

Soldered control board pcb at siebel today(11/1) also tested the LM2575 power system while I was soldering. Works as intended with 5V output and 3.3V. Used SCD soldering station will be soldering the next boards in the coming days



tested
HWS port - Shows 3v and 5.5v
at correct locations

11/2: Today I soldered and attempted to test the remaining boards. Primarily I tested the TPS564 power supply. This power supply and step-down converter. After soldering, the step-down did not occur at all and stayed at around 0.8V.

I resoldwred this multiple times with no luck

This means that two of the boards are non functional. The LM2576 power supply worked in the dome board. Converting 12v to 5v and 3v.

I will be designing a board based on the LM2575/76 and TLV535 to supply power to these.

Switch Drivers and dome board (soldered by morgan)
Lid and Pot board (soldered by me)
Power distribution (soldered by me)



10/28. Me and Morgan also started coding some of the sensors using the dev board

The TDS sensor(analog)

```
1311 /*TDS SENSOR*/
1312     //waterTemp = Temperature; for linking between wt sensor and
1313     HAL_ADC_Start(&hadc1);
1314     HAL_ADC_PollForConversion(&hadc1,20);
1315     tds = HAL_ADC_GetValue(&hadc1);
1316     tdsbuff[counter%30] = tds;
1317     counter++;
1318     printf("collect");
1319     if(counter<30){
1320         for(int i = 0; i<counter; i++){
1321             sum += (float)tdsbuff[i];
1322             printf("%d\n",tdsbuff[i]);
1323         }
1324         avg = sum/((float)counter);
1325     }
1326     else{
1327         for(int i = 0; i<30; i++){
1328             sum += (float)tdsbuff[i];
1329             printf("%d\n",tdsbuff[i]);
1330         }
1331         avg = sum/30.0;
1332     }
1333     float waterTemp = 25.0;
1334     float cc = 1.0 + 0.02*(waterTemp-25);
1335     float cv = (avg*3.3/4096)/cc;
1336     ppm = (133.42*cv*cv*cv - 255.86*cv*cv + 857.39*cv)*0.5;
1337     sum = 0;
1338     TDS_sample_counter--;
1339     if(TDS_sample_counter==0)
1340     {
1341         initial_TDS=ppm;
1342     }
1343 }
```

Polling for voltage reading

Average filtering out.

V to ppm calculation

Initially a polling approach was taken but it was blocking other events that we were testing too. Thus we opted to poll as we have control over initiating communication.

