

# Bench tests of LBL PMT

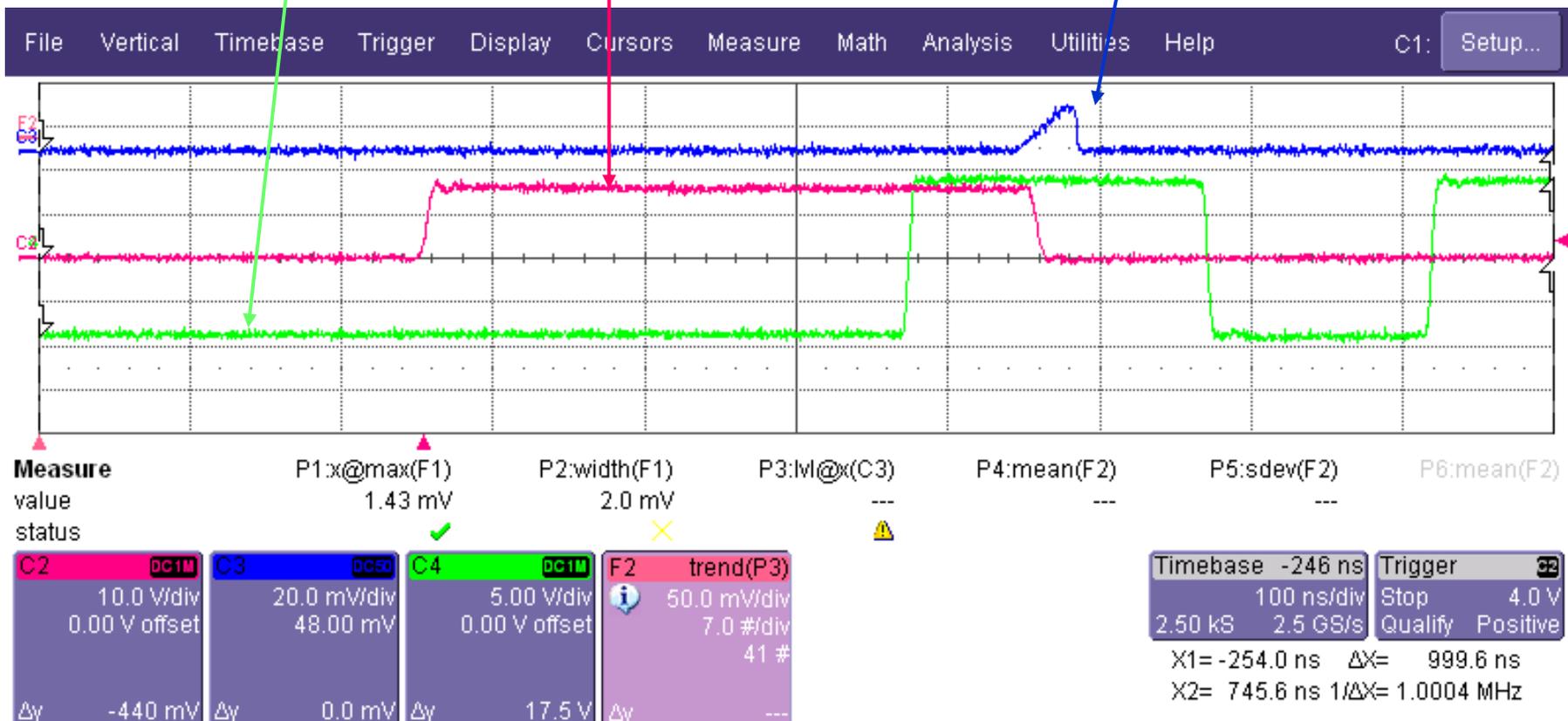
- Various pulsers and gate generators provide
  - 12 bunches and a gap (not precise TeV timing)
  - PMT gate
  - Integrator gate
  - Duty cycles (both skipped turns and overall supercycle)
- Fast integrator receives signal and sends to scope
- Scope measures pulse height distribution

# Bench Tests of LBL PMT

LED pulser simulating bunch

PMT gate

Output signal

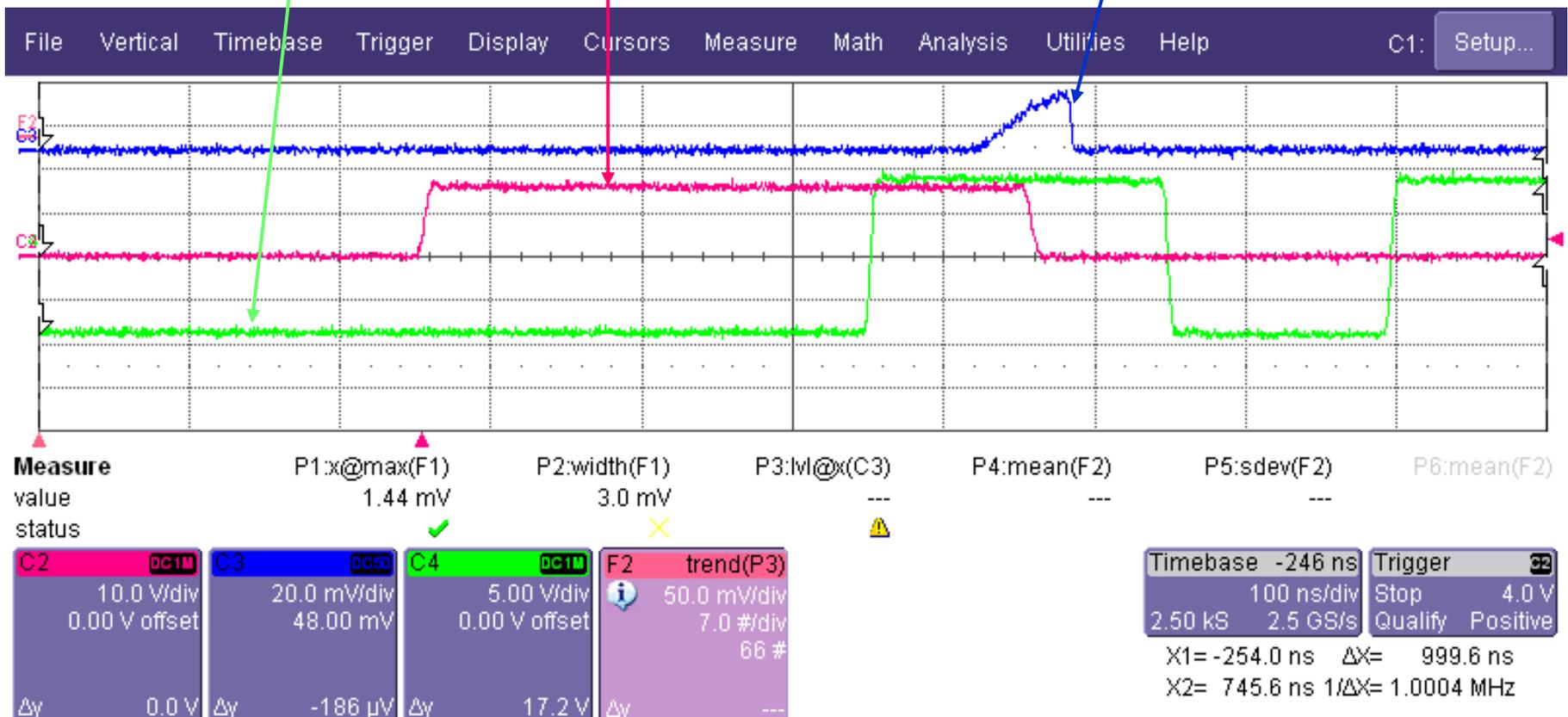


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PMT gate

Output signal

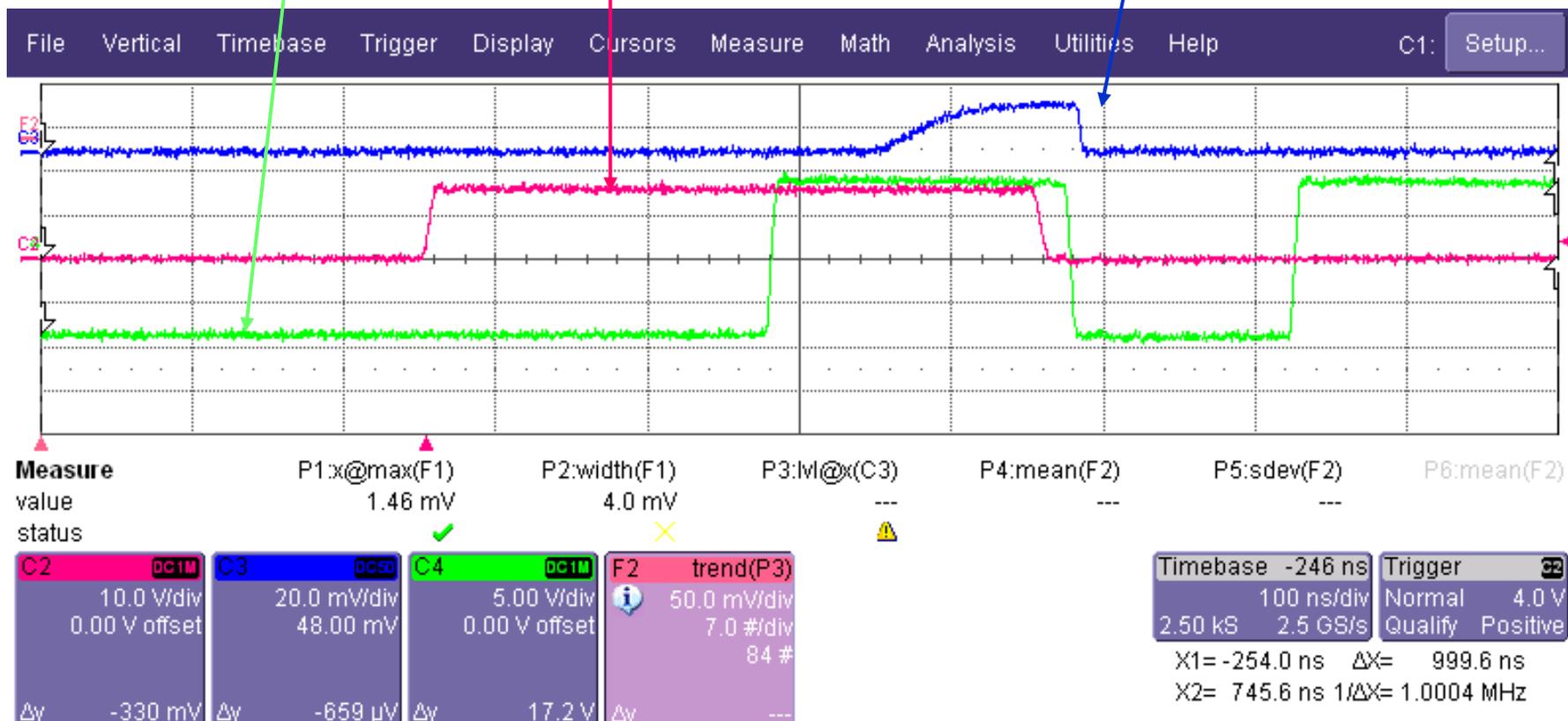


# Bench Tests of LBL PMT

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PMT gate

Output signal

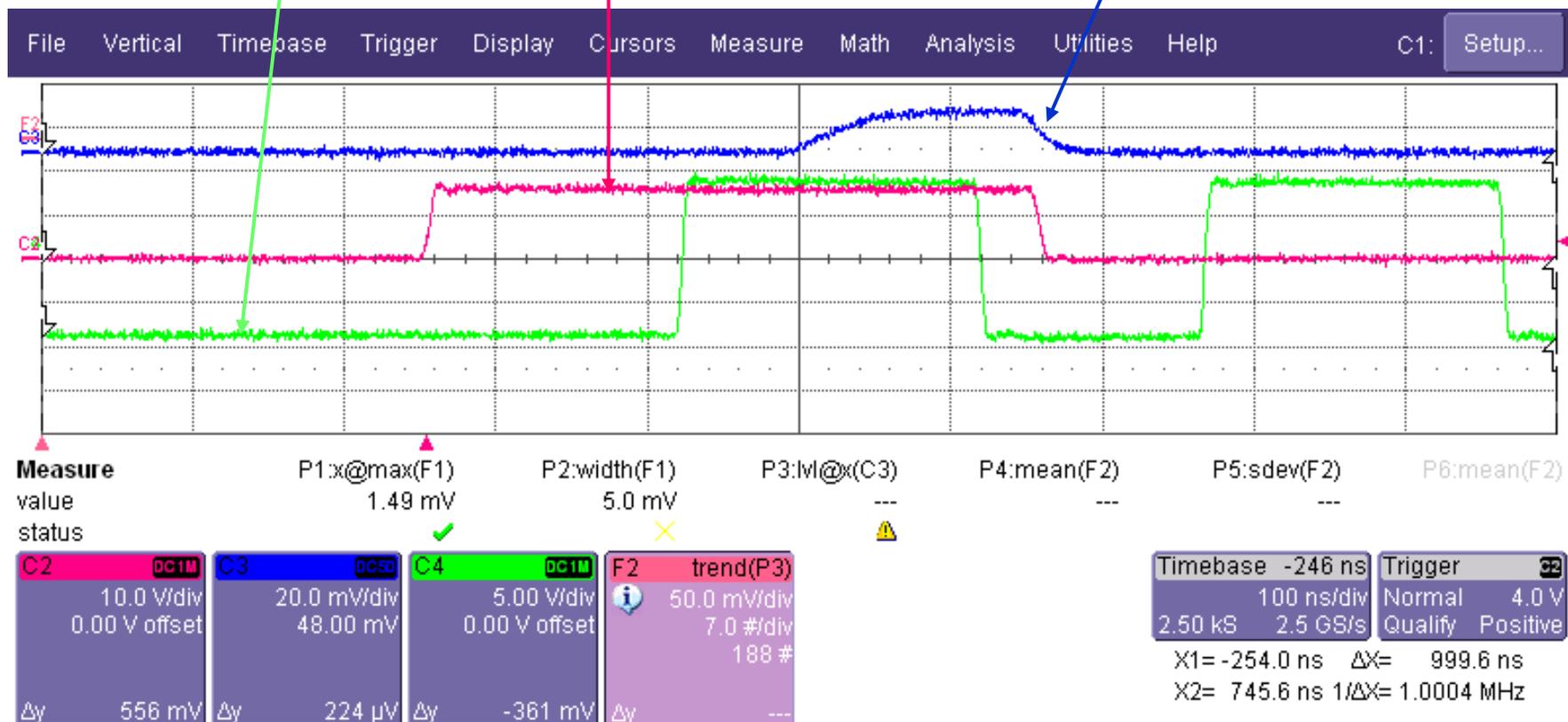


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PMT gate

Output signal

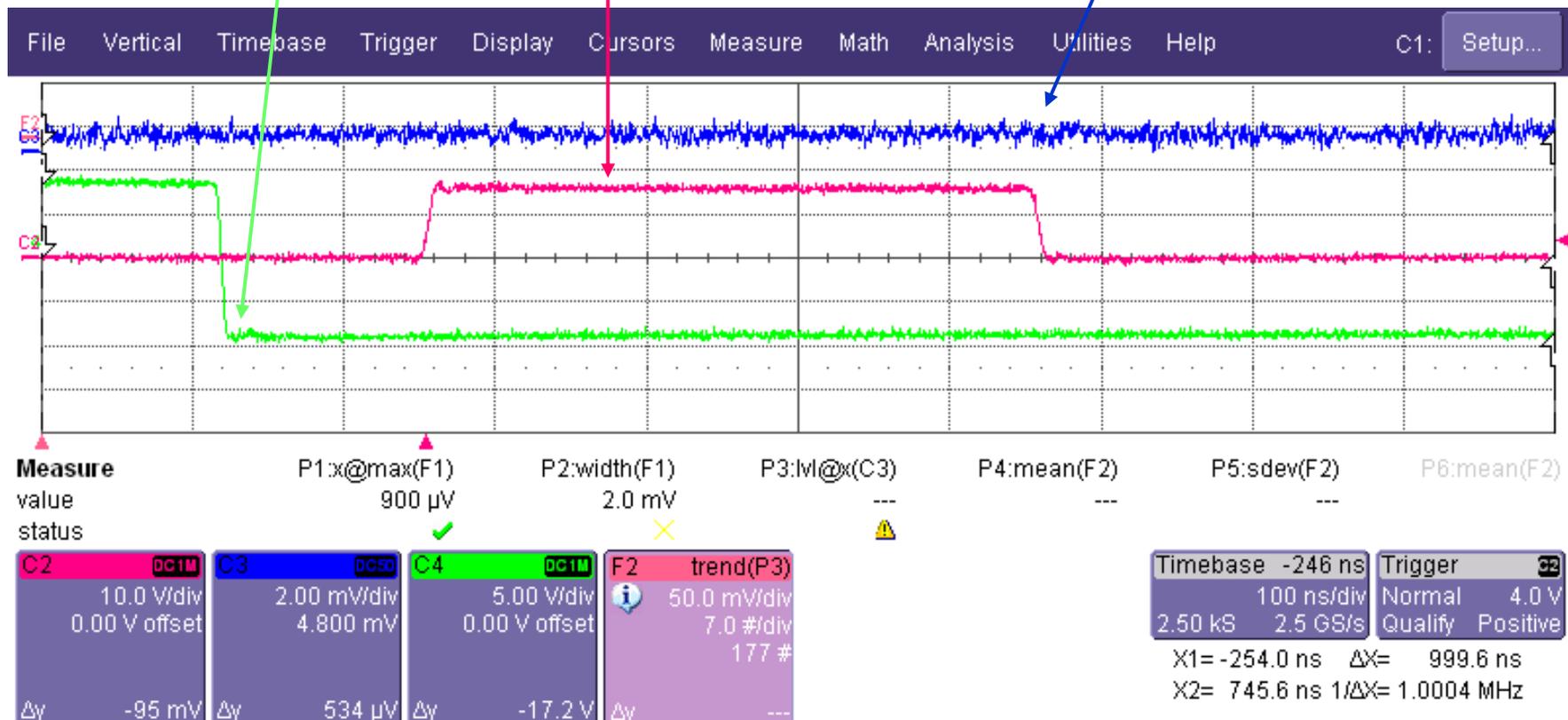


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PMT gate

Output signal

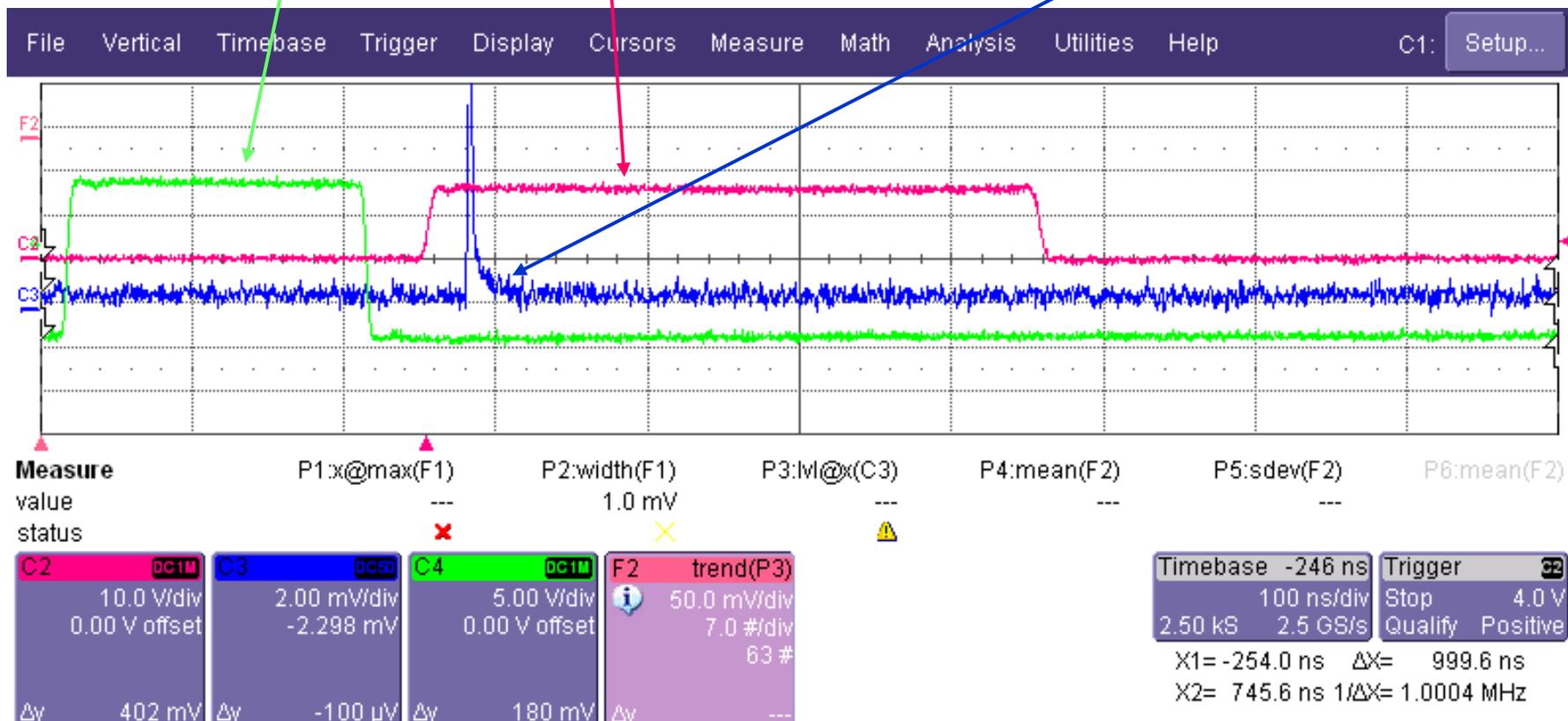


# Bench Tests of LBL PMT

LED pulser simulating bunch

PMT gate

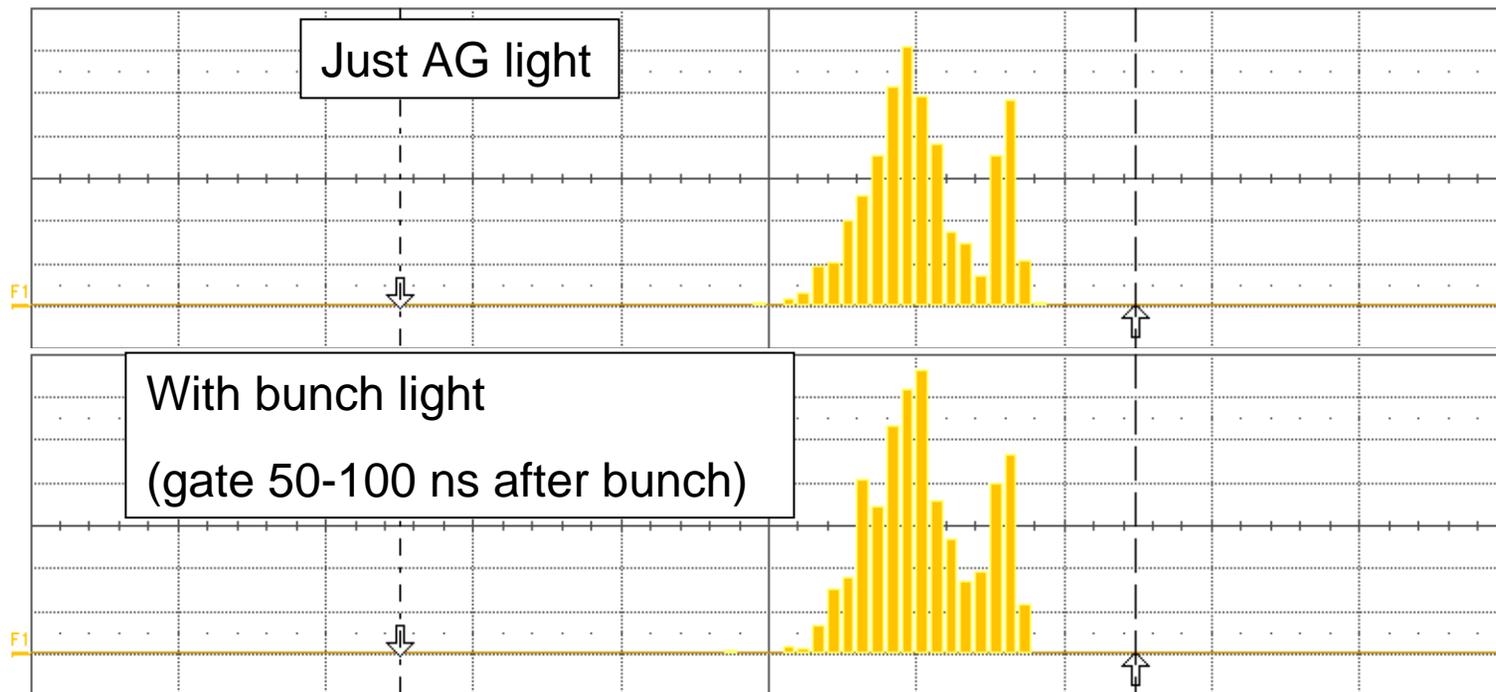
Output signal



# Bench Tests of LBL PMT

Pulse height distributions (w/background)

- Bunch is  $\sim 1.6 \times 10^5$  photoelectrons ( $5 \times 10^4$  actual)
- AG is  $\sim 14$  photoelectrons / 200ns ( $\sim 10X >$  actual)
- Gain of PMT is  $\sim 5 \times 10^5$  at 3347 V (3400 MAX)
  - Expect  $10^6$  (pulse height / duty cycle problems??)



# Bench Tests of LBL PMT

Seems to work well, but gain is maybe a bit low?

Need to build mount for existing PMT connection

Put it in the tunnel