CALIFA Electronics & DAQ

Tobias Jenegger

CALIFA WG meeting
18.10.2024

Preamplifier Status

DAQ status – Exp S091/118 in 2024

DAQ Upgrade

Documentation Status

Supported by BMBF 05P15WOFNA and 05P19WOFN1.

The results presented here are based on the experiment s444/s473, which was performed at the beam line/infrastructure Cave C at the GSI Helmholtzzentrum für Schwerionenforschung, Darmstadt (Germany) in the frame of FAIR Phase-0.

TUM Members:
Roman Gernhäuser,Philipp Klenze,Mrunmoy Jena, Gero Bollmann,Tobias Jenegger

CALIFA Preamplifier Status for Exp. S091/118 - 2024

CEPA iPhos	Ring 4	Ring 3	Ring 2	Ring 1
DR 48 30/450	SR 30/300	SR 30/300		
DR 30/300	SR 30/300	SR 30/300		
DR 48 30/450	SR 30/300	SR 30/300		
DR 30/300	SR 30/300	SR 30/300		
DR 48 30/450	SR 30/300	SR 30/300		
DR 30/300	SR 30/300	SR 30/300		
DR 48 30/450	SR 30/300	SR 30/300		
DR 30/300	SR 30/300	SR 30/300		

→ **CEPA**: 8 x 3/45pC DR Preamplifier

→ **iPhos:** mixed configuration:

8 x 3/45pC DR PA

8 x 3/30pC DR PA

→ **Barrel – Ring 4&3**: 32 x 3/30pC SR PA

→ **Backward Barrel (BB) – Ring 2:**

Bricolage of 16 PA (SR/DR)

What is still needed?

32 x SR 3/30pC PA for BB
(the current BB are spares for different applications)

Modifications:
12x DR → to low noise input and 3/45pC range
32x SR → lower noise input stage

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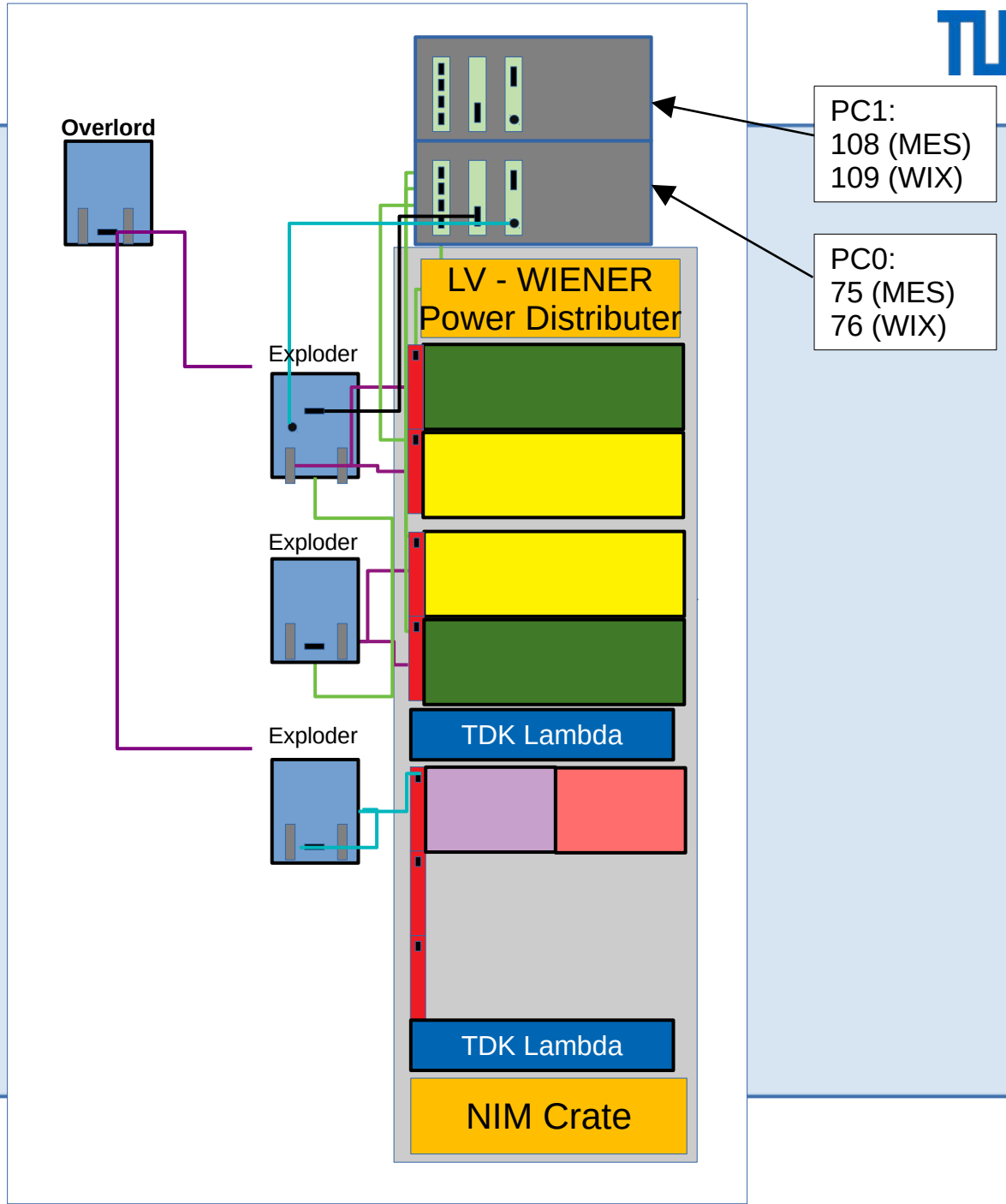
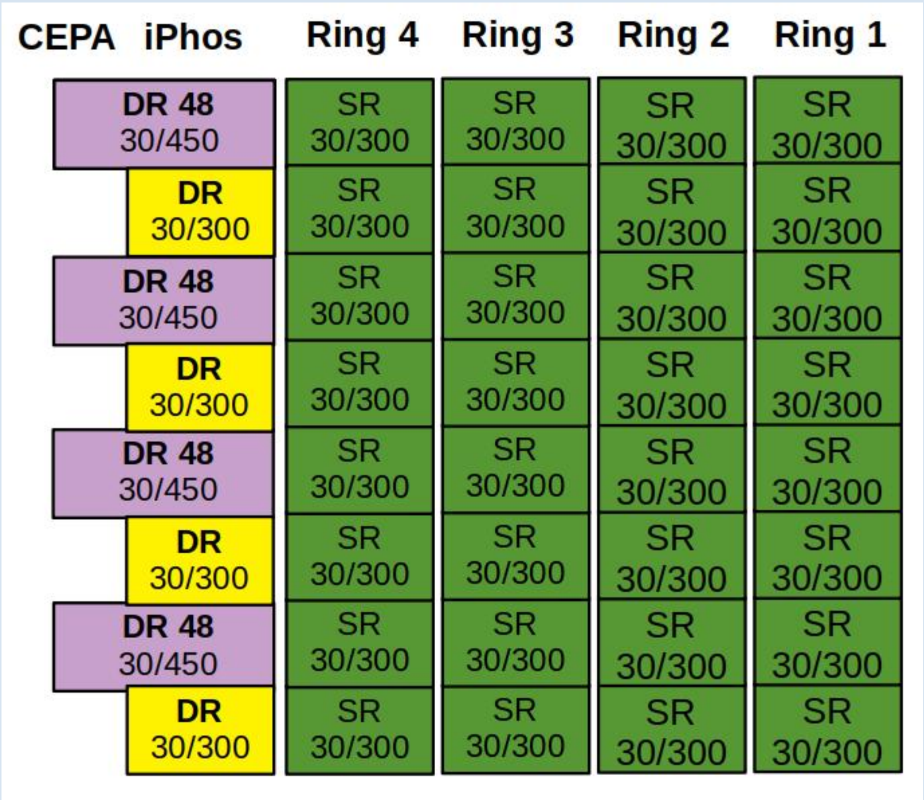
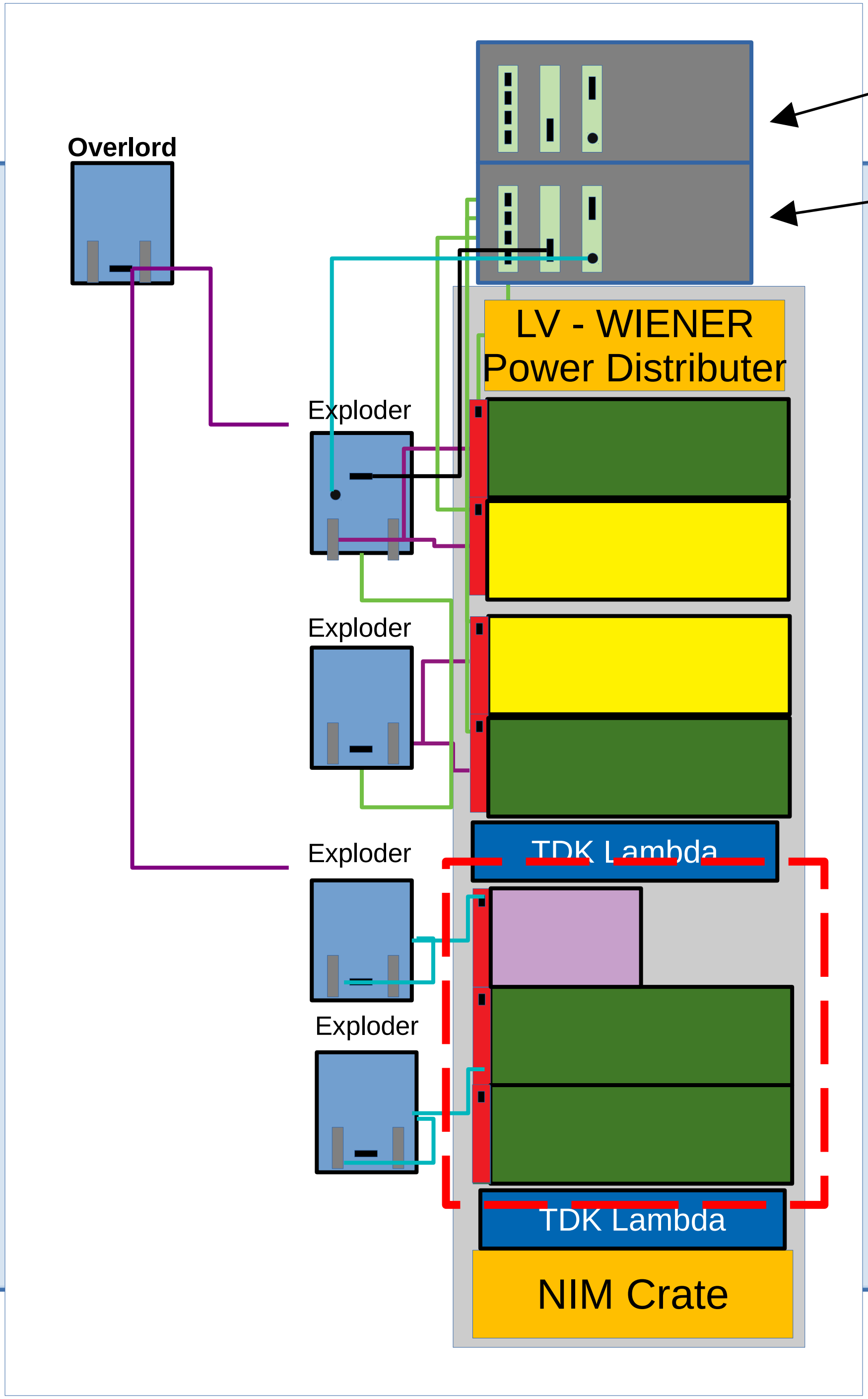
DR 30/300	SR 30/300	SR 30/300		
DR 48 30/450	SR 30/300	SR 30/300		
DR 30/300	SR 30/300	SR 30/300		
DR 48 30/450	SR 30/300	SR 30/300		
DR 30/300	SR 30/300	SR 30/300		



DAQ – Future Upgrades





Hardware ordered:

- ✔ 5 Exploders (as spares)
- ✔ 16+ FEBEX cards
- ✔ 1 NIM Power Crate

Cables:

- ✔ 48+ SR data cables (BB)
- ✔ 16+ LV power cables (BB)

DAQ Testing:

- ✘ Running sub-system with all three crates was not possible, unstable

This needs to be tested and debugged!

Documentation Status

- Info about FAB,FEBEX,PAs, Exploders on google spreadsheet:

https://docs.google.com/spreadsheets/d/1TqvlTK1xVxb5rhWSQlSCEBDzf2x7GS8RSkM1WwQoNJM/edit?hl=de&pli=1&gid=1790449867#gid=1790449867

- Info califa-cabling-slowcontrol:

https://elog.gsi.de/land/CALIFA/375

- More (more or less structured) info on our wiki:

https://wiki.r3b-nustar.de/detectors/califa/overview

General Questions:

- Do we have an overview what we have documented and what not?
- Where and how should the documentations be stored?
  - → lifetime (how long will google spreadsheets be available (for free) ?)
  - → accessibility (read and write permissions?)

Maybe open question for R3BWeek-Paris,

since all detector groups should be affected