

Long Term Test status in Florence

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Software used

- New installation of Linux RedHat CERN 7.2.1 on a Pentium III 1 GHz with 512 MB RAM
- Mirabito's Xdaq (downloaded on December 2002)
- Long term software 0.12 (development version)
- BigBrowser

Hardware

- CAEN SY127 controlled via A303 (not officially supported for RH 7.2.1, but working)
- TRHX:
 - 2 temperature sensors
 - 1 humidity + temperature sensor
- PAACB controlled via TPO (Ageron's card)
- Module with 4 APVs connected via VUTRI
- Catania cold box for humidity and temperature check (no module inside yet)

Hardware (2)

From our experience, the T sensor of the TH probe takes a lot of time to reach the correct T readout: this affects the calculation of the relative humidity. As a result, you get a lower relative humidity with respect to the real one, when T is decreasing.

At 20° C you should have no more than 3% (conservative value) of relative humidity to avoid ice at -20° C!
Check it before starting the thermal cycle!

Hardware (3)

We are still waiting for:

- Electrometers, to readout the HV current (we'll try to integrate also the CIO 6402)
- Wien cold box
- Karlsruhe multiplexer

We'll test this equipment as soon as possible

Measurements

Measurements done with a simple scenario file:

| time (s) | action | |
|----------|------------|---------------------------|
| 0 | Start | 0 |
| 5 | ChangeHV | 200 |
| 90 | PedRun | i2cpedpeak (or i2cpeddec) |
| 110 | SaveRec | 0 |
| 120 | CalProfRun | i2ccalpeak (or i2ccaldec) |
| 1400 | SaveRec | 1 |
| 1420 | ChangeHV | 0 |
| 1440 | Stop | 0 |

peak mode

deconvolution mode

The output is a ROOT file that can be used to produce an XML for the upload to the database.

Settings

[Settings.xml](#) file was modified to include:

- the TRHX humidity and temperature channels
- one CAEN SY127 HV channel

[Settings.dtd](#) file was changed to extract up to 3 composite actions from the ROOT file to the XML:

- before cooling cycle (room temperature)
- at target temperature (-20° C)
- at the end of the cooling cycle (room temperature)

"Bad" strips

Are flagged with a code according to the problem identified

Results presented for module

TIB302166805173

Bad channels:

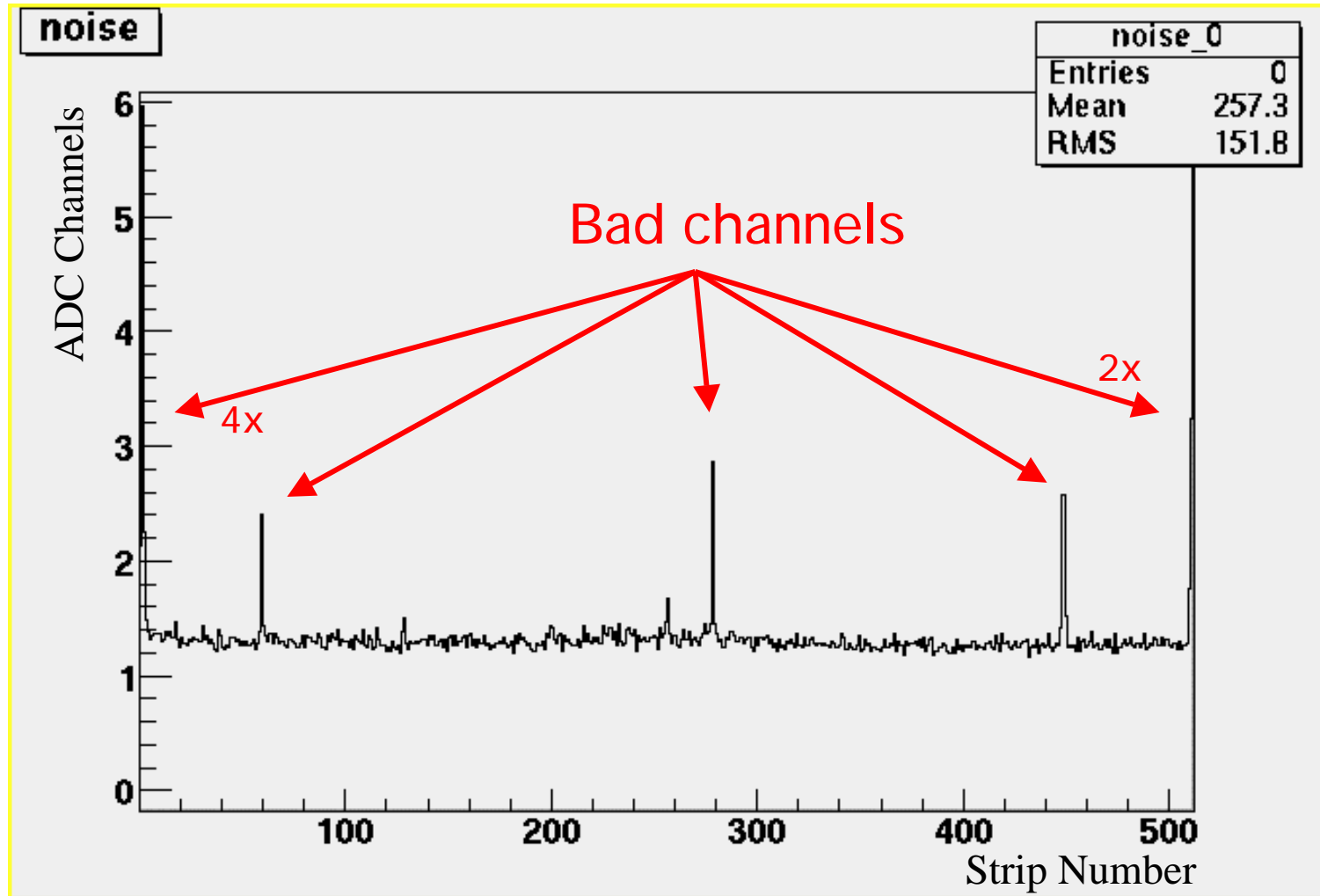
Peak mode, inverter off

1 2 3 4 60 279 449 511 512

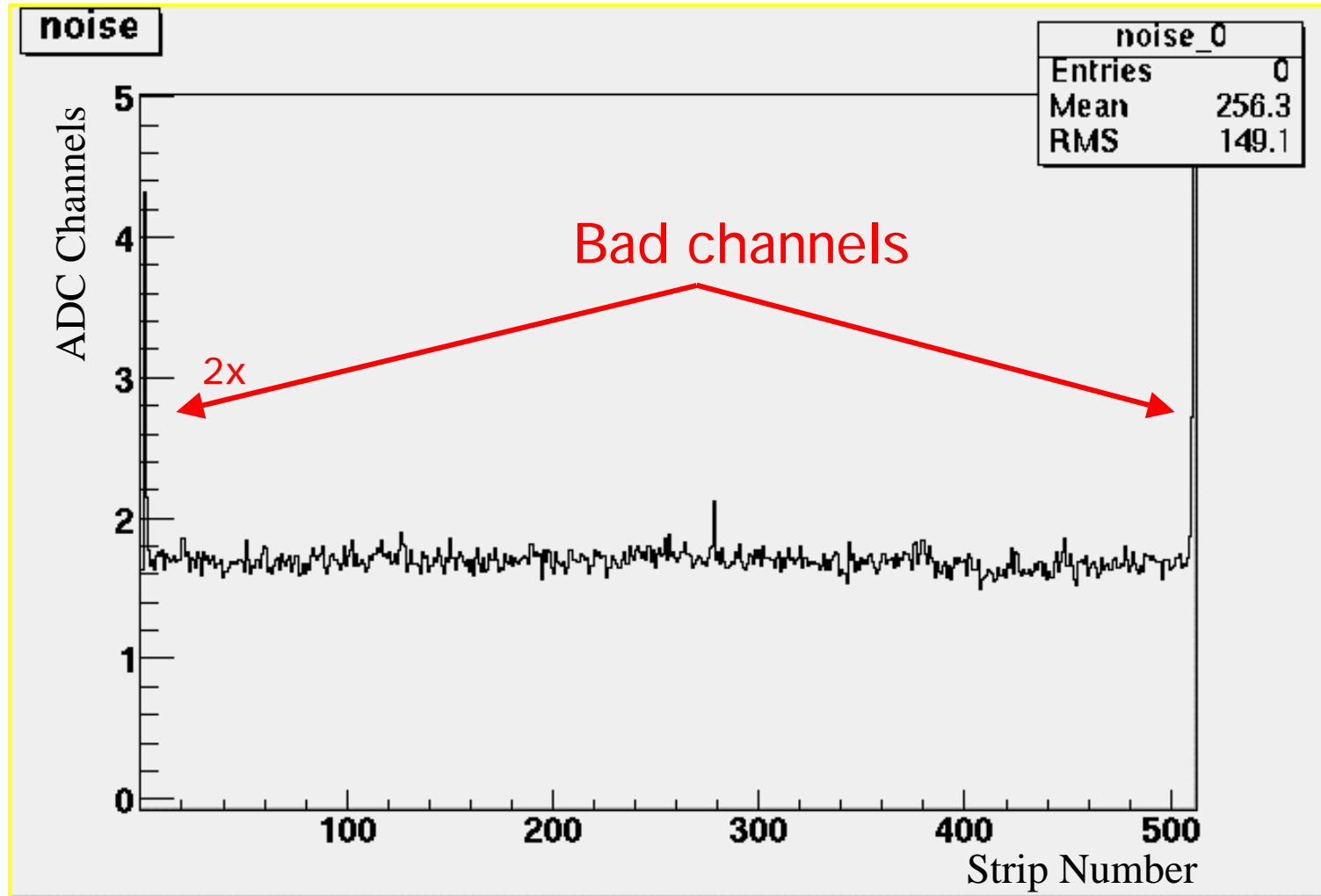
Dec mode, inverter off

1 3 512

Noise in peak mode



Noise in deconvolution mode



"Bad" strips (2)

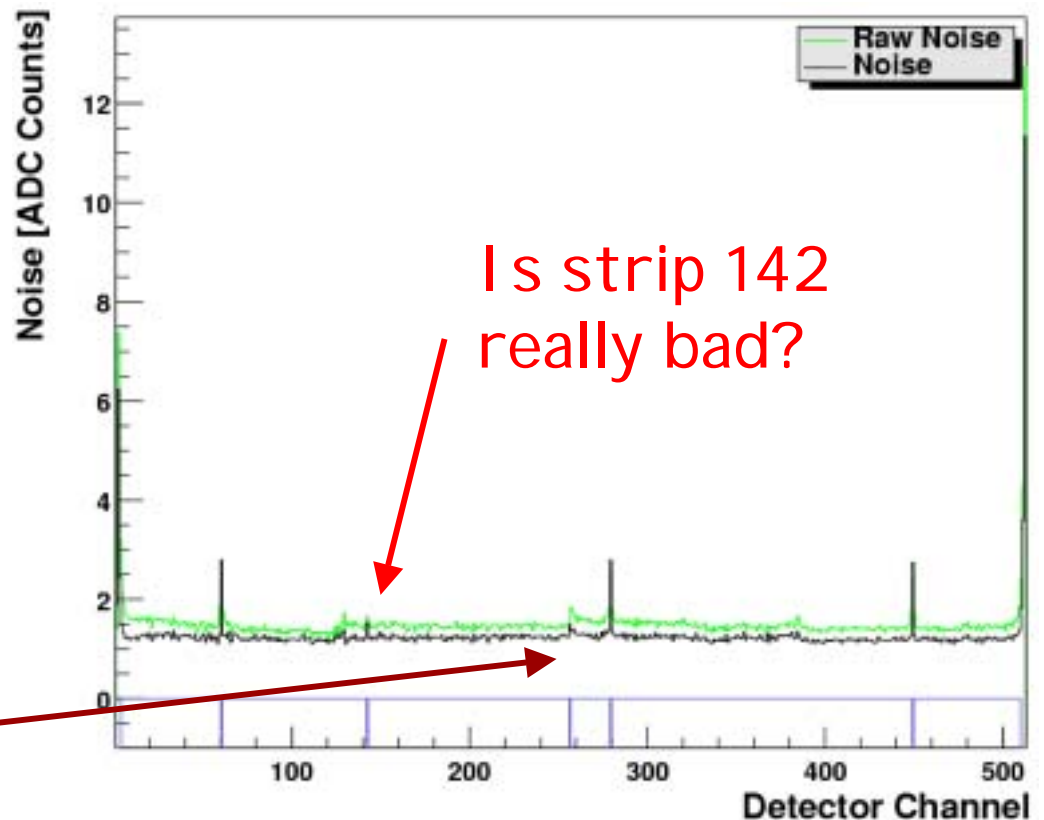
We ran tests on the same module with ARC System to compare the results.

Bad channels in peak mode, with inverter off:

1 2 3 60 142 256 279
449 510


Doesn't appear in LT results

Chip edge



XML output file

Problems encountered

- Only the V2.50 value read from the PAACB is stored. V1.25 can be readout but not saved
- After ChangeHV, the HV is read and stored generally before the end of the ramp, and so it results lower than the real bias voltage applied. Is it not updated?
- Pedestals, rawnoise, noise and channels flags are saved as integers truncated and then multiplied by 10!  We loose one decimal

XML output file

Problems encountered (2)

- DCU values are in ADC channels and should be converted in physical units
- Channels flags are stored correctly into the ROOT file but are not well converted into the XML file

Database interface

- BigBrowser works only with the standard RH 7.2.1 Java engine and not with the version included in the released package
- We can create objects into the test database
- Read data about these objects

but

- We can't upload XML files to the database
- We should still understand how to work with the information extracted from the database

"Bad" strips (3)

ARC System

Bad channels in dec mode, with inverter off:

2 3 279 449 510 511
512

Not in LT

