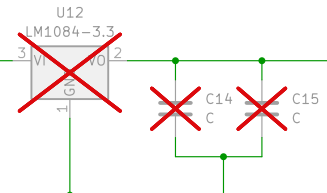
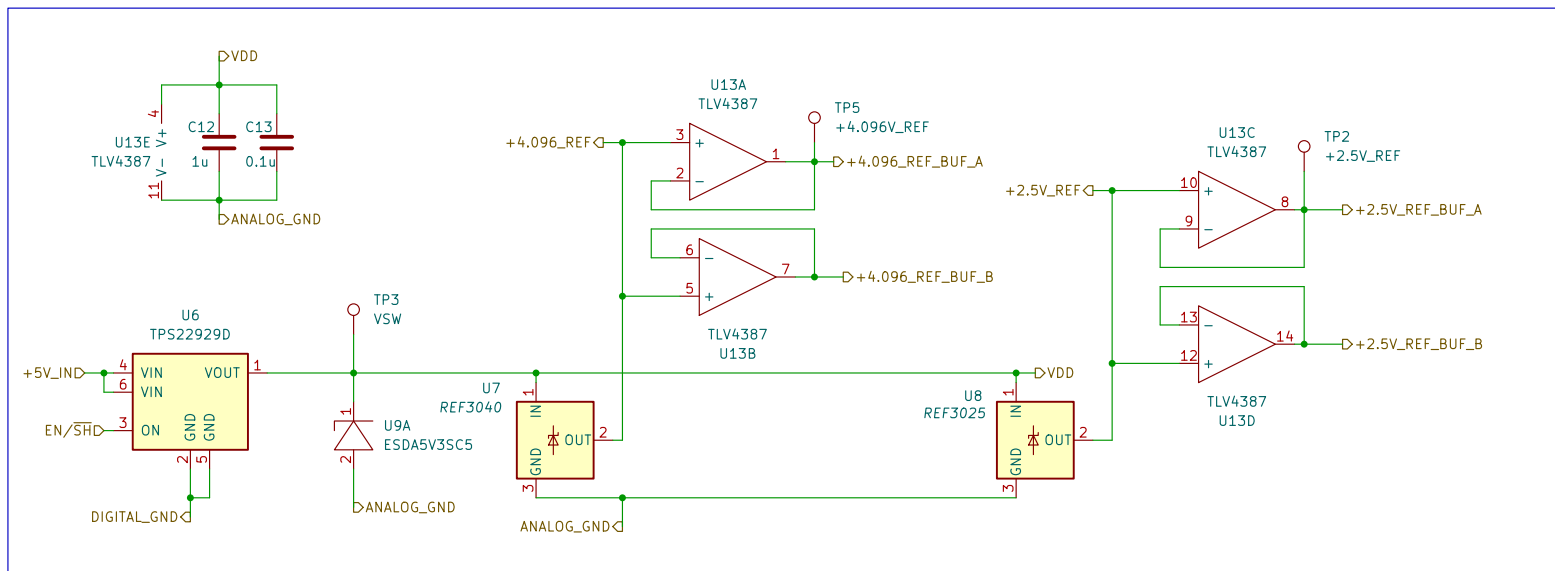


**Battery Decoupling**

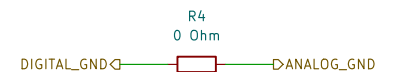


Place-holder for a 3.3V supply.  
Might not need this since the CPU modules  
may have built-in 5V-3.3V regulators.  
Should be SMPS regulator, not linear.

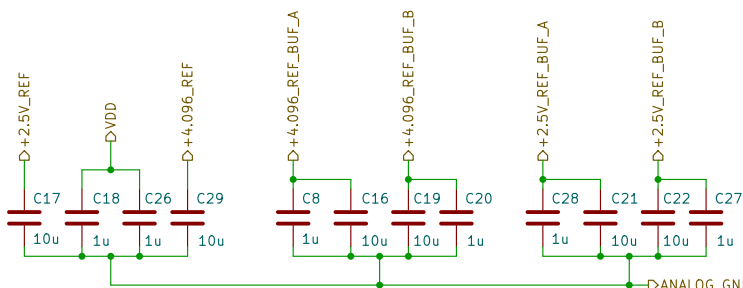
DIGITAL\_GND



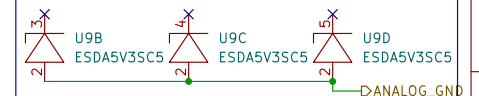
AGND and DGND are tied together  
internally to the MCP320X. This  
connection should be as close to  
thay chip as possible.



**Reference Decoupling**



**SPARE**



Sheet: /Power/  
File: power.kicad\_sch

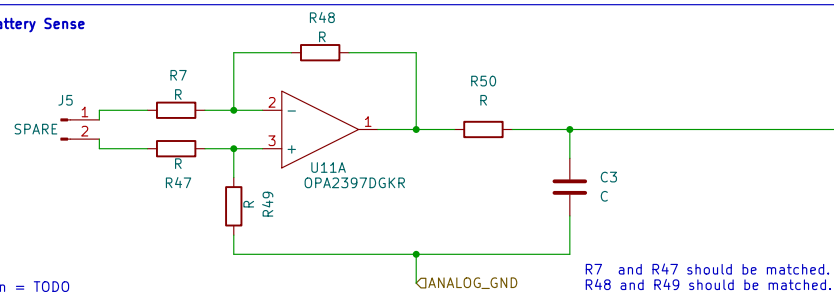
**Title:**

Size: A4  
KiCad E.D.A. 8.0.9

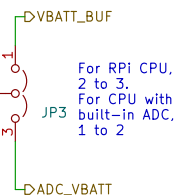
Date:

Rev:  
Id: 2/5

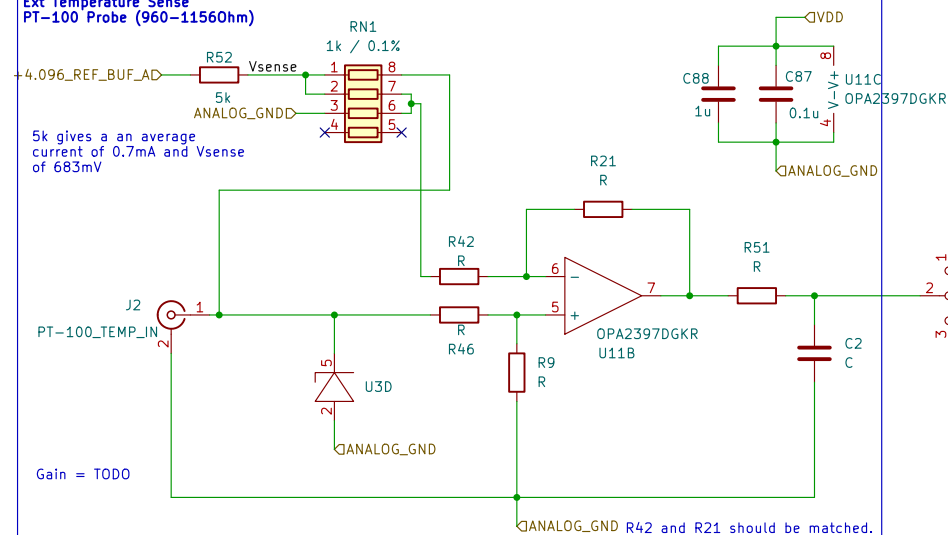
# Battery Sense



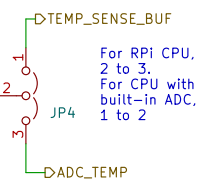
Gain = TODO



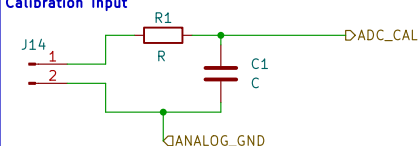
# Ext Temperature Sense PT-100 Probe (960-11560hm)



Gain = TODO

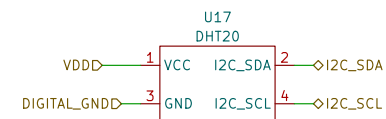


# Calibration Input



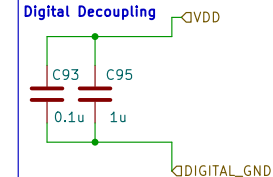
# Internal Temp / Humidity (DTH 20)

I2C Addr 0x38



Decoupling Capacitors are connected as close as possible to each IC of the given power domain.

# Digital Decoupling



# Base Sensor Circuit

This sensor board is included in the base unit. It includes built-in temperature probe, battery Coulomb counting, leak detector, and TBD.

Sheet: /Base\_Sensor/  
File: sensor\_base.kicad\_sch

# Title:

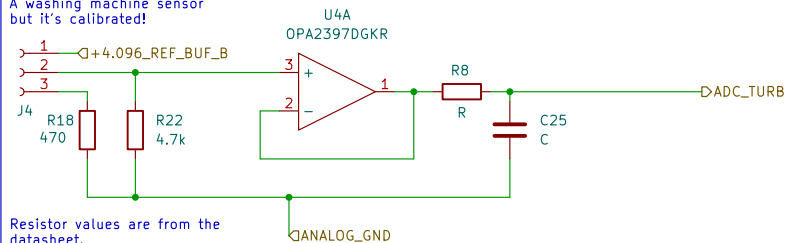
Size: A4  
KiCad E.D.A. 8.0.9

Date:

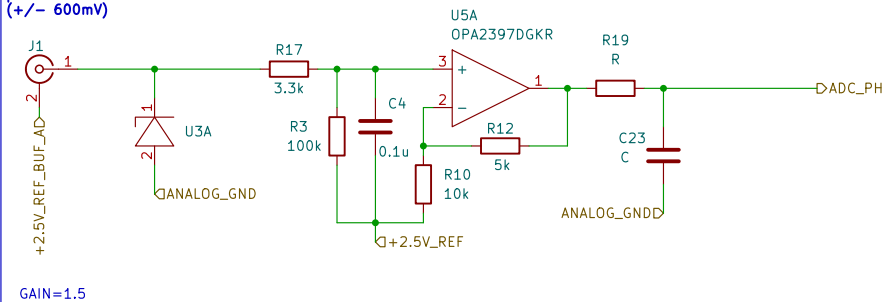
Rev:  
Id: 3/5

### Turbidity

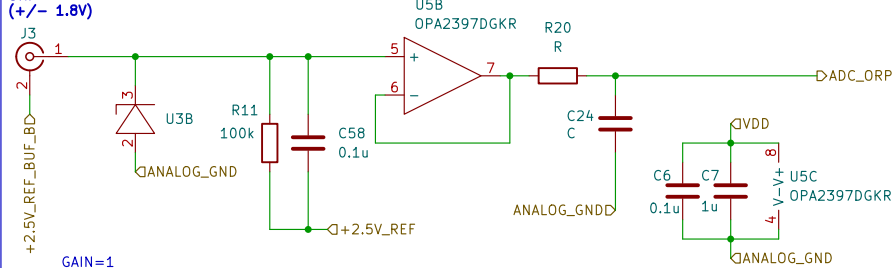
Amphenol TSW-10  
A washing machine sensor  
but it's calibrated!



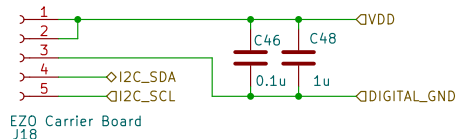
### pH (+/- 600mV)



### ORP (+/- 1.8V)



### Atlas Scientific Isolated Carrier Board

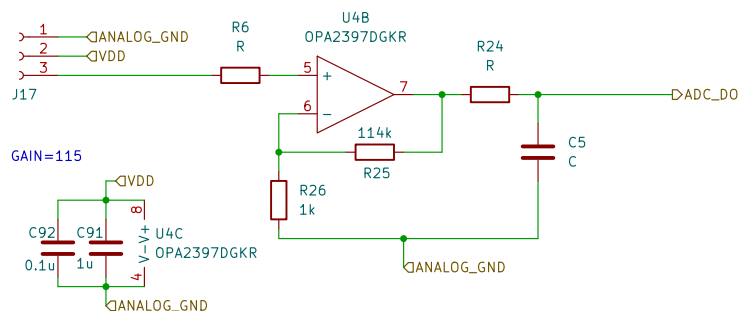


**NOTE!!!** The header socket is flipped for mounting the carrier board upsidedown.

This is initially for the Atlas Scientific Conductivity board.  
It is required to initialize the EC-EZO module to I2C comms.  
See the EZO-EC datasheet for more information.

### DO (Analog) Atlas Scientific Surveyor 42mV=100% saturation

**NOTE!!!** The header socket is flipped for mounting the carrier board upsidedown.



GAIN = TBD

### SPARE



Sheet: /Sensor Module Prototype/  
File: sensor\_module\_4.kicad\_sch

### Title:

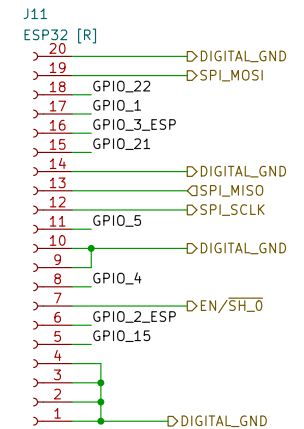
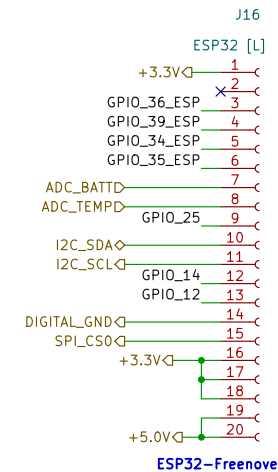
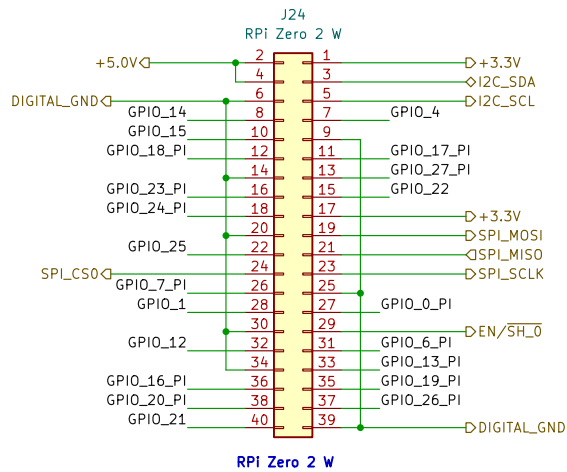
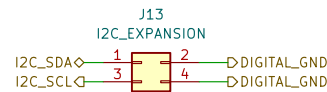
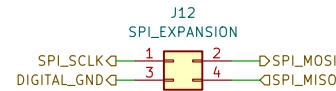
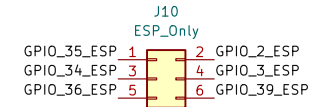
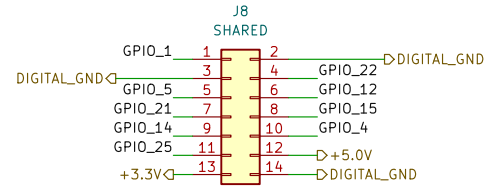
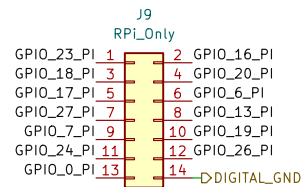
Size: A4

Date:

KiCad E.D.A. 8.0.9

Rev:

Id: 4/5



NOTE: The ESP32 carrier board has headers on the bottom. Thus the carrier board header socket pinout is identical to the ESP32 board as viewed from above. The RPi has its header pins on the top side of the board and so will need to be flipped about its long axis when installed meaning that the pinout is reversed left-to-right (e.g. RPi header pin 1 is top left, but the carrier board header socket will have pin one on the top right since the RPi will be flipped over when installed).

Sheet: /Micocontroller/  
File: microcontroller.kicad\_sch

Title:

Size: A4

Date:

KiCad E.D.A. 8.0.9

Rev:

Id: 6/5