

SBS Front Tracker Status

E. Cisbani / RM / R

SBS Weekly Meeting

2016 Mar 02

E. Bellini / CT / R

S. Colilli / RM / T

F. Giuliani / RM / T

A. Grimaldi / CT / T

F. Librizzi / CT / R+T

M. Lucentini / RM / T

BA=Bari

CT=Catania

GE=Genova

LE=Lecce

RM=Roma-ISS

E=Engineer

P=PhD Student

R=Researcher

S=Student

T=Technician

P. Musico / GE / E

R. Perrino / BA+LE / R

L. Re / CT / S

F. Santavenere / RM / T

D. Sciliberto / CT / T

C. Sutera / CT / R

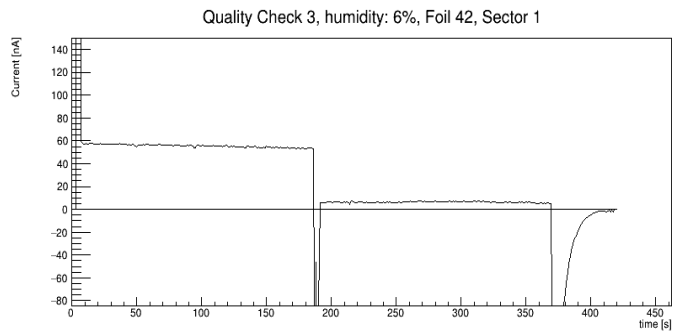
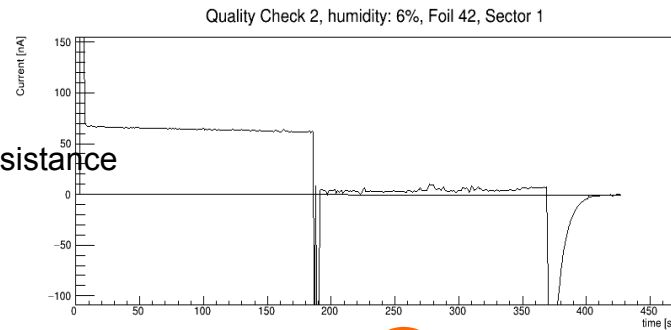
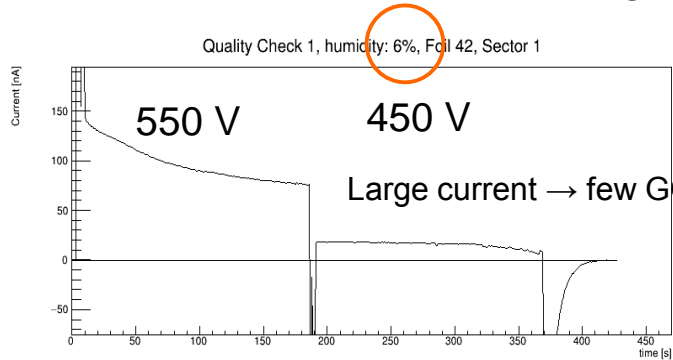
Module assembling (in Catania)

43 GEM foils tested

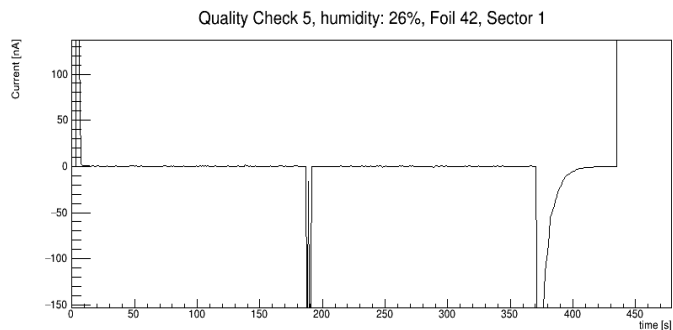
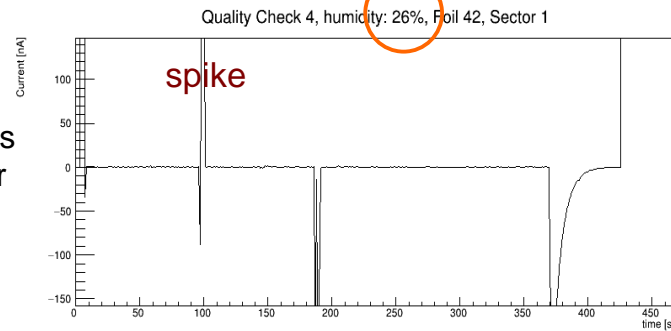
Module 11 completed (with old GEM foils production)

Module 12 completed (with 2 «reconditioned» foils + 1 new production)

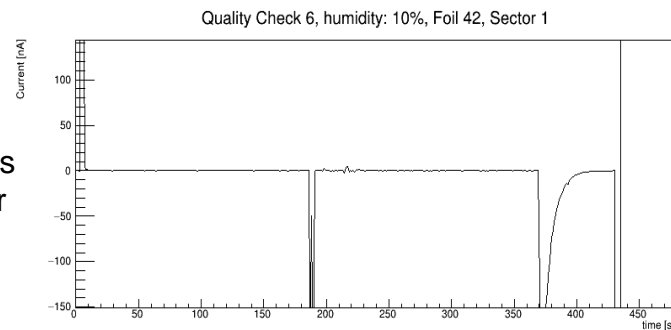
Module 13 under assembling



hours later



hours later



QA repeated when current is not stable and quiet ($<$ few nA)

Statistics:

- most of the sectors works fine first time
- 2-3 sectors need few QA loops
- 1 sector every \sim 10 foils has a short

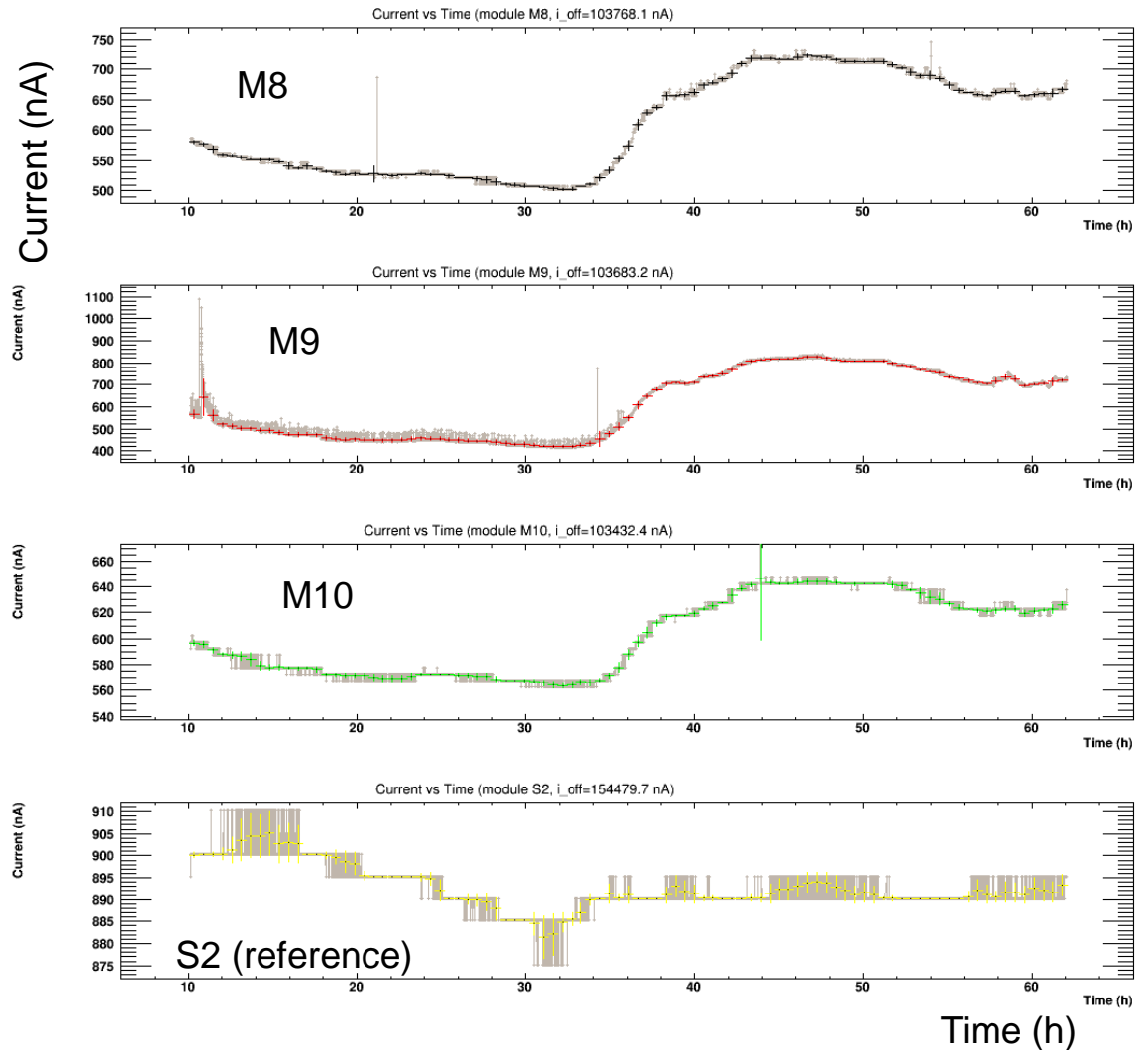
Left, un pretty curious sector; increased gas humidity apparently helped to clean the sector (?)

Chamber test and integration

- 3 new modules in Rome (8, 9 and 10)
 - Gas leaks fixed
 - HV trained
 - Read for cosmic test



ArCO₂, 4100 V



Current variation with external P,T, h conditions

MPD firmware update 12 Jan 2016

- Updated firmware (v 4.0) has:
 - VME interface
 - VME A24 space for configuration registers/RAM
 - VME A32 space for data buffer
 - Improved fragmentation in VME address map
 - Fast VME block transfer (2sVME, 2eSST)
 - Fiber interface
 - Optical Fiber interface now SSP compliant
 - Common
 - 16 taps FIR filters (for cable noise suppression)
 - 128 MB DDR data buffer
 - Logic utilization: 72 %, 20376 registers (43 %)
 - Block memory: 1814700 bits (72 %)

NOTE: VME and Fiber accesses are mutually exclusive

from Paolo Musico

MPD Firmware testing in Genova

- Bench test with 1 MPD connected to 1 backplane equipped with 4 APV front-ends.
- Very slow trigger rate to test Event Builder data format.
- All machinery seems working, including DDR FIFO
- VME 2eSST seems not working: not sure if problem is in MPD or in SIS3104 controller. Continue investigation.

from Paolo Musico

MPD firmware testing (fiber)

- No SSP available: developed a fiber master module using a second MPD
- Using a packet generator module that send data along the fiber
- Tried to extract APV data from the fiber using DAQ code: sometimes the format is good, but very often data are corrupted. The fiber master is not very stable
- The fiber master does not seem very stable (need a real SSP)

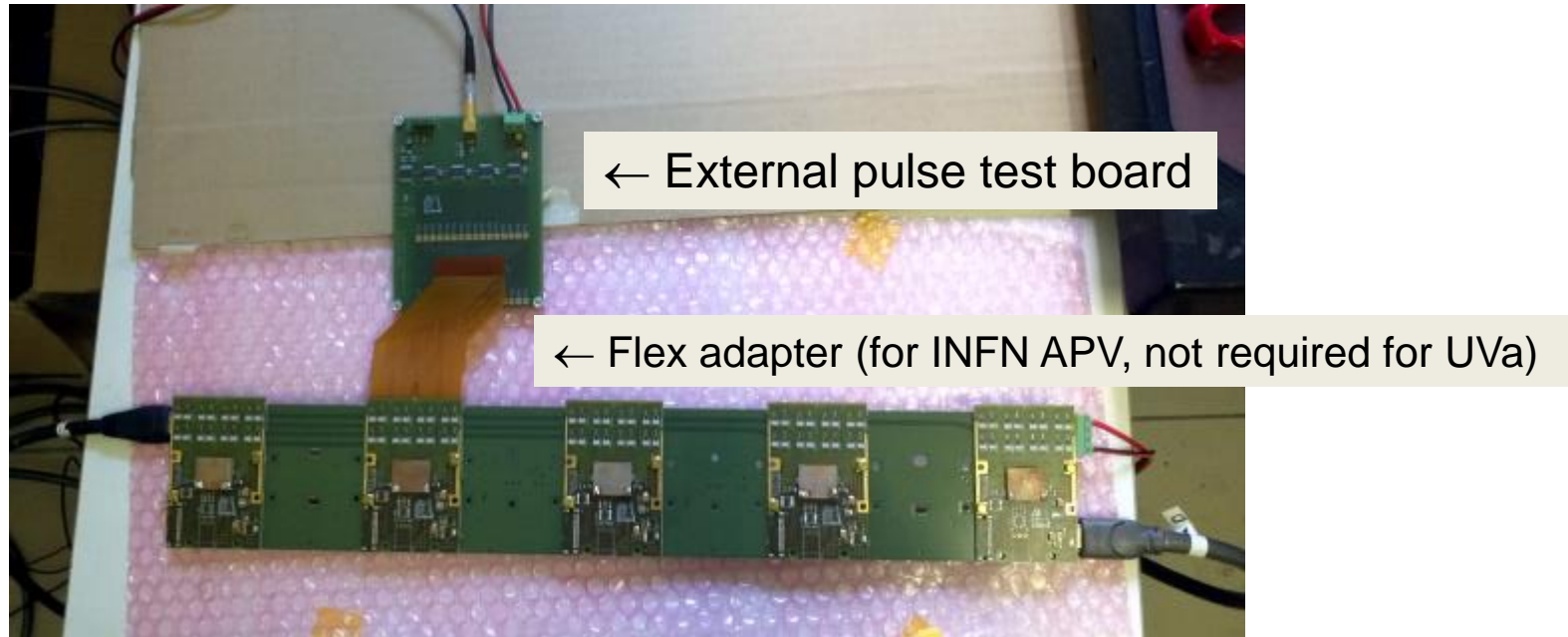
from Paolo Musico

Virginia, Hampton, Idaho State University parts

- EES provided updated quotation for the following:
 - UHampton: 5 MPDs
 - UIdaho: 55 APV front-ends, 6 MPDs
 - UVa: 900 APV front-ends, 57 MPDs, 42 backplanes 12 slots, 82 backplanes 5 slots
- Purchase orders are in preparation
- All boards need to be tested before leaving Italy: ship only working parts

from Paolo Musico

Electronics QA Test



- Implemented automated procedure for backplane + cards quality checks:
 - card discovery, check sync pulses, histogram quality, pedestals, SNR by internal calibration pulse
 - Monitor and log power consumption during all steps
- To do: include external calibration pulse (needed for bonding quality test), need operator to connect test circuit on each card