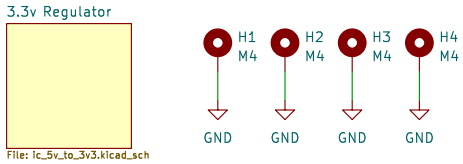
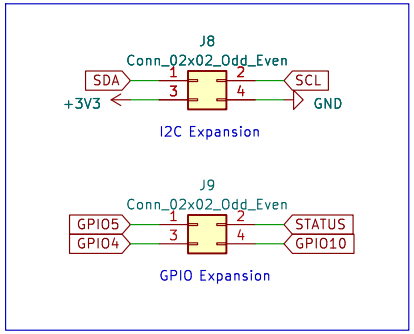
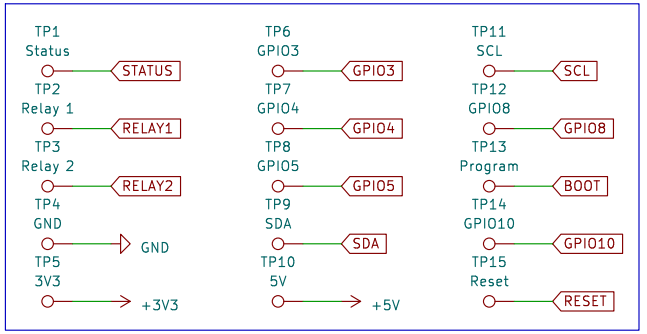


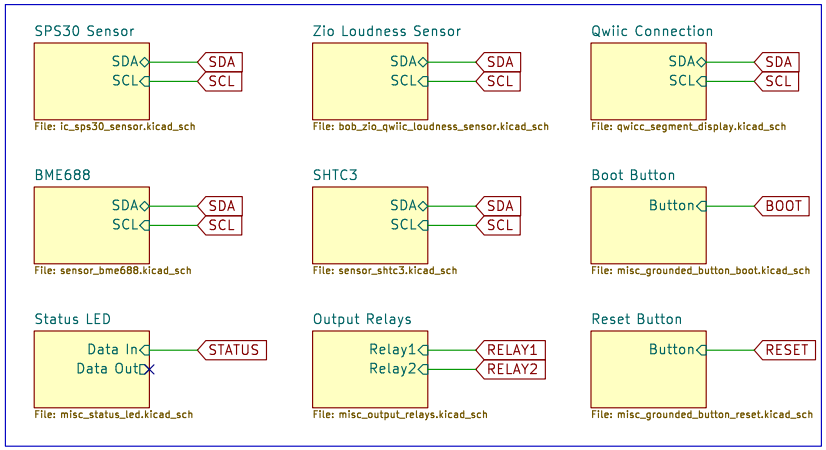
Expansion



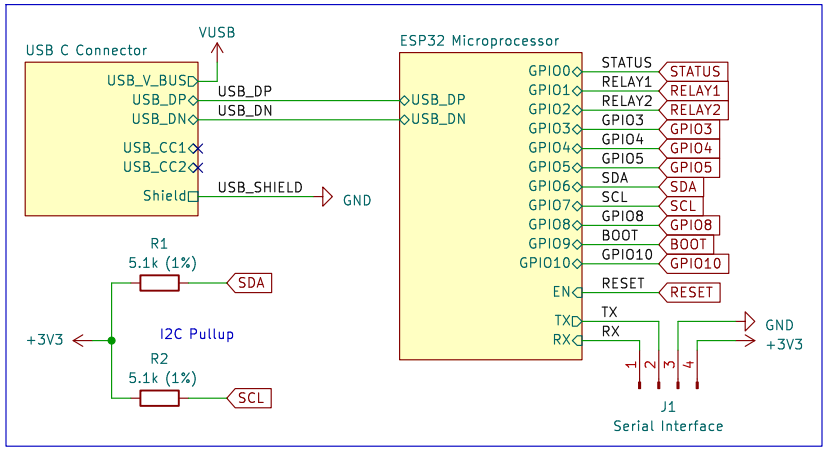
Testpoints (for hacking)



Sensors & IO



Microprocessor



Sensors:
SPS30: PM2.5
BME688: Gas, VOC, CO2, Pressure
SHTC3: Temperature, Humidity
Zio Loudness Sensor(*): Sound Levels
Qwicc: LCD or Segment Display

* Woodshop Note:
There is a different configuration for the woodshop
Instead of LCD Screen use 2x Segment Displays
Add Zio Loudness Sensor

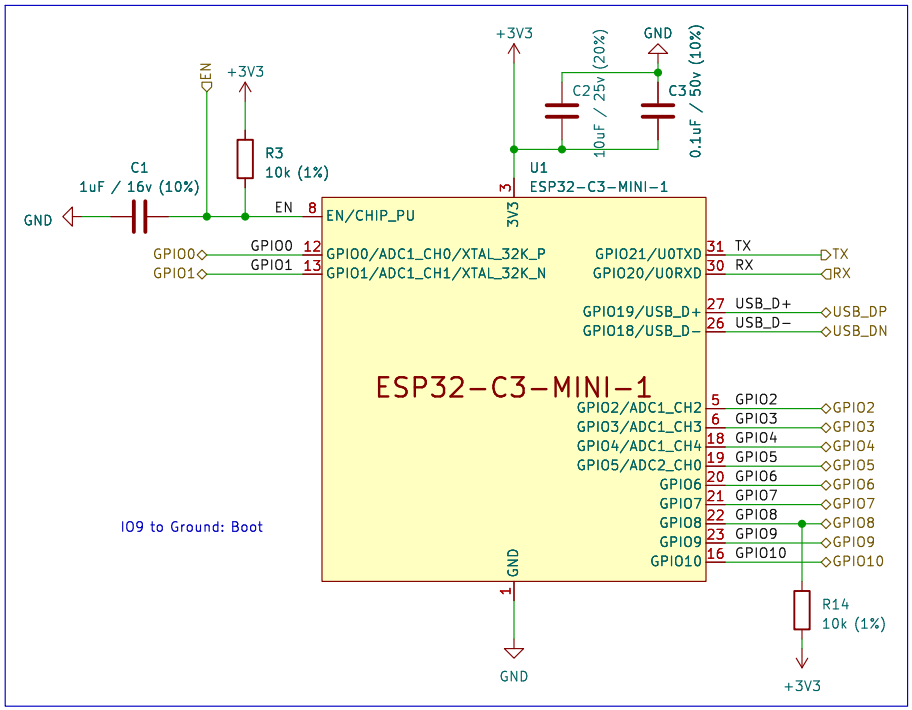
Created By: Erin Reed (FireLabs – www.firelabs.ca)

Sheet: /
File: KwartzLab-SensorBoard-Rev3.kicad_sch

Title: Kwartzlab Environmental Sensor

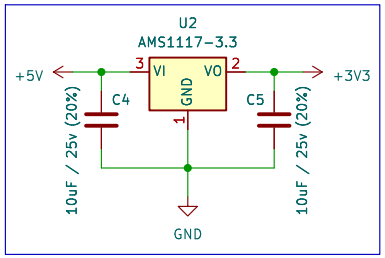
Size: USLetter	Date: 2023-04-20	**Rev: 3**
KiCad E.D.A. kicad (7.0.0-0)		Id: 1/13

ESP32 Microprocessor



Created By: Erin Reed (FireLabs – www.firelabs.ca)		
Sheet: /ESP32 Microprocessor/		
File: ic_esp32_c3_mini.kicad_sch		
Title: Kwartzlab Environmental Sensor		
Size: USLetter	Date: 2023-04-20	**Rev: 3**
KiCad E.D.A. kicad (7.0.0-0)		Id: 2/13

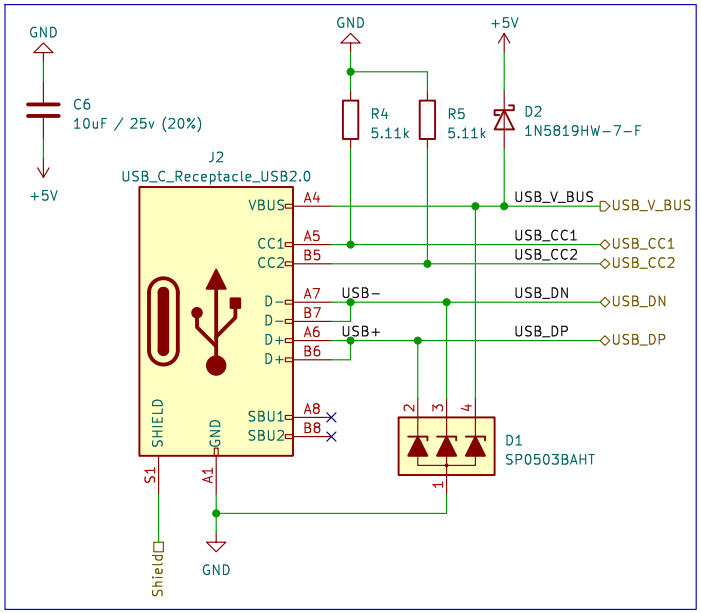
5v to 3v3 Regulator



Notes:
Max Current Output is 1A

Created By: Erin Reed (FireLabs – www.firelabs.ca)		
Sheet: /3.3v Regulator/		
File: ic_5v_to_3v3.kicad_sch		
Title: Kwartzlab Environmental Sensor		
Size: USLetter	Date: 2023-04-20	**Rev: 3**
KiCad E.D.A. kicad (7.0.0-0)		Id: 3/13

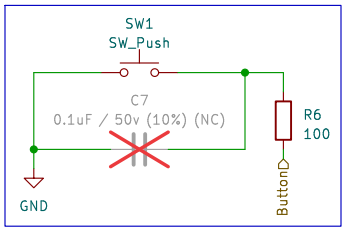
USB C Port



USB Type C Port in USB 2.0 Mode

Created By: Erin Reed (FireLabs – www.firelabs.ca)		
Sheet: /USB C Connector/		
File: connector_usb_c.kicad_sch		
Title: Kwartzlab Environmental Sensor		
Size: USLetter	Date: 2023-04-20	**Rev: 3**
KiCad E.D.A. kicad (7.0.0-0)		Id: 4/13

Grounded Button



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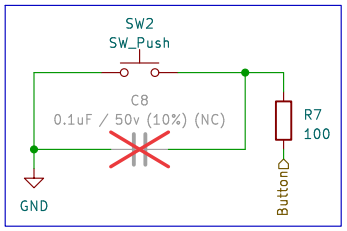
Sheet: /Boot Button/

File: misc_grounded_button_boot.kicad_sch

Title: Kwartzlab Environmental Sensor

Size: USLetter	Date: 2023-04-20	**Rev: 3**
KiCad E.D.A. kicad (7.0.0-0)		Id: 5/13

Grounded Button



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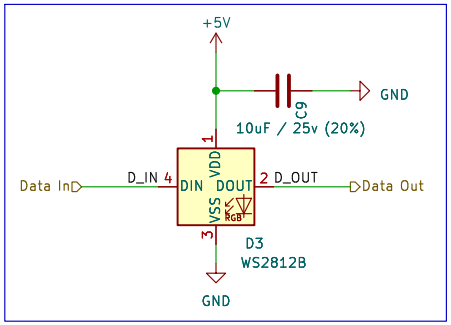
Sheet: /Reset Button/

File: misc_grounded_button_reset.kicad_sch

Title: Kwartzlab Environmental Sensor

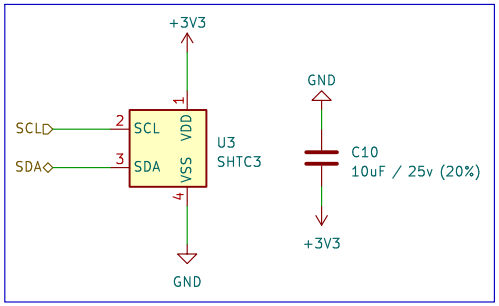
Size: USLetter	Date: 2023-04-20	**Rev: 3**
KiCad E.D.A. kicad (7.0.0-0)		Id: 6/13

WS2812B LED



Created By: Erin Reed (FireLabs – www.firelabs.ca)		
Sheet: /Status LED/		
File: misc_status_led.kicad_sch		
Title: Kwartzlab Environmental Sensor		
Size: USLetter	Date: 2023-04-20	**Rev: 3**
KiCad E.D.A. kicad (7.0.0-0)		Id: 7/13

Temperature, Humidity Sensor



Created By: Erin Reed (FireLabs – www.firelabs.ca)

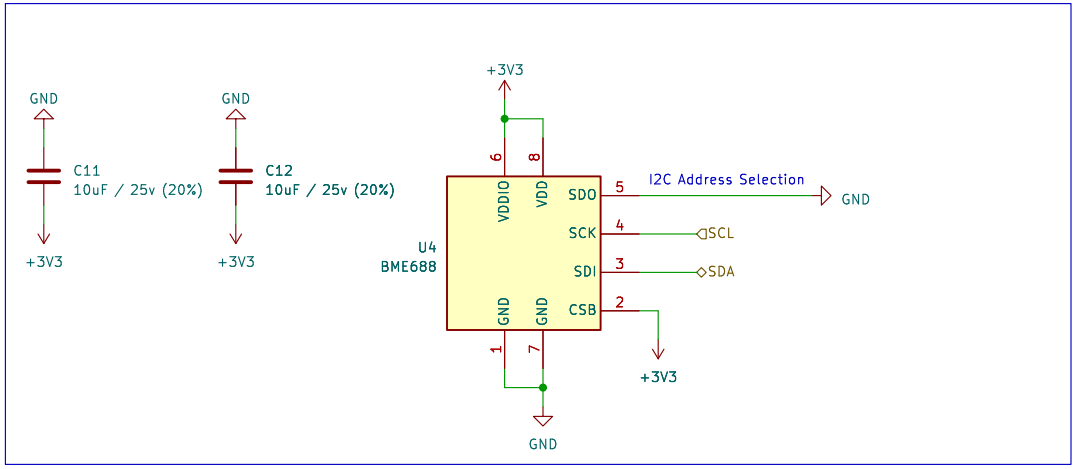
Sheet: /SHTC3/

File: sensor_shtc3.kicad_sch

Title: Kwartzlab Environmental Sensor

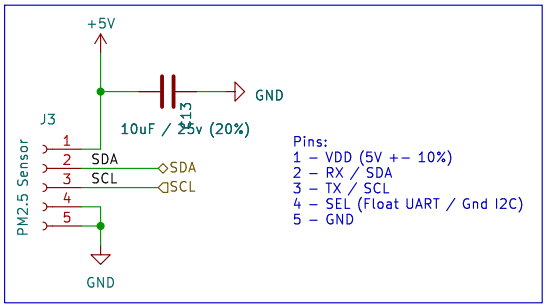
Size: USLetter	Date: 2023-04-20	**Rev: 3**
KiCad E.D.A. kicad (7.0.0-0)		Id: 8/13

VOC, CO2, Gas, Pressure Sensor



Created By: Erin Reed (FireLabs – www.firelabs.ca)		
Sheet: /BME688/		
File: sensor_bme688.kicad_sch		
Title: Kwartzlab Environmental Sensor		
Size: USLetter	Date: 2023-04-20	**Rev: 3**
KiCad E.D.A. kicad (7.0.0-0)		Id: 9/13

PM2.5 Sensor (JST Connection)



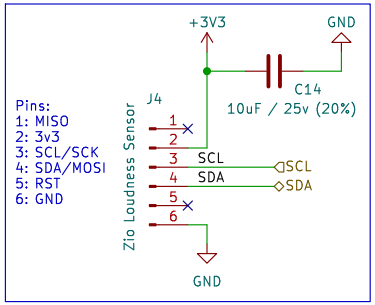
Created By: Erin Reed (FireLabs – www.firelabs.ca)

Sheet: /SPS30 Sensor/
File: ic_sps30_sensor.kicad_sch

Title: Kwartzlab Environmental Sensor

Size: USLetter	Date: 2023-04-20	**Rev: 3**
KiCad E.D.A. kicad (7.0.0-0)		Id: 10/13

Zio Loudness Sensor (2x3 Pin Connection)



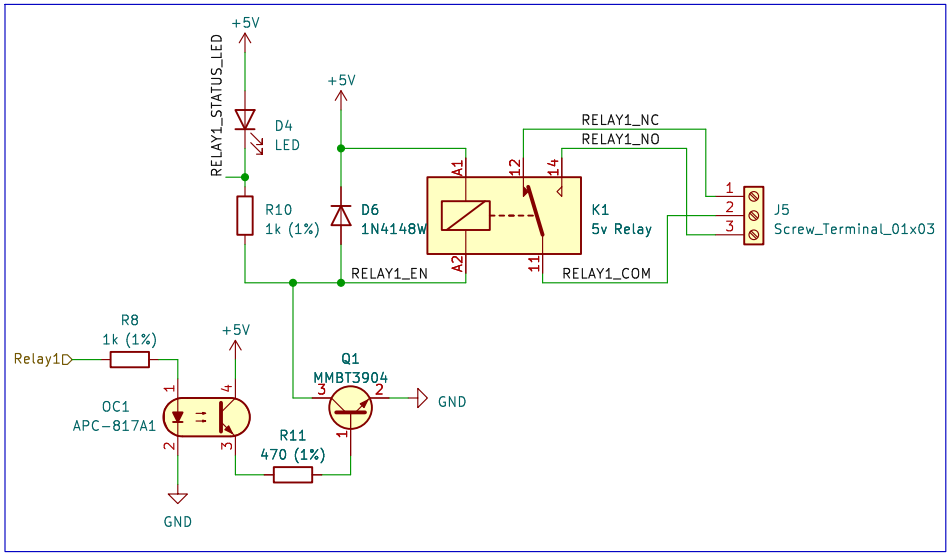
Created By: Erin Reed (FireLabs – www.firelabs.ca)

Sheet: /Zio Loudness Sensor/
File: bob_zio_qwiic_loudness_sensor.kicad_sch

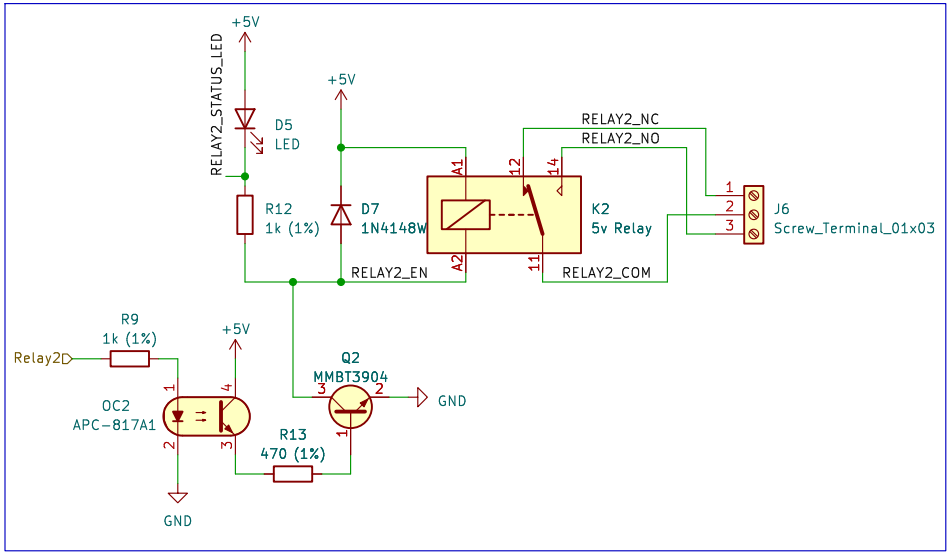
Title: Kwartzlab Environmental Sensor

Size: USLetter	Date: 2023-04-20	**Rev: 3**
KiCad E.D.A. kicad (7.0.0-0)		Id: 11/13

Relay 1

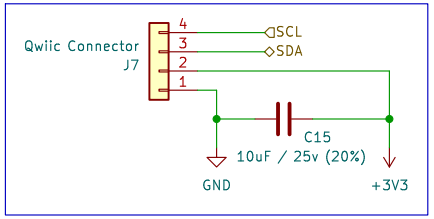


Relay 2



Created By: Erin Reed (FireLabs – www.firelabs.ca)		
Sheet: /Output Relays/		
File: misc_output_relays.kicad_sch		
Title: Kwartzlab Environmental Sensor		
Size: USLetter	Date: 2023-04-20	**Rev: 3**
KiCad E.D.A. kicad (7.0.0-0)		Id: 12/13

Qwiic Connector



Created By: Erin Reed (FireLabs – www.firelabs.ca)

Sheet: /Qwiic Connection/

File: qwicc_segment_display.kicad_sch

Title: Kwartzlab Environmental Sensor

Size: USLetter	Date: 2023-04-20	**Rev: 3**
KiCad E.D.A. kicad (7.0.0-0)		Id: 13/13