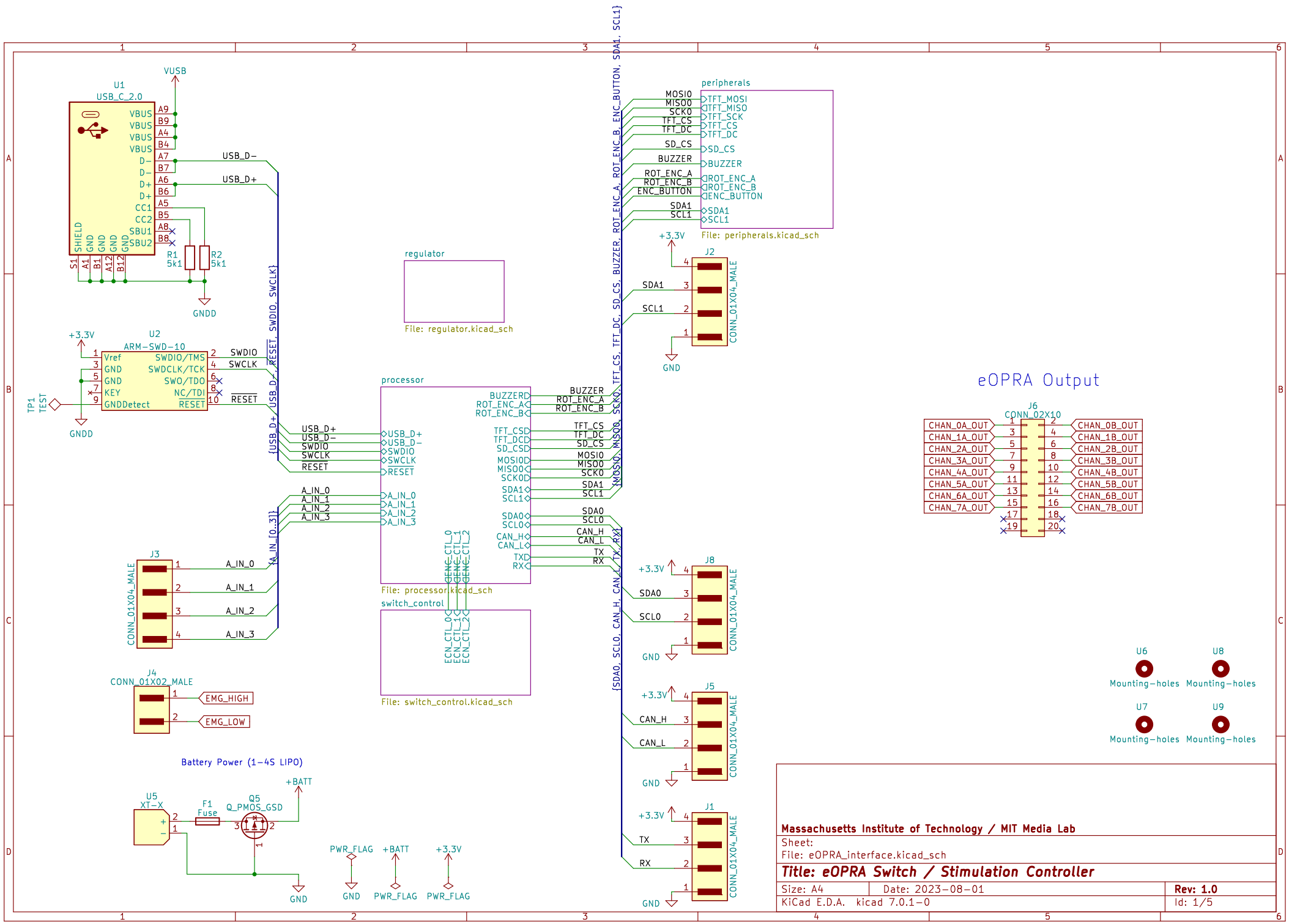
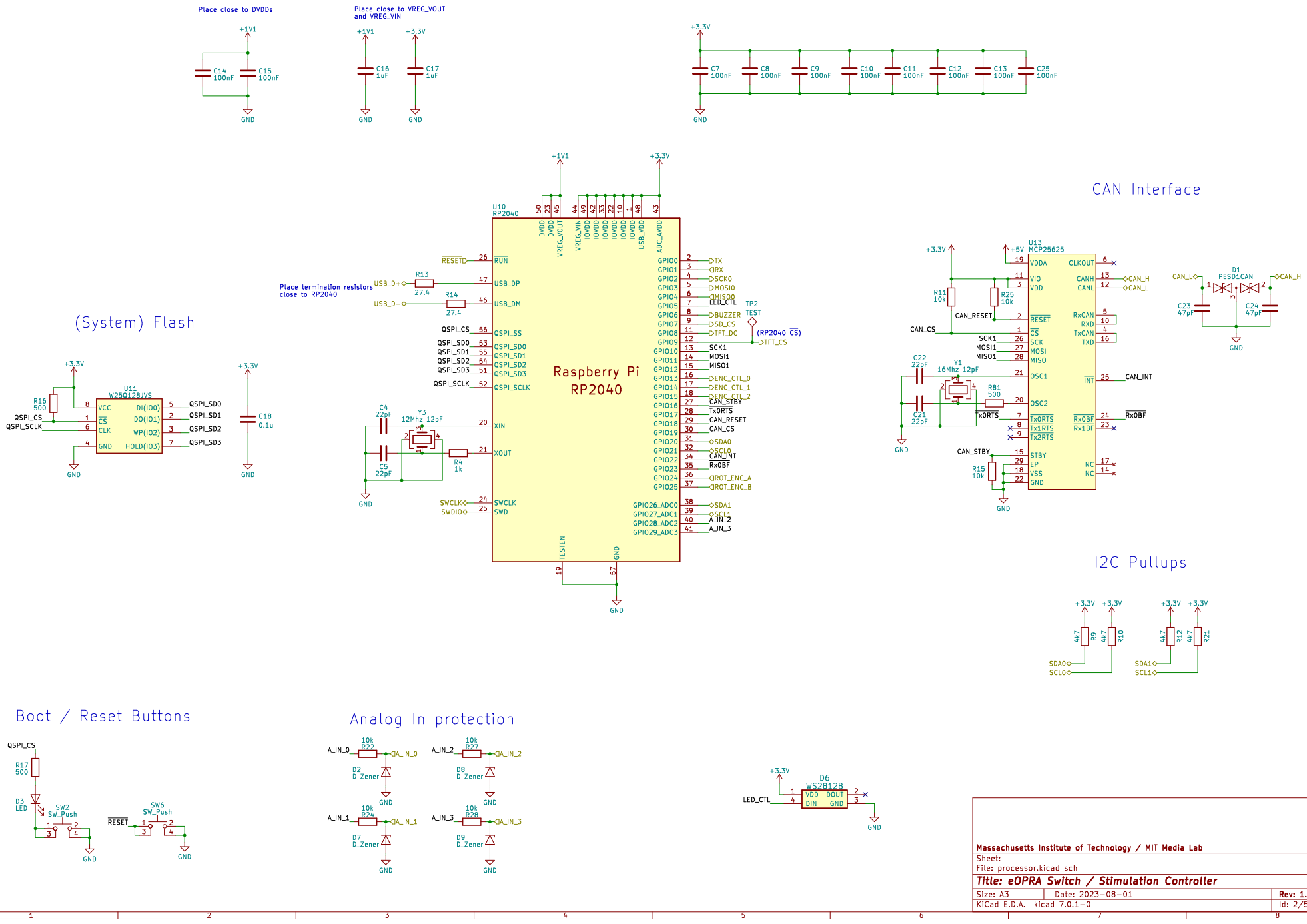
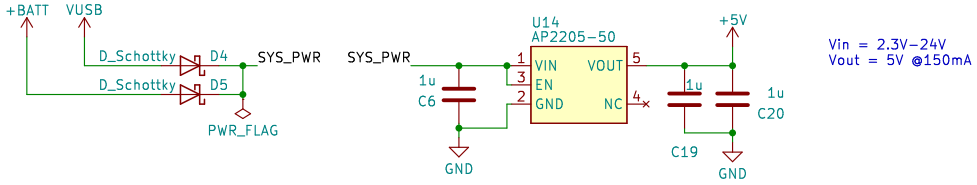
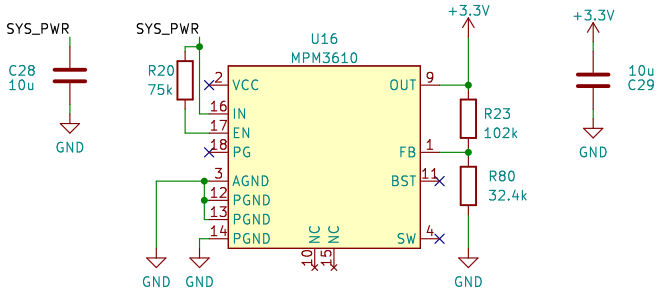
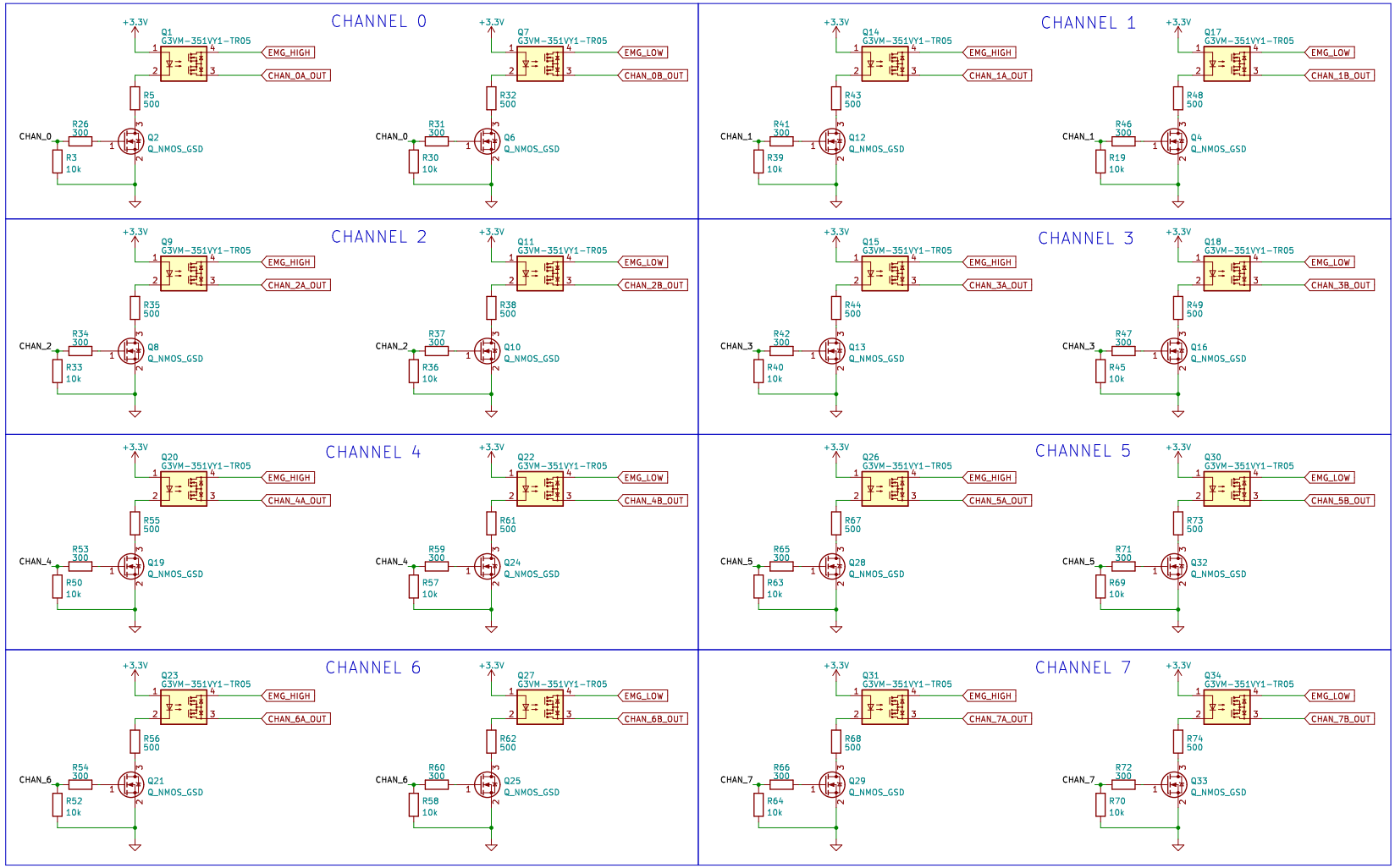

U1
USB_C_2.0
VUSB
VBUS
D-
D+
CC1
CC2
SBU1
SBU2
SHIELD
GND
USB_D-
USB_D+
R1
5k1
R2
5k1
GNDD
U2
ARM-SWD-10
+3.3V
Vref
GND
KEY
GNDdetect
SWDIO/TMS
SWDCLK/TCK
SWO/TDO
NC/TDI
RESET
SWDIO
SWCLK
RESET
TP1
TEST
regulator
File: regulator.kicad_sch
processor
BUZZER
ROT_ENC_A
ROT_ENC_B
TFT_CS
TFT_DC
SD_CS
MOSI0
MISO0
SCK0
SDA1
SCL1
SDA0
SCL0
CAN_H
CAN_L
TX
RX
A_IN_0
A_IN_1
A_IN_2
A_IN_3
ENC_CTL_0
ENC_CTL_1
ENC_CTL_2
File: processor.kicad_sch
switch_control
File: switch_control.kicad_sch
peripherals
TFT_MOSI
TFT_MISO
TFT_SCK
TFT_CS
TFT_DC
SD_CS
BUZZER
ROT_ENC_A
ROT_ENC_B
ENC_BUTTON
SDA1
SCL1
File: peripherals.kicad_sch
J2
CONN_01X04_MALE
J3
CONN_01X04_MALE
J4
CONN_01X02_MALE
EMG_HIGH
EMG_LOW
J8
J5
J1
eOPRA Output
J6
CONN_02X10
CHAN_0A_OUT
CHAN_1A_OUT
CHAN_2A_OUT
CHAN_3A_OUT
CHAN_4A_OUT
CHAN_5A_OUT
CHAN_6A_OUT
CHAN_7A_OUT
CHAN_0B_OUT
CHAN_1B_OUT
CHAN_2B_OUT
CHAN_3B_OUT
CHAN_4B_OUT
CHAN_5B_OUT
CHAN_6B_OUT
CHAN_7B_OUT
U6
U7
U8
U9
Mounting-holes
Battery Power (1-4S LIPO)
U5
XT-X
F1
Fuse
Q5
Q_PMOS_GSD
+BATT
PWR_FLAG
Massachusetts Institute of Technology / MIT Media Lab
Sheet:
File: eOPRA_interface.kicad_sch
Title: eOPRA Switch / Stimulation Controller
Size: A4
Date: 2023-08-01
Rev: 1.0
KiCad E.D.A. kicad 7.0.1-0
Id: 1/5

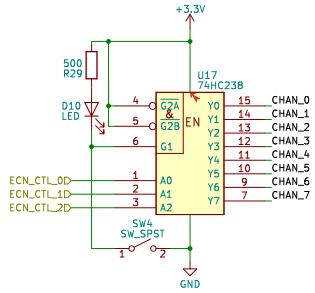

Place close to DVDDs
Place close to VREG_VOUT and VREG_VIN
Place termination resistors close to RP2040
Raspberry Pi RP2040
U10 RP2040
(System) Flash
U11 W25Q128JVS
CAN Interface
U13 MCP25625
D1 PESD1CAN
I2C Pullups
Boot / Reset Buttons
Analog In protection
D6 WS2812B
Massachusetts Institute of Technology / MIT Media Lab
Sheet:
File: processor.kicad_sch
Title: eOPRA Switch / Stimulation Controller
Size: A3
Date: 2023-08-01
Rev: 1.0
KiCad E.D.A. kicad 7.0.1-0
Id: 2/5





Massachusetts Institute of Technology / MIT Media Lab		
Sheet: File: regulator.kicad_sch		
Title: eOPRA Switch / Stimulation Controller		
Size: A4	Date: 2023-08-01	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.1-0		Id: 3/5





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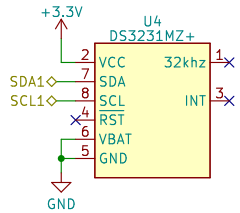
Sheet:

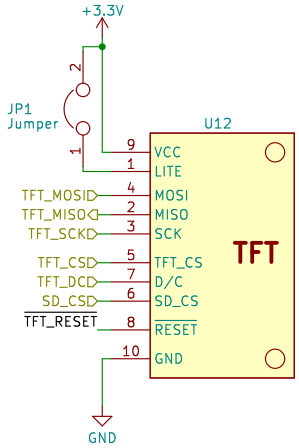
File: switch_control.kicad_sch

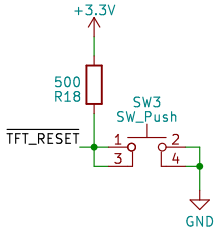
Title: eOPRA Switch / Stimulation Controller

Size: A3	Date: 2023-08-01	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.1-0		Id: 4/5

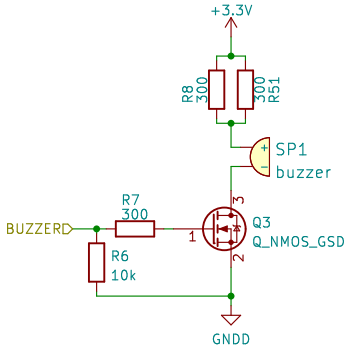
RTC



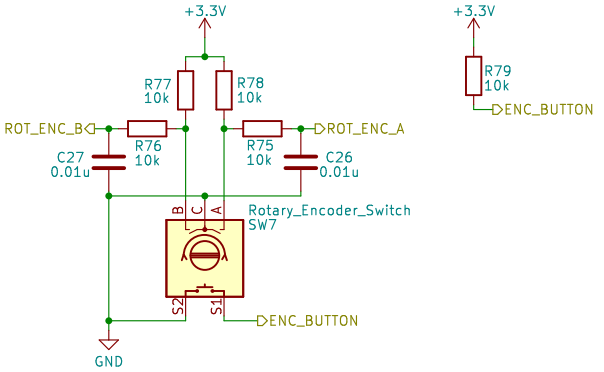




Buzzer



Rotary encoder



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Sheet:		
File: peripherals.kicad_sch		
Title: eOPRA Switch / Stimulation Controller		
Size: A4	Date: 2023-08-01	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.1-0		Id: 5/5