Nixie Clock *REDUX*

Power Input

File: power_input.kicad_sch

Power Input Telemetry

File: power_input_telemetry.kicad_sch

+3.3V Power Supply

File: pos3p3_power_supply.kicad_sch

+3.3V Telemetry

File: pos3p3_telemetry.kicad_sch

+180V Power Supply

File: pos180_power_supply.kicad_sch

+180V Telemetry

File: pos180_telemetry.kicad_sch

PIC32MZ Programming

File: pis32mz_programming.kicad_sch

PIC32MZ Bypass

File: PIC32MZ_Bypass.kicad_sch

PIC32MZ

File: PIC32MZ.kicad_sch

PIC32MZ Clocking

File: PIC32MZ_Clocking.kicad_sch

Backup RTC

File: Backup_RTC.kicad_sch

USB UART Bridge

File: USB_UART_Bridge.kicad_sch

Platform ETC

File: Platform_ETC.kicad_sch

PGOOD LEDs

File: PGOOD_LEDs.kicad_sch

Status LEDs

File: Status_LEDs.kicad_sch

IO Buffers 1

File: IO_Buffers_1.kicad_sch

IO Buffers 2

File: IO_Buffers_2.kicad_sch

IO Connectors

File: IO Connectors.kicad_sch

Misc Circuits

File: Misc_Circuits.kicad_sch

Mechanical

File: Mechanical.kicad_sch

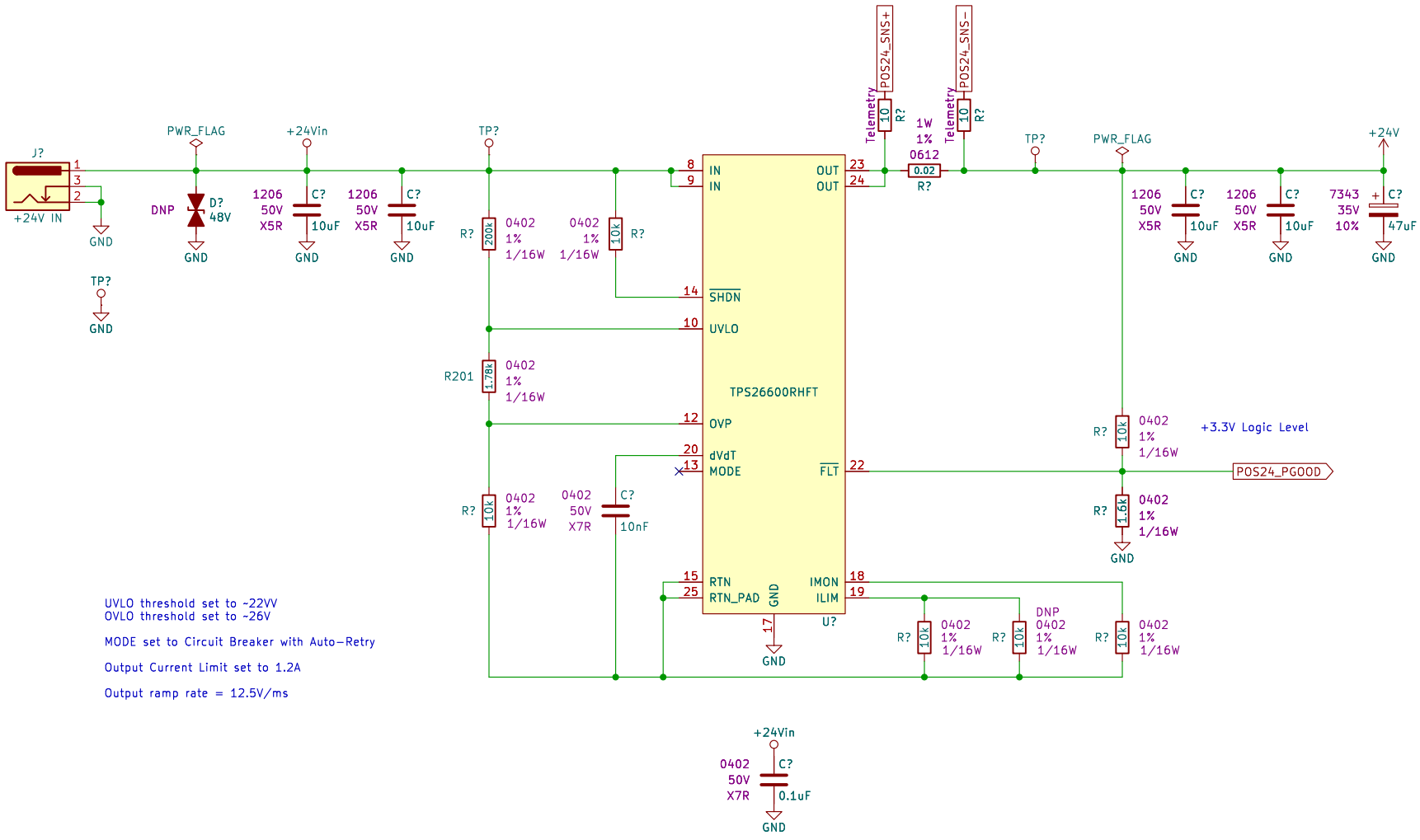
Drew Maatman

Sheet: /

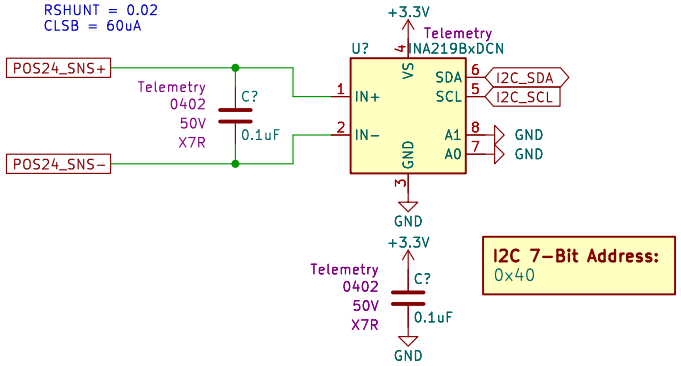
File: Nixie_Clock_Core.kicad_sch

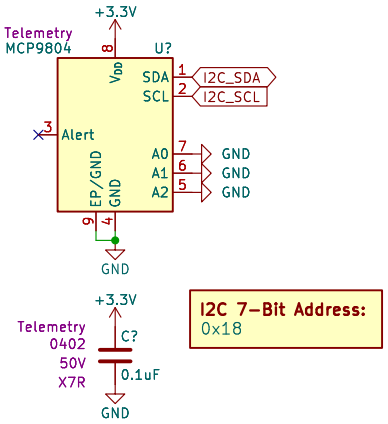
Title:

Size: A	Date: 2023-05-12	**Rev: PRELIM**
KiCad E.D.A. kicad 7.0.1		Id: 1/21

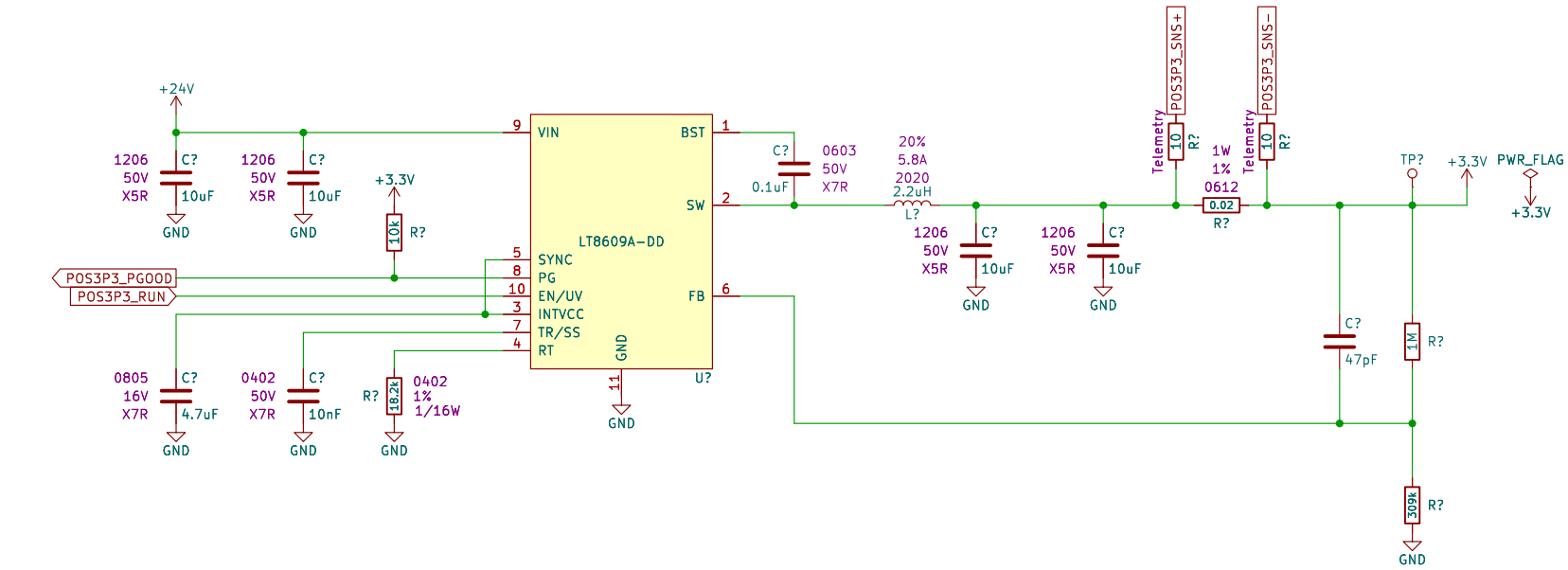


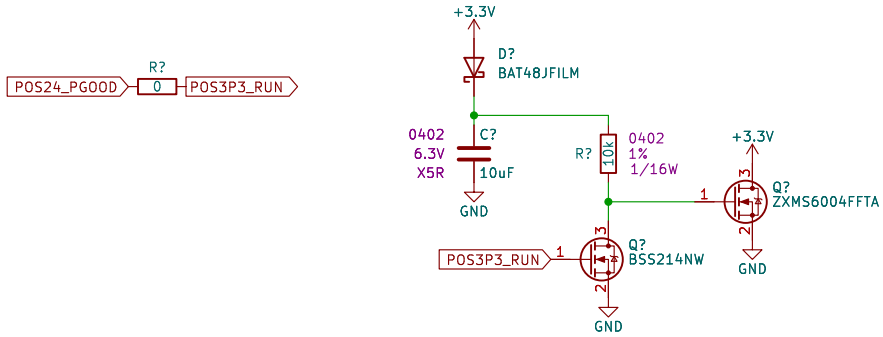
Drew Maatman		
Sheet: /Power Input/		
File: power_input.kicad_sch		
Title:		
Size: A	Date: 2023-05-12	**Rev: PRELIM**
KiCad E.D.A. kicad 7.0.1		Id: 2/21



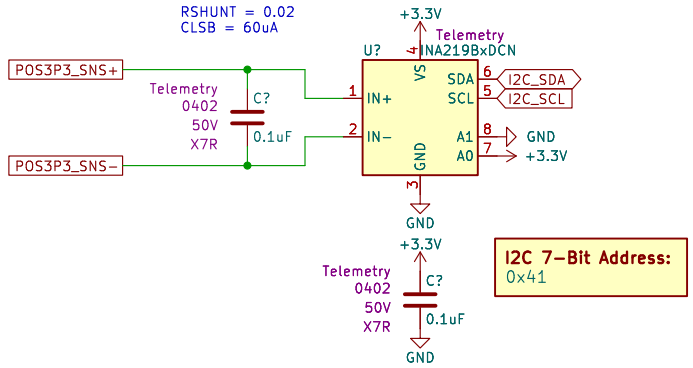


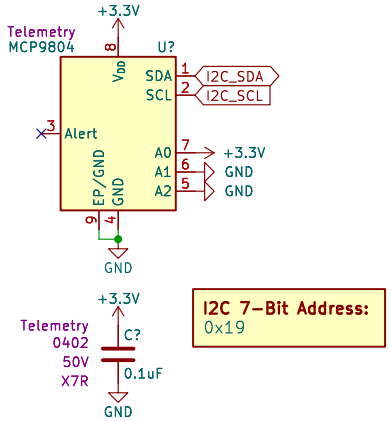
Drew Maatman		
Sheet: /Power Input Telemetry/		
File: power_input_telemetry.kicad_sch		
Title:		
Size: A	Date: 2023−05−12	**Rev: PRELIM**
KiCad E.D.A. kicad 7.0.1		Id: 3/21



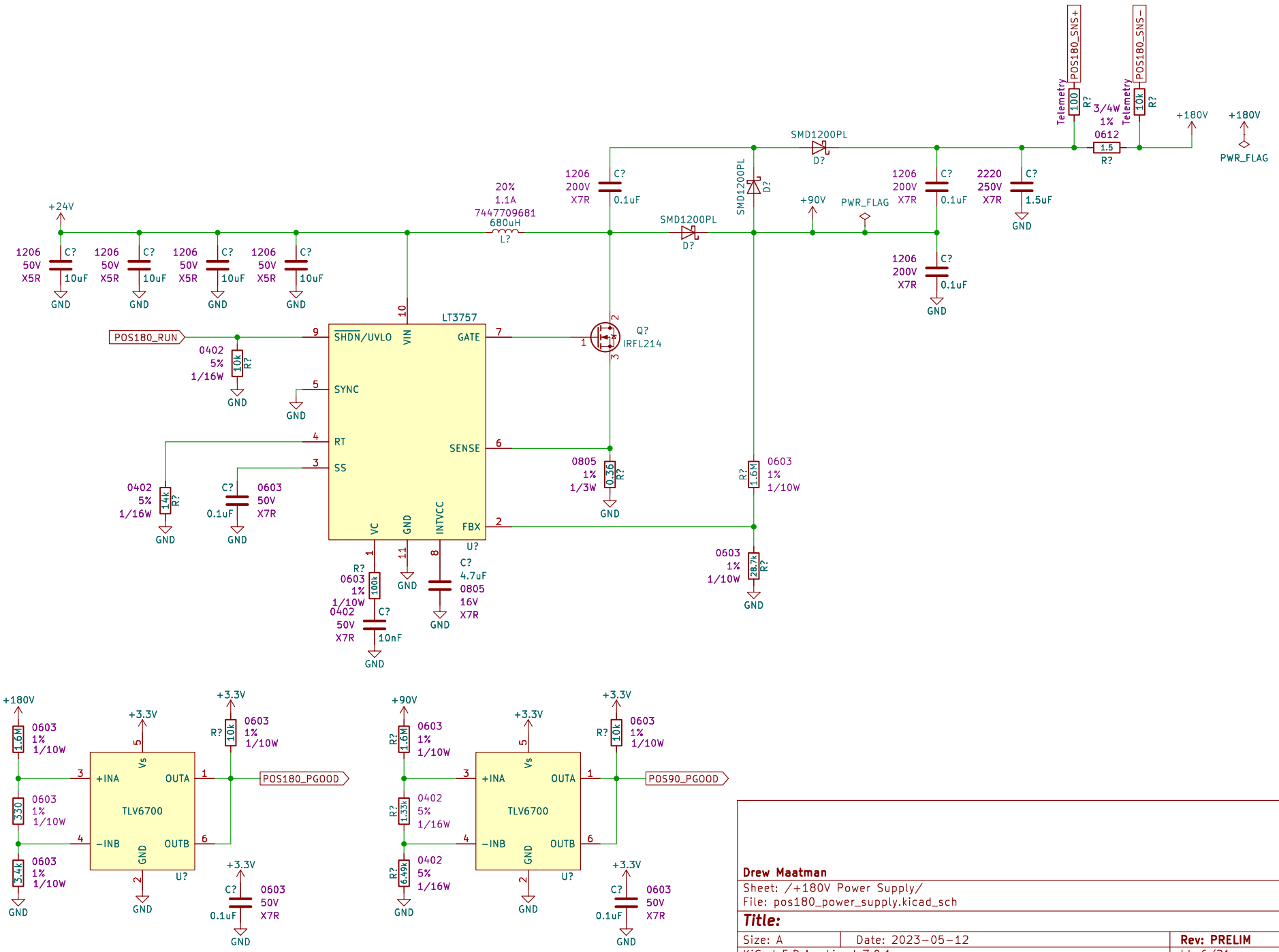


Drew Maatman		
Sheet: /+3.3V Power Supply/		
File: pos3p3_power_supply.kicad_sch		
Title:		
Size: A	Date: 2023-05-12	**Rev: PRELIM**
KiCad E.D.A. kicad 7.0.1		Id: 4/21



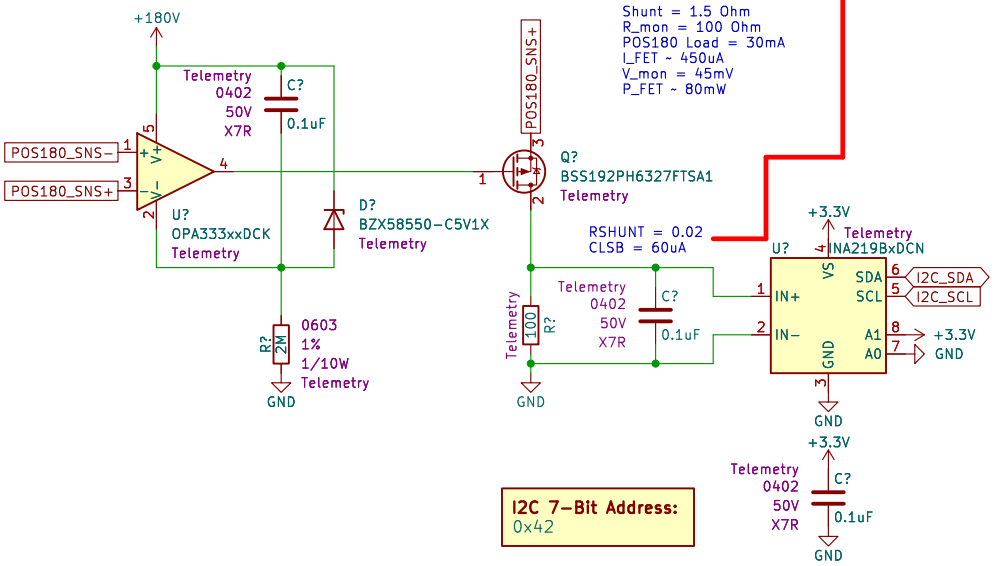


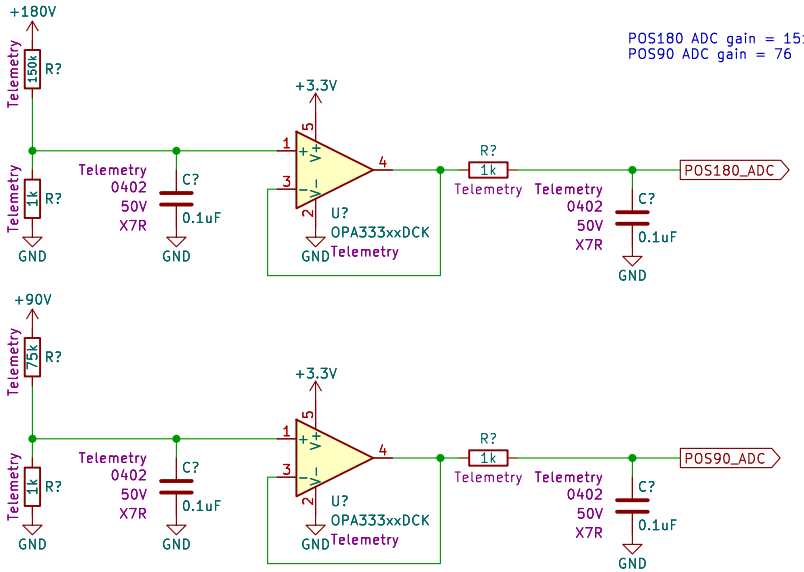
Drew Maatman		
Sheet: /+3.3V Telemetry/		
File: pos3p3_telemetry.kicad_sch		
Title:		
Size: A	Date: 2023−05−12	**Rev: PRELIM**
KiCad E.D.A. kicad 7.0.1		Id: 5/21

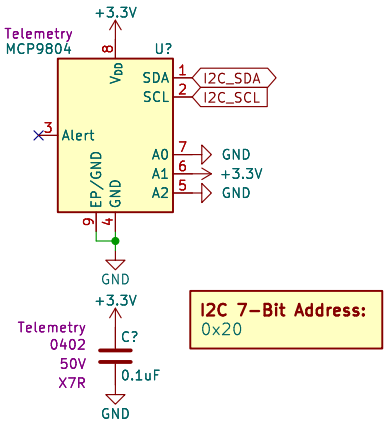

+24V
1206 C? 50V X5R 10uF
GND
20% 1.1A 7447709681 680uH L?
1206 C? 200V X7R 0.1uF
SMD1200PL D?
+90V
PWR_FLAG
2220 C? 250V X7R 1.5uF
Telemetry POS180_SNS+ 100 R?
Telemetry POS180_SNS- 10k R?
3/4W 1% 0612 1.5 R?
+180V
PWR_FLAG
POS180_RUN
LT3757
SHDN/UVLO
VIN
GATE
SYNC
RT
SS
SENSE
FBX
VC
GND
INTVCC
Q? IRFL214
0402 5% 1/16W 10k R?
0402 5% 1/16W 14k R?
C? 0603 50V X7R 0.1uF
0805 1% 1/3W 0.36 R?
R? 1.6M 0603 1% 1/10W
0603 1% 1/10W 28.7k R?
R? 0603 1% 1/10W 100k
0402 50V X7R C? 10nF
C? 4.7uF 0805 16V X7R
U?
+180V
+3.3V
+90V
1.6M 0603 1% 1/10W
330 0603 1% 1/10W
3.4k 0603 1% 1/10W
10k 0603 1% 1/10W
1.33k 0402 5% 1/16W
6.49k 0402 5% 1/16W
TLV6700
+INA
-INB
OUTA
OUTB
Vs
GND
POS180_PGOOD
POS90_PGOOD
C? 0603 50V X7R 0.1uF
Drew Maatman
Sheet: /+180V Power Supply/
File: pos180_power_supply.kicad_sch
Title:
Size: A
Date: 2023-05-12
Rev: PRELIM
KiCad E.D.A. kicad 7.0.1
Id: 6/21

INA219 SCALING NOTES WRONG, RSHUNT = 1.5Ohm

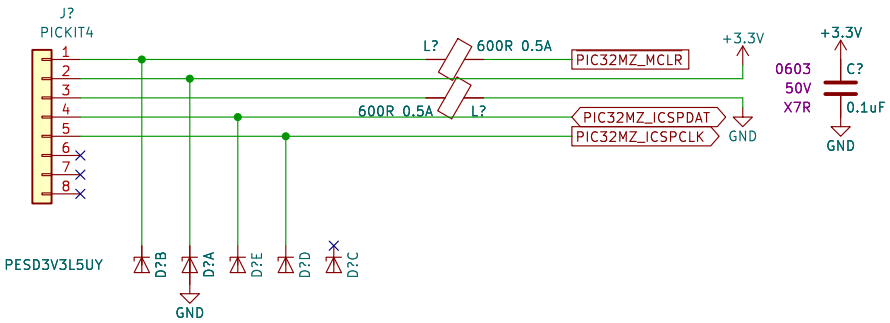
From TIDU849

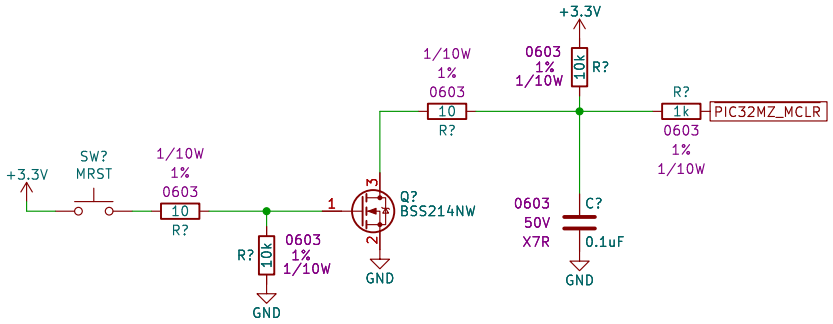




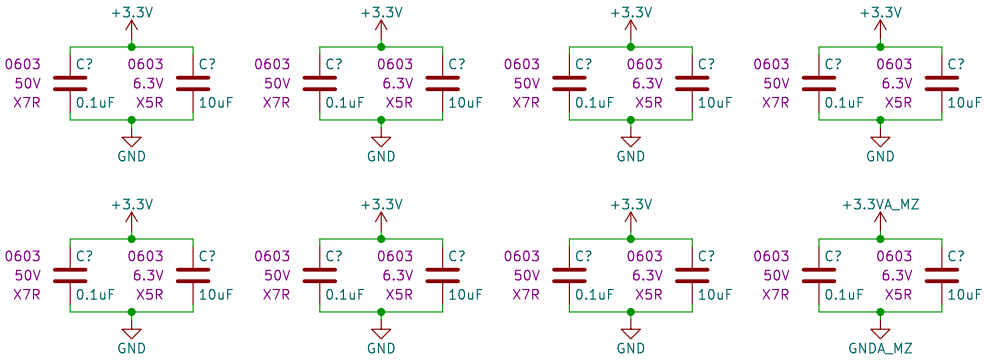


Drew Maatman		
Sheet: /+180V Telemetry/		
File: pos180_telemetry.kicad_sch		
Title:		
Size: A	Date: 2023-05-12	**Rev: PRELIM**
KiCad E.D.A. kicad 7.0.1		Id: 7/21

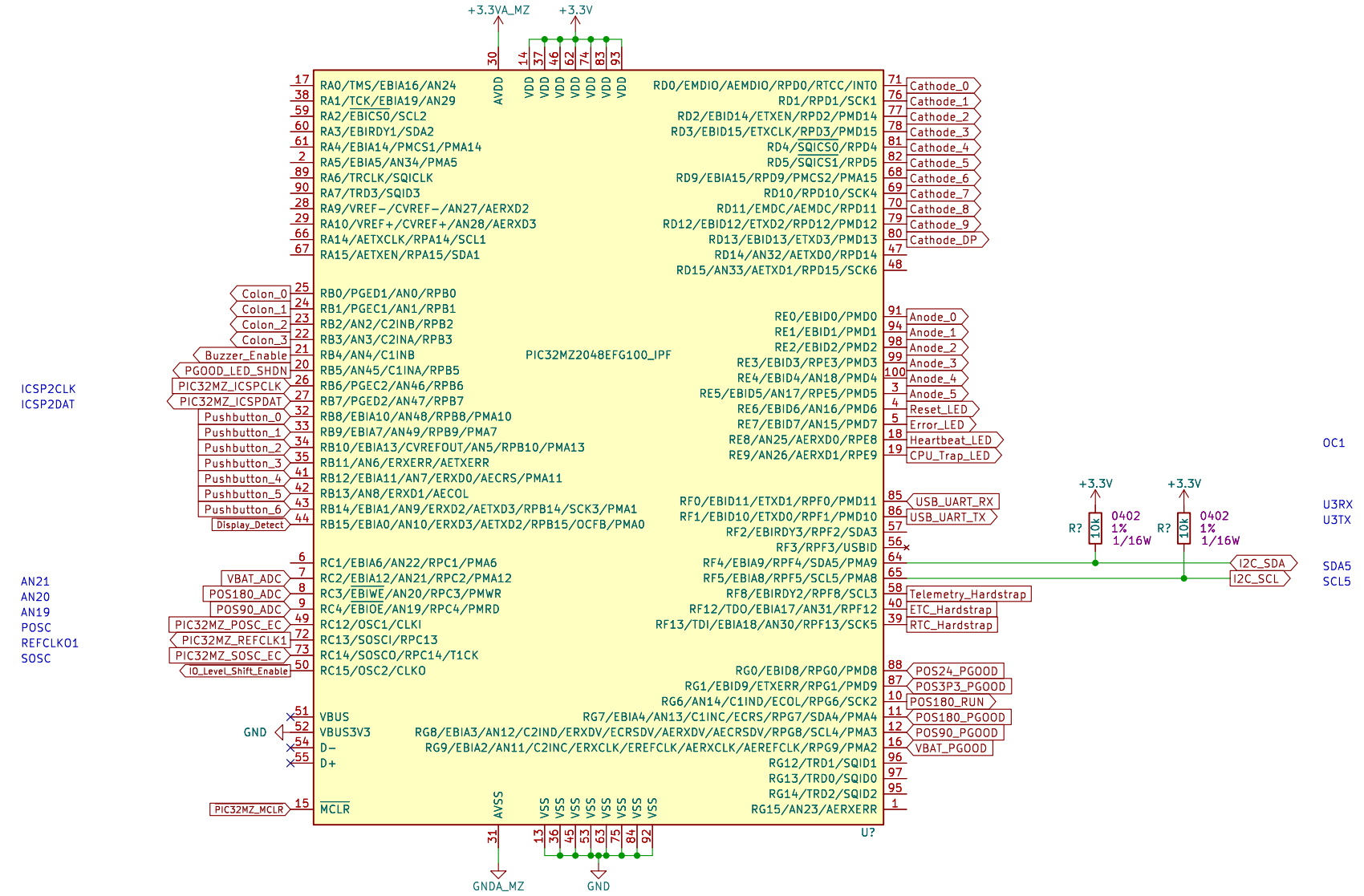




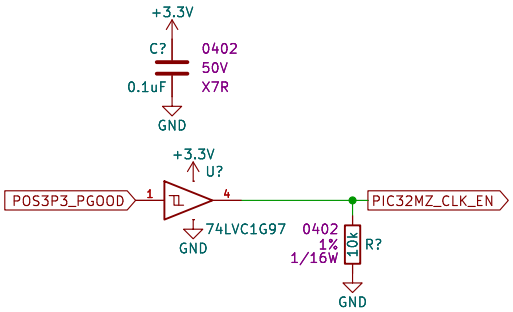
Drew Maatman		
Sheet: /PIC32MZ Programming/		
File: pis32mz_programming.kicad_sch		
Title:		
Size: A	Date: 2023-05-12	**Rev: PRELIM**
KiCad E.D.A. kicad 7.0.1		Id: 8/21

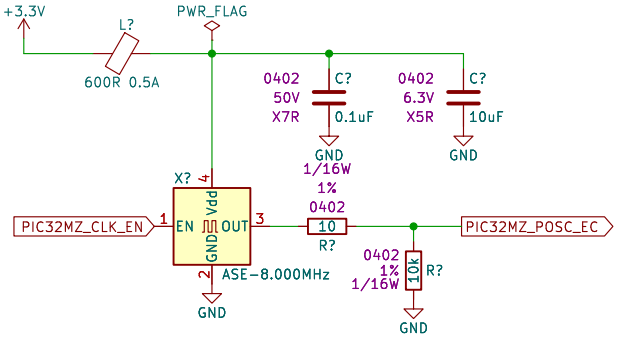


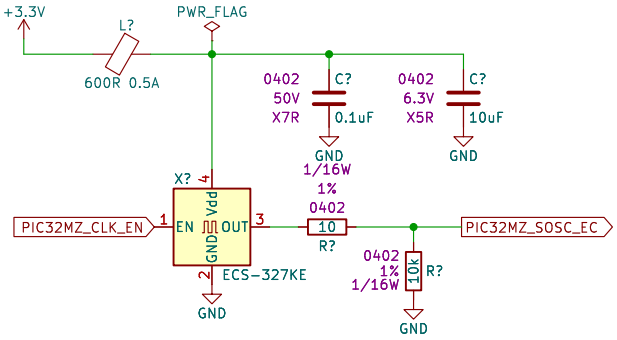
Drew Maatman		
Sheet: /PIC32MZ Bypass/		
File: PIC32MZ_Bypass.kicad_sch		
Title:		
Size: A	Date: 2023-05-12	**Rev: PRELIM**
KiCad E.D.A. kicad 7.0.1		Id: 9/21

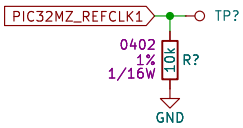


Drew Maatman		
Sheet: /PIC32MZ/		
File: PIC32MZ.kicad_sch		
Title:		
Size: A	Date: 2023-05-12	**Rev: PRELIM**
KiCad E.D.A. kicad 7.0.1		Id: 10/21

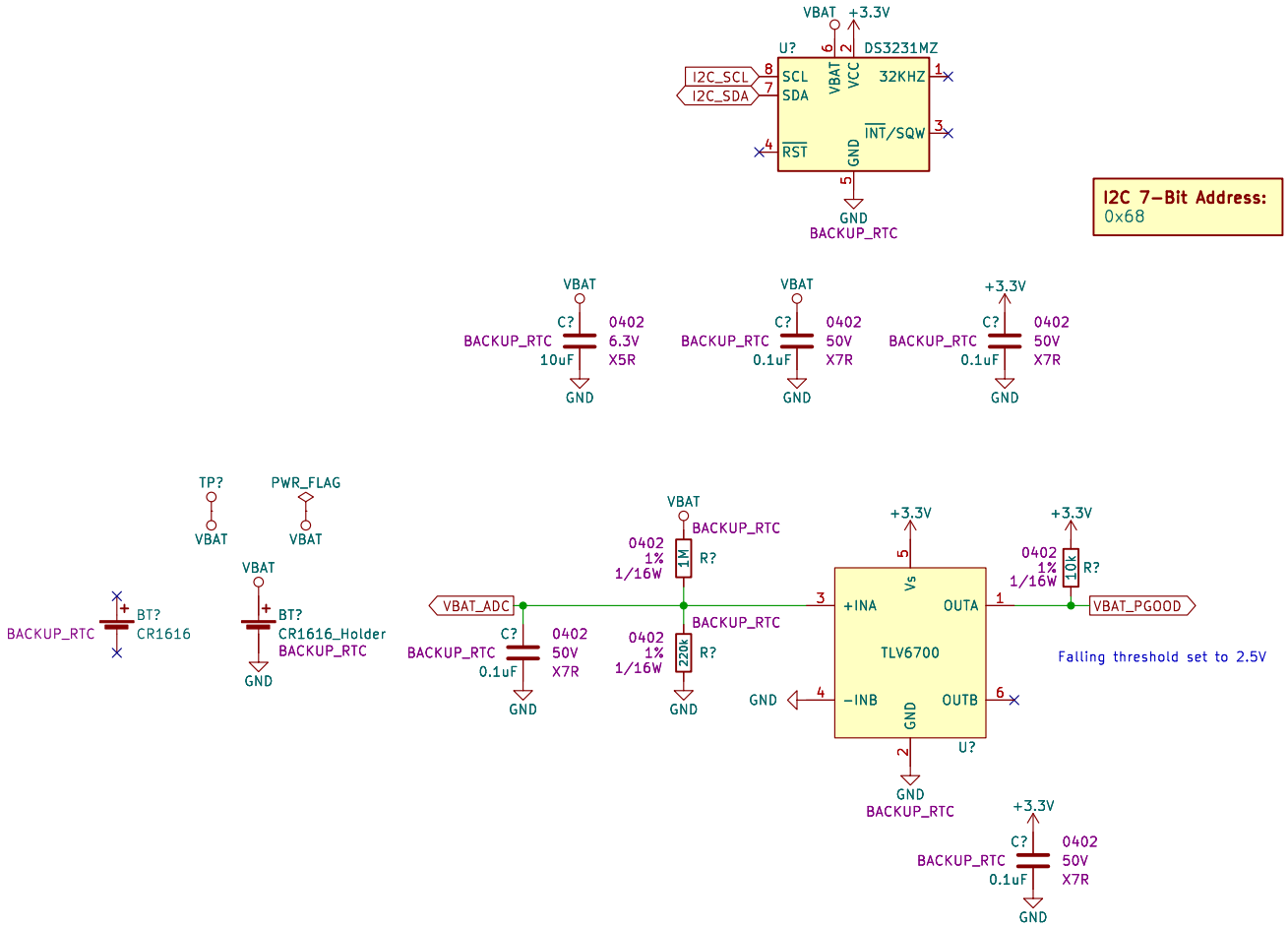




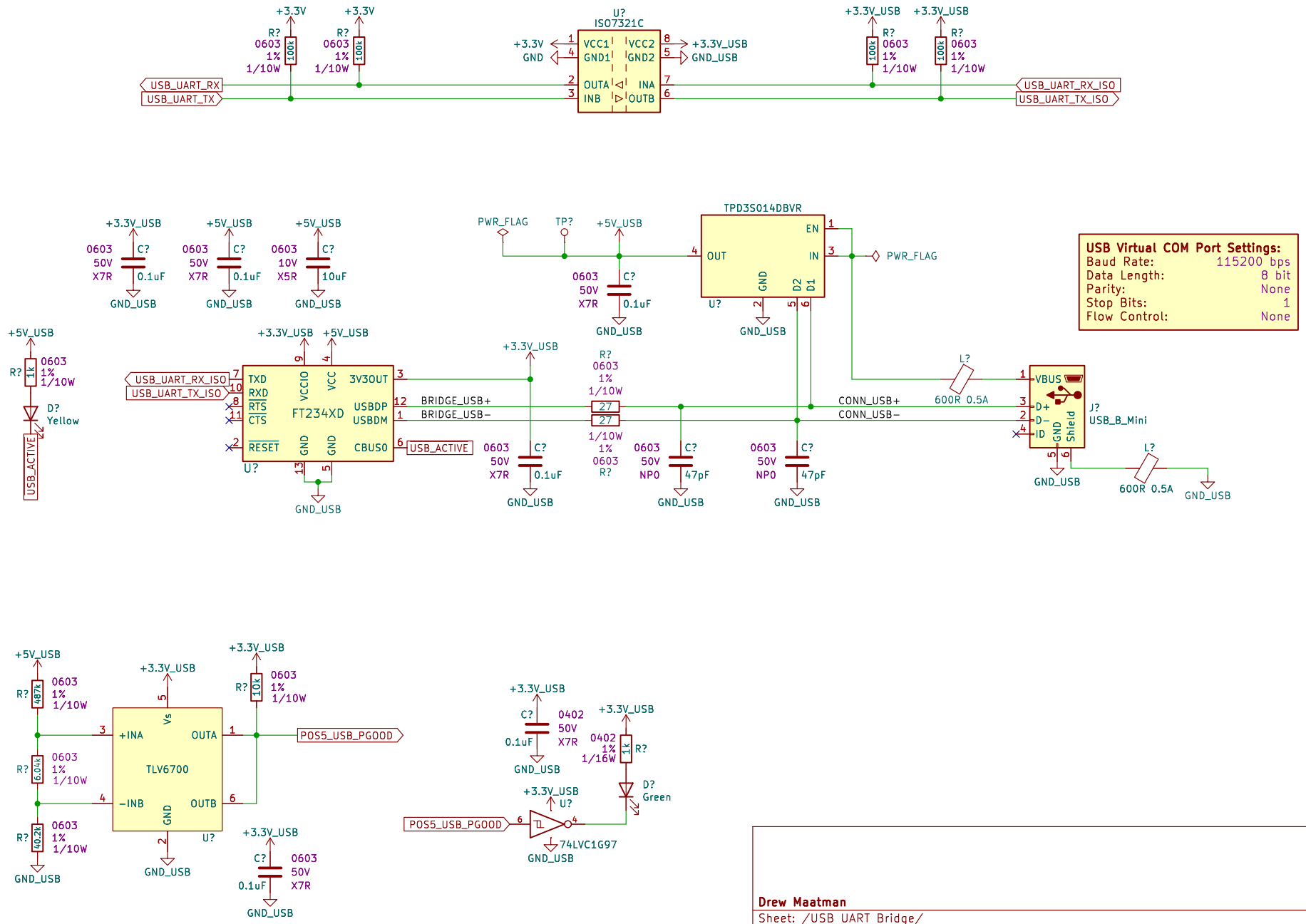


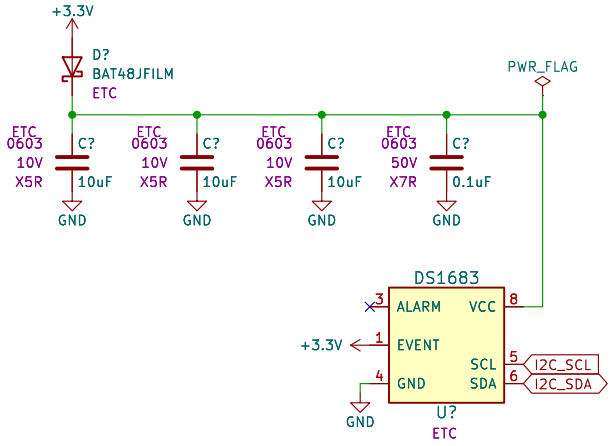


Drew Maatman		
Sheet: /PIC32MZ Clocking/		
File: PIC32MZ_Clocking.kicad_sch		
Title:		
Size: A	Date: 2023-05-12	**Rev: PRELIM**
KiCad E.D.A. kicad 7.0.1		Id: 11/21



Drew Maatman		
Sheet: /Backup RTC/		
File: Backup_RTC.kicad_sch		
Title:		
Size: A	Date: 2023-05-12	**Rev: PRELIM**
KiCad E.D.A. kicad 7.0.1		Id: 12/21


USB_UART_RX
USB_UART_TX
ISO7321C
USB_UART_RX_ISO
USB_UART_TX_ISO
TPD3S014DBVR
PWR_FLAG
USB Virtual COM Port Settings:
Baud Rate: 115200 bps
Data Length: 8 bit
Parity: None
Stop Bits: 1
Flow Control: None
FT234XD
BRIDGE_USB+
BRIDGE_USB−
CONN_USB+
CONN_USB−
USB_ACTIVE
600R 0.5A
USB_B_Mini
TLV6700
POS5_USB_PGOOD
74LVC1G97
Drew Maatman
Sheet: /USB UART Bridge/
File: USB_UART_Bridge.kicad_sch
Title:
Size: A
Date: 2023-05-12
Rev: PRELIM
KiCad E.D.A. kicad 7.0.1
Id: 13/21



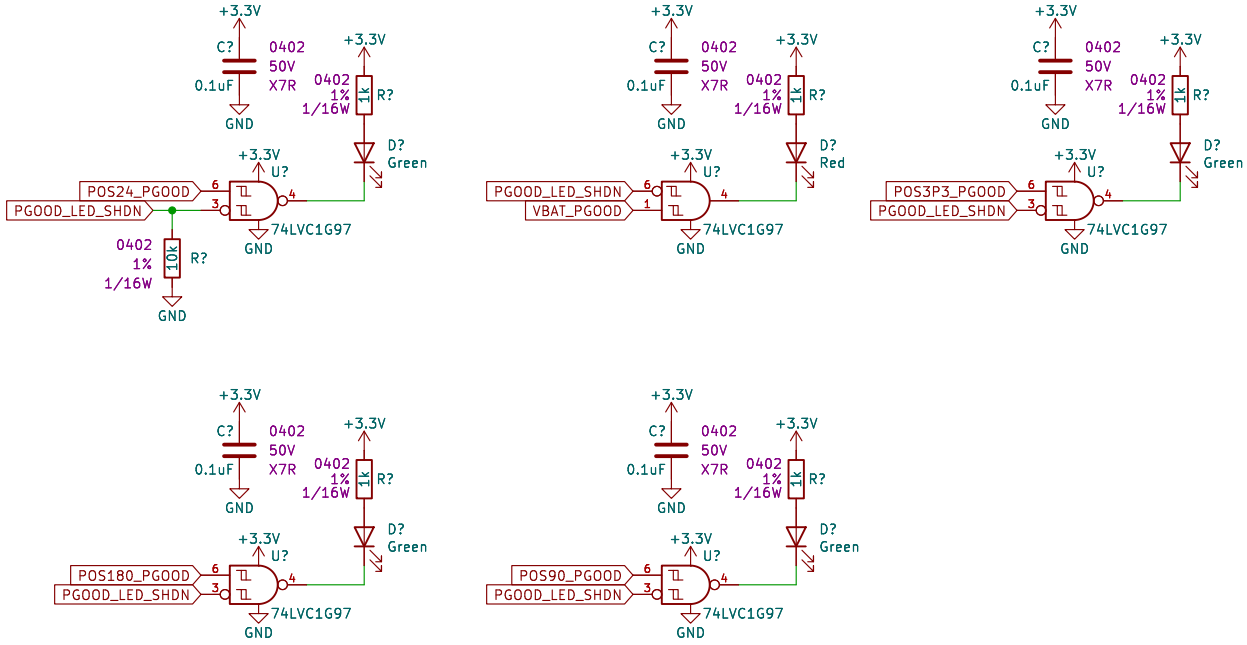
I2C 7-Bit Address:
0x6B

Drew Maatman

Sheet: /Platform ETC/
File: Platform_ETC.kicad_sch

Title:

Size: A	Date: 2023-05-12	**Rev: PRELIM**
KiCad E.D.A. kicad 7.0.1		Id: 15/21



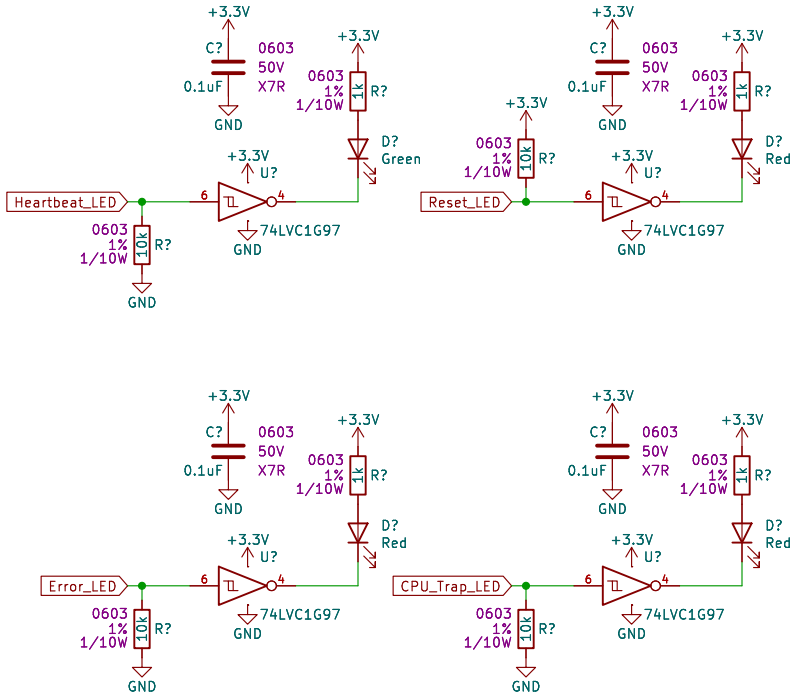
Drew Maatman

Sheet: /PGOOD LEDs/

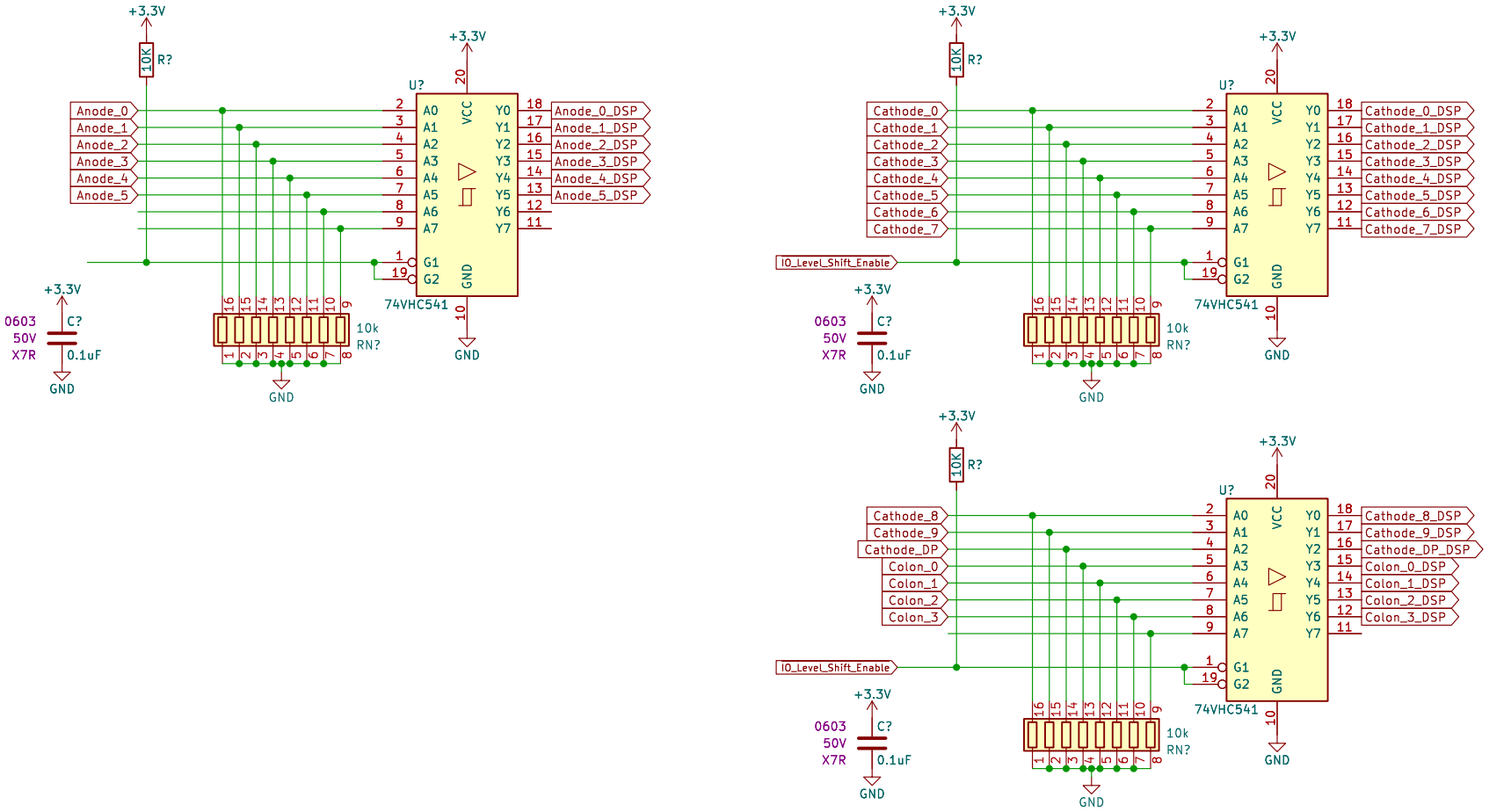
File: PGOOD_LEDs.kicad_sch

Title:

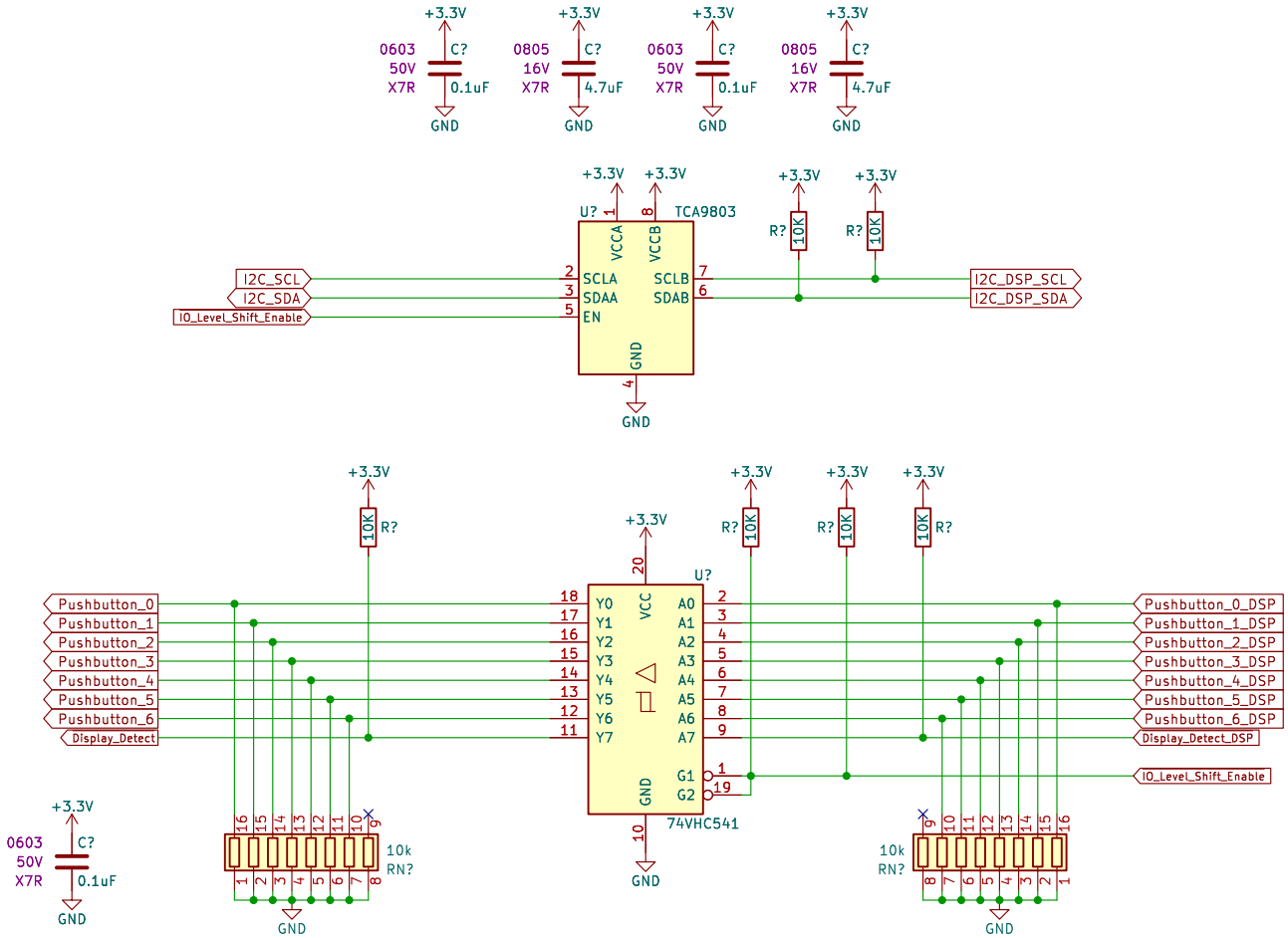
Size: A	Date: 2023-05-12	**Rev: PRELIM**
KiCad E.D.A. kicad 7.0.1		Id: 16/21



Drew Maatman		
Sheet: /Status LEDs/		
File: Status_LEDs.kicad_sch		
Title:		
Size: A	Date: 2023-05-12	**Rev: PRELIM**
KiCad E.D.A. kicad 7.0.1		Id: 17/21



Drew Maatman		
Sheet: /IO Buffers 1/		
File: IO_Buffers_1.kicad_sch		
Title:		
Size: A	Date: 2023-05-12	**Rev: PRELIM**
KiCad E.D.A. kicad 7.0.1		Id: 18/21

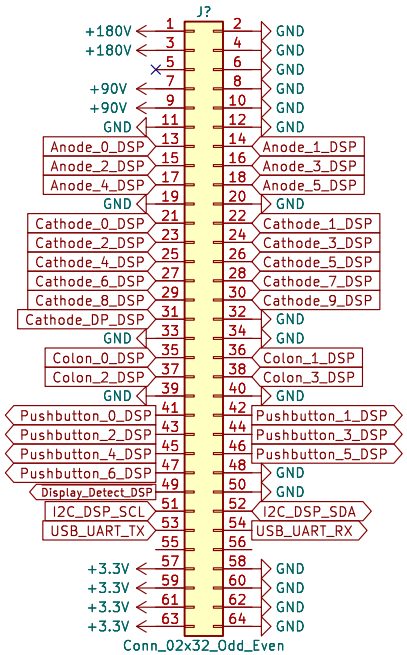


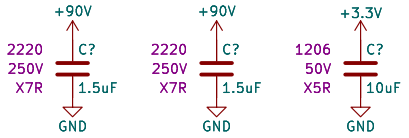
Drew Maatman		
Sheet: /IO Buffers 2/		
File: IO_Buffers_2.kicad_sch		
Title:		
Size: A	Date: 2023-05-12	**Rev: PRELIM**
KiCad E.D.A. kicad 7.0.1		Id: 19/21

FIND A CONNECTOR THAT CAN HANDLE HIGH VOLTAGE AND SIGNALLING THAT ISNT AWFUL

CONSIDER USING 0.1" SMT HEADERS

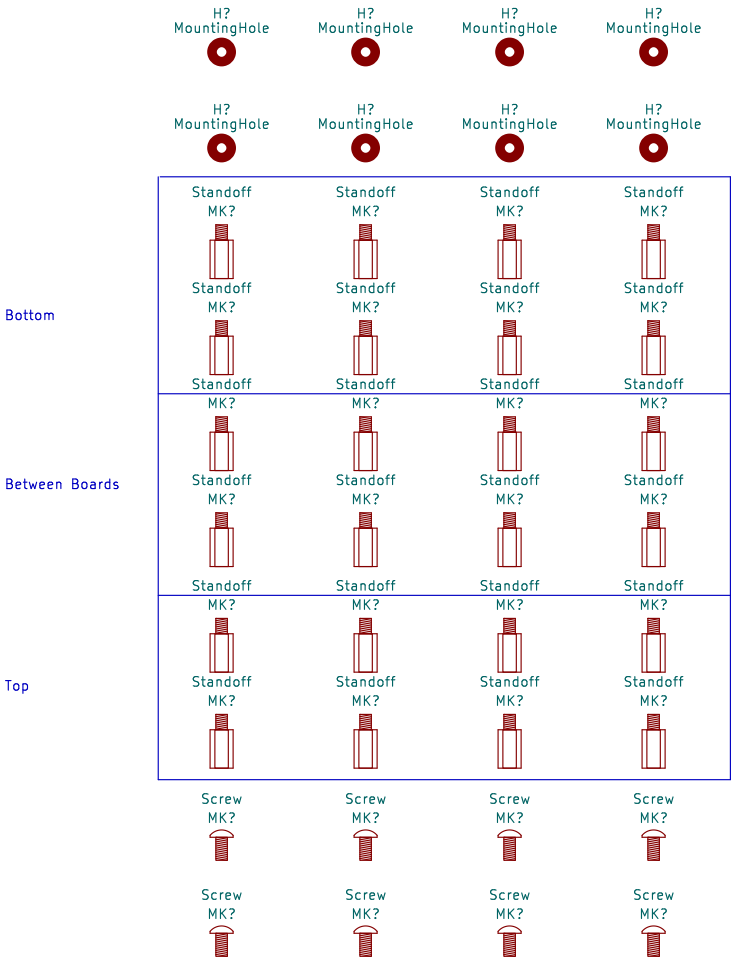
ADD BYPASS



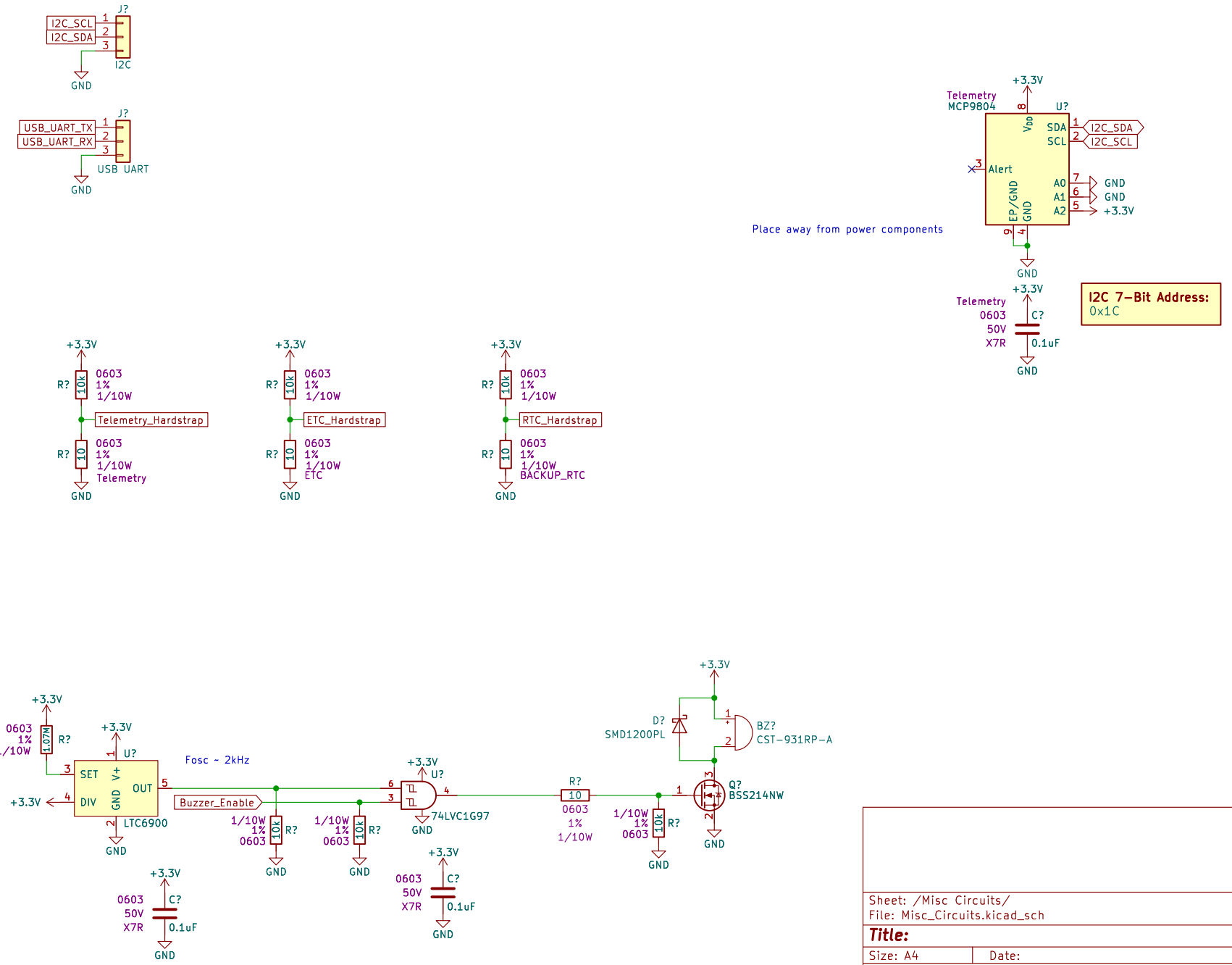


Drew Maatman		
Sheet: /IO Connectors/		
File: IO Connectors.kicad_sch		
Title:		
Size: A	Date: 2023-05-12	Rev: PRELIM
KiCad E.D.A. kicad 7.0.1		Id: 20/21

ENSURE STACK IS CORRECT HEIGHT



Drew Maatman		
Sheet: /Mechanical/		
File: Mechanical.kicad_sch		
Title:		
Size: A	Date: 2023-05-12	**Rev: PRELIM**
KiCad E.D.A. kicad 7.0.1		Id: 21/21



Sheet: /Misc Circuits/		
File: Misc_Circuits.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 7.0.1		Id: 22/21