

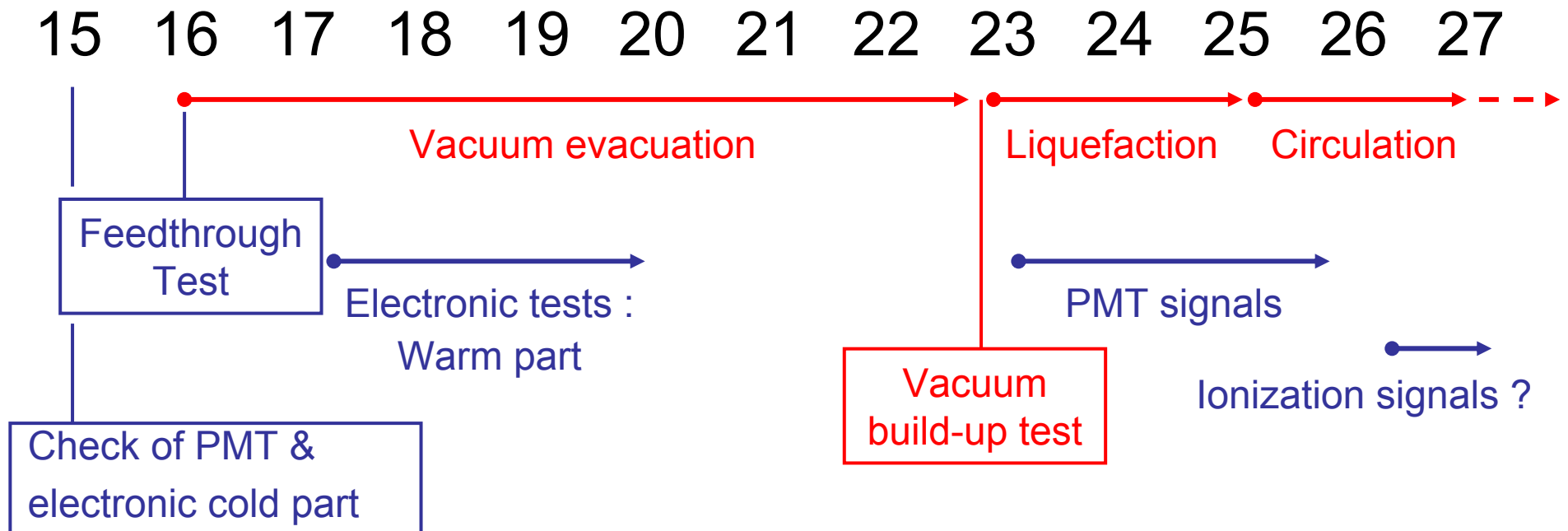
KEK visit work report

14-27 march 2010

Tugdual Oger



Planning of visit



The cryogenic system



Using of a smaller PTR :
24 W at 165 K
Just cooled by air.



Storage of gaseous xenon
in a 0.75 m³ tank at 1
bars.

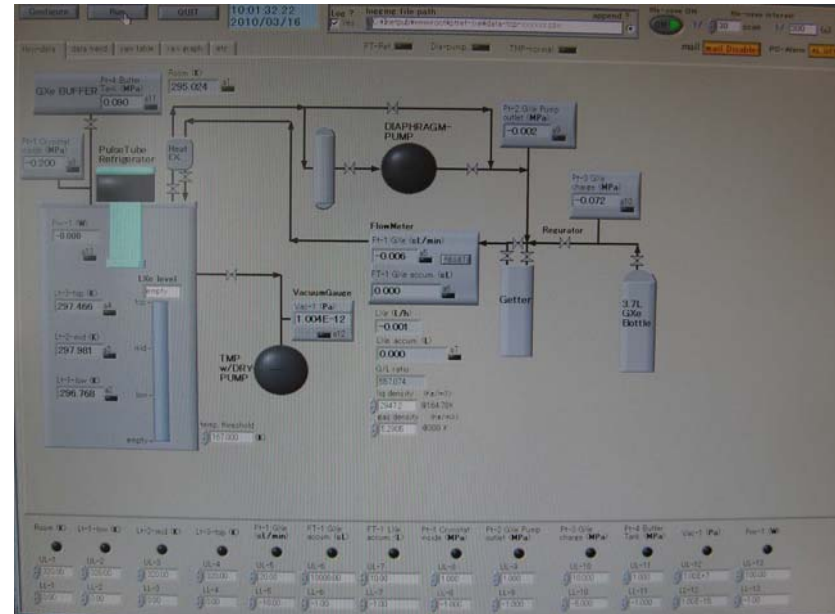
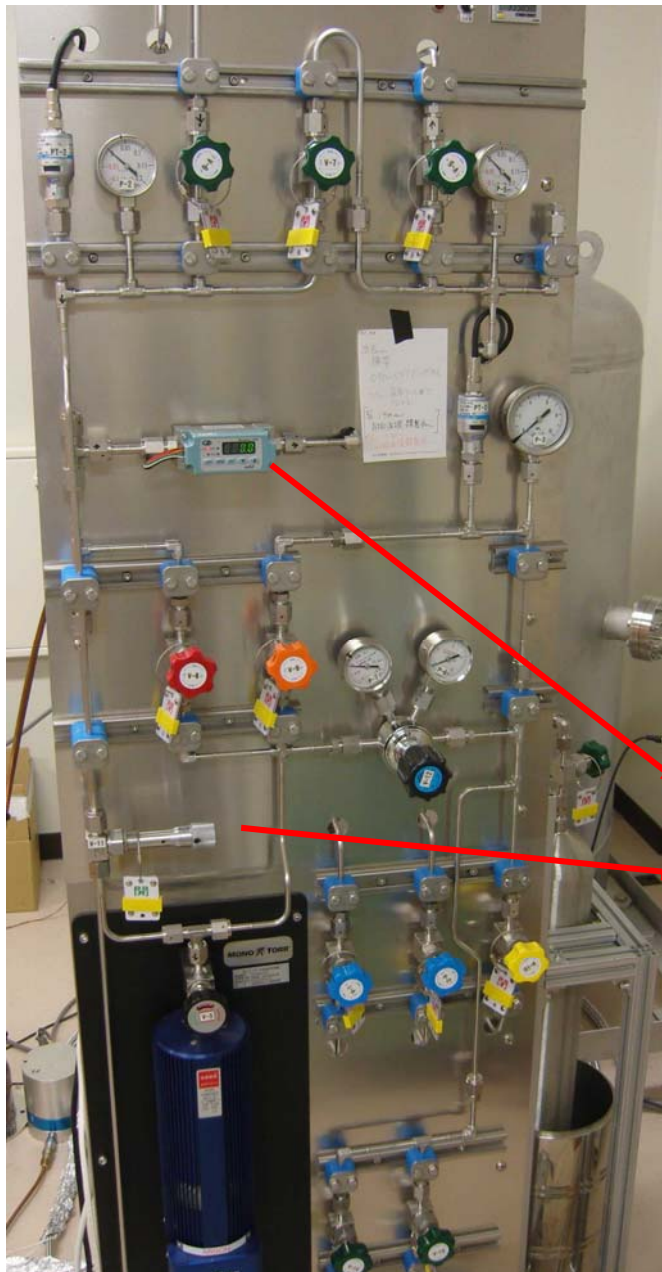
This tank is in permanent
communication with the
purification circuit.



Using of a heat exchanger



The cryogenic system



Slow control used only for monitoring

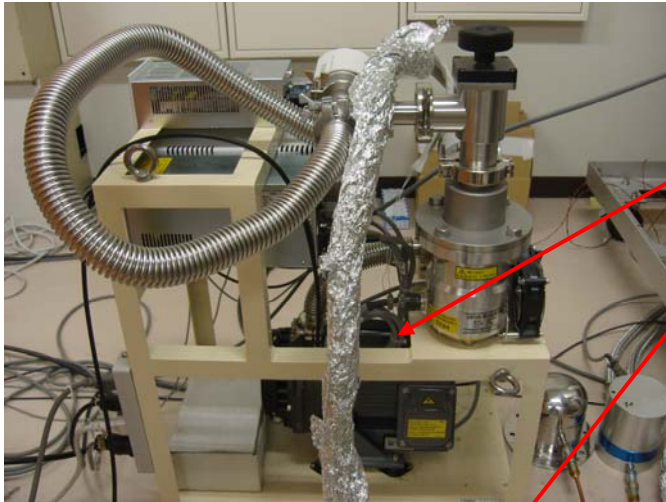
Flow meter used for measuring the flow

The flow driven by this valve

Cryogenics operation :

- No precooling needed
- Liquefaction rate : 0.16 l.h^{-1} of LXe

Vacuum evacuation



Three pumps are used :

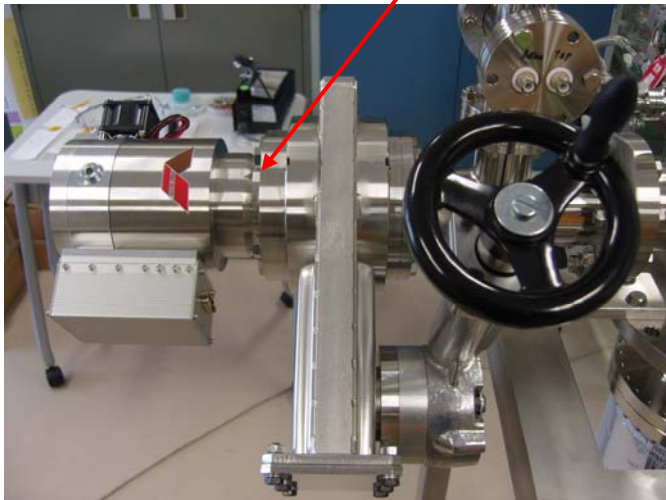
- A primary pump
- A turbomolecular pump
- A getter pump (CapaciTorr-D400-2)

Time of pumping : 6 days

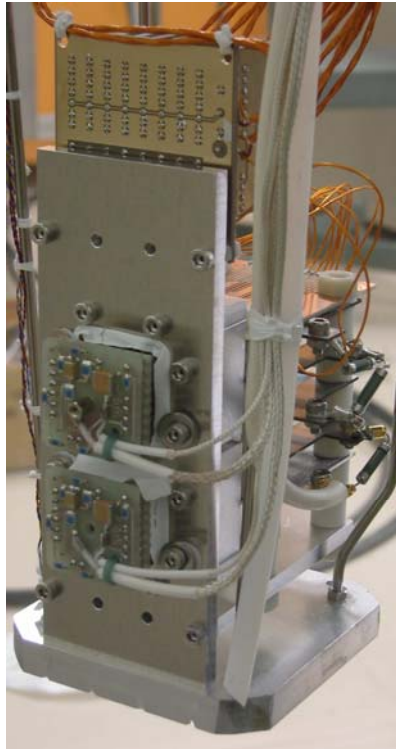
Result of the vacuum build-up test : $6 \cdot 10^{-3}$ Pa
after one hour of stopping pumping



Very good cleaning of the circuit

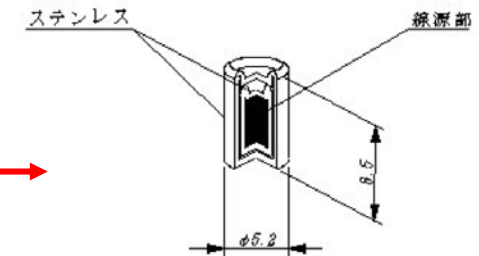
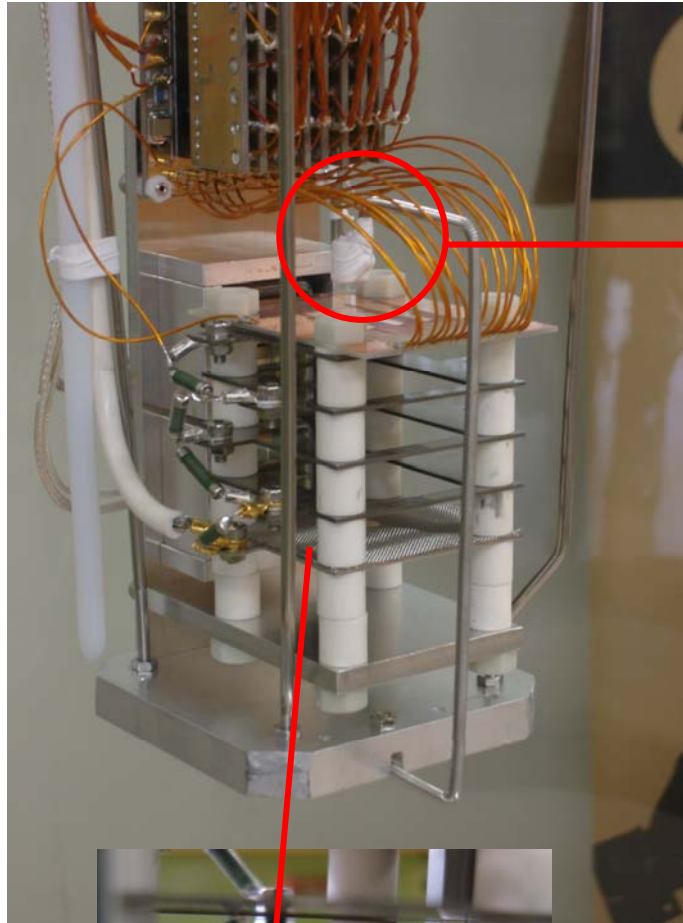


The TPC

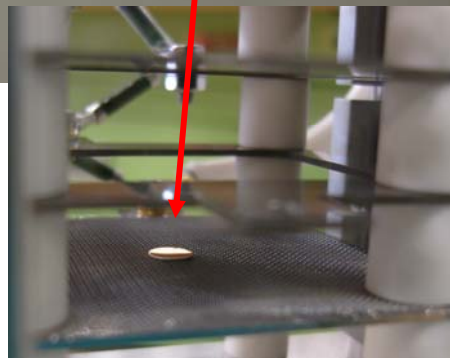


2 PMT :

- RS900-06AL12S-ASSY
- R7600-06MODASSY

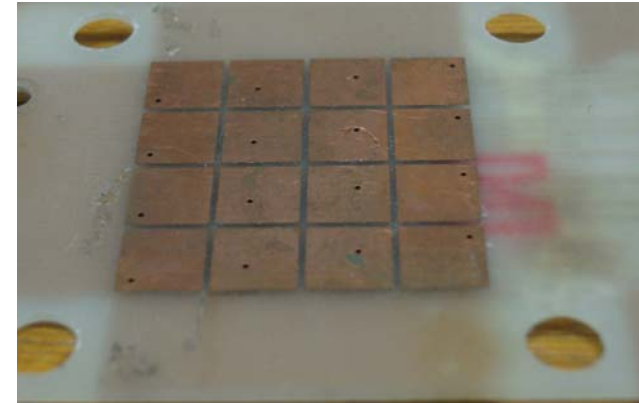
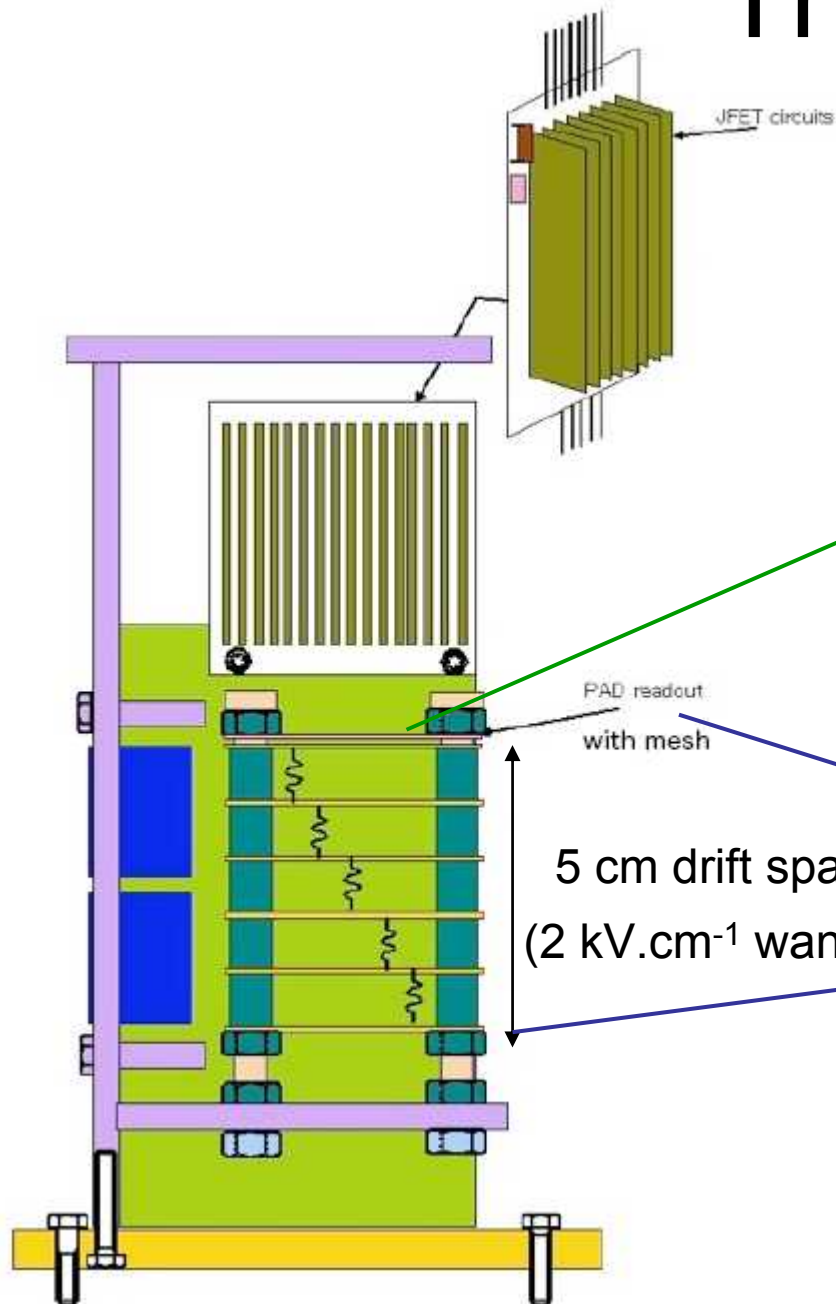


Cs^{137} gamma source
(7.34 kBq)



Am^{241} alpha source
(200 Bq)

The TPC



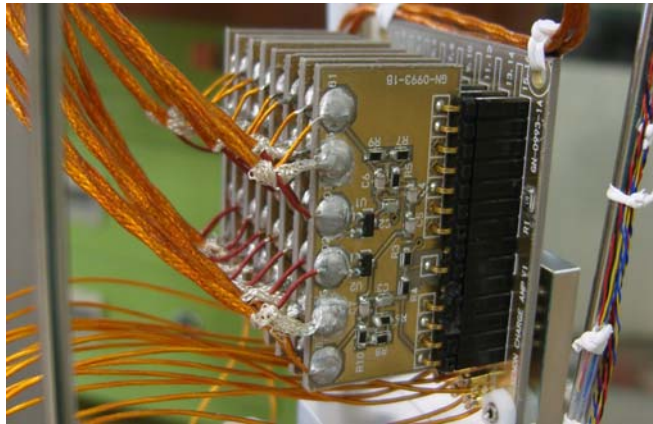
16-pads segmented anode



Two grids :

When I quit KEK, voltage on the bottom one had reached 3500 V

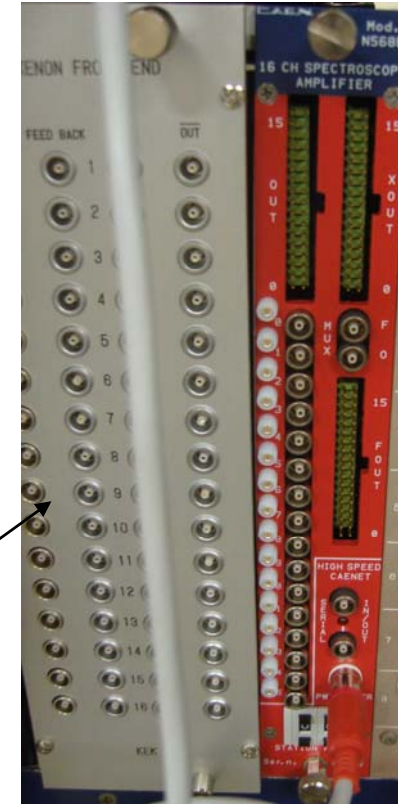
Electronic readout



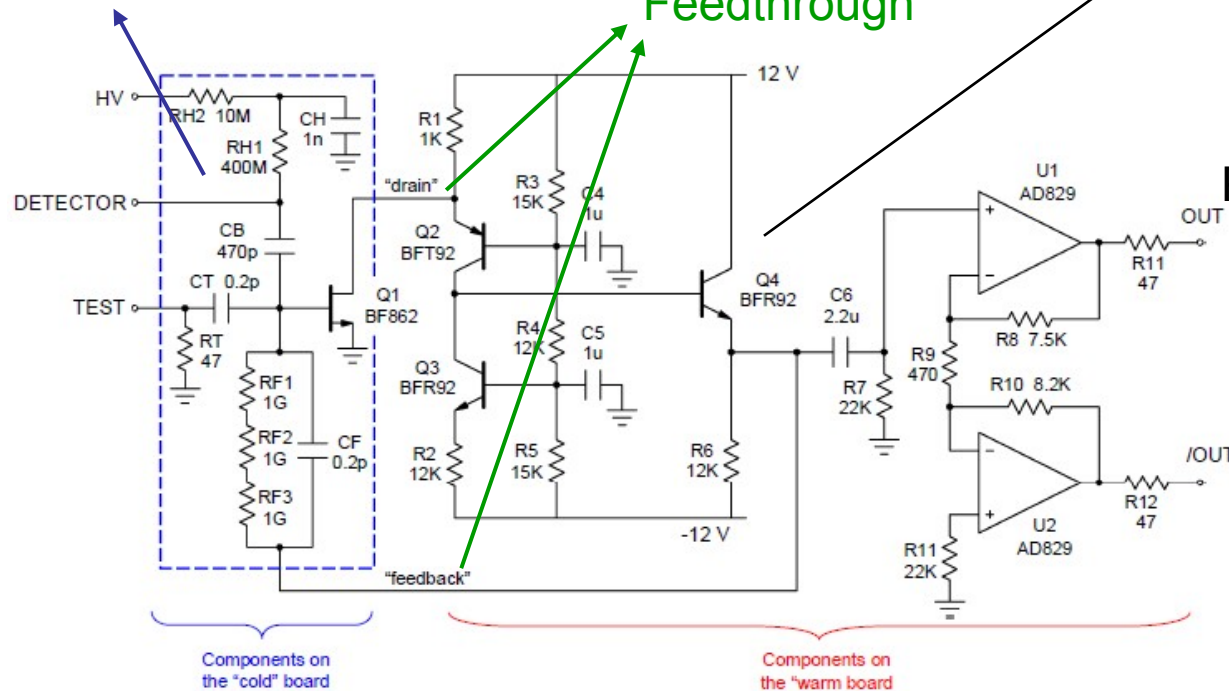
Daughter cards in the gaseous xenon



Feedthrough



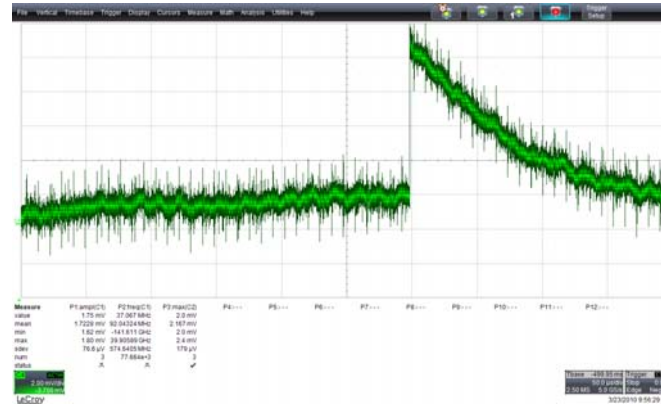
Pre-amplifier warm part
& amplifier NIM N568B



Check-out of electronics

The following check-out have been done :

- The two PMTs : replacement of an old one by a new R7200 one
- Feedthroughs : OK
- Daughter cards : all are working. The decreasing constant appears near from 80 μ s (250 μ s expected).



- Warm part of the pre-amplifier : several mistakes have been done by the constructor company, have to be improved.



Thanks to :

**- T. Tauchi
- S. Mihara
- T. Saeki
- K. Kasami**

**- S. Tanaka
- Y. Fujii**

- And all people met at KEK