

TOTAL DOSE RADIATION TEST REPORT

Part Type : ADS8402

16-Bit Unipolar Differential Input Analog to Digital Converter

Package : TQFP - 48

Manufacturer: Texas Instruments

Report Reference : ESA_QCA0407T_C

Issue : 01

Date : September 20th 2004

ESA Call of order Number 15, Estec / Contract n° 13528/99/NL/MV

European Space Agency Contract Report

The work described in this report was done under ESA contract.
Responsibility for the contents resides in the author or organization that prepared it

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Hirex reference :	HRX/TID/0233	Issue : 01	Date :	September 20 th 2004
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HIREX Engineering	Total Dose Test Report		Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments

TOTAL DOSE RADIATION TEST REPORT

on

Texas Instruments ADS8402

16-Bit Unipolar Differential Input Analog to Digital Converter

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1 Abstract

Under ESA Contract No 13528/99/NL/MV covering "Radiation Evaluation of COTS Semiconductor Components", the radiation sensitivity to Total Ionizing Dose (TID) of three different 16-bit Analog to Digital converters was evaluated. Results from these evaluations, are reported in individual TID reports. Below summary table lists manufacturer and evaluated types, and gives references to the various reports issued.

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

HIREX Engineering	Total Dose Test Report		Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments

2 Introduction

A total dose radiation evaluation test of the Texas Instruments ADS8402 16-Bit Unipolar Differential Input Analog to Digital Converter has been performed with an accumulated dose of about 51 Krad(Si) ,at a dose rate of 360 rad(Si)/hour in response to ESA contract: Call of order Number 15, Estec / Contract n° 13528/99/NL/MV.

The purpose of this test was to evaluate total dose withstanding of this component, to investigate its suitability for being used in space applications. This test was conducted on samples procured by Hirex Engineering. Test has been performed in accordance with Hirex Engineering Proposal reference: HRX/PRO/0846 Issue 2 dated 3/11/03.

A complete set of electrical measurements together with graphical representation of measured parameters with respect to total dose received, are provided for all samples.

3 Applicable and Reference Documents

3.1 Applicable Documents

- Hirex proposal: HRX/PRO/0846 Issue 2 dated 3/11/03.
- Burr-Brown / Texas Instruments ADS8402 datasheet SLAS154B December 2002, revised May 2003.
- ESA/SCC Basic specification N° 22900 issue 4.

3.2 Reference Documents

- NA

4 Test Samples

10 samples of the ADS8402 device were tested (10 + 1 control sample). Parts have been biased according to the allocation table below.

Serial number	Allocation
Ref	Control
1	Static BIAS
2	Static BIAS
3	Static BIAS
4	Static BIAS
5	Static BIAS
6	Dynamic BIAS
7	Dynamic BIAS
8	Dynamic BIAS
9	Dynamic BIAS
10	Dynamic BIAS

Identification of the ADS8402 is given below:

Part Number:	ADS8402IB	Mask Set:	NA
Project:	-	Diffusion Lot:	NA
Lot Number:	-	Marking:	AZ8402 2CT AYL4 B
Date Code:	0249	Project:	NA

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5 Experimental Conditions

5.1 Radiation Source Dose Rate and Annealing

The dose exposures were performed at CERT-ONERA. In this irradiation facility, a Cobalt 60 source is used with the possibility to vary the dose rate by simply adjusting the distance to the source.

The irradiation conditions used for this test are provided in the following table:

Irradiation Steps krads	Dose rate krads/h	Annealing steps hours	Temperature °C
0			25
6	0.36		25
13	0.36		25
19	0.36		25
26	0.36		25
51	0.36		25
		24	25
		168	100

5.2 Bias during Dose Exposures and Measurements conditions

5.2.1 Bias conditions

During exposures dedicated test boards were used mounted on a special board-holder made for irradiation. The test boards allowed two biasing conditions of the devices in accordance with electrical circuits provided in Figure 1 and 2.

These two conditions correspond to static and dynamic functioning of the components.

During annealing steps, the same stress conditions were applied at 25°C and 100°C temperatures.

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5.2.2 Electrical Measurements

ADS8402 test program principle is provided in Figure 3.

The test Setup for this ADC includes a CREDENCE Electra Mixed Signal Test Station, an arbitrary waveform generator (AWG), and a DC tester. To ensure coherent clocking to the mixed signal tester, ADC, and AWG, a clock from the ELECTRA is used.

The AWG has 18 bits of resolution, and provides pure enough signal to the test board thanks to internal filters. Additional filtering was also implemented onto the test fixture board to clean the noise and distortion from the input signal.

After input signal is generated, the ELECTRA acquires data output by the ADC. The dedicated Labview programs analyse the data and display the results on a SUN workstation.

For conversion characteristics including Differential Non Linearity, Integral Non Linearity, Offset Error, Gain Error, a histogram test technique was used.

Two full scale pure ramps are input to the ADC. Thousands samples of the input signals are taken and processed by the histogram software. At the end of sampling, the histogram is plotted with possible output codes along the X axis and frequency of occurrence along Y axis. Above each possible output code, a point is plotted whose height is proportional to the total number of times that code occurred.

From histogram test data, dedicated math routines calculate the different parameter values.

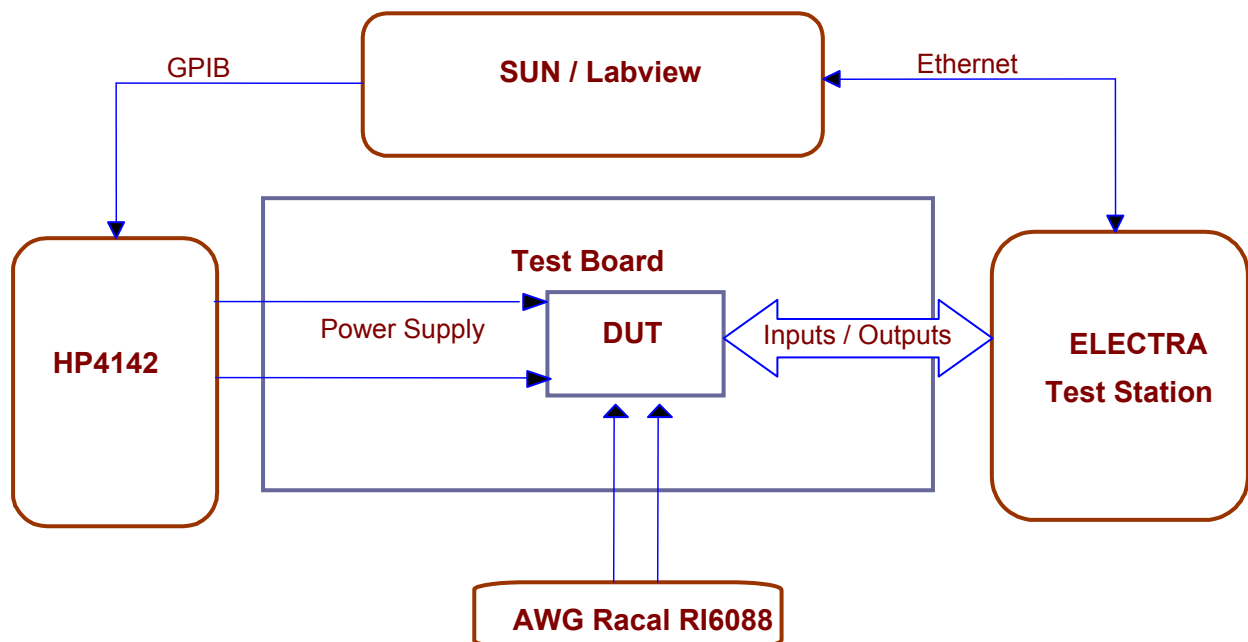
For dynamic characteristics including Signal-to-Noise Ratio, Signal-to-Noise Plus Distortion Ratio, Effective Number of Bits, and Total Harmonic Distortion, a Fast Fourier Transform (FFT) algorithm was implemented.

Two full scale sine waves of specified frequency are input to the device under test. Harmonics of the input sine waves, caused by the integral nonlinearity of the ADC, are aliased into the baseband spectrum and can be readily identified. The frequency of the input sine waves is not arbitrary and must be selected so that harmonics, aliased into baseband, do not coincide with the fundamental.

From FFT spectra test data, dedicated math routines calculate the different parameter values.

Test results were automatically loaded in an Excel worksheet and compared in real time to specification limits. This allowed for real time data analysis in particular in case failures are recorded

Figure 3 : Test program principle



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Electrical parameters test conditions and limits used for performing this test are given in the following table.

Table 1: Measured electrical parameters

Parameter	Test conditions	Limits			Unit
		Min	Typ	Max	
INL	(note 1)	-3,5	±2	+3,5	LSB
DNL		-1	±0.75	2	
Offset Error	(note 2)	-1,5	±0.5	+1,5	mV
Gain Error	(note 2 and 3)	-0,098	-	0,098	%FS
THD	Vin=8Vpp at 20kHz (note 3)	-	-95	-	dB
SNR	Vin=8Vpp at 20kHz	-	90	-	
SINAD	Vin=8Vpp at 20kHz	-	88	-	
SFDR	Vin=8Vpp at 20kHz		95		
+VA supply current (ICCA)	Fs=1 MHz (note 4)	-	31	34	mA
IiH	Vih=5V (note 5)	-5		+5	µA
IiL	Vil=0V (note 5)	-5		+5	µA
VOH	Ioh=2TTL loads=	4,4	-		V
VOL	Iol= 2TTL loads=		-	0.4	

Specification for all parameters:

+VA=5V, +VBD= 5V, Vref=4.096V, fsample= 1MHz.

Note 1: This is endpoint INL.

Note 2: Measured relative to an ideal FS input (8,192V).

Note 3: Calculated on the first nine harmonics of the input frequency. A frequency of 20kHz has been chosen in order to reduce impact of test socket and kept the frequency coherence during FFT.

Note 4: This includes only +VA current. +VBD current is typically 1mA with 5pF load capacitance on output pins.

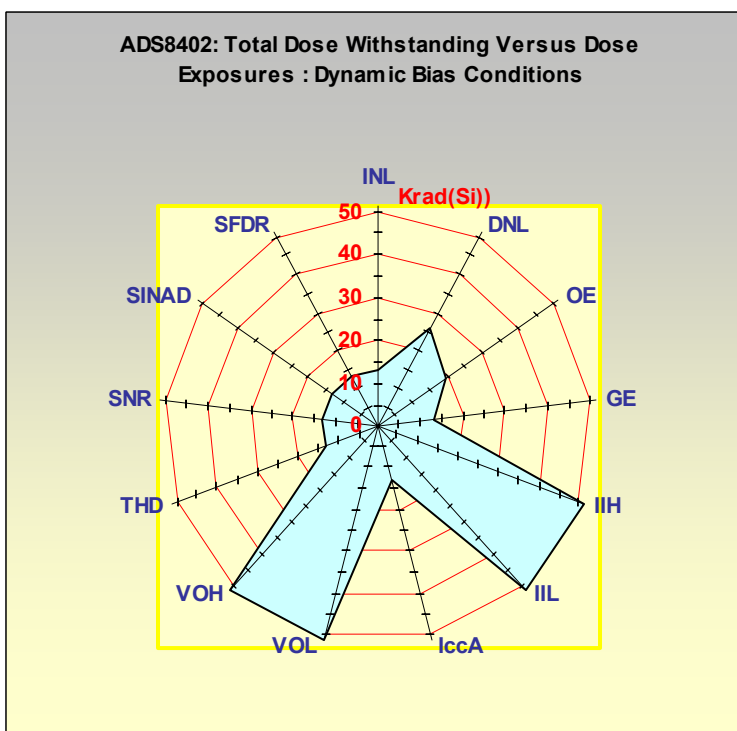
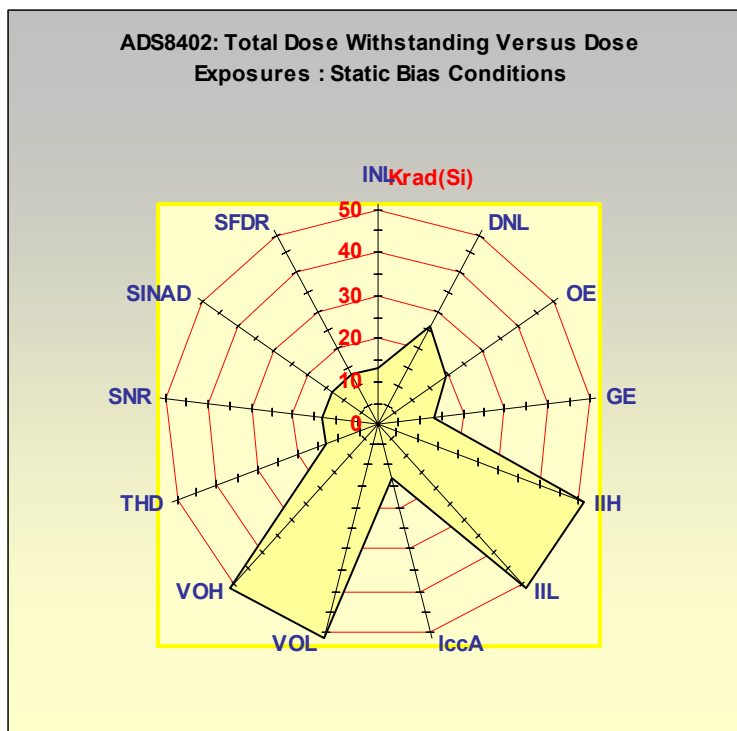
Note 5: Extrapolated from Vil and Vih parameters.

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

6 Conclusion

A Total Ionizing Dose evaluation test was carried out by Hirex Engineering under ESA contract on the Texas Instruments ADS8402 16-Bit Unipolar Differential Input Analog to Digital Converter in TQFP - 48 package. 10 samples plus one control sample were used during testing. They were exposed to radiation using a dose rate of 360 rad(Si)/hour at room temperature.

A summary of the results obtained are presented in the following figures.



HIREX Engineering	Total Dose Test Report		Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments

On these figures, the last dose exposure at which a given parameter was measured within specification limits is plotted. Two series of data are represented corresponding to the two types of bias conditions used during dose exposures.

The bigger the surface of the polygon, the better the withstanding capabilities of the device.

From these plots we can see that samples exposed under static and dynamic conditions present similar degradation.

The most affected parameters are VA supply current, INL, GE, SNR, SINAD, SFDR, THD, that failed specification limits after 19 Krad(Si) of dose exposure. A partial recovery was observed after annealing for all these parameters except VA supply current that has totally recovered.

It should be noted that functionality of most samples was lost at 51 Krad(Si) as reflected in the results of Gain Error parameter where some out of range values have not been plotted.

Some of these samples have recovered their functionality after the last annealing step.

All other parameters remained within specification limits all along testing.

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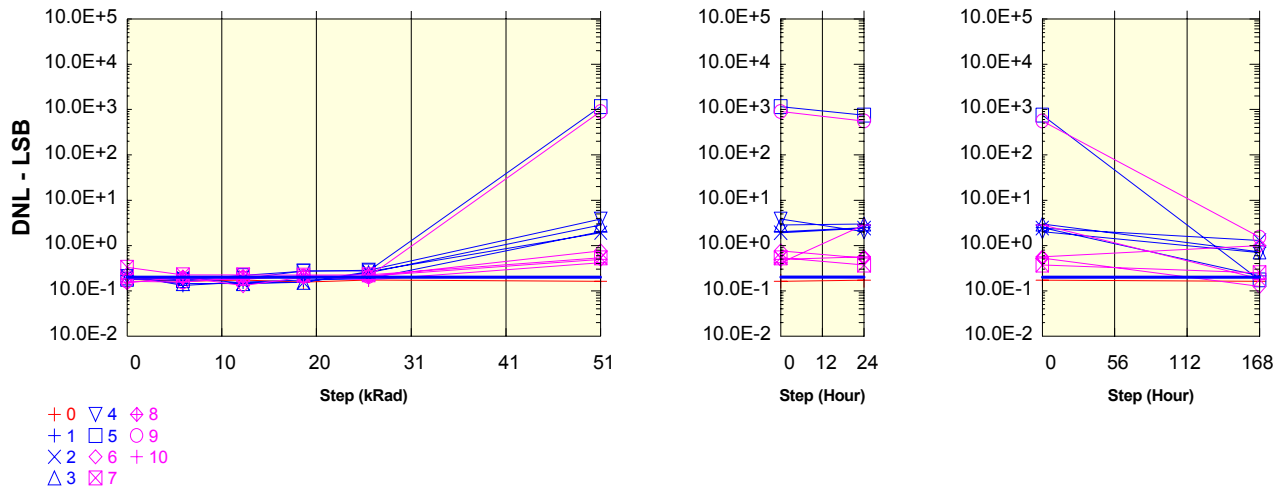
7 Test Results

Test results including tables and graphics are provided in this section for each measured parameter.

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : DNL

Unit : LSB
Spec Limit Max : 20.0E-1
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	18.1E-1	16.3E-1	17.5E-1	15.6E-1	17.5E-1	16.3E-1
1	21.9E-1	13.2E-1	15.6E-1	17.4E-1	18.7E-1	20.2E+0
2	21.3E-1	19.4E-1	15.0E-1	15.4E-1	26.4E-1	19.1E+0
3	19.4E-1	14.4E-1	14.4E-1	15.4E-1	25.0E-1	28.3E+0
4	20.6E-1	17.5E-1	21.9E-1	27.3E-1	28.8E-1	38.6E+0
5	18.1E-1	16.9E-1	18.7E-1	27.4E-1	27.5E-1	11.6E+3
6	19.4E-1	20.0E-1	13.1E-1	20.0E-1	20.6E-1	76.9E-1
7	33.1E-1	22.5E-1	22.5E-1	22.3E-1	22.5E-1	53.6E-1
8	15.0E-1	20.0E-1	20.6E-1	21.0E-1	21.2E-1	49.7E-1
9	16.2E-1	15.6E-1	19.4E-1	21.2E-1	20.6E-1	90.8E+2
10	18.7E-1	18.7E-1	18.1E-1	21.2E-1	17.5E-1	41.7E-1
Statistics						
Min	15.0E-1	13.2E-1	13.1E-1	15.4E-1	17.5E-1	41.7E-1
Max	33.1E-1	22.5E-1	22.5E-1	27.4E-1	28.8E-1	11.6E+3
Mean	20.4E-1	17.8E-1	17.9E-1	20.9E-1	22.9E-1	20.8E+2
Sigma	49.6E-2	28.6E-2	32.7E-2	42.0E-2	38.4E-2	43.9E+2

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	16.3E-1	17.2E-1
1	20.2E+0	24.8E+0
2	19.1E+0	24.3E+0
3	28.3E+0	29.8E+0
4	38.6E+0	20.2E+0
5	11.6E+3	75.6E+2
6	76.9E-1	53.3E-1
7	53.6E-1	37.1E-1
8	49.7E-1	56.3E-1
9	90.8E+2	55.9E+2
10	41.7E-1	28.2E+0
Statistics		
Min	41.7E-1	37.1E-1
Max	11.6E+3	75.6E+2
Mean	20.8E+2	13.3E+2
Sigma	43.9E+2	28.0E+2

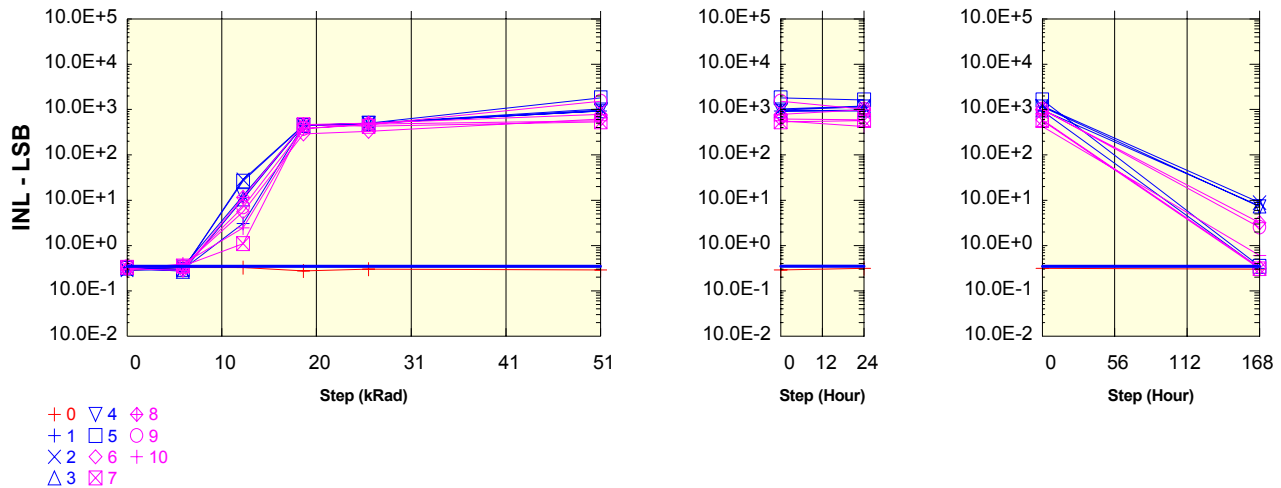
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	17.2E-1	16.3E-1
1	24.8E+0	21.4E-1
2	24.3E+0	12.9E+0
3	29.8E+0	72.5E-1
4	20.2E+0	69.4E-1
5	75.6E+2	17.5E-1
6	53.3E-1	12.5E-1
7	37.1E-1	25.0E-1
8	56.3E-1	98.8E-1
9	55.9E+2	15.3E+0
10	28.2E+0	18.7E-1
Statistics		
Min	37.1E-1	12.5E-1
Max	75.6E+2	15.3E+0
Mean	13.3E+2	61.8E-1
Sigma	28.0E+2	51.3E-1

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : INL

Unit : LSB
Spec Limit Max : 35.0E-1
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	28.4E-1	32.8E-1	32.8E-1	27.4E-1	30.2E-1	29.0E-1
1	32.6E-1	29.6E-1	30.9E+0	45.3E+2	49.8E+2	92.9E+2
2	28.8E-1	29.5E-1	28.4E+1	44.9E+2	49.3E+2	10.3E+3
3	31.6E-1	27.3E-1	10.7E+1	45.4E+2	49.2E+2	93.5E+2
4	31.6E-1	33.4E-1	12.7E+1	44.9E+2	49.2E+2	98.6E+2
5	32.5E-1	29.8E-1	26.5E+1	44.3E+2	50.2E+2	18.2E+3
6	31.3E-1	35.2E-1	55.2E+0	28.9E+2	32.9E+2	62.0E+2
7	33.1E-1	35.2E-1	11.0E+0	46.2E+2	43.1E+2	53.6E+2
8	30.4E-1	28.6E-1	11.6E+1	46.7E+2	50.1E+2	78.8E+2
9	34.1E-1	34.0E-1	71.3E+0	38.1E+2	46.6E+2	15.3E+3
10	30.3E-1	39.1E-1	24.6E+0	38.2E+2	47.4E+2	56.2E+2
Statistics						
Min	28.8E-1	27.3E-1	11.0E+0	28.9E+2	32.9E+2	53.6E+2
Max	34.1E-1	39.1E-1	28.4E+1	46.7E+2	50.2E+2	18.2E+3
Mean	31.6E-1	32.2E-1	10.9E+1	42.3E+2	46.8E+2	97.3E+2
Sigma	15.4E-2	37.6E-2	95.8E+0	56.2E+1	53.4E+1	41.4E+2

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	29.0E-1	31.2E-1
1	92.9E+2	93.4E+2
2	10.3E+3	11.8E+3
3	93.5E+2	97.6E+2
4	98.6E+2	11.5E+3
5	18.2E+3	16.4E+3
6	62.0E+2	59.9E+2
7	53.6E+2	57.5E+2
8	78.8E+2	99.1E+2
9	15.3E+3	10.2E+3
10	56.2E+2	42.6E+2
Statistics		
Min	53.6E+2	42.6E+2
Max	18.2E+3	16.4E+3
Mean	97.3E+2	94.9E+2
Sigma	41.4E+2	35.1E+2

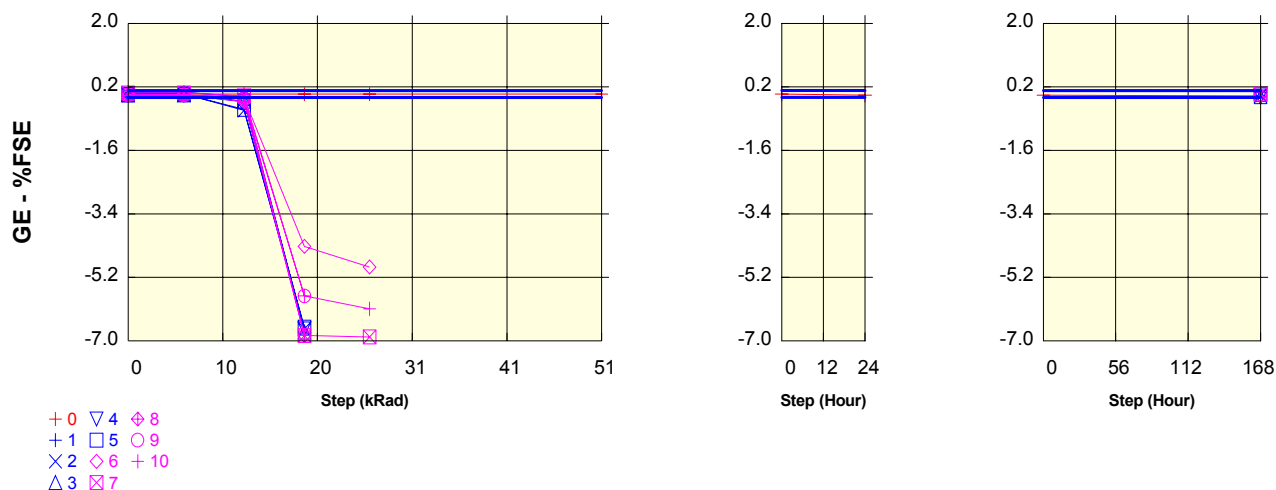
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	31.2E-1	30.1E-1
1	93.4E+2	31.4E-1
2	11.8E+3	88.9E+0
3	97.6E+2	74.8E+0
4	11.5E+3	72.1E+0
5	16.4E+3	35.0E-1
6	59.9E+2	32.7E-1
7	57.5E+2	30.8E-1
8	99.1E+2	31.9E+0
9	10.2E+3	25.4E+0
10	42.6E+2	60.8E-1
Statistics		
Min	42.6E+2	30.8E-1
Max	16.4E+3	88.9E+0
Mean	94.9E+2	31.2E+0
Sigma	35.1E+2	34.5E+0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : GE

Unit : %FSE
Spec Limit Min : -0.1
Spec Limit Max : 0.1
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	0.0	0.0	0.0	-0.01	-0.01	0.0
1	0.04	0.05	-0.09	-6.75		
2	-0.01	0.0	-0.46	-6.66		
3	-0.03	-0.03	-0.21	-6.75		
4	-0.02	-0.02	-0.23	-6.66		
5	0.0	0.0	-0.43	-6.61		
6	-0.03	-0.02	-0.12	-4.32	-4.91	
7	0.02	0.03	-0.06	-6.85	-6.89	
8	-0.04	-0.04	-0.22	-6.85		
9	-0.03	-0.03	-0.15	-5.73		
10	-0.03	-0.03	-0.07	-5.73	-6.09	
Statistics						
Min	-0.04	-0.04	-0.46	-6.85	-6.89	
Max	0.04	0.05	-0.06	-4.32	0.0	
Mean	-0.01	-0.01	-0.2	-6.29	-1.79	
Sigma	0.03	0.03	0.14	0.81	2.92	

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	0.0	-0.04
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
Statistics		
Min		
Max		
Mean		
Sigma		

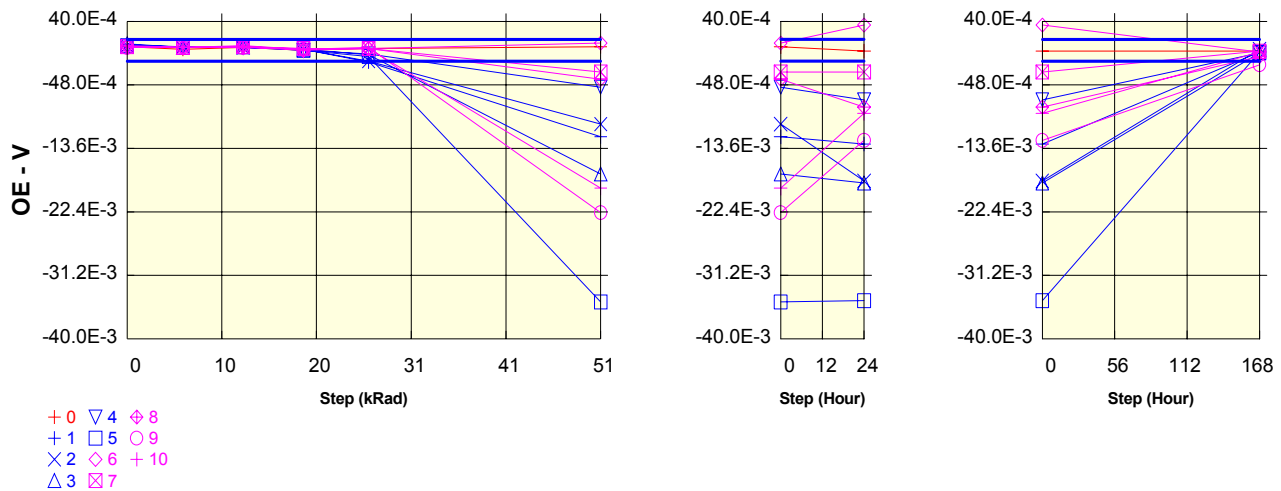
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	-0.04	-0.05
1		0.04
2		-0.04
3		-0.08
4		-0.08
5		-0.02
6		-0.05
7		0.0
8		
9		
10		-0.09
Statistics		
Min		-0.09
Max		0.04
Mean		-0.03
Sigma		0.04

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Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : OE

Unit : V
Spec Limit Min : -15.0E-4
Spec Limit Max : 15.0E-4
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	50.0E-5	12.5E-5	37.5E-5	00.0E+0	25.0E-5	50.0E-5
1	75.0E-5	50.0E-5	37.5E-5	12.5E-5	-16.3E-4	-12.0E-3
2	62.5E-5	37.5E-5	37.5E-5	12.5E-5	-15.0E-4	-10.3E-3
3	87.5E-5	37.5E-5	50.0E-5	12.5E-5	-62.5E-5	-17.1E-3
4	50.0E-5	37.5E-5	37.5E-5	00.0E+0	-50.0E-5	-51.3E-4
5	62.5E-5	37.5E-5	50.0E-5	00.0E+0	-87.5E-5	-34.9E-3
6	50.0E-5	37.5E-5	62.5E-5	12.5E-5	25.0E-5	10.0E-4
7	50.0E-5	37.5E-5	50.0E-5	25.0E-5	25.0E-5	-30.0E-4
8	62.5E-5	37.5E-5	50.0E-5	00.0E+0	25.0E-5	-40.0E-4
9	37.5E-5	37.5E-5	37.5E-5	12.5E-5	37.5E-5	-22.5E-3
10	50.0E-5	37.5E-5	37.5E-5	25.0E-5	25.0E-5	-19.1E-3
Statistics						
Min	37.5E-5	37.5E-5	37.5E-5	00.0E+0	-16.3E-4	-34.9E-3
Max	87.5E-5	50.0E-5	62.5E-5	25.0E-5	37.5E-5	10.0E-4
Mean	58.8E-5	38.8E-5	45.0E-5	11.3E-5	-37.6E-5	-12.7E-3
Sigma	14.5E-5	39.5E-6	87.4E-6	92.2E-6	76.7E-5	10.9E-3

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	50.0E-5	-12.5E-5
1	-12.0E-3	-13.0E-3
2	-10.3E-3	-18.1E-3
3	-17.1E-3	-18.4E-3
4	-51.3E-4	-68.8E-4
5	-34.9E-3	-34.7E-3
6	10.0E-4	35.0E-4
7	-30.0E-4	-30.0E-4
8	-40.0E-4	-78.8E-4
9	-22.5E-3	-12.5E-3
10	-19.1E-3	-87.5E-4
Statistics		
Min	-34.9E-3	-34.7E-3
Max	10.0E-4	35.0E-4
Mean	-12.7E-3	-12.0E-3
Sigma	10.9E-3	10.4E-3

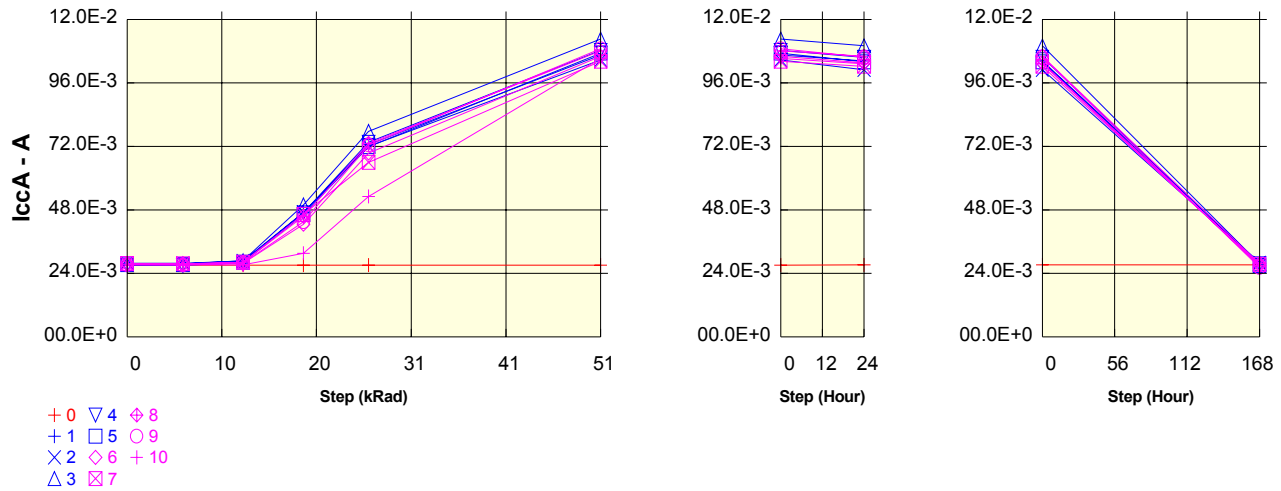
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	-12.5E-5	-12.5E-5
1	-13.0E-3	-24.5E-5
2	-18.1E-3	12.5E-5
3	-18.4E-3	-37.5E-5
4	-68.8E-4	-37.5E-5
5	-34.7E-3	-24.5E-5
6	35.0E-4	-24.5E-5
7	-30.0E-4	-12.5E-5
8	-78.8E-4	-87.5E-5
9	-12.5E-3	-20.1E-4
10	-87.5E-4	-24.5E-5
Statistics		
Min	-34.7E-3	-20.1E-4
Max	35.0E-4	12.5E-5
Mean	-12.0E-3	-46.1E-5
Sigma	10.4E-3	59.7E-5

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : IccA

Unit : A
No spec limit specified.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	27.1E-3	27.1E-3	27.1E-3	27.1E-3	27.1E-3	27.1E-3
1	27.7E-3	27.6E-3	28.4E-3	46.8E-3	72.7E-3	10.7E-2
2	27.8E-3	27.8E-3	28.7E-3	47.0E-3	72.0E-3	10.5E-2
3	27.6E-3	27.6E-3	28.8E-3	49.8E-3	77.6E-3	11.3E-2
4	27.1E-3	27.0E-3	28.0E-3	46.9E-3	73.6E-3	10.8E-2
5	27.3E-3	27.3E-3	28.2E-3	46.2E-3	71.9E-3	10.7E-2
6	27.4E-3	27.3E-3	27.8E-3	42.6E-3	69.5E-3	10.6E-2
7	27.7E-3	27.7E-3	28.2E-3	46.3E-3	66.0E-3	10.4E-2
8	27.5E-3	27.5E-3	28.2E-3	45.6E-3	73.2E-3	10.8E-2
9	27.3E-3	27.2E-3	27.9E-3	43.5E-3	72.5E-3	10.9E-2
10	27.2E-3	27.3E-3	27.2E-3	31.7E-3	53.0E-3	10.5E-2
Statistics						
Min	27.1E-3	27.0E-3	27.2E-3	31.7E-3	53.0E-3	10.4E-2
Max	27.8E-3	27.8E-3	28.8E-3	49.8E-3	77.6E-3	11.3E-2
Mean	27.5E-3	27.4E-3	28.1E-3	44.6E-3	70.2E-3	10.7E-2
Sigma	24.2E-5	23.2E-5	45.1E-5	49.7E-4	67.2E-4	24.9E-4

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	27.1E-3	27.2E-3
1	10.7E-2	10.4E-2
2	10.5E-2	10.1E-2
3	11.3E-2	11.0E-2
4	10.8E-2	10.6E-2
5	10.7E-2	10.4E-2
6	10.6E-2	10.4E-2
7	10.4E-2	10.2E-2
8	10.8E-2	10.6E-2
9	10.9E-2	10.6E-2
10	10.5E-2	10.3E-2
Statistics		
Min	10.4E-2	10.1E-2
Max	11.3E-2	11.0E-2
Mean	10.7E-2	10.5E-2
Sigma	24.9E-4	24.9E-4

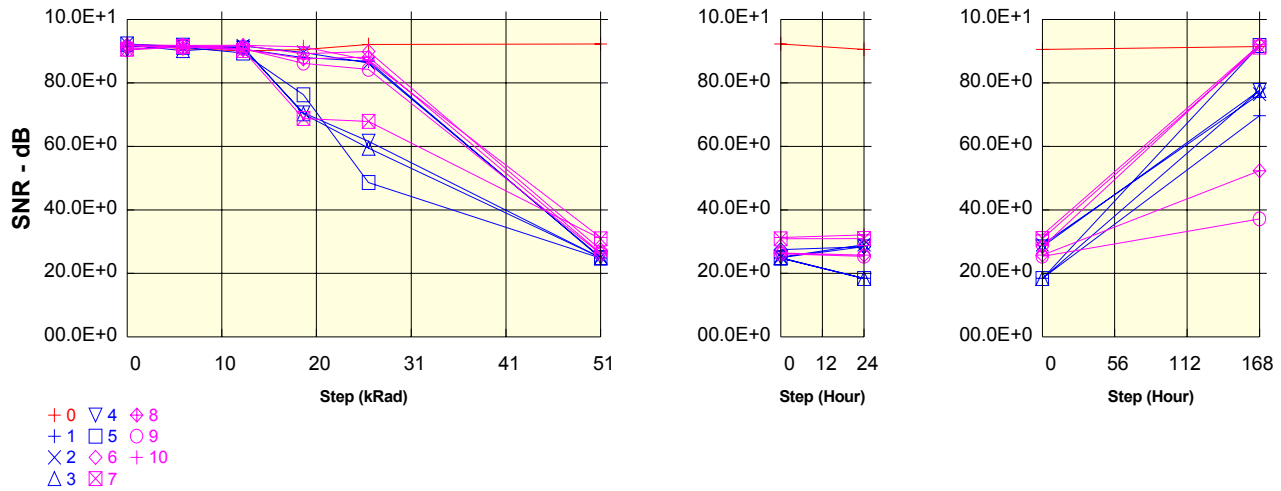
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	27.2E-3	27.2E-3
1	10.4E-2	27.9E-3
2	10.1E-2	28.0E-3
3	11.0E-2	27.6E-3
4	10.6E-2	27.6E-3
5	10.4E-2	26.9E-3
6	10.4E-2	27.0E-3
7	10.2E-2	27.4E-3
8	10.6E-2	27.7E-3
9	10.6E-2	26.2E-3
10	10.3E-2	27.0E-3
Statistics		
Min	10.1E-2	26.2E-3
Max	11.0E-2	28.0E-3
Mean	10.5E-2	27.3E-3
Sigma	24.9E-4	54.3E-5

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : SNR

Unit : dB
No spec limit specified.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	92.1E+0	90.8E+0	90.1E+0	90.5E+0	92.1E+0	92.3E+0
1	91.5E+0	91.4E+0	90.7E+0	87.9E+0	86.9E+0	24.8E+0
2	92.3E+0	91.5E+0	91.6E+0	89.6E+0	86.2E+0	25.2E+0
3	92.0E+0	90.1E+0	91.4E+0	70.2E+0	59.5E+0	25.0E+0
4	90.4E+0	91.9E+0	91.0E+0	70.6E+0	61.6E+0	25.0E+0
5	92.3E+0	91.2E+0	89.4E+0	76.3E+0	48.6E+0	24.8E+0
6	91.9E+0	91.0E+0	91.8E+0	89.2E+0	89.9E+0	27.5E+0
7	90.7E+0	91.5E+0	90.2E+0	68.8E+0	67.9E+0	30.9E+0
8	91.2E+0	91.9E+0	90.6E+0	87.6E+0	88.2E+0	26.4E+0
9	90.4E+0	91.3E+0	90.8E+0	86.2E+0	84.2E+0	26.2E+0
10	92.0E+0	91.8E+0	91.8E+0	91.4E+0	87.2E+0	31.3E+0
Statistics						
Min	90.4E+0	90.1E+0	89.4E+0	68.8E+0	48.6E+0	24.8E+0
Max	92.3E+0	91.9E+0	91.8E+0	91.4E+0	89.9E+0	31.3E+0
Mean	91.5E+0	91.3E+0	90.9E+0	81.8E+0	76.0E+0	26.7E+0
Sigma	74.9E-2	52.5E-2	76.1E-2	91.7E-1	15.1E+0	24.9E-1

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	92.3E+0	90.6E+0
1	24.8E+0	18.4E+0
2	25.2E+0	29.1E+0
3	25.0E+0	18.4E+0
4	25.0E+0	28.4E+0
5	24.8E+0	18.4E+0
6	27.5E+0	28.3E+0
7	30.9E+0	31.0E+0
8	26.4E+0	25.8E+0
9	26.2E+0	25.3E+0
10	31.3E+0	32.1E+0
Statistics		
Min	24.8E+0	18.4E+0
Max	31.3E+0	32.1E+0
Mean	26.7E+0	25.5E+0
Sigma	24.9E-1	53.2E-1

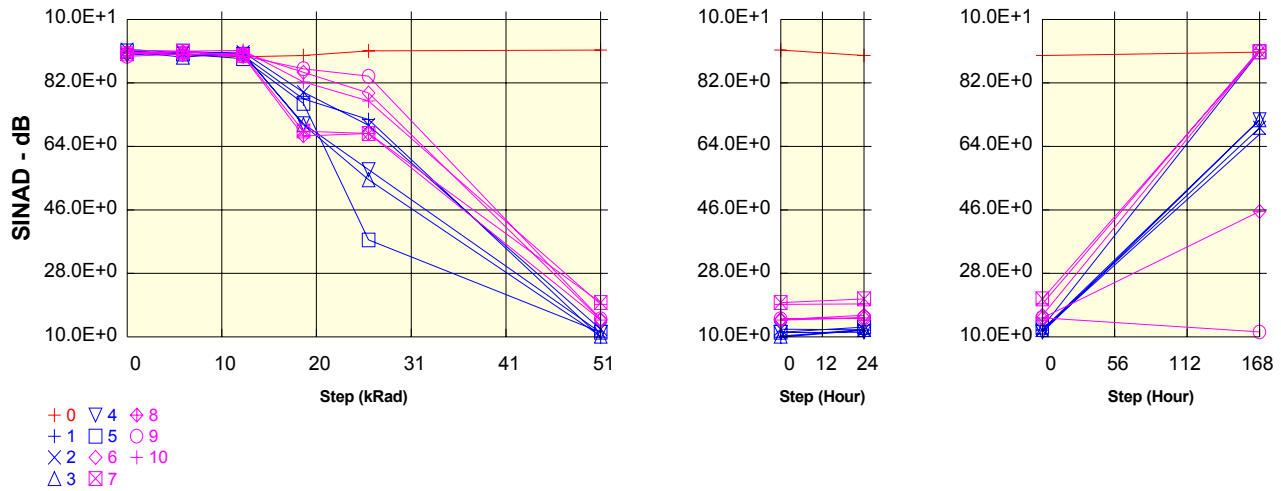
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	90.6E+0	91.4E+0
1	18.4E+0	69.7E+0
2	29.1E+0	76.5E+0
3	18.4E+0	77.6E+0
4	28.4E+0	77.7E+0
5	18.4E+0	91.8E+0
6	28.3E+0	92.1E+0
7	31.0E+0	91.3E+0
8	25.8E+0	52.4E+0
9	25.3E+0	37.2E+0
10	32.1E+0	92.0E+0
Statistics		
Min	18.4E+0	37.2E+0
Max	32.1E+0	92.1E+0
Mean	25.5E+0	75.8E+0
Sigma	53.2E-1	18.6E+0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : SINAD

Unit : dB
No spec limit specified.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	91.1E+0	90.0E+0	89.4E+0	89.8E+0	91.1E+0	91.3E+0
1	90.3E+0	90.2E+0	89.8E+0	77.5E+0	71.6E+0	99.1E-1
2	91.5E+0	90.6E+0	90.7E+0	79.4E+0	70.0E+0	12.2E+0
3	90.9E+0	89.3E+0	90.5E+0	70.1E+0	54.6E+0	10.2E+0
4	89.8E+0	91.0E+0	90.2E+0	70.4E+0	57.4E+0	11.2E+0
5	91.1E+0	90.2E+0	88.9E+0	76.2E+0	37.5E+0	11.3E+0
6	90.8E+0	90.1E+0	90.5E+0	85.0E+0	79.1E+0	14.9E+0
7	90.3E+0	90.9E+0	89.9E+0	68.4E+0	67.7E+0	19.7E+0
8	90.4E+0	90.9E+0	89.6E+0	67.0E+0	67.6E+0	14.8E+0
9	89.5E+0	90.2E+0	89.7E+0	86.0E+0	83.9E+0	15.2E+0
10	91.3E+0	91.0E+0	91.2E+0	82.3E+0	76.9E+0	19.2E+0
Statistics						
Min	89.5E+0	89.3E+0	88.9E+0	67.0E+0	37.5E+0	99.1E-1
Max	91.5E+0	91.0E+0	91.2E+0	86.0E+0	83.9E+0	19.7E+0
Mean	90.6E+0	90.4E+0	90.1E+0	76.2E+0	66.6E+0	13.9E+0
Sigma	62.0E-2	54.5E-2	67.1E-2	69.9E-1	13.7E+0	35.2E-1

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	91.3E+0	89.8E+0
1	99.1E-1	11.9E+0
2	12.2E+0	12.0E+0
3	10.2E+0	12.1E+0
4	11.2E+0	11.4E+0
5	11.3E+0	12.8E+0
6	14.9E+0	16.2E+0
7	19.7E+0	20.8E+0
8	14.8E+0	15.4E+0
9	15.2E+0	15.4E+0
10	19.2E+0	19.4E+0
Statistics		
Min	99.1E-1	11.4E+0
Max	19.7E+0	20.8E+0
Mean	13.9E+0	14.7E+0
Sigma	35.2E-1	33.1E-1

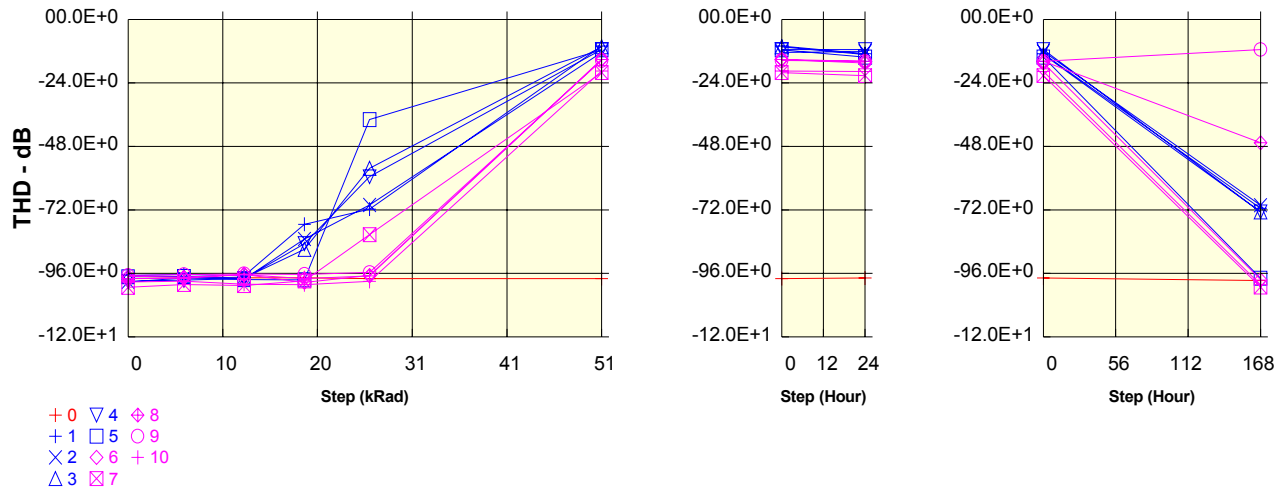
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	89.8E+0	90.7E+0
1	11.9E+0	67.4E+0
2	12.0E+0	69.3E+0
3	12.1E+0	71.5E+0
4	11.4E+0	71.5E+0
5	12.8E+0	90.8E+0
6	16.2E+0	91.2E+0
7	20.8E+0	90.9E+0
8	15.4E+0	45.6E+0
9	15.4E+0	11.4E+0
10	19.4E+0	91.4E+0
Statistics		
Min	11.4E+0	11.4E+0
Max	20.8E+0	91.4E+0
Mean	14.7E+0	70.1E+0
Sigma	33.1E-1	25.4E+0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : THD

Unit : dB
No spec limit specified.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	-97.9E+0	-97.7E+0	-97.6E+0	-97.7E+0	-98.0E+0	-98.0E+0
1	-96.8E+0	-96.4E+0	-97.0E+0	-77.5E+0	-71.7E+0	-10.1E+0
2	-99.2E+0	-97.8E+0	-98.1E+0	-83.0E+0	-70.1E+0	-12.5E+0
3	-97.1E+0	-97.2E+0	-97.8E+0	-86.9E+0	-56.3E+0	-10.4E+0
4	-99.0E+0	-98.5E+0	-97.9E+0	-84.8E+0	-59.5E+0	-11.4E+0
5	-97.3E+0	-97.2E+0	-98.3E+0	-98.4E+0	-37.8E+0	-11.5E+0
6	-97.1E+0	-97.5E+0	-96.4E+0	-99.5E+0	-96.8E+0	-15.1E+0
7	-10.1E+1	-10.0E+1	-10.1E+1	-98.8E+0	-81.4E+0	-20.1E+0
8	-97.9E+0	-97.9E+0	-96.5E+0	-97.9E+0	-97.0E+0	-15.1E+0
9	-96.8E+0	-96.5E+0	-96.2E+0	-96.4E+0	-95.7E+0	-15.5E+0
10	-99.2E+0	-98.9E+0	-10.0E+1	-10.0E+1	-99.0E+0	-19.5E+0
Statistics						
Min	-10.1E+1	-10.0E+1	-10.1E+1	-10.0E+1	-99.0E+0	-20.1E+0
Max	-96.8E+0	-96.4E+0	-96.2E+0	-77.5E+0	-37.8E+0	-10.1E+0
Mean	-98.2E+0	-97.8E+0	-97.9E+0	-92.3E+0	-76.5E+0	-14.1E+0
Sigma	14.8E-1	11.6E-1	15.2E-1	84.1E-1	21.0E+0	35.8E-1

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	-98.0E+0	-97.8E+0
1	-10.1E+0	-13.0E+0
2	-12.5E+0	-12.1E+0
3	-10.4E+0	-13.2E+0
4	-11.4E+0	-11.4E+0
5	-11.5E+0	-14.2E+0
6	-15.1E+0	-16.4E+0
7	-20.1E+0	-21.2E+0
8	-15.1E+0	-15.8E+0
9	-15.5E+0	-15.9E+0
10	-19.5E+0	-19.7E+0
Statistics		
Min	-20.1E+0	-21.2E+0
Max	-10.1E+0	-11.4E+0
Mean	-14.1E+0	-15.3E+0
Sigma	35.8E-1	32.0E-1

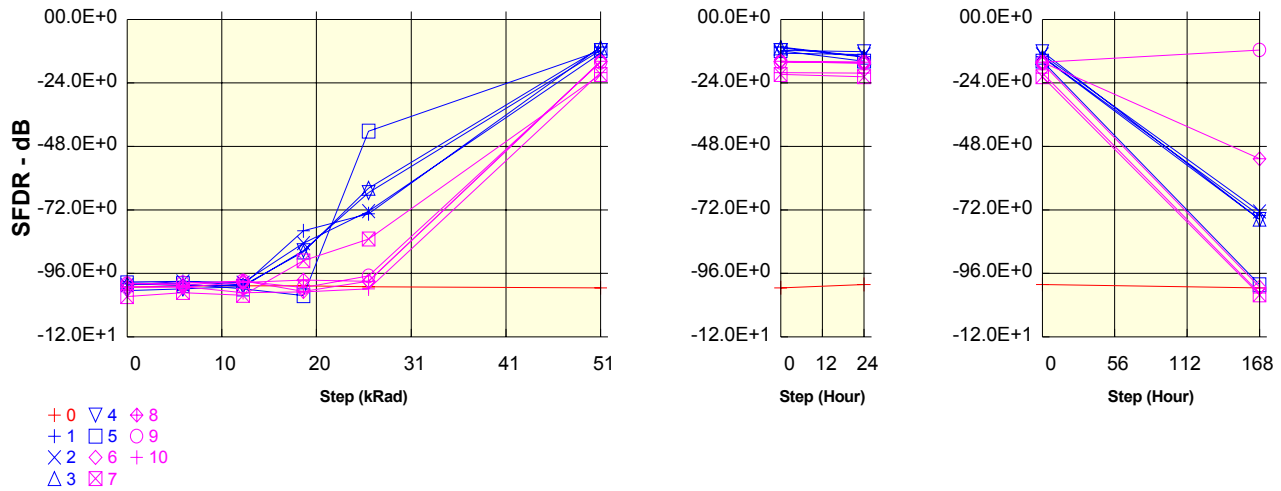
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	-97.8E+0	-98.7E+0
1	-13.0E+0	-71.4E+0
2	-12.1E+0	-70.2E+0
3	-13.2E+0	-72.8E+0
4	-11.4E+0	-72.7E+0
5	-14.2E+0	-97.8E+0
6	-16.4E+0	-98.4E+0
7	-21.2E+0	-10.1E+1
8	-15.8E+0	-46.6E+0
9	-15.9E+0	-11.4E+0
10	-19.7E+0	-10.0E+1
Statistics		
Min	-21.2E+0	-10.1E+1
Max	-11.4E+0	-11.4E+0
Mean	-15.3E+0	-74.3E+0
Sigma	32.0E-1	28.5E+0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : SFDR

Unit : dB
No spec limit specified.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	-10.1E+1	-10.1E+1	-10.1E+1	-10.1E+1	-10.1E+1	-10.1E+1
1	-99.2E+0	-99.0E+0	-10.0E+1	-79.9E+0	-73.5E+0	-10.5E+0
2	-10.0E+1	-99.0E+0	-99.5E+0	-84.6E+0	-72.5E+0	-12.8E+0
3	-99.9E+0	-10.1E+1	-10.1E+1	-87.9E+0	-63.8E+0	-10.7E+0
4	-10.3E+1	-10.2E+1	-10.1E+1	-87.4E+0	-65.5E+0	-11.7E+0
5	-99.6E+0	-99.9E+0	-10.2E+1	-10.4E+1	-42.2E+0	-11.8E+0
6	-99.7E+0	-10.0E+1	-98.8E+0	-10.3E+1	-99.0E+0	-15.9E+0
7	-10.5E+1	-10.3E+1	-10.4E+1	-91.3E+0	-83.0E+0	-20.8E+0
8	-10.1E+1	-10.1E+1	-99.4E+0	-98.6E+0	-99.0E+0	-15.8E+0
9	-10.0E+1	-99.6E+0	-98.9E+0	-10.1E+1	-97.0E+0	-16.2E+0
10	-10.1E+1	-10.1E+1	-10.3E+1	-10.3E+1	-10.2E+1	-20.1E+0
Statistics						
Min	-10.5E+1	-10.3E+1	-10.4E+1	-10.4E+1	-10.2E+1	-20.8E+0
Max	-99.2E+0	-99.0E+0	-98.8E+0	-79.9E+0	-42.2E+0	-10.5E+0
Mean	-10.1E+1	-10.1E+1	-10.1E+1	-94.1E+0	-79.7E+0	-14.6E+0
Sigma	17.1E-1	13.3E-1	18.4E-1	89.5E-1	19.7E+0	37.4E-1

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	-10.1E+1	-10.0E+1
1	-10.5E+0	-14.0E+0
2	-12.8E+0	-13.2E+0
3	-10.7E+0	-14.3E+0
4	-11.7E+0	-12.2E+0
5	-11.8E+0	-15.8E+0
6	-15.9E+0	-16.7E+0
7	-20.8E+0	-21.6E+0
8	-15.8E+0	-16.2E+0
9	-16.2E+0	-16.2E+0
10	-20.1E+0	-20.3E+0
Statistics		
Min	-20.8E+0	-21.6E+0
Max	-10.5E+0	-12.2E+0
Mean	-14.6E+0	-16.0E+0
Sigma	37.4E-1	29.8E-1

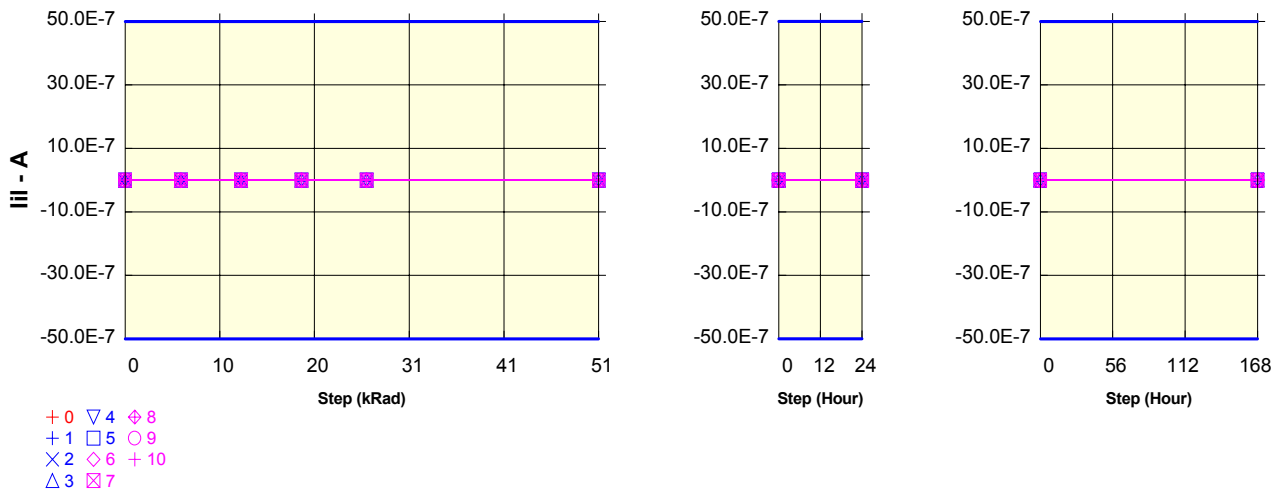
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	-10.0E+1	-10.1E+1
1	-14.0E+0	-74.1E+0
2	-13.2E+0	-72.6E+0
3	-14.3E+0	-75.6E+0
4	-12.2E+0	-75.6E+0
5	-15.8E+0	-10.0E+1
6	-16.7E+0	-10.1E+1
7	-21.6E+0	-10.4E+1
8	-16.2E+0	-52.7E+0
9	-16.2E+0	-11.6E+0
10	-20.3E+0	-10.3E+1
Statistics		
Min	-21.6E+0	-10.4E+1
Max	-12.2E+0	-11.6E+0
Mean	-16.0E+0	-77.1E+0
Sigma	29.8E-1	28.8E+0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : IILCONVST/

Unit : A
Spec Limit Min : -50.0E-7
Spec Limit Max : 50.0E-7
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	-20.0E-11	10.0E-11	10.0E-11	10.0E-11	50.0E-12	-20.0E-11
1	00.0E+0	50.0E-12	10.0E-11	10.0E-11	00.0E+0	50.0E-12
2	-15.0E-11	00.0E+0	10.0E-11	50.0E-12	15.0E-11	-50.0E-12
3	00.0E+0	50.0E-12	50.0E-12	50.0E-12	15.0E-11	-50.0E-12
4	50.0E-12	50.0E-12	-50.0E-12	50.0E-12	10.0E-11	10.0E-11
5	-50.0E-12	10.0E-11	15.0E-11	10.0E-11	-50.0E-12	50.0E-12
6	50.0E-12	50.0E-12	-50.0E-12	50.0E-12	00.0E+0	00.0E+0
7	10.0E-11	10.0E-11	50.0E-12	50.0E-12	15.0E-11	-50.0E-12
8	00.0E+0	50.0E-12	50.0E-12	50.0E-12	50.0E-12	-50.0E-12
9	00.0E+0	50.0E-12	-50.0E-12	10.0E-11	10.0E-11	10.0E-11
10	-50.0E-12	50.0E-12	50.0E-12	50.0E-12	50.0E-12	50.0E-12
Statistics						
Min	-15.0E-11	00.0E+0	-50.0E-12	50.0E-12	-50.0E-12	-50.0E-12
Max	10.0E-11	10.0E-11	15.0E-11	10.0E-11	15.0E-11	10.0E-11
Mean	-50.0E-13	55.0E-12	40.0E-12	65.0E-12	70.0E-12	15.0E-12
Sigma	68.5E-12	28.4E-12	69.9E-12	24.2E-12	71.5E-12	62.6E-12

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	-20.0E-11	15.0E-11
1	50.0E-12	-50.0E-12
2	-50.0E-12	10.0E-11
3	-50.0E-12	-50.0E-12
4	10.0E-11	20.0E-11
5	50.0E-12	00.0E+0
6	00.0E+0	-10.0E-11
7	-50.0E-12	-15.0E-11
8	-50.0E-12	10.0E-11
9	10.0E-11	50.0E-12
10	50.0E-12	50.0E-12
Statistics		
Min	-50.0E-12	-15.0E-11
Max	10.0E-11	20.0E-11
Mean	15.0E-12	15.0E-12
Sigma	62.6E-12	10.6E-11

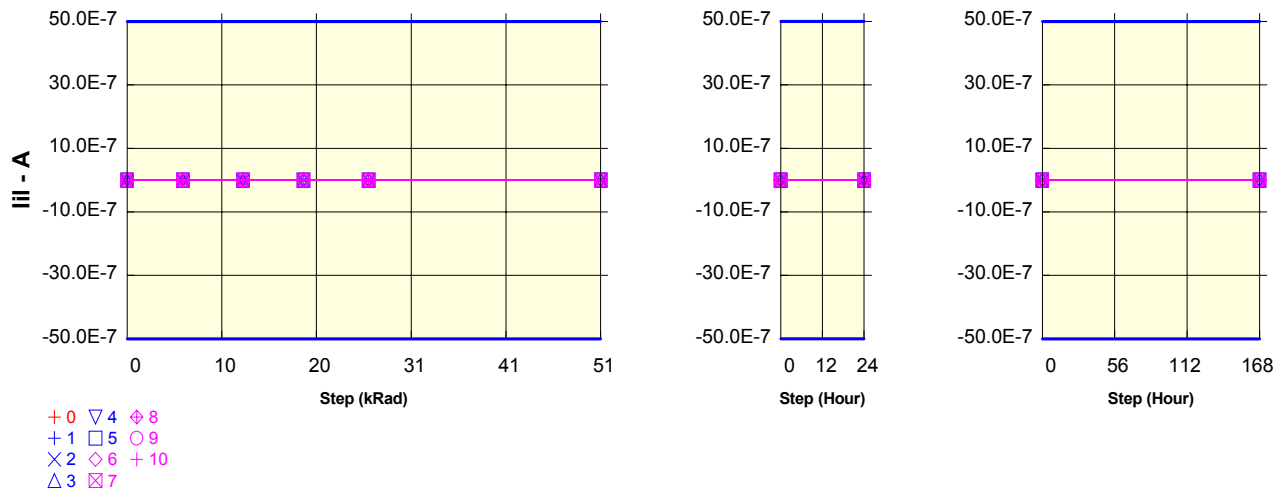
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	15.0E-11	50.0E-12
1	-50.0E-12	10.0E-11
2	10.0E-11	10.0E-11
3	-50.0E-12	50.0E-12
4	20.0E-11	15.0E-11
5	00.0E+0	50.0E-12
6	-10.0E-11	-50.0E-12
7	-15.0E-11	10.0E-11
8	10.0E-11	10.0E-11
9	50.0E-12	50.0E-12
10	50.0E-12	10.0E-11
Statistics		
Min	-15.0E-11	-50.0E-12
Max	20.0E-11	15.0E-11
Mean	15.0E-12	75.0E-12
Sigma	10.6E-11	54.0E-12

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : IILCS/

Unit : A
Spec Limit Min : -50.0E-7
Spec Limit Max : 50.0E-7
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	-10.0E-11	50.0E-12	50.0E-12	50.0E-12	10.0E-11	-10.0E-11
1	10.0E-11	50.0E-12	50.0E-12	10.0E-11	50.0E-12	-50.0E-12
2	10.0E-11	00.0E+0	10.0E-11	10.0E-11	00.0E+0	00.0E+0
3	-10.0E-11	10.0E-11	-50.0E-12	10.0E-11	10.0E-11	-50.0E-12
4	50.0E-12	10.0E-11	50.0E-12	00.0E+0	10.0E-11	00.0E+0
5	-50.0E-12	10.0E-11	50.0E-12	50.0E-12	00.0E+0	-50.0E-12
6	-50.0E-12	50.0E-12	10.0E-11	50.0E-12	10.0E-11	50.0E-12
7	-50.0E-12	50.0E-12	50.0E-12	10.0E-11	50.0E-12	50.0E-12
8	50.0E-12	50.0E-12	20.0E-11	10.0E-11	10.0E-11	10.0E-11
9	-50.0E-12	50.0E-12	-50.0E-12	50.0E-12	50.0E-12	50.0E-12
10	50.0E-12	10.0E-11	10.0E-11	50.0E-12	10.0E-11	15.0E-11
Statistics						
Min	-10.0E-11	00.0E+0	-50.0E-12	00.0E+0	00.0E+0	-50.0E-12
Max	10.0E-11	10.0E-11	20.0E-11	10.0E-11	10.0E-11	15.0E-11
Mean	50.0E-13	65.0E-12	60.0E-12	70.0E-12	65.0E-12	25.0E-12
Sigma	72.5E-12	33.7E-12	73.8E-12	35.0E-12	41.2E-12	67.7E-12

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	-10.0E-11	25.0E-11
1	-50.0E-12	00.0E+0
2	00.0E+0	00.0E+0
3	-50.0E-12	-50.0E-12
4	00.0E+0	-15.0E-11
5	-50.0E-12	50.0E-12
6	50.0E-12	-15.0E-11
7	50.0E-12	10.0E-11
8	10.0E-11	-50.0E-12
9	50.0E-12	-20.0E-11
10	15.0E-11	-15.0E-11
Statistics		
Min	-50.0E-12	-20.0E-11
Max	15.0E-11	10.0E-11
Mean	25.0E-12	-60.0E-12
Sigma	67.7E-12	99.4E-12

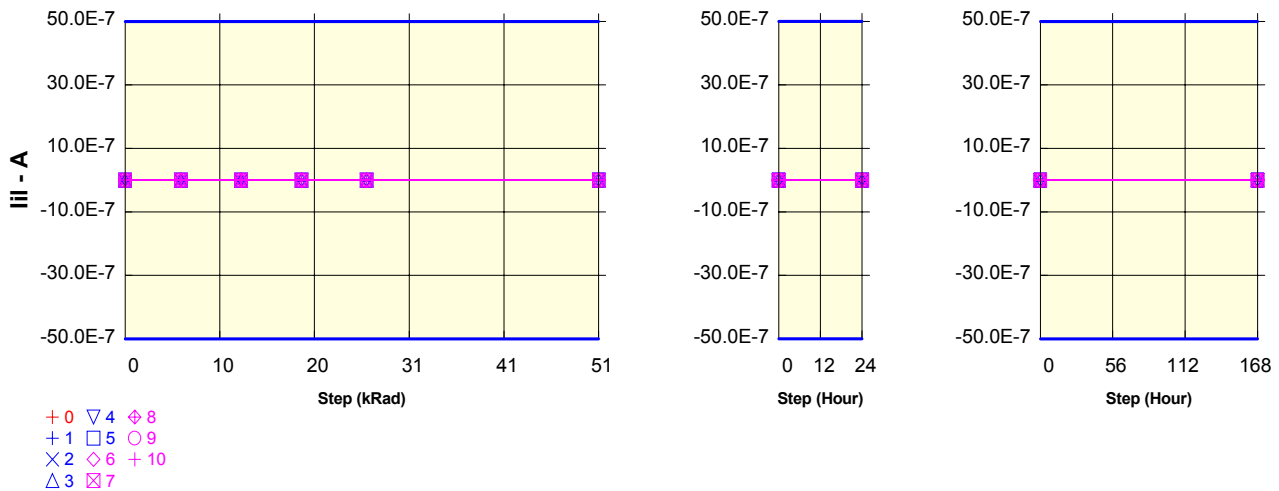
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	25.0E-11	15.0E-11
1	00.0E+0	10.0E-11
2	00.0E+0	50.0E-12
3	-50.0E-12	10.0E-11
4	-15.0E-11	00.0E+0
5	50.0E-12	-50.0E-12
6	-15.0E-11	-50.0E-12
7	10.0E-11	50.0E-12
8	-50.0E-12	-50.0E-12
9	-20.0E-11	50.0E-12
10	-15.0E-11	00.0E+0
Statistics		
Min	-20.0E-11	-50.0E-12
Max	10.0E-11	10.0E-11
Mean	-60.0E-12	20.0E-12
Sigma	99.4E-12	58.7E-12

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : IILBYTE

Unit : A
Spec Limit Min : -50.0E-7
Spec Limit Max : 50.0E-7
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	-10.0E-11	10.0E-11	50.0E-12	00.0E+0	50.0E-12	-15.0E-11
1	-50.0E-12	00.0E+0	-50.0E-12	10.0E-11	50.0E-12	-10.0E-11
2	00.0E+0	20.0E-11	50.0E-12	50.0E-12	50.0E-12	-50.0E-12
3	-50.0E-12	-50.0E-12	10.0E-11	10.0E-11	-50.0E-12	50.0E-12
4	-50.0E-12	50.0E-12	10.0E-11	50.0E-12	50.0E-12	50.0E-12
5	-10.0E-11	-50.0E-12	00.0E+0	50.0E-12	00.0E+0	00.0E+0
6	-50.0E-12	00.0E+0	20.0E-11	50.0E-12	10.0E-11	00.0E+0
7	50.0E-12	00.0E+0	50.0E-12	50.0E-12	50.0E-12	50.0E-12
8	-50.0E-12	10.0E-11	50.0E-12	-50.0E-12	50.0E-12	50.0E-12
9	50.0E-12	50.0E-12	10.0E-11	50.0E-12	50.0E-12	10.0E-11
10	-50.0E-12	50.0E-12	50.0E-12	50.0E-12	-50.0E-12	50.0E-12
Statistics						
Min	-10.0E-11	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12	-10.0E-11
Max	50.0E-12	20.0E-11	20.0E-11	10.0E-11	10.0E-11	10.0E-11
Mean	-30.0E-12	35.0E-12	65.0E-12	50.0E-12	30.0E-12	20.0E-12
Sigma	48.3E-12	74.7E-12	66.9E-12	40.8E-12	48.3E-12	58.7E-12

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	-15.0E-11	50.0E-12
1	-10.0E-11	-50.0E-12
2	-50.0E-12	-50.0E-12
3	50.0E-12	-50.0E-12
4	50.0E-12	-10.0E-11
5	00.0E+0	50.0E-12
6	00.0E+0	-50.0E-12
7	50.0E-12	00.0E+0
8	50.0E-12	50.0E-12
9	10.0E-11	00.0E+0
10	50.0E-12	10.0E-11
Statistics		
Min	-10.0E-11	-10.0E-11
Max	10.0E-11	10.0E-11
Mean	20.0E-12	-10.0E-12
Sigma	58.7E-12	61.5E-12

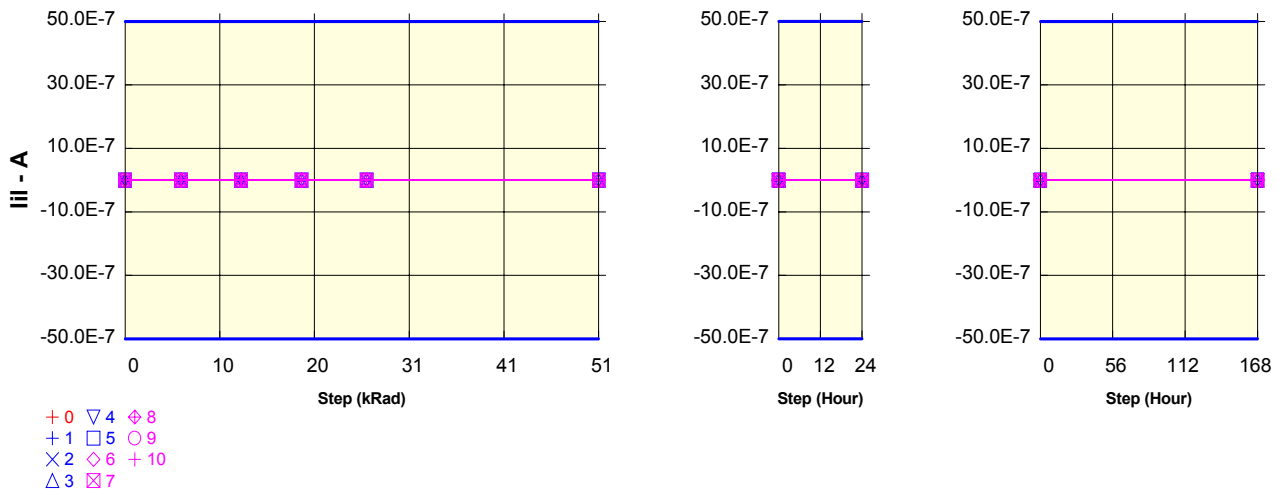
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	50.0E-12	10.0E-11
1	-50.0E-12	50.0E-12
2	-50.0E-12	10.0E-11
3	-50.0E-12	10.0E-11
4	-10.0E-11	-50.0E-12
5	50.0E-12	10.0E-11
6	-50.0E-12	50.0E-12
7	00.0E+0	00.0E+0
8	50.0E-12	50.0E-12
9	00.0E+0	00.0E+0
10	10.0E-11	10.0E-11
Statistics		
Min	-10.0E-11	-50.0E-12
Max	10.0E-11	10.0E-11
Mean	-10.0E-12	50.0E-12
Sigma	61.5E-12	52.7E-12

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : IIRESET/

Unit : A
Spec Limit Min : -50.0E-7
Spec Limit Max : 50.0E-7
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	-20.5E-10	-11.0E-10	-17.5E-10	-17.5E-10	-12.0E-10	-15.0E-10
1	-15.0E-10	-16.0E-10	-18.0E-10	-15.0E-10	-14.0E-10	-12.0E-10
2	-16.5E-10	-16.5E-10	-12.0E-10	-17.5E-10	-11.5E-10	-14.0E-10
3	-22.5E-10	-16.5E-10	-24.0E-10	-11.5E-10	-22.5E-10	-20.5E-10
4	-19.5E-10	-18.5E-10	-21.5E-10	-17.0E-10	-25.5E-10	-18.5E-10
5	-15.5E-10	-13.5E-10	-12.5E-10	-11.0E-10	-24.5E-10	-13.5E-10
6	-15.5E-10	-18.5E-10	-16.0E-10	-19.5E-10	-22.0E-10	-16.0E-10
7	-16.5E-10	-13.0E-10	-20.0E-10	-13.5E-10	-14.0E-10	-27.5E-10
8	-12.5E-10	-17.0E-10	-17.0E-10	-13.0E-10	-18.5E-10	-18.0E-10
9	-18.0E-10	-15.5E-10	-15.0E-10	-17.0E-10	-21.5E-10	-16.5E-10
10	-17.5E-10	-14.0E-10	-25.5E-10	-16.5E-10	-12.0E-10	-11.0E-10
Statistics						
Min	-22.5E-10	-18.5E-10	-25.5E-10	-19.5E-10	-25.5E-10	-27.5E-10
Max	-12.5E-10	-13.0E-10	-12.0E-10	-11.0E-10	-11.5E-10	-11.0E-10
Mean	-16.9E-10	-15.9E-10	-18.2E-10	-15.2E-10	-18.6E-10	-16.8E-10
Sigma	27.3E-11	19.3E-11	45.8E-11	28.1E-11	53.1E-11	48.1E-11

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	-15.0E-10	-11.0E-10
1	-12.0E-10	-25.0E-10
2	-14.0E-10	-19.0E-10
3	-20.5E-10	-24.0E-10
4	-18.5E-10	-20.0E-10
5	-13.5E-10	-35.0E-10
6	-16.0E-10	-20.5E-10
7	-27.5E-10	-35.0E-10
8	-18.0E-10	-16.5E-10
9	-16.5E-10	-18.5E-10
10	-11.0E-10	-14.5E-10
Statistics		
Min	-27.5E-10	-35.0E-10
Max	-11.0E-10	-14.5E-10
Mean	-16.8E-10	-22.8E-10
Sigma	48.1E-11	71.4E-11

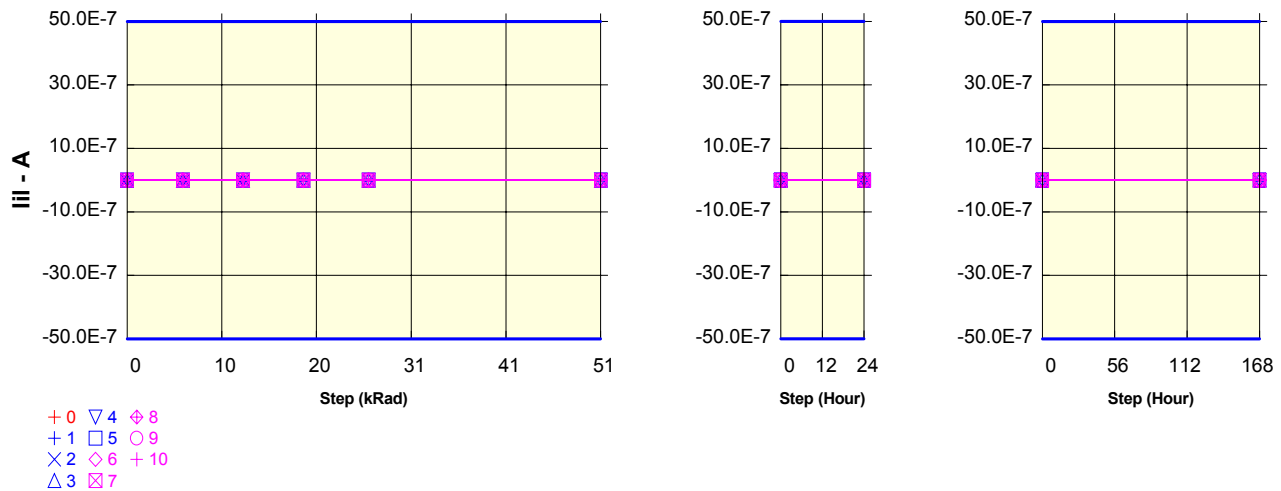
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	-11.0E-10	-20.5E-10
1	-25.0E-10	-21.5E-10
2	-19.0E-10	-20.0E-10
3	-24.0E-10	-14.5E-10
4	-20.0E-10	-17.0E-10
5	-35.0E-10	-14.5E-10
6	-20.5E-10	-15.0E-10
7	-35.0E-10	-15.0E-10
8	-16.5E-10	-14.5E-10
9	-18.5E-10	-17.0E-10
10	-14.5E-10	-15.0E-10
Statistics		
Min	-35.0E-10	-21.5E-10
Max	-14.5E-10	-14.5E-10
Mean	-22.8E-10	-16.4E-10
Sigma	71.4E-11	25.0E-11

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : IIRD/

Unit : A
Spec Limit Min : -50.0E-7
Spec Limit Max : 50.0E-7
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	10.0E-11	50.0E-12	-10.0E-11	00.0E+0	10.0E-11	-10.0E-11
1	10.0E-11	50.0E-12	50.0E-12	10.0E-11	-50.0E-12	00.0E+0
2	-15.0E-11	00.0E+0	50.0E-12	10.0E-11	50.0E-12	10.0E-11
3	-15.0E-11	00.0E+0	-50.0E-12	10.0E-11	50.0E-12	50.0E-12
4	-50.0E-12	-50.0E-12	00.0E+0	00.0E+0	00.0E+0	10.0E-11
5	10.0E-11	00.0E+0	50.0E-12	50.0E-12	50.0E-12	-50.0E-12
6	10.0E-11	00.0E+0	10.0E-11	-50.0E-12	50.0E-12	10.0E-11
7	00.0E+0	50.0E-12	10.0E-11	00.0E+0	10.0E-11	00.0E+0
8	10.0E-11	50.0E-12	00.0E+0	10.0E-11	10.0E-11	00.0E+0
9	00.0E+0	00.0E+0	50.0E-12	10.0E-11	50.0E-12	50.0E-12
10	-10.0E-11	00.0E+0	50.0E-12	10.0E-11	50.0E-12	00.0E+0
Statistics						
Min	-15.0E-11	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12	-50.0E-12
Max	10.0E-11	50.0E-12	10.0E-11	10.0E-11	10.0E-11	10.0E-11
Mean	-50.0E-13	10.0E-12	40.0E-12	60.0E-12	45.0E-12	35.0E-12
Sigma	10.4E-11	31.6E-12	45.9E-12	56.8E-12	43.8E-12	53.0E-12

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	-10.0E-11	40.0E-11
1	00.0E+0	-35.0E-11
2	10.0E-11	35.0E-11
3	50.0E-12	35.0E-11
4	10.0E-11	00.0E+0
5	-50.0E-12	-25.0E-11
6	10.0E-11	00.0E+0
7	00.0E+0	-35.0E-11
8	00.0E+0	20.0E-11
9	50.0E-12	-35.0E-11
10	00.0E+0	-15.0E-11
Statistics		
Min	-50.0E-12	-35.0E-11
Max	10.0E-11	35.0E-11
Mean	35.0E-12	-55.0E-12
Sigma	53.0E-12	28.0E-11

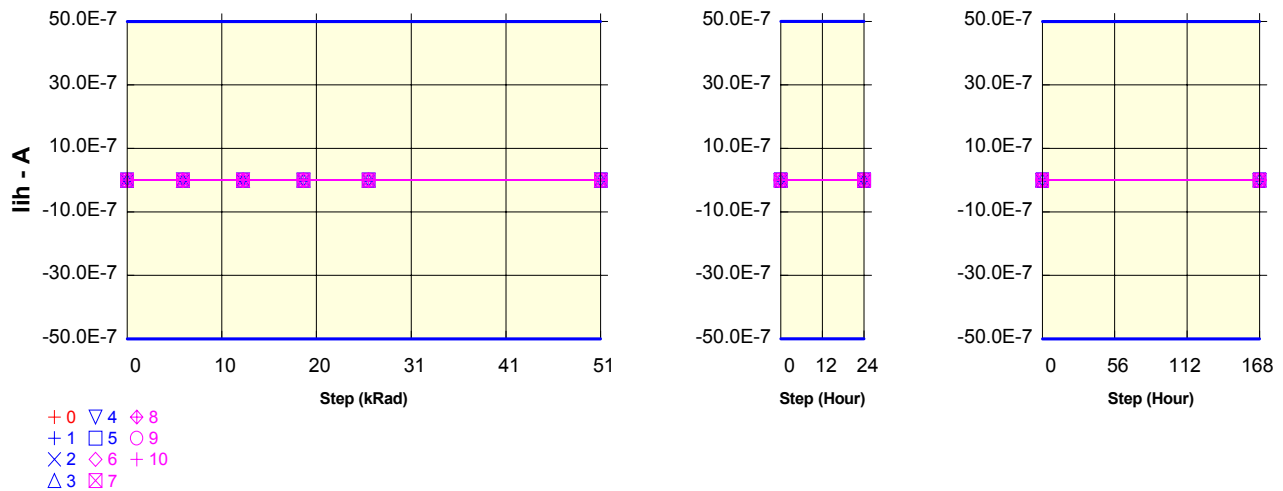
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	40.0E-11	-15.0E-11
1	-35.0E-11	-20.0E-11
2	35.0E-11	-20.0E-11
3	35.0E-11	00.0E+0
4	00.0E+0	-50.0E-12
5	-25.0E-11	50.0E-12
6	00.0E+0	50.0E-12
7	-35.0E-11	-50.0E-12
8	20.0E-11	-10.0E-11
9	-35.0E-11	-50.0E-12
10	-15.0E-11	-50.0E-12
Statistics		
Min	-35.0E-11	-20.0E-11
Max	35.0E-11	50.0E-12
Mean	-55.0E-12	-60.0E-12
Sigma	28.0E-11	87.6E-12

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : lihCONVST/

Unit : A
Spec Limit Min : -50.0E-7
Spec Limit Max : 50.0E-7
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	70.0E-11	25.0E-11	25.0E-11	40.0E-11	25.0E-11	10.0E-10
1	65.0E-11	30.0E-11	20.0E-11	30.0E-11	40.0E-11	35.0E-11
2	60.0E-11	40.0E-11	35.0E-11	30.0E-11	30.0E-11	40.0E-11
3	55.0E-11	30.0E-11	20.0E-11	30.0E-11	40.0E-11	40.0E-11
4	35.0E-11	25.0E-11	30.0E-11	35.0E-11	20.0E-11	50.0E-11
5	45.0E-11	35.0E-11	25.0E-11	20.0E-11	35.0E-11	35.0E-11
6	45.0E-11	25.0E-11	35.0E-11	25.0E-11	35.0E-11	40.0E-11
7	40.0E-11	20.0E-11	35.0E-11	25.0E-11	35.0E-11	35.0E-11
8	45.0E-11	25.0E-11	25.0E-11	25.0E-11	40.0E-11	35.0E-11
9	35.0E-11	35.0E-11	20.0E-11	30.0E-11	30.0E-11	35.0E-11
10	35.0E-11	30.0E-11	25.0E-11	40.0E-11	25.0E-11	35.0E-11
Statistics						
Min	35.0E-11	20.0E-11	20.0E-11	20.0E-11	20.0E-11	35.0E-11
Max	65.0E-11	40.0E-11	35.0E-11	40.0E-11	40.0E-11	50.0E-11
Mean	46.0E-11	29.5E-11	27.0E-11	29.0E-11	33.0E-11	38.0E-11
Sigma	10.7E-11	59.9E-12	63.2E-12	56.8E-12	67.5E-12	48.3E-12

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	10.0E-10	25.0E-11
1	35.0E-11	40.0E-11
2	40.0E-11	25.0E-11
3	40.0E-11	30.0E-11
4	50.0E-11	35.0E-11
5	35.0E-11	20.0E-11
6	40.0E-11	40.0E-11
7	35.0E-11	30.0E-11
8	35.0E-11	30.0E-11
9	35.0E-11	30.0E-11
10	35.0E-11	20.0E-11
Statistics		
Min	35.0E-11	20.0E-11
Max	50.0E-11	40.0E-11
Mean	38.0E-11	30.0E-11
Sigma	48.3E-12	70.7E-12

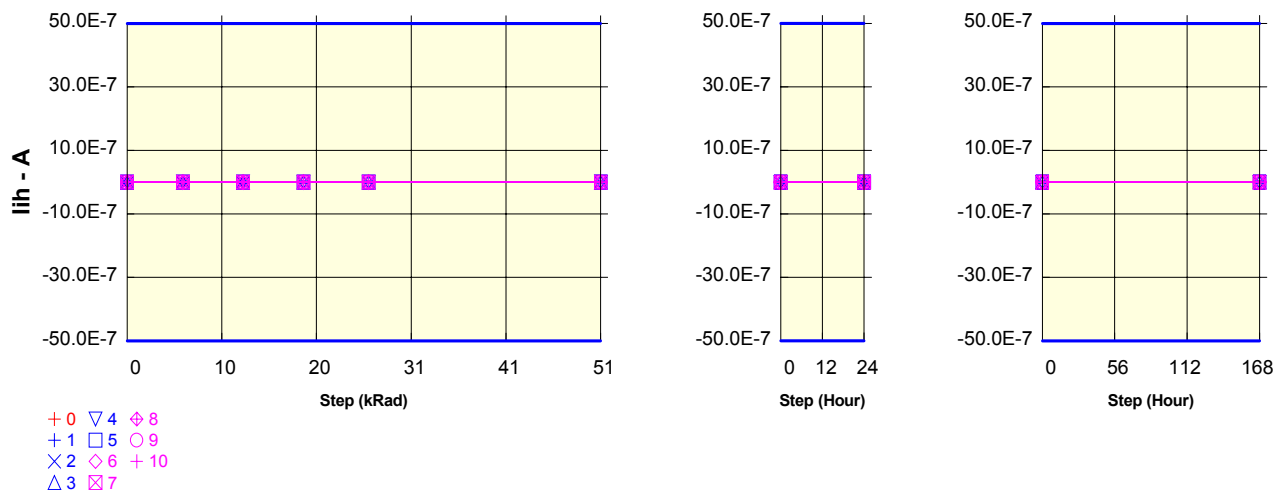
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	25.0E-11	30.0E-11
1	40.0E-11	40.0E-11
2	25.0E-11	25.0E-11
3	30.0E-11	30.0E-11
4	35.0E-11	30.0E-11
5	20.0E-11	30.0E-11
6	40.0E-11	30.0E-11
7	30.0E-11	30.0E-11
8	30.0E-11	40.0E-11
9	30.0E-11	25.0E-11
10	20.0E-11	30.0E-11
Statistics		
Min	20.0E-11	25.0E-11
Max	40.0E-11	40.0E-11
Mean	30.0E-11	31.0E-11
Sigma	70.7E-12	51.6E-12

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : lihCS/

Unit : A
Spec Limit Min : -50.0E-7
Spec Limit Max : 50.0E-7
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	50.0E-11	20.0E-11	25.0E-11	30.0E-11	25.0E-11	80.0E-11
1	60.0E-11	25.0E-11	35.0E-11	20.0E-11	25.0E-11	45.0E-11
2	40.0E-11	25.0E-11	40.0E-11	30.0E-11	30.0E-11	45.0E-11
3	45.0E-11	35.0E-11	25.0E-11	30.0E-11	15.0E-11	40.0E-11
4	40.0E-11	30.0E-11	25.0E-11	25.0E-11	15.0E-11	40.0E-11
5	45.0E-11	30.0E-11	40.0E-11	35.0E-11	20.0E-11	35.0E-11
6	45.0E-11	20.0E-11	25.0E-11	20.0E-11	25.0E-11	35.0E-11
7	30.0E-11	30.0E-11	25.0E-11	30.0E-11	30.0E-11	35.0E-11
8	35.0E-11	40.0E-11	15.0E-11	20.0E-11	30.0E-11	25.0E-11
9	25.0E-11	25.0E-11	25.0E-11	30.0E-11	30.0E-11	30.0E-11
10	35.0E-11	30.0E-11	30.0E-11	25.0E-11	25.0E-11	40.0E-11
Statistics						
Min	25.0E-11	20.0E-11	15.0E-11	20.0E-11	15.0E-11	25.0E-11
Max	60.0E-11	40.0E-11	40.0E-11	35.0E-11	30.0E-11	45.0E-11
Mean	40.0E-11	29.0E-11	28.5E-11	26.5E-11	24.5E-11	37.0E-11
Sigma	97.2E-12	56.8E-12	78.4E-12	53.0E-12	59.9E-12	63.2E-12

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	80.0E-11	15.0E-11
1	45.0E-11	40.0E-11
2	45.0E-11	45.0E-11
3	40.0E-11	35.0E-11
4	40.0E-11	20.0E-11
5	35.0E-11	35.0E-11
6	35.0E-11	35.0E-11
7	35.0E-11	30.0E-11
8	25.0E-11	10.0E-11
9	30.0E-11	10.0E-11
10	40.0E-11	20.0E-11
Statistics		
Min	25.0E-11	10.0E-11
Max	45.0E-11	45.0E-11
Mean	37.0E-11	28.0E-11
Sigma	63.2E-12	12.3E-11

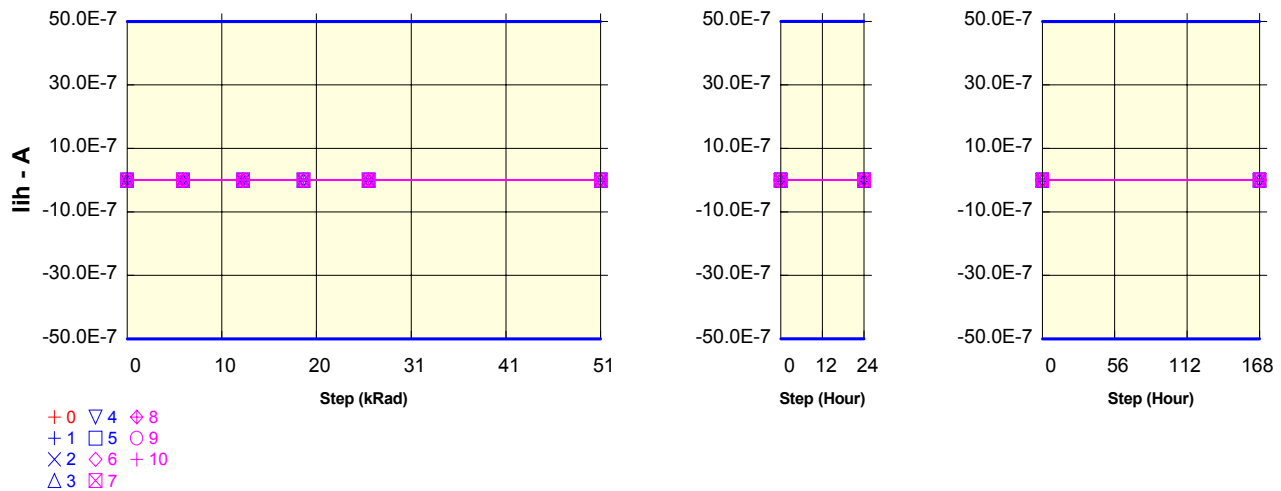
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	15.0E-11	35.0E-11
1	40.0E-11	35.0E-11
2	45.0E-11	25.0E-11
3	35.0E-11	40.0E-11
4	20.0E-11	20.0E-11
5	35.0E-11	25.0E-11
6	35.0E-11	20.0E-11
7	30.0E-11	30.0E-11
8	10.0E-11	25.0E-11
9	10.0E-11	30.0E-11
10	20.0E-11	35.0E-11
Statistics		
Min	10.0E-11	20.0E-11
Max	45.0E-11	40.0E-11
Mean	28.0E-11	28.5E-11
Sigma	12.3E-11	66.9E-12

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : lihBYTE

Unit : A
Spec Limit Min : -50.0E-7
Spec Limit Max : 50.0E-7
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	55.0E-11	25.0E-11	30.0E-11	20.0E-11	30.0E-11	75.0E-11
1	60.0E-11	30.0E-11	25.0E-11	30.0E-11	20.0E-11	40.0E-11
2	50.0E-11	25.0E-11	20.0E-11	20.0E-11	20.0E-11	50.0E-11
3	60.0E-11	30.0E-11	30.0E-11	25.0E-11	15.0E-11	35.0E-11
4	35.0E-11	30.0E-11	30.0E-11	30.0E-11	35.0E-11	25.0E-11
5	35.0E-11	30.0E-11	15.0E-11	25.0E-11	35.0E-11	45.0E-11
6	40.0E-11	25.0E-11	25.0E-11	25.0E-11	20.0E-11	35.0E-11
7	45.0E-11	25.0E-11	25.0E-11	20.0E-11	35.0E-11	40.0E-11
8	35.0E-11	30.0E-11	30.0E-11	25.0E-11	25.0E-11	40.0E-11
9	40.0E-11	30.0E-11	25.0E-11	20.0E-11	30.0E-11	45.0E-11
10	35.0E-11	25.0E-11	30.0E-11	35.0E-11	40.0E-11	30.0E-11
Statistics						
Min	35.0E-11	25.0E-11	15.0E-11	20.0E-11	15.0E-11	25.0E-11
Max	60.0E-11	30.0E-11	30.0E-11	35.0E-11	40.0E-11	50.0E-11
Mean	43.5E-11	28.0E-11	25.5E-11	25.5E-11	27.5E-11	38.5E-11
Sigma	10.0E-11	25.8E-12	49.7E-12	49.7E-12	85.8E-12	74.7E-12

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	75.0E-11	20.0E-11
1	40.0E-11	20.0E-11
2	50.0E-11	25.0E-11
3	35.0E-11	30.0E-11
4	25.0E-11	35.0E-11
5	45.0E-11	35.0E-11
6	35.0E-11	25.0E-11
7	40.0E-11	35.0E-11
8	40.0E-11	25.0E-11
9	45.0E-11	30.0E-11
10	30.0E-11	25.0E-11
Statistics		
Min	25.0E-11	20.0E-11
Max	50.0E-11	35.0E-11
Mean	38.5E-11	28.5E-11
Sigma	74.7E-12	53.0E-12

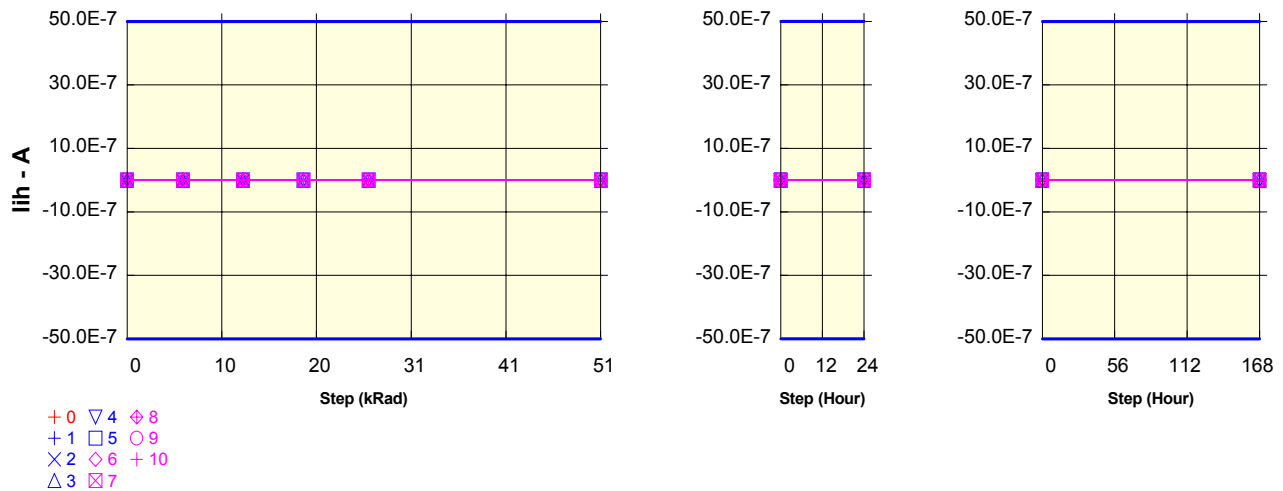
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	20.0E-11	25.0E-11
1	20.0E-11	40.0E-11
2	25.0E-11	25.0E-11
3	30.0E-11	30.0E-11
4	35.0E-11	30.0E-11
5	35.0E-11	35.0E-11
6	25.0E-11	25.0E-11
7	35.0E-11	30.0E-11
8	25.0E-11	30.0E-11
9	30.0E-11	25.0E-11
10	25.0E-11	30.0E-11
Statistics		
Min	20.0E-11	25.0E-11
Max	35.0E-11	40.0E-11
Mean	28.5E-11	30.0E-11
Sigma	53.0E-12	47.1E-12

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : lihRESET/

Unit : A
Spec Limit Min : -50.0E-7
Spec Limit Max : 50.0E-7
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	25.0E-11	30.0E-11	25.0E-11	20.0E-11	20.0E-11	35.0E-11
1	25.0E-11	30.0E-11	35.0E-11	35.0E-11	30.0E-11	35.0E-11
2	50.0E-11	35.0E-11	30.0E-11	20.0E-11	35.0E-11	30.0E-11
3	35.0E-11	30.0E-11	35.0E-11	30.0E-11	25.0E-11	40.0E-11
4	35.0E-11	25.0E-11	35.0E-11	45.0E-11	40.0E-11	25.0E-11
5	30.0E-11	30.0E-11	35.0E-11	30.0E-11	40.0E-11	25.0E-11
6	30.0E-11	30.0E-11	40.0E-11	50.0E-11	35.0E-11	75.0E-11
7	25.0E-11	30.0E-11	25.0E-11	30.0E-11	25.0E-11	17.0E-10
8	45.0E-11	30.0E-11	40.0E-11	25.0E-11	25.0E-11	75.0E-11
9	20.0E-11	30.0E-11	25.0E-11	30.0E-11	35.0E-11	65.0E-11
10	35.0E-11	35.0E-11	40.0E-11	35.0E-11	30.0E-11	50.0E-11
Statistics						
Min	20.0E-11	25.0E-11	25.0E-11	20.0E-11	25.0E-11	25.0E-11
Max	50.0E-11	35.0E-11	40.0E-11	50.0E-11	40.0E-11	17.0E-10
Mean	33.0E-11	30.5E-11	34.0E-11	33.0E-11	32.0E-11	59.0E-11
Sigma	91.9E-12	28.4E-12	56.8E-12	88.8E-12	58.7E-12	43.5E-11

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	35.0E-11	50.0E-11
1	35.0E-11	60.0E-11
2	30.0E-11	70.0E-11
3	40.0E-11	45.0E-11
4	25.0E-11	50.0E-11
5	25.0E-11	50.0E-11
6	75.0E-11	80.0E-11
7	17.0E-10	12.5E-10
8	75.0E-11	60.0E-11
9	65.0E-11	70.0E-11
10	50.0E-11	40.0E-11
Statistics		
Min	25.0E-11	40.0E-11
Max	17.0E-10	12.5E-10
Mean	59.0E-11	65.0E-11
Sigma	43.5E-11	24.5E-11

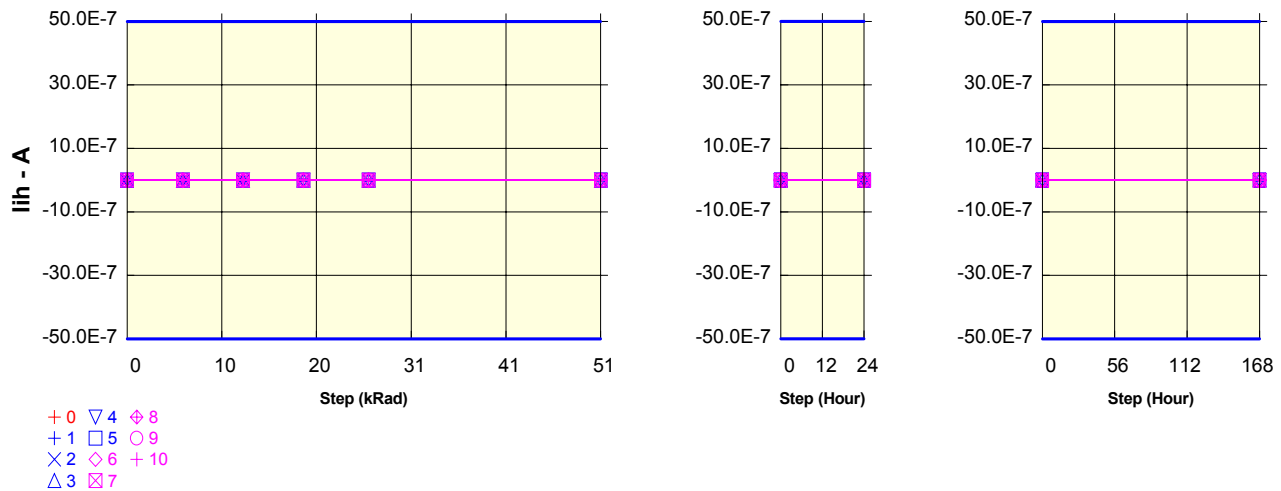
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	50.0E-11	14.0E-10
1	60.0E-11	11.0E-10
2	70.0E-11	11.5E-10
3	45.0E-11	80.0E-11
4	50.0E-11	65.0E-11
5	50.0E-11	55.0E-11
6	80.0E-11	70.0E-11
7	12.5E-10	65.0E-11
8	60.0E-11	80.0E-11
9	70.0E-11	65.0E-11
10	40.0E-11	65.0E-11
Statistics		
Min	40.0E-11	55.0E-11
Max	12.5E-10	11.5E-10
Mean	65.0E-11	77.0E-11
Sigma	24.5E-11	20.2E-11

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : lihRD/

Unit : A
Spec Limit Min : -50.0E-7
Spec Limit Max : 50.0E-7
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	40.0E-11	40.0E-11	40.0E-11	35.0E-11	30.0E-11	35.0E-11
1	35.0E-11	35.0E-11	20.0E-11	30.0E-11	30.0E-11	35.0E-11
2	40.0E-11	30.0E-11	40.0E-11	25.0E-11	30.0E-11	45.0E-11
3	45.0E-11	15.0E-11	25.0E-11	25.0E-11	30.0E-11	30.0E-11
4	45.0E-11	30.0E-11	25.0E-11	40.0E-11	40.0E-11	35.0E-11
5	35.0E-11	30.0E-11	25.0E-11	20.0E-11	20.0E-11	35.0E-11
6	35.0E-11	35.0E-11	30.0E-11	35.0E-11	30.0E-11	40.0E-11
7	35.0E-11	20.0E-11	25.0E-11	25.0E-11	40.0E-11	45.0E-11
8	45.0E-11	40.0E-11	25.0E-11	25.0E-11	30.0E-11	35.0E-11
9	30.0E-11	25.0E-11	40.0E-11	25.0E-11	30.0E-11	35.0E-11
10	40.0E-11	30.0E-11	30.0E-11	30.0E-11	40.0E-11	40.0E-11
Statistics						
Min	30.0E-11	15.0E-11	20.0E-11	20.0E-11	20.0E-11	30.0E-11
Max	45.0E-11	40.0E-11	40.0E-11	40.0E-11	40.0E-11	45.0E-11
Mean	38.5E-11	29.0E-11	28.5E-11	28.0E-11	32.0E-11	37.5E-11
Sigma	53.0E-12	73.8E-12	66.9E-12	58.7E-12	63.2E-12	48.6E-12

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	35.0E-11	20.0E-11
1	35.0E-11	40.0E-11
2	45.0E-11	35.0E-11
3	30.0E-11	40.0E-11
4	35.0E-11	35.0E-11
5	35.0E-11	20.0E-11
6	40.0E-11	50.0E-11
7	45.0E-11	45.0E-11
8	35.0E-11	60.0E-11
9	35.0E-11	15.0E-11
10	40.0E-11	35.0E-11
Statistics		
Min	30.0E-11	15.0E-11
Max	45.0E-11	60.0E-11
Mean	37.5E-11	37.5E-11
Sigma	48.6E-12	13.2E-11

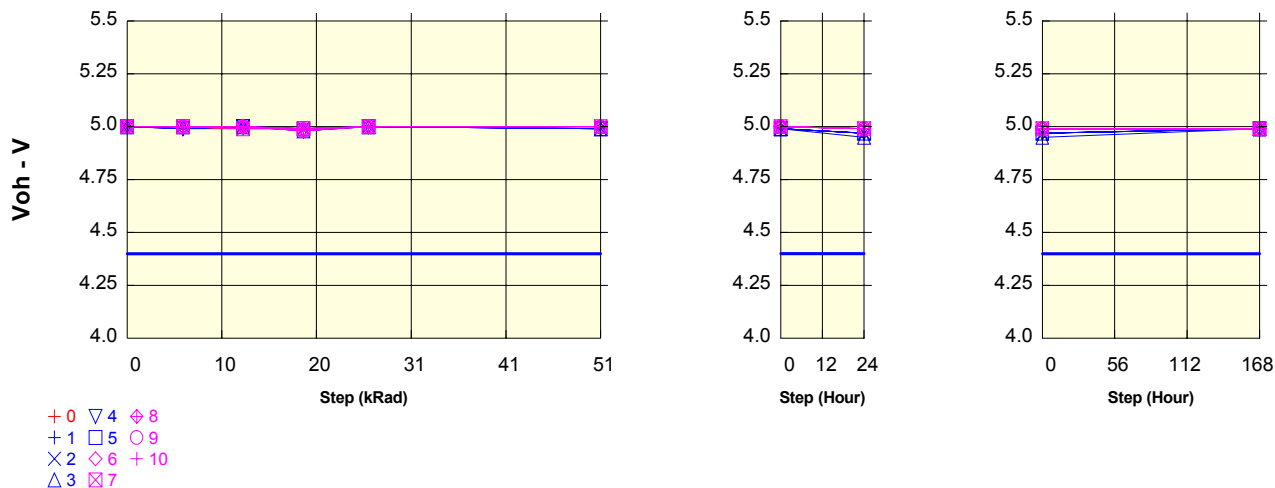
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	20.0E-11	45.0E-11
1	40.0E-11	60.0E-11
2	35.0E-11	40.0E-11
3	40.0E-11	35.0E-11
4	35.0E-11	30.0E-11
5	20.0E-11	30.0E-11
6	50.0E-11	20.0E-11
7	45.0E-11	30.0E-11
8	60.0E-11	25.0E-11
9	15.0E-11	30.0E-11
10	35.0E-11	40.0E-11
Statistics		
Min	15.0E-11	20.0E-11
Max	60.0E-11	60.0E-11
Mean	37.5E-11	34.0E-11
Sigma	13.2E-11	11.0E-11

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VohDB15

Unit : V
Spec Limit Min : 4.4
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	5.0	4.99	4.99	4.99	5.0	5.0
1	5.0	4.99	5.0	4.99	5.0	4.99
2	5.0	5.0	5.0	4.99	5.0	4.99
3	5.0	5.0	5.0	4.98	5.0	4.99
4	5.0	4.99	5.0	4.98	5.0	4.99
5	5.0	5.0	5.0	4.99	5.0	4.99
6	5.0	5.0	5.0	4.98	5.0	5.0
7	5.0	5.0	4.99	4.99	5.0	5.0
8	5.0	5.0	5.0	4.99	5.0	5.0
9	5.0	5.0	5.0	4.98	5.0	5.0
10	5.0	5.0	5.0	4.99	5.0	5.0
Statistics						
Min	5.0	4.99	4.99	4.98	5.0	4.99
Max	5.0	5.0	5.0	4.99	5.0	5.0
Mean	5.0	5.0	5.0	4.99	5.0	5.0
Sigma	0.0	0.0	0.0	0.01	0.0	0.01

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	5.0	4.99
1	4.99	4.97
2	4.99	4.97
3	4.99	4.95
4	4.99	4.97
5	4.99	4.97
6	5.0	4.99
7	5.0	4.99
8	5.0	4.99
9	5.0	4.99
10	5.0	4.99
Statistics		
Min	4.99	4.95
Max	5.0	4.99
Mean	5.0	4.98
Sigma	0.01	0.01

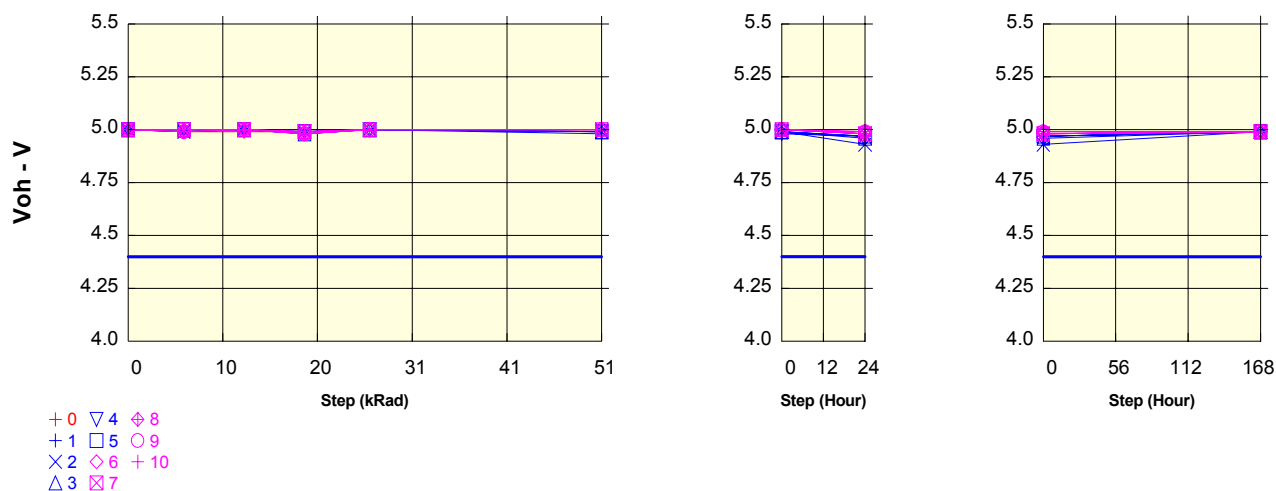
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	4.99	4.99
1	4.97	4.99
2	4.97	4.99
3	4.95	4.99
4	4.97	4.99
5	4.97	4.99
6	4.99	4.99
7	4.99	4.99
8	4.99	4.99
9	4.99	4.99
10	4.99	4.99
Statistics		
Min	4.95	4.99
Max	4.99	4.99
Mean	4.98	4.99
Sigma	0.01	0.0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VohDB14

Unit : V
Spec Limit Min : 4.4
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	5.0	4.99	4.99	4.99	5.0	5.0
1	5.0	4.99	5.0	4.98	5.0	4.98
2	5.0	4.99	5.0	4.99	5.0	4.99
3	5.0	5.0	5.0	4.98	5.0	4.99
4	5.0	5.0	5.0	4.99	5.0	4.99
5	5.0	5.0	5.0	4.99	5.0	4.99
6	5.0	4.99	5.0	4.99	5.0	5.0
7	5.0	5.0	5.0	4.99	5.0	5.0
8	5.0	5.0	5.0	4.98	5.0	5.0
9	5.0	4.99	5.0	4.98	5.0	5.0
10	5.0	5.0	5.0	4.99	5.0	5.0
Statistics						
Min	5.0	4.99	5.0	4.98	5.0	4.98
Max	5.0	5.0	5.0	4.99	5.0	5.0
Mean	5.0	5.0	5.0	4.99	5.0	4.99
Sigma	0.0	0.01	0.0	0.01	0.0	0.01

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	5.0	4.98
1	4.98	4.97
2	4.99	4.93
3	4.99	4.96
4	4.99	4.97
5	4.99	4.97
6	5.0	4.98
7	5.0	4.98
8	5.0	4.99
9	5.0	4.99
10	5.0	4.98
Statistics		
Min	4.98	4.93
Max	5.0	4.99
Mean	4.99	4.97
Sigma	0.01	0.02

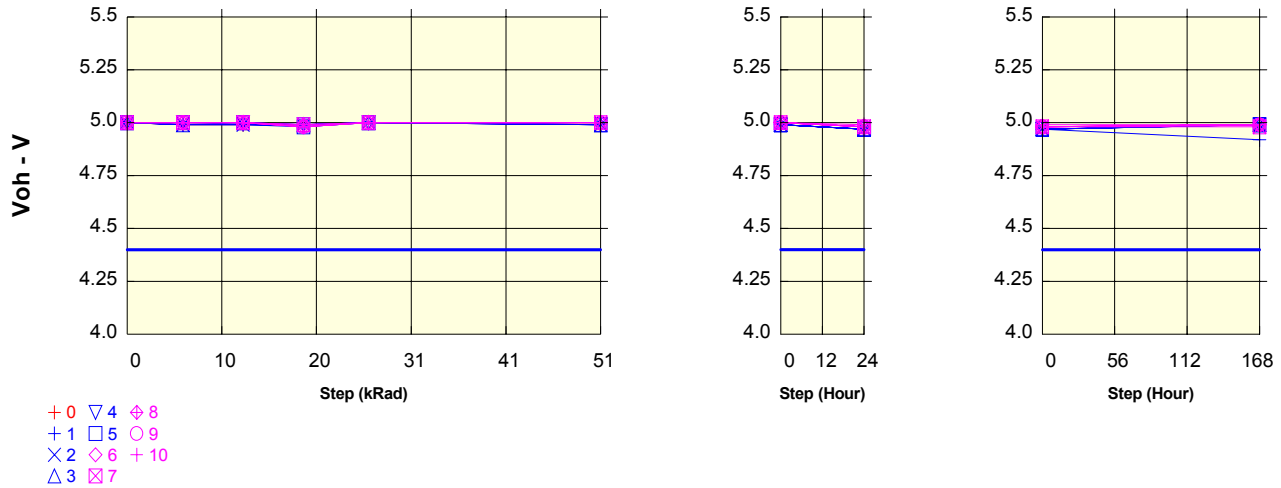
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	4.98	4.99
1	4.97	4.99
2	4.93	4.99
3	4.96	4.99
4	4.97	4.99
5	4.97	4.99
6	4.98	4.99
7	4.98	4.99
8	4.99	4.99
9	4.99	4.99
10	4.98	4.99
Statistics		
Min	4.93	4.99
Max	4.99	4.99
Mean	4.97	4.99
Sigma	0.02	0.0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VohDB13

Unit : V
Spec Limit Min : 4.4
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	5.0	4.99	4.99	4.99	5.0	5.0
1	5.0	4.99	4.99	4.98	5.0	4.99
2	5.0	4.99	4.99	4.99	5.0	4.99
3	5.0	4.99	5.0	4.99	5.0	4.99
4	5.0	5.0	5.0	4.99	5.0	4.99
5	5.0	5.0	5.0	4.98	5.0	4.99
6	5.0	5.0	5.0	4.98	5.0	5.0
7	5.0	5.0	5.0	4.99	5.0	5.0
8	5.0	5.0	5.0	4.99	5.0	5.0
9	5.0	5.0	5.0	4.98	5.0	5.0
10	5.0	5.0	5.0	4.98	5.0	5.0
Statistics						
Min	5.0	4.99	4.99	4.98	5.0	4.99
Max	5.0	5.0	5.0	4.99	5.0	5.0
Mean	5.0	5.0	5.0	4.99	5.0	5.0
Sigma	0.0	0.0	0.0	0.01	0.0	0.01

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	5.0	4.98
1	4.99	4.97
2	4.99	4.97
3	4.99	4.97
4	4.99	4.97
5	4.99	4.97
6	5.0	4.98
7	5.0	4.98
8	5.0	4.98
9	5.0	4.98
10	5.0	4.99
Statistics		
Min	4.99	4.97
Max	5.0	4.99
Mean	5.0	4.98
Sigma	0.01	0.01

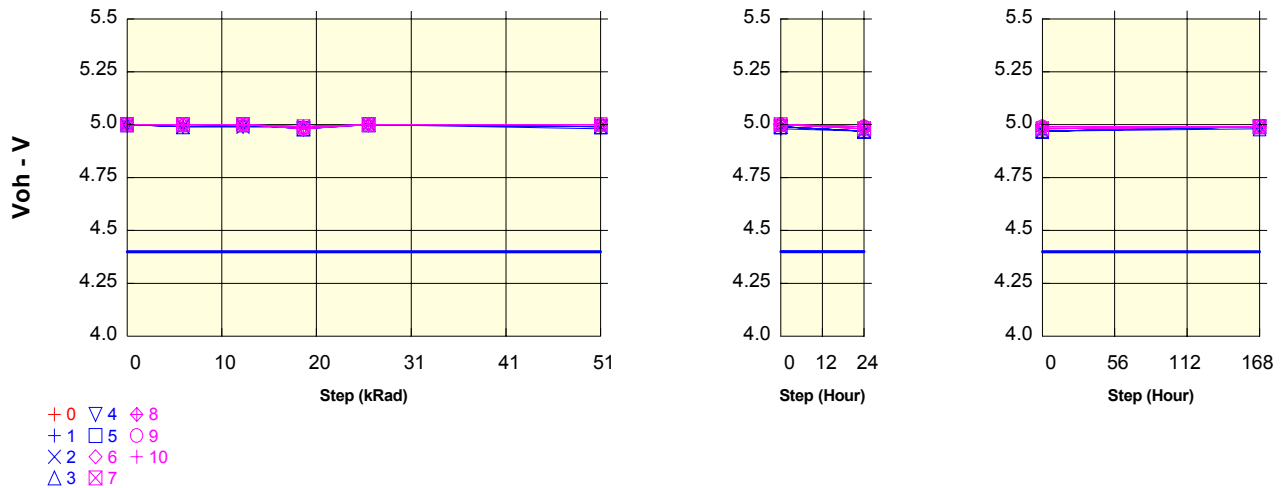
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	4.98	4.99
1	4.97	4.92
2	4.97	4.99
3	4.97	4.99
4	4.97	4.99
5	4.97	4.99
6	4.98	4.99
7	4.98	4.98
8	4.98	4.99
9	4.98	4.99
10	4.99	4.99
Statistics		
Min	4.97	4.92
Max	4.99	4.99
Mean	4.98	4.98
Sigma	0.01	0.02

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VohDB12

Unit : V
Spec Limit Min : 4.4
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	5.0	4.99	4.99	4.99	5.0	5.0
1	5.0	4.99	4.99	4.99	5.0	4.98
2	5.0	4.99	4.99	4.99	5.0	4.99
3	5.0	4.99	5.0	4.98	5.0	4.99
4	5.0	5.0	5.0	4.98	5.0	4.99
5	5.0	5.0	5.0	4.98	5.0	4.99
6	5.0	5.0	5.0	4.98	5.0	5.0
7	5.0	5.0	5.0	4.99	5.0	5.0
8	5.0	5.0	5.0	4.99	5.0	5.0
9	5.0	5.0	5.0	4.98	5.0	5.0
10	5.0	5.0	5.0	4.99	5.0	5.0
Statistics						
Min	5.0	4.99	4.99	4.98	5.0	4.98
Max	5.0	5.0	5.0	4.99	5.0	5.0
Mean	5.0	5.0	5.0	4.99	5.0	4.99
Sigma	0.0	0.0	0.0	0.01	0.0	0.01

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	5.0	4.98
1	4.98	4.97
2	4.99	4.97
3	4.99	4.97
4	4.99	4.97
5	4.99	4.97
6	5.0	4.98
7	5.0	4.98
8	5.0	4.99
9	5.0	4.99
10	5.0	4.99
Statistics		
Min	4.98	4.97
Max	5.0	4.99
Mean	4.99	4.98
Sigma	0.01	0.01

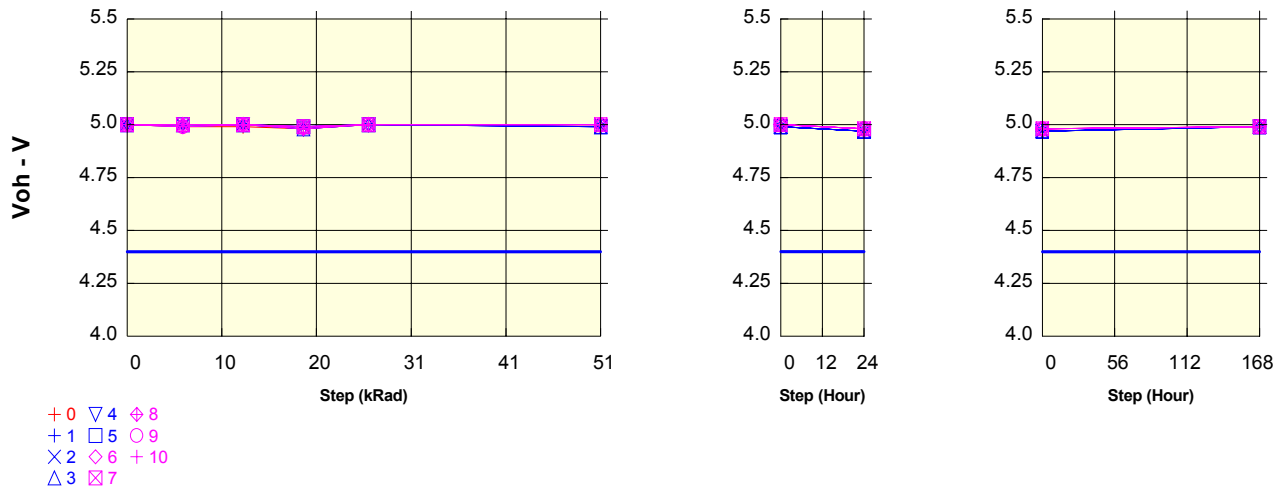
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	4.98	4.99
1	4.97	4.99
2	4.97	4.99
3	4.97	4.98
4	4.97	4.99
5	4.97	4.99
6	4.98	4.99
7	4.98	4.99
8	4.99	4.99
9	4.99	4.99
10	4.99	4.99
Statistics		
Min	4.97	4.98
Max	4.99	4.99
Mean	4.98	4.99
Sigma	0.01	0.0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VohDB11

Unit : V
Spec Limit Min : 4.4
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	5.0	4.99	4.99	4.98	5.0	5.0
1	5.0	4.99	5.0	4.99	5.0	4.99
2	5.0	5.0	5.0	4.99	5.0	4.99
3	5.0	5.0	5.0	4.98	5.0	4.99
4	5.0	5.0	5.0	4.98	5.0	4.99
5	5.0	5.0	5.0	4.99	5.0	4.99
6	5.0	4.99	5.0	4.98	5.0	5.0
7	5.0	5.0	5.0	4.99	5.0	5.0
8	5.0	5.0	5.0	4.99	5.0	5.0
9	5.0	4.99	5.0	4.99	5.0	5.0
10	5.0	5.0	5.0	4.98	5.0	5.0
Statistics						
Min	5.0	4.99	5.0	4.98	5.0	4.99
Max	5.0	5.0	5.0	4.99	5.0	5.0
Mean	5.0	5.0	5.0	4.99	5.0	5.0
Sigma	0.0	0.0	0.0	0.01	0.0	0.01

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	5.0	4.98
1	4.99	4.97
2	4.99	4.97
3	4.99	4.97
4	4.99	4.97
5	4.99	4.97
6	5.0	4.98
7	5.0	4.98
8	5.0	4.98
9	5.0	4.98
10	5.0	4.98
Statistics		
Min	4.99	4.97
Max	5.0	4.98
Mean	5.0	4.98
Sigma	0.01	0.01

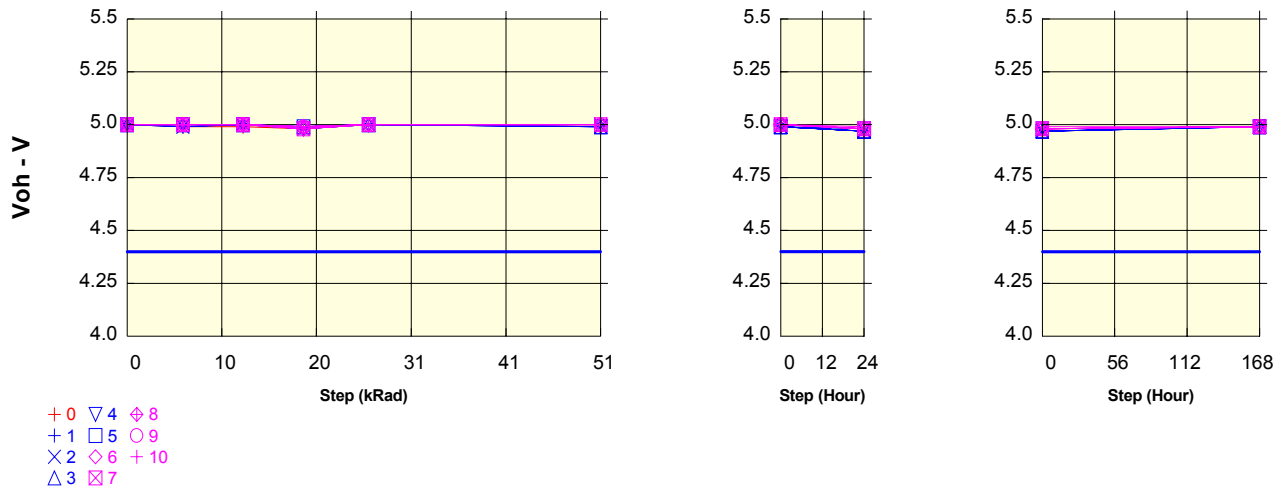
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	4.98	4.99
1	4.97	4.99
2	4.97	4.99
3	4.97	4.99
4	4.97	4.99
5	4.97	4.99
6	4.98	4.99
7	4.98	4.99
8	4.98	4.99
9	4.98	4.99
10	4.98	4.99
Statistics		
Min	4.97	4.99
Max	4.98	4.99
Mean	4.98	4.99
Sigma	0.01	0.0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VohDB10

Unit : V
Spec Limit Min : 4.4
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	5.0	4.99	4.99	4.98	5.0	5.0
1	5.0	4.99	5.0	4.99	5.0	4.99
2	5.0	4.99	5.0	4.98	5.0	4.99
3	5.0	5.0	5.0	4.99	5.0	4.99
4	5.0	5.0	5.0	4.98	5.0	4.99
5	5.0	5.0	5.0	4.99	5.0	4.99
6	5.0	5.0	5.0	4.98	5.0	5.0
7	5.0	5.0	5.0	4.98	5.0	5.0
8	5.0	5.0	5.0	4.99	5.0	5.0
9	5.0	5.0	5.0	4.99	5.0	5.0
10	5.0	5.0	5.0	4.99	5.0	5.0
Statistics						
Min	5.0	4.99	5.0	4.98	5.0	4.99
Max	5.0	5.0	5.0	4.99	5.0	5.0
Mean	5.0	5.0	5.0	4.99	5.0	5.0
Sigma	0.0	0.0	0.0	0.01	0.0	0.01

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	5.0	4.98
1	4.99	4.97
2	4.99	4.97
3	4.99	4.97
4	4.99	4.98
5	4.99	4.97
6	5.0	4.98
7	5.0	4.98
8	5.0	4.98
9	5.0	4.98
10	5.0	4.99
Statistics		
Min	4.99	4.97
Max	5.0	4.99
Mean	5.0	4.98
Sigma	0.01	0.01

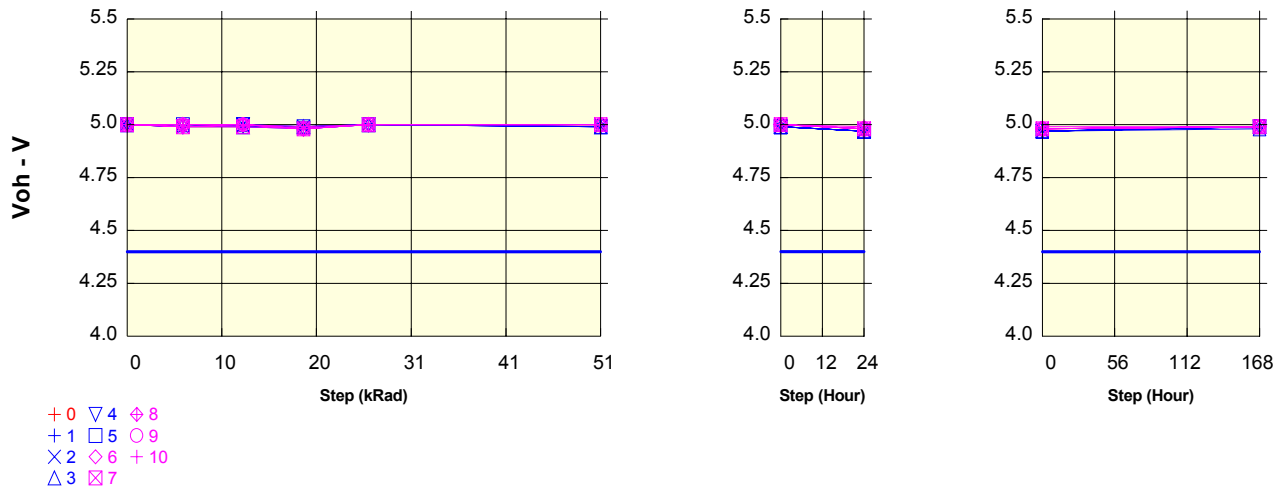
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	4.98	4.99
1	4.97	4.99
2	4.97	4.99
3	4.97	4.99
4	4.98	4.99
5	4.97	4.99
6	4.98	4.99
7	4.98	4.99
8	4.98	4.99
9	4.98	4.99
10	4.99	4.99
Statistics		
Min	4.97	4.99
Max	4.99	4.99
Mean	4.98	4.99
Sigma	0.01	0.0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VohDB9

Unit : V
Spec Limit Min : 4.4
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	5.0	4.99	4.99	4.99	5.0	5.0
1	5.0	4.99	4.99	4.98	5.0	4.99
2	5.0	4.99	5.0	4.99	5.0	4.99
3	5.0	5.0	4.99	4.99	5.0	4.99
4	5.0	4.99	5.0	4.98	5.0	4.99
5	5.0	5.0	5.0	4.99	5.0	4.99
6	5.0	5.0	5.0	4.98	5.0	5.0
7	5.0	4.99	4.99	4.98	5.0	5.0
8	5.0	4.99	5.0	4.98	5.0	5.0
9	5.0	5.0	5.0	4.98	5.0	5.0
10	5.0	5.0	5.0	4.99	5.0	5.0
Statistics						
Min	5.0	4.99	4.99	4.98	5.0	4.99
Max	5.0	5.0	5.0	4.99	5.0	5.0
Mean	5.0	5.0	5.0	4.98	5.0	5.0
Sigma	0.0	0.01	0.0	0.01	0.0	0.01

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	5.0	4.98
1	4.99	4.97
2	4.99	4.97
3	4.99	4.97
4	4.99	4.97
5	4.99	4.97
6	5.0	4.98
7	5.0	4.98
8	5.0	4.98
9	5.0	4.98
10	5.0	4.99
Statistics		
Min	4.99	4.97
Max	5.0	4.99
Mean	5.0	4.98
Sigma	0.01	0.01

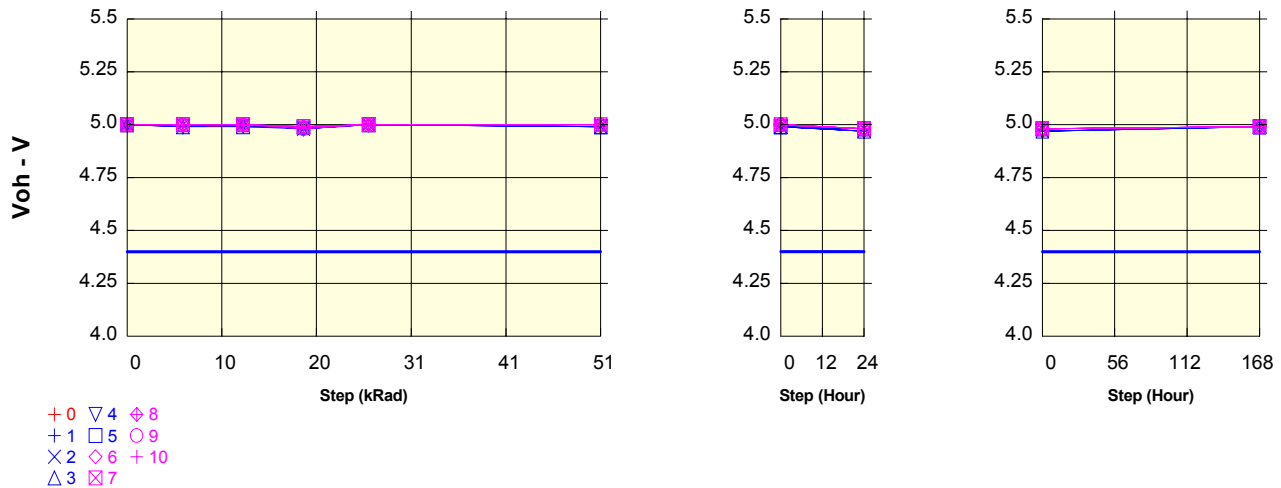
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	4.98	4.99
1	4.97	4.99
2	4.97	4.99
3	4.97	4.98
4	4.97	4.99
5	4.97	4.99
6	4.98	4.99
7	4.98	4.99
8	4.98	4.99
9	4.98	4.99
10	4.99	4.99
Statistics		
Min	4.97	4.98
Max	4.99	4.99
Mean	4.98	4.99
Sigma	0.01	0.0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VohDB8

Unit : V
Spec Limit Min : 4.4
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	5.0	4.99	4.99	4.99	5.0	5.0
1	5.0	5.0	4.99	4.98	5.0	4.99
2	5.0	5.0	5.0	4.98	5.0	4.99
3	5.0	4.99	5.0	4.99	5.0	4.99
4	5.0	4.99	5.0	4.98	5.0	4.99
5	5.0	5.0	4.99	4.99	5.0	4.99
6	5.0	5.0	5.0	4.99	5.0	5.0
7	5.0	5.0	5.0	4.99	5.0	5.0
8	5.0	5.0	5.0	4.99	5.0	5.0
9	5.0	5.0	5.0	4.98	5.0	5.0
10	5.0	5.0	5.0	4.99	5.0	5.0
Statistics						
Min	5.0	4.99	4.99	4.98	5.0	4.99
Max	5.0	5.0	5.0	4.99	5.0	5.0
Mean	5.0	5.0	5.0	4.99	5.0	5.0
Sigma	0.0	0.0	0.0	0.01	0.0	0.01

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	5.0	4.98
1	4.99	4.97
2	4.99	4.98
3	4.99	4.97
4	4.99	4.97
5	4.99	4.98
6	5.0	4.98
7	5.0	4.98
8	5.0	4.98
9	5.0	4.98
10	5.0	4.98
Statistics		
Min	4.99	4.97
Max	5.0	4.98
Mean	5.0	4.98
Sigma	0.01	0.0

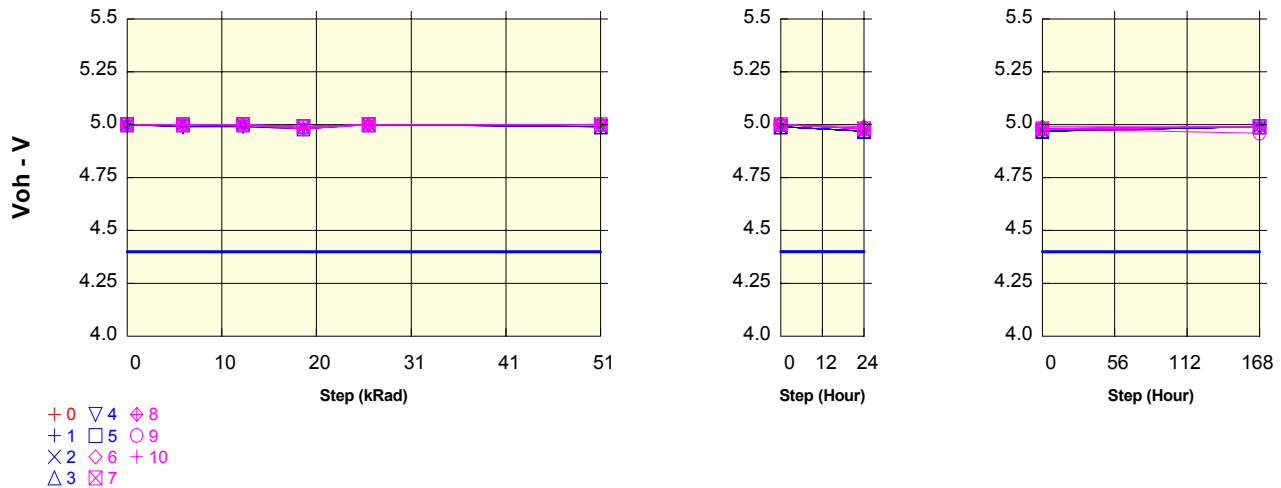
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	4.98	4.99
1	4.97	4.99
2	4.98	4.99
3	4.97	4.99
4	4.97	4.99
5	4.98	4.99
6	4.98	4.99
7	4.98	4.99
8	4.98	4.99
9	4.98	4.99
10	4.98	4.99
Statistics		
Min	4.97	4.99
Max	4.98	4.99
Mean	4.98	4.99
Sigma	0.0	0.0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VohDB7

Unit : V
Spec Limit Min : 4.4
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	5.0	4.99	4.99	4.98	5.0	5.0
1	5.0	4.99	4.99	4.98	5.0	4.99
2	5.0	5.0	5.0	4.99	5.0	4.99
3	5.0	5.0	5.0	4.98	5.0	4.99
4	5.0	4.99	5.0	4.99	5.0	4.99
5	5.0	5.0	5.0	4.99	5.0	4.99
6	5.0	5.0	5.0	4.98	5.0	5.0
7	5.0	5.0	5.0	4.99	5.0	5.0
8	5.0	5.0	5.0	4.98	5.0	5.0
9	5.0	5.0	5.0	4.99	5.0	5.0
10	5.0	5.0	5.0	4.99	5.0	5.0
Statistics						
Min	5.0	4.99	4.99	4.98	5.0	4.99
Max	5.0	5.0	5.0	4.99	5.0	5.0
Mean	5.0	5.0	5.0	4.99	5.0	5.0
Sigma	0.0	0.0	0.0	0.01	0.0	0.01

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	5.0	4.98
1	4.99	4.97
2	4.99	4.97
3	4.99	4.97
4	4.99	4.97
5	4.99	4.97
6	5.0	4.98
7	5.0	4.98
8	5.0	4.99
9	5.0	4.98
10	5.0	4.98
Statistics		
Min	4.99	4.97
Max	5.0	4.99
Mean	5.0	4.98
Sigma	0.01	0.01

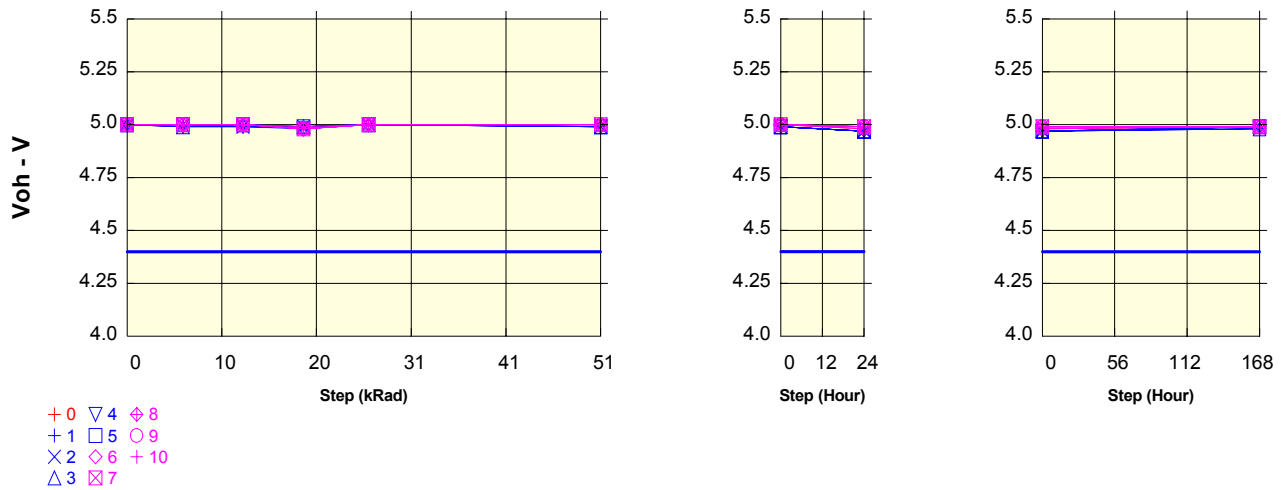
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	4.98	4.99
1	4.97	4.99
2	4.97	4.99
3	4.97	4.99
4	4.97	4.99
5	4.97	4.99
6	4.98	4.99
7	4.98	4.99
8	4.99	4.99
9	4.98	4.96
10	4.98	4.99
Statistics		
Min	4.97	4.96
Max	4.99	4.99
Mean	4.98	4.99
Sigma	0.01	0.01

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VohDB6

Unit : V
Spec Limit Min : 4.4
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	5.0	4.99	4.99	4.99	5.0	5.0
1	5.0	4.99	4.99	4.98	5.0	4.99
2	5.0	5.0	4.99	4.99	5.0	4.99
3	5.0	4.99	5.0	4.99	5.0	4.99
4	5.0	5.0	5.0	4.98	5.0	4.99
5	5.0	5.0	5.0	4.99	5.0	4.99
6	5.0	5.0	5.0	4.98	5.0	5.0
7	5.0	5.0	5.0	4.98	5.0	5.0
8	5.0	5.0	5.0	4.98	5.0	5.0
9	5.0	5.0	5.0	4.98	5.0	5.0
10	5.0	5.0	5.0	4.99	5.0	5.0
Statistics						
Min	5.0	4.99	4.99	4.98	5.0	4.99
Max	5.0	5.0	5.0	4.99	5.0	5.0
Mean	5.0	5.0	5.0	4.98	5.0	5.0
Sigma	0.0	0.0	0.0	0.01	0.0	0.01

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	5.0	4.98
1	4.99	4.97
2	4.99	4.97
3	4.99	4.97
4	4.99	4.97
5	4.99	4.97
6	5.0	4.98
7	5.0	4.99
8	5.0	4.99
9	5.0	4.99
10	5.0	4.99
Statistics		
Min	4.99	4.97
Max	5.0	4.99
Mean	5.0	4.98
Sigma	0.01	0.01

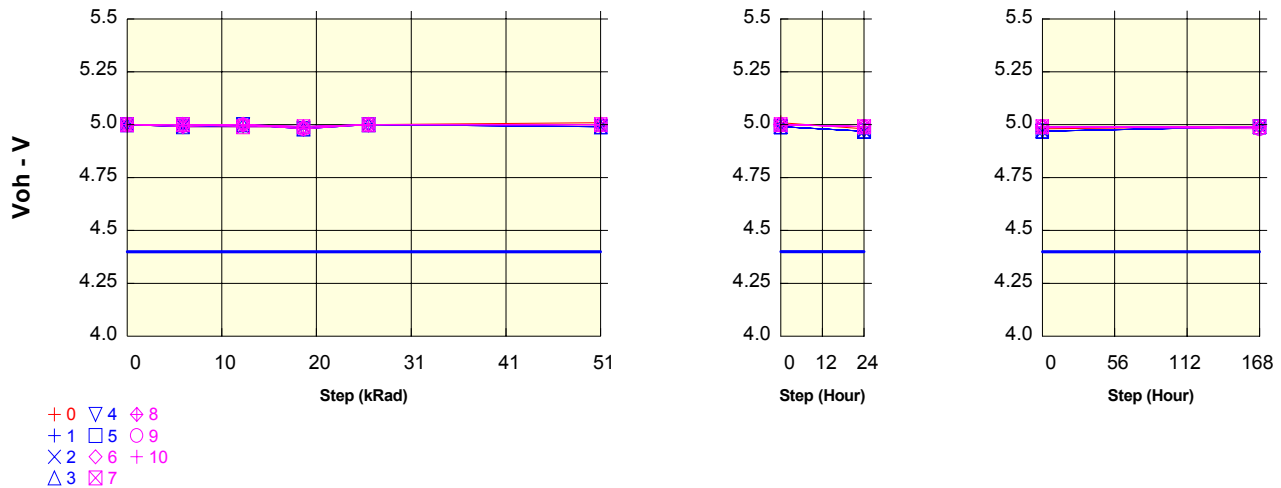
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	4.98	4.99
1	4.97	4.98
2	4.97	4.99
3	4.97	4.98
4	4.97	4.99
5	4.97	4.99
6	4.98	4.99
7	4.99	4.99
8	4.99	4.99
9	4.99	4.99
10	4.99	4.99
Statistics		
Min	4.97	4.98
Max	4.99	4.99
Mean	4.98	4.99
Sigma	0.01	0.0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VohDB5

Unit : V
Spec Limit Min : 4.4
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	5.0	4.99	4.99	4.99	5.0	5.01
1	5.0	4.99	5.0	4.99	5.0	4.99
2	5.0	4.99	4.99	4.99	5.0	4.99
3	5.0	5.0	5.0	4.98	5.0	4.99
4	5.0	5.0	5.0	4.98	5.0	4.99
5	5.0	4.99	5.0	4.98	5.0	4.99
6	5.0	4.99	5.0	4.98	5.0	5.0
7	5.0	5.0	4.99	4.99	5.0	5.0
8	5.0	5.0	5.0	4.99	5.0	5.0
9	5.0	5.0	5.0	4.98	5.0	5.0
10	5.0	5.0	5.0	4.99	5.0	5.0
Statistics						
Min	5.0	4.99	4.99	4.98	5.0	4.99
Max	5.0	5.0	5.0	4.99	5.0	5.0
Mean	5.0	5.0	5.0	4.99	5.0	5.0
Sigma	0.0	0.01	0.0	0.01	0.0	0.01

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	5.01	4.98
1	4.99	4.97
2	4.99	4.97
3	4.99	4.97
4	4.99	4.97
5	4.99	4.97
6	5.0	4.99
7	5.0	4.99
8	5.0	4.99
9	5.0	4.99
10	5.0	4.99
Statistics		
Min	4.99	4.97
Max	5.0	4.99
Mean	5.0	4.98
Sigma	0.01	0.01

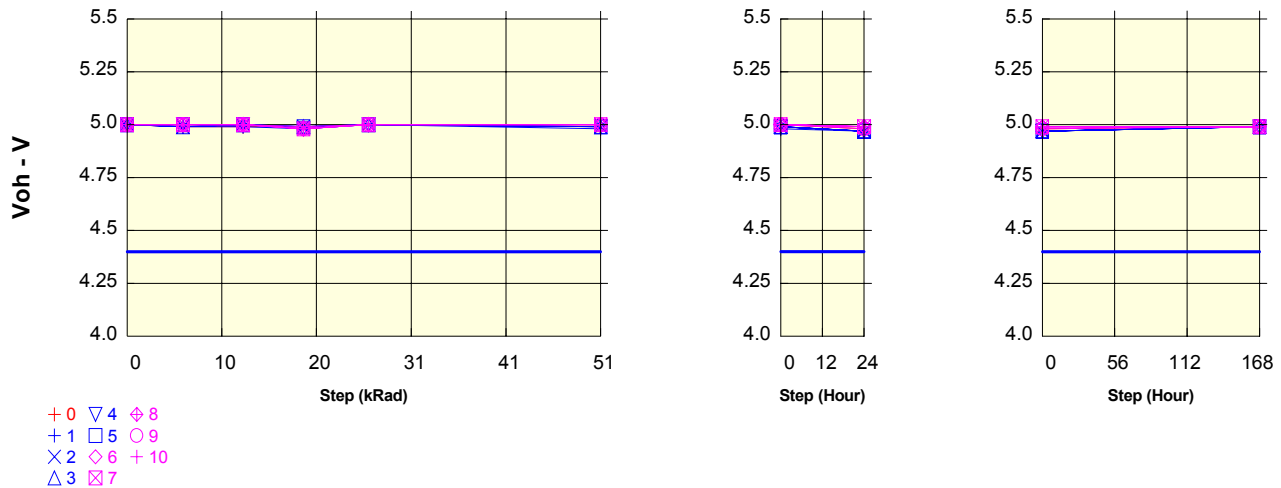
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	4.98	4.99
1	4.97	4.99
2	4.97	4.99
3	4.97	4.99
4	4.97	4.99
5	4.97	4.99
6	4.99	4.99
7	4.99	4.99
8	4.99	4.99
9	4.99	4.98
10	4.99	4.99
Statistics		
Min	4.97	4.98
Max	4.99	4.99
Mean	4.98	4.99
Sigma	0.01	0.0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VohDB4

Unit : V
Spec Limit Min : 4.4
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	5.0	4.99	4.99	4.99	5.0	5.0
1	5.0	4.99	4.99	4.98	5.0	4.98
2	5.0	4.99	5.0	4.99	5.0	4.99
3	5.0	4.99	5.0	4.99	5.0	4.99
4	5.0	5.0	5.0	4.98	5.0	4.99
5	5.0	5.0	5.0	4.99	5.0	4.99
6	5.0	5.0	5.0	4.98	5.0	5.0
7	5.0	5.0	5.0	4.98	5.0	5.0
8	5.0	5.0	5.0	4.98	5.0	5.0
9	5.0	5.0	5.0	4.98	5.0	5.0
10	5.0	5.0	5.0	4.99	5.0	5.0
Statistics						
Min	5.0	4.99	4.99	4.98	5.0	4.98
Max	5.0	5.0	5.0	4.99	5.0	5.0
Mean	5.0	5.0	5.0	4.98	5.0	4.99
Sigma	0.0	0.0	0.0	0.01	0.0	0.01

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	5.0	4.98
1	4.98	4.97
2	4.99	4.97
3	4.99	4.97
4	4.99	4.97
5	4.99	4.97
6	5.0	4.99
7	5.0	4.99
8	5.0	4.99
9	5.0	4.98
10	5.0	4.99
Statistics		
Min	4.98	4.97
Max	5.0	4.99
Mean	4.99	4.98
Sigma	0.01	0.01

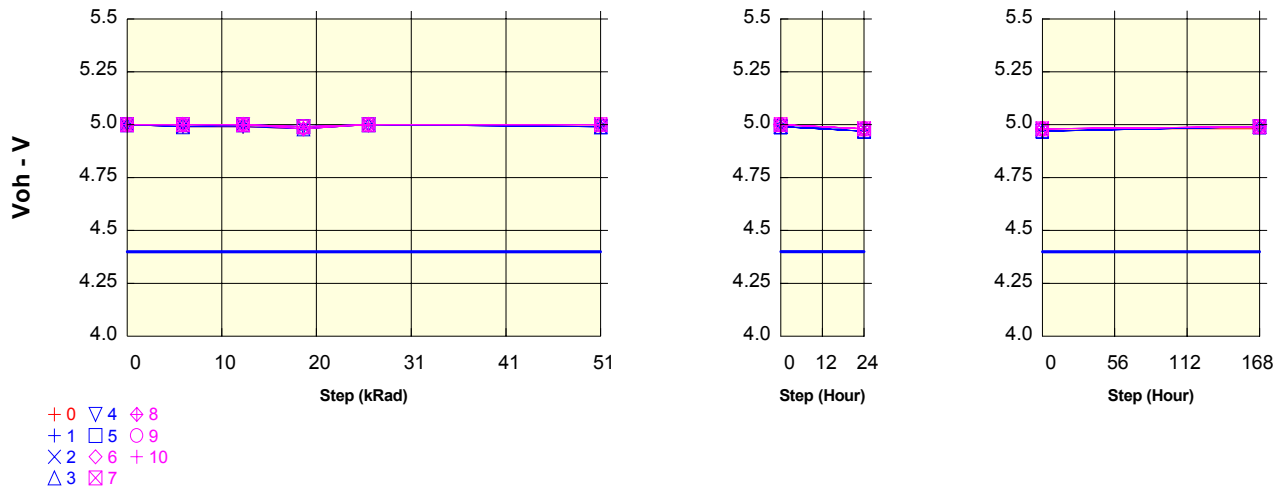
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	4.98	4.99
1	4.97	4.99
2	4.97	4.99
3	4.97	4.99
4	4.97	4.99
5	4.97	4.99
6	4.99	4.99
7	4.99	4.99
8	4.99	4.99
9	4.98	4.99
10	4.99	4.99
Statistics		
Min	4.97	4.99
Max	4.99	4.99
Mean	4.98	4.99
Sigma	0.01	0.0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VohDB3

Unit : V
Spec Limit Min : 4.4
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	5.0	4.99	4.99	4.98	5.0	5.0
1	5.0	4.99	4.99	4.98	5.0	4.99
2	5.0	4.99	5.0	4.99	5.0	4.99
3	5.0	5.0	5.0	4.98	5.0	4.99
4	5.0	5.0	5.0	4.99	5.0	4.99
5	5.0	4.99	5.0	4.99	5.0	4.99
6	5.0	5.0	5.0	4.98	5.0	5.0
7	5.0	5.0	5.0	4.99	5.0	5.0
8	5.0	5.0	5.0	4.98	5.0	5.0
9	5.0	5.0	5.0	4.99	5.0	5.0
10	5.0	5.0	5.0	4.99	5.0	5.0
Statistics						
Min	5.0	4.99	4.99	4.98	5.0	4.99
Max	5.0	5.0	5.0	4.99	5.0	5.0
Mean	5.0	5.0	5.0	4.99	5.0	5.0
Sigma	0.0	0.0	0.0	0.01	0.0	0.01

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	5.0	4.98
1	4.99	4.97
2	4.99	4.98
3	4.99	4.97
4	4.99	4.97
5	4.99	4.97
6	5.0	4.98
7	5.0	4.98
8	5.0	4.98
9	5.0	4.98
10	5.0	4.98
Statistics		
Min	4.99	4.97
Max	5.0	4.98
Mean	5.0	4.98
Sigma	0.01	0.01

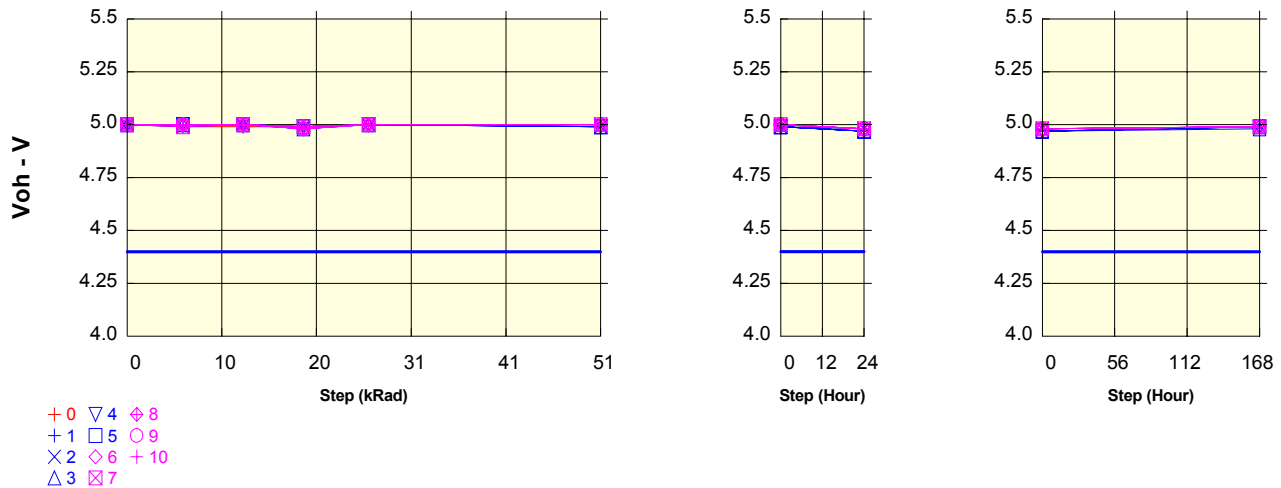
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	4.98	4.98
1	4.97	4.99
2	4.98	4.99
3	4.97	4.99
4	4.97	4.99
5	4.97	4.99
6	4.98	4.99
7	4.98	4.99
8	4.98	4.99
9	4.98	4.99
10	4.98	4.99
Statistics		
Min	4.97	4.99
Max	4.98	4.99
Mean	4.98	4.99
Sigma	0.01	0.0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VohDB2

Unit : V
Spec Limit Min : 4.4
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	5.0	4.99	4.99	4.99	5.0	5.0
1	5.0	5.0	5.0	4.98	5.0	4.99
2	5.0	4.99	5.0	4.99	5.0	4.99
3	5.0	5.0	5.0	4.98	5.0	4.99
4	5.0	5.0	5.0	4.99	5.0	4.99
5	5.0	5.0	5.0	4.99	5.0	4.99
6	5.0	5.0	5.0	4.99	5.0	5.0
7	5.0	4.99	5.0	4.99	5.0	5.0
8	5.0	5.0	5.0	4.98	5.0	5.0
9	5.0	5.0	5.0	4.98	5.0	5.0
10	5.0	5.0	5.0	4.99	5.0	5.0
Statistics						
Min	5.0	4.99	5.0	4.98	5.0	4.99
Max	5.0	5.0	5.0	4.99	5.0	5.0
Mean	5.0	5.0	5.0	4.99	5.0	5.0
Sigma	0.0	0.0	0.0	0.01	0.0	0.01

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	5.0	4.98
1	4.99	4.97
2	4.99	4.98
3	4.99	4.97
4	4.99	4.97
5	4.99	4.97
6	5.0	4.98
7	5.0	4.98
8	5.0	4.98
9	5.0	4.98
10	5.0	4.98
Statistics		
Min	4.99	4.97
Max	5.0	4.98
Mean	5.0	4.98
Sigma	0.01	0.01

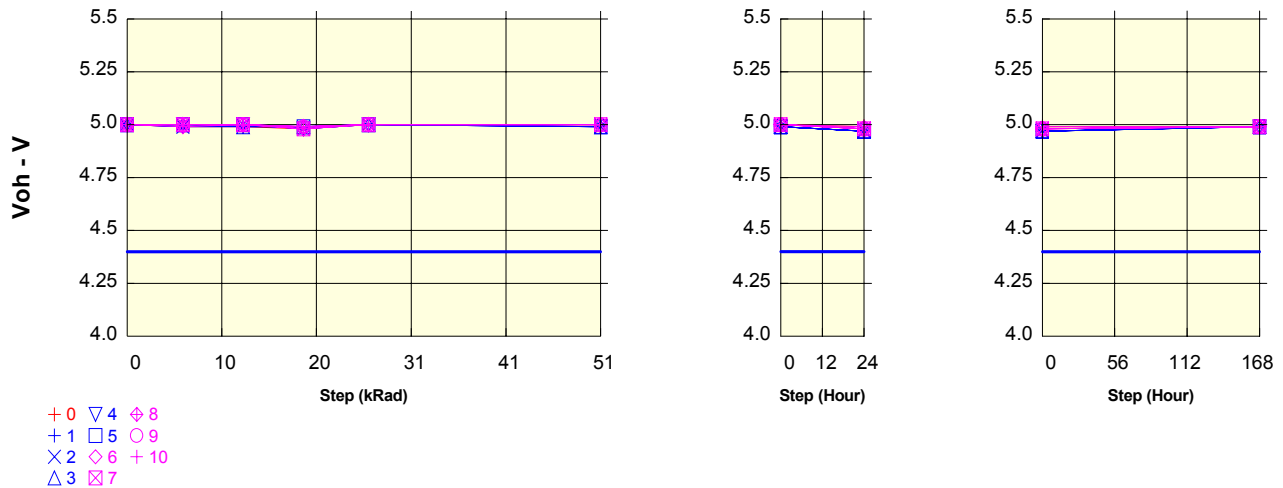
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	4.98	4.99
1	4.97	4.99
2	4.98	4.99
3	4.97	4.98
4	4.97	4.99
5	4.97	4.99
6	4.98	4.99
7	4.98	4.99
8	4.98	4.99
9	4.98	4.99
10	4.98	4.99
Statistics		
Min	4.97	4.98
Max	4.98	4.99
Mean	4.98	4.99
Sigma	0.01	0.0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VohDB1

Unit : V
Spec Limit Min : 4.4
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	5.0	4.99	4.99	4.98	5.0	5.0
1	5.0	4.99	4.99	4.99	5.0	4.99
2	5.0	4.99	5.0	4.98	5.0	4.99
3	5.0	5.0	4.99	4.99	5.0	4.99
4	5.0	5.0	5.0	4.98	5.0	4.99
5	5.0	5.0	5.0	4.99	5.0	4.99
6	5.0	4.99	5.0	4.98	5.0	5.0
7	5.0	5.0	5.0	4.98	5.0	5.0
8	5.0	5.0	5.0	4.99	5.0	5.0
9	5.0	5.0	5.0	4.99	5.0	5.0
10	5.0	5.0	5.0	4.99	5.0	5.0
Statistics						
Min	5.0	4.99	4.99	4.98	5.0	4.99
Max	5.0	5.0	5.0	4.99	5.0	5.0
Mean	5.0	5.0	5.0	4.99	5.0	5.0
Sigma	0.0	0.0	0.0	0.01	0.0	0.01

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	5.0	4.99
1	4.99	4.97
2	4.99	4.97
3	4.99	4.97
4	4.99	4.97
5	4.99	4.97
6	5.0	4.98
7	5.0	4.98
8	5.0	4.98
9	5.0	4.98
10	5.0	4.99
Statistics		
Min	4.99	4.97
Max	5.0	4.99
Mean	5.0	4.98
Sigma	0.01	0.01

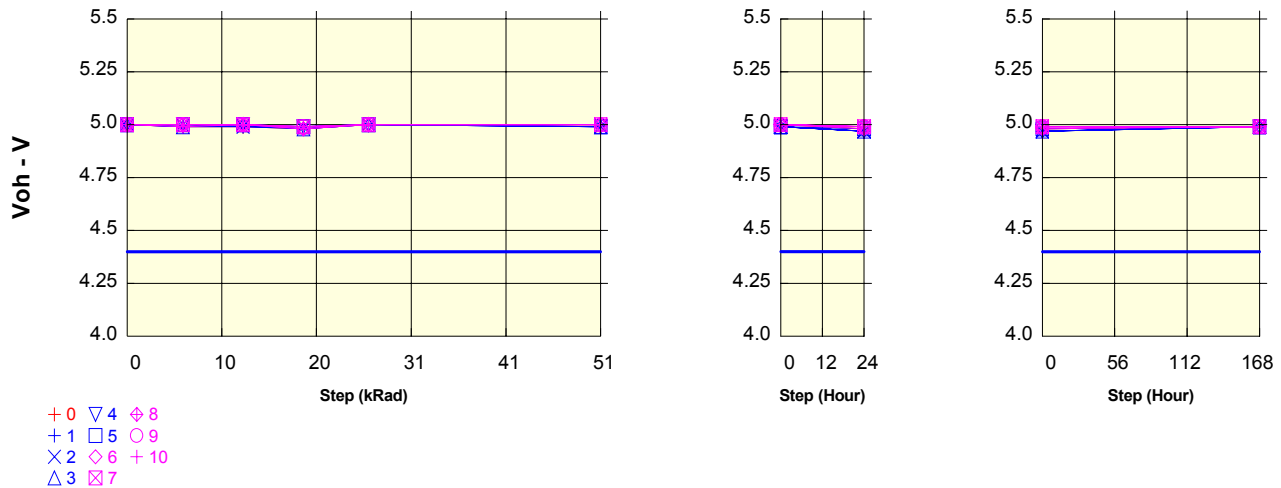
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	4.99	4.99
1	4.97	4.99
2	4.97	4.99
3	4.97	4.99
4	4.97	4.99
5	4.97	4.99
6	4.98	4.99
7	4.98	4.99
8	4.98	4.99
9	4.98	4.99
10	4.99	4.99
Statistics		
Min	4.97	4.99
Max	4.99	4.99
Mean	4.98	4.99
Sigma	0.01	0.0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VohDB0

Unit : V
Spec Limit Min : 4.4
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	5.0	4.99	4.99	4.98	5.0	5.0
1	5.0	4.99	4.99	4.98	5.0	4.99
2	5.0	5.0	4.99	4.99	5.0	4.99
3	5.0	4.99	5.0	4.98	5.0	4.99
4	5.0	5.0	5.0	4.99	5.0	4.99
5	5.0	5.0	5.0	4.99	5.0	4.99
6	5.0	5.0	5.0	4.98	5.0	5.0
7	5.0	5.0	5.0	4.99	5.0	5.0
8	5.0	5.0	5.0	4.98	5.0	5.0
9	5.0	5.0	5.0	4.99	5.0	5.0
10	5.0	4.99	5.0	4.99	5.0	5.0
Statistics						
Min	5.0	4.99	4.99	4.98	5.0	4.99
Max	5.0	5.0	5.0	4.99	5.0	5.0
Mean	5.0	5.0	5.0	4.99	5.0	5.0
Sigma	0.0	0.0	0.0	0.01	0.0	0.01

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	5.0	4.98
1	4.99	4.97
2	4.99	4.97
3	4.99	4.97
4	4.99	4.97
5	4.99	4.98
6	5.0	4.98
7	5.0	4.99
8	5.0	4.99
9	5.0	4.99
10	5.0	4.99
Statistics		
Min	4.99	4.97
Max	5.0	4.99
Mean	5.0	4.98
Sigma	0.01	0.01

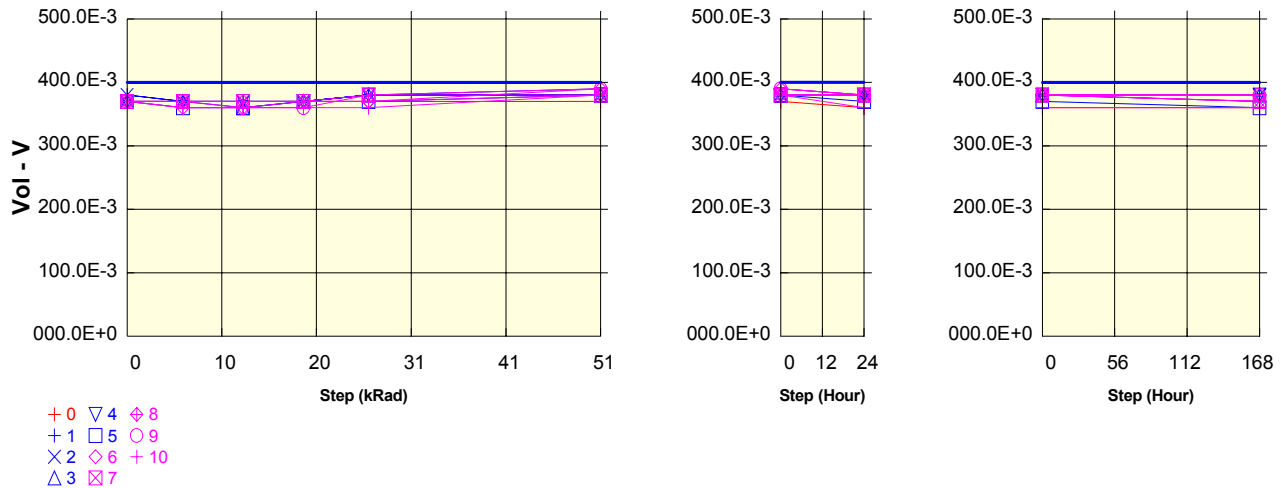
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	4.98	4.99
1	4.97	4.99
2	4.97	4.99
3	4.97	4.99
4	4.97	4.99
5	4.98	4.99
6	4.98	4.99
7	4.99	4.99
8	4.99	4.99
9	4.99	4.99
10	4.99	4.99
Statistics		
Min	4.97	4.99
Max	4.99	4.99
Mean	4.98	4.99
Sigma	0.01	0.0

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VolDB15

Unit : V
Spec Limit Max : 400.0E-3
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	370.0E-3	370.0E-3	370.0E-3	370.0E-3	370.0E-3	370.0E-3
1	380.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
2	380.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3
3	370.0E-3	370.0E-3	360.0E-3	370.0E-3	380.0E-3	380.0E-3
4	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3
5	370.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3	380.0E-3
6	370.0E-3	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3
7	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3
8	370.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3	390.0E-3
9	370.0E-3	370.0E-3	360.0E-3	360.0E-3	380.0E-3	390.0E-3
10	370.0E-3	360.0E-3	360.0E-3	360.0E-3	360.0E-3	380.0E-3
Statistics						
Min	370.0E-3	360.0E-3	360.0E-3	360.0E-3	360.0E-3	380.0E-3
Max	380.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
Mean	372.0E-3	367.0E-3	365.0E-3	368.0E-3	375.0E-3	383.0E-3
Sigma	421.6E-5	483.0E-5	527.0E-5	421.6E-5	707.1E-5	483.0E-5

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	370.0E-3	360.0E-3
1	390.0E-3	380.0E-3
2	380.0E-3	380.0E-3
3	380.0E-3	380.0E-3
4	380.0E-3	380.0E-3
5	380.0E-3	370.0E-3
6	380.0E-3	380.0E-3
7	380.0E-3	380.0E-3
8	390.0E-3	380.0E-3
9	390.0E-3	380.0E-3
10	380.0E-3	360.0E-3
Statistics		
Min	380.0E-3	360.0E-3
Max	390.0E-3	380.0E-3
Mean	383.0E-3	377.0E-3
Sigma	483.0E-5	674.9E-5

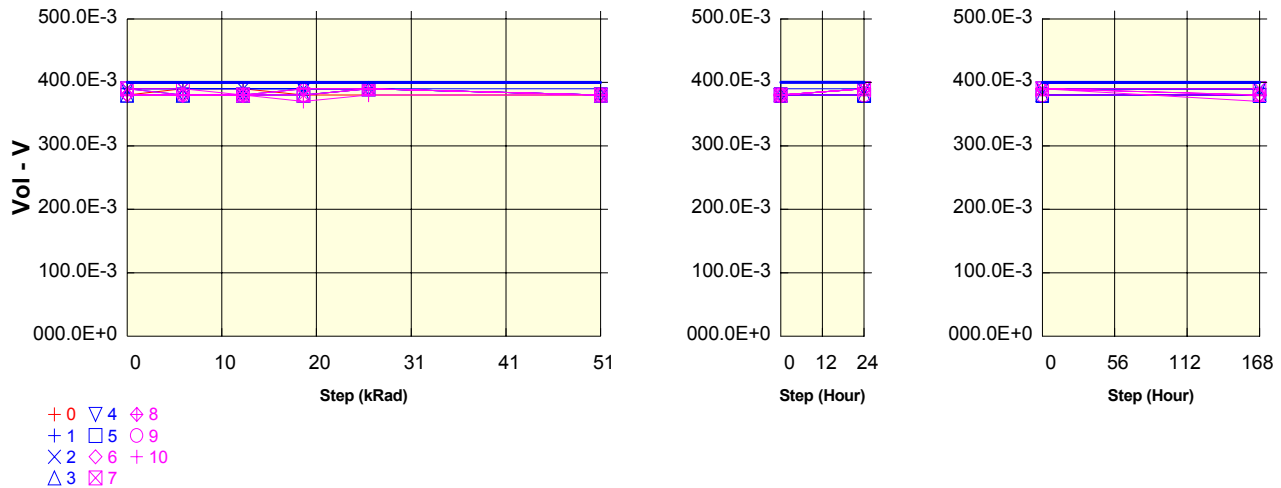
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	360.0E-3	360.0E-3
1	380.0E-3	370.0E-3
2	380.0E-3	380.0E-3
3	380.0E-3	380.0E-3
4	380.0E-3	380.0E-3
5	370.0E-3	360.0E-3
6	380.0E-3	380.0E-3
7	380.0E-3	370.0E-3
8	380.0E-3	370.0E-3
9	380.0E-3	380.0E-3
10	360.0E-3	360.0E-3
Statistics		
Min	360.0E-3	360.0E-3
Max	380.0E-3	380.0E-3
Mean	377.0E-3	373.0E-3
Sigma	674.9E-5	823.3E-5

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VolDB14

Unit : V
Spec Limit Max : 400.0E-3
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	380.0E-3	390.0E-3	390.0E-3	380.0E-3	380.0E-3	380.0E-3
1	390.0E-3	390.0E-3	390.0E-3	390.0E-3	390.0E-3	390.0E-3
2	390.0E-3	390.0E-3	390.0E-3	390.0E-3	390.0E-3	380.0E-3
3	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3	380.0E-3
4	390.0E-3	380.0E-3	380.0E-3	390.0E-3	390.0E-3	380.0E-3
5	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3	380.0E-3
6	380.0E-3	380.0E-3	380.0E-3	390.0E-3	390.0E-3	380.0E-3
7	390.0E-3	390.0E-3	380.0E-3	380.0E-3	390.0E-3	380.0E-3
8	380.0E-3	380.0E-3	380.0E-3	390.0E-3	390.0E-3	380.0E-3
9	390.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3	380.0E-3
10	380.0E-3	380.0E-3	380.0E-3	370.0E-3	380.0E-3	380.0E-3
Statistics						
Min	380.0E-3	380.0E-3	380.0E-3	370.0E-3	380.0E-3	380.0E-3
Max	390.0E-3	390.0E-3	390.0E-3	390.0E-3	390.0E-3	390.0E-3
Mean	385.0E-3	383.0E-3	382.0E-3	384.0E-3	389.0E-3	381.0E-3
Sigma	527.0E-5	483.0E-5	421.6E-5	699.2E-5	316.2E-5	316.2E-5

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	380.0E-3	380.0E-3
1	390.0E-3	390.0E-3
2	380.0E-3	390.0E-3
3	380.0E-3	380.0E-3
4	380.0E-3	390.0E-3
5	380.0E-3	380.0E-3
6	380.0E-3	390.0E-3
7	380.0E-3	390.0E-3
8	380.0E-3	390.0E-3
9	380.0E-3	380.0E-3
10	380.0E-3	390.0E-3
Statistics		
Min	380.0E-3	380.0E-3
Max	390.0E-3	390.0E-3
Mean	381.0E-3	387.0E-3
Sigma	316.2E-5	483.0E-5

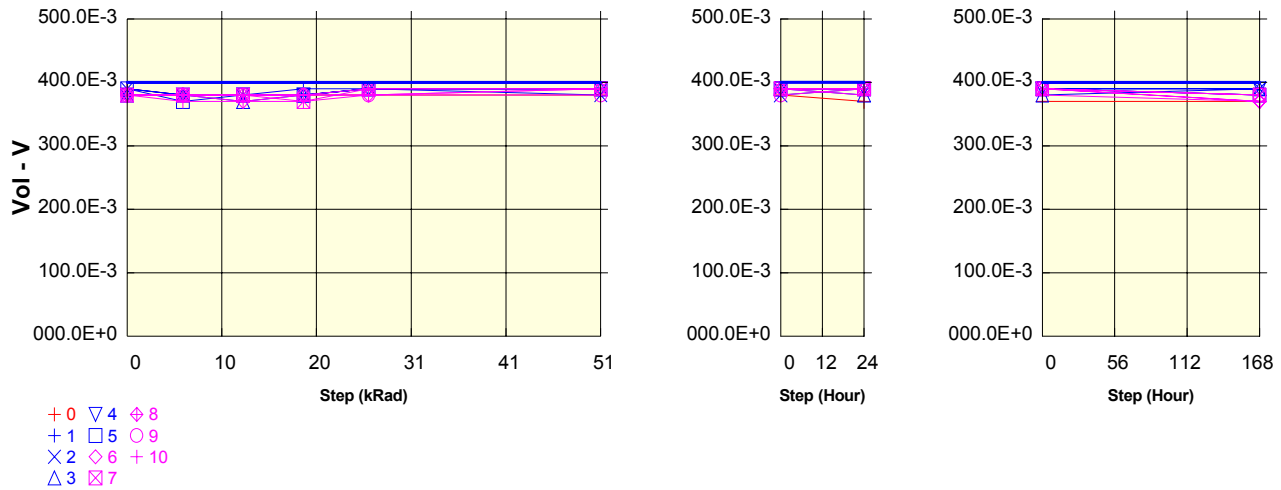
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	380.0E-3	380.0E-3
1	390.0E-3	390.0E-3
2	390.0E-3	390.0E-3
3	380.0E-3	380.0E-3
4	390.0E-3	390.0E-3
5	380.0E-3	380.0E-3
6	390.0E-3	380.0E-3
7	390.0E-3	390.0E-3
8	390.0E-3	380.0E-3
9	380.0E-3	380.0E-3
10	390.0E-3	370.0E-3
Statistics		
Min	380.0E-3	370.0E-3
Max	390.0E-3	390.0E-3
Mean	387.0E-3	383.0E-3
Sigma	483.0E-5	674.9E-5

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VolDB13

Unit : V
Spec Limit Max : 400.0E-3
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	390.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3
1	390.0E-3	380.0E-3	380.0E-3	390.0E-3	390.0E-3	390.0E-3
2	390.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3	380.0E-3
3	380.0E-3	380.0E-3	370.0E-3	380.0E-3	390.0E-3	390.0E-3
4	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3	390.0E-3
5	390.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3	390.0E-3
6	380.0E-3	380.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
7	380.0E-3	380.0E-3	380.0E-3	370.0E-3	390.0E-3	390.0E-3
8	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3	390.0E-3
9	380.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3
10	380.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
Statistics						
Min	380.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3
Max	390.0E-3	380.0E-3	380.0E-3	390.0E-3	390.0E-3	390.0E-3
Mean	383.0E-3	378.0E-3	377.0E-3	379.0E-3	387.0E-3	388.0E-3
Sigma	483.0E-5	421.6E-5	483.0E-5	567.6E-5	483.0E-5	421.6E-5

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	380.0E-3	370.0E-3
1	390.0E-3	390.0E-3
2	380.0E-3	390.0E-3
3	390.0E-3	380.0E-3
4	390.0E-3	390.0E-3
5	390.0E-3	390.0E-3
6	390.0E-3	390.0E-3
7	390.0E-3	390.0E-3
8	390.0E-3	390.0E-3
9	380.0E-3	390.0E-3
10	390.0E-3	380.0E-3
Statistics		
Min	380.0E-3	380.0E-3
Max	390.0E-3	390.0E-3
Mean	388.0E-3	388.0E-3
Sigma	421.6E-5	421.6E-5

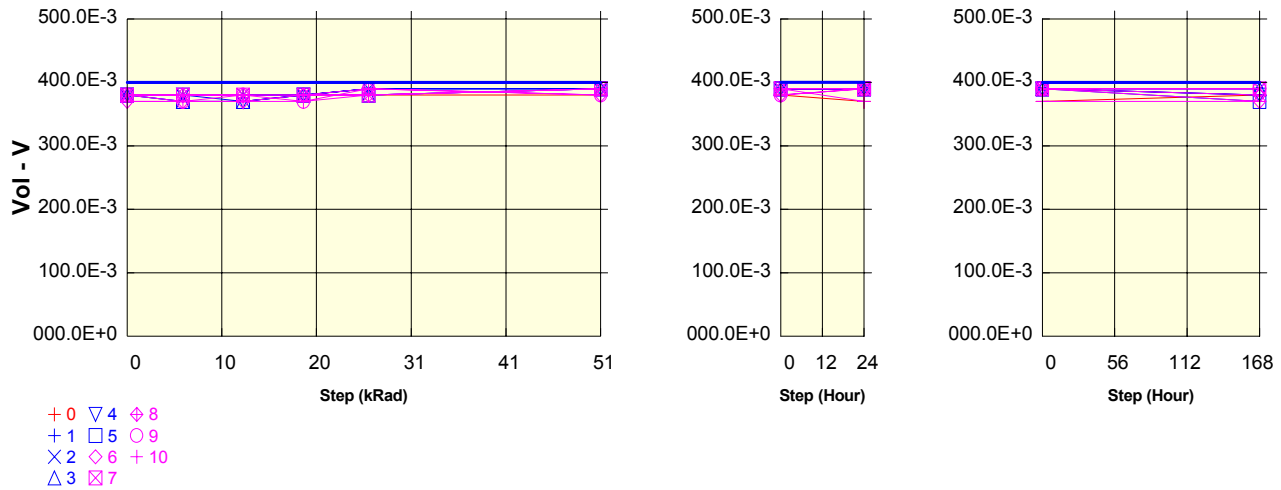
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	370.0E-3	370.0E-3
1	390.0E-3	380.0E-3
2	390.0E-3	390.0E-3
3	380.0E-3	390.0E-3
4	390.0E-3	390.0E-3
5	390.0E-3	380.0E-3
6	390.0E-3	370.0E-3
7	390.0E-3	380.0E-3
8	390.0E-3	370.0E-3
9	390.0E-3	380.0E-3
10	380.0E-3	370.0E-3
Statistics		
Min	380.0E-3	370.0E-3
Max	390.0E-3	390.0E-3
Mean	388.0E-3	380.0E-3
Sigma	421.6E-5	816.5E-5

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VoIDB12

Unit : V
Spec Limit Max : 400.0E-3
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	380.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3
1	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3	390.0E-3
2	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3	390.0E-3
3	380.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
4	380.0E-3	380.0E-3	370.0E-3	380.0E-3	390.0E-3	390.0E-3
5	380.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
6	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
7	380.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3
8	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3	380.0E-3
9	380.0E-3	370.0E-3	380.0E-3	370.0E-3	390.0E-3	380.0E-3
10	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
Statistics						
Min	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3
Max	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3	390.0E-3
Mean	378.0E-3	375.0E-3	375.0E-3	378.0E-3	385.0E-3	388.0E-3
Sigma	421.6E-5	527.0E-5	527.0E-5	421.6E-5	527.0E-5	421.6E-5

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	380.0E-3	370.0E-3
1	390.0E-3	390.0E-3
2	390.0E-3	390.0E-3
3	390.0E-3	390.0E-3
4	390.0E-3	390.0E-3
5	390.0E-3	390.0E-3
6	390.0E-3	390.0E-3
7	390.0E-3	390.0E-3
8	380.0E-3	390.0E-3
9	380.0E-3	390.0E-3
10	390.0E-3	370.0E-3
Statistics		
Min	380.0E-3	370.0E-3
Max	390.0E-3	390.0E-3
Mean	388.0E-3	388.0E-3
Sigma	421.6E-5	632.5E-5

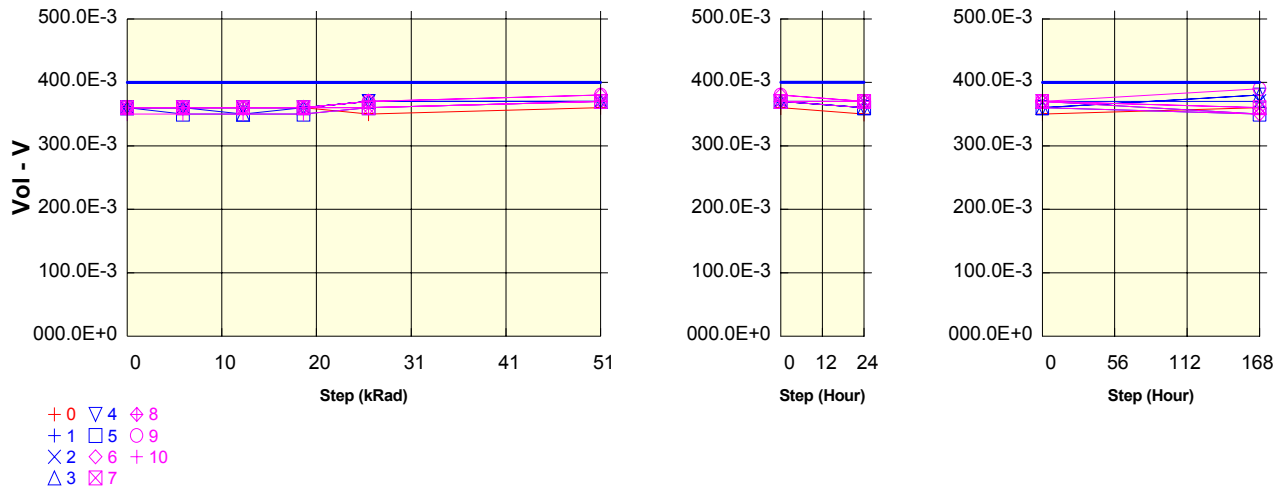
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	370.0E-3	380.0E-3
1	390.0E-3	380.0E-3
2	390.0E-3	390.0E-3
3	390.0E-3	390.0E-3
4	390.0E-3	380.0E-3
5	390.0E-3	370.0E-3
6	390.0E-3	380.0E-3
7	390.0E-3	390.0E-3
8	390.0E-3	370.0E-3
9	390.0E-3	390.0E-3
10	370.0E-3	370.0E-3
Statistics		
Min	370.0E-3	370.0E-3
Max	390.0E-3	390.0E-3
Mean	388.0E-3	381.0E-3
Sigma	632.5E-5	875.6E-5

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VolDB11

Unit : V
Spec Limit Max : 400.0E-3
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	360.0E-3	360.0E-3	360.0E-3	360.0E-3	350.0E-3	360.0E-3
1	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3
2	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3
3	360.0E-3	360.0E-3	350.0E-3	360.0E-3	370.0E-3	370.0E-3
4	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3
5	360.0E-3	350.0E-3	350.0E-3	350.0E-3	360.0E-3	370.0E-3
6	360.0E-3	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3
7	360.0E-3	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3
8	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	380.0E-3
9	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	380.0E-3
10	350.0E-3	350.0E-3	350.0E-3	350.0E-3	360.0E-3	370.0E-3
Statistics						
Min	350.0E-3	350.0E-3	350.0E-3	350.0E-3	360.0E-3	370.0E-3
Max	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	380.0E-3
Mean	359.0E-3	358.0E-3	357.0E-3	358.0E-3	366.0E-3	372.0E-3
Sigma	316.2E-5	421.6E-5	483.0E-5	421.6E-5	516.4E-5	421.6E-5

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	360.0E-3	350.0E-3
1	370.0E-3	370.0E-3
2	370.0E-3	370.0E-3
3	370.0E-3	360.0E-3
4	370.0E-3	360.0E-3
5	370.0E-3	360.0E-3
6	370.0E-3	370.0E-3
7	370.0E-3	370.0E-3
8	380.0E-3	370.0E-3
9	380.0E-3	370.0E-3
10	370.0E-3	360.0E-3
Statistics		
Min	370.0E-3	360.0E-3
Max	380.0E-3	370.0E-3
Mean	372.0E-3	366.0E-3
Sigma	421.6E-5	516.4E-5

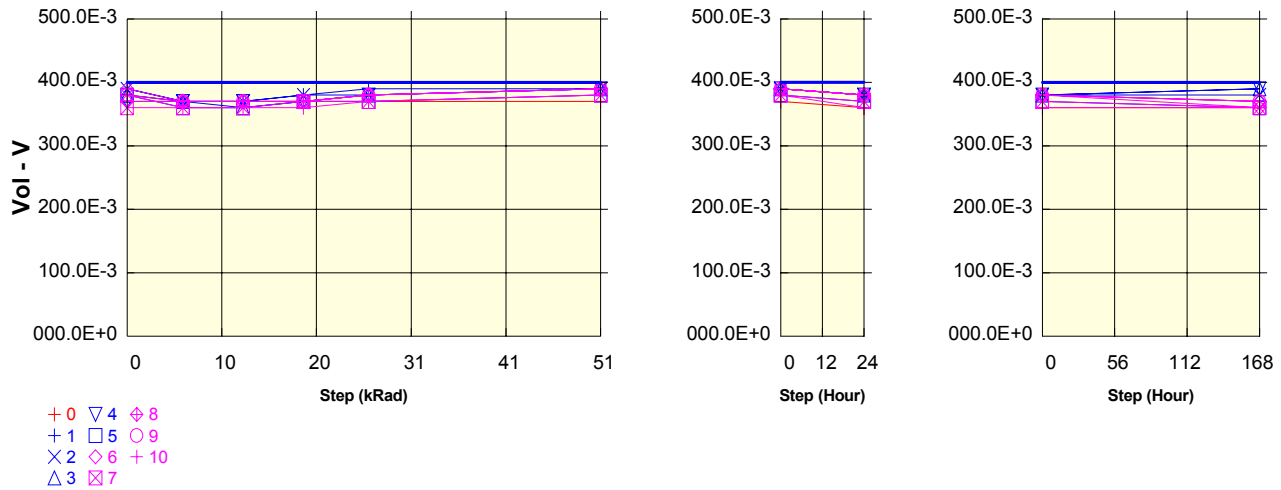
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	350.0E-3	360.0E-3
1	370.0E-3	350.0E-3
2	370.0E-3	370.0E-3
3	360.0E-3	380.0E-3
4	360.0E-3	380.0E-3
5	360.0E-3	350.0E-3
6	370.0E-3	360.0E-3
7	370.0E-3	360.0E-3
8	370.0E-3	350.0E-3
9	370.0E-3	390.0E-3
10	360.0E-3	350.0E-3
Statistics		
Min	360.0E-3	350.0E-3
Max	370.0E-3	390.0E-3
Mean	366.0E-3	364.0E-3
Sigma	516.4E-5	150.6E-4

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VolDB10

Unit : V
Spec Limit Max : 400.0E-3
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	380.0E-3	370.0E-3	370.0E-3	370.0E-3	370.0E-3	370.0E-3
1	390.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3	390.0E-3
2	390.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
3	380.0E-3	370.0E-3	360.0E-3	370.0E-3	380.0E-3	390.0E-3
4	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
5	380.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3	380.0E-3
6	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
7	360.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3	380.0E-3
8	390.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
9	380.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
10	380.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	380.0E-3
Statistics						
Min	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	380.0E-3
Max	390.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3	390.0E-3
Mean	379.0E-3	367.0E-3	366.0E-3	371.0E-3	378.0E-3	387.0E-3
Sigma	994.4E-5	483.0E-5	516.4E-5	567.6E-5	632.5E-5	483.0E-5

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	370.0E-3	360.0E-3
1	390.0E-3	380.0E-3
2	390.0E-3	380.0E-3
3	390.0E-3	380.0E-3
4	390.0E-3	380.0E-3
5	380.0E-3	370.0E-3
6	390.0E-3	380.0E-3
7	380.0E-3	370.0E-3
8	390.0E-3	380.0E-3
9	390.0E-3	380.0E-3
10	380.0E-3	360.0E-3
Statistics		
Min	380.0E-3	360.0E-3
Max	390.0E-3	380.0E-3
Mean	387.0E-3	376.0E-3
Sigma	483.0E-5	699.2E-5

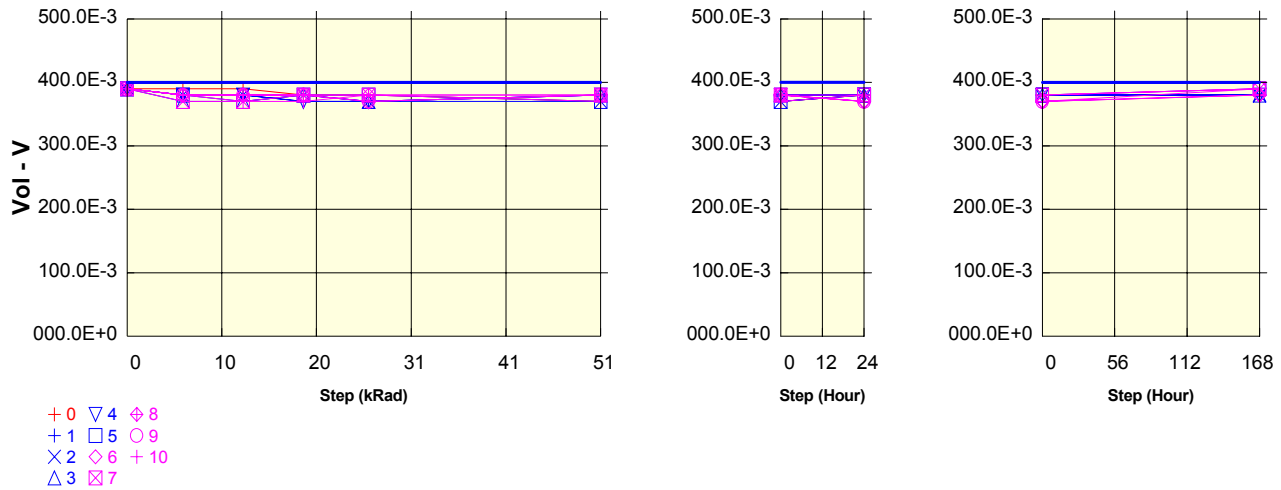
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	360.0E-3	360.0E-3
1	380.0E-3	370.0E-3
2	380.0E-3	380.0E-3
3	380.0E-3	390.0E-3
4	380.0E-3	390.0E-3
5	370.0E-3	360.0E-3
6	380.0E-3	370.0E-3
7	370.0E-3	360.0E-3
8	380.0E-3	360.0E-3
9	380.0E-3	370.0E-3
10	360.0E-3	360.0E-3
Statistics		
Min	360.0E-3	360.0E-3
Max	380.0E-3	390.0E-3
Mean	376.0E-3	371.0E-3
Sigma	699.2E-5	119.7E-4

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VoIDB9

Unit : V
Spec Limit Max : 400.0E-3
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	390.0E-3	390.0E-3	390.0E-3	380.0E-3	380.0E-3	370.0E-3
1	390.0E-3	380.0E-3	380.0E-3	370.0E-3	370.0E-3	380.0E-3
2	390.0E-3	380.0E-3	380.0E-3	380.0E-3	370.0E-3	370.0E-3
3	390.0E-3	370.0E-3	370.0E-3	380.0E-3	370.0E-3	380.0E-3
4	390.0E-3	380.0E-3	380.0E-3	370.0E-3	370.0E-3	380.0E-3
5	390.0E-3	380.0E-3	370.0E-3	380.0E-3	380.0E-3	370.0E-3
6	390.0E-3	380.0E-3	380.0E-3	380.0E-3	370.0E-3	380.0E-3
7	390.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	380.0E-3
8	390.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3
9	390.0E-3	380.0E-3	380.0E-3	380.0E-3	370.0E-3	380.0E-3
10	390.0E-3	380.0E-3	370.0E-3	370.0E-3	380.0E-3	370.0E-3
Statistics						
Min	390.0E-3	370.0E-3	370.0E-3	370.0E-3	370.0E-3	370.0E-3
Max	390.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3
Mean	390.0E-3	378.0E-3	376.0E-3	377.0E-3	374.0E-3	377.0E-3
Sigma	702.4E-11	421.6E-5	516.4E-5	483.0E-5	516.4E-5	483.0E-5

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	370.0E-3	380.0E-3
1	380.0E-3	380.0E-3
2	370.0E-3	380.0E-3
3	380.0E-3	380.0E-3
4	380.0E-3	380.0E-3
5	370.0E-3	380.0E-3
6	380.0E-3	370.0E-3
7	380.0E-3	380.0E-3
8	380.0E-3	370.0E-3
9	380.0E-3	370.0E-3
10	370.0E-3	380.0E-3
Statistics		
Min	370.0E-3	370.0E-3
Max	380.0E-3	380.0E-3
Mean	377.0E-3	377.0E-3
Sigma	483.0E-5	483.0E-5

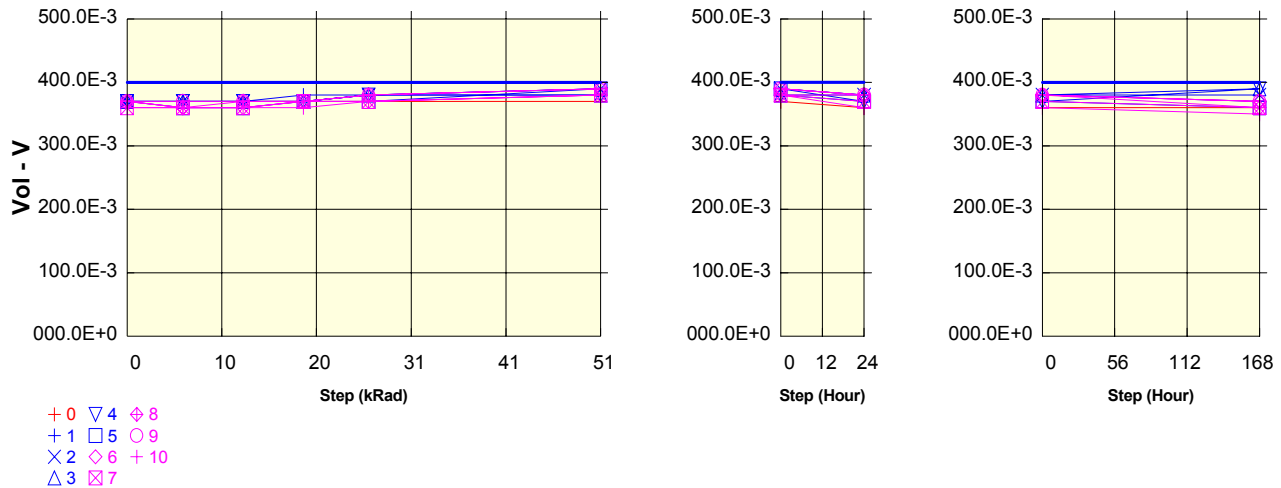
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	380.0E-3	380.0E-3
1	380.0E-3	380.0E-3
2	380.0E-3	380.0E-3
3	380.0E-3	380.0E-3
4	380.0E-3	380.0E-3
5	380.0E-3	390.0E-3
6	370.0E-3	380.0E-3
7	380.0E-3	390.0E-3
8	370.0E-3	380.0E-3
9	370.0E-3	390.0E-3
10	380.0E-3	390.0E-3
Statistics		
Min	370.0E-3	380.0E-3
Max	380.0E-3	390.0E-3
Mean	377.0E-3	384.0E-3
Sigma	483.0E-5	516.4E-5

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VolDB8

Unit : V
Spec Limit Max : 400.0E-3
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	370.0E-3	370.0E-3	370.0E-3	370.0E-3	370.0E-3	370.0E-3
1	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
2	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
3	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3
4	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3
5	370.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3	390.0E-3
6	370.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3	380.0E-3
7	360.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3	380.0E-3
8	370.0E-3	360.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
9	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
10	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	380.0E-3
Statistics						
Min	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	380.0E-3
Max	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
Mean	368.0E-3	365.0E-3	366.0E-3	370.0E-3	376.0E-3	385.0E-3
Sigma	421.6E-5	527.0E-5	516.4E-5	471.4E-5	516.4E-5	527.0E-5

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	370.0E-3	360.0E-3
1	390.0E-3	380.0E-3
2	390.0E-3	380.0E-3
3	380.0E-3	380.0E-3
4	380.0E-3	370.0E-3
5	390.0E-3	370.0E-3
6	380.0E-3	380.0E-3
7	380.0E-3	370.0E-3
8	390.0E-3	380.0E-3
9	390.0E-3	380.0E-3
10	380.0E-3	360.0E-3
Statistics		
Min	380.0E-3	360.0E-3
Max	390.0E-3	380.0E-3
Mean	385.0E-3	375.0E-3
Sigma	527.0E-5	707.1E-5

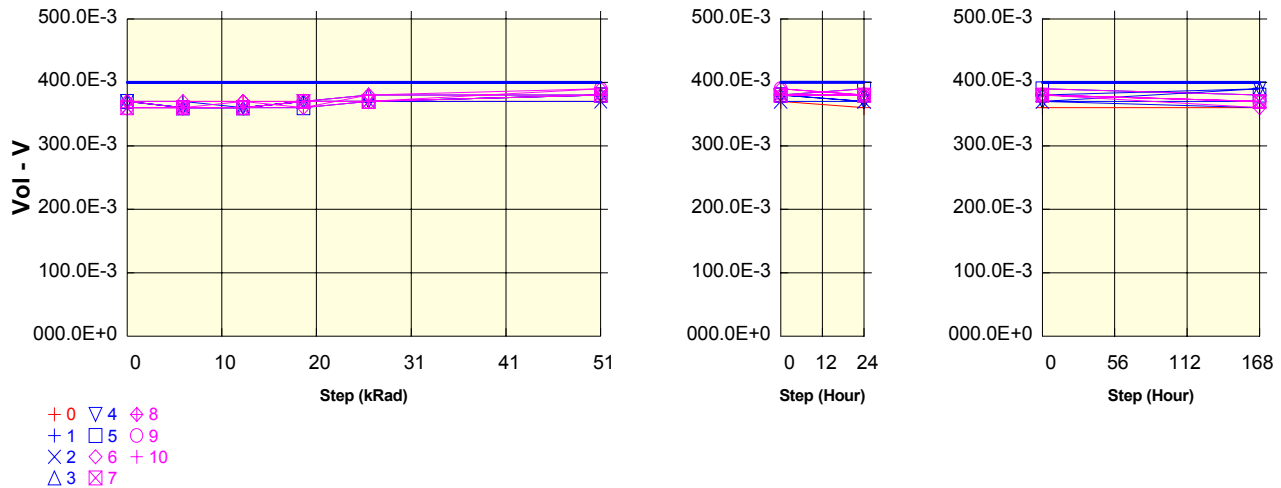
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	360.0E-3	360.0E-3
1	380.0E-3	370.0E-3
2	380.0E-3	380.0E-3
3	380.0E-3	390.0E-3
4	370.0E-3	390.0E-3
5	370.0E-3	360.0E-3
6	380.0E-3	370.0E-3
7	370.0E-3	360.0E-3
8	380.0E-3	360.0E-3
9	380.0E-3	370.0E-3
10	360.0E-3	350.0E-3
Statistics		
Min	360.0E-3	350.0E-3
Max	380.0E-3	390.0E-3
Mean	375.0E-3	370.0E-3
Sigma	707.1E-5	133.3E-4

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VolDB7

Unit : V
Spec Limit Max : 400.0E-3
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	370.0E-3	370.0E-3	370.0E-3	370.0E-3	370.0E-3	370.0E-3
1	370.0E-3	370.0E-3	360.0E-3	370.0E-3	370.0E-3	380.0E-3
2	360.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3	370.0E-3
3	370.0E-3	360.0E-3	360.0E-3	370.0E-3	380.0E-3	380.0E-3
4	370.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3	380.0E-3
5	370.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	380.0E-3
6	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
7	360.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3	380.0E-3
8	370.0E-3	360.0E-3	370.0E-3	360.0E-3	380.0E-3	380.0E-3
9	360.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3	390.0E-3
10	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	380.0E-3
Statistics						
Min	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3
Max	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
Mean	366.0E-3	362.0E-3	362.0E-3	367.0E-3	373.0E-3	381.0E-3
Sigma	516.4E-5	421.6E-5	421.6E-5	483.0E-5	483.0E-5	567.6E-5

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	370.0E-3	360.0E-3
1	380.0E-3	370.0E-3
2	370.0E-3	370.0E-3
3	380.0E-3	380.0E-3
4	380.0E-3	370.0E-3
5	380.0E-3	390.0E-3
6	390.0E-3	380.0E-3
7	380.0E-3	380.0E-3
8	380.0E-3	380.0E-3
9	390.0E-3	380.0E-3
10	380.0E-3	390.0E-3
Statistics		
Min	370.0E-3	370.0E-3
Max	390.0E-3	390.0E-3
Mean	381.0E-3	379.0E-3
Sigma	567.6E-5	737.9E-5

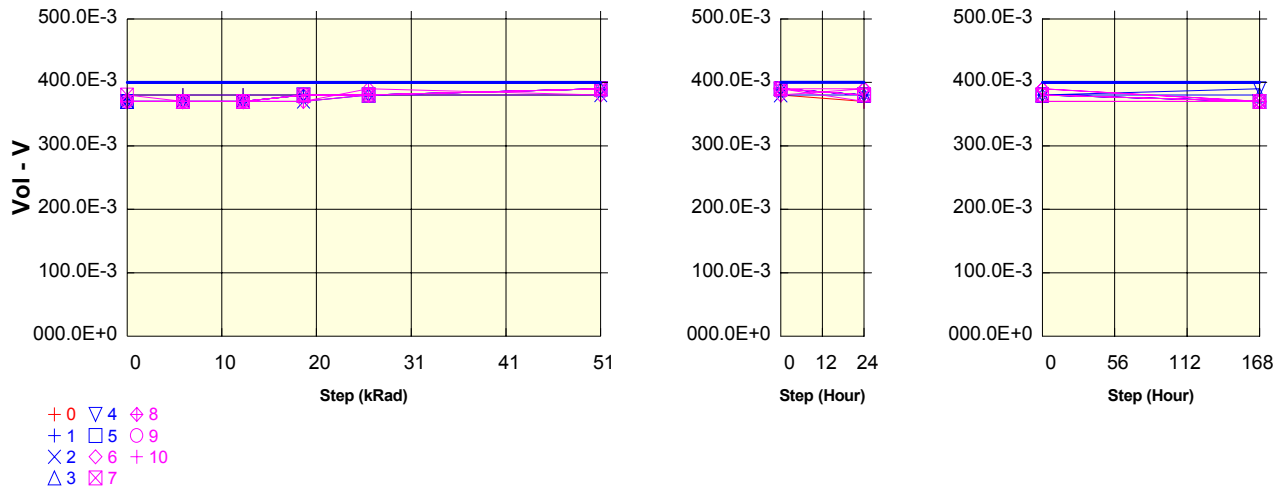
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	360.0E-3	360.0E-3
1	370.0E-3	360.0E-3
2	370.0E-3	370.0E-3
3	380.0E-3	390.0E-3
4	370.0E-3	390.0E-3
5	390.0E-3	380.0E-3
6	380.0E-3	370.0E-3
7	380.0E-3	370.0E-3
8	380.0E-3	360.0E-3
9	380.0E-3	370.0E-3
10	390.0E-3	380.0E-3
Statistics		
Min	370.0E-3	360.0E-3
Max	390.0E-3	390.0E-3
Mean	379.0E-3	374.0E-3
Sigma	737.9E-5	107.5E-4

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VoIDB6

Unit : V
Spec Limit Max : 400.0E-3
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	380.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3
1	380.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3
2	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3
3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
4	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
5	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
6	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
7	380.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
8	370.0E-3	370.0E-3	370.0E-3	370.0E-3	390.0E-3	380.0E-3
9	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
10	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
Statistics						
Min	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3
Max	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3	390.0E-3
Mean	372.0E-3	371.0E-3	371.0E-3	377.0E-3	381.0E-3	388.0E-3
Sigma	421.6E-5	316.2E-5	316.2E-5	483.0E-5	316.2E-5	421.6E-5

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	380.0E-3	370.0E-3
1	390.0E-3	380.0E-3
2	380.0E-3	380.0E-3
3	390.0E-3	380.0E-3
4	390.0E-3	380.0E-3
5	390.0E-3	380.0E-3
6	390.0E-3	390.0E-3
7	390.0E-3	380.0E-3
8	380.0E-3	390.0E-3
9	390.0E-3	380.0E-3
10	390.0E-3	370.0E-3
Statistics		
Min	380.0E-3	370.0E-3
Max	390.0E-3	390.0E-3
Mean	388.0E-3	381.0E-3
Sigma	421.6E-5	567.6E-5

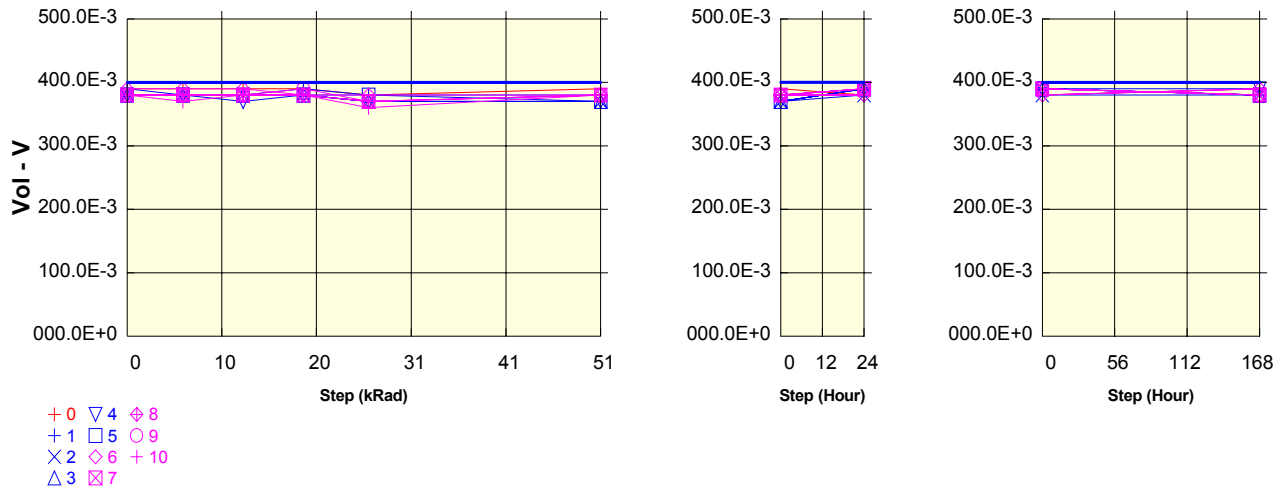
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	370.0E-3	370.0E-3
1	380.0E-3	370.0E-3
2	380.0E-3	370.0E-3
3	380.0E-3	380.0E-3
4	380.0E-3	390.0E-3
5	380.0E-3	370.0E-3
6	390.0E-3	370.0E-3
7	380.0E-3	370.0E-3
8	390.0E-3	370.0E-3
9	380.0E-3	370.0E-3
10	370.0E-3	370.0E-3
Statistics		
Min	370.0E-3	370.0E-3
Max	390.0E-3	390.0E-3
Mean	381.0E-3	373.0E-3
Sigma	567.6E-5	674.9E-5

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VoIDB5

Unit : V
Spec Limit Max : 400.0E-3
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	390.0E-3	390.0E-3	390.0E-3	390.0E-3	380.0E-3	390.0E-3
1	390.0E-3	380.0E-3	380.0E-3	390.0E-3	380.0E-3	380.0E-3
2	380.0E-3	380.0E-3	380.0E-3	380.0E-3	370.0E-3	370.0E-3
3	380.0E-3	380.0E-3	380.0E-3	380.0E-3	370.0E-3	370.0E-3
4	380.0E-3	380.0E-3	370.0E-3	380.0E-3	370.0E-3	370.0E-3
5	380.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3	370.0E-3
6	390.0E-3	390.0E-3	390.0E-3	380.0E-3	380.0E-3	380.0E-3
7	380.0E-3	380.0E-3	380.0E-3	380.0E-3	370.0E-3	380.0E-3
8	380.0E-3	380.0E-3	380.0E-3	380.0E-3	370.0E-3	380.0E-3
9	380.0E-3	380.0E-3	380.0E-3	390.0E-3	370.0E-3	380.0E-3
10	380.0E-3	370.0E-3	380.0E-3	380.0E-3	360.0E-3	380.0E-3
Statistics						
Min	380.0E-3	370.0E-3	370.0E-3	380.0E-3	360.0E-3	370.0E-3
Max	390.0E-3	390.0E-3	390.0E-3	390.0E-3	380.0E-3	380.0E-3
Mean	382.0E-3	380.0E-3	380.0E-3	382.0E-3	372.0E-3	376.0E-3
Sigma	421.6E-5	471.4E-5	471.4E-5	421.6E-5	632.5E-5	516.4E-5

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	390.0E-3	380.0E-3
1	380.0E-3	390.0E-3
2	370.0E-3	380.0E-3
3	370.0E-3	390.0E-3
4	370.0E-3	390.0E-3
5	370.0E-3	390.0E-3
6	380.0E-3	380.0E-3
7	380.0E-3	390.0E-3
8	380.0E-3	390.0E-3
9	380.0E-3	390.0E-3
10	380.0E-3	380.0E-3
Statistics		
Min	370.0E-3	380.0E-3
Max	380.0E-3	390.0E-3
Mean	376.0E-3	387.0E-3
Sigma	516.4E-5	483.0E-5

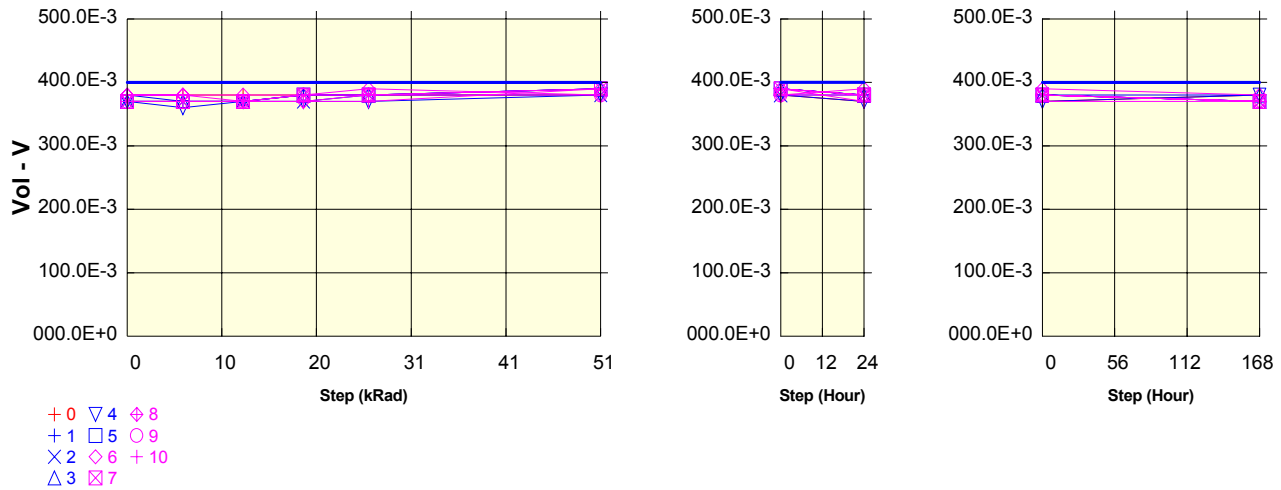
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	380.0E-3	390.0E-3
1	390.0E-3	380.0E-3
2	380.0E-3	380.0E-3
3	390.0E-3	380.0E-3
4	390.0E-3	390.0E-3
5	390.0E-3	380.0E-3
6	380.0E-3	390.0E-3
7	390.0E-3	380.0E-3
8	390.0E-3	380.0E-3
9	390.0E-3	380.0E-3
10	380.0E-3	390.0E-3
Statistics		
Min	380.0E-3	380.0E-3
Max	390.0E-3	390.0E-3
Mean	387.0E-3	383.0E-3
Sigma	483.0E-5	483.0E-5

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VolDB4

Unit : V
Spec Limit Max : 400.0E-3
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	380.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3
1	380.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
2	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3
3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
4	370.0E-3	360.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3
5	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
6	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3	380.0E-3
7	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
8	380.0E-3	380.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
9	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	380.0E-3
10	370.0E-3	370.0E-3	370.0E-3	370.0E-3	370.0E-3	390.0E-3
Statistics						
Min	370.0E-3	360.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3
Max	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3	390.0E-3
Mean	373.0E-3	371.0E-3	371.0E-3	376.0E-3	379.0E-3	386.0E-3
Sigma	483.0E-5	567.6E-5	316.2E-5	516.4E-5	567.6E-5	516.4E-5

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	380.0E-3	370.0E-3
1	390.0E-3	380.0E-3
2	380.0E-3	380.0E-3
3	390.0E-3	380.0E-3
4	380.0E-3	370.0E-3
5	390.0E-3	380.0E-3
6	380.0E-3	390.0E-3
7	390.0E-3	380.0E-3
8	390.0E-3	380.0E-3
9	380.0E-3	380.0E-3
10	390.0E-3	370.0E-3
Statistics		
Min	380.0E-3	370.0E-3
Max	390.0E-3	390.0E-3
Mean	386.0E-3	379.0E-3
Sigma	516.4E-5	567.6E-5

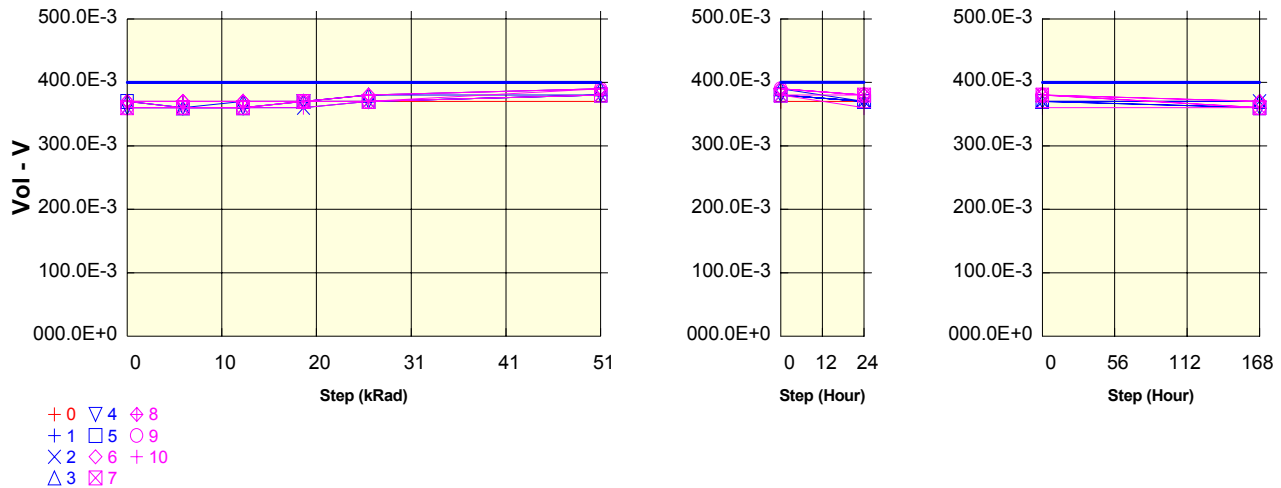
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	370.0E-3	380.0E-3
1	380.0E-3	370.0E-3
2	380.0E-3	370.0E-3
3	380.0E-3	380.0E-3
4	370.0E-3	380.0E-3
5	380.0E-3	370.0E-3
6	390.0E-3	380.0E-3
7	380.0E-3	370.0E-3
8	380.0E-3	370.0E-3
9	380.0E-3	370.0E-3
10	370.0E-3	370.0E-3
Statistics		
Min	370.0E-3	370.0E-3
Max	390.0E-3	380.0E-3
Mean	379.0E-3	373.0E-3
Sigma	567.6E-5	483.0E-5

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VolDB3

Unit : V
Spec Limit Max : 400.0E-3
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	370.0E-3	370.0E-3	370.0E-3	370.0E-3	370.0E-3	370.0E-3
1	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3
2	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	380.0E-3
3	370.0E-3	360.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
4	360.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3	380.0E-3
5	370.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3	380.0E-3
6	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
7	360.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3	380.0E-3
8	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
9	360.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3	390.0E-3
10	370.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	380.0E-3
Statistics						
Min	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	380.0E-3
Max	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
Mean	366.0E-3	363.0E-3	364.0E-3	368.0E-3	374.0E-3	384.0E-3
Sigma	516.4E-5	483.0E-5	516.4E-5	421.6E-5	516.4E-5	516.4E-5

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	370.0E-3	370.0E-3
1	380.0E-3	370.0E-3
2	380.0E-3	370.0E-3
3	390.0E-3	370.0E-3
4	380.0E-3	370.0E-3
5	380.0E-3	370.0E-3
6	390.0E-3	380.0E-3
7	380.0E-3	380.0E-3
8	390.0E-3	380.0E-3
9	390.0E-3	380.0E-3
10	380.0E-3	360.0E-3
Statistics		
Min	380.0E-3	360.0E-3
Max	390.0E-3	380.0E-3
Mean	384.0E-3	373.0E-3
Sigma	516.4E-5	674.9E-5

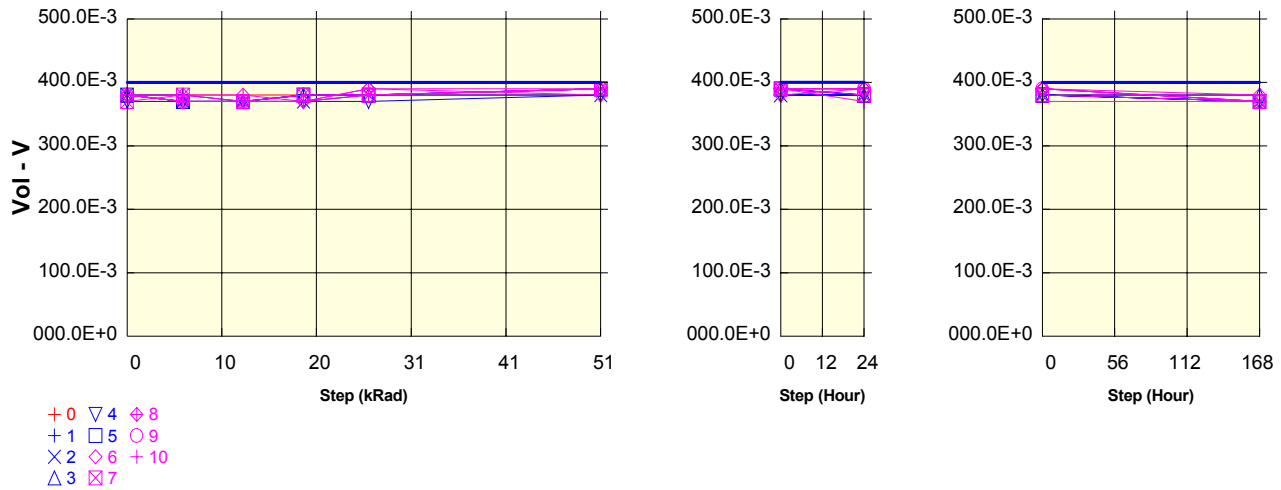
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	370.0E-3	370.0E-3
1	370.0E-3	370.0E-3
2	370.0E-3	370.0E-3
3	370.0E-3	370.0E-3
4	370.0E-3	360.0E-3
5	370.0E-3	360.0E-3
6	380.0E-3	370.0E-3
7	380.0E-3	360.0E-3
8	380.0E-3	370.0E-3
9	380.0E-3	360.0E-3
10	360.0E-3	360.0E-3
Statistics		
Min	360.0E-3	360.0E-3
Max	380.0E-3	370.0E-3
Mean	373.0E-3	365.0E-3
Sigma	674.9E-5	527.0E-5

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VolDB2

Unit : V
Spec Limit Max : 400.0E-3
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	380.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3
1	380.0E-3	380.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
2	380.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3
3	380.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
4	370.0E-3	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3
5	380.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
6	380.0E-3	380.0E-3	380.0E-3	370.0E-3	390.0E-3	380.0E-3
7	370.0E-3	380.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
8	380.0E-3	370.0E-3	370.0E-3	370.0E-3	390.0E-3	390.0E-3
9	380.0E-3	370.0E-3	370.0E-3	380.0E-3	380.0E-3	390.0E-3
10	380.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
Statistics						
Min	370.0E-3	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3
Max	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3	390.0E-3
Mean	378.0E-3	373.0E-3	371.0E-3	375.0E-3	381.0E-3	387.0E-3
Sigma	421.6E-5	483.0E-5	316.2E-5	527.0E-5	567.6E-5	483.0E-5

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	380.0E-3	380.0E-3
1	390.0E-3	390.0E-3
2	380.0E-3	380.0E-3
3	390.0E-3	380.0E-3
4	380.0E-3	380.0E-3
5	390.0E-3	380.0E-3
6	380.0E-3	390.0E-3
7	390.0E-3	380.0E-3
8	390.0E-3	390.0E-3
9	390.0E-3	390.0E-3
10	390.0E-3	370.0E-3
Statistics		
Min	380.0E-3	370.0E-3
Max	390.0E-3	390.0E-3
Mean	387.0E-3	383.0E-3
Sigma	483.0E-5	674.9E-5

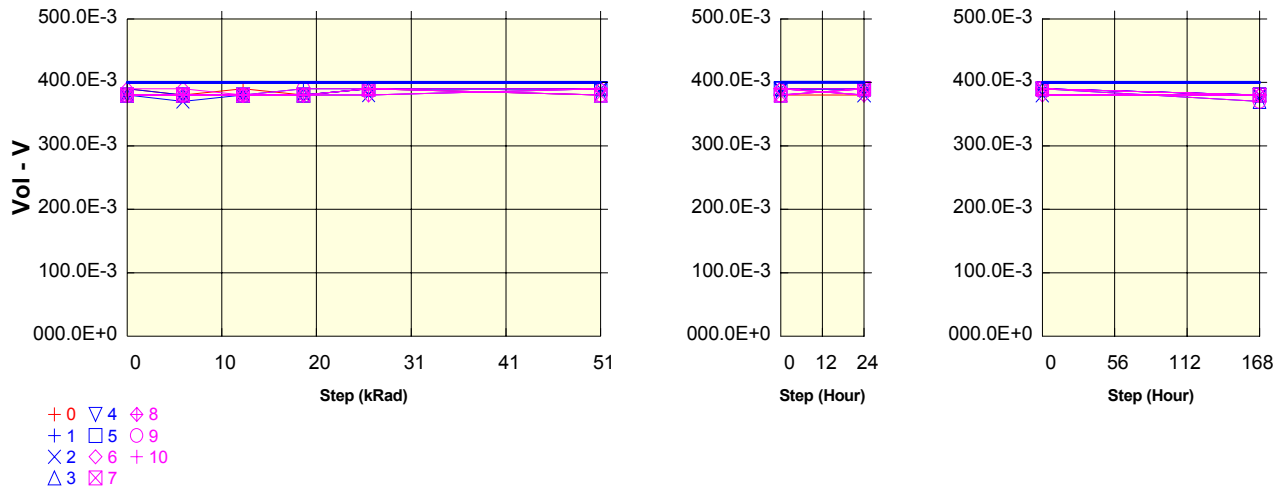
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	380.0E-3	380.0E-3
1	390.0E-3	370.0E-3
2	380.0E-3	370.0E-3
3	380.0E-3	380.0E-3
4	380.0E-3	370.0E-3
5	380.0E-3	370.0E-3
6	390.0E-3	380.0E-3
7	380.0E-3	370.0E-3
8	390.0E-3	370.0E-3
9	390.0E-3	370.0E-3
10	370.0E-3	370.0E-3
Statistics		
Min	370.0E-3	370.0E-3
Max	390.0E-3	380.0E-3
Mean	383.0E-3	372.0E-3
Sigma	674.9E-5	421.6E-5

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VoIDB1

Unit : V
Spec Limit Max : 400.0E-3
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	390.0E-3	380.0E-3	390.0E-3	380.0E-3	390.0E-3	380.0E-3
1	390.0E-3	380.0E-3	380.0E-3	390.0E-3	390.0E-3	390.0E-3
2	380.0E-3	370.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3
3	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3	380.0E-3
4	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3	390.0E-3
5	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3	390.0E-3
6	390.0E-3	390.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3
7	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3	380.0E-3
8	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3	390.0E-3
9	380.0E-3	380.0E-3	380.0E-3	390.0E-3	390.0E-3	380.0E-3
10	380.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3	390.0E-3
Statistics						
Min	380.0E-3	370.0E-3	380.0E-3	380.0E-3	380.0E-3	380.0E-3
Max	390.0E-3	390.0E-3	380.0E-3	390.0E-3	390.0E-3	390.0E-3
Mean	382.0E-3	380.0E-3	380.0E-3	382.0E-3	387.0E-3	387.0E-3
Sigma	421.6E-5	471.4E-5	702.4E-11	421.6E-5	483.0E-5	483.0E-5

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	380.0E-3	380.0E-3
1	390.0E-3	390.0E-3
2	390.0E-3	380.0E-3
3	380.0E-3	390.0E-3
4	390.0E-3	390.0E-3
5	390.0E-3	390.0E-3
6	390.0E-3	380.0E-3
7	380.0E-3	390.0E-3
8	390.0E-3	390.0E-3
9	380.0E-3	390.0E-3
10	390.0E-3	380.0E-3
Statistics		
Min	380.0E-3	380.0E-3
Max	390.0E-3	390.0E-3
Mean	387.0E-3	387.0E-3
Sigma	483.0E-5	483.0E-5

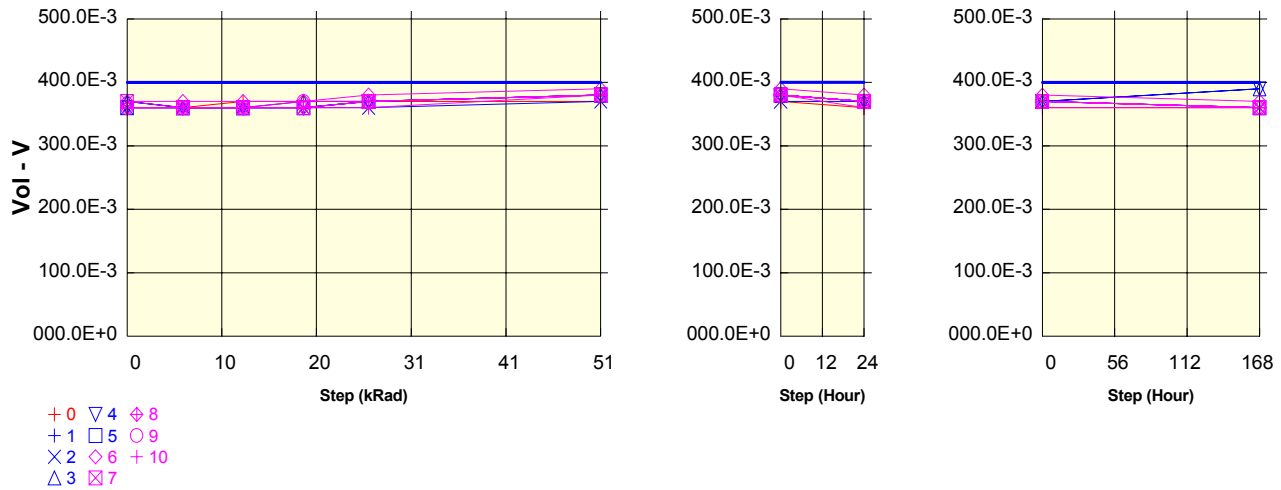
Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	380.0E-3	380.0E-3
1	390.0E-3	380.0E-3
2	380.0E-3	380.0E-3
3	390.0E-3	370.0E-3
4	390.0E-3	380.0E-3
5	390.0E-3	380.0E-3
6	380.0E-3	380.0E-3
7	390.0E-3	380.0E-3
8	390.0E-3	380.0E-3
9	390.0E-3	370.0E-3
10	380.0E-3	380.0E-3
Statistics		
Min	380.0E-3	370.0E-3
Max	390.0E-3	380.0E-3
Mean	387.0E-3	378.0E-3
Sigma	483.0E-5	421.6E-5

HIREX Engineering	Total Dose Test Report			Ref. : HRX/TID/0233 Issue : 01
Part Type :	ADS8402	Manufacturer :	Texas Instruments	

Test conditions : tid
Parameter : VoIDB0

Unit : V
Spec Limit Max : 400.0E-3
Spec limits are represented in bold lines on the graphic.



Test TST001 : Dose

	0 kRad	6 kRad	13 kRad	19 kRad	26 kRad	51 kRad
0	360.0E-3	360.0E-3	370.0E-3	370.0E-3	370.0E-3	370.0E-3
1	370.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	380.0E-3
2	360.0E-3	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3
3	370.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3	380.0E-3
4	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	380.0E-3
5	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	380.0E-3
6	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
7	370.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	380.0E-3
8	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3	380.0E-3
9	360.0E-3	360.0E-3	360.0E-3	370.0E-3	370.0E-3	380.0E-3
10	360.0E-3	360.0E-3	360.0E-3	360.0E-3	360.0E-3	380.0E-3
Statistics						
Min	360.0E-3	360.0E-3	360.0E-3	360.0E-3	360.0E-3	370.0E-3
Max	370.0E-3	370.0E-3	370.0E-3	370.0E-3	380.0E-3	390.0E-3
Mean	364.0E-3	361.0E-3	361.0E-3	363.0E-3	369.0E-3	380.0E-3
Sigma	516.4E-5	316.2E-5	316.2E-5	483.0E-5	567.6E-5	471.4E-5

Test TST002 : Annealing - 24h

	0 Hour	24 Hour
0	370.0E-3	360.0E-3
1	380.0E-3	370.0E-3
2	370.0E-3	370.0E-3
3	380.0E-3	370.0E-3
4	380.0E-3	370.0E-3
5	380.0E-3	370.0E-3
6	390.0E-3	380.0E-3
7	380.0E-3	370.0E-3
8	380.0E-3	370.0E-3
9	380.0E-3	370.0E-3
10	380.0E-3	360.0E-3
Statistics		
Min	370.0E-3	360.0E-3
Max	390.0E-3	380.0E-3
Mean	380.0E-3	370.0E-3
Sigma	471.4E-5	471.4E-5

Test TST003 : Annealing - 168h

	0 Hour	168 Hour
0	360.0E-3	360.0E-3
1	370.0E-3	360.0E-3
2	370.0E-3	360.0E-3
3	370.0E-3	390.0E-3
4	370.0E-3	390.0E-3
5	370.0E-3	360.0E-3
6	380.0E-3	370.0E-3
7	370.0E-3	360.0E-3
8	370.0E-3	360.0E-3
9	370.0E-3	360.0E-3
10	360.0E-3	360.0E-3
Statistics		
Min	360.0E-3	360.0E-3
Max	380.0E-3	390.0E-3
Mean	370.0E-3	367.0E-3
Sigma	471.4E-5	125.2E-4