

Maps for NP04: BIAS, trim, IV curves and geolocation

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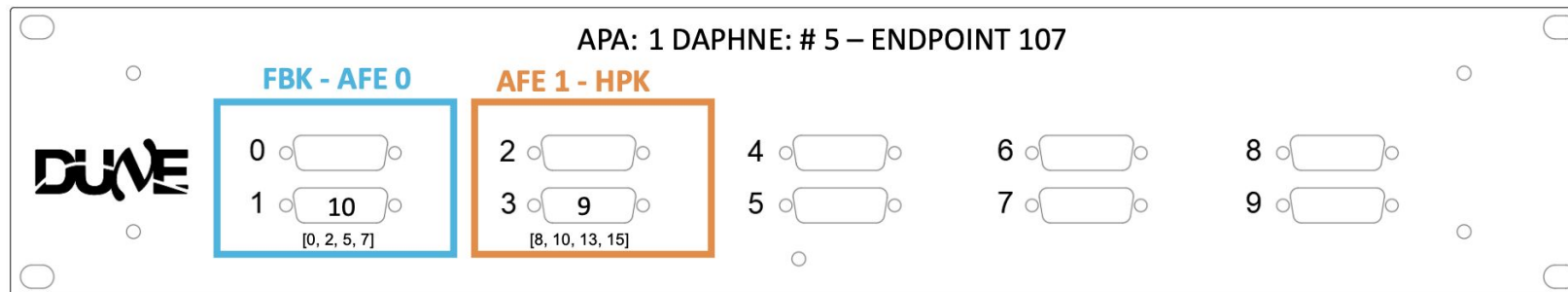
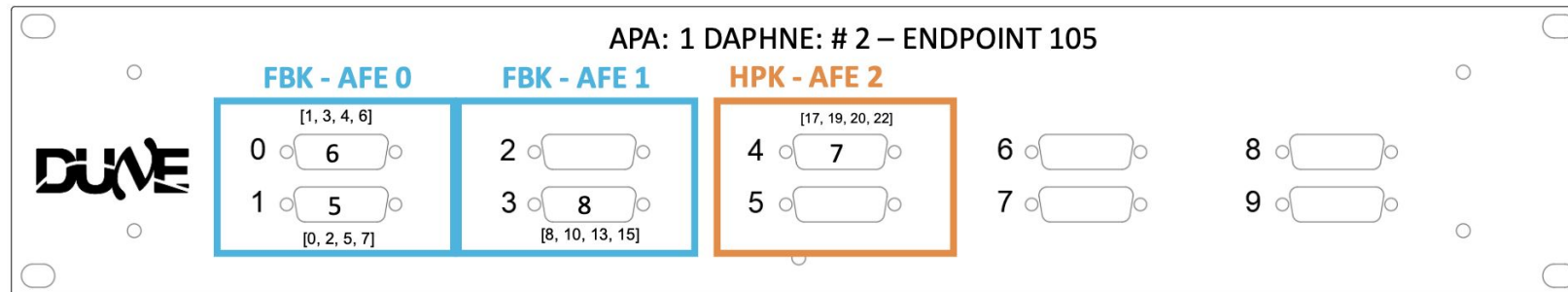
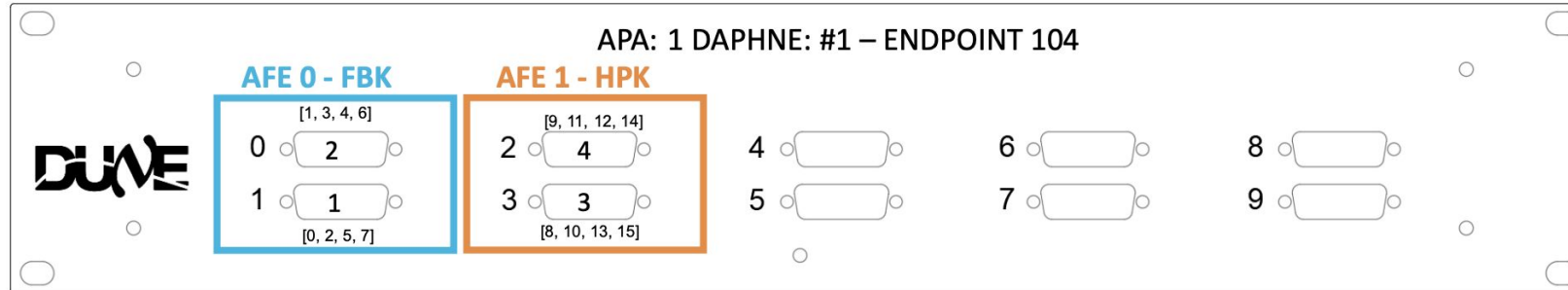
NP04 PDS Data Taking Planning Meeting

26/09/2024

Content

- Review of original daphne channel configuration
- New daphne channel configuration
- New IV curve results
- Comparison with previous IV results
- Geoid update for APA1

Original Daphne Channel configuration

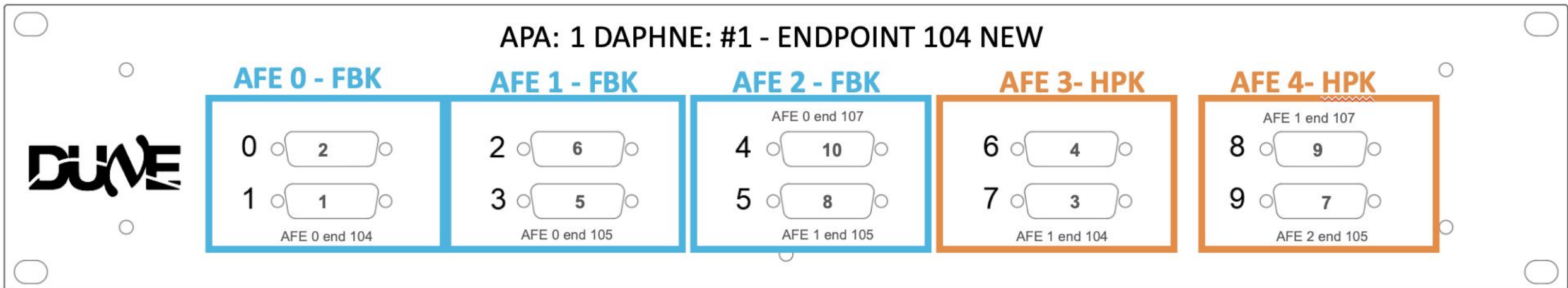


New Daphne Channel configuration

Channels of Endpoint **104**, **105** and **107** moved all to the same daphne **104** (on 24/09/2024)

APA 1 will now work in **self-trigger mode**

- End 104 , AFE 0 → End 104 , AFE 0 (FBK)
- End 105 , AFE 0 → End 104 , AFE 1 (FBK)
- End 105 , AFE 1 + End 107 , AFE 0 → End 104 , AFE 2 (FBK)
- End 104 , AFE 1 → End 104 , AFE 3 (HPK)
- End 105 , AFE 2 + End 107 , AFE 1 (HPK) → End 104 , AFE 4 (HPK)



Original Daphne Channel configuration

- In detail:

AFE 0 (FBK)

0 → 0, end 104
1 → 1, end 104
2 → 2, end 104
3 → 3, end 104
4 → 4, end 104
5 → 5, end 104
6 → 6, end 104
7 → 7, end 104

AFE 1 (FBK)

8 → 0, end 105
9 → 1, end 105
10 → 2, end 105
11 → 3, end 105
12 → 4, end 105
13 → 5, end 105
14 → 6, end 105
15 → 7, end 105

AFE 2 (FBK)

16 → 8, end 105
17 → 0, end 107
18 → 10, end 105
19 → 2, end 107
20 → 5, end 107
21 → 13, end 105
22 → 7, end 107
23 → 15, end 105

AFE 3 (HPK)

24 → 8, end 104
25 → 9, end 104
26 → 10, end 104
27 → 11, end 104
28 → 12, end 104
29 → 13, end 104
30 → 14, end 104
31 → 15, end 104

AFE 4 (HPK)

32 → 17, end 105
33 → 8, end 107
34 → 19, end 105
35 → 10, end 107
36 → 13, end 107
37 → 20, end 105
38 → 15, end 107
39 → 22, end 105

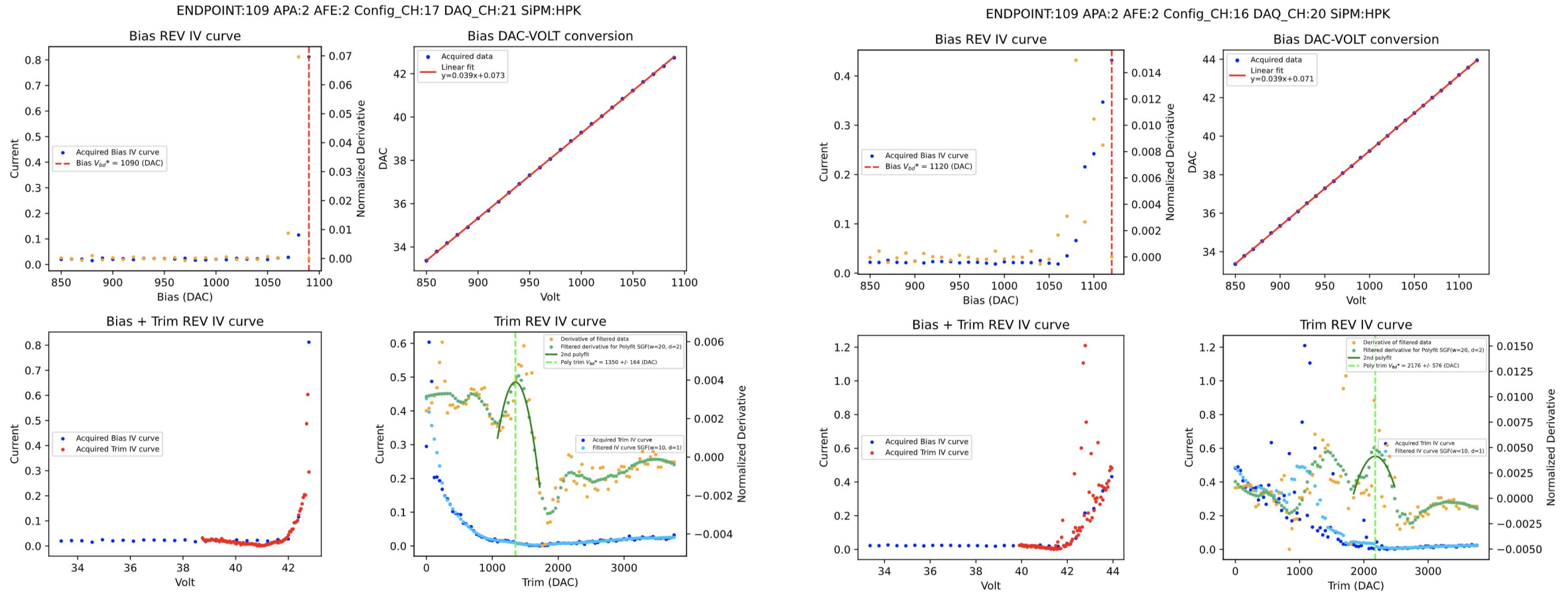
Please, see
[correlation_map_end104.json](#)
that will be added to the PDS git
repository

New IV curve results

- On Tuesday 24/09, IV curves were acquired (with the new configuration).
- A new map, **new_IV_channel_map.json**, was used for the acquisition.
- The run was in global good, I noticed (see):
 - New End 104 IVs are good (except for some noisy channel)
 - End 104 Ch 33 has a steep IV curve, in agreement with previous configuration (End 107 Ch 10)
 - Very noisy IVs in End 109 AFE 2 (always in the last three run)
 - Very noisy IV End 111 AFE 0
 - End 111 Ch 31 has a empty root file (*why?*)

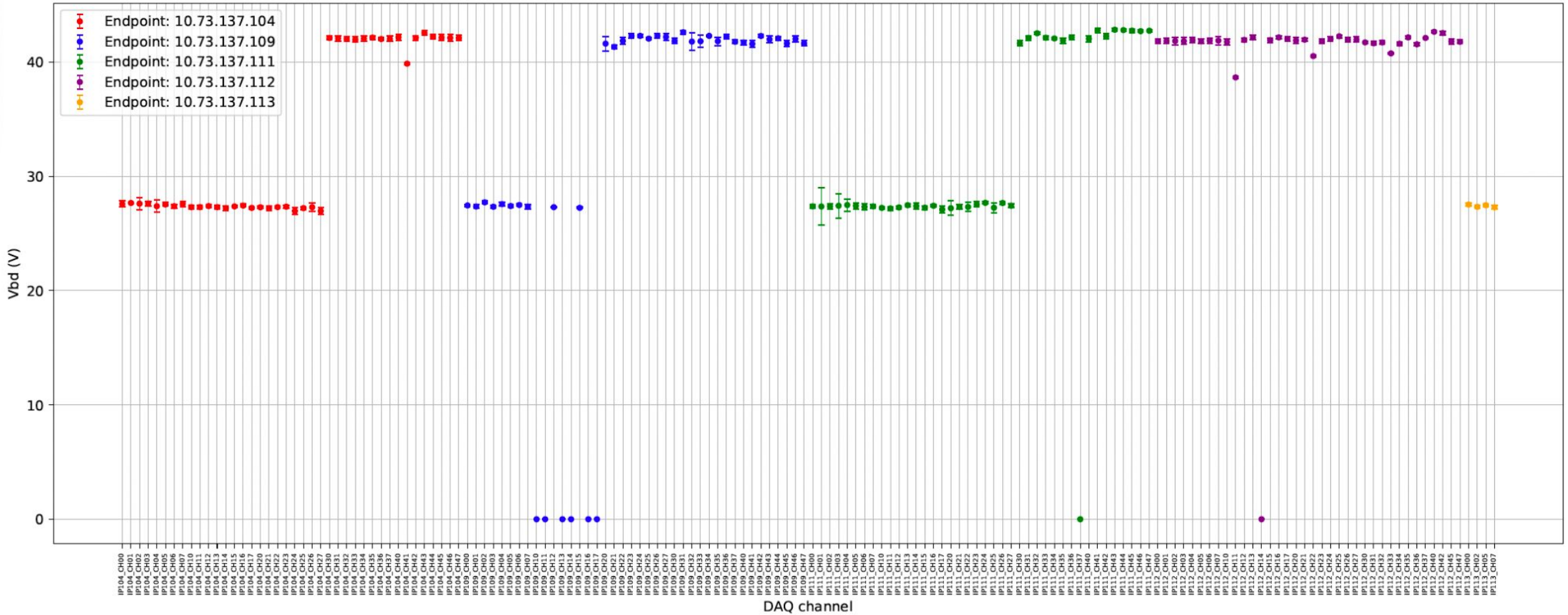
New IV curve results

- Some examples of noisy IV curves:



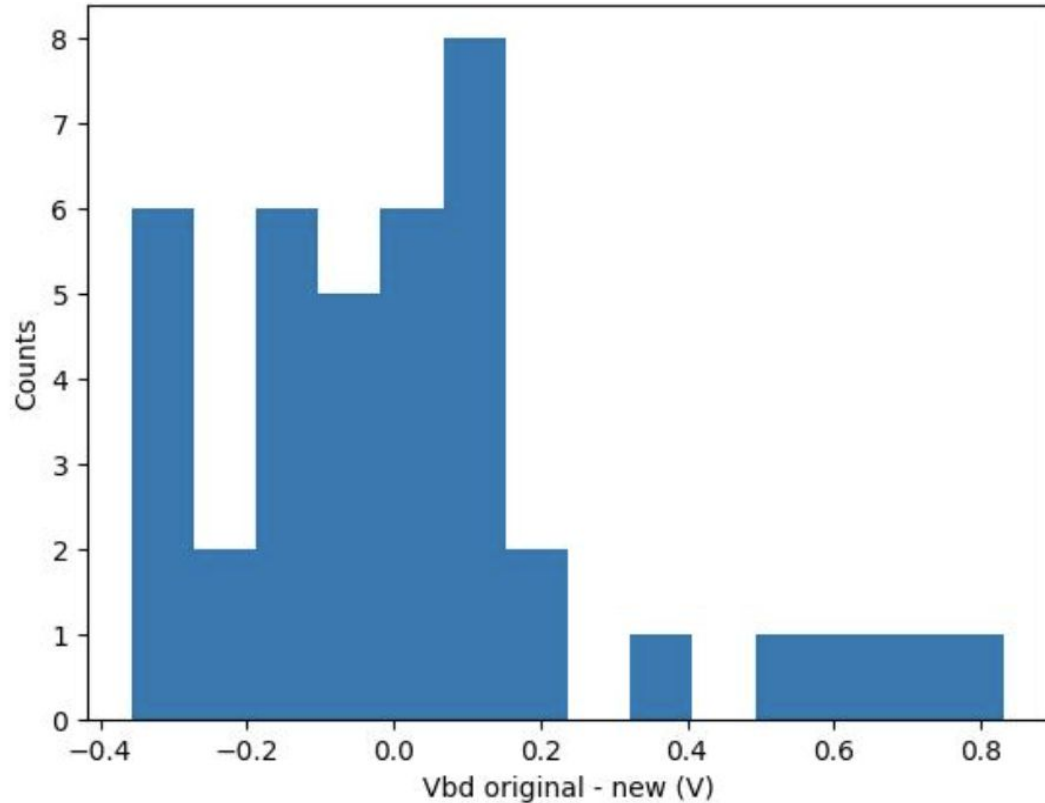
New IV curve results

Channel Vbd
RUN: Sep-24-2024-run00



Without correction for Steep IV curve channels

Comparison with previous results



Vbd original from Jul-29-2024-run00

Vbd new from Sep-24-2024-run00

Both FBK and HPK

New analysis results in the next few days!!

Geoid update for APA1

DAPHNE Frame Definition

Created: 18May2022
 Updated: 3Apr2022
 Version: 1.2

	K/D	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
0	0	Link				Slot				CratID								DetID				Version												
1	0000	Timing master Time stamp [31:0]																																
2	0000	Timing master Time stamp [63:32]																																
3	0000	RI	TBD															Algorithm # (=1)				Channel												
4	0000	TBD																																
5	0000	ADC[[3:0],2]				ADC[[13:0],1]								ADC[[13:0],0]																				
6	0000	ADC[[7:0],4]							ADC[[13:0],3]								ADC[[13:4],2]																	
7	0000	ADC[[11:0],6]											ADC[[13:0],5]								ADC[[13:8],4]													
8	0000	ADC[[13:0],8]											ADC[[13:0],7]								ADC[[13:12],6]													

We need to update and populate the new geoid map for APA 1 taking into account all channels from APA1 are now connected to board with controller 4.

The source ID for this board is now [1] instead of [1,2,3,4,5,6,7,8,9]

The rest of the fields remain unchanged

By Manuel

Thank you for your the attention!