

Detector Support Group

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

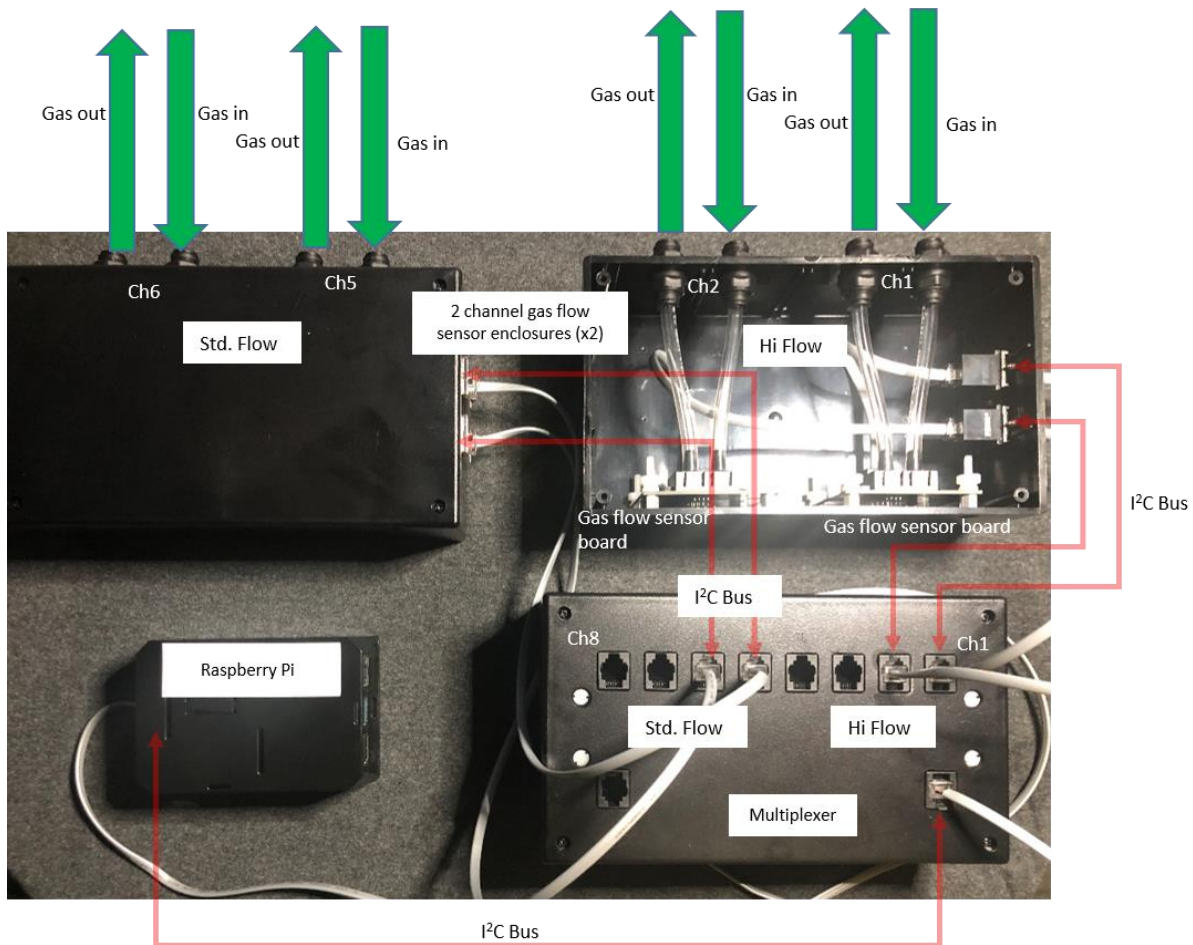
Weekly Report, 2021-03-24

Summary

Hall A – GEM

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

- Assembled prototype exhaust gas flow readback system enclosures for gas flow sensors and a multiplexer
- Successfully tested the software for readback from multiple multiplexers using the prototype exhaust system components for the BigBite gas distribution system



Prototype exhaust gas flow system components for BigBite gas distribution system

- Fabricated two of six [SBS gas flow sensor chassis](#)
- Cut, terminated, tested, and labeled 32 of 272 BNC-to-LEMO RG-58 cables

Hall A – SoLID

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

- Successfully tested all eight constant current source boards
- Completed AutoCAD drawing: *Temperature Diode Sensors Wire Diagram*



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- Reviewed information about instrumentation used to monitor flow and temperatures in the CLEO II magnet's current leads

Hall B – RICH-II

Mary Ann Antonioli, Peter Bonneau, Tyler Lemon

- Revised design of SHT-35 temperature and humidity sensor PCB
 - ★ Decoupling capacitors were added near the buffer drivers
 - ★ A lower profile connector was added, reducing the connector height from 4.7 mm to 3 mm
- Updated reflectivity test station parts list to include three options
 - ★ Manual alignment – probe fixed to a support arm that holds the probe in front of the mirror
 - ★ Automated alignment – probe attached to two motorized rotation stages and three linear stages for X, Y, Z, θ , and ϕ rotation
 - ★ Robotic arm alignment – probe attached to robotic arm with six axes of movement
- Contacted and discussed requirements for automated alignment system with a Zaber representative
 - ★ Zaber has a gantry system with the ability to attach their rotary or gimbal stages to get the five axes of motion needed for an automated test station

Hall C – CAEN Testing

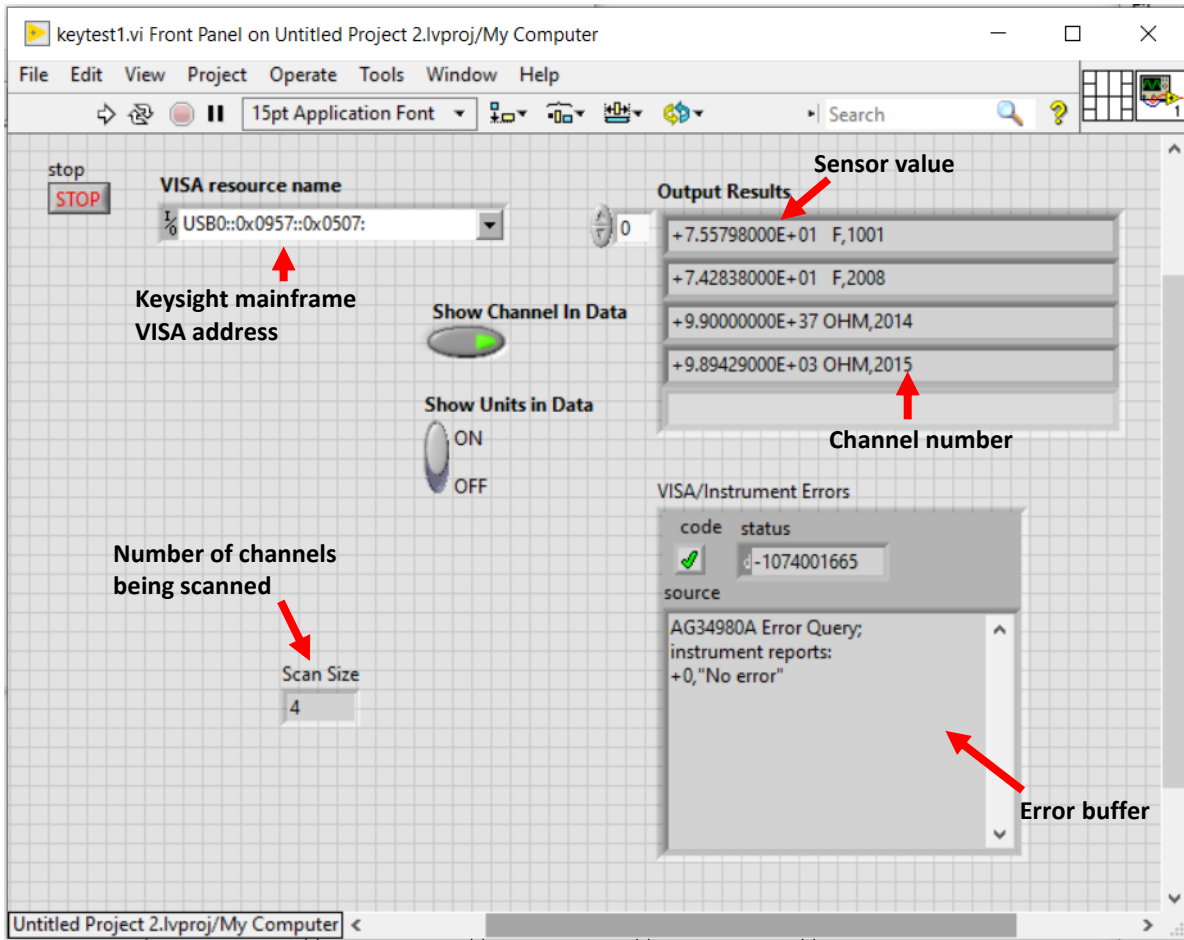
Mary Ann Antonioli, Aaron Brown, George Jacobs

- Generated voltage and current stability strip plots for CAEN A1535 and A7435 HV modules; posted to DSG [Hall C Technical Documentation](#) webpage

Hall C – NPS

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

- Developed channel scanning program for the Keysight switch/measurement unit via web interface
 - ★ Multiple users can simultaneously view live data via web interface
 - ★ Multiple triggering options available including number of samples and continuous triggering
 - ★ Available channel statistics: max, min, average
- Developed a sensor scanning LabVIEW VI for testing communication with Keysight switch/measurement unit
 - ★ VI successfully scanned four channels across two multiplexers



Screenshot of LabVIEW front panel for Keysight sensor scanning test VI

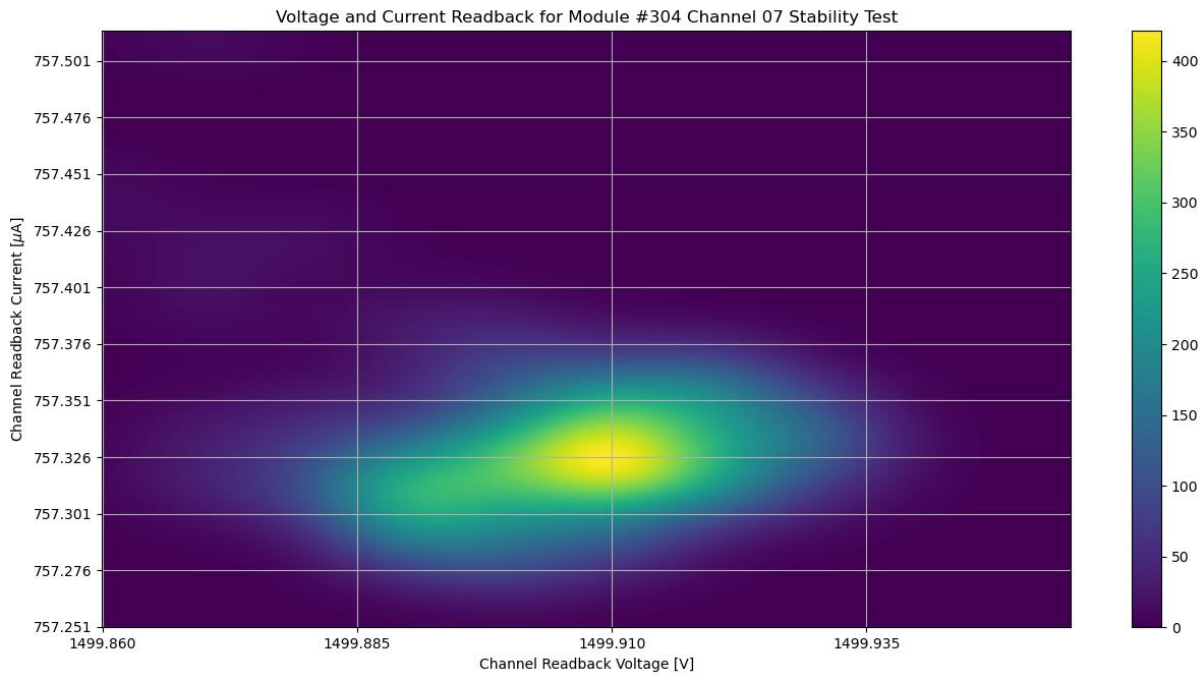
- Researched Keysight 34925A multiplexer for possible replacement for the 34921A multiplexer currently used in Keysight sensor scanning system
 - ★ Keysight 34925A multiplexer scans 1000 channels/s and has an unlimited relay life whereas the 34921A multiplexer scans 100 channels/s and has a relay life of 100 million cycles
- Generating, using Python, V and I density plots using CAEN A7030TN voltage and current stability test data
 - ★ Readback voltage is ~1499.9 V and readback current is ~757.32 μ A



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Voltage and current density plot of CAEN A7030TN module #304 Ch #7.

EIC

Brian Eng

- Attended IR2@EIC Workshop meetings
- Reviewed presentation on example detectors for engineers and designers joining project

DSG – Cleanroom EEL 124

Marc McMullen

- Coordinated effort to re-establish protocols in the large cleanroom
 - ★ Ordered class 1000 cleanroom disposable lab frocks
 - ★ Ordered new signage for the gowning room and roll-up doors