

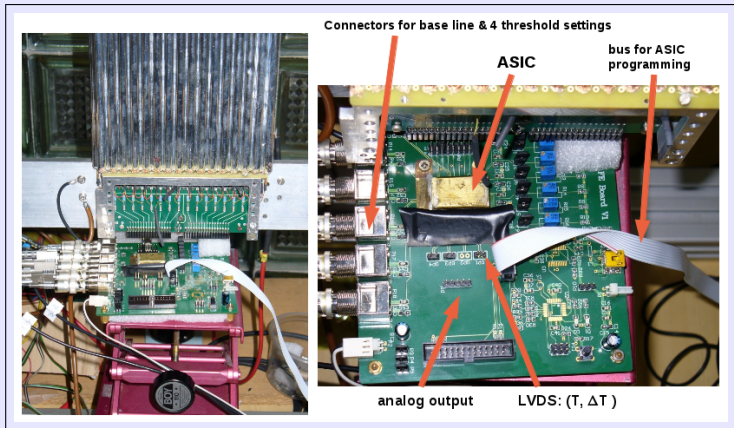
Test results FEE-TRB in Krakow

Paweł Strzempek

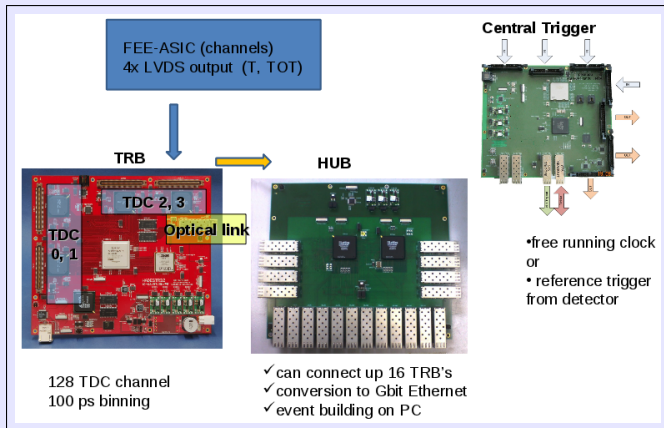
Jagiellonian University

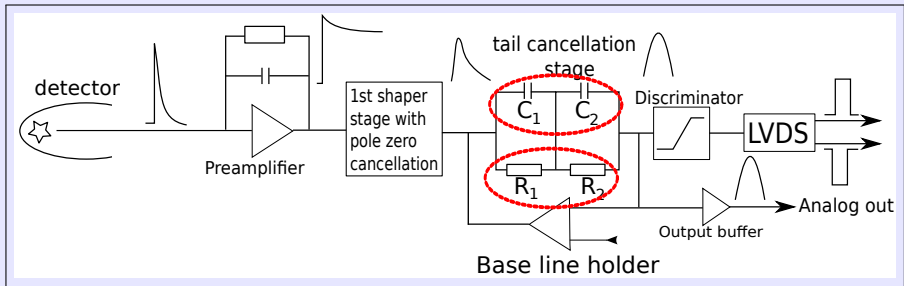
13 December 2011

Setup

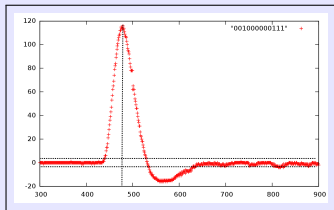


Setup part 2



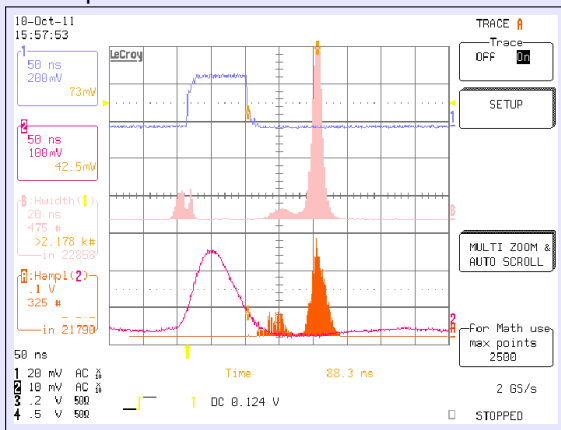


- Threshold 1.28 V,
base line 1.20 V
- Tail cancellation
 $Rt_1 = 31k\Omega$; $Rt_2 = 11k\Omega$; $Ct_1 = 6pF$; $Ct_2 = 1.2pF$



Oscilloscope spectra

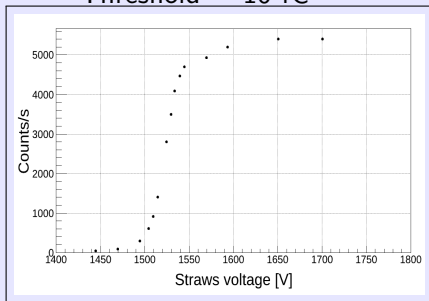
First two spectra taken after connection of the set-up.



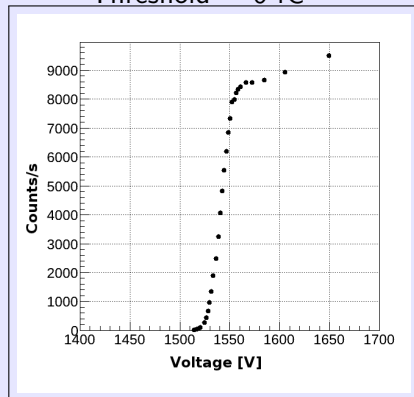
^{55}Fe source (2.9 and 5.8keV)

Platou measurement with ^{55}Fe

Threshold ~ 10 fC

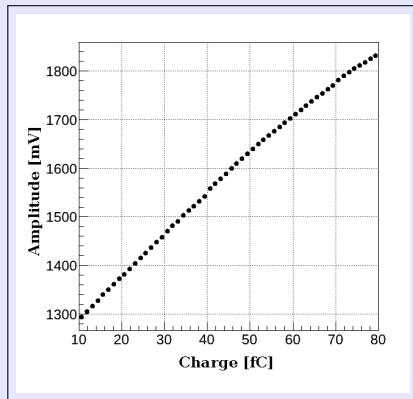
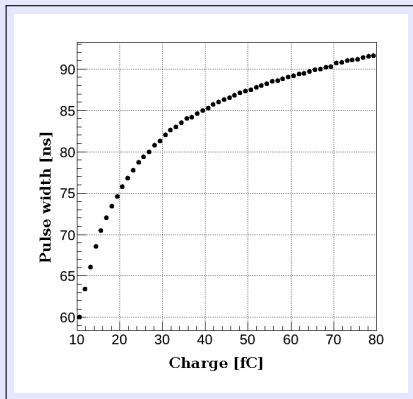


Threshold ~ 6 fC

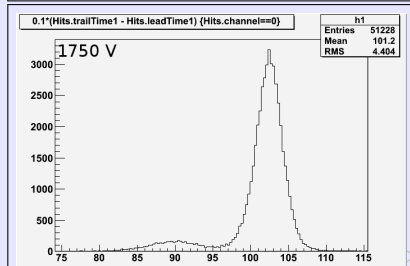
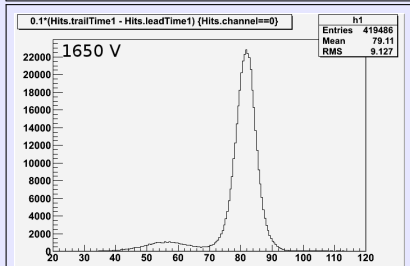
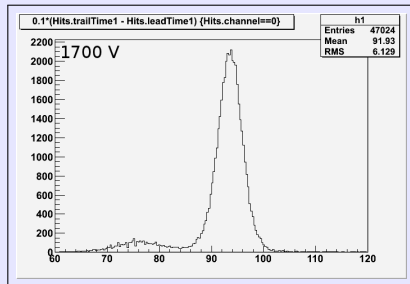
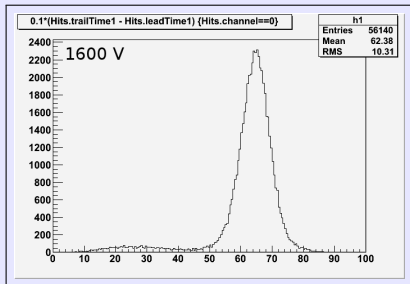


Amplitude and TOT vs. charge - characteristics

Characteristics measured with delta like pulse obtained from voltage step injected into capacitor.



TOT spectra with ^{55}Fe



Searching for the best ASIC's setting

Control word consist of 25 bits.
12 of them are responsible for
tail cancellation. It gives 4096
possibilities.

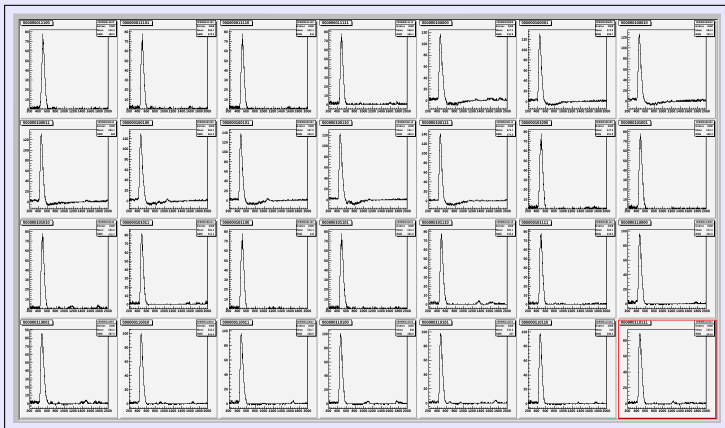
Procedure:

- ^{55}Fe source was used;
- signal averaged over 50
acquisitions in digital scope for
each setting of ASIC;
- digitalized pulse stored for
later analysis;

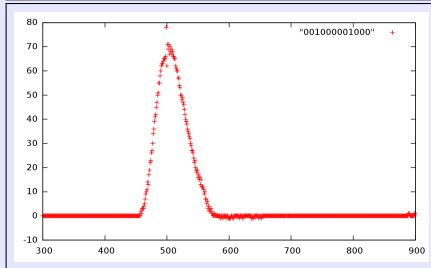
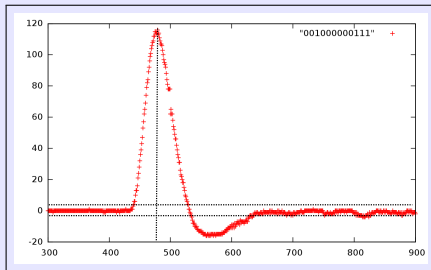


Searching for the best ASIC's setting - example

Each graph represents one of 4096 settings available.



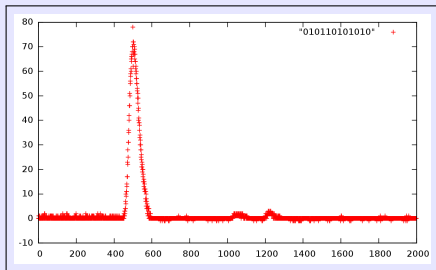
Examples of spectra observed



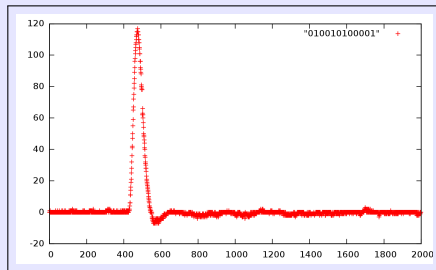
Pulse characteristics:

- rise time
- falling time
- max amplitude
- amplitude of undershoot
- total duration of the pulse

Amplitude and TOT vs. charge - characteristics



Pulses without undershoot -
around one hundred
configurations give similar
pulses.



Pulses with undershoot but
higher amplitude - several
other configurations give
similar pulses.

Final results are still to be obtained. However we are close to find optimal configuration.

Thank you!

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