

TG3: Analog Electronics for Ge detectors

Goal of Task Group: Delivery of

- Front-end (FE) circuits for Ge det. read-out
- Cables from FE to FADC
- HV-PS, LV-PS, Pulser
- Slow-control of operational parameters of digital and analog electronics.

Status of TG3 works: FE not ASIC cryogenic circuits

	Status / meet specs	Date	Notes
Test of FE Circuit 1 (AGATA, discrete components)	Achieved	09/05	Discrete components. Warm outside LN bath with cold FET
Test of FE Circuit 2 (IPA4 – monolithic JFET+ polarizing components)	Achieved	02/2005	Semi-integrated. Polarizing components, CF,RF not integrated.
Production of 20 FE channels for Ge prototypes at LNGS and MU	Achieved	05/2006	
Test of produced channels	To be done	07/2006	
Test of FE circuit 3 (AMPTEK- A250)	✓	12/2005	Ibrid can work at cryo-T.

Status of TG3 works: ASIC FE cryogenic circuits

MI- ASIC – CMOS FE			Integrated but not CF,RF
Test	Achieved	06/2005	
Test of chips	Achieved	12/2005	
2 nd run (fine tuning)	To be done	10/2006	
Production	To be done	2007	
MI- ASIC – CMOS FE			Fully Integrated but not RF, with possible active reset
Test run	Submitted	07/2006	
Test of chips	TBA	09/2006	
2 nd run (tuning)	TBA	10/2006	
Packaging	Candidate	04/2006	
Hd ASIC-CMOS			Fully integrated
Test run	Done	02/2006	
Test of chips	TBA	?	
2 nd run	TBA	?	
Production	TBA	2007	

Status of TG3 works : Cables (Phase I) and LV,HV PS

	Status / meet specs	Date	Notes
HV for Ge detector Caburn Kapton 8 kV 0,25 mm diam	Achieved	06/05	Measured by M.Laubenstein < 10 mBq/kg both for U and Th. (30 g/ 6 m)
Signal (from FE to FADC) and LV PS (picocoax-Axon) (siltem coax) (Tekdata woven)	X Ongoing, candidates exists	12/2005 05/2006	To be measured γ - spectrometry
LV PS	Candidate	07/2006	INFN-PD design and production
HV PS	Candidate		
Pulser Slow Control of Analog electronic	X Ongoing	12/2006 2007	INFN-PD

Possible problems

Too high radioactivity of components, as the junction box has to be put nearest the top of the crystal string compared to the showed solution (see talk of B.Majorovits)