

CRP news

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General info, status of CRP6

CRP meeting
March 27th 2024

CRP6 status and next cold box plan:

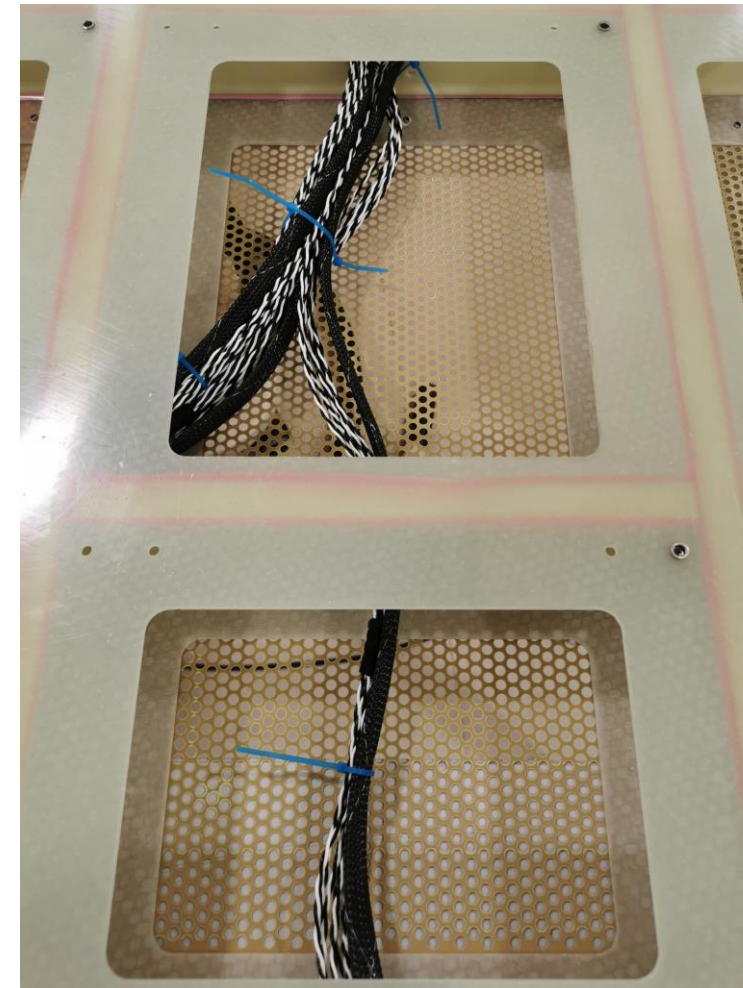
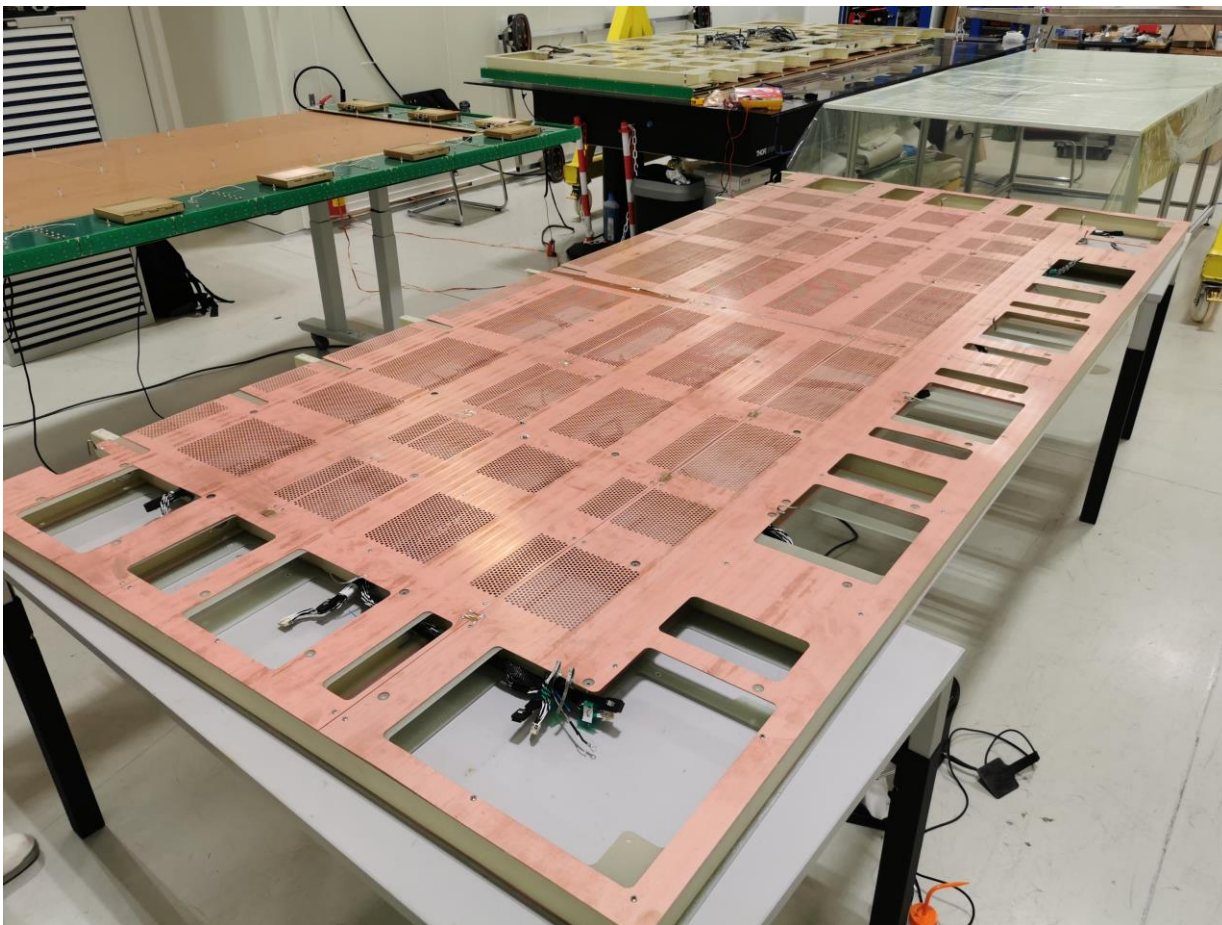
- ❑ CRP6 has been modified and rebuilt last week
 - replace screws for braid connection to the ground plane by soldering them on both CRU
 - CRUA ground plane is replaced by a new version covering the cables in the composite openings
 - More details can be found in Chris presentation at the 'SP TPC Electronics/BDE Consortium' Meeting : <https://indico.fnal.gov/event/64002/#1-modifications-to-crp6>

- ❑ In the Faraday cage since Monday 25/03

- ❑ The noise runs show a rather good situation and already highlight the advantage of shielding the power cables
(ref: summary from Cheng-Ju at the 'SP TPC Electronics/BDE Consortium' Meeting yesterday.
(https://indico.fnal.gov/event/64002/contributions/287656/attachments/176291/239449/CRP6_Faraday_Cage_03-26-2024.pdf)

- ❑ Tomorrow (28/03) the CRP6 will be inserted in the coldbox, purge during the long weekend until Tuesday April 2nd morning => cooling down and first checks of the behaviour

CRP6 and modified ground for CRP6b

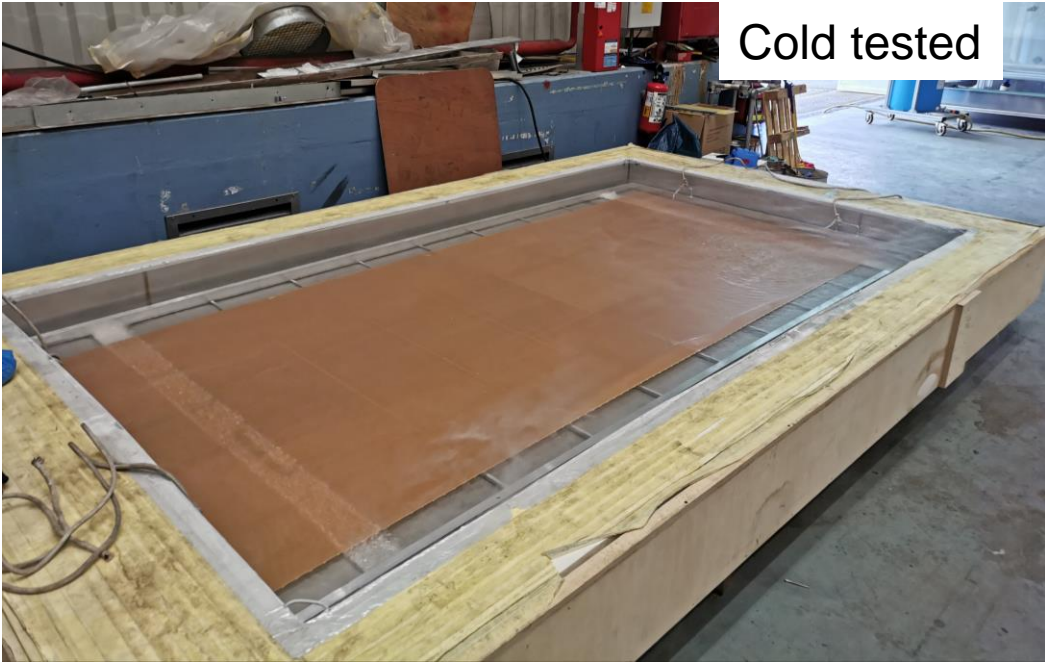


To note: it has been drilled at the CERN PCB workshop

The effect of reduced flow transparency has to be evaluated for FD2 (through CFD simulation?)

Cost is higher than the standard ground plane

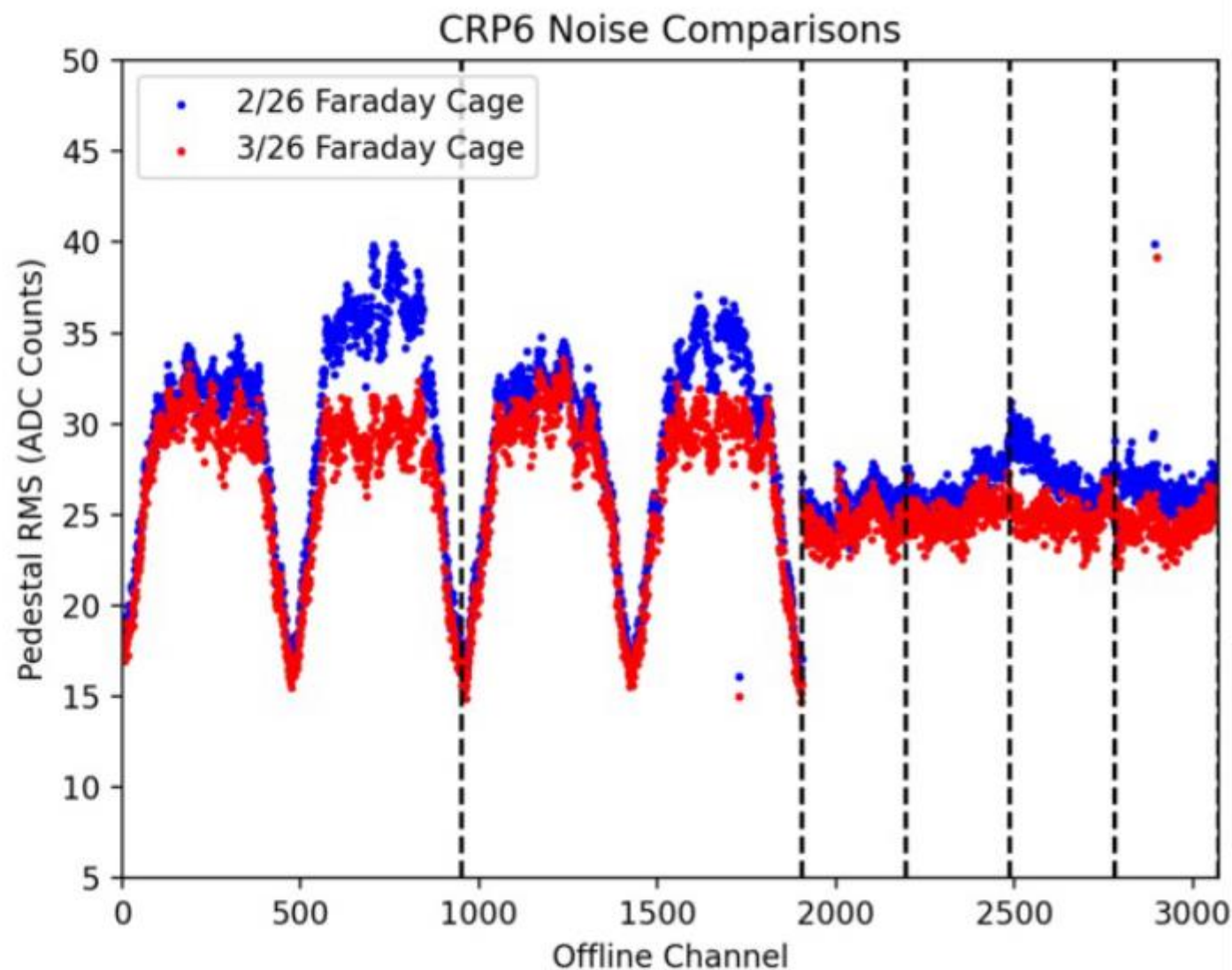
New anode: shield-induction1 prepared



CRP6 3rd vs 4th Faraday Cage Noise Level

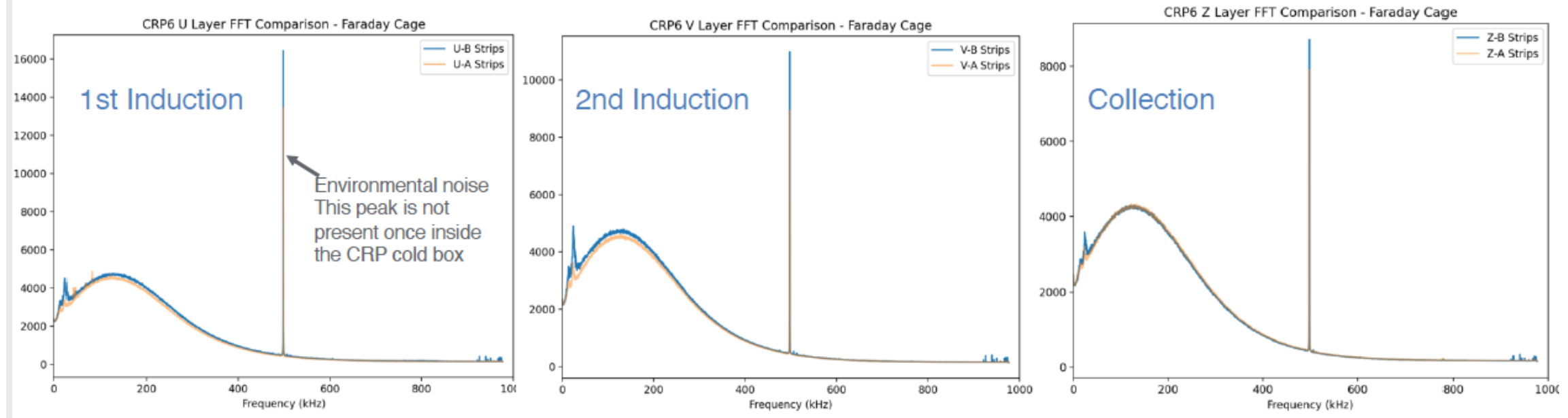
(Plot from Roger Huang)

Overall noise level improved significantly with the new copper shield and better ground connections between the copper shield and the FEMB adapter boards



Comparison Between Two Halves of the CRP#6 (A and B side)

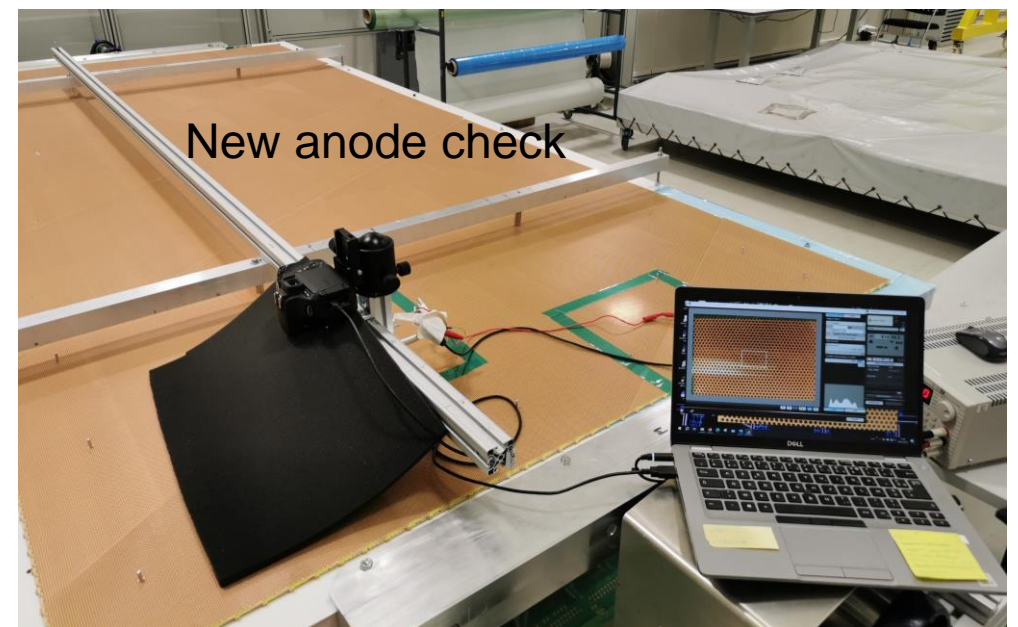
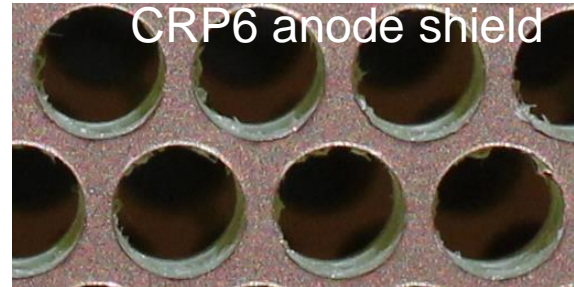
(Plots from Roger Huang)



- Overall better noise performance on CRP6 side A which has the new copper shield and better ground connections.
- 25kHz coherent noise is more suppressed on side A

New shield-induction1 anode panel for CRU6-A

- After a careful campaign of detailed imaging of the anodes of CRP7 and CRP6 several points were identified to explain the transparency results reported in January
- Detailed analysis of the photos will be summarized and presented at the next consortium meeting in 2 weeks



- 1 aspect coming out from the inspection was the tolerance of the cutting of the anode PCB segments
At the junction parts there are some panels which have FR4 in excess to the copper border
- ⇒ This can affect the alignment of the segments along the junction lines
 - ⇒ It has been decided to build a new shield-induction1 panel with spare panels where the border has been rectified removing the excess FR4



The anode will be assembled Thursday 14th and tested and cleaned on Friday 15th