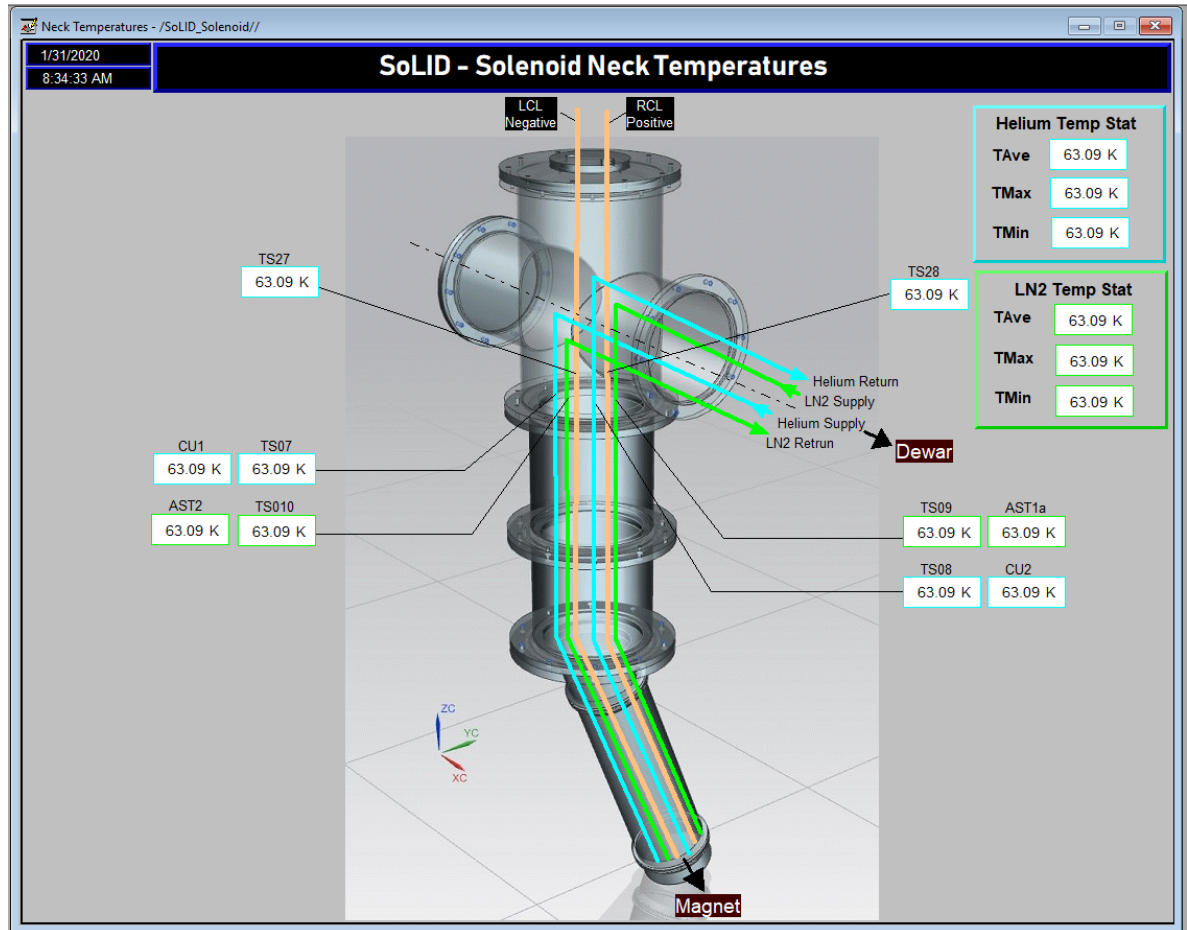# Summary

Hall A – SoLID Magnet Controls
- Reviewed design and the components of the Constant Current Source (CCS) PCB.
- Developed CCS circuit simulator program to confirm operation of board design.
- Completed isometric view of the SoLID magnet "Neck" section in NX12.
- Developed HMI screen to show temperature sensors' location in the Neck of the magnet

SoLID Solenoid Neck Temperature screen

Hall A – BigBite Shower Calorimeter
- Terminated one 34-contact coax ribbon cable to twisted-pair ribbon cable
- Removed old labels from and repaired, if needed, 140 RG58 signal cables

Hall B RTPC
- Installed differential pressure transducer on RTPC panel.
    - ✶ Modified EEL RTPC test stand code to accommodate the PT's signal range.
- Removed ambient pressure sensor and reconnected He4 buffer DP sensor, changed where the reference side is connected to RTPC sense.
- Fabricated RTD cable temperature assemblies.

Hall B MVT
- Tested Mix 1 system for flow limits

Hall B RICH
- Set up monitoring cRIO to notify if humidity in the aerogel storage dry boxes increases
  - ✦ Box 1 and 3 work fine; box 2 has leaks.
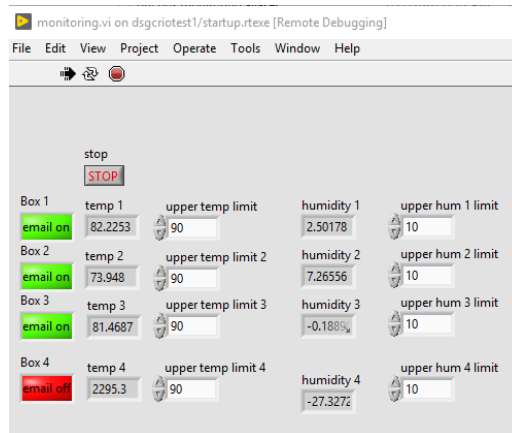
Screenshot of cRIO program running while monitoring dry boxes. Only dry box 1-3 are monitored.

- Procured and set up a new alignment laser in mirror reflectivity test station.
  - ✦ New alignment laser is moved in and out of place using a vertical adjustment knob on its stand, allowing it to be consistently moved into the correct location.
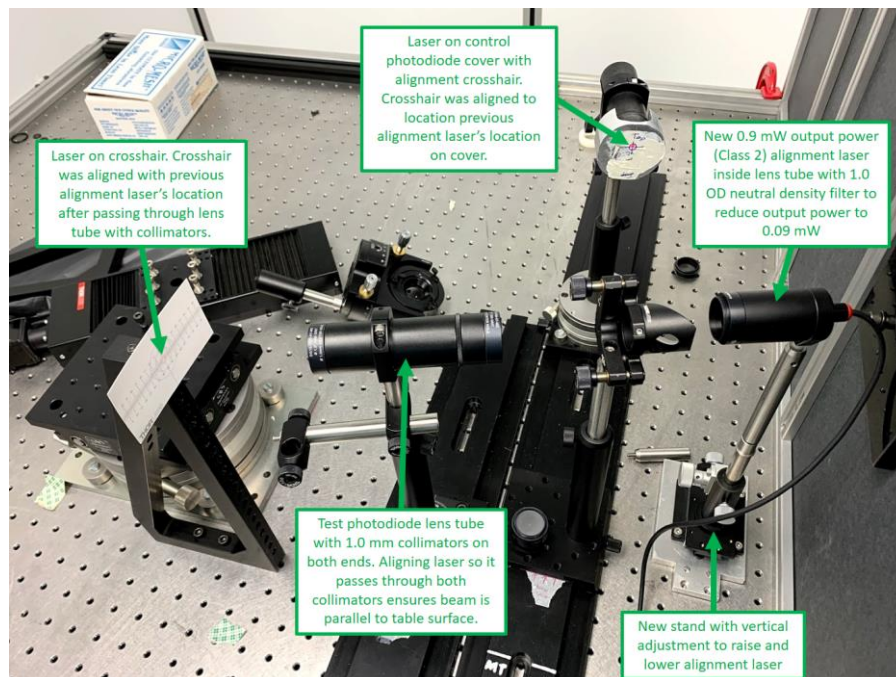

New alignment laser in reflectivity test station.

Hall C – Magnet Screen Conversion
- Developing Q1 PSU Setup screen.
- Debugged issue between CSS and LabVIEW EPICS Server and Client
  - ✶ Access Mode in the LabVIEW EPICS server was not in correct mode; changing it from write to read solved the problem

## Hall C – CAEN HV Hardware Testing
- Continued testing of CAEN HV crate and modules.
- Developed monitoring screens for EPICS testing.
  - ✶ Screen alerts user when a set parameter has changed from the set point and to show what channels and boards are powered on
- Modified the 2 MΩ HV load chassis to dissipate heat by adding spacers to box sides to allow airflow while still preventing physical contact with circuit.
- Completed bread board test for multiplexer circuit.
- Started schematic and printed circuit board parts creation for the multiplexer circuit.
- Noted a one-second, 61.78 µA current spike Channel #20 on Board #356 in Slot #1 of *hvcaentest2* during a fully-populated ramp test with load connected to a different board
  - ✶ Channel set to output 1500 V at time of spike.
  - ✶ Since load was not connected to board, the current should have been ~0 µA
  - ✶ The board that was connected to the load (Slot #0 Board #353) had no issues
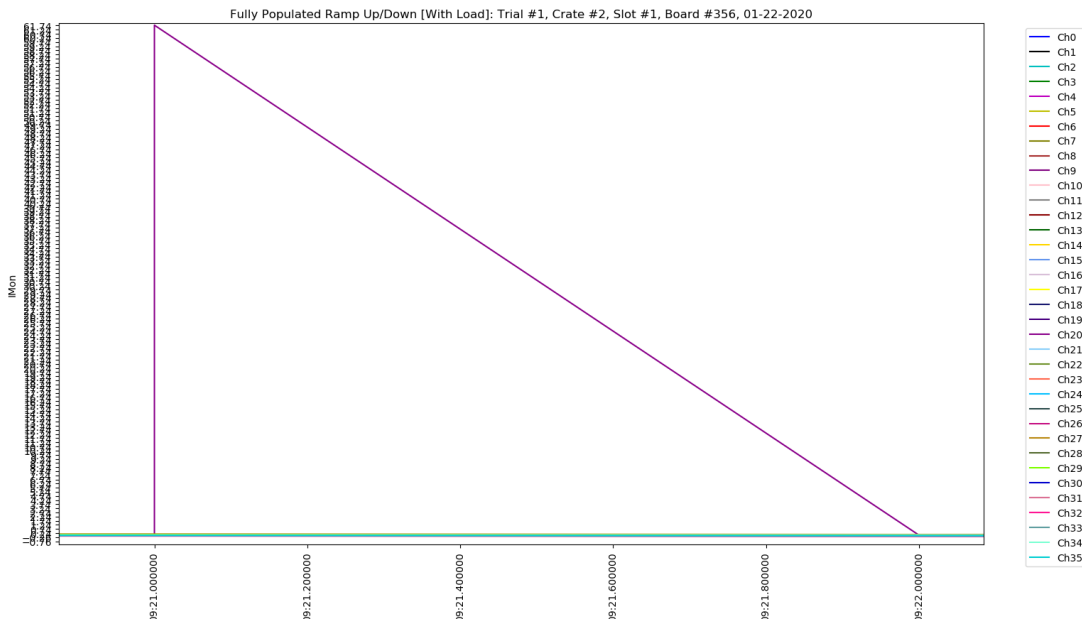
Monitored current for all 36 channels of board #356 in Slot #1 of *hvcaentest2* during ramp test showing one-second, 61.78 µA current spike of Channel 20 (pink).
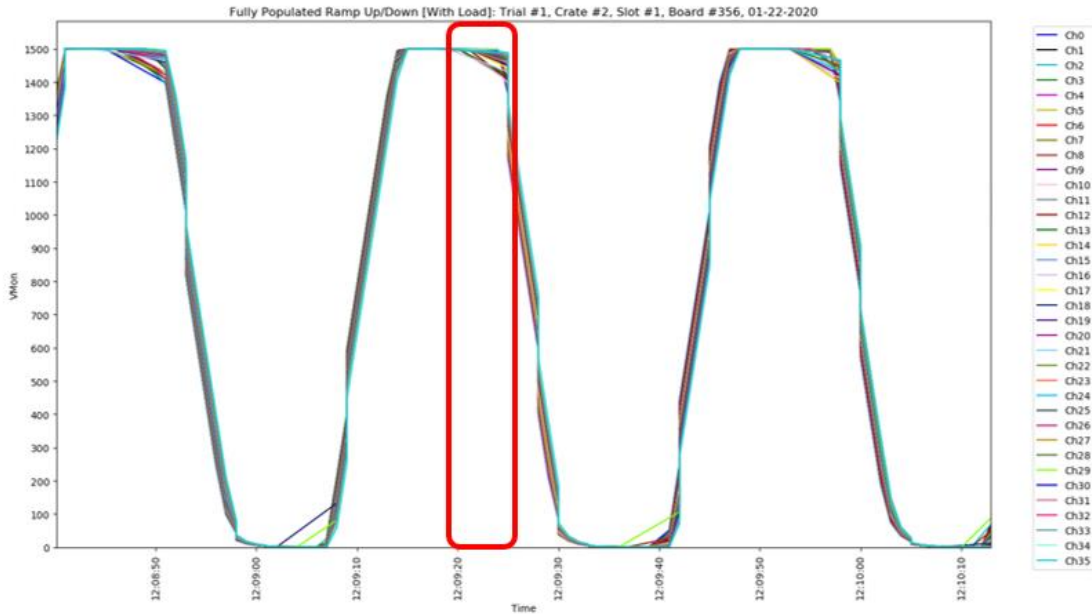
Normal and expected voltage behavior for all channels on Board #356 in Slot #1 during test. Approximate location of current spike on Channel #20 denoted by red box.

CAEN HV test set up with two fully populated crates and one card connected to a Radiall-to-SHV adapter chassis and then to the Load Chassis.

Hall D – Solenoid PLC/PXI

- Reconfigured PLC's EWEB module to use NTP for time, resolving PLC/PXI time issues.

DSG R&D – RICH

- Tested prototype signal and power distribution panel for the Sensirion SHT85 temperature/humidity sensors.
  - ✶ Communication tests passed with prototype cable assemblies

DSG R&D – MSELV Chassis

- Corrected Cernox readout issue.
  - ✶ All sensors in chassis can now be read by sbRIO.
- Fabricated test loads to mimic Cernox sensors.
- Debugging new failure PT100 readout.
  - ✶ Issue may be due to a bad capacitor or broken solder joint on board.
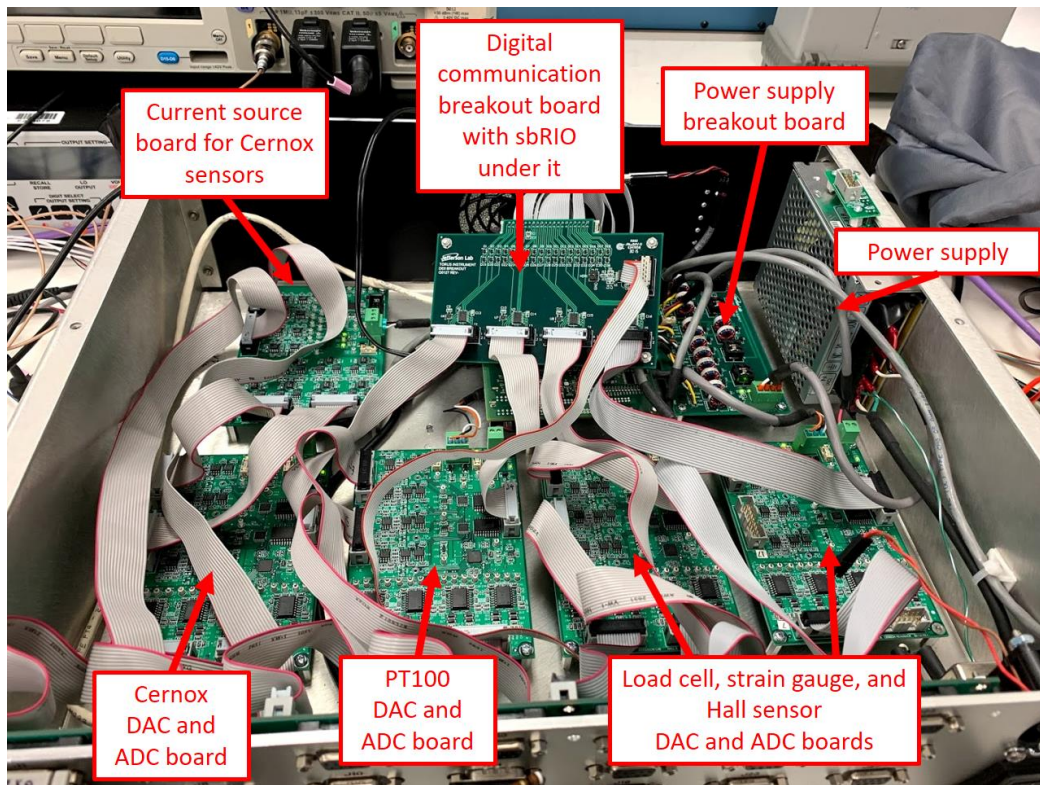
MSELV Chassis with internal boards labeled.