

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

Nov. 2001 Baseline

SYSTEM AND COMPONENT

System / Board / component	Big Wheel HV System
Comments	0

COORDINATES

	Zmin	Zmax	Rmin	Rmax
Limits of the macro-domain (cm)	1350	1400	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	n	Y	n
Limits of the Domain of Interest (cm)	1350	1410	1170	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)
1400	1410	1170	1180	6.50E+00	<u>4.55E+02</u>
1400	1410	1190	1200	1.46E+00	1.02E+02
1390	1400	1170	1180	8.86E-01	6.20E+01
1390	1400	1180	1190	7.63E-01	5.34E+01
1350	1360	1190	1200	7.41E-01	5.18E+01
1350	1360	1180	1190	6.39E-01	4.47E+01
1360	1370	1180	1190	5.81E-01	4.07E+01
1370	1380	1180	1190	5.53E-01	3.87E+01
1370	1380	1170	1180	5.16E-01	3.61E+01
1400	1410	1180	1190	4.77E-01	3.34E+01

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