Detector Support Group
Weekly Report, 2019-07-24

Summary

Hall A – BigBite – ECAL
- Assembled six supermodules (in all, 68)

Hall A – BigBite – HCAL
- Removed 32 labels from cable bundle.

Hall A – Gas System
- Received Honeywell flow sensors and microcontrollers to evaluate suitability for Hall A Gas System.
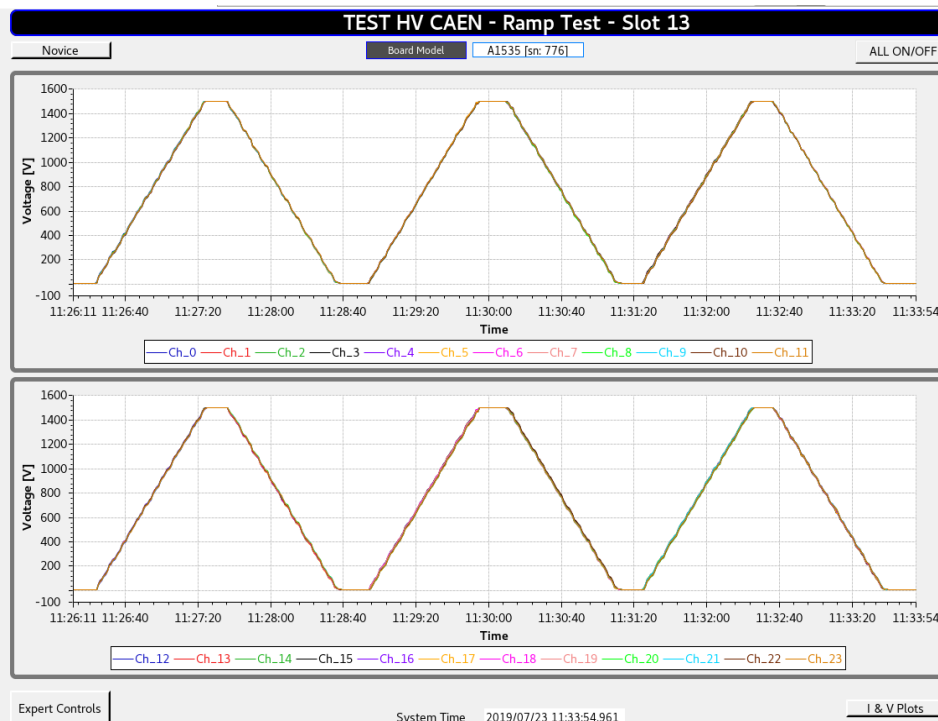
Hall B – Magnets
- Switched from using FPGA to acquire data to DAQmx in data acquisition tests.
- National Instruments (NI) confirmed EPICS server will not use arrays larger than 2032 elements.
  - ✶ Testing EPICS transmission rate at 1 Hz cannot be done; 10000 element array is needed.

Hall C – EPICS
- Investigated way to add mouse-over channel information to bar plot monitors.
- Added 1150 tags (twice as many needed for Hall C PLC) to DSG-PLC and IOC for proof-of-concept test that EthernetIP driver works without errors.

Hall C – CAEN HV Test Station
- Developed CSS-BOY screen to test voltage ramp up/down of model A1535 modules.

CSS-BOY screen for testing voltage ramp up/down of A1535 modules.

- Tested three A1535 modules. All had software issues. One had a hardware issue.
  - ✳ Module # 776 – inconsistent behavior in setting channel properties (software).
  - ✳ Module # 775 – inconsistent behavior in setting channel properties (software).
  - ✳ Module # 0556 – inconsistent behavior in setting channel properties (software), Ch. 22 does not ramp at all (hardware).
- Determined effective resistances needed to be able to measure full current and voltage range of each CAEN HV module model without exceeding the module's maximum allowed power output.

Module Type	Module Specifications			At Max Current		For Max Voltage
	Max Voltage (V)	Max Current (A)	Max Power (W)	Max Voltage (V)	Max Total Resistance Allowable (MΩ)	Total Resistance (MΩ)
A7030TN	3000	0.001	1.5	~1500	1.5	6
A7435	3500	0.0035	9	~1750	0.5	6
A1535	3500	0.0035	8	~1750	0.5	6

Table of effective resistive loads needed to measure full current and voltage ranges of for CAEN HV modules.

Hall D – Solenoid PXI
- Found that for PXIs running Real-Time Linux, EtherNet/IP package is missing in LabVIEW 2019 and EPICS server won't deploy properly.
  - ✳ NI support ticket filed. PXI will be reverted back to previous working OS.

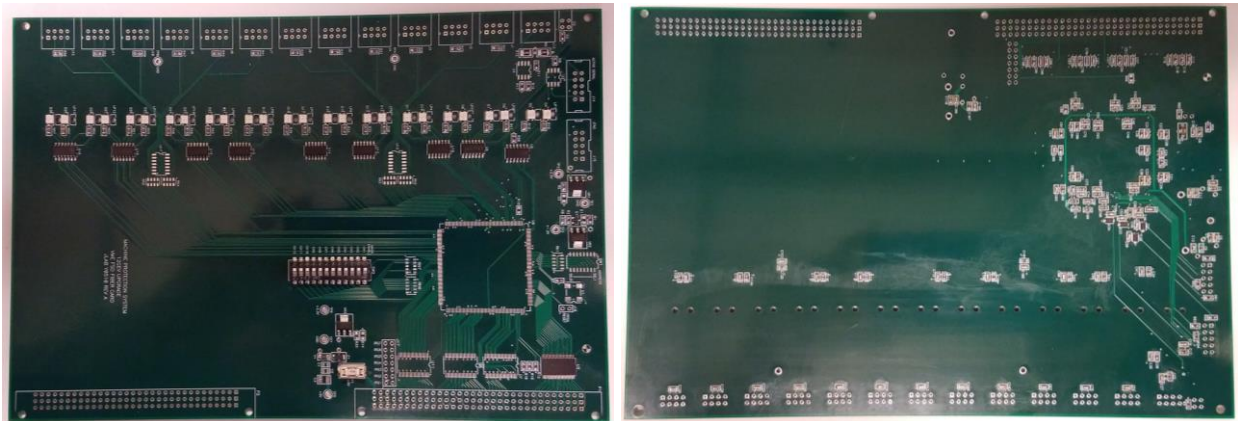## HDice
- Reinstalled 24 V power supply in IGH.

DSG R&D – cRIO Test Stand
- Developed automatic voltage tests of NI 9219 module in ±1 V and ±0.125 V ranges.

DSG R&D – RICH
- Developed technical documentation Sensirion SHT85 temperature and humidity sensor system.

Accelerator Division – BPM Boards

Left: Front of bare BPM PCB. Right: Back of bare BPM PCB.

- Soldered 345 components onto PCBs.