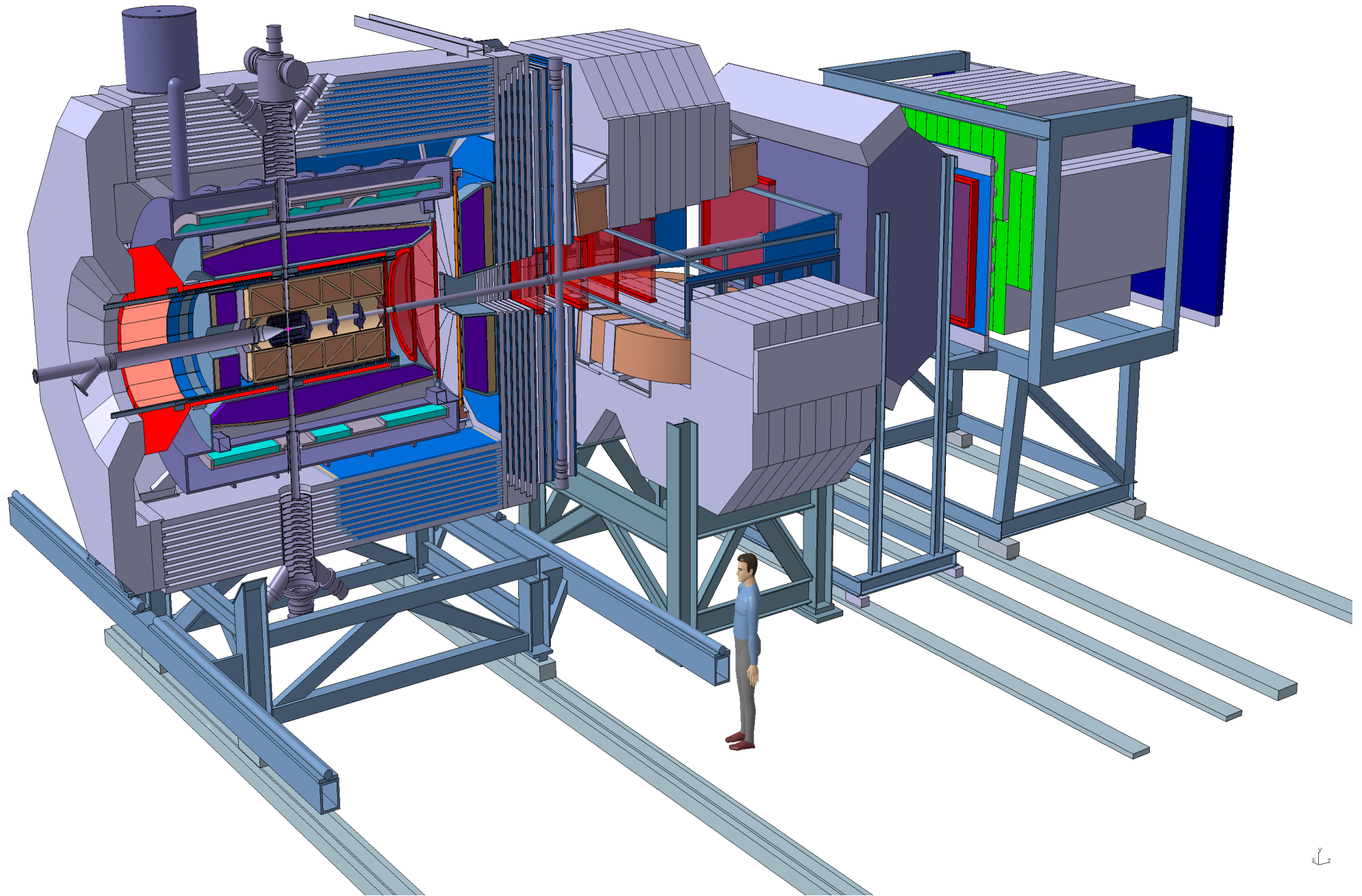


FEE Barrel DIRC

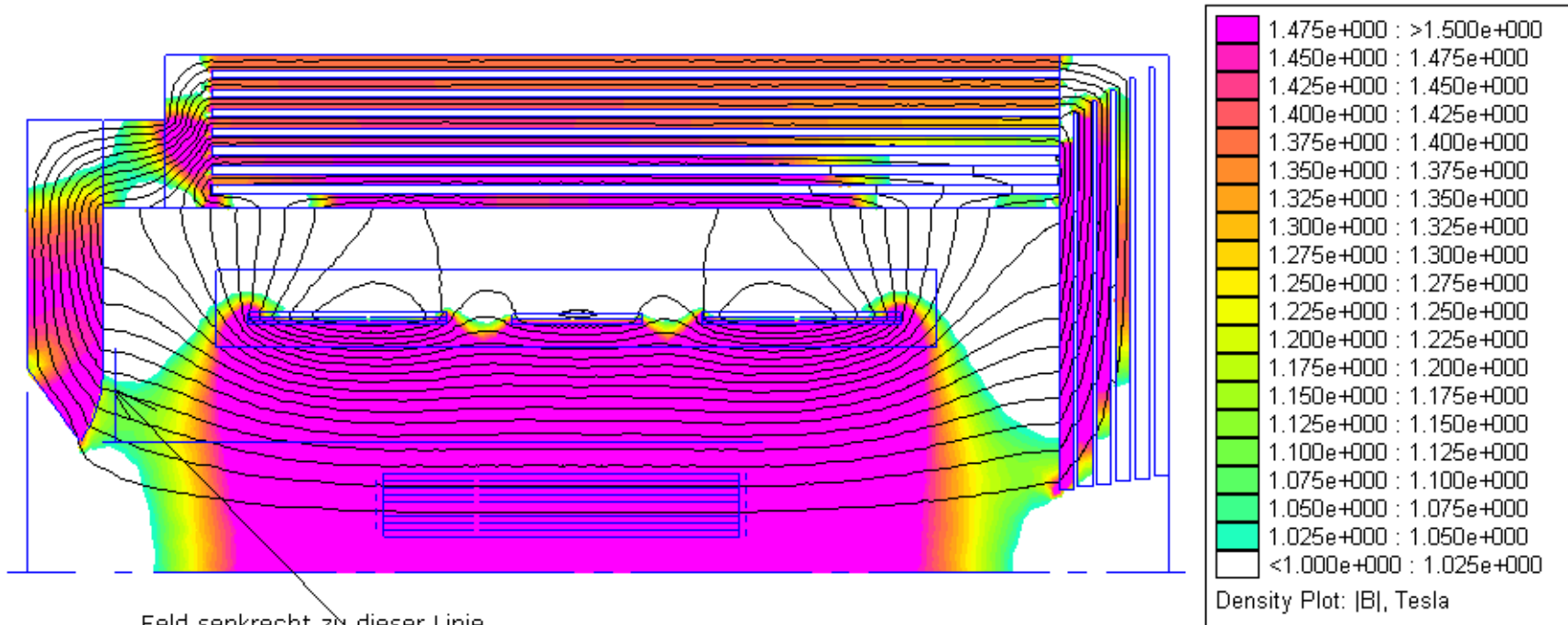
possible photodetector & electronic readout scheme based on existing electronics

C. Schwarz, GSI

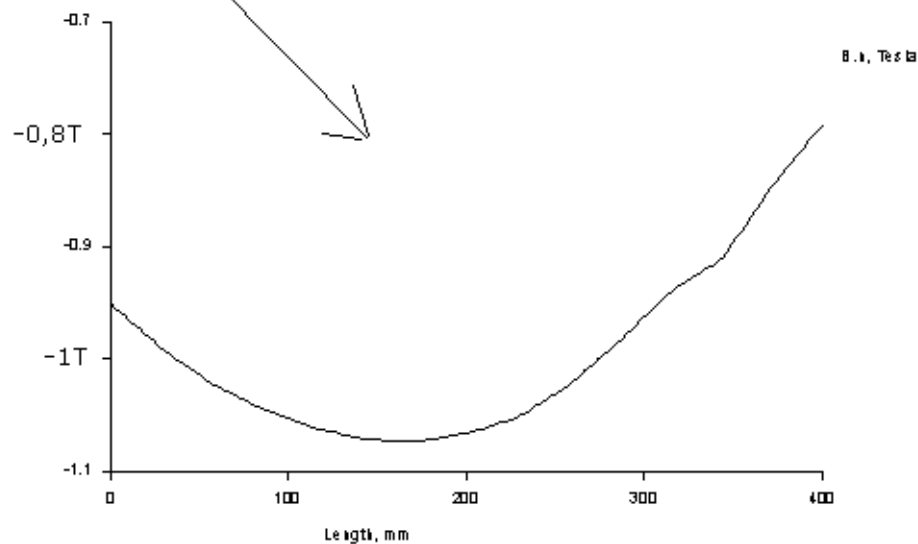




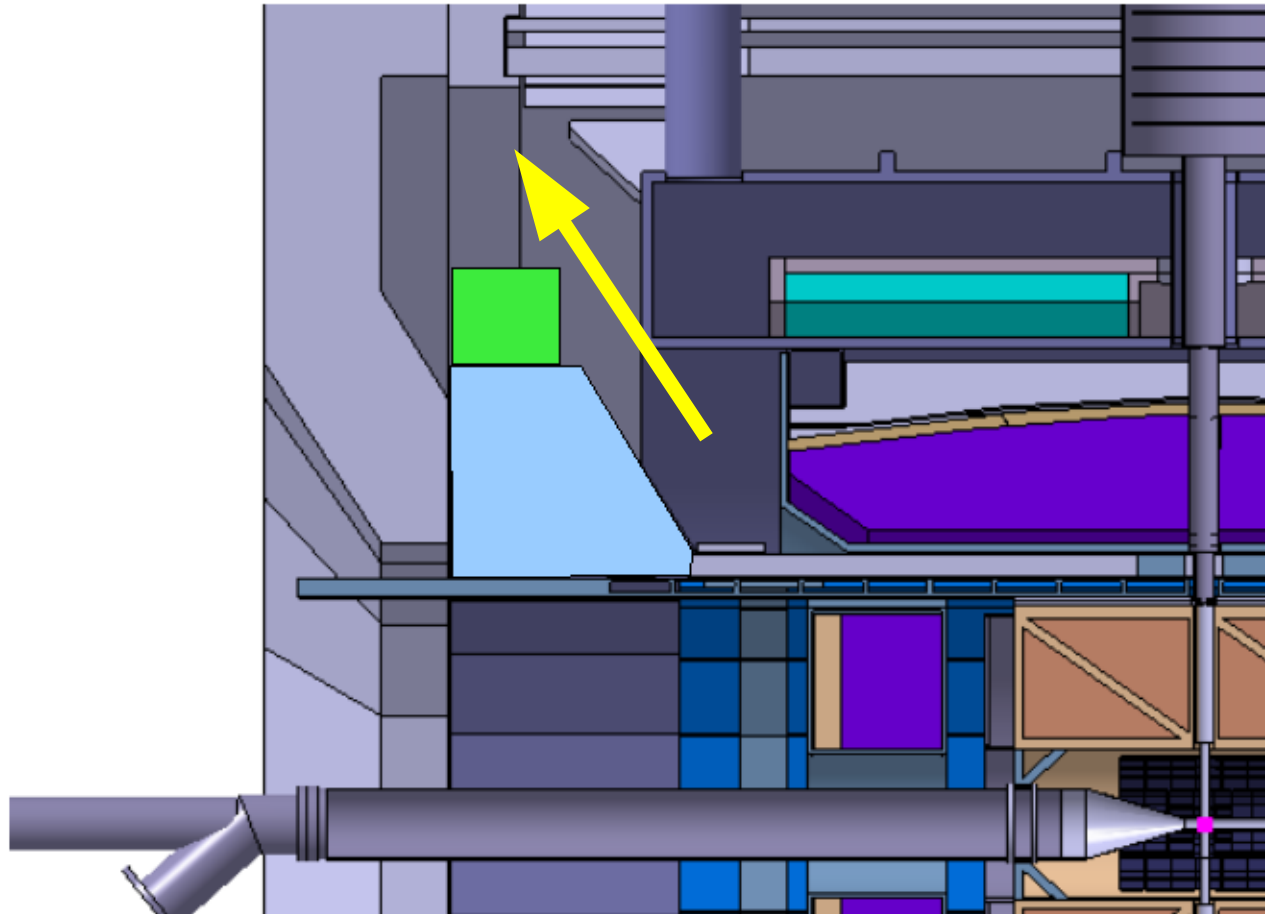
Magnetic field



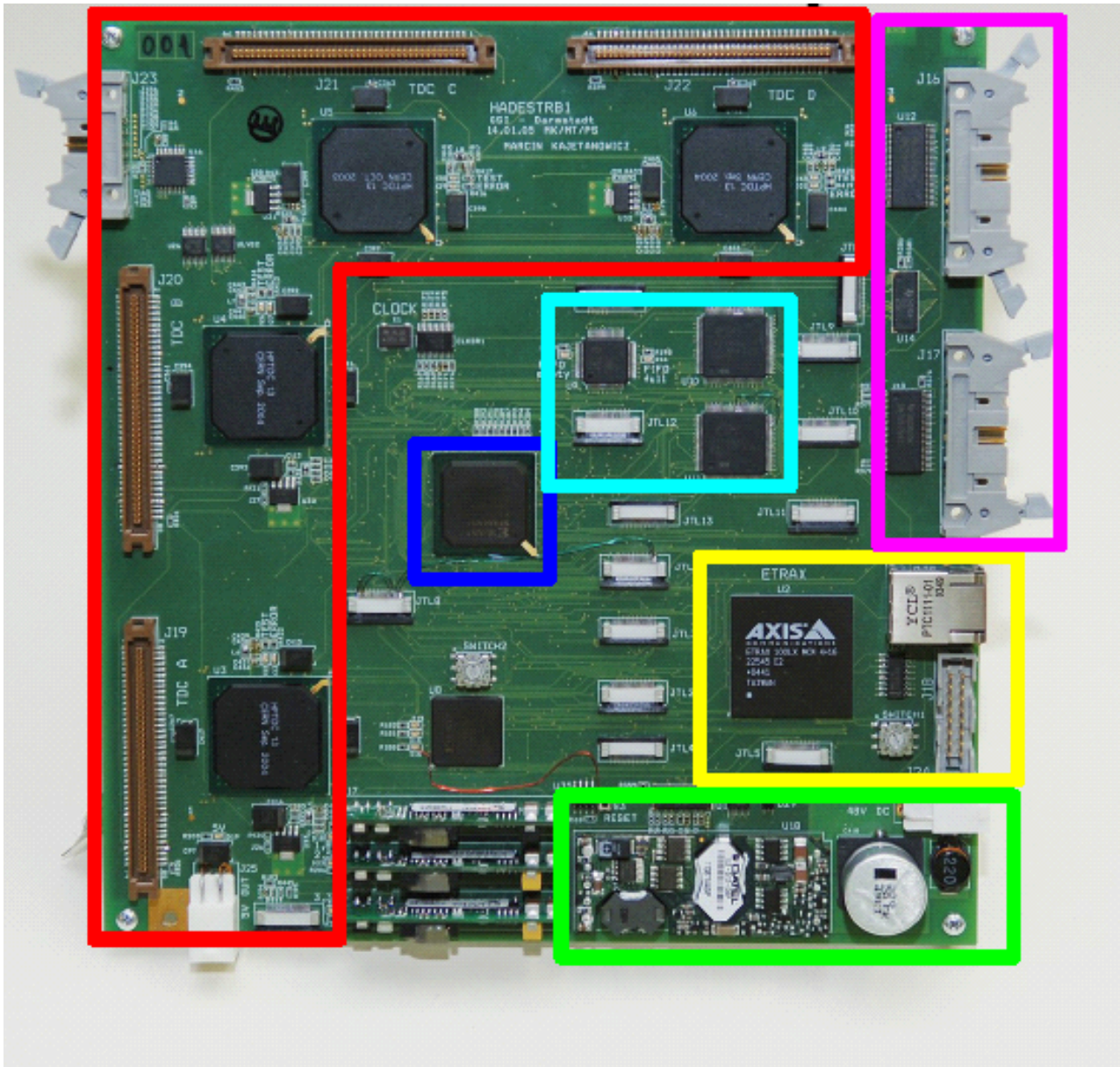
Feld senkrecht zu dieser Linie



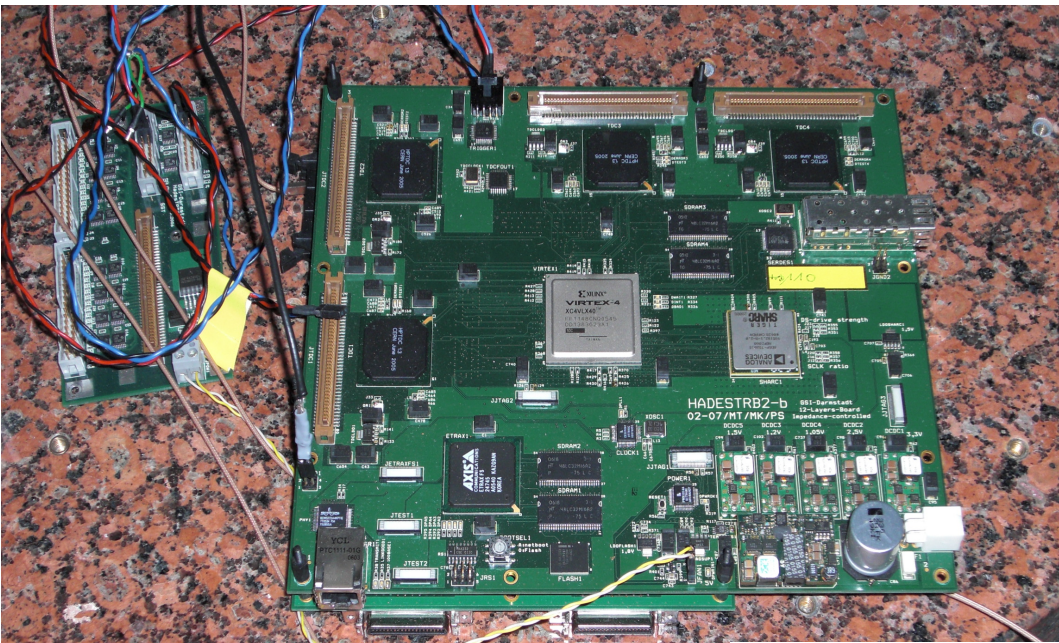
cables can be brought outside



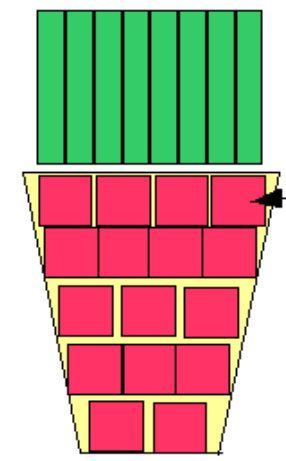
HADES TDC Board: Trigger and Readout Board



- **4*32 channels TDC, HPTDC**
- **80 pin twisted pair cable, KEL connector**
- **Single Chip Computer with Ethernet**
- **FPGA**
- **DC/DC 48V, isolated**
- **Memory**



16 fold symmetry

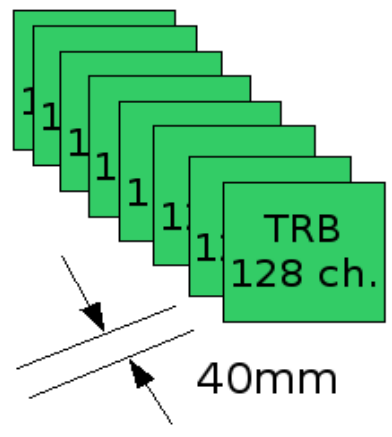


Burle MCP-PMT

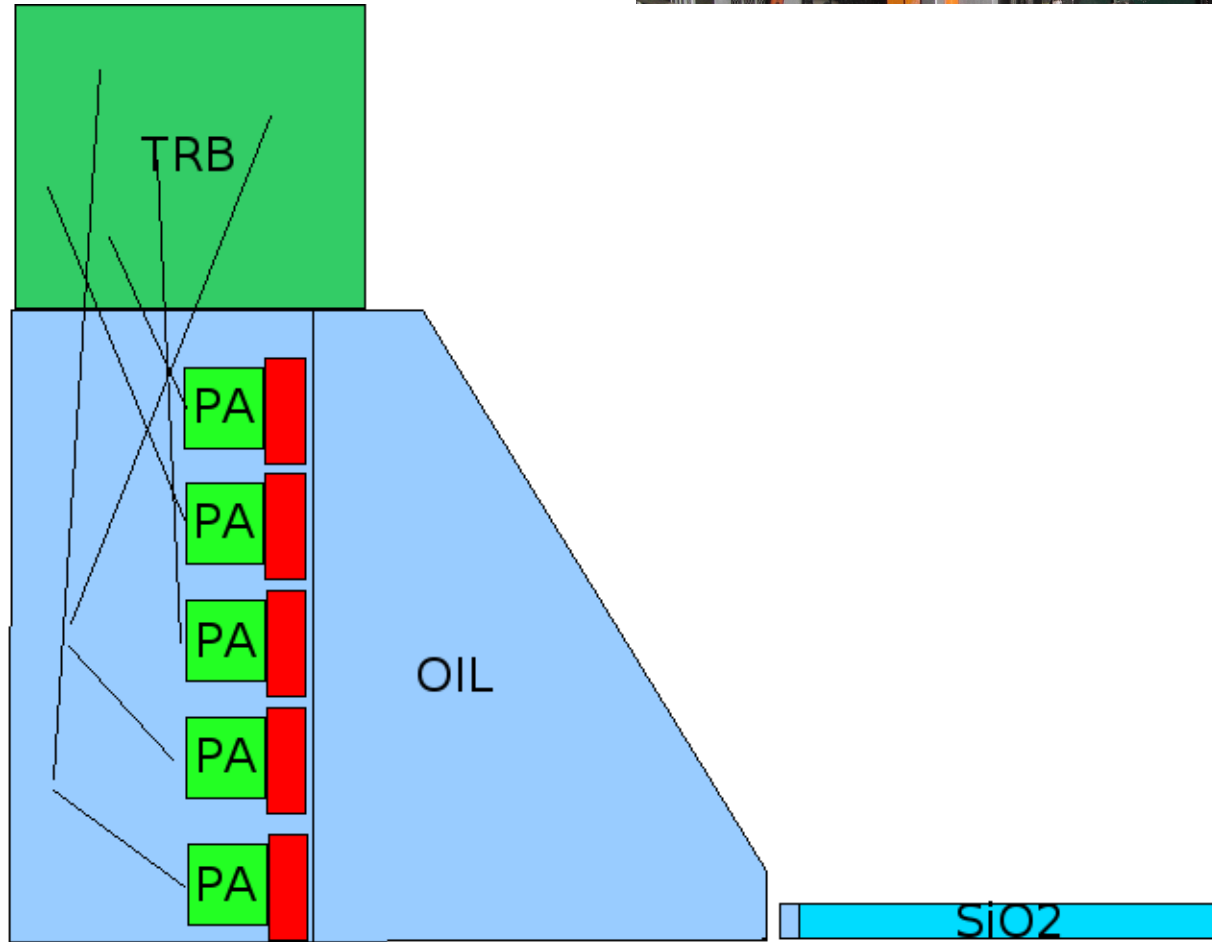
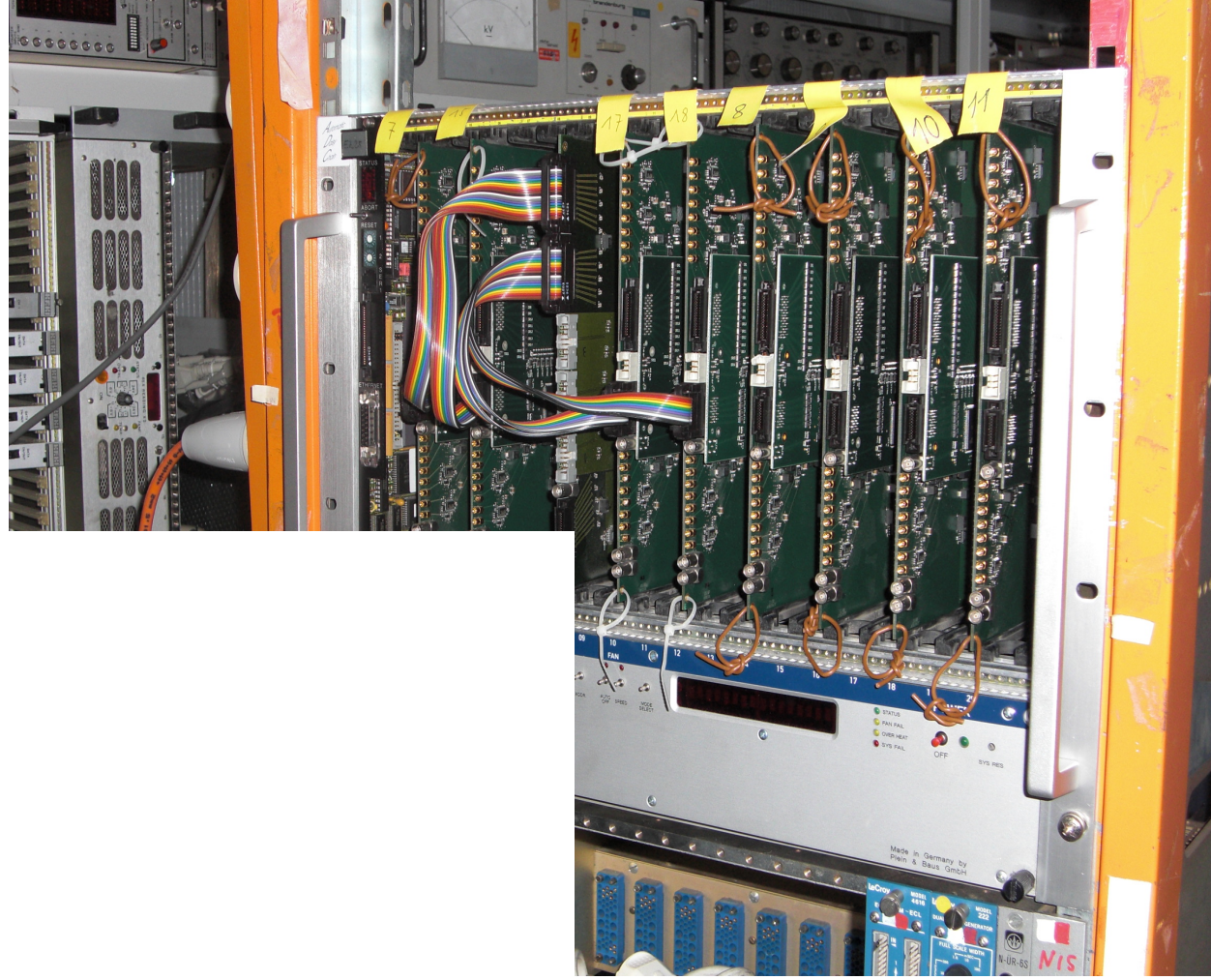
One segment
 = 16 MCP-PMT
 = 1024 channels
 = 8 TRB boards

Placement of detectors
 and frontend electronics

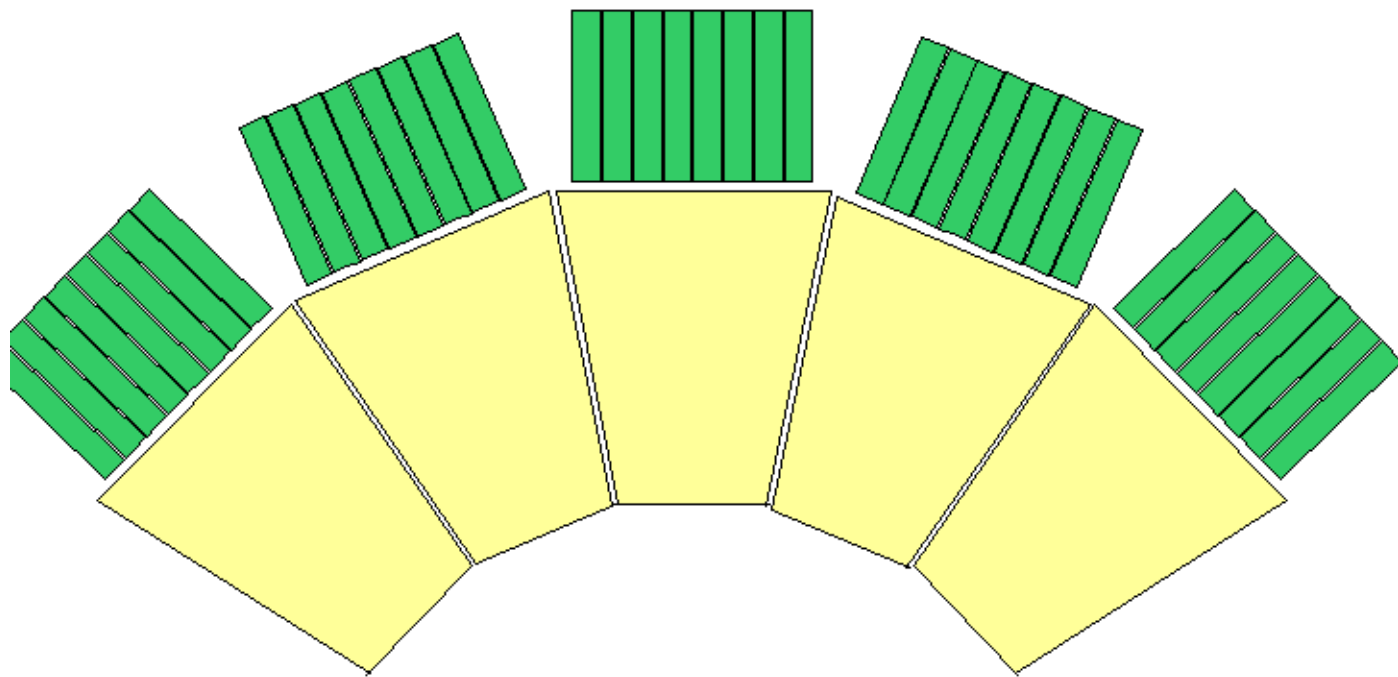
photon detector
 readout chain
 prototype: worked on by
 C. Sfienti



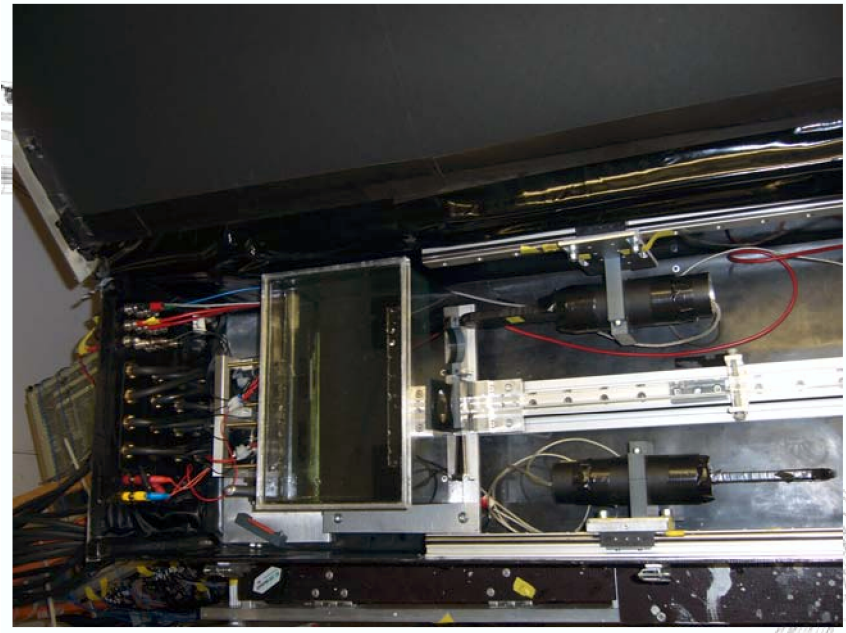
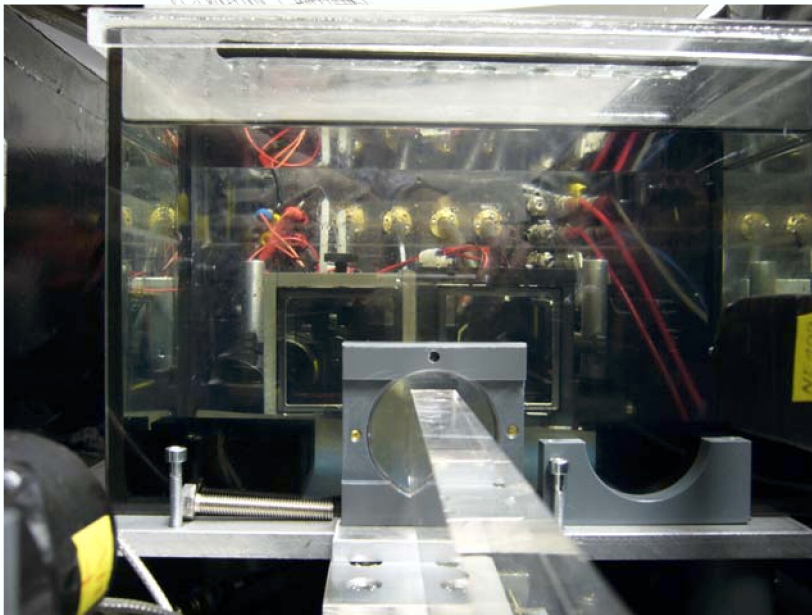
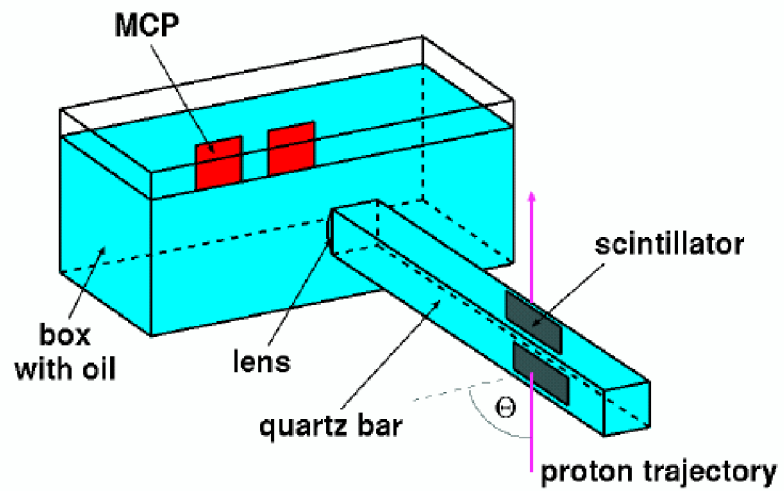
beam pipe



TRB
+ discriminator board
(HADES, NINO...)



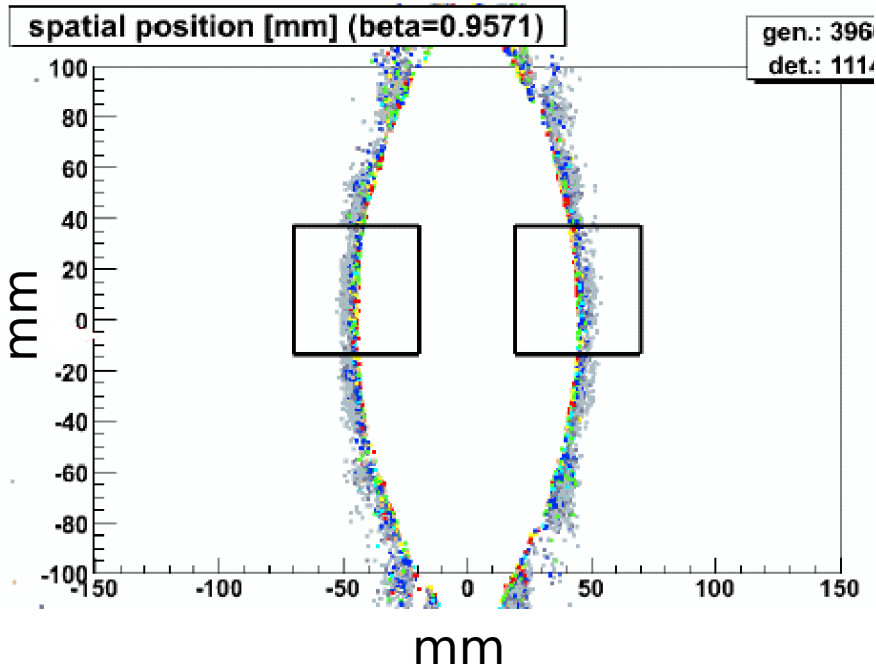
● beam pipe



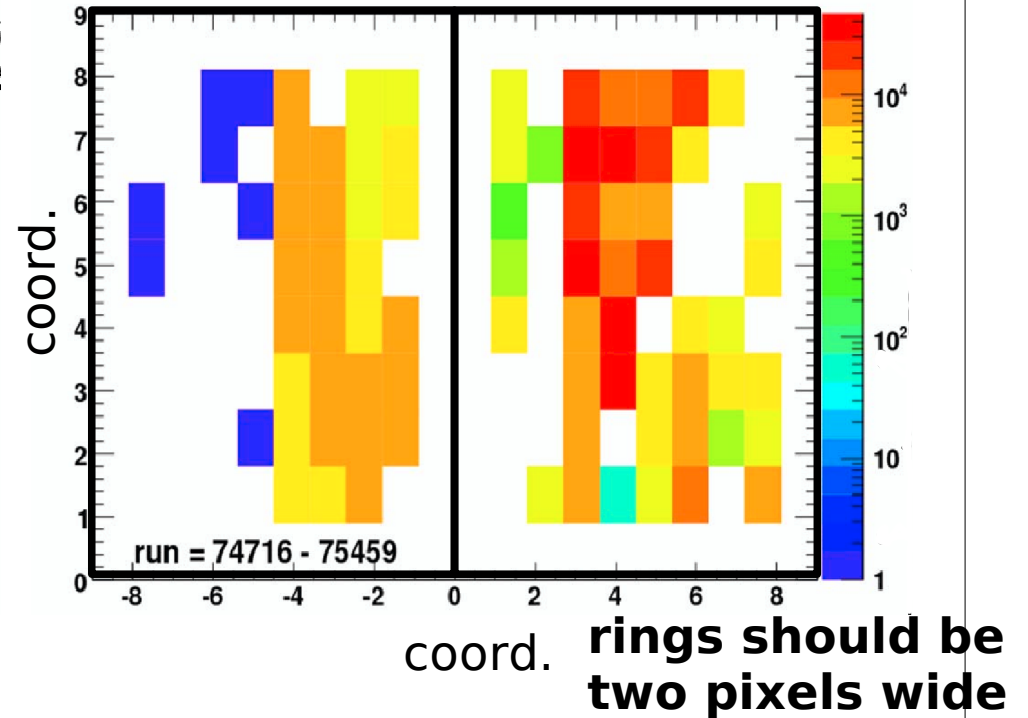
Test beam September 2008
with 2.3 GeV protons

2 Burle MCP-PMTs
as photon detector (2x64 channels)

Simulation

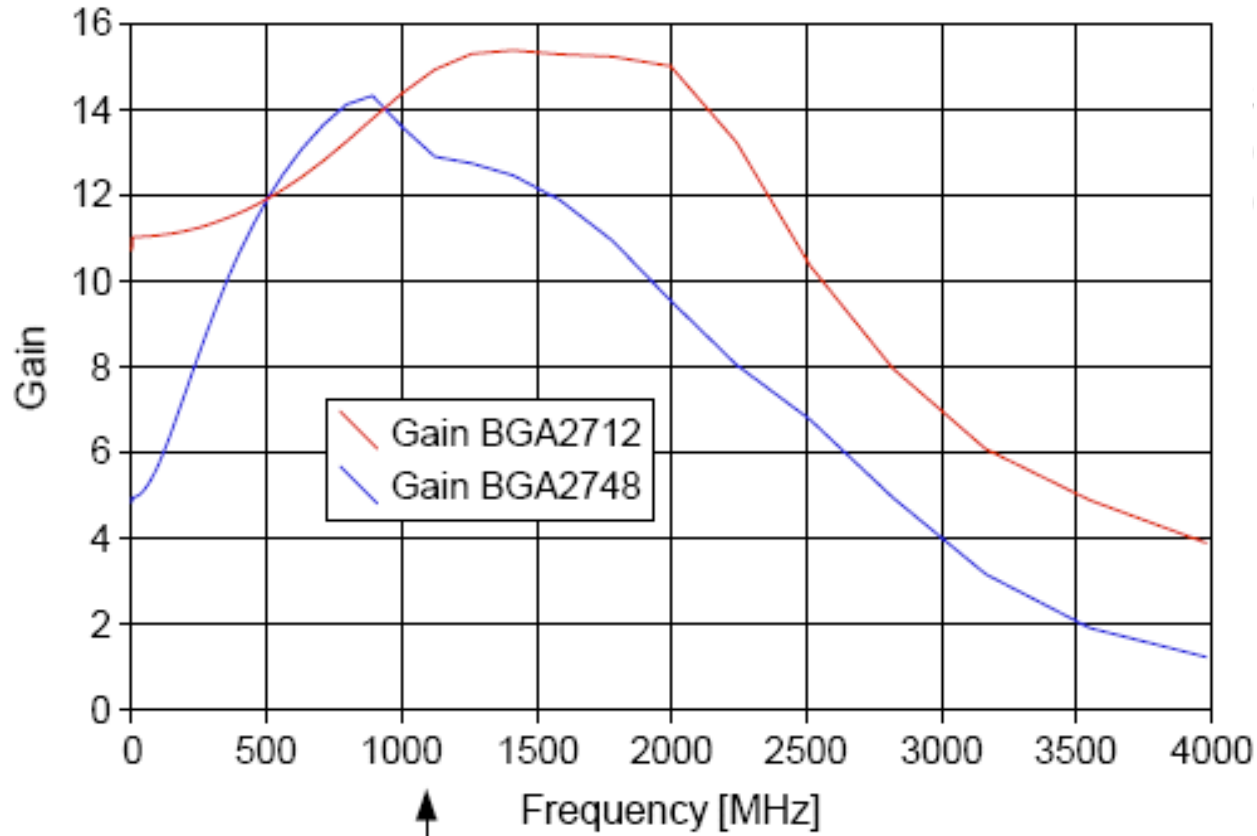


Experiment

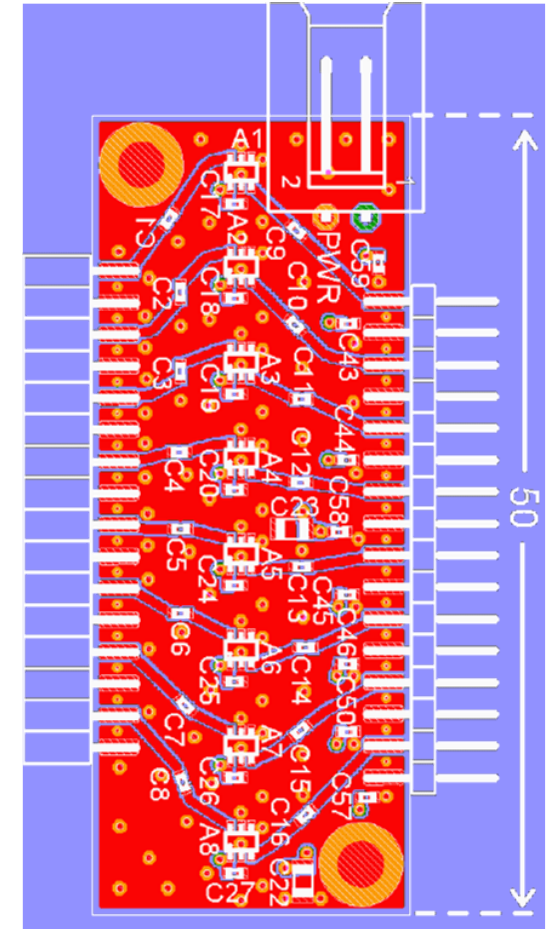


ring structures are observed, but not so sharp as predicted
working on pre amplifier (S/N ratio)

Preamplifier gain: 10



300 ps rise time



- first read out chain tested in experiment
 - noisy environment
 - missing debug features
 - amplitude
 - time in spill
- more test beams necessary