Personal notes

Current

|  |  |
| --- | --- |
| Current Action Items | Progress of Item |
| Confirm functionality of small sense boards |  |
| Get Small Probe to Lucia for testing |  |
| Confirm functionality of moisture sensor | Tested and working within spec on the cast probe board |
| Confirm functionality of Temperature sensor |  |
| Get a cheap device that can program nrf52/53 in the field |  |
|  |  |

Future action items

|  |  |
| --- | --- |
| Fix bugs on wifi weather station |  |
| Confirm functionality of Windy device |  |

WINDY: Changed the RS485 cable on the 12/05/2025 at 15:09.

Integration and Test approach for resolving the temperature issue:

* Allow for a startup delay for voltages to settle
* Change the order and timing of the temperature readings
* Increase from 1k ohm to 10k ohm thermistor
* Remove RS485 signal cable from running through the sensors
* Remove sensor wires from running through other sensors
* Make all the sensors wires the same length
* Swap the sensors and check if the good readings moves or remains the same
* Manufacture precise sense boards with only temperature readings (Remove high frequency RF)
* Change the order of the readings taken starting from 6-1
* Add high frequency filtering capacitors to the ADC line
* Manufacture precise sense board (Rebuild the temperature sensing circuits carefully)
* Create an independent test device that communicates with the sensors and the roman
* Create an independent test device that measures temperature and relays that to the roman

How to fix probe:

* Add a 5th wire and connector with a control wire (Demultiplexer/mosfet)
* Add a RC on delay function to the sense board to delay the RF circuit
* Shielding of the temperature components

Information, it takes just over 18 seconds from power on to the 0x07 RS485 command being sent.

Change the code and the order that each sense circuit is read.

Use all the same length wires to each sense circuit. Currently in testing 01/05/2025 -> …….

Test the temperature sense circuits without the high frequency oscillator running, without the copper rings with the same length cables connected to each sense board.

06.05.2025

Probing for errors, noticed that the ADC line was stable between the RF and non RF board.

Checked for high frequency noise on the ADC line and saw a 10mV AC signal.

Checked the 3.3V supply and it was stable (had the bench supply at too low a voltage)

What do I need to do to get the small probe into Lucias hands to test.

* Print the enclosure
  + Dry the filament
  + Print the .stl file
* Figure out a way to log the data acquired for data processing purposes
  + Will it log over BLE or UART?
* Modify the PCB to fit in the enclosure
  + Change the connector
* Add the rings to the PCB and close the enclosure
  + Find suitable pvc pipe and make better rings that fit inside
* Cast the enclosure
  + Ask Sighle to help me cast the small probe
* Integrate the application and the mini probe
  + Get the probe and the app communicating so as to notify Lucia that the plant needs water
* Add the battery to the probe and enclosure
  + Add the battery to the probe and close everything up

Coding of the devices may need to be done in the field, continue work on the black magic probe