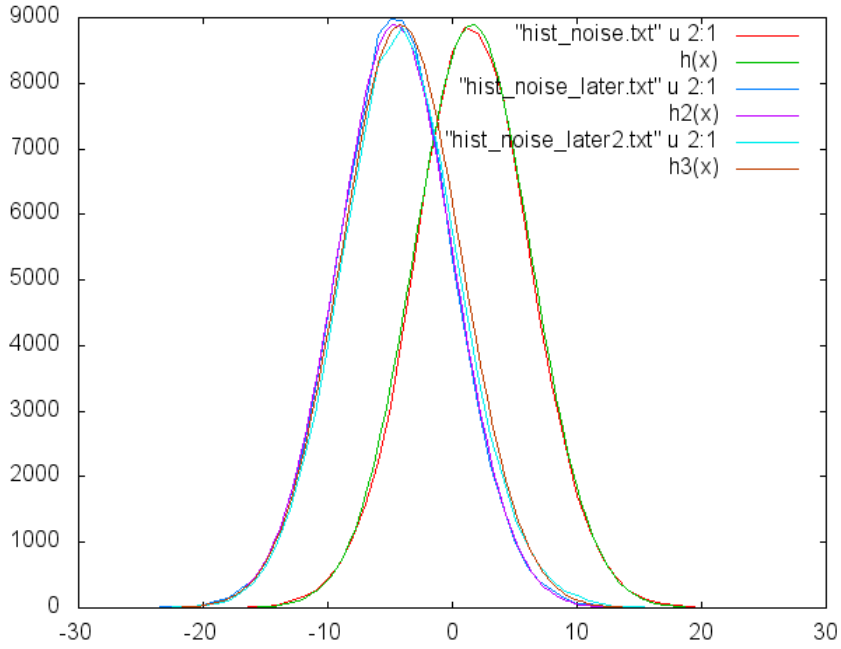


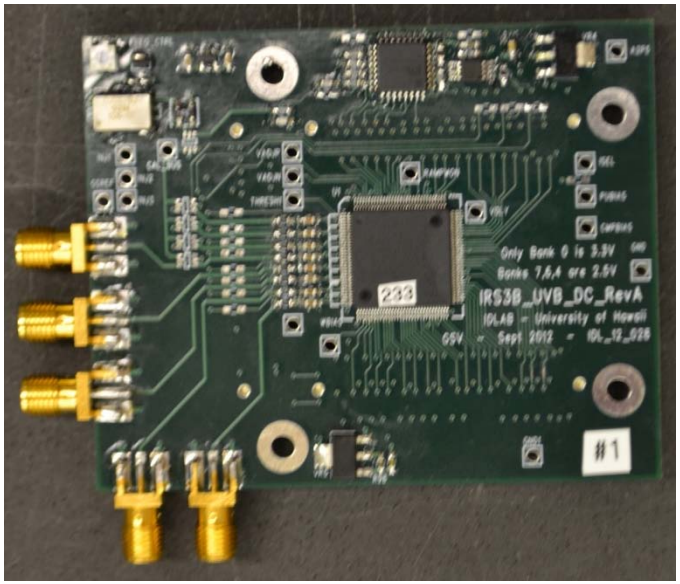
CRT Electronics Preparations

- Short Updates:
  - Further IRS3B testing
  - Amplifier Performance
  - HV update
- Posted/presented separately:
  - PNNL “back end” update
  - Schedule updates
  - Equipment list follow-up

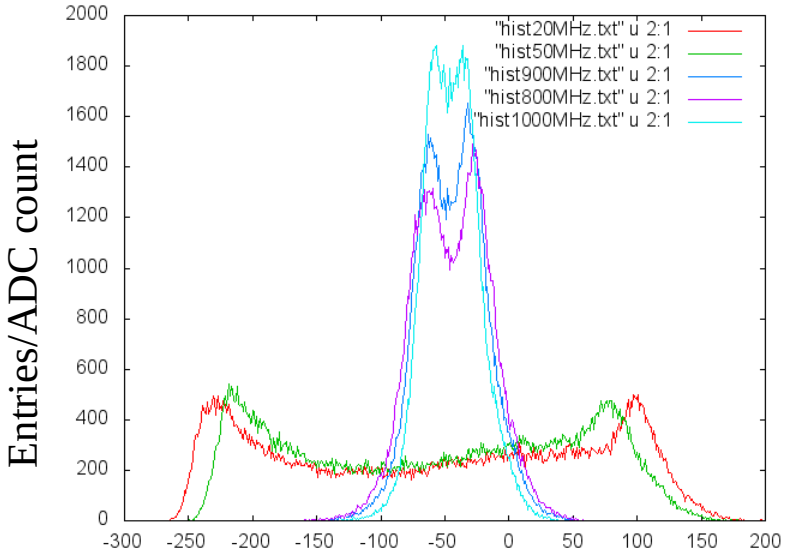
31-OCT-2012 (Hawaii) edition

P. Allison, M. Andrew, B. Kirby, L. Macchiarulo, K. Nishimura, X. Shi, G. Varner, G. Visser

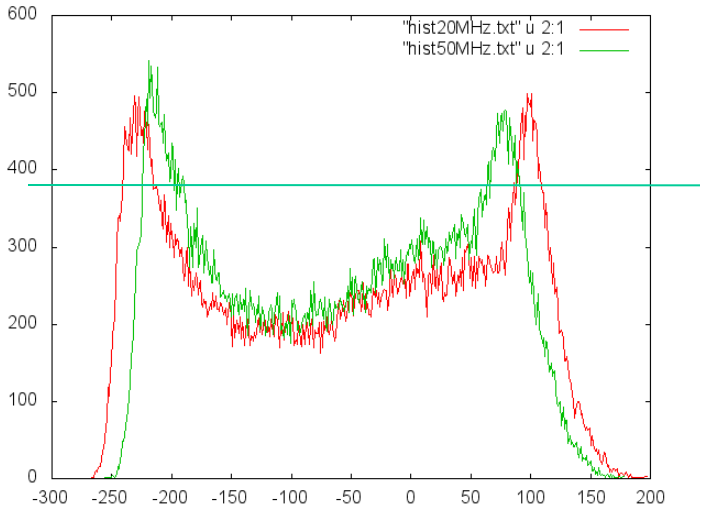
Analog Bandwidth



RF sine wave injected Channel 5

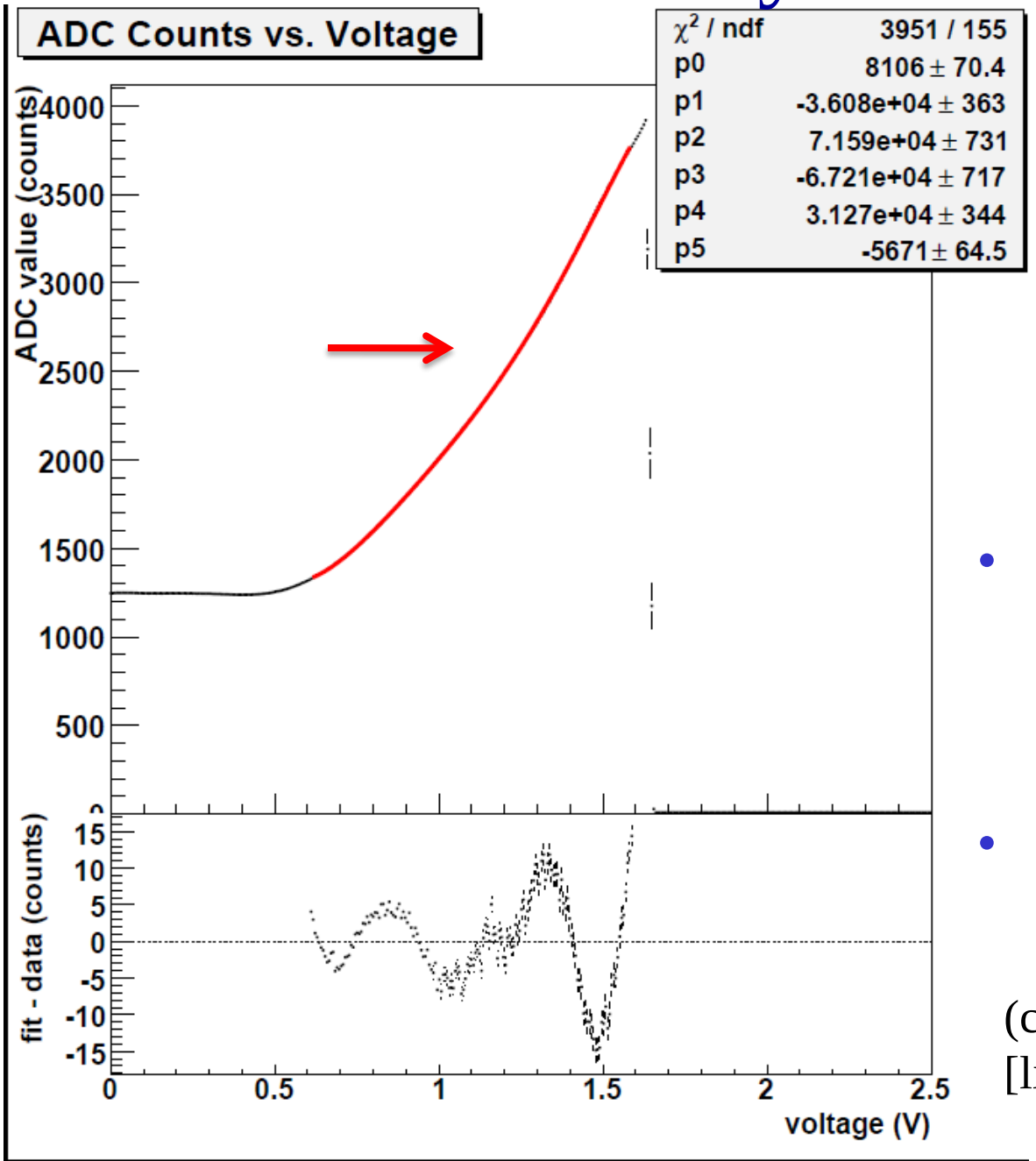


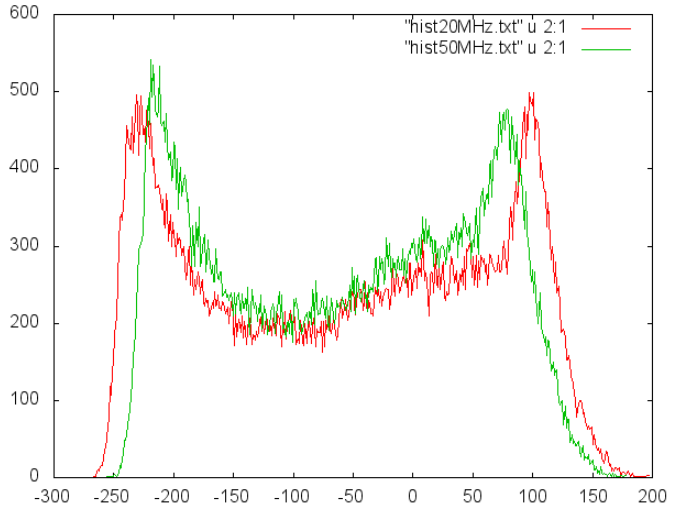
- Data logging coming along
- 2x estimators (sine peak):
  1. 90% of maximum
  2. Highest entry



(comparator biases [linearity] not yet optimized)

Linearity comment

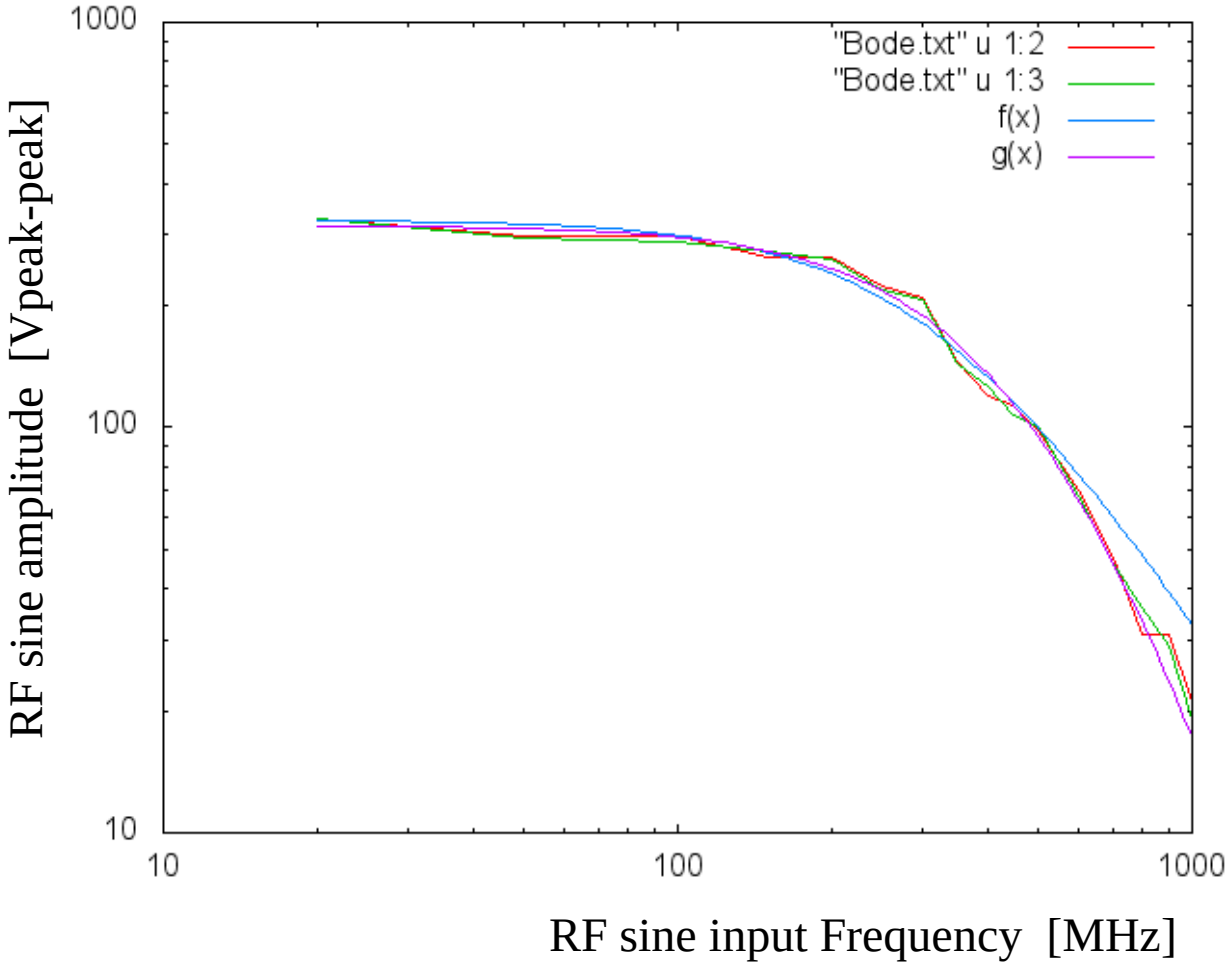




- High-density comparators have somewhat non-linear response
- Linearize in firmware (Look Up Table)

(comparator biases [linearity] not yet optimized)

Analog Bandwidth



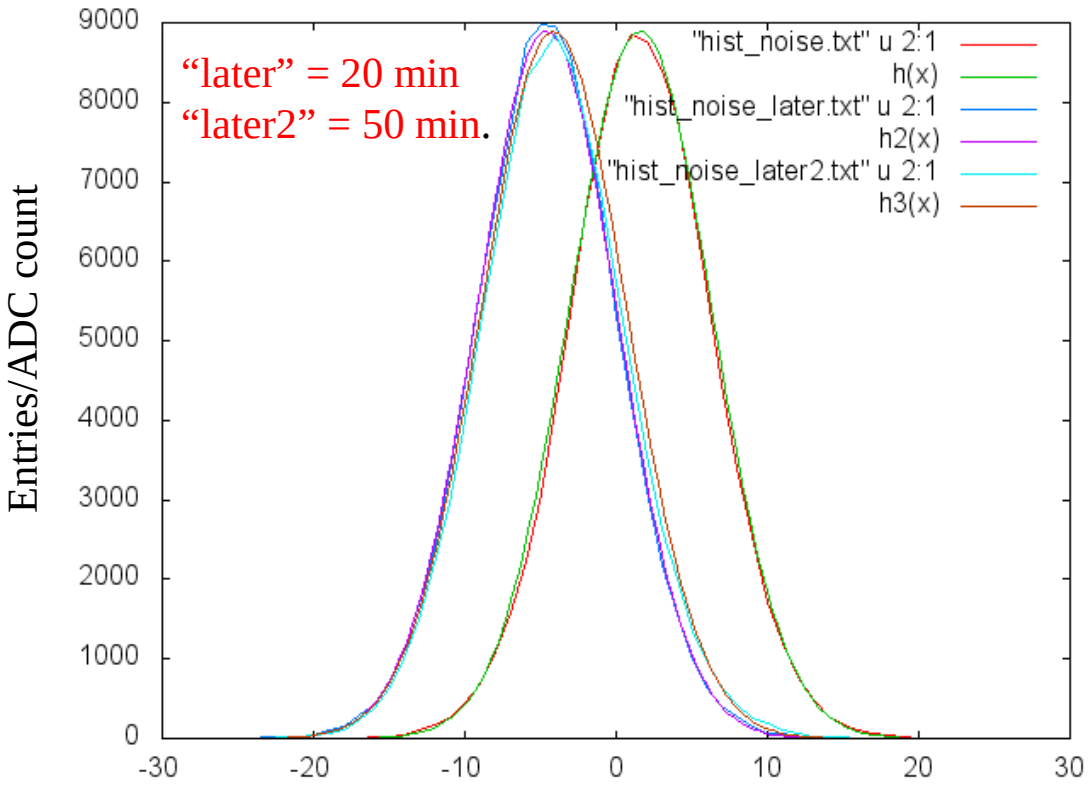
2 measurement techniques give comparable results

Blue fit is for a single pole at 334MHz

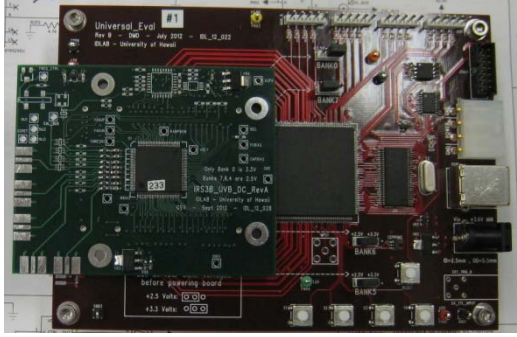
Green is a double-pole

- Best fit (green) for a double pole at 554 MHz

Noise measurement



No signal input, pedestal subtracted [ADC counts]

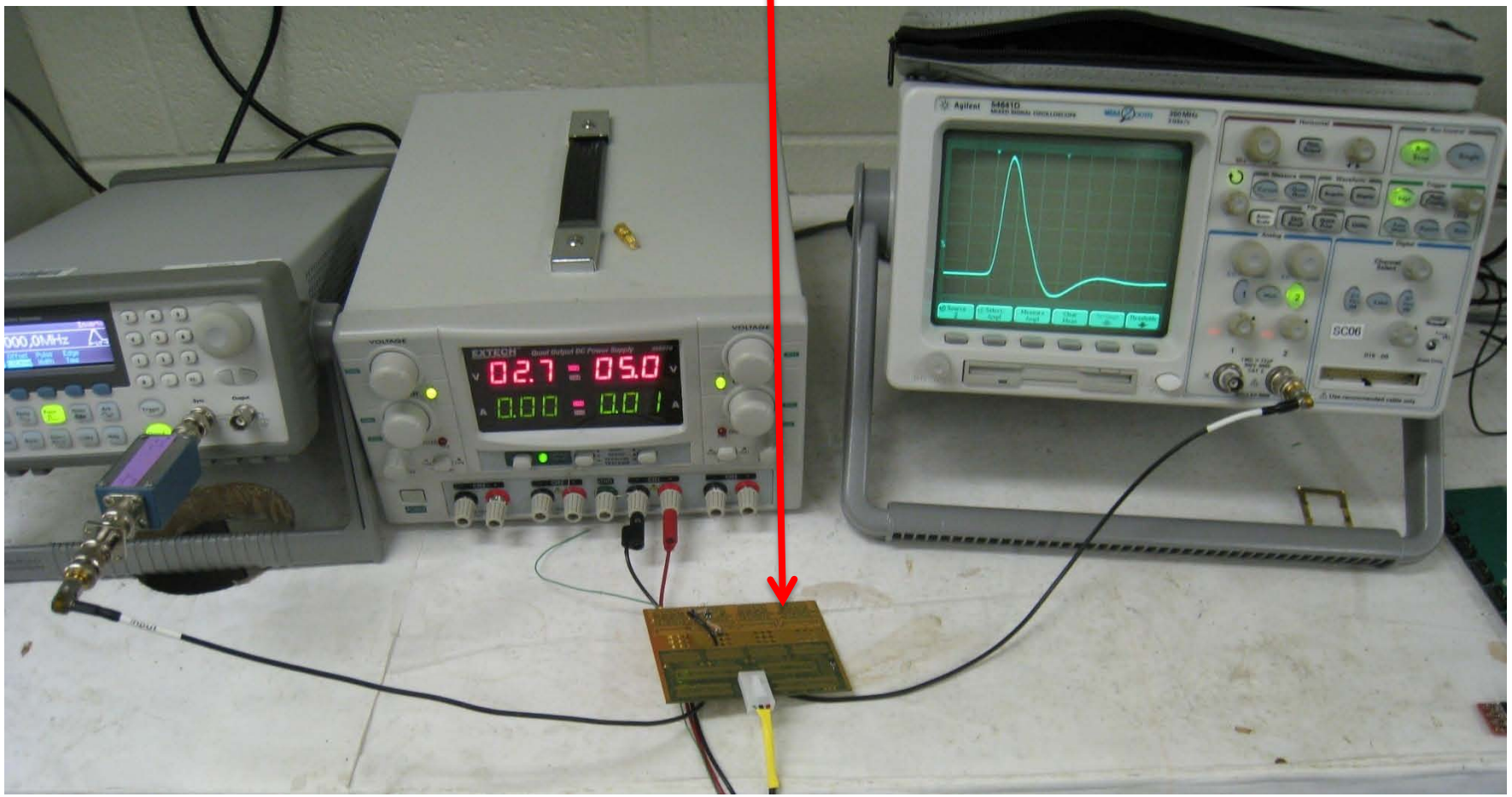


Sets limit on overall noise and baseline jitter

- 100 events, 16x 64-sample windows
- RMS ~ 4.6 – 4.8 ADC counts
- Gain needs calibration (~mV level)

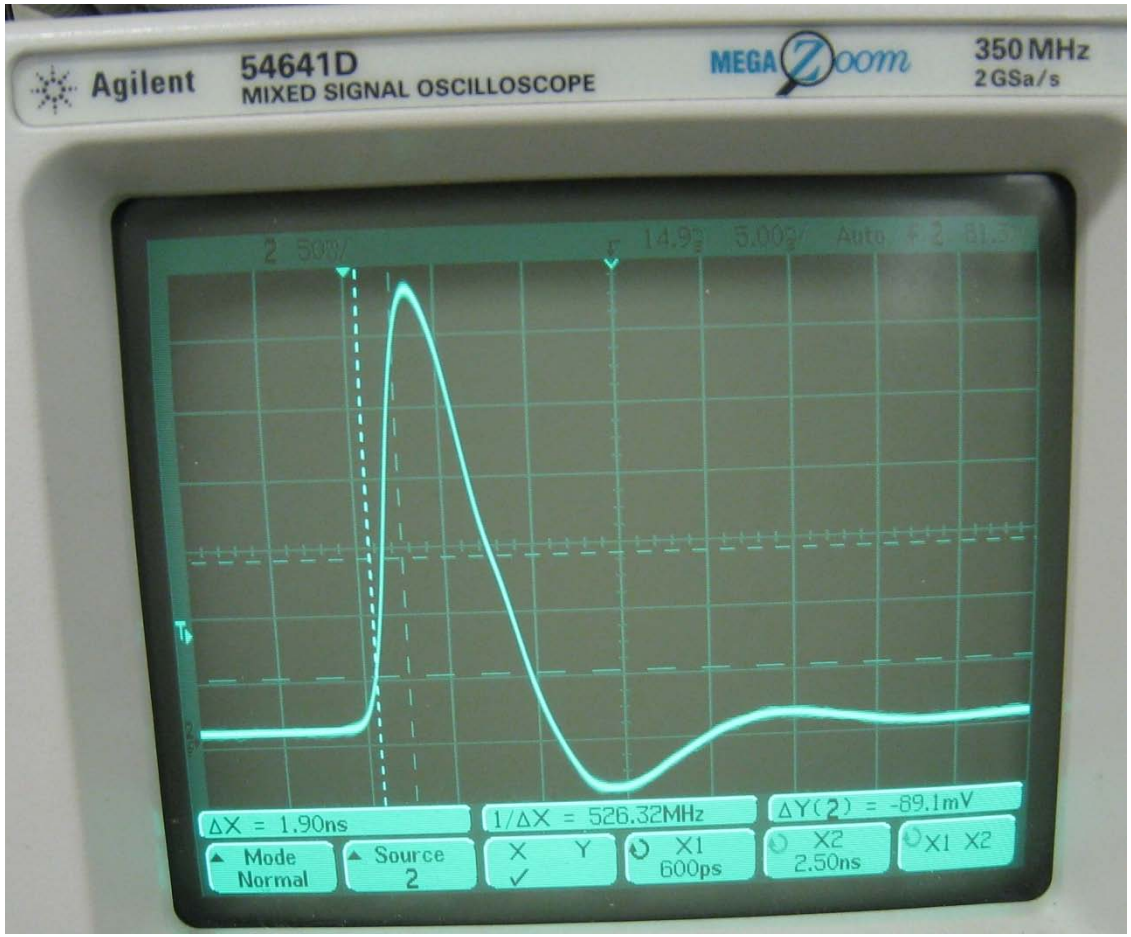
- Distributions very much match the Gaussian fits ($h_i(x)$)
- Vdly servo-locking off, so drift in mean position due to temperature change, but no "blow-up" as saw with IRS2 pedestals (need to check with Vdly feedback on)

New Carrier + Amp test



- OP846 (lower-power) amp installed

New Carrier + Amp test



5ns per division

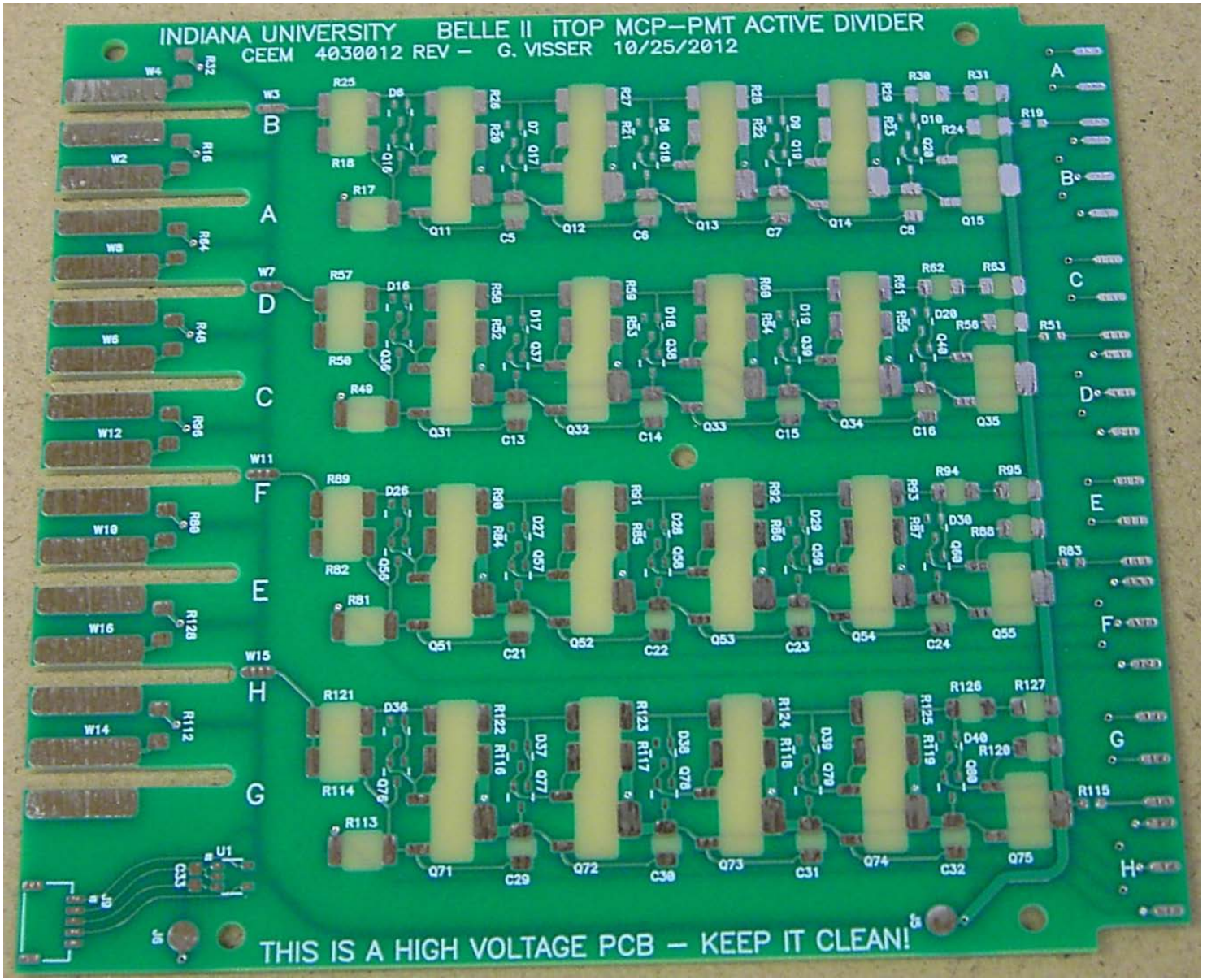
Sync signal differentiated to give fast input

1.9ns risetime

Modest amount of overshoot (width matches simulation)

- At least 5-6 samples on leading edge

New HV (Gerard – board received)



Populate from tomorrow

Summary

- High voltage cable: RG-316 for testing -- long term stability?? (Gerard is proposing burn-in test)

- Schedule updated, very tight

- A lot of progress, but a long way to go