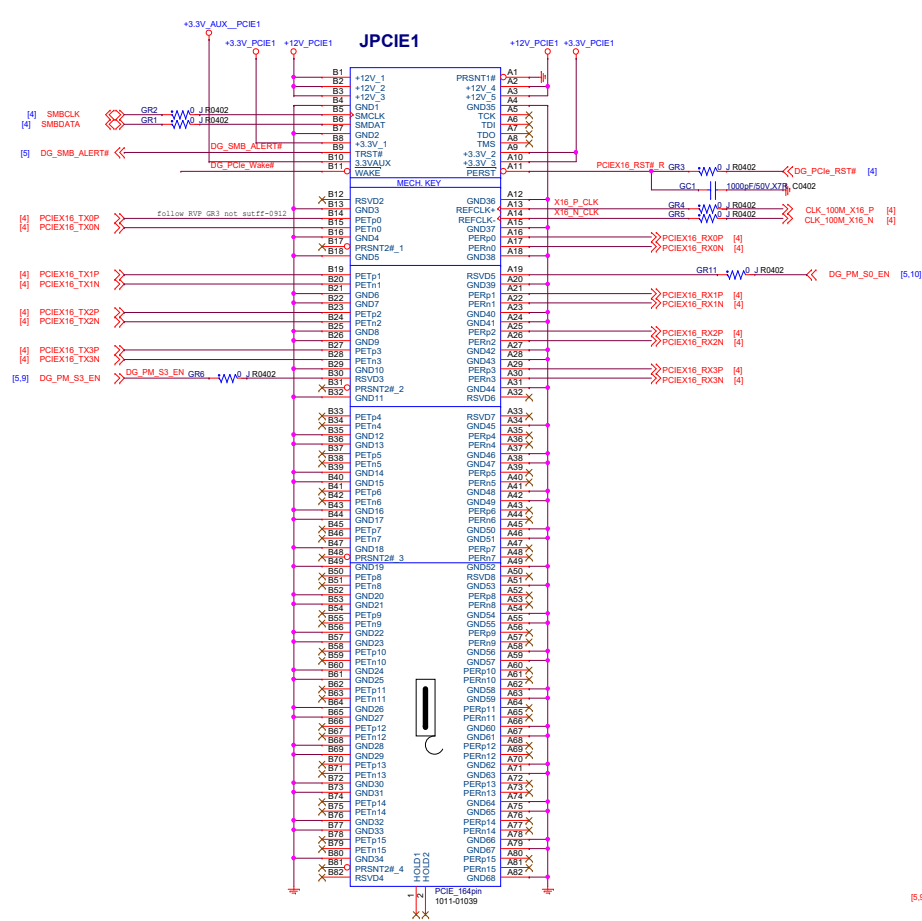


8Mbit Flash

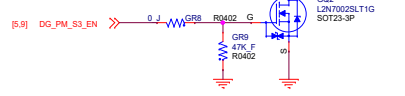
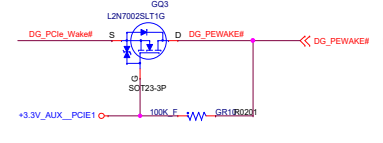


PP_EXT circuit



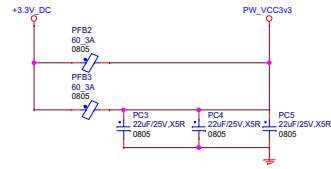


PCIe Wake Circuit

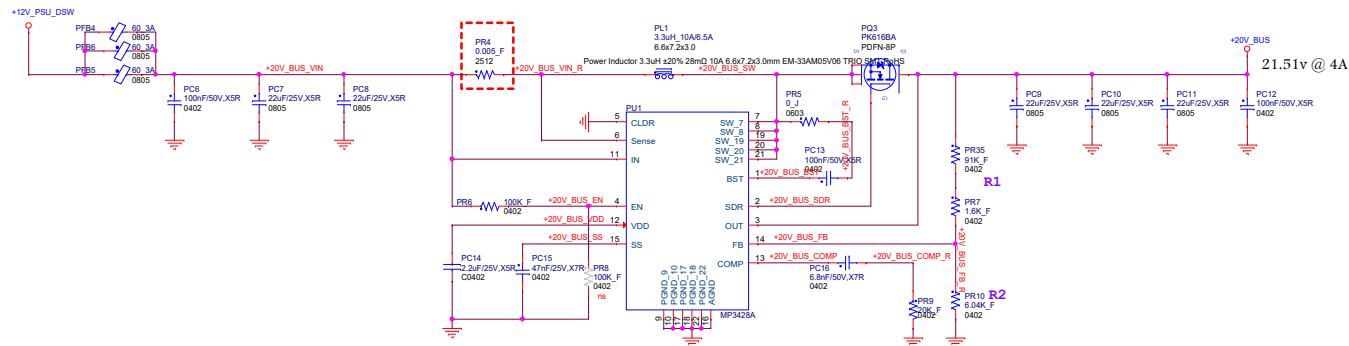
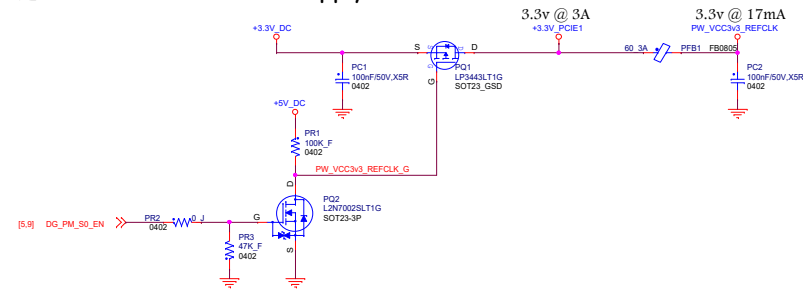


Power Supply - (3.3v)

3v3 Power Supply

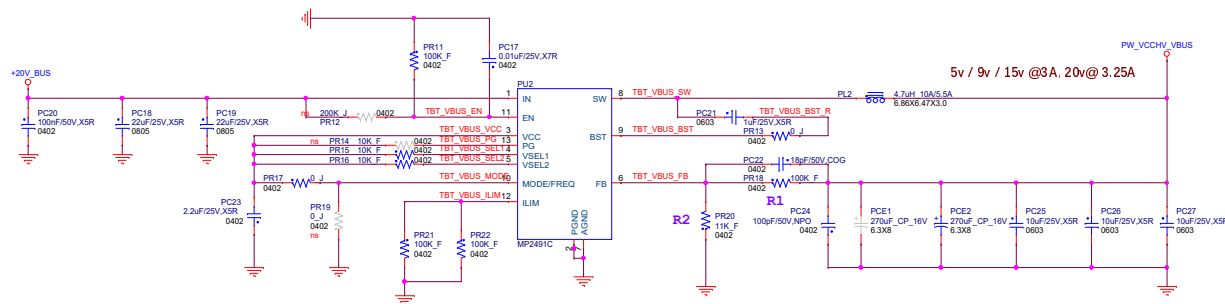


3.3V_PCIE1/3v3 Ref Clock Supply



$$V_{out} = V_{ref} * (1 + R1 / R2)$$

$$V_{out} = 1.225 * (1 + 92.6K / 6.04K) = 20.005v$$



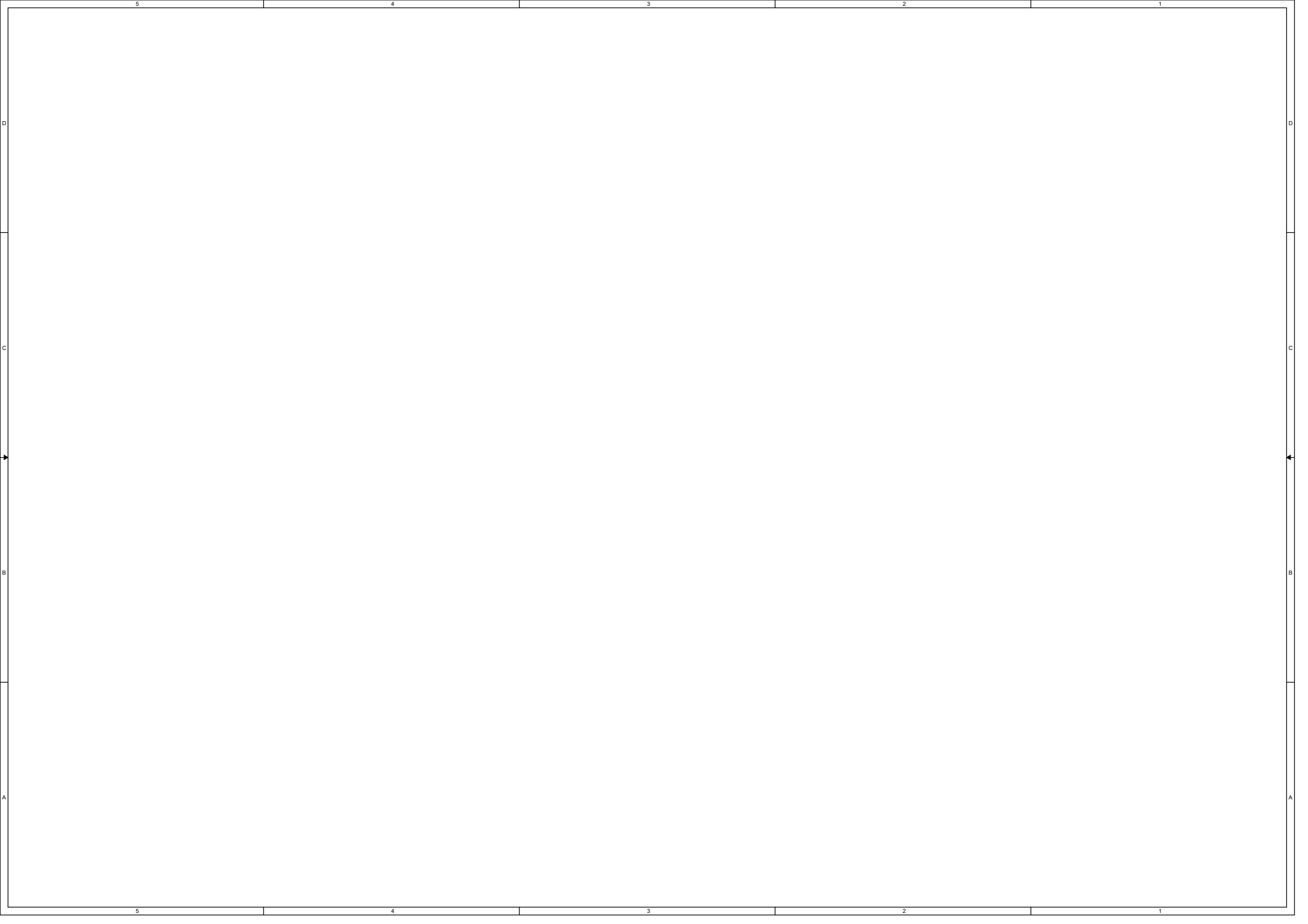
$$V_{out} = V_{ref} * (1 + R1 / R2)$$

$$V_{out} = 0.5 * (1 + 100K / 11K) = 5.05v ; VSEL2 = '1', VSEL1 = '1'$$

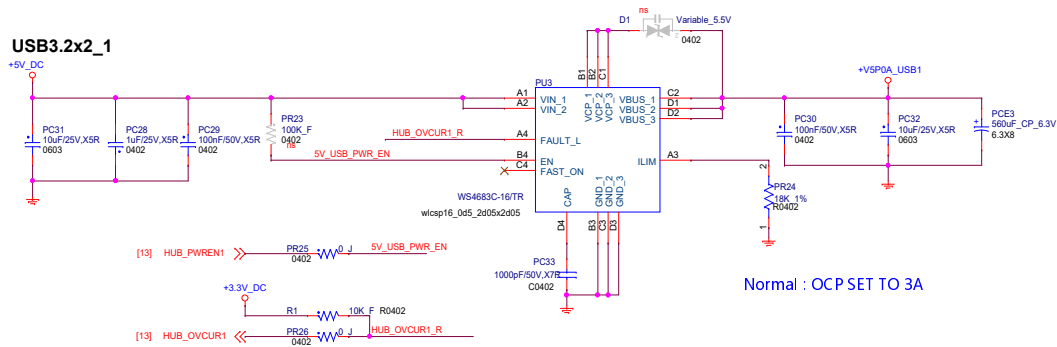
$$V_{out} = 0.9 * (1 + 100K / 11K) = 9.08v ; VSEL2 = '1', VSEL1 = '0'$$

$$V_{out} = 1.5 * (1 + 100K / 11K) = 15.14v ; VSEL2 = '0', VSEL1 = '1'$$

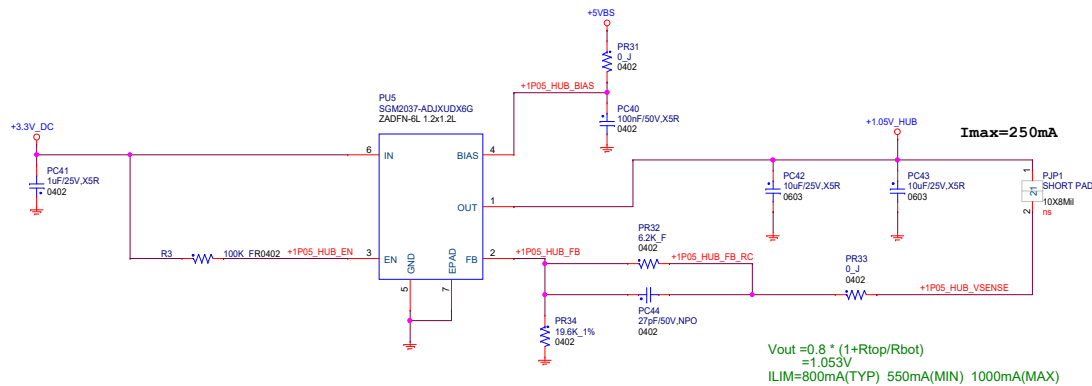
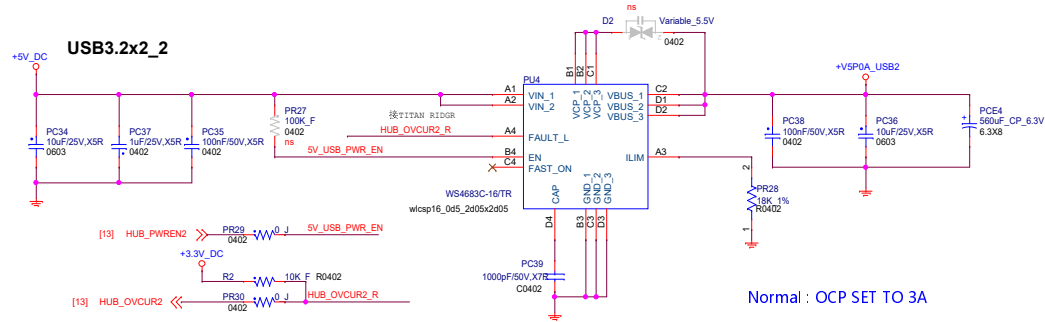
$$V_{out} = 2.0 * (1 + 100K / 11K) = 20.18v ; VSEL2 = '0', VSEL1 = '0'$$

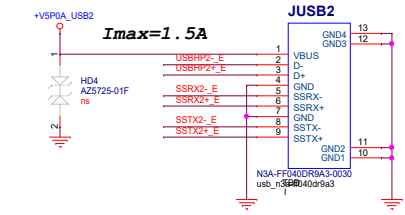
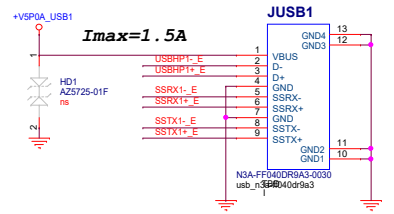
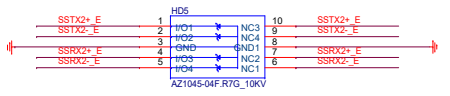
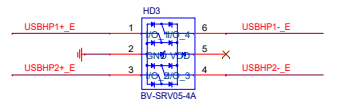
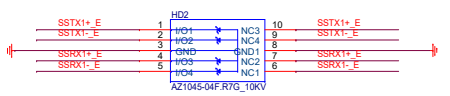
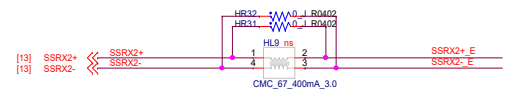
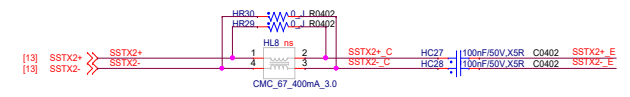
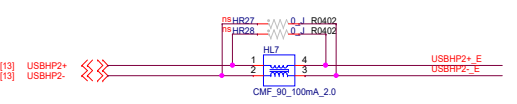
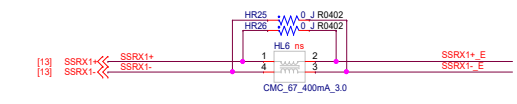
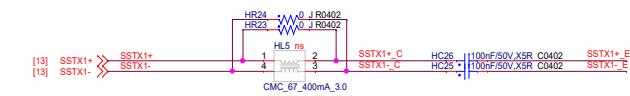
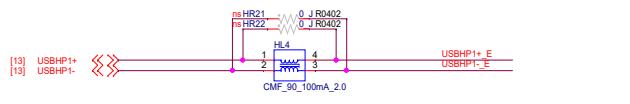


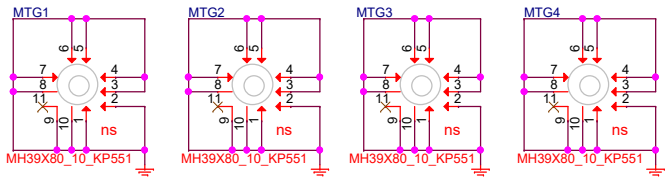
USB3.2x2_1



USB3.2x2_2



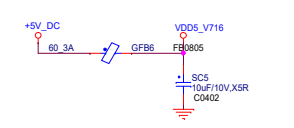
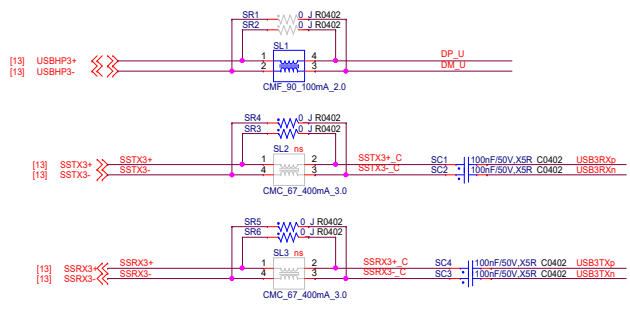




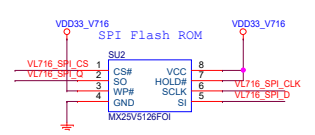
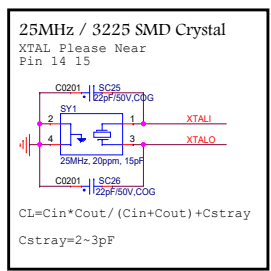
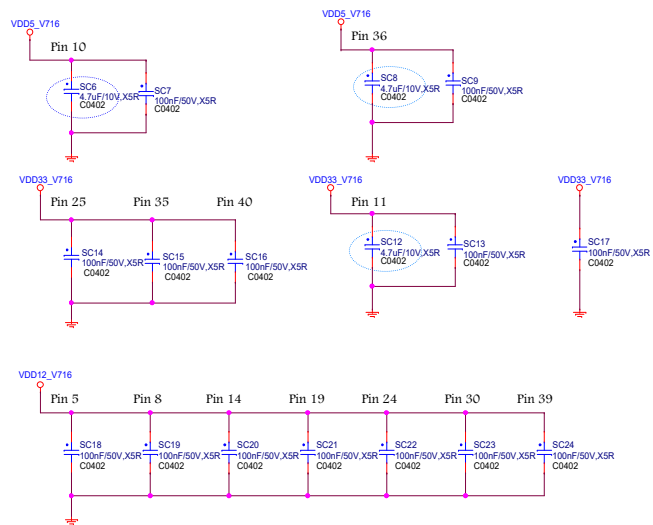
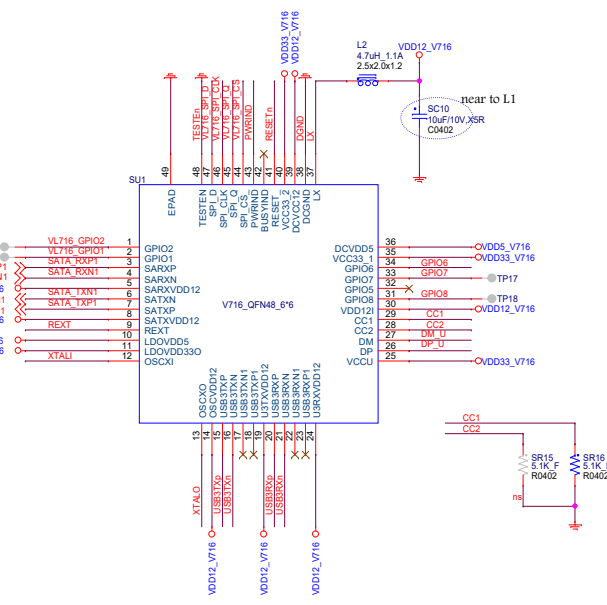
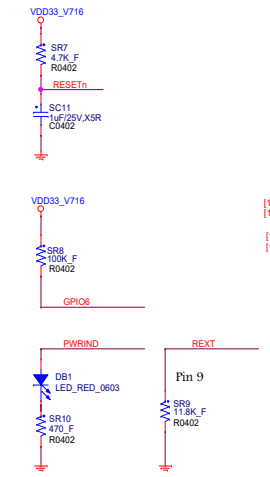
PCB1

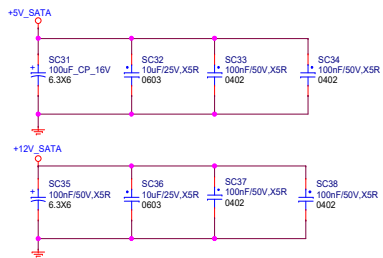
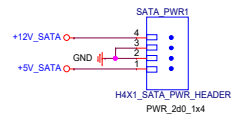
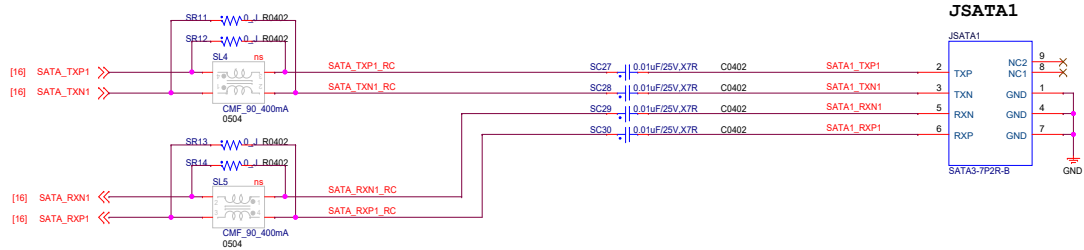
Printed Circuit Board

PCB_TBT_RFO
 PCB TBT显卡拓展坞 Ver1.0 1x2拼 4层OSP 绿色 TBT显卡拓展坞 160.3x182.6x1.6mm 奥士康 RoHS&HF
 1019-11123



Reset place near U2





Fan temperature control circuit 1

