

CRP6 Update

US CRP/BDE Meeting
March 26, 2024

Chris Macias

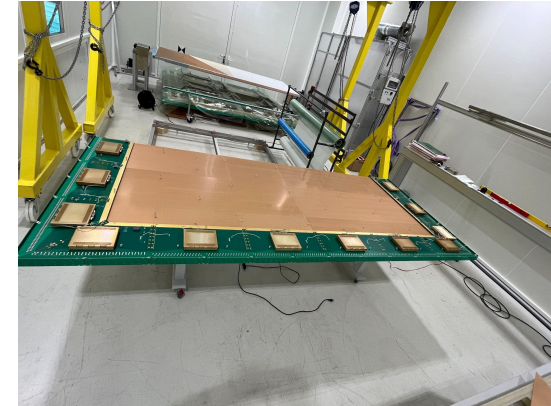
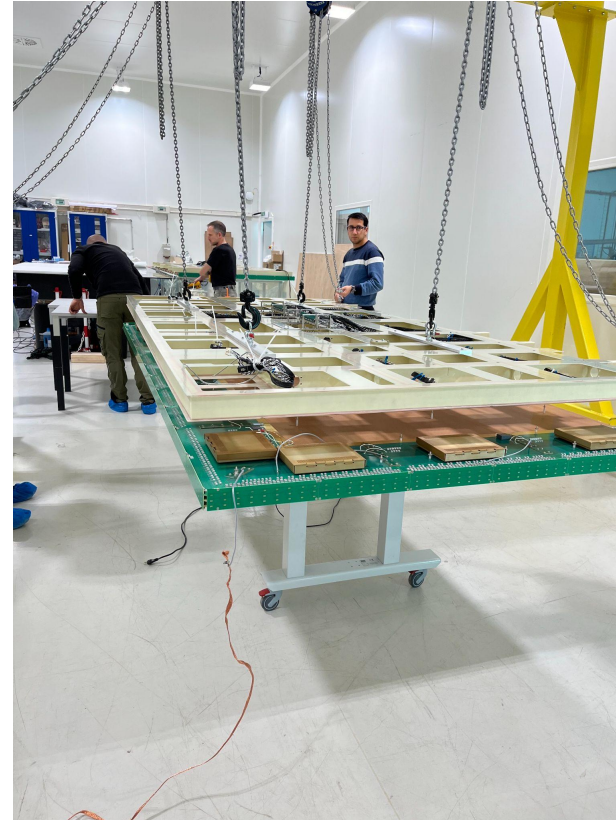
Outline- CRP6 updates

- March 7th
 - Transported CRP6 to B185 cleanroom
 - Disconnected CRP6a's FEMBs from short BDE cable connection
 - Detached composite frame from CRP6a
 - keeping FEMBs installed to adapter boards + stacked anodes
 - Uninstalled BDE short cables from CRP6a
 - Removed (original) grounding plane
- Week of March 11th
 - Changed adapter board #3 from CRP6a
 - additional cross-check for when we test crp6 again in the cold box
 - no obvious reason to suggest an adapter board problem, just that there is
 - currently no strong evidence that the edge cards are a problem
 - uninstall + reinstall FEMB 3 & 4.
 - Rerouted BDE short cables
 - minor updates to cable routes
 - removing any cable loops
 - Defined points to use cable ties within composite frame for US CRP factories
 - minimize cable ties + ensuring no cables sag onto grounding plane/anode
- Week of March 18th
 - Installed new grounding plane to CRP6a composite frame
 - Updated adapter board grounding braids
 - soldered on both endpoints
 - one braid per adapter board
 - Patch panel long cable-side power connector end minorly chipped
 - For corresponding FEMBs on CRP6a & CRP6b: 4, 7, 8, 10, 14, 15, 16, 22
 - *Should* not affect connection, even though no longer latched from power connector end
 - has strain relief as further connection support
 - FEMBs BDE short cables reinstalled
 - Warm tested all FEMBs from CRP6
 - All looks good
 - data & summary reports found [here](#)
 - CRP6 transported back to ehnl
 - CRP6 recabled to cold box roof
- (This week) Week of March 25th
 - CRP6 moved to faraday cage
 - *fixed* edge card, corresponding to FEMB 21
 - was manually semi-removed during cleanroom inspection and was not put back correctly
 - Open channel since (again) on FEMB 5
 - most likely from the anode copper pad solder bridge for this channel
 - 7 bridges induction plane
- March 28th
 - CRP6 inserted to cold box
 - Purged from March 29th - April 2nd
- Current status, from Filippo:
 - Filters for fill are being cooled down
 - Filling cold box will follow

Disassembling CRP6a

CRP6 updates

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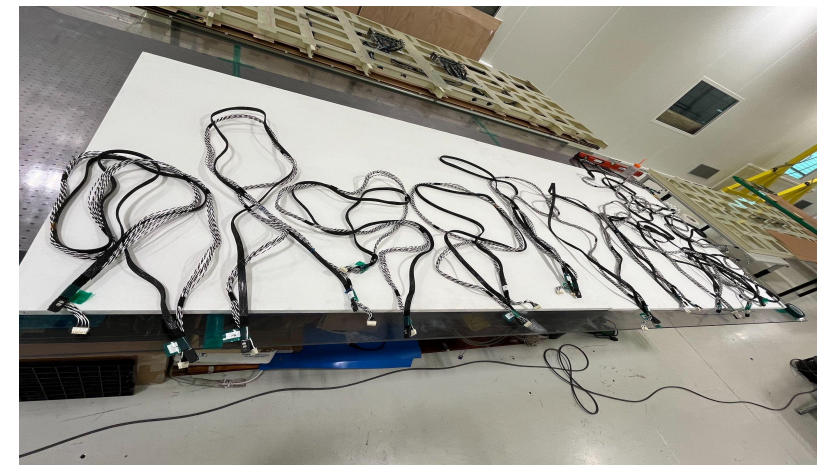


sample of anode PCBs

Disassembling CRP6a

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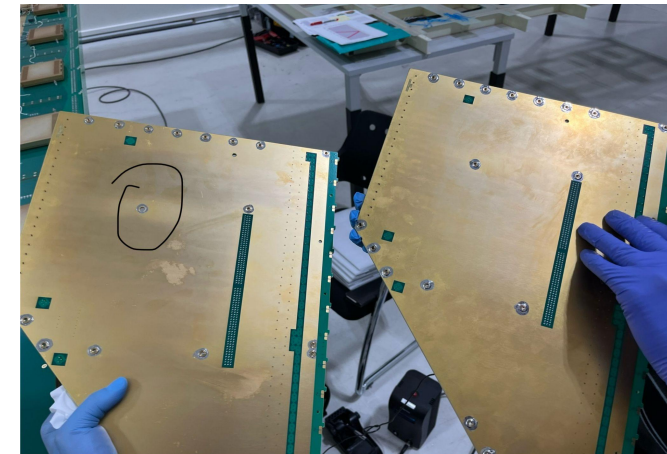
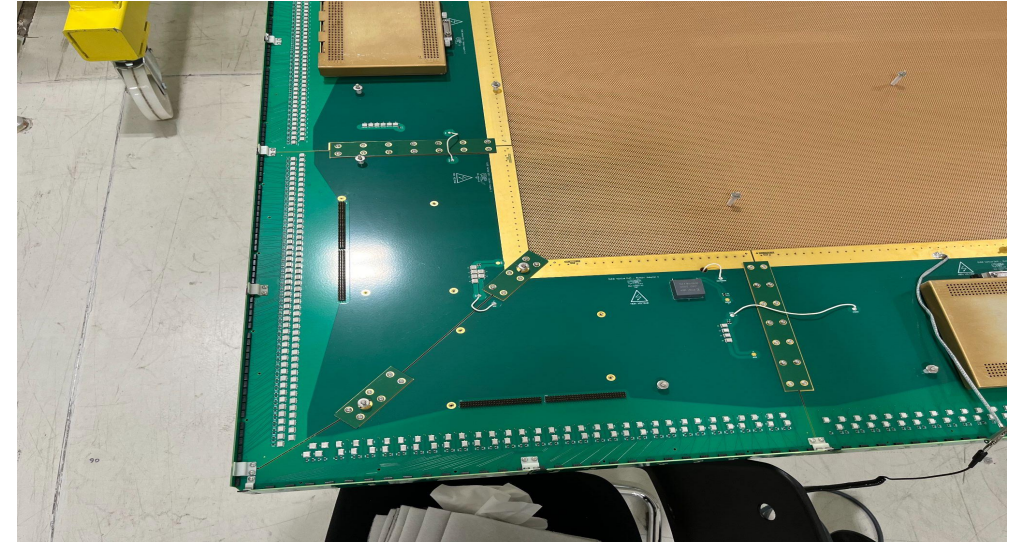
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CRP6a- round 3

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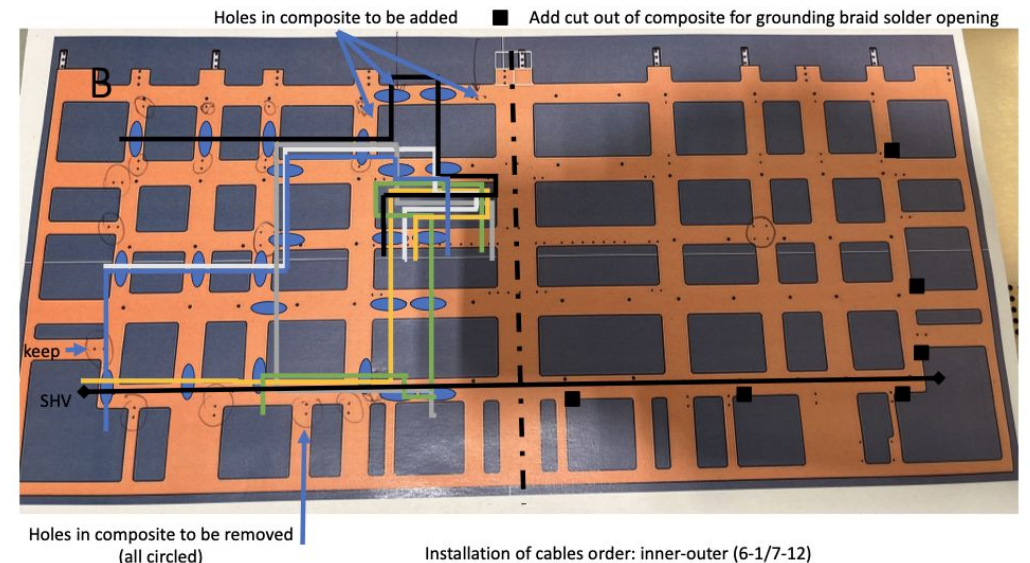
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 - useful for US CRP factory production



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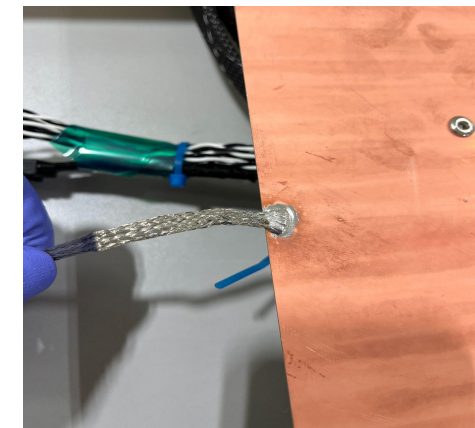
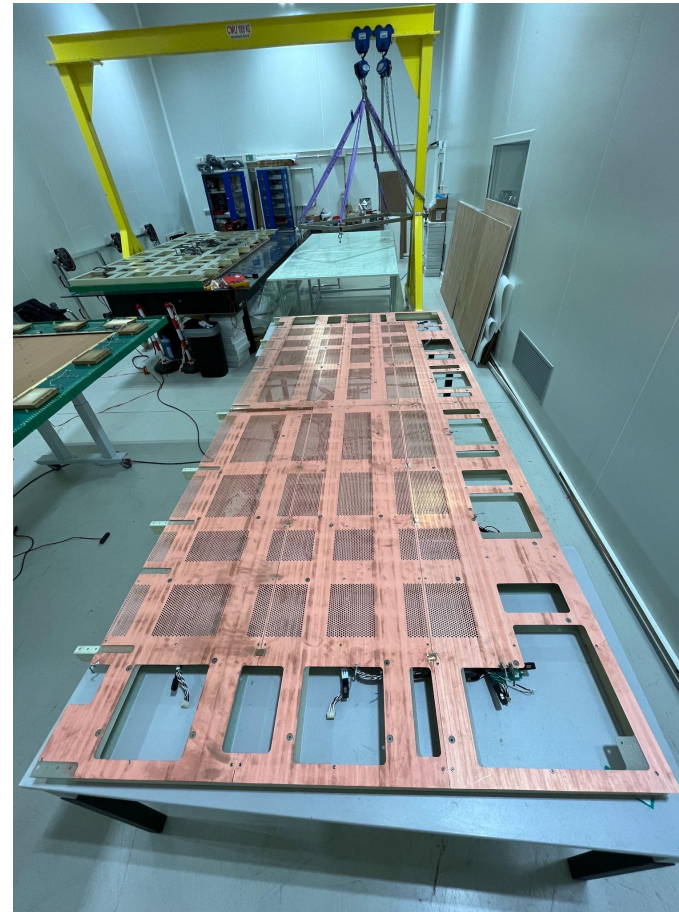
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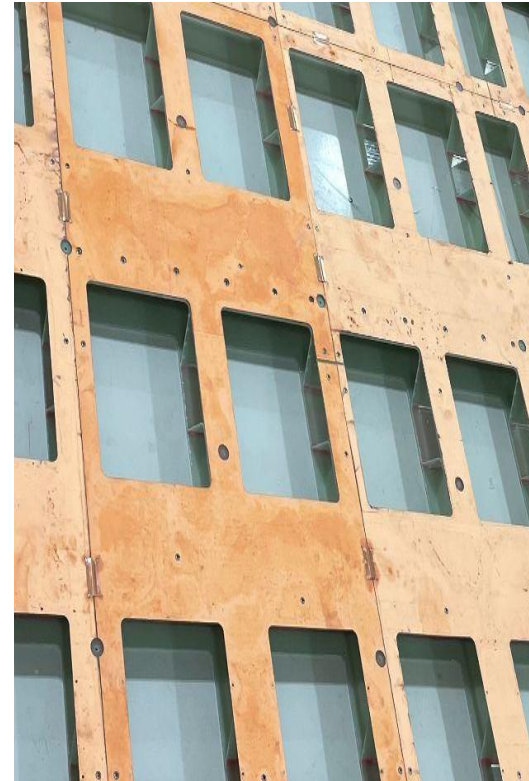
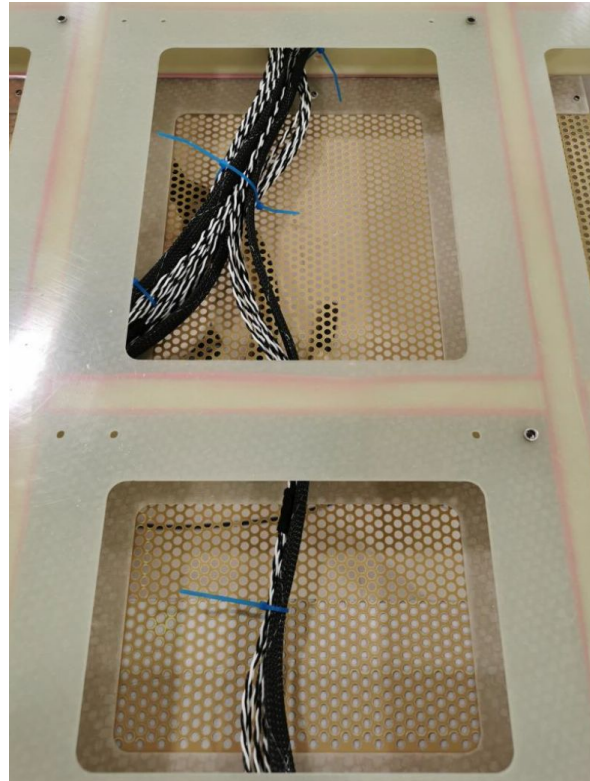


CRP6a- round 3

New grounding plane

vs

Old grounding plane

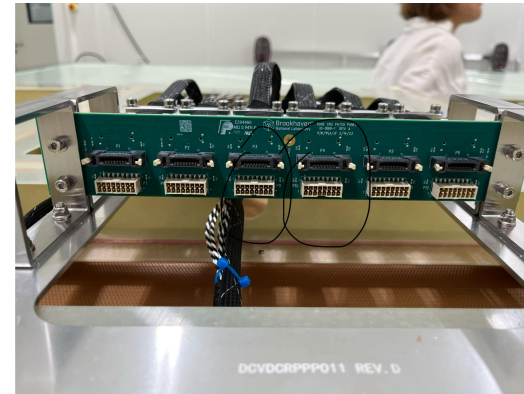
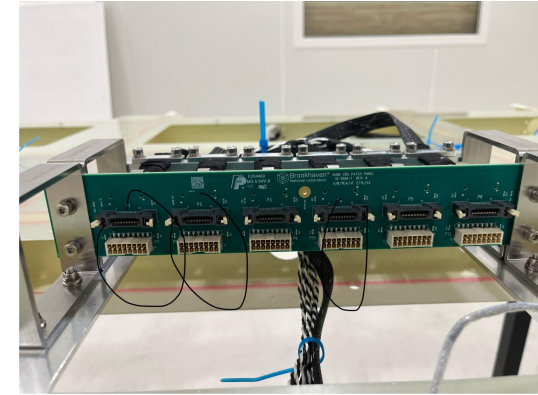
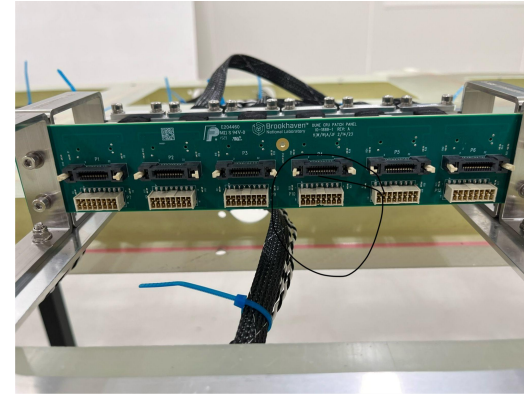


new version covering the cables in the composite openings

CRP6a- round 3

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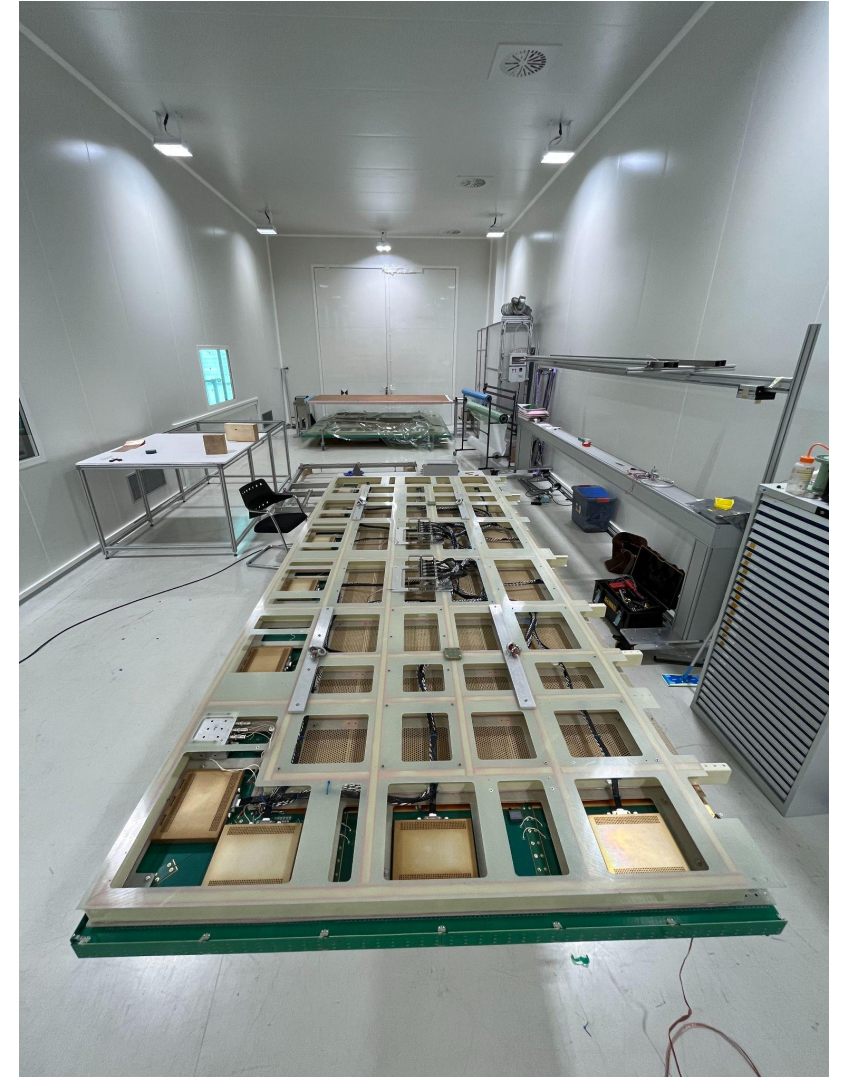
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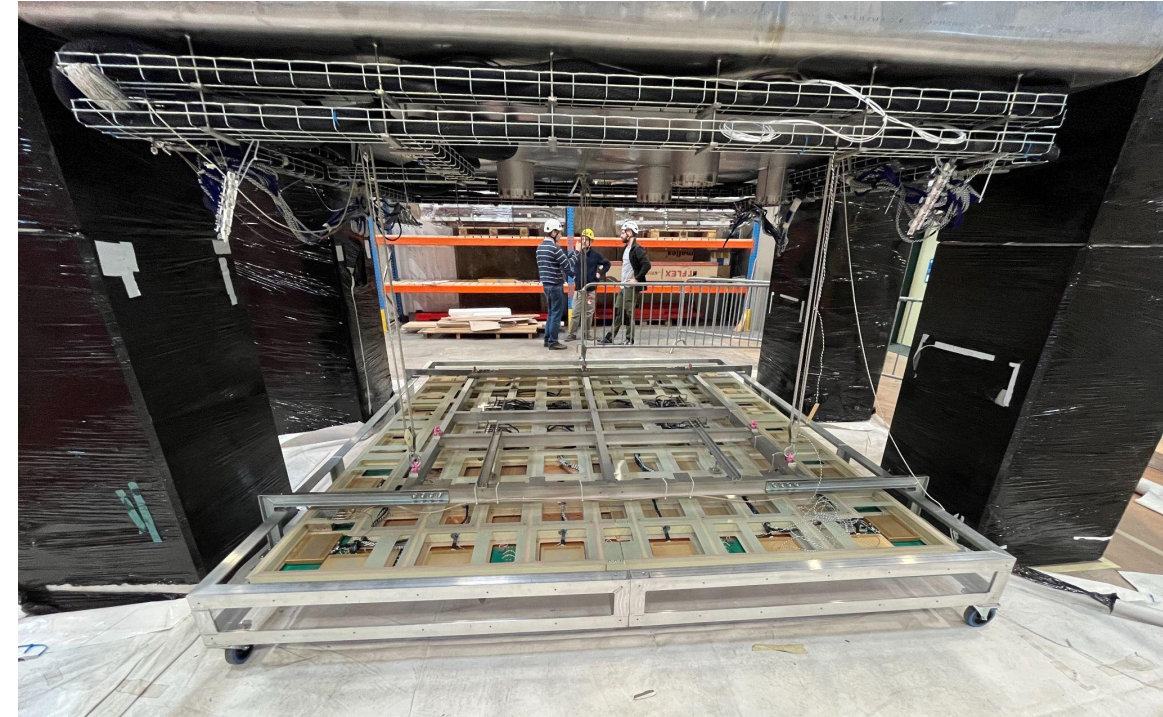
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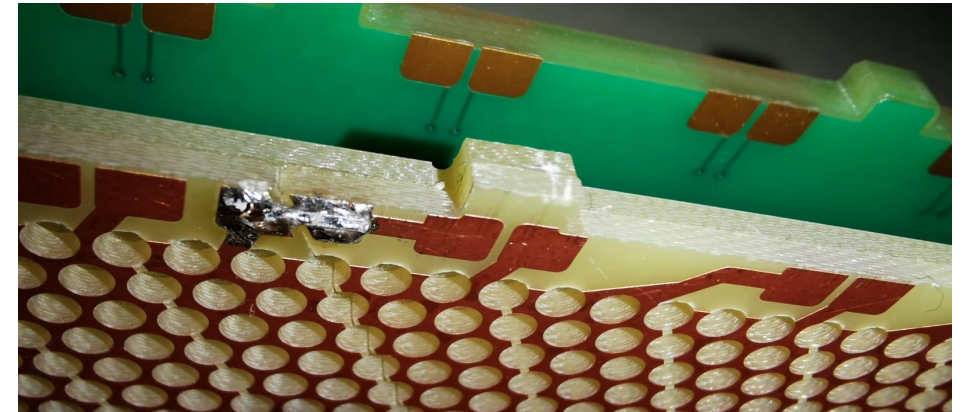


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Before Fix



After Fix



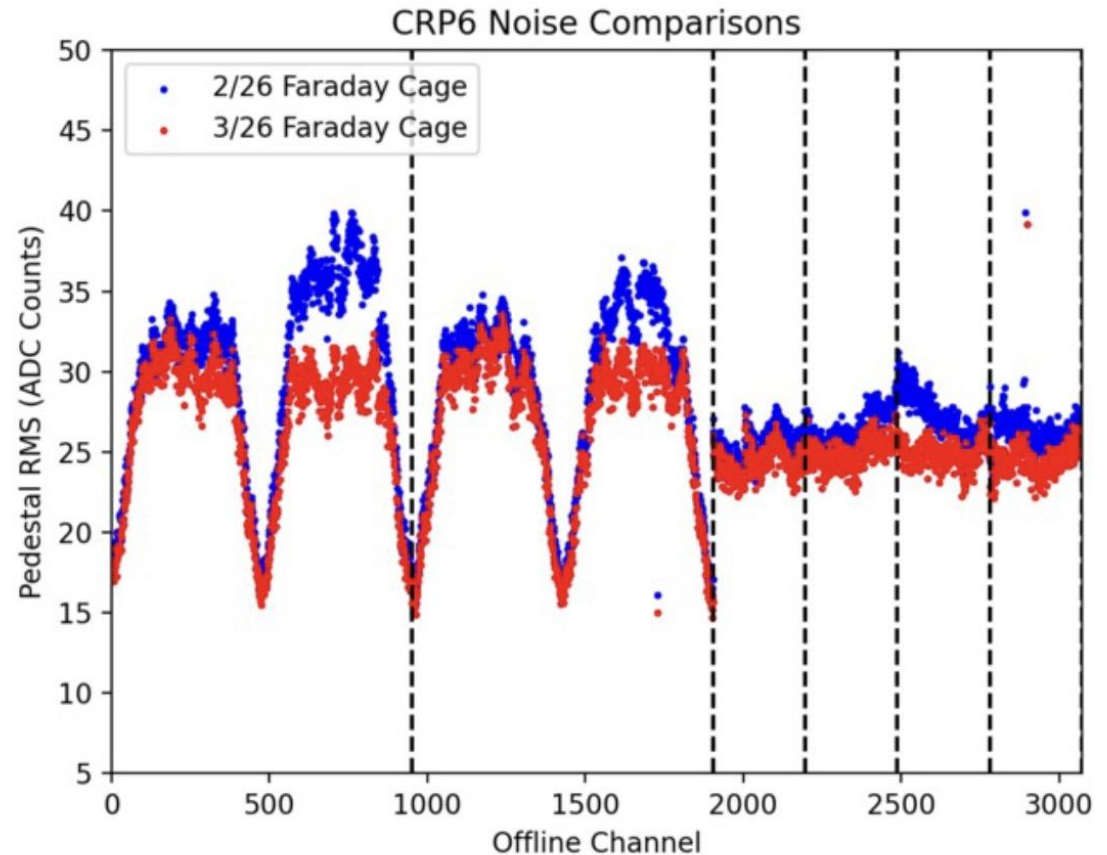
CRP6a- round 3

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

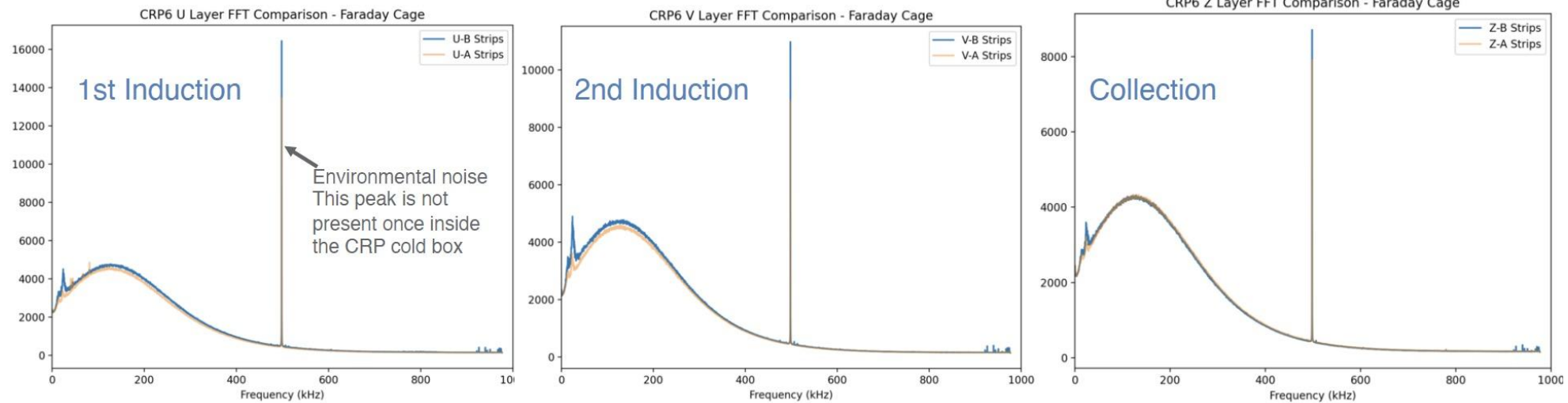
From Cheng-Ju



CRP6a- round 3

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

(Plots from Roger Huang)



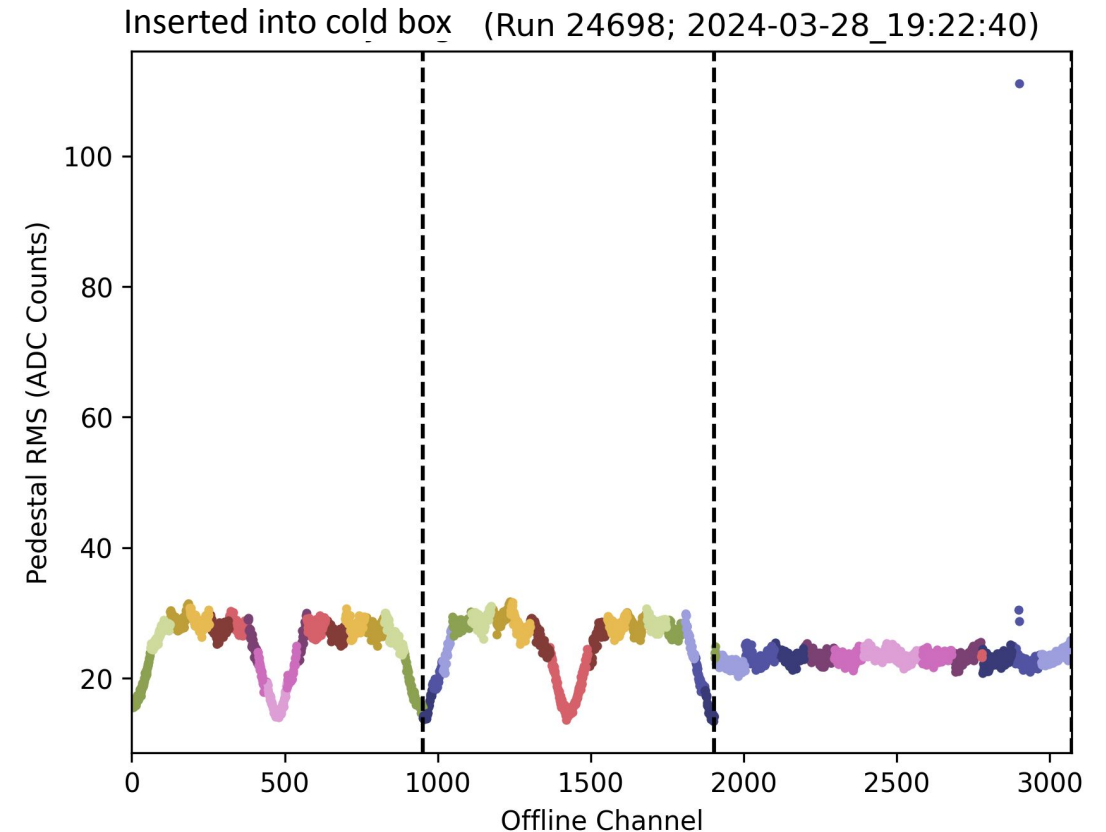
- Overall better noise performance on CRP6 side A which has the new copper shield and better ground connections.
- 25kHz coherent noise is more suppressed on side A

[From Cheng-Ju](#)

CRP6-round 3

Current status

- CRP6 inserted to cold box March 28th
- Purged from March 29th - April 2nd
- (Today) April 3rd, From Filippo:
 - Filters for fill are being cooled down
 - Filling cold box will follow



Backup