

Update on cold electronics

1 march 2021

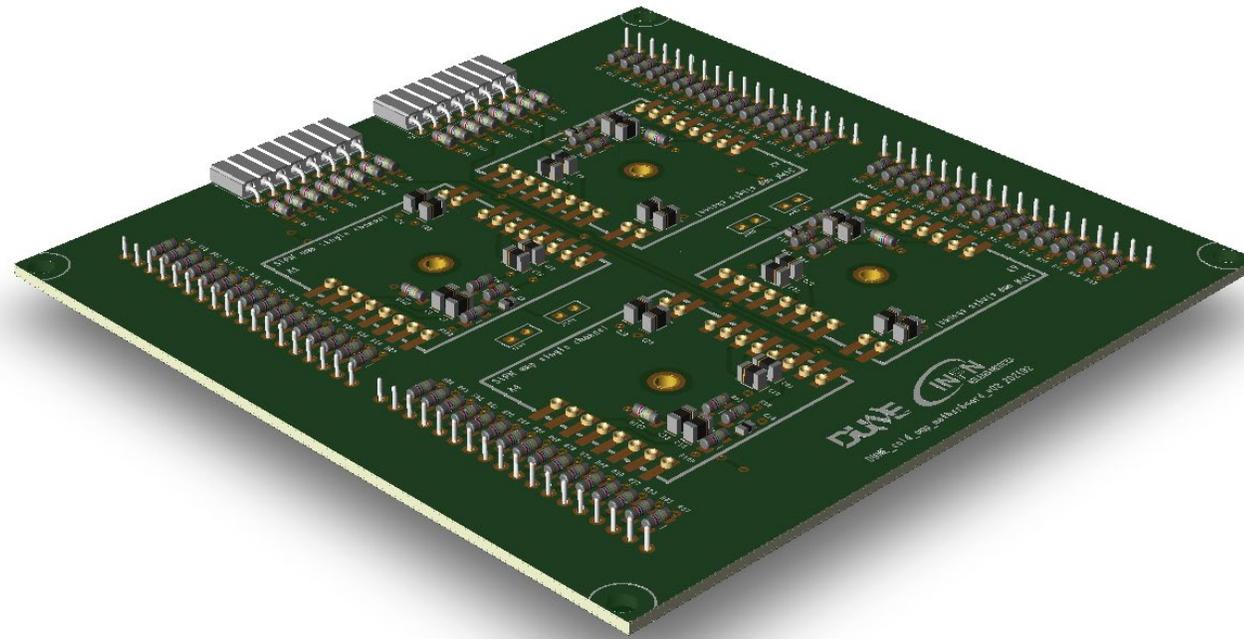
C. Gotti

INFN/Univ. Milano-Bicocca

On behalf of the photon detector & electronics WGs

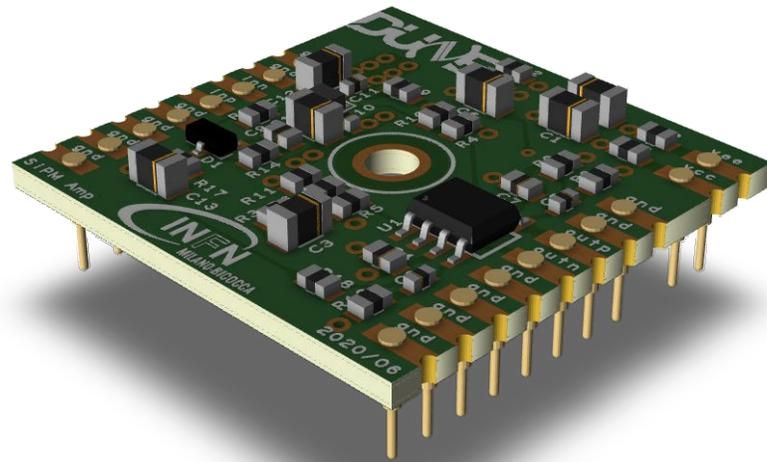
4-channel motherboard

- Version 02 ready (minor update w.r.t. 01)
- 6 PCBs to be ordered soon (after final check)
- Plan to order 18 in April
 - 10 for VST at CERN



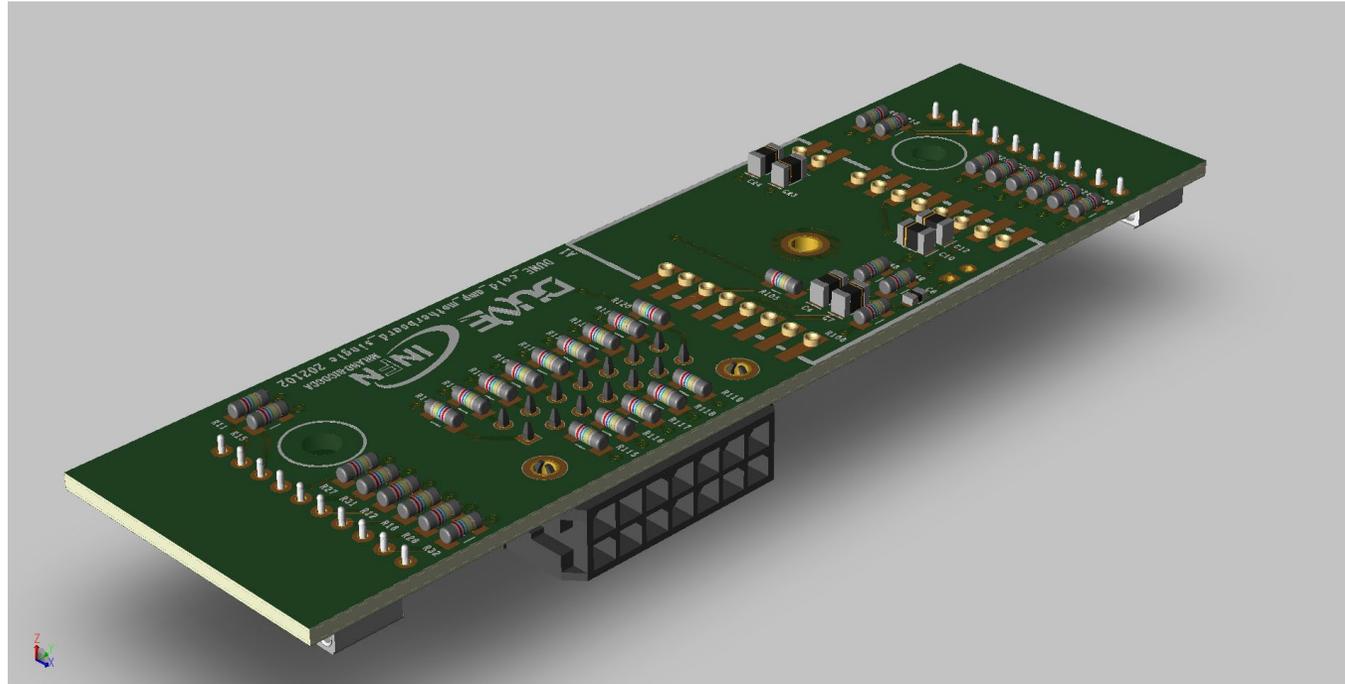
Amplifier

- V01 still under test with different SiPM models
- V02 design underway (minor changes)
- Plan to order 80 in in April
 - 40 for VST at CERN
 - 30 for SC tests at CIEMAT, to be shared after the tests



1-channel motherboard

- «New entry»: amplifier board for single supercell tests
- Directly connects to the cable with Molex connector (no need for the 2 connector boards)
- 12 PCBs to be ordered now
- 28 PCBs to be ordered around April
 - 28 for SC tests at CIEMAT, to be shared after the tests



Signal lead boards

- 1m long PCBs to be ordered soon
- Also a shorter (0.5m) version for single SC tests

Cold electronics tests

Ganging at MiB

- Ganging tests with HPK HR 50um and FBK TT: done (December/January)
- All SiPMs received (4 types from HPK, 2 types from FBK)
- Ganging tests with all remaining models in progress

Integration at Mi:

- Good S/N demonstrated with HPK HR 50um, signal lead boards, cold amplifier, cable (short)
- Tests with other SiPMs planned

Single supercell tests:

- Planned in many institutes (CIEMAT and others)
- Meant as tests of optical parts and SiPMs
- Motherboards and signal lead boards are a bit different from DUNE, but same SiPM boards, same amplifiers
- May still provide useful information for the electronics