

A

A

B

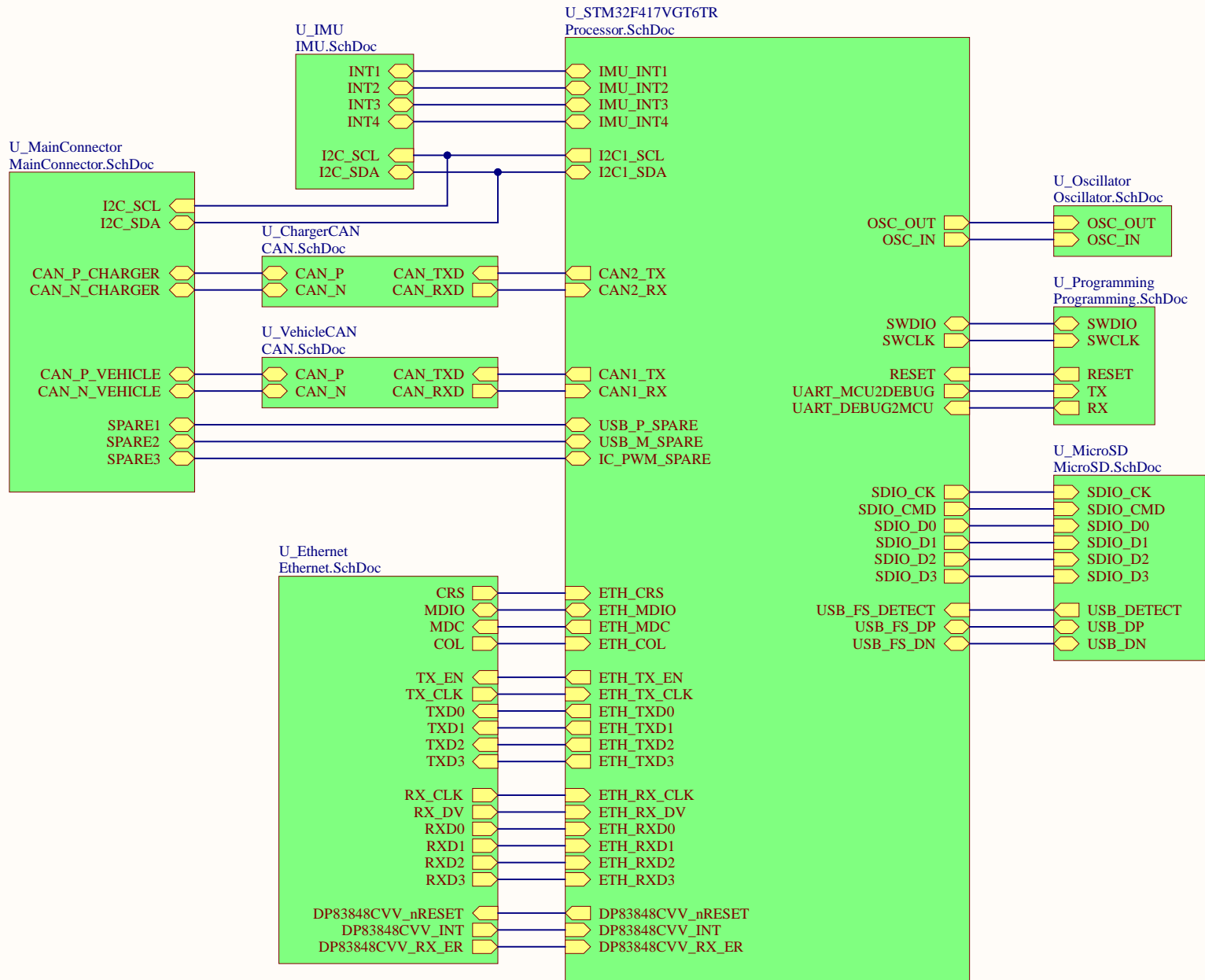
B

C

C

D

D



Title

Size

A

Number

Revision

Date:

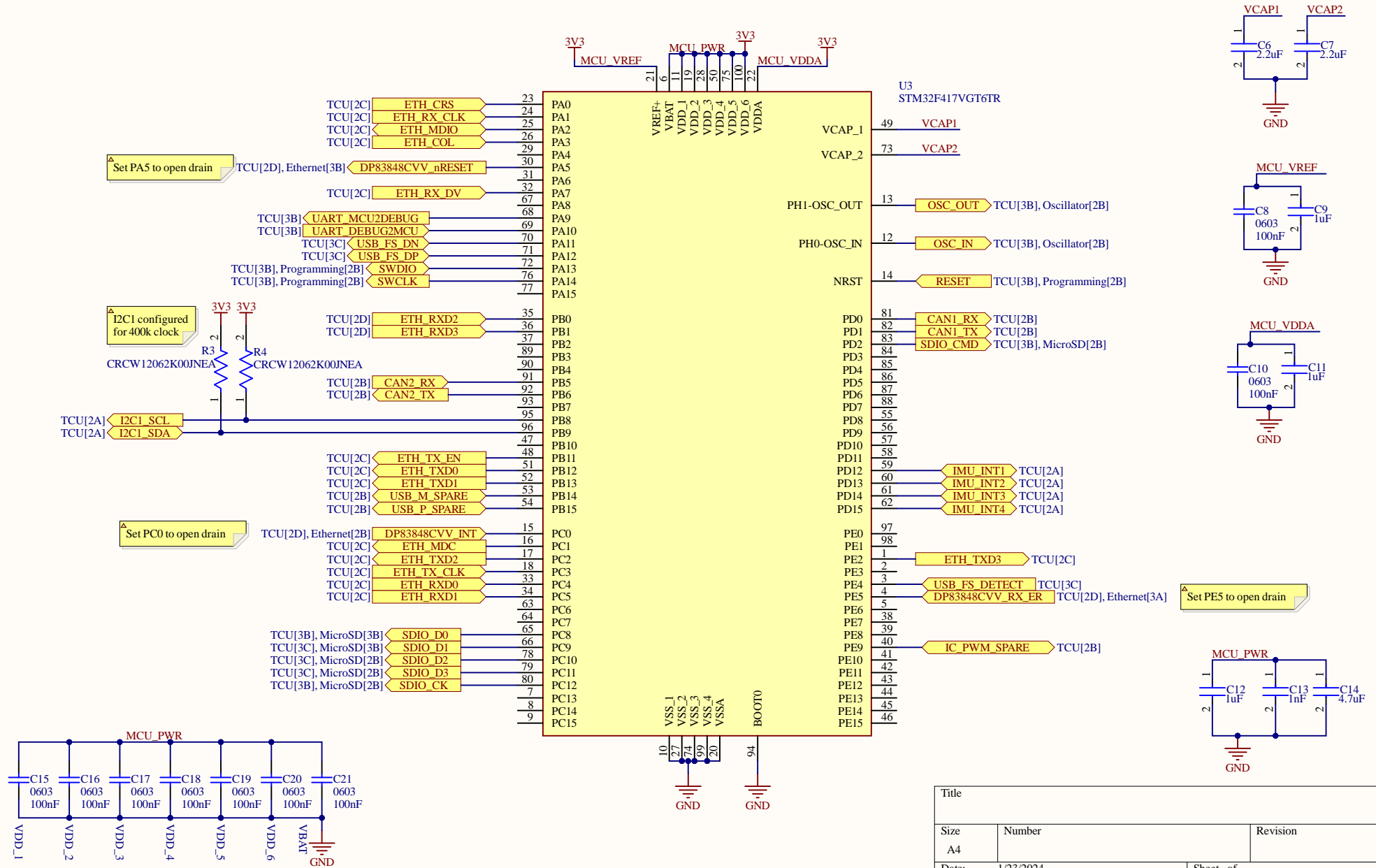
1/23/2024

Sheet of

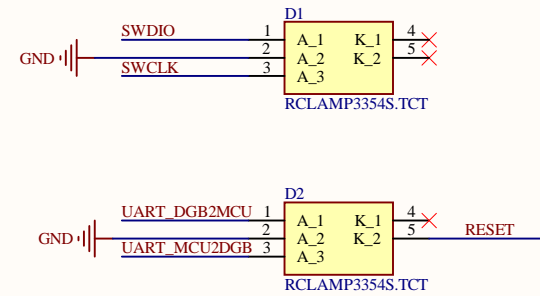
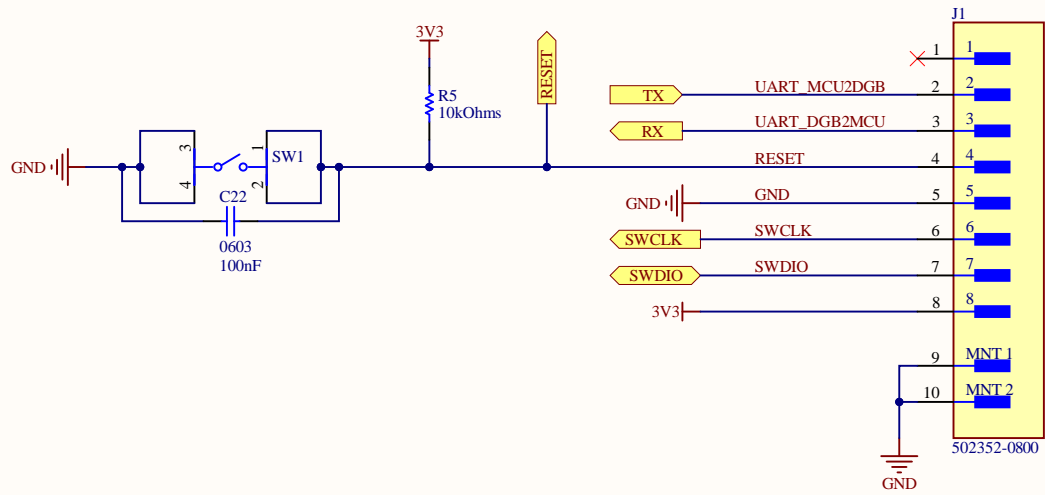
File:

C:\Users\...\TCU.SchDoc

Drawn By:

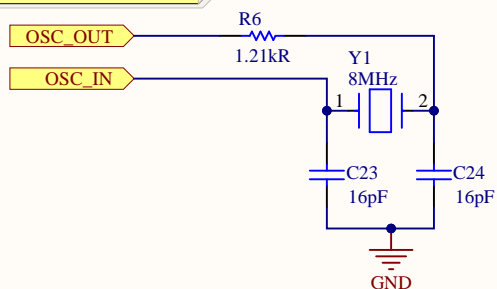


Title		
Size	Number	Revision
A4		
Date:	1/23/2024	Sheet of
File:	C:\Users\...\Processor.SchDoc	Drawn By:



Title		
Size A4	Number	Revision
Date:	1/23/2024	Sheet of
File:	C:\Users\...\Programming.SchDoc	Drawn By:

△ Oscillator external resistor must be selected to limit power dissipation to < 100uW. Value selected based value used for existing F7 boards but should be verified experimentally but a general equation in AN2867 is given in section 3.5.3 as:  
 $R\_EXT = 1/(2*\pi*F\_osc*C\_L2)$   
 $R\_EXT = 1/(2*\pi*(8*10^6)*(16*10^{-12}))$   
 $R\_EXT = 1243$



△ See ST AN2867 Rev 19 and datasheet section 5.3.8 External clock source characteristics for details. MCU datasheet recommends a 10pF estimate for parasitic capacitance. This is a Pierce Oscillator (variant of Colpitts Oscillator). R\_Ext is used to limit inverter output current. See Figure 5 in AN2867. From AN2867 Section 3.3 with C\_L1 = C\_L2 and C\_L as 18pF:  
 $C\_L1 = 2*(C\_L - C\_s)$   
 $C\_L1 = 16pF$

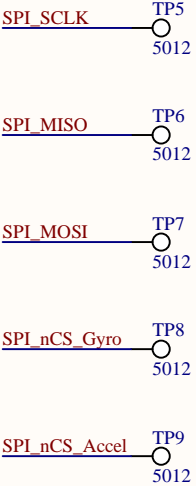
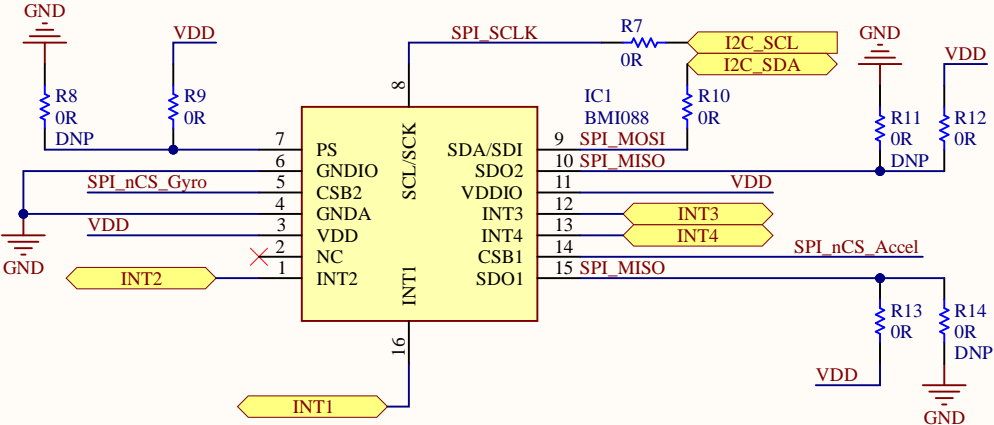
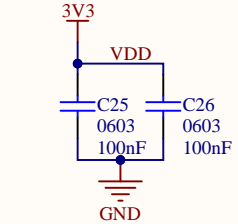
Title			
Size	Number		Revision
A			
Date:	1/23/2024	Sheet	of
File:	C:\Users\...\Oscillator.SchDoc	Drawn By:	

I2C Settings:  
Clock Speed: 400k  
Gyro I2C Address: 0x69  
Accelerometer I2C Address: 0x19

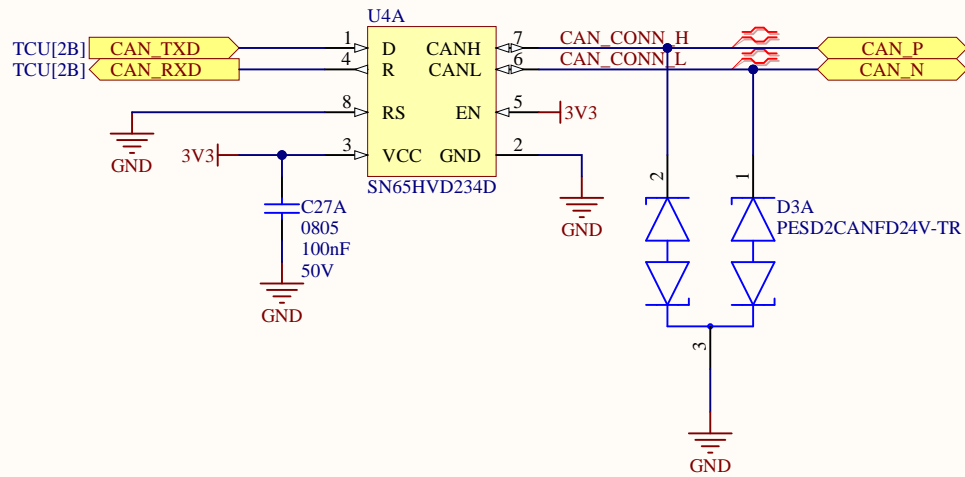
Protocol Select pin 7 mapping:  
GND = SPI, VDDIO = I2C

I2C Address Select pin 10 mapping:  
GND = 0x68, VDDIO = 0x69

I2C Address Select pin 15 mapping:  
GND = 0x18, VDDIO = 0x19



Title		
Size	Number	Revision
A		
Date:	1/23/2024	Sheet of
File:	C:\Users\...\IMU.SchDoc	Drawn By:



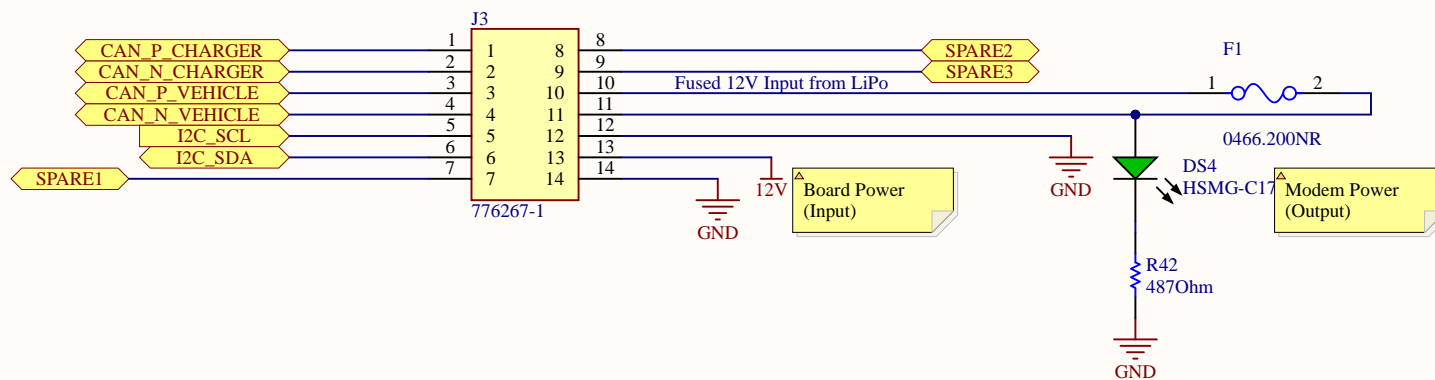
Title		
Size	Number	Revision
A		
Date:	1/23/2024	Sheet of
File:	C:\Users\...\CAN.SchDoc	Drawn By:







# Main Connector



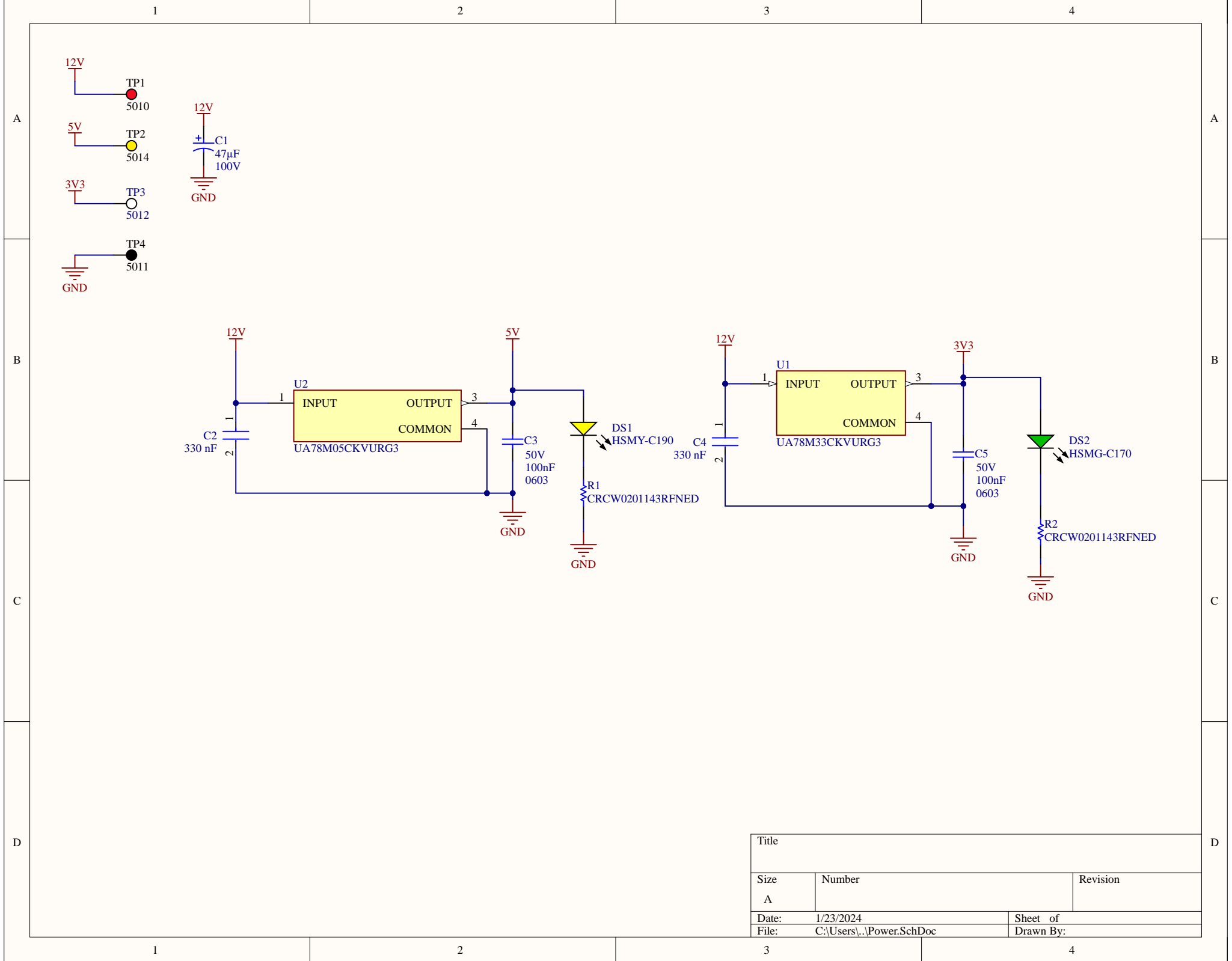
Title		
Size	Number	Revision
A		
Date:	1/23/2024	Sheet of
File:	C:\Users\...\MainConnector.SchDoc	Drawn By:

## A



## C

D



Title		
Size	Number	Revision
A		
Date:	1/23/2024	Sheet of
File:	C:\Users\...\Power.SchDoc	Drawn By:

