ANALOG DEVICES

AHEAD OF WHAT'S POSSIBLE™

Total-Ionizing Dose Test Report for RH5596S 100MHz to 40GHz Linear-in-dB RMS Power Detector

December, 2019

Radiation Test Report	
Product:	RH5596S
Gamma:	HDR: 30K, 50K, 100K
Gamma Source:	Co60/TM1019
Dose Rate:	High dose rate: 50 – 300 rad(Si)/sec
Facilities:	Defense Micro-Electronics Activity (DMEA)
Tested:	Nov. 2019

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I. Introduction

This is a report summarizing the total-ionizing dose (TID) radiation lot testing results for RH5596S. The qualification tests were carried out per MIL-STD-883 TM1019 condition A at high dose rate. RH5596S passes all electrical parametric tests up to 100Krad(Si).

II. Device Description

RH5596S is 100MHz to 40GHz Linear-in-dB RMS Power Detector. RH5596S was fabricated with Jazz Semiconductor 0.18um SiGe BiCMOS process. For TID testing purposes, the parts were assembled in a 8-Lead (2mmx2mm) Plastic DFN. Table I displays the part and test information. Figure 2.1 shows the pin configurations.

Table I

Test and part information.

Part Number:	RH5596S
Manufacturer:	Analog Devices Inc.
Part Function:	RMS Power Detector
Process Technology:	0.18um SiGe BiCMOS
Package Type:	8-Lead Plastic DFN
Sample Quantity:	12 biased and 12 unbiased for 100K irradiation 4 biased and 4 unbiased for 30K, 50K irradiation
Dose rate:	High dose rate: 50 – 300 rad(Si)/sec
Test Equipment:	LTX TS80 Automated Tester LT5596 Family Board

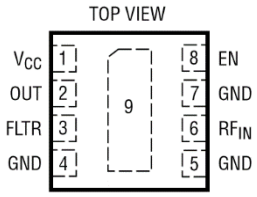

Figure 2.1. 8 lead pin configurations for the RH5596S

III. Test Method

A. Irradiation procedures

The samples were irradiated in dose steps. The high dose rate testing was carried out at DMEA, the samples were hand carried back on dry ice to ADI ‘s facility for ATE testing.

Radiation facility: The irradiations were carried out at Defense Micro-Electronics Activity (DMEA) facility using JL Shephard ^{60}Co gamma ray sources. The devices under test (DUT) were placed inside a chamber with standard Pb/Al shielding. The irradiation procedures and dosimetry requirements conform to MIL-STD-883-K TM1019.9. Dosimetry was performed using air ionization chamber.

Pre-Irradiation burn-in: The test samples were burned-in prior to irradiation

Over-test: No over-test was included.

Post-irradiation anneal: No annealing was performed.

Test temperature: Room temperature controlled to 24°C±6°C.

B. Irradiation bias setup

Figure 3.1 shows a schematic diagram for devices that were irradiated under bias. High dose rate irradiation was performed on 40 units from 30K, 50K and 100K. There were 4 unique units each for biased and unbiased for 30Krad (Si) and 50Krad (Si), 12 unique units each for biased and unbiased for 100Krad(Si). For all unbiased units, samples had all pins grounded during irradiation. In addition, 3 samples were used as control units.

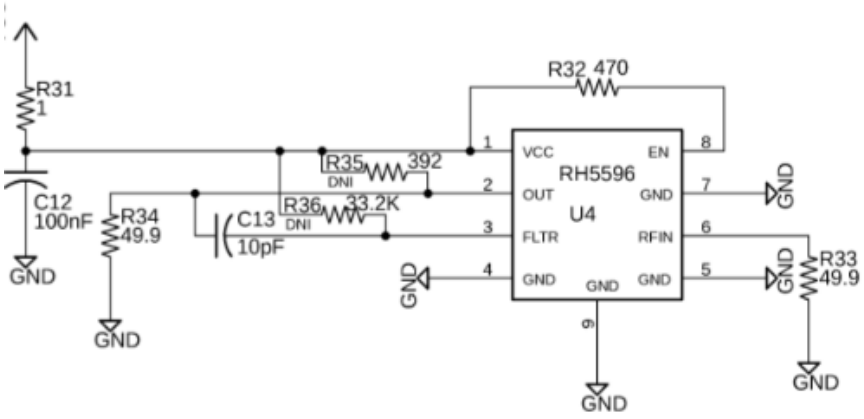

Figure 3.1. Irradiation bias configuration for the RH5596S

IV. Results

The radiation tests showed that all parts irradiated at high dose rate passed TID of 100Krad(Si).

Figure 4.1 through 4.7 show plots of all measured parameters versus total ionizing dose. In the data plots, the triangle marker is the average of the measured data points for the samples irradiated under electrical bias while the square marker is the average of the measured data points for the sample under no electrical bias (all pins tied to GND). KTL value (2.742) with the standard deviation and average are also applied in the plots with the dash lines.

Note that the following criteria must be met for a device to pass the high dose rate test: following the radiation exposure each of the samples irradiated under electrical bias and no bias shall pass the specification limits. The KTL statistics included in the report are for reference only. If any of the samples irradiated under electrical bias and no bias exceed the device post radiation data sheet specification limits, then the lot could be logged as a failure.

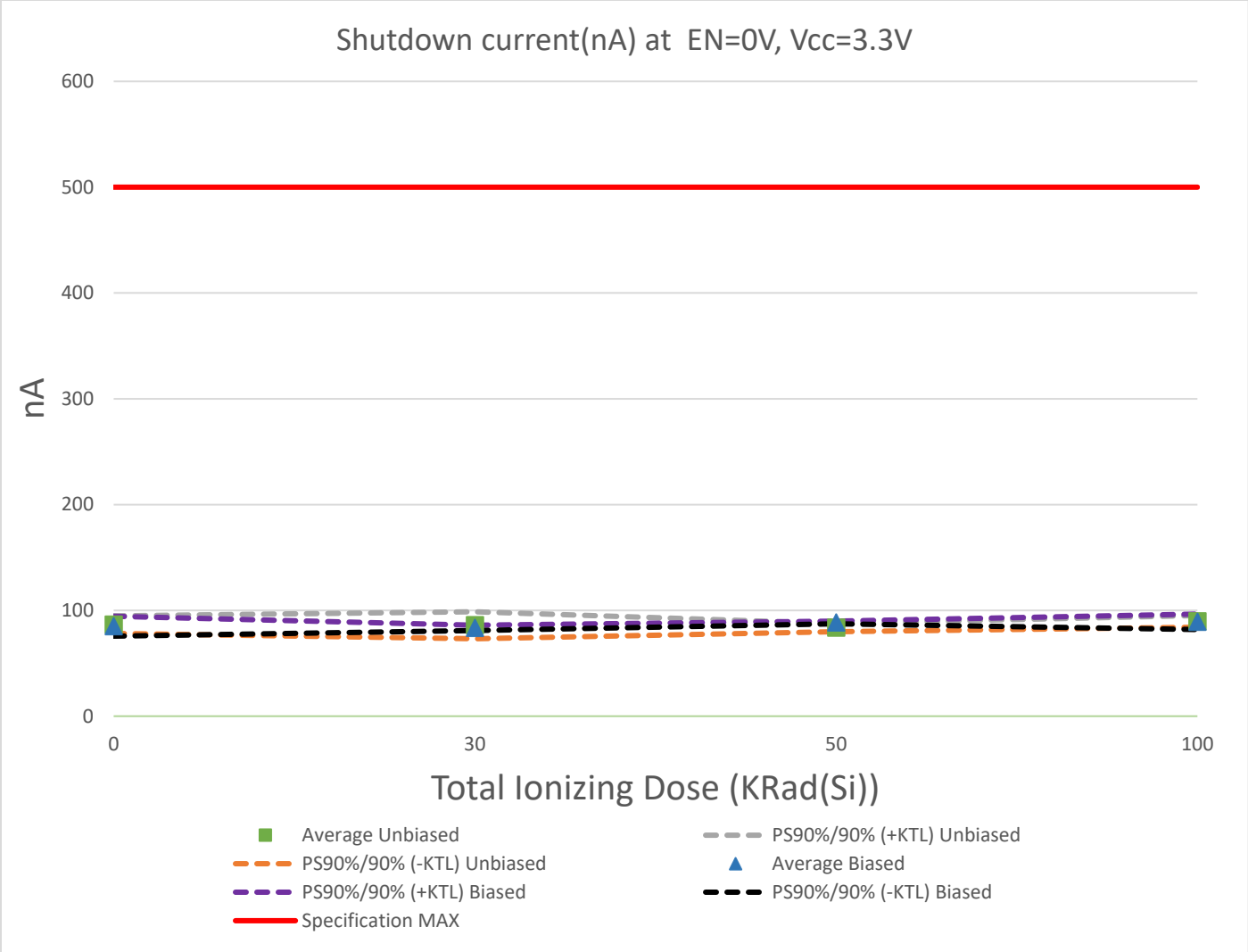

Figure 4.1 Shutdown current at EN = 0V, Vcc =3.3V

Table 4.1 Raw data for shutdown current at EN = 0V, Vcc =3.3V versus total dose, including the statistical analysis, specification and the status of the testing (pass/fail)

Parameter (T#12)	ICC_OFF_PRE_ABS_MAX_EN=0.0V_VCC=3.3V	Total Dose (kRad(Si)) @ 50 Rad(Si)/s			
Device #	(nA)	0	30	50	100
25	Biased	82.6	83.8		
26	Biased	85.4	83.0		
27	Biased	82.2	82.5		
28	Biased	80.4	84.6		
29	Unbiased	81.1	81.4		
30	Unbiased	85.6	82.6		
31	Unbiased	90.2	88.9		
32	Unbiased	88.6	90.9		
33	Biased	89.6		87.9	
34	Biased	89.7		88.8	
35	Biased	87.4		88.7	
36	Biased	90.0		89.0	
37	Unbiased	82.7		84.9	
38	Unbiased	83.3		82.1	
39	Unbiased	85.2		84.8	
40	Unbiased	87.8		83.0	
1	Biased	89.9			87.8
2	Biased	82.0			86.7
3	Biased	85.1			89.8
4	Biased	86.4			91.9
5	Biased	85.4			87.4
6	Biased	86.3			88.8
13	Biased	80.1			86.8
14	Biased	83.2			88.6
15	Biased	86.5			92.5
16	Biased	82.9			94.5
17	Biased	81.0			90.1
18	Biased	81.9			85.7
7	Unbiased	85.5			90.5
8	Unbiased	88.4			90.9
9	Unbiased	90.8			91.8
10	Unbiased	90.1			90.8
11	Unbiased	81.5			88.3
12	Unbiased	88.7			86.0

19	Unbiased	86.1			90.4
20	Unbiased	84.7			87.5
21	Unbiased	88.9			89.1
22	Unbiased	88.7			93.3
23	Unbiased	83.4			88.2
24	Unbiased	85.6			88.8
55	CTRL	89.9	87.8	87.8	87.8
56	CTRL	83.1	89.2	89.2	89.2
60	CTRL	85.7	90.4	90.4	90.4
Unbiased Irradiation Statistics					
Average Unbiased		86.5	85.9	83.7	89.6
Std Deviation Unbiased		3.0	4.6	1.4	2.0
PS90%/90% (+KTL) Unbiased		94.8	98.7	87.6	95.2
PS90%/90% (-KTL) Unbiased		78.2	73.2	79.8	84.1
Biased Irradiation Statistics					
Average Biased		85.0	83.5	88.6	89.2
Std Deviation Biased		3.4	0.9	0.5	2.7
PS90%/90% (+KTL) Biased		94.4	86.0	89.9	96.5
PS90%/90% (-KTL) Biased		75.6	81.0	87.3	81.9
Specification MAX		500	500	500	500
Status Unbiased		PASS	PASS	PASS	PASS
Status Biased		PASS	PASS	PASS	PASS

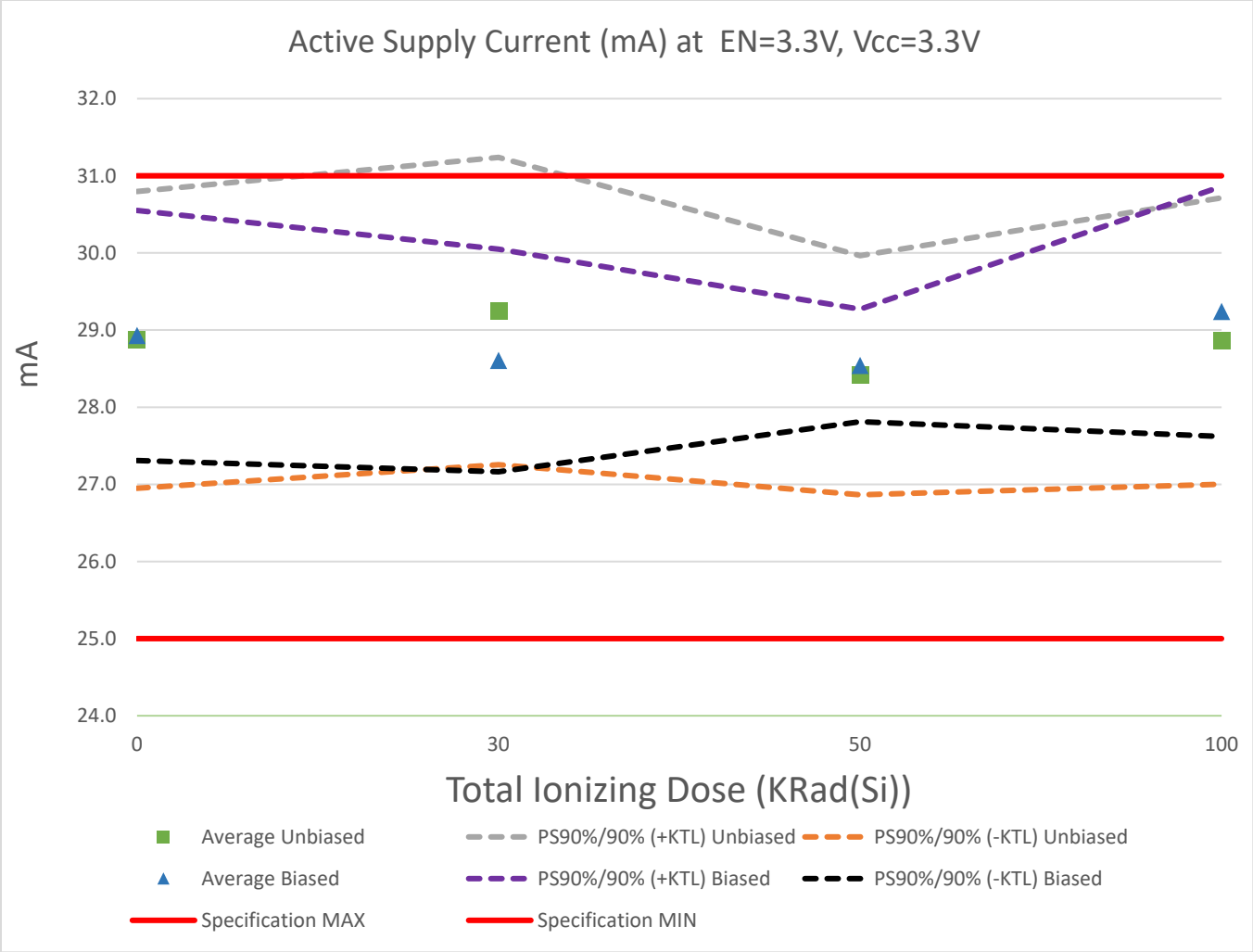

Figure 4.2 Active supply current at EN=3.3V, Vcc =3.3V

Table 4.2 Raw data for active supply current at EN=3.3V, Vcc =3.3V versus total dose, including the statistical analysis, specification and the status of the testing (pass/fail)

Parameter (T#27)	ICC_ON_POST_MAX_EN=3.3V_VCC=3.3V	Total Dose (kRad(Si)) @ 50 Rad(Si)/s			
Device #	(mA)	0	30	50	100
25	Biased	29.2	29.1		
26	Biased	29.0	29.0		
27	Biased	28.4	28.4		
28	Biased	28.0	28.0		
29	Unbiased	28.7	28.7		
30	Unbiased	28.7	28.7		
31	Unbiased	29.3	29.3		
32	Unbiased	30.3	30.3		
33	Biased	28.8		28.9	
34	Biased	28.3		28.2	
35	Biased	28.5		28.4	
36	Biased	28.7		28.6	
37	Unbiased	27.8		27.8	
38	Unbiased	28.9		28.9	
39	Unbiased	28.1		28.1	
40	Unbiased	28.9		28.9	
1	Biased	29.2			29.3
2	Biased	28.8			28.9
3	Biased	29.5			29.5
4	Biased	28.4			28.5
5	Biased	28.5			28.5
6	Biased	29.8			29.8
13	Biased	29.8			29.8
14	Biased	28.9			28.9
15	Biased	28.9			28.8
16	Biased	28.8			28.8
17	Biased	30.1			30.1
18	Biased	30.2			30.1
7	Unbiased	28.5			28.4
8	Unbiased	28.6			28.6
9	Unbiased	29.7			29.7
10	Unbiased	28.7			28.7
11	Unbiased	30.0			29.9

12	Unbiased	29.9			29.8
19	Unbiased	29.1			29.2
20	Unbiased	29.0			29.0
21	Unbiased	28.6			28.6
22	Unbiased	28.8			28.8
23	Unbiased	27.9			27.8
24	Unbiased	27.9			27.9
55	CTRL	28.8	28.8	28.8	28.8
56	CTRL	28.3	28.2	28.2	28.2
60	CTRL	29.6	29.7	29.7	29.7
Unbiased Irradiation Statistics					
Average Unbiased		28.9	29.2	28.4	28.9
Std Deviation Unbiased		0.7	0.7	0.6	0.7
PS90%/90% (+KTL) Unbiased		30.8	31.2	30.0	30.7
PS90%/90% (-KTL) Unbiased		26.9	27.3	26.9	27.0
Biased Irradiation Statistics					
Average Biased		28.9	28.6	28.5	29.2
Std Deviation Biased		0.6	0.5	0.3	0.6
PS90%/90% (+KTL) Biased		30.6	30.0	29.3	30.9
PS90%/90% (-KTL) Biased		27.3	27.2	27.8	27.6
Specification MAX		31	31	31	31
Status Unbiased		PASS	PASS	PASS	PASS
Status Biased		PASS	PASS	PASS	PASS
Specification MIN		25	25	25	25
Status Unbiased		PASS	PASS	PASS	PASS
Status Biased		PASS	PASS	PASS	PASS

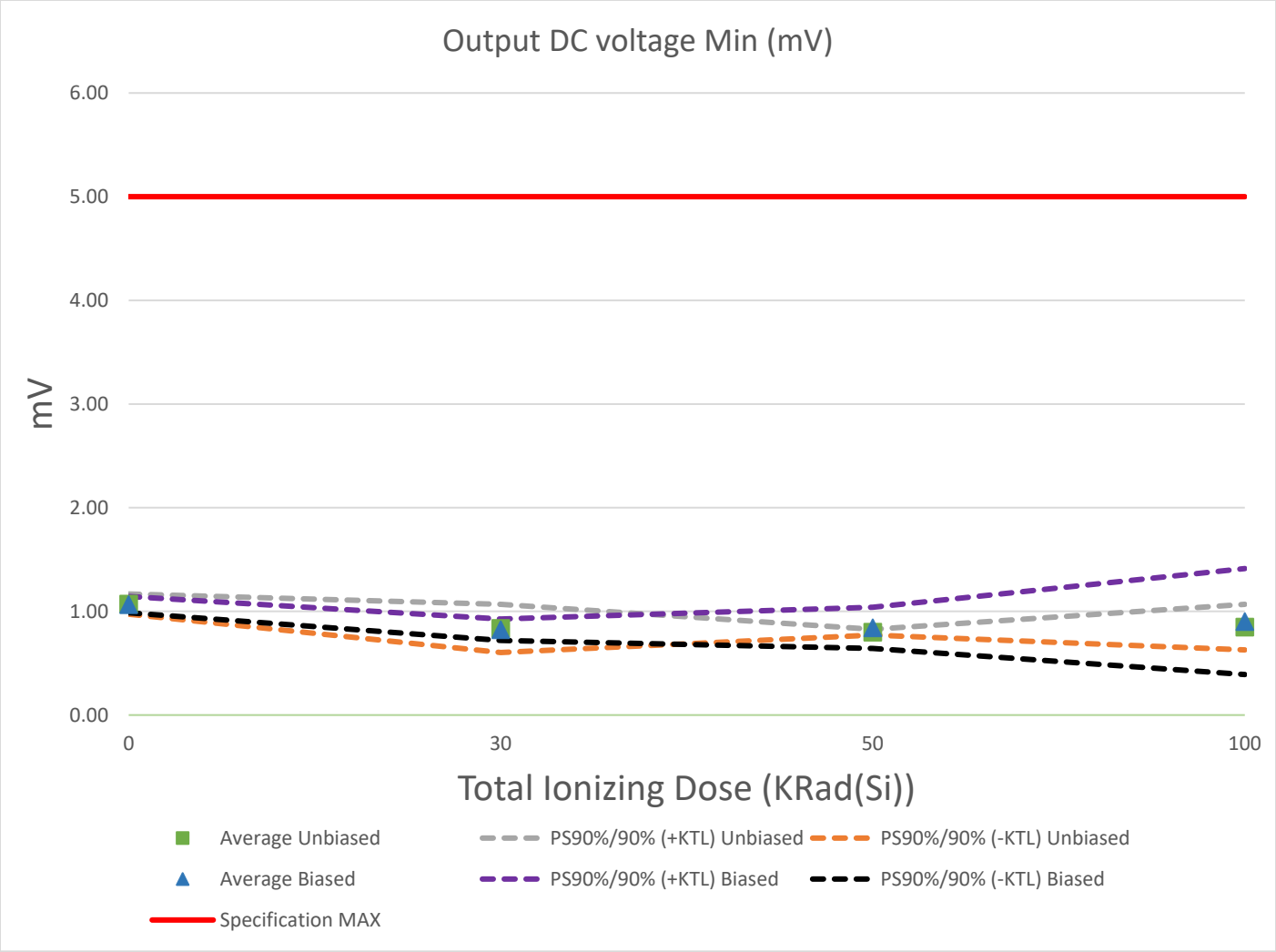

Figure 4.3 Output DC voltage Min at RF=off, EN=1.1V, Vcc=3.3V

Table 4.3 Raw data for Output DC voltage Min at RF=off, EN=1.1V, Vcc=3.3V versus total dose, including the statistical analysis, specification and the status of the testing (pass/fail)

Parameter (T#36)	VOUT_RFIN=GND_EN=1.1V_VCC=3.3V	Total Dose (kRad(Si)) @ 50 Rad(Si)/s			
Device #	(mV)	0	30	50	100
25	Biased	1.08	0.81		
26	Biased	1.08	0.88		
27	Biased	1.02	0.81		
28	Biased	1.04	0.79		
29	Unbiased	1.05	0.80		
30	Unbiased	1.05	0.76		
31	Unbiased	1.08	0.95		
32	Unbiased	1.11	0.83		
33	Biased	1.07		0.94	
34	Biased	1.07		0.78	
35	Biased	1.03		0.80	
36	Biased	1.07		0.84	
37	Unbiased	1.02		0.80	
38	Unbiased	1.05		0.79	
39	Unbiased	1.04		0.80	
40	Unbiased	1.06		0.81	
1	Biased	1.07			1.44
2	Biased	1.08			1.04
3	Biased	1.12			0.80
4	Biased	1.02			0.82
5	Biased	1.04			0.75
6	Biased	1.09			0.80
13	Biased	1.09			0.89
14	Biased	1.05			0.81
15	Biased	1.06			0.95
16	Biased	1.04			0.81
17	Biased	1.10			0.82
18	Biased	1.12			0.88
7	Unbiased	1.05			0.79
8	Unbiased	1.05			0.78
9	Unbiased	1.11			0.79
10	Unbiased	1.05			0.97
11	Unbiased	1.15			0.98

12	Unbiased	1.14			0.94
19	Unbiased	1.08			0.93
20	Unbiased	1.08			0.79
21	Unbiased	1.02			0.81
22	Unbiased	1.08			0.84
23	Unbiased	1.07			0.78
24	Unbiased	1.04			0.78
55	CTRL	1.08	0.81	0.81	0.81
56	CTRL	1.06	0.81	0.81	0.81
60	CTRL	1.10	0.82	0.82	0.82
Unbiased Irradiation Statistics					
Average Unbiased		1.07	0.84	0.80	0.85
Std Deviation Unbiased		0.04	0.08	0.01	0.08
PS90%/90% (+KTL) Unbiased		1.17	1.07	0.83	1.07
PS90%/90% (-KTL) Unbiased		0.97	0.60	0.77	0.63
Biased Irradiation Statistics					
Average Biased		1.07	0.82	0.84	0.90
Std Deviation Biased		0.03	0.04	0.07	0.19
PS90%/90% (+KTL) Biased		1.14	0.93	1.04	1.41
PS90%/90% (-KTL) Biased		0.99	0.72	0.64	0.39
Specification MAX		5	5	5	5
Status Unbiased		PASS	PASS	PASS	PASS
Status Biased		PASS	PASS	PASS	PASS
Specification MIN					
Status Unbiased		PASS	PASS	PASS	PASS
Status Biased		PASS	PASS	PASS	PASS

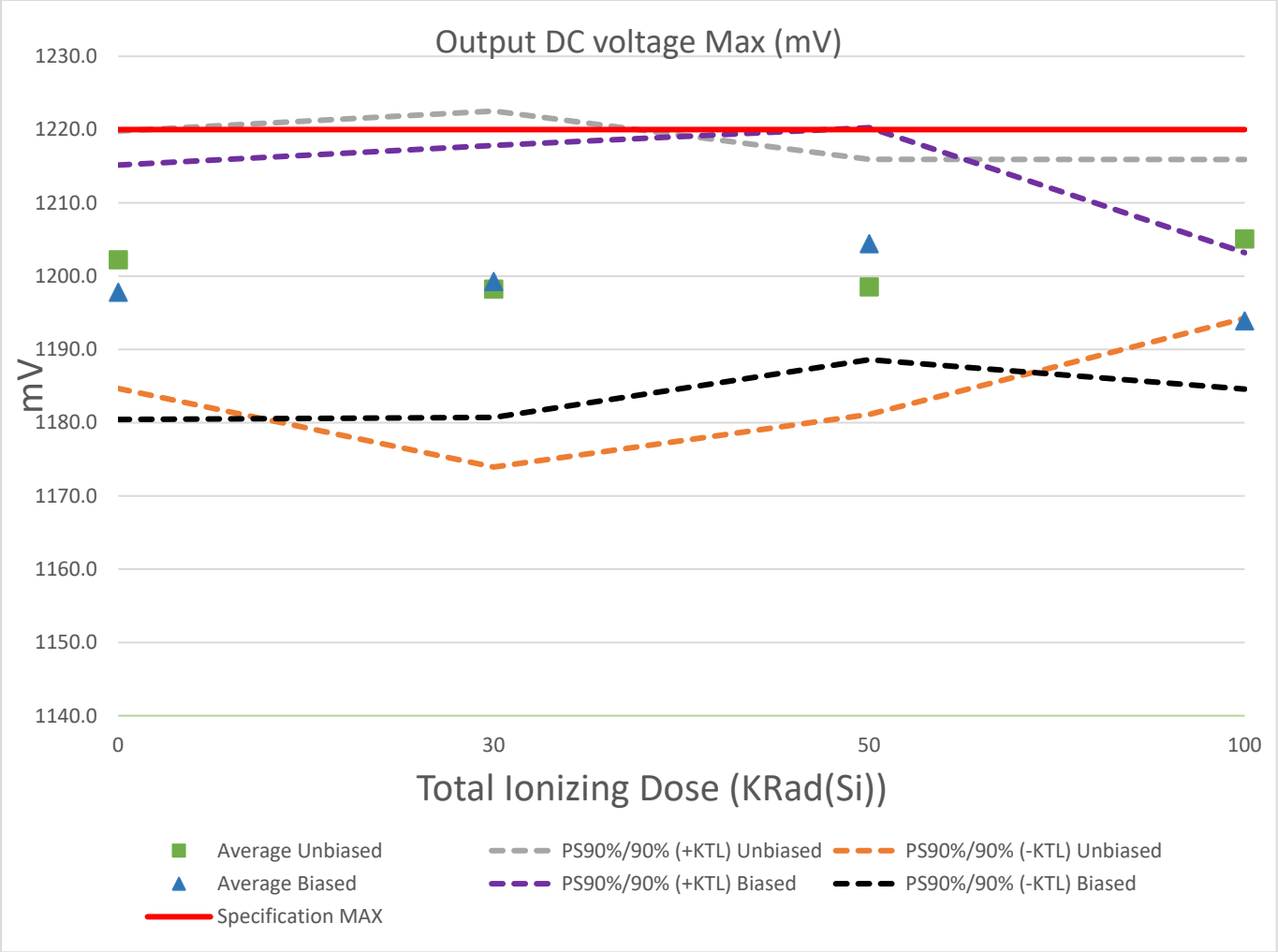

Figure 4.4 Output DC voltage Max at RF=10dBm, EN=1.1V, Vcc=3.3V

Table 4.4 Raw data for output DC voltage Max at RF=10dBm, EN=1.1V, Vcc=3.3V versus total dose, including the statistical analysis, specification and the status of the testing (pass/fail)

Parameter (T#58.1)	VOUT_PIN=10DBM_2.14GHZ_VCC=3.3V	Total Dose (kRad(Si)) @ 50 Rad(Si)/s			
Device #	(mV)	0	30	50	100
25	Biased	1207.6	1207.3		
26	Biased	1201.3	1200.8		
27	Biased	1191.9	1190.9		
28	Biased	1198.4	1198.0		
29	Unbiased	1189.5	1189.4		
30	Unbiased	1193.3	1191.9		
31	Unbiased	1206.3	1206.1		
32	Unbiased	1205.9	1205.6		
33	Biased	1211.3		1210.6	
34	Biased	1200.6		1200.0	
35	Biased	1199.2		1199.1	
36	Biased	1209.1		1208.0	
37	Unbiased	1204.4		1204.5	
38	Unbiased	1197.1		1197.0	
39	Unbiased	1203.3		1202.4	
40	Unbiased	1191.3		1190.3	
1	Biased	1194.6			1195.7
2	Biased	1193.2			1192.7
3	Biased	1188.6			1186.8
4	Biased	1197.5			1197.2
5	Biased	1194.6			1194.0
6	Biased	1194.6			1195.1
13	Biased	1193.9			1192.7
14	Biased	1195.5			1195.2
15	Biased	1199.6			1197.9
16	Biased	1198.3			1197.9
17	Biased	1194.0			1192.6
18	Biased	1190.4			1189.0
7	Unbiased	1212.0			1211.3
8	Unbiased	1207.1			1206.8
9	Unbiased	1208.8			1207.4
10	Unbiased	1207.5			1206.3
11	Unbiased	1202.6			1202.2

12	Unbiased	1205.7			1205.8
19	Unbiased	1207.4			1206.5
20	Unbiased	1202.7			1201.9
21	Unbiased	1204.7			1204.3
22	Unbiased	1205.1			1205.2
23	Unbiased	1195.9			1195.4
24	Unbiased	1208.3			1208.0
55	CTRL	1201.4	1199.7	1199.7	1199.7
56	CTRL	1192.6	1192.3	1192.3	1192.3
60	CTRL	1209.6	1209.2	1209.2	1209.2
Unbiased Irradiation Statistics					
Average Unbiased		1202.2	1198.2	1198.5	1205.1
Std Deviation Unbiased		6.4	8.9	6.3	4.0
PS90%/90% (+KTL) Unbiased		1219.8	1222.5	1215.9	1215.9
PS90%/90% (-KTL) Unbiased		1184.7	1173.9	1181.1	1194.2
Biased Irradiation Statistics					
Average Biased		1197.8	1199.3	1204.4	1193.9
Std Deviation Biased		6.3	6.8	5.8	3.4
PS90%/90% (+KTL) Biased		1215.2	1217.8	1220.3	1203.2
PS90%/90% (-KTL) Biased		1180.4	1180.7	1188.6	1184.6
Specification MAX		1220	1220	1220	1220
Status Unbiased		PASS	PASS	PASS	PASS
Status Biased		PASS	PASS	PASS	PASS
Specification MIN					
Status Unbiased		PASS	PASS	PASS	PASS
Status Biased		PASS	PASS	PASS	PASS

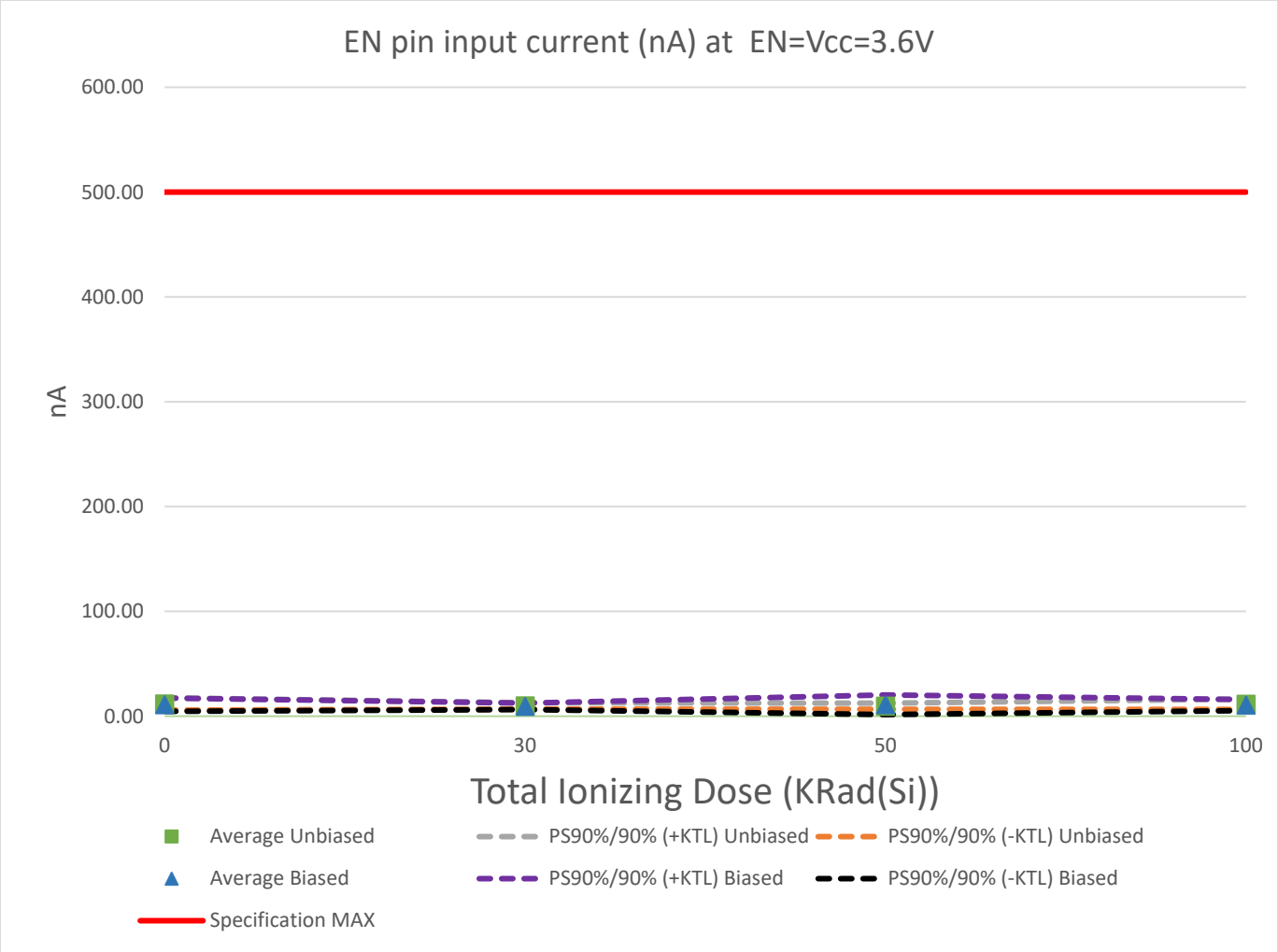

Figure 4.5 EN pin input current at EN=Vcc=3.6V

Table 4.5 Raw data for EN pin input current at EN=Vcc=3.6V versus total dose, including the statistical analysis, specification and the status of the testing (pass/fail)

Parameter (T#32)	EN_IIH_EN=3.6V_VCC=3.6V	Total Dose (kRad(Si)) @ 50 Rad(Si)/s			
Device #	(nA)	0	30	50	100
25	Biased	8.29	11.08		
26	Biased	9.59	8.74		
27	Biased	8.18	8.92		
28	Biased	10.01	8.85		
29	Unbiased	8.59	8.60		
30	Unbiased	12.51	10.75		
31	Unbiased	10.19	10.79		
32	Unbiased	8.33	9.22		
33	Biased	13.98		9.51	
34	Biased	14.07		16.04	
35	Biased	12.87		8.93	
36	Biased	9.34		9.22	
37	Unbiased	13.52		9.67	
38	Unbiased	13.72		8.72	
39	Unbiased	9.40		10.95	
40	Unbiased	13.57		8.66	
1	Biased	10.78			9.42
2	Biased	8.51			9.66
3	Biased	9.10			9.19
4	Biased	12.78			10.69
5	Biased	8.99			11.45
6	Biased	12.70			11.14
13	Biased	9.02			9.02
14	Biased	8.05			8.05
15	Biased	12.49			12.49
16	Biased	13.52			13.52
17	Biased	8.42			8.42
18	Biased	13.66			13.66
7	Unbiased	10.14			10.14
8	Unbiased	13.74			13.74
9	Unbiased	11.65			11.65
10	Unbiased	12.65			12.65
11	Unbiased	13.48			13.48
12	Unbiased	14.12			14.12

19	Unbiased	8.96			9.59
20	Unbiased	12.36			11.75
21	Unbiased	14.07			9.94
22	Unbiased	14.03			9.57
23	Unbiased	8.54			8.97
24	Unbiased	7.99			11.15
55	CTRL	13.51	10.37	10.37	10.37
56	CTRL	9.85	11.24	11.24	11.24
60	CTRL	7.93	9.22	9.22	9.22
Unbiased Irradiation Statistics					
Average Unbiased		11.67	9.84	9.50	11.40
Std Deviation Unbiased		2.14	1.10	1.07	1.79
PS90%/90% (+KTL) Unbiased		17.54	12.87	12.44	16.30
PS90%/90% (-KTL) Unbiased		5.81	6.81	6.56	6.49
Biased Irradiation Statistics					
Average Biased		10.98	9.40	10.93	10.56
Std Deviation Biased		2.32	1.12	3.42	1.92
PS90%/90% (+KTL) Biased		17.34	12.48	20.30	15.82
PS90%/90% (-KTL) Biased		4.61	6.31	1.56	5.30
Specification MAX		500	500	500	500
Status Unbiased		PASS	PASS	PASS	PASS
Status Biased		PASS	PASS	PASS	PASS
Specification MIN					
Status Unbiased		PASS	PASS	PASS	PASS
Status Biased		PASS	PASS	PASS	PASS

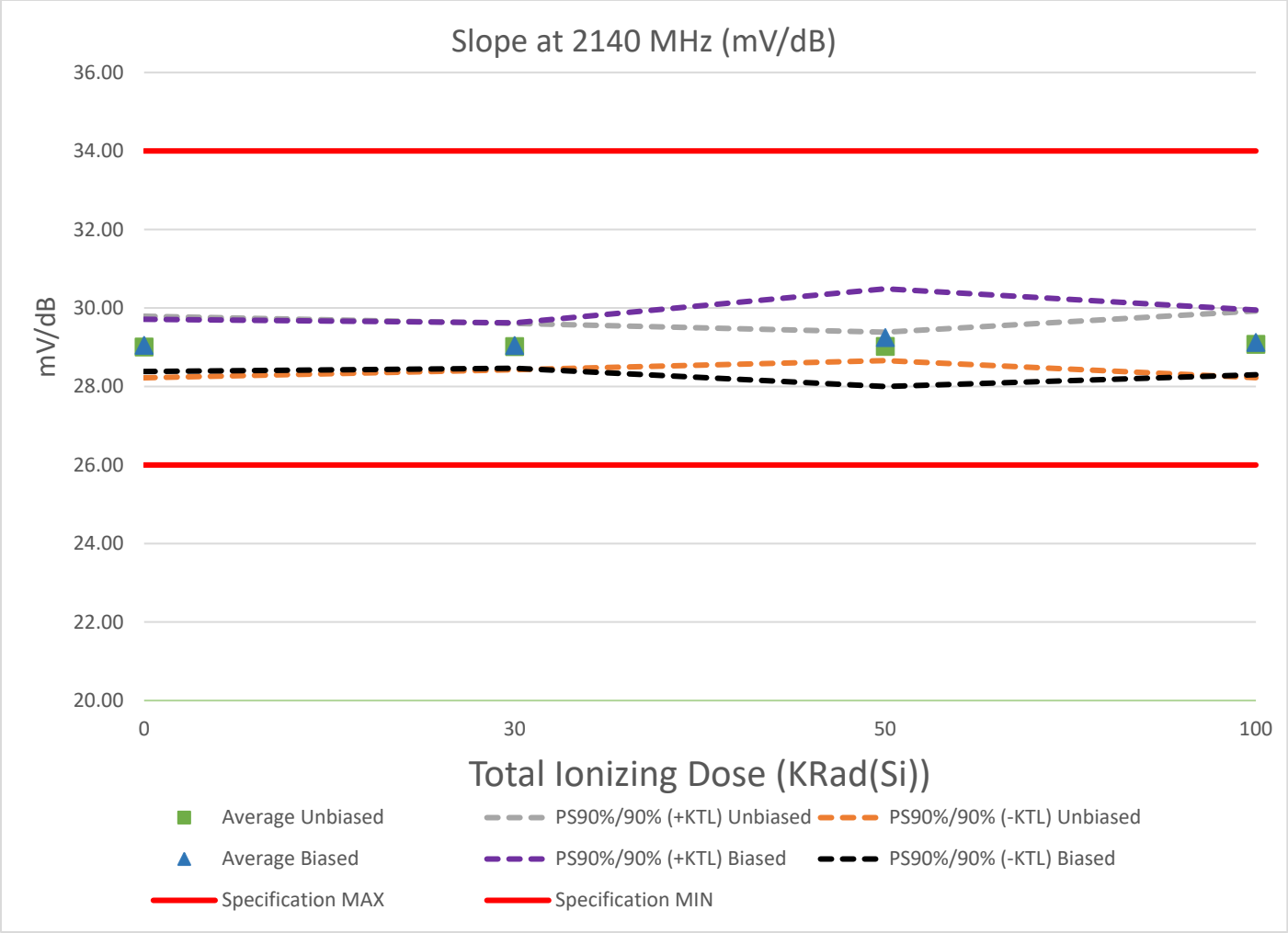

Figure 4.6 Slope at 2140 MHz CW input

Table 4.6 Raw data for Slope at 2140 MHz CW input versus total dose, including the statistical analysis, specification and the status of the testing (pass/fail)

Parameter (T#76)	H_SLOPE_2.14GHZ_MV/DB	Total Dose (kRad(Si)) @ 50 Rad(Si)/s			
Device #	(mV/dB)	0	30	50	100
25	Biased	28.86	28.94		
26	Biased	28.89	29.09		
27	Biased	29.10	29.32		
28	Biased	28.86	28.83		
29	Unbiased	28.85	28.81		
30	Unbiased	28.78	28.86		
31	Unbiased	29.00	29.22		
32	Unbiased	29.18	29.19		
33	Biased	29.64		29.92	
34	Biased	28.97		29.00	
35	Biased	28.92		29.11	
36	Biased	28.90		28.95	
37	Unbiased	28.97		29.02	
38	Unbiased	29.02		29.17	
39	Unbiased	28.82		29.05	
40	Unbiased	28.72		28.85	
1	Biased	29.33			29.59
2	Biased	28.74			28.69
3	Biased	29.13			29.32
4	Biased	28.67			28.72
5	Biased	29.14			29.08
6	Biased	28.80			28.97
13	Biased	29.09			29.06
14	Biased	29.24			29.59
15	Biased	29.19			29.41
16	Biased	28.78			29.01
17	Biased	28.92			28.92
18	Biased	29.14			29.11
7	Unbiased	28.87			28.88
8	Unbiased	29.22			29.23
9	Unbiased	29.30			29.21
10	Unbiased	28.92			29.19
11	Unbiased	29.01			28.98
12	Unbiased	28.91			28.84

19	Unbiased	29.67			29.89
20	Unbiased	28.79			28.77
21	Unbiased	28.67			28.83
22	Unbiased	28.88			29.12
23	Unbiased	29.13			29.13
24	Unbiased	28.85			28.80
55	CTRL	28.93	28.89	28.89	28.89
56	CTRL	29.23	29.33	29.33	29.33
60	CTRL	29.51	29.47	29.47	29.47
Unbiased Irradiation Statistics					
Average Unbiased		29.01	29.02	29.02	29.07
Std Deviation Unbiased		0.29	0.22	0.13	0.31
PS90%/90% (+KTL) Unbiased		29.79	29.61	29.38	29.92
PS90%/90% (-KTL) Unbiased		28.22	28.43	28.66	28.23
Biased Irradiation Statistics					
Average Biased		29.05	29.04	29.24	29.12
Std Deviation Biased		0.24	0.21	0.45	0.30
PS90%/90% (+KTL) Biased		29.71	29.62	30.49	29.95
PS90%/90% (-KTL) Biased		28.38	28.46	28.00	28.30
Specification MAX		34	34	34	34
Status Unbiased		PASS	PASS	PASS	PASS
Status Biased		PASS	PASS	PASS	PASS
Specification MIN		26	26	26	26
Status Unbiased		PASS	PASS	PASS	PASS
Status Biased		PASS	PASS	PASS	PASS

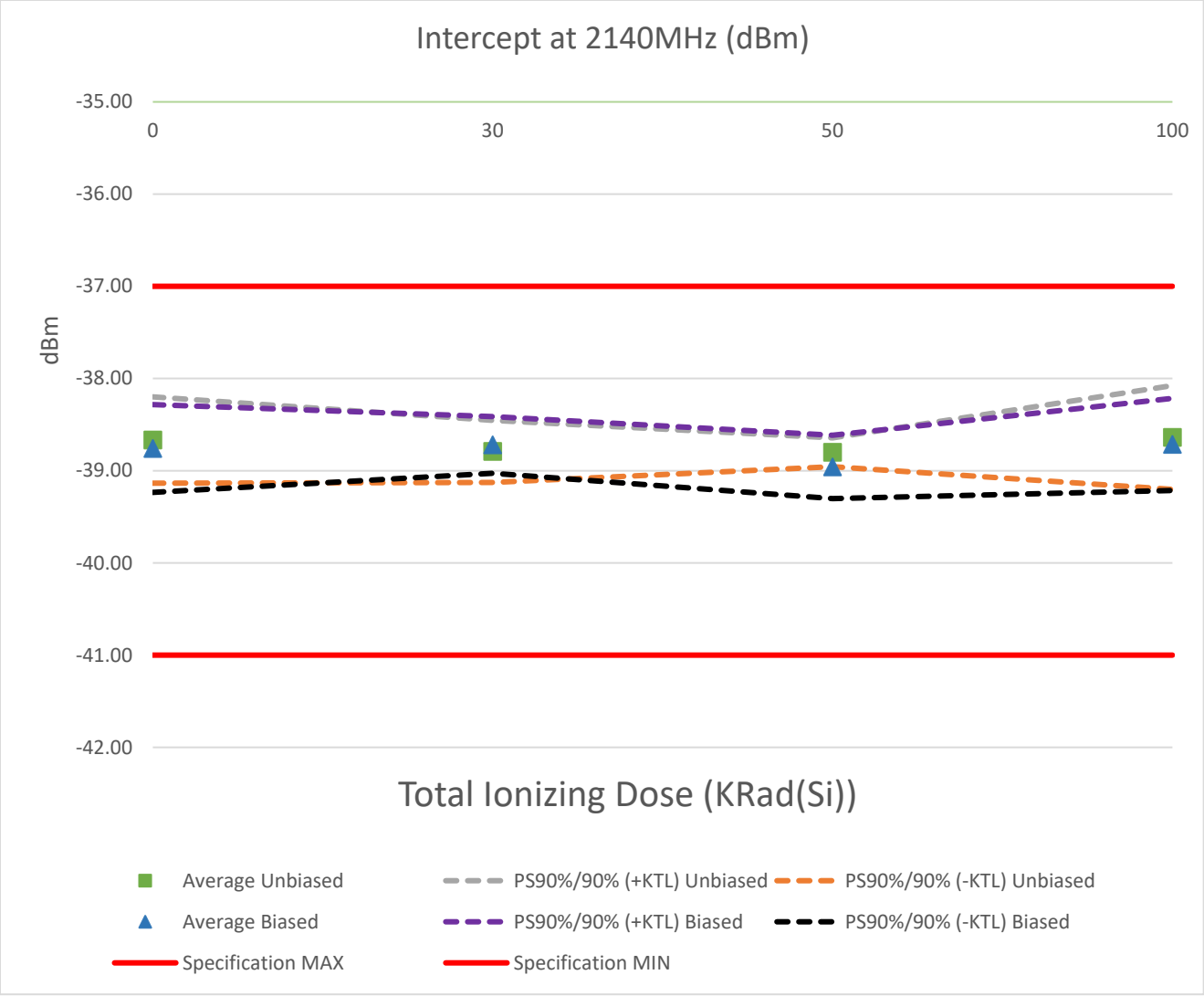

Figure 4.7 Intercept at 2140 MHz CW input

Table 4.7 Raw data for Slope at Intercept at 2140 MHz CW input versus total dose, including the statistical analysis, specification and the status of the testing (pass/fail)

Parameter (T#77)	H_INTERCEPT_2.14GHZ_DBM	Total Dose (kRad(Si)) @ 50 Rad(Si)/s			
Device #	(dBm)	0	30	50	100
25	Biased	-38.65	-38.66		
26	Biased	-38.61	-38.61		
27	Biased	-38.84	-38.86		
28	Biased	-38.63	-38.76		
29	Unbiased	-38.77	-38.88		
30	Unbiased	-38.77	-38.91		
31	Unbiased	-38.74	-38.70		
32	Unbiased	-38.63	-38.67		
33	Biased	-38.96		-38.96	
34	Biased	-38.79		-38.85	
35	Biased	-39.11		-39.13	
36	Biased	-38.81		-38.89	
37	Unbiased	-38.72		-38.79	
38	Unbiased	-38.81		-38.83	
39	Unbiased	-38.88		-38.86	
40	Unbiased	-38.66		-38.73	
1	Biased	-38.76			-38.54
2	Biased	-38.44			-38.50
3	Biased	-38.85			-38.77
4	Biased	-38.98			-39.04
5	Biased	-38.81			-38.89
6	Biased	-38.69			-38.63
13	Biased	-38.51			-38.59
14	Biased	-38.97			-38.95
15	Biased	-38.80			-38.72
16	Biased	-38.49			-38.46
17	Biased	-38.66			-38.68
18	Biased	-38.78			-38.83
7	Unbiased	-38.95			-38.96
8	Unbiased	-38.92			-38.97
9	Unbiased	-38.53			-38.66
10	Unbiased	-38.47			-38.40

11	Unbiased	-38.41			-38.47
12	Unbiased	-38.44			-38.56
19	Unbiased	-38.64			-38.63
20	Unbiased	-38.67			-38.74
21	Unbiased	-38.57			-38.62
22	Unbiased	-38.39			-38.39
23	Unbiased	-38.37			-38.43
24	Unbiased	-38.75			-38.84
55	CTRL	-38.76	-38.88	-38.88	-38.88
56	CTRL	-38.61	-38.69	-38.69	-38.69
60	CTRL	-38.73	-38.85	-38.85	-38.85
Unbiased Irradiation Statistics					
Average Unbiased		-38.67	-38.79	-38.80	-38.64
Std Deviation Unbiased		0.17	0.12	0.06	0.21
PS90%/90% (+KTL) Unbiased		-38.20	-38.45	-38.64	-38.08
PS90%/90% (-KTL) Unbiased		-39.13	-39.13	-38.96	-39.20
Biased Irradiation Statistics					
Average Biased		-38.76	-38.72	-38.96	-38.72
Std Deviation Biased		0.17	0.11	0.13	0.18
PS90%/90% (+KTL) Biased		-38.28	-38.41	-38.62	-38.22
PS90%/90% (-KTL) Biased		-39.23	-39.03	-39.30	-39.22
Specification MAX		-37	-37	-37	-37
Status Unbiased		PASS	PASS	PASS	PASS
Status Biased		PASS	PASS	PASS	PASS
Specification MIN		-41	-41	-41	-41
Status Unbiased		PASS	PASS	PASS	PASS
Status Biased		PASS	PASS	PASS	PASS

v. Summary

Based on testing results, RH5596S passed total ionizing dose test results to the maximum tested dose level of 100Krad (Si) with all test parameters remaining within their datasheet specifications