

HIGH DOSE RADIATION TEST REPORT ADRF5730-CSL

April 2026
Generic

Radiation Test Report	
Product:	ADRF5730-CSL
Gamma:	0,100k
Gamma Source:	Co60/TM1019 Condition A
Dose Rate:	137 Rad/s
Facilities:	VPT RAD
Tested:	April 7th, 2026

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		VDD Supply Current Parallel Low (uA)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	113.70	114.00	113.68	113.58
Biased	163	113.76	296.99	209.81	121.20
	164	113.55	257.85	188.69	121.36
	165	110.32	280.99	200.76	121.03
	167	113.14	272.26	198.66	120.88
	168	112.46	265.74	191.27	120.07
	169	111.51	234.57	170.39	113.65
		Min	110.32	234.57	170.39
	Max	113.76	296.99	209.81	121.36
	Mean	112.46	268.07	193.26	119.70
	Std. Dev	1.33	21.23	13.47	3.00
	Mean - 3 Sigma	108.48	204.38	152.86	110.71
	Mean + 3 Sigma	116.44	331.75	233.67	128.69
Unbiased	170	112.37	114.98	114.83	114.16
	171	110.90	113.78	113.33	112.77
	172	110.39	113.71	113.55	112.93
	173	108.86	112.15	111.70	111.18
	174	108.34	111.05	110.92	110.73
	Min	108.34	111.05	110.92	110.73
	Max	112.37	114.98	114.83	114.16
	Mean	110.17	113.13	112.86	112.35
	Std. Dev	1.62	1.54	1.56	1.40
	Mean - 3 Sigma	105.30	108.52	108.20	108.17
	Mean + 3 Sigma	115.04	117.75	117.53	116.54

		VSS Supply Current Parallel Low (uA)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-111.14	-111.00	-111.14	-111.14
Biased	163	-110.36	-164.91	-143.34	-114.92
	164	-111.09	-157.80	-138.31	-115.95
	165	-109.44	-160.34	-142.29	-116.53
	167	-111.20	-156.27	-138.28	-114.95
	168	-110.80	-154.81	-138.45	-114.92
	169	-110.60	-139.42	-126.28	-111.22
	Min	-111.20	-164.91	-143.34	-116.53
	Max	-109.44	-139.42	-126.28	-111.22
	Mean	-110.58	-155.59	-137.83	-114.75
	Std. Dev	0.64	8.68	6.07	1.85
	Mean - 3 Sigma	-112.50	-181.63	-156.05	-120.31
	Mean + 3 Sigma	-108.66	-129.55	-119.60	-109.19
Unbiased	170	-111.66	-111.77	-111.83	-112.18
	171	-110.34	-110.34	-110.35	-110.61
	172	-110.59	-110.68	-110.66	-110.88
	173	-110.64	-110.83	-110.77	-111.12
	174	-109.67	-109.64	-109.61	-109.86
	Min	-111.66	-111.77	-111.83	-112.18
	Max	-109.67	-109.64	-109.61	-109.86
	Mean	-110.58	-110.65	-110.64	-110.93
	Std. Dev	0.71	0.78	0.80	0.85
	Mean - 3 Sigma	-112.73	-112.98	-113.05	-113.47
	Mean + 3 Sigma	-108.44	-108.32	-108.24	-108.39

		VDD Supply Current Parallel High (uA)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	116.55	117.00	116.51	116.40
Biased	163	116.47	186.96	172.06	147.95
	164	116.16	186.75	175.91	156.53
	165	112.23	183.87	171.79	152.64
	167	115.59	188.64	176.33	156.17
	168	114.77	194.66	178.33	154.37
	169	114.14	181.48	174.31	156.45
	Min	112.23	181.48	171.79	147.95
	Max	116.47	194.66	178.33	156.53
	Mean	114.89	187.06	174.79	154.02
	Std. Dev	1.57	4.51	2.56	3.34
	Mean - 3 Sigma	110.20	173.52	167.10	144.01
	Mean + 3 Sigma	119.59	200.60	182.47	164.03
Unbiased	170	114.71	147.74	148.10	142.64
	171	113.53	155.11	155.44	148.74
	172	112.68	148.08	148.42	143.52
	173	111.59	146.52	146.04	141.95
	174	110.74	150.00	150.73	144.88
	Min	110.74	146.52	146.04	141.95
	Max	114.71	155.11	155.44	148.74
	Mean	112.65	149.49	149.75	144.34
	Std. Dev	1.56	3.38	3.59	2.69
	Mean - 3 Sigma	107.96	139.35	138.98	136.28
	Mean + 3 Sigma	117.34	159.63	160.52	152.41

		VSS Supply Current Parallel High (uA)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-111.16	-111.00	-111.16	-111.16
Biased	163	-110.37	-158.47	-142.08	-117.01
	164	-111.10	-151.10	-136.90	-116.91
	165	-109.43	-151.77	-138.29	-118.14
	167	-111.21	-147.47	-134.40	-115.47
	168	-110.80	-152.43	-138.89	-116.99
	169	-110.61	-131.23	-123.26	-111.34
	Min	-111.21	-158.47	-142.08	-118.14
	Max	-109.43	-131.23	-123.26	-111.34
	Mean	-110.59	-148.74	-135.64	-115.98
	Std. Dev	0.65	9.29	6.56	2.43
	Mean - 3 Sigma	-112.53	-176.60	-155.33	-123.26
	Mean + 3 Sigma	-108.65	-120.89	-115.94	-108.70
Unbiased	170	-111.66	-111.79	-111.84	-112.19
	171	-110.36	-110.36	-110.36	-110.61
	172	-110.60	-110.70	-110.67	-110.90
	173	-110.65	-110.85	-110.79	-111.13
	174	-109.68	-109.64	-109.61	-109.86
	Min	-111.66	-111.79	-111.84	-112.19
	Max	-109.68	-109.64	-109.61	-109.86
	Mean	-110.59	-110.67	-110.65	-110.94
	Std. Dev	0.71	0.78	0.80	0.85
	Mean - 3 Sigma	-112.73	-113.01	-113.07	-113.48
	Mean + 3 Sigma	-108.45	-108.33	-108.24	-108.40

		Control Current D0 Parallel High (uA)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	32.39	32.40	32.40	32.35
Biased	163	32.67	32.64	32.62	32.68
	164	32.56	32.54	32.51	32.59
	165	31.10	31.11	31.08	31.16
	167	32.19	32.18	32.16	32.18
	168	31.64	31.65	31.63	31.70
	169	32.70	32.69	32.66	32.65
	Min	31.10	31.11	31.08	31.16
	Max	32.70	32.69	32.66	32.68
	Mean	32.14	32.13	32.11	32.16
	Std. Dev	0.65	0.63	0.64	0.62
	Mean - 3 Sigma	30.20	30.23	30.20	30.31
	Mean + 3 Sigma	34.09	34.04	34.02	34.00
Unbiased	170	32.96	32.91	32.90	32.93
	171	33.08	33.02	33.01	33.01
	172	32.76	32.72	32.71	32.69
	173	32.31	32.25	32.23	32.25
	174	31.84	31.78	31.76	31.78
	Min	31.84	31.78	31.76	31.78
	Max	33.08	33.02	33.01	33.01
	Mean	32.59	32.54	32.52	32.53
	Std. Dev	0.51	0.51	0.52	0.51
	Mean - 3 Sigma	31.05	30.99	30.97	30.99
	Mean + 3 Sigma	34.13	34.08	34.08	34.07

		Control Current D1 Parallel High (uA)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	32.65	32.70	32.66	32.60
Biased	163	32.30	32.27	32.25	32.34
	164	31.92	31.90	31.87	31.98
	165	30.77	30.78	30.75	30.87
	167	32.39	32.38	32.35	32.38
	168	31.65	31.66	31.64	31.72
	169	32.82	32.85	32.82	32.83
	Min	30.77	30.78	30.75	30.87
	Max	32.82	32.85	32.82	32.83
	Mean	31.98	31.97	31.95	32.02
	Std. Dev	0.72	0.71	0.71	0.68
	Mean - 3 Sigma	29.83	29.83	29.81	29.99
	Mean + 3 Sigma	34.12	34.12	34.09	34.05
Unbiased	170	32.66	32.61	32.60	32.60
	171	32.87	32.80	32.79	32.79
	172	32.46	32.46	32.43	32.41
	173	32.30	32.25	32.22	32.24
	174	32.39	32.34	32.31	32.32
	Min	32.30	32.25	32.22	32.24
	Max	32.87	32.80	32.79	32.79
	Mean	32.54	32.49	32.47	32.47
	Std. Dev	0.23	0.22	0.23	0.22
	Mean - 3 Sigma	31.85	31.83	31.79	31.81
	Mean + 3 Sigma	33.23	33.15	33.15	33.14

		Control Current D2 Parallel High (uA)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	32.83	32.80	32.83	32.76
Biased	163	32.65	32.60	32.58	32.67
	164	32.37	32.35	32.32	32.45
	165	31.08	31.08	31.06	31.18
	167	32.40	32.38	32.35	32.39
	168	31.67	31.69	31.68	31.74
	169	33.24	33.29	33.26	33.29
	Min	31.08	31.08	31.06	31.18
Max	33.24	33.29	33.26	33.29	
Mean	32.23	32.23	32.21	32.28	
Std. Dev	0.76	0.76	0.76	0.73	
Mean - 3 Sigma	29.95	29.95	29.94	30.08	
Mean + 3 Sigma	34.51	34.52	34.48	34.49	
Unbiased	170	33.24	33.21	33.19	33.19
	171	32.61	32.56	32.55	32.53
	172	32.89	32.91	32.89	32.84
	173	32.33	32.28	32.25	32.26
	174	32.03	31.98	31.95	31.97
	Min	32.03	31.98	31.95	31.97
Max	33.24	33.21	33.19	33.19	
Mean	32.62	32.59	32.56	32.56	
Std. Dev	0.48	0.49	0.49	0.48	
Mean - 3 Sigma	31.19	31.12	31.09	31.12	
Mean + 3 Sigma	34.04	34.05	34.04	34.00	

		Control Current D3 Parallel High (uA)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	9.61E-04	1.13E-03	1.08E-03	1.07E-03
Biased	163	1.02E-03	3.21E-03	2.37E-03	1.45E-03
	164	9.94E-04	2.83E-03	2.25E-03	1.47E-03
	165	1.05E-03	4.65E-03	3.47E-03	2.01E-03
	167	1.09E-03	1.87E-03	1.55E-03	1.33E-03
	168	1.07E-03	7.20E-03	5.64E-03	2.51E-03
	169	1.07E-03	2.68E-03	2.29E-03	1.37E-03
	Min	1.07E-03	1.87E-03	1.55E-03	1.33E-03
Max	1.09E-03	7.20E-03	5.64E-03	2.51E-03	
Mean	1.08E-03	3.92E-03	3.16E-03	1.74E-03	
Std. Dev	1.54E-05	2.87E-03	2.18E-03	6.71E-04	
Mean - 3 Sigma	1.03E-03	-4.70E-03	-3.37E-03	-2.75E-04	
Mean + 3 Sigma	1.12E-03	1.25E-02	9.70E-03	3.75E-03	
Unbiased	170	1.10E-03	2.98E-03	2.24E-03	1.32E-03
	171	1.09E-03	2.66E-03	2.10E-03	1.38E-03
	172	1.17E-03	3.79E-03	2.67E-03	1.58E-03
	173	1.14E-03	3.92E-03	3.41E-03	1.86E-03
	174	1.08E-03	3.46E-03	3.05E-03	1.58E-03
	Min	1.08E-03	2.66E-03	2.10E-03	1.32E-03
	Max	1.17E-03	3.92E-03	3.41E-03	1.86E-03
	Mean	1.12E-03	3.36E-03	2.69E-03	1.54E-03
	Std. Dev	3.75E-05	5.32E-04	5.49E-04	2.09E-04
	Mean - 3 Sigma	1.00E-03	1.77E-03	1.05E-03	9.16E-04
Mean + 3 Sigma	1.23E-03	4.96E-03	4.34E-03	2.17E-03	

		Control Current D4 Parallel High (uA)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-1.75E-05	6.88E-06	1.88E-05	2.75E-05
Biased	163	1.06E-05	1.00E-05	5.63E-06	-6.94E-05
	164	1.38E-05	-6.25E-07	-3.13E-05	-2.13E-05
	165	6.88E-06	3.31E-05	-1.19E-05	-9.38E-06
	167	2.06E-05	2.50E-06	-1.44E-05	-5.19E-05
	168	-1.25E-06	1.19E-05	6.88E-06	-1.56E-05
	169	-1.75E-05	-2.94E-05	-7.50E-06	-3.88E-05
	Min	-1.75E-05	-2.94E-05	-1.44E-05	-5.19E-05
	Max	2.06E-05	1.19E-05	6.88E-06	-1.56E-05
	Mean	6.25E-07	-5.00E-06	-5.00E-06	-3.54E-05
	Std. Dev	1.91E-05	2.16E-05	1.08E-05	1.84E-05
	Mean - 3 Sigma	-5.68E-05	-6.99E-05	-3.75E-05	-9.05E-05
	Mean + 3 Sigma	5.80E-05	5.99E-05	2.75E-05	1.97E-05
Unbiased	170	-2.69E-05	2.50E-06	1.50E-05	-3.56E-05
	171	-2.25E-05	-1.88E-06	-1.19E-05	-5.44E-05
	172	-5.63E-06	1.13E-05	-2.75E-05	-7.38E-05
	173	-1.94E-05	-8.75E-06	-3.81E-05	-4.06E-05
	174	-1.38E-05	1.38E-05	1.50E-05	-6.94E-05
	Min	-2.69E-05	-8.75E-06	-3.81E-05	-7.38E-05
	Max	-5.63E-06	1.38E-05	1.50E-05	-3.56E-05
	Mean	-1.76E-05	3.38E-06	-9.50E-06	-5.48E-05
	Std. Dev	8.24E-06	9.29E-06	2.42E-05	1.69E-05
	Mean - 3 Sigma	-4.24E-05	-2.45E-05	-8.22E-05	-1.05E-04
	Mean + 3 Sigma	7.09E-06	3.12E-05	6.32E-05	-4.10E-06

		Control Current D5 Parallel High (uA)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-4.26E-04	-4.35E-04	-3.94E-04	-2.87E-04
Biased	163	-2.91E-04	-3.68E-04	-4.31E-04	-3.63E-04
	164	-2.96E-04	-3.90E-04	-4.13E-04	-3.36E-04
	165	-3.10E-04	-3.81E-04	-3.87E-04	-3.44E-04
	167	-2.71E-04	-4.03E-04	-3.95E-04	-2.63E-04
	168	-3.20E-04	-4.46E-04	-4.24E-04	-2.54E-04
	169	0.00E+00	-4.36E-04	-4.24E-04	-3.00E-04
	Min	-3.20E-04	-4.46E-04	-4.31E-04	-3.63E-04
	Max	0.00E+00	-3.68E-04	-3.87E-04	-2.54E-04
	Mean	-2.48E-04	-4.04E-04	-4.12E-04	-3.10E-04
	Std. Dev	1.23E-04	3.13E-05	1.78E-05	4.46E-05
	Mean - 3 Sigma	-6.16E-04	-4.98E-04	-4.66E-04	-4.44E-04
	Mean + 3 Sigma	1.20E-04	-3.10E-04	-3.59E-04	-1.76E-04
Unbiased	170	-3.05E-04	-4.24E-04	-4.19E-04	-3.17E-04
	171	-3.21E-04	-4.42E-04	-3.91E-04	-2.57E-04
	172	-2.93E-04	-4.18E-04	-4.00E-04	-2.78E-04
	173	-3.12E-04	-4.44E-04	-4.24E-04	-2.89E-04
	174	-3.03E-04	-4.09E-04	-4.04E-04	-2.58E-04
	Min	-3.21E-04	-4.44E-04	-4.24E-04	-3.17E-04
	Max	-2.93E-04	-4.09E-04	-3.91E-04	-2.57E-04
	Mean	-3.07E-04	-4.27E-04	-4.08E-04	-2.80E-04
	Std. Dev	1.05E-05	1.52E-05	1.37E-05	2.48E-05
	Mean - 3 Sigma	-3.38E-04	-4.73E-04	-4.49E-04	-3.54E-04
	Mean + 3 Sigma	-2.75E-04	-3.82E-04	-3.67E-04	-2.05E-04

		Control Current LE Parallel High (uA)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	8.75E-06	-5.75E-05	-2.75E-05	3.44E-05
Biased	163	-5.81E-05	-7.57E-05	-6.19E-05	5.44E-05
	164	-2.56E-05	-8.63E-05	-3.56E-05	2.50E-05
	165	1.00E-05	-7.19E-05	-6.88E-05	3.00E-05
	167	-2.19E-05	-7.82E-05	-8.57E-05	9.38E-06
	168	-7.50E-05	-5.69E-05	-9.38E-05	3.00E-05
	169	-7.13E-05	-2.69E-05	-6.19E-05	6.94E-05
	Min	-7.50E-05	-8.63E-05	-9.38E-05	9.38E-06
	Max	1.00E-05	-2.69E-05	-3.56E-05	6.94E-05
	Mean	-4.03E-05	-6.60E-05	-6.79E-05	3.64E-05
	Std. Dev	3.34E-05	2.14E-05	2.05E-05	2.17E-05
	Mean - 3 Sigma	-1.40E-04	-1.30E-04	-1.29E-04	-2.87E-05
	Mean + 3 Sigma	5.98E-05	-1.62E-06	-6.48E-06	1.01E-04
Unbiased	170	-7.94E-05	-6.57E-05	-6.63E-05	4.00E-05
	171	-4.56E-05	-6.57E-05	-3.06E-05	2.88E-05
	172	-5.38E-05	-4.88E-05	-2.63E-05	9.38E-06
	173	-1.50E-05	-5.44E-05	-6.06E-05	5.63E-05
	174	-2.63E-05	-3.69E-05	-3.38E-05	1.94E-05
	Min	-7.94E-05	-6.57E-05	-6.63E-05	9.38E-06
	Max	-1.50E-05	-3.69E-05	-2.63E-05	5.63E-05
	Mean	-4.40E-05	-5.43E-05	-4.35E-05	3.08E-05
	Std. Dev	2.50E-05	1.22E-05	1.85E-05	1.82E-05
	Mean - 3 Sigma	-1.19E-04	-9.08E-05	-9.90E-05	-2.39E-05
	Mean + 3 Sigma	3.11E-05	-1.78E-05	1.20E-05	8.54E-05

		0dB IL at 8GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-1.816	-1.640	-1.573	-1.810
Biased	163	-1.644	-1.644	-1.564	-1.778
	164	-1.711	-1.691	-1.566	-1.776
	165	-1.729	-1.658	-1.551	-1.757
	167	-1.768	-1.672	-1.566	-1.753
	168	-1.747	-1.653	-1.548	-1.730
	169	-1.695	-1.677	-1.562	-1.733
	Min	-1.768	-1.691	-1.566	-1.778
	Max	-1.644	-1.644	-1.548	-1.730
	Mean	-1.716	-1.666	-1.559	-1.754
	Std. Dev	4.36E-02	1.71E-02	7.89E-03	2.04E-02
	Mean - 3 Sigma	-1.846	-1.717	-1.583	-1.816
	Mean + 3 Sigma	-1.585	-1.615	-1.536	-1.693
Unbiased	170	-1.684	-1.666	-1.591	-1.806
	171	-1.642	-1.651	-1.560	-1.775
	172	-1.778	-1.662	-1.566	-1.778
	173	-1.744	-1.631	-1.549	-1.736
	174	-1.659	-1.674	-1.551	-1.709
	Min	-1.778	-1.674	-1.591	-1.806
	Max	-1.642	-1.631	-1.549	-1.709
	Mean	-1.701	-1.657	-1.563	-1.761
	Std. Dev	5.77E-02	1.66E-02	1.67E-02	3.84E-02
	Mean - 3 Sigma	-1.875	-1.707	-1.613	-1.876
	Mean + 3 Sigma	-1.528	-1.607	-1.514	-1.646

		0d5dB IL at 8GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-4.69E-01	-4.68E-01	-4.54E-01	-4.54E-01
Biased	163	-4.68E-01	-4.70E-01	-4.62E-01	-4.55E-01
	164	-4.68E-01	-4.64E-01	-4.60E-01	-4.54E-01
	165	-4.64E-01	-4.61E-01	-4.57E-01	-4.52E-01
	167	-4.65E-01	-4.66E-01	-4.61E-01	-4.54E-01
	168	-4.68E-01	-4.65E-01	-4.60E-01	-4.55E-01
	169	-4.70E-01	-4.71E-01	-4.71E-01	-4.57E-01
	Min	-4.70E-01	-4.71E-01	-4.71E-01	-4.57E-01
	Max	-4.64E-01	-4.61E-01	-4.57E-01	-4.52E-01
	Mean	-4.67E-01	-4.66E-01	-4.62E-01	-4.54E-01
	Std. Dev	1.95E-03	3.82E-03	4.78E-03	1.62E-03
	Mean - 3 Sigma	-4.73E-01	-4.78E-01	-4.76E-01	-4.59E-01
	Mean + 3 Sigma	-4.61E-01	-4.55E-01	-4.47E-01	-4.49E-01
Unbiased	170	-4.66E-01	-4.58E-01	-4.58E-01	-4.54E-01
	171	-4.71E-01	-4.68E-01	-4.71E-01	-4.66E-01
	172	-4.71E-01	-4.64E-01	-4.66E-01	-4.62E-01
	173	-4.68E-01	-4.61E-01	-4.61E-01	-4.57E-01
	174	-4.72E-01	-4.69E-01	-4.71E-01	-4.65E-01
	Min	-4.72E-01	-4.69E-01	-4.71E-01	-4.66E-01
	Max	-4.66E-01	-4.58E-01	-4.58E-01	-4.54E-01
	Mean	-4.69E-01	-4.64E-01	-4.66E-01	-4.61E-01
	Std. Dev	2.29E-03	4.67E-03	5.79E-03	4.96E-03
	Mean - 3 Sigma	-4.76E-01	-4.78E-01	-4.83E-01	-4.76E-01
	Mean + 3 Sigma	-4.63E-01	-4.50E-01	-4.48E-01	-4.46E-01

		1dB IL at 8GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-0.955	-0.955	-0.943	-0.941
Biased	163	-0.951	-0.957	-0.950	-0.942
	164	-0.952	-0.957	-0.949	-0.942
	165	-0.951	-0.953	-0.946	-0.940
	167	-0.950	-0.955	-0.948	-0.940
	168	-0.955	-0.956	-0.948	-0.943
	169	-0.959	-0.961	-0.959	-0.945
	Min	-0.959	-0.961	-0.959	-0.945
	Max	-0.950	-0.953	-0.946	-0.940
	Mean	-0.953	-0.956	-0.950	-0.942
	Std. Dev	3.23E-03	2.67E-03	4.71E-03	1.81E-03
	Mean - 3 Sigma	-0.963	-0.964	-0.964	-0.947
	Mean + 3 Sigma	-0.943	-0.948	-0.936	-0.937
Unbiased	170	-0.950	-0.946	-0.946	-0.941
	171	-0.957	-0.958	-0.959	-0.954
	172	-0.954	-0.953	-0.954	-0.949
	173	-0.954	-0.953	-0.953	-0.949
	174	-0.957	-0.959	-0.959	-0.953
	Min	-0.957	-0.959	-0.959	-0.954
	Max	-0.950	-0.946	-0.946	-0.941
	Mean	-0.954	-0.954	-0.954	-0.949
	Std. Dev	2.85E-03	5.25E-03	5.26E-03	5.48E-03
	Mean - 3 Sigma	-0.963	-0.970	-0.970	-0.966
	Mean + 3 Sigma	-0.946	-0.938	-0.938	-0.933

		2dB IL at 8GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-2.004	-2.000	-1.993	-1.990
Biased	163	-1.999	-2.008	-2.002	-1.991
	164	-2.000	-2.003	-2.000	-1.992
	165	-2.001	-2.009	-2.001	-1.993
	167	-1.997	-2.003	-2.000	-1.987
	168	-2.002	-2.007	-2.002	-1.993
	169	-2.000	-2.007	-2.008	-1.991
	Min	-2.002	-2.009	-2.008	-1.993
	Max	-1.997	-2.003	-2.000	-1.987
	Mean	-2.000	-2.006	-2.002	-1.991
	Std. Dev	1.72E-03	2.31E-03	3.02E-03	2.18E-03
	Mean - 3 Sigma	-2.005	-2.013	-2.011	-1.998
	Mean + 3 Sigma	-1.995	-1.999	-1.993	-1.985
Unbiased	170	-1.995	-1.994	-1.996	-1.987
	171	-2.002	-2.007	-2.009	-2.000
	172	-2.000	-2.003	-2.006	-1.997
	173	-1.998	-2.000	-2.000	-1.995
	174	-2.004	-2.008	-2.009	-2.002
	Min	-2.004	-2.008	-2.009	-2.002
	Max	-1.995	-1.994	-1.996	-1.987
	Mean	-2.000	-2.003	-2.004	-1.996
	Std. Dev	3.81E-03	5.97E-03	5.56E-03	5.67E-03
	Mean - 3 Sigma	-2.011	-2.021	-2.021	-2.013
	Mean + 3 Sigma	-1.988	-1.985	-1.987	-1.979

		4dB IL at 8GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-4.012	-4.010	-4.005	-4.000
Biased	163	-4.001	-4.020	-4.016	-4.006
	164	-4.003	-4.018	-4.016	-4.008
	165	-4.010	-4.020	-4.019	-4.009
	167	-3.998	-4.014	-4.012	-4.004
	168	-4.011	-4.021	-4.020	-4.011
	169	-4.004	-4.018	-4.020	-4.006
	Min	-4.011	-4.021	-4.020	-4.011
Max	-3.998	-4.014	-4.012	-4.004	
Mean	-4.004	-4.018	-4.017	-4.007	
Std. Dev	4.80E-03	2.68E-03	3.22E-03	2.57E-03	
Mean - 3 Sigma	-4.019	-4.026	-4.027	-4.015	
Mean + 3 Sigma	-3.990	-4.010	-4.007	-4.000	
Unbiased	170	-3.995	-4.006	-4.005	-3.996
	171	-4.010	-4.024	-4.027	-4.016
	172	-4.006	-4.018	-4.019	-4.010
	173	-4.000	-4.011	-4.014	-4.003
	174	-4.010	-4.026	-4.029	-4.016
	Min	-4.010	-4.026	-4.029	-4.016
Max	-3.995	-4.006	-4.005	-3.996	
Mean	-4.004	-4.017	-4.019	-4.008	
Std. Dev	6.47E-03	8.60E-03	9.62E-03	8.77E-03	
Mean - 3 Sigma	-4.023	-4.043	-4.048	-4.035	
Mean + 3 Sigma	-3.985	-3.991	-3.990	-3.982	

		8dB IL at 8GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-7.959	-7.960	-7.975	-7.971
Biased	163	-7.937	-7.989	-7.990	-7.976
	164	-7.947	-7.989	-7.994	-7.982
	165	-7.976	-8.010	-8.009	-7.997
	167	-7.931	-7.979	-7.983	-7.977
	168	-8.007	-8.004	-8.005	-7.998
	169	-7.972	-7.998	-8.007	-7.991
	Min	-8.007	-8.010	-8.009	-7.998
	Max	-7.931	-7.979	-7.983	-7.976
	Mean	-7.962	-7.995	-7.998	-7.987
	Std. Dev	2.89E-02	1.13E-02	1.05E-02	9.69E-03
	Mean - 3 Sigma	-8.048	-8.029	-8.029	-8.016
	Mean + 3 Sigma	-7.875	-7.961	-7.966	-7.958
Unbiased	170	-7.941	-7.973	-7.973	-7.960
	171	-7.960	-8.001	-8.000	-7.995
	172	-7.961	-7.993	-7.998	-7.994
	173	-7.945	-7.986	-7.994	-7.977
	174	-7.976	-8.012	-8.016	-8.002
	Min	-7.976	-8.012	-8.016	-8.002
	Max	-7.941	-7.973	-7.973	-7.960
	Mean	-7.956	-7.993	-7.996	-7.986
	Std. Dev	1.39E-02	1.48E-02	1.55E-02	1.69E-02
	Mean - 3 Sigma	-7.998	-8.038	-8.043	-8.037
	Mean + 3 Sigma	-7.915	-7.949	-7.950	-7.935

		16dB IL at 8GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-16.006	-16.000	-16.050	-16.051
Biased	163	-15.980	-16.080	-16.093	-16.079
	164	-15.989	-16.080	-16.091	-16.080
	165	-16.049	-16.115	-16.126	-16.109
	167	-15.960	-16.052	-16.067	-16.062
	168	-16.051	-16.114	-16.128	-16.119
	169	-16.030	-16.078	-16.095	-16.093
	Min	-16.051	-16.115	-16.128	-16.119
	Max	-15.960	-16.052	-16.067	-16.062
	Mean	-16.010	-16.086	-16.100	-16.090
	Std. Dev	3.85E-02	2.41E-02	2.31E-02	2.11E-02
	Mean - 3 Sigma	-16.125	-16.159	-16.169	-16.153
	Mean + 3 Sigma	-15.895	-16.014	-16.031	-16.027
Unbiased	170	-15.969	-16.041	-16.042	-16.028
	171	-16.017	-16.099	-16.100	-16.096
	172	-16.018	-16.086	-16.089	-16.095
	173	-15.985	-16.071	-16.083	-16.065
	174	-16.045	-16.124	-16.128	-16.116
	Min	-16.045	-16.124	-16.128	-16.116
	Max	-15.969	-16.041	-16.042	-16.028
	Mean	-16.007	-16.084	-16.089	-16.080
	Std. Dev	3.01E-02	3.11E-02	3.13E-02	3.44E-02
	Mean - 3 Sigma	-16.097	-16.178	-16.183	-16.183
	Mean + 3 Sigma	-15.917	-15.991	-15.995	-15.977

		31d5dB IL at 8GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-31.429	-31.400	-31.468	-31.477
Biased	163	-31.390	-31.565	-31.563	-31.526
	164	-31.397	-31.538	-31.544	-31.505
	165	-31.489	-31.608	-31.615	-31.566
	167	-31.345	-31.507	-31.514	-31.484
	168	-31.523	-31.618	-31.631	-31.598
	169	-31.495	-31.581	-31.590	-31.558
	Min	-31.523	-31.618	-31.631	-31.598
	Max	-31.345	-31.507	-31.514	-31.484
	Mean	-31.440	-31.570	-31.576	-31.540
	Std. Dev	7.17E-02	4.21E-02	4.41E-02	4.22E-02
	Mean - 3 Sigma	-31.655	-31.696	-31.708	-31.666
	Mean + 3 Sigma	-31.224	-31.443	-31.443	-31.413
Unbiased	170	-31.350	-31.467	-31.467	-31.433
	171	-31.463	-31.592	-31.594	-31.573
	172	-31.457	-31.566	-31.563	-31.572
	173	-31.410	-31.539	-31.555	-31.513
	174	-31.517	-31.645	-31.657	-31.613
	Min	-31.517	-31.645	-31.657	-31.613
	Max	-31.350	-31.467	-31.467	-31.433
	Mean	-31.439	-31.562	-31.567	-31.541
	Std. Dev	6.30E-02	6.57E-02	6.91E-02	7.01E-02
	Mean - 3 Sigma	-31.628	-31.759	-31.774	-31.751
	Mean + 3 Sigma	-31.250	-31.365	-31.360	-31.330

		0dB IL at 15GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-2.158	-1.960	-1.852	-2.221
Biased	163	-1.913	-1.896	-1.857	-2.143
	164	-2.035	-1.925	-1.860	-2.164
	165	-2.020	-1.886	-1.835	-2.180
	167	-2.048	-1.946	-1.857	-2.176
	168	-2.062	-1.952	-1.881	-2.128
	169	-1.969	-1.824	-1.858	-2.167
	Min	-2.062	-1.952	-1.881	-2.180
	Max	-1.913	-1.824	-1.835	-2.128
	Mean	-2.008	-1.905	-1.858	-2.160
	Std. Dev	5.65E-02	4.77E-02	1.45E-02	2.04E-02
	Mean - 3 Sigma	-2.177	-2.048	-1.901	-2.221
	Mean + 3 Sigma	-1.838	-1.762	-1.814	-2.099
Unbiased	170	-1.932	-1.911	-1.866	-2.248
	171	-1.911	-2.052	-1.836	-2.127
	172	-2.061	-1.972	-1.859	-2.152
	173	-2.001	-1.996	-1.814	-2.125
	174	-1.925	-1.866	-1.911	-2.114
	Min	-2.061	-2.052	-1.911	-2.248
	Max	-1.911	-1.866	-1.814	-2.114
	Mean	-1.966	-1.960	-1.857	-2.153
	Std. Dev	6.33E-02	7.29E-02	3.61E-02	5.50E-02
	Mean - 3 Sigma	-2.156	-2.178	-1.966	-2.318
	Mean + 3 Sigma	-1.776	-1.741	-1.749	-1.988

		0d5dB IL at 15GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-0.472	-0.472	-0.463	-0.464
Biased	163	-0.474	-0.474	-0.469	-0.463
	164	-0.469	-0.468	-0.464	-0.460
	165	-0.468	-0.468	-0.462	-0.461
	167	-0.472	-0.471	-0.466	-0.464
	168	-0.470	-0.468	-0.465	-0.465
	169	-0.473	-0.477	-0.475	-0.466
	Min	-0.474	-0.477	-0.475	-0.466
	Max	-0.468	-0.468	-0.462	-0.460
	Mean	-0.471	-0.471	-0.467	-0.463
	Std. Dev	2.33E-03	3.83E-03	4.58E-03	2.45E-03
	Mean - 3 Sigma	-0.478	-0.482	-0.481	-0.470
	Mean + 3 Sigma	-0.464	-0.459	-0.453	-0.456
Unbiased	170	-0.471	-0.465	-0.465	-0.465
	171	-0.475	-0.470	-0.475	-0.472
	172	-0.474	-0.469	-0.470	-0.469
	173	-0.474	-0.467	-0.468	-0.467
	174	-0.474	-0.472	-0.476	-0.471
	Min	-0.475	-0.472	-0.476	-0.472
	Max	-0.471	-0.465	-0.465	-0.465
	Mean	-0.474	-0.469	-0.471	-0.469
	Std. Dev	1.35E-03	2.81E-03	4.50E-03	3.16E-03
	Mean - 3 Sigma	-0.478	-0.477	-0.484	-0.478
	Mean + 3 Sigma	-0.469	-0.460	-0.457	-0.459

		1dB IL at 15GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-0.992	-0.992	-0.985	-0.983
Biased	163	-0.995	-0.995	-0.992	-0.990
	164	-0.992	-0.992	-0.990	-0.987
	165	-0.988	-0.989	-0.987	-0.984
	167	-0.990	-0.993	-0.990	-0.984
	168	-1.020	-0.995	-0.989	-0.990
	169	-0.998	-1.004	-1.004	-0.995
	Min	-1.020	-1.004	-1.004	-0.995
	Max	-0.988	-0.989	-0.987	-0.984
	Mean	-0.997	-0.995	-0.992	-0.988
	Std. Dev	1.19E-02	4.97E-03	5.93E-03	4.18E-03
	Mean - 3 Sigma	-1.033	-1.010	-1.010	-1.001
	Mean + 3 Sigma	-0.962	-0.980	-0.974	-0.976
Unbiased	170	-0.996	-0.992	-0.993	-0.993
	171	-0.998	-0.996	-0.999	-0.997
	172	-0.993	-0.994	-0.996	-0.993
	173	-1.000	-0.997	-0.998	-1.000
	174	-0.999	-1.001	-1.000	-0.998
	Min	-1.000	-1.001	-1.000	-1.000
	Max	-0.993	-0.992	-0.993	-0.993
	Mean	-0.997	-0.996	-0.997	-0.996
	Std. Dev	2.86E-03	3.54E-03	2.78E-03	3.04E-03
	Mean - 3 Sigma	-1.006	-1.007	-1.006	-1.006
	Mean + 3 Sigma	-0.989	-0.985	-0.989	-0.987

		2dB IL at 15GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-2.114	-2.110	-2.111	-2.108
Biased	163	-2.118	-2.123	-2.122	-2.118
	164	-2.113	-2.115	-2.114	-2.112
	165	-2.110	-2.114	-2.112	-2.113
	167	-2.112	-2.116	-2.115	-2.112
	168	-2.112	-2.118	-2.118	-2.116
	169	-2.112	-2.126	-2.128	-2.121
	Min	-2.118	-2.126	-2.128	-2.121
	Max	-2.110	-2.114	-2.112	-2.112
	Mean	-2.113	-2.119	-2.118	-2.115
	Std. Dev	2.77E-03	4.73E-03	5.82E-03	3.63E-03
	Mean - 3 Sigma	-2.121	-2.133	-2.136	-2.126
	Mean + 3 Sigma	-2.104	-2.104	-2.101	-2.104
Unbiased	170	-2.120	-2.122	-2.125	-2.128
	171	-2.117	-2.117	-2.124	-2.120
	172	-2.115	-2.118	-2.123	-2.119
	173	-2.122	-2.122	-2.124	-2.126
	174	-2.119	-2.124	-2.128	-2.123
	Min	-2.122	-2.124	-2.128	-2.128
	Max	-2.115	-2.117	-2.123	-2.119
	Mean	-2.119	-2.121	-2.125	-2.123
	Std. Dev	2.83E-03	2.74E-03	1.82E-03	3.74E-03
	Mean - 3 Sigma	-2.127	-2.129	-2.130	-2.134
	Mean + 3 Sigma	-2.110	-2.113	-2.119	-2.112

		4dB IL at 15GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-4.159	-4.160	-4.161	-4.159
Biased	163	-4.160	-4.170	-4.172	-4.173
	164	-4.151	-4.156	-4.159	-4.161
	165	-4.150	-4.161	-4.161	-4.164
	167	-4.151	-4.157	-4.162	-4.162
	168	-4.158	-4.163	-4.170	-4.175
	169	-4.153	-4.171	-4.175	-4.175
	Min	-4.160	-4.171	-4.175	-4.175
	Max	-4.150	-4.156	-4.159	-4.161
	Mean	-4.154	-4.163	-4.167	-4.169
	Std. Dev	4.29E-03	6.24E-03	6.69E-03	6.67E-03
	Mean - 3 Sigma	-4.167	-4.182	-4.187	-4.189
	Mean + 3 Sigma	-4.141	-4.144	-4.146	-4.149
Unbiased	170	-4.166	-4.171	-4.174	-4.181
	171	-4.161	-4.164	-4.174	-4.172
	172	-4.154	-4.161	-4.168	-4.168
	173	-4.164	-4.171	-4.173	-4.179
	174	-4.160	-4.172	-4.177	-4.174
	Min	-4.166	-4.172	-4.177	-4.181
	Max	-4.154	-4.161	-4.168	-4.168
	Mean	-4.161	-4.168	-4.173	-4.175
	Std. Dev	4.78E-03	4.90E-03	3.29E-03	5.35E-03
	Mean - 3 Sigma	-4.175	-4.183	-4.183	-4.191
	Mean + 3 Sigma	-4.147	-4.153	-4.163	-4.159

		8dB IL at 15GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-8.221	-8.220	-8.249	-8.246
Biased	163	-8.223	-8.256	-8.269	-8.277
	164	-8.212	-8.242	-8.255	-8.265
	165	-8.227	-8.253	-8.267	-8.268
	167	-8.202	-8.233	-8.252	-8.257
	168	-8.265	-8.265	-8.277	-8.289
	169	-8.250	-8.281	-8.292	-8.297
	Min	-8.265	-8.281	-8.292	-8.297
	Max	-8.202	-8.233	-8.252	-8.257
	Mean	-8.230	-8.255	-8.269	-8.275
	Std. Dev	2.35E-02	1.71E-02	1.47E-02	1.53E-02
	Mean - 3 Sigma	-8.300	-8.306	-8.313	-8.321
	Mean + 3 Sigma	-8.159	-8.204	-8.225	-8.230
Unbiased	170	-8.245	-8.274	-8.277	-8.291
	171	-8.238	-8.258	-8.271	-8.281
	172	-8.230	-8.264	-8.275	-8.283
	173	-8.243	-8.273	-8.282	-8.300
	174	-8.255	-8.290	-8.294	-8.294
	Min	-8.255	-8.290	-8.294	-8.300
	Max	-8.230	-8.258	-8.271	-8.281
	Mean	-8.242	-8.272	-8.280	-8.290
	Std. Dev	9.11E-03	1.24E-02	8.66E-03	7.60E-03
	Mean - 3 Sigma	-8.270	-8.309	-8.306	-8.313
	Mean + 3 Sigma	-8.215	-8.235	-8.254	-8.267

		16dB IL at 15GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-16.371	-16.400	-16.433	-16.432
Biased	163	-16.370	-16.450	-16.476	-16.484
	164	-16.360	-16.432	-16.455	-16.464
	165	-16.404	-16.463	-16.484	-16.485
	167	-16.334	-16.408	-16.438	-16.448
	168	-16.408	-16.479	-16.501	-16.517
	169	-16.400	-16.459	-16.480	-16.498
	Min	-16.408	-16.479	-16.501	-16.517
	Max	-16.334	-16.408	-16.438	-16.448
	Mean	-16.379	-16.449	-16.472	-16.483
	Std. Dev	2.97E-02	2.52E-02	2.24E-02	2.44E-02
	Mean - 3 Sigma	-16.469	-16.524	-16.540	-16.556
	Mean + 3 Sigma	-16.290	-16.373	-16.405	-16.409
Unbiased	170	-16.384	-16.451	-16.457	-16.469
	171	-16.392	-16.448	-16.465	-16.482
	172	-16.385	-16.453	-16.468	-16.483
	173	-16.384	-16.458	-16.476	-16.490
	174	-16.424	-16.498	-16.500	-16.505
	Min	-16.424	-16.498	-16.500	-16.505
	Max	-16.384	-16.448	-16.457	-16.469
	Mean	-16.394	-16.462	-16.473	-16.486
	Std. Dev	1.70E-02	2.07E-02	1.66E-02	1.30E-02
	Mean - 3 Sigma	-16.445	-16.524	-16.523	-16.525
	Mean + 3 Sigma	-16.343	-16.399	-16.424	-16.447

		31d5dB IL at 15GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-32.105	-32.100	-32.168	-32.158
Biased	163	-32.096	-32.238	-32.263	-32.227
	164	-32.089	-32.193	-32.220	-32.185
	165	-32.158	-32.259	-32.283	-32.249
	167	-32.063	-32.172	-32.197	-32.187
	168	-32.187	-32.279	-32.298	-32.291
	169	-32.149	-32.254	-32.269	-32.245
	Min	-32.187	-32.279	-32.298	-32.291
	Max	-32.063	-32.172	-32.197	-32.185
	Mean	-32.124	-32.232	-32.255	-32.231
	Std. Dev	4.81E-02	4.16E-02	3.86E-02	4.05E-02
	Mean - 3 Sigma	-32.268	-32.357	-32.371	-32.352
	Mean + 3 Sigma	-31.979	-32.108	-32.139	-32.109
Unbiased	170	-32.086	-32.172	-32.194	-32.168
	171	-32.137	-32.239	-32.253	-32.249
	172	-32.131	-32.222	-32.252	-32.240
	173	-32.111	-32.230	-32.244	-32.221
	174	-32.192	-32.300	-32.311	-32.284
	Min	-32.192	-32.300	-32.311	-32.284
	Max	-32.086	-32.172	-32.194	-32.168
	Mean	-32.132	-32.232	-32.251	-32.232
	Std. Dev	3.94E-02	4.58E-02	4.14E-02	4.27E-02
	Mean - 3 Sigma	-32.250	-32.370	-32.375	-32.361
	Mean + 3 Sigma	-32.014	-32.095	-32.127	-32.104

		0dB IL at 26GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-3.493	-3.210	-3.200	-3.799
Biased	163	-3.385	-3.202	-3.266	-3.378
	164	-3.486	-3.188	-3.210	-3.391
	165	-3.352	-3.153	-3.175	-3.418
	167	-3.540	-3.215	-3.236	-3.554
	168	-3.543	-3.164	-3.200	-3.386
	169	-3.559	-3.190	-3.249	-3.538
	Min	-3.559	-3.215	-3.266	-3.554
	Max	-3.352	-3.153	-3.175	-3.378
	Mean	-3.478	-3.185	-3.223	-3.444
	Std. Dev	8.86E-02	2.30E-02	3.37E-02	8.03E-02
	Mean - 3 Sigma	-3.744	-3.254	-3.324	-3.685
	Mean + 3 Sigma	-3.212	-3.116	-3.121	-3.203
Unbiased	170	-3.360	-3.250	-3.309	-3.536
	171	-3.317	-3.218	-3.238	-3.373
	172	-3.599	-3.199	-3.222	-3.334
	173	-3.554	-3.290	-3.268	-3.467
	174	-3.353	-3.220	-3.239	-3.386
	Min	-3.599	-3.290	-3.309	-3.536
	Max	-3.317	-3.199	-3.222	-3.334
	Mean	-3.437	-3.236	-3.255	-3.419
	Std. Dev	1.30E-01	3.56E-02	3.43E-02	8.11E-02
	Mean - 3 Sigma	-3.826	-3.343	-3.358	-3.662
	Mean + 3 Sigma	-3.047	-3.129	-3.152	-3.176

		0d5dB IL at 26GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-0.576	-0.576	-0.561	-0.565
Biased	163	-0.578	-0.575	-0.569	-0.560
	164	-0.574	-0.564	-0.558	-0.554
	165	-0.569	-0.567	-0.561	-0.557
	167	-0.571	-0.568	-0.562	-0.558
	168	-0.575	-0.568	-0.562	-0.560
	169	-0.576	-0.578	-0.577	-0.564
	Min	-0.578	-0.578	-0.577	-0.564
	Max	-0.569	-0.564	-0.558	-0.554
	Mean	-0.574	-0.570	-0.565	-0.559
	Std. Dev	3.40E-03	5.39E-03	6.94E-03	3.47E-03
	Mean - 3 Sigma	-0.584	-0.586	-0.586	-0.569
	Mean + 3 Sigma	-0.564	-0.554	-0.544	-0.548
Unbiased	170	-0.579	-0.569	-0.570	-0.571
	171	-0.575	-0.569	-0.575	-0.572
	172	-0.573	-0.566	-0.568	-0.563
	173	-0.581	-0.571	-0.571	-0.570
	174	-0.576	-0.573	-0.575	-0.569
	Min	-0.581	-0.573	-0.575	-0.572
	Max	-0.573	-0.566	-0.568	-0.563
	Mean	-0.577	-0.570	-0.572	-0.569
	Std. Dev	3.33E-03	2.46E-03	3.16E-03	3.39E-03
	Mean - 3 Sigma	-0.587	-0.577	-0.581	-0.579
	Mean + 3 Sigma	-0.567	-0.562	-0.562	-0.559

		1dB IL at 26GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-1.051	-1.050	-1.037	-1.028
Biased	163	-1.050	-1.053	-1.045	-1.039
	164	-1.045	-1.042	-1.036	-1.028
	165	-1.041	-1.045	-1.037	-1.035
	167	-1.047	-1.045	-1.039	-1.039
	168	-1.054	-1.048	-1.044	-1.041
	169	-1.052	-1.058	-1.059	-1.047
	Min	-1.054	-1.058	-1.059	-1.047
	Max	-1.041	-1.042	-1.036	-1.028
	Mean	-1.048	-1.049	-1.043	-1.038
	Std. Dev	4.95E-03	6.20E-03	8.47E-03	6.52E-03
	Mean - 3 Sigma	-1.063	-1.067	-1.069	-1.058
	Mean + 3 Sigma	-1.033	-1.030	-1.018	-1.019
Unbiased	170	-1.051	-1.049	-1.048	-1.051
	171	-1.049	-1.049	-1.053	-1.052
	172	-1.051	-1.045	-1.046	-1.043
	173	-1.059	-1.053	-1.052	-1.053
	174	-1.051	-1.052	-1.054	-1.051
	Min	-1.059	-1.053	-1.054	-1.053
	Max	-1.049	-1.045	-1.046	-1.043
	Mean	-1.053	-1.049	-1.051	-1.050
	Std. Dev	3.96E-03	3.02E-03	3.42E-03	4.09E-03
	Mean - 3 Sigma	-1.064	-1.059	-1.061	-1.062
	Mean + 3 Sigma	-1.041	-1.040	-1.040	-1.038

		2dB IL at 26GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-2.225	-2.220	-2.209	-2.226
Biased	163	-2.226	-2.226	-2.223	-2.215
	164	-2.218	-2.213	-2.212	-2.203
	165	-2.212	-2.213	-2.213	-2.213
	167	-2.222	-2.217	-2.216	-2.218
	168	-2.226	-2.219	-2.215	-2.215
	169	-2.223	-2.231	-2.234	-2.225
	Min	-2.226	-2.231	-2.234	-2.225
	Max	-2.212	-2.213	-2.212	-2.203
	Mean	-2.221	-2.220	-2.219	-2.215
	Std. Dev	5.31E-03	7.43E-03	8.66E-03	7.26E-03
	Mean - 3 Sigma	-2.237	-2.242	-2.245	-2.237
	Mean + 3 Sigma	-2.205	-2.197	-2.193	-2.193
Unbiased	170	-2.236	-2.234	-2.236	-2.243
	171	-2.218	-2.221	-2.223	-2.222
	172	-2.220	-2.217	-2.221	-2.215
	173	-2.236	-2.234	-2.230	-2.237
	174	-2.221	-2.224	-2.224	-2.222
	Min	-2.236	-2.234	-2.236	-2.243
	Max	-2.218	-2.217	-2.221	-2.215
	Mean	-2.226	-2.226	-2.227	-2.228
	Std. Dev	9.06E-03	7.85E-03	6.40E-03	1.17E-02
	Mean - 3 Sigma	-2.254	-2.249	-2.246	-2.263
	Mean + 3 Sigma	-2.199	-2.202	-2.208	-2.193

		4dB IL at 26GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-4.455	-4.450	-4.447	-4.467
Biased	163	-4.457	-4.460	-4.463	-4.457
	164	-4.437	-4.437	-4.436	-4.436
	165	-4.431	-4.444	-4.443	-4.450
	167	-4.438	-4.442	-4.441	-4.451
	168	-4.451	-4.453	-4.456	-4.459
	169	-4.443	-4.464	-4.469	-4.467
	Min	-4.457	-4.464	-4.469	-4.467
	Max	-4.431	-4.437	-4.436	-4.436
	Mean	-4.443	-4.450	-4.452	-4.453
	Std. Dev	9.32E-03	1.06E-02	1.31E-02	1.06E-02
	Mean - 3 Sigma	-4.471	-4.482	-4.491	-4.485
	Mean + 3 Sigma	-4.415	-4.418	-4.412	-4.421
Unbiased	170	-4.471	-4.482	-4.486	-4.498
	171	-4.442	-4.452	-4.456	-4.461
	172	-4.441	-4.451	-4.450	-4.447
	173	-4.469	-4.479	-4.475	-4.487
	174	-4.443	-4.455	-4.457	-4.457
	Min	-4.471	-4.482	-4.486	-4.498
	Max	-4.441	-4.451	-4.450	-4.447
	Mean	-4.453	-4.464	-4.465	-4.470
	Std. Dev	1.53E-02	1.55E-02	1.51E-02	2.16E-02
	Mean - 3 Sigma	-4.499	-4.511	-4.510	-4.535
	Mean + 3 Sigma	-4.407	-4.417	-4.420	-4.405

		8dB IL at 26GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-8.372	-8.360	-8.384	-8.427
Biased	163	-8.367	-8.399	-8.413	-8.405
	164	-8.361	-8.384	-8.390	-8.375
	165	-8.383	-8.408	-8.414	-8.423
	167	-8.367	-8.378	-8.388	-8.404
	168	-8.394	-8.402	-8.413	-8.410
	169	-8.387	-8.419	-8.437	-8.437
	Min	-8.394	-8.419	-8.437	-8.437
	Max	-8.361	-8.378	-8.388	-8.375
	Mean	-8.377	-8.398	-8.409	-8.409
	Std. Dev	1.34E-02	1.51E-02	1.81E-02	2.09E-02
	Mean - 3 Sigma	-8.417	-8.444	-8.463	-8.472
	Mean + 3 Sigma	-8.336	-8.353	-8.355	-8.346
Unbiased	170	-8.364	-8.402	-8.403	-8.416
	171	-8.383	-8.417	-8.426	-8.438
	172	-8.396	-8.406	-8.412	-8.414
	173	-8.398	-8.417	-8.419	-8.426
	174	-8.397	-8.426	-8.430	-8.432
	Min	-8.398	-8.426	-8.430	-8.438
	Max	-8.364	-8.402	-8.403	-8.414
	Mean	-8.388	-8.414	-8.418	-8.425
	Std. Dev	1.43E-02	9.58E-03	1.09E-02	1.03E-02
	Mean - 3 Sigma	-8.431	-8.442	-8.450	-8.456
	Mean + 3 Sigma	-8.344	-8.385	-8.385	-8.394

		16dB IL at 26GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-16.637	-16.600	-16.676	-16.729
Biased	163	-16.648	-16.712	-16.737	-16.723
	164	-16.628	-16.683	-16.709	-16.691
	165	-16.675	-16.731	-16.751	-16.755
	167	-16.612	-16.661	-16.683	-16.709
	168	-16.676	-16.725	-16.745	-16.748
	169	-16.630	-16.700	-16.731	-16.737
	Min	-16.676	-16.731	-16.751	-16.755
	Max	-16.612	-16.661	-16.683	-16.691
	Mean	-16.645	-16.702	-16.726	-16.727
	Std. Dev	2.64E-02	2.66E-02	2.54E-02	2.46E-02
	Mean - 3 Sigma	-16.724	-16.782	-16.802	-16.801
	Mean + 3 Sigma	-16.566	-16.622	-16.650	-16.653
Unbiased	170	-16.613	-16.686	-16.690	-16.711
	171	-16.642	-16.708	-16.725	-16.741
	172	-16.661	-16.701	-16.719	-16.721
	173	-16.652	-16.708	-16.717	-16.729
	174	-16.671	-16.727	-16.738	-16.748
	Min	-16.671	-16.727	-16.738	-16.748
	Max	-16.613	-16.686	-16.690	-16.711
	Mean	-16.648	-16.706	-16.718	-16.730
	Std. Dev	2.24E-02	1.49E-02	1.75E-02	1.46E-02
	Mean - 3 Sigma	-16.715	-16.751	-16.770	-16.774
	Mean + 3 Sigma	-16.581	-16.661	-16.665	-16.686

		31d5dB IL at 26GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-32.664	-32.600	-32.713	-32.752
Biased	163	-32.726	-32.773	-32.828	-32.749
	164	-32.651	-32.683	-32.771	-32.705
	165	-32.707	-32.810	-32.843	-32.807
	167	-32.516	-32.589	-32.619	-32.646
	168	-32.673	-32.795	-32.820	-32.788
	169	-32.583	-32.716	-32.755	-32.690
	Min	-32.726	-32.810	-32.843	-32.807
	Max	-32.516	-32.589	-32.619	-32.646
	Mean	-32.643	-32.728	-32.773	-32.731
	Std. Dev	7.96E-02	8.33E-02	8.27E-02	6.15E-02
	Mean - 3 Sigma	-32.881	-32.978	-33.021	-32.915
	Mean + 3 Sigma	-32.404	-32.478	-32.524	-32.547
Unbiased	170	-32.605	-32.709	-32.742	-32.737
	171	-32.612	-32.716	-32.736	-32.726
	172	-32.653	-32.696	-32.778	-32.706
	173	-32.646	-32.695	-32.721	-32.752
	174	-32.689	-32.730	-32.756	-32.768
	Min	-32.689	-32.730	-32.778	-32.768
	Max	-32.605	-32.695	-32.721	-32.706
	Mean	-32.641	-32.709	-32.747	-32.738
	Std. Dev	3.39E-02	1.47E-02	2.17E-02	2.37E-02
	Mean - 3 Sigma	-32.743	-32.753	-32.812	-32.809
	Mean + 3 Sigma	-32.539	-32.665	-32.682	-32.667

		0dB IL at 32GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-5.623	-5.260	-5.252	-5.395
Biased	163	-5.453	-5.296	-5.237	-5.369
	164	-5.666	-5.204	-5.160	-5.324
	165	-5.373	-5.224	-5.188	-5.393
	167	-5.385	-5.274	-5.219	-5.420
	168	-5.261	-5.225	-5.167	-5.347
	169	-5.298	-5.348	-5.334	-5.472
	Min	-5.666	-5.348	-5.334	-5.472
	Max	-5.261	-5.204	-5.160	-5.324
	Mean	-5.406	-5.262	-5.217	-5.387
	Std. Dev	1.44E-01	5.46E-02	6.44E-02	5.33E-02
	Mean - 3 Sigma	-5.839	-5.426	-5.411	-5.547
	Mean + 3 Sigma	-4.973	-5.098	-5.024	-5.228
Unbiased	170	-5.497	-5.391	-5.361	-5.515
	171	-5.433	-5.279	-5.300	-5.424
	172	-5.240	-5.262	-5.217	-5.303
	173	-5.501	-5.425	-5.358	-5.574
	174	-5.485	-5.294	-5.198	-5.400
	Min	-5.501	-5.425	-5.361	-5.574
	Max	-5.240	-5.262	-5.198	-5.303
	Mean	-5.431	-5.330	-5.287	-5.443
	Std. Dev	1.10E-01	7.31E-02	7.64E-02	1.05E-01
	Mean - 3 Sigma	-5.763	-5.549	-5.516	-5.758
	Mean + 3 Sigma	-5.100	-5.111	-5.058	-5.127

		0d5dB IL at 32GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-0.463	-0.462	-0.451	-0.454
Biased	163	-0.462	-0.464	-0.459	-0.454
	164	-0.464	-0.463	-0.459	-0.455
	165	-0.460	-0.459	-0.456	-0.450
	167	-0.462	-0.459	-0.455	-0.451
	168	-0.467	-0.462	-0.456	-0.454
	169	-0.462	-0.462	-0.462	-0.452
	Min	-0.467	-0.464	-0.462	-0.455
	Max	-0.460	-0.459	-0.455	-0.450
	Mean	-0.463	-0.461	-0.458	-0.453
	Std. Dev	2.31E-03	2.19E-03	2.56E-03	1.91E-03
	Mean - 3 Sigma	-0.470	-0.468	-0.466	-0.458
	Mean + 3 Sigma	-0.456	-0.455	-0.450	-0.447
Unbiased	170	-0.454	-0.451	-0.451	-0.450
	171	-0.462	-0.461	-0.464	-0.458
	172	-0.465	-0.460	-0.463	-0.462
	173	-0.457	-0.452	-0.455	-0.450
	174	-0.464	-0.463	-0.468	-0.463
	Min	-0.465	-0.463	-0.468	-0.463
	Max	-0.454	-0.451	-0.451	-0.450
	Mean	-0.460	-0.457	-0.460	-0.456
	Std. Dev	4.79E-03	5.54E-03	7.03E-03	6.18E-03
	Mean - 3 Sigma	-0.475	-0.474	-0.481	-0.475
	Mean + 3 Sigma	-0.446	-0.441	-0.439	-0.438

		1dB IL at 32GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-0.882	-0.876	-0.867	-0.868
Biased	163	-0.874	-0.874	-0.870	-0.863
	164	-0.880	-0.875	-0.874	-0.865
	165	-0.884	-0.878	-0.877	-0.866
	167	-0.874	-0.874	-0.869	-0.862
	168	-0.884	-0.877	-0.874	-0.866
	169	-0.883	-0.876	-0.878	-0.860
	Min	-0.884	-0.878	-0.878	-0.866
	Max	-0.874	-0.874	-0.869	-0.860
	Mean	-0.880	-0.876	-0.874	-0.864
	Std. Dev	4.58E-03	1.78E-03	3.44E-03	2.48E-03
	Mean - 3 Sigma	-0.894	-0.881	-0.884	-0.871
	Mean + 3 Sigma	-0.866	-0.870	-0.863	-0.856
Unbiased	170	-0.868	-0.860	-0.859	-0.851
	171	-0.879	-0.877	-0.878	-0.872
	172	-0.883	-0.874	-0.877	-0.871
	173	-0.875	-0.865	-0.869	-0.862
	174	-0.881	-0.877	-0.880	-0.872
	Min	-0.883	-0.877	-0.880	-0.872
	Max	-0.868	-0.860	-0.859	-0.851
	Mean	-0.877	-0.871	-0.873	-0.865
	Std. Dev	5.81E-03	7.79E-03	8.59E-03	9.20E-03
	Mean - 3 Sigma	-0.895	-0.894	-0.898	-0.893
	Mean + 3 Sigma	-0.860	-0.847	-0.847	-0.838

		2dB IL at 32GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-1.986	-1.970	-1.959	-1.968
Biased	163	-1.966	-1.957	-1.954	-1.936
	164	-1.988	-1.962	-1.965	-1.949
	165	-2.002	-1.978	-1.976	-1.963
	167	-1.971	-1.958	-1.957	-1.949
	168	-1.982	-1.960	-1.956	-1.942
	169	-1.975	-1.945	-1.945	-1.930
	Min	-2.002	-1.978	-1.976	-1.963
	Max	-1.966	-1.945	-1.945	-1.930
	Mean	-1.980	-1.960	-1.959	-1.945
	Std. Dev	1.31E-02	1.06E-02	1.07E-02	1.17E-02
	Mean - 3 Sigma	-2.020	-1.992	-1.991	-1.980
	Mean + 3 Sigma	-1.941	-1.928	-1.927	-1.910
Unbiased	170	-1.974	-1.951	-1.950	-1.931
	171	-1.968	-1.954	-1.955	-1.946
	172	-1.978	-1.955	-1.961	-1.948
	173	-1.960	-1.936	-1.941	-1.925
	174	-1.967	-1.947	-1.951	-1.937
	Min	-1.978	-1.955	-1.961	-1.948
	Max	-1.960	-1.936	-1.941	-1.925
	Mean	-1.970	-1.949	-1.952	-1.937
	Std. Dev	6.92E-03	7.76E-03	7.31E-03	1.01E-02
	Mean - 3 Sigma	-1.990	-1.972	-1.974	-1.968
	Mean + 3 Sigma	-1.949	-1.925	-1.930	-1.907

		4dB IL at 32GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-3.869	-3.830	-3.833	-3.835
Biased	163	-3.840	-3.831	-3.836	-3.828
	164	-3.878	-3.849	-3.859	-3.847
	165	-3.874	-3.836	-3.855	-3.839
	167	-3.828	-3.826	-3.835	-3.815
	168	-3.865	-3.846	-3.841	-3.834
	169	-3.846	-3.805	-3.815	-3.805
	Min	-3.878	-3.849	-3.859	-3.847
Max	-3.828	-3.805	-3.815	-3.805	
Mean	-3.855	-3.832	-3.840	-3.828	
Std. Dev	2.02E-02	1.59E-02	1.59E-02	1.55E-02	
Mean - 3 Sigma	-3.916	-3.880	-3.888	-3.875	
Mean + 3 Sigma	-3.795	-3.785	-3.792	-3.781	
Unbiased	170	-3.852	-3.831	-3.835	-3.820
	171	-3.837	-3.826	-3.822	-3.806
	172	-3.834	-3.830	-3.840	-3.824
	173	-3.823	-3.812	-3.816	-3.808
	174	-3.843	-3.822	-3.823	-3.813
Min	-3.852	-3.831	-3.840	-3.824	
Max	-3.823	-3.812	-3.816	-3.806	
Mean	-3.838	-3.824	-3.827	-3.814	
Std. Dev	1.07E-02	7.85E-03	9.91E-03	7.86E-03	
Mean - 3 Sigma	-3.870	-3.848	-3.857	-3.838	
Mean + 3 Sigma	-3.806	-3.801	-3.797	-3.790	

		8dB IL at 32GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-7.565	-7.510	-7.522	-7.559
Biased	163	-7.469	-7.504	-7.510	-7.484
	164	-7.533	-7.503	-7.515	-7.488
	165	-7.563	-7.550	-7.535	-7.539
	167	-7.493	-7.489	-7.479	-7.517
	168	-7.540	-7.523	-7.528	-7.529
	169	-7.497	-7.458	-7.477	-7.469
	Min	-7.563	-7.550	-7.535	-7.539
	Max	-7.469	-7.458	-7.477	-7.469
	Mean	-7.516	-7.504	-7.507	-7.504
	Std. Dev	3.54E-02	3.09E-02	2.45E-02	2.79E-02
	Mean - 3 Sigma	-7.622	-7.597	-7.581	-7.588
	Mean + 3 Sigma	-7.409	-7.412	-7.434	-7.421
Unbiased	170	-7.434	-7.447	-7.443	-7.432
	171	-7.469	-7.496	-7.502	-7.498
	172	-7.550	-7.506	-7.515	-7.509
	173	-7.442	-7.421	-7.455	-7.416
	174	-7.490	-7.493	-7.516	-7.493
	Min	-7.550	-7.506	-7.516	-7.509
	Max	-7.434	-7.421	-7.443	-7.416
	Mean	-7.477	-7.473	-7.486	-7.470
	Std. Dev	4.63E-02	3.69E-02	3.48E-02	4.23E-02
	Mean - 3 Sigma	-7.616	-7.584	-7.591	-7.596
	Mean + 3 Sigma	-7.338	-7.362	-7.382	-7.343

		16dB IL at 32GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-15.393	-15.300	-15.365	-15.421
Biased	163	-15.293	-15.358	-15.379	-15.343
	164	-15.370	-15.361	-15.398	-15.360
	165	-15.414	-15.411	-15.425	-15.419
	167	-15.281	-15.298	-15.307	-15.354
	168	-15.374	-15.393	-15.402	-15.388
	169	-15.265	-15.248	-15.273	-15.272
	Min	-15.414	-15.411	-15.425	-15.419
	Max	-15.265	-15.248	-15.273	-15.272
	Mean	-15.333	-15.345	-15.364	-15.356
	Std. Dev	6.09E-02	6.13E-02	6.01E-02	4.95E-02
	Mean - 3 Sigma	-15.516	-15.529	-15.544	-15.504
	Mean + 3 Sigma	-15.150	-15.161	-15.184	-15.208
Unbiased	170	-15.221	-15.271	-15.260	-15.247
	171	-15.244	-15.309	-15.305	-15.312
	172	-15.351	-15.323	-15.349	-15.340
	173	-15.223	-15.223	-15.265	-15.228
	174	-15.292	-15.309	-15.335	-15.320
	Min	-15.351	-15.323	-15.349	-15.340
	Max	-15.221	-15.223	-15.260	-15.228
	Mean	-15.266	-15.287	-15.303	-15.289
	Std. Dev	5.53E-02	4.06E-02	4.03E-02	4.91E-02
	Mean - 3 Sigma	-15.432	-15.409	-15.424	-15.437
	Mean + 3 Sigma	-15.101	-15.165	-15.182	-15.142

		31d5dB IL at 32GHz (dB)			
	SN	PRE	100k	24 Hour Anneal	168 Hour Anneal
CTRL	199	-30.940	-30.900	-30.941	-31.050
Biased	163	-31.004	-31.100	-31.120	-30.960
	164	-31.031	-30.999	-31.147	-30.989
	165	-31.045	-31.088	-31.109	-31.059
	167	-30.752	-30.797	-30.765	-30.859
	168	-30.902	-31.104	-31.004	-30.937
	169	-30.712	-30.881	-30.856	-30.778
	Min	-31.045	-31.104	-31.147	-31.059
Max	-30.712	-30.797	-30.765	-30.778	
Mean	-30.908	-30.995	-31.000	-30.930	
Std. Dev	1.45E-01	1.30E-01	1.57E-01	9.92E-02	
Mean - 3 Sigma	-31.344	-31.384	-31.472	-31.228	
Mean + 3 Sigma	-30.471	-30.606	-30.528	-30.633	
Unbiased	170	-30.758	-30.917	-30.844	-30.793
	171	-30.745	-30.903	-30.829	-30.887
	172	-30.867	-30.868	-30.966	-30.840
	173	-30.827	-30.851	-30.870	-30.868
	174	-30.889	-30.906	-30.872	-30.933
	Min	-30.889	-30.917	-30.966	-30.933
	Max	-30.745	-30.851	-30.829	-30.793
Mean	-30.817	-30.889	-30.876	-30.864	
Std. Dev	6.38E-02	2.81E-02	5.33E-02	5.22E-02	
Mean - 3 Sigma	-31.009	-30.973	-31.036	-31.021	
Mean + 3 Sigma	-30.626	-30.805	-30.716	-30.708	





















