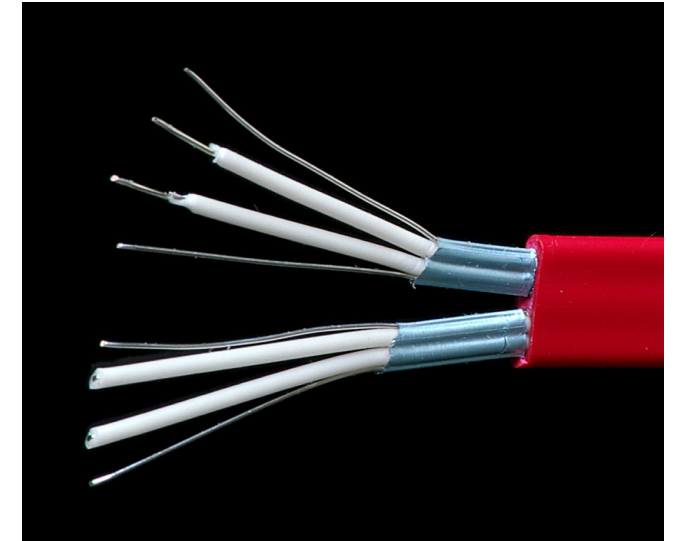
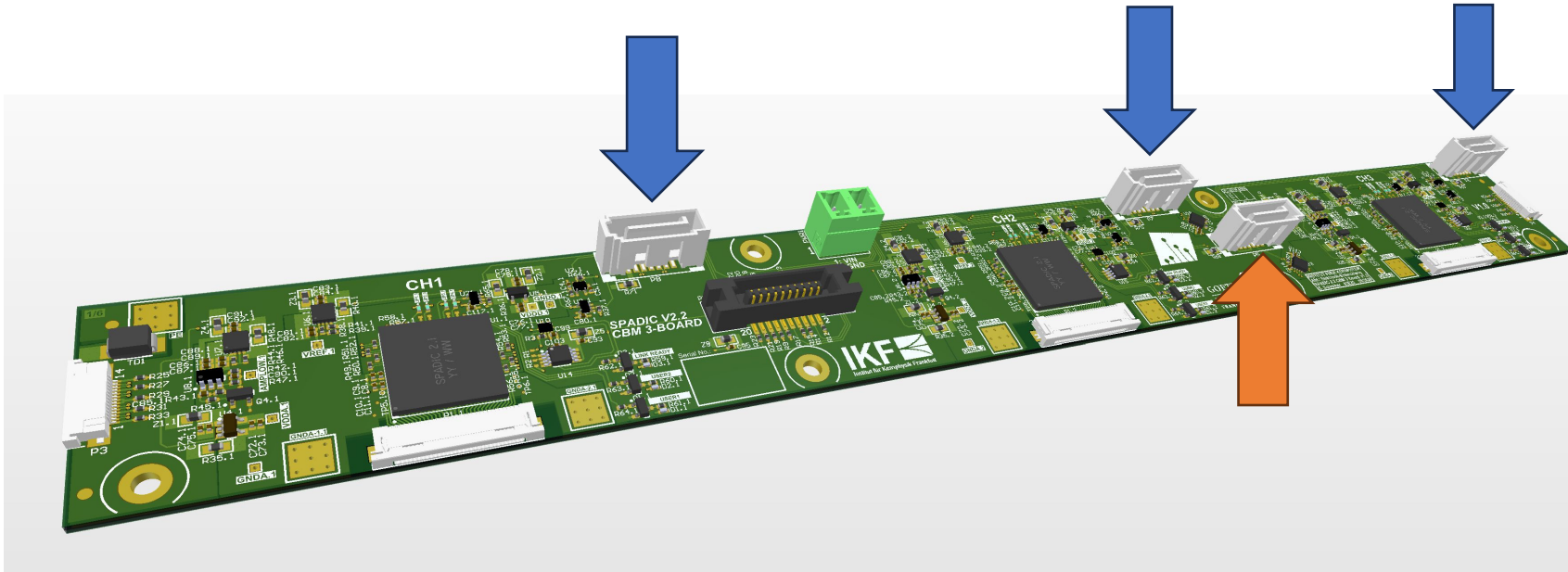


Front-end electronics for mCBM

Florian Roether – TRD Retreat – Dorfweil – 8. Nov 2023

New FEBs for mCBM



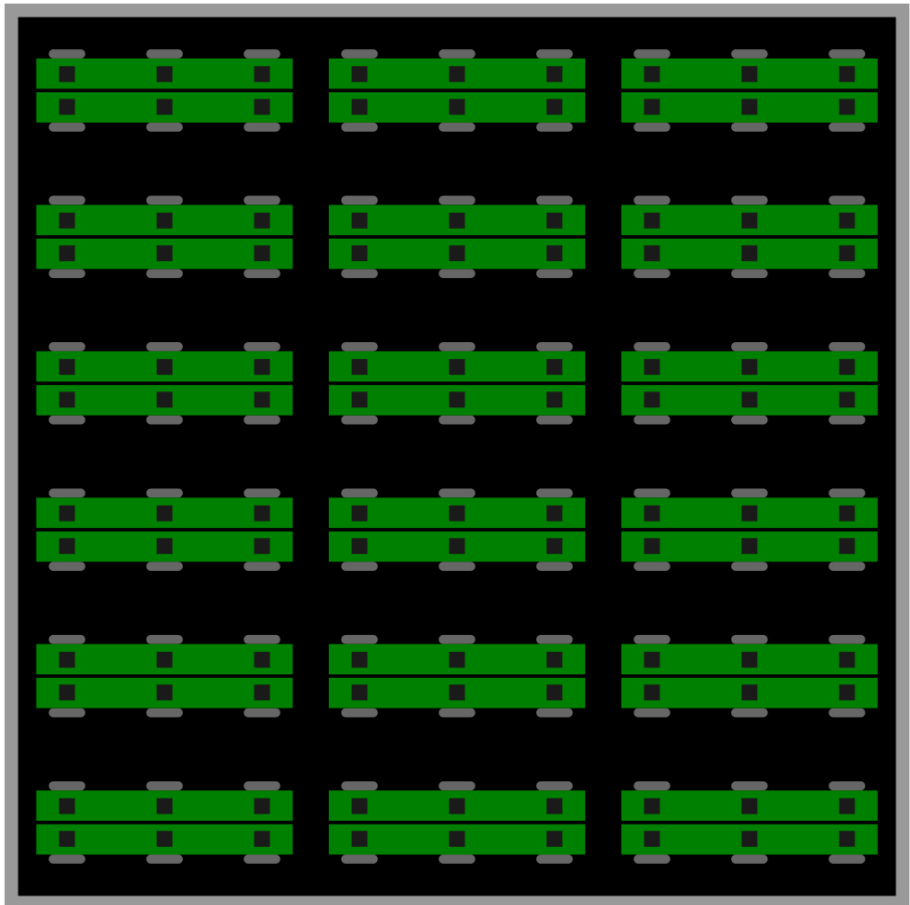
- Based on the design currently in use
- Smaller form factor
- Equipped with SATA connectors

Advantages of switching to SATA cables:

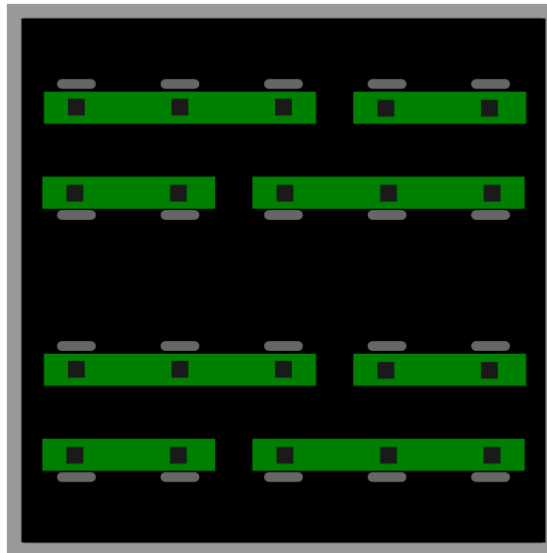
- Shielded cables available
- Better air flow
- Allows the flexible distribution of e-links

FEE for module 3

module 5



module 3



Modul 5 (6 FEB3 per ROB):

- 36 up-links
- 6 down-links
- 6 clock lines

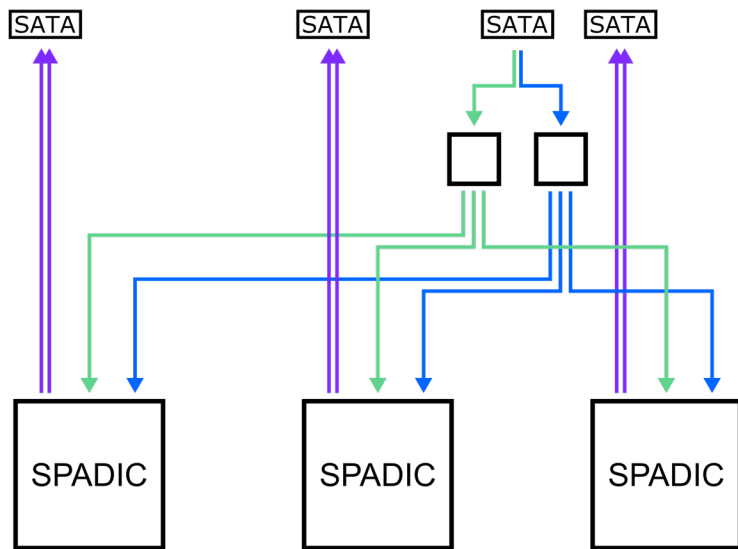
Module 3 (4 FEB3 and 4 FEB2 per ROB):

- 40 up-links
- 8 down-links
- **8 clock lines (only 6 available)**

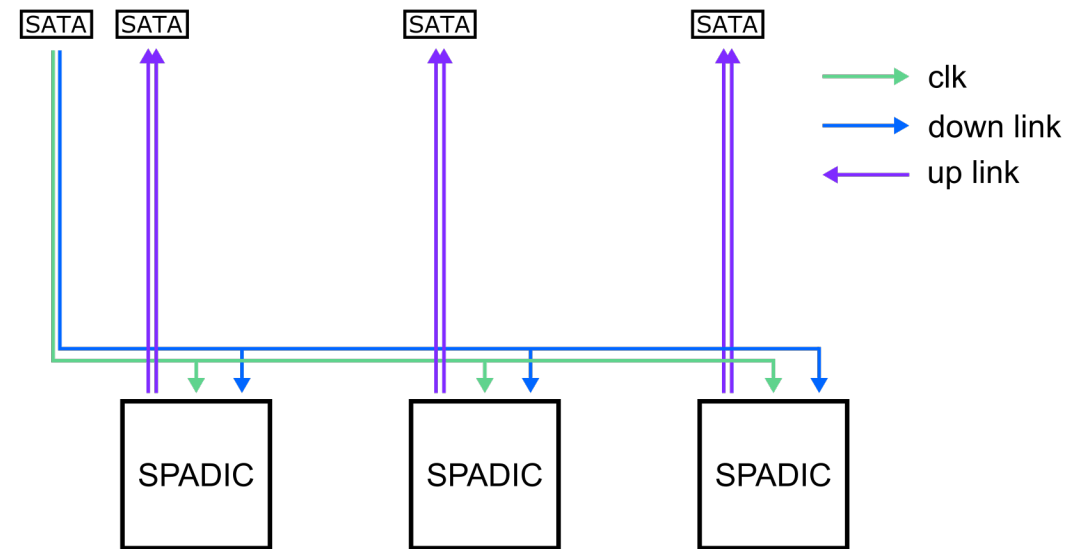
Possible solutions (?):

- make more clock lines useable
- share the clock line between FEB3 and FEB2

Clock distribution

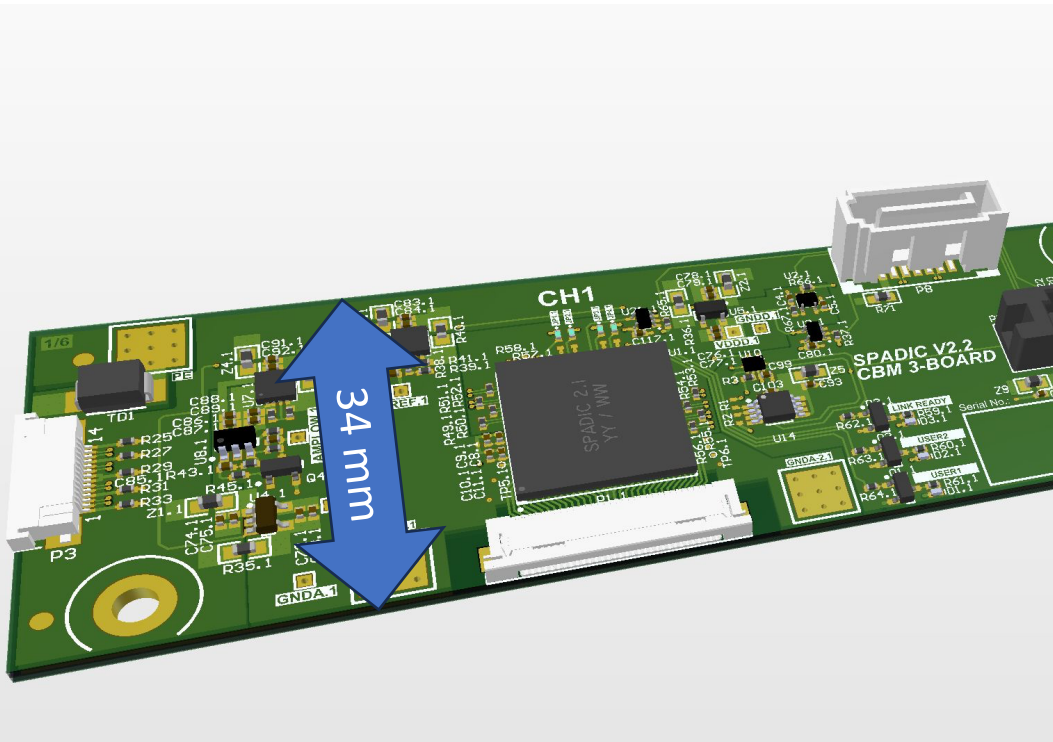


current design
(all traces are matched in length)



passive distribution via short drop-lines

Space constraints on FEBs



Available Space (assuming flat mounting):

- FEB width: 34 mm
- ROB width: 68 mm

Available options for packaging?

- LPGA packaging (15 x 15 mm² footprint)
- 128 pin TQFP (15.4 x 15.4 mm² footprint)