



Module testing: Irradiated R5 in the cold box

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DESY ATLAS Instrumentation meeting

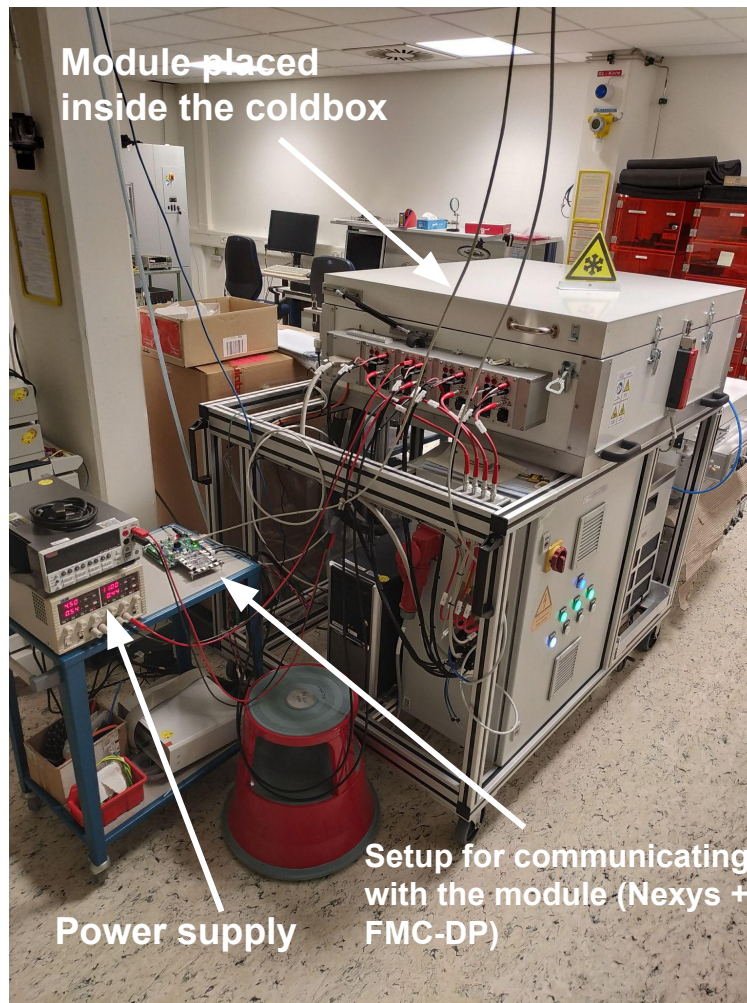
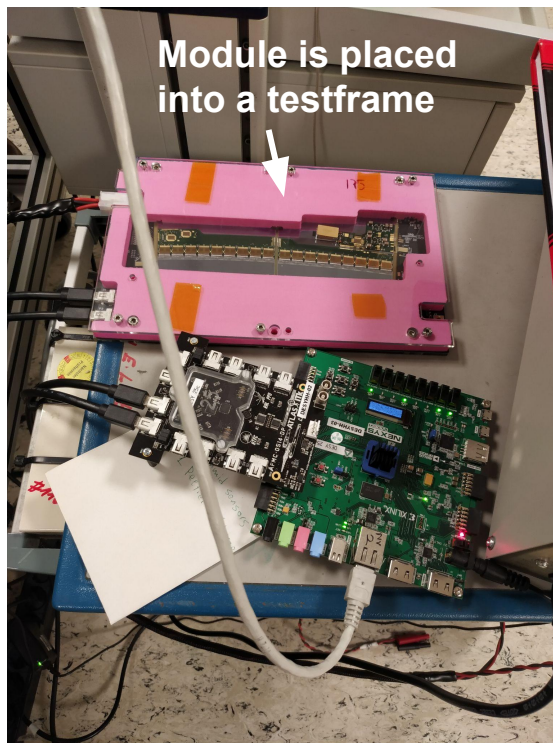
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Introduction

Irradiated R5 module was sent to DESY to be used during the test beam (TB)

We tested it beforehand using the coldbox setup, but we observed higher noise levels than expected

We continued testing it to understand whether the noise is caused by the coldbox setup



Testing different configurations

TB: *Testbeam configuration, -40 C, less stable cooling setup with dry ice*

CB1: *Coldbox configuration, -35 C, stable cooling, **no metal GND screw, only plastic screws used when fixing the module***

CB2: *Coldbox configuration, -35 C, stable cooling, no metal GND screw, **one plastic screw replaced by a metal one (lower right corner)***

CB3: *Coldbox configuration, -35 C, stable cooling, **metal GND screw put back, one plastic screw replaced by a metal one (lower right corner)***

Additional configurations to test:

- *Connect the GND of the power supply with the GND of the coldbox (however, we should decide on top of which configuration to do this)*
- *Test without the pink foam (I do not dare doing this alone! :))*

Results

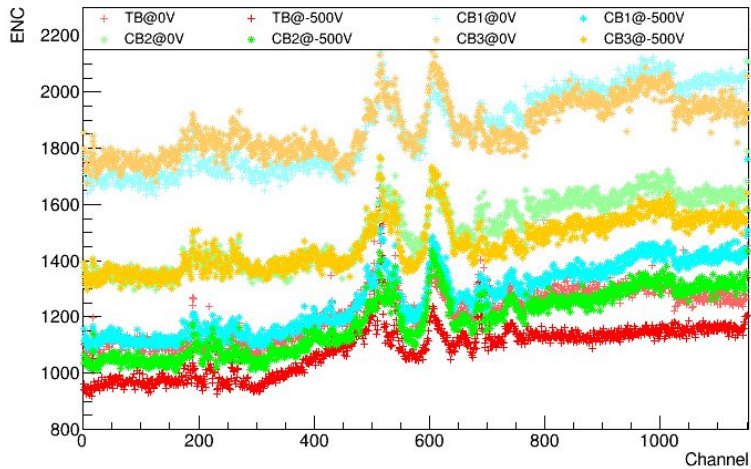
Test beam

(CB1)
Plastic screws

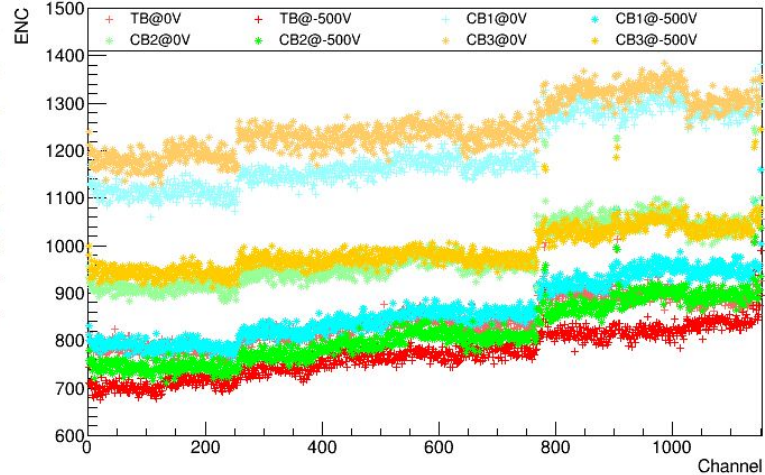
(CB2)
Metal screw

(CB3)
Metal screw +
metal GND
screw

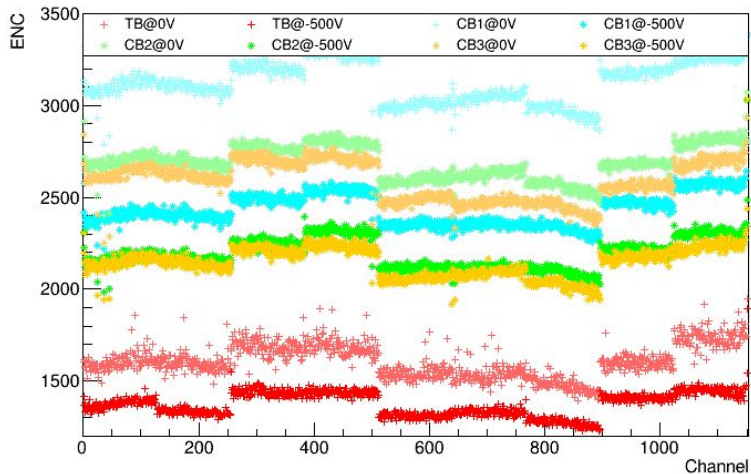
R5H0S0 - Input Noise



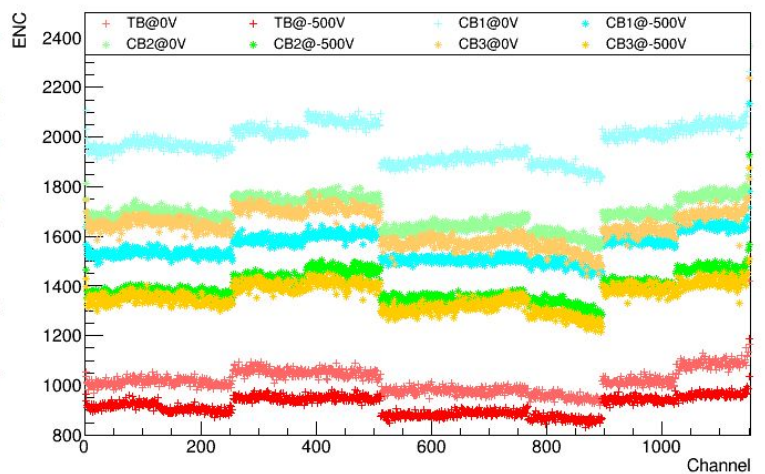
R5H0S1 - Input Noise



R5H1S0 - Input Noise



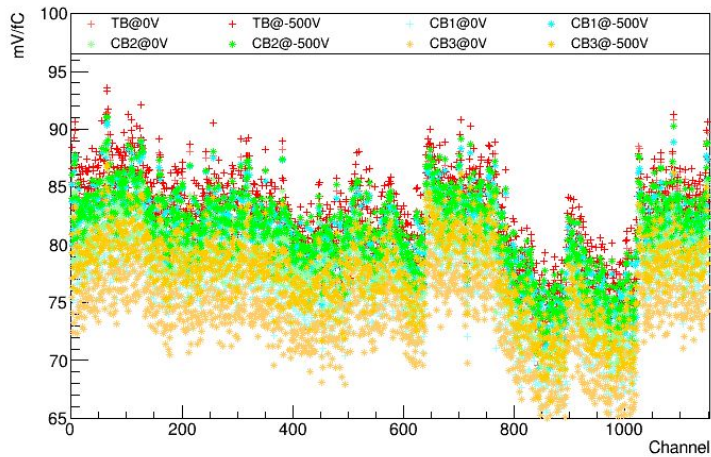
R5H1S1 - Input Noise



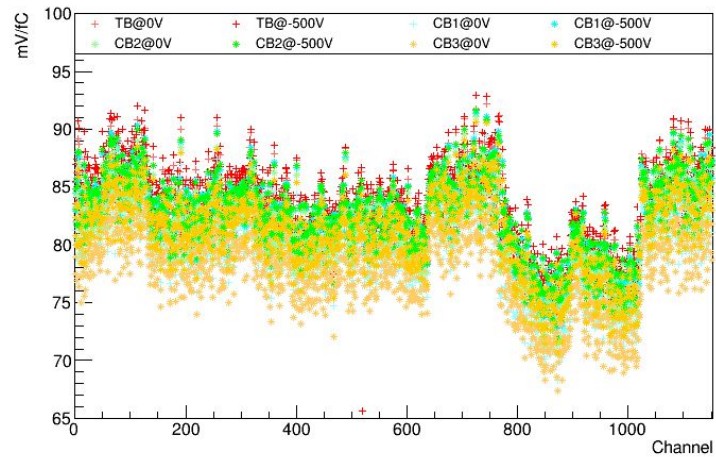
Backup

Gain

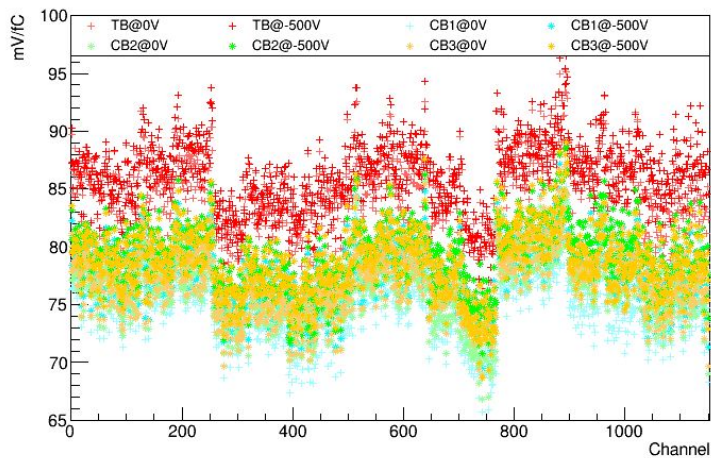
R5H0S0 - Gain



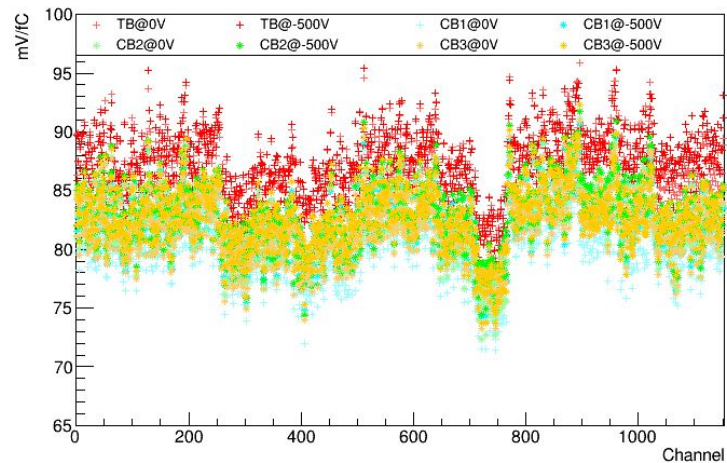
R5H0S1 - Gain



R5H1S0 - Gain



R5H1S1 - Gain



IV curve

