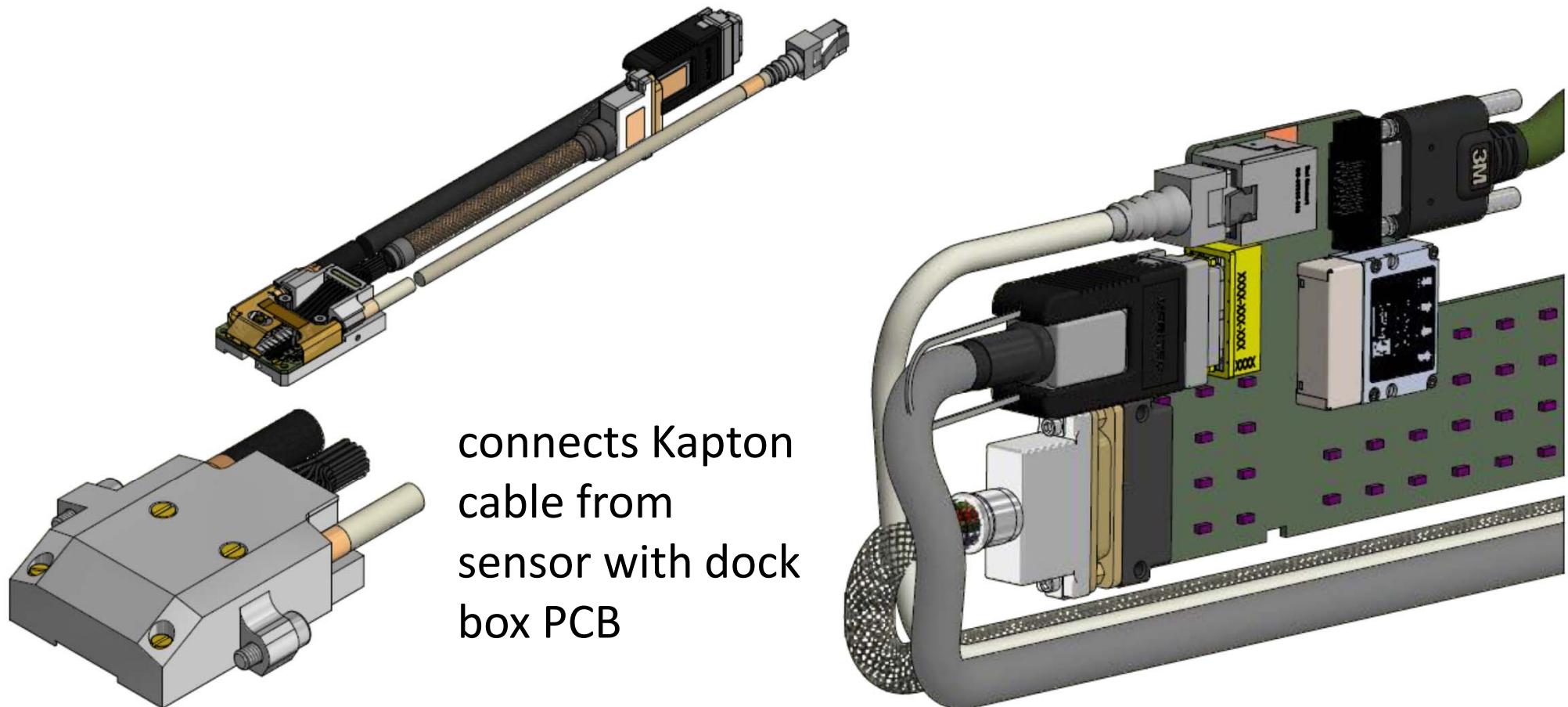
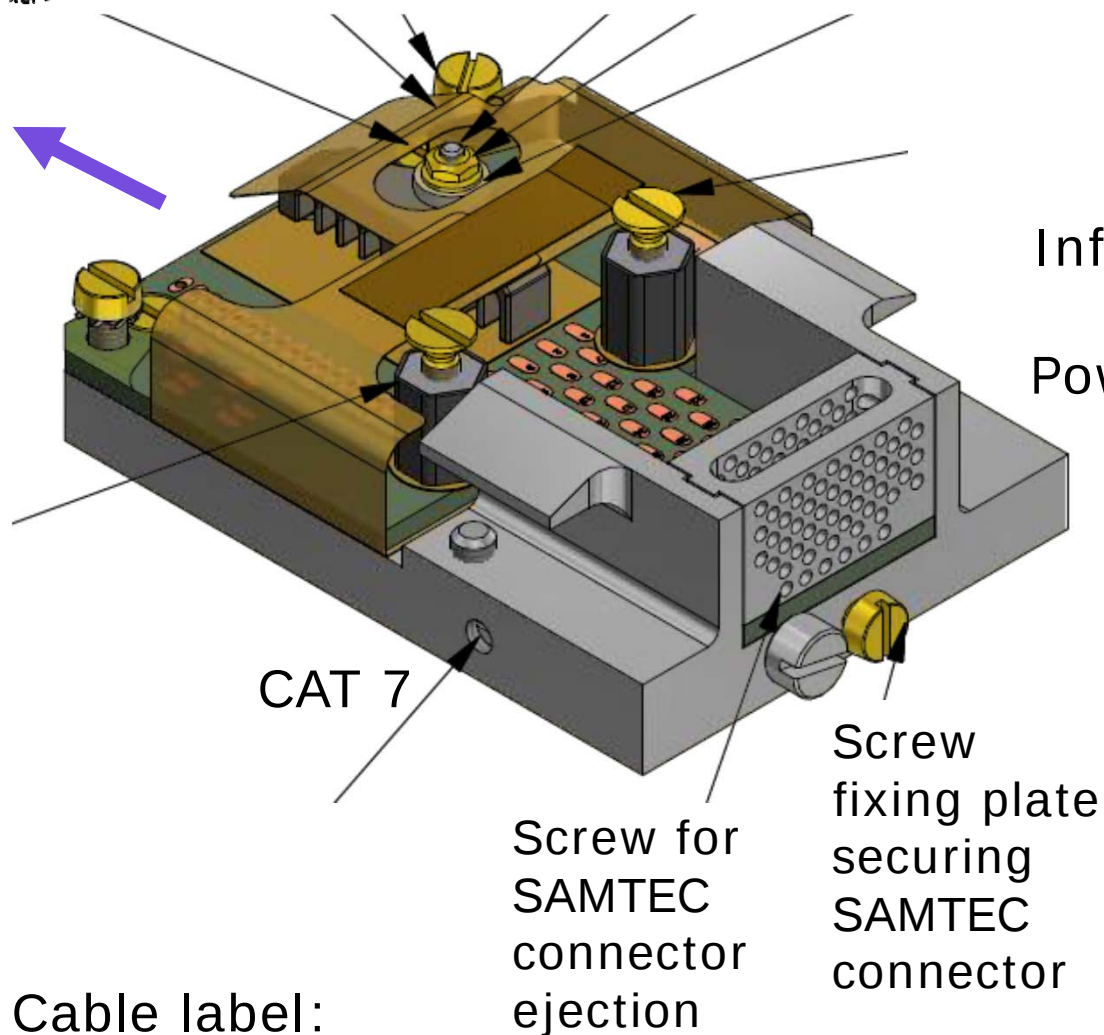


Belle II PXD Workshop

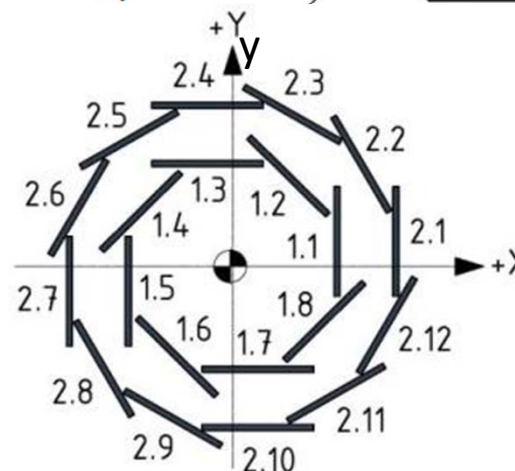
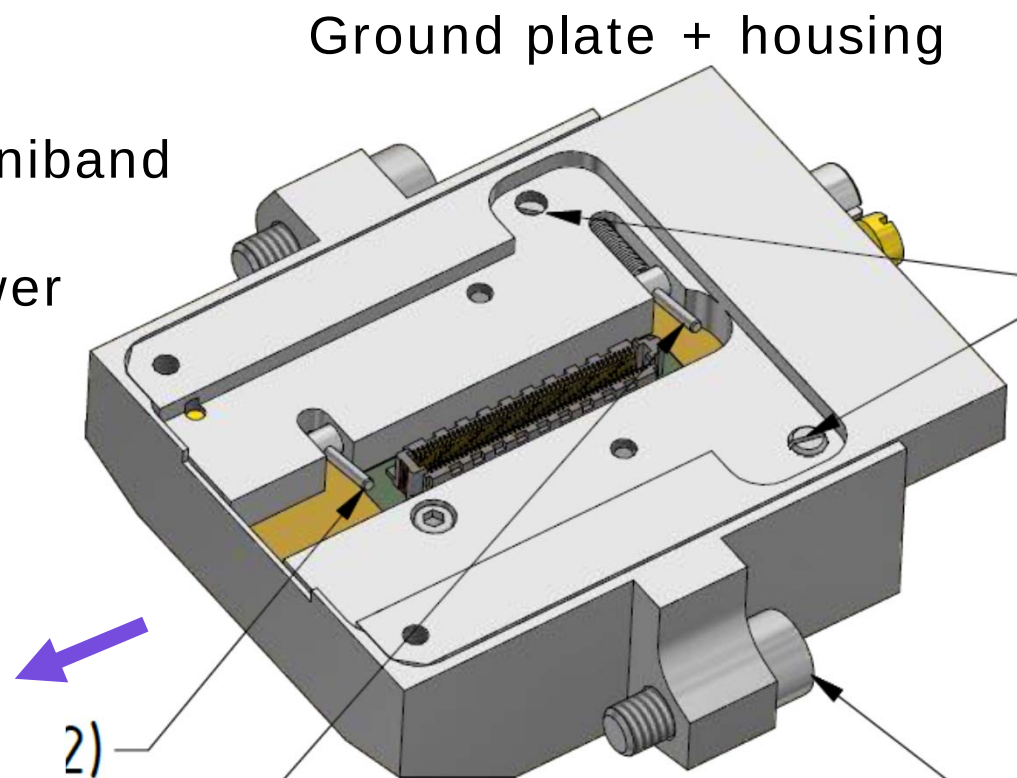
Services: Patch Panel Production



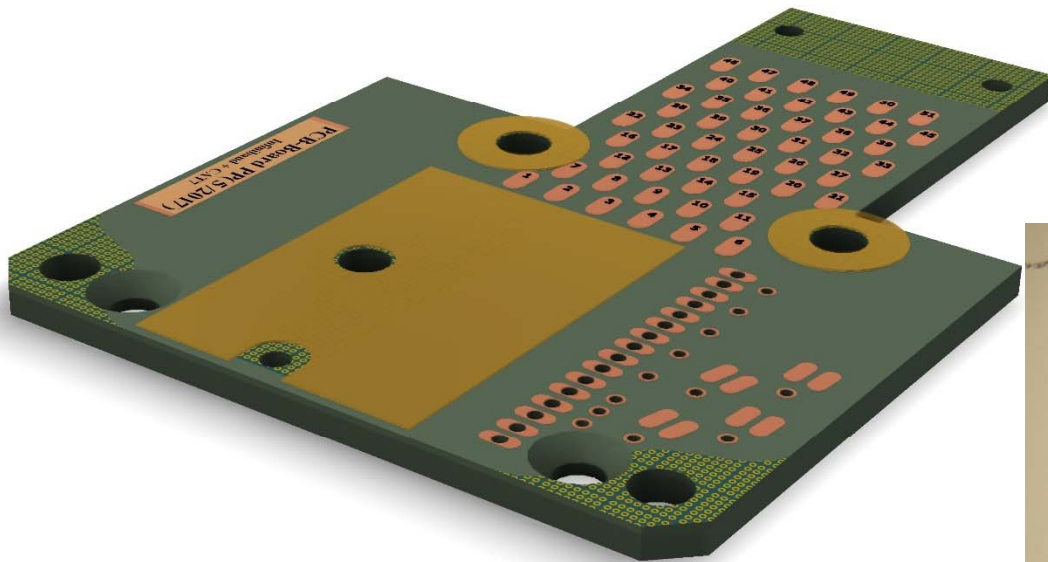


Cable label:

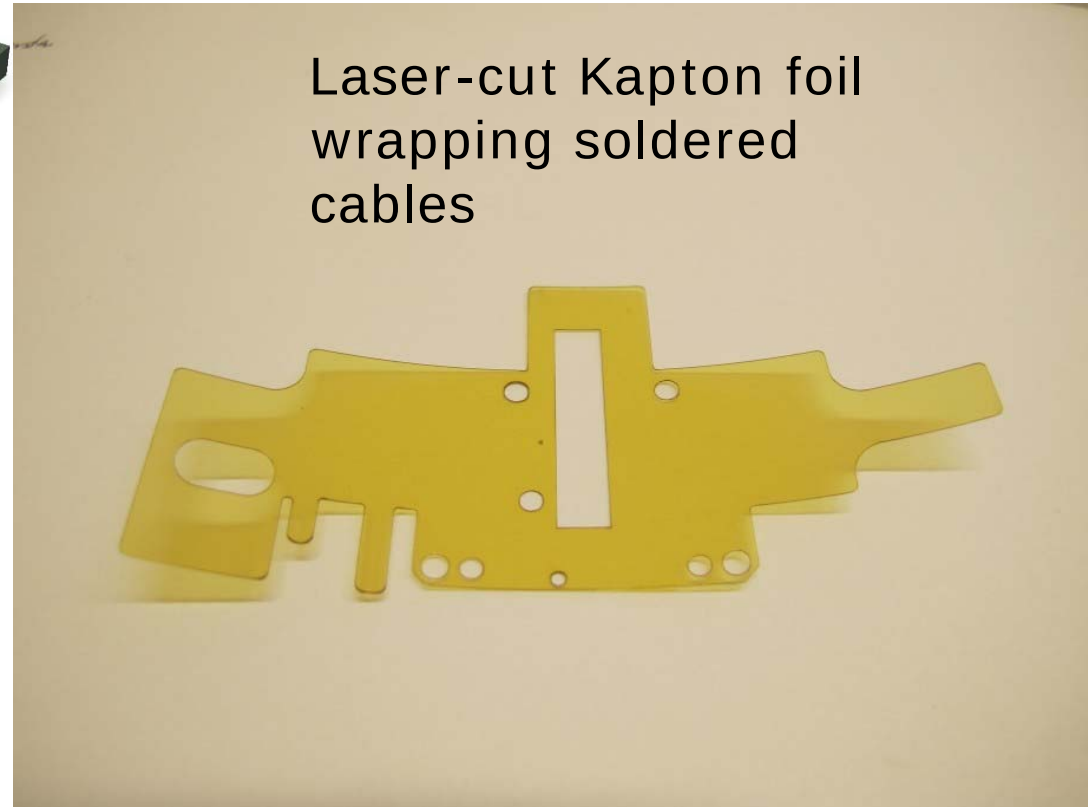
Ser. number + geom. module number
(e.g. L1 BWD 1-8)

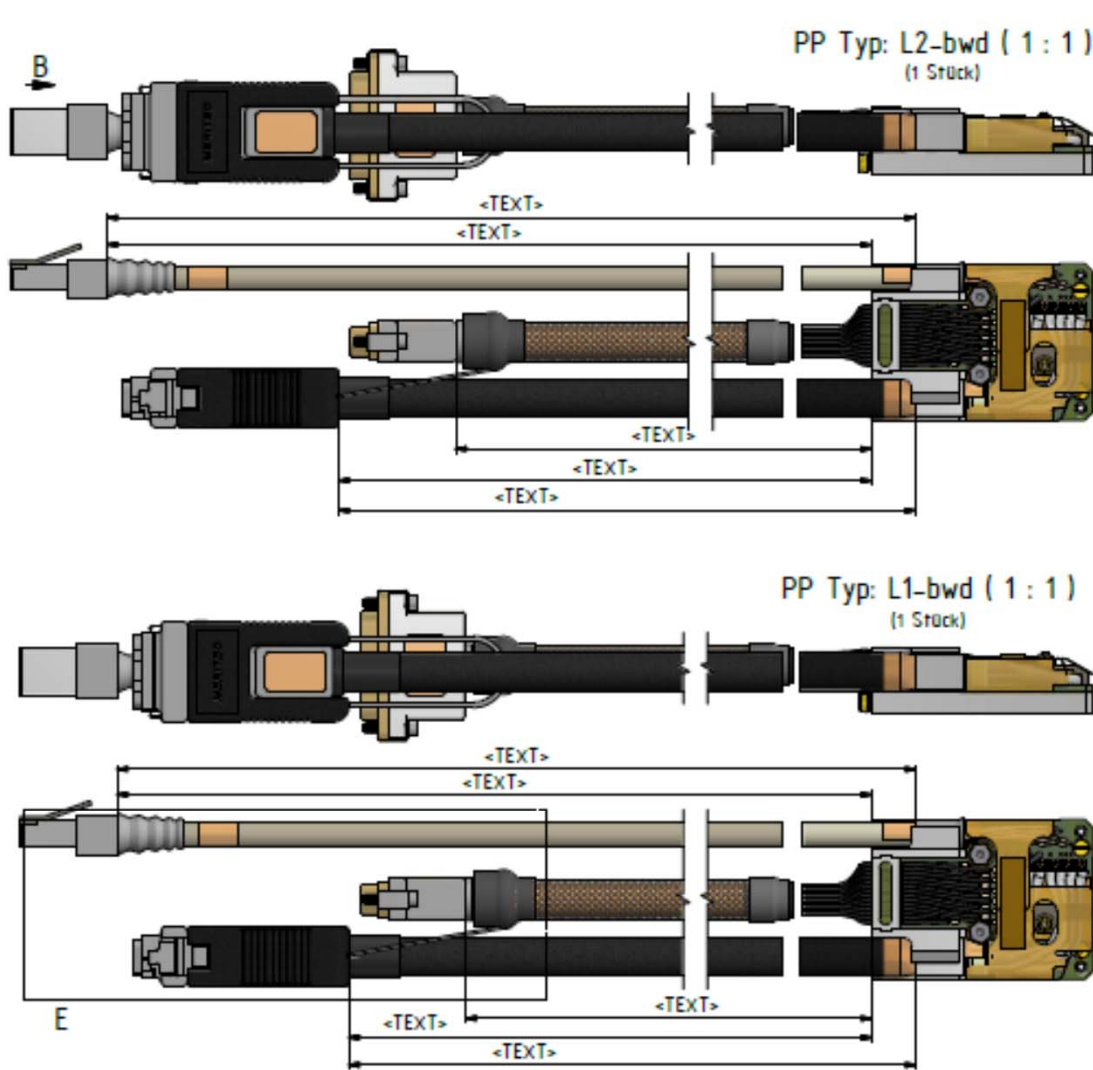


PCB with
Kapton isolations

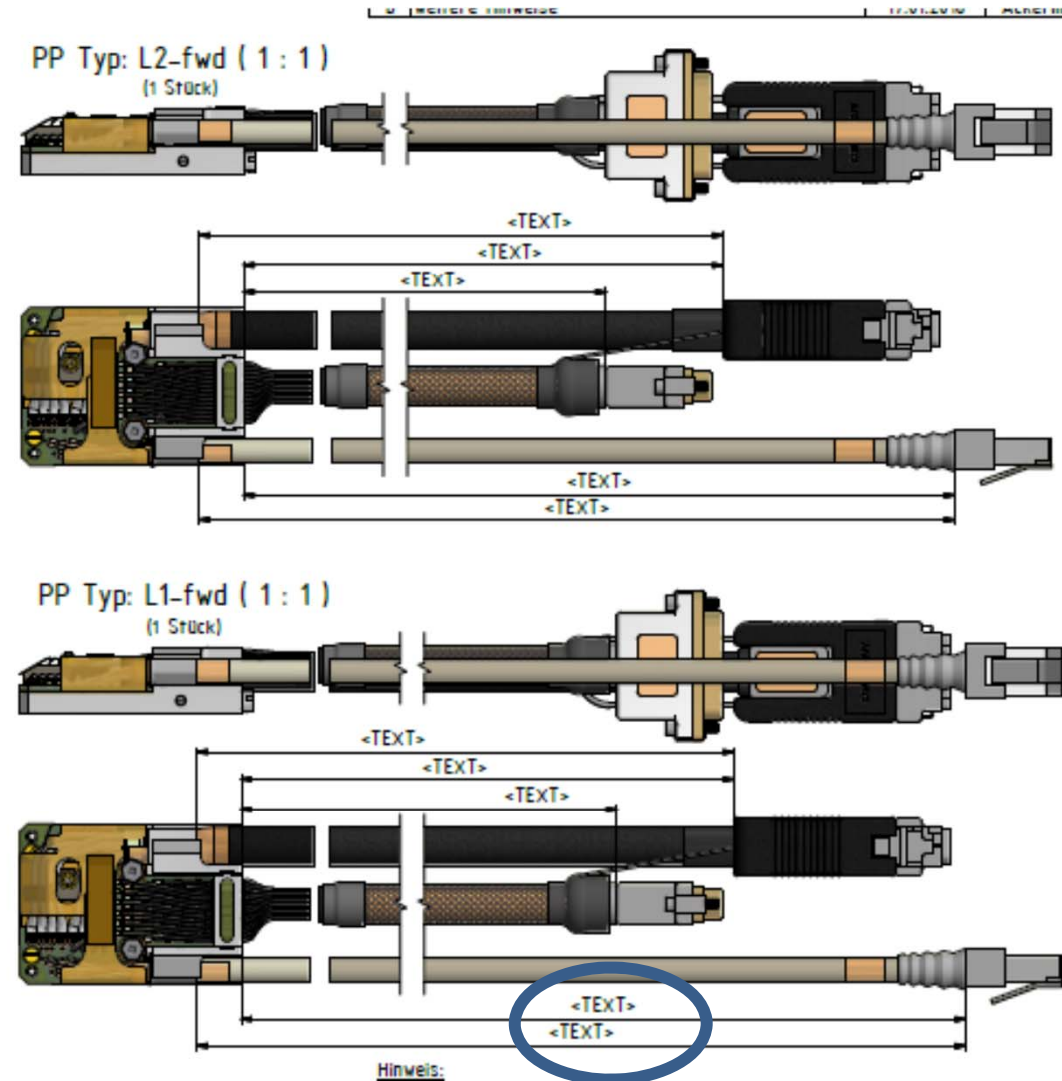


Laser-cut Kapton foil
wrapping soldered
cables

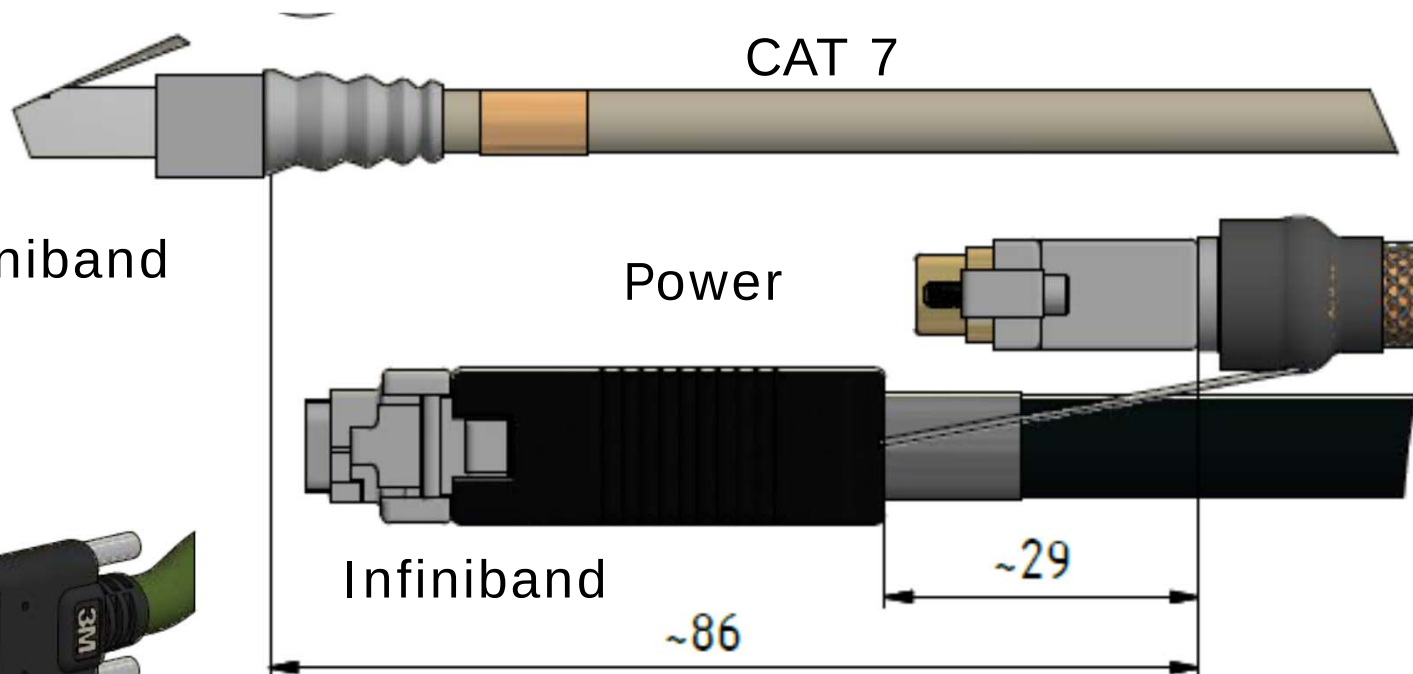
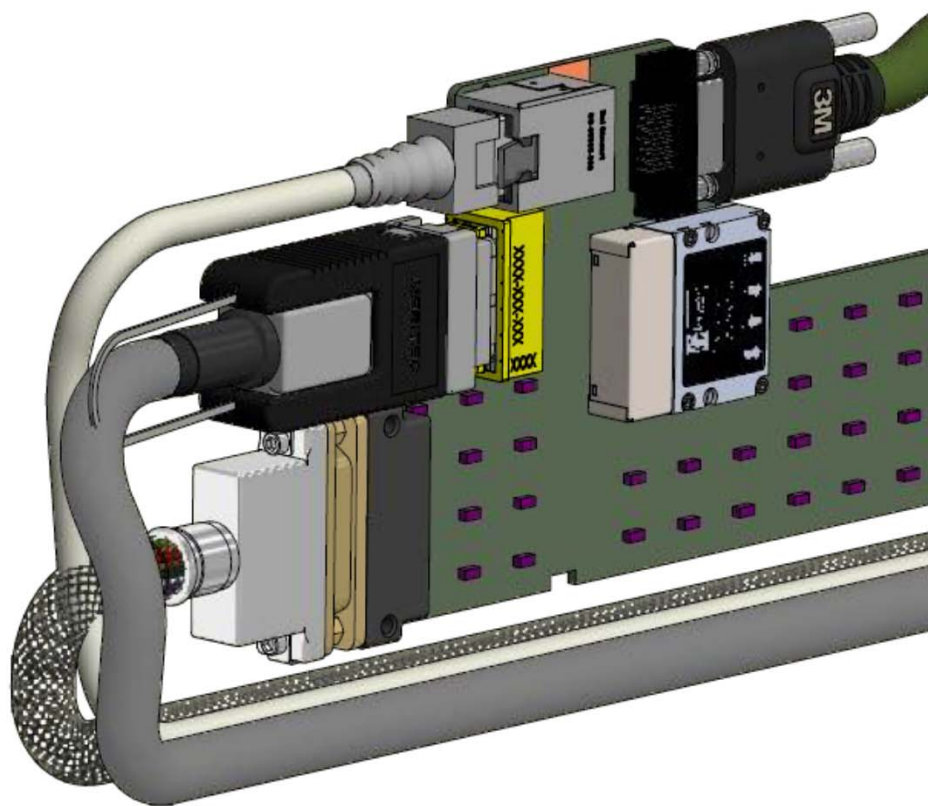
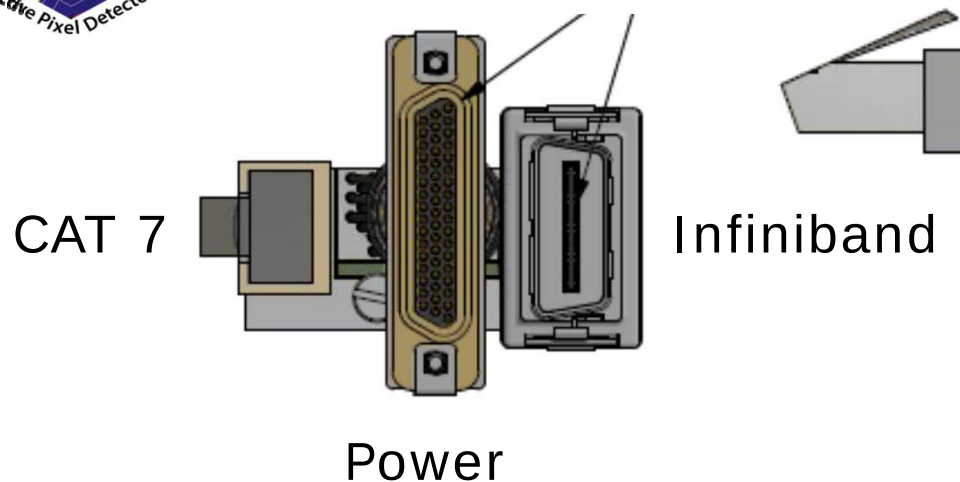




4 types of cables



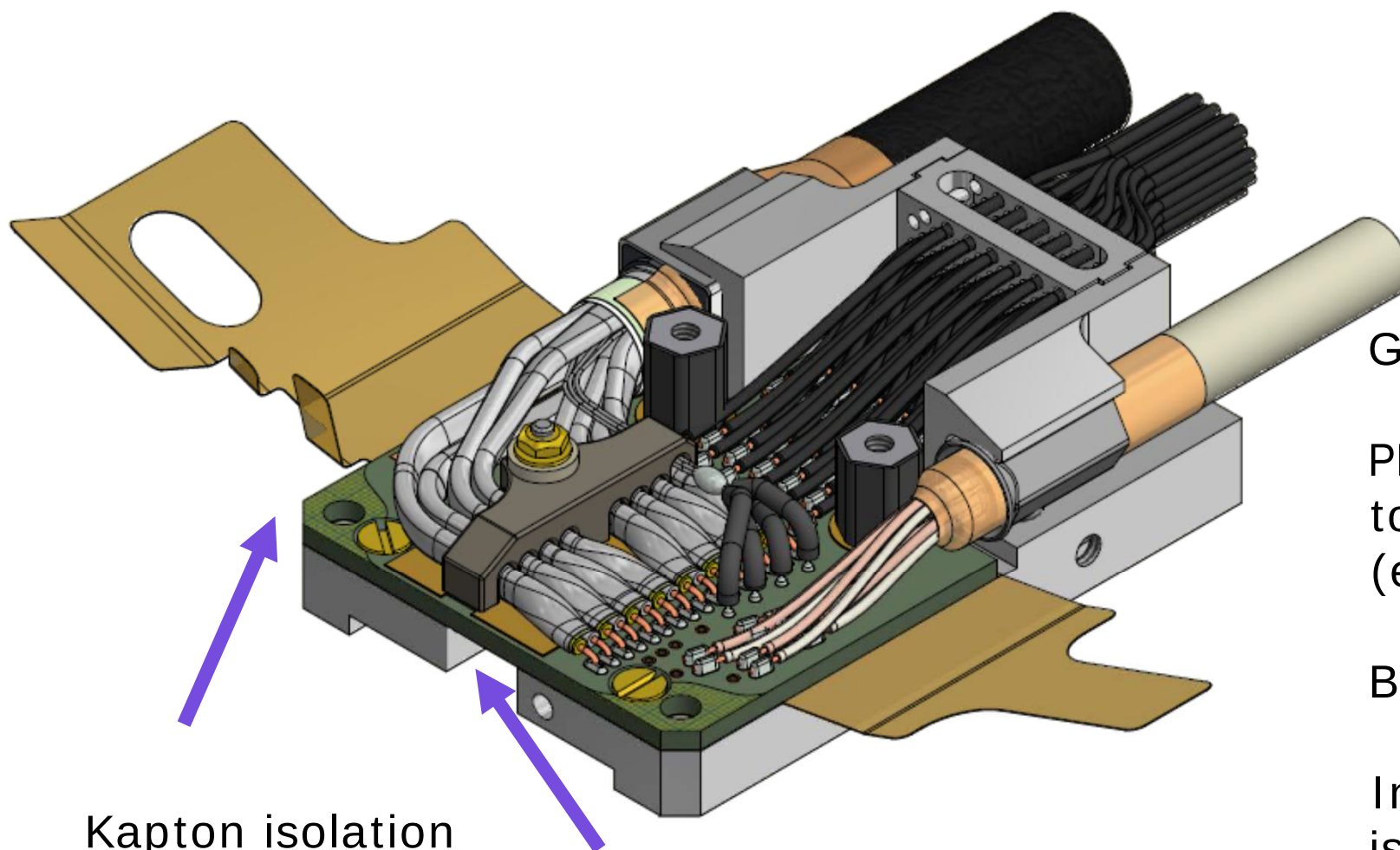
total length ~ 200 cm FWD
~ 160 cm BWD



relative cable length defined

overall length still to be optimized (end of January)





Kapton isolation
foil to avoid
contact of cable
shields with
housing

below: receive
SAMTEC
connector from
Kapton cable

Grounding concept:

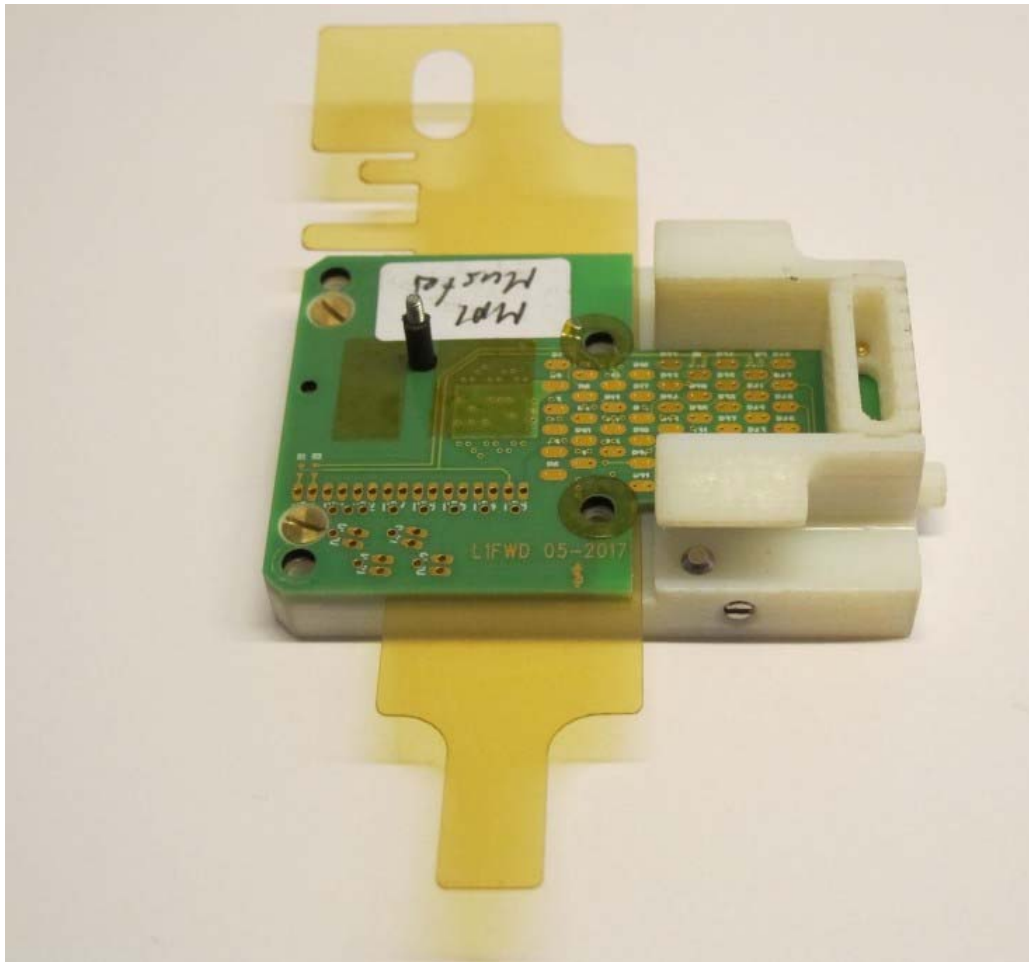
PP housing connected
to endflange
(experiment ground)

Bridge is isolated

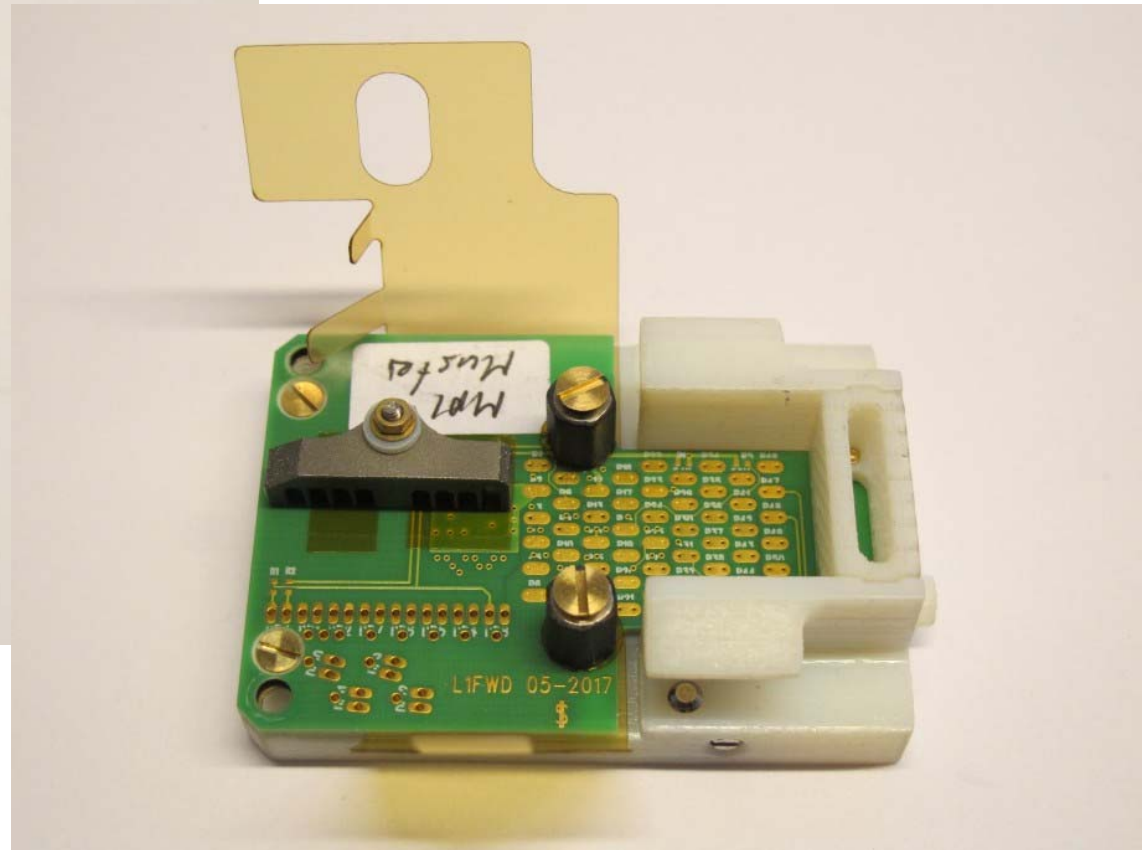
Infiniband shields
isolated

drain wires are
connected to
analog/digital ground

Patch Panel: Kapton Isolation Test

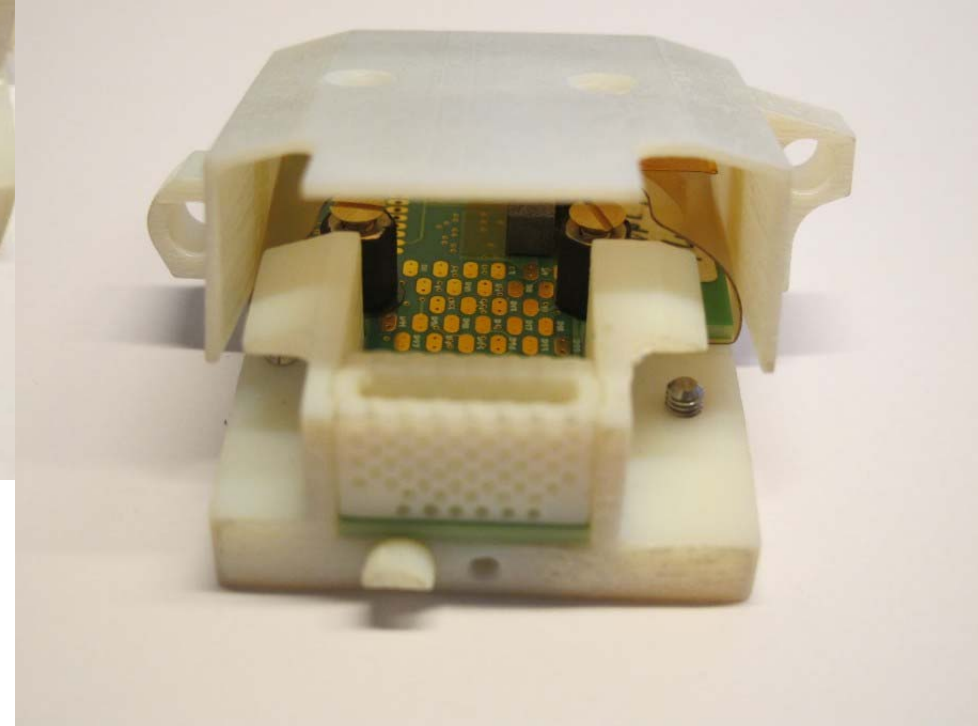


Prototyping of Kapton isolation foil

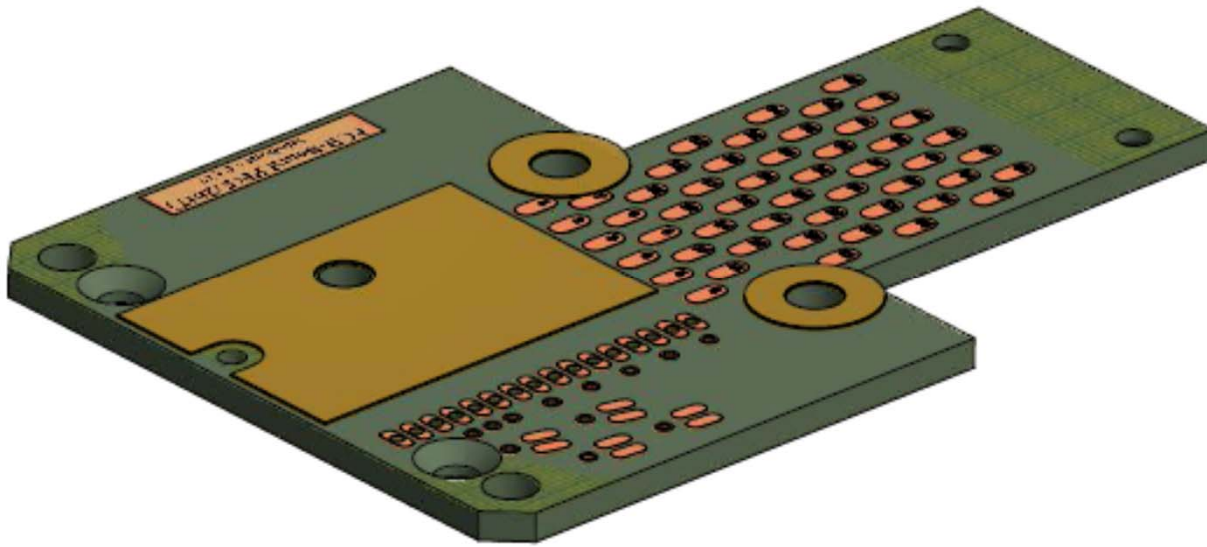




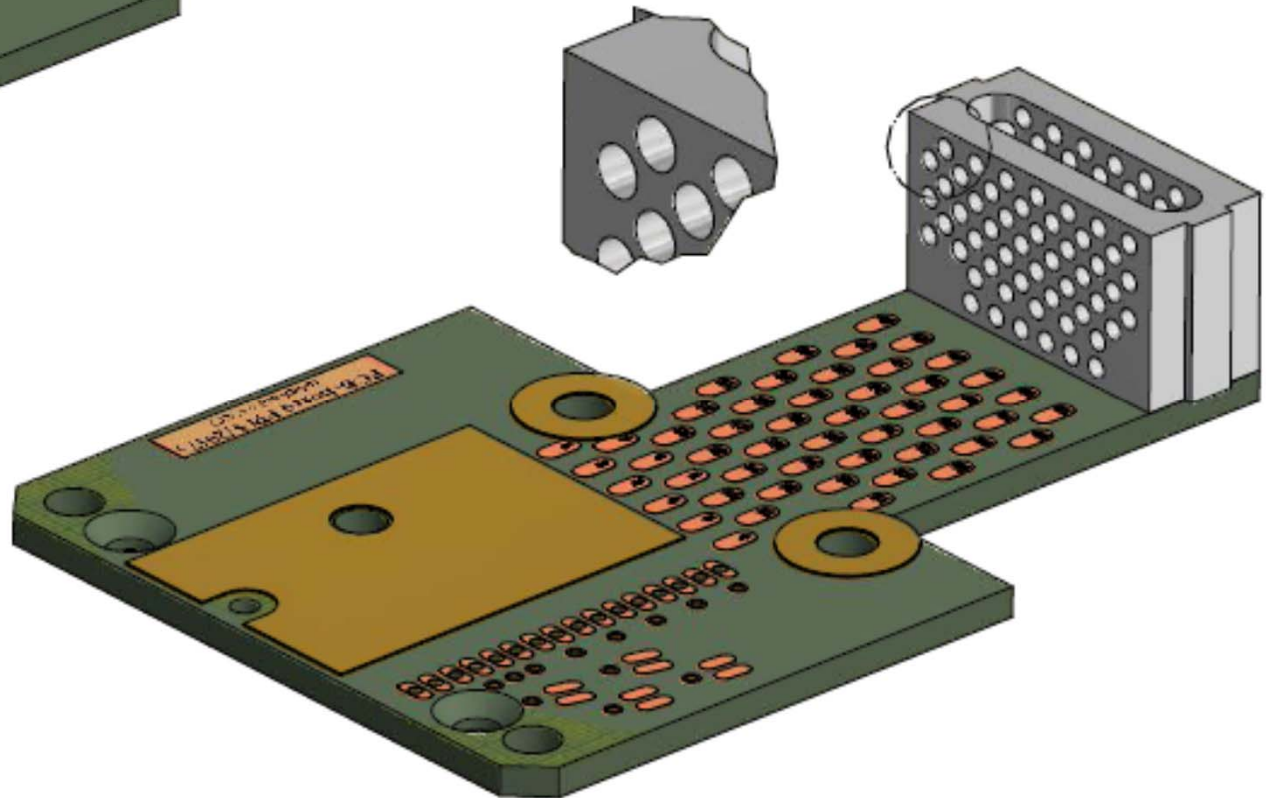
Prototyping of Kapton isolation foil



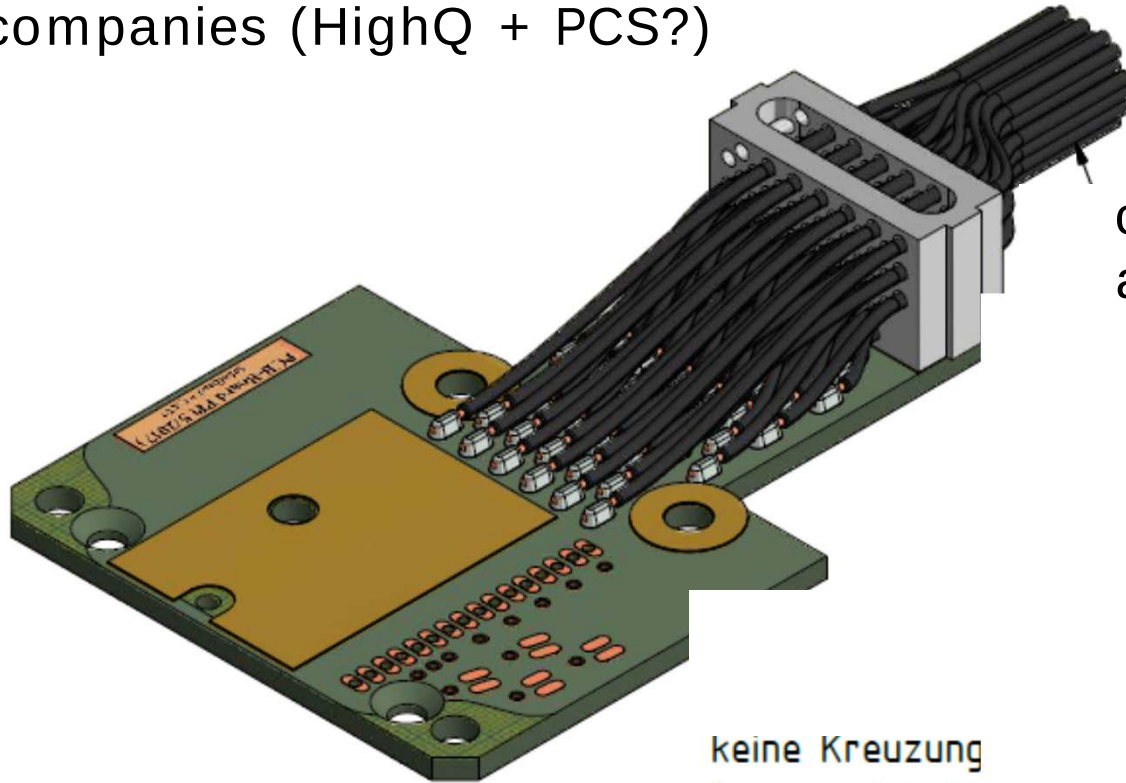
PCB with Kapton isolation
(prepared at MPI)



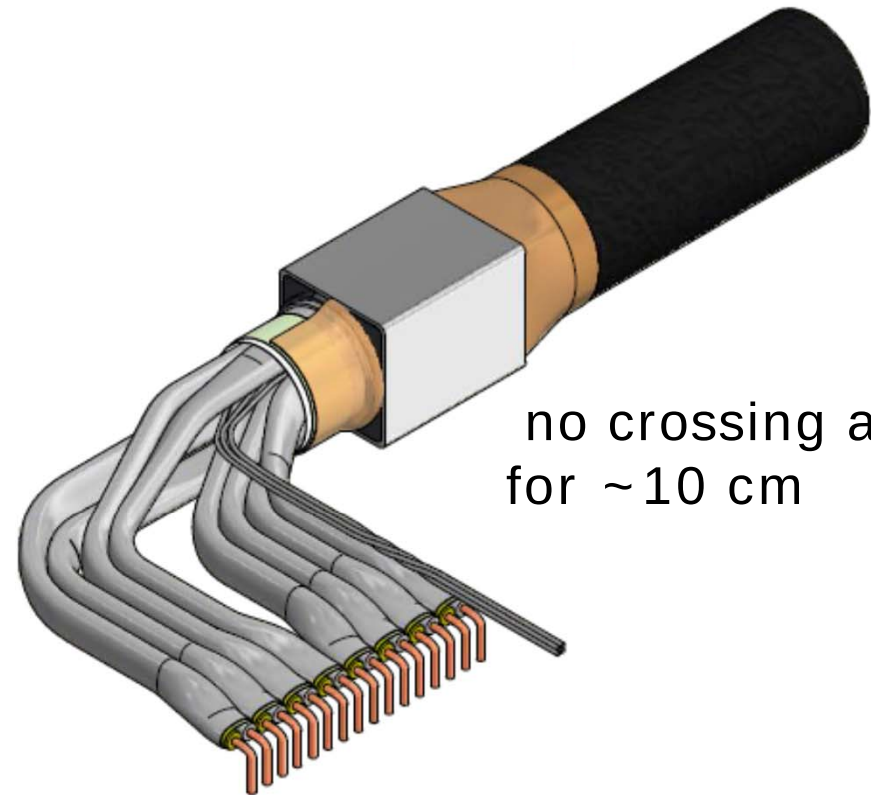
Strain relief matrix for power cable (3D print, finished at MPI)



These and the following step
are done by the producing
companies (HighQ + PCS?)



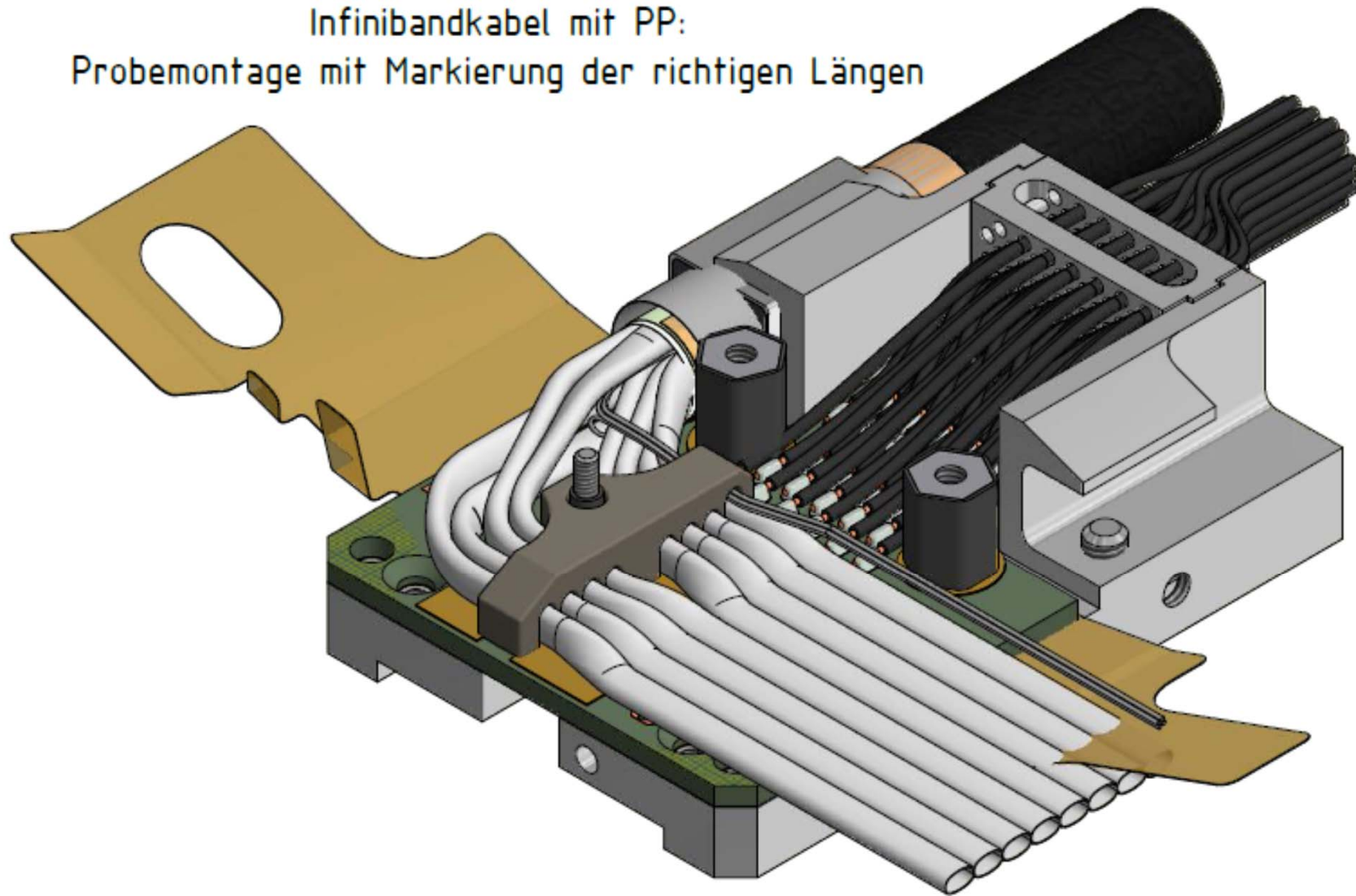
careful: no crossing
allowed for ~10 cm

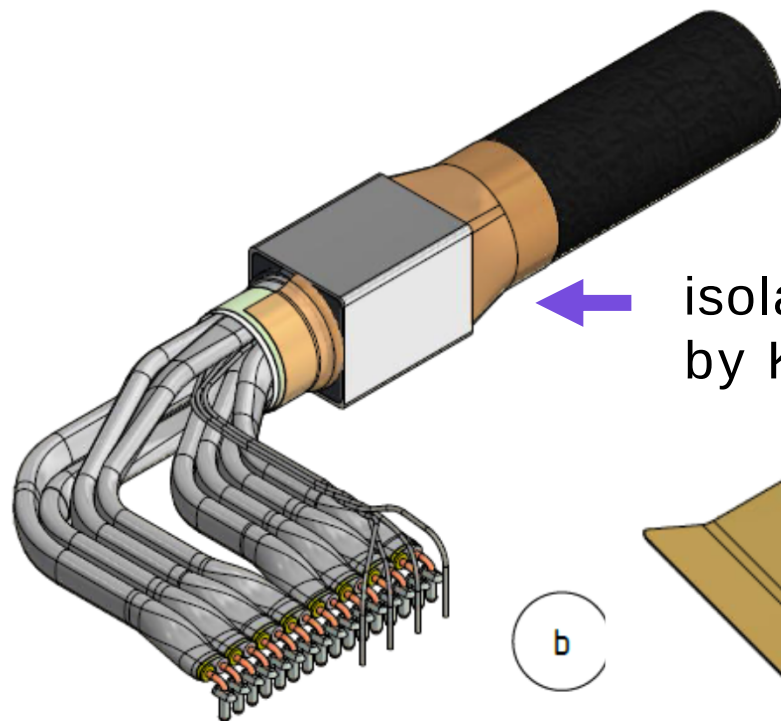


5. Montageschritt

Infinibandkabel mit PP:

Probemontage mit Markierung der richtigen Längen

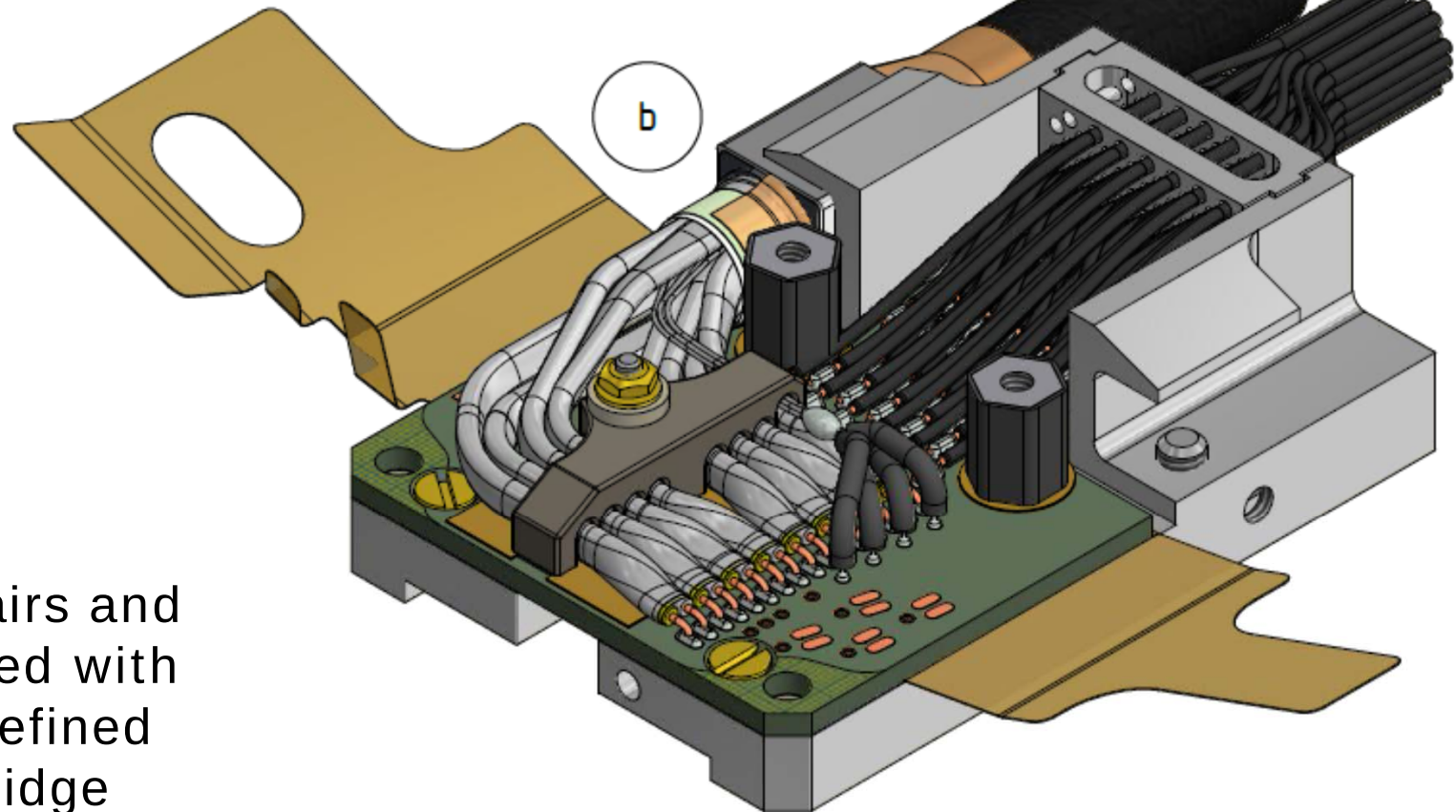




Cut Infiniband pairs and drain wires to correct lengths

← isolate wire mesh by Kapton

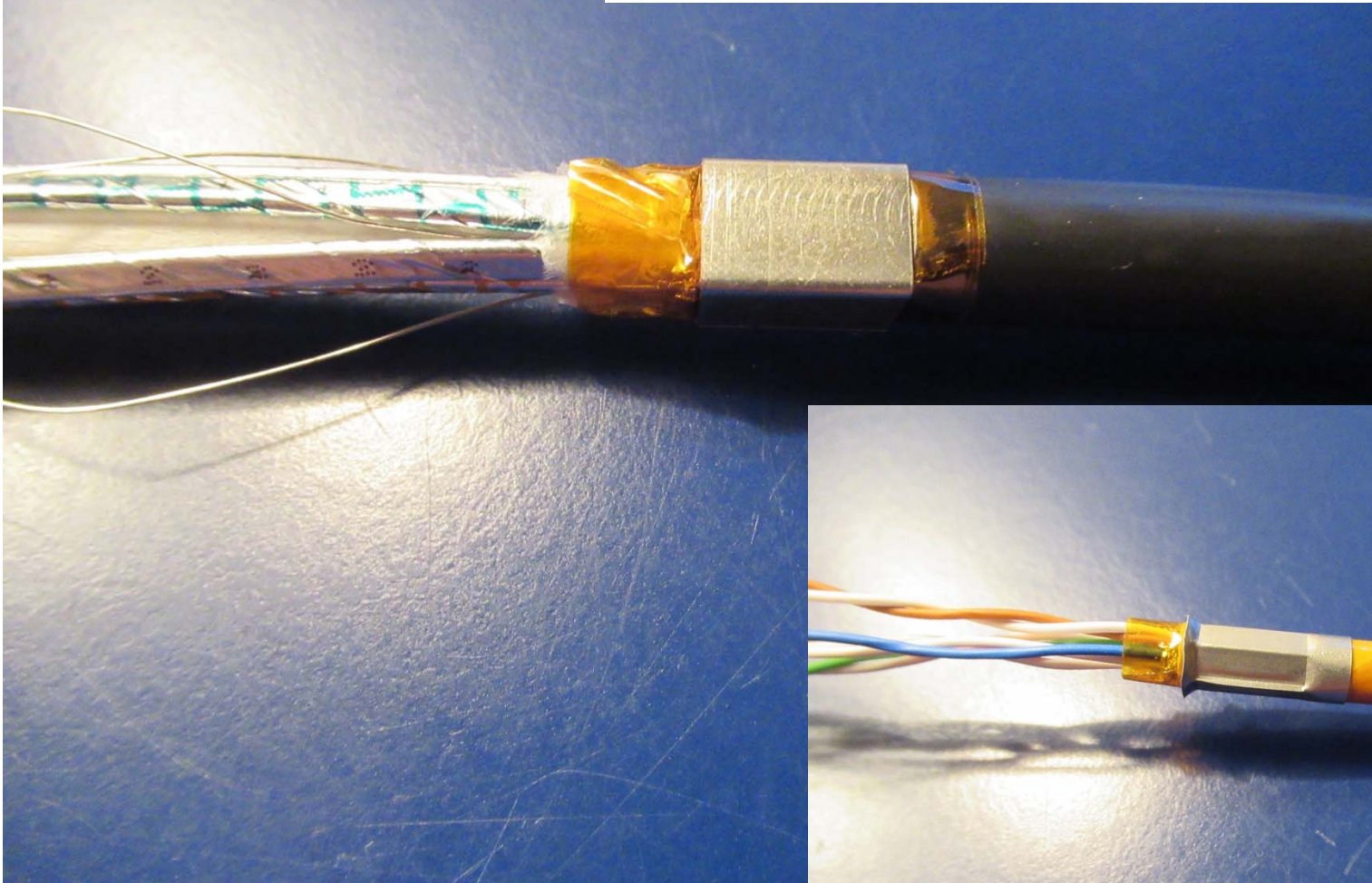
b



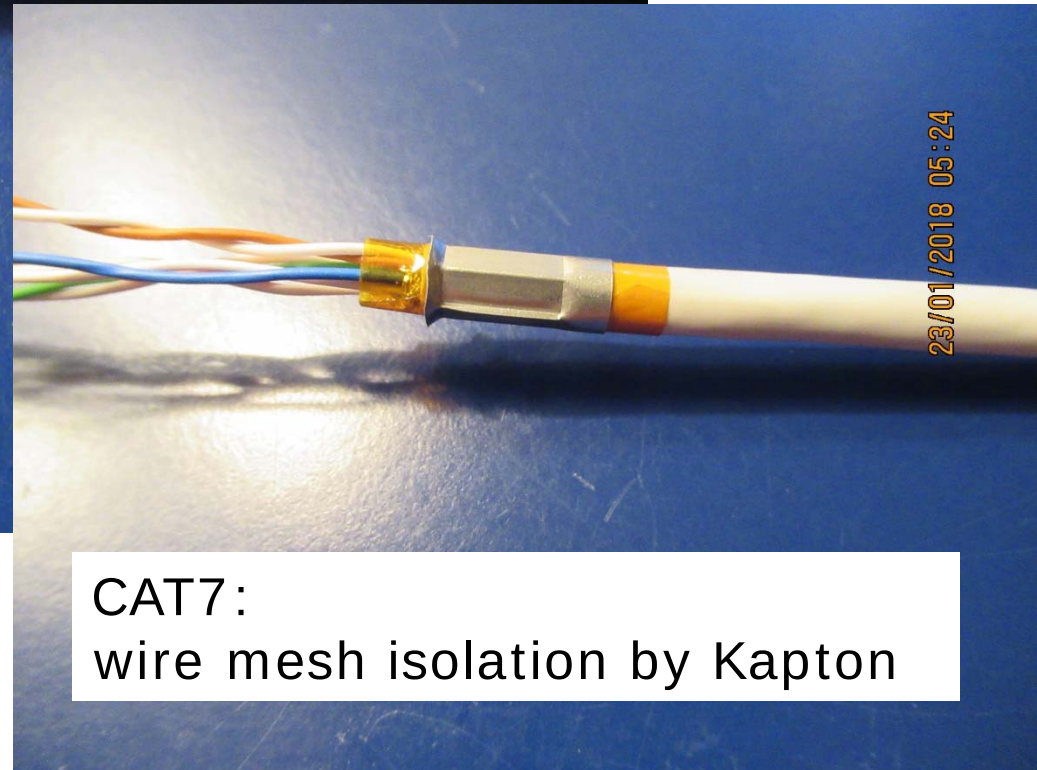
Solder Infiniband pairs and drain wires (protected with shrinking tube) at defined places, secure by bridge

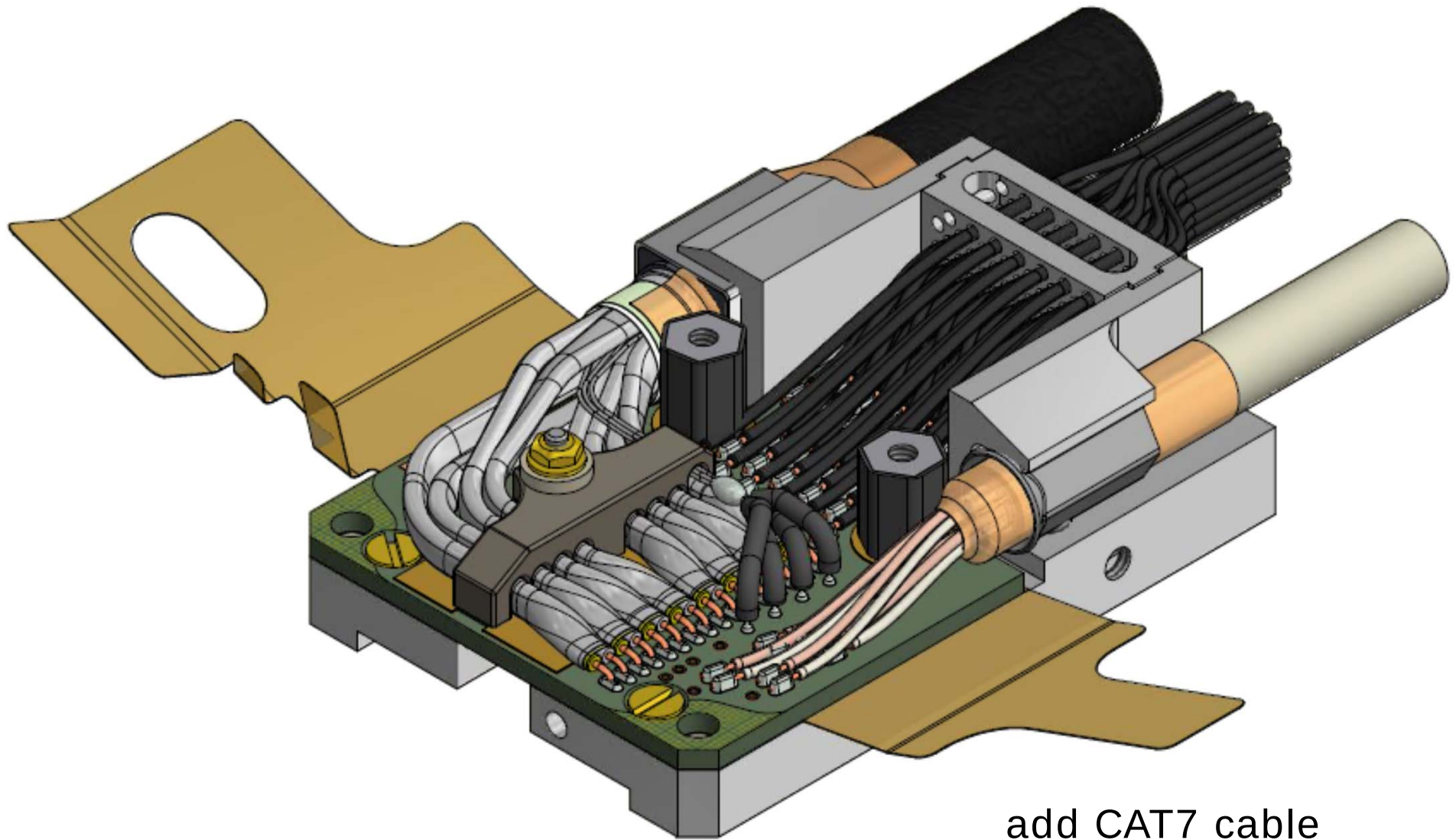
Patch Panel Production: Individual Steps

Infiniband:
wire mesh isolation by Kapton

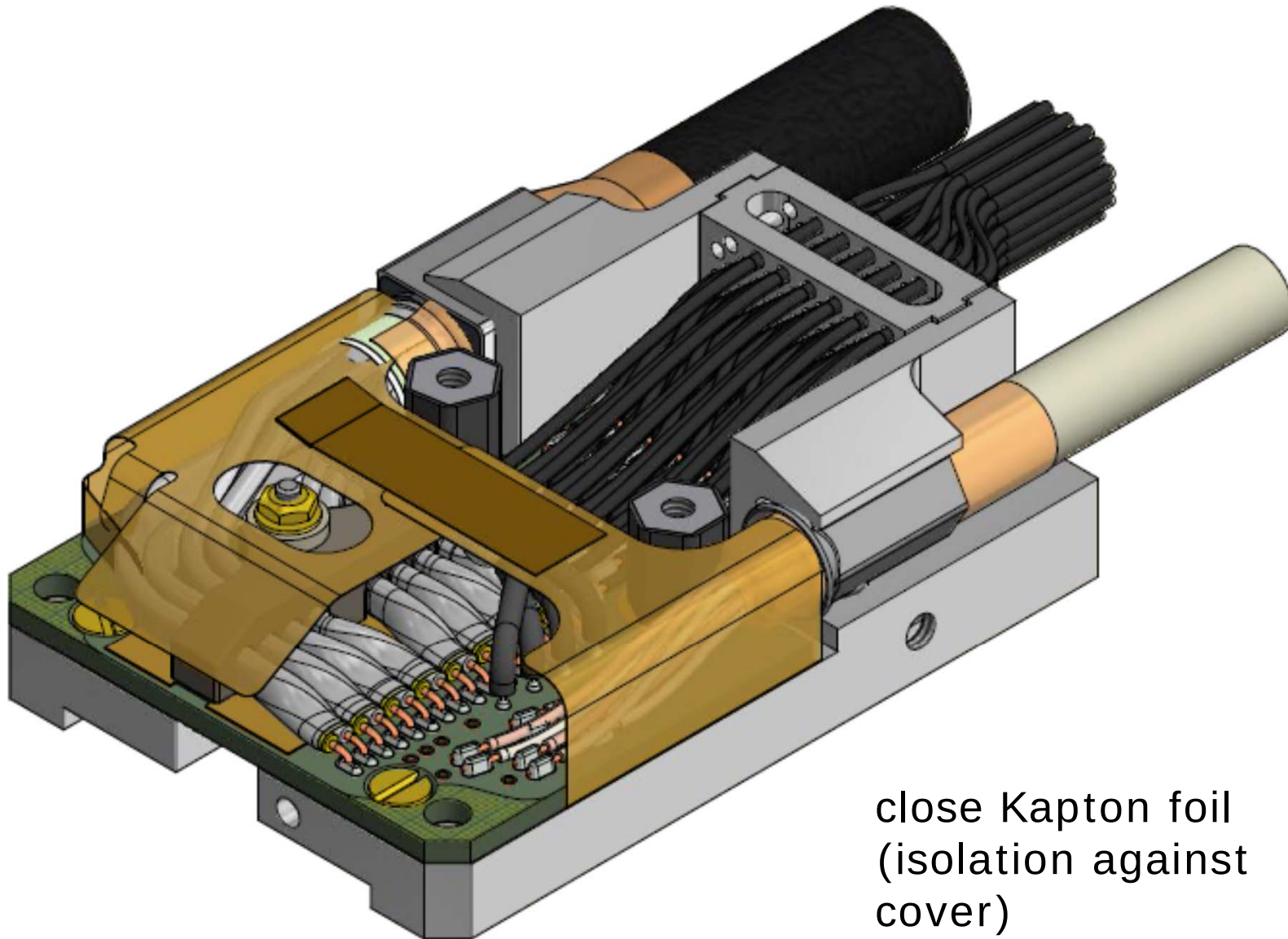


CAT7:
wire mesh isolation by Kapton





add CAT7 cable

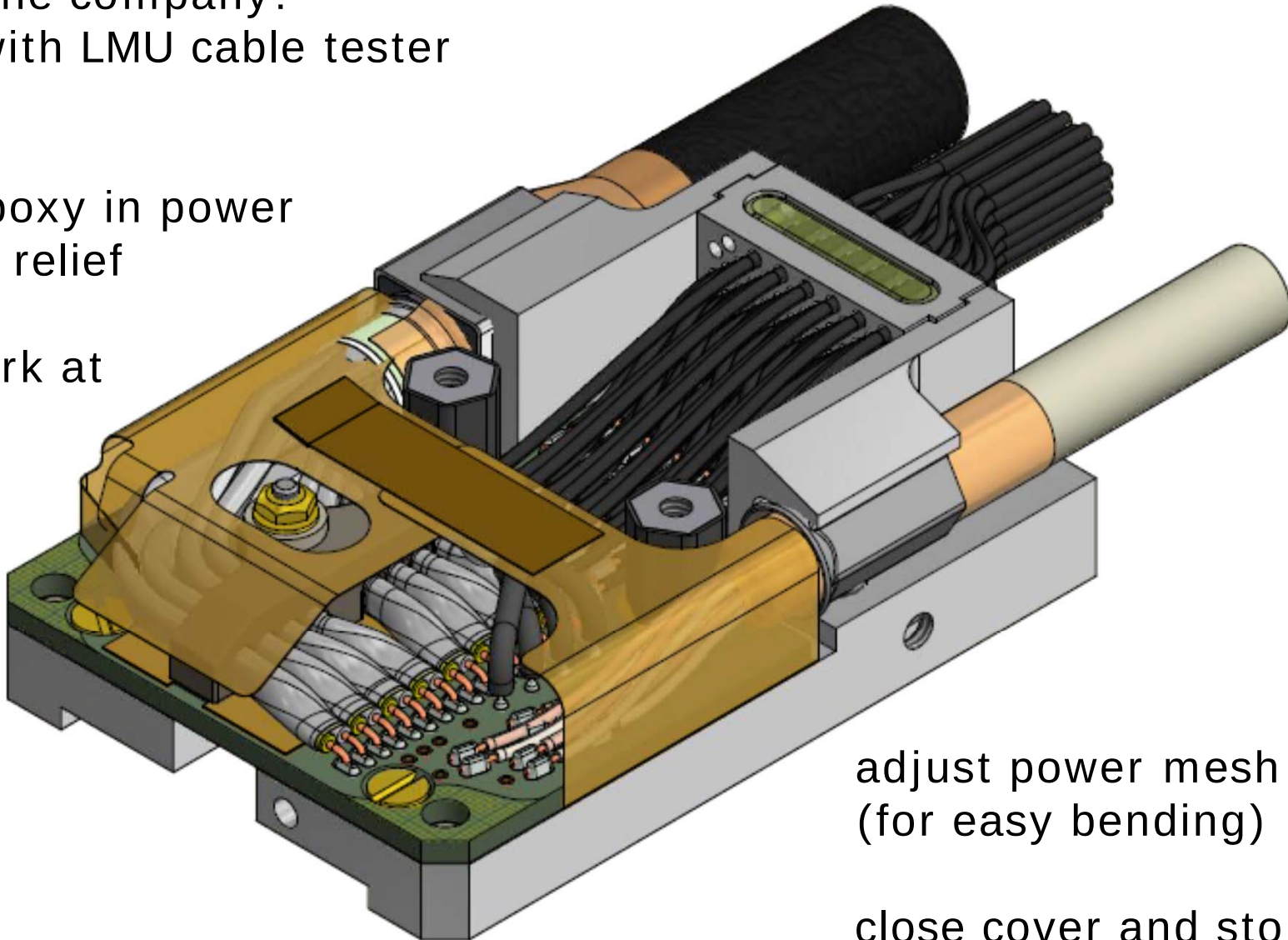


close Kapton foil
(isolation against
cover)

Back from the company:
test cable with LMU cable tester

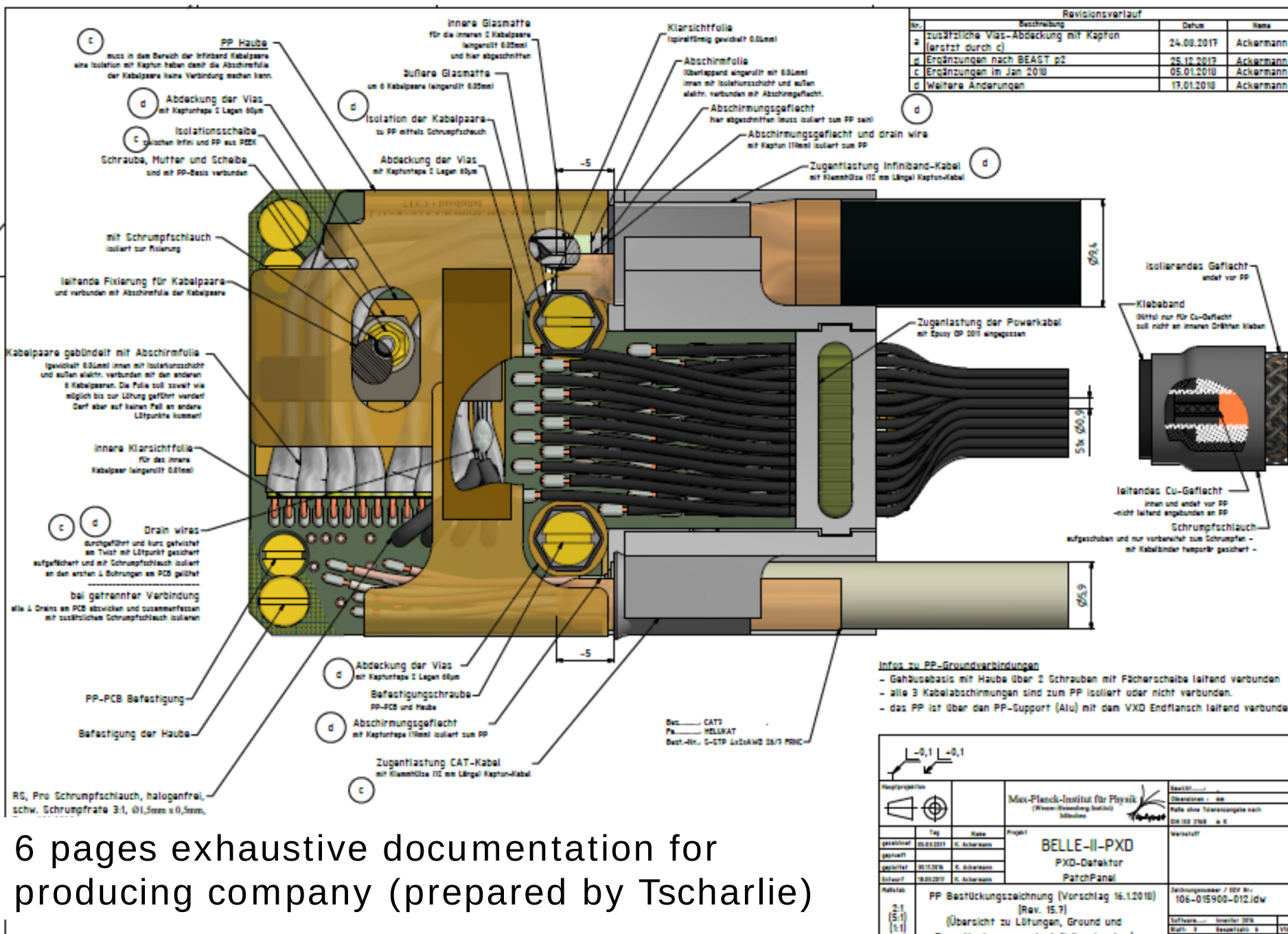
If OK, fill epoxy in power
cable strain relief

if not: rework at
company



adjust power mesh at 60 mm
(for easy bending)

close cover and store in box



6 pages exhaustive documentation for producing company (prepared by Tscharlie)

Total of 74 Cables to be produced, procedure clearly defined and documented in detail

Power cable preparation by MPI and LMU

10 cables (L1 BWD / L1 FWD 5 each) being produced by MPI

Cables for complete L1 half shell for DESY Test will be available in ~ 3 – 4 weeks (end of February)

4 L1 cables (FWD and BWD) for qualification at PCS
(back shells for only 2 cables exist)

60 cables for the Phase 3 detector [cables count ?]

production to be done by company (HighQ and PCS):

- HighQ now only offers 10 cables per month -> negotiate
- PCS needs to be qualified (visit with all parts and docu on Friday)