DHI Status

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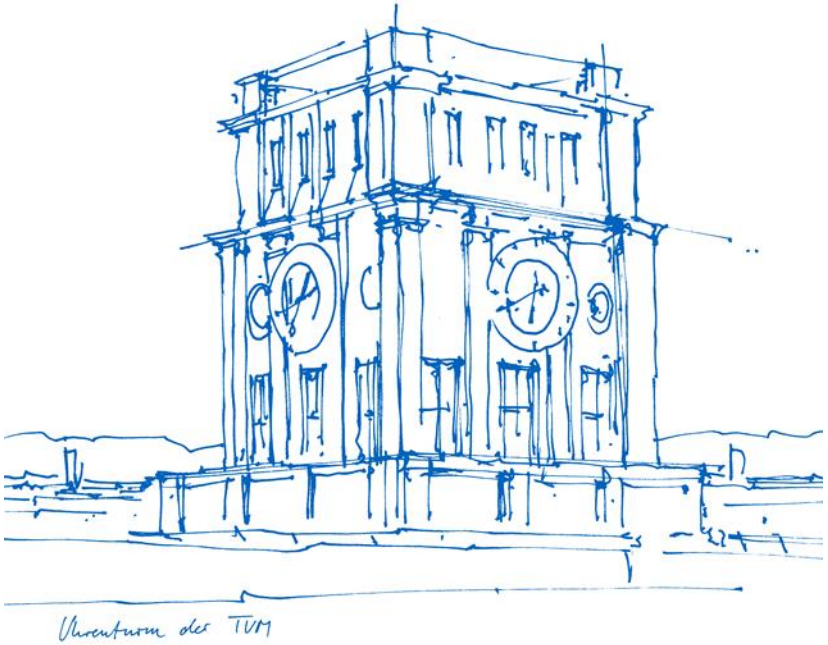
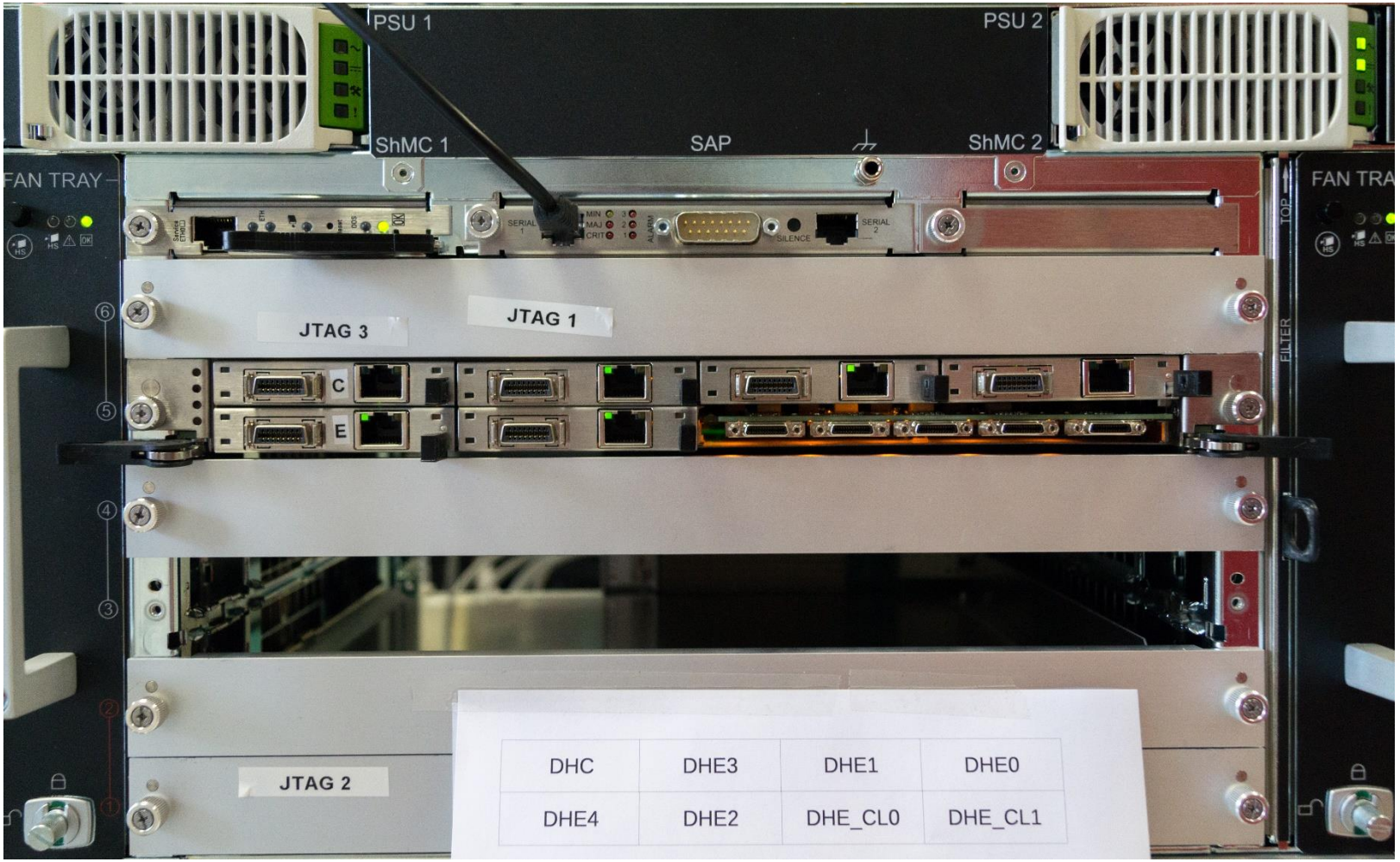
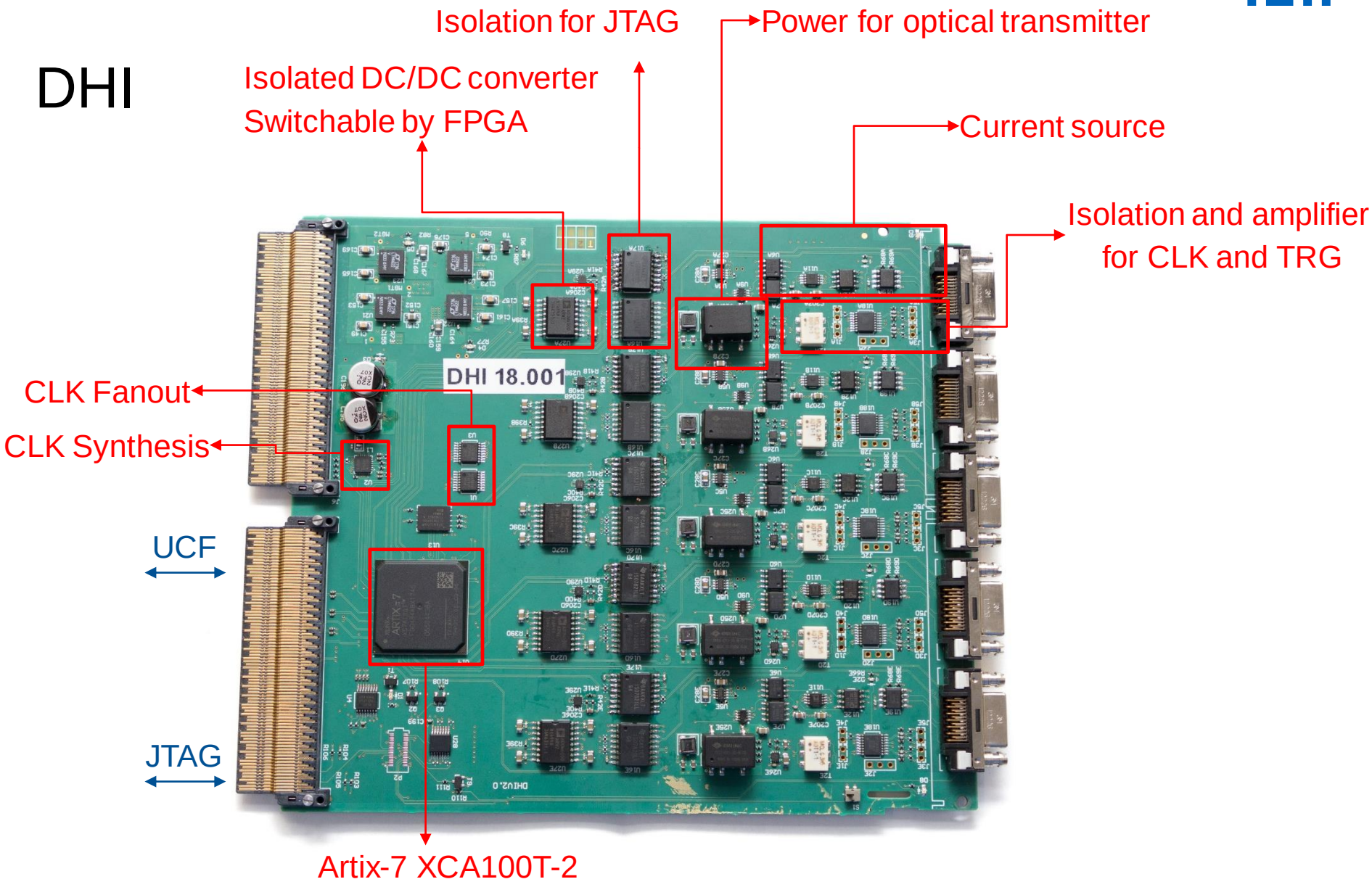


Full DHH System in the ATCA Shelf



DHI


Isolation for JTAG
Power for optical transmitter
Isolated DC/DC converter
Switchable by FPGA
Current source
Isolation and amplifier
for CLK and TRG
CLK Fanout
CLK Synthesis
UCF
JTAG
Artix-7 XCA100T-2
DHI 18.001

DHI Hardware

- Production complete waiting for delivery

- Measurement of all signals to the detector with the Oscilloscope ✓
- Programming the FPGA ✓
- Communication via UCF ✓
- Programming of SiLab-Chip ✓
- IPBus ✓
- Switching DC/DC for the signals going to the detector ✓
- Communication with the Flash via firmware ✓
- Programming the Flash via Xilinx tools ✗
  - Data lines swapped($0 \leftrightarrow 1, 2 \leftrightarrow 3$)
    - Fix this in hardware, most flexible
    - Only program flash via firmware and swap bits in software

DHI firmware

- Firmware is split into 6 parts
  - Master controlling SiLab-Chip and global parameters
  - 5 Slaves each a copy of the DHE firmware (without data path)
- Main difficulties were in getting UCF running on Artix-7

⇒ 6 IPBus instances, one IP-address with different ports
⇒ Keep consistency with current OPIs
- Future: Move trigger parameters to the master

DHI TODO

- Assemble front-panels
- Test all modules
- Test including the detector

=> Interference with the high-rate DHE firmware development

Conclusion

- Most critical parts in testing completed
- 1 Module tested and working in the ATCA shelf
- 10 More modules are currently delivered from MPP to TUM
- FPGA on one module destroyed during testing / to be replaced

- Testing of all modules to be performed this week
- Start testing with detector as soon as DHE firmware testing allows for it