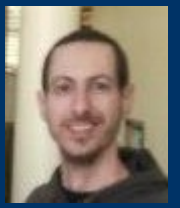
Board Design

Andreas Sakellariou, Saverio Citraro

FTK-IAPP Executive Board – Pisa, 27 June, 2013

Man Power for PCB design

- Andreas Sakellariou, Secondment from Prisma Electronic to Pisa



April, May 2013

- Saverio Citraro, FTK-IAPP Researcher, UNIPI Fellow.

- Pierluigi Luciano, Master Degree Student University of Pisa.

About new Boards

- AMBSLP: Associative Memory Board Serial Link Processor (Designed by Andreas Sakelariou, Saverio Citraro, CERN)
- MiniLAMBSLP: Little Associative Memory Board Serial Link Processor for Miniasic (Designed by Pierluigi Luciano)
- LAMBSLP: Little Associative Memory Board Serial Link Processor for Amchip05 (Designed by Saverio Citraro)

AMBSLP

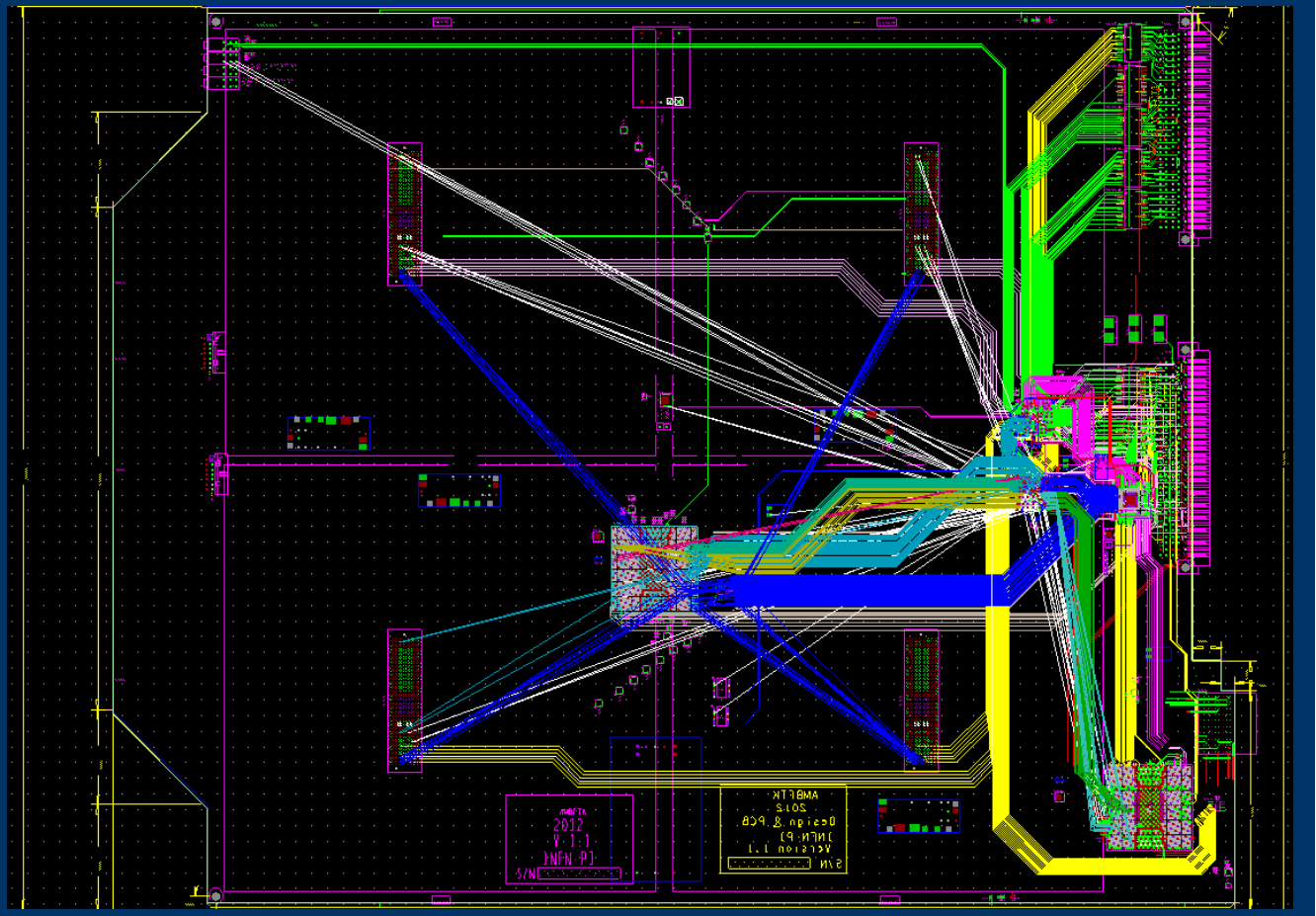
Main new features:

- All data paths are differential serial link 2 Gbit/s.
- All clocks are differential LVDS.
- There are only 2 big FPGAs (Artix-7 1156 pads) for data distribution.

AMBSLP

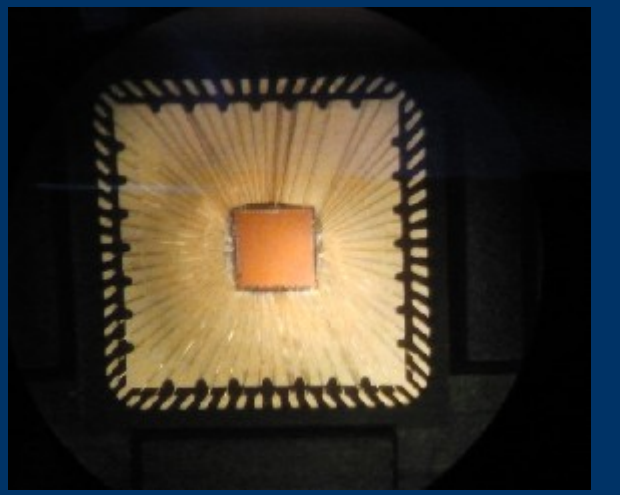
Work plan:

- April and May 2013: start schematic editing and routing.
- Now: electronic group at CERN finalizing layout routing.
- End of June 2013: submission of the board for production.



PCB layout at 21 June, 2013

MiniLAMBSLP



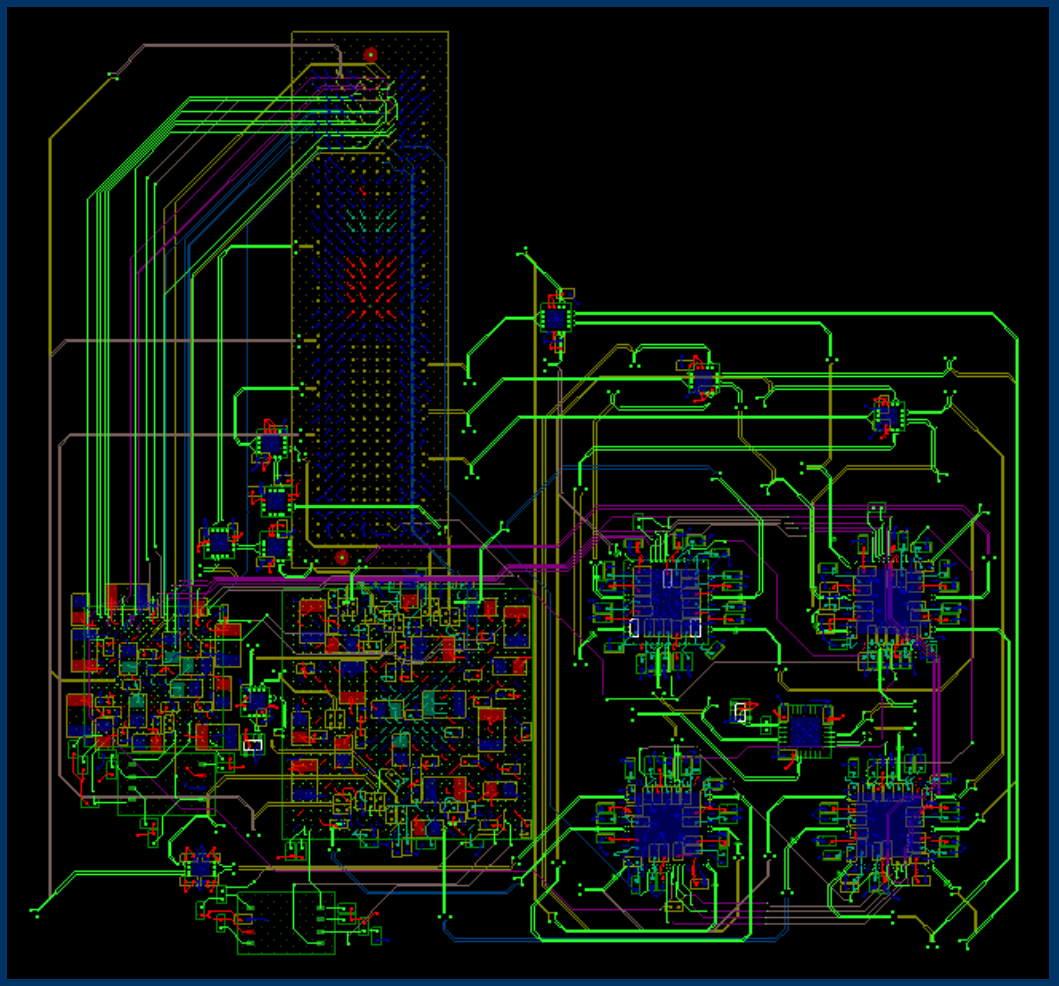
Main features:

- A quarter of final LAMBSLP, with 4 chips.
- Designed for MiniASIC (little AMchip to test SerDes).
- Designed to test the MiniASIC and new data-path (LVDS serial fanout).

MiniLAMBSLP

Work plan:

- May and June 2013: design of schematic and routing.
- Now: wait of MiniASIC chip test result (in Milan). Then submission of the board for production.

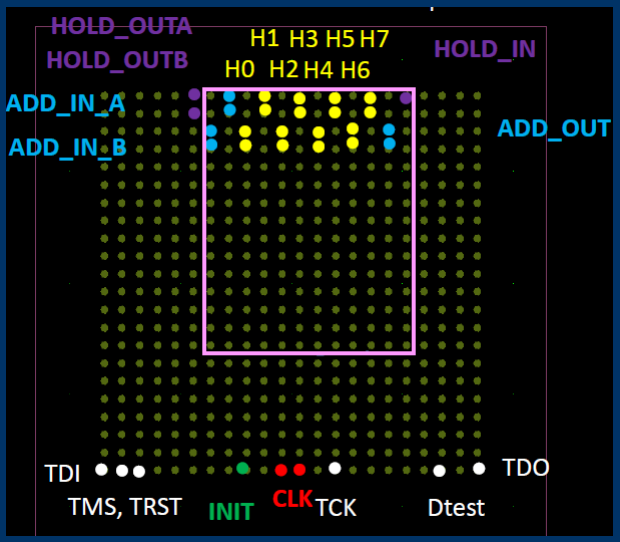


Final PCB layout

LAMBSLP

Main new features:

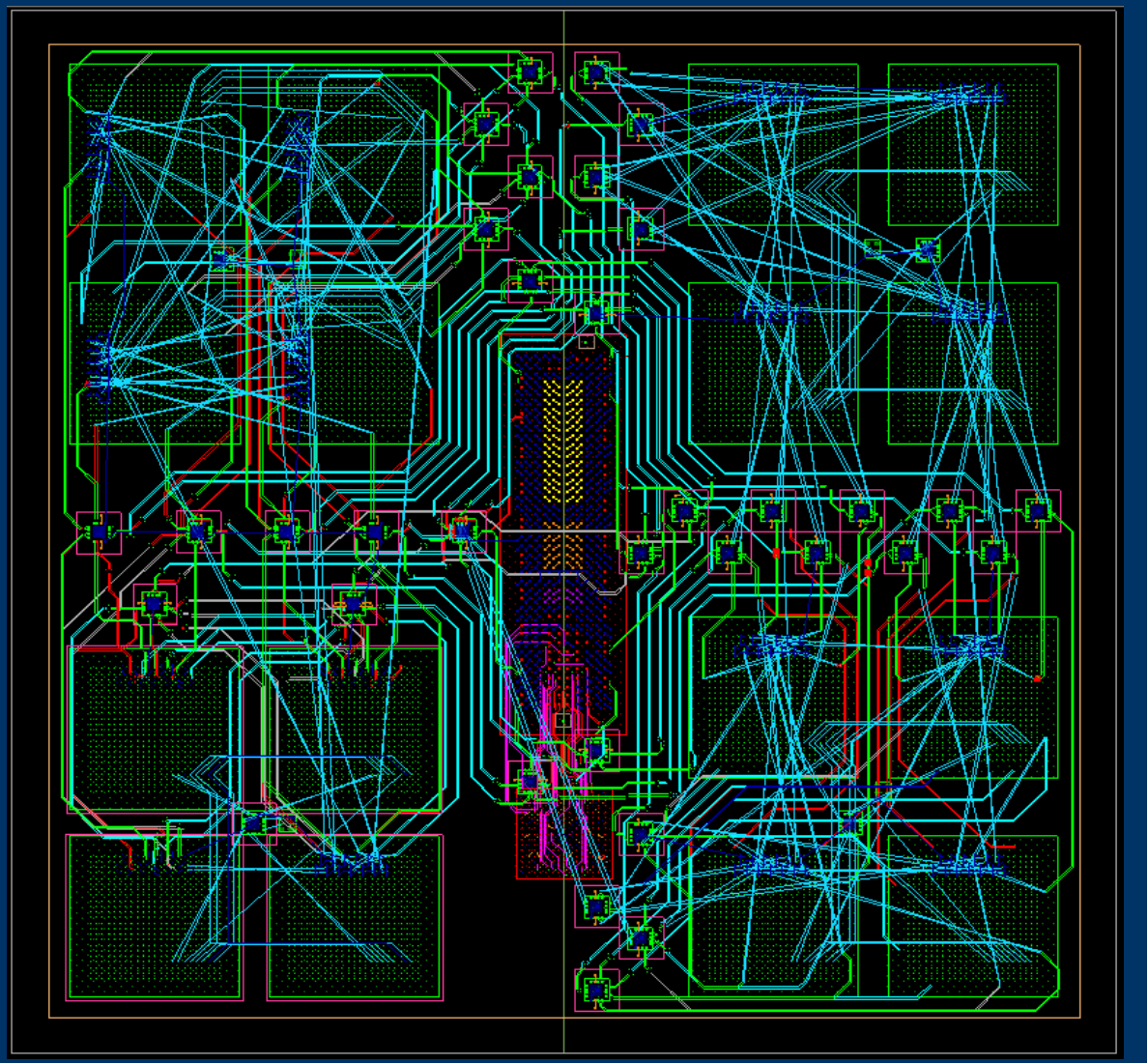
- All data paths are differential serial link 2 Gbit/s.
- New high speed and high power connector.
- Designed for AMChip05 (BGA 23mmx23mm)



LAMBSLP

Work plan:

- June 2013: start the schematic editing and routing.
- Now: work in progress on PCB-layout.
- After the test of MiniLAMBSLP (with MiniAsic chip) submission the board for production.



PCB layout at 25 June, 2013

Next steps

- End of June submission of AMBSLP.
- In July mounting component on AMBSLP.
- End of July send AMBSLP in Prisma Electronic for tests.
- After test results on Amchip05 submission LAMBSLP.

Conclusions

- Satisfied about PCB design result
- Useful exchange of knowledge
- We are continuing the job with enthusiasm

Thanks!