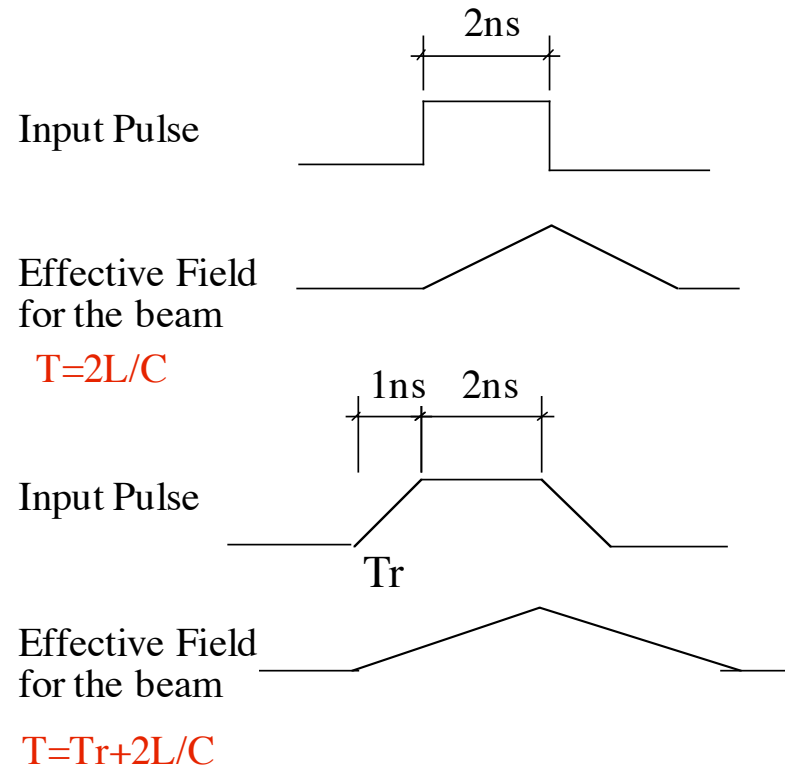
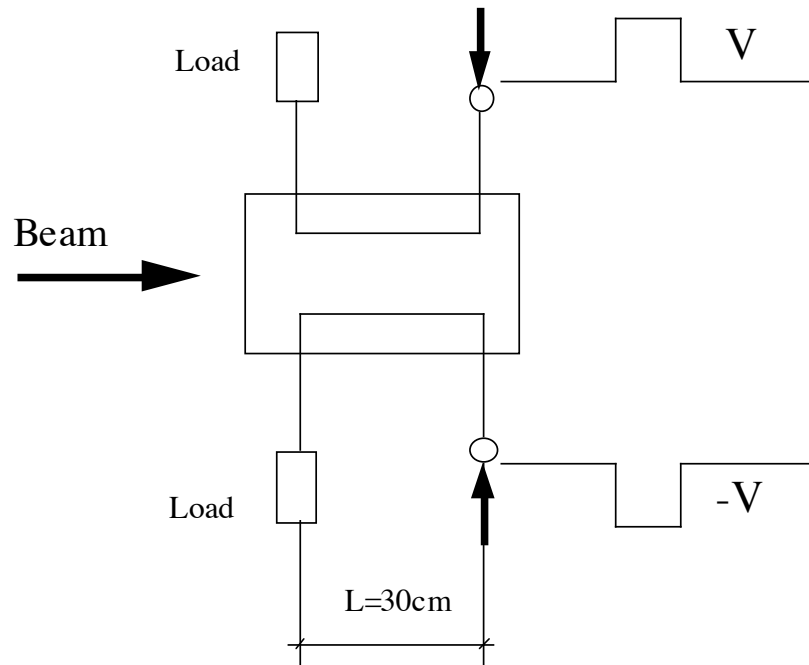
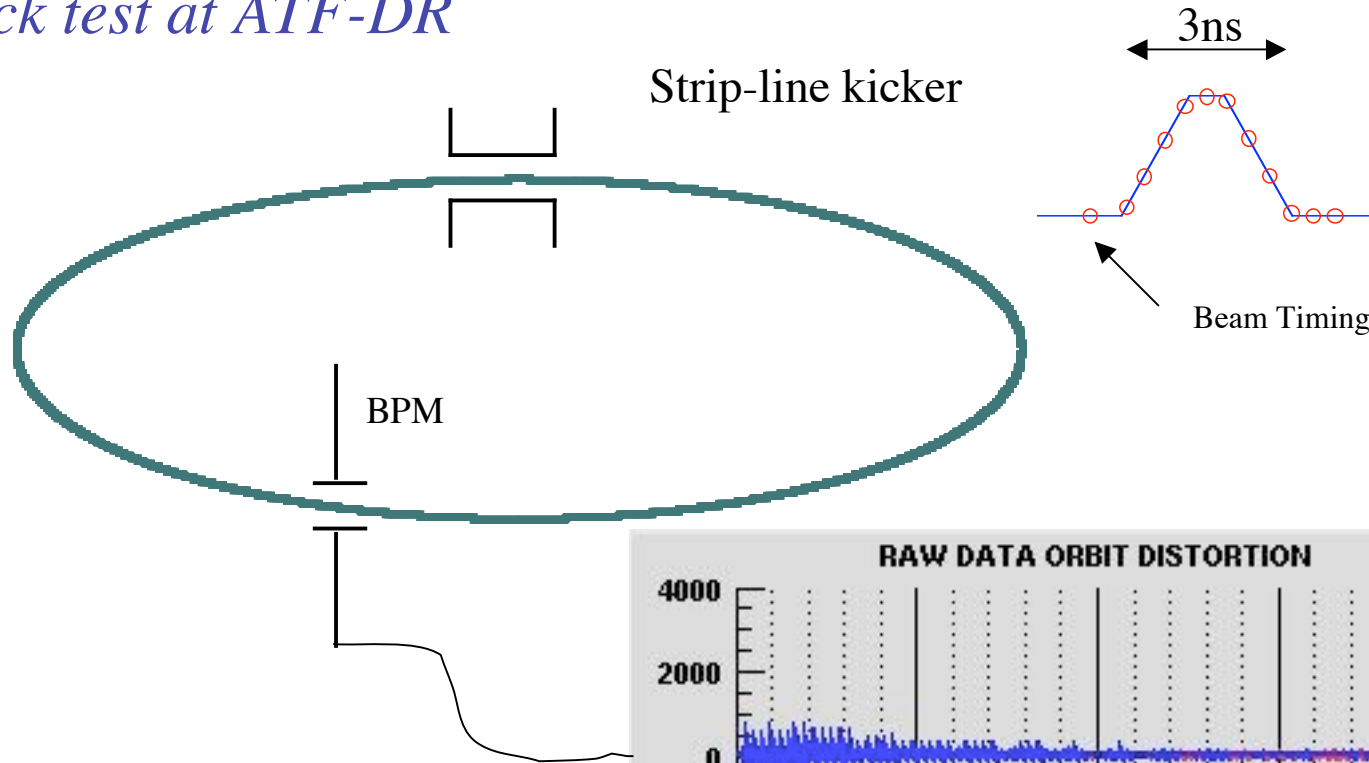


Rise time of the kicker field



When the kicker pulse is applied to the electrode for the counter direction to the beam, the rise time of the field is required to $T=2L/C$. Where L is length of the electrode and C is a speed of light. If the pulse has the rise time, Tr , the field is a summation of the rise time of the field in the electrode and the rise time of the pulse.

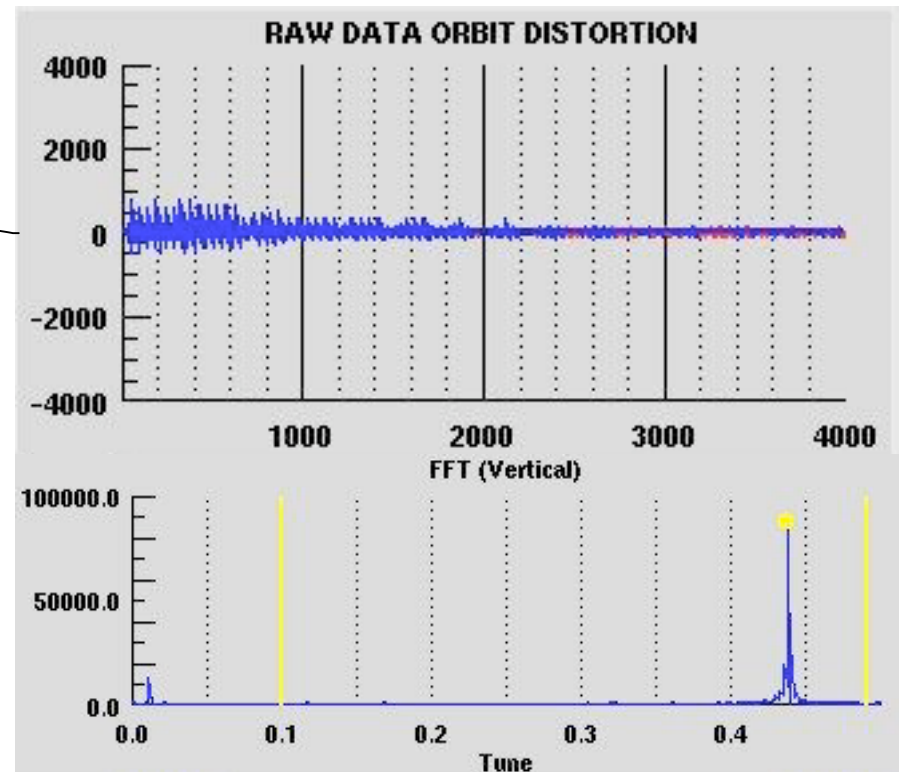
Beam kick test at ATF-DR



The kicker pulse is applied to the strip-line electrode at just the timing of the beam go through the electrode.

The beam kick is observed by a turn-by-turn BPM as the amplitude of the oscillation of the betatron frequency component.

The kick effect is measured by scanning the pulse timing for the beam timing.



FPG5-3000M pulser(FID GmbH)

Specifications

Maximum amplitude at 50 Ohm - 5 kV

Rise time - 1-1,2 ns

Pulse width at 50% of amplitude - 2-3 ns

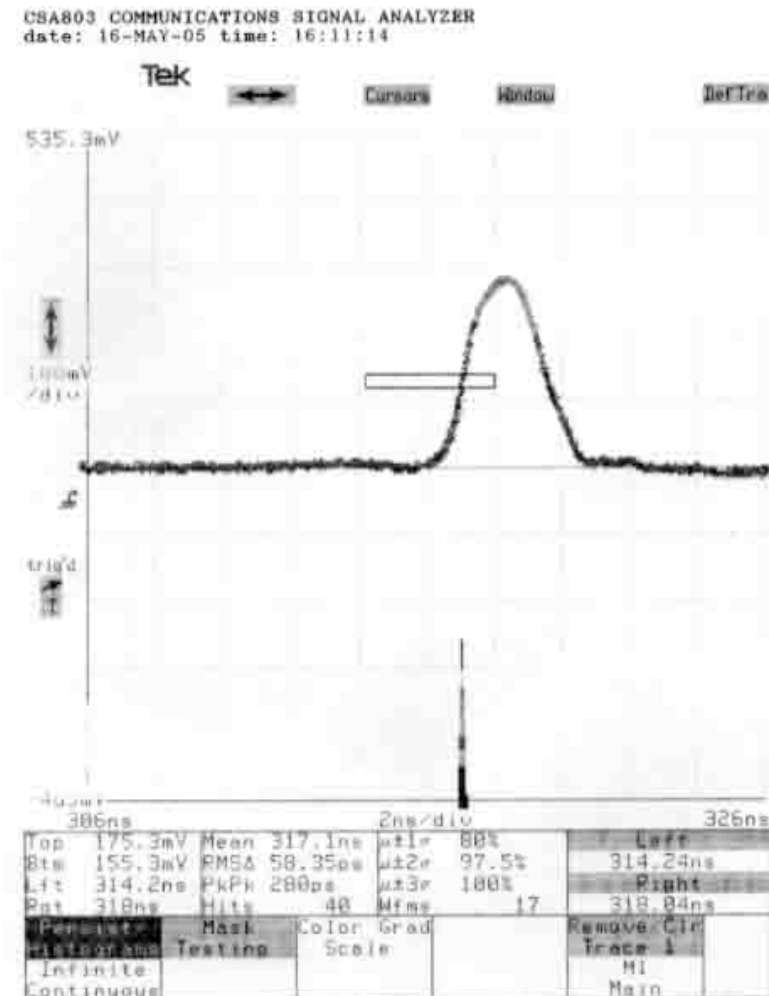
Polarity - negative or positive

Delay time between output pulse and triggering
- not more than 200 ns

Jitter - not more than 100 ps

Triggering - Internal and External - 5-15 V, 10-20 ns

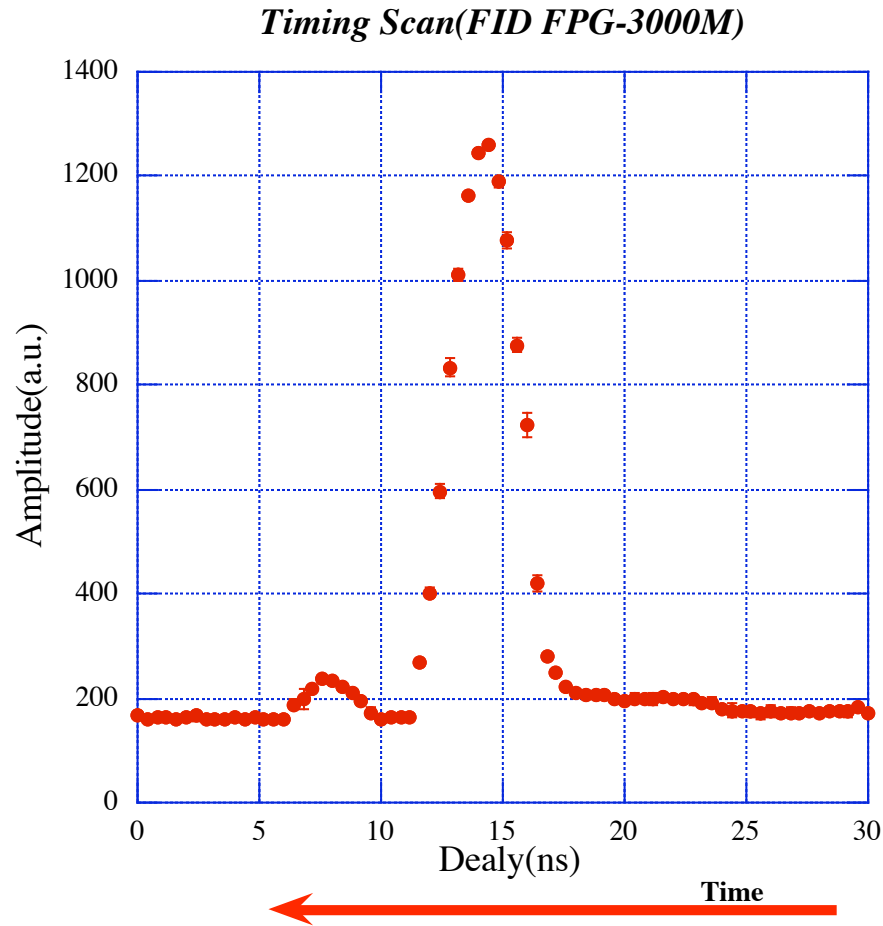
Maximum PRF in burst mode - 3 MHz



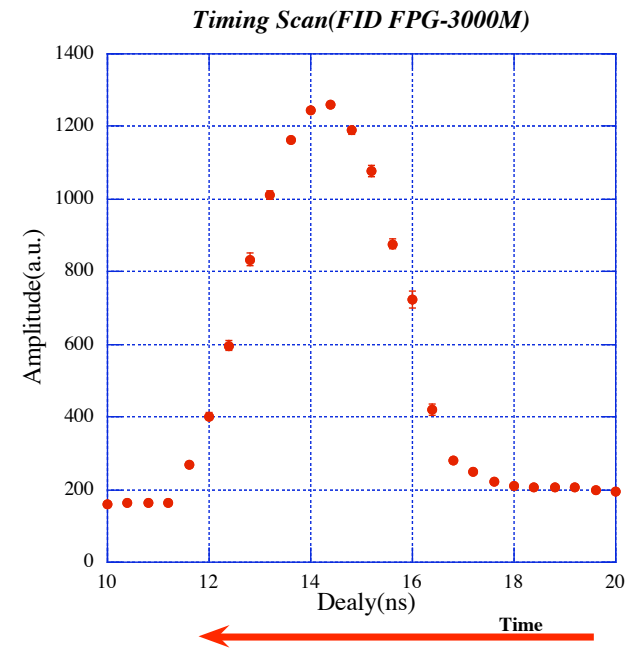
5.8kV, ~1.5ns rise time

Measurement result of FPG5-3000M

● Amplitude(a.u.)

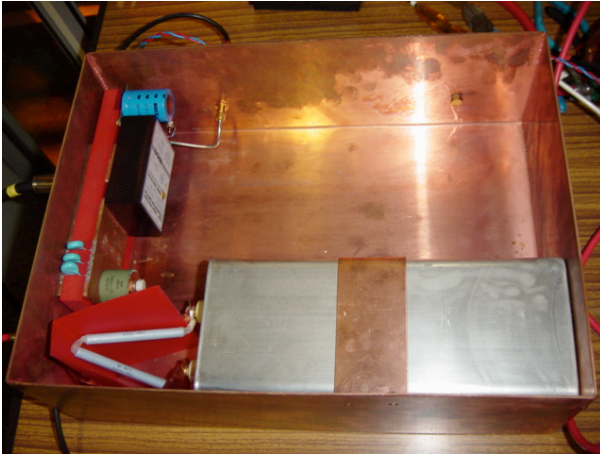


Rise time~3.2ns

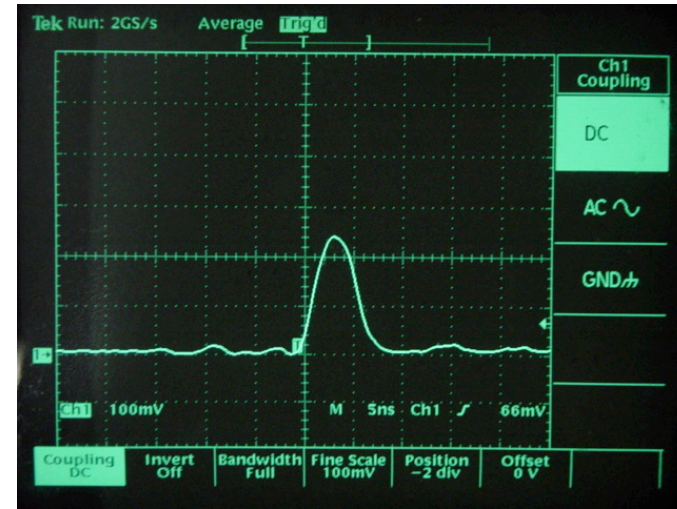


Expanded the horizontal scale

DESY pulser 2005/05/18~05/20



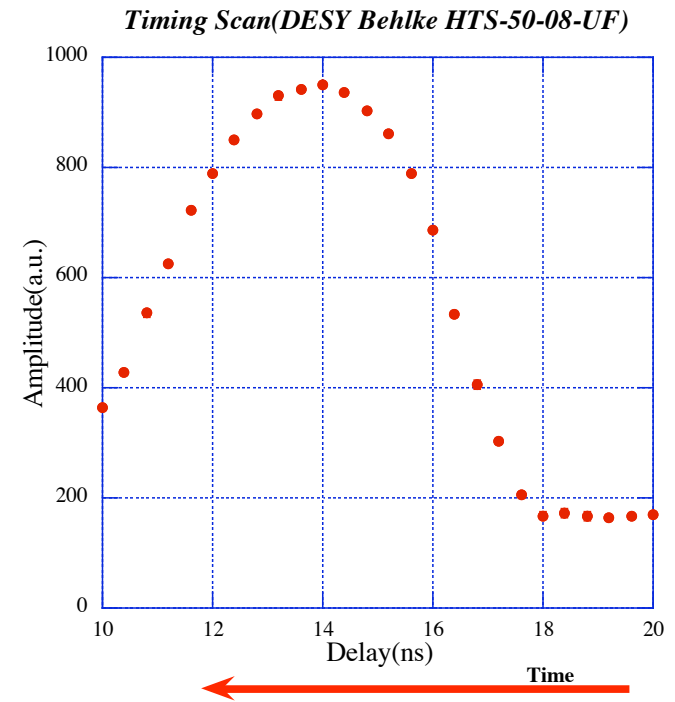
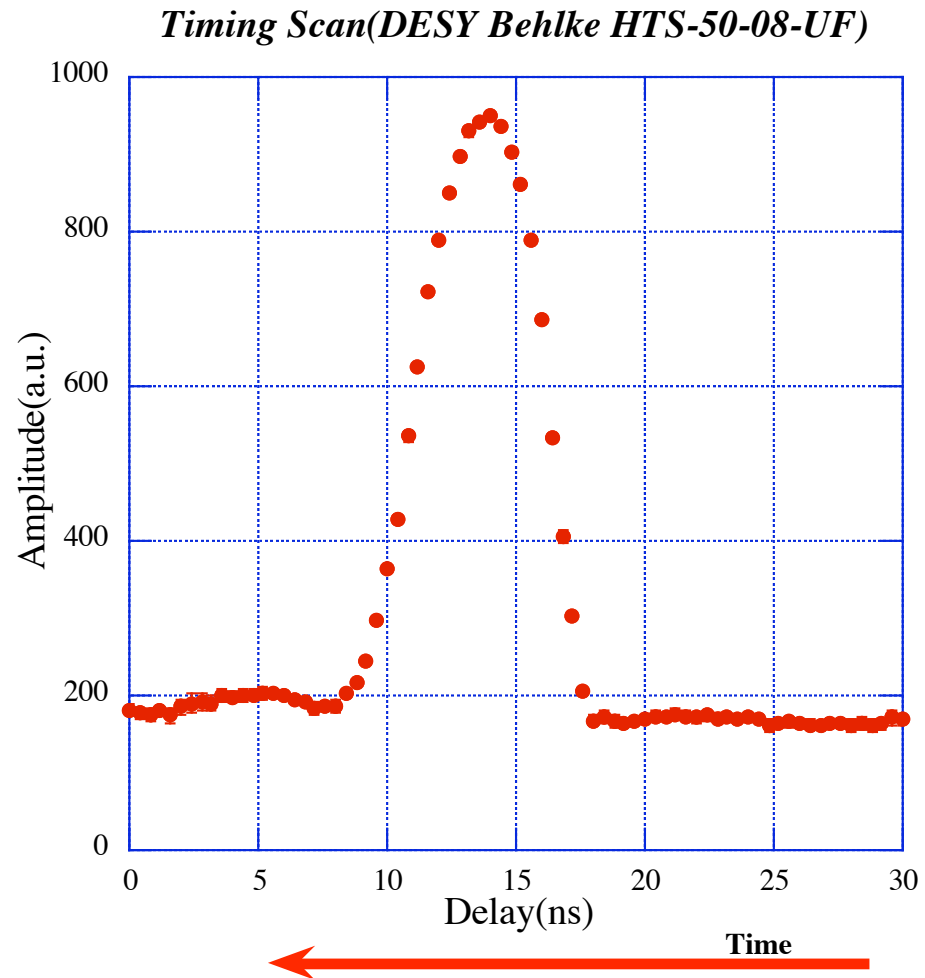
BEHLKE ELECTRONIC
GmbH,
HTS-50-08-UF
5ns pulse width



2.5kV peak, 1MHz, 500pulses

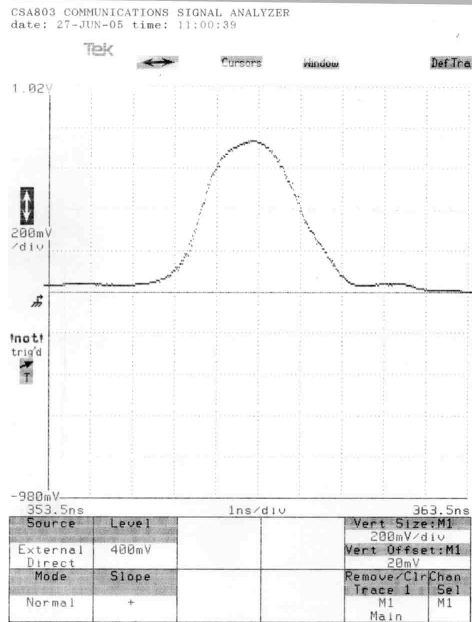
DESY pulser(HTS-50-08-UF)

Rise time $\sim 4\text{ns}$

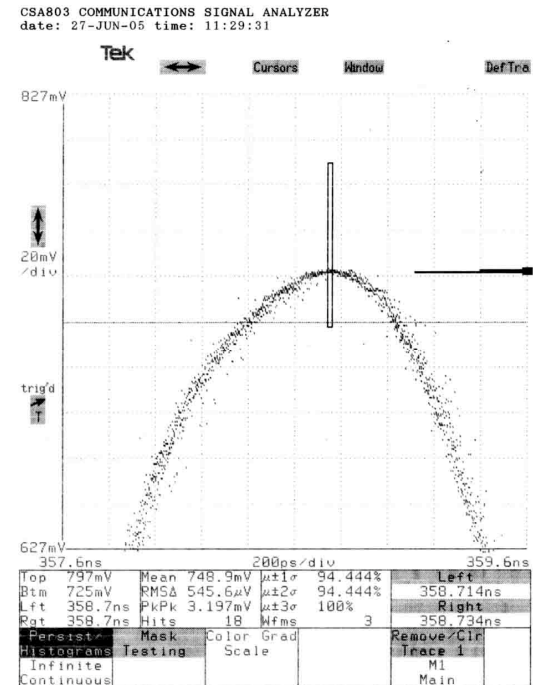
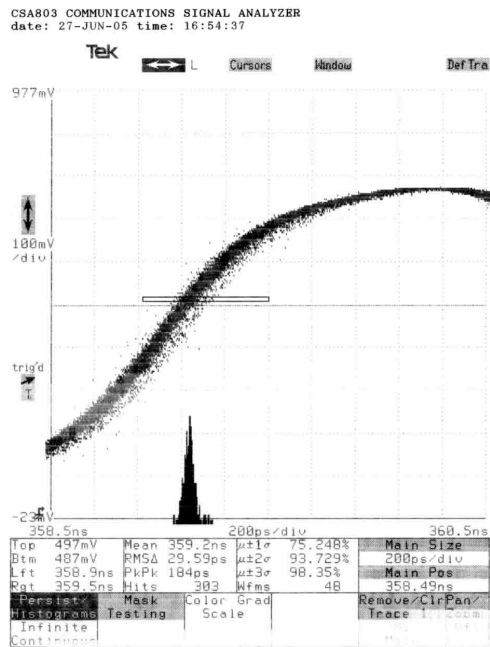


Expanded the horizontal scale

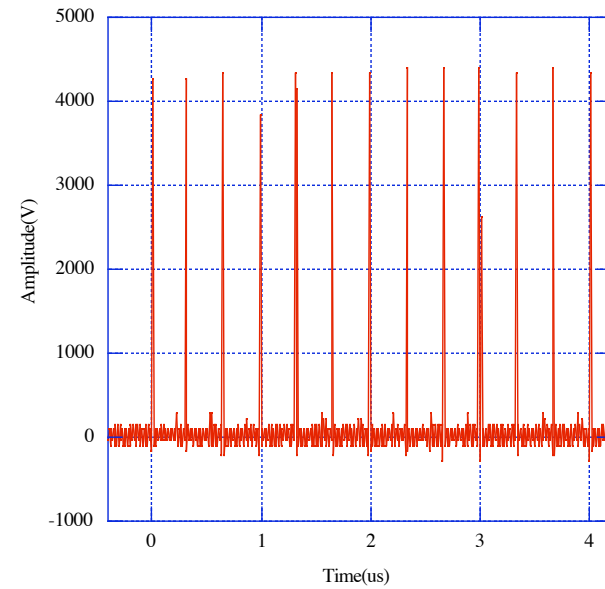
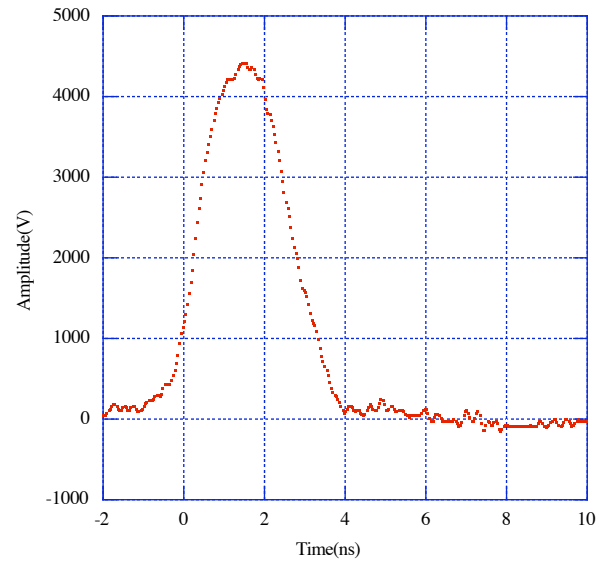
Pulser characteristics



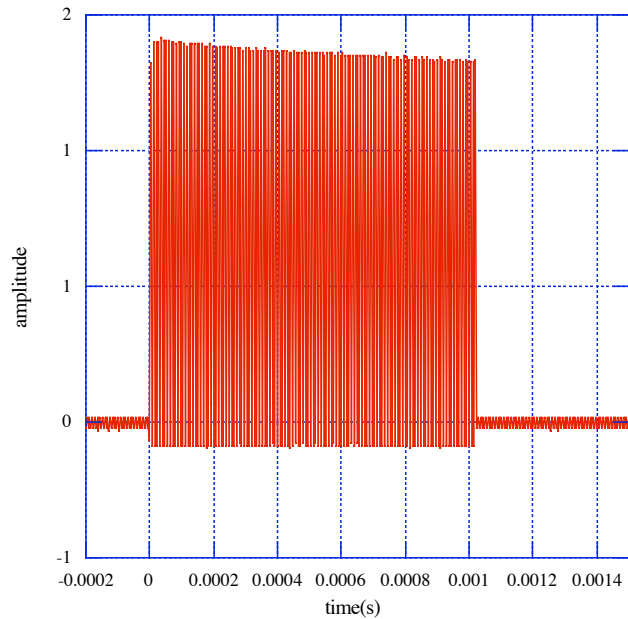
FID(FPG5-3000M) pulser
 Pulse width(FWHM) = 2ns
 Pulse height = 5kV
 Rise time = ~1.5ns
 Time jitter = ~29 ps
 Amplitude Jitter = 0.72%
 (limited by the scope resolution)



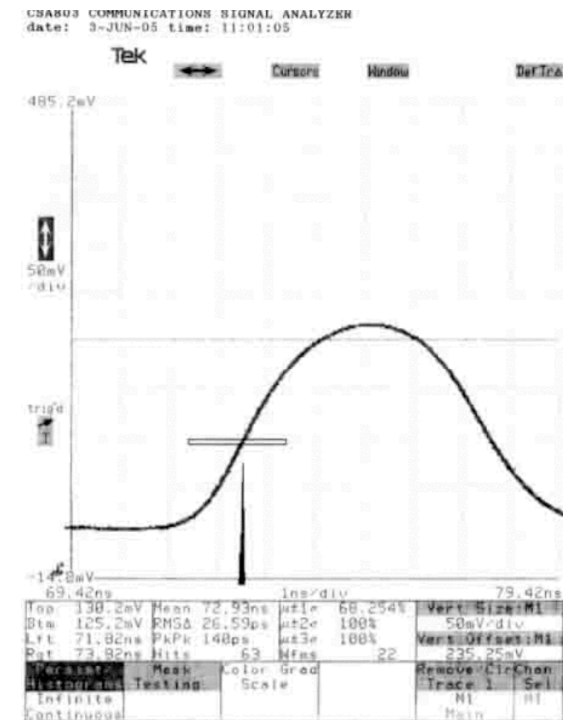
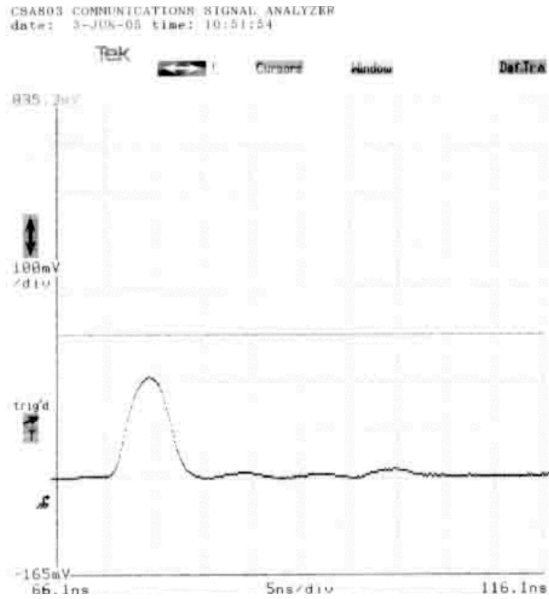
FPG-3000M 3MHz, 3000plses



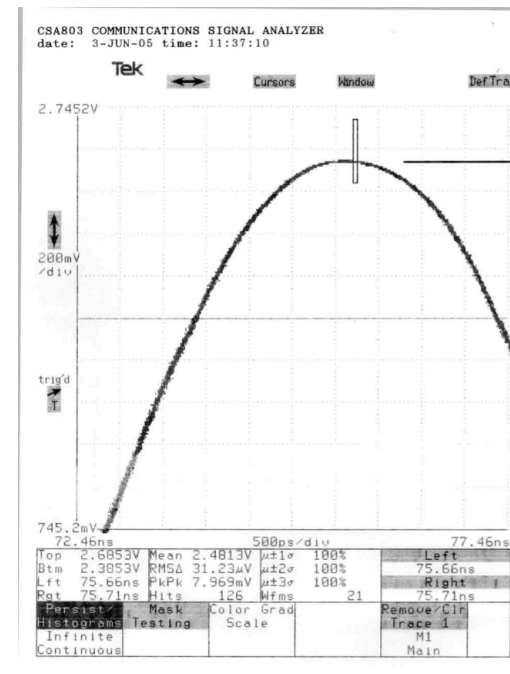
Pulse train(3000 pulses)

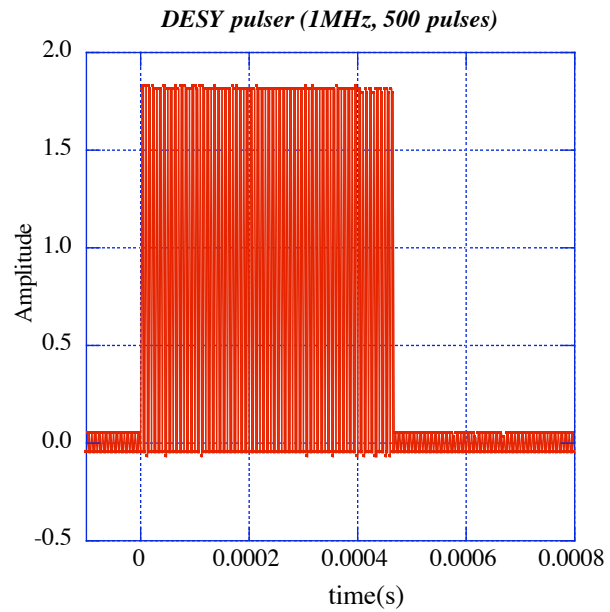
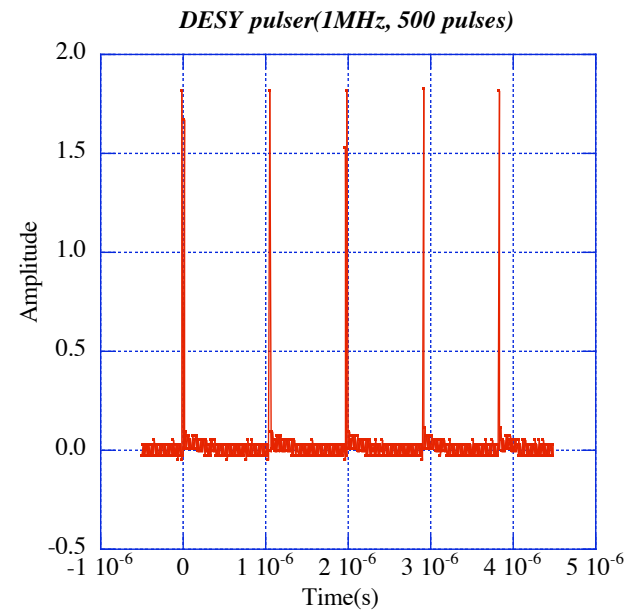
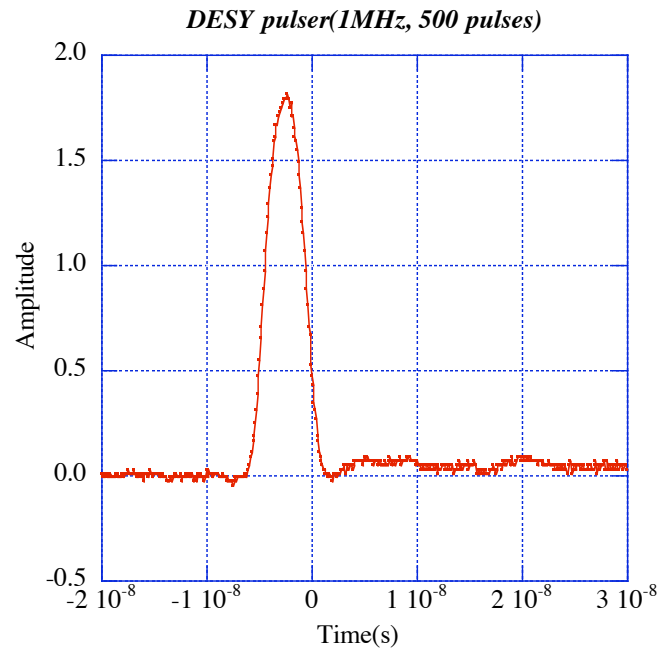


- *The 4th pulse is ~10% smaller than the others.
- *A few % of droop was observed in the 3000pulse train.



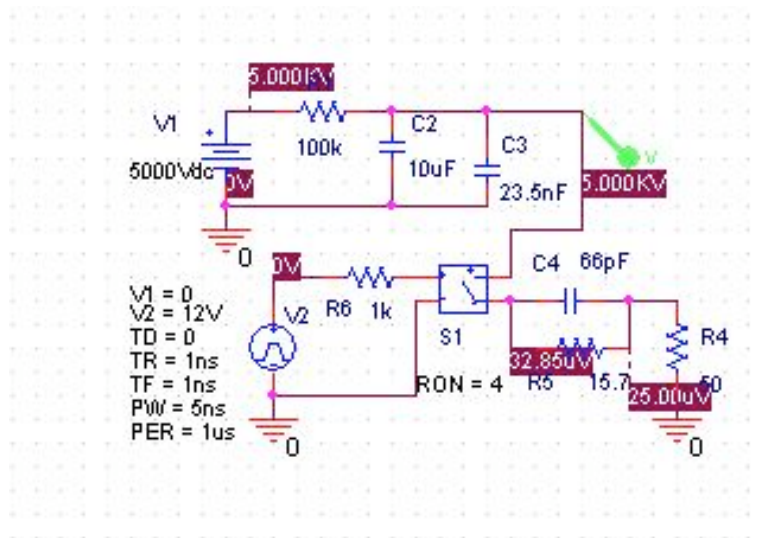
DESY pulser
Pulse width(FWHM) = 5ns
Pulse height = 2.5kV
Rise time = ~3ns
Time jitter = ~26 ps
Amplitude Jitter = 0.4%
(limited by the scope resolution)





The droop of the envelope is 5×10^{-3} .

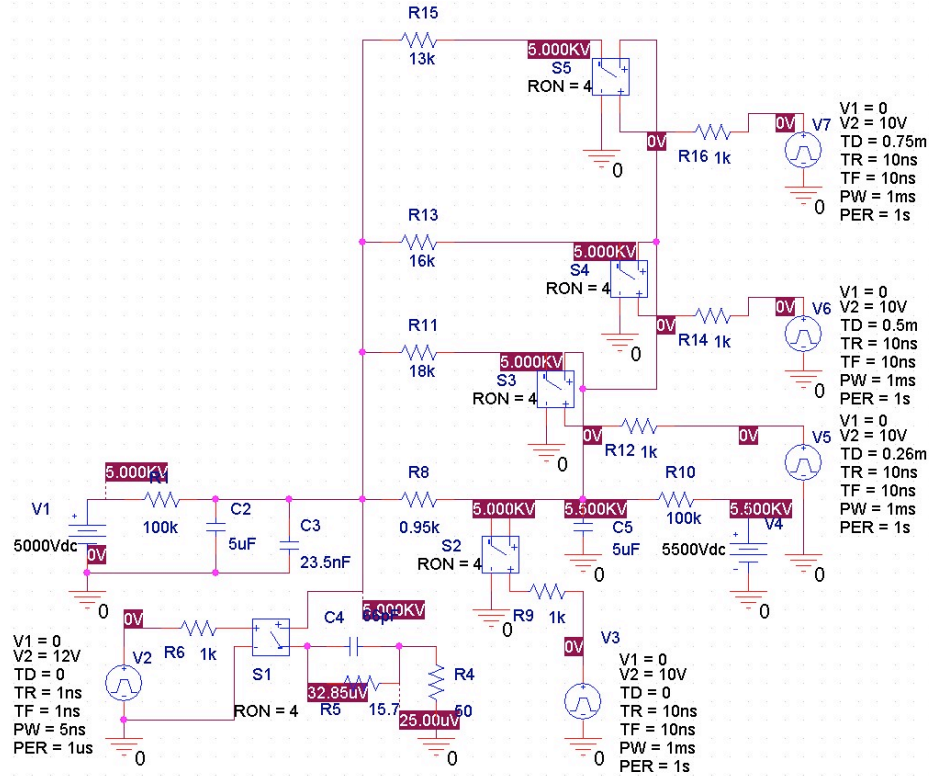
Amplitude stabilization of the burst pulses(1)



The changing of the pulse amplitude from the first pulse to the end pulse is simulated. The pulse amplitude changed 0.5% between the 500pulses.



Amplitude stabilization of the burst pulses(2)



When compensation circuit is adapted to the high voltage power supply, the pulse amplitude is stabilized to 6×10^{-5} between the 500 pulses. The stability meet with the ILC specification.

