

Trenched Carrier board with APD
with FAST AMP readout
intrinsic noise &
response to Fe55 stimulation

Mitch & Manny

Setup

Refurbished Trenched carrier board & APD returned to Penn last week.

APD Biased at 1800V (300nA bias current)

Fastamp High gain mode ($\sim 5\text{mV/fC}$)

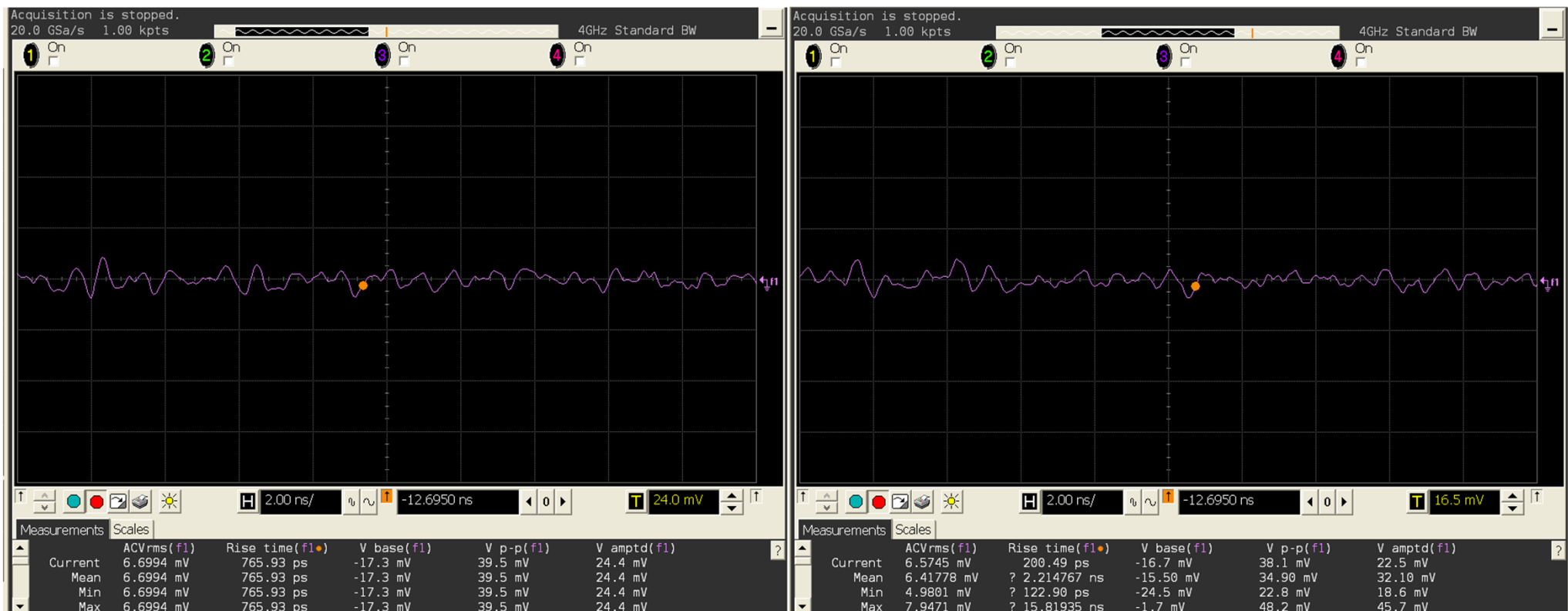
Fe55 Source 1640 e^-

Signal size observed $\sim 50\text{mV}$ Output $\rightarrow \sim 10\text{fC}$ 62k

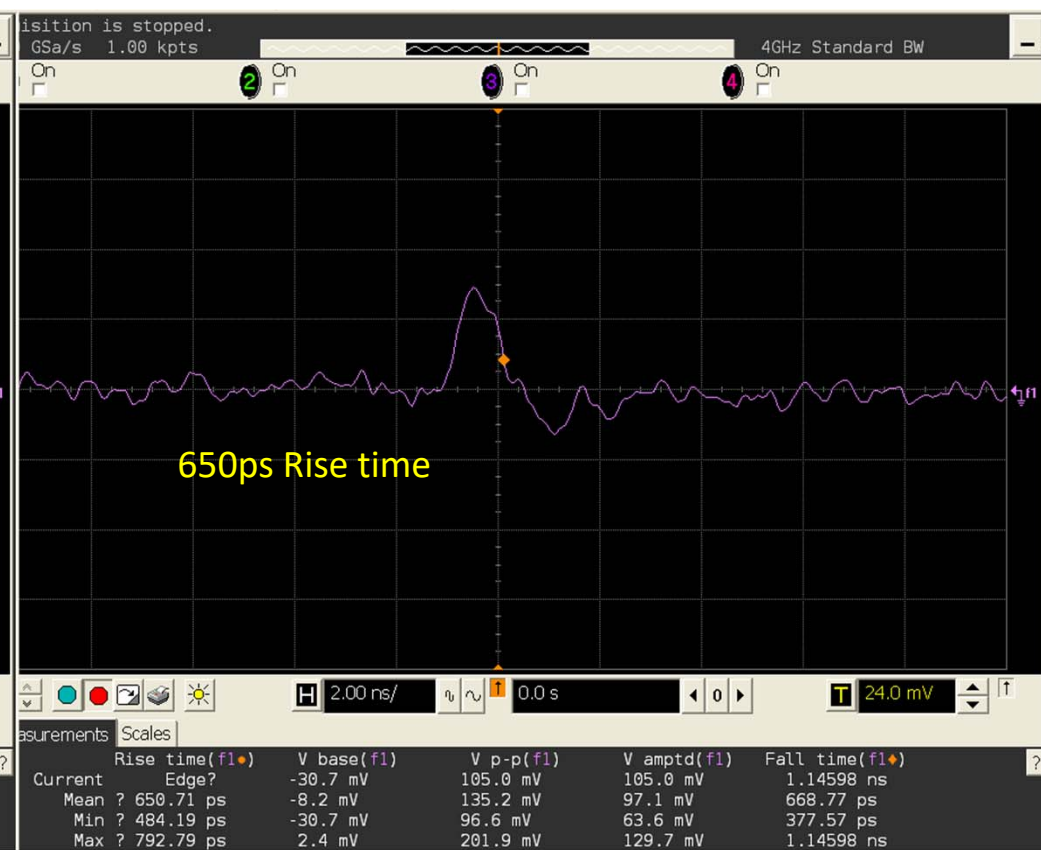
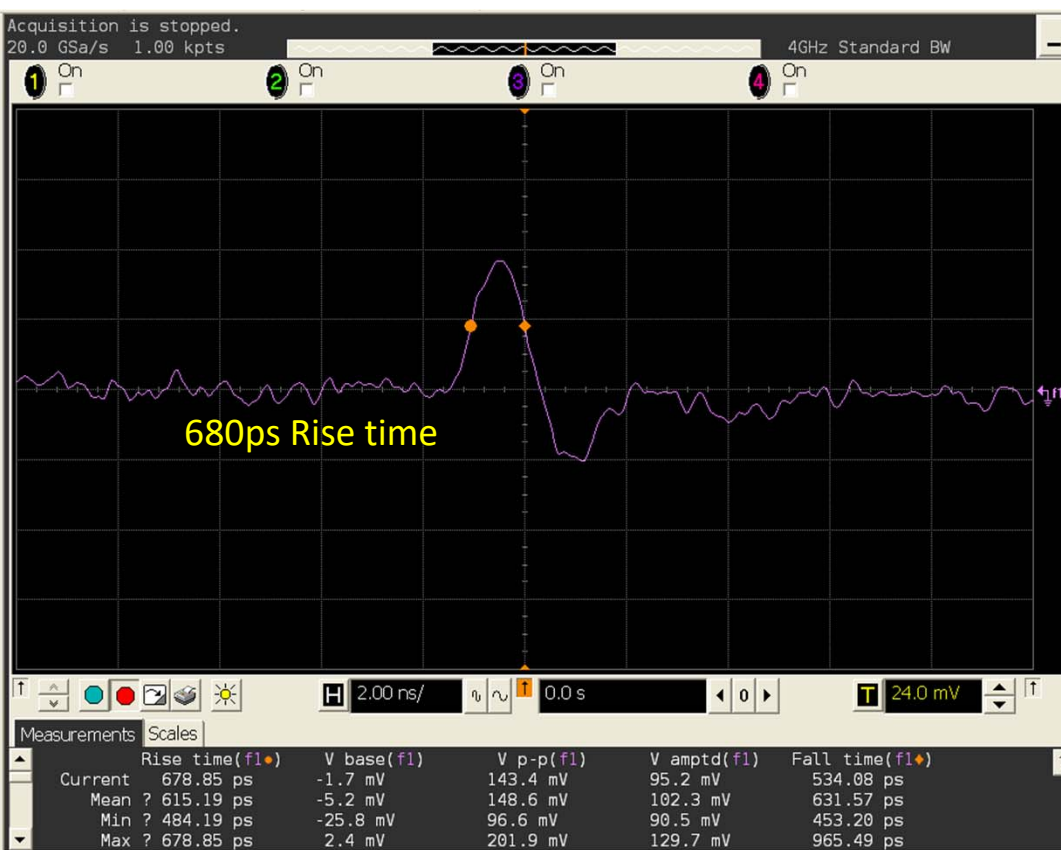
Effective APD gain $\sim 40?$ Charge sharing somewhere?

RMS noise 6.6mV typical Average 6.4mV

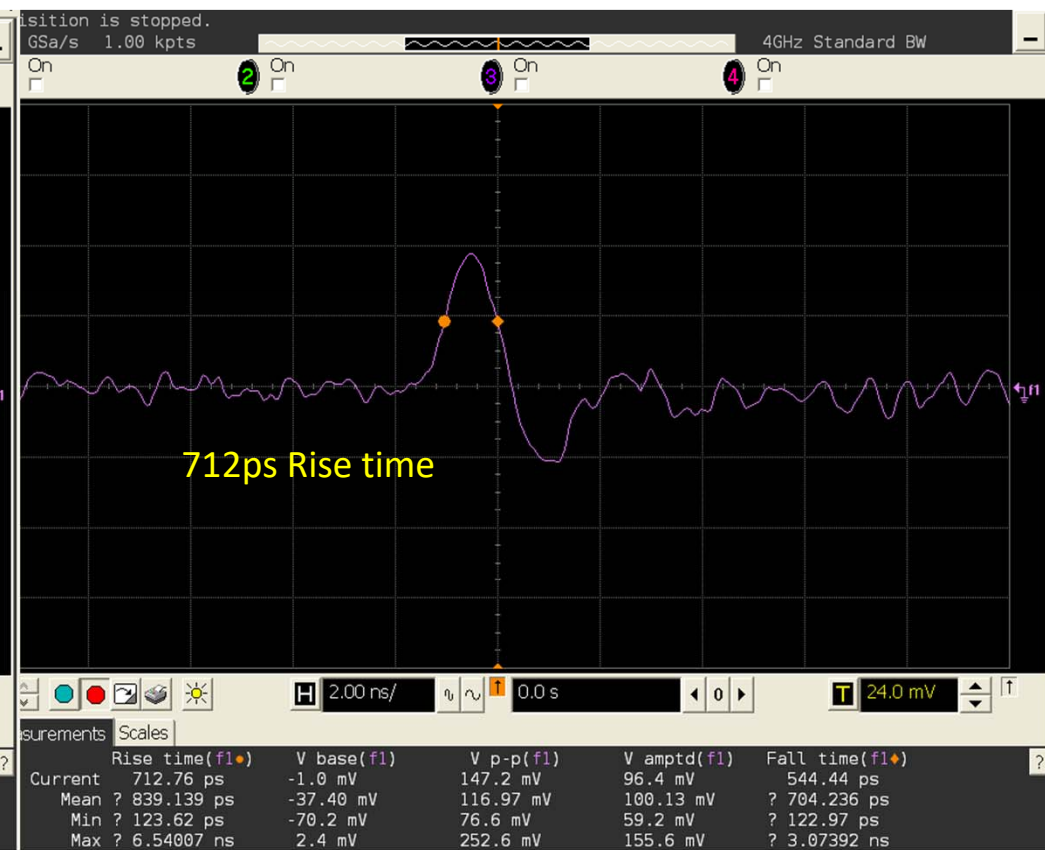
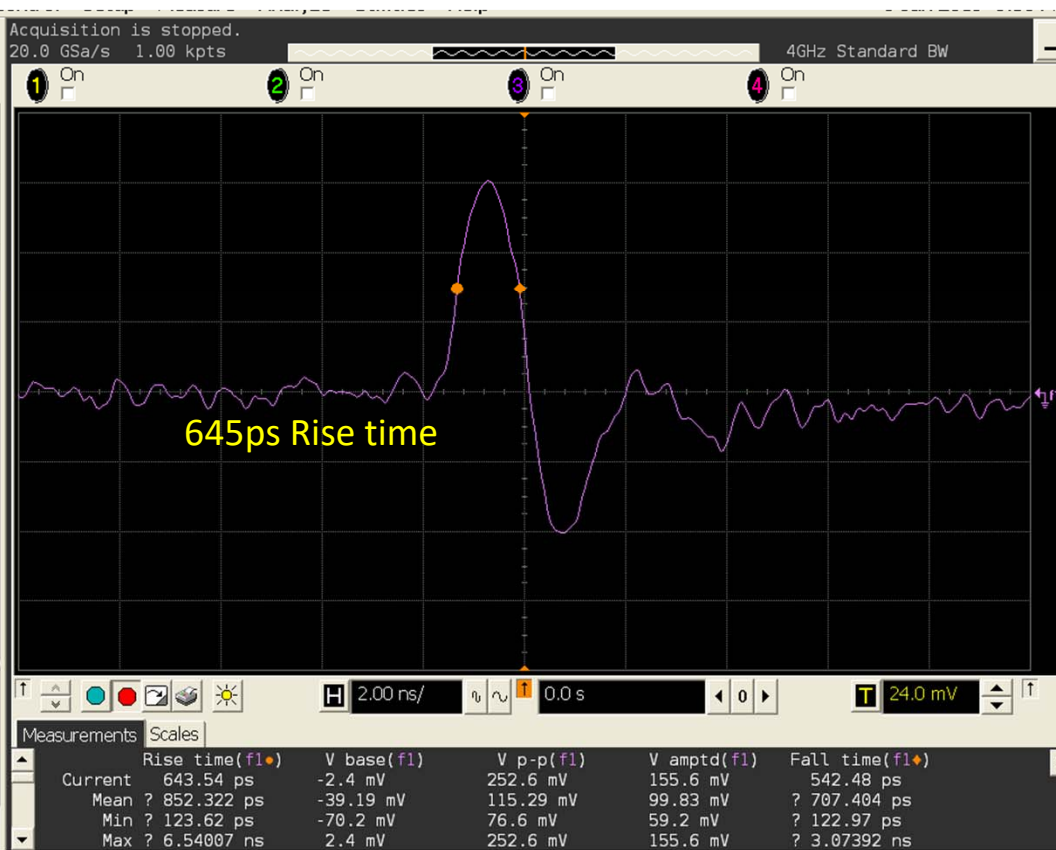
Differential Output (Ch1 – Ch2) 2ns X 50mV/box (probably scale is too coarse for accurate noise measurement)



Signals 2ns X 50mV differential / box



Signals 2ns X 50mV differential / box



Signals 2ns X 50mV differential / box

