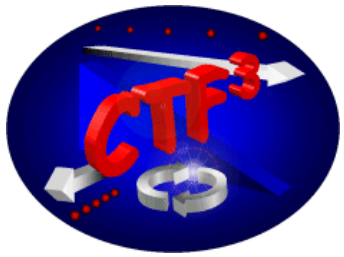


LAPP BPM Read-out Electronics

Louis Bellier, Jean Tassan, Sébastien Vilalte

CTF3 technical meeting

21-01-2008

Foreseen equipments

For April, LAPP electronics to be installed:

TL2: 6 analog + digital for BPIs.
5 digital for 40mm BPMs (analog provided by CERN).
2 digital for BPR & WCM.

TL2': 4 digital for 40mm BPMs (analog provided by CERN).

TBL: 2 digital for 40mm BPMs (analog provided by CERN).

TBTS: 10 analog + digital for Uppsala 40mm BPMs.

Total of 16 analog modules and 29 digital front-end.

Foreseen equipments: racks

The digital front-end boards can be grouped up to 6 due to the Ethernet daisy chain link → ***use of 19" racks.***

A rack can host up to 6 digital boards and an extra distribution board provides signals: power supplies, clock, blocking, calibration.

→ ***divides the number of cables.***

For TL2/CLEX we will group 4 boards in each rack

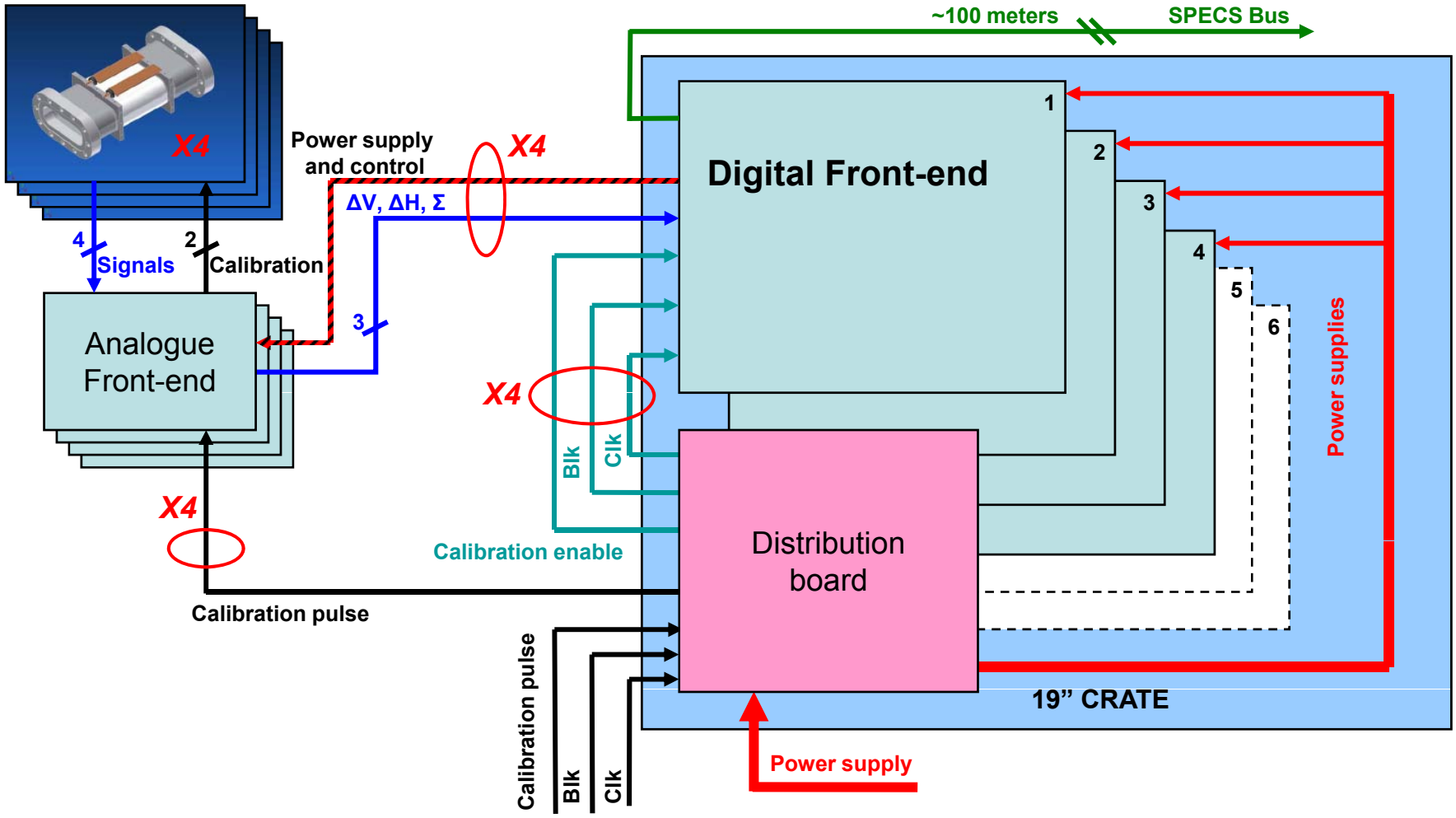
→ ***9 racks to be installed under the girders.***

See Lars Søby for layouts.

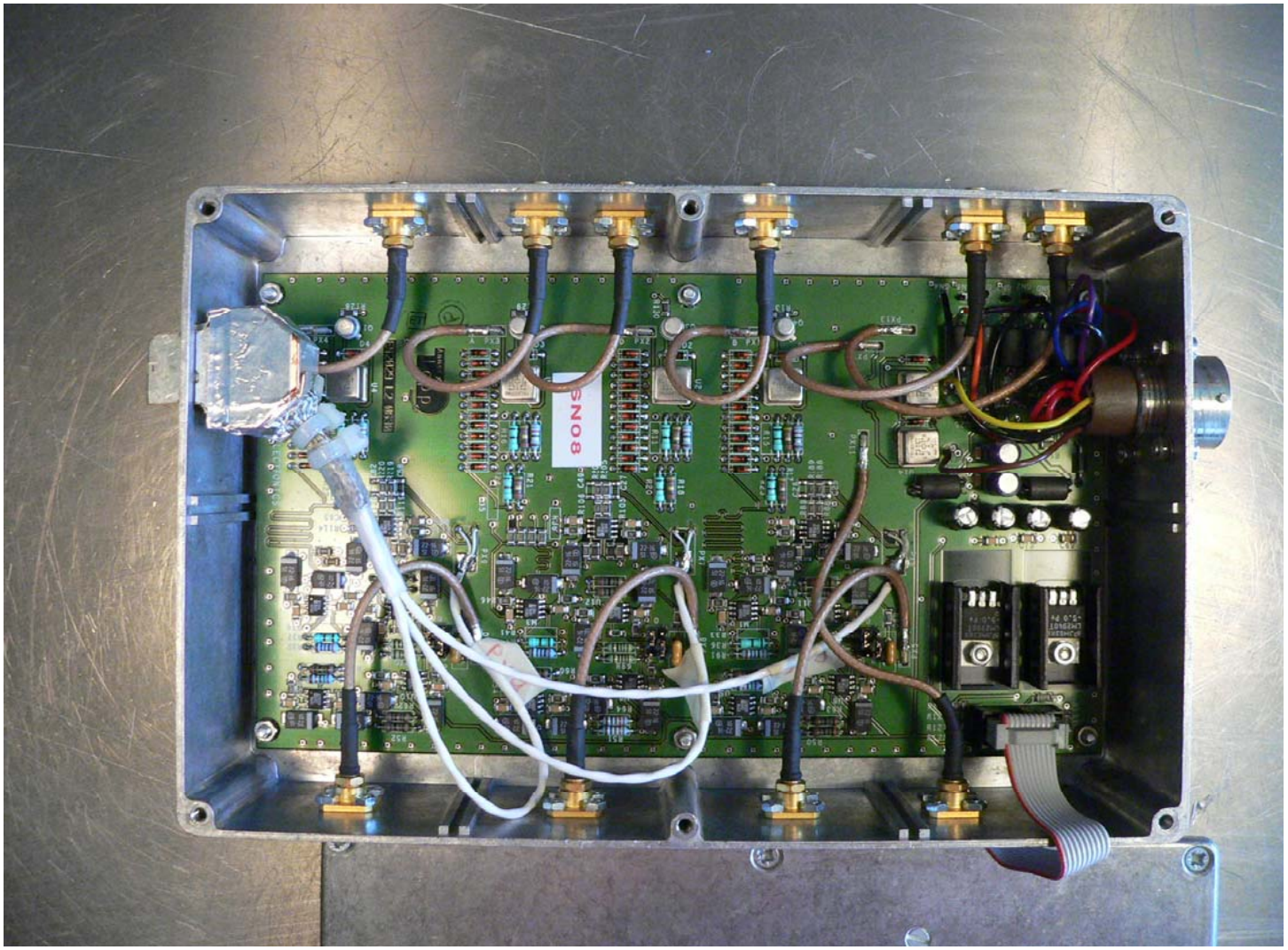
→ ***2 possible remaining boards in a rack.***

Lapp provides all cables from analog modules to DFE and from distribution board to DFE.

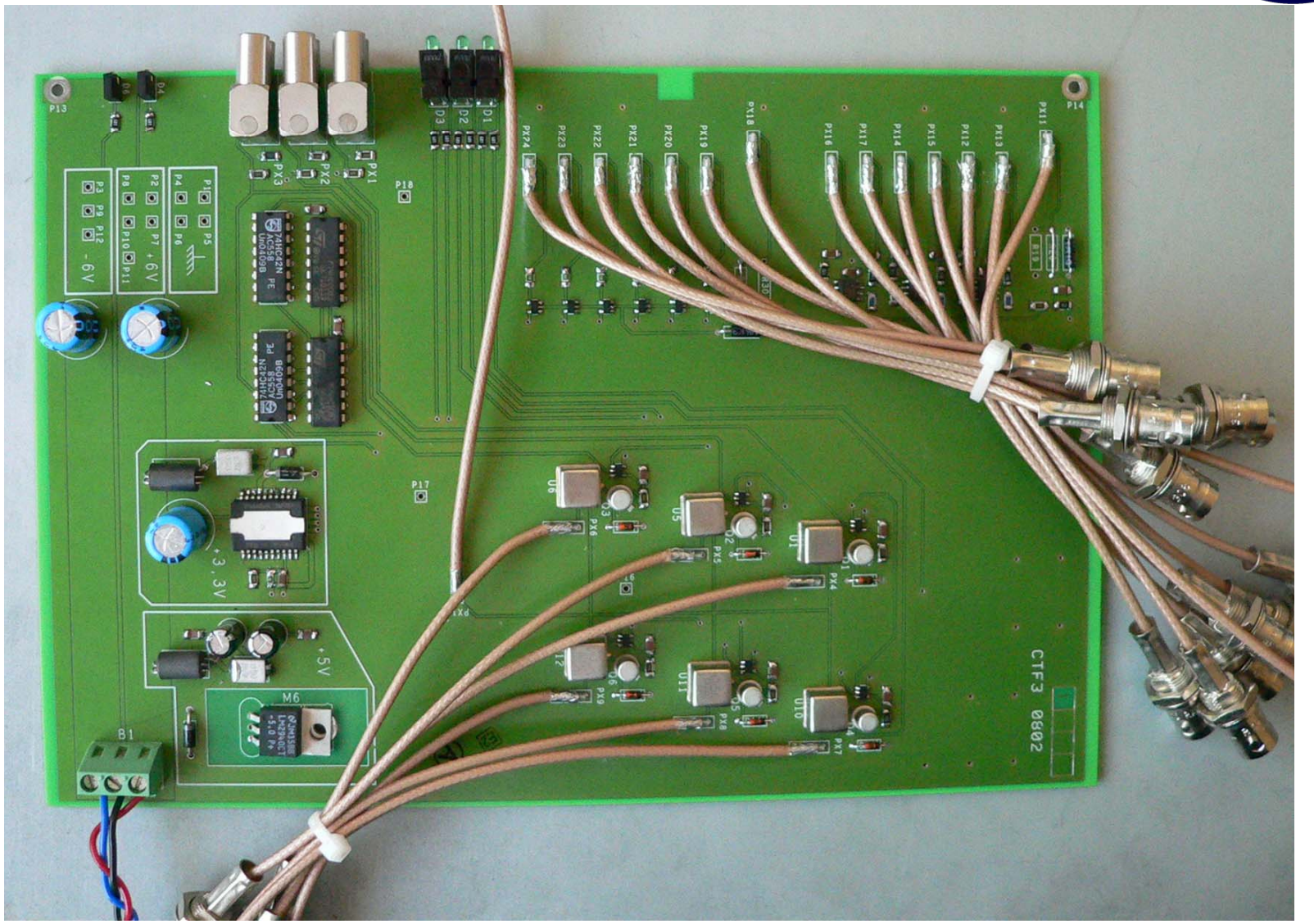
Architecture



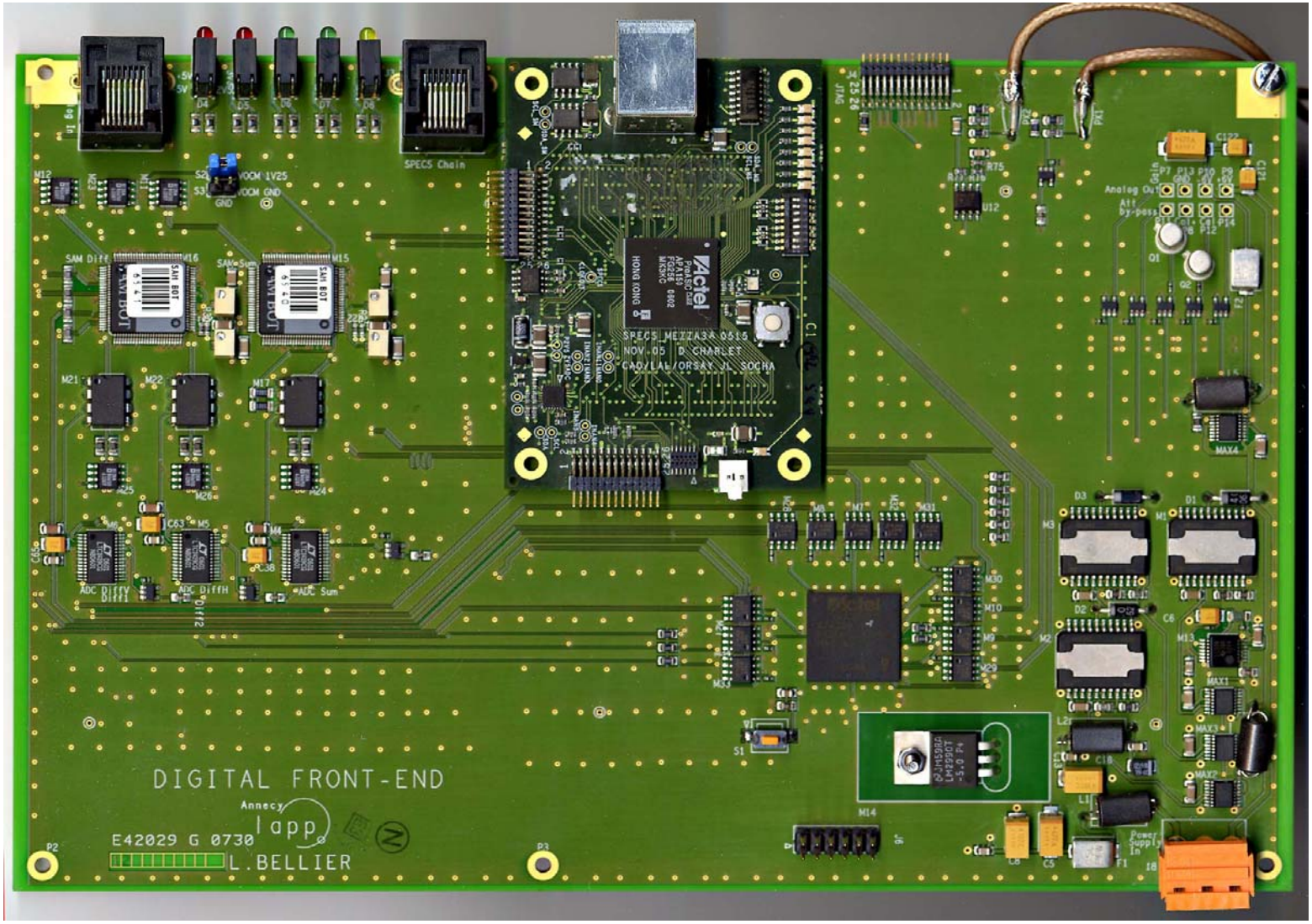
Analogue Front-end



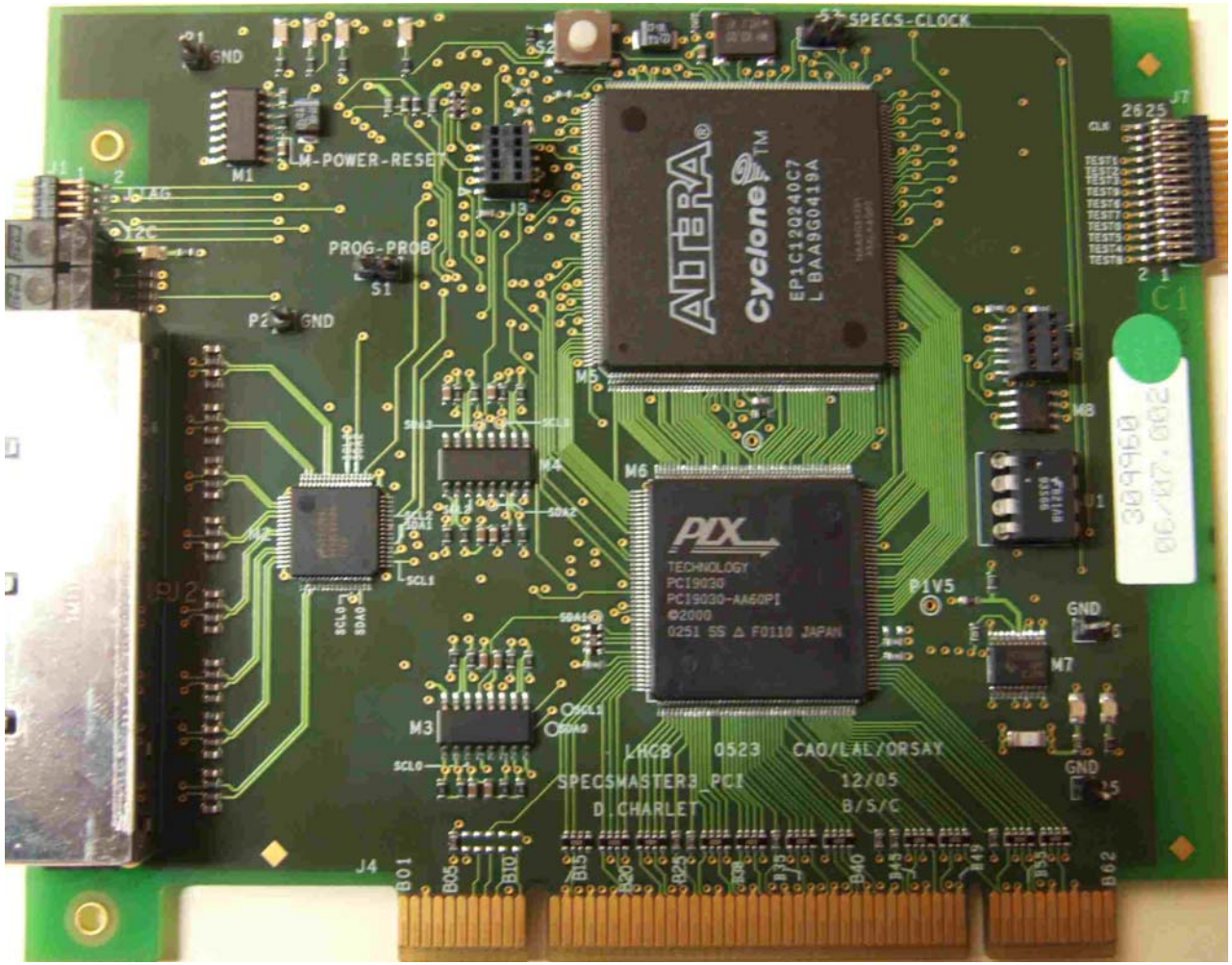
Distribution board



Lapp Digital front-end board



Specs PCI Board



Point on the activity

ANALOG MODULES: 16 modules, 20 in production → 4 spares.

- boards currently in wiring.
- mechanical engineering ok.
- compensation filters and gains to be implemented and tested (BPM ≠ BPI)
- All cables already ordered or received.

after assembling, individual tests of signal processing with controls switching.

Point on the activity

DIGITAL FRONT-END: 28 boards needed for 2008 but 50 in production
→ 43 foreseen for the whole machine and 7 spares.

- boards currently in wiring.
- front panels currently in production.
- software issues: adjustments and improvements to be performed on a first 4 boards rack according to the read-out system (network, FESA framework…).
  Implementation of a blocking delay control for each board.

Louis Bellier is leaving end january: LAPP supports digital activities with the aid of a part-time digital electronics technician Jean Marc Nappa.

Point on the activity

RACKS AND DISTRIBUTION: 9 racks, 9 distribution boards,
11 foreseen in production → 2 spares.

- racks ordered. To be assembled at reception.
  power supplies distribution to be implemented.
- front panels currently in production.
- tests with 4 and 6 digital boards to be finalized.
- All cables already ordered or received.

Point on the activity

SOFTWARE APPLICATIONS: Jean Jacquemier

To drive the front-end and plot data, LAPP develops two applications :

- A JAVA application dedicated to the control of DFE:

“specialist requirements” (gain, attenuation, blk delay…).

- The acquisition application on the gateway FESA server.

A third, “trajectory”, a JAVA application to be defined.

Dates and conclusions

MILESTONES:

- We foresee a full rack for debug for end February.

→ test of an acquisition chain from pick-up to control room display.

- 9 racks for April with final versions of DFE soft and a first version user applications.

CONCLUSION: though the work still to provide, we think we will be on time for the beam.