

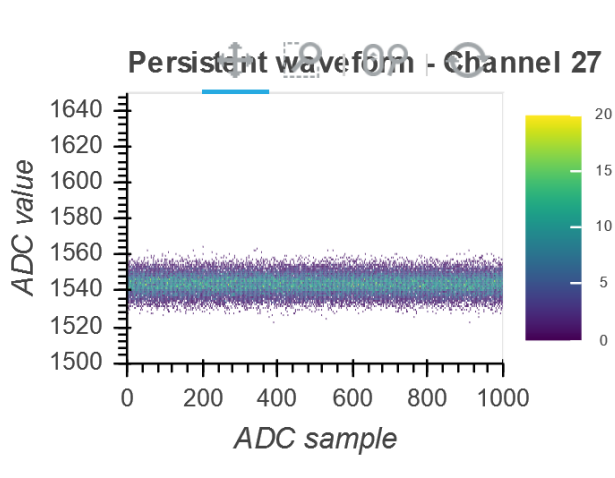
APA #3 PD Update

February 15th, 2018
Chris Macias, Jaroslav Zalesak

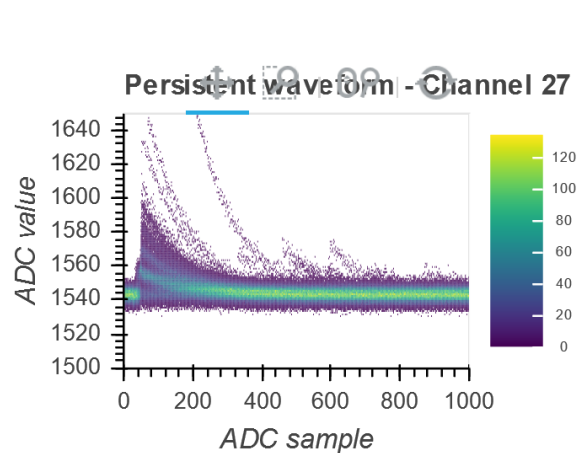
Unstable Channel

- Slot #7, ch0 showed no response during the diode test before inserting APA into the cold box.
- When tested at $\sim 150\text{K}$, the channel seemed to come back to life, see below

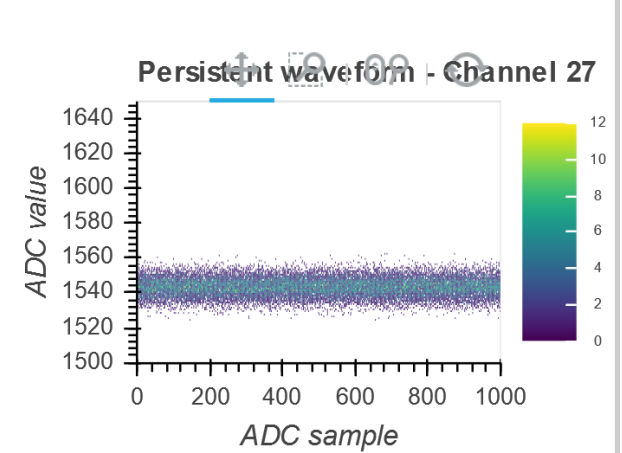
Warm before Cold Test



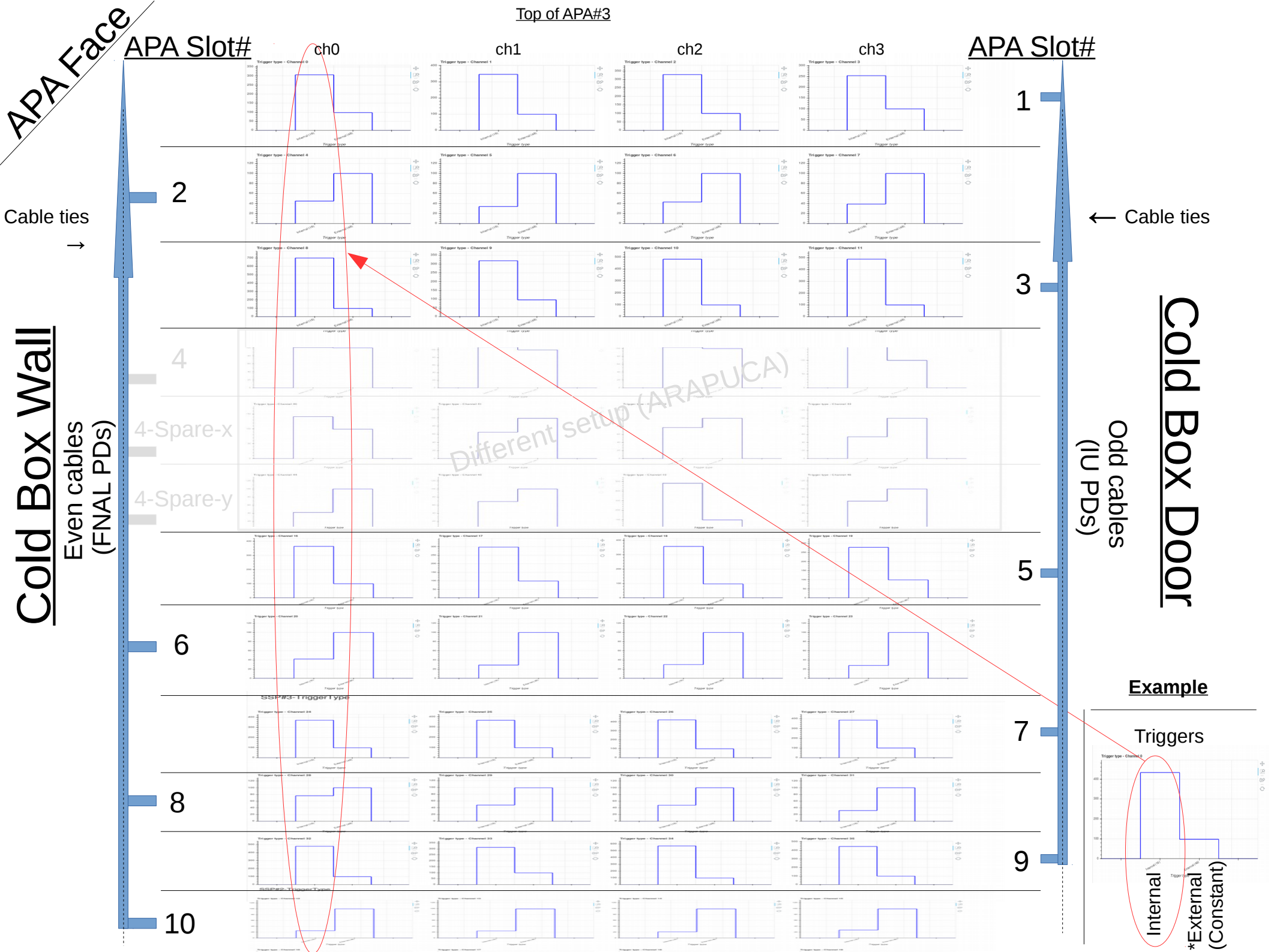
Cold Test



Warm after Cold Test



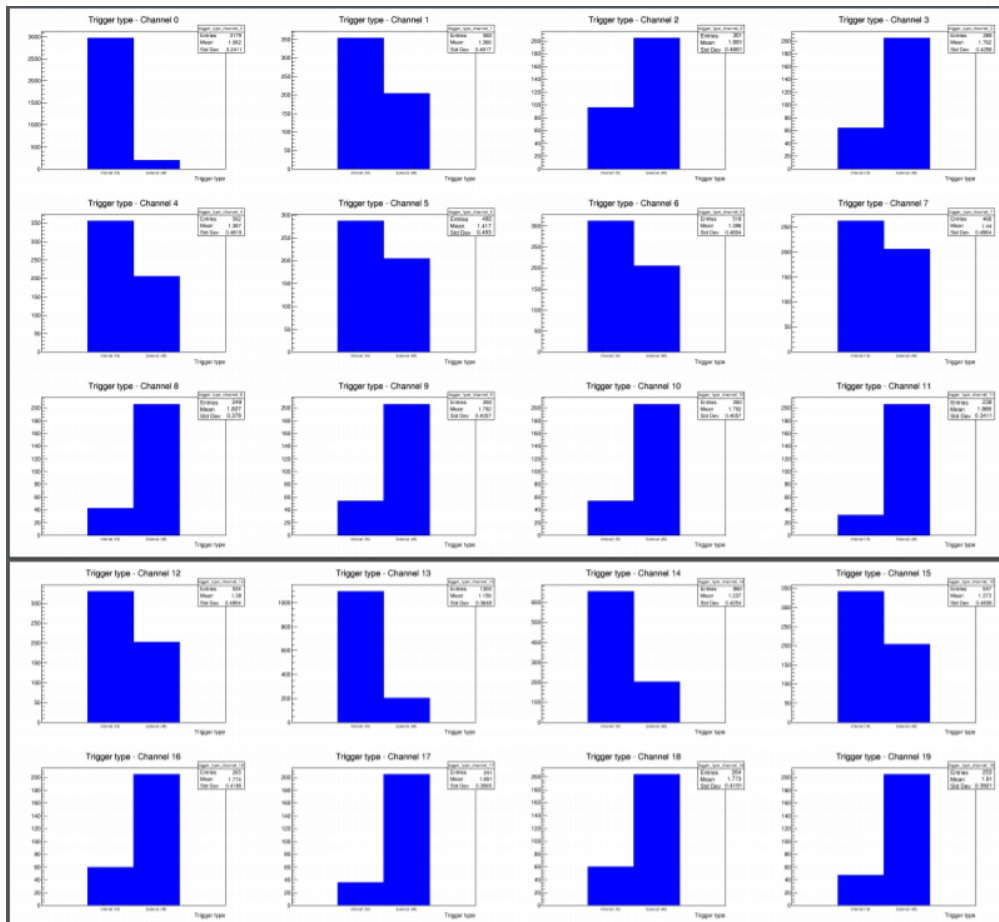
- Note: Slot #7, Ch0 should correspond to Ch24 in the DAQ. As you can see above, there might be a backwards cable map between the Cat6 cable & SSP.
 - Channel mapping between the Cat6 cable and SSP are currently being verified



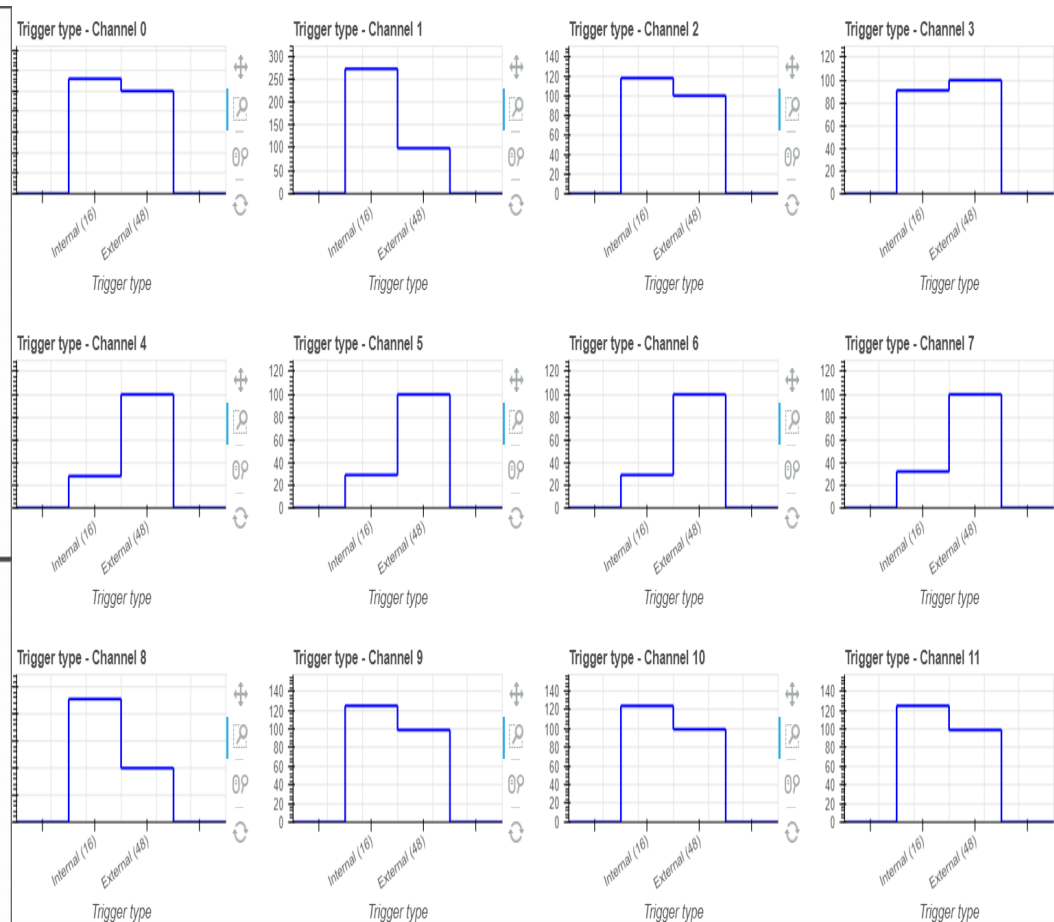
APA 1 & 2 Internal Trigger Rates

- High internal trigger rate along cold box door also found in APA 1 & 2
- Still uncertain of what is causing this high internal trigger rate along cold box door side

APA #1



APA #2



Additions to Online Monitoring

- Additions to the online monitoring will help catch more potential problems in the future
- This week we have worked with DAQ group to add:
 - Run number to the search function
 - leading-edge amplitude histograms per channel
- Plan to add very soon:
 - Integral waveforms per ch
 - Average waveform of 1PEs
 - Characteristics of SiPMs/MPPCs
 - Cross talk, Dark rate, etc.

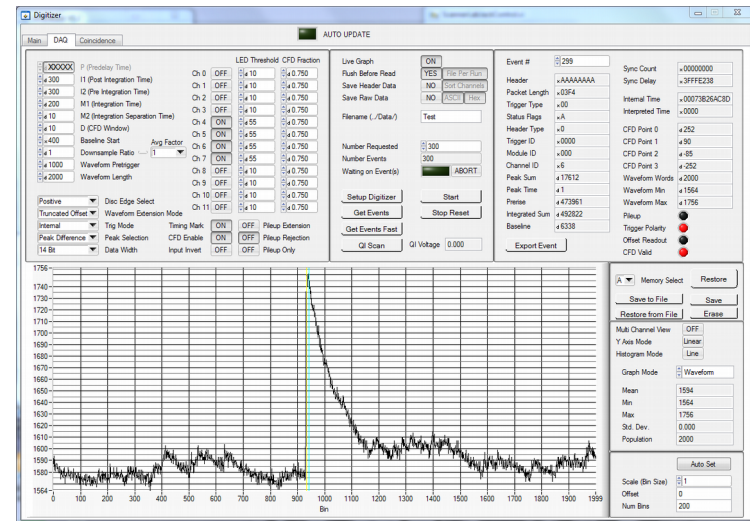


Replaced Hover Boards

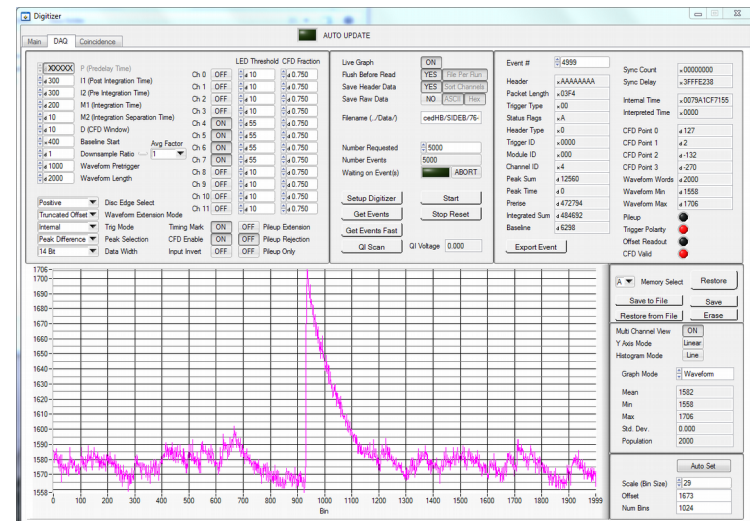
- Replaced two FNAL/MIT hover boards this week.
 - All channels are shown functioning properly- success!

- Proof of principle
 - Can replace bad hover boards here at CERN in future, if needed

FL 06 Module



FL 07 Module



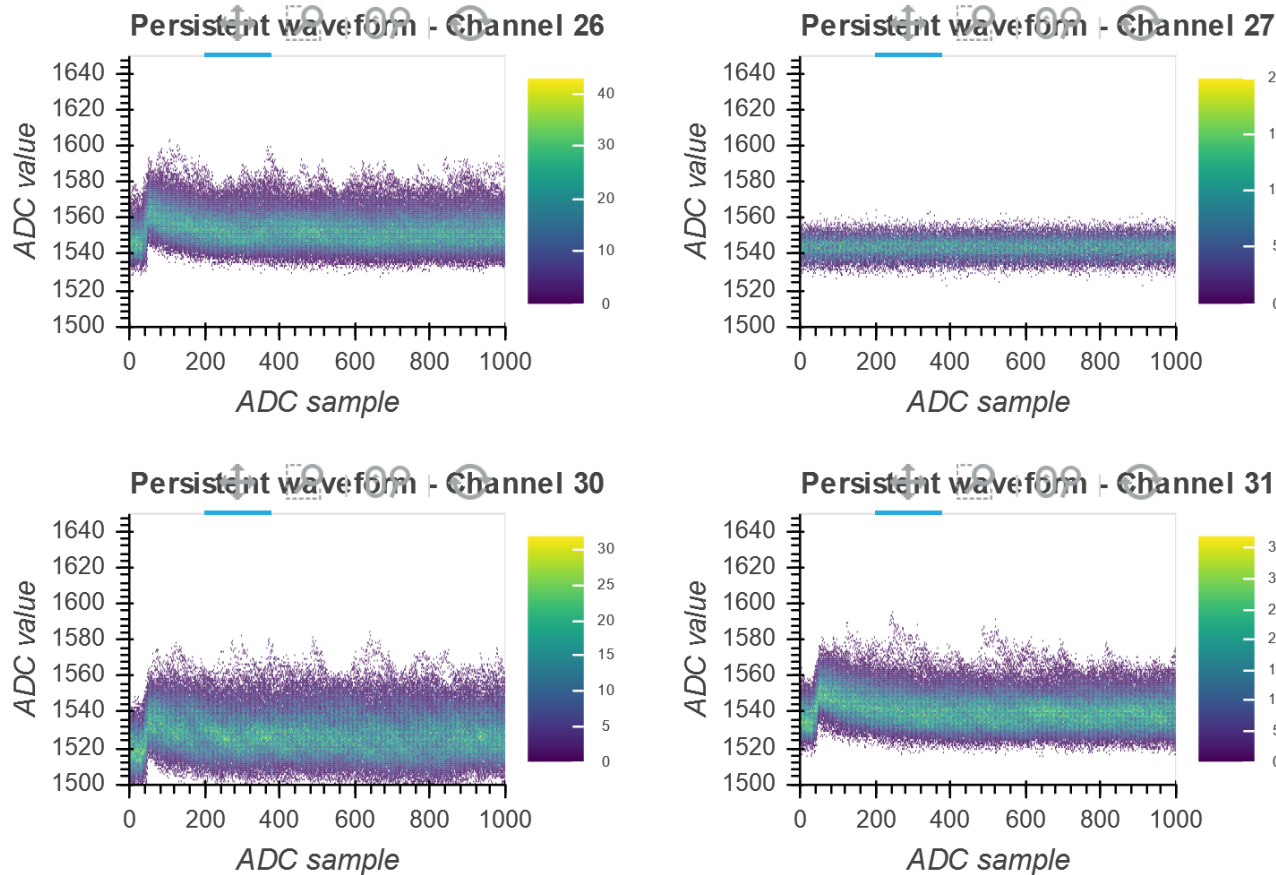
APA #4 PD Layout

- Modules will have opposite slot positions then APA 1-3
 - Except slot 9 & 10 are to be swapped
 - This can allow for a check with the high internal trigger rate seen on APA 1-3
- All but 1 hover board is C1 series (opposite to APA #3)
- No ARAPUCA module in this APA
- 6/10 modules are ready for installation!
- 5 additional modules should arrive within the next couple days
 - Dark scanning will begin toward the end of next week.

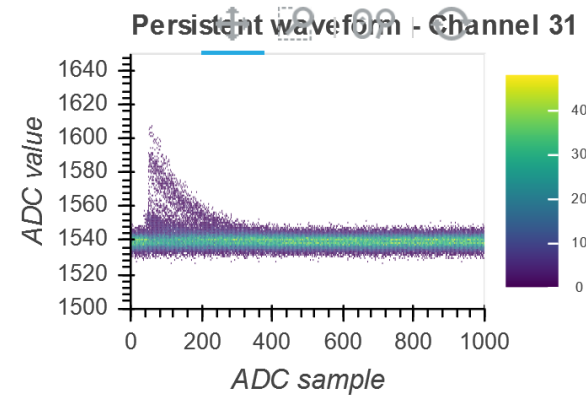
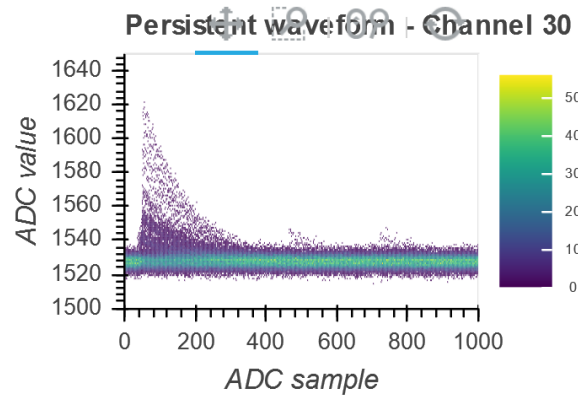
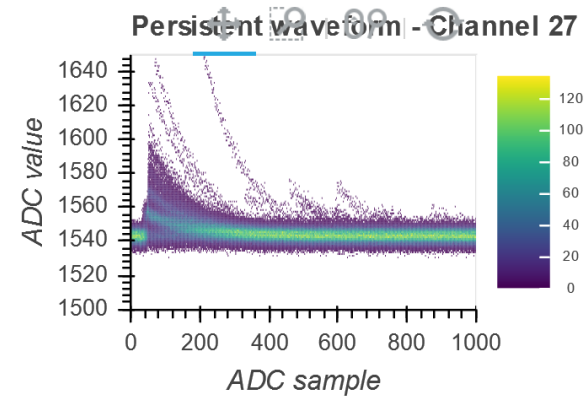
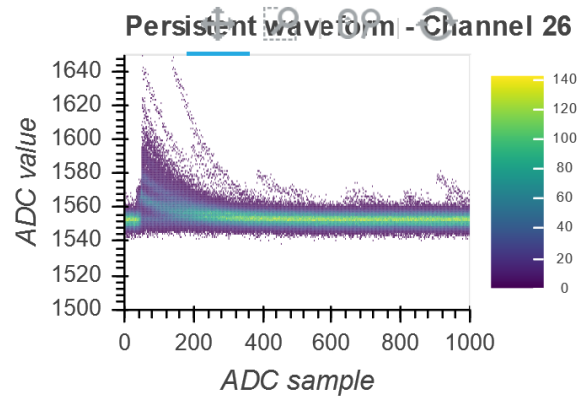
Slot #	Hover Board	Cold box wall	Cold box door
1	A1 series		FNAL
2	C1 Series	IU	
3	C1 Series		FNAL
4	C1 Series	IU	
5	C1 Series		FNAL
6	C1 Series	IU	
7	C1 Series		FNAL
8	C1 Series	IU	
9	C1 Series		IU
10	C1 Series	FNAL	

Additional persistent Wvfms for
comparison with unstable channel
shown in the next three slides

Warm before testing



Cold Tests



Warm after cold test

