

SEE Verification Test of RH1078 Using INTEGRAL Flight Conditions.

by

¹R. Harboe-Sørensen and ²H. Timm

¹European Space Agency/ESTEC - The Netherlands

²TERMA Elektronik AS, Lystrup - Denmark

Abstract

RH1078 and LT1078 was SEE tested using INTEGRAL flight conditions "with and without transient RC filters". Test details and results will be presented.



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Ref.: D/TOS-QCA/RH1078

Main Purpose of Test:

To SEE characterise the RH1078 sensitivity under test conditions identical to INTEGRAL flight conditions and assess the same design with a RC filter of 5 KW/10 nF. - Heavy ion SEE testing was carried out at the HIF, UCL, Belgium – September 2000.

- Devices:

1. RH1078 (XMIG006701BR 9638A);
 - s/n 156 – Tested with RC filter: 5 KW/10 nF
 - s/n 157 – Tested as used by INTEGRAL
2. LT1078 d/c 9609;
 - s/n #C01 – Tested with RC filter: 5 KW/10 nF
 - s/n #C02 Tested as used by INTEGRAL



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Test Set-up/Conditions:

- INTEGRAL Test Board:
 1. Position 11 – No Filter (original)
 2. Position 15 – Modified with Filter (5 KW/10 nF)
- Test Conditions;
 1. ON – High output signal on pin 7
 2. OFF – Low output signal on pin 7
- Events recorded;
 1. Latches/Switching Events
 2. Comperator Events
 3. Flip-Flop Events

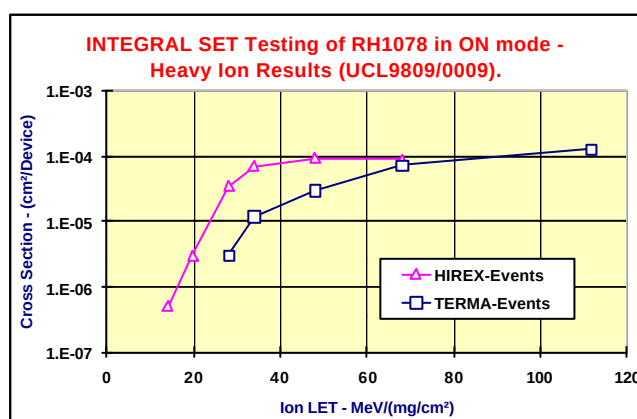


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RH1078 Results: - PDU Current Limited Switch Sensitivity:



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RH1078 Results: Preliminary

- Xe-ions at a LET = 111.8 MeV/(mg/cm²) & Fluence 1E+6 p/cm²
- s/n 157 (INTEGRAL); ON – Mode
 1. Latches/Switching Events: 127
 2. Comperator Events: 84
 3. Flip-Flop Events: 64
- s/n 156 (with Filter); ON – Mode
 1. Latches/Switching Events: 0
 2. Comperator Events: 159
 3. Flip-Flop Events: 144



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Conclusions: Preliminary

Final SEE Test (in On mode) using Xe-ions having a LET = 111.8 MeV/(mg/cm²) to a fluence of 1.0E+06 p/cm²;

- Devices:
 1. RH1078 (XMIG006701BR 9638A);
 - s/n 156 – Tested with RC filter: 5 KW/10 nF
 - Cross Section = <1.0E-06 cm²/Device (No Events)
 - s/n 157 – Tested as used by INTEGRAL
 - Cross Section = 1.3E-04 cm²/Device
 2. LT1078 d/c 9609;
 - s/n #C01 – Tested with RC filter: 5 KW/10 nF
 - Cross Section = <1.0E-06 cm²/Device (No Events)
 - s/n #C02 Tested as used by INTEGRAL
 - Cross Section = 5.2E-05 cm²/Device



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