

sPHENIX/MAPS Update

11/18/2016

- CERN Visit:
 - Walt Sondheim and Ming Liu from LANL
 - LANL joined ALICE/ITS project as an Associate Member
 - MOU discussions, LDRD and sPHENIX
 - Lab visit, R&D plan
- New Collaboration
 - LBNL
 - Czech
 - Meeting at CERN this week
 - Excellent in sensor design and readout electronics
- MIE Proposal Writing

MOU Discussions

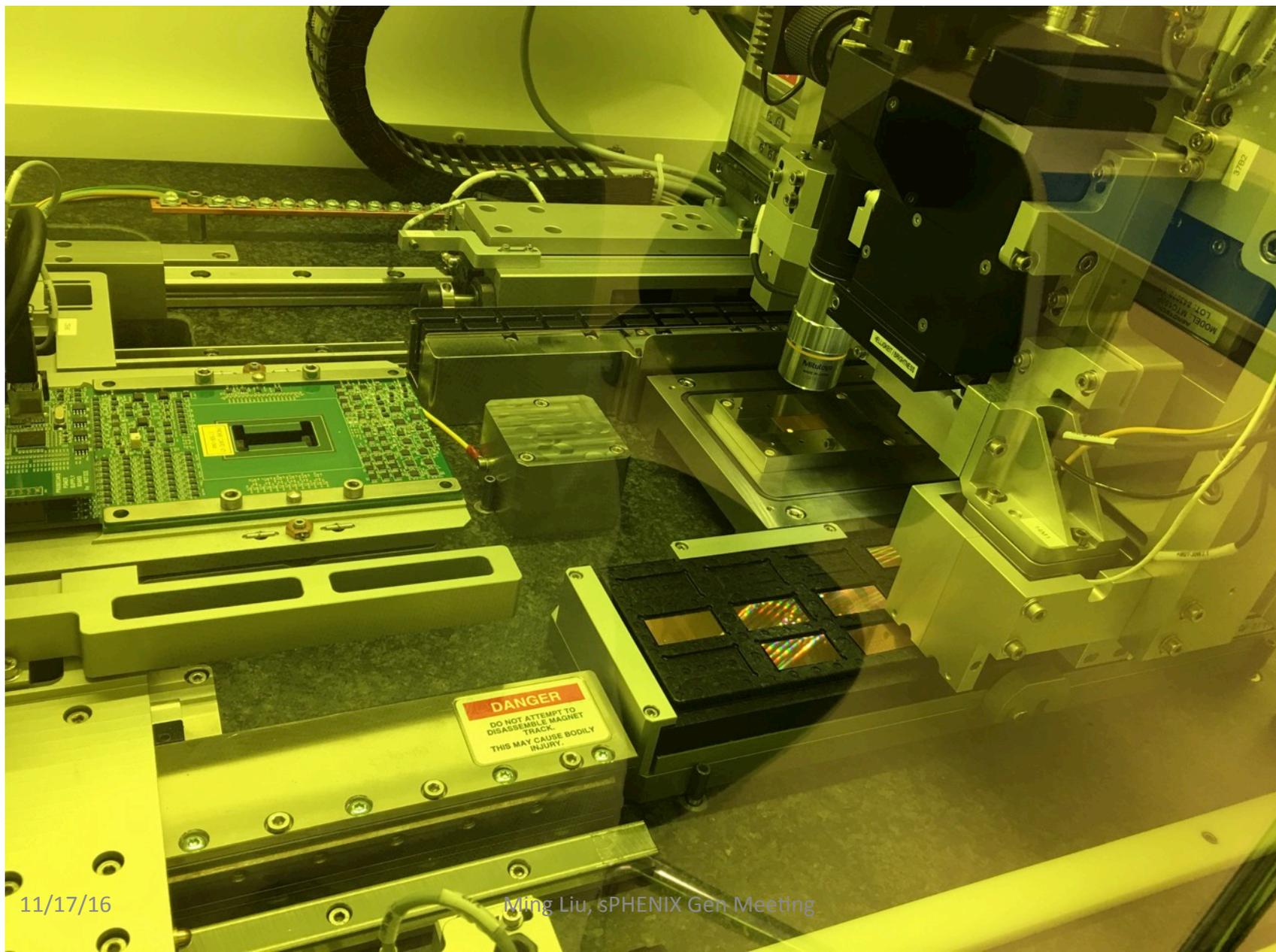
- LDRD R&D – full support
 - Single chips test boards to build a telescope
 - Assembled prototype modules
 - Test bench, high speed MOSAIC board
 - Readout units, CRU etc.
- sPHENIX – great support
 - MAPS chips, to be part of the full production
 - Production Review next week,
 - Stave/space frames, to be part of the full production
 - Will support sPHENIX production run for module assembly etc.
 - sPHENIX needs to come up with a plan to build one!

MIE pre-proposal writing etc

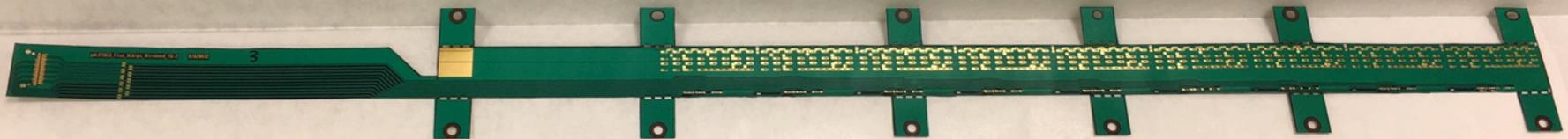
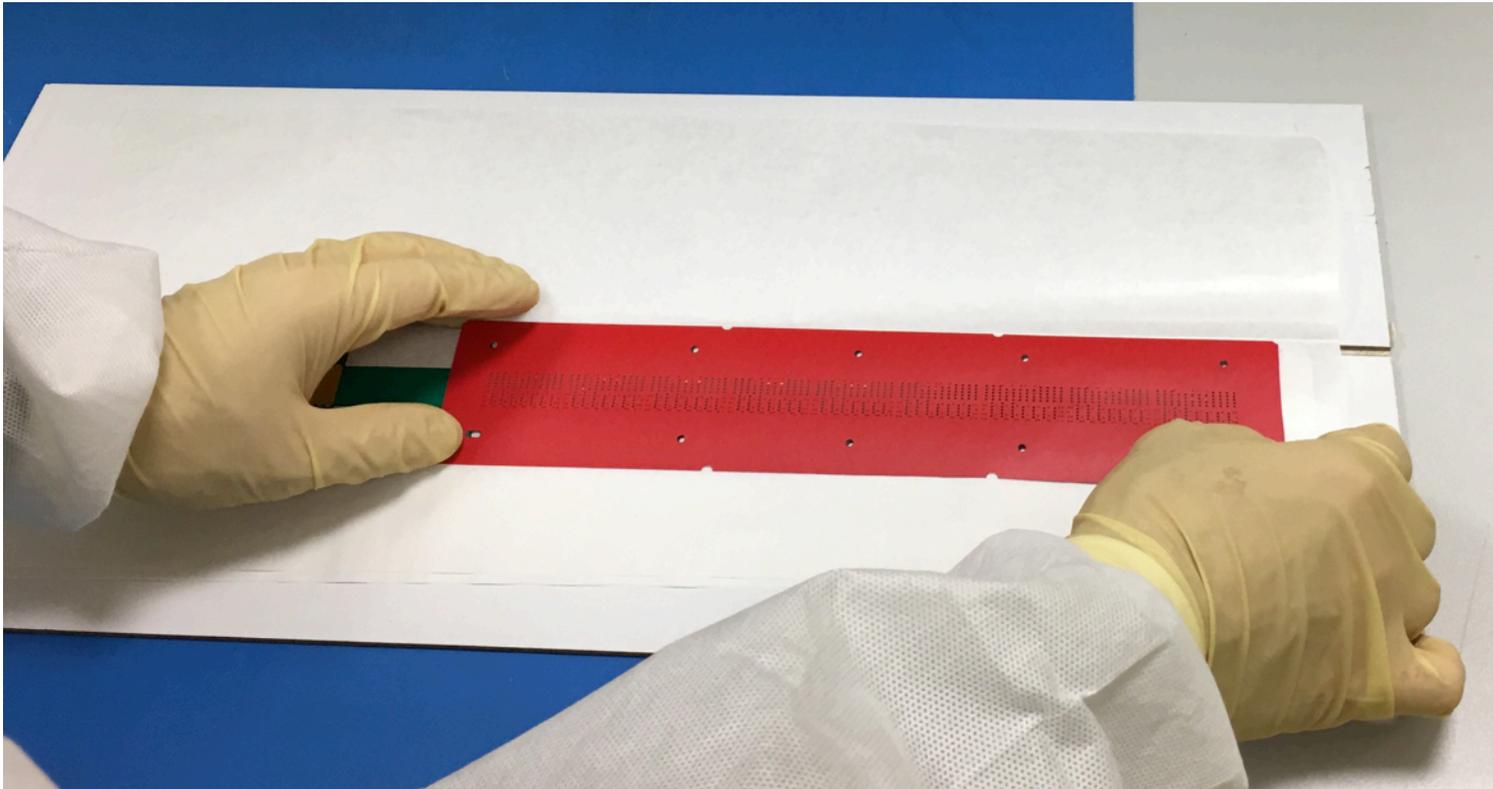
- Outline being discussed
 - A short one, 10~20 pages
 - Welcome contributions
- First draft for collaboration discussion
 - Dec 15-17, sPHENIX meeting
- Complete draft by January
 - DOE Feb budget meeting
 - Timeline of
- Joint R&D on readout and mechanics integration

1. Executive Summary (1~2 pages)
 - Science highlights and deliverables
 - Mission Need
2. Physics Goals (~2 pages)
 - B-jet physics at intermediate pT ($\sim >15$ GeV)
 - B-hadron physics at low pT ($< \sim 15$ GeV)
3. Detector Requirements (~2 pages)
 - Tracking impact parameter resolution
 - B-tagging in AuAu
 - Readout rate
4. Physics Performance (~2 pages)
 - B-tagging
5. Technical Scope and Deliverables (~2 pages)
 - Stave assembly and testing
 - Readout
 - Mechanical structures
6. Organization and Collaboration (1~2pages)
7. Schedule and Cost Baseline (3~5 pages)

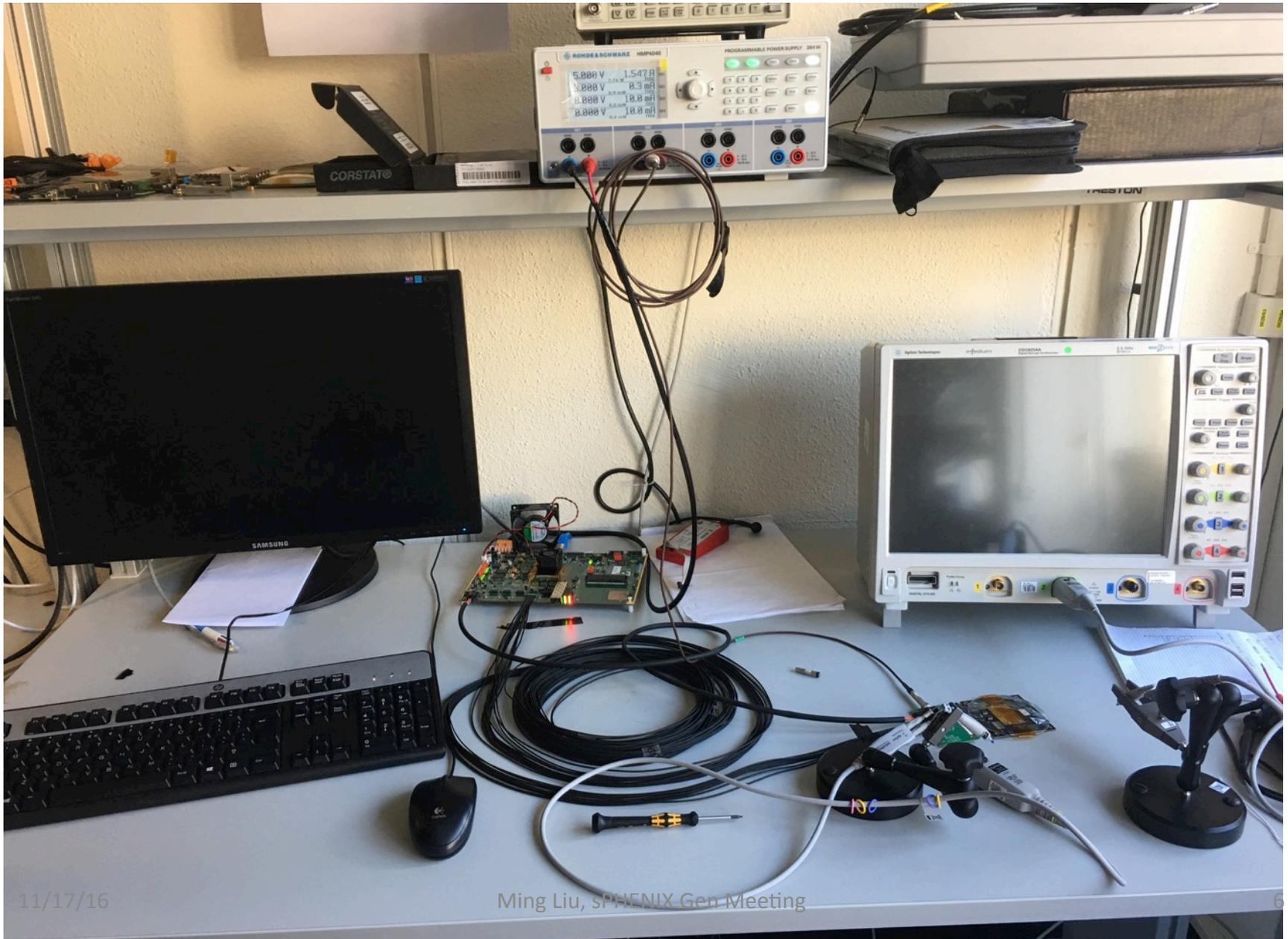
Module Assembly Lab



FPCB and Module Assembly

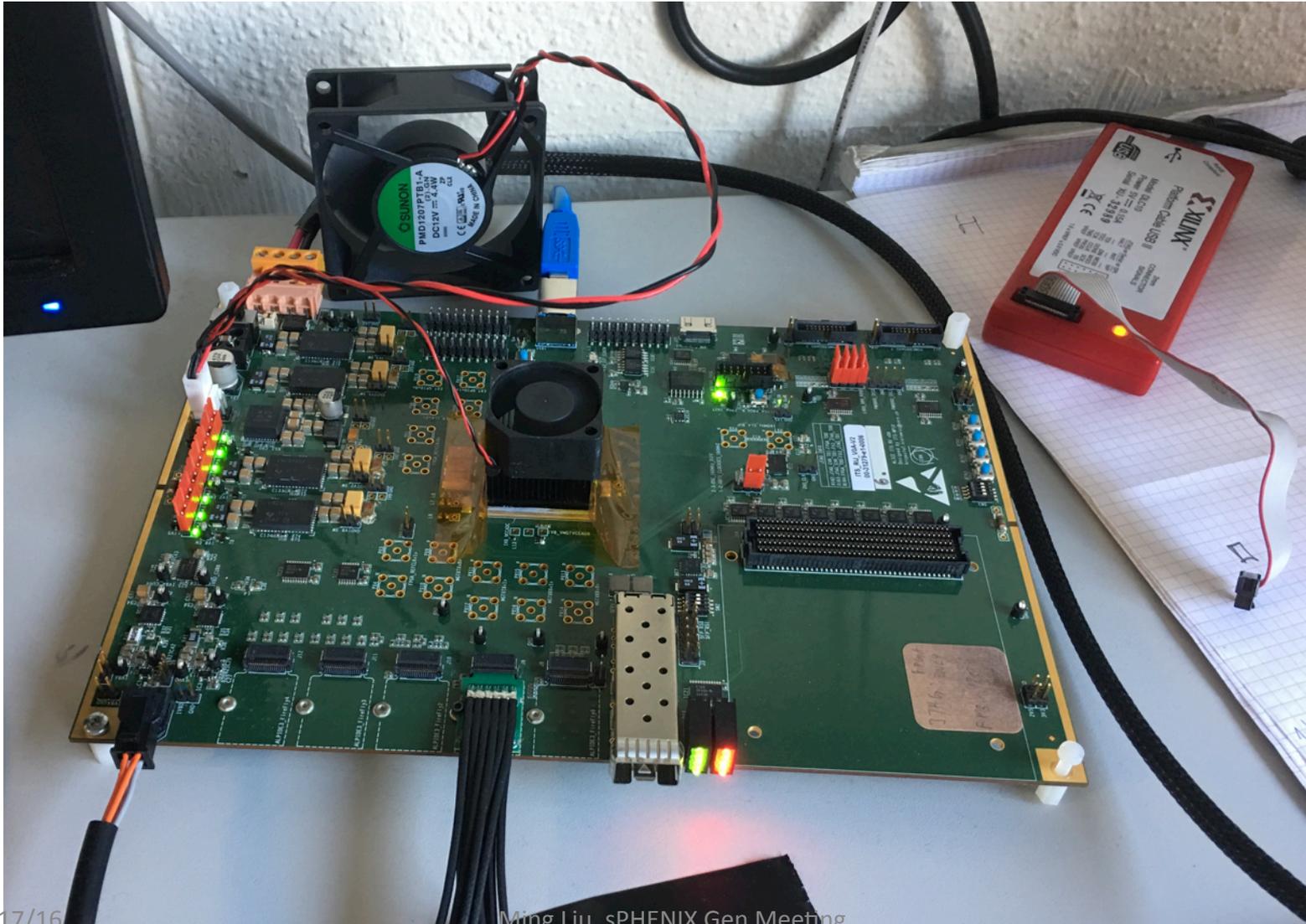


Readout Electronics Lab

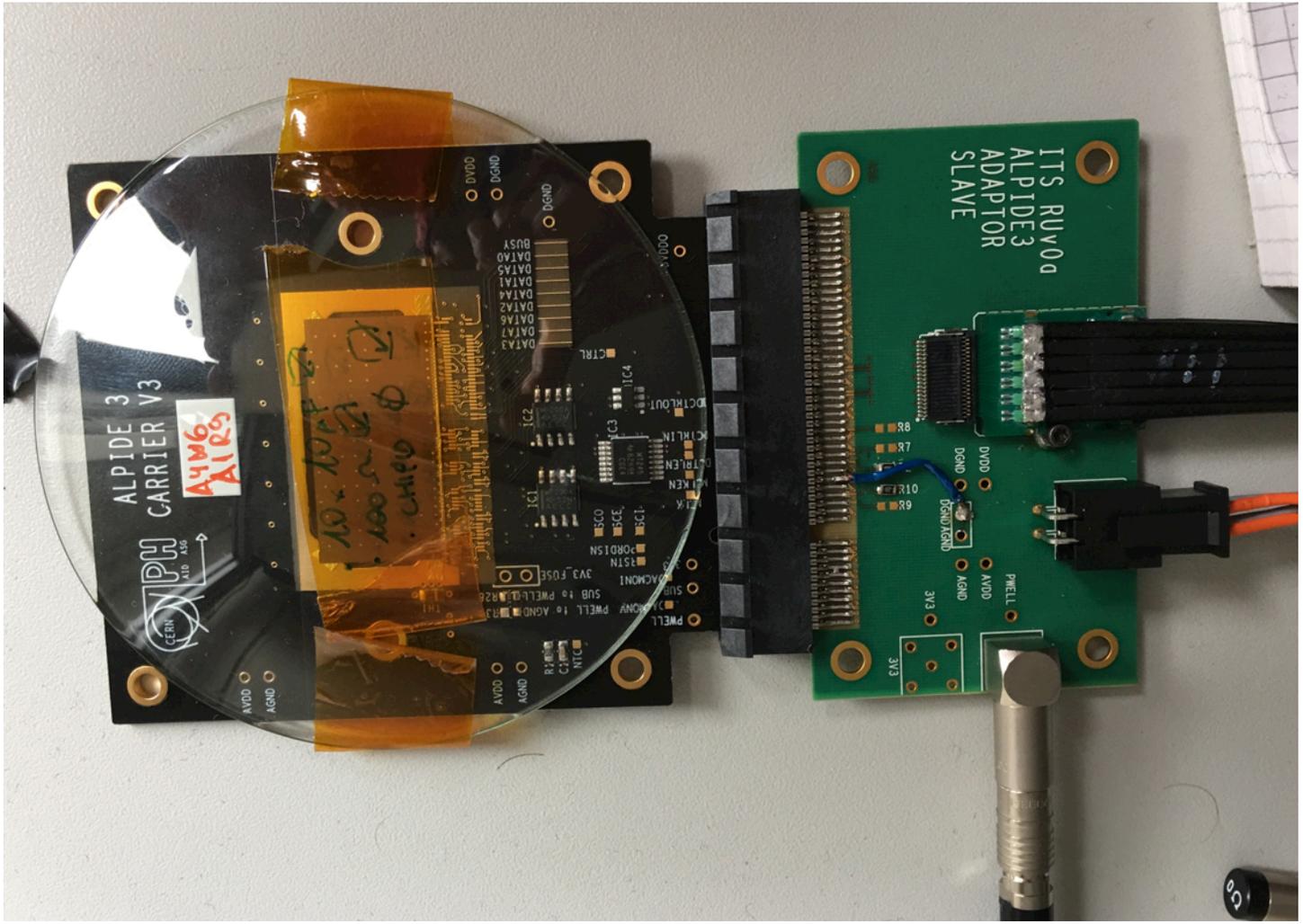


Readout Unit - V0

single module high-speed readout, USB or GBT fiber; no CRU yet

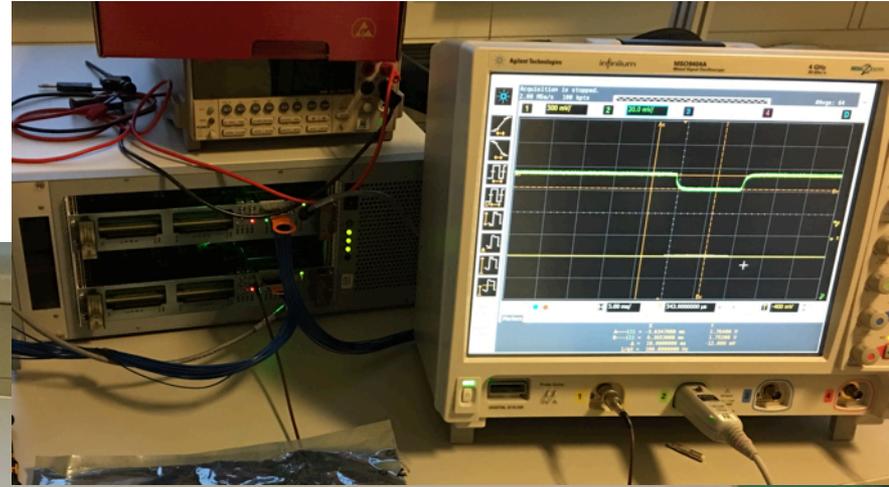
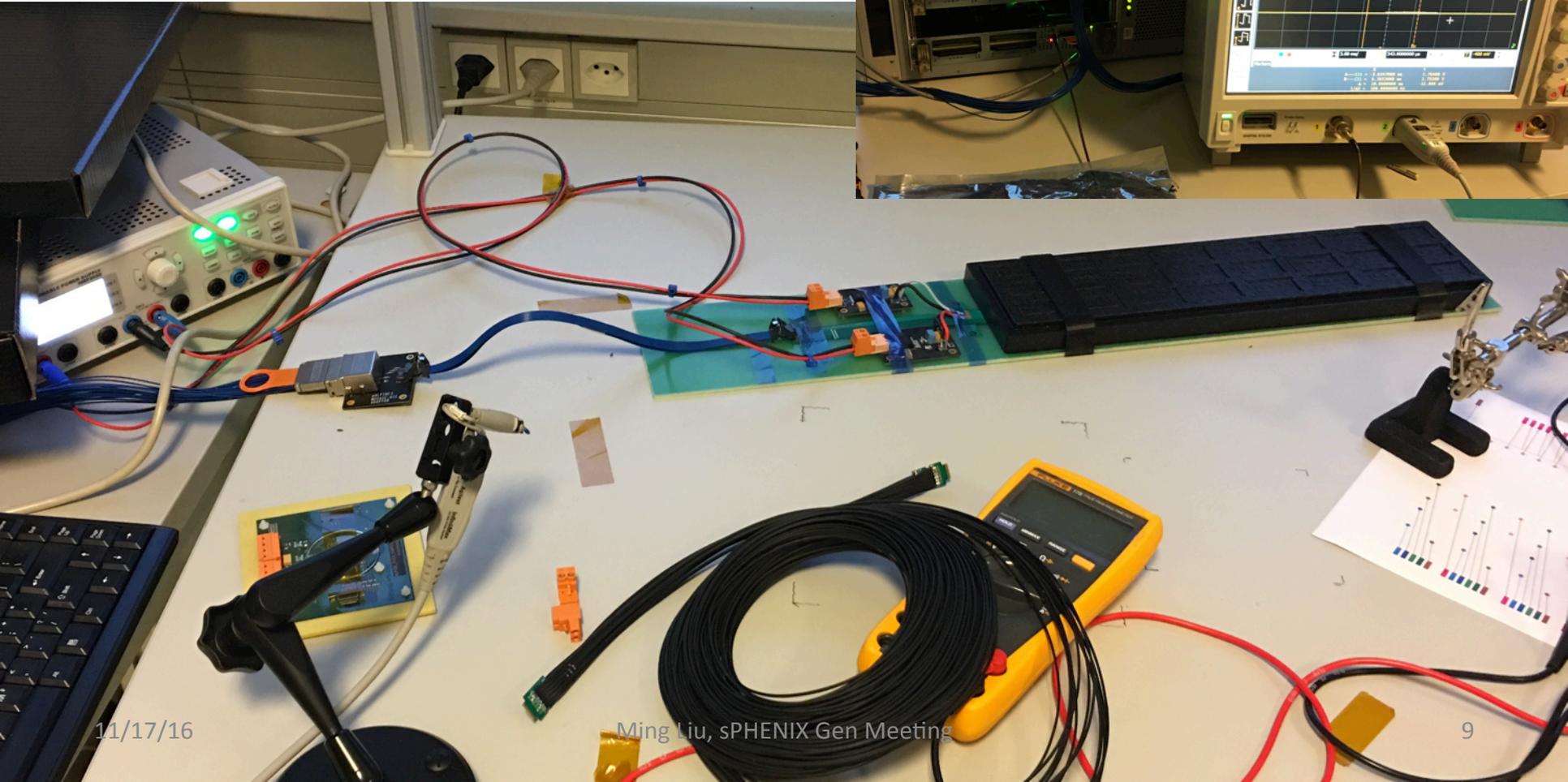


Single Chip High Speed Readout



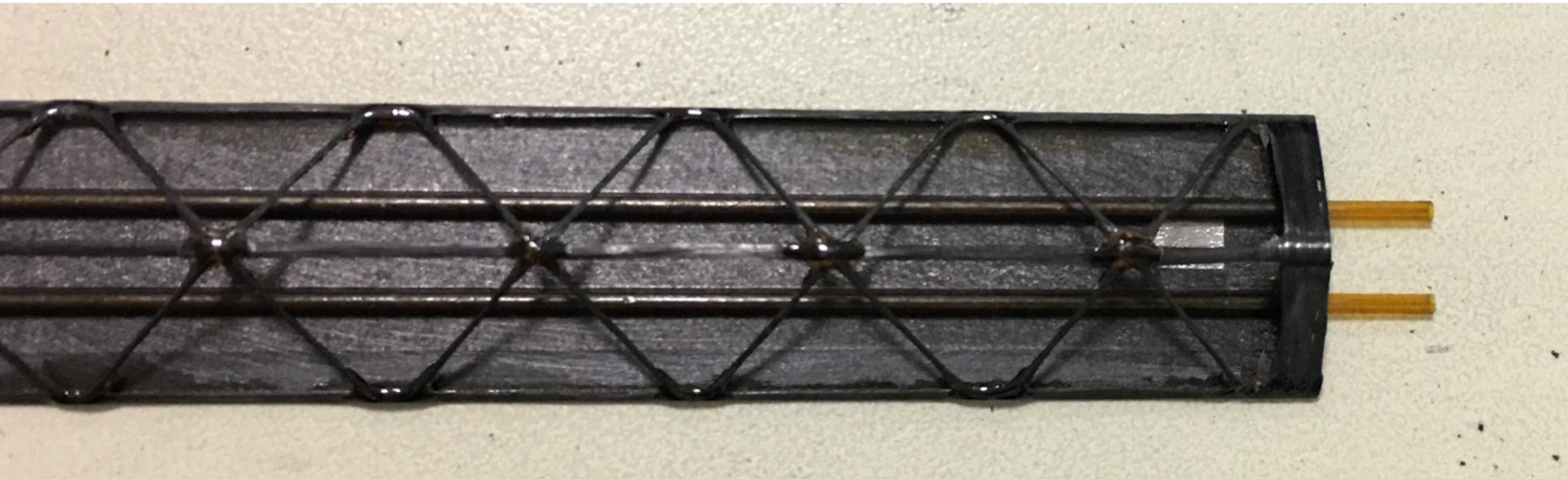
9-Chip Module High Speed Readout

Test Bench: MOSAIC Card



Stave Production

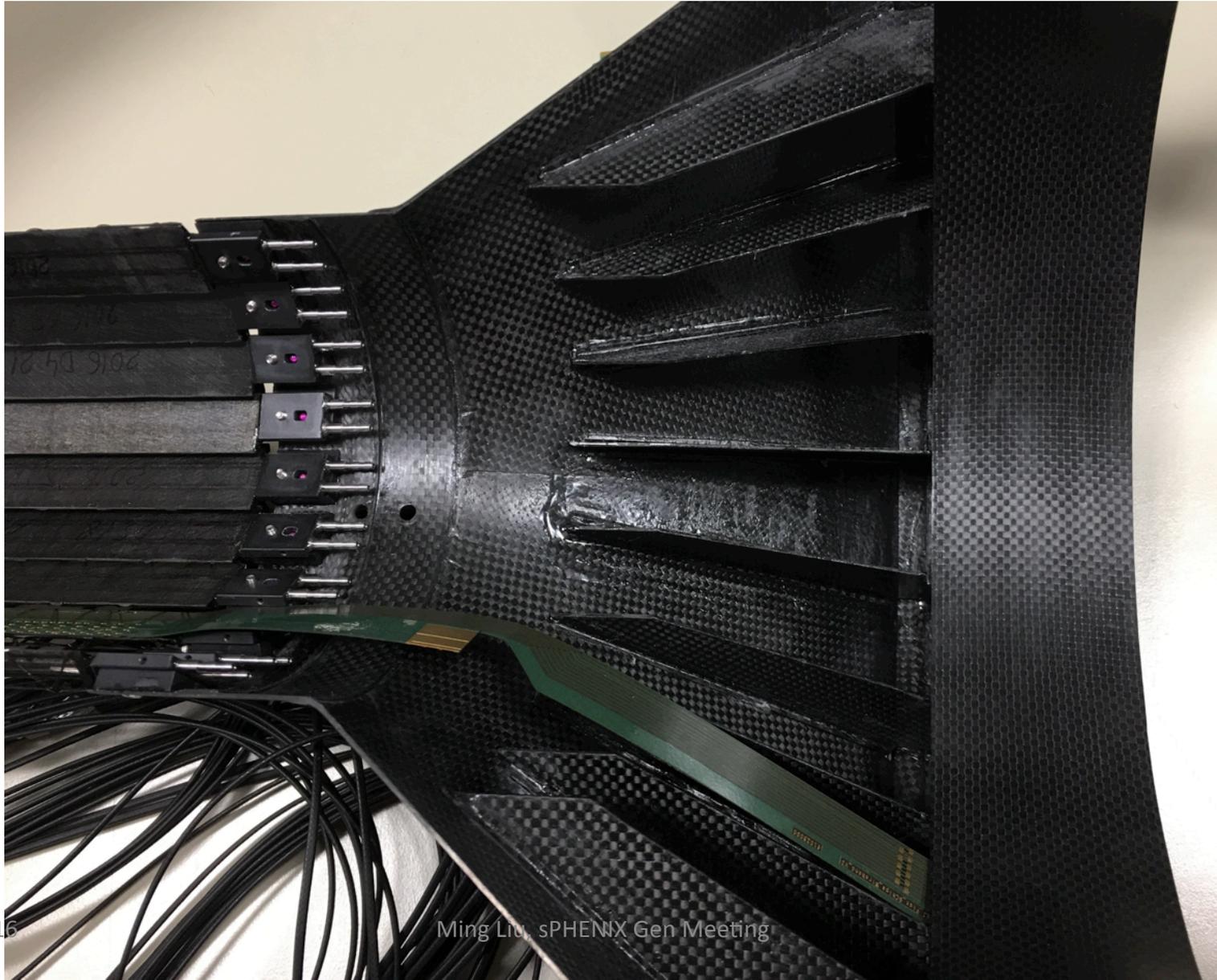
Very good progress, ahead of schedule



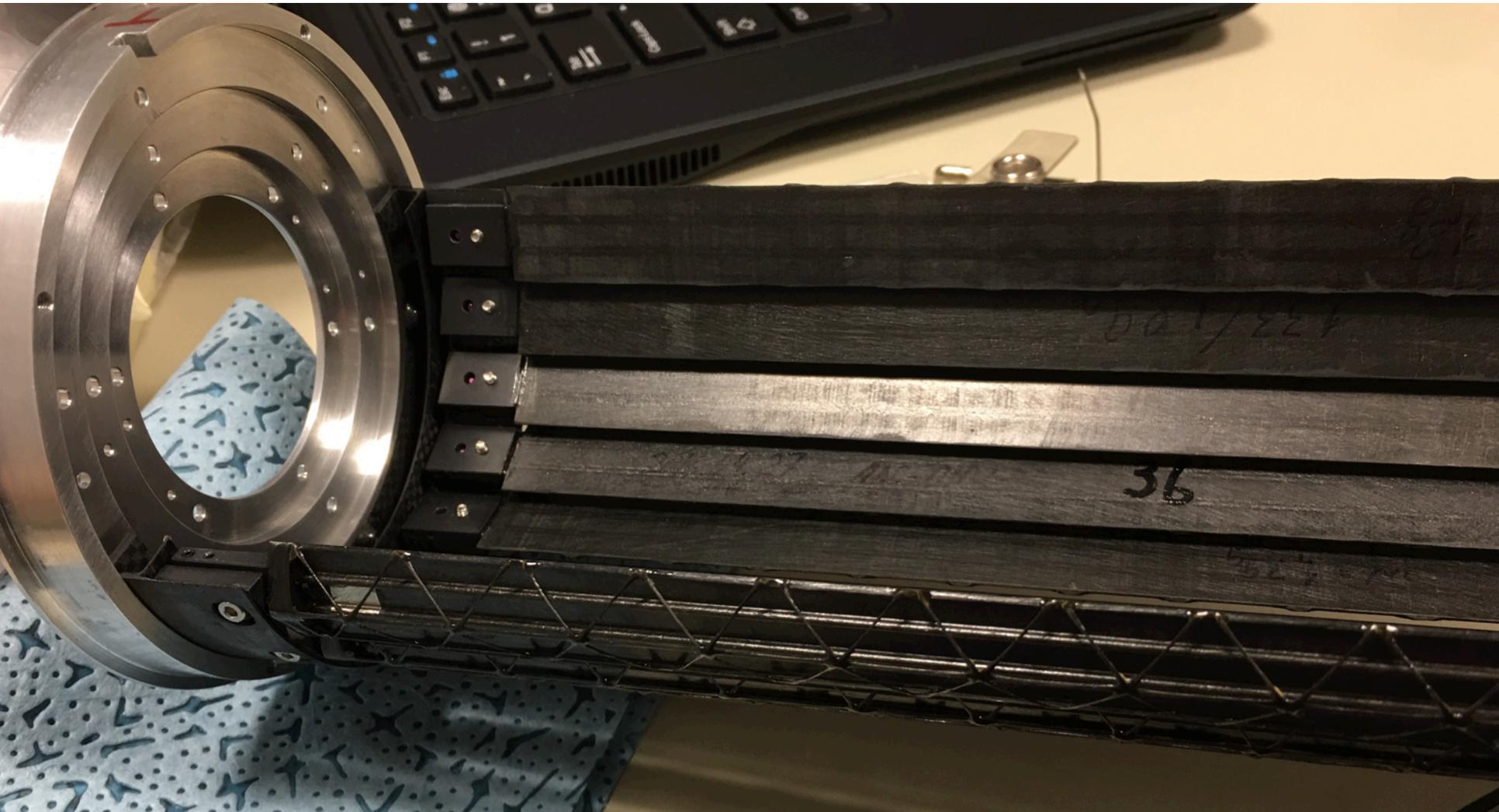
Mechanical Frames



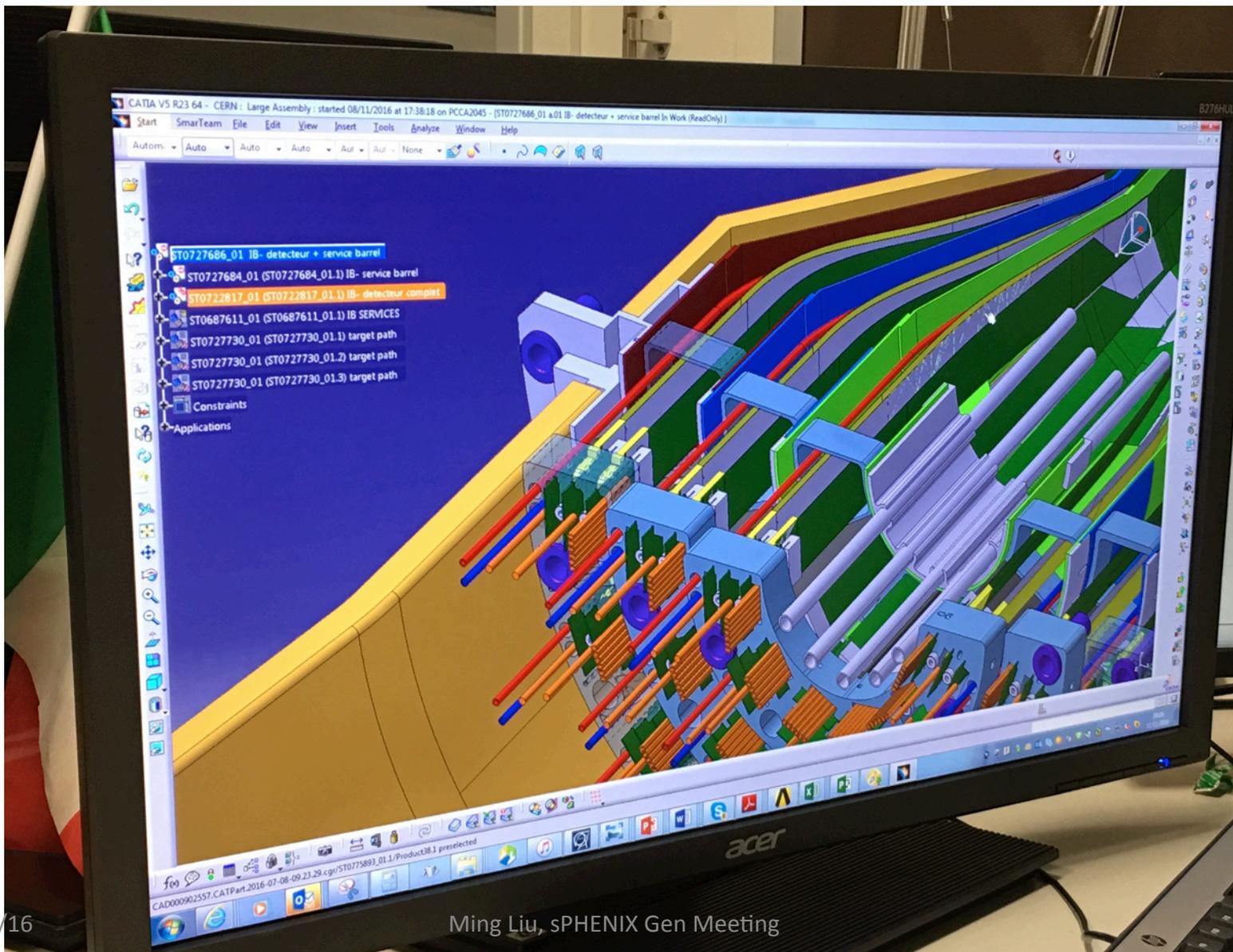
Service End Wheel



Staves



Mechanical End Wheel Design



Test beam setup: 7 Single Chip Modules

