

ATLAS simulated Total Ionizing Dose (TID) and related Radiation Tolerance Criteria (RTCtid)

Nov. 2001 Baseline

SYSTEM AND COMPONENT	
System / Board / component	Barrel HV System
Comments	Rack positions for Barrel > 12 m

COORDINATES				
	Zmin	Zmax	Rmin	Rmax
Limits of the macro-domain (cm)	0	1250	1190	1200
For each column, is the above limit the ABSOLUTE limit of the macro-domain, i.e. no board cross these limits (Y/N)?	y	y	Y	n
Limits of the Domain of Interest (cm)	0	1250	1190	1210

GENERAL INFORMATION AND SAFETY FACTORS		
The component is not dedicated to the inner detector.		
The component is a standard (non-radiation-hard) COTS component.		
The test do not include a post-irradiation aging at elevated temperature.		
The purpose of the test is to qualify production batch(es) with respect to TID.		
The production will be made with components from unknown commercial lots.		
Safety Factors resulting from the above information:		
SFsim	SFldr	SFlot
3.5	5	4

10 WORST LOCATIONS IN THE MACRO-DOMAIN AND RELATED SRLtid AND RTCtid (1) FOR THE COMPONENT					
Zmin cm	Zmax cm	Rmin cm	Rmax cm	SRLtid (Gray in 10 years)	<u>RTCtid</u> (Gray in 10 years)
780	790	1190	1200	3.29E+00	<u>2.30E+02</u>
790	800	1190	1200	2.92E+00	2.05E+02
1170	1180	1190	1200	2.33E+00	1.63E+02
1070	1080	1190	1200	1.97E+00	1.38E+02
770	780	1190	1200	1.83E+00	1.28E+02
490	500	1190	1200	1.64E+00	1.15E+02
680	690	1190	1200	1.63E+00	1.14E+02
880	890	1190	1200	1.62E+00	1.14E+02
970	980	1190	1200	1.49E+00	1.04E+02
350	360	1190	1200	1.47E+00	1.03E+02

(1) The RTCtid to be used for the test is given in the above table (**Underlined**)