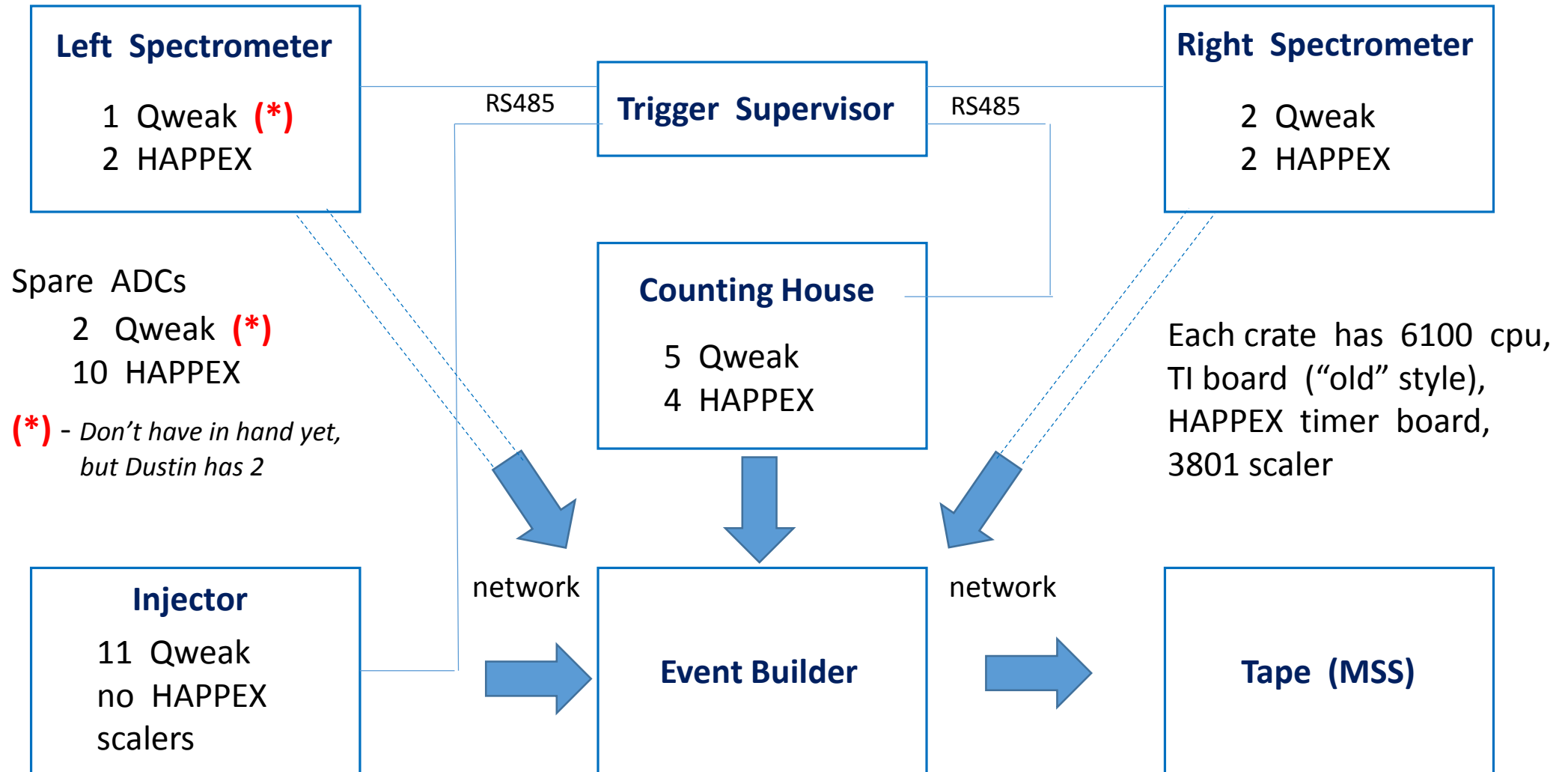


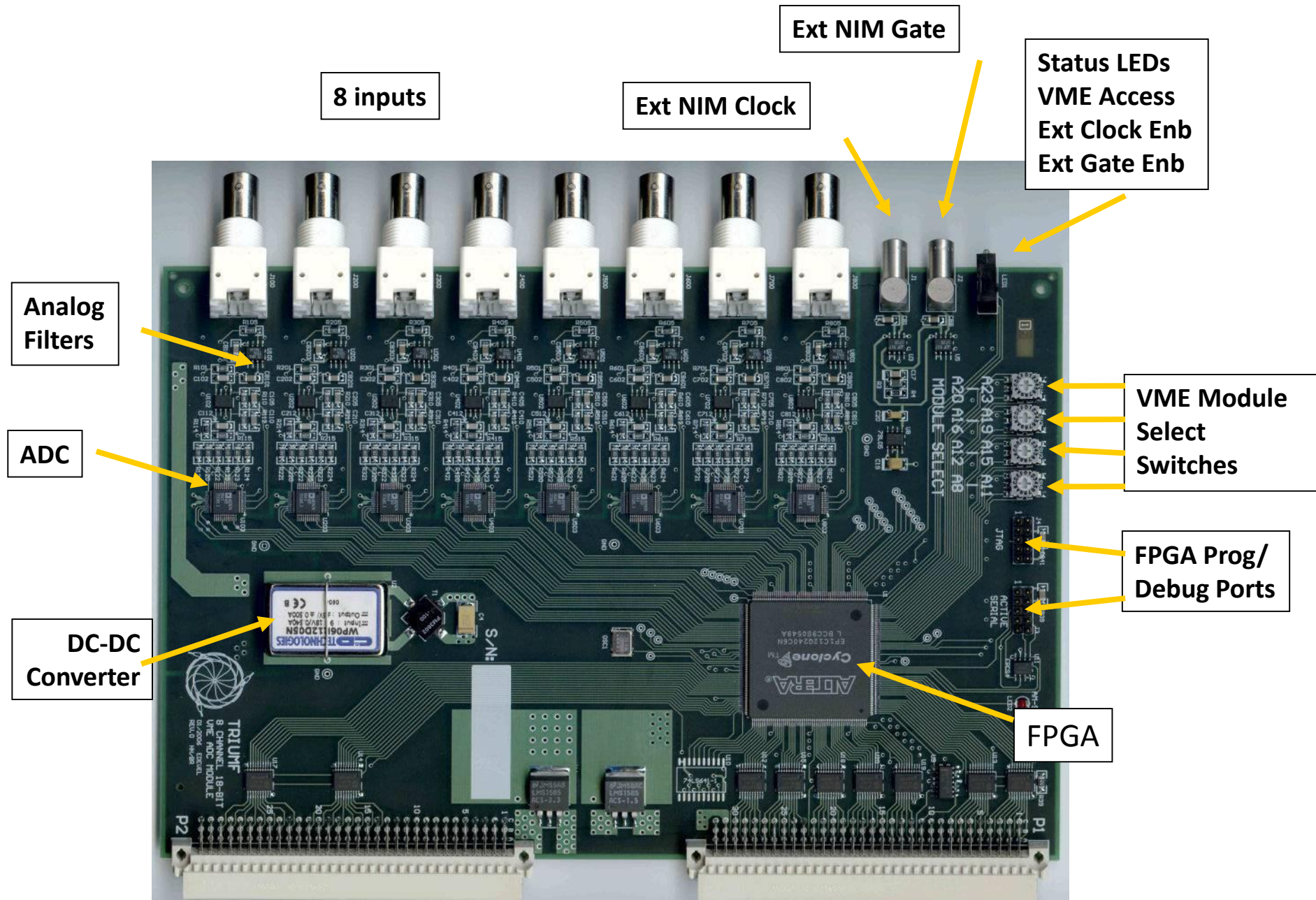
Data Acquisition (DAQ) Status

- Layout of DAQ
- Inventory and Present Status
- Comparison of Qweak and HAPPEX ADCs
- Possible Upgrades
- To – Do List

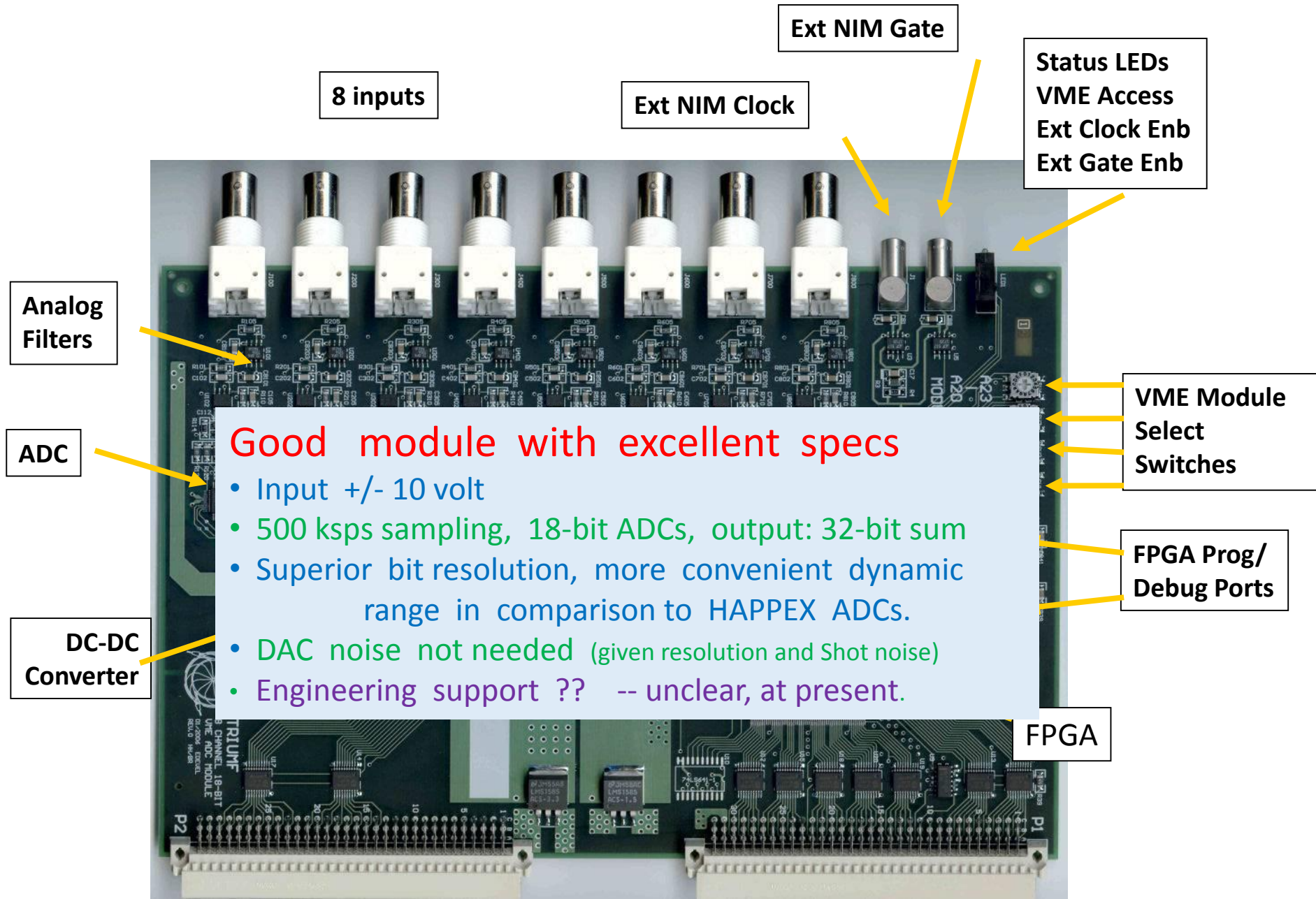
Parity DAQ



From Qweak: TRIUMF VME integrator

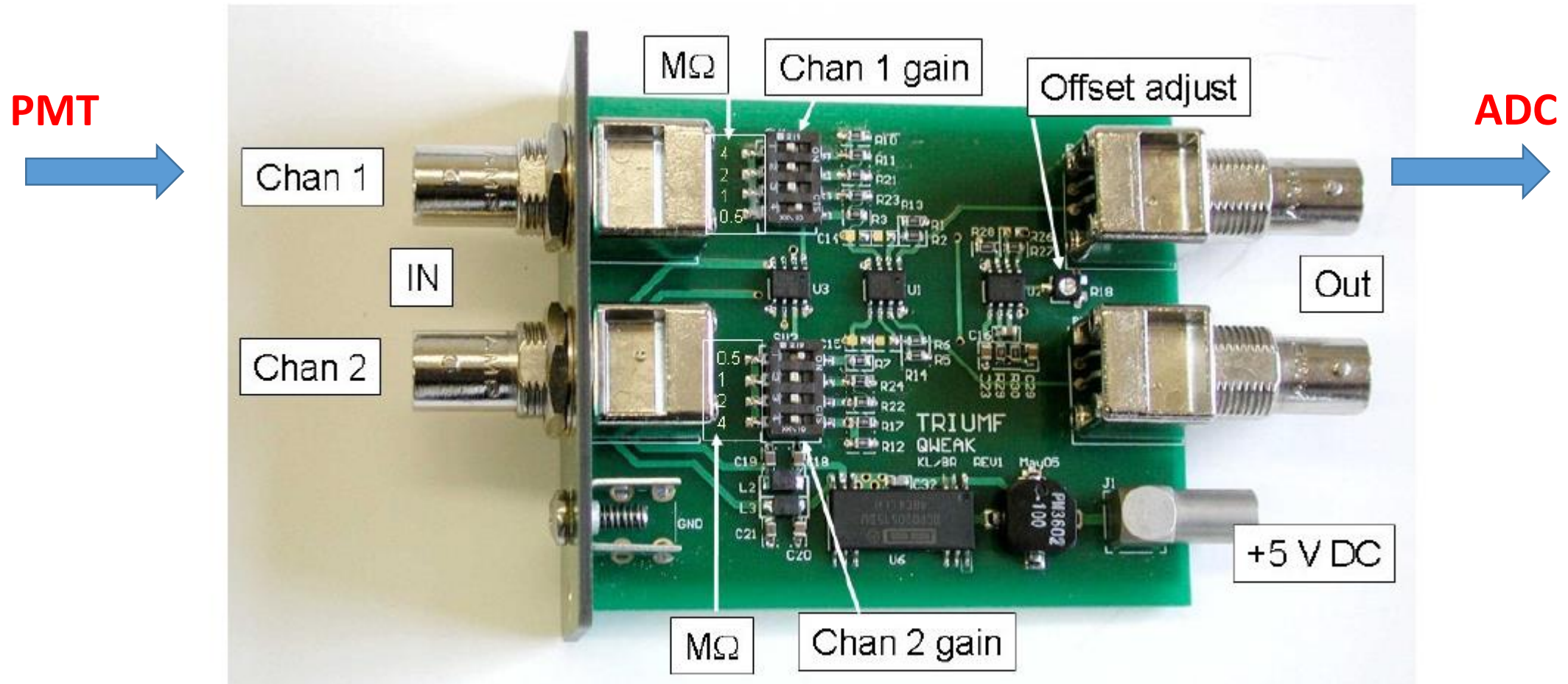


From Qweak: TRIUMF VME integrator



Put your detector PMT into this, output goes to ADC

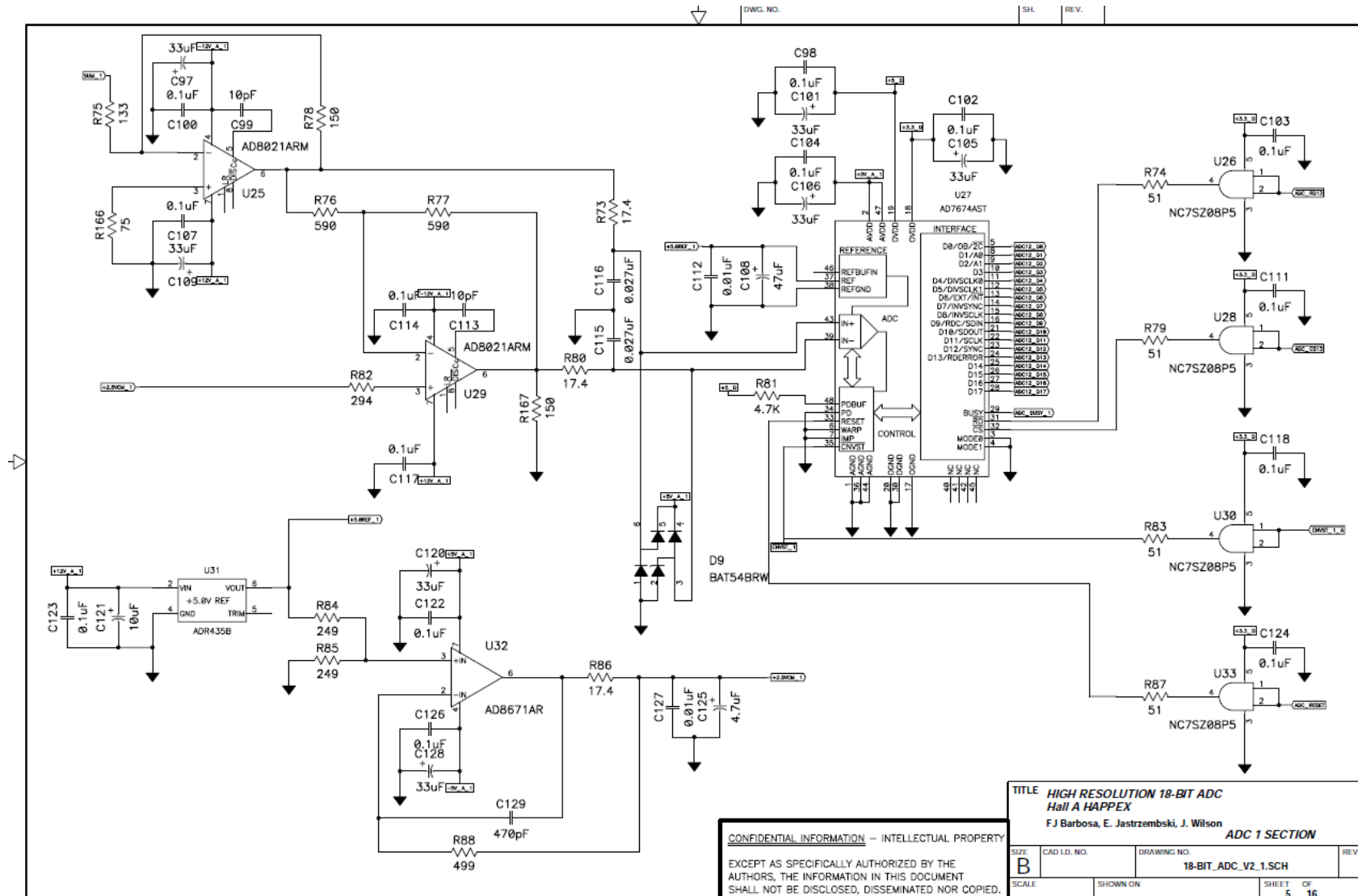
Note, we've reconfigured the HAPPEX ADCs to also require these preamps.



TRIUMF current-to-voltage preamplifier for the Qweak experiment.

HAPPEX ADCs

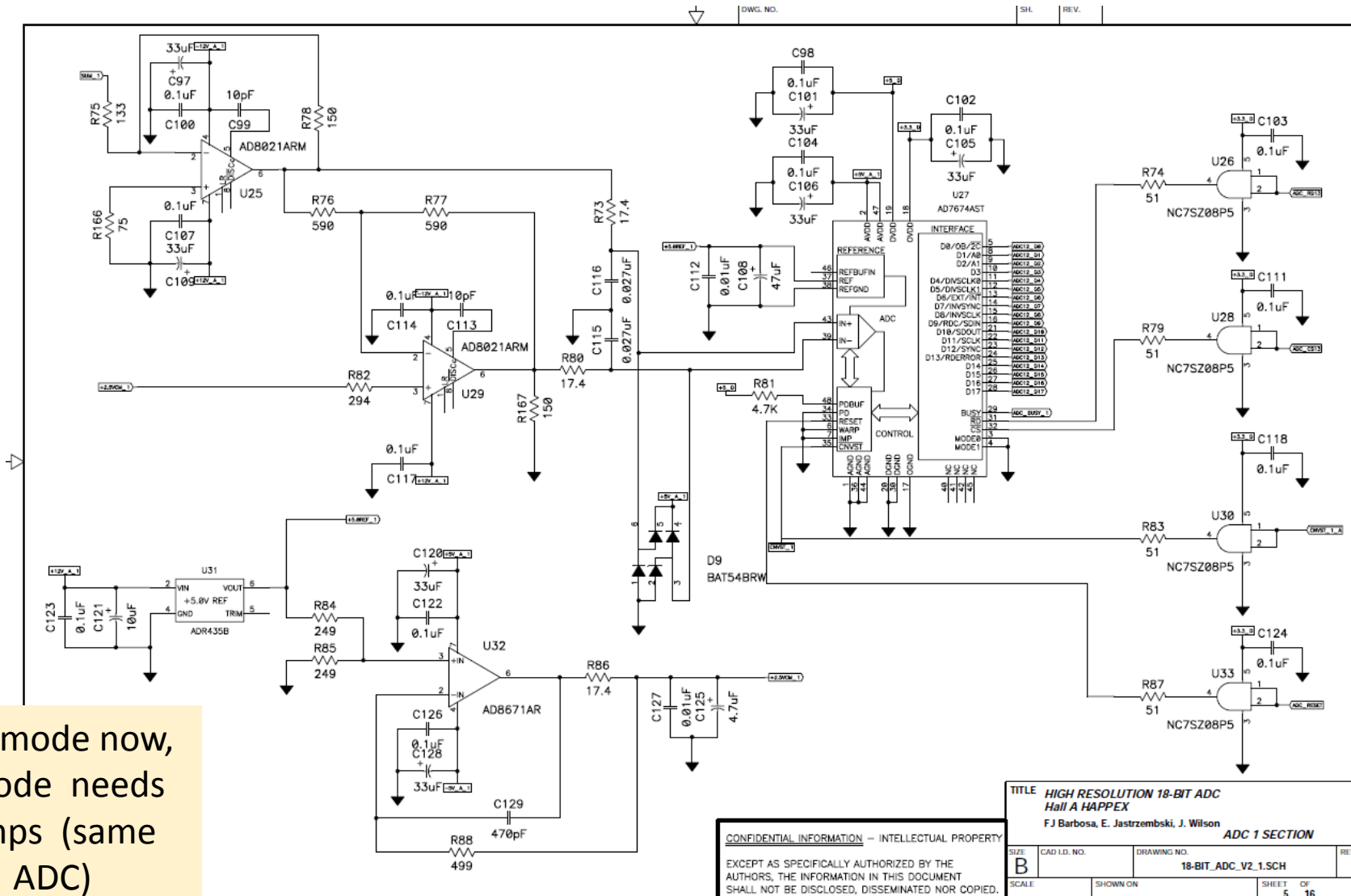
Integrate signals over the helicity period,
same aim as Qweak ADCs but different design.



Used by
HAPPEX-III
and
PREX-I

HAPPEX ADCs

Recent work: resistors adjusted so that ADC works for 0–5 V for $30\text{ Hz} < f < 240\text{ Hz}$



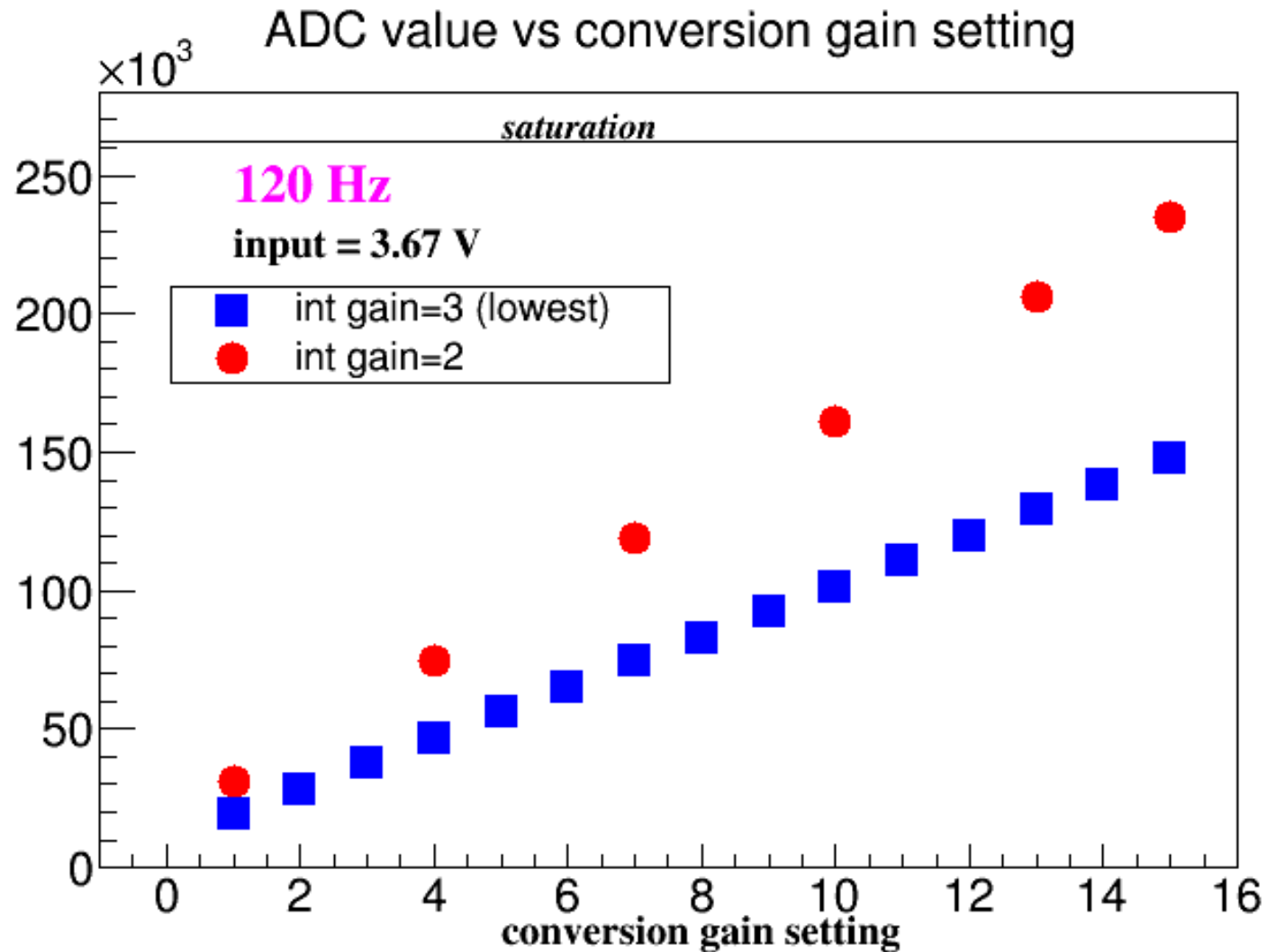
Will be made available for any of our detector or beamline signals.

DAC noise pickup issue (10 ppm noise which mostly cancels)

Recent work on HAPPEX ADC: resistors adjusted

so that ADC works for $0 - 5 \text{ V}$ for $30 \text{ Hz} < f < 240 \text{ Hz}$

Example of
calibration
plot



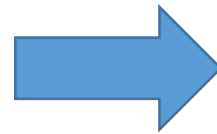
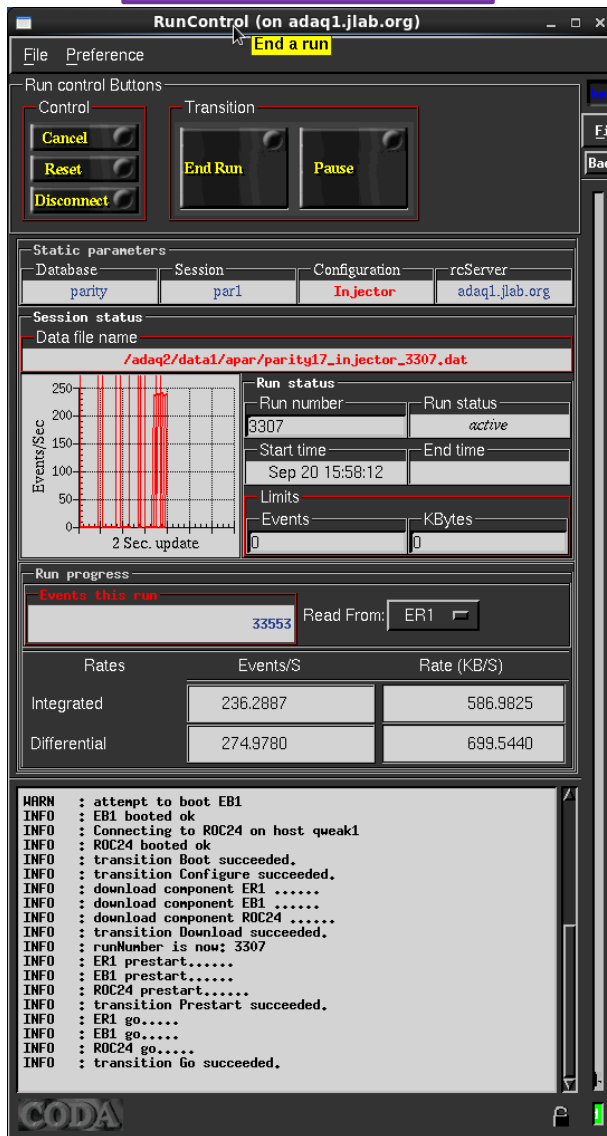
DAQ Inventory and Needs

Item	Deployed in our DAQ now	Spares on Hand	Needed
Qweak ADCs	18 (*)	0	3
HAPPEX ADCs	8	10	
Model 6100 cpu	4	2	
Model 5100 cpu in TS	1	2	
Crates including TS	5	2	
Trigger Interrupt (TI)	4	2	
Trigger Supervisor	1	1	
HAPPEX Timer	4	6	
Flexio board	1	0	3
Model 3801 Scalers	4	2	
Model 7200 Scaler	1 (injector)	0	1
Intel / Linux VME cpu	0	0	5 + 1 spare (**)

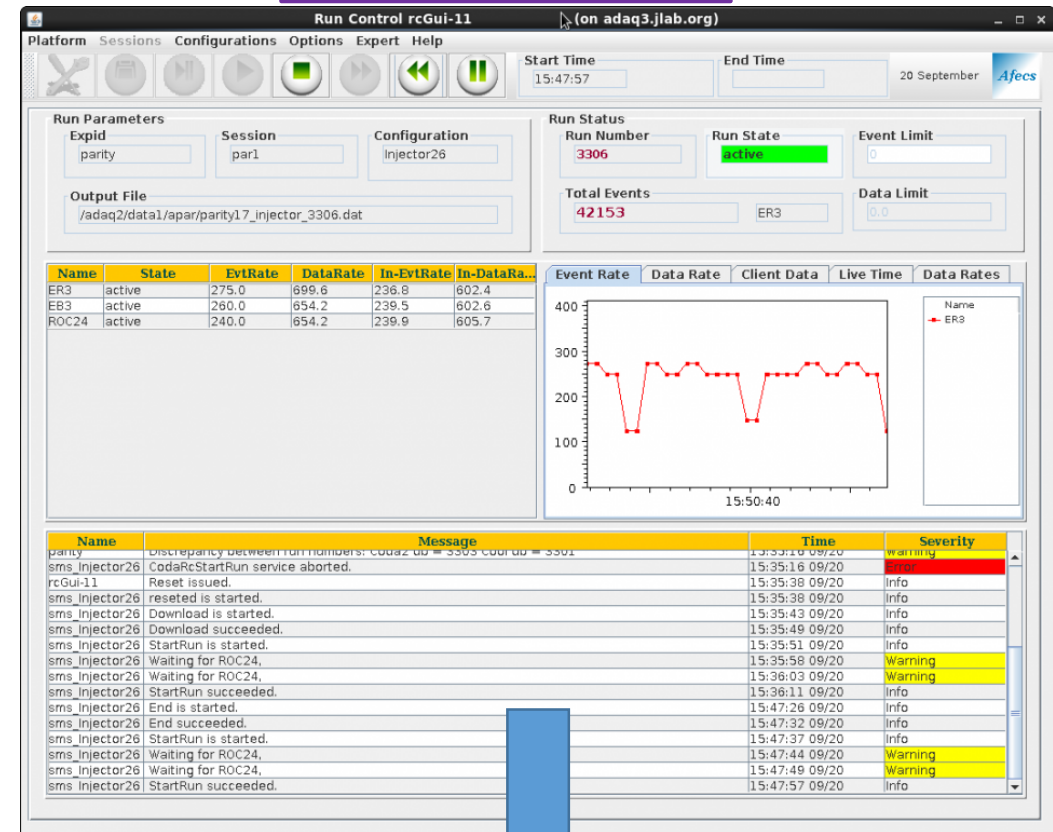
(*) I hear there are “a few” more Qweak ADCs in a cabinet at Jlab. Also, 2 at Idaho State

(**) If using CODA 3

CODA 2.5

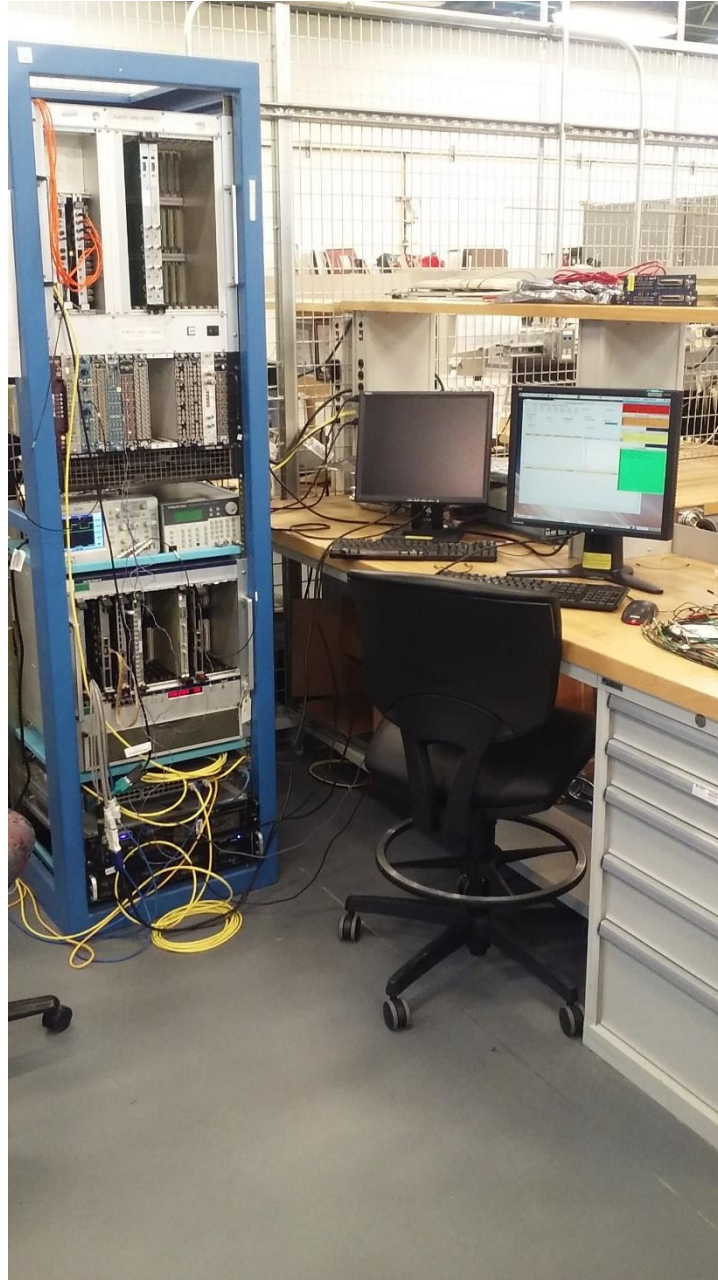


CODA 2.6.2



We should consider CODA 3

- It's what the DAQ group supports
- Fits better with new computers
- But costs money (new cpus)



DAQ Test Stand

Located in the TEDF building
(Technology Engineering and
Development Facility)

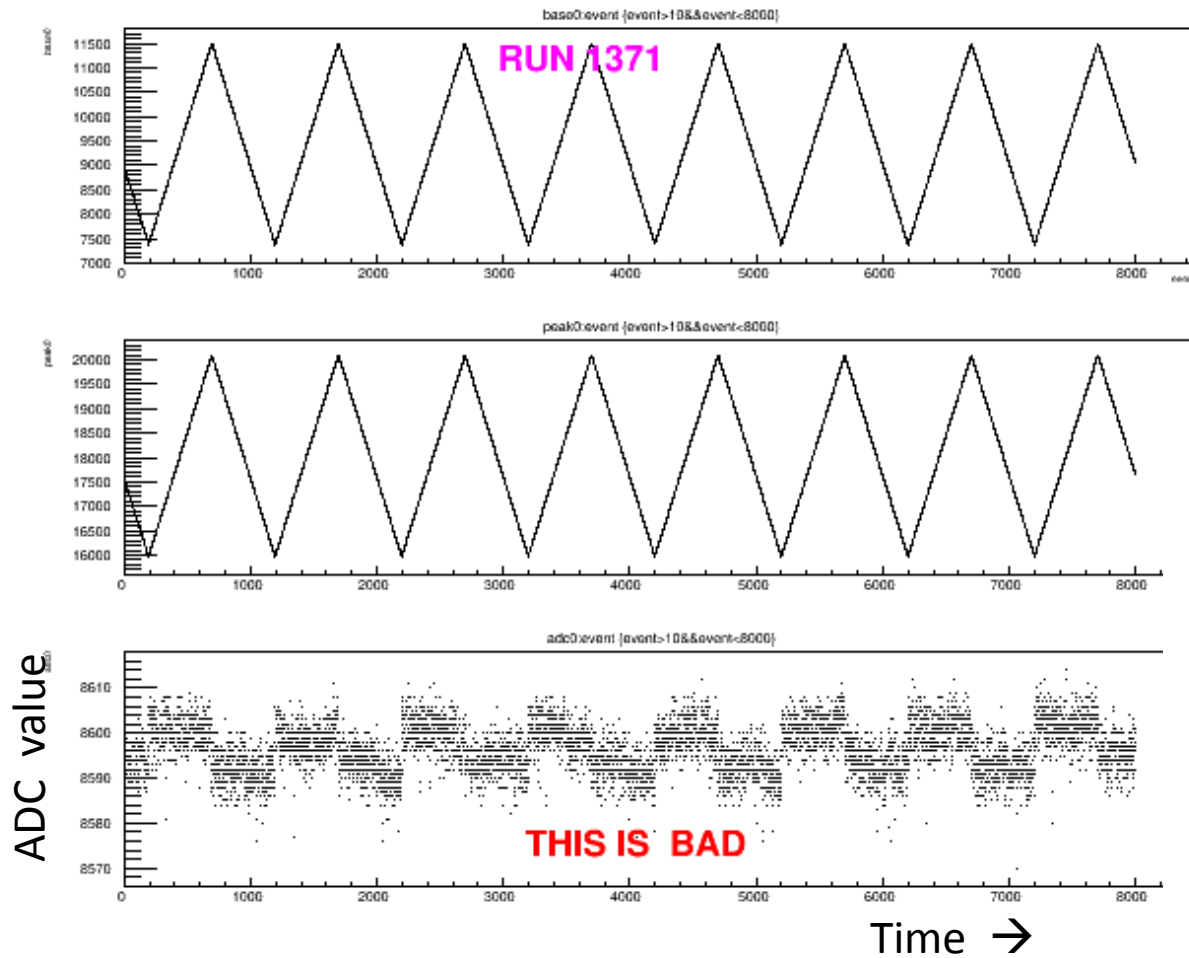
2 DAQ crates, computers,
NIM electronics, test bench
(adjacent cubicle unused).

To – Do List for DAQ (and related)

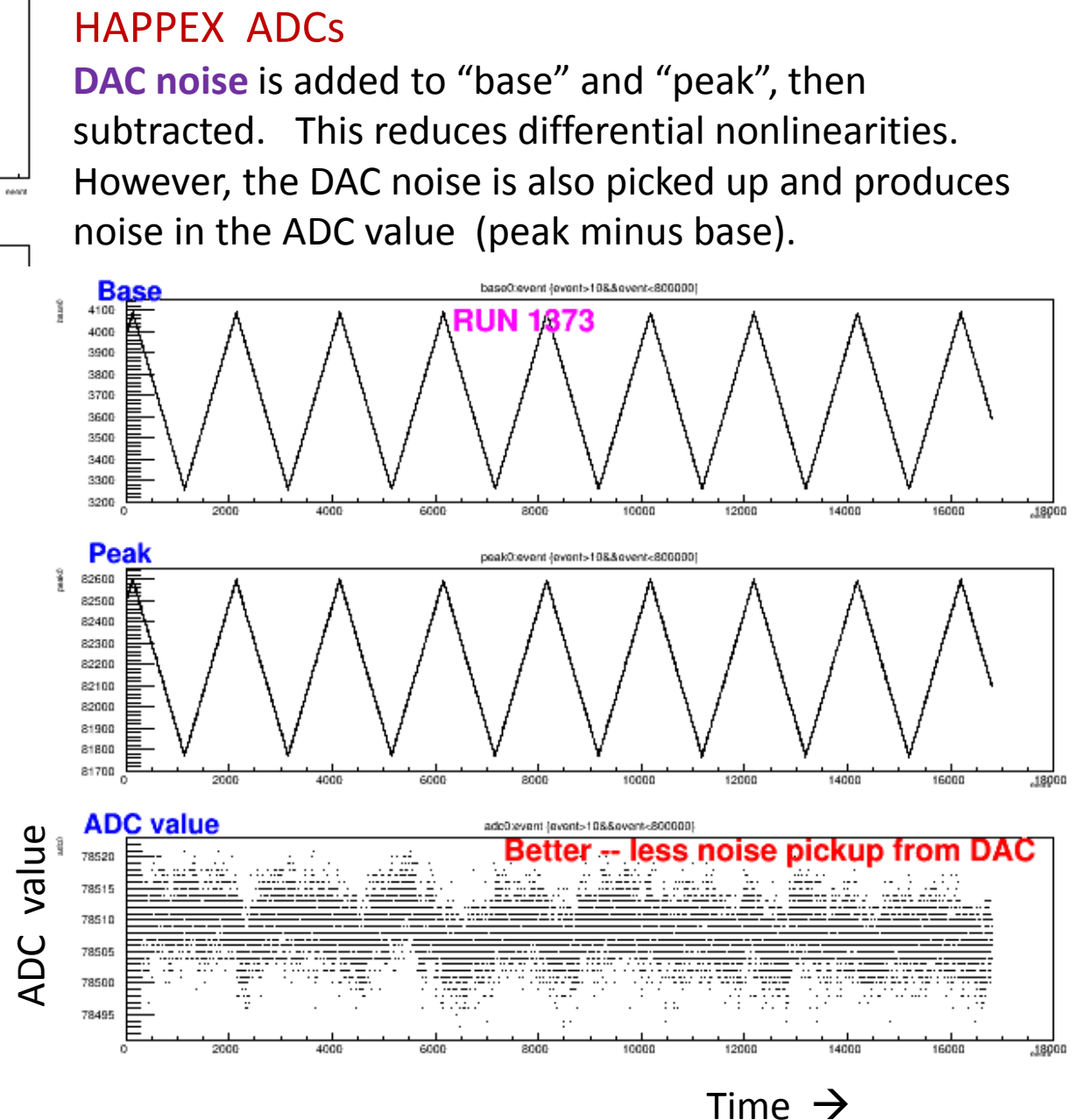
Job	Status
Revive all crates	Mostly accomplished
Feedback	Underway, needed by Injector Studies
Run-dependent database generation	Software exists, need to revive
Coil pulsing	ditto
Panguin	ditto
Prompt analysis	ditto
Synchronization check	Dismantled, need to revive
E-logbook entries	Needs work since new E-logbook
DAQ for GEMs ?	The rest of the HRS DAQ is ready.
Upgrade to CODA 3 ???	An idea. We can start on test crate

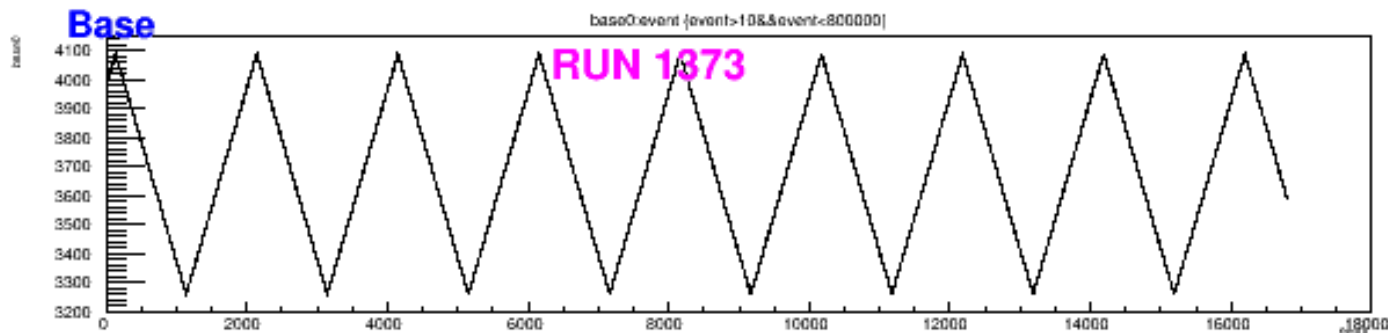
The End

Backup slides on DAC noise pickup follows.



At the right, we've reduced DAC noise to 800 channels with reduced stepsize of 4. Residual noise is 4 channels RMS.





Current status of **DAC noise pickup**: it causes a ~ 10 ppm noise floor (not helicity correlated).

