



RADWG 6TH - 2013

13TH NOVEMBER 2013

G. Spiezia (EN/STI/ECE)



AGENDA

- ❖ Matters arising
- ❖ Memorandum for the rad test
- ❖ Update on Fraunhofer test
- ❖ Update on CHARM
- ❖ Rad test results from Cryo

PSI test – Done

Date	Equipment Owner	Test group	DUT
16-17 February	EN/STI-BE/BI	EN/STI, BE/BI	Cypress memory, potentiometer, Samsung, BLM
24-Feb	TE	TE	Switches
16-17 March	BE CO	BE CO	NanoFip
23-24 March	TE/EPC, EN/STI	EN/STI	Voltage reg, Voltage ref, Mux, Amplifier
13-14 April	TE/EPC	TE/EPC, EN/STI	ADC, SRAM for latch-up study
25-26 May	TE/EPC, EN/STI	EN/STI	LM45, Oscillator, Current source, SRAM
25 Jun	TE/EPC, EN/STI	TE/EPC, EN/STI	ADC ADS1271
28-29 June	TE/EPC,EN/STI	EN/STI	Analog switch, Mosfets, Amplifiers, LVDT conditioner
20-21 July	TE/CRG	TE/CRG	Components for beam screen heaters

PSI test

Date	Equipment Owner	Test group	DUT
21-22 September	EN/STI, TE/EPC	EN/STI	Voltage reg, Amplifiers, Isolated regulator, Transceiver
(05)-06 October	TE/ EPC EN/STI	TE/ EPC EN/STI	ADC test (SEL study) - (R. Garcia Alia, S. Uznanski)
12-13 October	TE/EPC	TE/EPC	FGC lite (S. Uznanski)
19-20 October	EN/STI TE/EPC	EN/STI	RadMon, Thermocouple board, FG, SRAM
1-3 November	TE/CRG QPS	TE/CRG QPS	Heater board (N. Trikoupis) Components for QPS (J. Steckert)
(23)-24 November	TE/EPC, EN/STI	EN/STI	ADC, Trigger Schmitt, Amplifier, ADC, BJT
14-15 December	QPS PH	QPS PH	Components for QPS (depend on the previous results) (J. Steckert) ASIC test (F. Anghinolfi)

❖ http://radwg.web.cern.ch/RadWG/Pages/PSI_tests/2013_PSI.htm

CEA

Date	Equipment Owner	Test group	DUT
29-30 April	EN/STI	EN/STI	Components, Pin diodes
14-May	BE/BI, IT, EN/EL, PH/ESE	passive	Diode, Beacon, LED, Silicon chip
10 September	PH	passive	Experiment devices
25 October	EN/EL	Passive	LED block

- ❖ Transport of the irradiated material still to be finalized
- ❖ Material will be sent to 867
 - ❖ IT beacon
 - ❖ Diodes for BLM
 - ❖ Light EN/EL
- ❖ Request for 2014
 - ❖ 3 slots have been asked

Conferences

- ❖ AMICSA
 - ❖ Workshop organized by ESA with CERN collaboration
 - ❖ ASICS and mixed signal components
 - ❖ Talks from industries
 - ❖ 30 June-1 July 2014
 - ❖ <http://indico.cern.ch/conferenceTimeTable.py?confId=277669#20140630>

- ❖ NSREC 2014 - Paris
 - ❖ Combined with RADECS
 - ❖ July 14-18 2014
 - ❖ <http://www.nsrec.com/> details on the call for papers and the short course program
 - ❖ A talk of the short course will be given by Markus on: Radiation test challenges in accelerator mixed beam environments

Test Guidelines

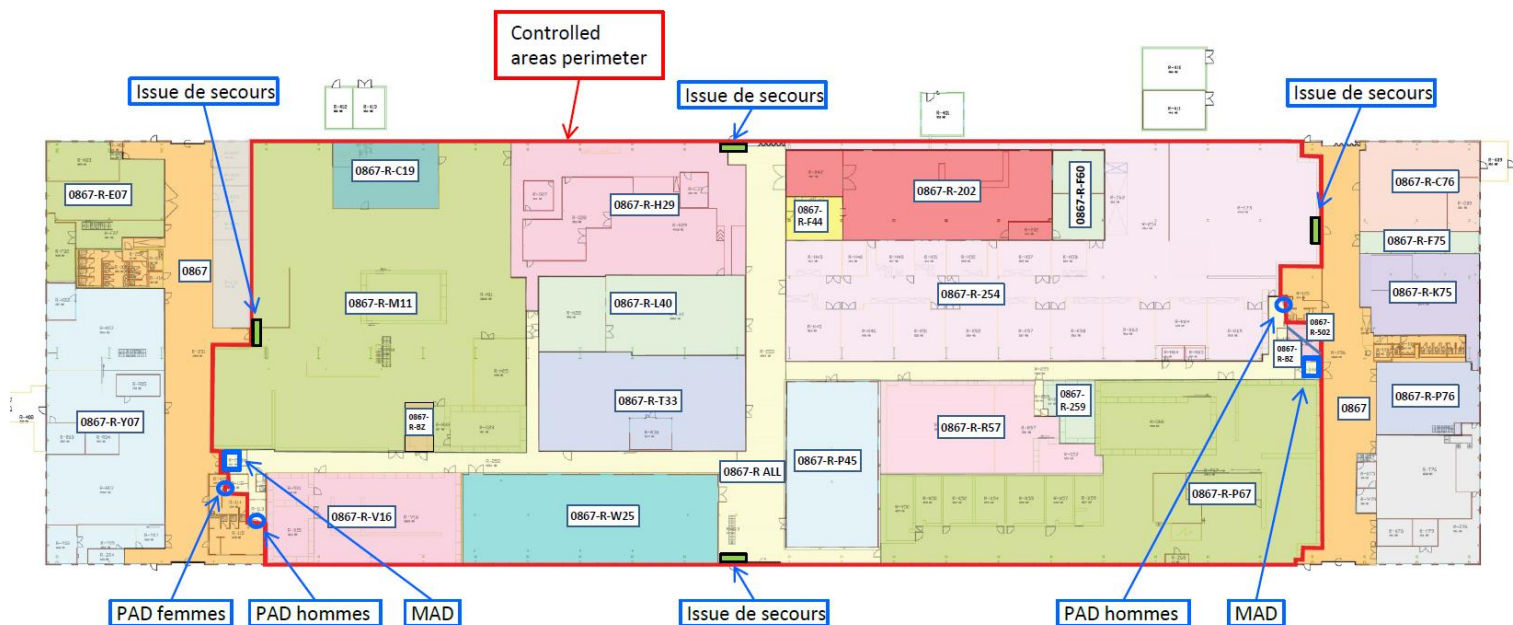
- ❖ JEDEC standard for SEE
 - ❖ Guidelines on requirements, procedures and report for 40 to 500 MeV proton irradiation of electronic devices for Single Event Effects (SEE), and reporting the results.
- ❖ RADWG web site EDMS project link → Documentation → Guidelines
- ❖ <https://edms.cern.ch/nav/P:CERN-0000083951:V0/P:CERN-0000101608:V0/TAB3>

Status of projects with R2E concerns

- ❖ Last meeting, the list of the projects with R2E concerns was presented
- ❖ For the follow-up reviews are organized
- ❖ The next will be on the on-going and future development for the Beam Instrumentation equipment
- ❖ http://indico.cern.ch/e/R2E_BI_2013

Workshop for activated electronic boards

- ❖ Access control system in function as of 18 November
- ❖ Use of PAD and MAD
- ❖ Access procedure [*edms no.1325086*](#)





Back-up

Status of various projects

- ❖ Follow up from CNRAD test (J. Mekki), H4IRRAD test (M. Calviani) and TID measurement requests on 2011-2012

Equipment under test	Location	Status
BPM- BE/BI/QP (C. DePlano, J. L. Gonzalez)	SPS tunnel	rad test postponed. Priority on installation
Beam Profile- BE/BI/PM (J. Focker)	PS, LINAC	rad test at Fraunhofer (to be done)
GEM,XWCA - BE/BI/EA(J. Spangaard)	TT83	SEU on the FPGA. Status not known
MosFETs for the PSB, BE/RF/IS (M. Paoluzzi)	PS Booster	Test at Jparc
Control PSB Dump, EN/CV, EN/STI (G. Mason, A. Morvillo)	PSB Dump	Test at PSI to be done. CV equipment ok
Interlock TE/MPE (P. Dahlen)	SPS	Measurement of TID at SPS. Status not known
Actuators, EN-MME-ES (K. Artoos)	CLIC	Test at H4. Status not known

Status of various projects

Equipment under test	Location	Status
QPS, TE/MPE/EP (R. Denz, J. Steckert)	LHC tunnel	Test at PSI and Fraunhofer
Power converter TE/EPC (Y. Thurel)	LHC	Replacement of the AC/DC converter Component test on going
Power converter-FGC Lite (A. Dinius)	LHC	Prototype test to be done
Cryo - Beam screen heaters, TE/CRG (N. Trikoupis)	LHC tunnel	Component testing ok. Full board to be tested
LED Warning system, EN/EL/BT (J. M. Foray)	LHC tunnel, PS, SPS	CNRAD test OK. Test at CEA (To be checked)
Ethernet switch, IT/CS	LHC (shielded areas)	installation only in safe area
Wifi Access point, IT/CS	LHC(Tunnel or shielded areas)	installation only in safe area (no information on the results)
Survey Equipment, BE/ABP/SU (Mateusz Sosin)	LHC shielded areas- Point 2 and 5	Test at Fraunhofer
IT beacons, IT/CS/CS (A. G. Molero)	LHC tunnel SPS tunnel	Problem for location at high dose, Test on going at CEA and Fraunhofer
PLC EN/ICE (J. Ortola Vidal)	LHC Shielded areas	Tested. Results not known
DerivFIP, BE/CO/FE (J. Palluel)	LHC tunnel and shielded area	Tested
Beam Loss Monitor, BE/BI/BL, (E. Del Busto)	LHC tunnel	Tested
NanoFip BE/CO, (E. Gousiou)	LHC tunnel	Tested; FieldDrive to tested at Fraunhofer

Fraunhofer institute - Germany

- ❖ All the information and the news are on the web:

<https://twiki.cern.ch/twiki/bin/view/FraunhoferRadTests/WebHome>

Test reports

- ❖ Share the knowledge of the tested components
 - ❖ Reports are on EDMS
 - ❖ Add your own reports (PSI, CNRAD, H4IRRAD)
 - ❖ Many tested components are useful for other groups
- ❖ Table of the tested components
 - ❖ http://radwg.web.cern.ch/RadWG/Pages/reports/Radiation_report_menu.htm

Passive dosimetry along 2012

- ❖ Used RadFets and BatMons (battery version of the RadMon)
- ❖ Removed from the machines
- ❖ Results given for the following areas
 - ❖ TT83 (requested by Spanggaard)
 - ❖ TT2 (requested by BE/ABP, S. Gilardoni)
 - ❖ PSB Dump (requested by Calviani)
 - ❖ Door 352 (requested by RAMSES, M. Pangallo)
 - ❖ LINAC3 (requested by M. Calviani)
 - ❖ PS (requested by RF, M. Paoluzzi)
 - ❖ SPS (requested by BE/BI, J Gonzalez)
 - ❖ SPS (requested by TE/MPE, P. Dahlen)
 - ❖ ATLAS-LAR (requested by Luis Hervas)

Conferences

❖ SEE symposium

❖ http://radhome.gsfc.nasa.gov/radhome/see_mapld/#

❖ NSREC

❖ <http://www.nsrec.com/>

❖ RADECS

❖ <http://www.radecs2013.com/>

CERN facilities

- ❖ CNRAD and H4IRRAD
- ❖ East area



Technical stop