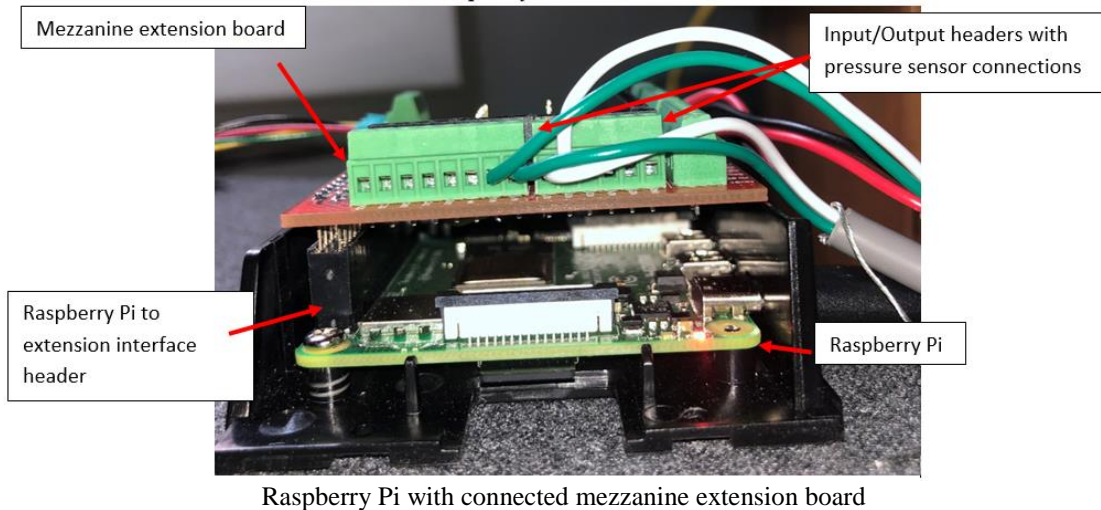


Summary

Hall A – GEM

Peter Bonneau, Brian Eng, George Jacobs, Mindy Leffel, Tyler Lemon, Marc McMullen

- Generated design for 6-channel GEM N₂ gas maintenance supply chassis
- Assembled and tested Raspberry Pi mezzanine extension board



- Terminated 64 BNC-to-LEMO cables; 200 of 272 complete

Hall A – SoLID

Mary Ann Antonioli, Pablo Campero, Mindy Leffel, Marc McMullen

- Wrote PLC code to generate warnings based on the radial support loads
 - ★ Added first threshold PLC tags to warn user when limits are exceeded
- Generated, using Python, plots to show the relation between the required gaseous helium flow in the current leads based on the current
- Completed AutoCAD [mechanical drawings](#) for the Valve Control Panels
- Seven of eight constant current source boards populated

Hall B – RICH II

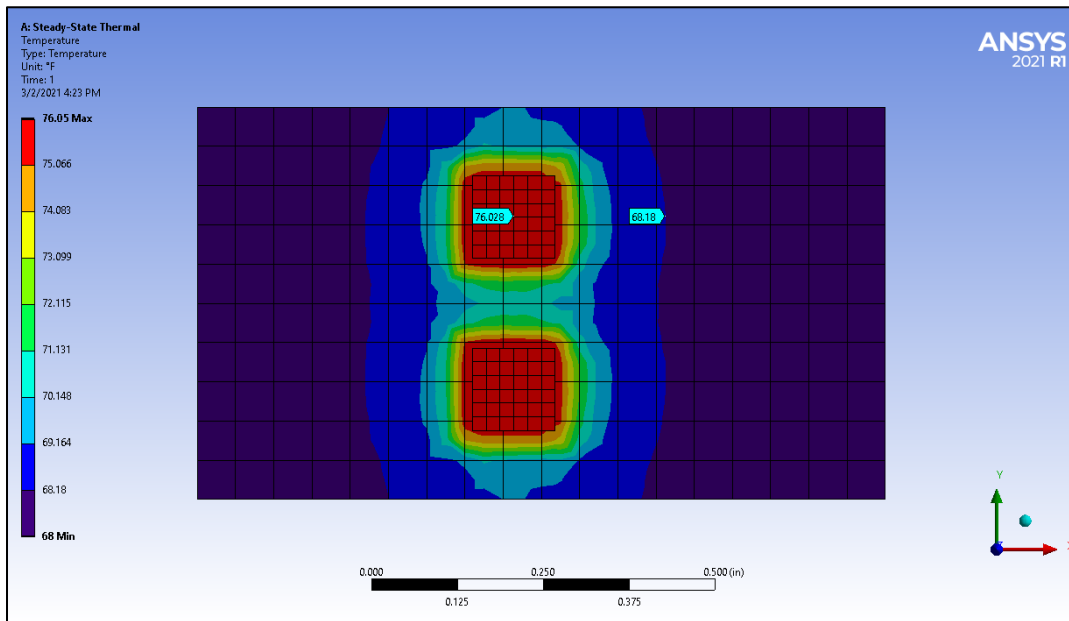
Peter Bonneau, Tyler Lemon

- Super Dry has assembled the dry cabinet; expected arrival at JLab: 03/27/2021
- Modeled, using ANSYS, placement of buffer drivers on SHT-35 sensor PCB to determine distance sensors should be from buffer drivers to prevent them from being affected by power dissipation of buffer drivers
 - ★ Model used two steel heat sources the size of the buffer drivers that generated ~22 mW with 3.3 V input and maximum possible current load (6.75 mA)
 - ★ Results show that if sensor is placed ~220 mils away from buffer drivers, the effect on the sensor will be less than 0.18°F (0.1°C)

Detector Support Group

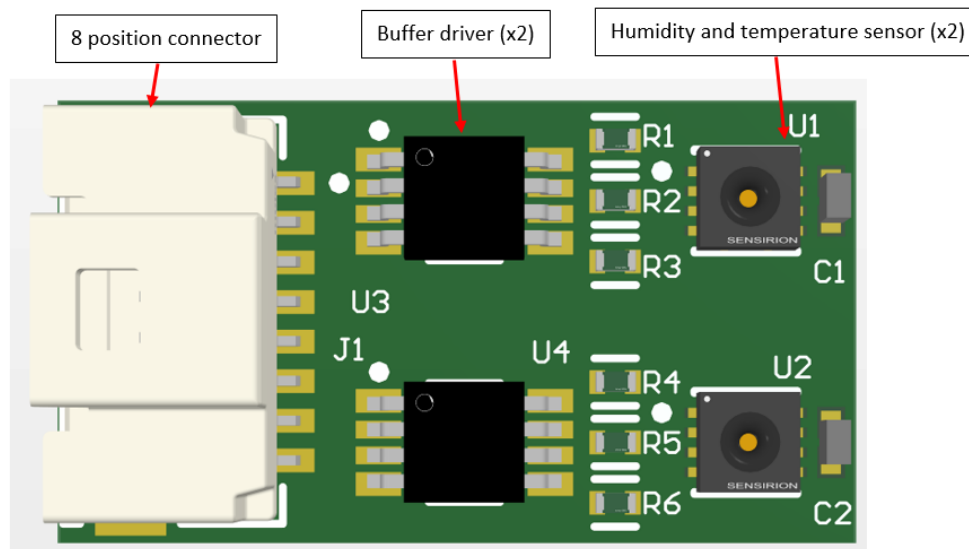
We choose to do these things "not because they are easy, but because they are hard".

Weekly Report, 2021-03-03



Top view of temperature profile plot generated by ANSYS

- Completed preliminary component placement for SHT-35 temperature and humidity sensor board layout



SHT-35 temperature and humidity sensor PCB

- Developing SHT-35 based temperature and humidity system for RICH-II Hardware Interlock System
 - ★ Interlock system will monitor the internal power supplies (+3.3 V and +5 V) and status signals (interlock override status, temperature/humidity interlock relay status) via the sbRIO's on-board ADC



Detector Support Group

We choose to do these things "not because they are easy, but because they are hard".

Weekly Report, 2021-03-03

Hall B – SVT

Peter Bonneau

- Testing detector temperature and humidity sensor's signal inputs to verify system interlocking operation after the installation of the cable quick disconnect system
- Restored interlock threshold configuration file from backup after original file was found to be corrupted on power-up; investigating cause of corruption

Hall C – CAEN Testing

Mary Ann Antonioli, Aaron Brown, George Jacobs

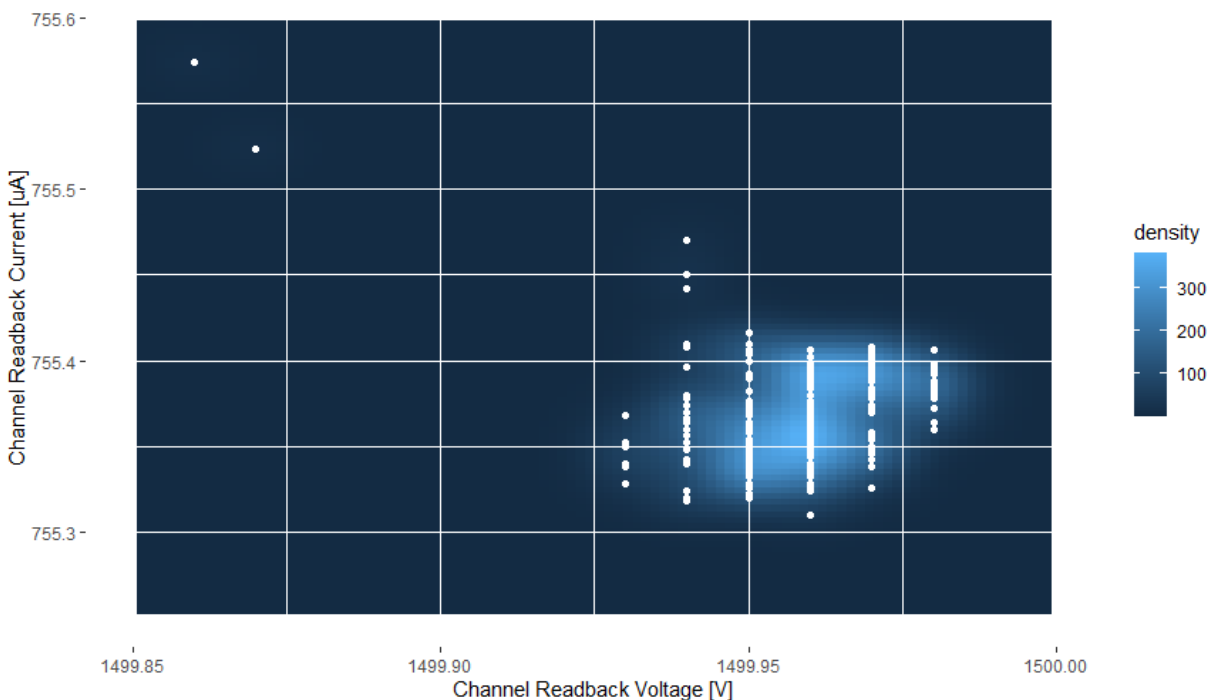
- Generated trip testing plots for CAEN A1535 and A7435 24-Channel modules
 - ★ Modules 064, 070, and 776 had an issue with at least one channel
- All [testing plots](#) will be added to the DSG Hall C Technical Documentation webpage
- Completed voltage and current stability testing
- Developing testing analysis spreadsheet with completed ramp and trip tests

Hall C – NPS

Mary Ann Antonioli, Peter Bonneau, Aaron Brown, Pablo Campero, George Jacobs, Mindy Leffel, Tyler Lemon

- Developed, using R, density plot from raw voltage and current stability data for channel 0 of CAEN A7030TN module #304
 - ★ Plot indicates most data in voltage range 65 mV and in current range 50 nA; exceeding CAEN's specifications

Voltage and Current Readback for Channel 0: Module 304 Stability Test



Voltage and current stability density plot for A7030TN module #304 Ch0

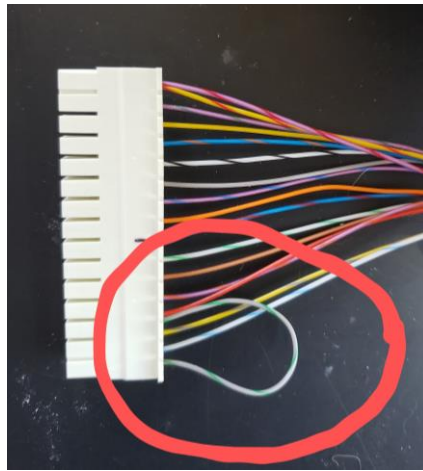


Detector Support Group

We choose to do these things "not because they are easy, but because they are hard".

Weekly Report, 2021-03-03

- Developed preliminary design for NPS HV Supply cable test PCB
- Hardware Interlock System will run on a National Instruments cRIO-9045 8-slot controller to be located in the SHMS hut
 - ★ The majority of the LabVIEW-based system uses subroutines common to all DSG interlock systems (SVT, FT, RICH-I, and RICH-II) which have run reliably since 2015 with ~10,000 hours between software updates
- Researching VME LED Driver module manual to develop LED control GUI
- Added safety loops for cable testing to NPS HV Supply cable; one of five complete



One SAMTEC 15-pin connector of the NPS HV Supply cable with added safety loop

Hall D

Brian Eng

- Installed LabVIEW 2020 SP1 and related software (Real-Time module, PXI Platform) in preparation of upgrading PXI controller