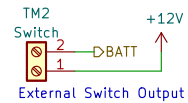
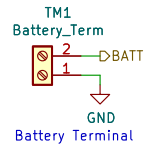
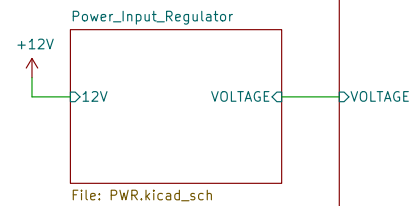


3s LIPO BATTERY

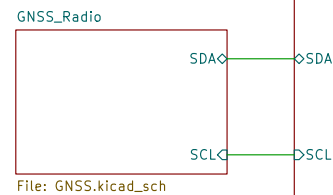
Main Power Supply During Flight



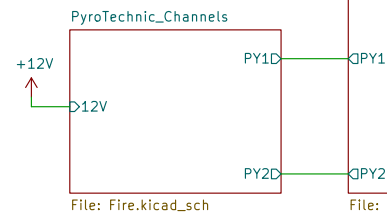
POWER MANAGEMENT



GNSS Module + Ant



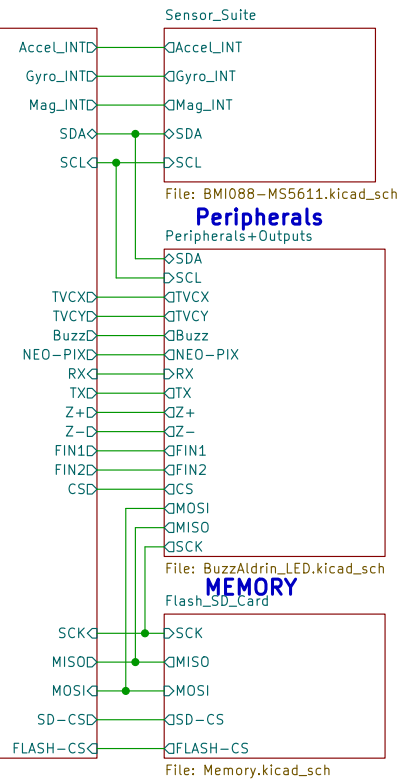
PYRO CHANNELS



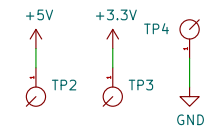
μCONTROLLER

Proc

SENSORS



Voltage TestPoints



Mounting Holes

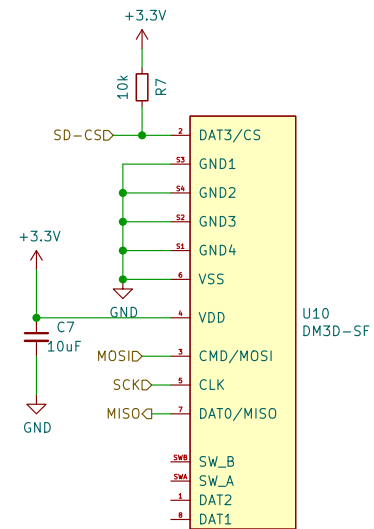
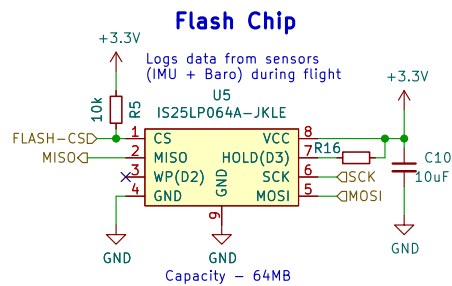
- H1 MountingHole
- H2 MountingHole
- H3 MountingHole
- H4 MountingHole

Sheet: /
File: Flight_Computer.kicad_sch

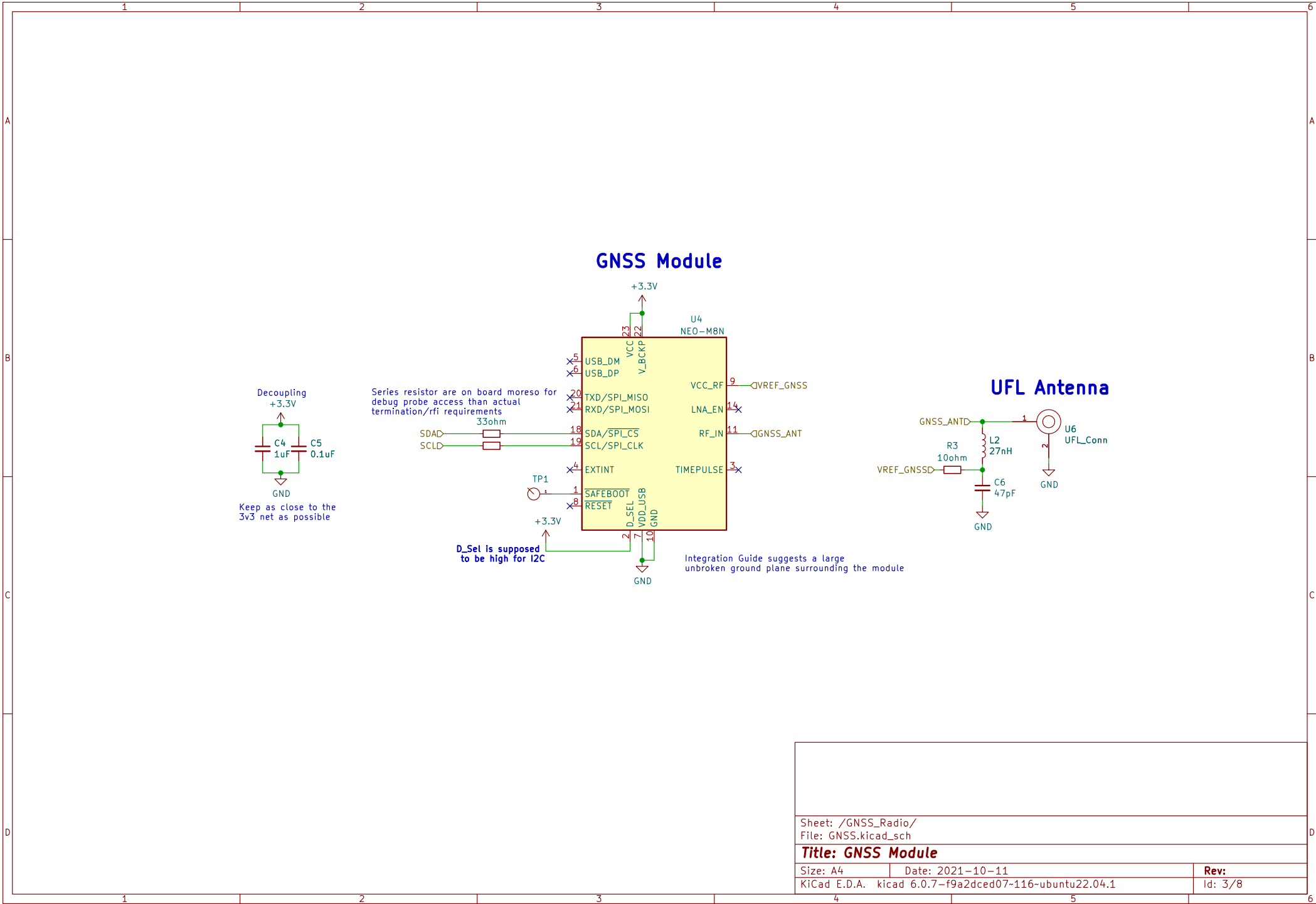
Title: Flight Computer Avionics

Size: A4 Date: 2021-10-11
KiCad E.D.A. kicad 6.0.7-f9a2dced07-116-ubuntu22.04.1

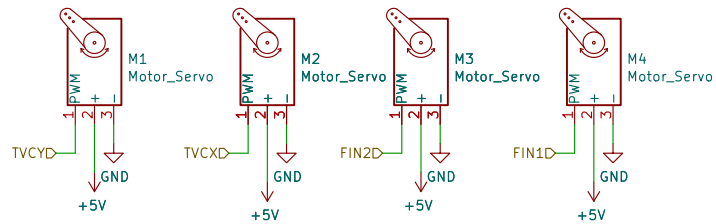
Rev: 1
Id: 1/8



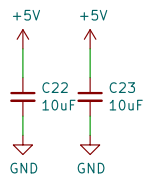
Flash Chip		
Sheet: /Flash_SD_Card/ File: Memory.kicad_sch		
Title: SPI Flash Chip		
Size: A4	Date: 2021-10-11	Rev: 1
KiCad E.D.A. kicad 6.0.7-f9a2dc07-116-ubuntu22.04.1		Id: 2/8



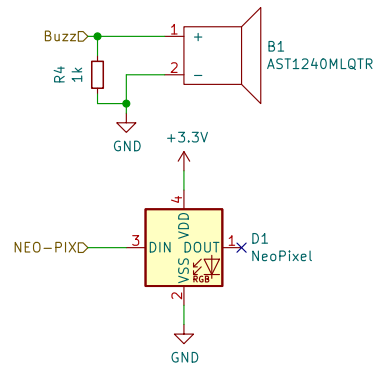
TVC Servo



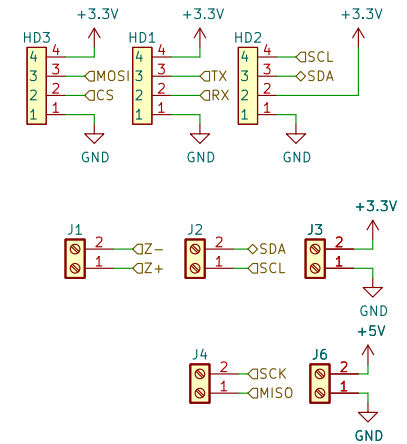
Servo Bulk Capacitors



Extra Peripherals



Outputs



LED, Buzzer Microcontroller Breakout Pins		
Sheet: /Peripherals+Outputs/ File: BuzzAldrin_LED.kicad_sch		
Title: Additional Peripherals		
Size: A4	Date: 2021-10-11	Rev: 1
KiCad E.D.A. kicad 6.0.7-f9a2dced07-116-ubuntu22.04.1		Id: 4/8

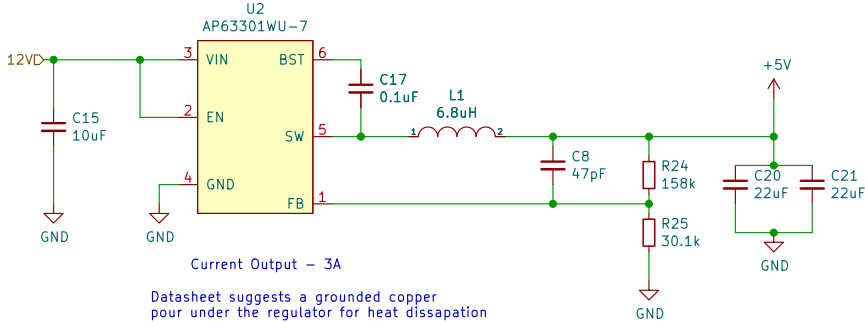
5V Regulator

Regulates voltage from LiPo to servo and 3.3V Reg operating voltage

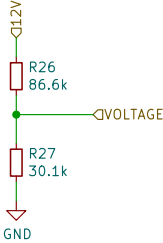
U2
AP63301WU-7

Current Output – 3A

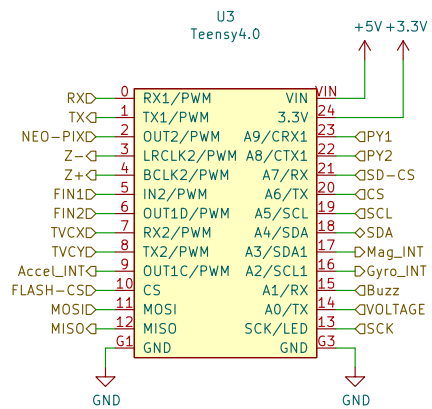
Datasheet suggests a grounded copper pour under the regulator for heat dissipation



Voltage Divider



Stepdown Regulators		
Sheet: /Power_Input_Regulator/		
File: PWR.kicad_sch		
Title: 5V and 3.3V Regulator		
Size: A4	Date: 2021-10-11	Rev: 1
KiCad E.D.A. kicad 6.0.7-f9a2dced07-116-ubuntu22.04.1		Id: 5/8



Teensy 4.0		
Sheet: /Proc/		
File: Teensy.kicad_sch		
Title: MicroController		
Size: A4	Date: 2021-10-11	Rev: 1
KiCad E.D.A. kicad 6.0.7-f9a2dced07-116-ubuntu22.04.1		Id: 6/8

PyroTechnic Channels

Switching High Current

The schematic shows two identical channels, U12 and U13, each based on the UCS3205 module. Both are powered by a 12V source through a 47ohm resistor (R12/R13) and a 10uF capacitor (C25/C26). The output of each channel is connected to a terminal block (TM8/TM3) labeled VOUT1/VOUT2. A separate section shows a current limiting resistor R19 (4.7ohm) connected to ground, with notes indicating it limits current to 2.4A on a 3s LiPO and 1.4A on a 2s LiPO.

Current Limiting Resistor

R19
4.7ohm

- - - GND

2.4A on a 3s LiPO
1.4A on a 2s LiPO

2 Load Switches

Sheet: /PyroTechnic_Channels/
File: Fire.kicad_sch

Title: Pyro-Technic Channels

Size: A4	Date: 2021-10-11	Rev: 1
KiCad E.D.A. kicad 6.0.7-f9a2dced07-116-ubuntu22.04.1	Id: 7/8	

1 2 3 4 5

A

B

C

D

PyroTechnic Channels

Switching High Current

TM8
Screw_Terminal_01x02

TM3
Screw_Terminal_01x02

R19
4.7ohm

2.4A on a 3s LiPO
1.4A on a 2s LiPO

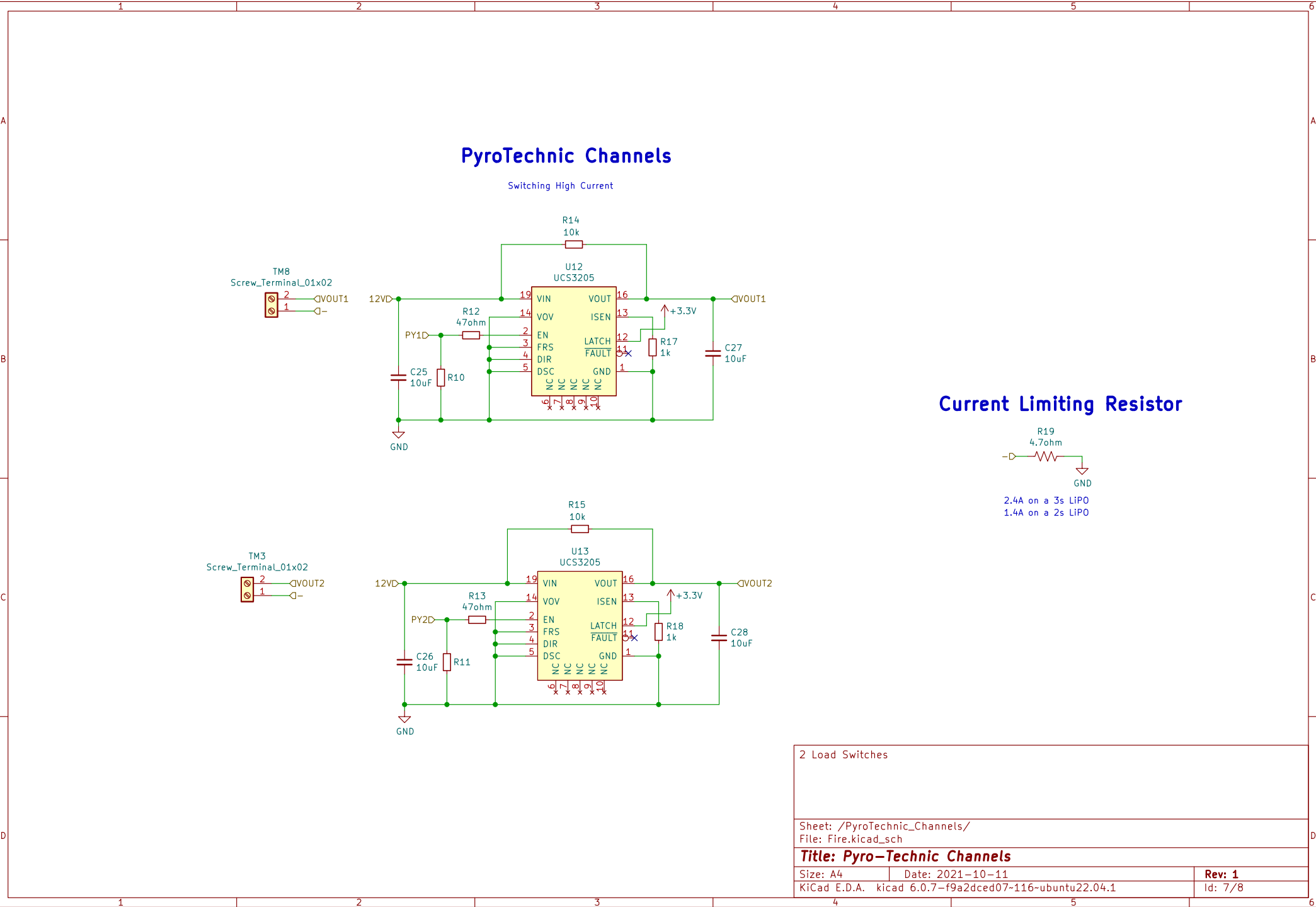
2 Load Switches

Sheet: /PyroTechnic_Channels/
File: Fire.kicad_sch

Title: Pyro-Technic Channels

Size: A4	Date: 2021-10-11	Rev: 1
KiCad E.D.A. kicad 6.0.7-f9a2dced07-116-ubuntu22.04.1	Id: 7/8	

1 2 3 4 5



1 2 3 4 5

A

B

C

D

PyroTechnic Channels

Switching High Current

TM8
Screw_Terminal_01x02

TM3
Screw_Terminal_01x02

R19
4.7ohm

2.4A on a 3s LiPO
1.4A on a 2s LiPO

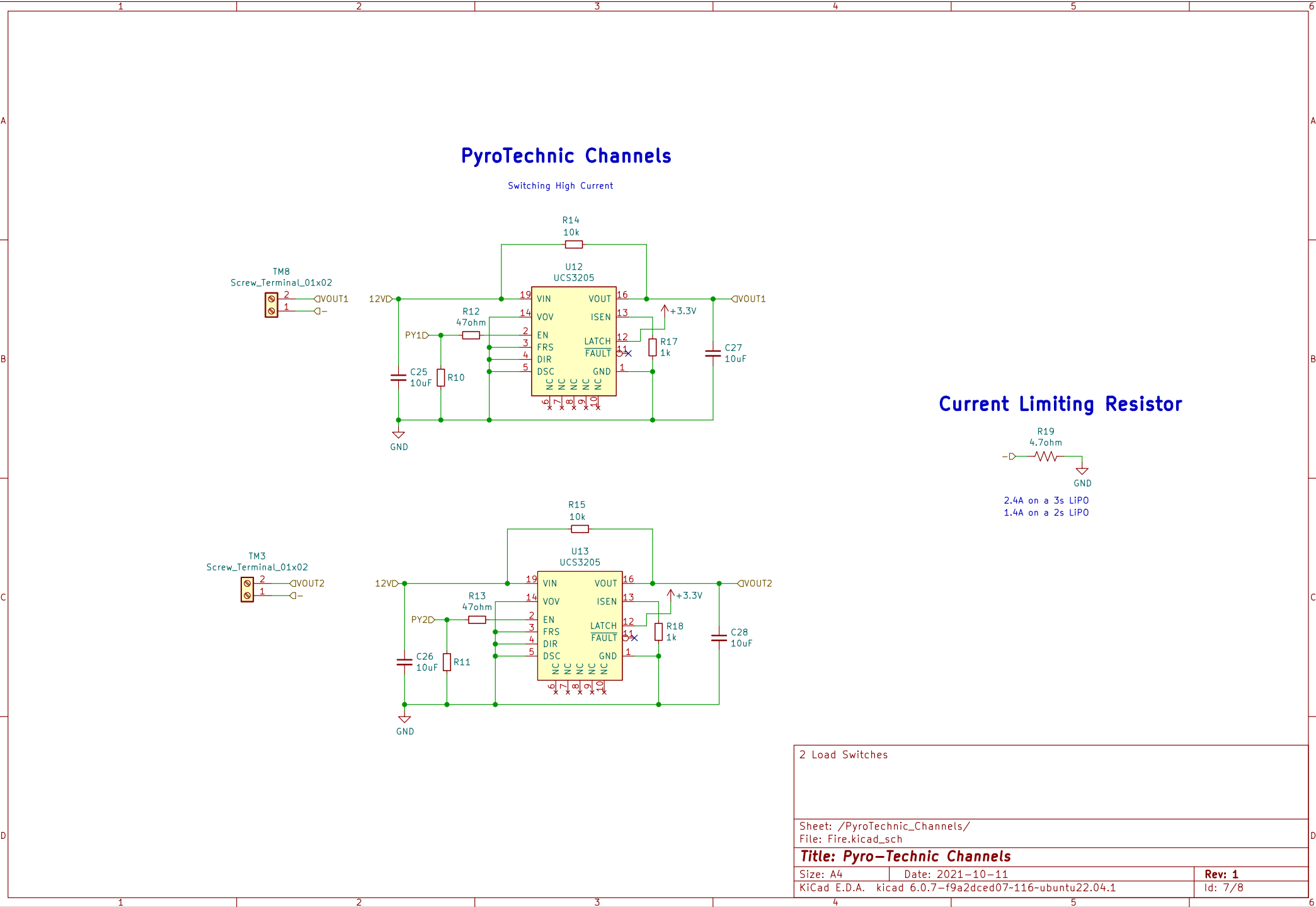
2 Load Switches

Sheet: /PyroTechnic_Channels/
File: Fire.kicad_sch

Title: Pyro-Technic Channels

Size: A4	Date: 2021-10-11	Rev: 1
KiCad E.D.A. kicad 6.0.7-f9a2dced07-116-ubuntu22.04.1	Id: 7/8	

1 2 3 4 5



1 2 3 4 5

A

B

C

D

PyroTechnic Channels

Switching High Current

TM8
Screw_Terminal_01x02

12V

GND

U12
UCS3205

R14
10k

R12
47ohm

C25
10uF

R17
1k

C27
10uF

U13
UCS3205

R15
10k

R13
47ohm

C26
10uF

R18
1k

C28
10uF

TM3
Screw_Terminal_01x02

12V

GND

R19
4.7ohm

2.4A on a 3s LiPO
1.4A on a 2s LiPO

2 Load Switches

Sheet: /PyroTechnic_Channels/
File: Fire.kicad_sch

Title: Pyro-Technic Channels

Size: A4 Date: 2021-10-11 Rev: 1

KiCad E.D.A. kicad 6.0.7-f9a2dced07-116-ubuntu22.04.1 Id: 7/8

1 2 3 4 5

A

B

C

D

PyroTechnic Channels

Switching High Current

TM8
Screw_Terminal_01x02

12V

GND

U12
UCS3205

R14
10k

R12
47ohm

C25
10uF

R17
1k

C27
10uF

U13
UCS3205

R15
10k

R13
47ohm

C26
10uF

R18
1k

C28
10uF

TM3
Screw_Terminal_01x02

12V

GND

R19
4.7ohm

2.4A on a 3s LiPO
1.4A on a 2s LiPO

2 Load Switches

Sheet: /PyroTechnic_Channels/
File: Fire.kicad_sch

Title: Pyro-Technic Channels

Size: A4 Date: 2021-10-11 Rev: 1

KiCad E.D.A. kicad 6.0.7-f9a2dced07-116-ubuntu22.04.1 Id: 7/8

1 2 3 4 5

A

B

C

D

PyroTechnic Channels

Switching High Current

TM8
Screw_Terminal_01x02

12V

GND

U12
UCS3205

R14
10k

R12
47ohm

C25
10uF

R17
1k

C27
10uF

U13
UCS3205

R15
10k

R13
47ohm

C26
10uF

R18
1k

C28
10uF

TM3
Screw_Terminal_01x02

12V

GND

R19
4.7ohm

2.4A on a 3s LiPO
1.4A on a 2s LiPO

2 Load Switches

Sheet: /PyroTechnic_Channels/
File: Fire.kicad_sch

Title: Pyro-Technic Channels

Size: A4 Date: 2021-10-11 Rev: 1

KiCad E.D.A. kicad 6.0.7-f9a2dced07-116-ubuntu22.04.1 Id: 7/8

1 2 3 4 5

A

B

C

D

PyroTechnic Channels

Switching High Current

TM8
Screw_Terminal_01x02

12V

GND

U12
UCS3205

R14
10k

R12
47ohm

C25
10uF

R17
1k

C27
10uF

U13
UCS3205

R15
10k

R13
47ohm

C26
10uF

R18
1k

C28
10uF

TM3
Screw_Terminal_01x02

12V

GND

R19
4.7ohm

2.4A on a 3s LiPO
1.4A on a 2s LiPO

2 Load Switches

Sheet: /PyroTechnic_Channels/
File: Fire.kicad_sch

Title: Pyro-Technic Channels

Size: A4 Date: 2021-10-11 Rev: 1

KiCad E.D.A. kicad 6.0.7-f9a2dced07-116-ubuntu22.04.1 Id: 7/8

1 2 3 4 5

A

B

C

D

PyroTechnic Channels

Switching High Current

U12 UCS3205

U13 UCS3205

TM8 Screw_Terminal_01x02

TM3 Screw_Terminal_01x02

Current Limiting Resistor

R19 4.7ohm

2.4A on a 3s LiPO
1.4A on a 2s LiPO

2 Load Switches

Sheet: /PyroTechnic_Channels/
File: Fire.kicad_sch

Title: Pyro-Technic Channels

Size: A4	Date: 2021-10-11	Rev: 1
KiCad E.D.A. kicad 6.0.7-f9a2dced07-116-ubuntu22.04.1	Id: 7/8	

1 2 3 4 5

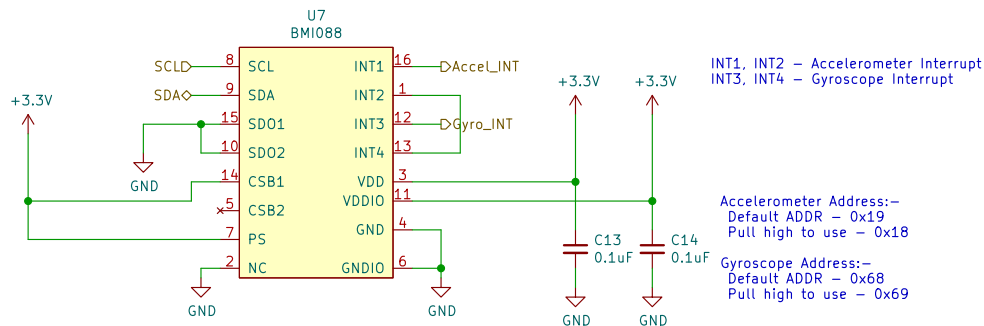
A

B

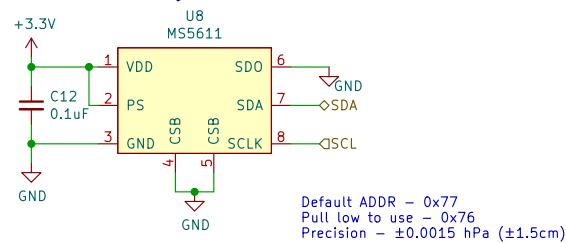
C

D

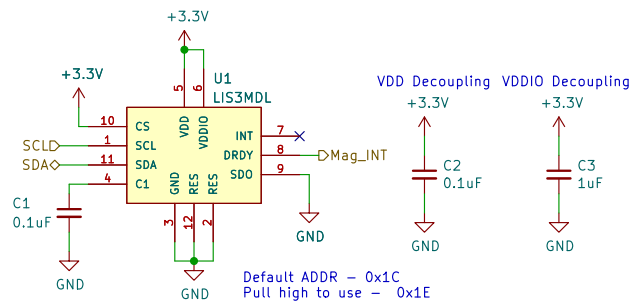
6DOF BMI088 IMU Accelerometer + Gyroscope



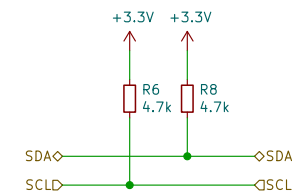
Primary Barometer



Magnetometer



I2C Pullups



These resistors pull their corresponding I2C lines (SDA or SCL) high when it is not driven low by the "open drain" nature of I2C bus drivers.

BMI088– (Accel + Gyro)		
MS5611 (Primary Baro)		
LIS3MDL (Mag)		
Drawn by Abhigna Y		
Sheet: /Sensor_Suite/		
File: BMI088–MS5611.kicad_sch		
Title: 10DOF–Sensor Suite		
Size: A4	Date: 2021–10–11	Rev: 1
KiCad E.D.A. kicad 6.0.7–f9a2dced07–116-ubuntu22.04.1		Id: 8/8