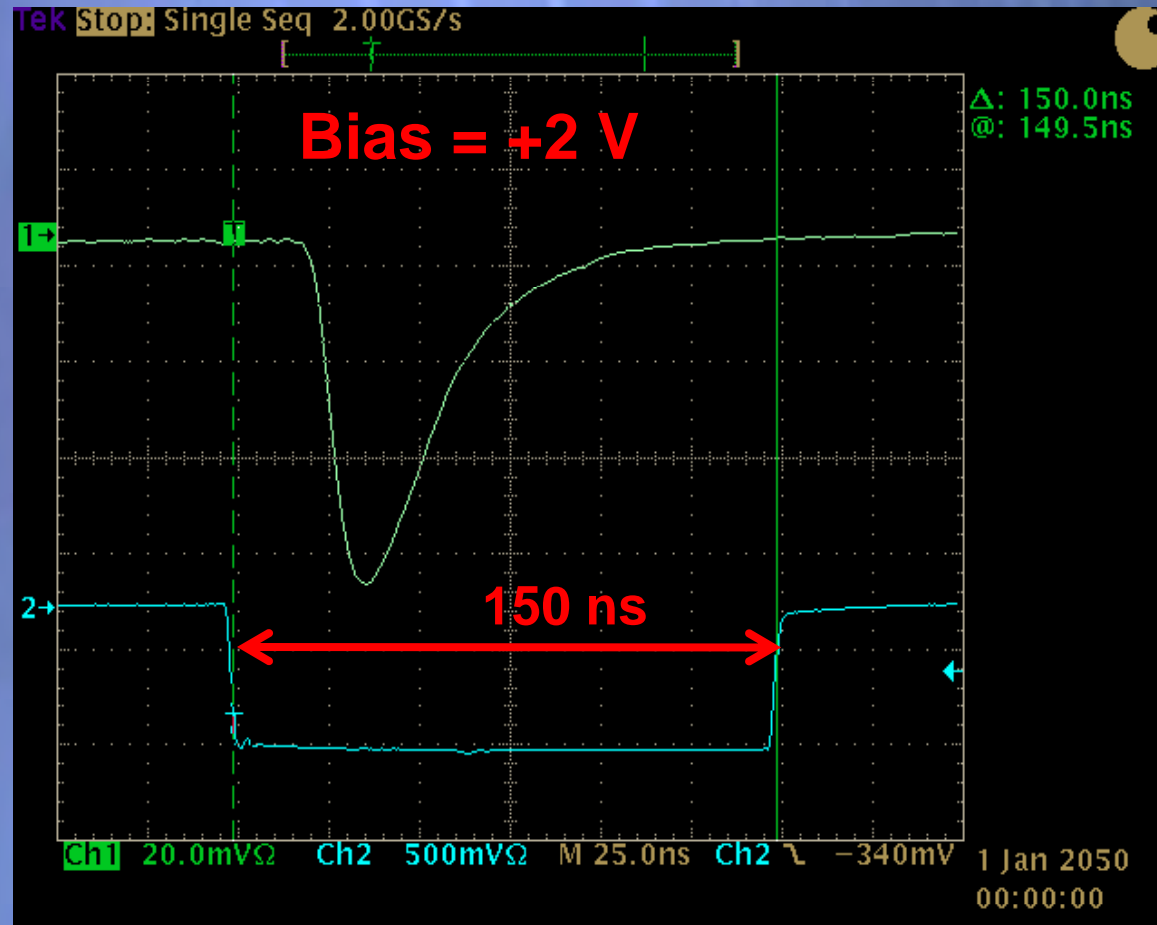


Some Results with new 1 mm² SiPM from SensL

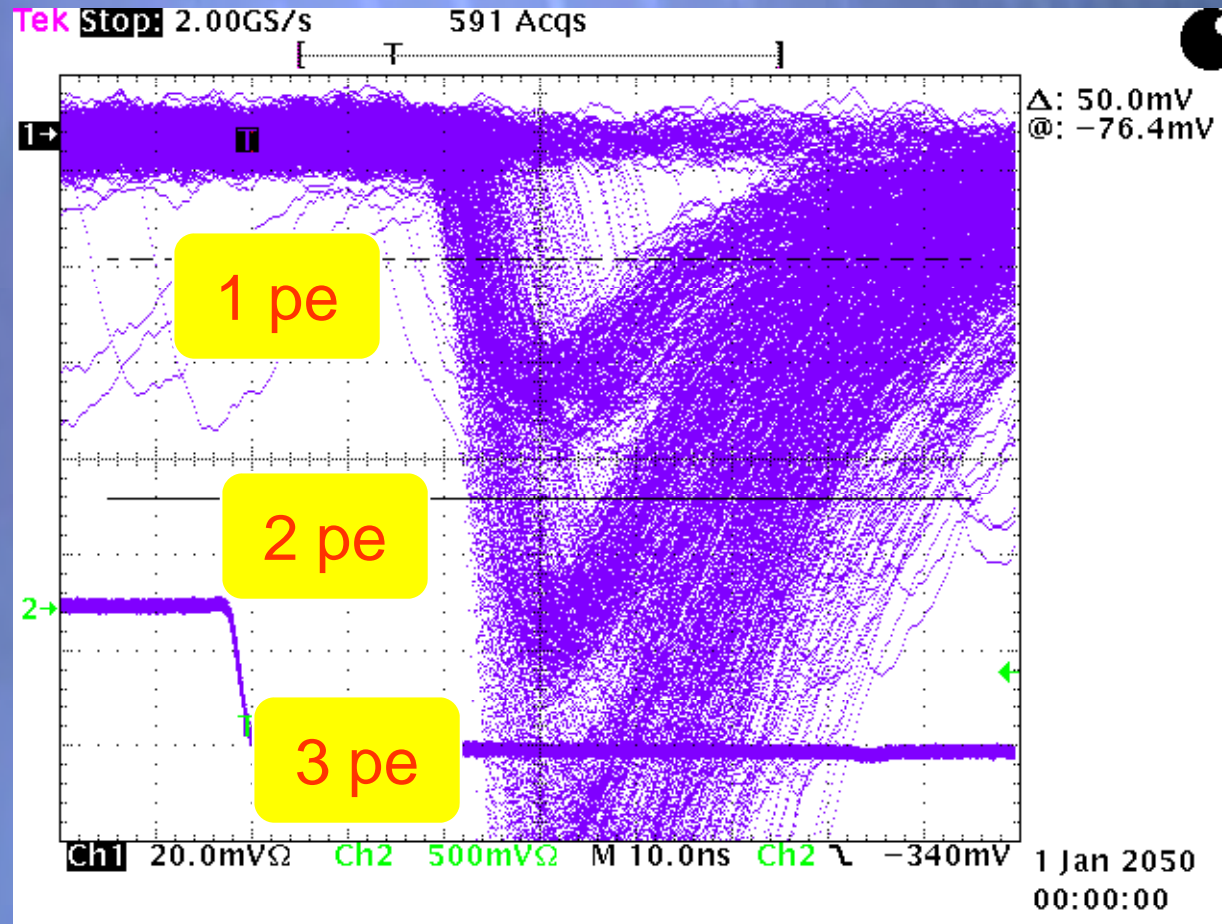
- Type A20H - 20 μm , 43% fill, ~ 1K pixels
- Trenched to decrease crosstalk
- This is our first room temperature sample that gives well-resolved photopeaks across a good range of bias voltages*
- Breakdown voltage - 28.1 volts (higher than previous)
- Dark current ~ 10 - 200 nA

Example pulse (includes internal x21 amplifier)

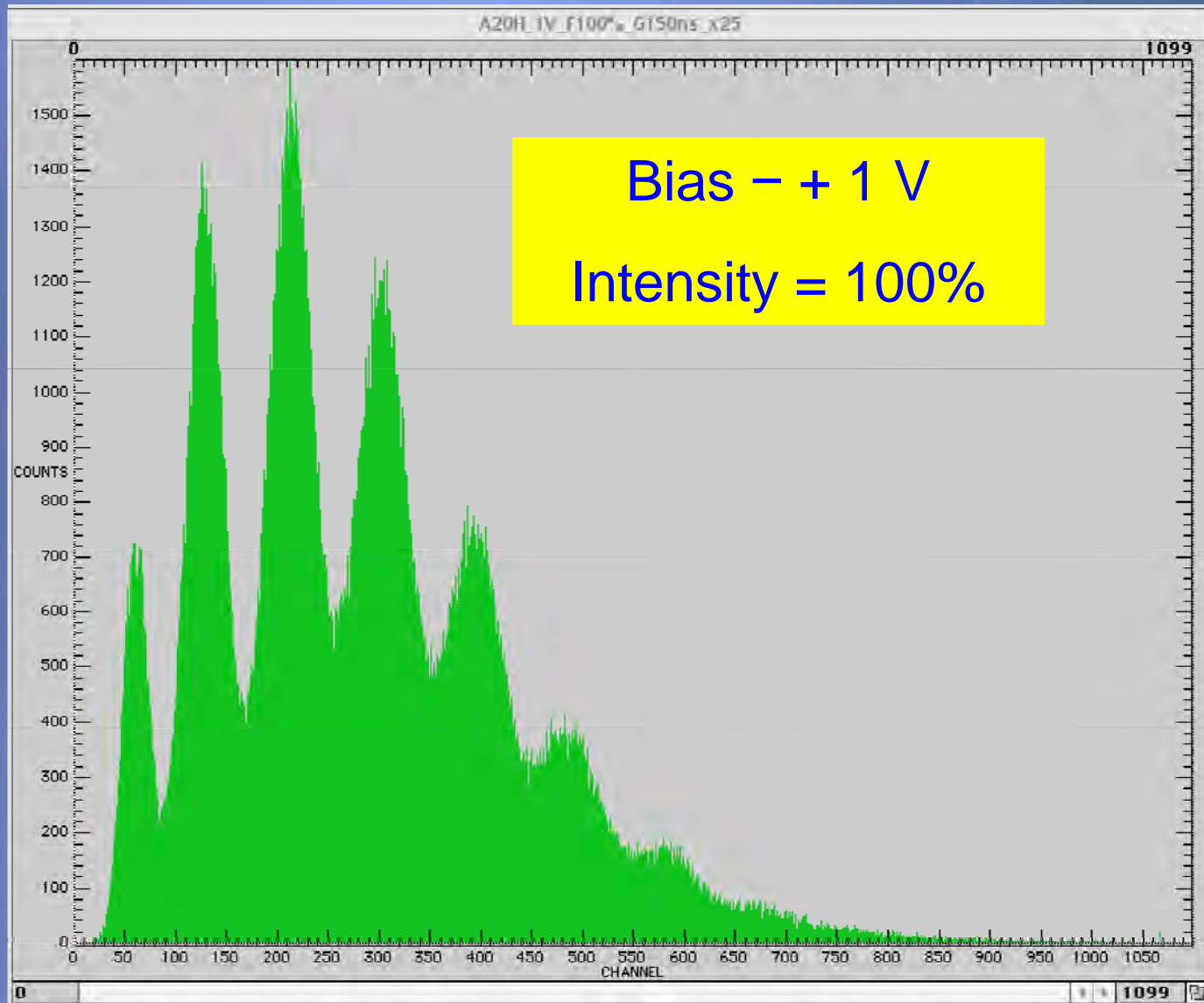
Average of 16 pulses

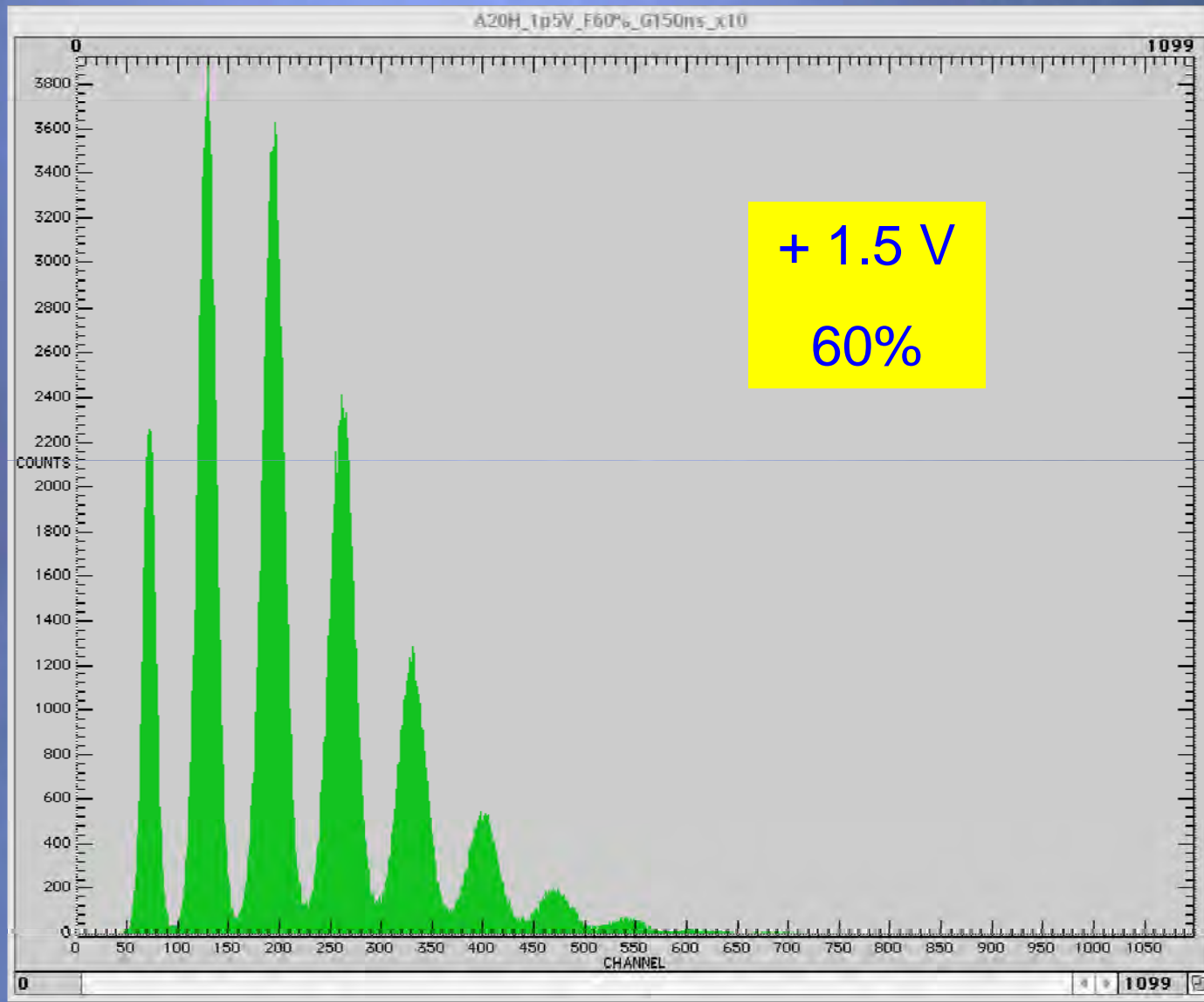


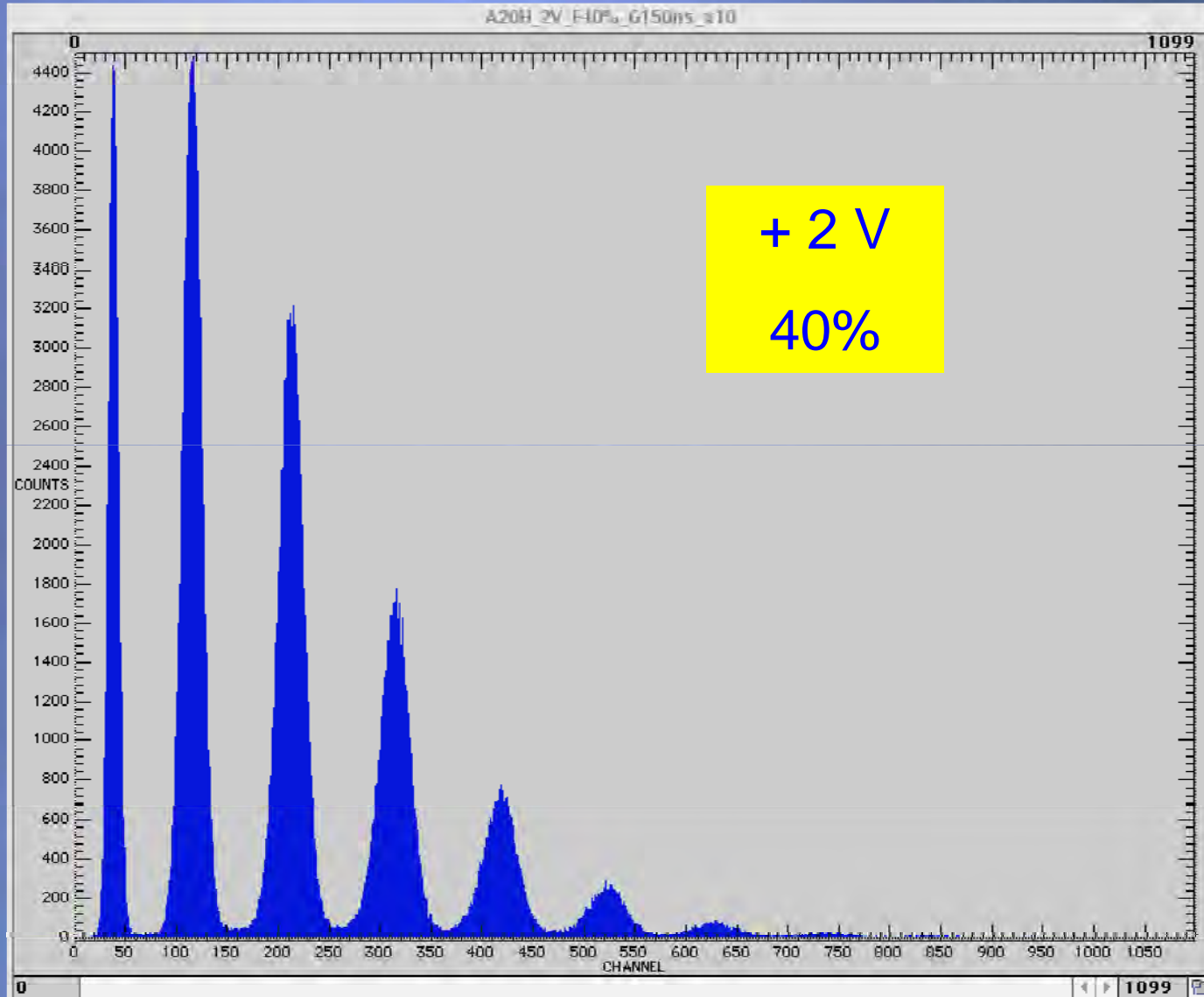
Pulses accumulated - note the resolved photopeaks

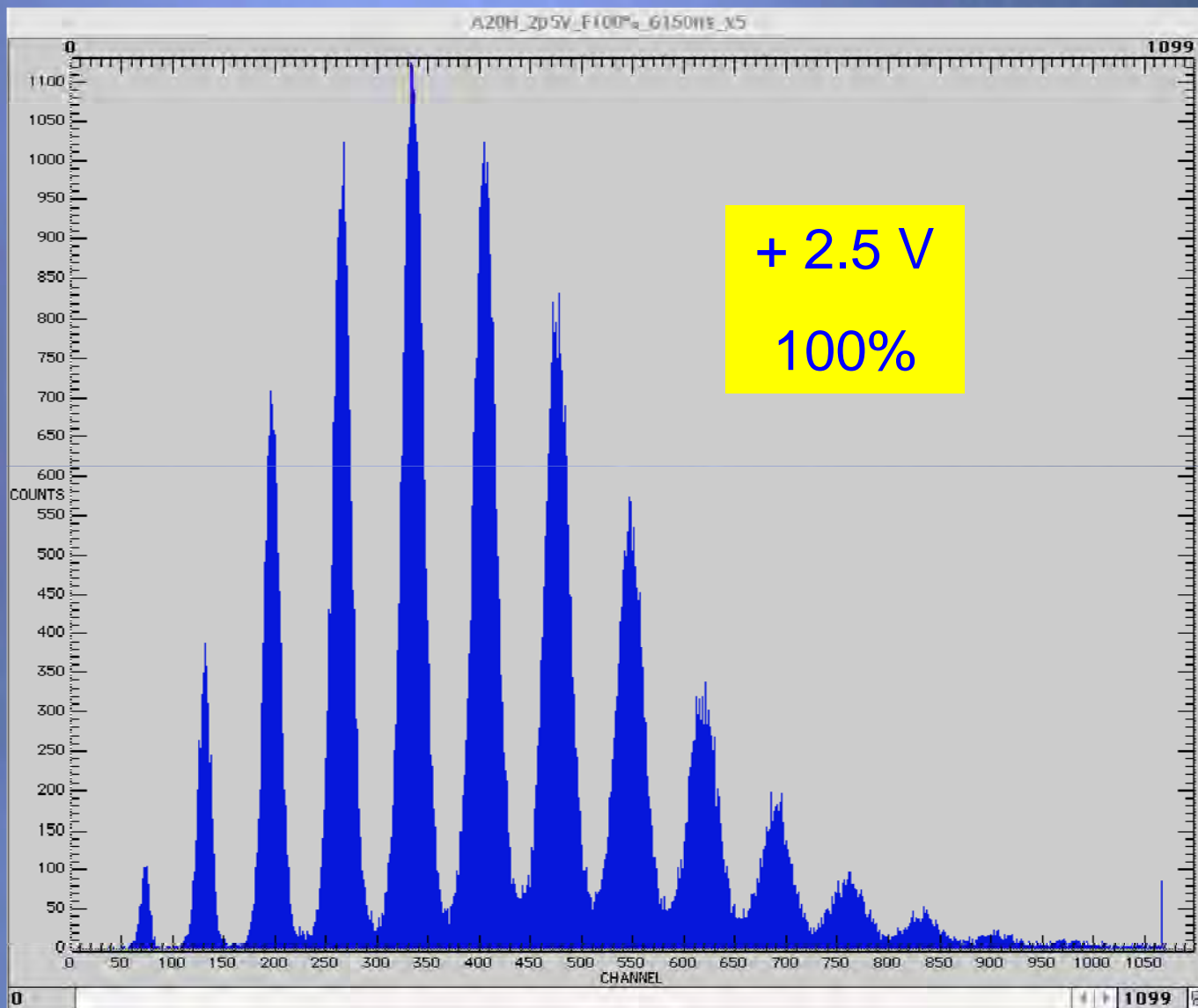


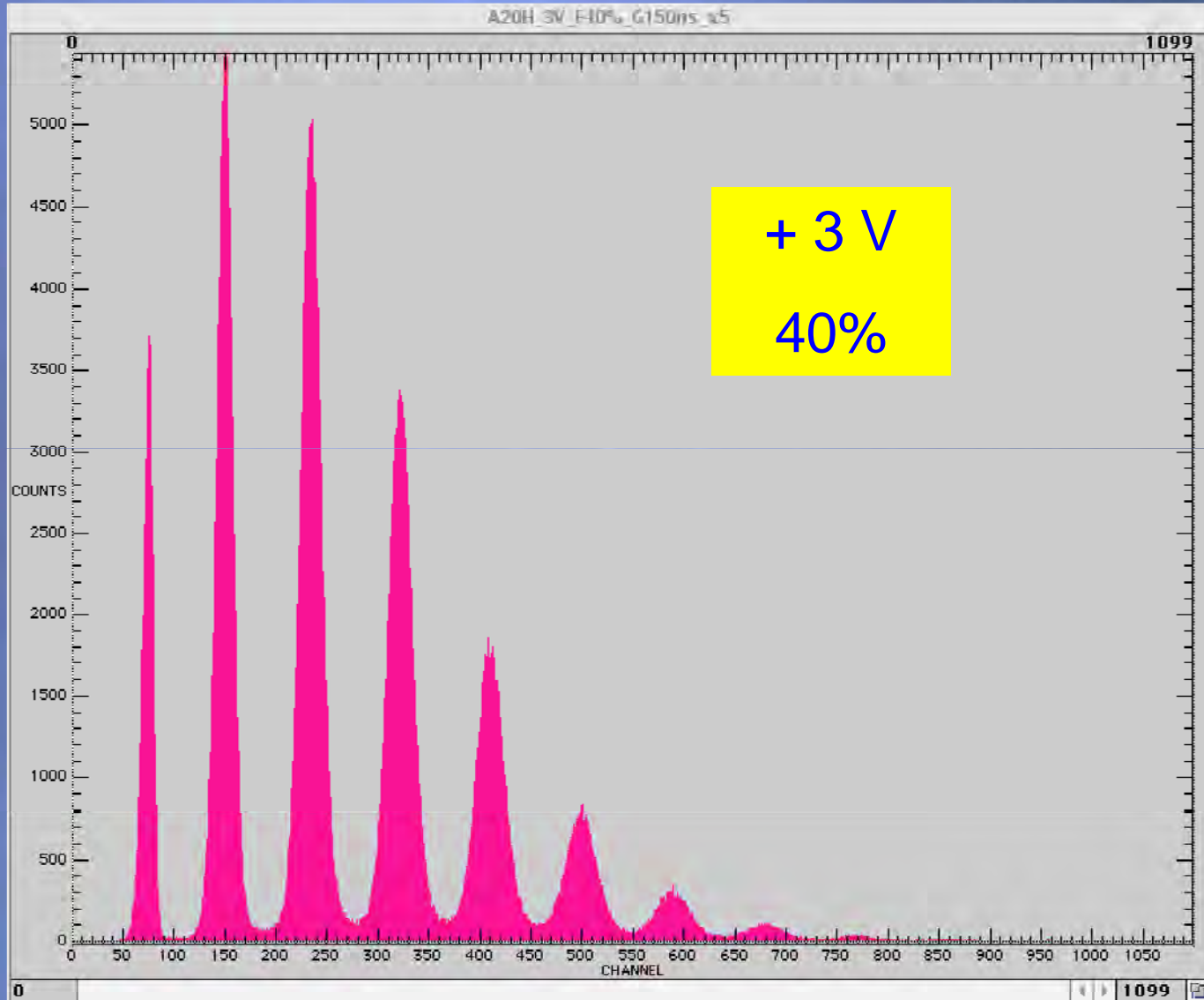
Some Example ADC spectra

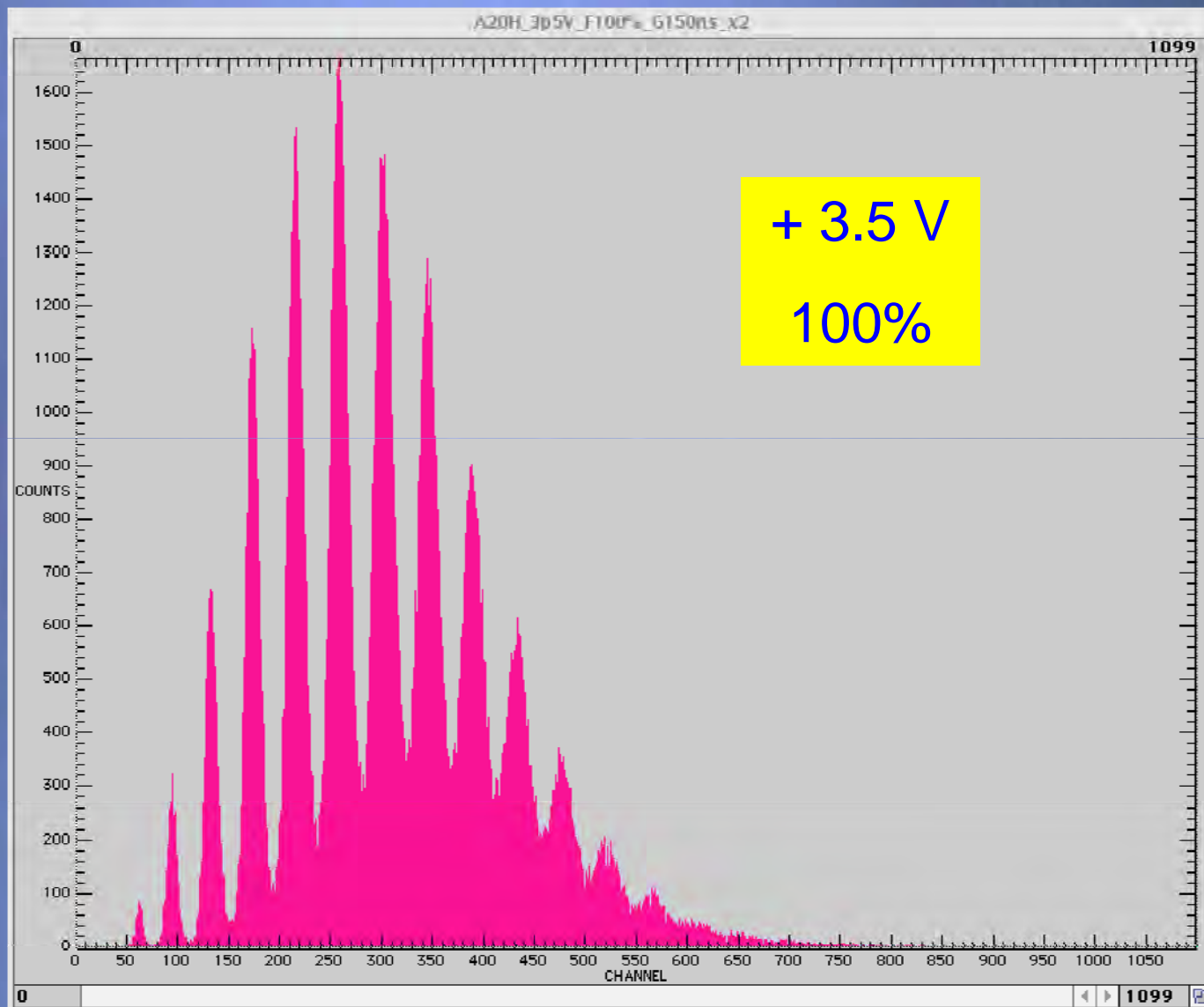




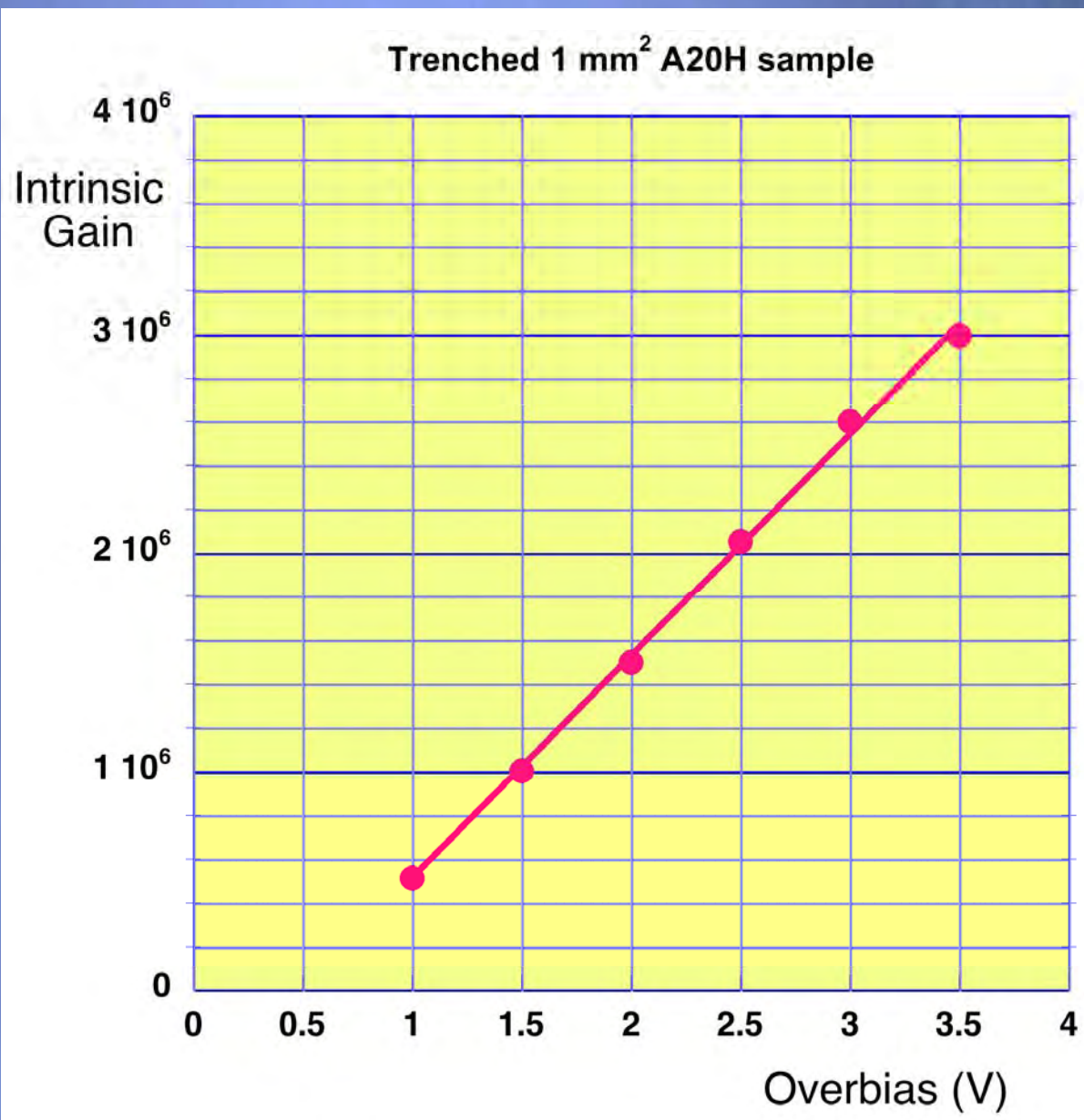




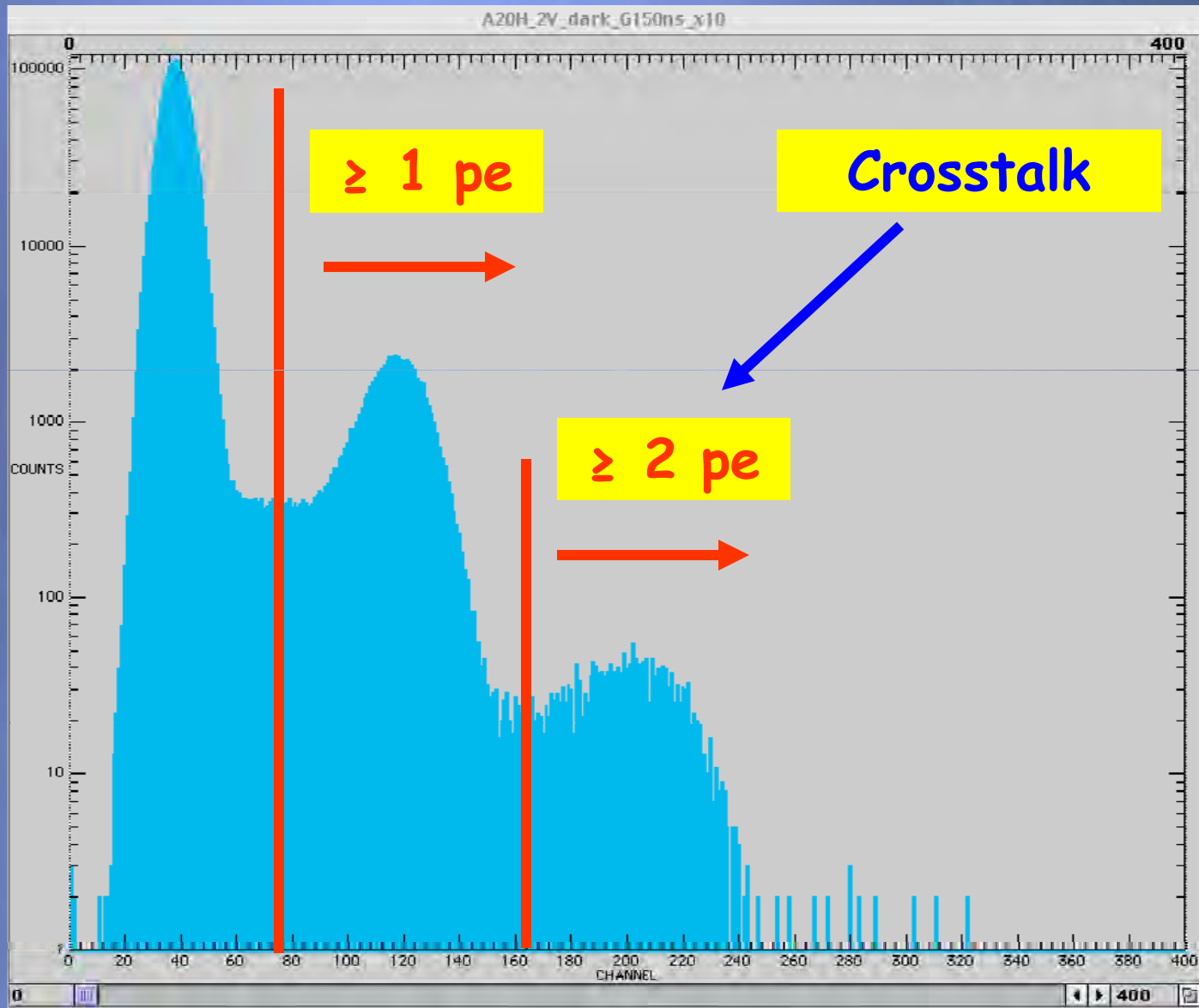




Intrinsic Gain



Dark Noise

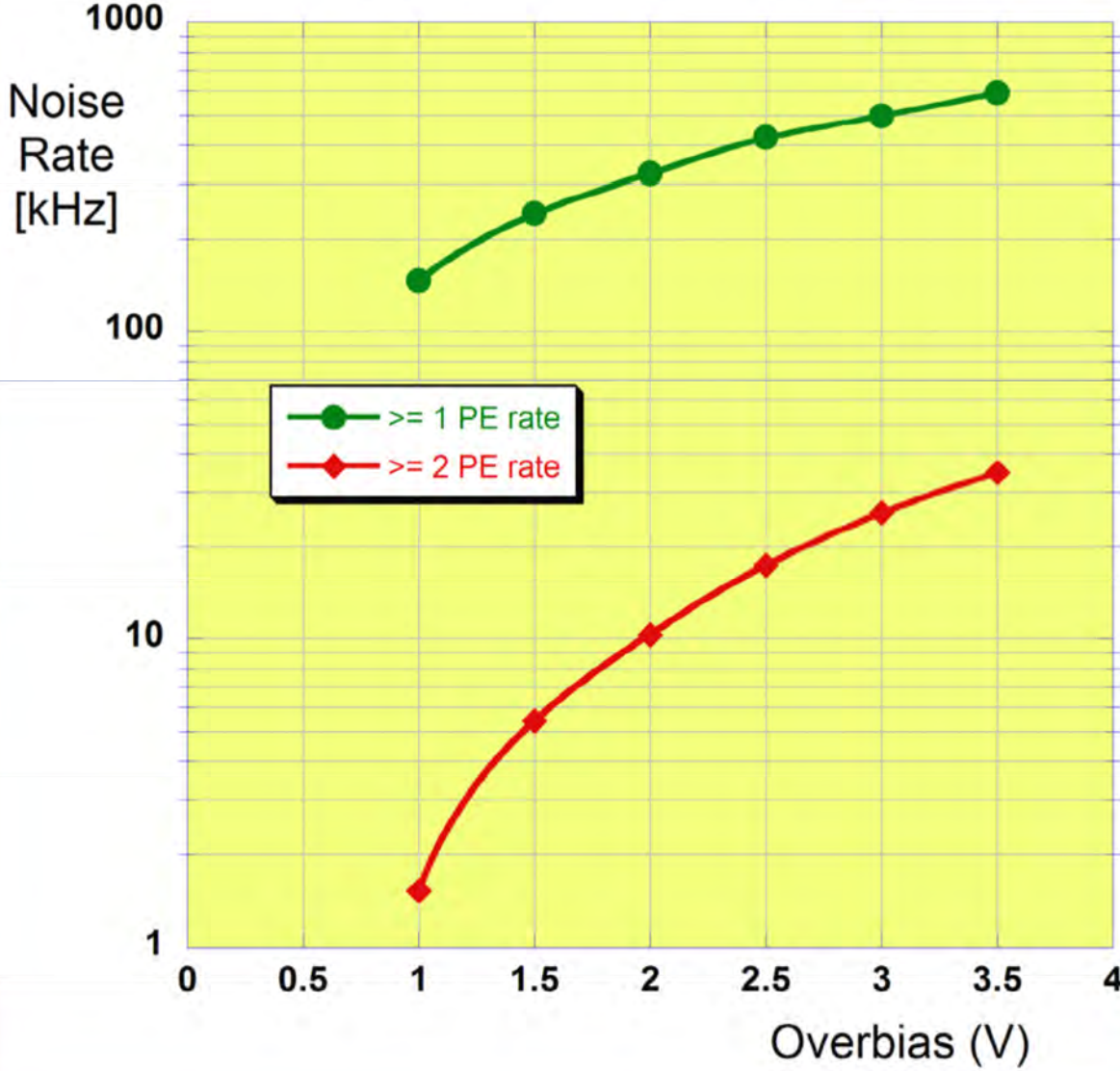


Noise Rates:

$$R(\geq 1) \text{ [kHz]} = \frac{N(\geq 1) / N_T}{\text{Gate (150 ns)}}$$

$$R(\geq 2) \text{ [kHz]} = \frac{N(\geq 2)}{N(\geq 1)} \times R(\geq 1)$$

Trenched 1 mm² A20H Noise Rates



Still to Come:

- PDE measurements
- Linearity Tests
- Long-term operational tests of 3x3 mm² A35H samples