Component No 5962R3812801VGA	**Component Designation:** AD584S	**Irradiation Spec. No.:** ESCC 22900 Issue 4
Gen. Spec.: MIL-PRF-38535 **Det. Spec.:** 5962-38128 **Amend.:** --	**Evaluation:** X **Acceptance Wafer:** - **Acceptance Lot:** -	**Project/Programme:** LDT (ESA) AO / 1-6172 / 09 / F / WE
Family: 08 / **Group:** 90	**Functional Assignment:** Pin programmable voltage reference	**Package:** CAN-8
Manuf.Name: ANALOG DEVICES **Address:** USA	**Test House:** ATN **Address:** SEVILLA (SPAIN)	**Orig.house:** ATN **Address:** SEVILLA (SPAIN)
Radiation Test Plan No.: ATGSP-RP-71 Iss1	**Sample Size:** 22 **Irradiation Devices:** 20 **Control Devices:** 2	**Date Code:** 0125A **Wafer Lot:** M11187
Radiation Source: Cobalt-60 **Facility Name:** ESA (ESTEC) **Address:** NOORDWIJK (HOLLAND)	**Energy:** 1.33/1.17 MeV **Dose Rate:** 35.4 & 323.7 rad(Si)/h	**Interest level**: 100krad(Si) **Maximum Test Level:** 100krad(Si)
Irradiation Conditions: **Biased:** X (10 samples) **Unbiased:** X (10 samples) **Test Circuit:** Figure 1	**Irradiation Measurements** **Interval:** **Remote test:** X **In situ Test:** --	**Annealing Tests:** 24h@25ºC, 168h@100ºC **Biased:** X (10 samples) **Unbiased:** X (10 samples) **Test Circuit:** Figure 1

Electrical Measurements. Parameters Tested:

I_{CC}, V_{OUT1}, V_{OUT2}, V_{OUT3}, V_{OUT4}, V_{RLINE1}, V_{RLINE2}, V_{RLOAD1}, V_{RLOAD2}, V_{RLOAD3}, V_{RLOAD4}, I_{OS}

Prepared by.: Antonio Romero Mallén **Date:** 2014/03/10 **Signature:**	**Approved by.:** Eugenio Muñoz Plaza **Date:** 2014/03/10 **Signature:**

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DOCUMENT CHANGE CONTROL

Edition / Revision	Date	Affected Edition / Revision	Affected Paragraph / Modification
ATN-RR-005/2012 Iss.1	2012/07/30	--	First edition of this document.
ATN-RR-005/2012 Iss.2	2012/11/12	ATN-RR-005/2012 Iss.1	Footer on the pages updated with new issue of document format. Company's logo updated. Test house name updated.
ATN-RR-005/2012 Iss.3	2014/03/10	ATN-RR-005/2012 Iss.2	ANNEX I graphs corrected and updated

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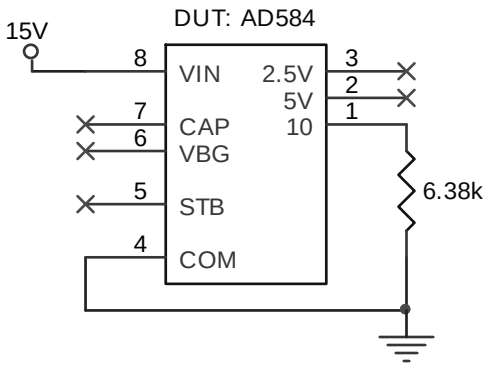
FIGURE 1.-RADIATION BIAS CIRCUITS



Notes:

1. Ten parts(5 ELDR+5 LDR) were irradiated biased ON, in accordance with the radiation bias circuit shown in Figure 1.
2. Ten parts(5 ELDR+ 5 LDR) were irradiated biased OFF: the pins are short circuited and connected to ground.

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SUMMARY

In order to evaluate the behaviour of the samples between ELDR, LDR, ON and OFF biased, a total dose steady-state irradiation test has been carried out on a Pin programmable voltage reference, manufactured by Analog Devices, USA. The test was performed using two dose rate (35.4 rad(Si)/h and 323.7rad (Si)/h) until a total accumulated dose of 100krad(Si). The irradiated parts were labelled as follows:

Serial Number		Bias condition	Dose rate
R1	166	Control device	ELDR
R2	167	ON	
R3	168		
R4	169		
R5	170		
R6	171		
R7	172	OFF	
R8	173		
R9	174		
R10	175		
R11	176		
R1	154	Control device	LDR
R2	155	ON	
R3	156		
R4	158		
R5	159		
R6	160		
R7	161	OFF	
R8	162		
R9	163		
R10	164		
R11	165		

DEVIATION TO PLAN

The VOUT @ 7.5V and VOUT @ 2.5V parameters have been added to the RVT test in accordance with the conditions and limits showed in table below:

Nº	SYMBOL	CONDITIONS (T_A=25ºC)	LIMITS		UNIT
			MIN.	MAX.	
1	VOUT @ 7.5V	Vo=7.5V	7.425	7.575	V
2	VOUT @ 2.5V	Vo=2.5V	2.475	2.525	V

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RESULTS

The next table shows a resume of the irradiation test results.

ELDR									
	0Krad	6Krad	13Krad	20Krad	30Krad	50Krad	100Krad	ANN24	ANN168
I_{CC}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
V_{OUT1}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
V_{OUT2}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
V_{OUT3}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
V_{OUT4}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
V_{RLINE1}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	(1)
V_{RLINE2}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	(1)
V_{RLOAD1}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
V_{RLOAD2}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
V_{RLOAD3}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
V_{RLOAD4}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
I_{OS}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
LDR									
	0Krad	**6Krad**	**13Krad**	**20Krad**	**30Krad**	**50Krad**	**100Krad**	**ANN24**	**ANN168**
I_{CC}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
V_{OUT1}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
V_{OUT2}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
V_{OUT3}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
V_{OUT4}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
V_{RLINE1}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
V_{RLINE2}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
V_{RLOAD1}	PASS	PASS	PASS	PASS	PASS	PASS	(1)	PASS	(1)
V_{RLOAD2}	PASS	PASS	PASS	PASS	PASS	PASS	(1)	PASS	(1)
V_{RLOAD3}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
V_{RLOAD4}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
I_{OS}	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS

(1) Parameter out of limits.

The values measured and graphs with the evolution of the previous parameters during the irradiation test and annealing sequence are available in ANNEX I.

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CONCLUSION

The results obtained during the irradiation test, show that this lot is sensitive to the cumulative radiation dose when tested at dose rates of 35.4 rad(Si)/h and 323.7 rad(Si)/h up to a cumulative dose of 100krad(Si).

The most affected parameters are the VOUT's, VRLINE's and VRLOAD's parameters.

-VOUT's: The results show a higher degradation in the samples biased OFF than the biased ON. The degradation in the samples tested at ELDR is higher than the samples tested at LDR.

VRLINE's: The results show a higher degradation in the samples biased OFF than the biased ON. The degradation in the samples tested at ELDR is higher than the samples tested at LDR.
In the VRLINE1 and VRLINE 2 parameters are within limits during all irradiation steps except at ANN 168h step, where the obtained values are out of limits in the samples tested at ELDR.

VRLOAD's: The results show that this parameter doesn't have a high deviation during all irradiation steps except at the ANN 168h step. Even In the VRLOAD1 and VRLOAD2, there are some values that are out of limits in the samples biased OFF at LDR.

For the rest of the parameters, clear different behaviours between ELDR, LDR, On and Off biased parts are not observed.

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SCHEDULE

ELDR Average Dose Rate (1)	LDR Average Dose Rate (2)	Cummulative ELDR Total Dose	ELDR Measurement date	Cummulative LDR Total Dose	LDR Measurement date	Step Deviation ELDR vs LDR (%)
rad(Si)/h	rad(Si)/h	krad(Si)	--	krad(Si)	--	
--	--	0	2012/02/15	0	2012/06/04	--
35.41	323.7	5240	2012/02/21	5707	2012/06/05	8.9
		12168	2012/02/29	13362	2012/06/06	9.8
		19201	2012/03/08	20644	2012/06/07	7.5
		28612	2012/03/19	28167	2012/06/08	-1.5
		48417	2012/04/11	48498	2012/06/11	0.1
		106074	2012/06/18	102360	2012/06/18	-3.7
Annealing						
ann24h @25ºC	24	--	2012/06/19	--	2012/06/19	
ann168h @100ºC	168	--	2012/06/26	--	2012/06/26	

(1) The minimum and maximum dose rate registered were 18.6rad (Si)/h and 38.9rad (Si)/h respectively.
(2) The minimum and maximum dose rate registered were 271.2 rad(Si)/h and 360.6 rad(Si)/h respectively.

ELECTRICAL MEASUREMENTS EQUIPMENT LIST

REF INVENT	DESCRIPTION	MFR	MODEL	CALIBRATION DUE	USAGE
LE0124.000	UNIVERSAL TEST SYSTEM	SZ	M-3000	2012/08/15	0,6,13,20,35,50,100Krad, ANN24, ANN168
N/A (Note1)	TEST ADAPTER	SZ	UNIVERSAL FRONT ADAPTER	--	0,6,13,20,35,50,100Krad, ANN24, ANN168
LE0080.015	MATRIX	SZ	SMX32B	--	0,6,13,20,35,50,100Krad, ANN24, ANN168
LE0351.000	MULTIMETER	KEITHLEY	2001	2012/09/26	0,6,13,20,35,50,100Krad, ANN24, ANN168

Note 1: This part type was measured with a Universal Test Adapter with serial number 913842 propriety of ESA.

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ANNEX I
ELECTRICAL MEASUREMENTS GRAPHS

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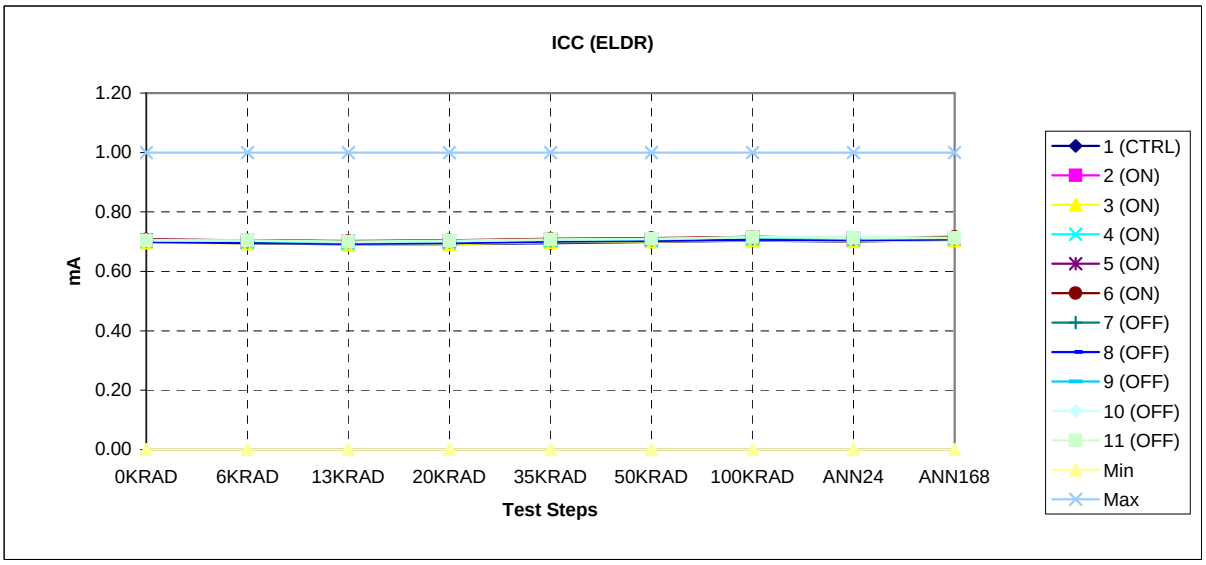
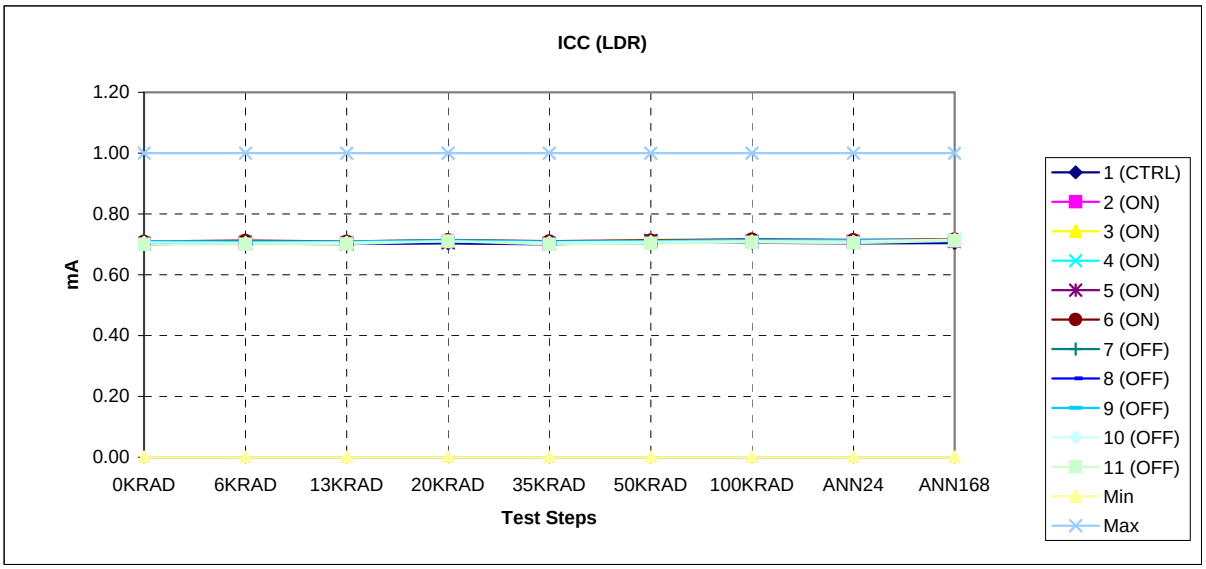
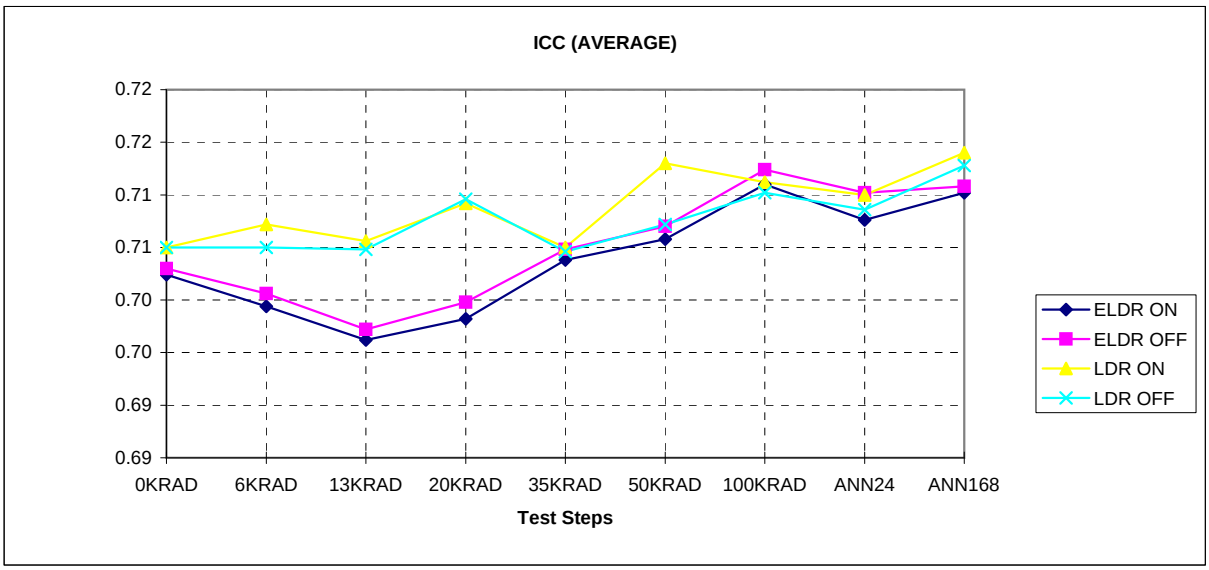


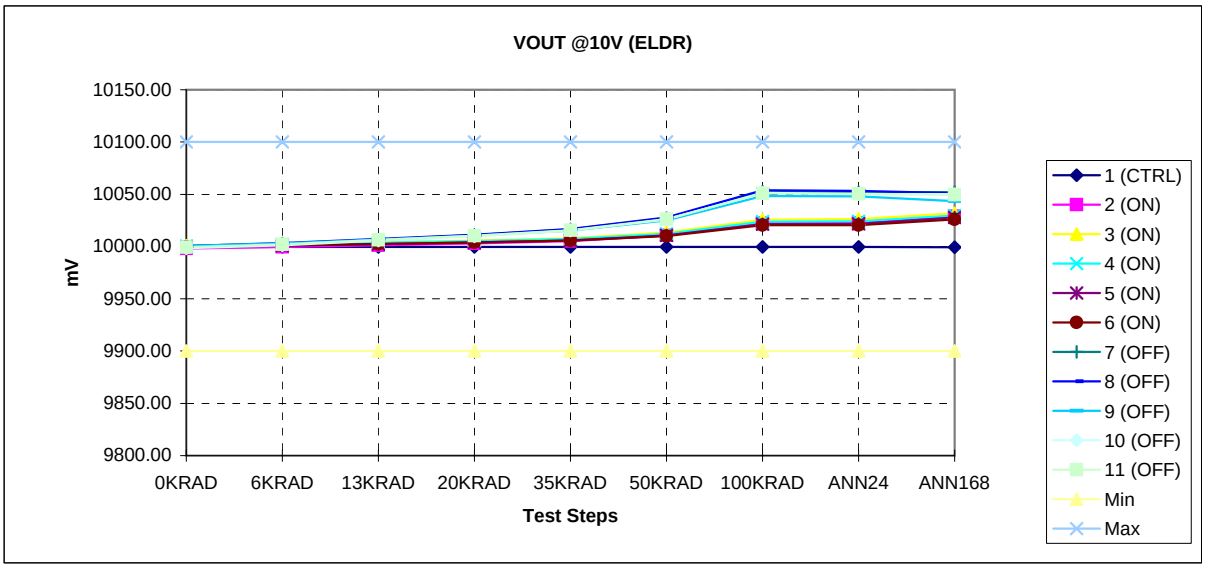
ICC (ELDR)	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Max	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Unit	**mA**	**mA**	**mA**	**mA**	**mA**	**mA**	**mA**	**mA**	**mA**
Control Results									
1 (CTRL)	0.699	0.696	0.691	0.692	0.695	0.699	0.703	0.7	0.707
Bias on results									
2 (ON)	0.7	0.697	0.694	0.696	0.701	0.703	0.709	0.706	0.707
3 (ON)	0.697	0.694	0.69	0.692	0.698	0.7	0.705	0.701	0.705
4 (ON)	0.7	0.698	0.694	0.696	0.702	0.704	0.709	0.706	0.71
5 (ON)	0.707	0.704	0.701	0.703	0.708	0.71	0.716	0.712	0.713
6 (ON)	0.708	0.704	0.702	0.704	0.71	0.712	0.716	0.713	0.716
Statistics bias on									
min result	0.697	0.694	0.690	0.692	0.698	0.700	0.705	0.701	0.705
max result	0.708	0.704	0.702	0.704	0.710	0.712	0.716	0.713	0.716
average	0.702	0.699	0.696	0.698	0.704	0.706	0.711	0.708	0.710
sigma	0.005	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.004
Bias off results									
7 (OFF)	0.702	0.699	0.697	0.699	0.703	0.706	0.711	0.708	0.709
8 (OFF)	0.699	0.695	0.693	0.695	0.7	0.702	0.707	0.704	0.708
9 (OFF)	0.704	0.702	0.697	0.701	0.706	0.708	0.714	0.709	0.712
10 (OFF)	0.705	0.703	0.699	0.701	0.707	0.709	0.715	0.718	0.712
11 (OFF)	0.705	0.704	0.7	0.703	0.708	0.71	0.715	0.712	0.713
Statistics bias off									
min result	0.699	0.695	0.693	0.695	0.700	0.702	0.707	0.704	0.708
max result	0.705	0.704	0.700	0.703	0.708	0.710	0.715	0.718	0.713
average	0.703	0.701	0.697	0.700	0.705	0.707	0.712	0.710	0.711
sigma	0.003	0.004	0.003	0.003	0.003	0.003	0.003	0.005	0.002



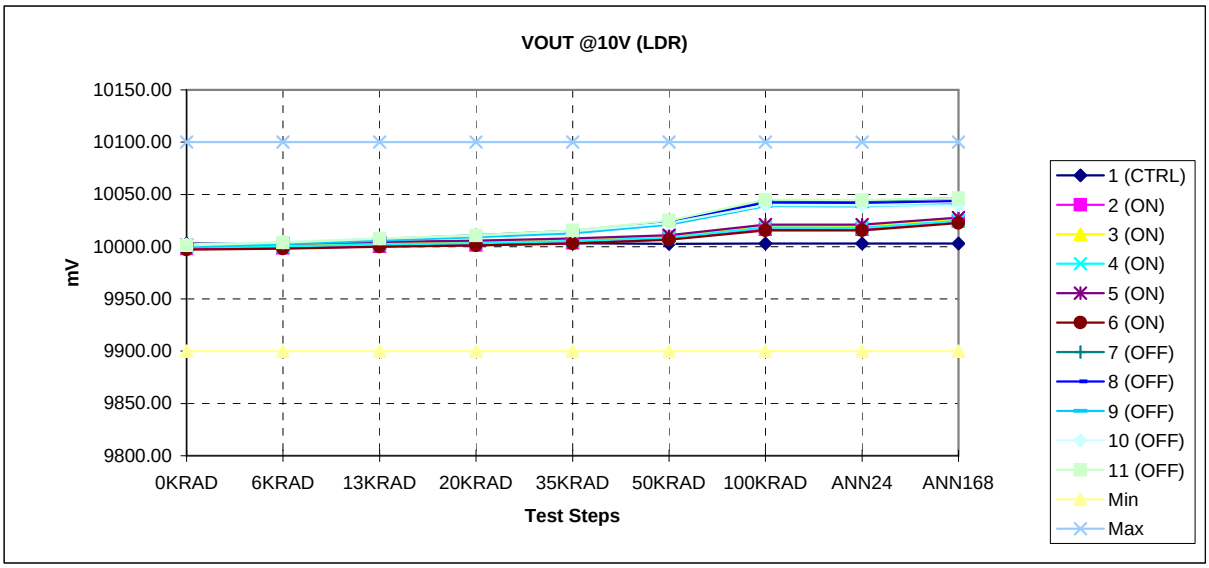
ICC (LDR)	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	0	0	0	0	0	0	0	0	0
Max	1	1	1	1	1	1	1	1	1
Unit	mA	mA	mA	mA	mA	mA	mA	mA	mA
Control Results									
1 (CTRL)	0.7	0.705	0.703	0.703	0.7	0.707	0.705	0.703	0.704
Bias on results									
2 (ON)	0.703	0.707	0.705	0.709	0.704	0.709	0.71	0.709	0.711
3 (ON)	0.706	0.708	0.708	0.709	0.705	0.716	0.712	0.71	0.719
4 (ON)	0.704	0.706	0.704	0.708	0.704	0.713	0.71	0.71	0.714
5 (ON)	0.702	0.702	0.701	0.705	0.701	0.713	0.707	0.706	0.709
6 (ON)	0.71	0.713	0.71	0.715	0.711	0.714	0.717	0.715	0.717
Statistics bias on									
min result	0.702	0.702	0.701	0.705	0.701	0.709	0.707	0.706	0.709
max result	0.710	0.713	0.710	0.715	0.711	0.716	0.717	0.715	0.719
average	0.705	0.707	0.706	0.709	0.705	0.713	0.711	0.710	0.714
sigma	0.003	0.004	0.004	0.004	0.004	0.003	0.004	0.003	0.004
Bias off results									
7 (OFF)	0.704	0.708	0.706	0.709	0.705	0.709	0.711	0.71	0.713
8 (OFF)	0.704	0.702	0.701	0.705	0.702	0.704	0.708	0.706	0.708
9 (OFF)	0.711	0.71	0.71	0.714	0.71	0.712	0.715	0.714	0.715
10 (OFF)	0.706	0.705	0.706	0.709	0.706	0.708	0.711	0.709	0.716
11 (OFF)	0.7	0.7	0.701	0.711	0.7	0.703	0.706	0.704	0.712
Statistics bias off									
min result	0.700	0.700	0.701	0.705	0.700	0.703	0.706	0.704	0.708
max result	0.711	0.710	0.710	0.714	0.710	0.712	0.715	0.714	0.716
average	0.705	0.705	0.705	0.710	0.705	0.707	0.710	0.709	0.713
sigma	0.004	0.004	0.004	0.003	0.004	0.004	0.003	0.004	0.003



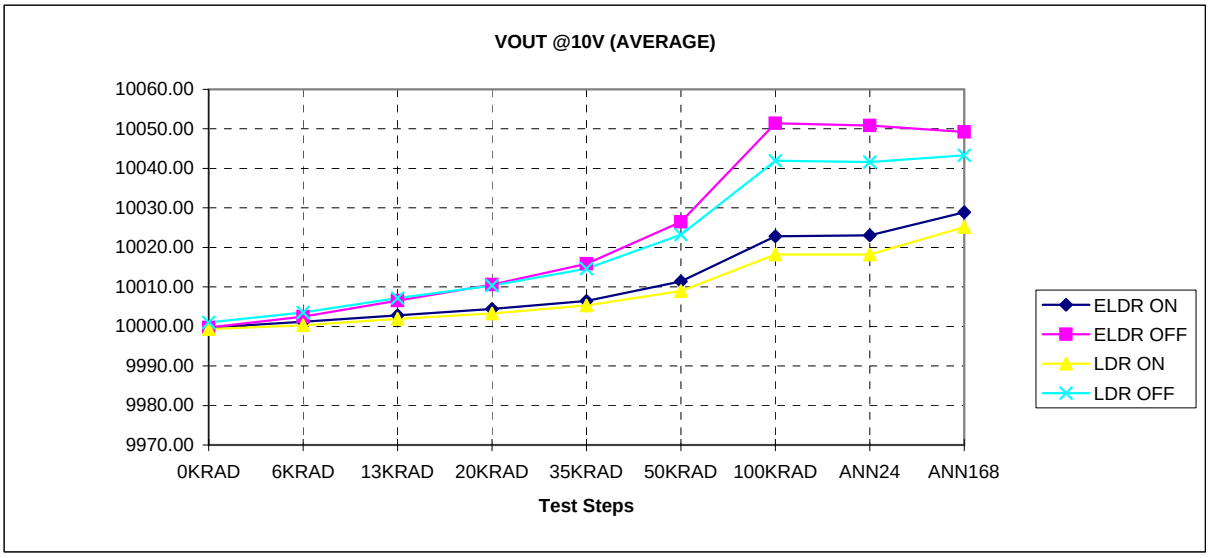
ICC (AVERAGE)	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
ELDR ON	0.702	0.699	0.696	0.698	0.704	0.706	0.711	0.708	0.710
ELDR OFF	0.703	0.701	0.697	0.700	0.705	0.707	0.712	0.710	0.711
LDR ON	0.705	0.707	0.706	0.709	0.705	0.713	0.711	0.710	0.714
LDR OFF	0.705	0.705	0.705	0.710	0.705	0.707	0.710	0.709	0.713



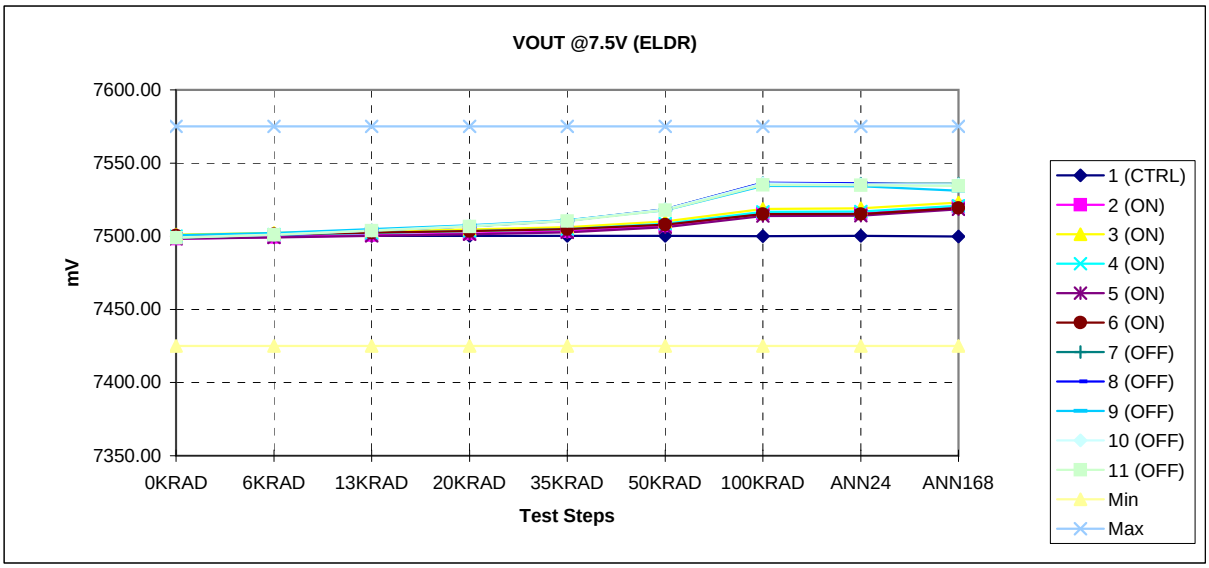
OUT @10V (ELDI	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	**9900**	**9900**	**9900**	**9900**	**9900**	**9900**	**9900**	**9900**	**9900**
Max	**10100**	**10100**	**10100**	**10100**	**10100**	**10100**	**10100**	**10100**	**10100**
Unit	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**
Control Results									
1 (CTRL)	9999.42	9999.6	9999.73	9999.78	9999.79	9999.67	9999.55	9999.67	9999.2
Bias on results									
2 (ON)	9997.98	9999.53	10001.29	10003.05	10005.26	10010.58	10022.42	10022.61	10028.93
3 (ON)	10000.95	10002.36	10004.08	10005.82	10008.05	10013.43	10025.66	10026.16	10031.75
4 (ON)	10000.54	10001.98	10003.59	10005.28	10007.32	10012.35	10023.99	10024.11	10029.74
5 (ON)	9999.44	10000.85	10002.4	10003.97	10005.83	10010.58	10021.54	10021.73	10027.92
6 (ON)	9999.68	10001.07	10002.53	10004.01	10005.76	10010.08	10020.36	10020.51	10026.13
Statistics bias on									
min result	9997.980	9999.530	10001.290	10003.050	10005.260	10010.080	10020.360	10020.510	10026.130
max result	10000.950	10002.360	10004.080	10005.820	10008.050	10013.430	10025.660	10026.160	10031.750
average	9999.718	10001.158	10002.778	10004.426	10006.444	10011.404	10022.794	10023.024	10028.894
sigma	1.150	1.104	1.092	1.112	1.183	1.424	2.079	2.190	2.089
Bias off results									
7 (OFF)	9999.57	10002.59	10006.79	10010.93	10016.34	10027.27	10052.64	10052.16	10051.87
8 (OFF)	10000.56	10003.34	10007.24	10011.39	10016.74	10027.92	10053.7	10053.2	10051.04
9 (OFF)	10000.5	10002.9	10006.67	10010.4	10015.22	10025.02	10048.48	10048.09	10043.43
10 (OFF)	9998.47	10001.32	10005.63	10009.76	10015.14	10026.01	10051.25	10050.18	10050.15
11 (OFF)	9999.42	10002.16	10006.36	10010.46	10015.69	10026.25	10050.92	10050.42	10049.52
Statistics bias off									
min result	9998.470	10001.320	10005.630	10009.760	10015.140	10025.020	10048.480	10048.090	10043.430
max result	10000.560	10003.340	10007.240	10011.390	10016.740	10027.920	10053.700	10053.200	10051.870
average	9999.704	10002.462	10006.538	10010.588	10015.826	10026.494	10051.398	10050.810	10049.202
sigma	0.864	0.770	0.598	0.612	0.699	1.129	1.975	1.967	3.347



VOUT @10V (LDR	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	**9900**	**9900**	**9900**	**9900**	**9900**	**9900**	**9900**	**9900**	**9900**
Max	**10100**	**10100**	**10100**	**10100**	**10100**	**10100**	**10100**	**10100**	**10100**
Unit	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**
Control Results									
1 (CTRL)	10003.11	10002.7	10002.86	10002.9	10003.22	10002.58	10002.91	10003.11	10003.01
Bias on results									
2 (ON)	9997.99	9998.59	10000.22	10001.47	10003.53	10008.91	10016.59	10016.53	10024.56
3 (ON)	10000.33	10001.4	10003.02	10004.66	10006.76	10009.8	10019.81	10019.86	10025.93
4 (ON)	9999.52	10000.38	10002.16	10003.41	10005.45	10008.54	10018.23	10018.15	10024.75
5 (ON)	10001.6	10002.76	10004.44	10005.75	10007.88	10010.89	10021.07	10021.07	10027.97
6 (ON)	9997.28	9998.22	9999.82	10001.04	10002.95	10006.59	10015.47	10015.45	10022.48
Statistics bias on									
min result	9997.280	9998.220	9999.820	10001.040	10002.950	10006.590	10015.470	10015.450	10022.480
max result	10001.600	10002.760	10004.440	10005.750	10007.880	10010.890	10021.070	10021.070	10027.970
average	9999.344	10000.270	10001.932	10003.266	10005.314	10008.946	10018.234	10018.212	10025.138
sigma	1.745	1.905	1.931	2.020	2.090	1.599	2.284	2.310	2.012
Bias off results									
7 (OFF)	10001.1	10003.44	10007.36	10010.92	10015.23	10024.22	10043.94	10043.52	10046.46
8 (OFF)	10001.07	10003.58	10007.16	10010.4	10014.49	10023.2	10042.22	10041.86	10043.68
9 (OFF)	9999.6	10002.28	10005.84	10009.04	10012.94	10021.18	10038.91	10038.53	10040.73
10 (OFF)	10002.09	10004.51	10007.83	10010.91	10014.71	10022.59	10039.83	10039.56	10039.35
11 (OFF)	10001.28	10003.86	10007.63	10010.56	10015.63	10024.95	10044.89	10044.56	10046.52
Statistics bias off									
min result	9999.600	10002.280	10005.840	10009.040	10012.940	10021.180	10038.910	10038.530	10039.350
max result	10002.090	10004.510	10007.830	10010.920	10015.630	10024.950	10044.890	10044.560	10046.520
average	10001.028	10003.534	10007.164	10010.366	10014.600	10023.228	10041.958	10041.606	10043.348
sigma	0.900	0.813	0.783	0.775	1.029	1.462	2.570	2.555	3.267



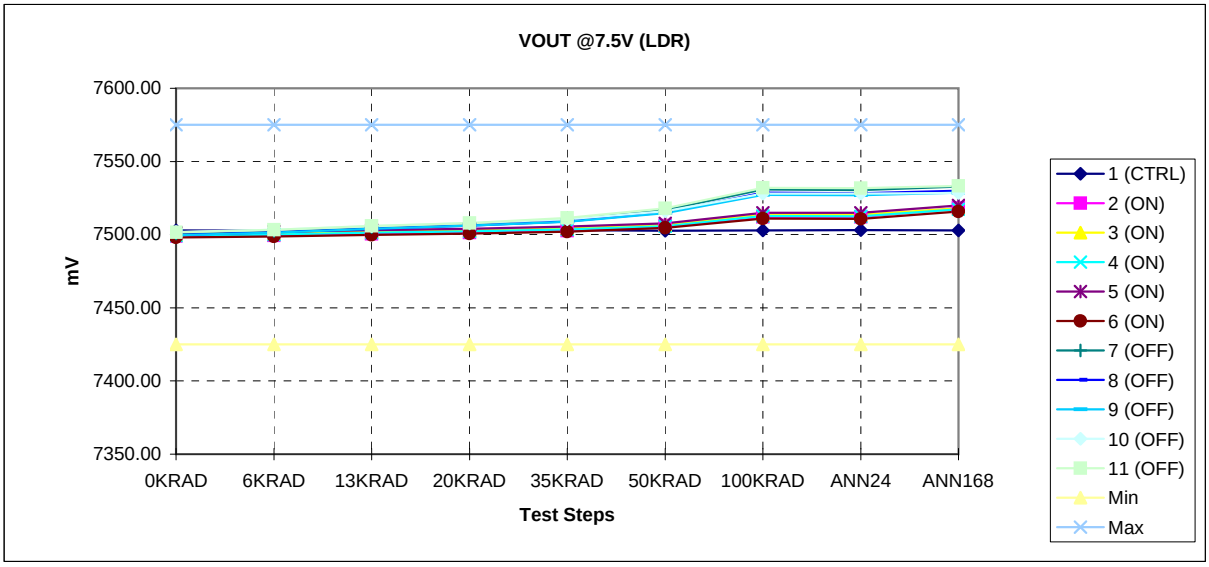
JT @10V (AVERA	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
ELDR ON	9999.718	10001.158	10002.778	10004.426	10006.444	10011.404	10022.794	10023.024	10028.894
ELDR OFF	9999.704	10002.462	10006.538	10010.588	10015.826	10026.494	10051.398	10050.810	10049.202
LDR ON	9999.344	10000.270	10001.932	10003.266	10005.314	10008.946	10018.234	10018.212	10025.138
LDR OFF	10001.028	10003.534	10007.164	10010.366	10014.600	10023.228	10041.958	10041.606	10043.348



OUT @7.5V (ELD	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	7425	7425	7425	7425	7425	7425	7425	7425	7425
Max	7575	7575	7575	7575	7575	7575	7575	7575	7575
Unit	mV	mV	mV	mV	mV	mV	mV	mV	mV
Control Results									
1 (CTRL)	7500.04	7500.16	7500.25	7500.3	7500.31	7500.24	7500.14	7500.23	7499.89

Bias on results									
2 (ON)	7498.3	7499.37	7500.61	7501.85	7503.41	7507.2	7515.56	7515.67	7520.11
3 (ON)	7501.17	7502.17	7503.35	7504.58	7506.17	7510.03	7518.64	7519.08	7522.91
4 (ON)	7500.14	7501.16	7502.27	7503.47	7504.92	7508.5	7516.72	7516.78	7520.78
5 (ON)	7498.25	7499.21	7500.3	7501.43	7502.75	7506.13	7513.84	7513.99	7518.32
6 (ON)	7500.49	7501.45	7502.46	7503.51	7504.76	7507.83	7515.12	7515.22	7519.24
Statistics bias on									
min result	7498.250	7499.210	7500.300	7501.430	7502.750	7506.130	7513.840	7513.990	7518.320
max result	7501.170	7502.170	7503.350	7504.580	7506.170	7510.030	7518.640	7519.080	7522.910
average	7499.670	7500.672	7501.798	7502.968	7504.402	7507.938	7515.976	7516.148	7520.272
sigma	1.326	1.315	1.297	1.300	1.345	1.459	1.811	1.920	1.741

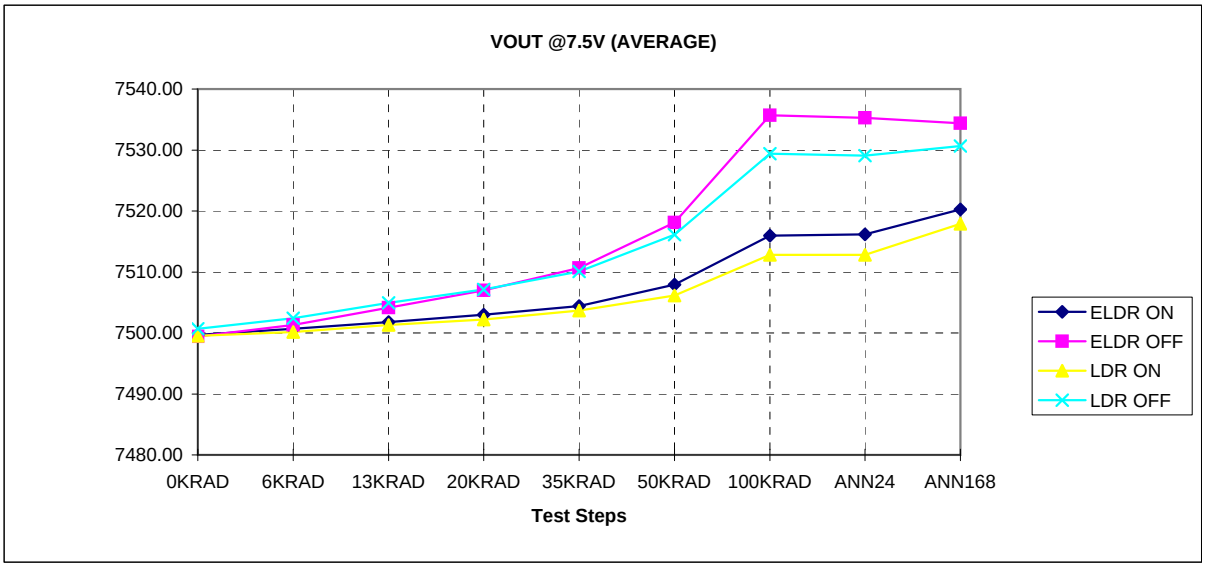
Bias off results									
7 (OFF)	7499.02	7501.11	7504.02	7506.91	7510.69	7518.36	7536.31	7535.89	7535.93
8 (OFF)	7499.32	7501.22	7503.94	7506.84	7510.57	7518.38	7536.55	7536.2	7534.95
9 (OFF)	7500.63	7502.29	7504.92	7507.52	7510.91	7517.8	7534.47	7534.23	7531.16
10 (OFF)	7499.11	7501.09	7504.08	7506.96	7510.73	7518.39	7536.11	7535.37	7535.56
11 (OFF)	7498.98	7500.86	7503.8	7506.64	7510.28	7517.7	7535.1	7534.73	7534.29
Statistics bias off									
min result	7498.980	7500.860	7503.800	7506.640	7510.280	7517.700	7534.470	7534.230	7531.160
max result	7500.630	7502.290	7504.920	7507.520	7510.910	7518.390	7536.550	7536.200	7535.930
average	7499.412	7501.314	7504.152	7506.974	7510.636	7518.126	7535.708	7535.284	7534.378
sigma	0.693	0.561	0.442	0.329	0.233	0.345	0.885	0.811	1.904



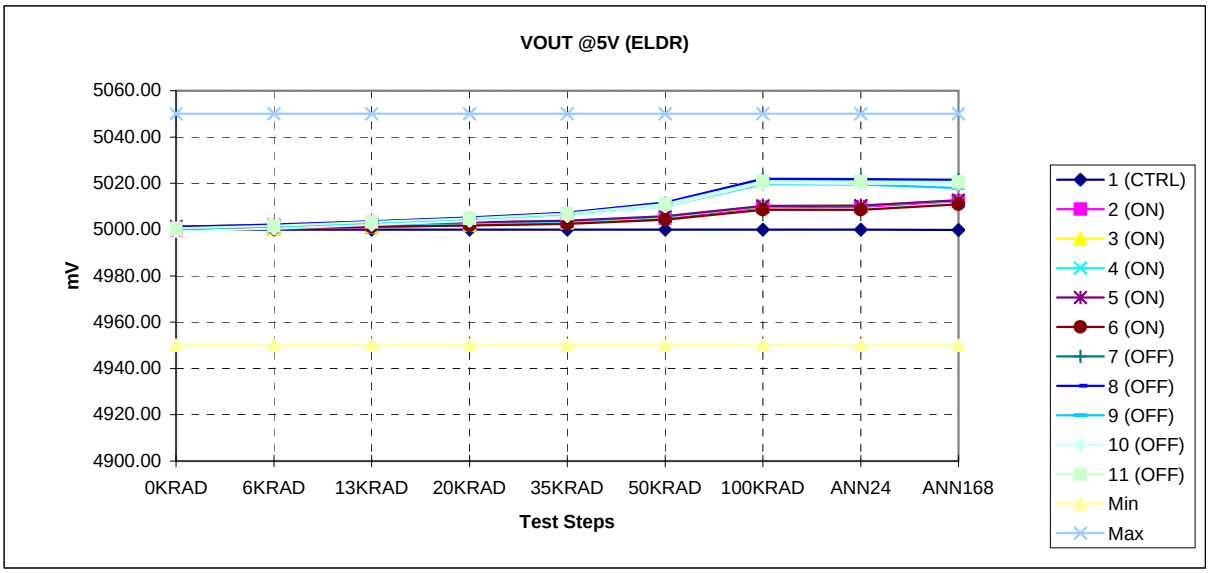
OUT @7.5V (LDR	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	**7425**	**7425**	**7425**	**7425**	**7425**	**7425**	**7425**	**7425**	**7425**
Max	**7575**	**7575**	**7575**	**7575**	**7575**	**7575**	**7575**	**7575**	**7575**
Unit	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**
Control Results									
1 (CTRL)	7502.98	7502.69	7502.8	7502.84	7503.09	7502.62	7502.88	7503	7502.94

Bias on results									
2 (ON)	7498.91	7499.31	7500.44	7501.34	7502.77	7506.18	7512.04	7511.98	7518.22
3 (ON)	7499.9	7500.63	7501.76	7502.9	7504.39	7506.52	7513.6	7513.65	7518.03
4 (ON)	7499.48	7500.06	7501.31	7502.17	7503.62	7505.81	7512.68	7512.61	7517.35
5 (ON)	7501.2	7501.99	7503.15	7504.07	7505.57	7507.71	7514.93	7514.91	7519.94
6 (ON)	7498.04	7498.7	7499.79	7500.64	7501.98	7504.57	7510.91	7510.83	7515.86
Statistics bias on									
min result	7498.040	7498.700	7499.790	7500.640	7501.980	7504.570	7510.910	7510.830	7515.860
max result	7501.200	7501.990	7503.150	7504.070	7505.570	7507.710	7514.930	7514.910	7519.940
average	7499.506	7500.138	7501.290	7502.224	7503.666	7506.158	7512.832	7512.796	7517.880
sigma	1.176	1.268	1.290	1.338	1.396	1.138	1.528	1.562	1.478

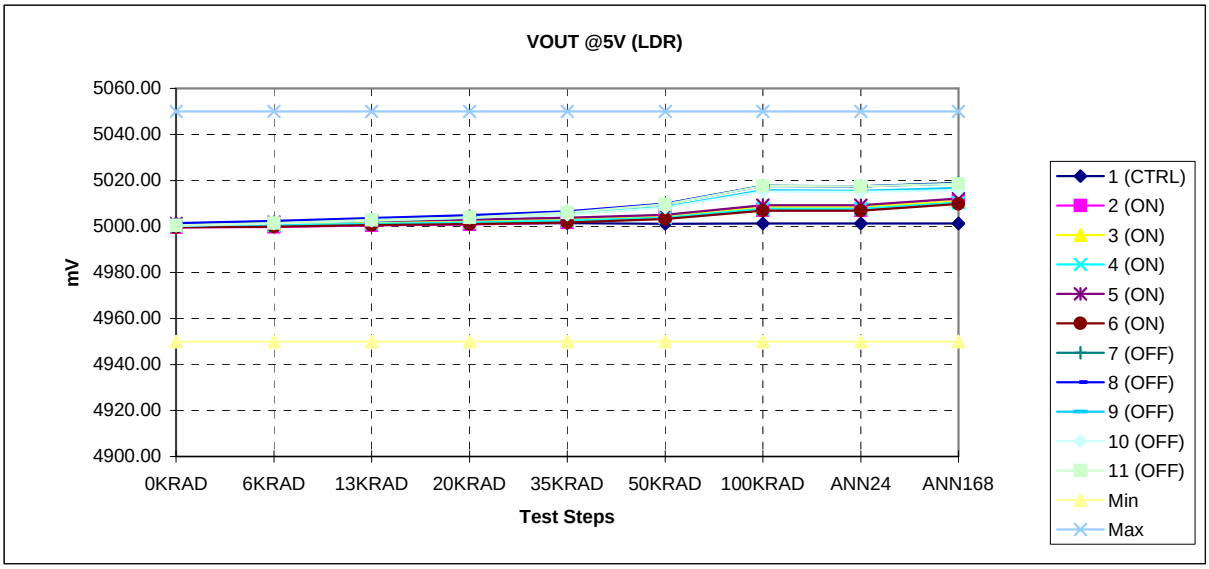
Bias off results									
7 (OFF)	7500.79	7502.38	7505.1	7507.57	7510.58	7516.89	7530.86	7530.42	7532.79
8 (OFF)	7499.81	7501.53	7504	7506.26	7509.12	7515.19	7528.62	7528.35	7530
9 (OFF)	7499.61	7501.44	7503.93	7506.16	7508.89	7514.61	7527.26	7526.86	7528.69
10 (OFF)	7501.7	7503.36	7505.69	7507.84	7510.45	7515.99	7528.14	7527.96	7528.49
11 (OFF)	7501.51	7503.27	7505.88	7507.92	7511.45	7517.94	7532	7531.75	7533.36
Statistics bias off									
min result	7499.610	7501.440	7503.930	7506.160	7508.890	7514.610	7527.260	7526.860	7528.490
max result	7501.700	7503.360	7505.880	7507.920	7511.450	7517.940	7532.000	7531.750	7533.360
average	7500.684	7502.396	7504.920	7507.150	7510.098	7516.124	7529.376	7529.068	7530.666
sigma	0.954	0.916	0.918	0.869	1.072	1.329	1.979	1.977	2.283



T @7.5V (AVERA	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
ELDR ON	7499.670	7500.672	7501.798	7502.968	7504.402	7507.938	7515.976	7516.148	7520.272
ELDR OFF	7499.412	7501.314	7504.152	7506.974	7510.636	7518.126	7535.708	7535.284	7534.378
LDR ON	7499.506	7500.138	7501.290	7502.224	7503.666	7506.158	7512.832	7512.796	7517.880
LDR OFF	7500.684	7502.396	7504.920	7507.150	7510.098	7516.124	7529.376	7529.068	7530.666



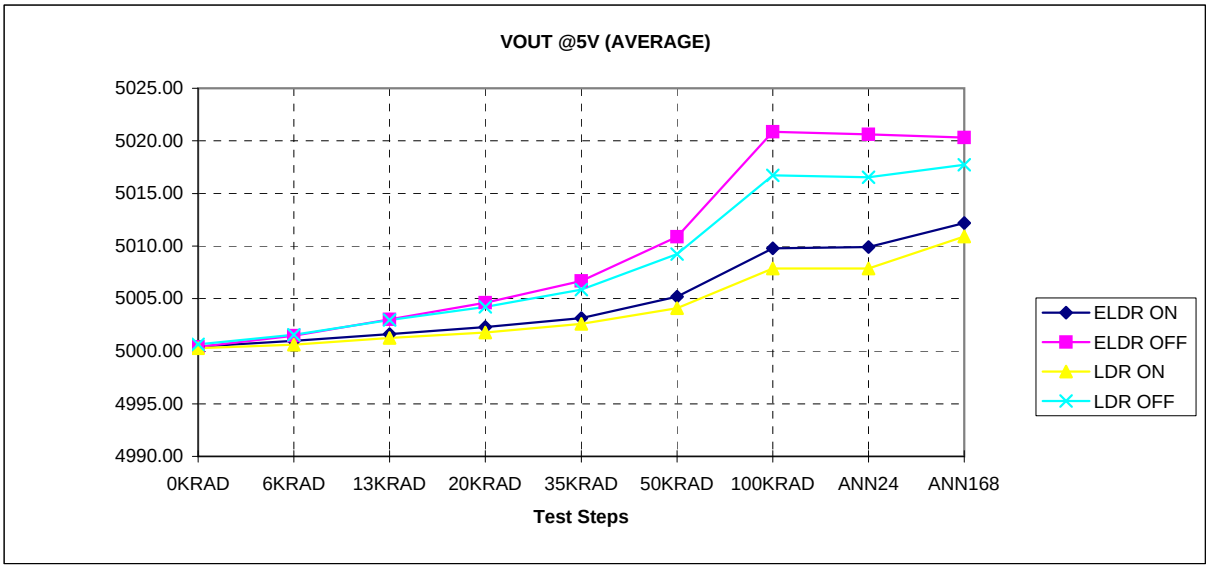
VOUT @5V (ELDR	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	**4950**	**4950**	**4950**	**4950**	**4950**	**4950**	**4950**	**4950**	**4950**
Max	**5050**	**5050**	**5050**	**5050**	**5050**	**5050**	**5050**	**5050**	**5050**
Unit	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**
Control Results									
1 (CTRL)	4999.88	4999.94	4999.99	5000.02	5000.03	5000	4999.93	4999.99	4999.79
Bias on results									
2 (ON)	4999.88	5000.46	5001.15	5001.86	5002.77	5004.98	5009.73	5009.79	5012.27
3 (ON)	5000.18	5000.71	5001.39	5002.1	5003.03	5005.31	5010.13	5010.55	5012.55
4 (ON)	5000.76	5001.31	5001.94	5002.63	5003.48	5005.56	5010.23	5010.28	5012.5
5 (ON)	5001.33	5001.86	5002.46	5003.12	5003.88	5005.85	5010.25	5010.32	5012.75
6 (ON)	5000.11	5000.62	5001.2	5001.8	5002.53	5004.31	5008.5	5008.54	5010.84
Statistics bias on									
min result	4999.880	5000.460	5001.150	5001.800	5002.530	5004.310	5008.500	5008.540	5010.840
max result	5001.330	5001.860	5002.460	5003.120	5003.880	5005.850	5010.250	5010.550	5012.750
average	5000.452	5000.992	5001.628	5002.302	5003.138	5005.202	5009.768	5009.896	5012.182
sigma	0.588	0.582	0.561	0.562	0.544	0.593	0.739	0.807	0.769
Bias off results									
7 (OFF)	5000.62	5001.77	5003.4	5005.01	5007.12	5011.44	5021.65	5021.38	5021.62
8 (OFF)	5001.08	5002.14	5003.64	5005.26	5007.33	5011.73	5021.99	5021.81	5021.36
9 (OFF)	5000.46	5001.37	5002.84	5004.3	5006.2	5010.09	5019.6	5019.51	5017.99
10 (OFF)	4999.3	5000.38	5002.04	5003.65	5005.77	5010.07	5020.09	5019.69	5019.98
11 (OFF)	5000.6	5001.64	5003.26	5004.86	5006.9	5011.06	5020.93	5020.71	5020.63
Statistics bias off									
min result	4999.300	5000.380	5002.040	5003.650	5005.770	5010.070	5019.600	5019.510	5017.990
max result	5001.080	5002.140	5003.640	5005.260	5007.330	5011.730	5021.990	5021.810	5021.620
average	5000.412	5001.460	5003.036	5004.616	5006.664	5010.878	5020.852	5020.620	5020.316
sigma	0.664	0.664	0.628	0.645	0.656	0.766	1.011	1.012	1.450



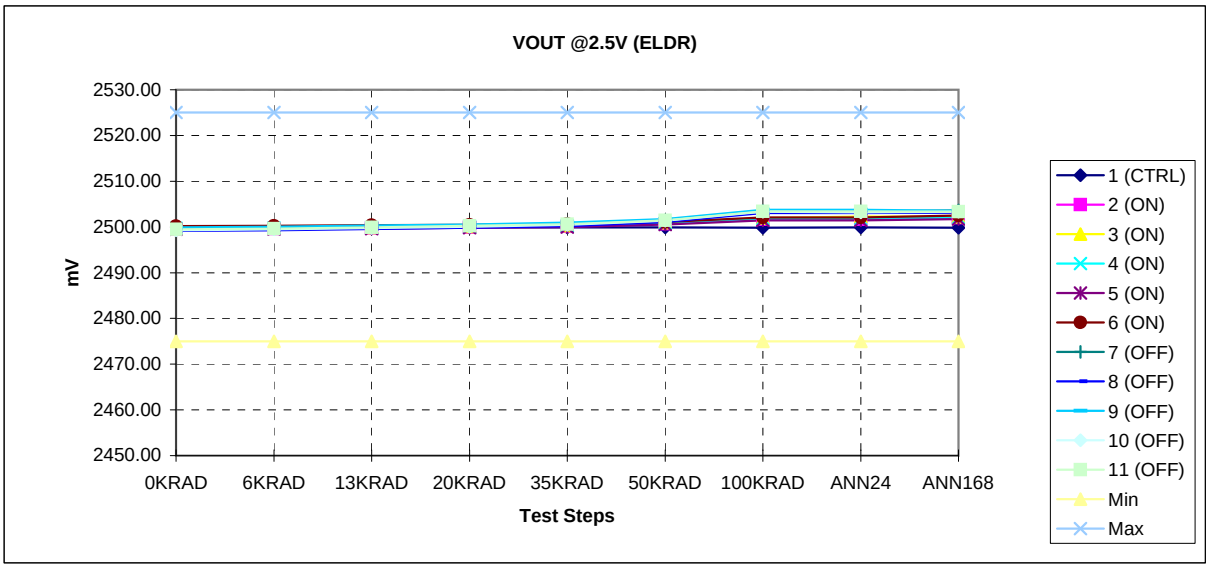
VOUT @5V (LDR	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	**4950**	**4950**	**4950**	**4950**	**4950**	**4950**	**4950**	**4950**	**4950**
Max	**5050**	**5050**	**5050**	**5050**	**5050**	**5050**	**5050**	**5050**	**5050**
Unit	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**
Control Results									
1 (CTRL)	5001.31	5001.13	5001.18	5001.21	5001.4	5001.09	5001.24	5001.34	5001.32

Bias on results									
2 (ON)	4999.56	4999.76	5000.41	5000.91	5001.74	5004.04	5007.05	5007	5011.15
3 (ON)	5000.76	5001.14	5001.75	5002.41	5003.26	5004.46	5008.54	5008.59	5011.09
4 (ON)	5000.2	5000.51	5001.19	5001.68	5002.49	5003.77	5007.72	5007.67	5010.4
5 (ON)	5001.34	5001.78	5002.42	5002.92	5003.77	5005	5009.18	5009.16	5012.16
6 (ON)	4999.58	4999.92	5000.53	5001.01	5001.77	5003.23	5006.91	5006.83	5009.73
Statistics bias on									
min result	4999.560	4999.760	5000.410	5000.910	5001.740	5003.230	5006.910	5006.830	5009.730
max result	5001.340	5001.780	5002.420	5002.920	5003.770	5005.000	5009.180	5009.160	5012.160
average	5000.288	5000.622	5001.260	5001.786	5002.606	5004.100	5007.880	5007.850	5010.906
sigma	0.769	0.845	0.844	0.874	0.901	0.672	0.972	1.007	0.909

Bias off results									
7 (OFF)	5000.76	5001.62	5003.11	5004.49	5006.19	5009.71	5017.65	5017.37	5018.91
8 (OFF)	5001.41	5002.35	5003.7	5004.96	5006.55	5009.95	5017.54	5017.41	5018.72
9 (OFF)	5000.2	5001.19	5002.57	5003.82	5005.34	5008.56	5015.75	5015.48	5016.7
10 (OFF)	5000.35	5001.26	5002.54	5003.73	5005.22	5008.31	5015.19	5015.09	5015.8
11 (OFF)	5000.48	5001.44	5002.87	5004	5005.98	5009.6	5017.52	5017.42	5018.48
Statistics bias off									
min result	5000.200	5001.190	5002.540	5003.730	5005.220	5008.310	5015.190	5015.090	5015.800
max result	5001.410	5002.350	5003.700	5004.960	5006.550	5009.950	5017.650	5017.420	5018.910
average	5000.640	5001.572	5002.958	5004.200	5005.856	5009.226	5016.730	5016.554	5017.722
sigma	0.477	0.466	0.476	0.516	0.566	0.738	1.168	1.167	1.389



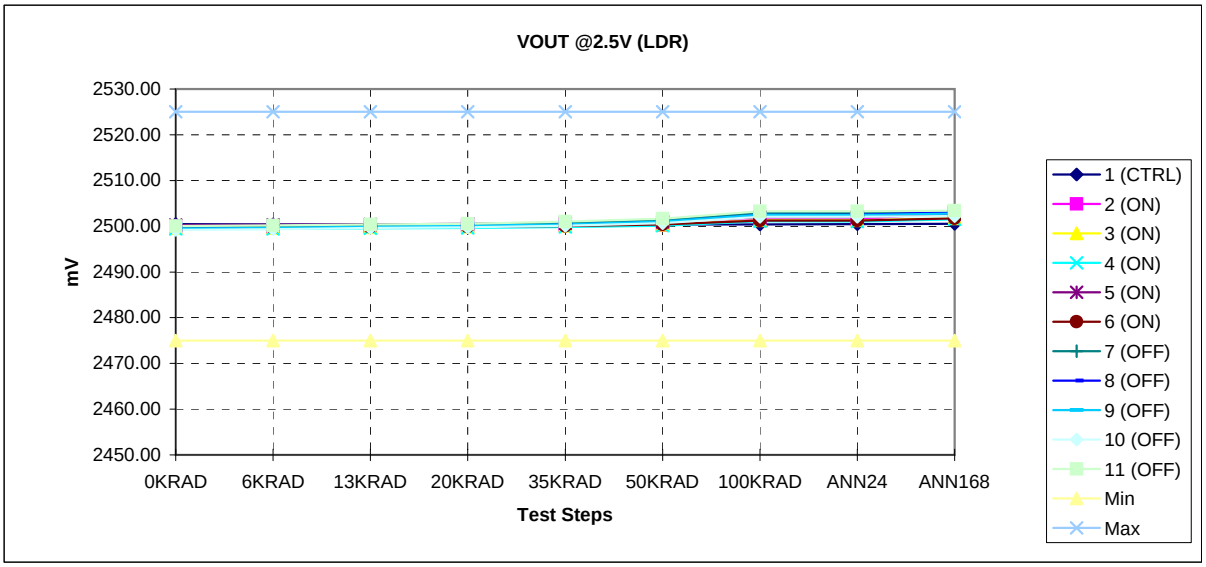
UT @5V (AVERA	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
ELDR ON	5000.452	5000.992	5001.628	5002.302	5003.138	5005.202	5009.768	5009.896	5012.182
ELDR OFF	5000.412	5001.460	5003.036	5004.616	5006.664	5010.878	5020.852	5020.620	5020.316
LDR ON	5000.288	5000.622	5001.260	5001.786	5002.606	5004.100	5007.880	5007.850	5010.906
LDR OFF	5000.640	5001.572	5002.958	5004.200	5005.856	5009.226	5016.730	5016.554	5017.722



OUT @2.5V (ELD	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	**2475**	**2475**	**2475**	**2475**	**2475**	**2475**	**2475**	**2475**	**2475**
Max	**2525**	**2525**	**2525**	**2525**	**2525**	**2525**	**2525**	**2525**	**2525**
Unit	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**	**mV**
Control Results									
1 (CTRL)	2499.85	2499.84	2499.87	2499.89	2499.89	2499.9	2499.86	2499.88	2499.8

Bias on results									
2 (ON)	2499.51	2499.59	2499.74	2499.92	2500.11	2500.65	2501.64	2501.68	2501.97
3 (ON)	2499.72	2499.78	2499.92	2500.1	2500.34	2500.97	2501.92	2502.28	2502.21
4 (ON)	2499.67	2499.74	2499.86	2500.03	2500.22	2500.78	2501.78	2501.76	2502.01
5 (ON)	2499.47	2499.54	2499.65	2499.82	2499.98	2500.5	2501.44	2501.46	2501.75
6 (ON)	2500.19	2500.25	2500.36	2500.48	2500.67	2501.11	2502.06	2502.08	2502.46
Statistics bias on									
min result	2499.470	2499.540	2499.650	2499.820	2499.980	2500.500	2501.440	2501.460	2501.750
max result	2500.190	2500.250	2500.360	2500.480	2500.670	2501.110	2502.060	2502.280	2502.460
average	2499.712	2499.780	2499.906	2500.070	2500.264	2500.802	2501.768	2501.852	2502.080
sigma	0.287	0.281	0.275	0.253	0.263	0.244	0.241	0.327	0.268

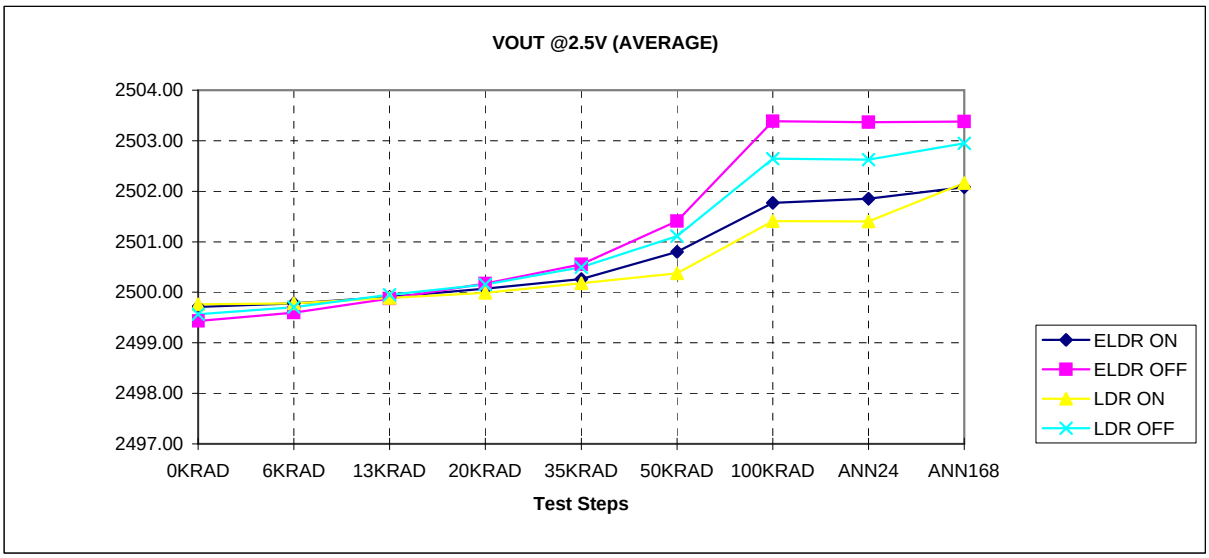
Bias off results									
7 (OFF)	2499.39	2499.58	2499.87	2500.17	2500.57	2501.44	2503.45	2503.42	2503.58
8 (OFF)	2499.11	2499.3	2499.55	2499.85	2500.21	2501.08	2503.08	2503.08	2503.09
9 (OFF)	2499.9	2500.03	2500.29	2500.56	2500.93	2501.7	2503.72	2503.73	2503.56
10 (OFF)	2499.29	2499.47	2499.76	2500.06	2500.46	2501.38	2503.3	2503.21	2503.33
11 (OFF)	2499.46	2499.62	2499.91	2500.22	2500.59	2501.43	2503.38	2503.38	2503.33
Statistics bias off									
min result	2499.110	2499.300	2499.550	2499.850	2500.210	2501.080	2503.080	2503.080	2503.090
max result	2499.900	2500.030	2500.290	2500.560	2500.930	2501.700	2503.720	2503.730	2503.580
average	2499.430	2499.600	2499.876	2500.172	2500.552	2501.406	2503.386	2503.364	2503.378
sigma	0.294	0.270	0.270	0.259	0.260	0.221	0.233	0.246	0.201



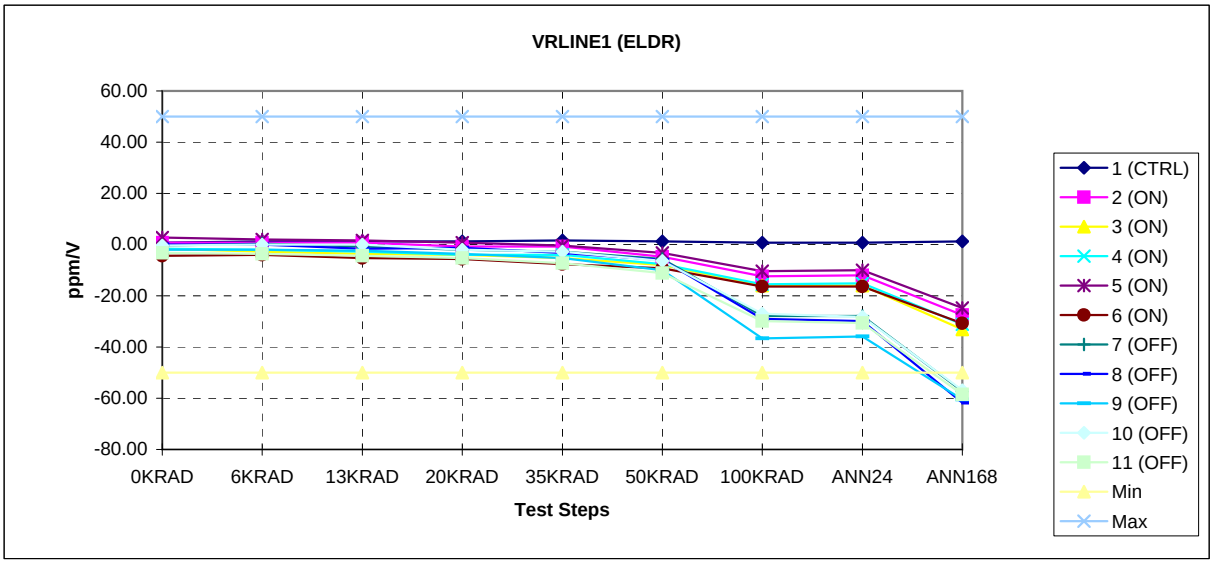
OUT @2.5V (LDR	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	2475	2475	2475	2475	2475	2475	2475	2475	2475
Max	2525	2525	2525	2525	2525	2525	2525	2525	2525
Unit	mV	mV	mV	mV	mV	mV	mV	mV	mV
Control Results									
1 (CTRL)	2500.44	2500.37	2500.39	2500.41	2500.53	2500.37	2500.42	2500.48	2500.51

Bias on results									
2 (ON)	2499.83	2499.8	2499.93	2500.03	2500.23	2500.16	2501.45	2501.41	2503.14
3 (ON)	2499.62	2499.65	2499.74	2499.88	2500.08	2500.3	2501.28	2501.33	2501.7
4 (ON)	2499.43	2499.44	2499.58	2499.64	2499.85	2500.12	2501.07	2501.05	2501.52
5 (ON)	2500.25	2500.29	2500.4	2500.5	2500.69	2500.94	2501.99	2502	2502.73
6 (ON)	2499.69	2499.71	2499.8	2499.89	2500.06	2500.37	2501.24	2501.22	2501.73
Statistics bias on									
min result	2499.430	2499.440	2499.580	2499.640	2499.850	2500.120	2501.070	2501.050	2501.520
max result	2500.250	2500.290	2500.400	2500.500	2500.690	2500.940	2501.990	2502.000	2503.140
average	2499.764	2499.778	2499.890	2499.988	2500.182	2500.378	2501.406	2501.402	2502.164
sigma	0.308	0.315	0.312	0.319	0.315	0.330	0.353	0.361	0.723

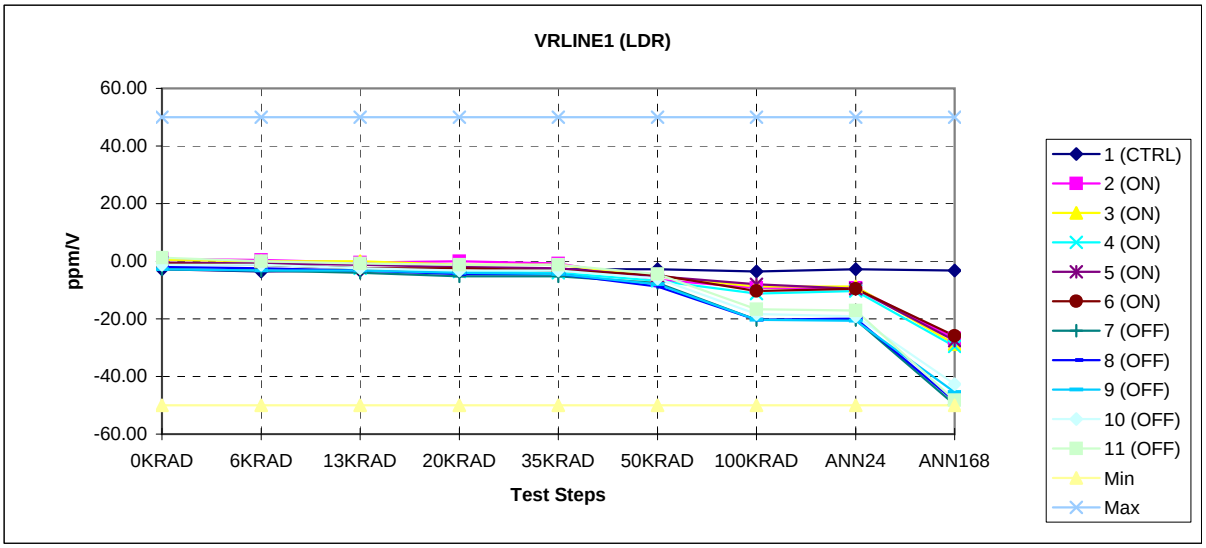
Bias off results									
7 (OFF)	2499.72	2499.83	2500.1	2500.35	2500.69	2501.33	2502.94	2502.92	2503.27
8 (OFF)	2499.4	2499.56	2499.78	2500	2500.32	2500.93	2502.5	2502.48	2503.1
9 (OFF)	2499.48	2499.63	2499.89	2500.1	2500.4	2500.99	2502.47	2502.42	2502.74
10 (OFF)	2499.21	2499.36	2499.59	2499.77	2500.08	2500.64	2502.04	2502.05	2502.21
11 (OFF)	2500.02	2500.15	2500.4	2500.56	2500.99	2501.66	2503.26	2503.25	2503.43
Statistics bias off									
min result	2499.210	2499.360	2499.590	2499.770	2500.080	2500.640	2502.040	2502.050	2502.210
max result	2500.020	2500.150	2500.400	2500.560	2500.990	2501.660	2503.260	2503.250	2503.430
average	2499.566	2499.706	2499.952	2500.156	2500.496	2501.110	2502.642	2502.624	2502.950
sigma	0.313	0.300	0.311	0.307	0.352	0.393	0.470	0.467	0.487



T @2.5V (AVERA	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
ELDR ON	2499.712	2499.780	2499.906	2500.070	2500.264	2500.802	2501.768	2501.852	2502.080
ELDR OFF	2499.430	2499.600	2499.876	2500.172	2500.552	2501.406	2503.386	2503.364	2503.378
LDR ON	2499.764	2499.778	2499.890	2499.988	2500.182	2500.378	2501.406	2501.402	2502.164
LDR OFF	2499.566	2499.706	2499.952	2500.156	2500.496	2501.110	2502.642	2502.624	2502.950



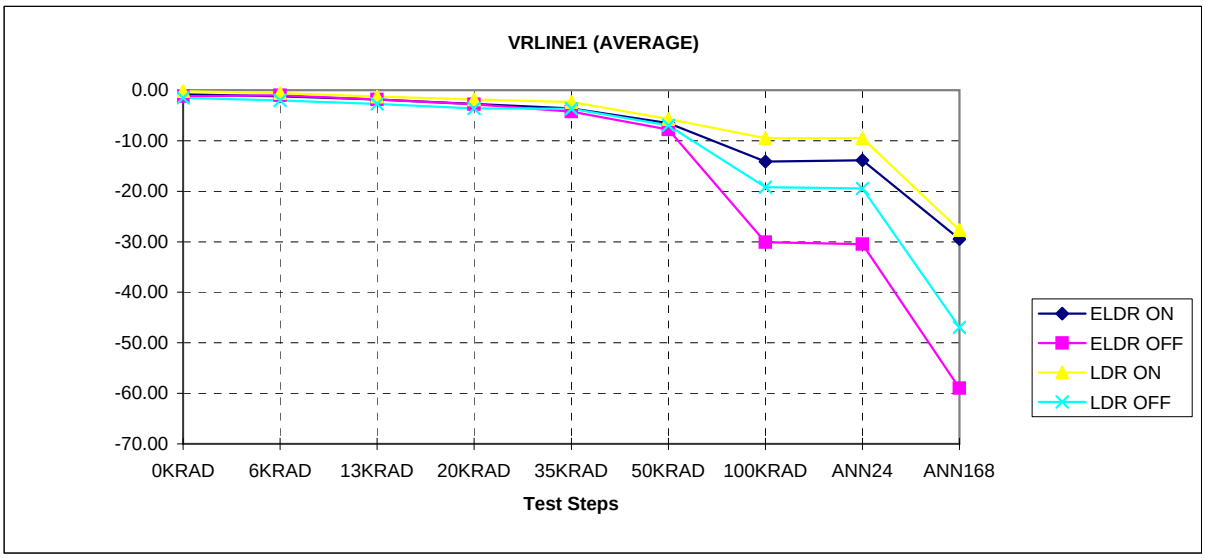
VRLINE1 (ELDR)	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	-50	-50	-50	-50	-50	-50	-50	-50	-50
Max	50	50	50	50	50	50	50	50	50
Unit	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V
Control Results									
1 (CTRL)	0.8	1.2	1.2	1.2	1.6	1.2	0.8	0.8	1.2
Bias on results									
2 (ON)	0.8	0.8	0.8	-0.8	-0.8	-4.79	-12.37	-11.97	-27.52
3 (ON)	-1.6	-2.8	-3.6	-4	-5.2	-7.99	-15.96	-15.96	-33.09
4 (ON)	-1.6	-2	-2.8	-4	-4	-7.59	-15.56	-15.16	-31.11
5 (ON)	2.8	2	1.6	0.8	-0.4	-3.2	-10.38	-9.98	-24.73
6 (ON)	-4.4	-4	-5.2	-5.6	-7.6	-9.19	-16.37	-16.37	-30.72
Statistics bias on									
min result	-4.400	-4.000	-5.200	-5.600	-7.600	-9.190	-16.370	-16.370	-33.090
max result	2.800	2.000	1.600	0.800	-0.400	-3.200	-10.380	-9.980	-24.730
average	-0.800	-1.200	-1.840	-2.720	-3.600	-6.552	-14.128	-13.888	-29.434
sigma	2.728	2.514	2.920	2.629	3.033	2.472	2.625	2.785	3.302
Bias off results									
7 (OFF)	-0.4	0.4	-0.8	-2	-2.8	-5.58	-27.85	-27.85	-57.3
8 (OFF)	0	0	-1.6	-1.2	-3.19	-5.98	-29.04	-29.84	-61.69
9 (OFF)	-2	-2	-2.4	-3.6	-5.19	-9.98	-36.62	-35.83	-60.54
10 (OFF)	-0.4	0	0	-2	-2.8	-6.38	-27.06	-28.26	-56.91
11 (OFF)	-3.2	-3.6	-4.4	-5.19	-7.19	-11.17	-29.85	-30.65	-58.51
Statistics bias off									
min result	-3.200	-3.600	-4.400	-5.190	-7.190	-11.170	-36.620	-35.830	-61.690
max result	0.000	0.400	0.000	-1.200	-2.800	-5.580	-27.060	-27.850	-56.910
average	-1.200	-1.040	-1.840	-2.798	-4.234	-7.818	-30.084	-30.486	-58.990
sigma	1.356	1.711	1.688	1.596	1.927	2.567	3.808	3.198	2.068



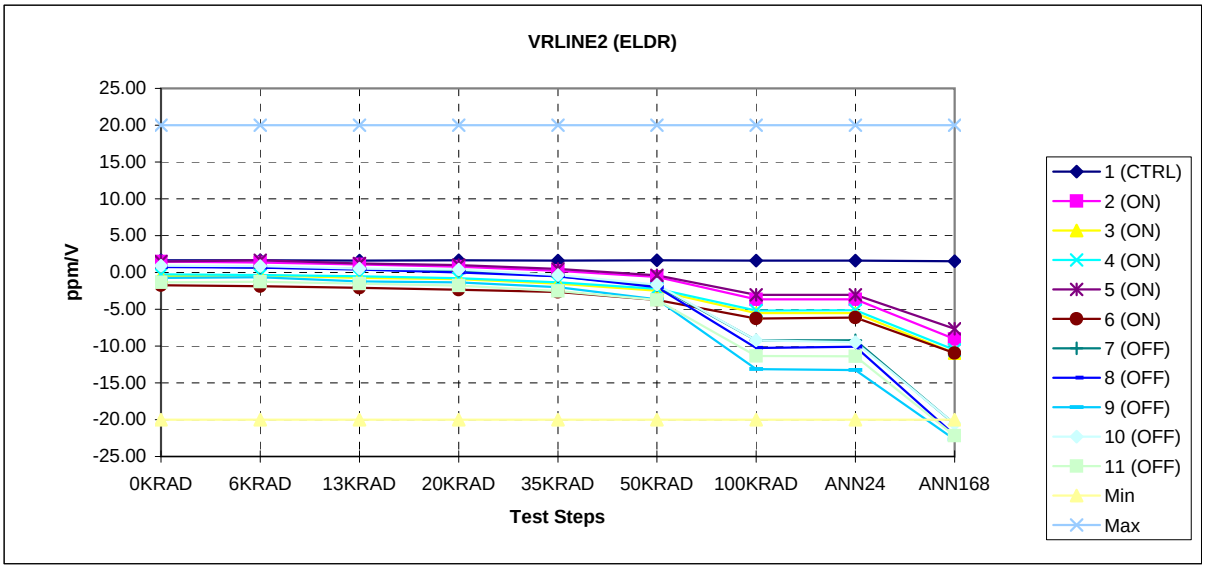
VRLINE1 (LDR)	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	-50	-50	-50	-50	-50	-50	-50	-50	-50
Max	50	50	50	50	50	50	50	50	50
Unit	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V
Control Results									
1 (CTRL)	-2.8	-3.6	-3.2	-3.6	-2.8	-2.8	-3.6	-2.8	-3.2

Bias on results									
2 (ON)	0.8	0.4	-0.4	0	-0.8	-6.39	-9.18	-9.18	-26.73
3 (ON)	0.4	0	0	-1.2	-1.2	-5.19	-8.78	-8.78	-28.73
4 (ON)	-0.8	-1.2	-2.4	-3.6	-4	-6.79	-11.18	-10.38	-29.53
5 (ON)	-0.4	-0.8	-1.2	-2	-2.4	-5.19	-7.98	-9.58	-27.52
6 (ON)	-0.8	-1.2	-2.4	-2.4	-3.2	-4.8	-10.38	-9.59	-25.94
Statistics bias on									
min result	-0.800	-1.200	-2.400	-3.600	-4.000	-6.790	-11.180	-10.380	-29.530
max result	0.800	0.400	0.000	0.000	-0.800	-4.800	-7.980	-8.780	-25.940
average	-0.160	-0.560	-1.280	-1.840	-2.320	-5.672	-9.500	-9.502	-27.690
sigma	0.727	0.727	1.110	1.345	1.339	0.865	1.277	0.594	1.456

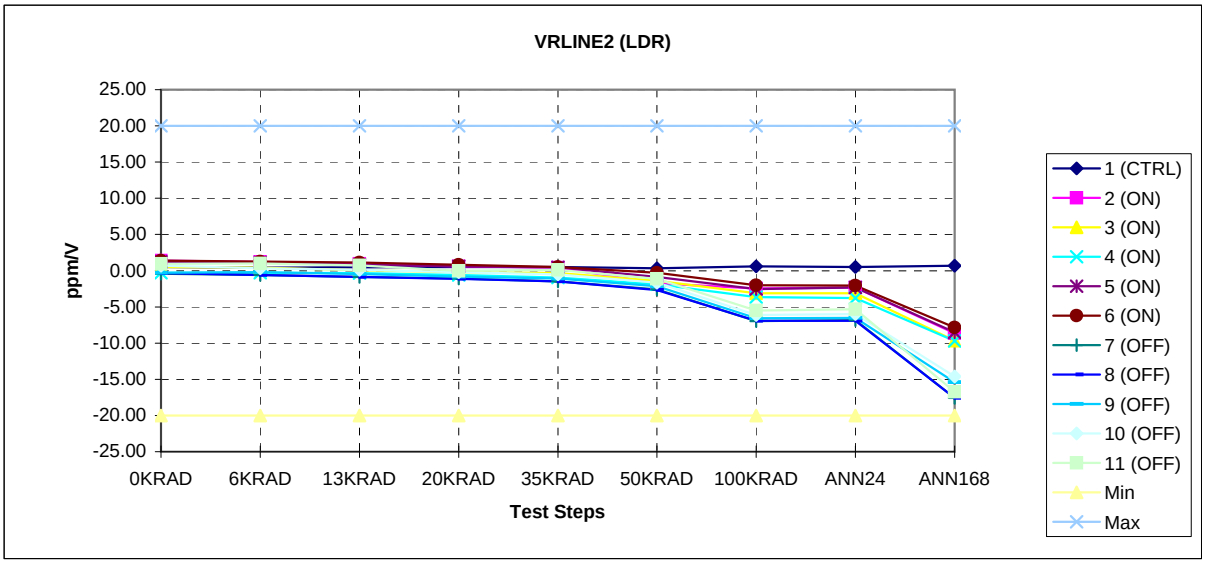
Bias off results									
7 (OFF)	-2.8	-3.2	-4	-5.19	-5.19	-7.58	-20.31	-20.31	-49.77
8 (OFF)	-2	-2.4	-3.2	-4.4	-4.39	-8.78	-20.31	-19.92	-48.59
9 (OFF)	-2.8	-3.2	-3.2	-4	-4.39	-7.98	-20.32	-20.72	-45.42
10 (OFF)	-1.2	-1.2	-2.4	-3.2	-3.2	-5.99	-18.33	-19.12	-42.63
11 (OFF)	1.2	0	-0.8	-1.2	-1.2	-4.39	-16.72	-17.12	-48.18
Statistics bias off									
min result	-2.800	-3.200	-4.000	-5.190	-5.190	-8.780	-20.320	-20.720	-49.770
max result	1.200	0.000	-0.800	-1.200	-1.200	-4.390	-16.720	-17.120	-42.630
average	-1.520	-2.000	-2.720	-3.598	-3.674	-6.944	-19.198	-19.438	-46.918
sigma	1.659	1.386	1.213	1.521	1.555	1.752	1.630	1.424	2.879



RLINE1 (AVERAG	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
ELDR ON	-0.800	-1.200	-1.840	-2.720	-3.600	-6.552	-14.128	-13.888	-29.434
ELDR OFF	-1.200	-1.040	-1.840	-2.798	-4.234	-7.818	-30.084	-30.486	-58.990
LDR ON	-0.160	-0.560	-1.280	-1.840	-2.320	-5.672	-9.500	-9.502	-27.690
LDR OFF	-1.520	-2.000	-2.720	-3.598	-3.674	-6.944	-19.198	-19.438	-46.918



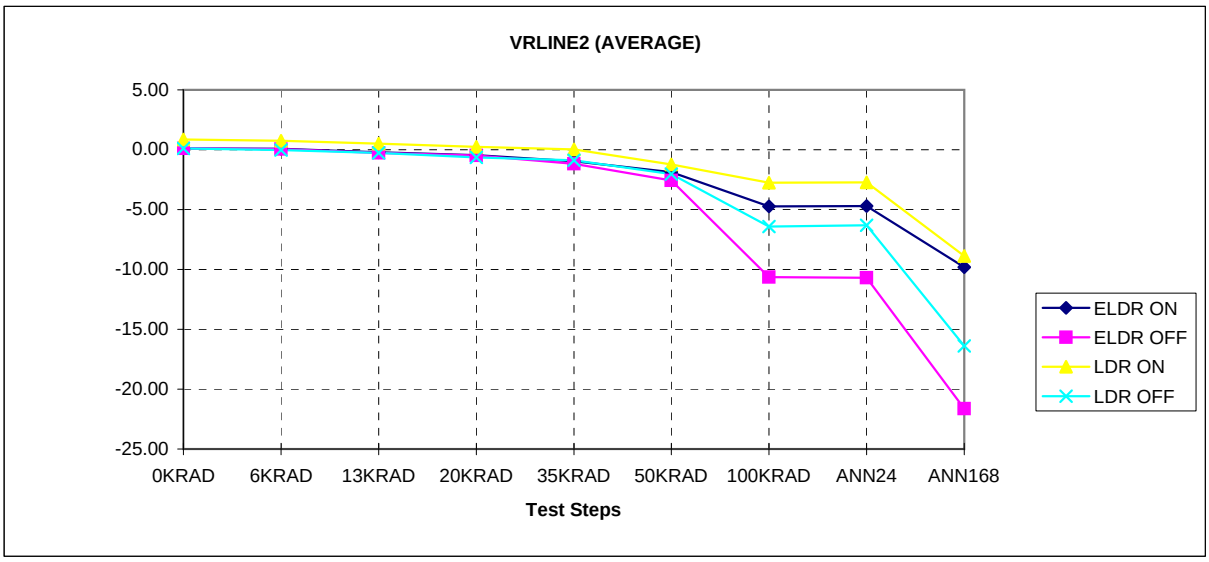
VRLINE2 (ELDR)	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	-20	-20	-20	-20	-20	-20	-20	-20	-20
Max	20	20	20	20	20	20	20	20	20
Unit	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V
Control Results									
1 (CTRL)	1.67	1.67	1.6	1.67	1.6	1.67	1.6	1.6	1.53
Bias on results									
2 (ON)	1.47	1.33	1.07	0.8	0.2	-0.6	-3.66	-3.66	-9.04
3 (ON)	-0.47	-0.4	-0.73	-0.93	-1.53	-2.46	-5.52	-5.52	-10.97
4 (ON)	-0.27	-0.33	-0.53	-0.8	-1.33	-2.2	-5.19	-5.12	-10.5
5 (ON)	1.47	1.67	1.2	1	0.47	-0.4	-3.06	-3.06	-7.65
6 (ON)	-1.73	-1.87	-2.07	-2.33	-2.67	-3.73	-6.25	-6.12	-10.97
Statistics bias on									
min result	-1.730	-1.870	-2.070	-2.330	-2.670	-3.730	-6.250	-6.120	-10.970
max result	1.470	1.670	1.200	1.000	0.470	-0.400	-3.060	-3.060	-7.650
average	0.094	0.080	-0.212	-0.452	-0.972	-1.878	-4.736	-4.696	-9.826
sigma	1.375	1.440	1.366	1.374	1.302	1.387	1.330	1.288	1.451
Bias off results									
7 (OFF)	0.87	0.67	0.47	0.27	-0.53	-1.8	-9.22	-9.22	-20.63
8 (OFF)	0.73	0.67	0.4	0	-0.53	-1.99	-10.28	-10.08	-22.09
9 (OFF)	-0.73	-0.67	-1.2	-1.33	-2	-3.66	-13.14	-13.27	-22.7
10 (OFF)	0.93	0.87	0.53	0.4	-0.33	-1.66	-9.22	-9.49	-20.56
11 (OFF)	-1.33	-1.27	-1.53	-1.8	-2.53	-3.72	-11.34	-11.41	-22.16
Statistics bias off									
min result	-1.330	-1.270	-1.530	-1.800	-2.530	-3.720	-13.140	-13.270	-22.700
max result	0.930	0.870	0.530	0.400	-0.330	-1.660	-9.220	-9.220	-20.560
average	0.094	0.054	-0.266	-0.492	-1.184	-2.566	-10.640	-10.694	-21.628
sigma	1.050	0.962	1.011	1.004	1.008	1.033	1.651	1.669	0.972



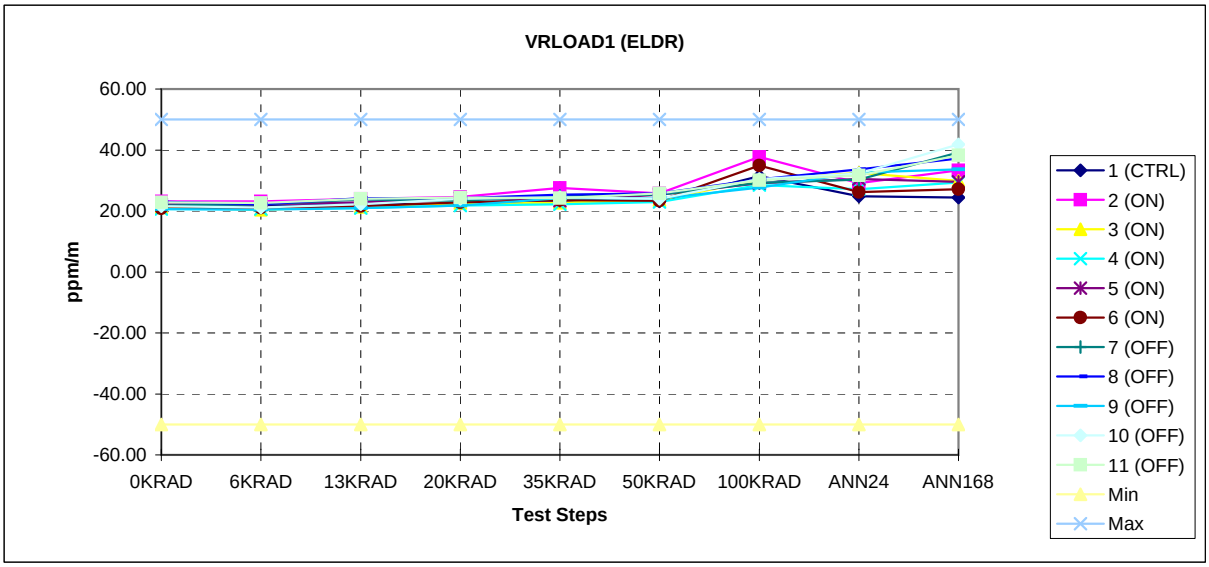
VRLINE2 (LDR)	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	-20	-20	-20	-20	-20	-20	-20	-20	-20
Max	20	20	20	20	20	20	20	20	20
Unit	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V	ppm/V
Control Results									
1 (CTRL)	0.53	0.4	0.47	0.53	0.53	0.33	0.6	0.53	0.67

Bias on results									
2 (ON)	1.4	1.2	0.93	0.6	0.4	-1.73	-2.46	-2.33	-8.65
3 (ON)	0.53	0.4	0.07	-0.2	-0.33	-1.4	-3.13	-3.13	-9.64
4 (ON)	-0.27	-0.27	-0.33	-0.6	-0.93	-1.87	-3.66	-3.79	-9.71
5 (ON)	1.2	1.13	0.8	0.6	0.47	-0.87	-2.53	-2.33	-8.51
6 (ON)	1.4	1.27	1.13	0.8	0.53	-0.27	-2	-2.06	-7.85
Statistics bias on									
min result	-0.270	-0.270	-0.330	-0.600	-0.930	-1.870	-3.660	-3.790	-9.710
max result	1.400	1.270	1.130	0.800	0.530	-0.270	-2.000	-2.060	-7.850
average	0.852	0.746	0.520	0.240	0.028	-1.228	-2.756	-2.728	-8.872
sigma	0.722	0.667	0.621	0.607	0.639	0.659	0.646	0.716	0.793

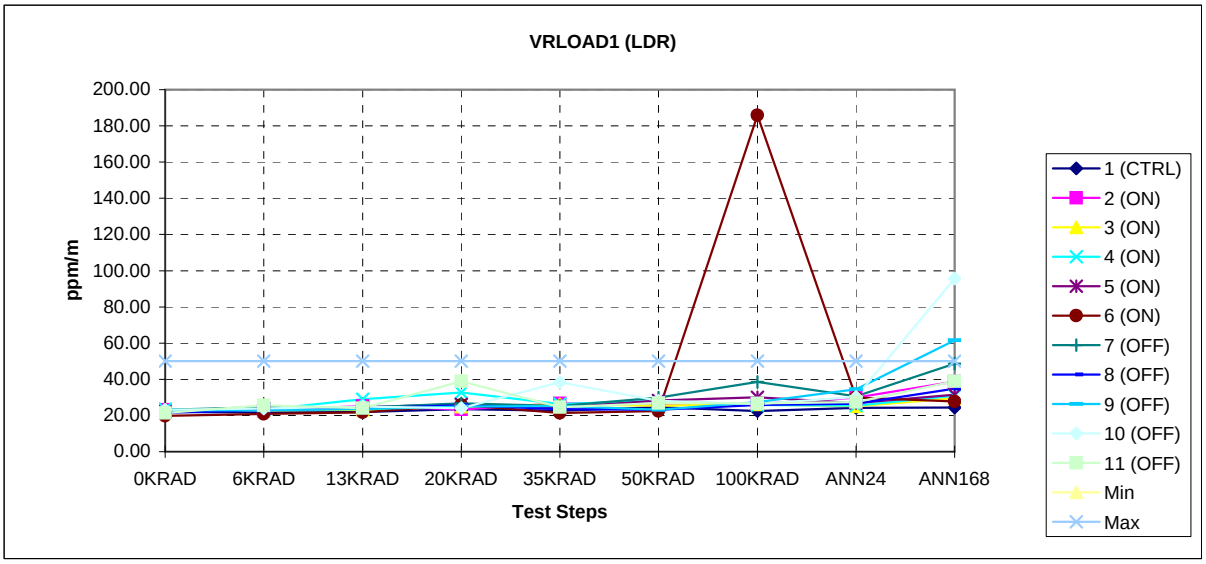
Bias off results									
7 (OFF)	-0.4	-0.6	-0.87	-1.07	-1.46	-2.59	-6.97	-6.84	-17.58
8 (OFF)	-0.33	-0.6	-0.87	-1.13	-1.46	-2.66	-6.9	-6.9	-17.59
9 (OFF)	-0.27	-0.2	-0.47	-0.8	-1.07	-2.13	-6.57	-6.51	-15.4
10 (OFF)	0.67	0.33	0.13	-0.2	-0.53	-1.66	-6.11	-5.98	-14.61
11 (OFF)	0.93	1	0.73	0	0.13	-1.13	-5.51	-5.31	-16.72
Statistics bias off									
min result	-0.400	-0.600	-0.870	-1.130	-1.460	-2.660	-6.970	-6.900	-17.590
max result	0.930	1.000	0.730	0.000	0.130	-1.130	-5.510	-5.310	-14.610
average	0.120	-0.014	-0.270	-0.640	-0.878	-2.034	-6.412	-6.308	-16.380
sigma	0.629	0.683	0.693	0.513	0.680	0.646	0.608	0.667	1.334



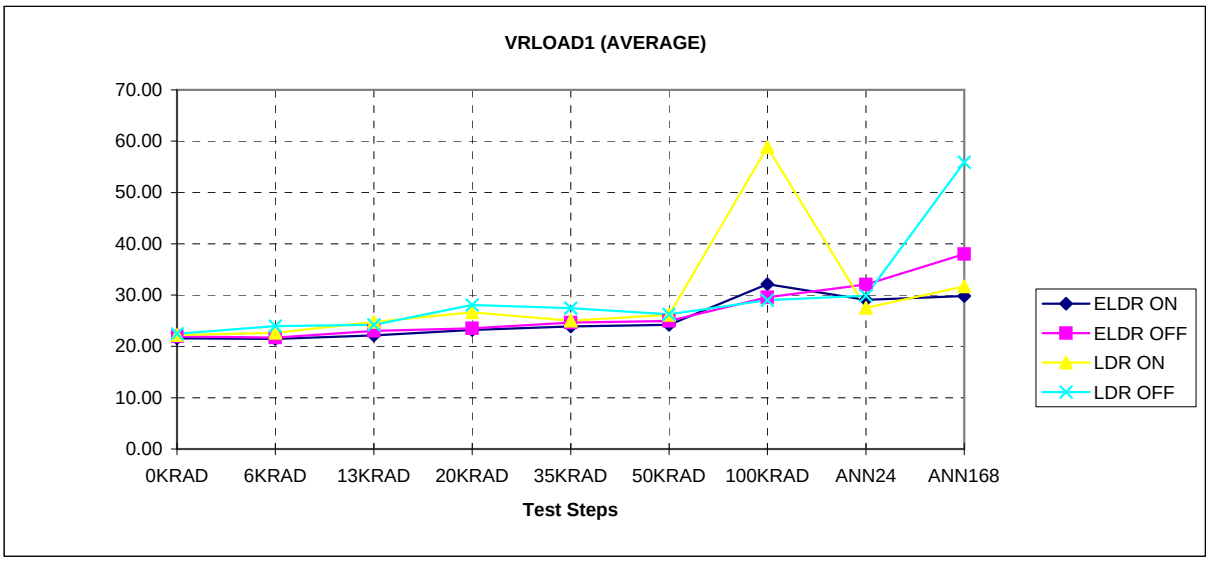
RLINE2 (AVERAG	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
ELDR ON	0.094	0.080	-0.212	-0.452	-0.972	-1.878	-4.736	-4.696	-9.826
ELDR OFF	0.094	0.054	-0.266	-0.492	-1.184	-2.566	-10.640	-10.694	-21.628
LDR ON	0.852	0.746	0.520	0.240	0.028	-1.228	-2.756	-2.728	-8.872
LDR OFF	0.120	-0.014	-0.270	-0.640	-0.878	-2.034	-6.412	-6.308	-16.380



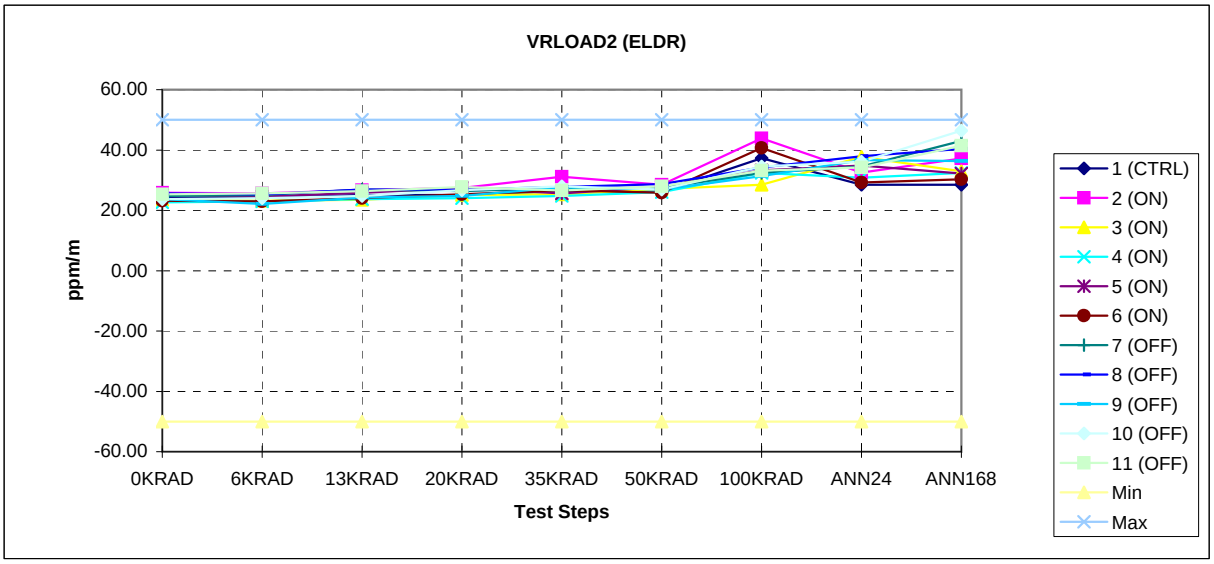
VRLOAD1 (ELDR	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	-50	-50	-50	-50	-50	-50	-50	-50	-50
Max	50	50	50	50	50	50	50	50	50
Unit	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m
Control Results									
1 (CTRL)	21.2	21.6	22.2	22.4	23.2	23.2	31.4	24.8	24.4
Bias on results									
2 (ON)	23.2	23.2	24	24.59	27.59	25.77	37.72	29.13	33.31
3 (ON)	21.2	20.4	21.39	22.59	22.78	23.57	30.32	32.52	29.91
4 (ON)	20.6	20.6	20.99	21.79	22.18	22.97	28.53	27.14	29.31
5 (ON)	22.2	22.2	22.79	24.19	23.39	25.37	29.14	30.53	29.52
6 (ON)	20.8	21	21.59	22.79	23.59	23.38	34.93	26.15	27.13
Statistics bias on									
min result	20.600	20.400	20.990	21.790	22.180	22.970	28.530	26.150	27.130
max result	23.200	23.200	24.000	24.590	27.590	25.770	37.720	32.520	33.310
average	21.600	21.480	22.152	23.190	23.906	24.212	32.128	29.094	29.836
sigma	1.086	1.188	1.232	1.166	2.132	1.266	4.008	2.563	2.223
Bias off results									
7 (OFF)	21.8	22.19	23.78	23.37	24.96	25.33	29.25	30.24	39.2
8 (OFF)	23	22.19	24.18	24.17	25.36	25.73	30.44	33.62	37.21
9 (OFF)	20.6	20.39	20.99	21.78	24.16	24.14	27.67	32.64	33.66
10 (OFF)	21.6	21.2	22.19	23.98	24.56	23.94	30.45	32.24	41.79
11 (OFF)	22.8	22.6	23.99	24.37	24.16	25.73	30.05	31.64	38.22
Statistics bias off									
min result	20.600	20.390	20.990	21.780	24.160	23.940	27.670	30.240	33.660
max result	23.000	22.600	24.180	24.370	25.360	25.730	30.450	33.620	41.790
average	21.960	21.714	23.026	23.534	24.640	24.974	29.572	32.076	38.016
sigma	0.974	0.902	1.385	1.049	0.522	0.871	1.170	1.254	2.971



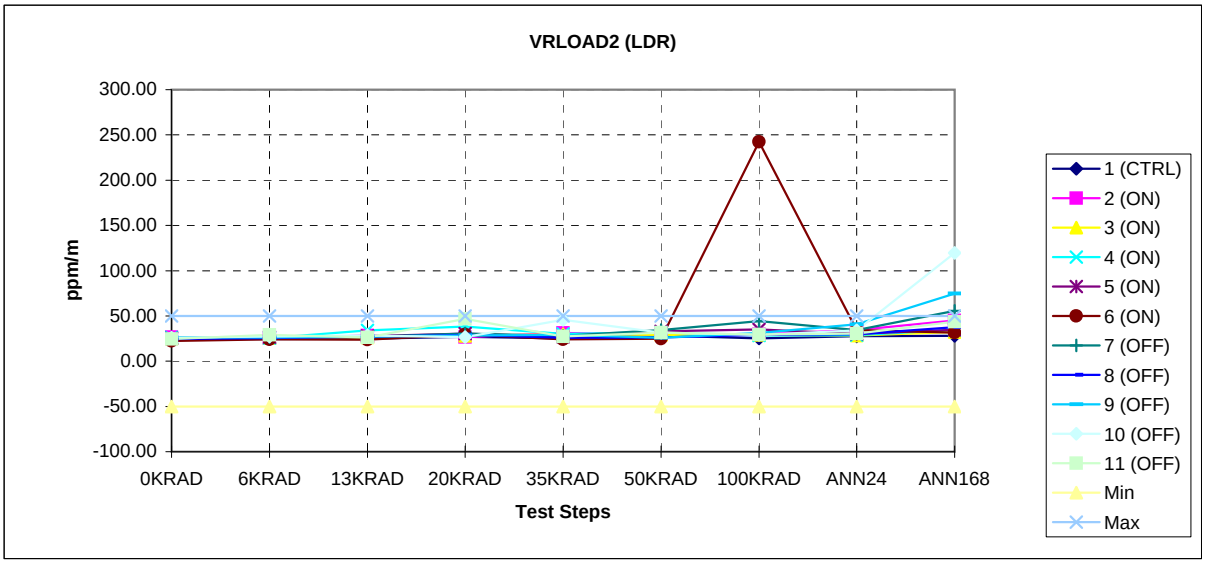
VRLOAD1 (LDR)	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	-50	-50	-50	-50	-50	-50	-50	-50	-50
Max	50	50	50	50	50	50	50	50	50
Unit	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m
Control Results									
1 (CTRL)	21.99	21.79	21.99	23.59	22.59	24.59	22.39	24.19	24.39
Bias on results									
2 (ON)	23.2	22.6	25.2	23.4	26.79	26.38	26.36	29.95	38.71
3 (ON)	22.4	22.8	23.19	24.99	26.18	25.38	26.15	25.15	29.52
4 (ON)	23.6	23.2	28.99	32.79	26.39	28.18	25.75	25.55	30.92
5 (ON)	22	23.79	24.59	26.18	24.38	28.37	30.14	26.94	31.51
6 (ON)	19.81	20.8	21.8	25.8	21.39	22.39	185.91	29.95	27.74
Statistics bias on									
min result	19.810	20.800	21.800	23.400	21.390	22.390	25.750	25.150	27.740
max result	23.600	23.790	28.990	32.790	26.790	28.370	185.910	29.950	38.710
average	22.202	22.638	24.754	26.632	25.026	26.140	58.862	27.508	31.680
sigma	1.479	1.123	2.708	3.604	2.233	2.441	71.044	2.326	4.190
Bias off results									
7 (OFF)	23.2	24.59	24.38	26.77	25.36	29.93	38.63	30.67	48.58
8 (OFF)	21.6	22.99	23.98	25.57	23.57	23.15	25.89	26.49	34.85
9 (OFF)	23	22.79	23.59	24.98	25.37	23.15	27.49	34.47	61.55
10 (OFF)	23.2	23.79	24.98	23.97	38.34	28.14	26.3	30.28	95.63
11 (OFF)	21.4	25.59	23.98	38.96	24.56	26.93	26.68	27.48	38.82
Statistics bias off									
min result	21.400	22.790	23.590	23.970	23.570	23.150	25.890	26.490	34.850
max result	23.200	25.590	24.980	38.960	38.340	29.930	38.630	34.470	95.630
average	22.480	23.950	24.182	28.050	27.440	26.260	28.998	29.878	55.886
sigma	0.901	1.161	0.526	6.182	6.138	3.033	5.417	3.127	24.489



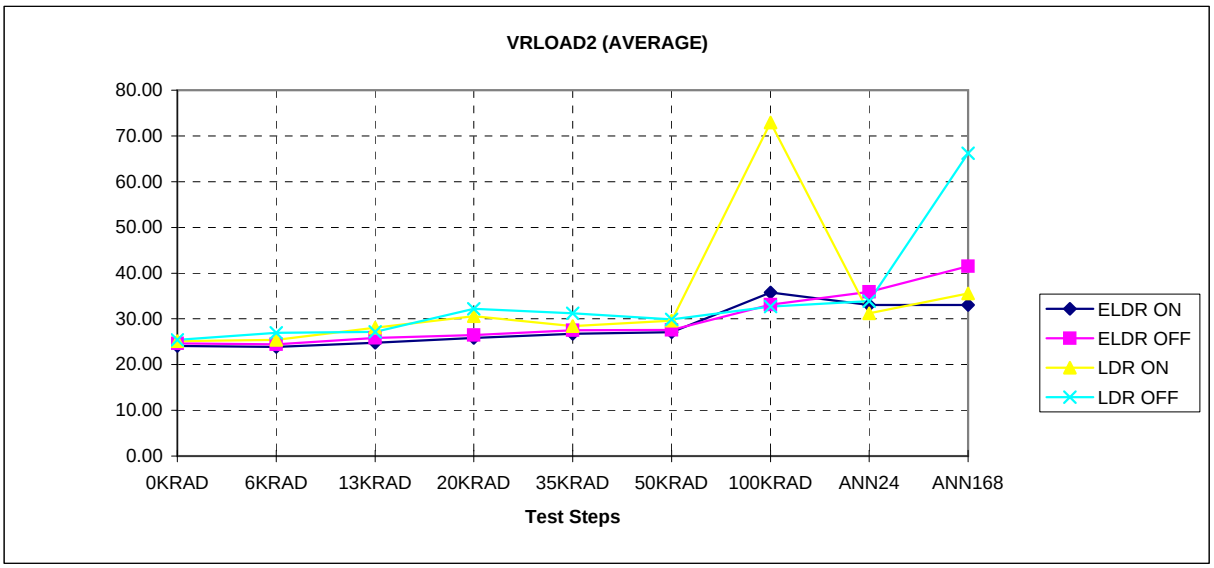
LOAD1 (AVERA	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
ELDR ON	21.600	21.480	22.152	23.190	23.906	24.212	32.128	29.094	29.836
ELDR OFF	21.960	21.714	23.026	23.534	24.640	24.974	29.572	32.076	38.016
LDR ON	22.202	22.638	24.754	26.632	25.026	26.140	58.862	27.508	31.680
LDR OFF	22.480	23.950	24.182	28.050	27.440	26.260	28.998	29.878	55.886



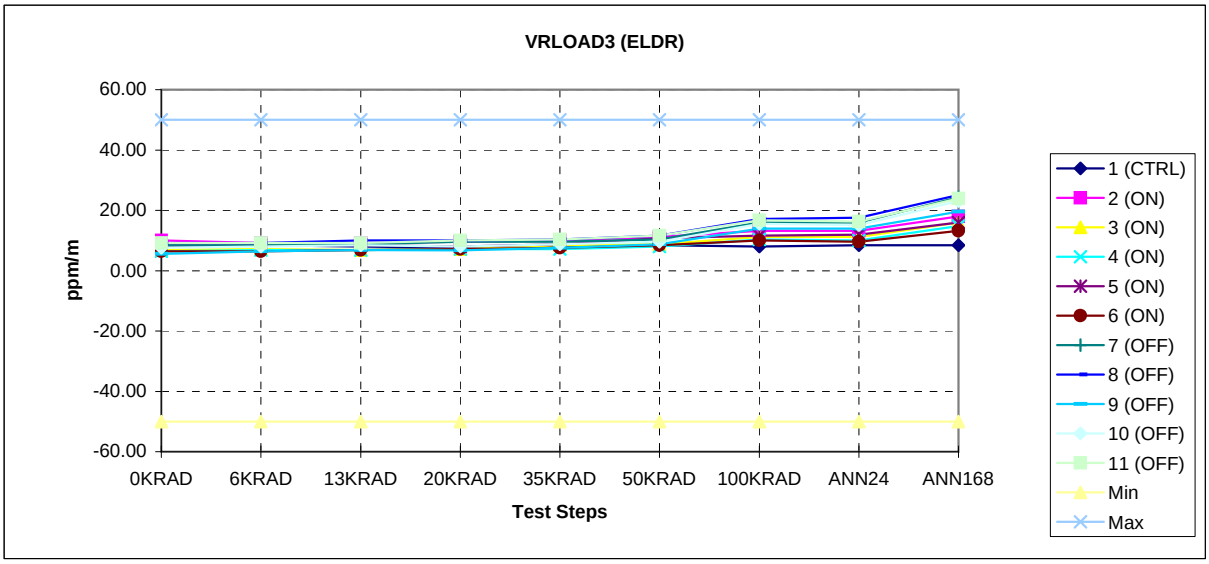
VRLOAD2 (ELDR	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	-50	-50	-50	-50	-50	-50	-50	-50	-50
Max	50	50	50	50	50	50	50	50	50
Unit	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m
Control Results									
1 (CTRL)	24	24.27	25.07	25.07	26.4	26.13	37.33	28.53	28.53
Bias on results									
2 (ON)	25.87	25.6	26.66	27.46	31.19	28.51	43.91	32.47	37.24
3 (ON)	23.46	23.19	23.46	25.05	25.31	27.16	28.46	37.77	32.97
4 (ON)	22.67	22.93	23.73	23.99	24.78	26.1	32.46	30.87	32.44
5 (ON)	25.07	24.54	25.87	27.46	25.59	27.71	33.27	34.87	32.19
6 (ON)	23.2	22.93	23.99	25.32	26.65	25.84	40.72	29.28	30.32
Statistics bias on									
min result	22.670	22.930	23.460	23.990	24.780	25.840	28.460	29.280	30.320
max result	25.870	25.600	26.660	27.460	31.190	28.510	43.910	37.770	37.240
average	24.054	23.838	24.742	25.856	26.704	27.064	35.764	33.052	33.032
sigma	1.353	1.190	1.430	1.546	2.599	1.112	6.352	3.350	2.556
Bias off results									
7 (OFF)	24.8	25.06	26.92	26.38	27.43	27.4	32.38	34.5	43
8 (OFF)	25.6	25.33	26.92	26.91	27.7	28.73	34.23	37.95	40.35
9 (OFF)	23.73	22.13	24.25	24.78	27.69	26.87	31.32	36.64	36.39
10 (OFF)	23.74	24	24.79	26.64	27.96	26.87	34.5	36.1	46.45
11 (OFF)	25.34	25.6	26.39	27.71	26.63	27.93	33.18	34.24	41.42
Statistics bias off									
min result	23.730	22.130	24.250	24.780	26.630	26.870	31.320	34.240	36.390
max result	25.600	25.600	26.920	27.710	27.960	28.730	34.500	37.950	46.450
average	24.642	24.424	25.854	26.484	27.482	27.560	33.122	35.886	41.522
sigma	0.877	1.419	1.251	1.075	0.512	0.788	1.316	1.541	3.681



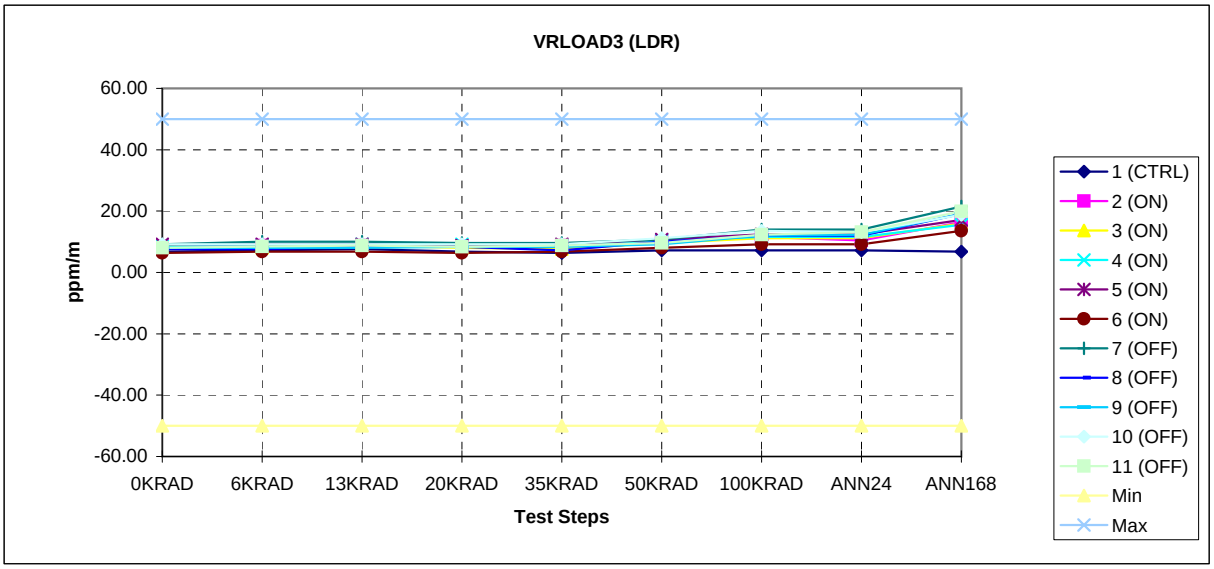
VRLOAD2 (LDR)	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	-50	-50	-50	-50	-50	-50	-50	-50	-50
Max	50	50	50	50	50	50	50	50	50
Unit	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m
Control Results									
1 (CTRL)	24.79	24.52	24.79	26.92	25.32	28.26	25.06	27.72	27.99
Bias on results									
2 (ON)	26.67	25.07	28.53	26.66	31.19	29.31	29.82	34.35	44.96
3 (ON)	25.07	25.6	26.13	27.99	29.85	29.04	29.01	28.48	32.19
4 (ON)	26.4	25.6	34.13	38.12	30.12	31.98	28.49	28.75	34.59
5 (ON)	25.06	26.66	27.72	30.65	26.91	33.03	35.13	30.07	34.58
6 (ON)	22.41	24.27	23.73	29.6	23.99	24.79	242.32	34.35	31.4
Statistics bias on									
min result	22.410	24.270	23.730	26.660	23.990	24.790	28.490	28.480	31.400
max result	26.670	26.660	34.130	38.120	31.190	33.030	242.320	34.350	44.960
average	25.122	25.440	28.048	30.604	28.412	29.630	72.954	31.200	35.544
sigma	1.688	0.873	3.862	4.469	2.937	3.200	94.716	2.938	5.453
Bias off results									
7 (OFF)	25.86	26.66	26.92	30.37	27.96	34.32	44.35	34.26	55.76
8 (OFF)	24.53	25.6	26.92	29.04	25.84	26.35	28.96	29.76	37.72
9 (OFF)	26.13	26.13	27.19	28.24	29.03	25.82	31.35	40.66	74.65
10 (OFF)	25.86	27.19	28.51	26.64	45.8	31.4	29.22	34.01	119.55
11 (OFF)	24.53	29.05	26.11	46.62	27.43	31.66	29.48	30.54	43.54
Statistics bias off									
min result	24.530	25.600	26.110	26.640	25.840	25.820	28.960	29.760	37.720
max result	26.130	29.050	28.510	46.620	45.800	34.320	44.350	40.660	119.550
average	25.382	26.926	27.130	32.182	31.212	29.910	32.672	33.846	66.244
sigma	0.786	1.327	0.871	8.183	8.236	3.679	6.596	4.309	32.982



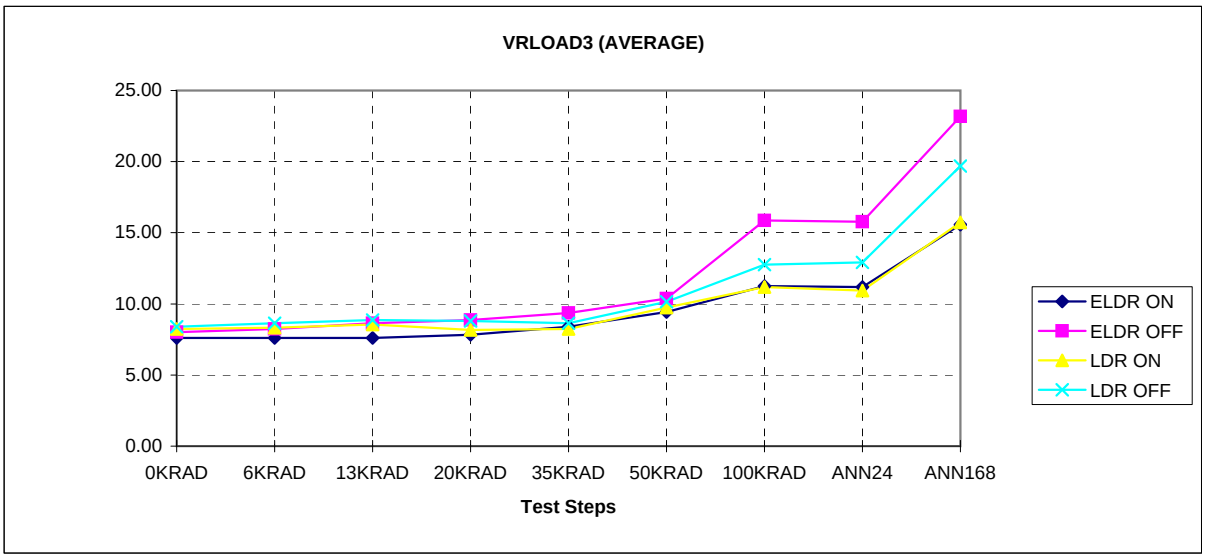
LOAD2 (AVERA	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
ELDR ON	24.054	23.838	24.742	25.856	26.704	27.064	35.764	33.052	33.032
ELDR OFF	24.642	24.424	25.854	26.484	27.482	27.560	33.122	35.886	41.522
LDR ON	25.122	25.440	28.048	30.604	28.412	29.630	72.954	31.200	35.544
LDR OFF	25.382	26.926	27.130	32.182	31.212	29.910	32.672	33.846	66.244



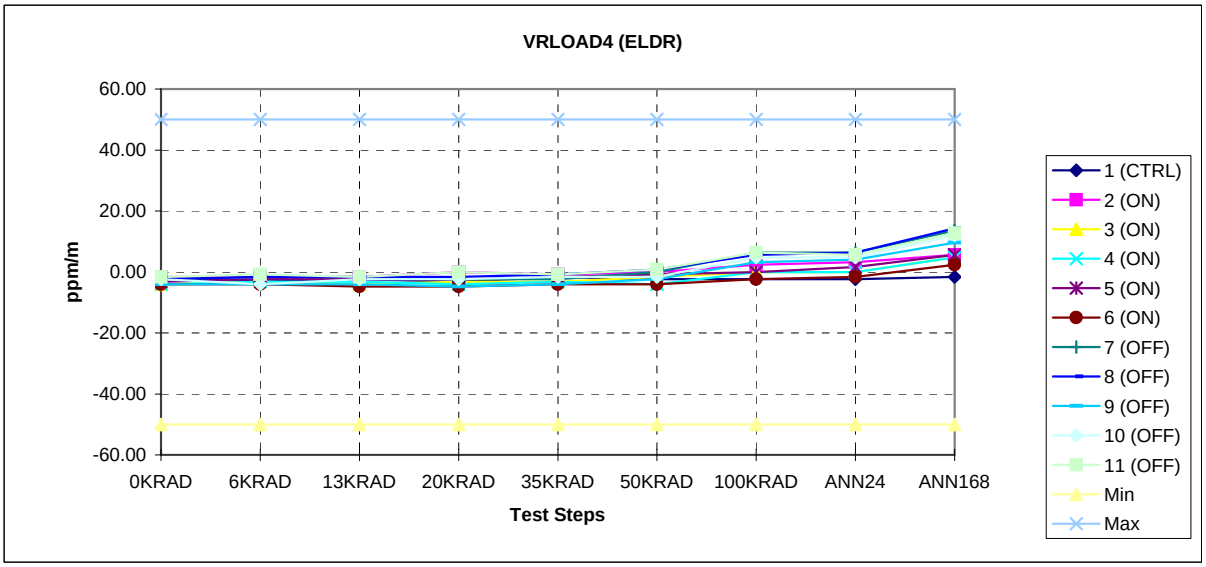
VRLOAD3 (ELDR	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	-50	-50	-50	-50	-50	-50	-50	-50	-50
Max	50	50	50	50	50	50	50	50	50
Unit	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m
Control Results									
1 (CTRL)	8.4	8.4	8	7.6	8	8.4	8	8.4	8.4
Bias on results									
2 (ON)	10	9.2	9.2	9.6	9.99	11.19	13.17	13.17	17.96
3 (ON)	6.8	7.2	6.8	7.2	8.4	8.79	11.18	11.18	15.96
4 (ON)	6.4	6.8	6.8	7.2	7.2	7.99	10.38	9.98	14.76
5 (ON)	8.4	8.4	8.4	8	8.79	10.79	11.58	11.98	15.96
6 (ON)	6.4	6.4	6.8	7.2	7.6	8.39	9.98	9.58	13.17
Statistics bias on									
min result	6.400	6.400	6.800	7.200	7.200	7.990	9.980	9.580	13.170
max result	10.000	9.200	9.200	9.600	9.990	11.190	13.170	13.170	17.960
average	7.600	7.600	7.600	7.840	8.396	9.430	11.258	11.178	15.562
sigma	1.575	1.166	1.131	1.043	1.091	1.459	1.242	1.466	1.763
Bias off results									
7 (OFF)	8.4	8.4	8.79	9.59	9.59	10.38	15.93	15.93	24.3
8 (OFF)	9.2	9.2	9.99	9.99	10.39	11.57	17.13	17.52	25.1
9 (OFF)	5.6	6.4	6.8	6.79	7.59	8.78	13.95	13.95	19.53
10 (OFF)	7.6	8	8.4	7.99	8.79	9.58	15.54	15.14	23.11
11 (OFF)	9.2	9.2	9.19	9.99	10.39	11.57	16.73	16.33	23.9
Statistics bias off									
min result	5.600	6.400	6.800	6.790	7.590	8.780	13.950	13.950	19.530
max result	9.200	9.200	9.990	9.990	10.390	11.570	17.130	17.520	25.100
average	8.000	8.240	8.634	8.870	9.350	10.376	15.856	15.774	23.188
sigma	1.497	1.152	1.182	1.425	1.187	1.228	1.237	1.333	2.167



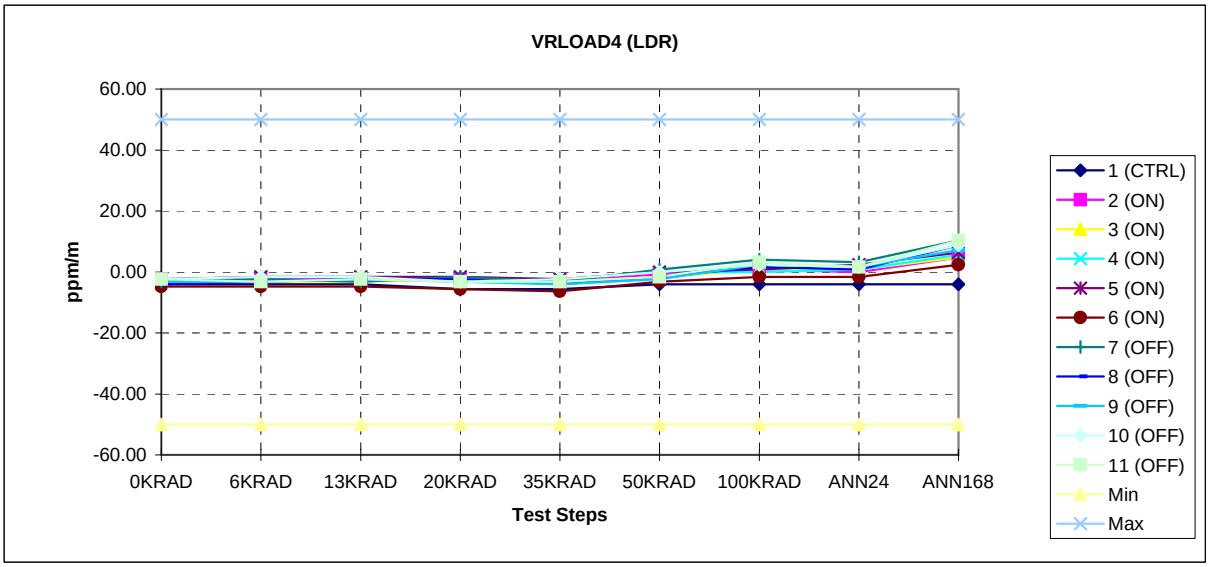
VRLOAD3 (LDR)	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	-50	-50	-50	-50	-50	-50	-50	-50	-50
Max	50	50	50	50	50	50	50	50	50
Unit	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m
Control Results									
1 (CTRL)	6.8	7.2	7.6	6.8	6.4	7.2	7.2	7.2	6.8
Bias on results									
2 (ON)	8.4	8.8	8.8	8.4	8.8	9.99	11.58	10.39	16.36
3 (ON)	8.8	8	8.8	8	7.6	9.59	11.18	11.18	15.97
4 (ON)	8.4	8.8	9.2	9.2	8.8	10.39	11.58	11.58	15.57
5 (ON)	9.2	9.2	9.2	8.79	9.19	10.79	12.38	12.38	17.16
6 (ON)	6.4	6.8	6.8	6.4	6.8	7.99	9.19	9.19	13.57
Statistics bias on									
min result	6.400	6.800	6.800	6.400	6.800	7.990	9.190	9.190	13.570
max result	9.200	9.200	9.200	9.200	9.190	10.790	12.380	12.380	17.160
average	8.240	8.320	8.560	8.158	8.238	9.750	11.182	10.944	15.726
sigma	1.081	0.955	1.004	1.079	1.002	1.081	1.196	1.215	1.341
Bias off results									
7 (OFF)	9.2	10	9.99	9.59	9.59	10.78	13.95	13.95	21.52
8 (OFF)	7.6	7.6	8.39	8.39	7.19	9.98	11.96	11.96	19.13
9 (OFF)	8	8	8	8.39	8.39	9.18	11.96	12.36	19.14
10 (OFF)	9.2	9.2	9.2	9.19	9.19	11.18	13.56	13.16	18.74
11 (OFF)	8	8.4	8.8	8.39	8.79	9.58	12.36	13.15	19.93
Statistics bias off									
min result	7.600	7.600	8.000	8.390	7.190	9.180	11.960	11.960	18.740
max result	9.200	10.000	9.990	9.590	9.590	11.180	13.950	13.950	21.520
average	8.400	8.640	8.876	8.790	8.630	10.140	12.758	12.916	19.692
sigma	0.748	0.963	0.767	0.566	0.921	0.829	0.935	0.776	1.110



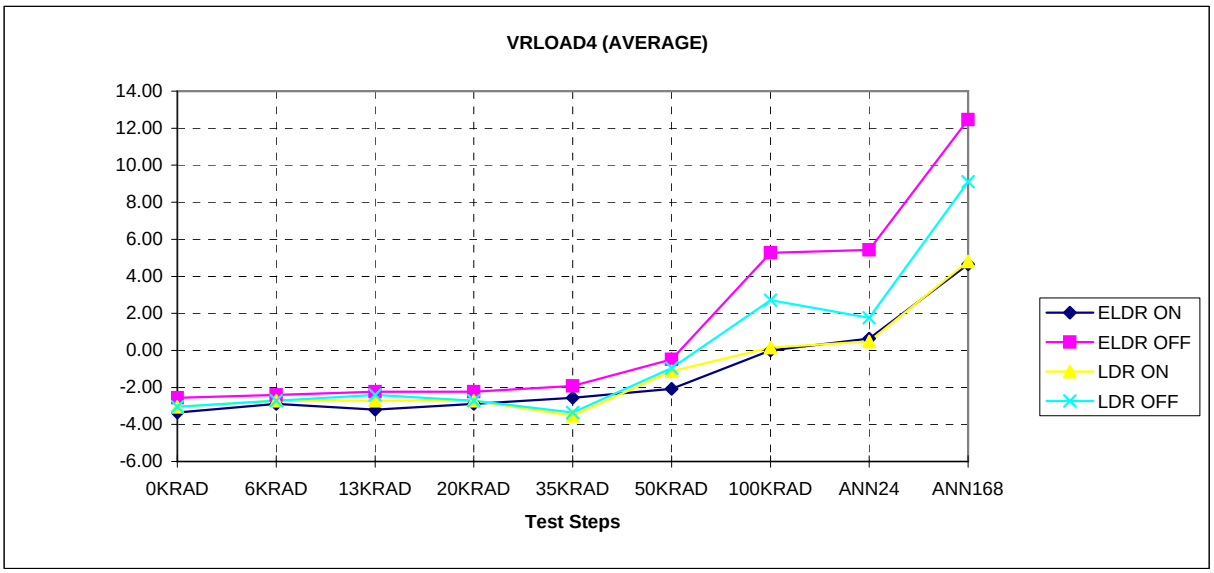
LOAD3 (AVERA	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
ELDR ON	7.600	7.600	7.600	7.840	8.396	9.430	11.258	11.178	15.562
ELDR OFF	8.000	8.240	8.634	8.870	9.350	10.376	15.856	15.774	23.188
LDR ON	8.240	8.320	8.560	8.158	8.238	9.750	11.182	10.944	15.726
LDR OFF	8.400	8.640	8.876	8.790	8.630	10.140	12.758	12.916	19.692



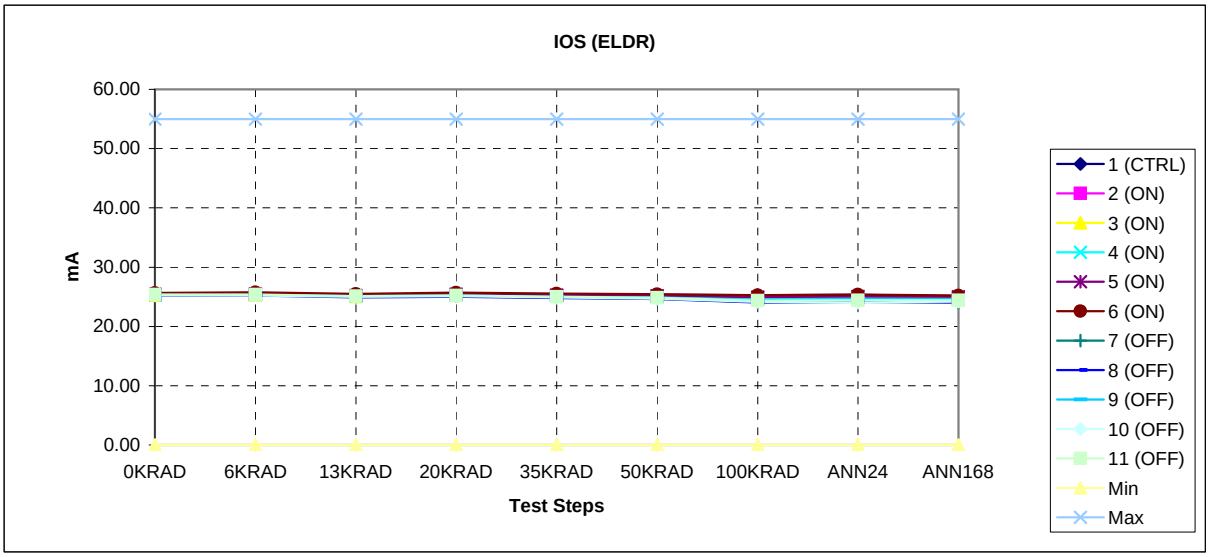
VRLOAD4 (ELDR	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	-50	-50	-50	-50	-50	-50	-50	-50	-50
Max	50	50	50	50	50	50	50	50	50
Unit	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m
Control Results									
1 (CTRL)	-1.6	-3.2	-2.4	-3.2	-1.6	-2.4	-2.4	-2.4	-1.6
Bias on results									
2 (ON)	-1.6	-1.6	-1.6	0	-0.8	0	2.4	3.2	5.6
3 (ON)	-4	-3.2	-4	-3.2	-3.2	-1.6	0	0	4.8
4 (ON)	-4	-3.2	-3.2	-4	-3.2	-4	0	0	4.8
5 (ON)	-3.2	-2.4	-2.4	-2.4	-1.6	-0.8	0	1.6	5.6
6 (ON)	-4	-4	-4.8	-4.8	-4	-4	-2.4	-1.6	2.4
Statistics bias on									
min result	-4.000	-4.000	-4.800	-4.800	-4.000	-4.000	-2.400	-1.600	2.400
max result	-1.600	-1.600	-1.600	0.000	-0.800	0.000	2.400	3.200	5.600
average	-3.360	-2.880	-3.200	-2.880	-2.560	-2.080	0.000	0.640	4.640
sigma	1.043	0.912	1.265	1.842	1.315	1.842	1.697	1.824	1.315
Bias off results									
7 (OFF)	-2.4	-1.6	-1.6	-2.4	-2.4	0	6.39	6.39	13.58
8 (OFF)	-2.4	-1.6	-1.6	-1.6	-0.8	0.8	5.59	6.39	14.38
9 (OFF)	-4	-4	-4	-4.8	-4	-2.4	3.2	3.99	9.59
10 (OFF)	-2.4	-4	-2.4	-2.4	-1.6	-1.6	4.79	4.79	11.98
11 (OFF)	-1.6	-0.8	-1.6	0	-0.8	0.8	6.39	5.59	12.78
Statistics bias off									
min result	-4.000	-4.000	-4.000	-4.800	-4.000	-2.400	3.200	3.990	9.590
max result	-1.600	-0.800	-1.600	0.000	-0.800	0.800	6.390	6.390	14.380
average	-2.560	-2.400	-2.240	-2.240	-1.920	-0.480	5.272	5.430	12.462
sigma	0.876	1.497	1.043	1.734	1.339	1.453	1.335	1.043	1.838



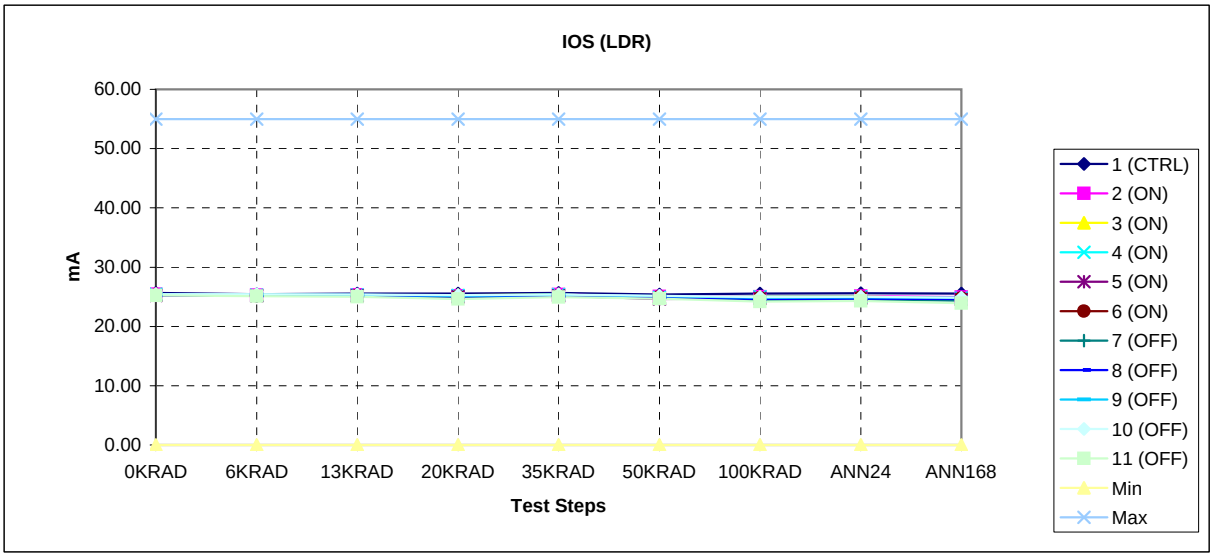
VRLOAD4 (LDR)	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	-50	-50	-50	-50	-50	-50	-50	-50	-50
Max	50	50	50	50	50	50	50	50	50
Unit	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m	ppm/m
Control Results									
1 (CTRL)	-4	-4	-4	-5.6	-5.6	-4	-4	-4	-4
Bias on results									
2 (ON)	-2.4	-2.4	-2.4	-2.4	-3.2	-0.8	0.8	0	4.79
3 (ON)	-3.2	-3.2	-3.2	-2.4	-3.2	-1.6	0.8	0.8	4.8
4 (ON)	-2.4	-1.6	-1.6	-1.6	-2.4	0	0	0.8	5.6
5 (ON)	-2.4	-1.6	-1.6	-1.6	-2.4	0	0.8	2.4	6.39
6 (ON)	-4.8	-4.8	-4.8	-5.6	-6.4	-3.2	-1.6	-1.6	2.4
Statistics bias on									
min result	-4.800	-4.800	-4.800	-5.600	-6.400	-3.200	-1.600	-1.600	2.400
max result	-2.400	-1.600	-1.600	-1.600	-2.400	0.000	0.800	2.400	6.390
average	-3.040	-2.720	-2.720	-2.720	-3.520	-1.120	0.160	0.480	4.796
sigma	1.043	1.339	1.339	1.659	1.659	1.339	1.043	1.453	1.494
Bias off results									
7 (OFF)	-3.2	-2.4	-3.2	-1.6	-3.2	0.8	4	3.2	10.39
8 (OFF)	-4	-3.2	-2.4	-2.4	-4	-1.6	1.6	0.8	8.79
9 (OFF)	-3.2	-3.2	-2.4	-3.2	-4	-2.4	2.4	1.6	7.19
10 (OFF)	-2.4	-1.6	-1.6	-3.2	-2.4	0	2.4	1.6	8.79
11 (OFF)	-2.4	-3.2	-2.4	-3.2	-3.2	-1.6	3.2	1.6	10.39
Statistics bias off									
min result	-4.000	-3.200	-3.200	-3.200	-4.000	-2.400	1.600	0.800	7.190
max result	-2.400	-1.600	-1.600	-1.600	-2.400	0.800	4.000	3.200	10.390
average	-3.040	-2.720	-2.400	-2.720	-3.360	-0.960	2.720	1.760	9.110
sigma	0.669	0.716	0.566	0.716	0.669	1.315	0.912	0.876	1.339



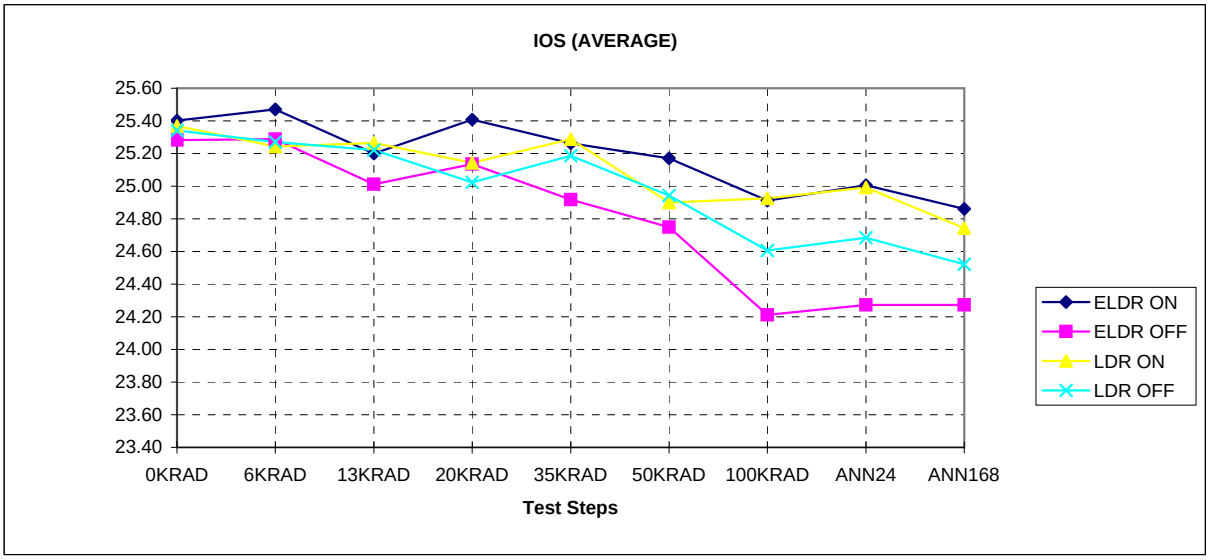
LOAD4 (AVERA	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
ELDR ON	-3.360	-2.880	-3.200	-2.880	-2.560	-2.080	0.000	0.640	4.640
ELDR OFF	-2.560	-2.400	-2.240	-2.240	-1.920	-0.480	5.272	5.430	12.462
LDR ON	-3.040	-2.720	-2.720	-2.720	-3.520	-1.120	0.160	0.480	4.796
LDR OFF	-3.040	-2.720	-2.400	-2.720	-3.360	-0.960	2.720	1.760	9.110



IOS (ELDR)	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	0	0	0	0	0	0	0	0	0
Max	55	55	55	55	55	55	55	55	55
Unit	mA	mA	mA	mA	mA	mA	mA	mA	mA
Control Results									
1 (CTRL)	25.24	25.31	25.14	25.4	25.4	25.32	25.26	25.33	25.13
Bias on results									
2 (ON)	25.34	25.38	25.13	25.34	25.21	25.12	24.81	24.89	24.77
3 (ON)	25.27	25.33	25.08	25.28	25.15	25.06	24.76	24.85	24.68
4 (ON)	25.3	25.39	25.1	25.28	25.14	25.02	24.76	24.86	24.63
5 (ON)	25.44	25.49	25.22	25.44	25.28	25.19	24.97	25.07	24.98
6 (ON)	25.66	25.76	25.47	25.7	25.53	25.46	25.26	25.36	25.24
Statistics bias on									
min result	25.270	25.330	25.080	25.280	25.140	25.020	24.760	24.850	24.630
max result	25.660	25.760	25.470	25.700	25.530	25.460	25.260	25.360	25.240
average	25.402	25.470	25.200	25.408	25.262	25.170	24.912	25.006	24.860
sigma	0.158	0.172	0.160	0.176	0.160	0.174	0.213	0.217	0.251
Bias off results									
7 (OFF)	25.3	25.29	24.98	25.1	24.9	24.7	24.07	24.16	24.11
8 (OFF)	25.17	25.22	24.88	25.03	24.79	24.64	24.04	24.14	24.03
9 (OFF)	25.31	25.33	25.1	25.22	25.01	24.88	24.49	24.62	24.61
10 (OFF)	25.24	25.24	24.99	25.11	24.87	24.69	24.12	24.01	24.2
11 (OFF)	25.39	25.36	25.11	25.22	25.02	24.84	24.34	24.43	24.41
Statistics bias off									
min result	25.170	25.220	24.880	25.030	24.790	24.640	24.040	24.010	24.030
max result	25.390	25.360	25.110	25.220	25.020	24.880	24.490	24.620	24.610
average	25.282	25.288	25.012	25.136	24.918	24.750	24.212	24.272	24.272
sigma	0.082	0.059	0.095	0.083	0.097	0.104	0.195	0.247	0.236



IOS (LDR)	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
Min	0	0	0	0	0	0	0	0	0
Max	55	55	55	55	55	55	55	55	55
Unit	mA	mA	mA	mA	mA	mA	mA	mA	mA
Control Results									
1 (CTRL)	25.66	25.46	25.54	25.55	25.65	25.4	25.54	25.62	25.55
Bias on results									
2 (ON)	25.43	25.27	25.32	25.19	25.36	25.04	25.03	25.1	24.94
3 (ON)	25.45	25.34	25.3	25.26	25.38	24.91	25.01	25.08	24.66
4 (ON)	25.44	25.29	25.34	25.2	25.36	24.92	24.99	25.03	24.77
5 (ON)	25.22	25.14	25.15	25.01	25.15	24.61	24.74	24.81	24.58
6 (ON)	25.3	25.18	25.21	25.06	25.19	25.02	24.86	24.94	24.77
Statistics bias on									
min result	25.220	25.140	25.150	25.010	25.150	24.610	24.740	24.810	24.580
max result	25.450	25.340	25.340	25.260	25.380	25.040	25.030	25.100	24.940
average	25.368	25.244	25.264	25.144	25.288	24.900	24.926	24.992	24.744
sigma	0.103	0.082	0.081	0.105	0.109	0.172	0.123	0.119	0.136
Bias off results									
7 (OFF)	25.4	25.18	25.19	25.03	25.13	24.83	24.46	24.53	24.38
8 (OFF)	25.24	25.24	25.23	25.05	25.16	24.94	24.61	24.69	24.64
9 (OFF)	25.42	25.38	25.34	25.16	25.32	25.11	24.82	24.89	24.82
10 (OFF)	25.44	25.43	25.36	25.25	25.37	25.18	24.95	25.03	24.85
11 (OFF)	25.21	25.12	24.99	24.63	24.95	24.66	24.19	24.28	23.92
Statistics bias off									
min result	25.210	25.120	24.990	24.630	24.950	24.660	24.190	24.280	23.920
max result	25.440	25.430	25.360	25.250	25.370	25.180	24.950	25.030	24.850
average	25.342	25.270	25.222	25.024	25.186	24.944	24.606	24.684	24.522
sigma	0.108	0.132	0.148	0.237	0.167	0.210	0.299	0.295	0.385



IOS (AVERAGE)	0KRAD	6KRAD	13KRAD	20KRAD	35KRAD	50KRAD	100KRAD	ANN24	ANN168
ELDR ON	25.402	25.470	25.200	25.408	25.262	25.170	24.912	25.006	24.860
ELDR OFF	25.282	25.288	25.012	25.136	24.918	24.750	24.212	24.272	24.272
LDR ON	25.368	25.244	25.264	25.144	25.288	24.900	24.926	24.992	24.744
LDR OFF	25.342	25.270	25.222	25.024	25.186	24.944	24.606	24.684	24.522

ANNEX II
DOSIMETRY

ALTER TECHNOLOGY - TÜV NORD S.A.U. CIF: A41990490. Tomas Alba Edison 4, Parque Científico y Tecnológico Cartuja 93. 41092 Sevilla, ESPAÑA. T: 34-95-446 70 50, Fax: 34-95-446 73 39, E-Mail: info@altertechnology.com

ESTEC ^{60}Co Facility

Keplerlaan, 1 2200AG Noordwijk Zh (NL)

RADIATION TEST SUMMARY

Irradiation Test Report Number : **20139** *Date :* **18 June 2012**

Test Requester :	*Name*	**Alter Technology**
	Address	Avd. Tomas Alba Edison, 4 41092 Seville (SPAIN)
	Personnel present :	E Munoz Plaza, J Jimenez Carreira, E Bernabeu Torres
	Project/Cost Code :	TRP
	Devices/Components irradiated :	Linear Devices AD565AT,OP470,AD584,PM139X,REF02,OP27,UC1843
	Device/Component details :	AD565AT,OP470,OP27,AD565AT,OLH249,OLH449 66183-105,AD565AT,PM139X,PM139X,SOC5551,UC1846
(conditions and identification)		

Dosimetry Chain used :	B
Dosimeter :	Farmer model 2680 – s/n 109
Gas Ionisation Chamber :	NE Type 2571 – s/n 3322
Measured Dosimetry :	Total Ionising Dose in [Gy] (water)
Dosimetry Procedure :	ESCC 22900 section 4.1.1 TEC-QEC/PR001 - Appendix D ***(Total Ionising Dose accredited by RvA according to ISO/IEC 17025.2005 Certificate No. L517)***

(With the exception of the above specified dosimetry equipment, ESTEC ^{60}Co Facility does not assume any liability for the calibration status of any other equipment lent to the requester)

Irradiation Test Campaign Details

Source Activity : 79.8 TBq *on date :* 15 February 2012

	units	*Min.*	*Max.*	Time-weighted Average
Temperature	°C	*24.10*	*25.70*	*24.99*
Pressure	mbar	*982.60*	*1036.30*	*1014.74*
Relative Humidity	%	*22.20*	*42.90*	*32.08*

Dosimeter position relative to ^{60}Co source		
X	cm	130
Y	cm	736
Z	cm	62

Run	***Start Date & Time (CET)***	***End Date & Time (CET)***	***Total Ionising Dose [Gy] (water)***	***Dose Rate [mGy/h] (water)***
1	15/02/2012 15:18	15/02/2012 15:54	0.25	0.41
2	15/02/2012 16:16	16/02/2012 09:13	7.02	0.41
3	16/02/2012 09:18	16/02/2012 11:10	0.77	0.41
4	16/02/2012 11:20	17/02/2012 13:28	10.80	0.41

5	17/02/2012 13:33	17/02/2012 15:33	0.82	0.41
6	17/02/2012 15:42	20/02/2012 09:08	27.02	0.41
7	20/02/2012 09:18	20/02/2012 11:11	0.78	0.41
8	20/02/2012 11:23	20/02/2012 13:49	1.00	0.41
9	20/02/2012 13:55	20/02/2012 15:16	0.55	0.41
10	20/02/2012 15:21	21/02/2012 09:36	7.47	0.41
11	21/02/2012 09:43	21/02/2012 10:58	0.52	0.41
12	21/02/2012 11:02	21/02/2012 14:00	1.22	0.41
13	21/02/2012 14:16	21/02/2012 16:14		
14	21/02/2012 16:35	22/02/2012 13:18	8.54	0.41
15	22/02/2012 13:28	22/02/2012 15:09	0.69	0.41
16	22/02/2012 15:17	23/02/2012 09:18	7.43	0.41
17	23/02/2012 09:25	23/02/2012 10:20	0.38	0.41
18	23/02/2012 11:09	24/02/2012 18:31	12.94	0.41
19	24/02/2012 18:33	27/02/2012 08:33	25.58	0.41
20	27/02/2012 08:47	27/02/2012 10:06	0.49	0.37
21	27/02/2012 10:12	27/02/2012 11:09	0.36	0.38
22	27/02/2012 11:11	27/02/2012 13:07	0.73	0.38
23	27/02/2012 13:10	27/02/2012 15:12	0.77	0.38
24	27/02/2012 15:16	27/02/2012 16:28	0.46	0.38
25	27/02/2012 16:31	28/02/2012 13:00	8.44	0.41
26	28/02/2012 13:10	28/02/2012 16:33	1.33	0.39
27	28/02/2012 16:36	28/02/2012 19:40	1.21	0.39
28	28/02/2012 19:42	29/02/2012 08:44	5.13	0.39
29	29/02/2012 08:48	29/02/2012 13:16	1.83	0.41
30	29/02/2012 13:18	29/02/2012 14:53	0.65	0.41
31	29/02/2012 15:06	29/02/2012 16:50		
32	29/02/2012 17:10	01/03/2012 08:36	6.30	0.41
33	01/03/2012 09:08	01/03/2012 14:03	2.01	0.41
34	01/03/2012 14:15	01/03/2012 16:29	0.92	0.41
35	01/03/2012 16:32	02/03/2012 08:50	6.70	0.41
36	02/03/2012 08:58	02/03/2012 17:29	3.53	0.41
37	02/03/2012 17:47	06/03/2012 09:02	37.75	0.43
38	06/03/2012 09:14	06/03/2012 09:15	0.00	0.31
39	06/03/2012 09:18	06/03/2012 10:36	0.51	0.39
40	06/03/2012 10:39	06/03/2012 11:44	0.43	0.40
41	06/03/2012 11:47	06/03/2012 13:56	0.85	0.39
42	06/03/2012 13:59	06/03/2012 14:49	0.33	0.39

43	06/03/2012 14:52	06/03/2012 16:29	0.64	0.39
44	06/03/2012 16:35	06/03/2012 18:30	0.76	0.40
45	06/03/2012 18:33	07/03/2012 08:57	5.68	0.39
46	07/03/2012 09:01	07/03/2012 10:16	0.51	0.41
47	07/03/2012 10:23	08/03/2012 08:56	9.23	0.41
48	08/03/2012 09:06	08/03/2012 14:16	2.00	0.39
49	08/03/2012 14:29	08/03/2012 16:10		
50	08/03/2012 16:27	09/03/2012 09:19	6.90	0.41
51	09/03/2012 09:22	09/03/2012 11:40	0.94	0.41
52	09/03/2012 11:42	12/03/2012 13:22	30.14	0.41
53	12/03/2012 13:25	12/03/2012 15:53	1.01	0.41
54	12/03/2012 15:55	13/03/2012 09:04	7.00	0.41
55	13/03/2012 09:14	14/03/2012 08:49	9.23	0.39
56	14/03/2012 08:56	14/03/2012 11:37	1.05	0.39
57	14/03/2012 11:43	14/03/2012 17:04	2.09	0.39
58	14/03/2012 17:09	15/03/2012 09:02	6.48	0.41
59	15/03/2012 09:08	15/03/2012 09:37	0.19	0.39
60	15/03/2012 09:42	15/03/2012 15:00	2.07	0.39
61	15/03/2012 15:05	15/03/2012 17:14	0.88	0.41
62	15/03/2012 17:21	16/03/2012 10:24	6.68	0.39
63	16/03/2012 10:31	16/03/2012 16:01	2.15	0.39
64	16/03/2012 16:15	19/03/2012 09:08	26.46	0.41
65	19/03/2012 09:33	19/03/2012 09:35	0.01	0.40
66	19/03/2012 09:37	19/03/2012 10:23	0.31	0.41
67*	19/03/2012 11:22	19/03/2012 13:44	0.96	0.41
68	19/03/2012 14:02	19/03/2012 15:39		
69	19/03/2012 15:58	20/03/2012 10:19	7.32	0.41
70	20/03/2012 10:27	20/03/2012 10:47	0.14	0.40
71	20/03/2012 10:50	20/03/2012 11:09	0.13	0.41
72	20/03/2012 11:12	20/03/2012 12:45	0.62	0.40
73	20/03/2012 12:47	20/03/2012 13:39	0.35	0.41
74	20/03/2012 13:42	20/03/2012 16:29	1.10	0.40
75	20/03/2012 16:31	20/03/2012 17:40	0.47	0.41
76	20/03/2012 17:43	21/03/2012 09:08	6.13	0.40
77	21/03/2012 09:11	21/03/2012 10:22	0.49	0.41
78	21/03/2012 10:28	21/03/2012 10:45	0.12	0.40
79	21/03/2012 10:47	21/03/2012 11:27	0.27	0.41
80	21/03/2012 11:30	21/03/2012 11:52	0.15	0.40

81	21/03/2012 11:54	21/03/2012 12:44	0.34	0.41
82	21/03/2012 12:47	21/03/2012 13:40	0.35	0.40
83	21/03/2012 13:42	21/03/2012 14:36	0.37	0.41
84	21/03/2012 14:38	21/03/2012 15:42	0.42	0.40
85	21/03/2012 15:44	21/03/2012 16:19	0.24	0.41
86	21/03/2012 16:21	21/03/2012 17:01	0.26	0.40
87	21/03/2012 17:05	30/03/2012 09:14	84.22	0.41
88	30/03/2012 09:24	30/03/2012 11:16	0.76	0.41
89	30/03/2012 11:20	30/03/2012 11:22	0.01	0.40
90	30/03/2012 11:26	30/03/2012 14:01	1.05	0.41
91	30/03/2012 14:05	30/03/2012 15:52	0.72	0.41
92	30/03/2012 15:56	30/03/2012 19:24	1.42	0.41
93	30/03/2012 20:03	30/03/2012 20:06	0.02	0.39
94	30/03/2012 20:09	30/03/2012 20:24	0.11	0.41
95	30/03/2012 20:27	30/03/2012 20:30	0.03	0.40
96	30/03/2012 20:32	30/03/2012 20:45	0.09	0.41
97	30/03/2012 20:49	30/03/2012 20:57	0.05	0.40
98	30/03/2012 21:21	02/04/2012 08:58	24.41	0.41
99	02/04/2012 09:01	03/04/2012 14:04	11.87	0.41
100	03/04/2012 14:22	03/04/2012 19:59	2.30	0.41
101	03/04/2012 20:05	03/04/2012 20:51	0.32	0.41
102	03/04/2012 20:57	04/04/2012 11:04	5.77	0.41
103	04/04/2012 11:07	04/04/2012 11:57	0.34	0.41
104	04/04/2012 12:02	05/04/2012 10:31	9.19	0.41
105	05/04/2012 10:37	05/04/2012 13:51	1.32	0.41
106	05/04/2012 14:11	05/04/2012 16:02	0.76	0.41
107	05/04/2012 16:04	10/04/2012 16:04	48.96	0.41
108	10/04/2012 17:38	11/04/2012 11:00	7.08	0.41
109	11/04/2012 13:32	11/04/2012 15:31	0.81	0.41
110	11/04/2012 15:34	12/04/2012 09:45	7.40	0.41
111	12/04/2012 11:06	12/04/2012 13:07	0.82	0.41
112	12/04/2012 13:35	12/04/2012 15:36	0.82	0.41
113	12/04/2012 15:52	12/04/2012 17:53	0.82	0.41
114	12/04/2012 18:08	13/04/2012 08:30	5.84	0.41
115	13/04/2012 08:45	13/04/2012 10:45	0.81	0.41
116	13/04/2012 10:57	13/04/2012 12:57	0.81	0.41
117	13/04/2012 13:10	13/04/2012 15:10	0.81	0.41
118	13/04/2012 15:24	13/04/2012 17:27	0.83	0.41

119	13/04/2012 17:40	16/04/2012 08:39	25.59	0.41
120	16/04/2012 08:50	17/04/2012 15:26	12.41	0.41
121	17/04/2012 15:45	20/04/2012 10:10	26.90	0.40
122	20/04/2012 10:23	20/04/2012 10:24	0.01	0.38
123	20/04/2012 10:27	20/04/2012 10:37	0.07	0.39
124	20/04/2012 10:40	20/04/2012 10:41	0.01	0.39
125	20/04/2012 10:45	24/04/2012 11:20	39.04	0.40
126	24/04/2012 11:41	24/04/2012 13:39	0.80	0.40
127	24/04/2012 13:42	27/04/2012 11:00	28.03	0.40
128	27/04/2012 11:06	03/05/2012 11:36	58.37	0.40
129	03/05/2012 11:56	03/05/2012 13:20	0.55	0.40
130	03/05/2012 13:27	04/05/2012 10:15	8.38	0.40
131	04/05/2012 10:24	07/05/2012 13:22	30.16	0.40
132	07/05/2012 13:35	07/05/2012 17:30	1.57	0.40
133	07/05/2012 17:53	07/05/2012 18:50	0.38	0.40
134	07/05/2012 18:53	08/05/2012 10:58	6.46	0.40
135	08/05/2012 11:26	08/05/2012 12:46	0.54	0.40
136	08/05/2012 12:50	08/05/2012 17:00	1.67	0.40
137	08/05/2012 17:19	08/05/2012 18:25	0.44	0.40
138	08/05/2012 18:47	09/05/2012 10:51	6.47	0.40
139	09/05/2012 10:53	09/05/2012 12:02	0.46	0.40
140	09/05/2012 12:07	10/05/2012 14:36	10.62	0.40
141	10/05/2012 14:41	10/05/2012 16:12	0.60	0.40
142	10/05/2012 16:15	11/05/2012 14:19	8.86	0.40
143	11/05/2012 14:46	14/05/2012 15:41	29.25	0.40
144	14/05/2012 15:51	14/05/2012 16:15	0.16	0.40
145	14/05/2012 16:19	21/05/2012 12:34	65.65	0.40
146	21/05/2012 12:37	21/05/2012 15:36	1.20	0.40
147*	21/05/2012 16:11	21/05/2012 18:34	0.96	0.40
148	21/05/2012 19:39	23/05/2012 16:53	18.15	0.40
149	23/05/2012 17:14	25/05/2012 11:55	17.18	0.40
150	25/05/2012 11:57	29/05/2012 10:35	38.04	0.40
151	29/05/2012 10:38	29/05/2012 13:27	1.13	0.40
152	29/05/2012 13:34	29/05/2012 14:32	0.39	0.40
153	29/05/2012 14:35	31/05/2012 08:20	16.77	0.40
154	31/05/2012 08:23	04/06/2012 10:18	40.48	0.41
155	04/06/2012 10:31	04/06/2012 11:05	0.19	0.33
156	04/06/2012 11:08	04/06/2012 13:43	2.87	0.40

157	04/06/2012 13:48	04/06/2012 15:27	1.14	0.33
158	04/06/2012 17:08	05/06/2012 08:58	6.04	0.40
159	05/06/2012 09:12	05/06/2012 11:04	0.41	0.40
160	05/06/2012 11:23	05/06/2012 13:45	0.54	0.33
161	05/06/2012 13:47	05/06/2012 17:24	1.04	0.29
162	05/06/2012 17:30	06/06/2012 08:45	3.83	0.25
163	06/06/2012 09:00	06/06/2012 10:06	0.24	0.22
164	06/06/2012 10:09	06/06/2012 11:12	0.24	0.23
165	06/06/2012 11:34	06/06/2012 14:16	0.59	0.22
166	06/06/2012 14:26	07/06/2012 08:44	3.73	0.21
167	07/06/2012 09:01	07/06/2012 11:04	0.78	0.38
168	07/06/2012 11:28	07/06/2012 16:33	1.93	0.38
169	07/06/2012 16:43	07/06/2012 18:23	0.70	0.42
170	07/06/2012 18:29	08/06/2012 11:03	6.40	0.39
171	08/06/2012 11:16	08/06/2012 13:01	0.67	0.38
172	08/06/2012 13:23	08/06/2012 17:54	1.72	0.38
173	08/06/2012 17:59	11/06/2012 08:54	27.18	0.43
174	11/06/2012 09:10	11/06/2012 11:09	0.80	0.40
175	11/06/2012 11:31	11/06/2012 13:21	0.73	0.40
176	11/06/2012 13:24	11/06/2012 14:21	0.38	0.40
177	11/06/2012 14:30	11/06/2012 14:55	0.15	0.37
178	11/06/2012 14:58	12/06/2012 08:45	6.70	0.38
179	12/06/2012 08:49	12/06/2012 09:30	0.25	0.37
180	12/06/2012 09:32	12/06/2012 11:11	0.62	0.38
181	12/06/2012 11:13	12/06/2012 11:53	0.25	0.37
182	12/06/2012 11:55	12/06/2012 13:50	0.72	0.38
183	12/06/2012 13:53	12/06/2012 14:51	0.37	0.38
184	12/06/2012 14:54	12/06/2012 16:40	0.67	0.38
185	12/06/2012 16:43	12/06/2012 17:32	0.32	0.39
186	12/06/2012 17:37	13/06/2012 13:55	8.06	0.40
187	13/06/2012 14:28	14/06/2012 10:15	7.89	0.40
188	14/06/2012 10:23	14/06/2012 11:20	0.38	0.40
189	14/06/2012 11:38	15/06/2012 09:55	8.89	0.40
190	15/06/2012 10:03	15/06/2012 10:53	0.33	0.40
191	15/06/2012 11:06	18/06/2012 09:24	28.04	0.40

Note: *The uncertainty budgets (according to TEC-QEC/PR001 section 12) are: 4.2 % (k=2) for absorbed dose to water and 4.4% (k=2) for absorbed dose rate to water*

Notes:. * Runs 67 & 147 without dosimetry. Dose rate taken from previous run with dosimetry.
Runs 13,31,49 & 68 – no dosimetry – devices out for measurements

Bob Nickson/Michele Muschitiello
(TEC-QEC Radiation Test Engineer)

Ali Zadeh
(TEC-QEC Section Head)

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http://task.esa.int/sites/WG/CO60Q/Lists/Customer%20Satisfaction/overview.aspx

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ESTEC ^{60}Co Facility

Keplerlaan, 1 2200AG Noordwijk Zh (NL)

RADIATION TEST SUMMARY

Irradiation Test Report Number : **20139b** *Date :* **18 June 2012**

Test Requester :	*Name*	**Alter Technology**
	Address	Avd. Tomas Alba Edison, 4 41092 Seville (SPAIN)
	Personnel present :	E Munoz Plaza, J Jimenez Carreira, E Bernabeu Torres
Project/Cost Code :		TRP
Devices/Components irradiated :		Linear Devices AD565AT,OP470,AD584,PM139X,REF02,OP27,UC1843
Device/Component details :		AD565AT,OP470,OP27,AD565AT,OLH249,OLH449 66183-105,AD565AT,PM139X,PM139X,SOC5551,UC1846
(conditions and identification)		

Dosimetry Chain used :	A
Dosimeter :	Farmer model 2680 – s/n 390
Gas Ionisation Chamber :	NE Type 2571 – s/n 2915
Measured Dosimetry :	Total Ionising Dose in [Gy] (water)
Dosimetry Procedure :	ESCC 22900 section 4.1.1 TEC-QEC/PR001 - Appendix D ***(Total Ionising Dose accredited by RvA according to ISO/IEC 17025.2005 Certificate No. L517)***

(With the exception of the above specified dosimetry equipment, ESTEC ^{60}Co Facility does not assume any liability for the calibration status of any other equipment lent to the requester)

Irradiation Test Campaign Details

Source Activity : 76.7 TBq *on date :* 4 June 2012

	units	*Min.*	*Max.*	Time-weighted Average
Temperature	°C	*25.00*	*25.60*	*25.43*
Pressure	mbar	*996.40*	*1019.10*	*1008.25*
Relative Humidity	%	*31.20*	*40.50*	*35.64*

Dosimeter position relative to ^{60}Co source		
X	cm	-10
Y	cm	231
Z	cm	0

Run	***Start Date & Time (CET)***	***End Date & Time (CET)***	***Total Ionising Dose [Gy] (water)***	***Dose Rate [mGy/h] (water)***
1	04/06/2012 17:08	05/06/2012 08:58	63.56	4.02
2	05/06/2012 09:12	05/06/2012 11:04		
3	05/06/2012 11:23	05/06/2012 13:45	9.47	4.01
4	05/06/2012 13:47	05/06/2012 17:24	14.52	4.02

5	05/06/2012 17:30	06/06/2012 08:45	61.25	4.02
6	06/06/2012 09:00	06/06/2012 10:06		
7	06/06/2012 10:09	06/06/2012 11:12		
8	06/06/2012 11:34	06/06/2012 14:16	9.51	3.52
9	06/06/2012 14:26	07/06/2012 08:44	71.58	3.97
10	07/06/2012 09:01	07/06/2012 11:04		
11	07/06/2012 11:28	07/06/2012 16:33	18.63	3.67
12	07/06/2012 16:43	07/06/2012 18:23	6.15	3.68
13	07/06/2012 18:29	08/06/2012 11:03	59.00	3.56
14	08/06/2012 11:16	08/06/2012 13:01		
15	08/06/2012 13:23	08/06/2012 17:54	13.66	3.02
16	08/06/2012 17:59	11/06/2012 08:54	212.74	3.38
17	11/06/2012 09:10	11/06/2012 11:09		
18	11/06/2012 11:31	11/06/2012 13:21	6.15	3.35
19	11/06/2012 13:24	11/06/2012 14:21	3.42	3.63
20	11/06/2012 14:30	11/06/2012 14:55	1.35	3.29
21	11/06/2012 14:58	12/06/2012 08:45	64.80	3.64
22	12/06/2012 08:49	12/06/2012 09:30	2.27	3.35
23	12/06/2012 09:32	12/06/2012 11:11	5.96	3.64
24	12/06/2012 11:13	12/06/2012 11:53	2.12	3.24
25	12/06/2012 11:55	12/06/2012 13:50	6.95	3.64
26	12/06/2012 13:53	12/06/2012 14:51	3.23	3.33
27	12/06/2012 14:54	12/06/2012 16:40	6.40	3.64
28	12/06/2012 16:43	12/06/2012 17:32	2.74	3.34
29	12/06/2012 17:37	13/06/2012 13:55	73.87	3.64
30	13/06/2012 14:28	14/06/2012 10:15	72.86	3.68
31	14/06/2012 10:23	14/06/2012 11:20	3.48	3.66
32	14/06/2012 11:38	15/06/2012 09:55	81.99	3.68
33	15/06/2012 10:03	15/06/2012 10:53	3.07	3.66
34	15/06/2012 11:06	18/06/2012 09:24	259.13	3.69

Note: *The uncertainty budgets (according to TEC-QEC/PR001 section 12) are: 4.2 % (k=2) for absorbed dose to water and 4.4% (k=2) for absorbed dose rate to water*

Notes: Runs 2,6,7,10,14 & 17 – no dosimetry – devices out for measurements

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