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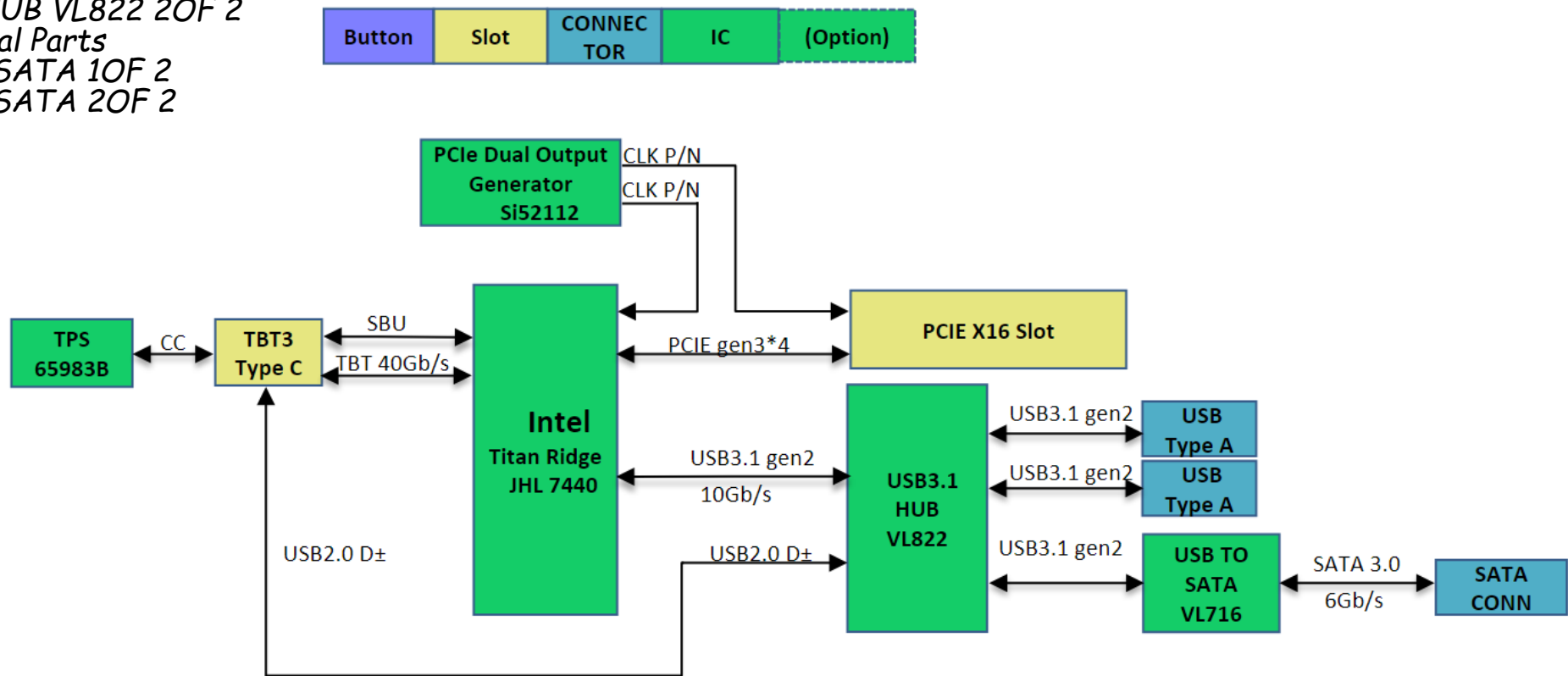
Page 14: USB3.1 HUB VL822 2OF 2

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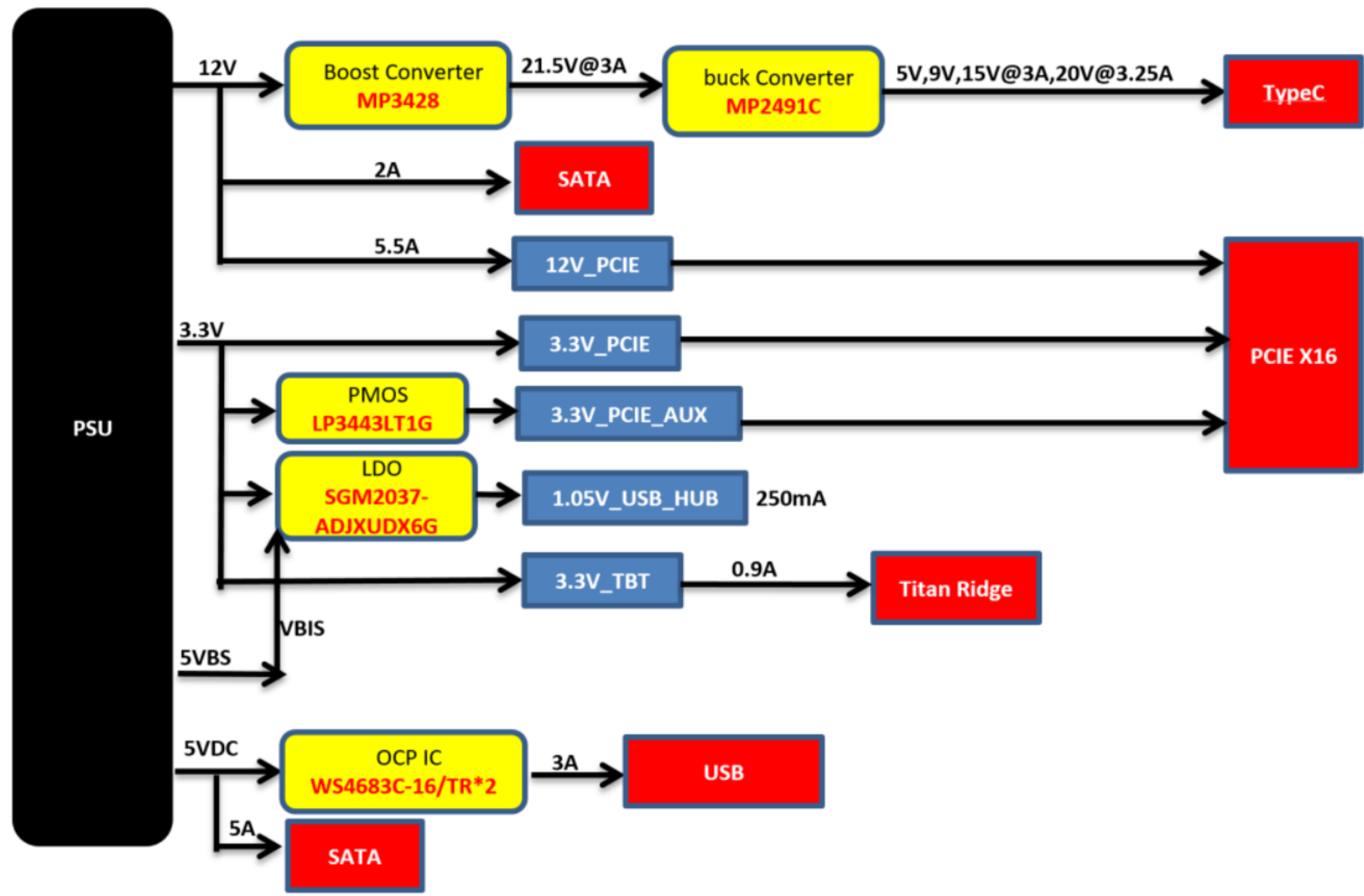
Page 16: USB TO SATA 1OF 2

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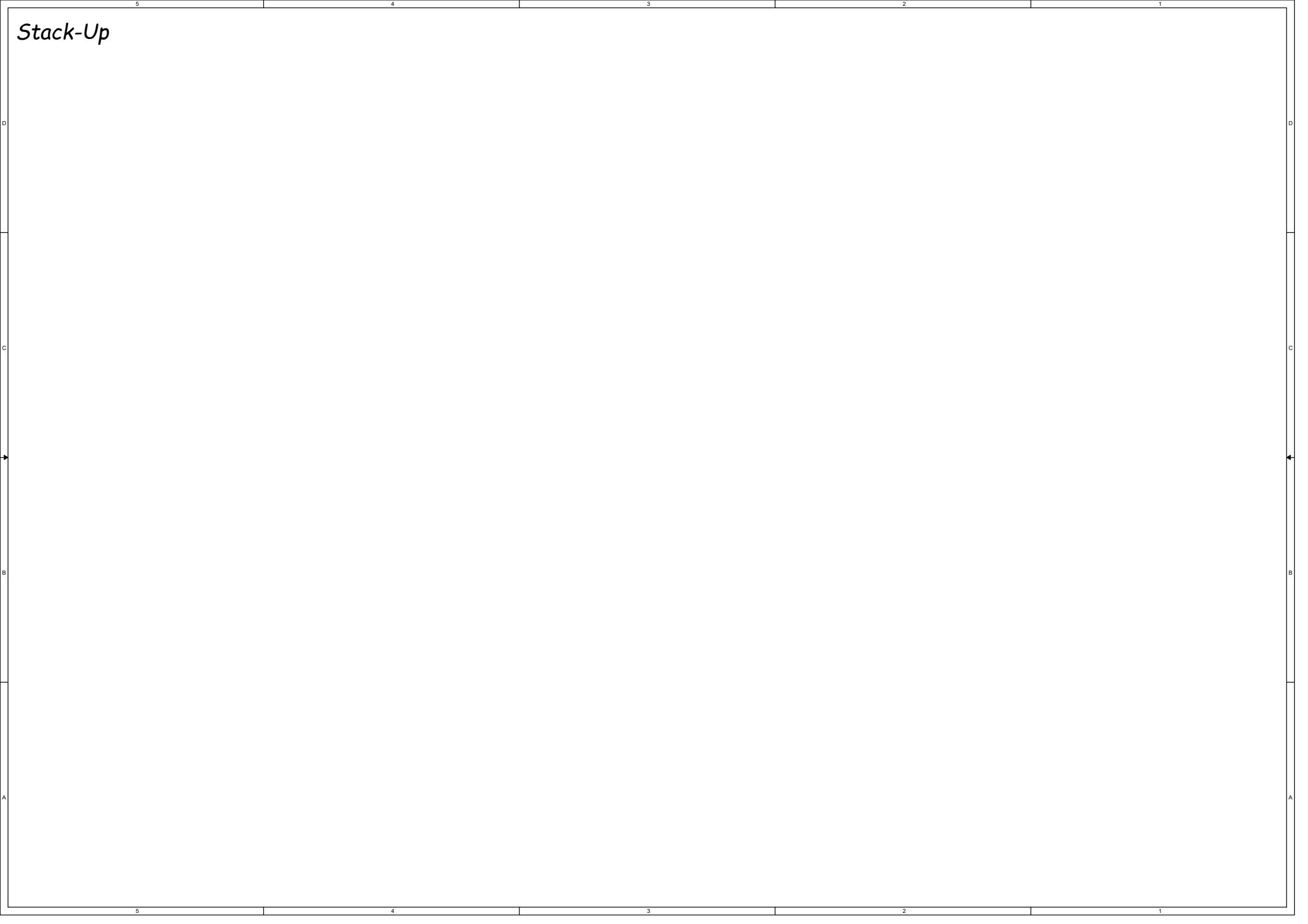
Page 18: FAN/IO



Power Diagram

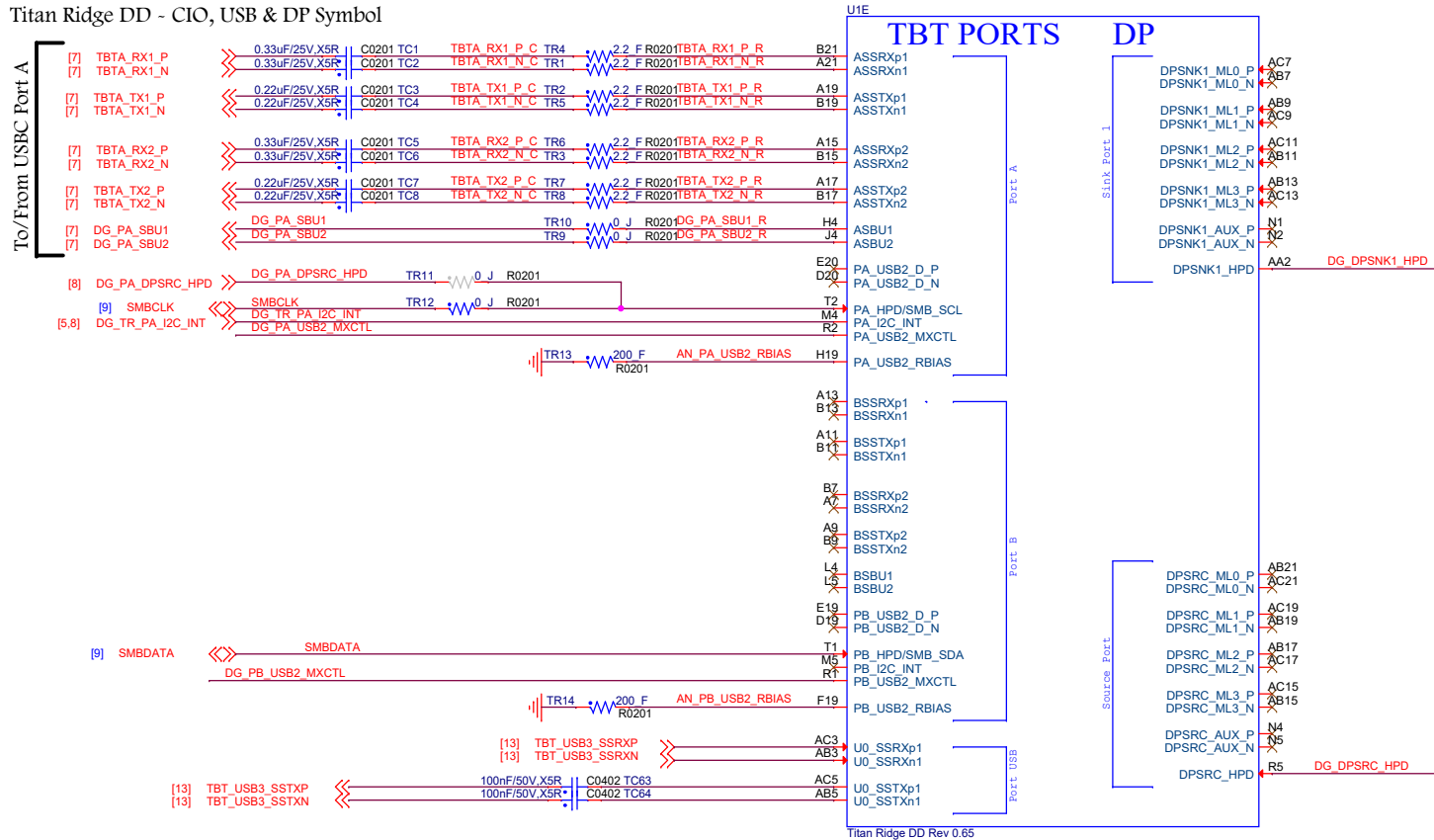


Stack-Up

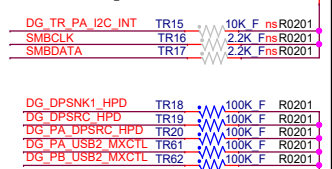


# Titan Ridge DD - High Speed (CIO, USB, DP and PCIe) Parts

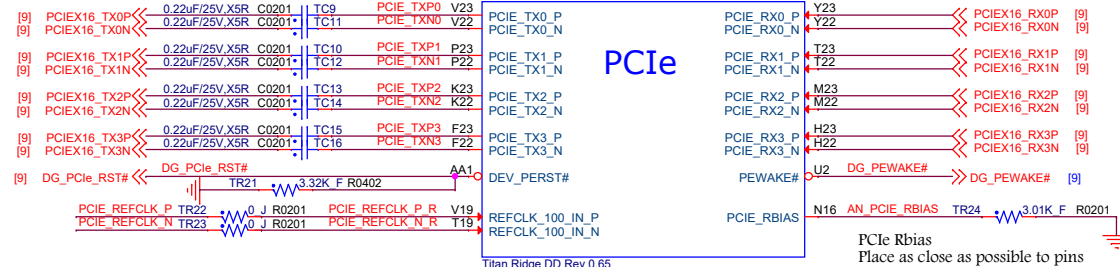
Titan Ridge DD - CIO, USB & DP Symbol



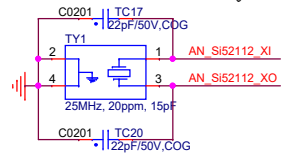
## HW Pull-Up/Pull-Down



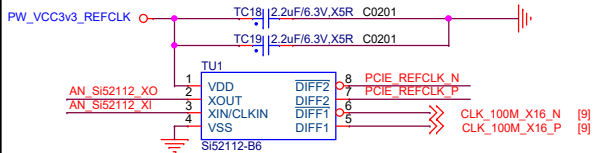
## Titan Ridge DD - PCIe Symbol



## 25MHz / 3225 SMD Crystal

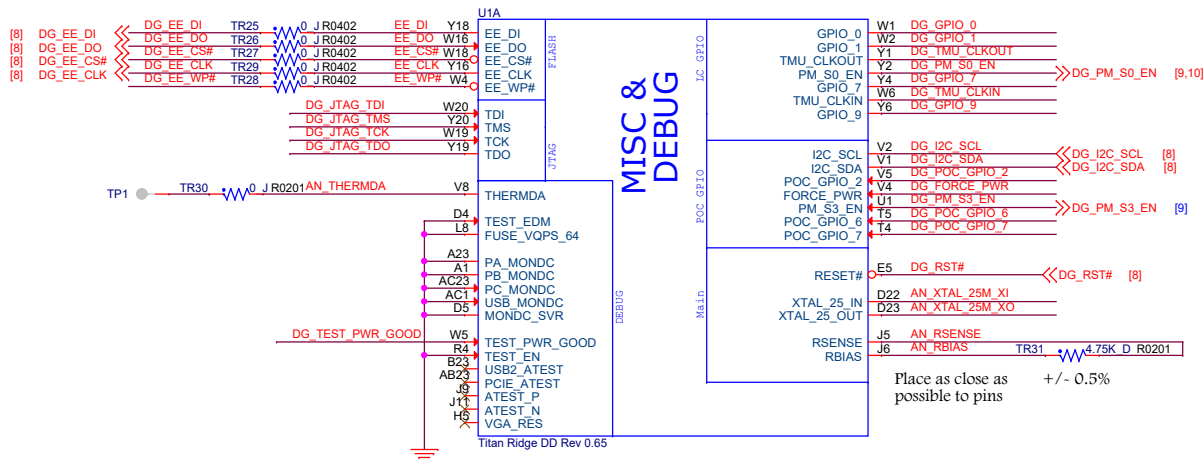


## Si52112 - PCIe Clock Generator

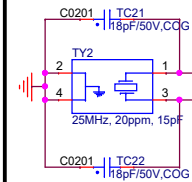


# Titan Ridge DD - Misc Part

## Titan Ridge DD - Misc Symbol

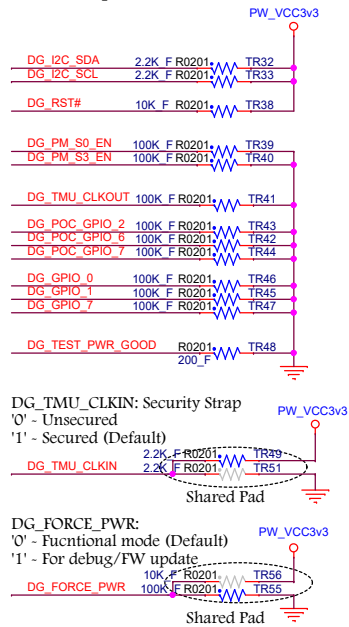


## 25MHz, 30ppm, 20pF TR Crystal

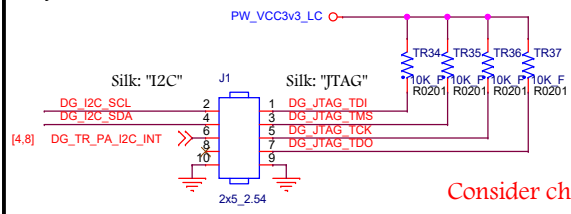


Must use Metal shielded crystal for better noise immunity. (Recommended: XRCGB25M000F3L12R0 by Murata)  
Strongly recommended adding GND guard-ring around Crystal and crystal's traces up to TR. GND vias should be used randomly.  
18pF cap is recommended for better 2.4GHz rejection. 20pF cap can be used as well.

## HW Pull-Up/Pull-Down

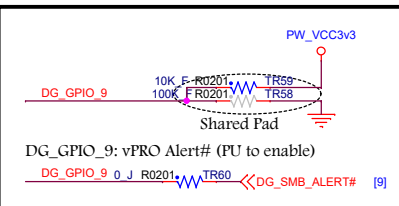
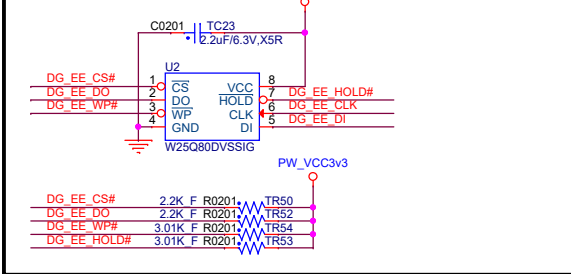


## TR JTAG & I2C

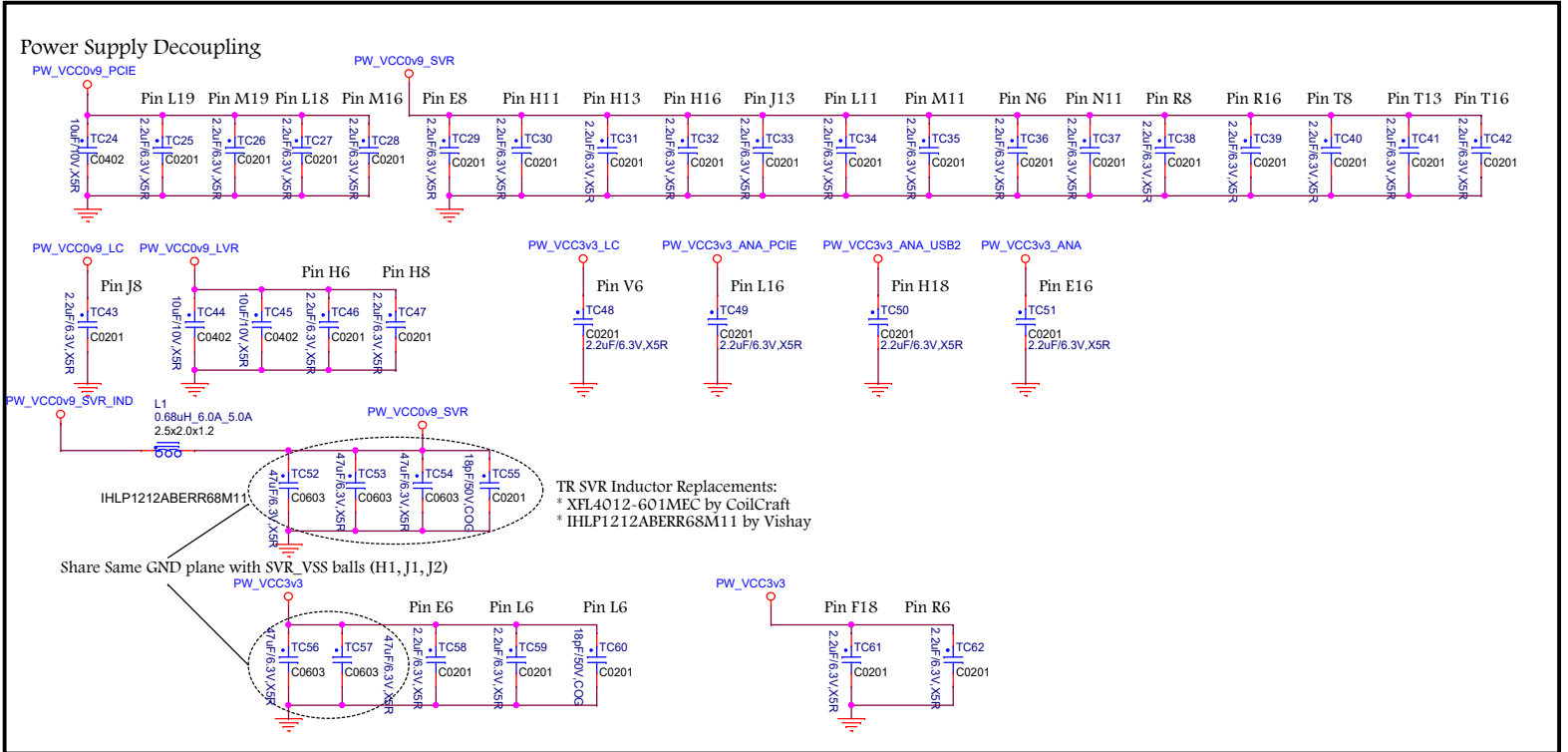
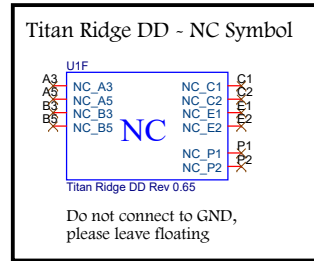
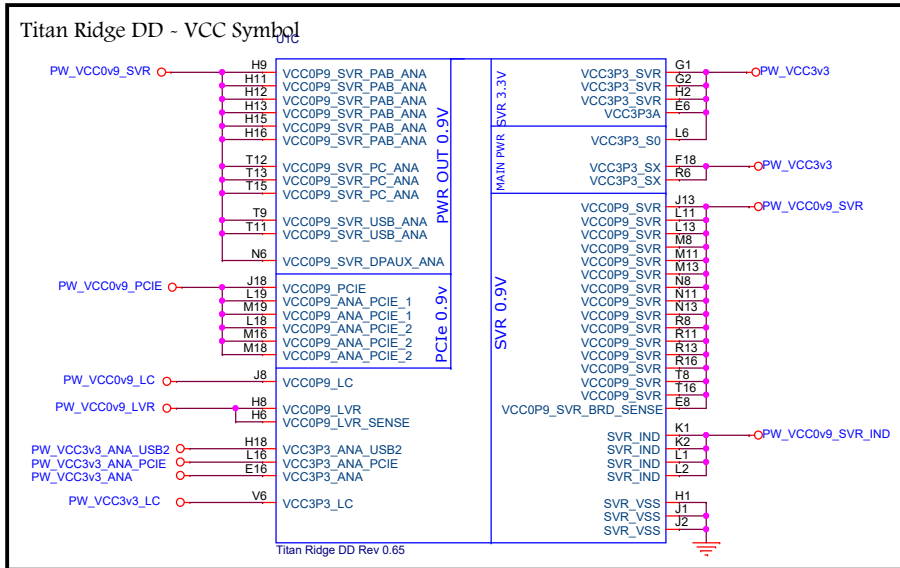
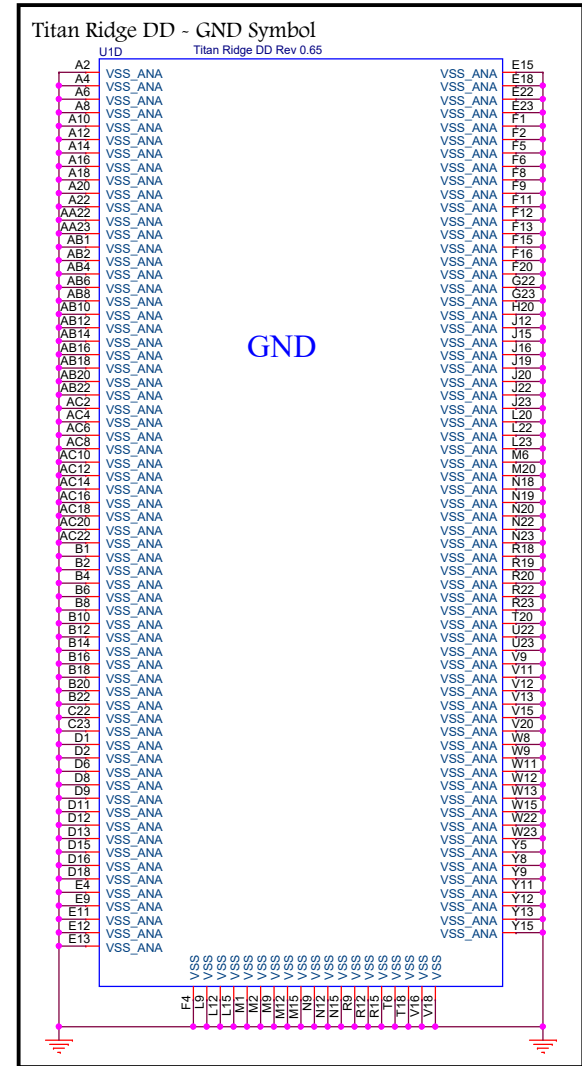


Consider changing header to 0603 pads

## 8Mbit Flash

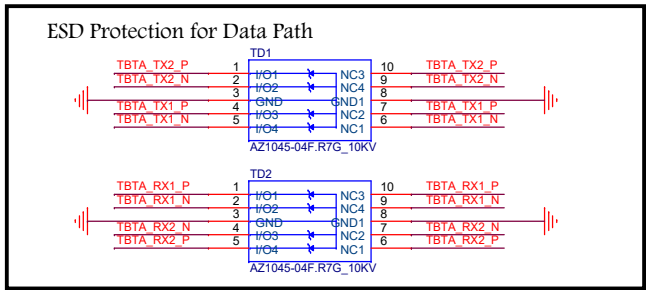
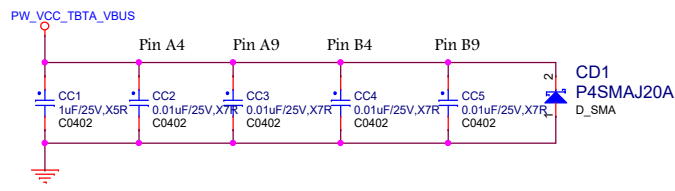
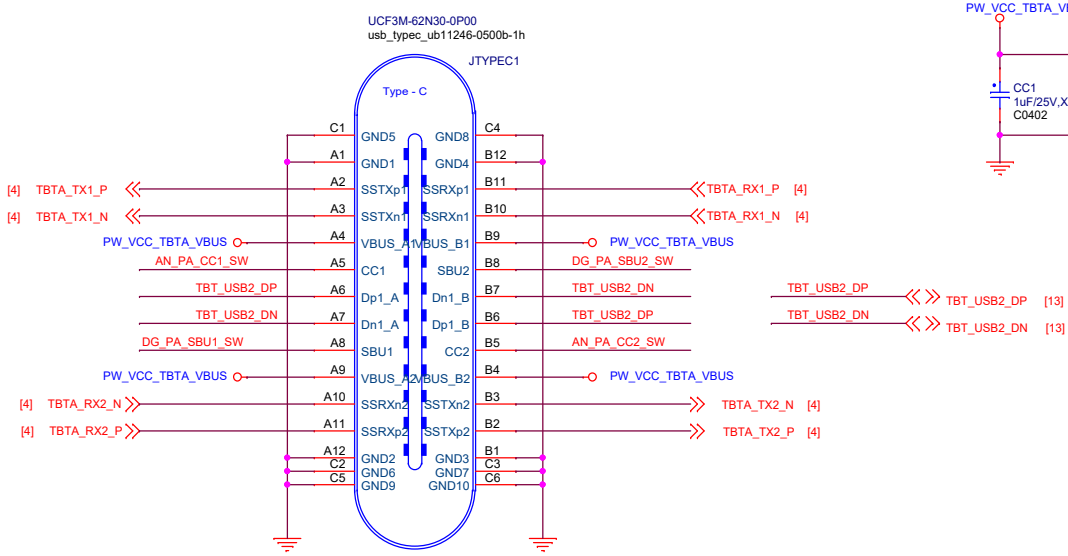


# Titan Ridge DD - Power Supply & GND Parts



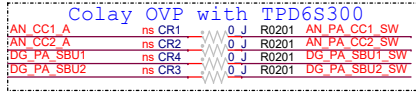
TBT USBC Port

TBT Type C Rec - Port A

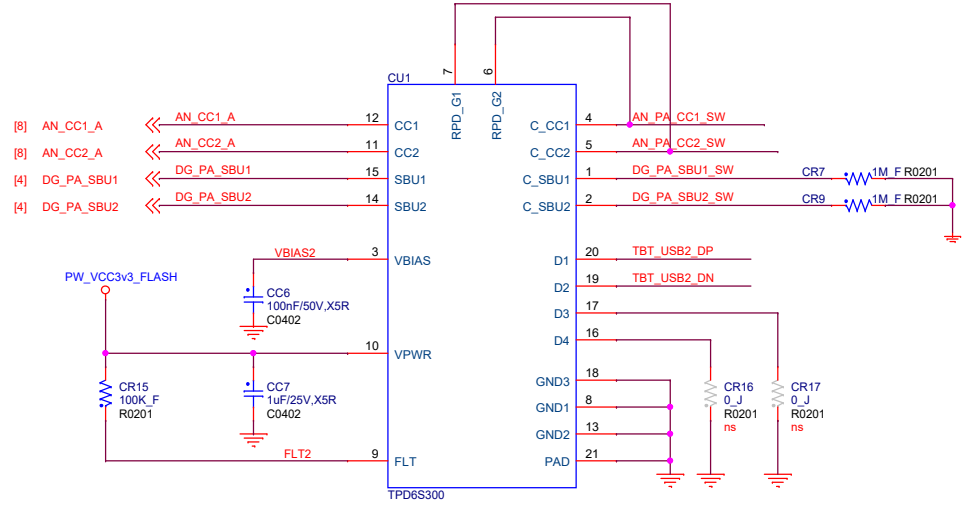
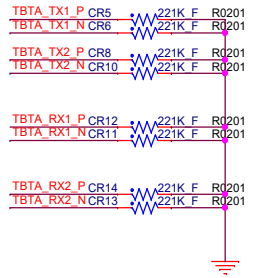


VBUS-Short Protection for SBUx/CCx

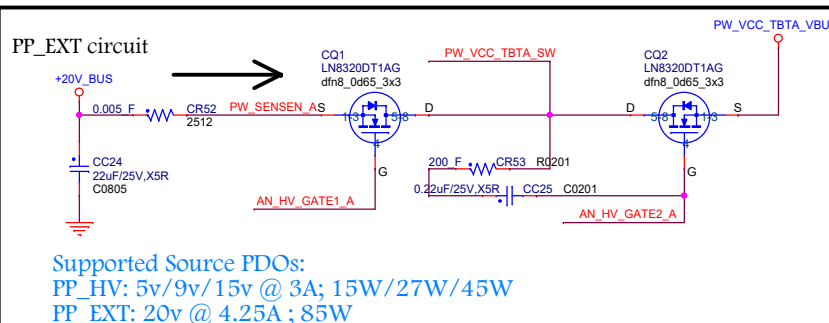
TPD6S300 is recommended for VBUS-short protection on low speed signals to/from USBC.



Bleeding Resistors



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

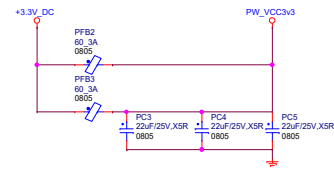




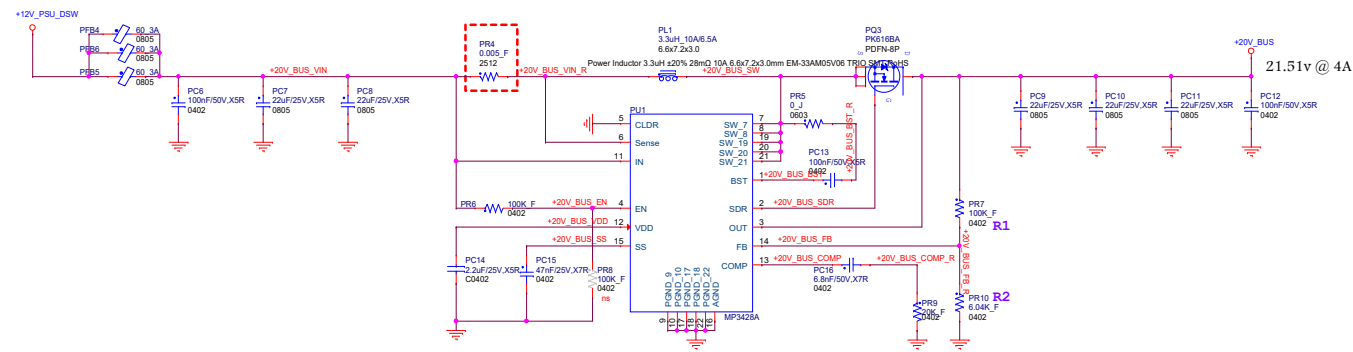
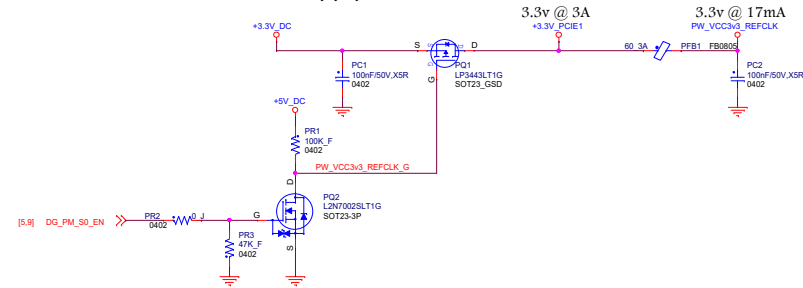


Power Supply - (3.3v)

### 3v3 Power Supply

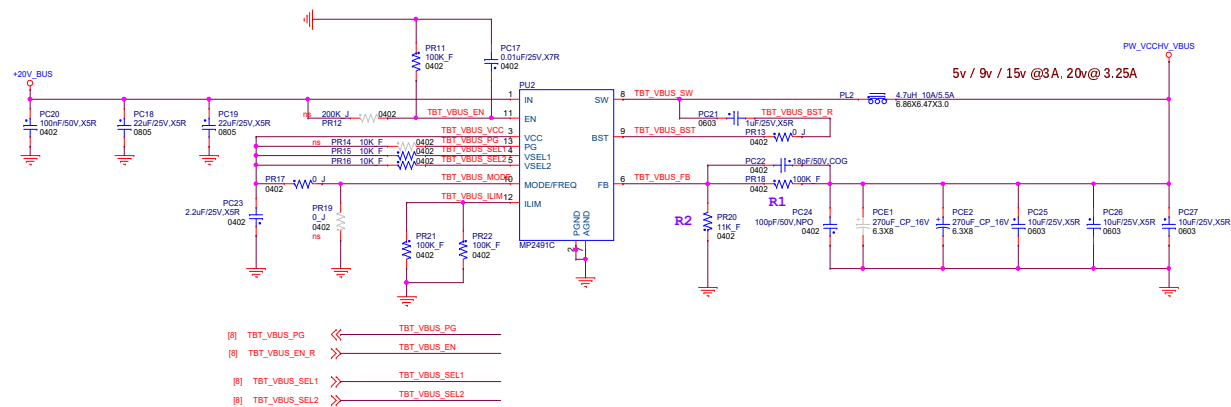


### 3.3V\_PCIE1/3v3 Ref Clock Supply



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

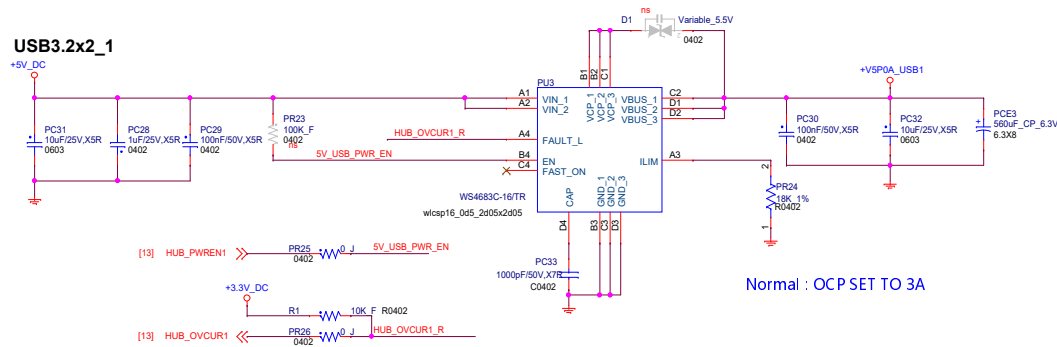
$$V_{out} = 1.225 * (1 + 100K / 6.04K) = 21.51v$$



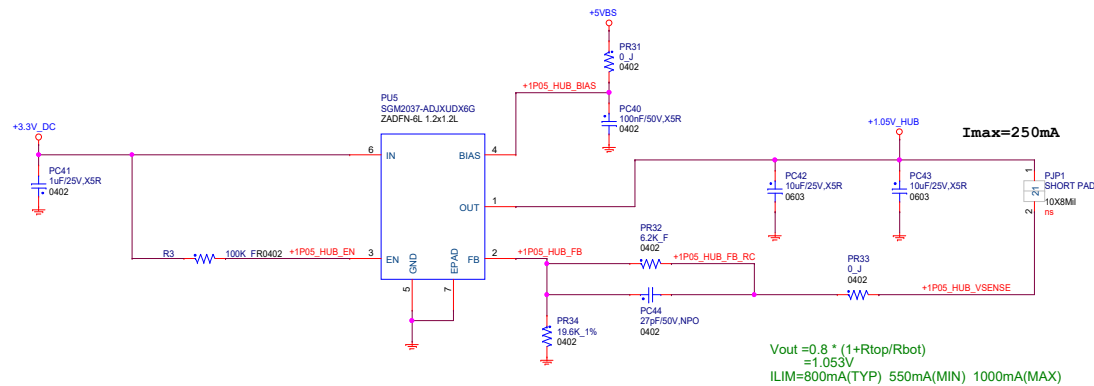
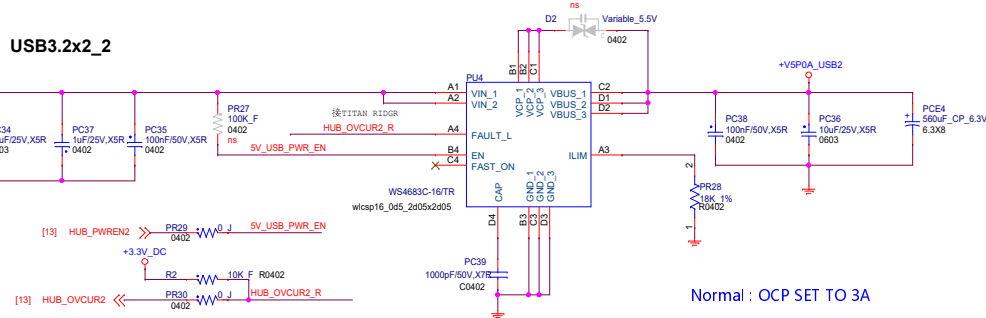
Vout = Vref \* (1 + R1 / R2)  
Vout = 0.5 \* (1 + 100K / 11K) = 5.05v; VSEL2 = '1', VSEL1 = '1'  
Vout = 0.9 \* (1 + 100K / 11K) = 9.08v; VSEL2 = '1', VSEL1 = '0'  
Vout = 1.5 \* (1 + 100K / 11K) = 15.14v; VSEL2 = '0', VSEL1 = '1'  
Vout = 2.0 \* (1 + 100K / 11K) = 20.18v; VSEL2 = '0', VSEL1 = '0'

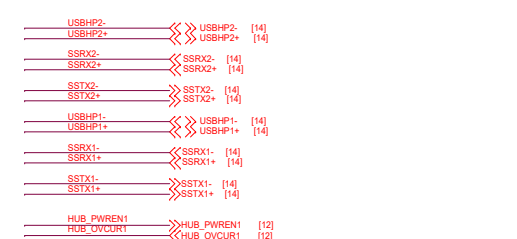
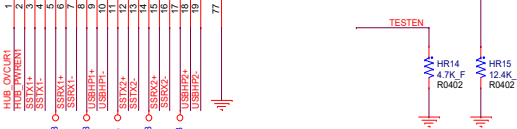
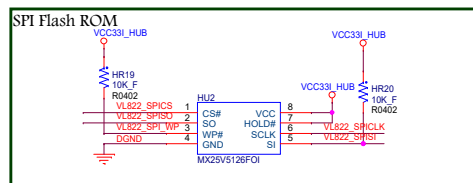
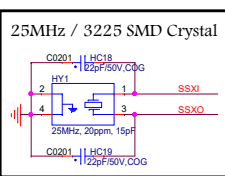
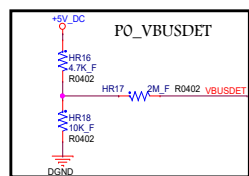
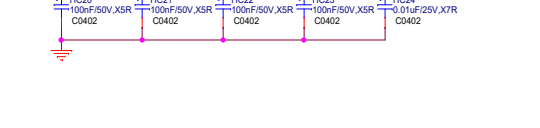
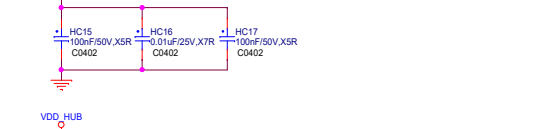
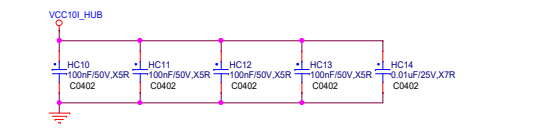
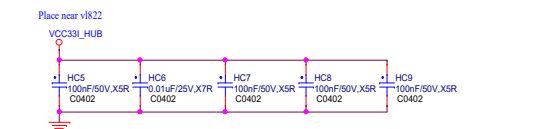
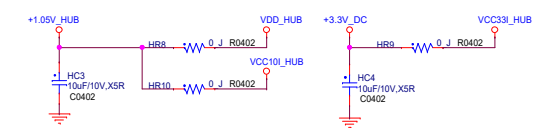
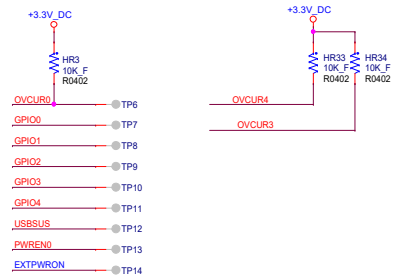
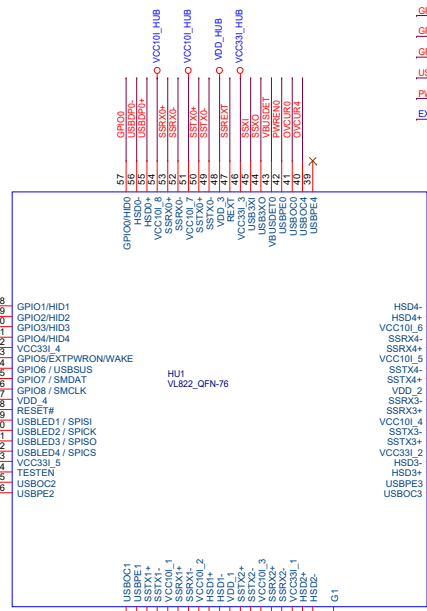
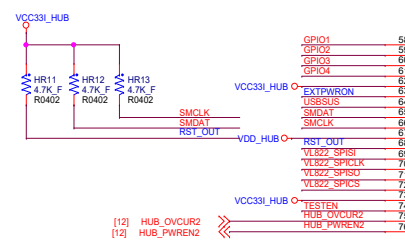
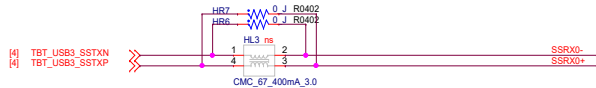
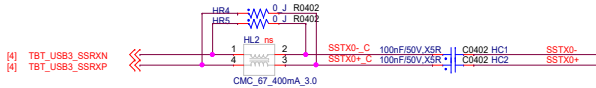
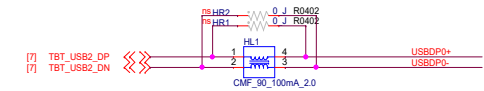


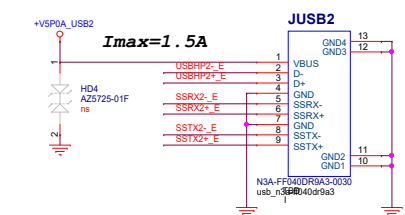
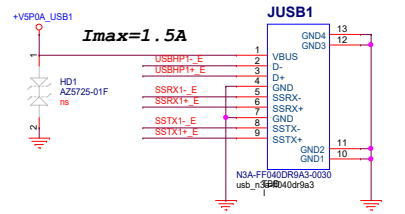
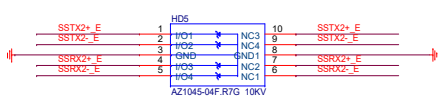
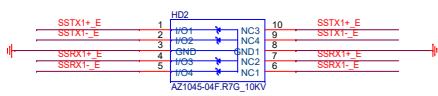
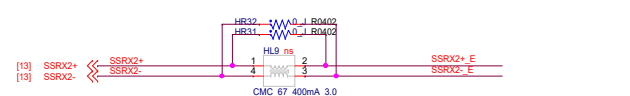
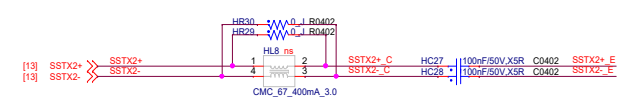
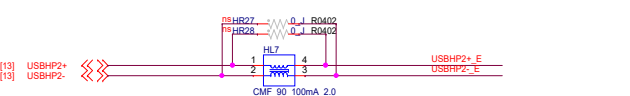
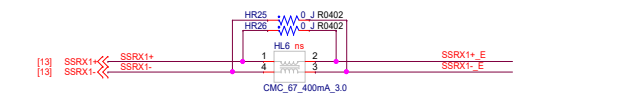
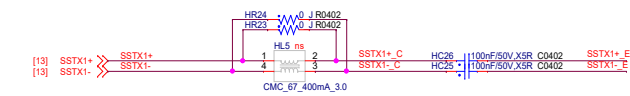
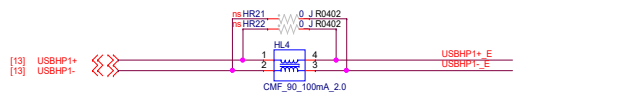
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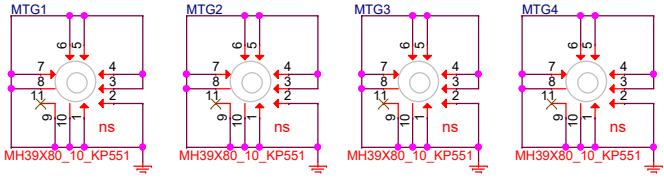


### USB3.2x2\_2





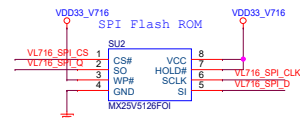
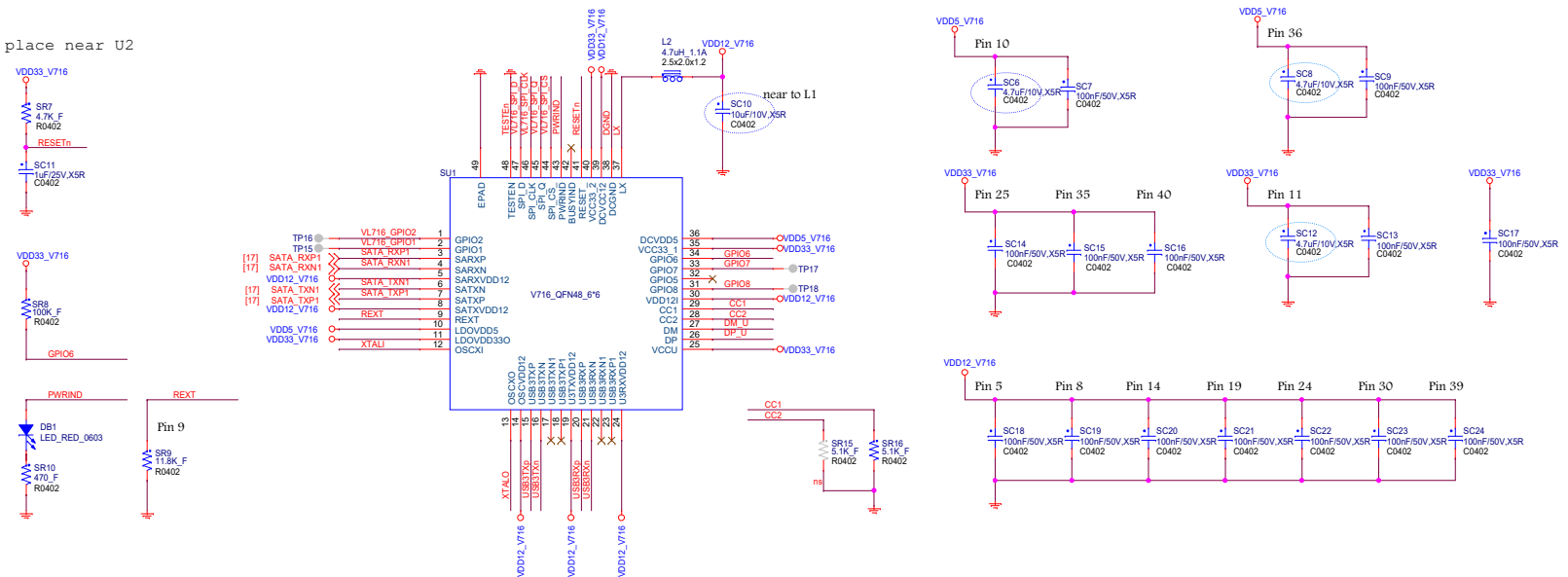
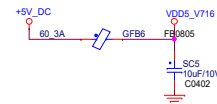




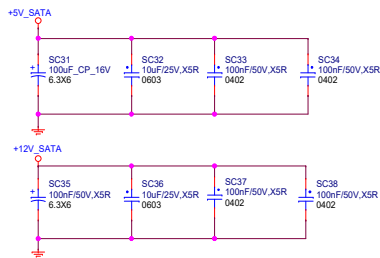
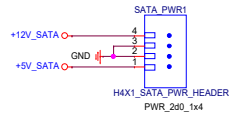
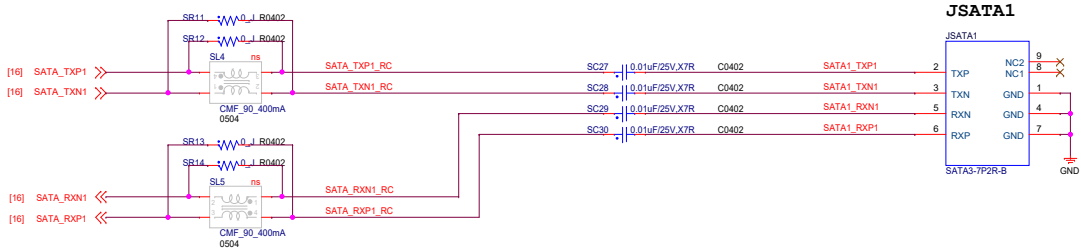
PCB1

Printed Circuit Board

PCB\_TBT\_RFQ  
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







Fan temperature control circuit 1

