

D/TEC-QCA Final Presentation Day - May 25th, 2005

Radiation Co-60 TID Evaluation of 16-Bit Analog-to-Digital Converters:
Texas Instruments ADS8402, Analog Devices AD7677 and AD9260

- **ESTEC Contract No. 13528/99/NL/MV, COO-15**
- **Hirex Engineering SAS**
- *F.X. Guerre, J.F. Pascal, O. Perrotin*
- **Estec Technical Officer**
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- Components tested

Manufacturer	Part Number	Description	TID Report
Analog Devices	AD7677AST	16-bit, 1LSB INL, 1 MSPS, Differential ADC	ESA_QCA0408T_C
Analog Devices	AD9260AS	16-bit CMOS ADC at a 2.5MHz Output Word Rate	ESA_QCA0409T_C
Texas Instruments	ADS8402IB	16-bit 1.25 MSPS, unipolar differential input ADC	ESA_QCA0407T_C

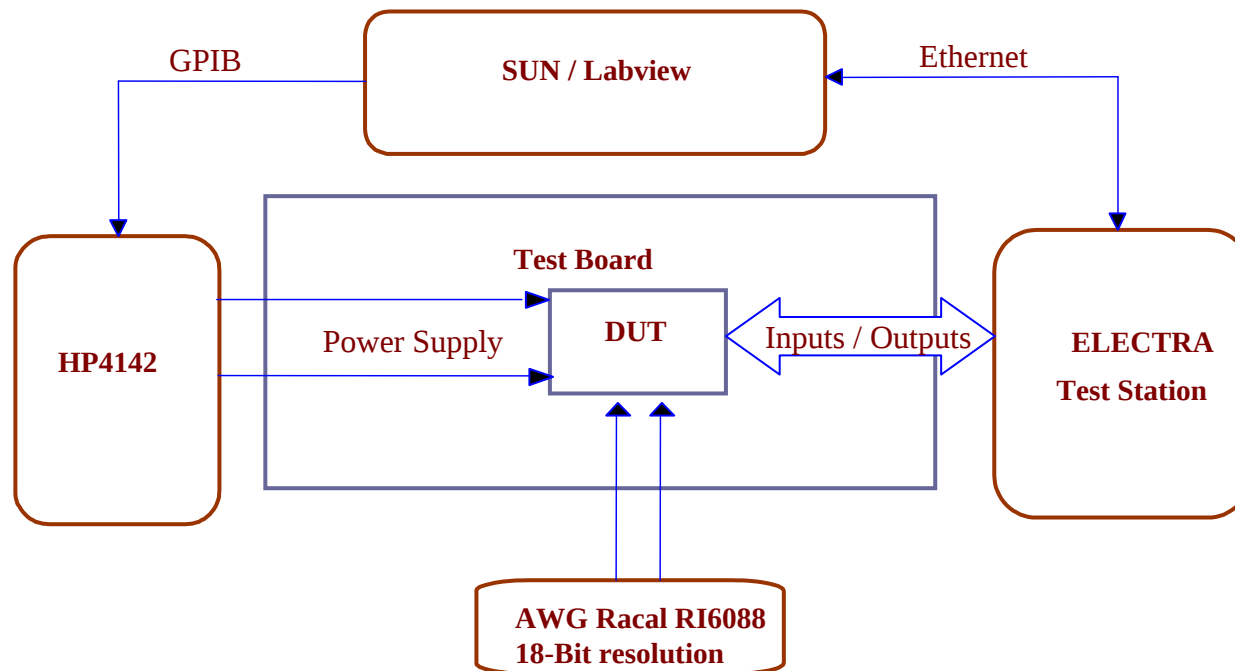
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- Test conditions

- Exposures: 6, 13, 19, 25 & 51 Krad(Si) @ Room
- Dose rate: 360 Rad/hour
- Annealing: 24H @ Room + 168H @ 100°C under bias
- Bias conditions, 2 modes: Static & Dynamic
- Electrical parameters: Main static & Dynamic including DNL, INL, Offset Error, Gain Error, FSE, SNR, SNRD, ENOB, THD, Voh/Vol, Iih/Iil, Op. currents

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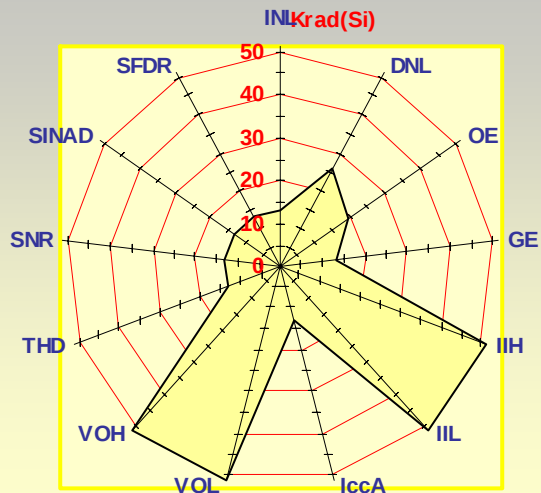
- Test program principle



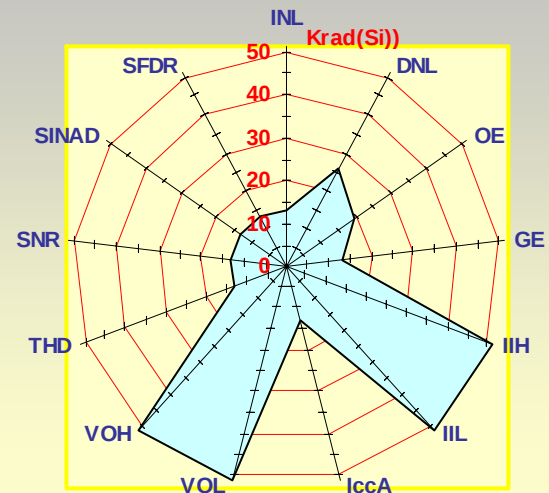
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• Test Results ADS8402 - TI

ADS8402: Total Dose Withstanding Versus Dose
Exposures : Static Bias Conditions

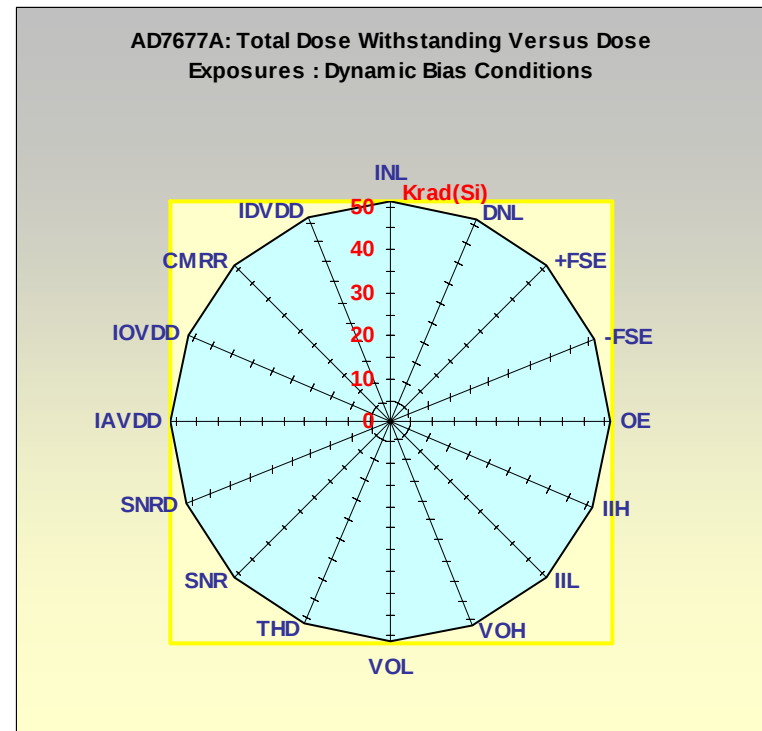
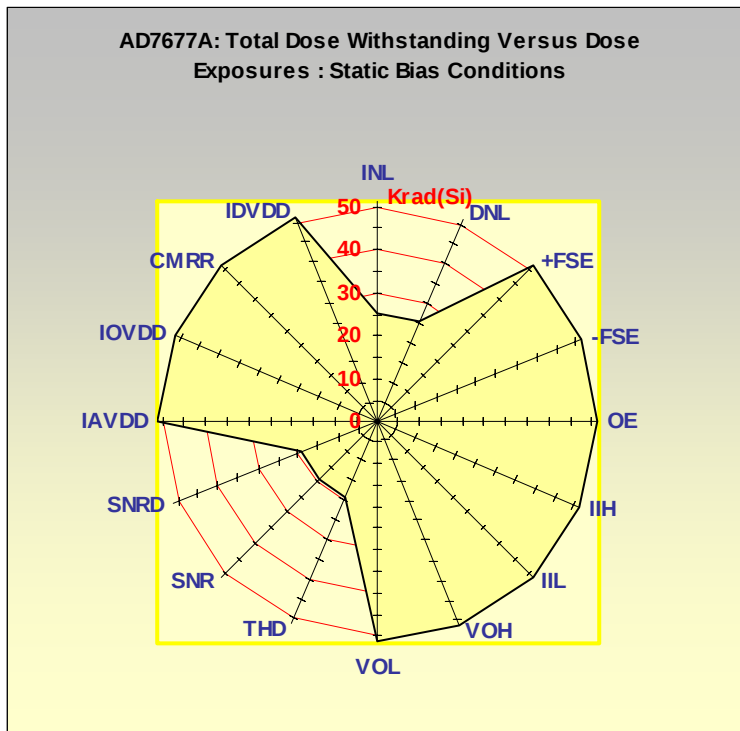


ADS8402: Total Dose Withstanding Versus Dose
Exposures : Dynamic Bias Conditions



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• Test Results AD7677 - Analog Devices



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• Test Results AD9260 - Analog Devices

