Materials for QA

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Oxford in-person meeting
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Chip QA (probe station)

Power Cables (3 SMA + 1 custom)

HV supply

LV supply

Motherboard

PC mounted
with StratixIV

Probe card

Probe station

SCSI cable

Wafer

Adapter card
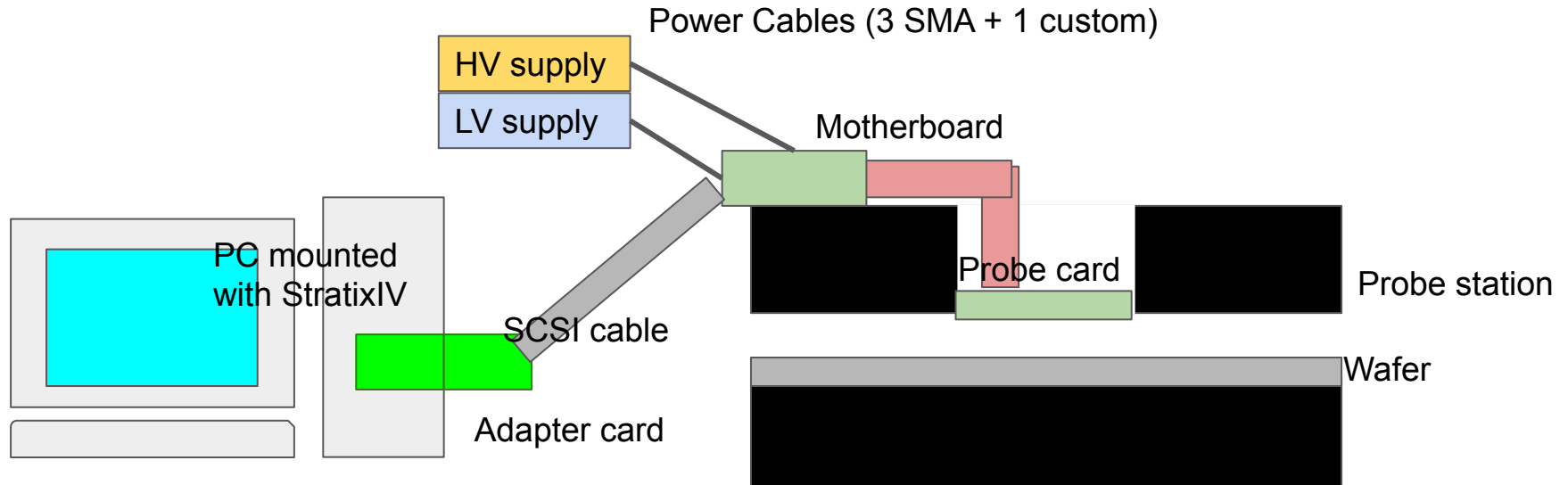
PC requirements
- Linux (better OpenSUSE 15.3)
- Mupix8_daq repository

Everything apart from probe card
already in Oxford

Chip QA (probe station)

- 2 possibilities
  - Probe wafer before processing
    - Easier to perform
    - Very early in production chain (thinning and dicing not taken into account)
  - Probe wafer after processing
    - More difficult
      - Wafer on blue tape
      - Chips move from initial position -> pattern recognition crucial
    - Still some chip handling afterwards
- Ideally one would want to test single chips as far as possible into the production chain

Chips QA (single chip needle card)

HD is in touch with PTSL for the development of a single chip needle card
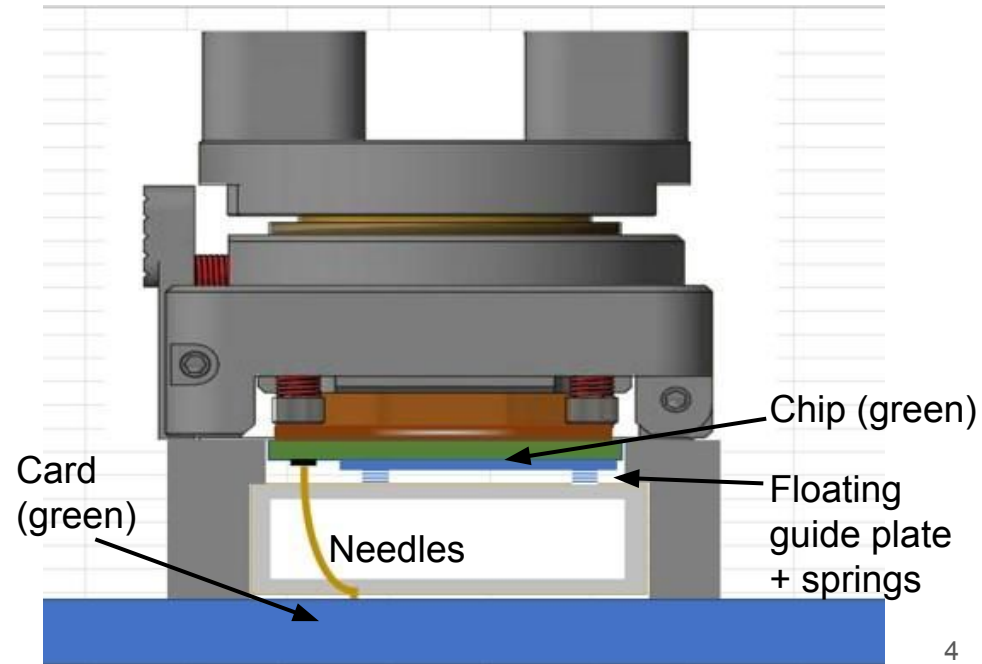
Technically feasible

Experience from HD ATLAS group

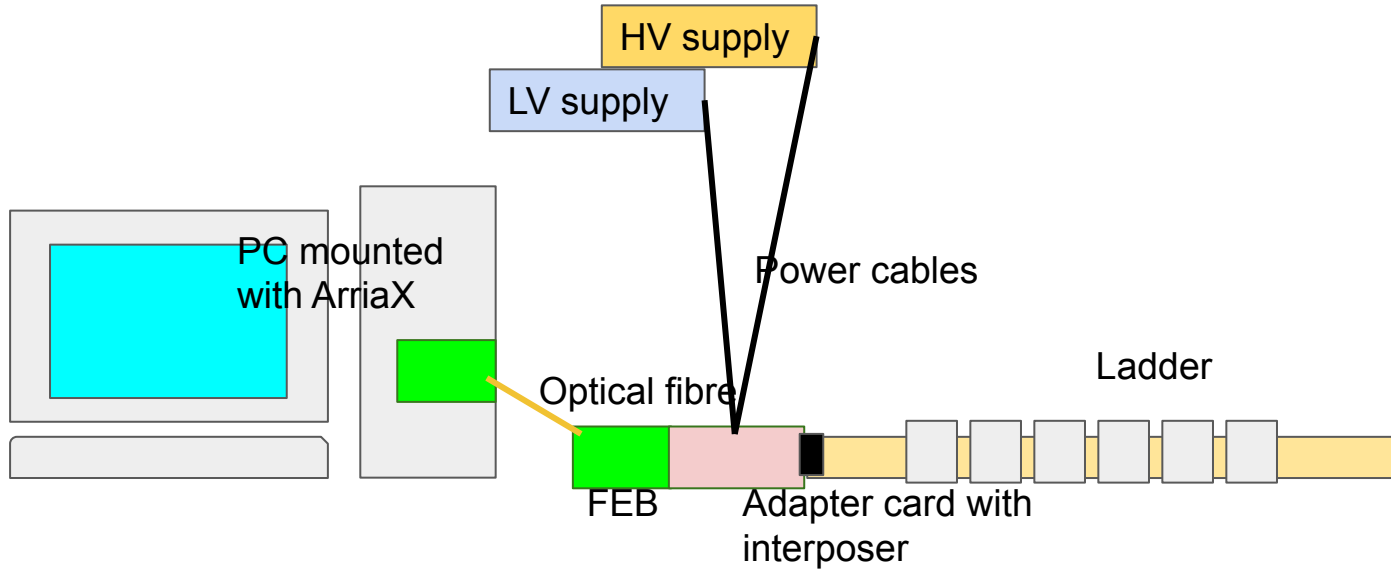One chip inside the box
Press down handle
Test

Single chips must be anyway handled to be put on gantree: one can perform test here

Chip (green)

Card (green)

Floating guide plate + springs

Needles

Single chip QA: what to verify

- IV curve
- Power up
- Configurability
- Data transmission
- Injection
- Source/laser (possibly)

Ladder/Module QA

HV supply

LV supply

PC mounted
with ArriaX

Power cables

Ladder

Optical fibre

FEB

Adapter card with
interposer

Adapter cards (and power cables with it) still to be designed
Requirement for PC
- Linux (preferably OpenSUSE 15.3)
- Online (MIDAS based) repository
- Quartus

FEB brought to Oxford this week
ArriaX to purchase
Adapter card to be designed

Ladder/Module QA: what to verify

- Connections
- Chip functionalities (test each chip in single chip mode)
- Temperature…?
- Mechanics…?