

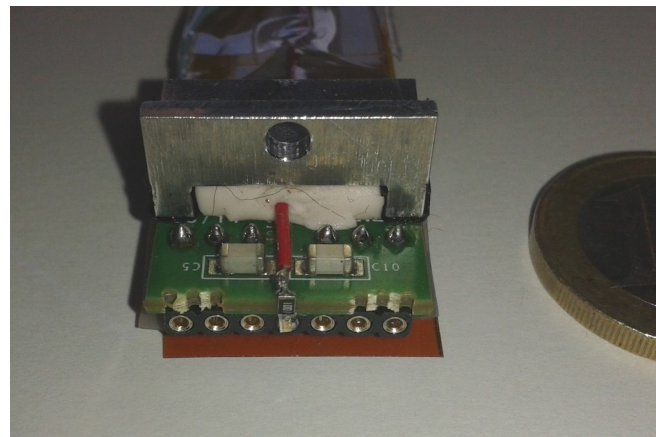
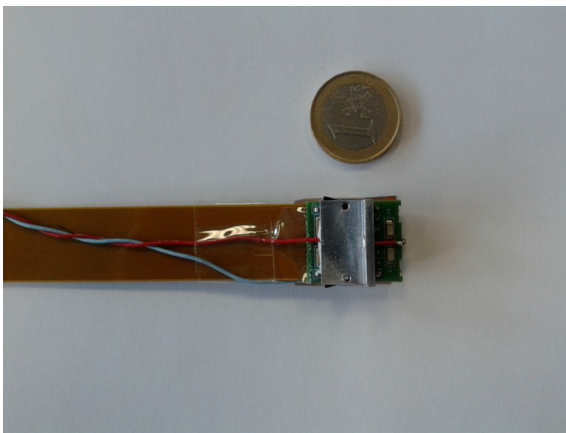
Barrel EMC SeeVogh Meeting 07-03-2016

Topics:

1. stimulated recovery of crystals: impact on barrel electronics integration
2. requirements for integration of FE-electronics

1) Impact of crystal recovery on electronics integration (barrel part)

- recovery through blue LED, not through fiber
- position of LED? Where to connect it? Critical specs: Heat production, rad hardness, spectral characteristics (UV w or w/o filter?)
- first test with LED on front face of ASIC PCB. Shines light into the crystal through gap between APDs



2) Integration of entire FE electronics into “Backplane PCB”

- Connection of 4 ASICs = 4 crystals
- HV-Distribution: 1 HV input, HV regulators for 4(8) APD voltages (proof-of concept ok)
- power supply: linear regulators for ASICs
- line drivers: 4x4 differential buffers with gain~3dB to compensate for cable loss
- high-density connector for transition to 4 signal cables (4 diff. pairs each)
- to be checked: possible solution 2 sandwiched PCBs to stay in height within clearance to outer wall (~7.8 cm)
- additional connection to 4 LEDs (one per crystal)
- further functionality? e.g. slow control distribution/buffers/multiplexer

