

ATLAS simulated Non Ionizing Energy Loss (NIEL) and related Radiation Tolerance Criteria (RTC_niel)

Nov. 2001 Baseline

SYSTEM AND COMPONENT	
System/Board/Component	Big Wheel HV system - NIEL
Comments	.

COORDINATES				
	Zmin	Zmax	Rmin	Rmax
Limits of the macro-domain (cm)	1350	1410	1170	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	Y
Limits of the Domain of Interest (cm)	1350	1410	1170	1200

GENERAL INFORMATION AND SAFETY FACTORS			
The purpose of the test is to qualify production batch(es) with respect to NIEL.			
The production will be made with components from unknown commercial lots.			
Safety Factors resulting from the above information:			
SF _{sim}	SF _{ldr}	SF _{lot}	
5	1	4	

10 WORST LOCATIONS IN THE MACRO-DOMAIN AND RELATED SRL _n iel AND RTC _n iel (1) FOR THE COMPONENT					
Zmin cm	Zmax cm	Rmin cm	Rmax cm	SRL _n iel 1MeV eq. n/cm ² / 10 y.	<u>RTC_niel</u> 1MeV eq. n/cm ² / 10 y.
1350	1360	1190	1200	4.58E+10	<u>9.16E+11</u>
1360	1370	1190	1200	4.38E+10	8.76E+11
1350	1360	1180	1190	4.34E+10	8.68E+11
1350	1360	1170	1180	4.31E+10	8.62E+11
1370	1380	1170	1180	4.26E+10	8.52E+11
1370	1380	1180	1190	4.20E+10	8.39E+11
1360	1370	1170	1180	4.17E+10	8.35E+11
1370	1380	1190	1200	4.13E+10	8.25E+11
1360	1370	1180	1190	4.10E+10	8.19E+11
1380	1390	1180	1190	3.90E+10	7.79E+11

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