



Tell40 status



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Outline

- ▶ **AMC40 prototype**
- ▶ **ATCA40 prototype**
- ▶ **Early setups**

AMC40 prototype status

Tested

♦ Optical links

- 4.8 Gbits/s works fine over 400 meters
- 10 Gbits/s works fine over 400 meters (6 hours test without error)

♦ PCIe

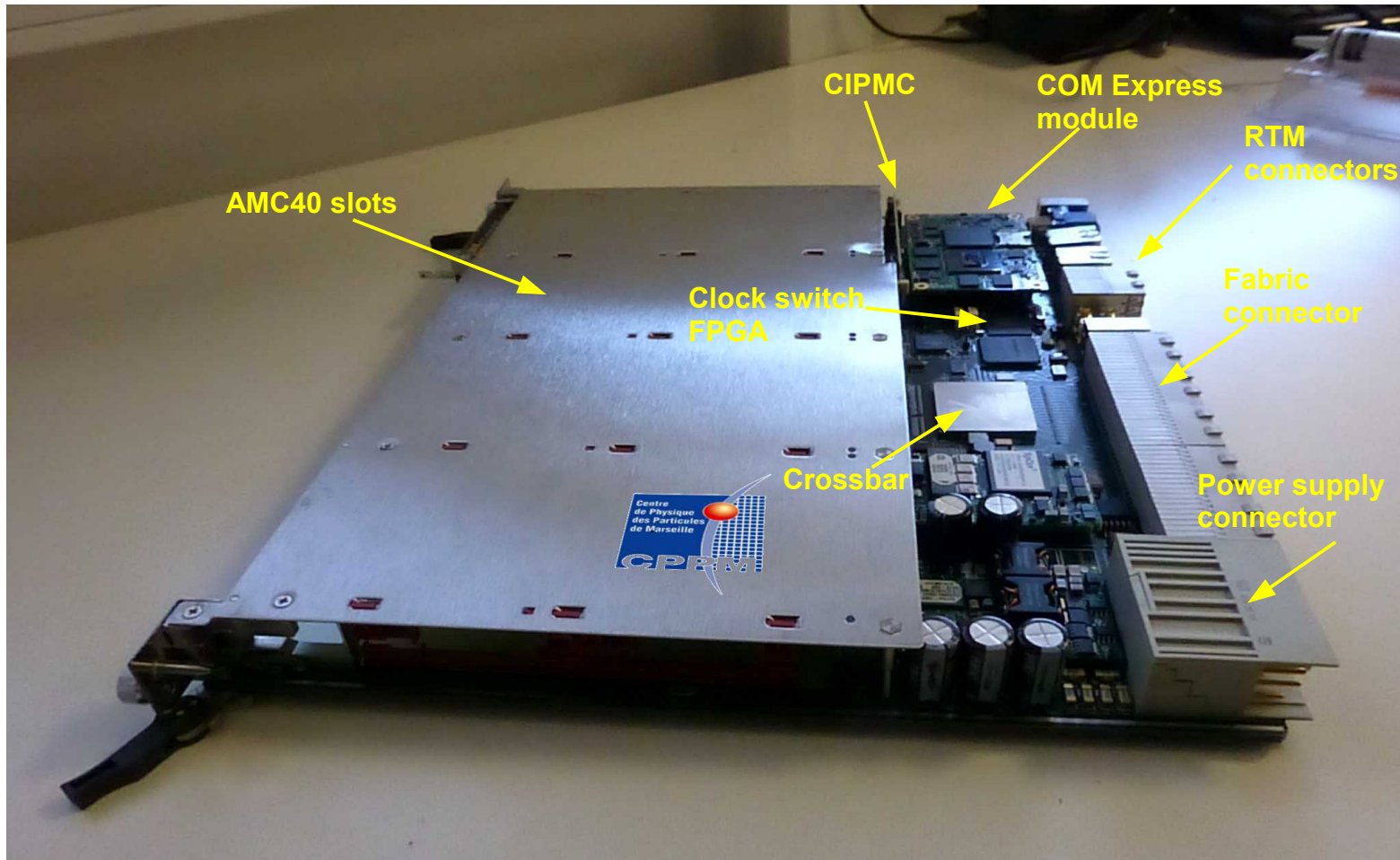
- Pin inversion
 - ➔ *Workaround using an optical link*
 - . *Raw connection works with PHY piloted by state machine*
 - . *MAC connection does not work because of non documented mechanism (pulse sent to check presence of target)*
- Issue not corrigible on current board
 - ➔ *Requires serial capacitor not available on track*
- Problem not solved but understood

Next steps

- ♦ **Systematic qualification of all serial links**
- ♦ **10 GbE MAC connection with PC**
- ♦ **DDR3 interface**
- ♦ **Low Level Interface for Early Setups**

ATCA40 prototype status

2 boards received this week



ATCA40 prototype status

Next steps

- Power on controlled by CIPMC (simplified: no IPMI dialog)
- FPGA programming
- Crossbar programming by FPGA
- AMC40 board power up (simplified: no IPMI control)
- PCIe switch programming by COM Express module
- Control of FPGA through PCIe
- Control of Crossbar through PCIe
- Control of an AMC40 board through PCIe
- Remote programming of Stratix V GX through PCIe
- Remote SignalTap on Stratix V GX through COM Express module
- 2 .4 Gbits/s loopback test of a serial line with an AMC40 board
- 2 .4 Gbits/s loopback test *through backplane* involving a second ATCA40 board
- 2 .4 Gbits/s communication between 2 AMC40 boards located on two ATCA40 boards
- 6.4 Gbits/s communication between 2 AMC boards located on the same ATCA40 board
- Systematic control of all serial links
- AMC40 board power up with IPMI control
- Clock phase stability through backplane
- Low Level Interface

Early setups

Schedule

- ♦ **Rerouting of AMC40 to fix PCIe problem**
 - *CAD review and last checks next week*
- ♦ **Production of 9 boards (2 marseille, 7 collaboration)**
 - *Boards manufactured end of January*
- ♦ **Test of PCIe**
 - *Finished mid-February*
- ♦ **Assembly of all the boards**
 - *Boards available mid-March with minimum LLI*

Conclusion

- ▶ **AMC40 prototype board debug nearly finished**
- ▶ **AMC40_V1 launched in production end of next week**
- ▶ **Review of critical points of Full Scale Prototype to be organized mid-February**
- ▶ **Early setups available approximately mid-March**
- ▶ **Fully debugged ATCA board by mid-2013**
- ▶ **Minimum LLI provided to start with**
 - ▶ *Will be progressively enriched*
 - ▶ *Need LAPP firmware framework to smoothly distribute versions*