



High Dose Radiation Test Report AD9814S

July 2008

Open Market

Radiation Test Report	
Product	AD9814S
Gamma	0, 10k, 20k, 30k, 24hr Anneal
Gamma Source	Co60/TM1019 Condition A
Dose Rate	154 Rad(Si)/s
Facilities	UMass-Lowell
Tested	7/17/2008

RADTEST® Data Service

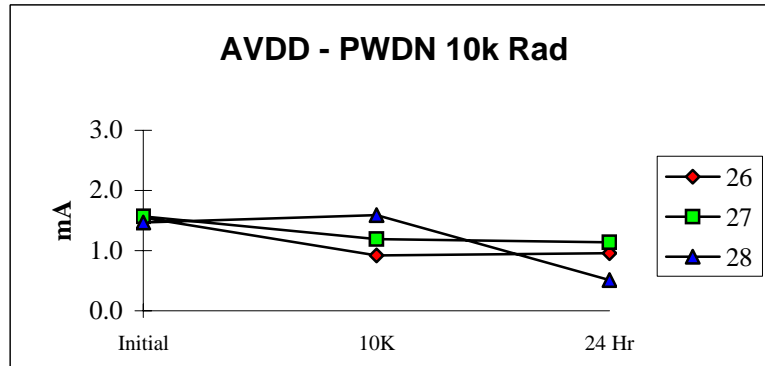
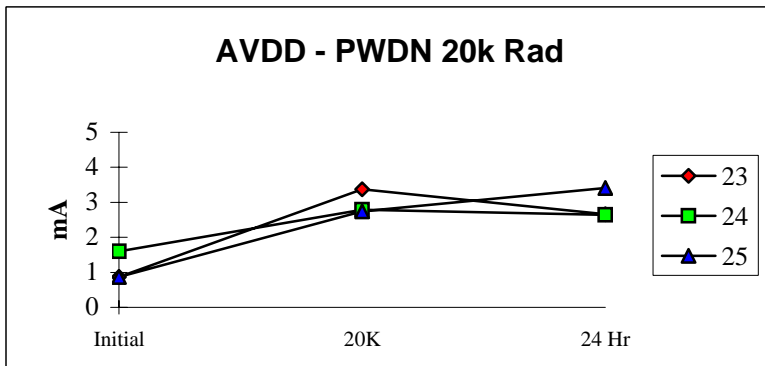
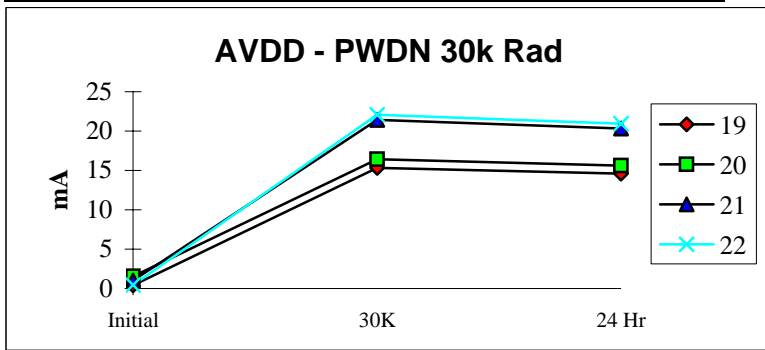
The RADTEST® DATA SERVICE is a compilation of radiation test results on ADI's space grade products. It's designed to assist customers in selecting the right product for applications where radiation is a consideration. ADI does not make any claim to maintain or guarantee these levels of radiation tolerance without lot qualification test.

It is the responsibility of the Procuring Activity to screen products from ADI for compliance to Nuclear Hardness Critical Items (HC) specifications.

WARNING

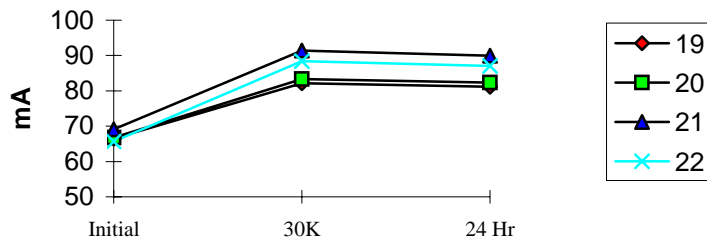
ADI does not recommend the use of this data to qualify other product grades or process levels. ADI is not responsible and has no liability for any consequences, and all applicable Warranties are null and void if any ADI product is modified in any way or used outside of normal environmental and operating conditions, including the parameters specified in the corresponding datasheet. ADI does not guarantee that wafer manufacturing is the same for all process levels or product grades.

T# 1	AVDD - PWDN				mA
SN	Initial	10K	20K	30K	24 Hr
18	0.40	0.79	0.79	0.79	0.910
19	0.40			15.32	14.59
20	1.55			16.44	15.61
21	1.00			21.44	20.31
22	0.45			22.06	20.94
23	0.87		3.37		2.66
24	1.60		2.79		2.64
25	0.87		2.74		3.41
26	1.55	0.92			0.96
27	1.57	1.19			1.14
28	1.47	1.59			0.51

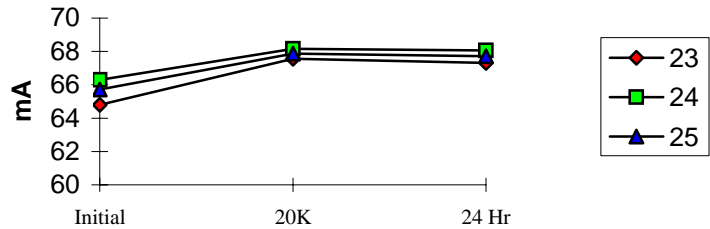


T# 2	AVDD - CLK				mA
SN	Initial	10K	20K	30K	24 Hr
18	69.92	69.91	69.91	69.91	69.930
19	66.49			82.13	81.16
20	66.74			83.31	82.33
21	69.14			91.36	89.91
22	65.64			88.38	87.08
23	64.79		67.56		67.31
24	66.29		68.16		68.06
25	65.72		67.86		67.71
26	64.92	64.96			64.86
27	71.37	71.46			71.38
28	66.09	66.11			66.03

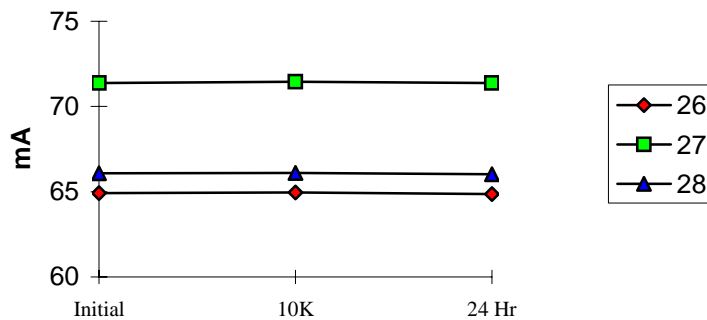
AVDD - CLK 30k Rad



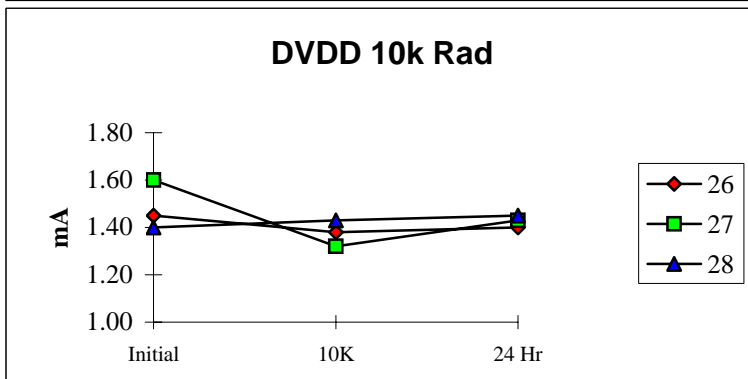
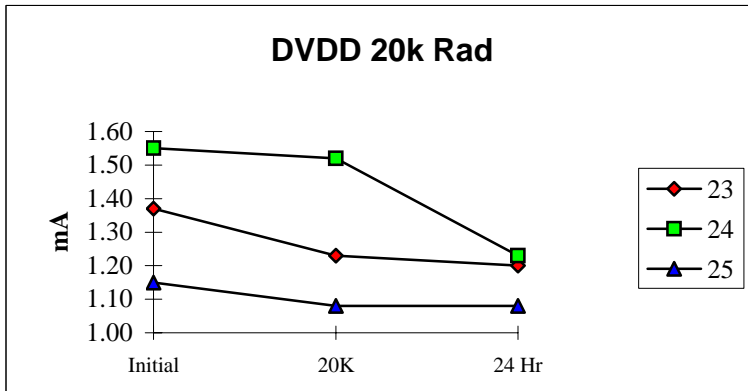
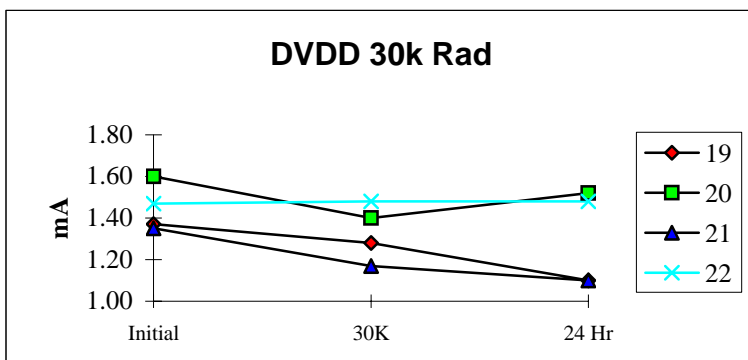
AVDD - CLK 20k Rad



AVDD - CLK 10k Rad

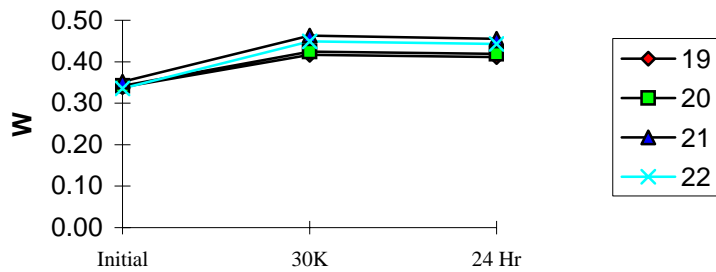


T# 3	DVDD				mA
SN	Initial	10K	20K	30K	24 Hr
18	1.32	1.28	1.28	1.28	1.38
19	1.37			1.28	1.10
20	1.60			1.40	1.52
21	1.35			1.17	1.10
22	1.47			1.48	1.48
23	1.37		1.23		1.20
24	1.55		1.52		1.23
25	1.15		1.08		1.08
26	1.45	1.38			1.40
27	1.60	1.32			1.43
28	1.40	1.43			1.45

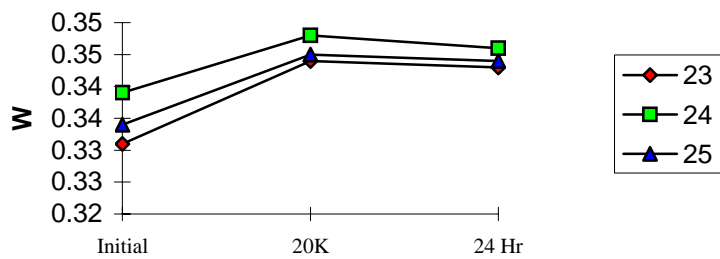


T# 4	Power				W
SN	Initial	10K	20K	30K	24 Hr
18	0.36	0.36	0.36	0.36	0.36
19	0.34			0.42	0.41
20	0.34			0.42	0.42
21	0.35			0.46	0.46
22	0.34			0.45	0.44
23	0.33		0.34		0.34
24	0.34		0.35		0.35
25	0.33		0.35		0.34
26	0.33	0.33			0.33
27	0.37	0.36			0.36
28	0.34	0.34			0.34

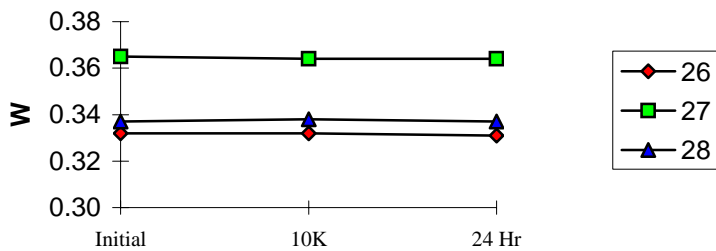
Power 30k Rad



Power 20k Rad

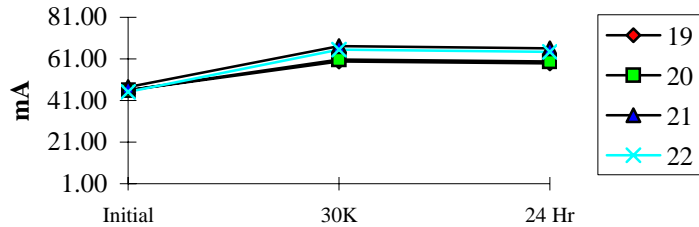


Power 10k Rad

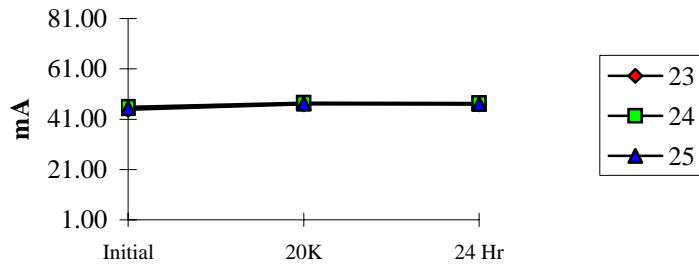


T# 5	AVDD-Red				mA
SN	Initial	10K	20K	30K	24 Hr
18	48.12	48.11	48.11	48.11	48.13
19	45.99			59.81	58.83
20	45.92			60.76	59.81
21	47.52			67.16	66.01
22	45.14			65.41	64.38
23	44.74		46.96		46.88
24	45.94		47.51		47.38
25	45.42		47.21		47.08
26	44.67	44.69			44.63
27	49.17	49.21			49.18
28	45.69	45.69			45.66

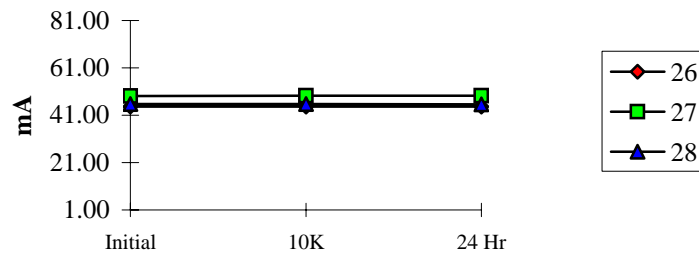
AVDD - Red 30k Rad



AVDD - Red 20k Rad

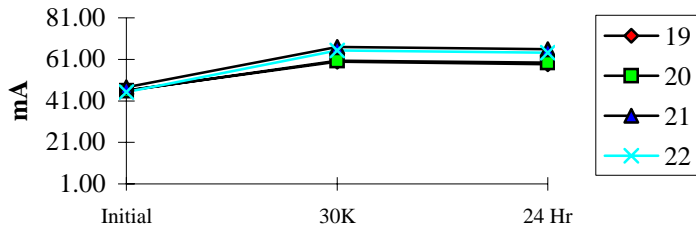


AVDD - Red 10k Rad

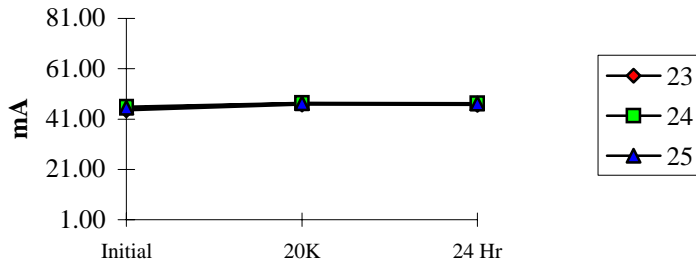


T# 6	AVDD-Green				mA
SN	Initial	10K	20K	30K	24 Hr
18	48.12	48.11	48.11	48.11	48.13
19	45.94			59.81	58.68
20	45.79			60.38	59.43
21	47.52			66.98	65.86
22	45.19			65.21	64.18
23	44.54		46.76		46.66
24	45.92		47.41		47.31
25	45.49		47.24		47.11
26	44.69	44.69			44.63
27	49.24	49.26			49.21
28	45.67	45.66			45.63

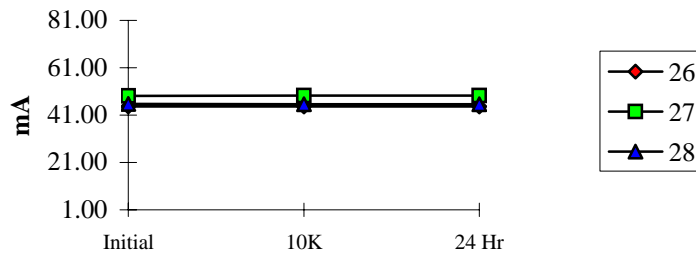
AVDD - Green 30k Rad



AVDD - Green 20k Rad

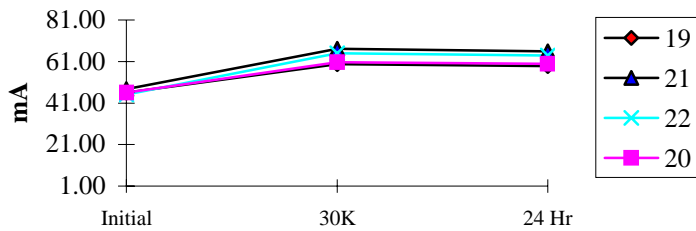


AVDD - Green 10k Rad

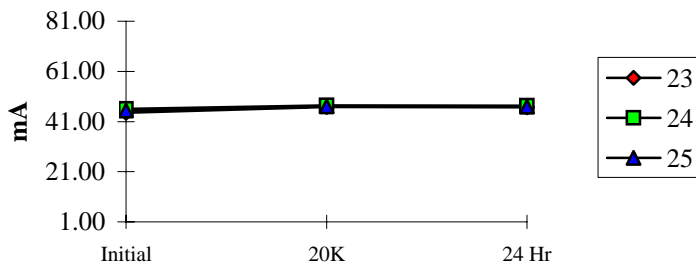


T# 7	AVDD - Blue				mA
SN	Initial	10K	20K	30K	24 Hr
18	48.14	48.11	48.11	48.11	48.13
19	45.99			59.76	58.73
20	46.04			60.66	59.91
21	47.64			67.11	65.96
22	45.12			64.98	63.96
23	44.57		46.79		46.68
24	45.99		47.41		47.33
25	45.34		47.11		46.98
26	44.67	44.66			44.58
27	49.32	49.29			49.26
28	45.74	45.71			45.66

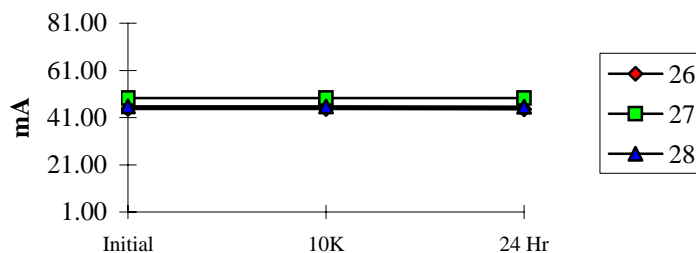
AVDD - Blue 30k Rad



AVDD - Blue 20k Rad

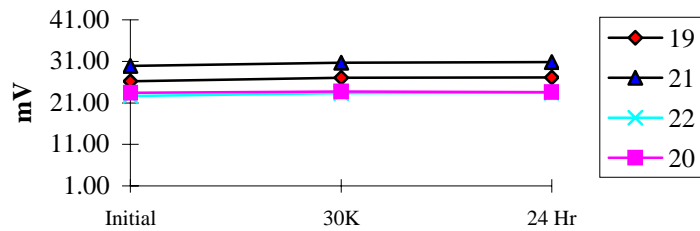


AVDD - Blue 10k Rad

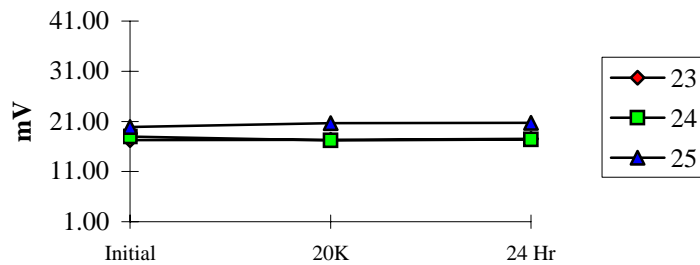


T# 20	Vref				mV
	Initial	10K	20K	30K	24 Hr
18	24.55	24.55	24.55	24.55	24.52
19	26.20			27.08	27.14
20	23.45			23.72	23.57
21	29.91			30.67	30.82
22	22.68			23.33	23.43
23	17.27		17.33		17.55
24	17.99		17.21		17.41
25	19.90		20.64		20.74
26	17.42	16.44			16.54
27	17.61	17.11			17.24
28	19.55	18.77			18.76

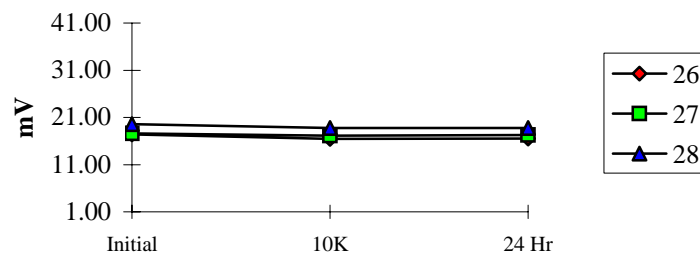
Vref 30k Rad



Vref 20k Rad

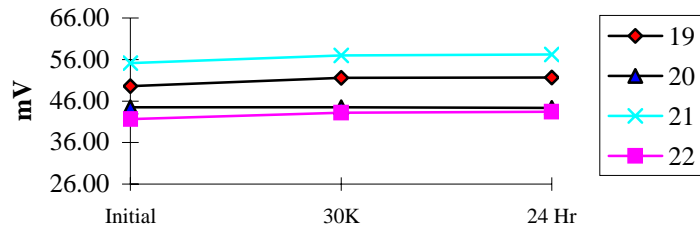


Vref 10k Rad

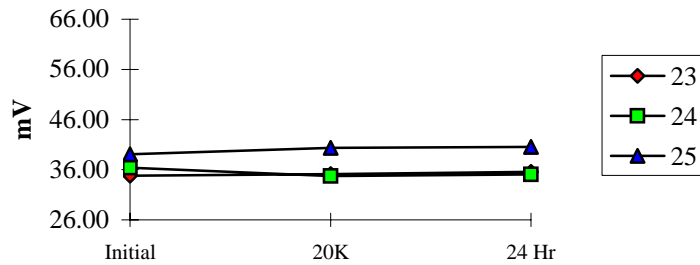


T# 21	Vref				mV
SN	Initial	10K	20K	30K	24 Hr
18	43.88	43.93	43.93	43.93	43.83
19	49.55			51.56	51.64
20	44.51			44.49	44.36
21	55.14			56.97	57.25
22	41.68			43.19	43.43
23	34.78		35.14		35.55
24	36.38		34.73		35.05
25	39.10		40.34		40.53
26	33.97	31.92			32.14
27	33.01	31.97			32.33
28	33.74	32.45			32.52

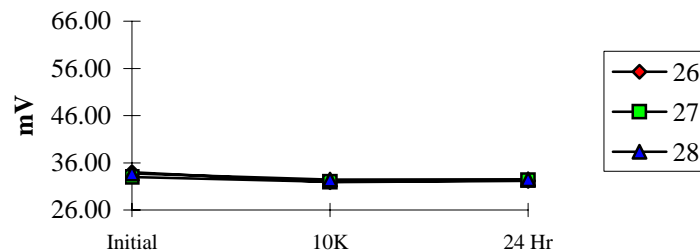
Vref 30k Rad



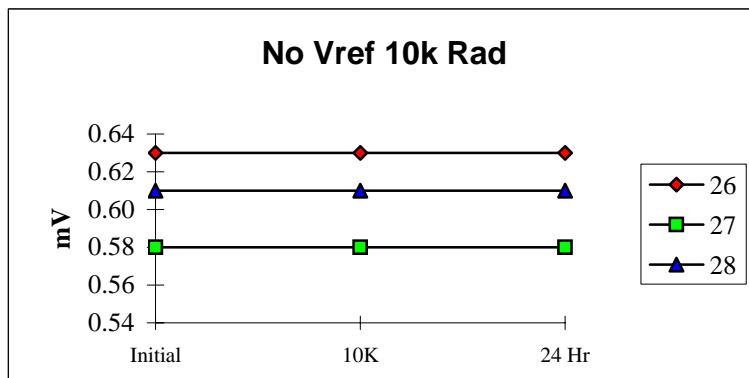
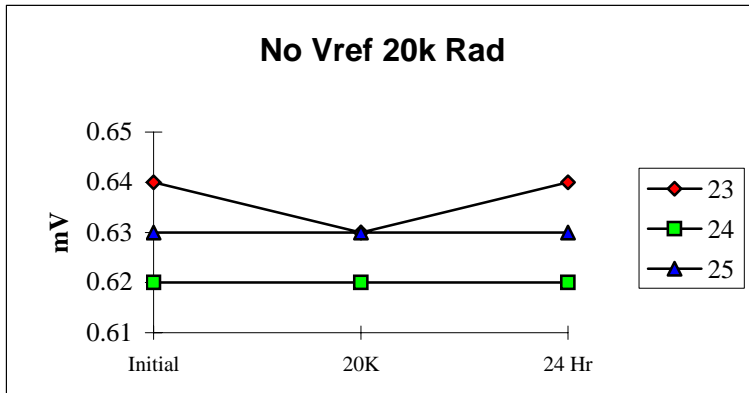
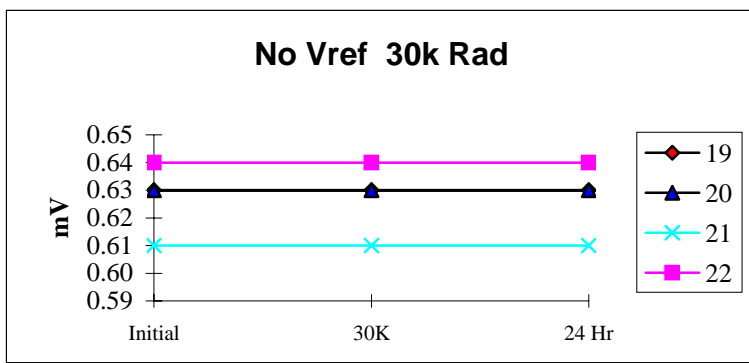
Vref 20k Rad



Vref 10k Rad

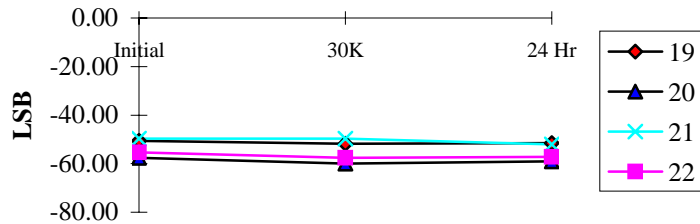


T# 22	No_Vref				mV
SN	Initial	10K	20K	30K	24 Hr
18	0.60	0.60	0.60	0.60	0.59
19	0.63			0.63	0.63
20	0.63			0.63	0.63
21	0.61			0.61	0.61
22	0.64			0.64	0.64
23	0.64		0.63		0.64
24	0.62		0.62		0.62
25	0.63		0.63		0.63
26	0.63	0.63			0.63
27	0.58	0.58			0.58
28	0.61	0.61			0.61

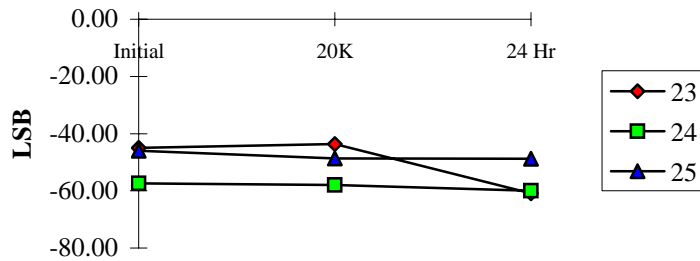


T# 32	Offset Red				LSB
SN	Initial	10K	20K	30K	24 Hr
18	-48.35	-49.20	-49.20	-49.20	-47.97
19	-50.64			-51.84	-51.52
20	-57.62			-59.99	-58.99
21	-49.74			-49.71	-52.10
22	-55.34			-57.56	-57.25
23	-44.99		-43.61		-60.840
24	-57.39		-57.96		-59.98
25	-46.04		-48.66		-48.73
26	-52.09	-53.16			-53.83
27	-53.86	-54.02			-54.87
28	-57.72	-58.95			-58.72

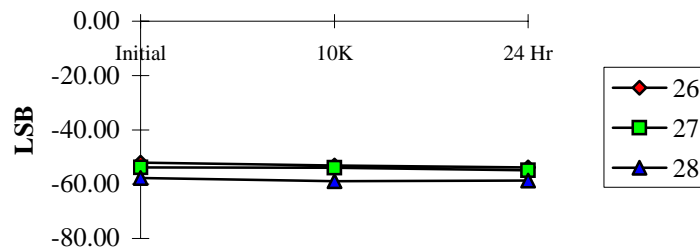
Offset Red 30k Rad



Offset Red 20k Rad

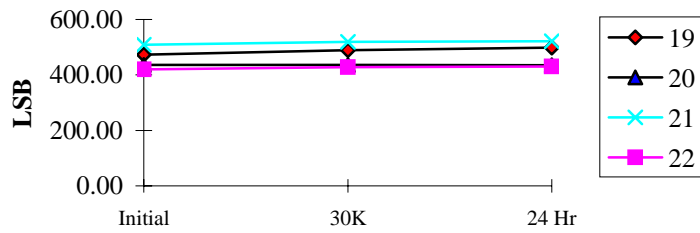


Offset Red 10k Rad

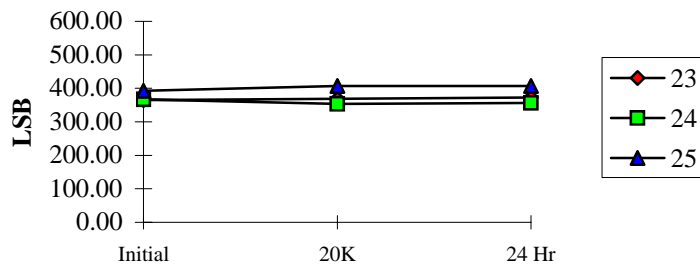


T# 33	Gain Red				LSB
SN	Initial	10K	20K	30K	24 Hr
18	424.66	425.16	425.16	425.16	424.09
19	473.00			489.56	498.33
20	436.56			435.90	435.05
21	508.79			519.05	521.79
22	420.07			428.55	430.88
23	365.43		368.62		372.89
24	367.25		353.38		356.24
25	392.95		407.29		406.85
26	356.30	339.48			341.41
27	333.44	333.31			331.84
28	346.60	337.22			337.19

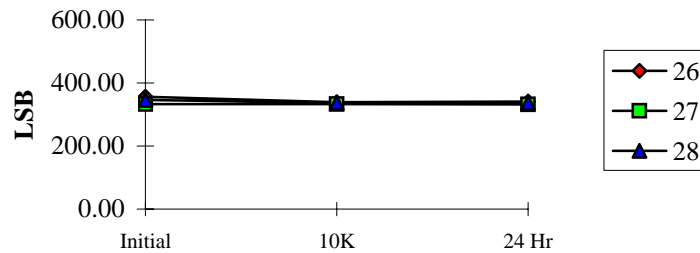
Gain Red 30k Rad



Gain Red 20k Rad

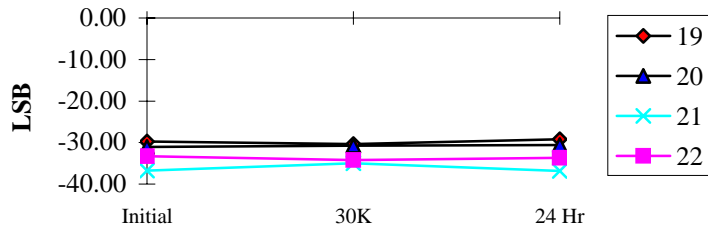


Gain Red 10k Rad

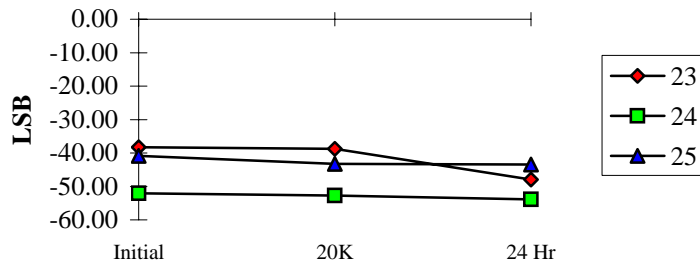


T# 42	Offset Green				LSB
	Initial	10K	20K	30K	24 Hr
18	-37.32	-37.58	-37.58	-37.58	-36.91
19	-29.73			-30.39	-29.22
20	-31.07			-30.73	-30.62
21	-36.80			-34.96	-36.87
22	-33.29			-34.21	-33.65
23	-38.23		-38.72		-47.99
24	-52.01		-52.72		-53.91
25	-40.87		-43.25		-43.48
26	-40.96	-41.89			-42.06
27	-49.60	-49.52			-50.08
28	-45.43	-45.00			-44.66

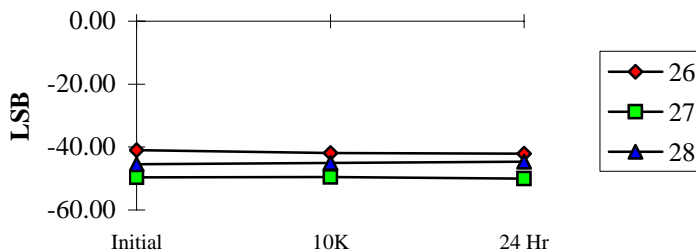
Offset Green 30k Rad



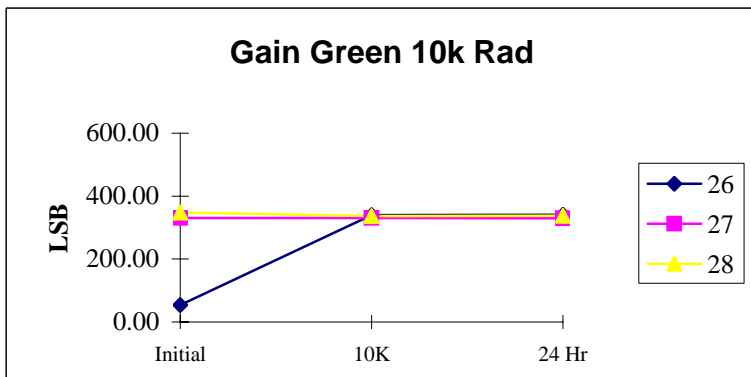
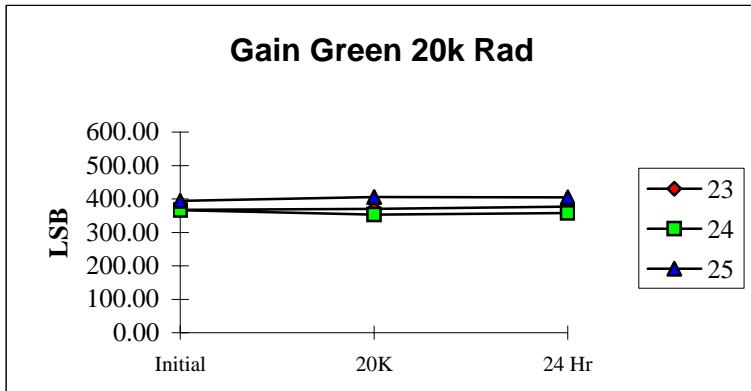
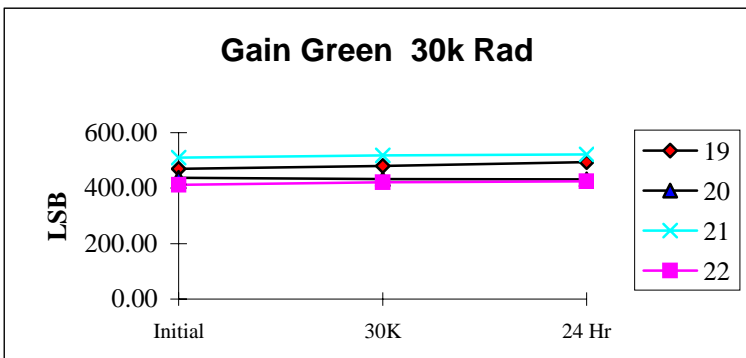
Offset Green 20k Rad



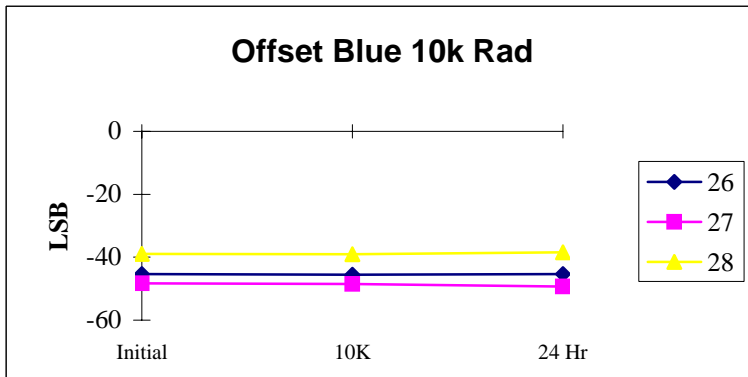
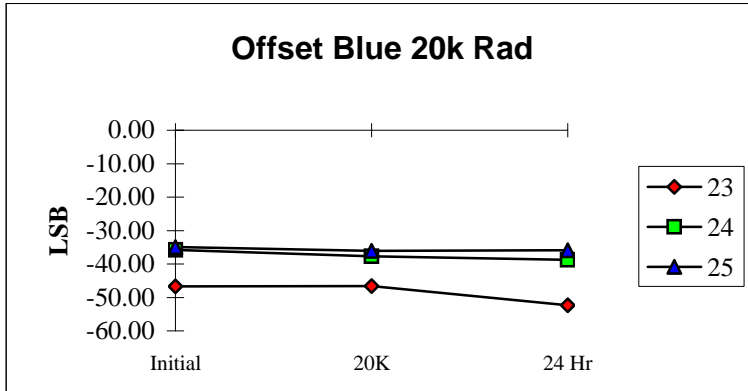
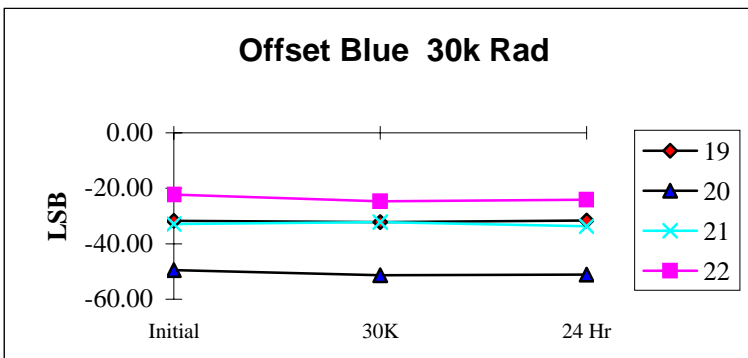
Offset Green 10k Rad



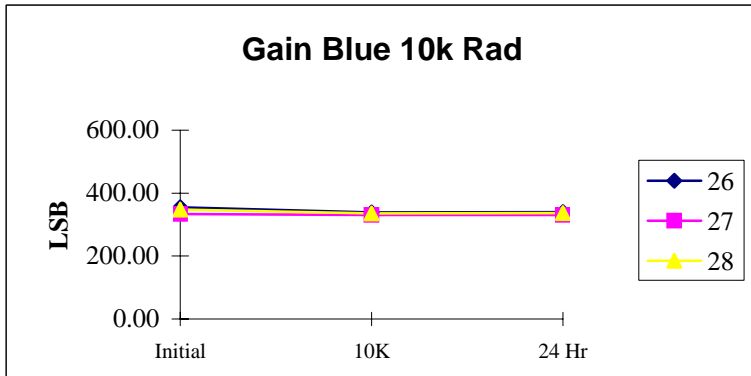
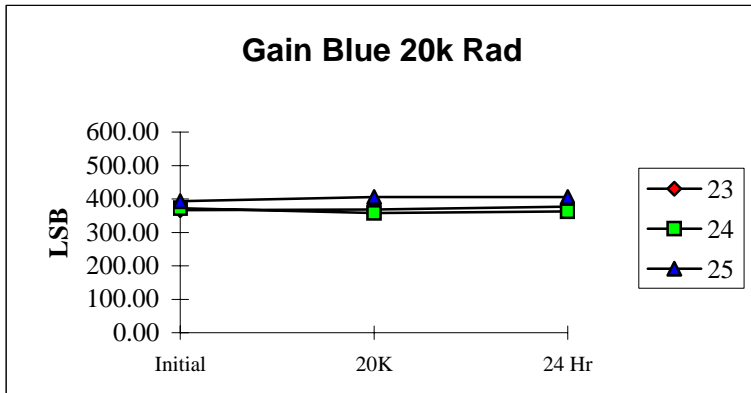
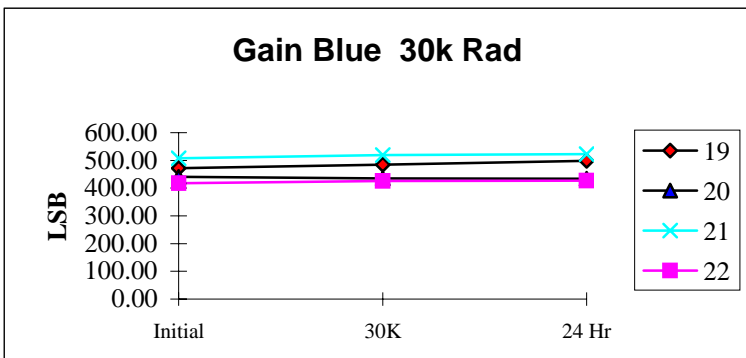
T# 43	Gain Green				LSB
SN	Initial	10K	20K	30K	24 Hr
18	421.32	422.18	422.18	422.18	422.51
19	469.08			480.44	493.73
20	437.51			432.55	431.74
21	509.50			518.27	521.95
22	412.29			420.73	424.04
23	367.56		370.70		377.39
24	366.13		353.40		357.72
25	394.46		405.43		405.16
26	54.33	339.43			341.09
27	330.27	330.36			329.69
28	347.55	336.21			337.12



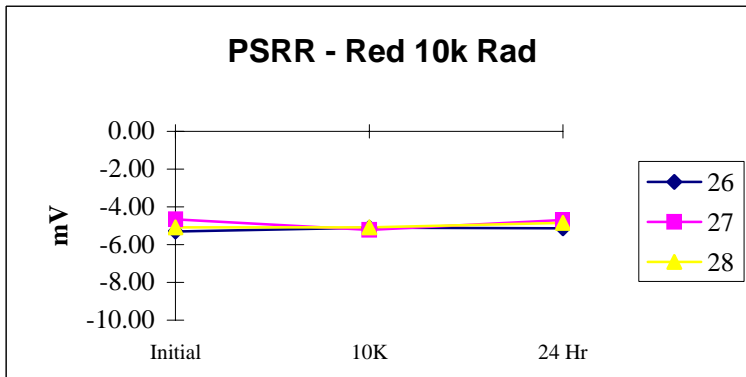
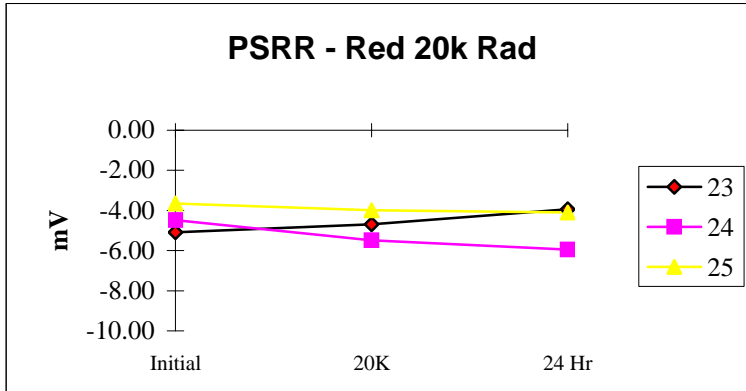
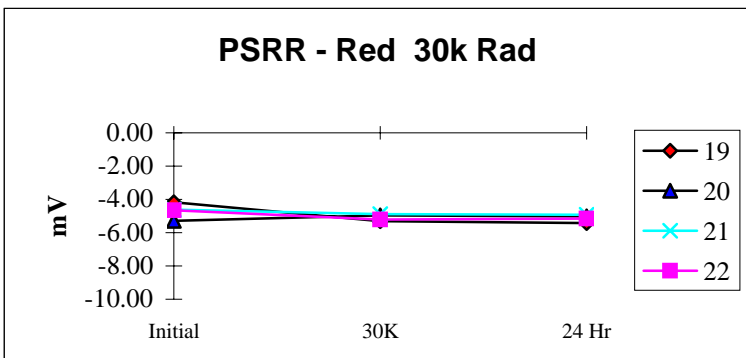
T# 52	Offset Blue				LSB
SN	Initial	10K	20K	30K	24 Hr
18	-42.97	-43.38	-43.38	-43.38	-42.35
19	-31.72			-32.18	-31.64
20	-49.55			-51.30	-51.09
21	-32.83			-32.22	-33.65
22	-22.24			-24.71	-24.15
23	-46.70		-46.63		-52.33
24	-35.8		-37.69		-38.80
25	-34.91		-36.11		-35.93
26	-45.36	-45.52			-45.35
27	-48.35	-48.52			-49.32
28	-38.98	-39.10			-38.47



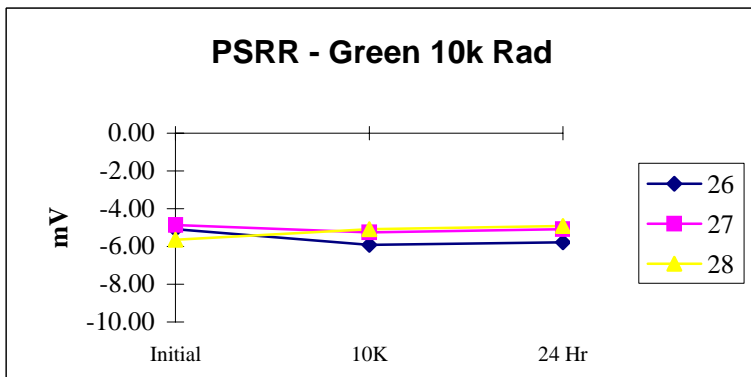
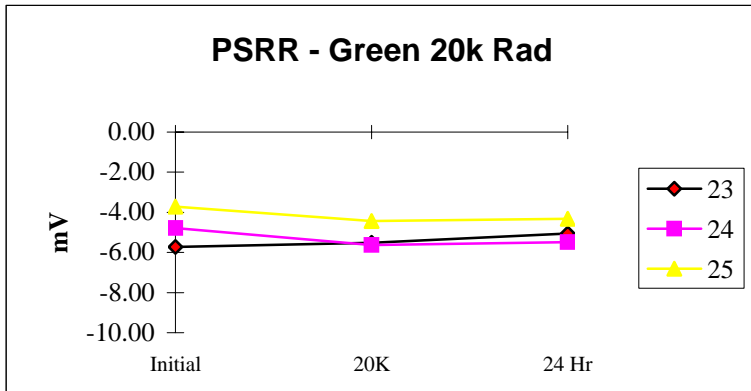
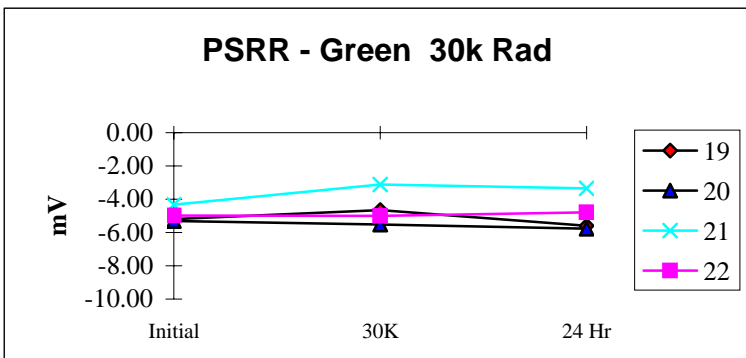
T# 53	Gain Blue				LSB
SN	Initial	10K	20K	30K	24 Hr
18	424.38	424.24	424.24	424.24	425.03
19	471.74			484.47	497.89
20	440.50			435.19	434.16
21	507.95			519.45	522.62
22	417.12			425.40	427.18
23	366.11		368.27		376.68
24	371.91		358.12		362.23
25	393.26		406.21		405.66
26	354.90	338.77			339.98
27	333.44	330.92			330.63
28	348.06	336.03			336.55



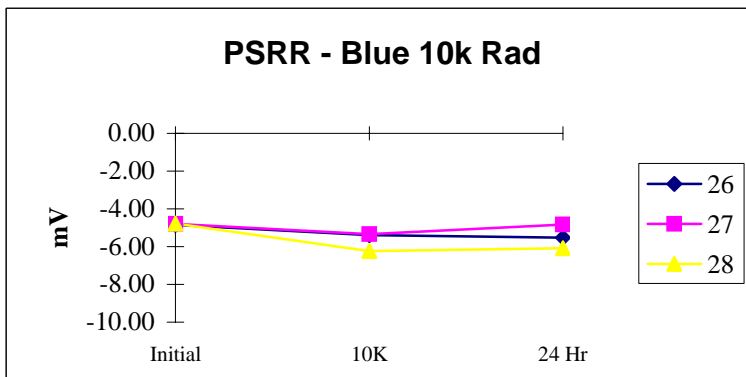
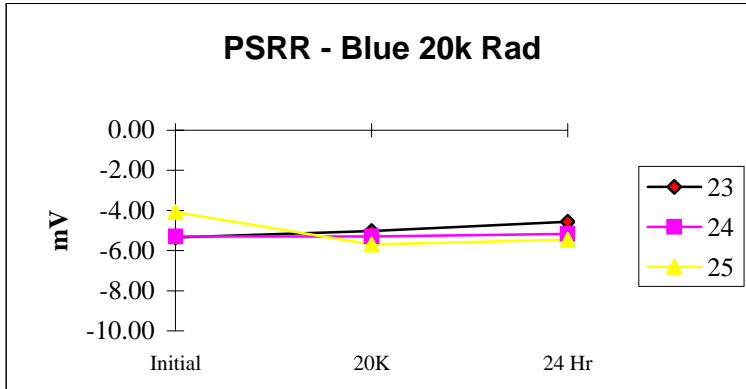
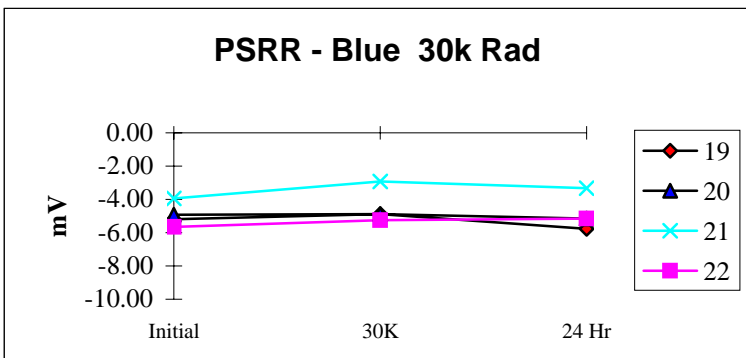
T# 60	PSRR - Red				mV
SN	Initial	10K	20K	30K	24 Hr
18	-4.67	-4.98	-4.98	-4.98	-4.69
19	-4.17			-5.31	-5.43
20	-5.29			-4.97	-5.02
21	-4.62			-4.88	-4.93
22	-4.65			-5.21	-5.15
23	-5.08		-4.69		-3.94
24	-4.48		-5.49		-5.95
25	-3.65		-3.99		-4.10
26	-5.31	-5.11			-5.13
27	-4.66	-5.22			-4.69
28	-5.08	-5.08			-4.84



T# 61	PSRR-Green				mV
SN	Initial	10K	20K	30K	24 Hr
18	-4.84	-4.71	-4.71	-4.71	-5.05
19	-5.19			-4.66	-5.60
20	-5.30			-5.52	-5.77
21	-4.32			-3.11	-3.35
22	-4.98			-5.00	-4.78
23	-5.73		-5.52		-5.05
24	-4.78		-5.63		-5.48
25	-3.71		-4.44		-4.32
26	-5.09	-5.91			-5.78
27	-4.86	-5.26			-5.09
28	-5.64	-5.08			-4.92

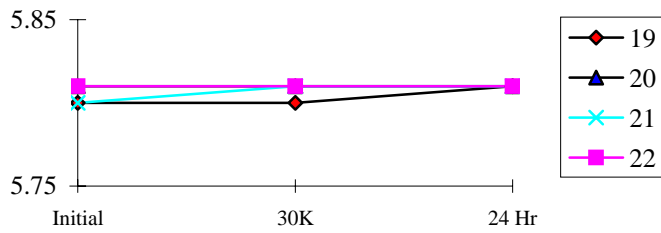


T# 62	PSRR-Blue				mV
SN	Initial	10K	20K	30K	24 Hr
18	-4.70	-4.94	-4.94	-4.94	-4.74
19	-5.19			-4.88	-5.77
20	-4.92			-4.88	-5.16
21	-3.94			-2.92	-3.32
22	-5.66			-5.25	-5.16
23	-5.34		-5.02		-4.56
24	-5.3		-5.29		-5.17
25	-4.09		-5.70		-5.45
26	-4.84	-5.39			-5.52
27	-4.79	-5.34			-4.83
28	-4.78	-6.23			-6.08

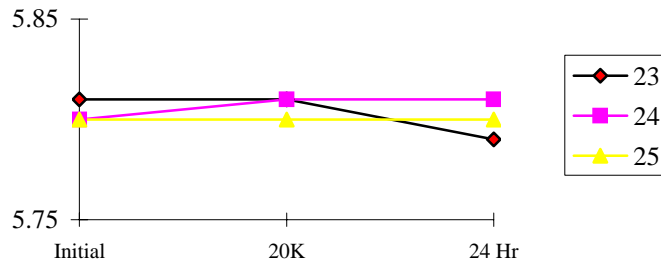


T# 80	PGA-Red				
SN	Initial	10K	20K	30K	24 Hr
18	5.80	5.80	5.80	5.80	5.80
19	5.80			5.80	5.81
20	5.81			5.81	5.81
21	5.80			5.81	5.81
22	5.81			5.81	5.81
23	5.81		5.81		5.79
24	5.80		5.81		5.81
25	5.80		5.80		5.80
26	5.81	5.81			5.80
27	5.80	5.80			5.80
28	5.80	5.81			5.80

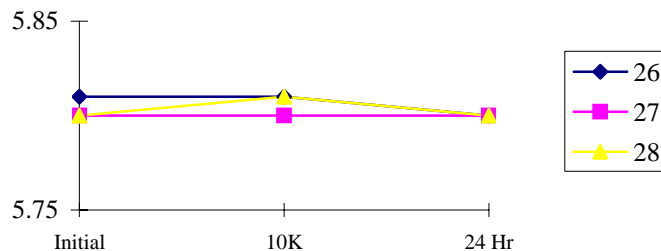
PGA - Red 30k Rad



PGA - Red 20k Rad

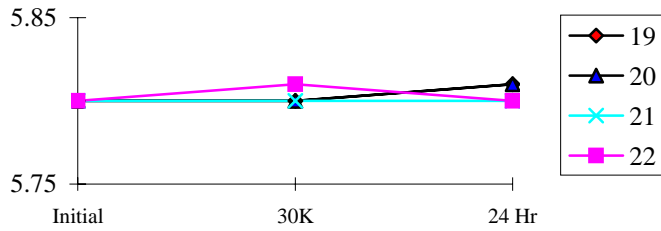


PGA - Red 10k Rad

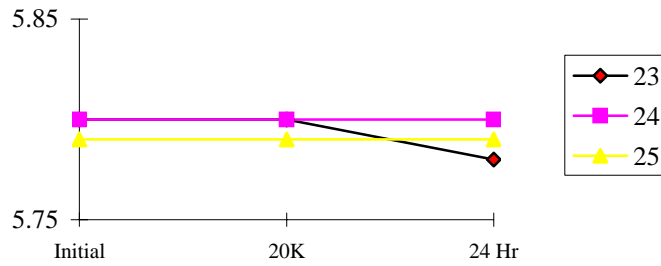


T# 81	PGA-Green				
SN	Initial	10K	20K	30K	24 Hr
18	5.80	5.79	5.79	5.79	5.80
19	5.80			5.80	5.81
20	5.80			5.80	5.81
21	5.80			5.80	5.80
22	5.80			5.81	5.80
23	5.80		5.80		5.78
24	5.80		5.80		5.80
25	5.79		5.79		5.79
26	5.80	5.80			5.80
27	5.79	5.80			5.80
28	5.80	5.80			5.80

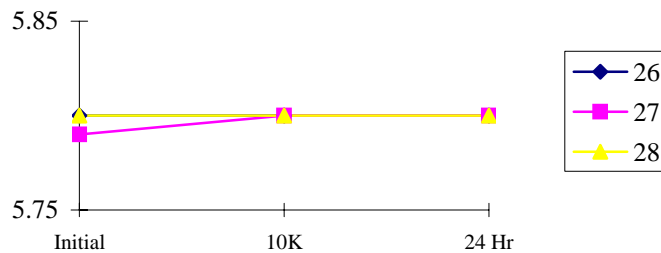
PGA - Green 30k Rad



PGA - Green 20k Rad

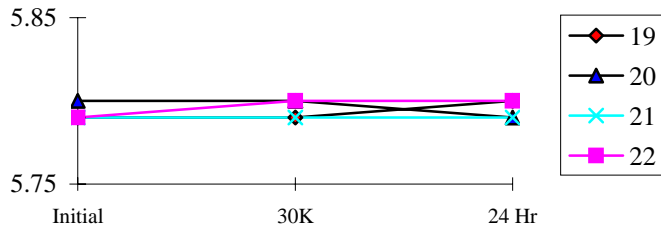


PGA - Green 10k Rad

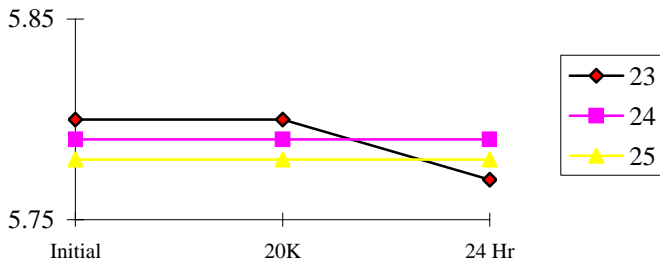


T# 82	PGA - Blue				
SN	Initial	10K	20K	30K	24 Hr
18	5.79	5.79	5.79	5.79	5.79
19	5.79			5.79	5.80
20	5.80			5.80	5.79
21	5.79			5.79	5.79
22	5.79			5.80	5.80
23	5.80		5.80		5.77
24	5.79		5.79		5.79
25	5.78		5.78		5.78
26	5.79	5.79			5.79
27	5.79	5.79			5.79
28	5.79	5.79			5.79

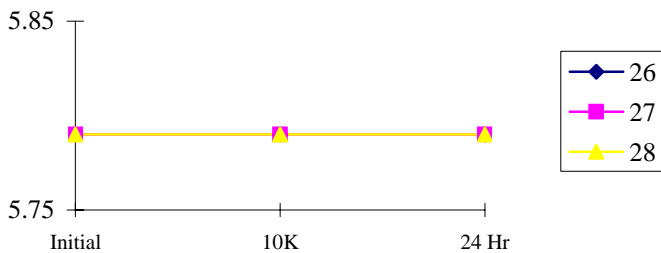
PGA - Blue 30k Rad



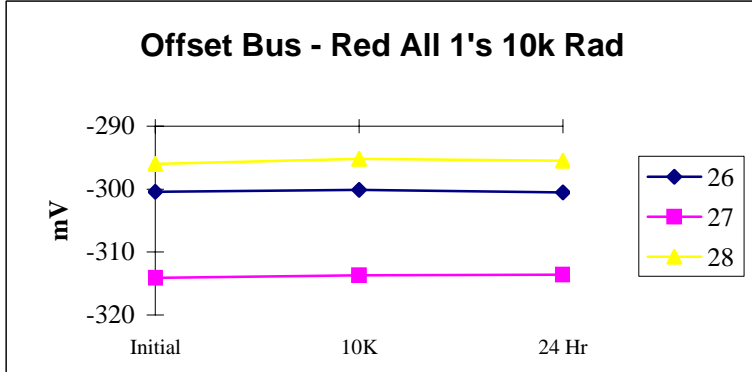
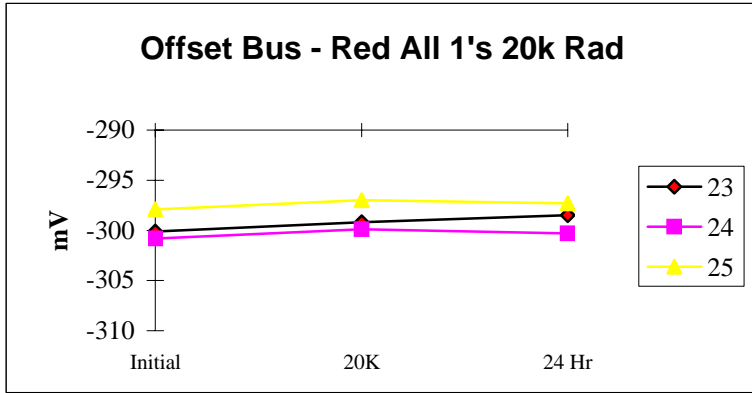
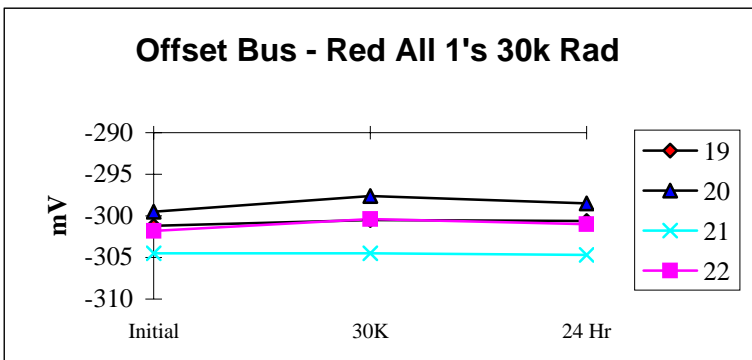
PGA - Blue 20k Rad



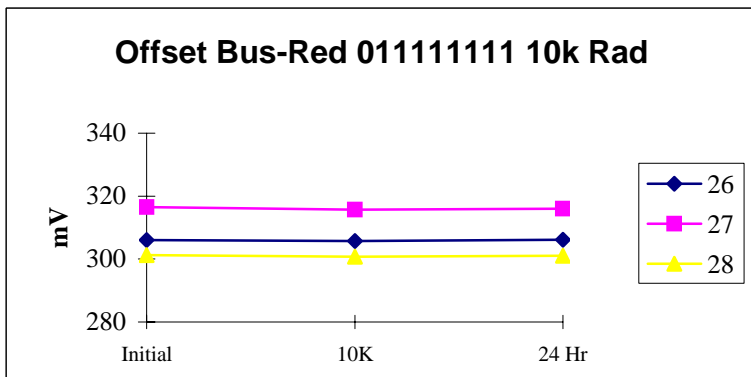
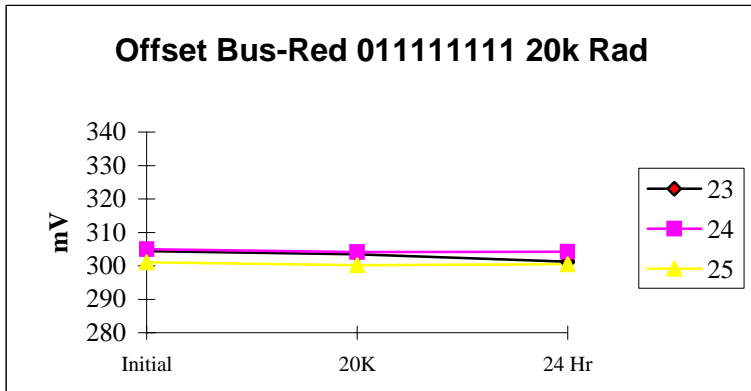
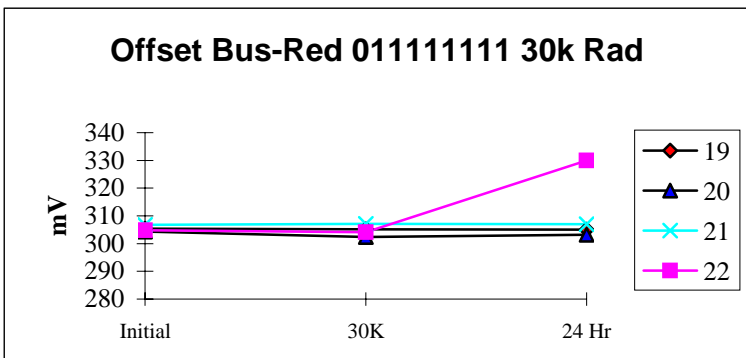
PGA - Blue 10k Rad



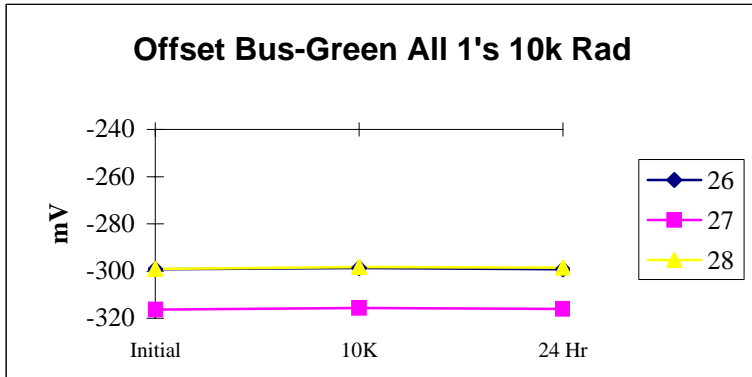
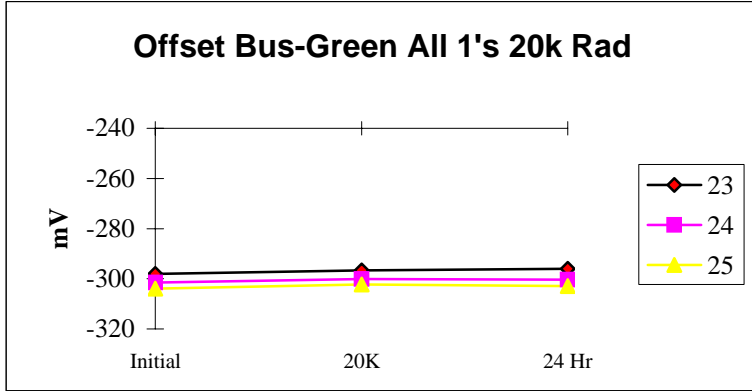
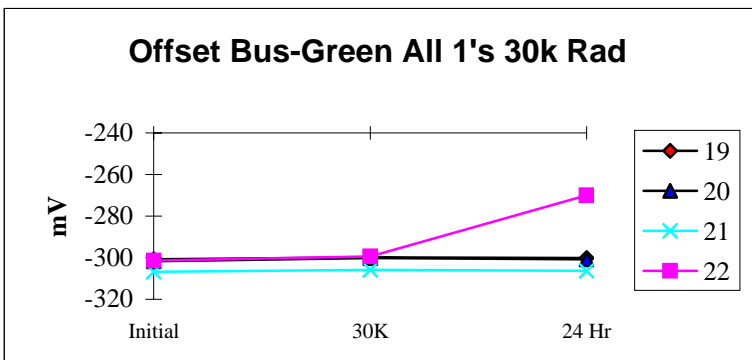
T# 120	Offset Bus - Red 11111111				mV
SN	Initial	10K	20K	30K	24 Hr
18	-309.30	-309.20	-309.20	-309.20	-309.10
19	-301.20			-300.50	-300.60
20	-299.50			-297.60	-298.50
21	-304.50			-304.50	-304.70
22	-301.80			-300.40	-301.00
23	-300.10		-299.20		-298.50
24	-300.8		-299.90		-300.30
25	-297.9		-297.00		-297.30
26	-300.40	-300.10			-300.50
27	-314.10	-313.70			-313.60
28	-296.00	-295.20			-295.50



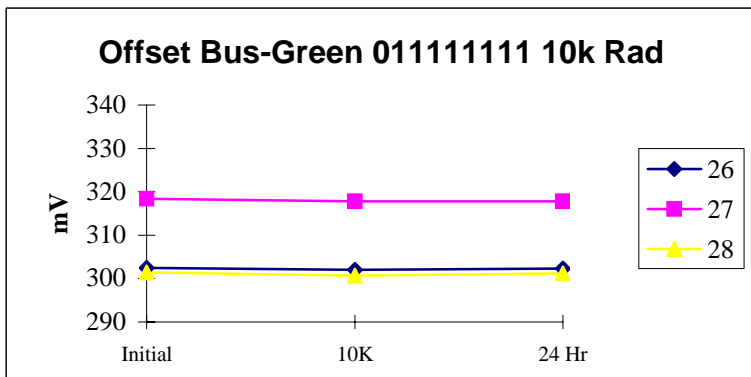
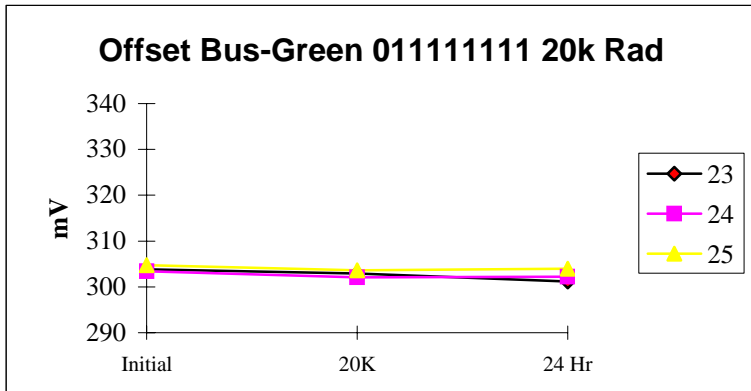
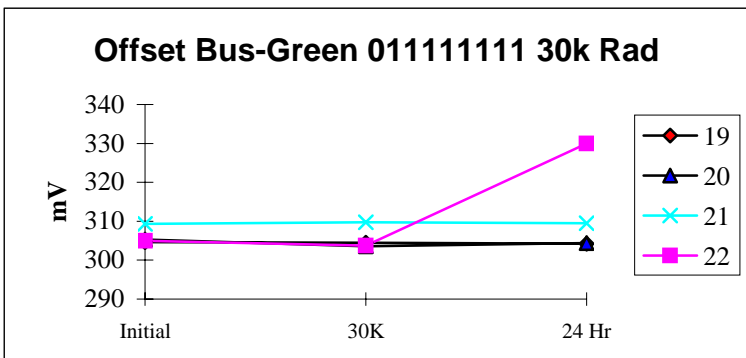
T# 121	Offset - Red 011111111				mV
SN	Initial	10K	20K	30K	24 Hr
18	312.30	312.30	312.30	312.30	312.4
19	305.40			305.20	305
20	304.40			302.40	303.20
21	306.80			307.10	307.00
22	304.80			304.10	330.00
23	304.40		303.40		301.20
24	305.00		304.10		304.20
25	301.10		300.20		300.50
26	306.00	305.70			306.10
27	316.50	315.70			316.00
28	301.30	300.70			301.10



T# 130	Offset - Green 11111111				mV
SN	Initial	10K	20K	30K	24 Hr
18	-305.90	-305.90	-305.90	-305.90	-306.00
19	-300.80			-299.90	-300.20
20	-301.70			-300.20	-300.80
21	-306.70			-305.90	-306.30
22	-301.40			-299.40	-270.00
23	-298.00		-296.70		-296.00
24	-301.50		-300.10		-300.30
25	-303.90		-302.30		-302.90
26	-299.20	-298.70			-299.20
27	-316.40	-315.70			-316.00
28	-299.10	-298.30			-298.60

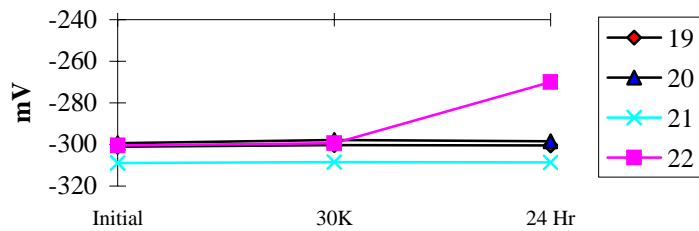


T# 131	Offset - Green 011111111				mV
SN	Initial	10K	20K	30K	24 Hr
18	308.80	308.70	308.70	308.70	308.60
19	304.60			304.50	304.20
20	305.30			303.60	304.40
21	309.30			309.70	309.50
22	305.00			303.70	330.00
23	303.80		302.90		301.20
24	303.40		302.10		302.20
25	304.70		303.60		304.00
26	302.50	302.00			302.30
27	318.40	317.80			317.80
28	301.40	300.70			301.20

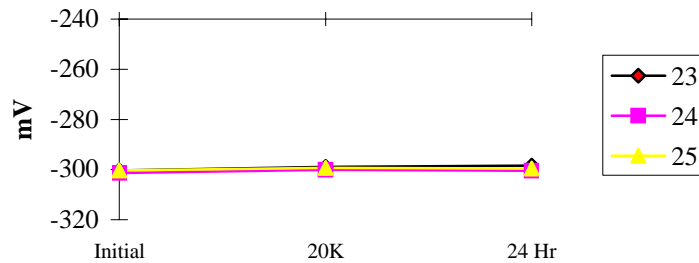


T# 140	Offset - Blue 11111111				mV
SN	Initial	10K	20K	30K	24 Hr
18	-308.30	-308.20	-308.20	-308.20	-308.20
19	-301.10			-300.30	-300.40
20	-299.40			-297.80	-298.50
21	-308.90			-308.40	-308.60
22	-300.50			-299.40	-270.00
23	-300.30		-299.00		-298.40
24	-301.40		-300.10		-300.50
25	-300.40		-299.30		-299.60
26	-301.10	-300.30			-300.60
27	-315.60	-315.10			-315.30
28	-297.00	-296.60			-297.10

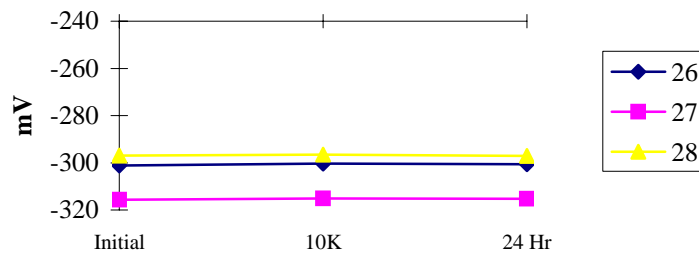
Offset Bus-Blue All 1's 30k Rad



Offset Bus-Blue All 1's 20k Rad

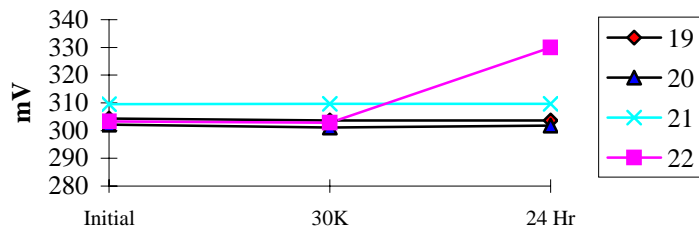


Offset Bus-Blue All 1's 10k Rad

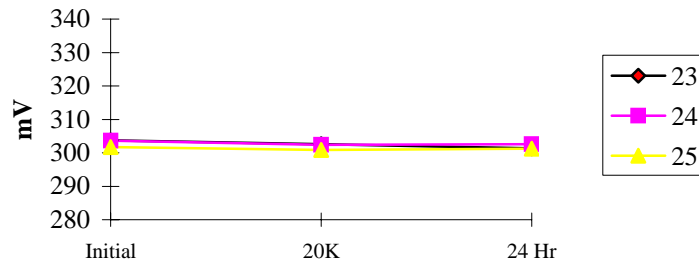


T# 141	Offset - Blue 011111111				mV
SN	Initial	10K	20K	30K	24 Hr
18	310.30	310.10	310.10	310.10	310.20
19	304.40			303.70	303.70
20	302.20			301.10	301.80
21	309.50			309.60	309.60
22	303.30			302.80	330.00
23	303.70		302.60		301.30
24	303.60		302.40		302.60
25	301.70		300.90		301.20
26	303.30	302.60			303.00
27	315.90	315.20			315.40
28	300.80	300.40			300.70

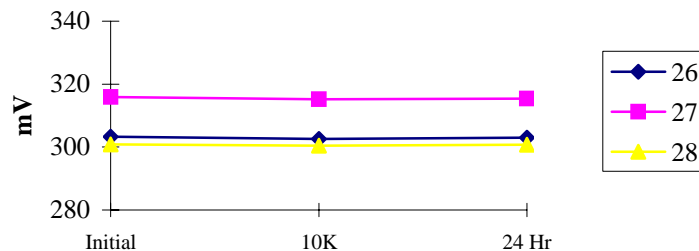
Offset Bus-Blue 011111111 30k Rad



Offset Bus-Blue 011111111 20k Rad

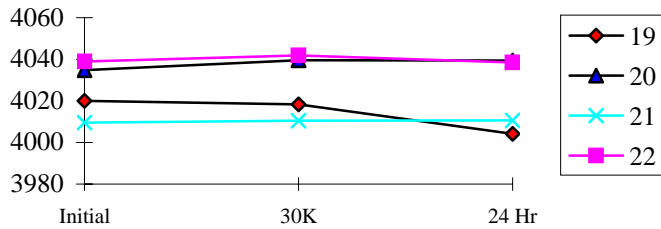


Offset Bus-Blue 011111111 10k Rad

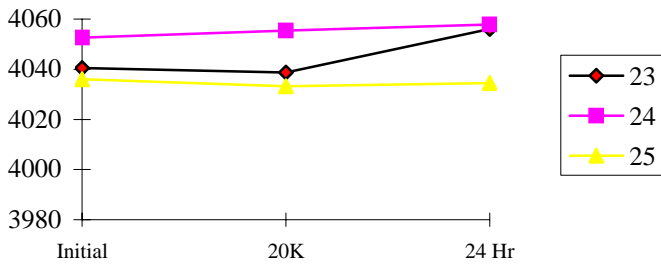


T# 190	Swap_out Red				
SN	Initial	10K	20K	30K	24 Hr
18	4031.40	4031.73	4031.73	4031.73	4030.79
19	4019.96			4018.27	4004.20
20	4034.84			4039.59	4039.46
21	4009.56			4010.48	4010.58
22	4038.96			4041.86	4038.40
23	4040.44		4038.71		4056.04
24	4052.59		4055.39		4057.81
25	4036.01		4033.19		4034.43
26	4049.96	4053.86			4053.87
27	4057.75	4053.97			4059.96
28	4057.48	4060.60			4061.62

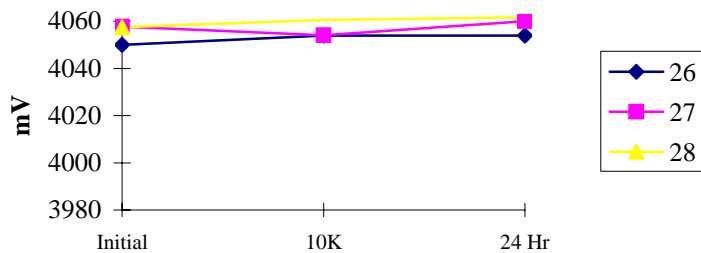
Swap Out Red 30k Rad



Swap Out Red 20k Rad

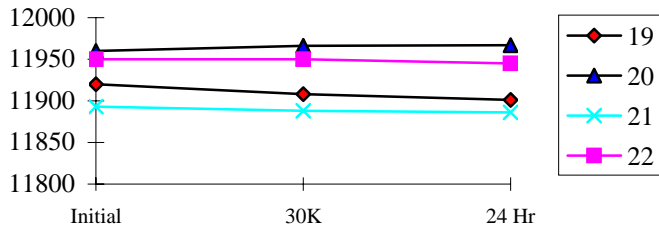


Swap Out Red 10k Rad

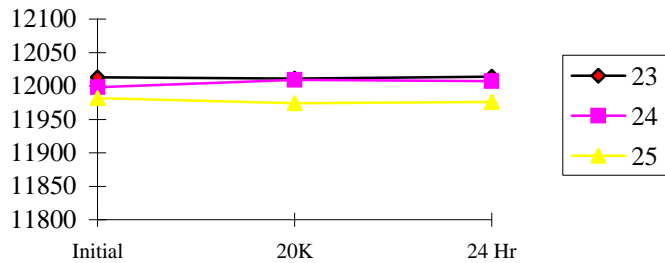


T# 191	Swap_out Blue				
SN	Initial	10K	20K	30K	24 Hr
18	11967	11966	11966	11966	11966
19	11920			11908	11901
20	11960			11966	11967
21	11893			11888	11886
22	11950			11950	11945
23	12013		12011		12014
24	11998		12009		12007
25	11982		11974		11976
26	12019	12029			12028
27	12040	12040			12044
28	12016	12024			12025

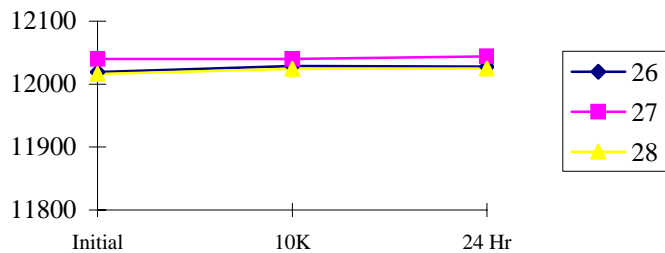
Swap Out Blue 30k Rad



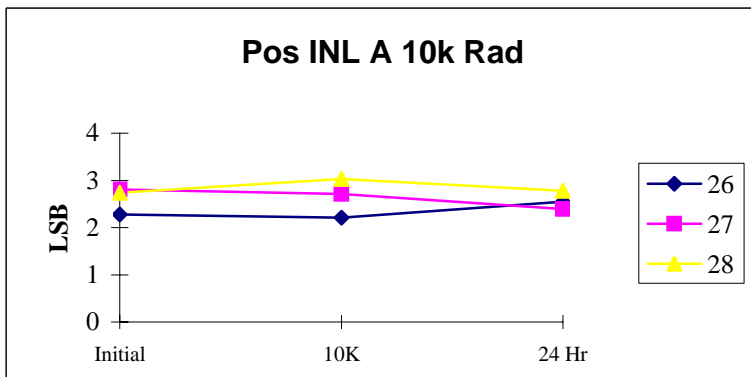
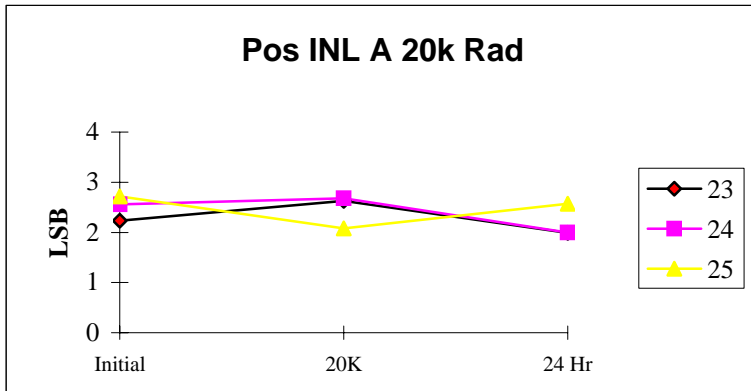
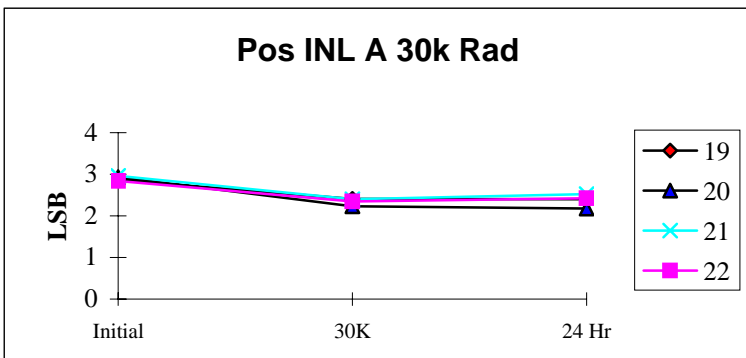
Swap Out Blue 20k Rad



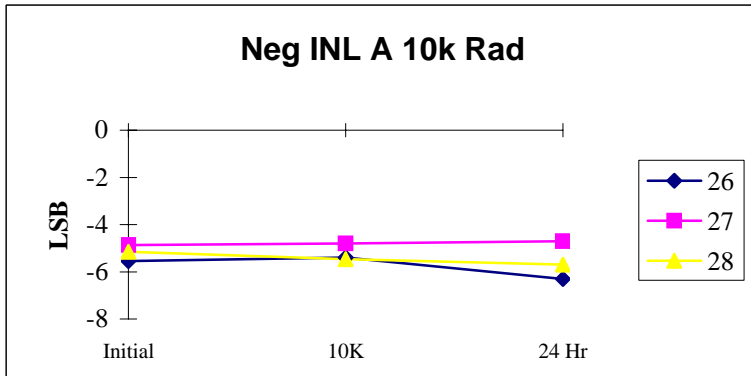
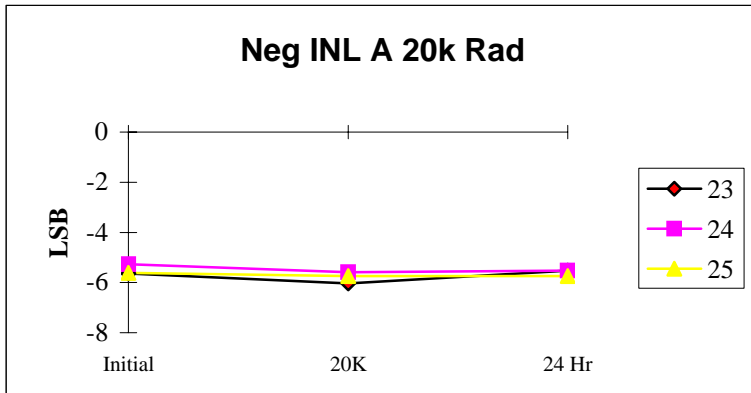
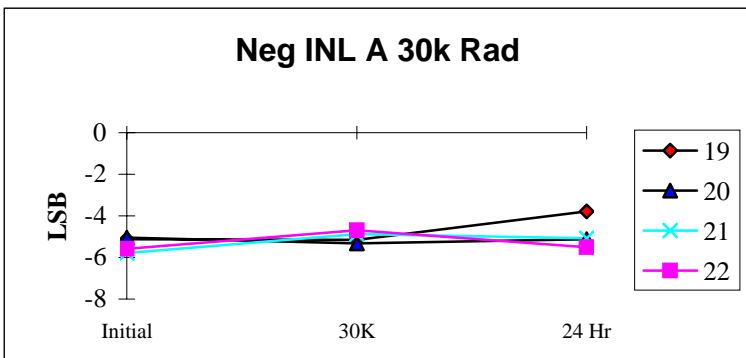
Swap Out Blue 10k Rad



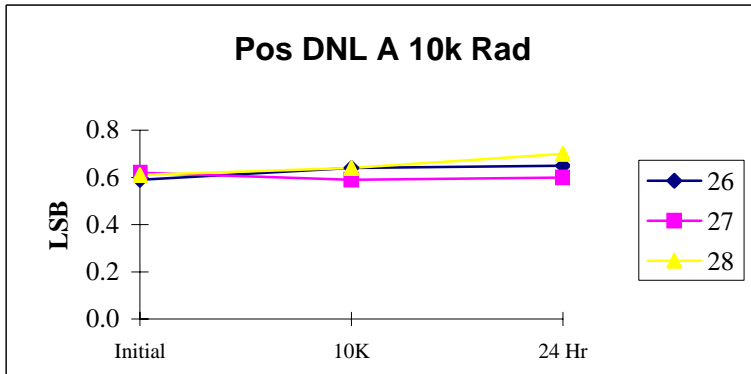
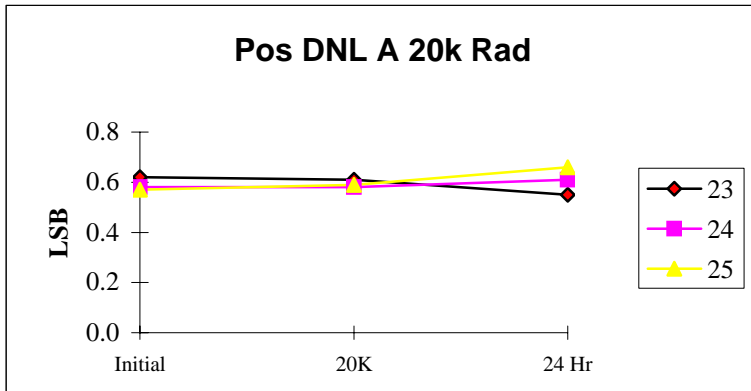
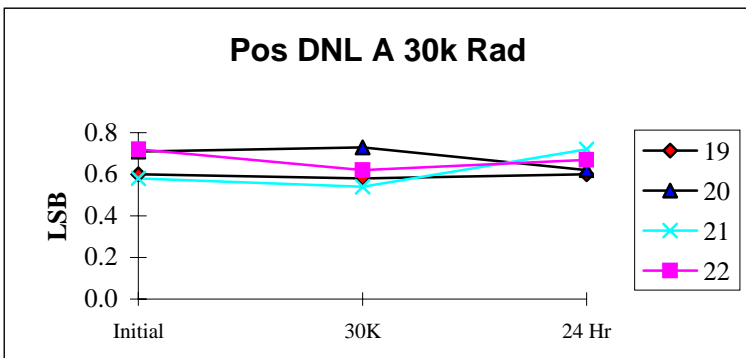
T# 502	Pos INL A				LSB
SN	Initial	10K	20K	30K	24 Hr
18	2.34	2.53	2.53	2.53	2.51
19	2.86			2.41	2.40
20	2.93			2.23	2.18
21	2.96			2.40	2.52
22	2.84			2.35	2.42
23	2.23		2.63		1.99
24	2.56		2.68		2.00
25	2.72		2.08		2.57
26	2.28	2.21			2.55
27	2.81	2.71			2.39
28	2.74	3.03			2.78



T# 503	Neg INL A				LSB
SN	Initial	10K	20K	30K	24 Hr
18	-5.61	-5.42	-5.42	-5.42	-5.60
19	-5.12			-5.16	-3.79
20	-5.04			-5.32	-5.12
21	-5.79			-4.87	-5.07
22	-5.59			-4.69	-5.50
23	-5.64		-6.03		-5.53
24	-5.27		-5.59		-5.53
25	-5.62		-5.74		-5.74
26	-5.55	-5.40			-6.31
27	-4.87	-4.80			-4.71
28	-5.15	-5.46			-5.69



T# 504	Pos DNL A				LSB
SN	Initial	10K	20K	30K	24 Hr
18	0.64	0.61	0.61	0.61	0.58
19	0.60			0.58	0.60
20	0.71			0.73	0.62
21	0.58			0.54	0.72
22	0.72			0.62	0.67
23	0.62		0.61		0.55
24	0.58		0.58		0.61
25	0.57		0.59		0.66
26	0.59	0.64			0.65
27	0.62	0.59			0.60
28	0.61	0.64			0.70



T# 505	Neg DNL A				LSB
SN	Initial	10K	20K	30K	24 Hr
18	-0.54	-0.51	-0.51	-0.51	-0.54
19	-0.62			-0.63	-0.57
20	-0.57			-0.60	-0.66
21	-0.70			-0.68	-0.62
22	-0.66			-0.67	-0.73
23	-0.70		-0.75		-0.76
24	-0.57		-0.55		-0.60
25	-0.54		-0.61		-0.67
26	-0.72	-0.66			-0.72
27	-0.54	-0.56			-0.56
28	-0.66	-0.64			-0.68

