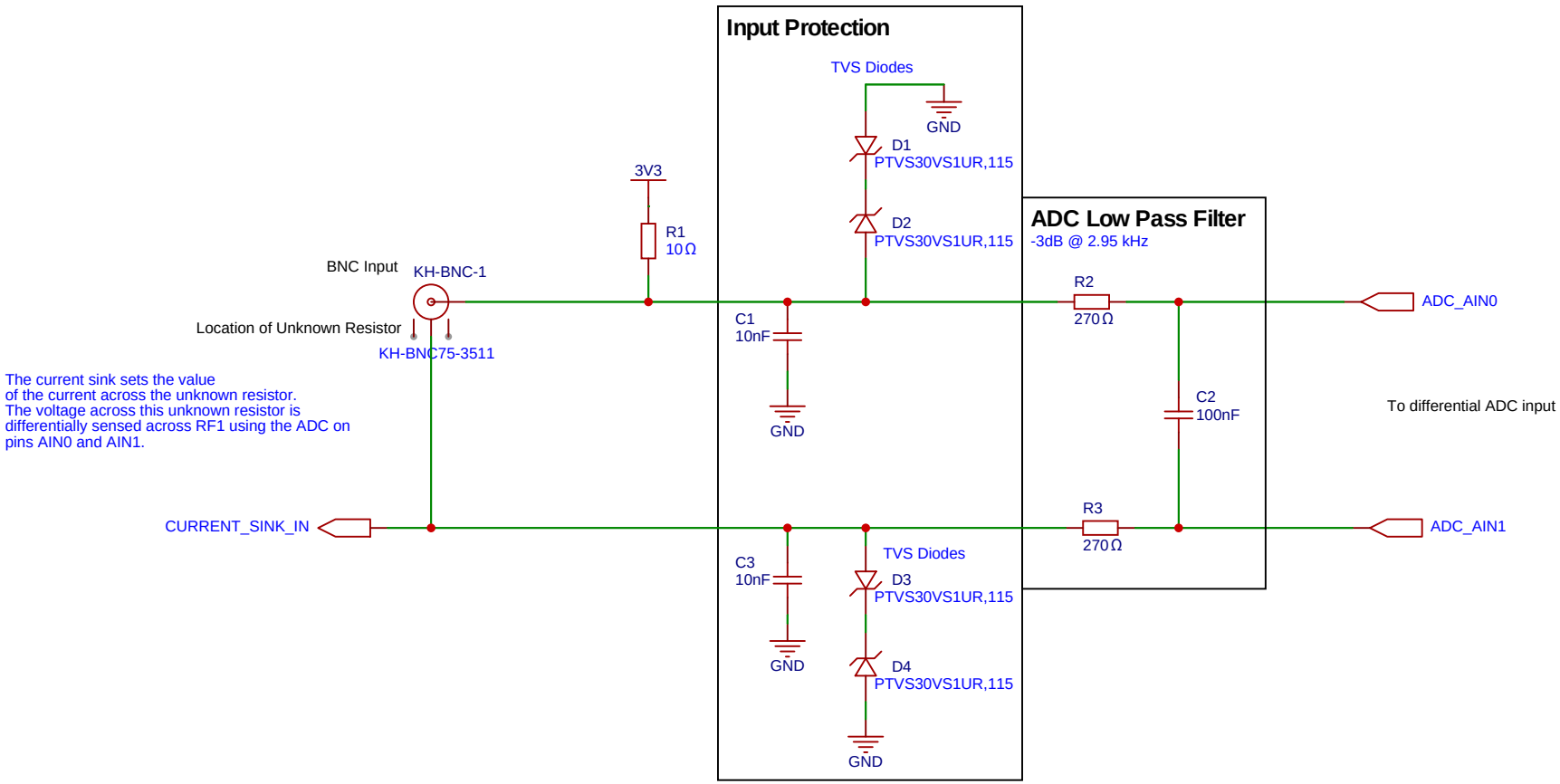
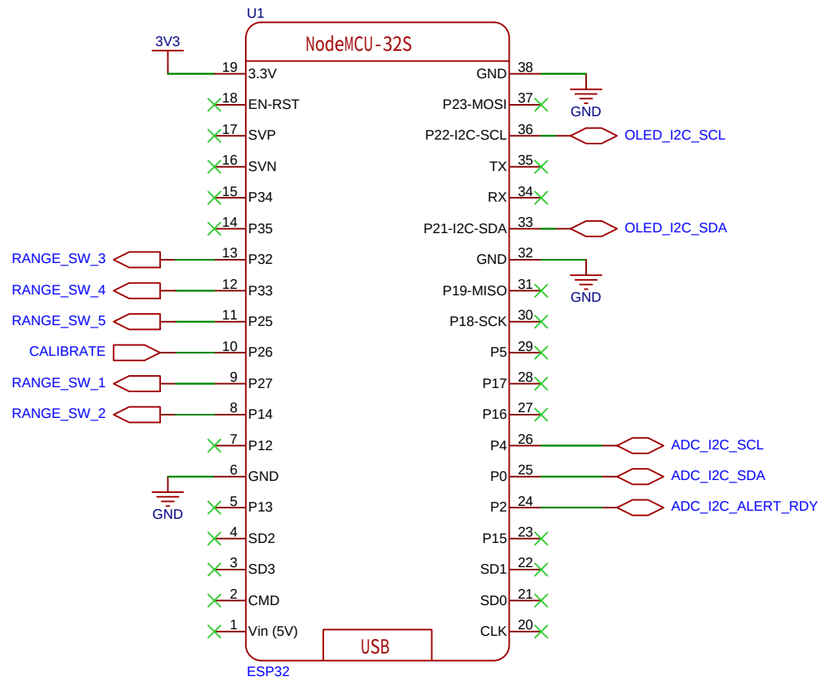


Schematic	Schematic 1	Update Date	2024-03-27
		Create Date	2022-11-20
Page	Input and Input Protection		
Drawn	Thomas Crisafulli	OhmmeterV1.1_Release	
		VER	SIZE	PAGE 1 OF 4
		1.1	A4	

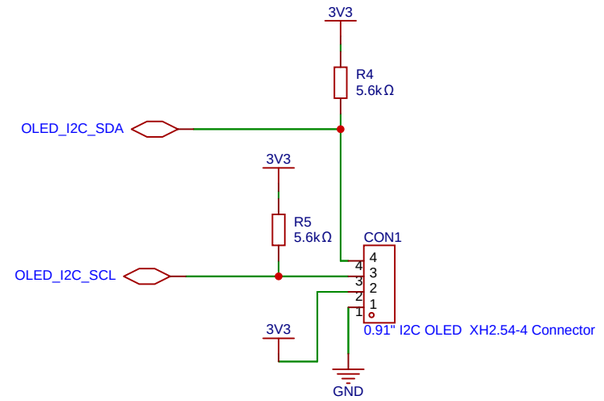
ESP32

*ESP32 set to run at 8 MHz for low current consumption.

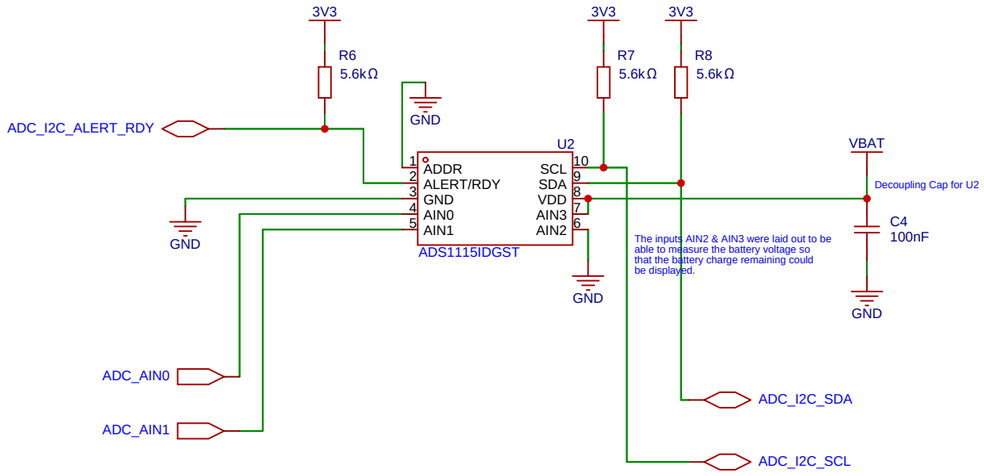


I2C OLED Connector

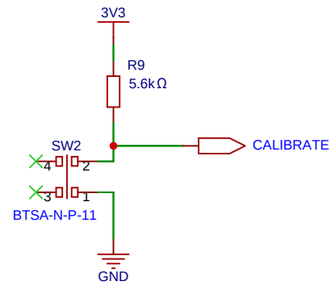
Connector connects to 0.91" I2C OLED display module.



ADC



Calibration / Zeroing Switch



Schematic	Schematic 1	Update Date	2024-03-27
		Create Date	2022-11-20
Page	Digital Circuitry		
Drawn	Thomas Crisafulli		
		OhmmeterV1.1_Release	
		VER 1.1 / SIZE A3 / PAGE 2 OF 4	

Constant Current Sink

1.250 V
Voltage Reference

U3
REF3112AIDBZR
IN 1
OUT 2
GND 3
GND

Decoupling Cap for U3
C6
10uF
GND

1.250V

C7
100nF
GND

VBAT

Decoupling Cap for U10
C5
100nF
GND

U10.2
OPA2365AIDR
2
3
1
8
4
GND

R10
5.6kΩ

Q1
BSH105,215

CURRENT_SINK_IN

C8
100pF

Unused Second OP AMP

Part of Single OPA2365AIDR Package

U10.1
OPA2365AIDR
6
5
7
GND

Was planned to be used
as active low-pass filter/buffer
for ADC input.

Current ranges and range selection

3V3

C9
100nF
GND

R11
100Ω

U4
MAX4715EXK+T
COM 1
NO 2
GND 3
V+ 5
IN 4
GND

RANGE_SW_1

R12
620Ω

U5
MAX4715EXK+T
COM 1
NO 2
GND 3
V+ 5
IN 4
GND

RANGE_SW_2

R13
3.3kΩ

ON resistance of MAX4715 analog switch IC is 0.3Ω typical with a 3V supply

U6
MAX4715EXK+T
COM 1
NO 2
GND 3
V+ 5
IN 4
GND

RANGE_SW_3

R14
22kΩ

U7
MAX4715EXK+T
COM 1
NO 2
GND 3
V+ 5
IN 4
GND

RANGE_SW_4

R15
130kΩ

U8
MAX4715EXK+T
COM 1
NO 2
GND 3
V+ 5
IN 4
GND

RANGE_SW_5

R16
270kΩ

R17
270kΩ

R18
270kΩ

GND

Resistors are rated at 0.1%

These triple 270kΩ resistors were chosen during a parts shortage, as such, they have no special meaning besides equaling 810kΩ.

Range 6 - Default Range

Selected when no other range is enabled

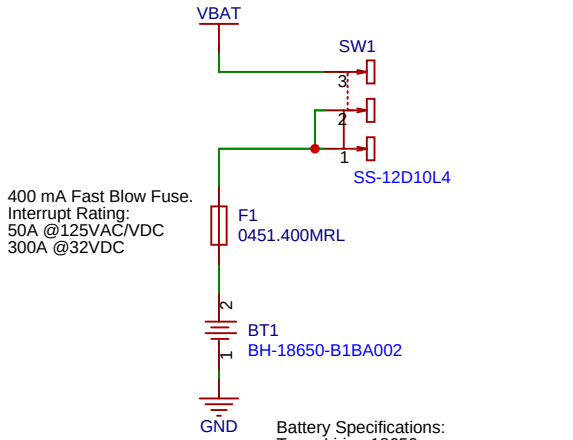
Design Note

Total resistances at different ranges:
1. 100Ω
2. 720Ω
3. 4.02kΩ
4. 26.02kΩ
5. 156.02kΩ
6. 966.02kΩ

Schematic	Schematic 1	Update Date	2024-03-27
		Create Date	2022-11-20
Page	Current Sink and Ranges		
Drawn	Thomas Crisafulli	OhmmeterV1.1_Release	
		VER 1.1	SIZE A3
		PAGE 3 OF 4	

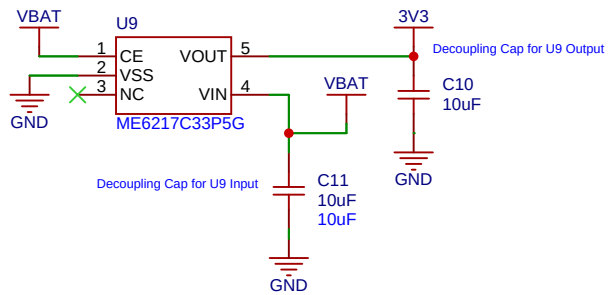
Battery, fuse, and ON - OFF Switch

VBAT is the switched battery output voltage that gets distributed around the board



Battery Specifications:
Type: Li-ion 18650
Operating Voltage Range: 3.0V to 4.2V

LDO 3.3V Voltage Regulator



Schematic	Schematic 1	Update Date	2024-03-27
		Create Date	2022-11-20
Page	Battery and LDO		
Drawn	Thomas Crisafulli	OhmmeterV1.1_Release	
		VER	SIZE	PAGE 4 OF 4
		1.1	A4	