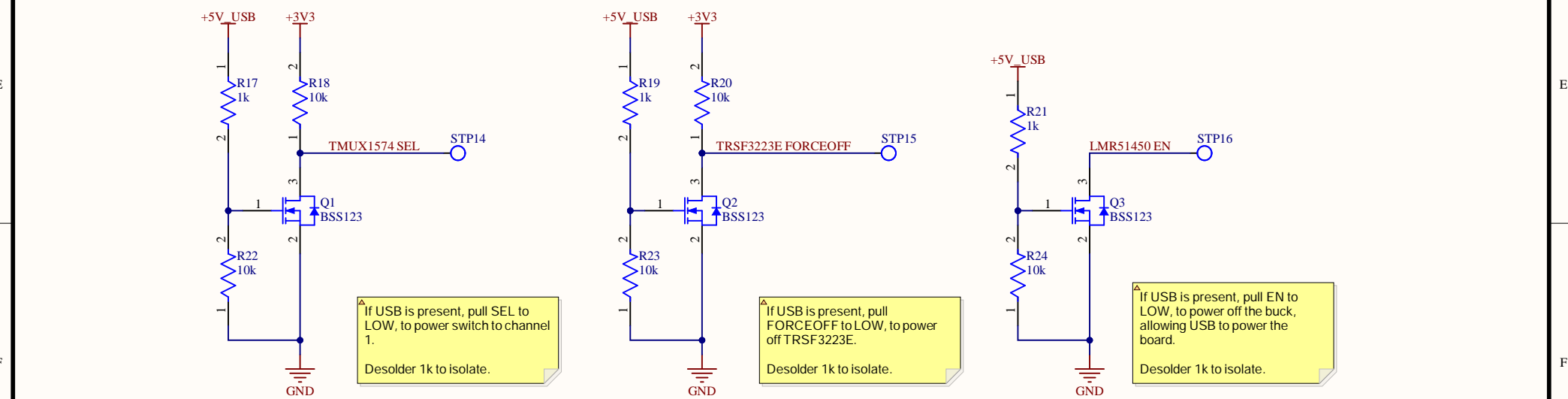


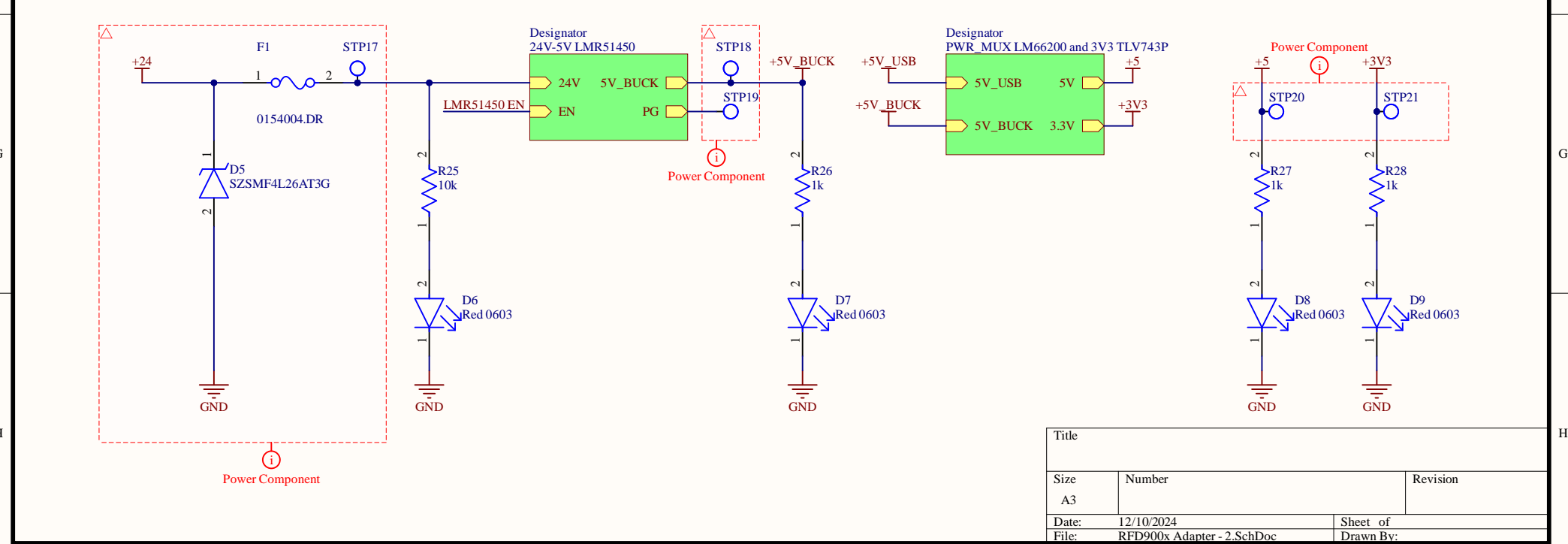
## UART LEDs and Test Points



## USBC Detection and Selection



## Power



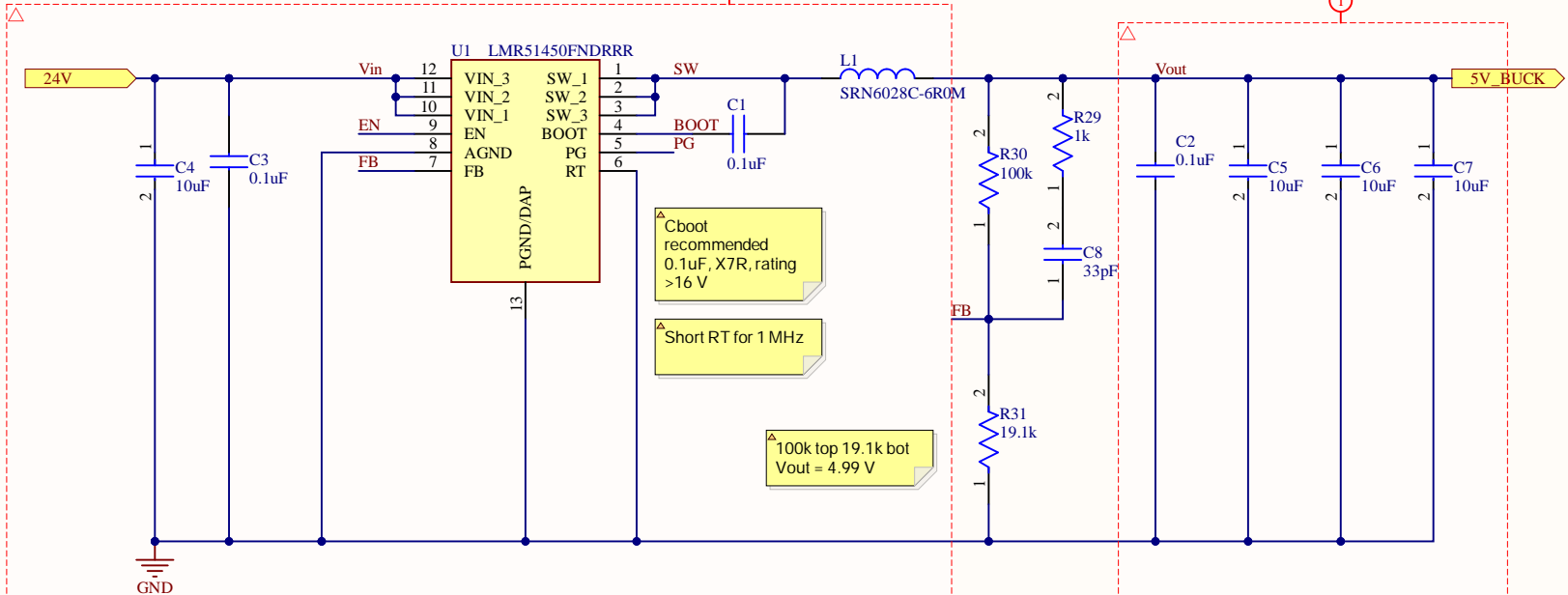
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|-------|----------------------------|-----------|
| Size  | Number                     | Revision  |
| A3    |                            |           |
| Date: | 12/10/2024                 | Sheet of  |
| File: | RFD900x Adapter - 2.SchDoc | Drawn By: |

# LMR51450 24V - 5V 2A

$0 \leq EN \leq V_{in} + 0.3V$   
 Do not apply high when  $V_{in} = 0V$   
 $< 0.8V$  off

Power Component

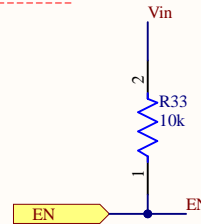
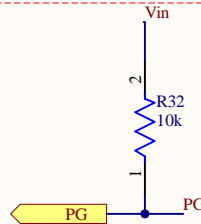
Power Component



$\Delta$  Cboot recommended  
 0.1uF, X7R, rating  
 $> 16V$

$\Delta$  Short RT for 1 MHz

$\Delta$  100k top 19.1k bot  
 $V_{out} = 4.99V$



$\Delta$  Power good current in  $< 5mA$   
 Pulled up to 12V  
 $R_{min} = 24/0.005 = 4.8k\Omega$   
 10k-100k ohm recommended  
 10k ohm used

$\Delta$  LOW = fault  
 Pulled up = no fault

$\Delta$  Pull to LOW externally to turn off

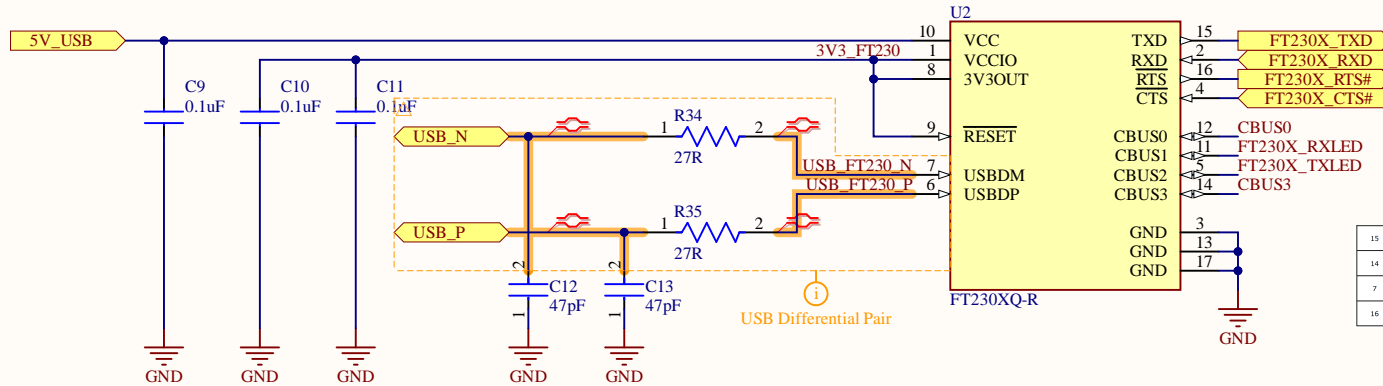
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| Size  | Number                 | Revision  |
| A     |                        |           |
| Date: | 12/10/2024             | Sheet of  |
| File: | 24V-5V LMR51450.SchDoc | Drawn By: |

# FT230X USB - UART

|    |      |        |  |
|----|------|--------|--|
| 15 | TXD  | Output | Transmit Asynchronous Data Output.                 |
| 2  | RXD  | Input  | Receiving Asynchronous Data Input.                 |
| 16 | RTS# | Output | Request to Send Control Output / Handshake Signal. |
| 4  | CTS# | Input  | Clear To Send Control Input / Handshake Signal.    |

FT230X\_TXD is the TX of FT230X, connect to RX of RFD.  
FT230X\_RXD is the RX of FT230X, connect to TX of RFD.  
FT230X\_RTS# is the RTS of FT230X, connect to CTS of RFD.  
FT230X\_CTS# is the CTS of FT230X, connect to RTS of RFD.

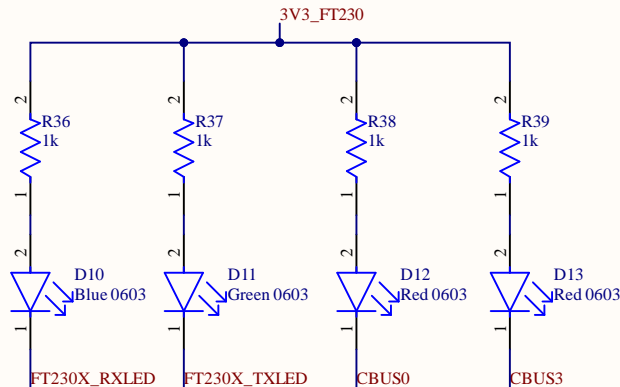
|    |           |        |                       |      |
|----|-----------|--------|-----------------------|------|
| 4  | CTS       | Input  | Clear to send         | 3.3V |
| 4  | Vcc       | -      | Power supply          | 5V   |
| 5  | Vusb      | -      | Power supply from USB | 5V   |
| 6  | Vusb      | -      | Power supply from USB | 5V   |
| 8  | RTS       | Output | Request to send       | 3.3V |
| 8  | GPIO/P1.4 | I/O    | Digital I/O           | 3.3V |
| 9  | TX        | Output | UART Data Out         | 3.3V |
| 10 | GPIO/P1.3 | I/O    | Digital I/O           | 3.3V |
| 15 | RTS       | Output | Request to send       | 3.3V |



CBUS1, 2 for RX TX LED  
CBUS0, 3 for fun, to be configured  
through MTP memory by FT\_PROG

|    |       |     |  |
|----|-------|-----|--|
| 15 | CBUS0 | I/O | Configurable CBUS I/O Pin. Function of this pin is configured in the device MTP memory. The default configuration is TXDEN. See CBUS Signal Options, Table 3.2.  |
| 14 | CBUS1 | I/O | Configurable CBUS I/O Pin. Function of this pin is configured in the device MTP memory. The default configuration is RXLED#. See CBUS Signal Options, Table 3.2. |
| 7  | CBUS2 | I/O | Configurable CBUS I/O Pin. Function of this pin is configured in the device MTP memory. The default configuration is TXLED#. See CBUS Signal Options, Table 3.2. |
| 16 | CBUS3 | I/O | Configurable CBUS I/O Pin. Function of this pin is configured in the device MTP memory. The default configuration is SLEEP#. See CBUS Signal Options, Table 3.2. |

## Indicator LEDs

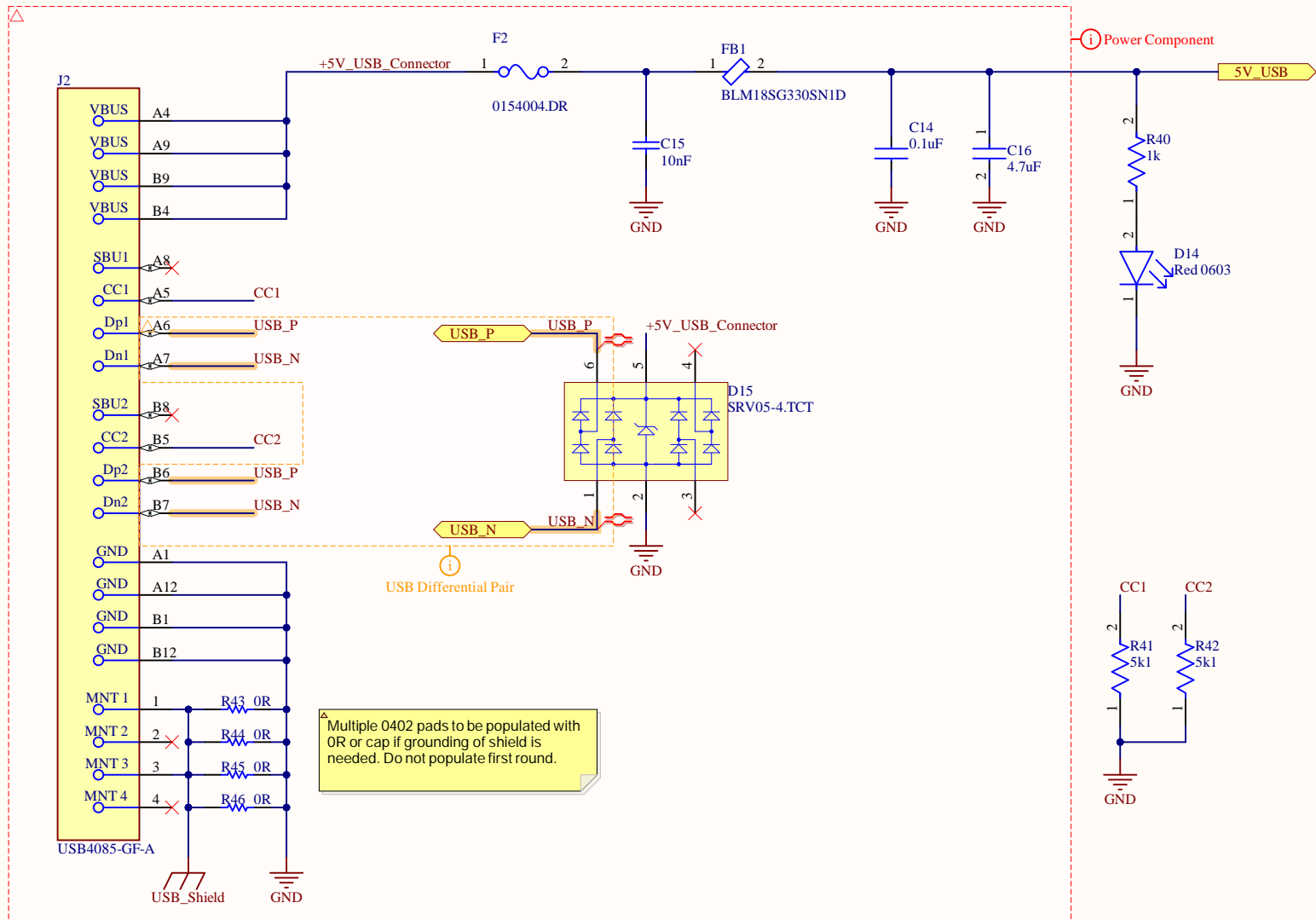


Green (Go) = from RFD900x to USB  
Blue (Back) = from USB to RFD900x  
1dk the convention so imma set it

TXLED# indicates data is being received on the UART Rx pin and being transmitted to the host over USB  
RXLED# indicates data is being received from the host over USB and is being transmitted via the Tx pin of the UART

|       |                        |           |
|-------|------------------------|-----------|
| Title |                        |           |
| Size  | Number                 | Revision  |
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| File: | USB-UART FT230X.SchDoc | Drawn By: |

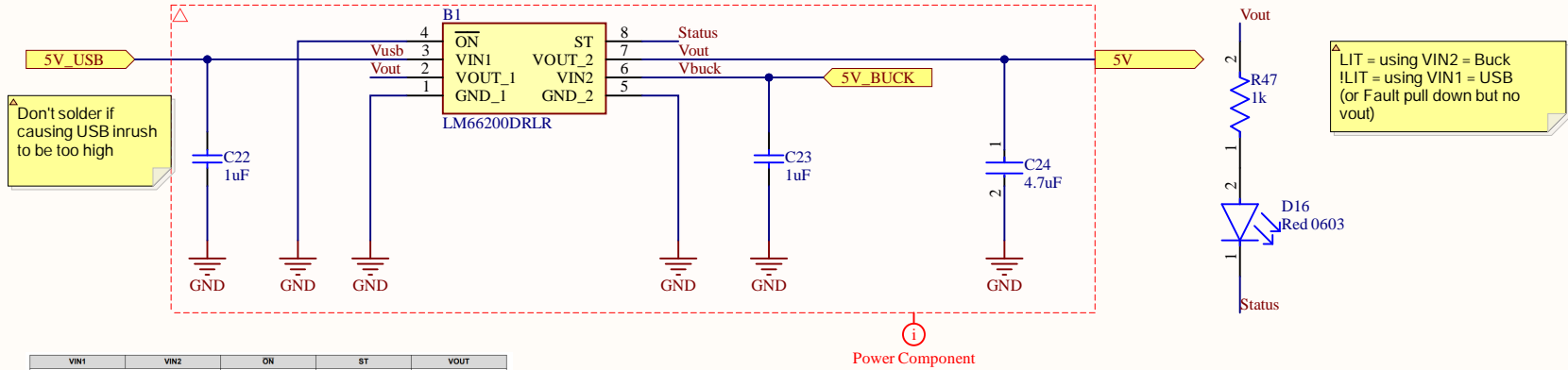
# USB C Connector



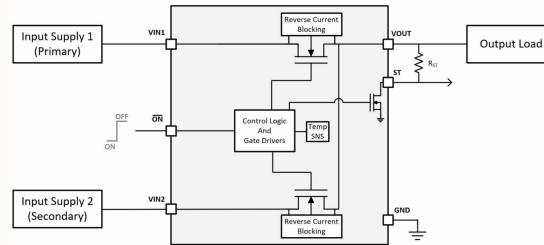
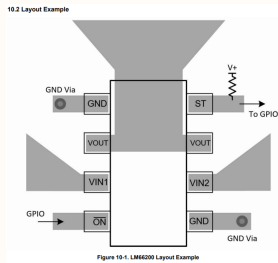
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| Size  | Number                | Revision  |
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| Date: | 12/10/2024            | Sheet of  |
| File: | USBC_Connector.SchDoc | Drawn By: |



# LM66200 PWR MUX

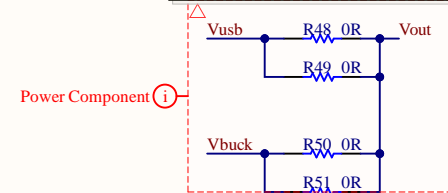


| VIN1        | VIN2 | ON   | ST   | VOUT |
|-------------|------|------|------|------|
| VIN1 > VIN2 |      | Low  | High | VIN1 |
| VIN1 < VIN2 |      | Low  | Low  | VIN2 |
| X           | X    | High | Low  | Hi-Z |

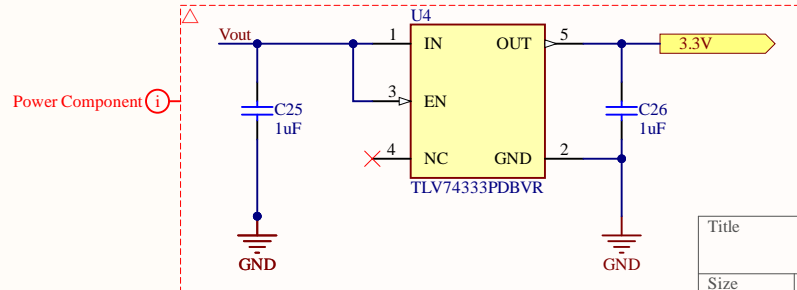
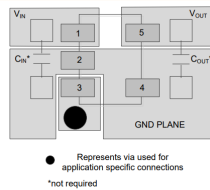


Max sinking ST current not specified, led uses <5mA

Manual Select, do not dumb dumb solder both

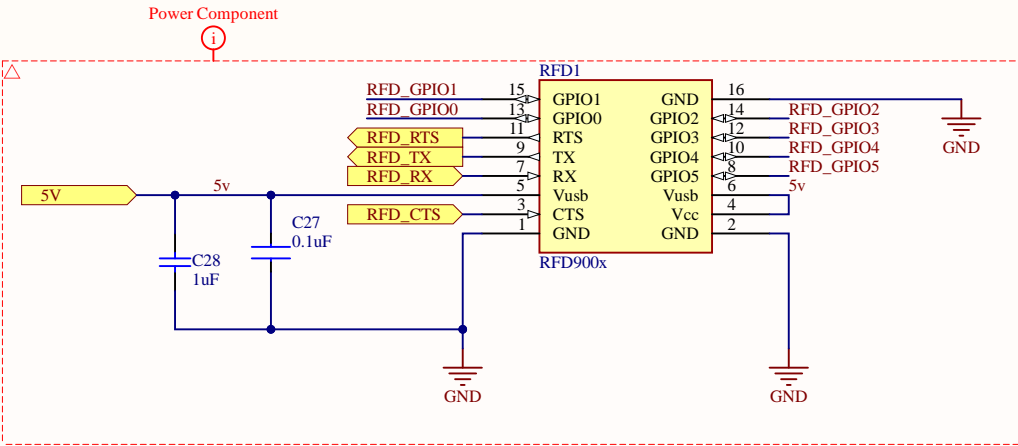


# TLV743 3.3V LDO



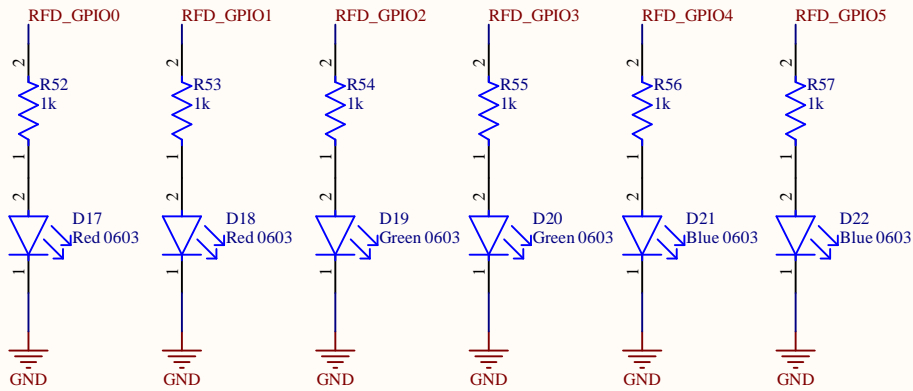
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| A     |                                      |             |
| Date: | 12/10/2024                           | Sheet of    |
| File: | PWR_MUX LM66200 and 3V3 TLV743 PDBVR | Printed By: |

# RFD900x



|    |            |        |                       |      |
|----|------------|--------|-----------------------|------|
| 3  | CTS        | Input  | Clear to send         | 3.3V |
| 4  | Vcc        | -      | Power supply          | 5V   |
| 5  | Vusb       | -      | Power supply from USB | 5V   |
| 6  | Vusb       | -      | Power supply from USB | 5V   |
| 7  | RX         | Input  | UART Data In          | 3.3V |
| 8  | GPIO5/P3.4 | I/O    | Digital I/O           | 3.3V |
| 9  | TX         | Output | UART Data Out         | 3.3V |
| 10 | GPIO4/P3.3 | I/O    | Digital I/O           | 3.3V |
| 11 | RTS        | Output | Request to send       | 3.3V |

# Indicator LEDs



A Pretty LEDs for funsies, shaoliang better make them blink for me

|       |                |           |
|-------|----------------|-----------|
| Title |                |           |
| Size  | Number         | Revision  |
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| Date: | 12/10/2024     | Sheet of  |
| File: | RFD900x_SchDoc | Drawn By: |

# TMUX1574 UART MUX

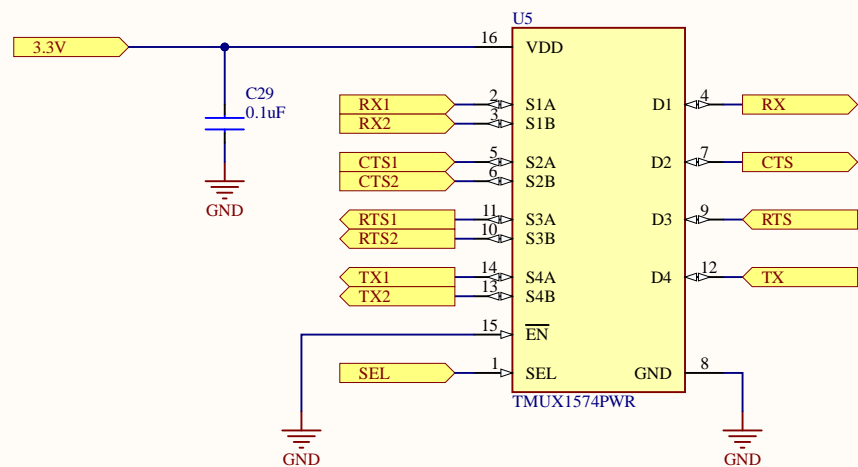


Table 1. TMUX1574 Truth Table

| INPUTS |                  | Selected Source Pins Connected To Drain Pins (Dx)  |
|--------|------------------|--|
| EN     | SEL              |  |
| 0      | 0                | S1A connected to D1<br>S2A connected to D2<br>S3A connected to D3<br>S4A connected to D4 |
| 0      | 1                | S1B connected to D1<br>S2B connected to D2<br>S3B connected to D3<br>S4B connected to D4 |
| 1      | X <sup>(1)</sup> | Hi-Z (OFF)   |

(1) X denotes *don't care*.

So empty lmao

|       |                          |           |
|-------|--------------------------|-----------|
| Title |                          |           |
| Size  | Number                   | Revision  |
| A     |                          |           |
| Date: | 12/10/2024               | Sheet of  |
| File: | UART_MUX_TMUX1574.SchDoc | Drawn By: |