INFN
Istituto Nazionale
di Fisica Nucleare

Test DPP-CI firmware

A. Rossi

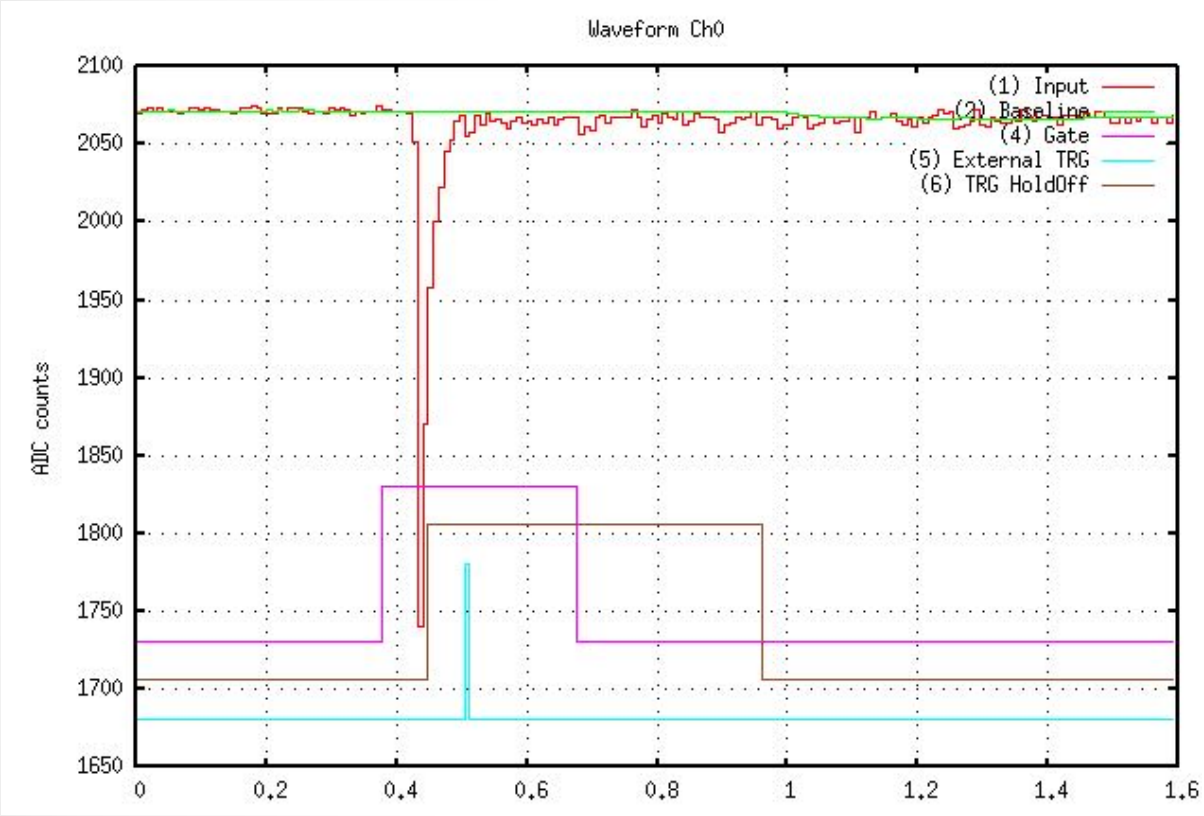
Setup

- 1 CsI(pure) crystal [Optomaterials]
- 1 Hamamatsu PMT with UV enhanced cathode

- Self-trigger on PMT signal
  - Firmware is valid for 30min with external scintillator the rate is too low

- DAQ
  - V1718 VME USB bridge
  - V1720 digitizer with DPP-CI firmware
- Used tools
  - CAEN Firmware Upgrader
  - CAEN DPP-CI software control

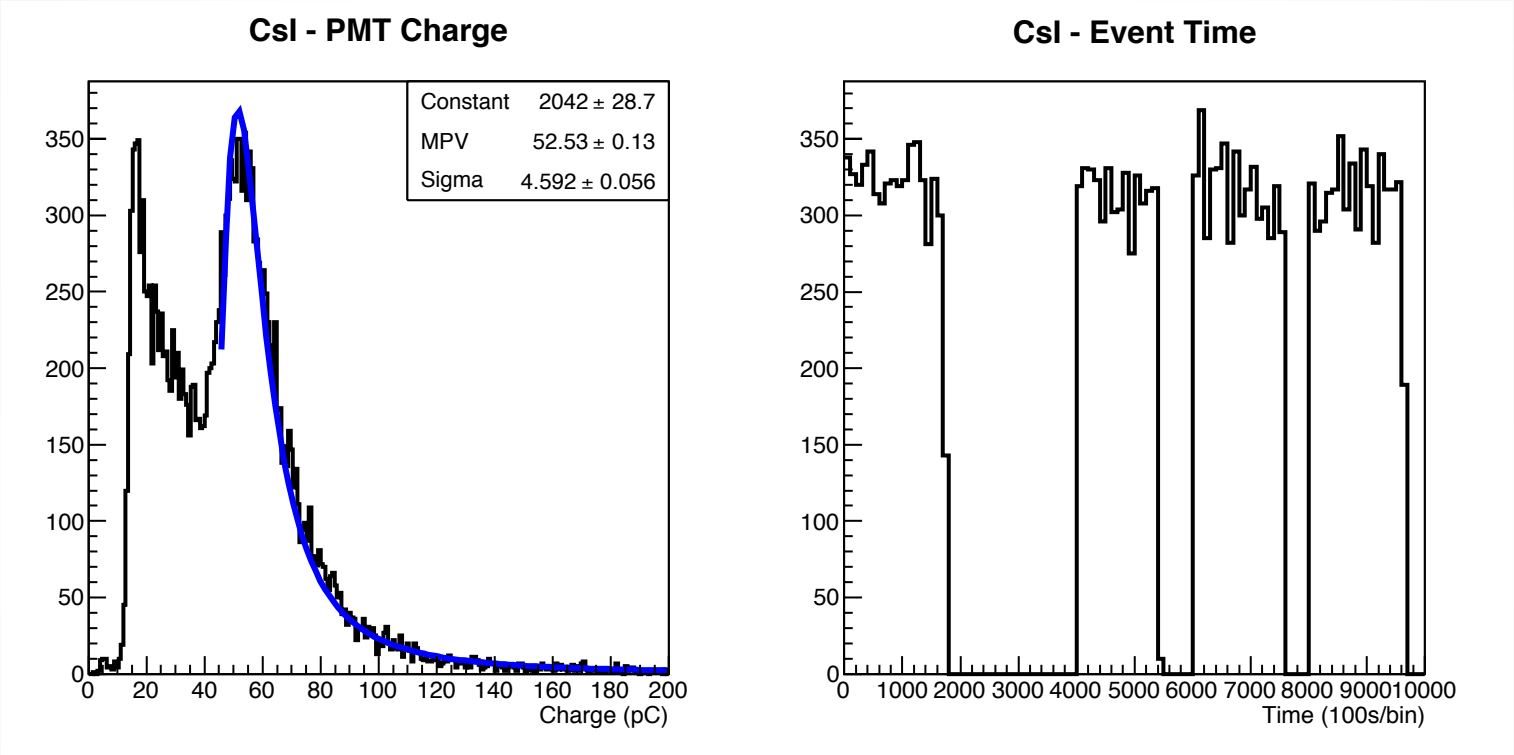
SetUp DPP



- Baseline evaluation
  - 32 CLK = 128ns
- Integration Gate
  - 300ns
- Trigger HoldOff
  - 512ns
- Other parameter
  - PreTrigger 500ns
  - GateOffset 120ns

- 4 Different ADC scale (16bit)
  - **40fc/LSB (used)**
  - 160fc/LSB
  - 640fc/LSB
  - 2560fc/LSB

Some results



- Only two value are saved
  - Charge integral (16bit word)
  - Trigger time (32bit word)
    - number of CLK from the board switch on

Some considerations

- Data are transmitted from board to PC every 64 events
  - Digitizers have an internal buffer, the dimension (# of trg) of the packet send to PC depends on the number of channels used
- At the moment I'm using the CAEN software but an if we need an implementation with the BEAST DAQ we have to implement some stand alone function (based on VMElib)
  - We have to do this or this part will be done by Canadians?