Updates on MaPMT test

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V792 calibration

• Strategy:
  – Input signal (Generator: WaveTek 80)
  – Signal frequency: 1HZ
  – V792 gate: 1KHz, gate width = 200ns (fixed)

• Pedestal and signal peak can be taken in one spectrum
A typical spectrum (10mv input)

Event Number

Pedestal peak

Signal peak

Entries 353277
Mean 258.9
RMS 167

ADC counts
Q = a \times (\text{Mean}\_\text{signal} - \text{Mean}\_\text{pedestal}) + b

a = 1.125967 \times 10^2

b = 5.766992 \times 10^2

Charge (\text{fC})

Residual ADC counts
H8500 signal with LED light
---fiber: scsf81MJ  length=2m  φ=1mm

Reflection is very strong!!!
Possible reason for reflection: readout cable on PMT side

Carl has “PMT socket” $\leftrightarrow$ “BNC” cable, all 64 channels are grouped together 64 channels $\rightarrow$ 1 cable
To-do list

• Solve the reflection
• HV scan and determine a “low gain” voltage
  – See the first signal on scope at -700V (gain: 1e5 in manual)
• Uniformity test
  – A 64 channels to 64 channels (PMT side) cable should be made
• Cross talk measurement
  – Rakitha is now calibrating 2D table: steps → mm
Carl’s cable for PMT side