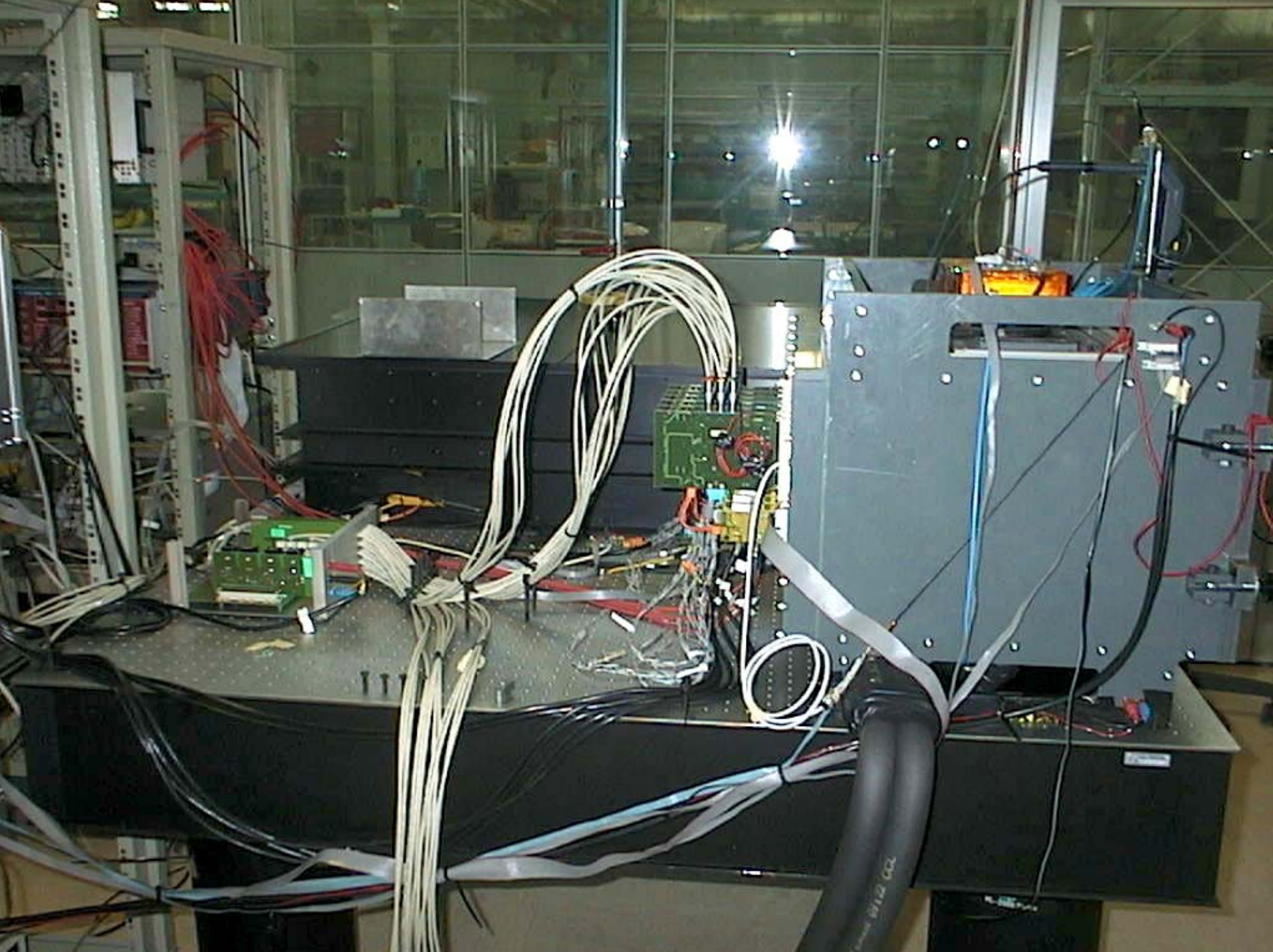




Lt test results on T1 B modules @ Torino

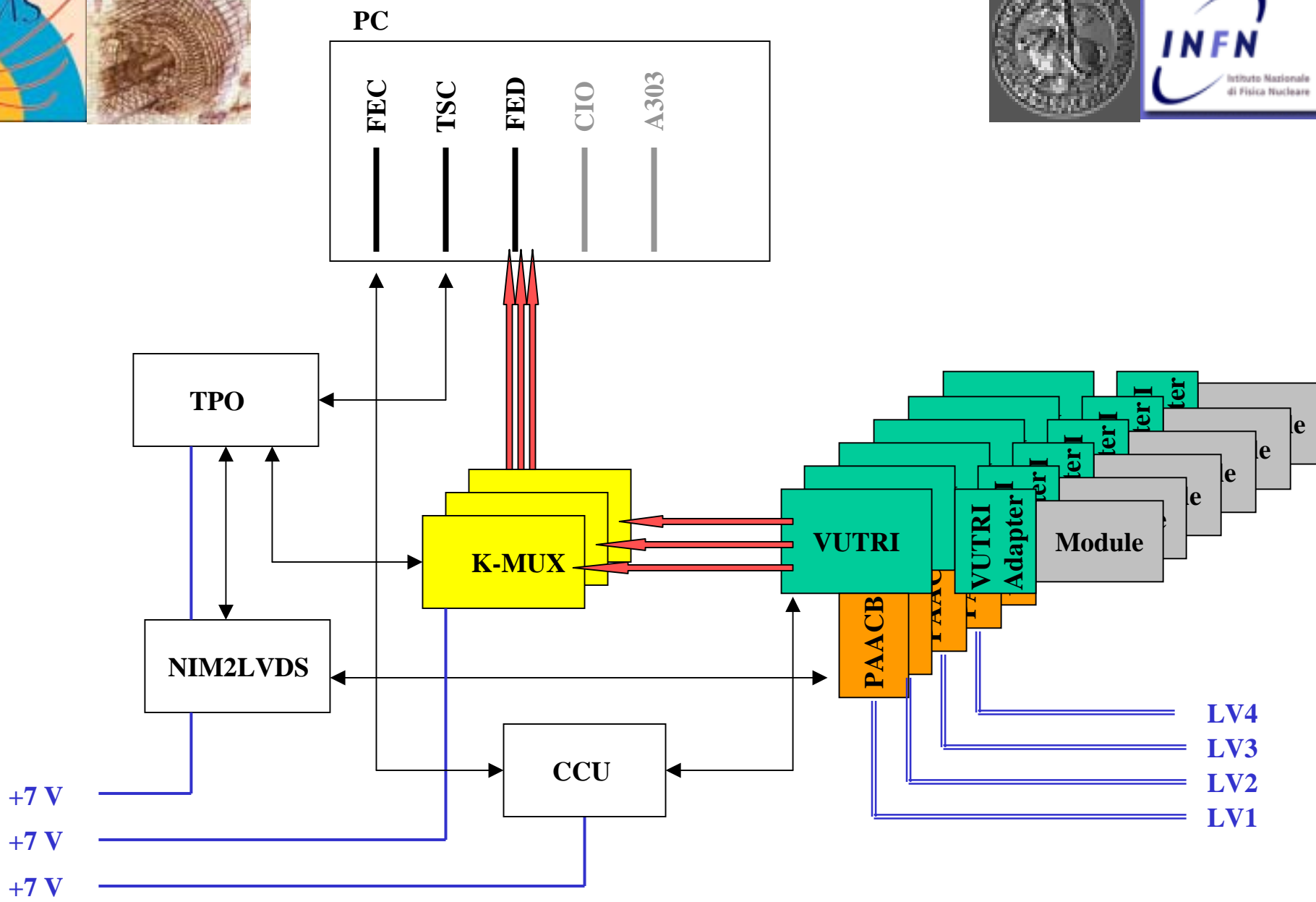
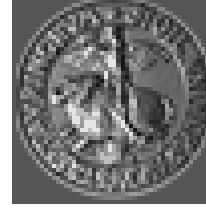
L.Demaria, E.Migliore, M.Costa, F.Benotto, P. Trapani





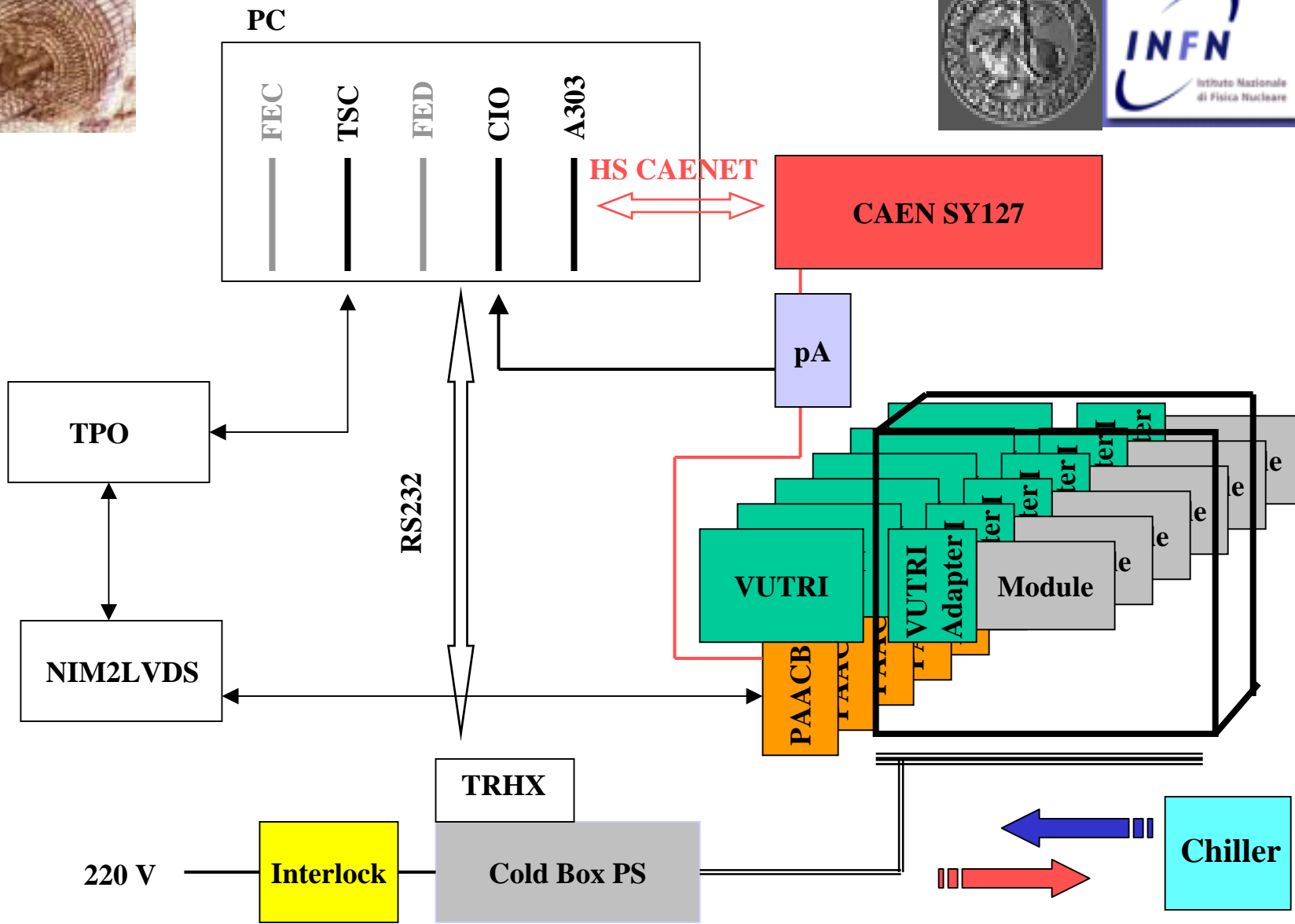
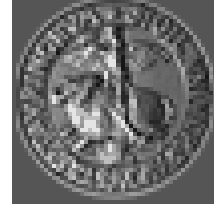
Hardware

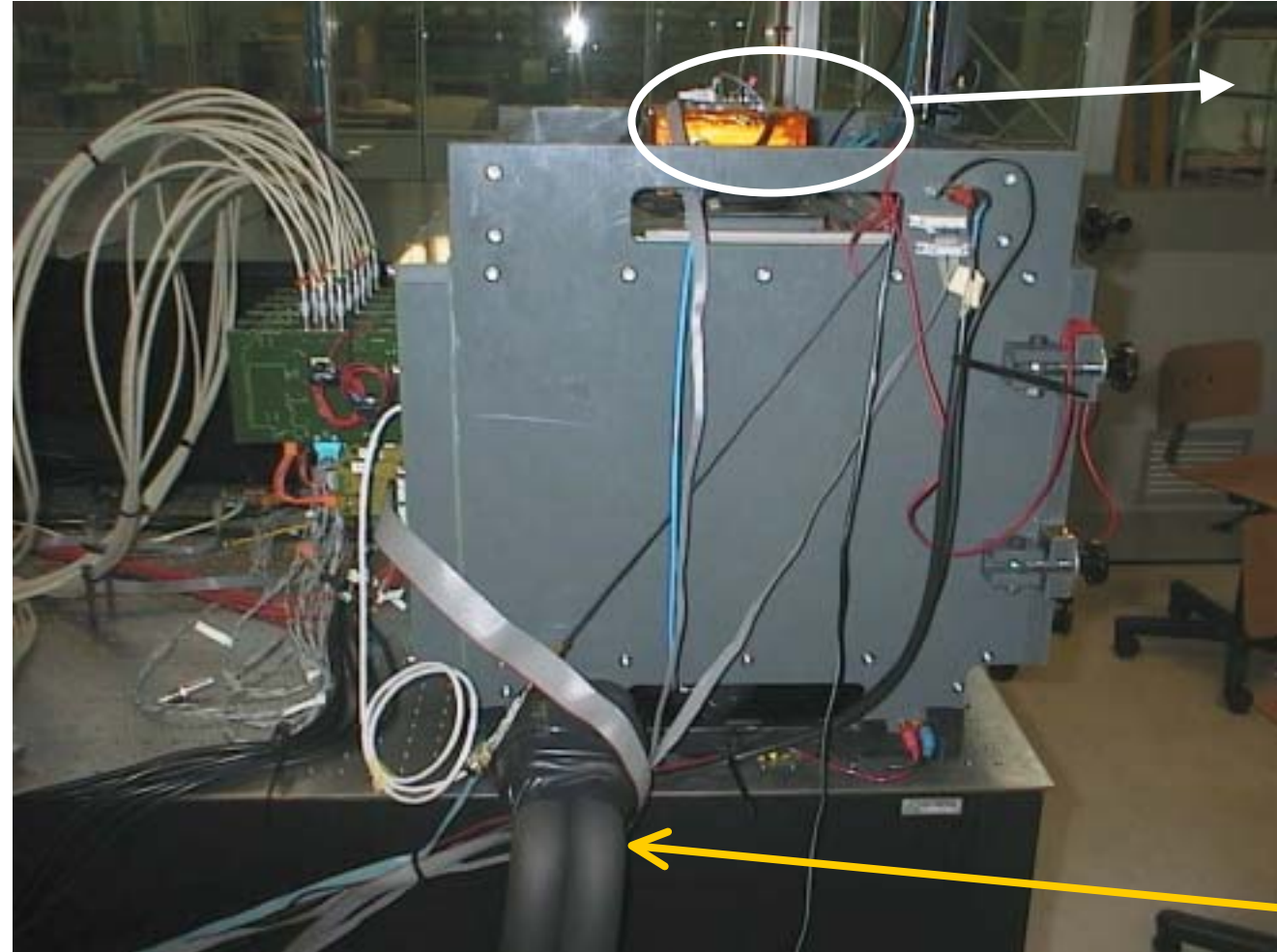
- Industrial PC (1GHz, 512MB, 12 PCI, 4 ISA)
- TSC, FEC, FED, CIO6402, A303
- TPO, CCUM, NIM2LVDS, K-MUX, TRHX, VUTRIS (+ADAPTER), PAACBs
- CAEN SY127 + A333 + 1 electrometer (4-channels)
- LV power supply (for 10 modules, K-MUX,CCU,NIM2LVDS)
- Wien box + Chiller (8 °C) + dry air (Dew point= -40 °C)
- Interlock box (with T and RH sensors)



MTWG : 21-10-2003

Torino Lt test results



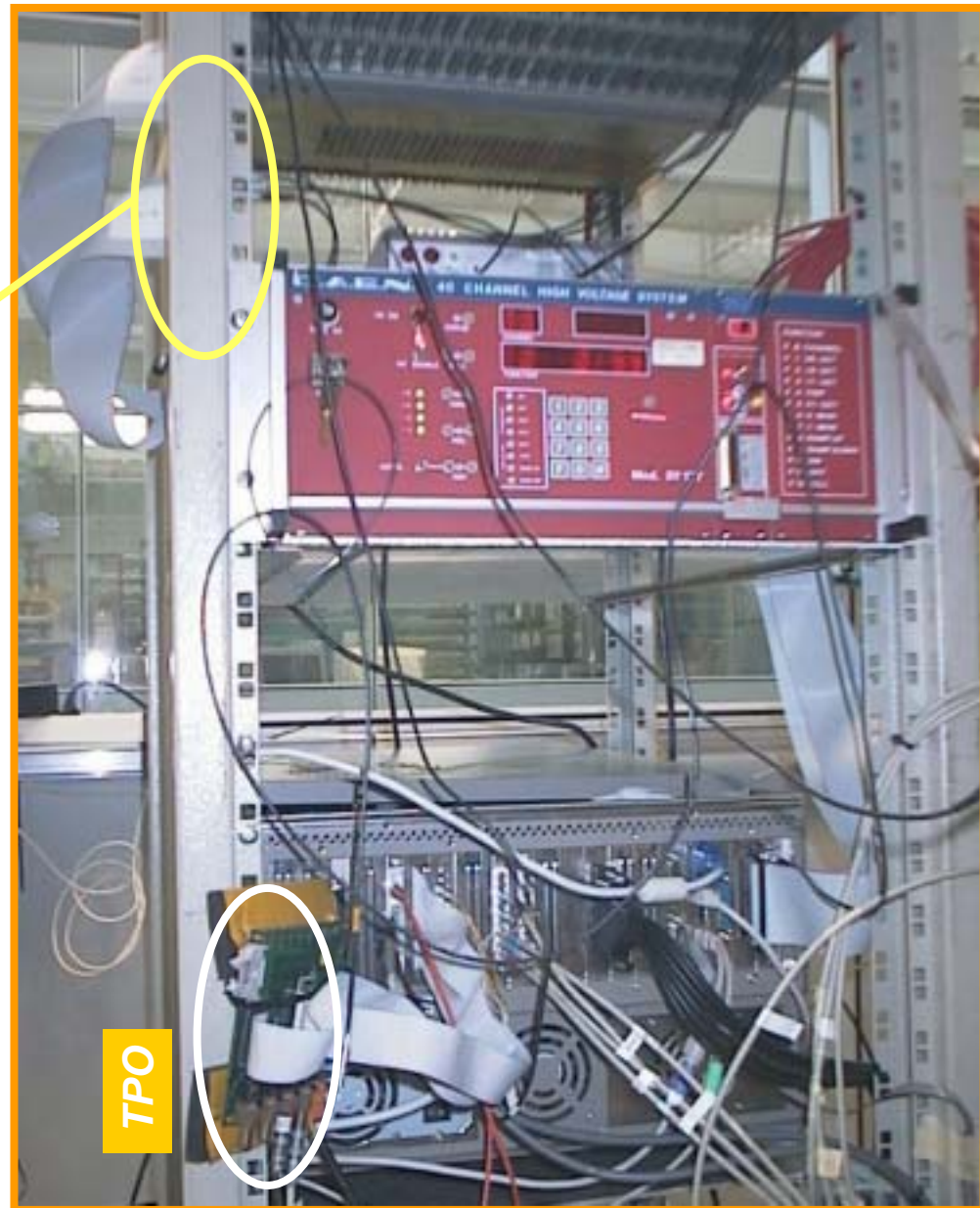
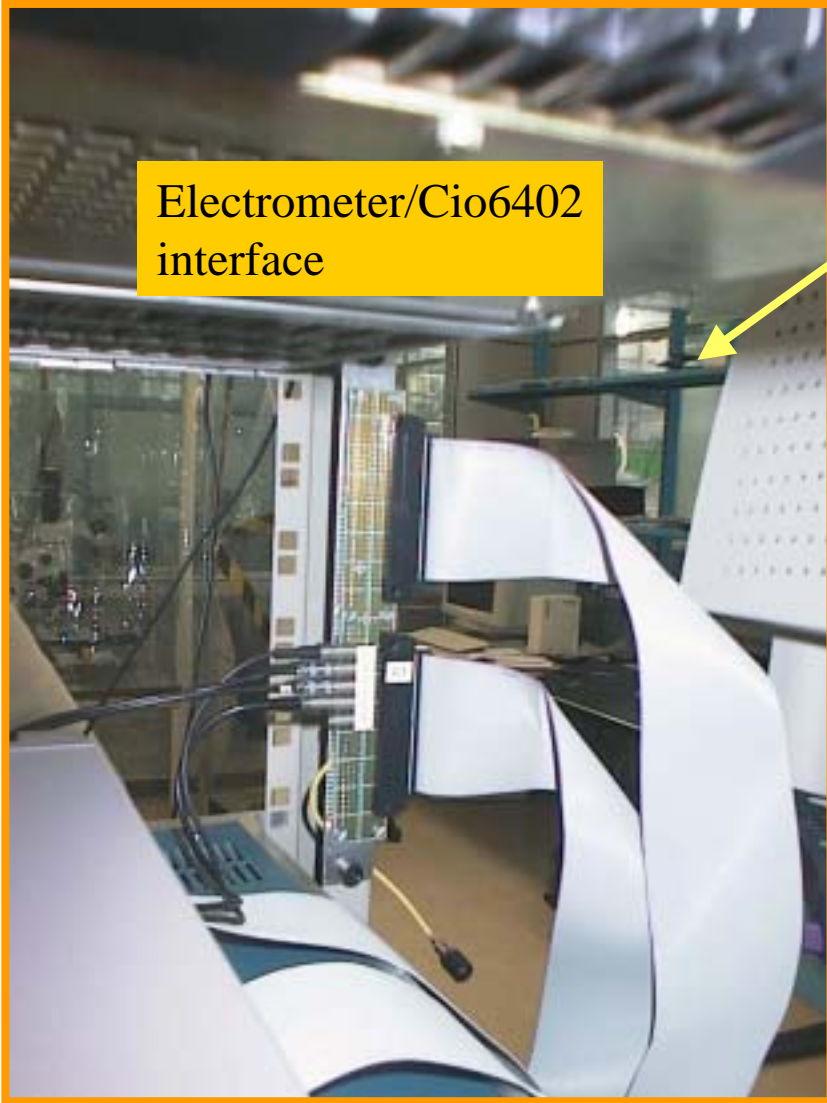


**Water tubes insulated
To avoid condensation**

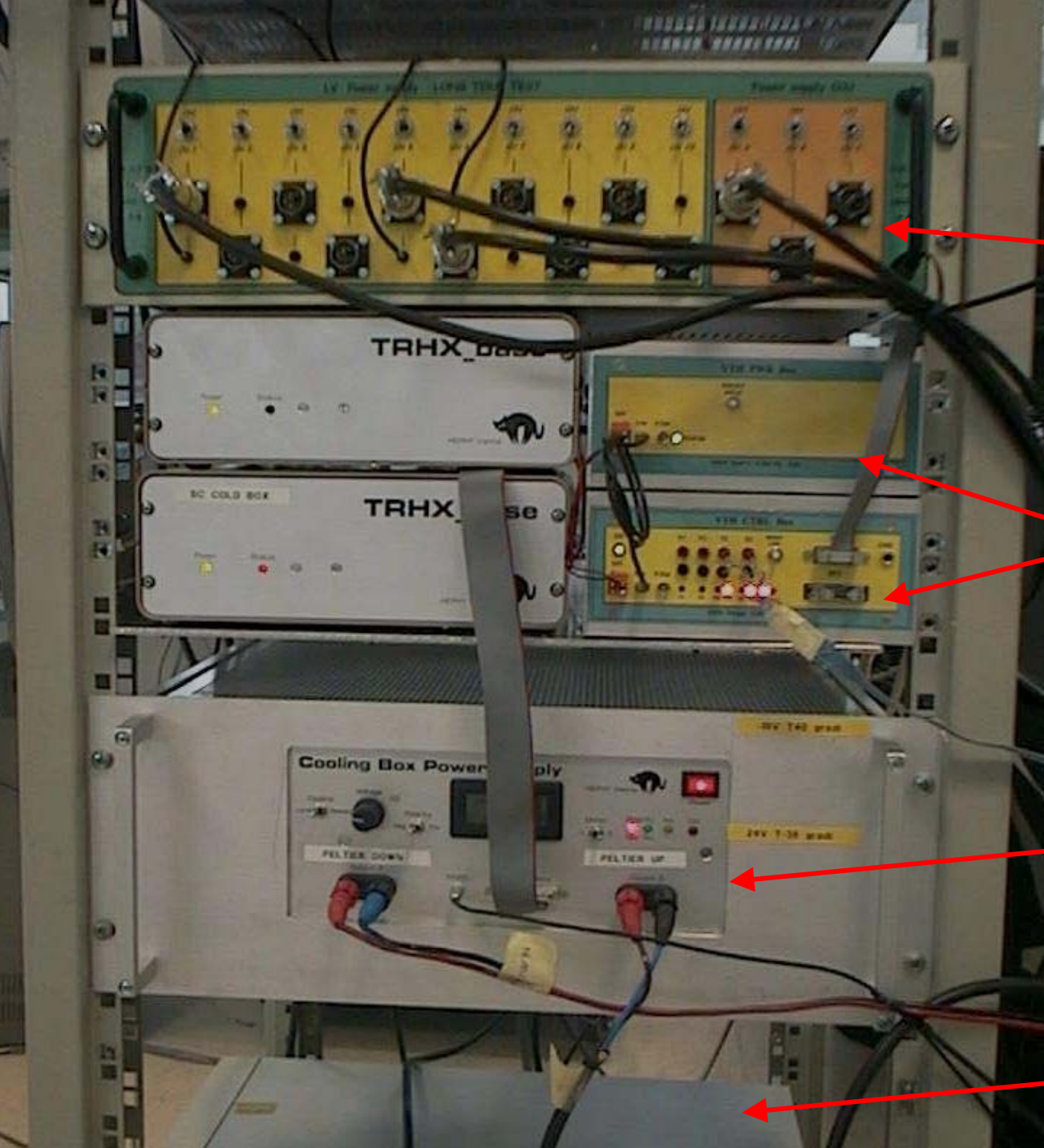
MTWG : 21-10-2003

Torino Lt test results





PC and HV ps are powered via LAB UPS unit



LV PS

for 10 modules
+CCU+KMUX+NI
M2LVDS

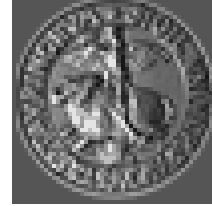
**Interlock
boxes**

Peltier PS

**Local
UPS unit**



Tests done so far (with the complete system)



...with Lt_1_15 software version

- 1) **1.5 days with 4 modules** (with old hybrids)
3 cycles from 23C to -5C, RH=10-30%
Bias=0V, 200V, 400V

- 2) **2.7 days with 6 modules** (2 old, 4 new hybrids)
5 cycles from 23C to -5C, RH < 2%
Bias=0V, 400V

Init | Control | Steering | Settings | Monitor

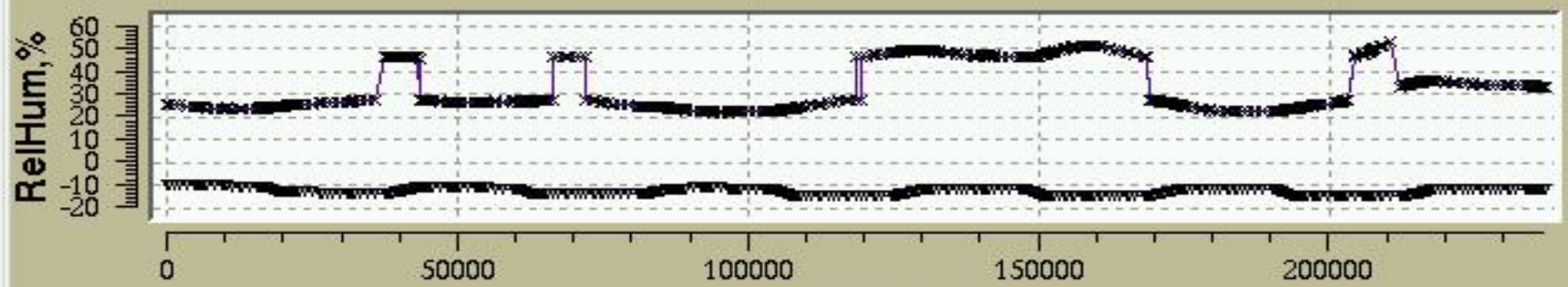
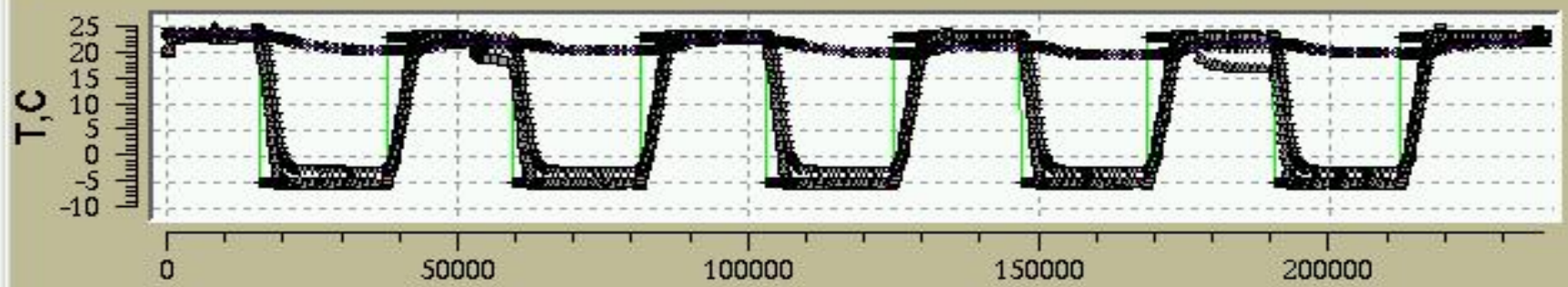
clear plots

Module 3000

2

redraw

Ped | Noise | Cal | CalProf | Xt | It | Lat | Cext | IV



QUIT

elapsed time
99999

```

-----start initialization, please wait-----
Time:39 -----Construct Setup-----
Time:59 demanded PedRun

```



Init | Control | Steering | Settings | Monitor

clear plots

Module

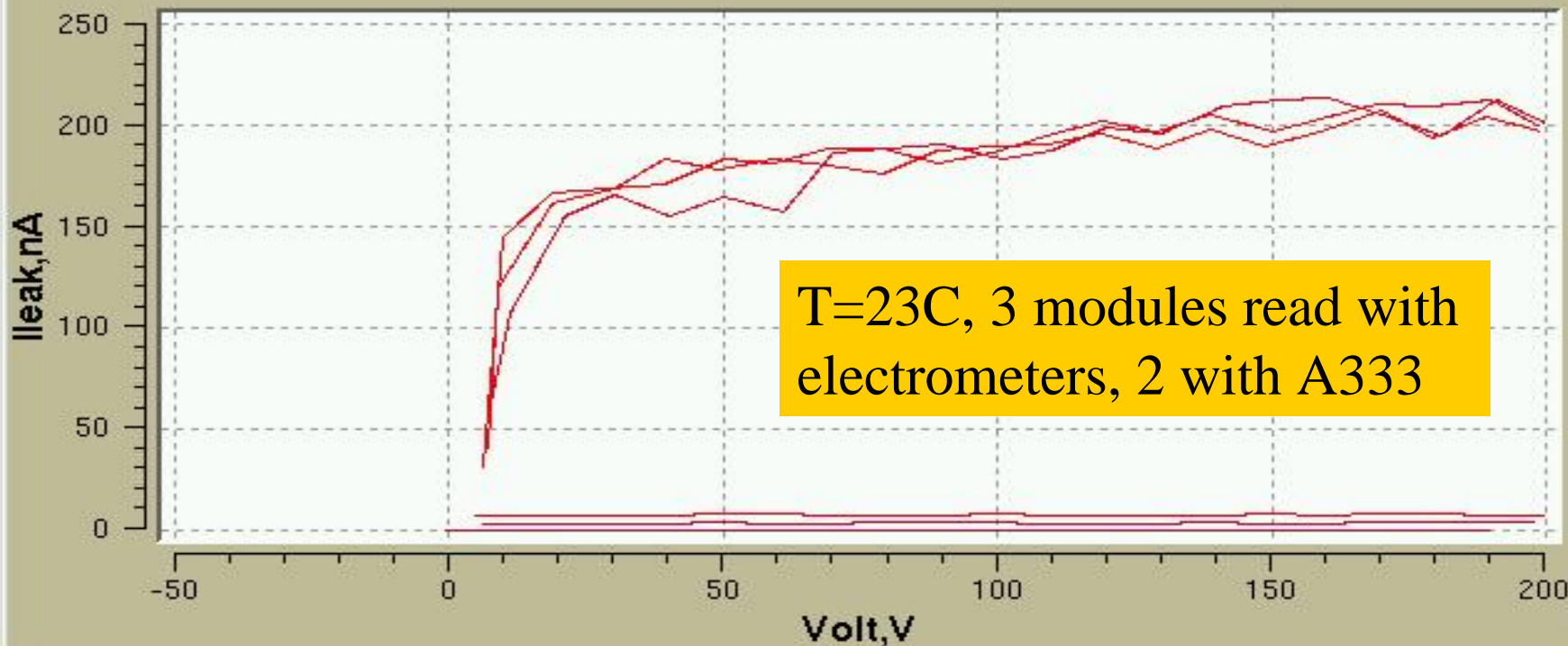
all

-1

redraw

Ped | Noise | Cal | CalProf | Xt | It | Lat | Cext | IV

IV



$T=23C$, 3 modules read with electrometers, 2 with A333

QUIT

elapsed time

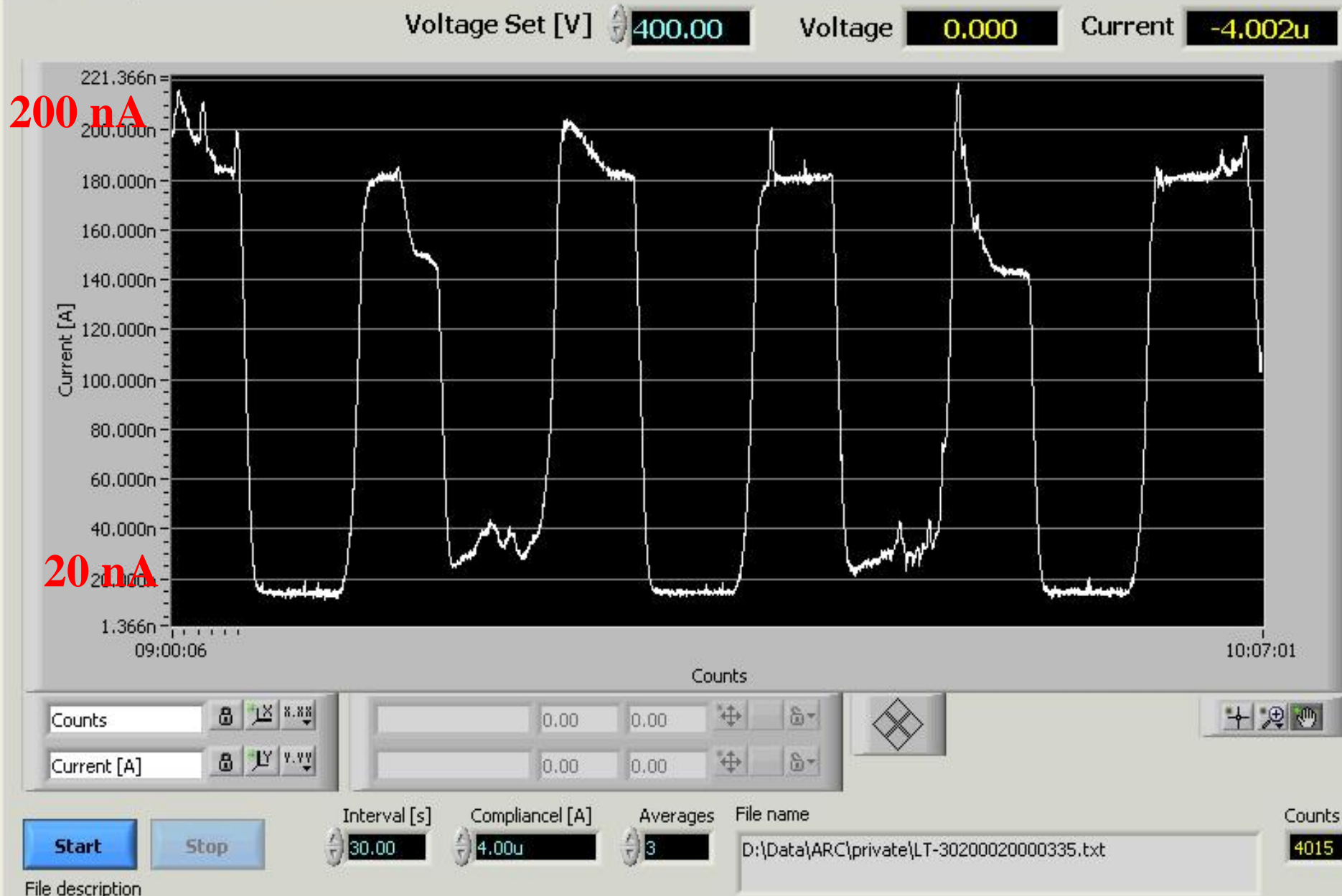
99999

```

.....start initialization, please wait.....
Time:39 .....Construct Setup.....
Time:59 demanded PedRun
    
```

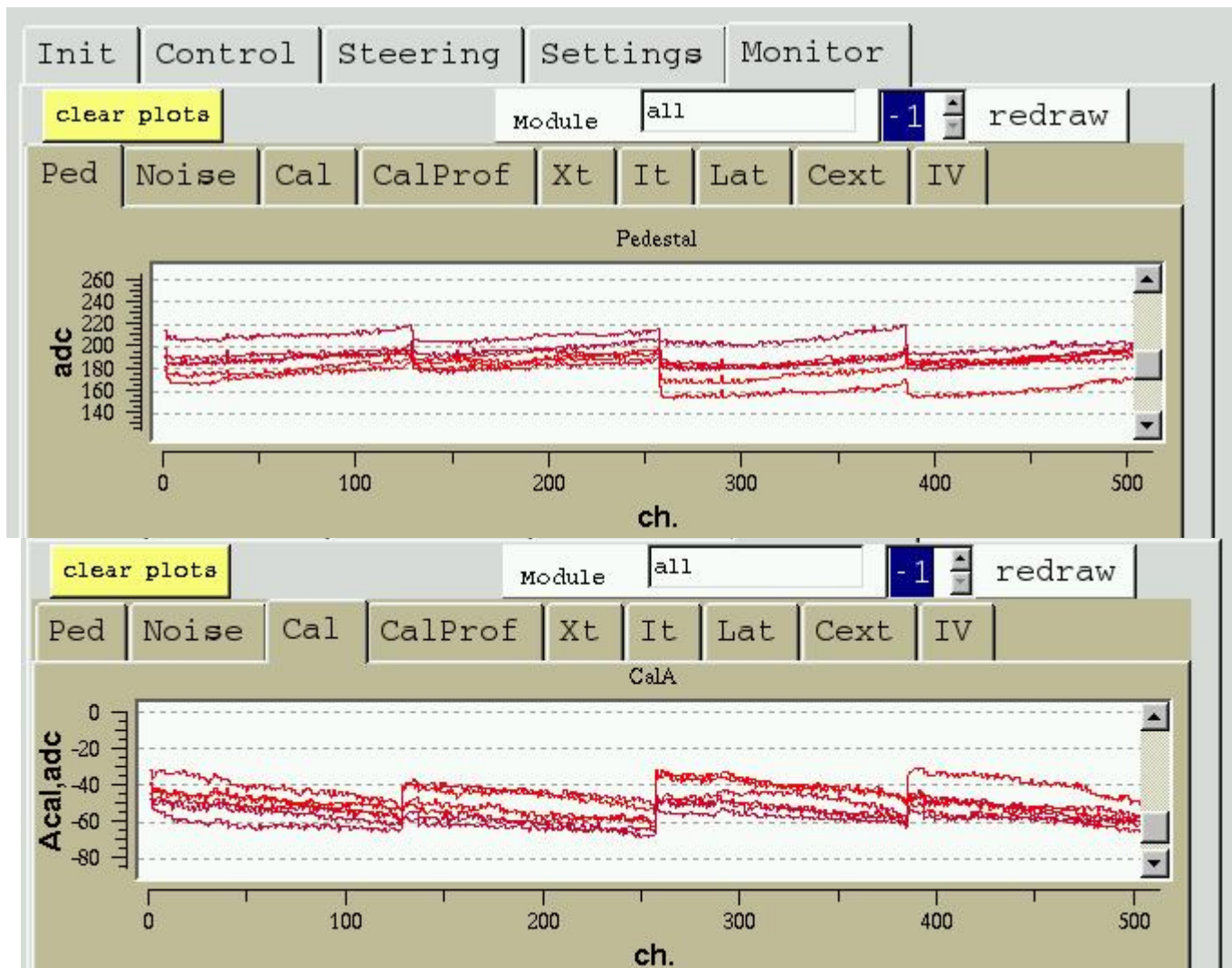
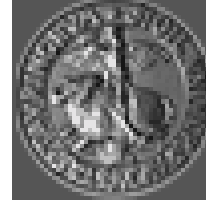


1 module always at 400V and read with K2410 every 30sec



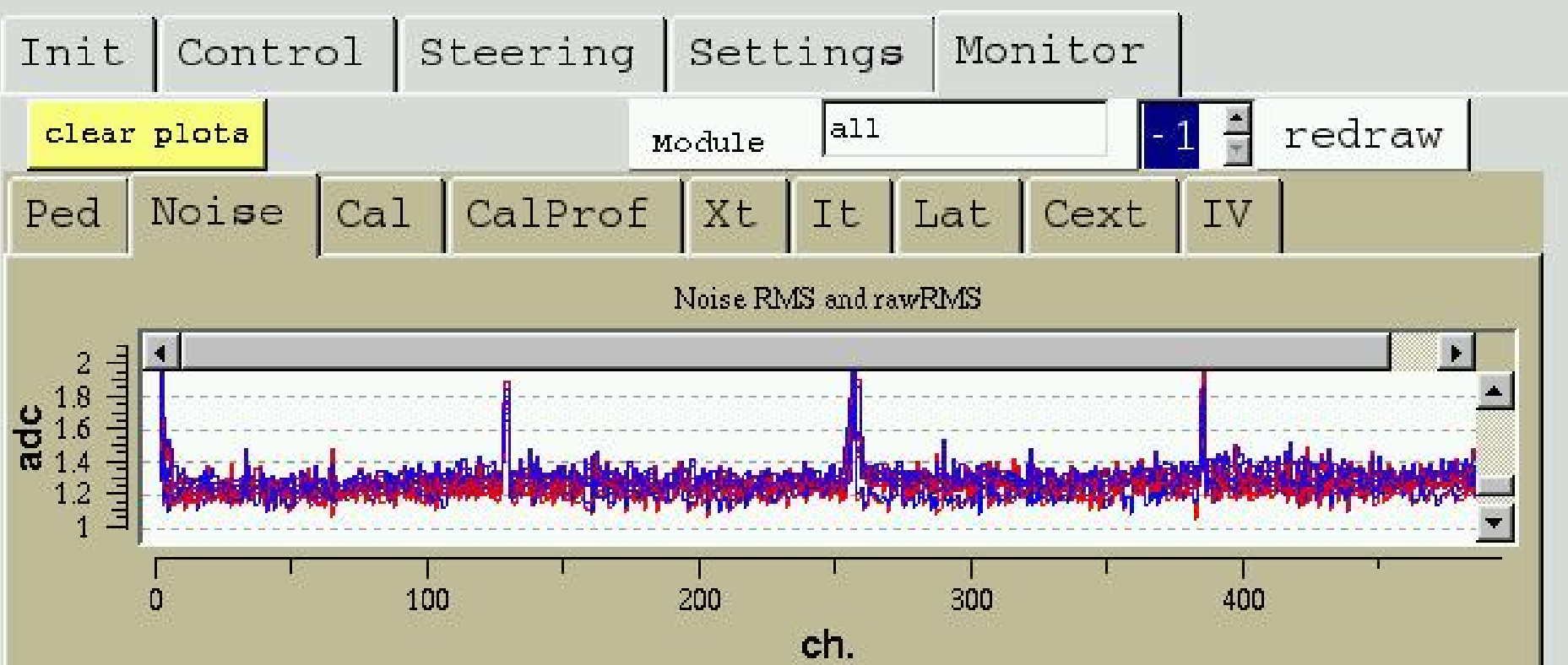
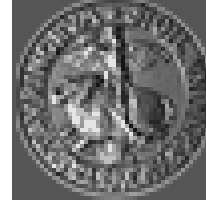


Ped & Cal





Noise



Huge noise at edges

CM noise with Peak InvOff = 0.6 ADC

Known problem → grounding needs optimisation,
but no influence from K-MUX

Test with ARC after Lt:

ALL modules perfectly fine:

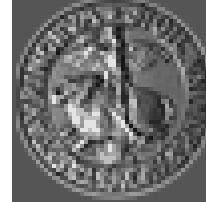
no change in IV

no pinholes

no new bad channels



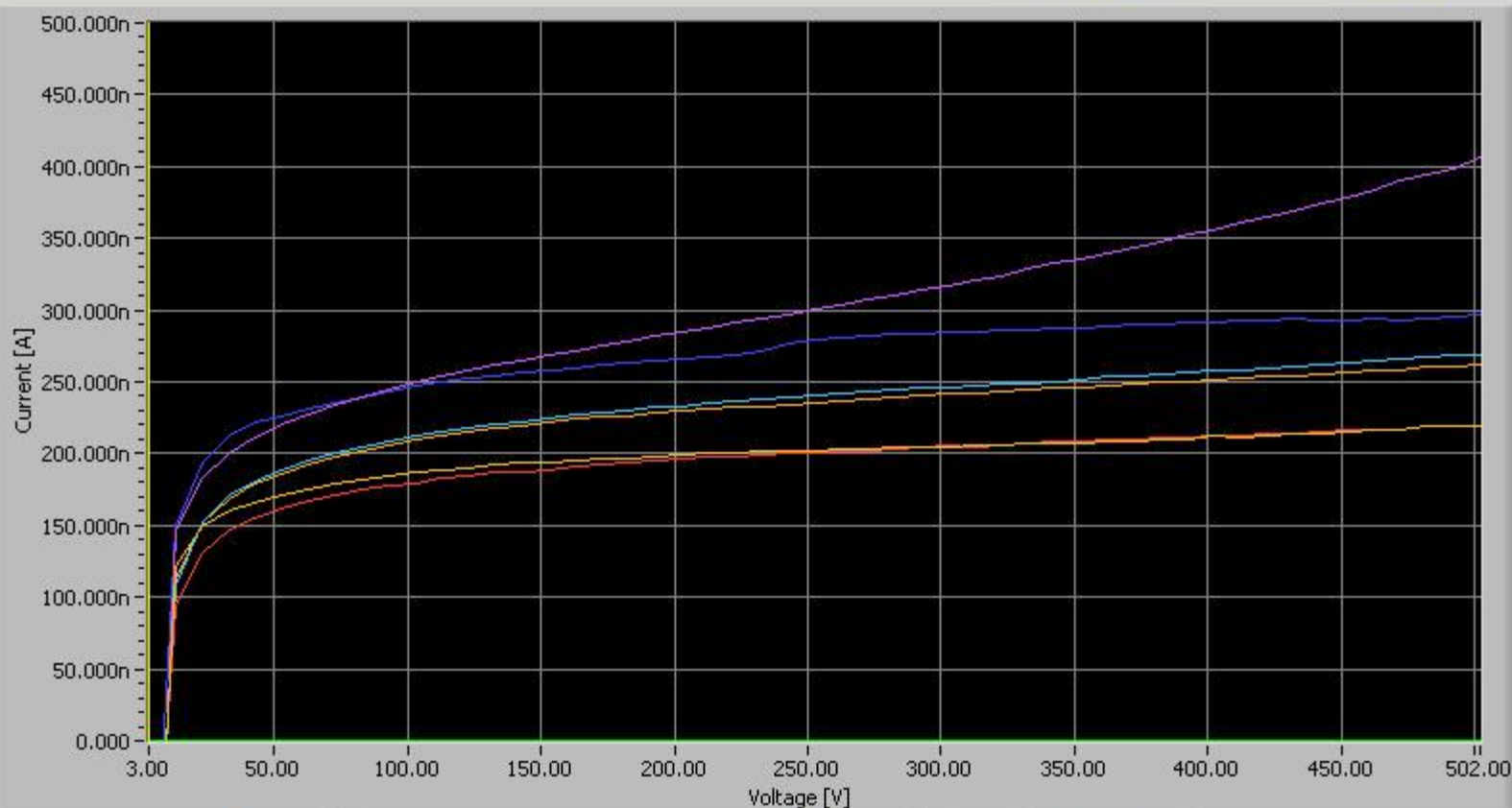
I V after Lt test



IV | I vs t | Startup setup

2410 Control center

Voltage **0.000** Current **-6.002u**



400 nA

200 nA

Voltage [V]
 Current [A]

Start **Stop**



...Next

- 1) **1 day test@-15C**
 - 2) **3 to 7 days test@ -15C**
- Grounding... (on ARC we have 0.3 ADC CM noise !)
 - Better analysis of data record (with new Root format to come)
 - Deep analysis of warning/errors DAQ errors
 - Better investigation of SC stability w.r.t DAQ
- a) More electrometers reading (now only 4 out of 6/10)
 - b) Interlock: HV control, power cut control (using UPS),
water flux control
 - c) implement 8-10 modules readout (2 CCU)



Conclusions

- Torino Lt system fully working with K-MUX
- Lt of 2.7 days with 6 modules readout
- All TIB3 modules passed the Lt test :
 - no IV difference
 - no new bad channels