

Radiation Report

AFE7903-SEP Total Ionizing Dose (TID) Radiation Report



ABSTRACT

This report covers the radiation characterization results of Texas Instruments AFE7903-SEP. The AFE7903-SEP was studied for total ionizing dose (TID) effects under high dose rate (HDR) up to 150rad(Si)/s as a one-time characterization. The results show that all samples passed within the specified limits up to 30krad(Si).

To verify TID performance in production, radiation lot acceptance testing (RLAT) was performed using five units from every wafer lot up to a dose level of 30krad(Si). Additionally, the AFE7903-SEP is single-event latch-up (SEL) immune up to 43MeV-cm²/mg, which makes it suitable for radiation-hardness-assured space applications in LEO orbit.

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Trademarks

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1 Device Information

The AFE7903-SEP is a high performance, wide bandwidth, multi-channel transceiver, integrating two RF-sampling transmitter chains, two RF-sampling receiver chains. With operation up to 7.4GHz, this device enables direct RF sampling in the HF, VHF, UHF, L, S and C band without the need for additional frequency conversions stages. This improvement in density and flexibility enables high channel count, multi-mission systems.

1.1 Device Details

[Table 1-1](#) lists the device information used for TID HDR characterization and qualification.

Table 1-1. Device and Exposure Details

TID HDR Details	
TI Device Number	AFE7903-SEP
Package	400-pin FC-BGA
Technology	TSMC C28.HPC+
Die Lot Number	5375919
A/T Lot Number / Lot Trace Code	57CCHDW
Quantity Tested	5 irradiated devices and 5 control devices
Lot Accept/Reject	Devices passed 30krad(Si)
HDR Radiation Facility	Texas Instruments CLAB, Dallas, TX
HDR Dose Level	30krad(Si)
HDR Dose Rate	150rad(Si)/s
HDR Radiation Source	Gammacell (GR420) Co-60
Irradiation Temperature	Ambient, room temperature

2 TID Test Setup

2.1 Test Methodology

Known-good and tested AFE7903-SEP samples were irradiated at a dose rate of 150rad(Si)/s up to a total dose of 30krad(Si). After exposure, units were retested using the production test solution, ensuring devices still meet datasheet specifications.

2.2 Test Description and Facilities

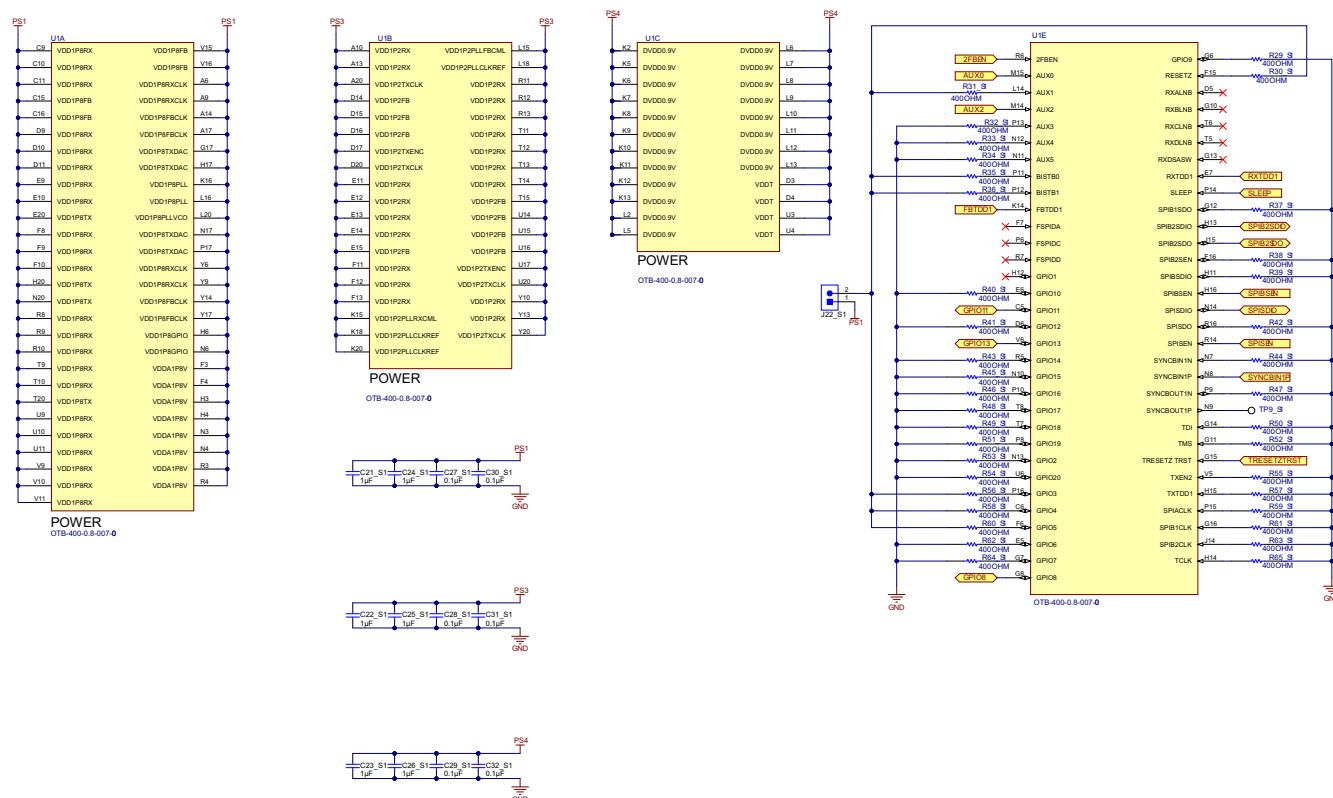
The AFE7903-SEP HDR exposure was performed on biased devices in a Co-60 gamma cell at TI's CLAB facility in Dallas, TX. The unattenuated dose rate of this cell is 150rad(Si)/s. After exposure, the devices completed a full post-irradiation electrical evaluation using the production test, or ATE, solution. ATE guard banded test limits are set within datasheet electrical specifications to ensure a minimum Cpk and test error margin based on initial qualification and characterization data. Post-irradiation measurements were taken within 30 minutes of irradiation.

2.3 Test Setup Details

During TID exposure, the device is powered up with VDD digital supply voltages set to 0.95V; Tx, Rx, and PLL analog supplies set to 1.25V; and IO supplies set to 1.85V.

2.3.1 Biasing Conditions

Figure 2-1 shows the bias conditions for each pin during irradiation.



2.4 Exposure Details

Five (5) units were characterized at the 150rad(Si)/s dose level with biased voltage conditions.

Table 2-1. Irradiation Information

Dose Rate	150rad(Si)/s
Total Samples	5 samples per dose level; 5 control
Exposure Levels	30krad(Si)
Supply Voltages	DVDD = 0.9V AVDD = 1.2V IOVDD = 1.8V

3 TID Characterization Test Results

Electrical and parametric test results for all units at every dose level were within datasheet limits.

Unit Number	Dose Level, krad(Si)	Result
1 - 5	N/A (control)	PASS
6 - 10	30	PASS

A TID Data Plots

This appendix provides the AFE7903-SEP TID HDR report data plots. The plots show the variation for each critical parameter up to 30krad(Si).

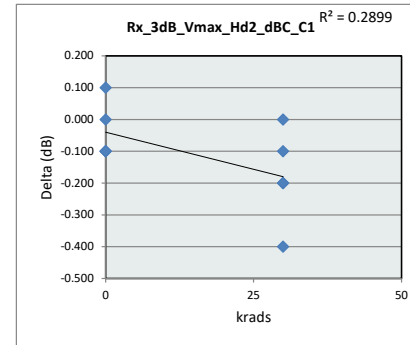
Delta Threshold 10.00%

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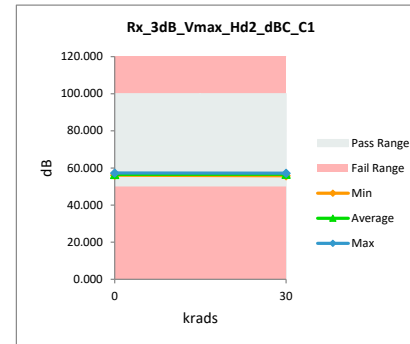
TID Report

AFE7903-SEPM

		Rx_3dB_Vmax_Hd2_dBC_C1				
Test Site		CLAB	CLAB			
Tester		VLCT92	VLCT92			
Test Number		VL713303	VL713303			
Unit		dB	dB			
Max Limit		100	100			
Min Limit		50	50			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	56.600	56.500	0.100	0.18%	0.20%
0	C2	56.000	56.100	-0.100	-0.18%	0.20%
0	C3	57.200	57.300	-0.100	-0.17%	0.20%
0	C4	56.600	56.700	-0.100	-0.18%	0.20%
0	C5	56.200	56.200	0.000	0.00%	0.00%
30	1	56.500	56.700	-0.200	-0.35%	0.40%
30	2	57.200	57.200	0.000	0.00%	0.00%
30	3	56.200	56.300	-0.100	-0.18%	0.20%
30	4	55.600	55.800	-0.200	-0.36%	0.40%
30	5	56.700	57.100	-0.400	-0.71%	0.80%
Max		57.200	57.300	0.100	0.18%	0.80%
Average		56.480	56.590	-0.110	-0.20%	0.26%
Min		55.600	55.800	-0.400	-0.71%	0.00%
Std Dev		0.503	0.502	0.137	0.24%	0.23%



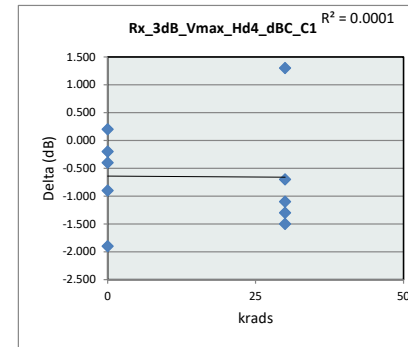
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Test Site		CLAB	
Tester		VLCT92	
Test Number		VL713303	
Max Limit		100	dB
Min Limit		50	dB
krads	0	30	
LL	50.000	50.000	
Min	56.100	55.800	
Average	56.560	56.620	
Max	57.300	57.200	
UL	100.000	100.000	



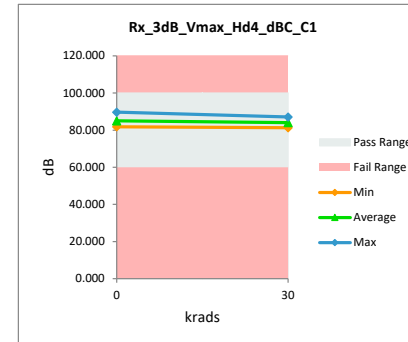
TID Report

AFE7903-SEPM

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Test Site		CLAB				
Tester		VLCT92				
Test Number		VL713303				
Unit		dB				
Max Limit		100				
Min Limit		60				
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	89.500	89.700	-0.200	-0.22%	0.50%
0	C2	84.000	84.400	-0.400	-0.48%	1.00%
0	C3	84.900	86.800	-1.900	-2.24%	4.75%
0	C4	82.600	82.400	0.200	0.24%	0.50%
0	C5	80.900	81.800	-0.900	-1.11%	2.25%
30	1	85.600	87.100	-1.500	-1.75%	3.75%
30	2	83.500	82.200	1.300	1.56%	3.25%
30	3	85.300	86.600	-1.300	-1.52%	3.25%
30	4	80.600	81.300	-0.700	-0.87%	1.75%
30	5	81.900	83.000	-1.100	-1.34%	2.75%
Max		89.500	89.700	1.300	1.56%	4.75%
Average		83.880	84.530	-0.650	-0.77%	2.38%
Min		80.600	81.300	-1.900	-2.24%	0.50%
Std Dev		2.645	2.848	0.929	1.10%	1.43%



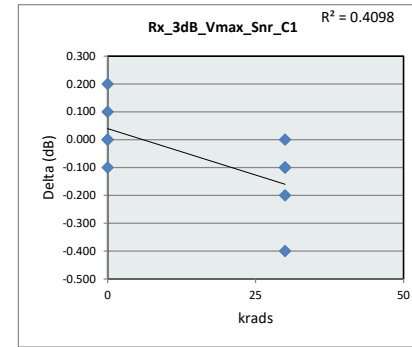
		Rx_3dB_Vmax_Hd4_dBC_C1	
Test Site		CLAB	
Tester		VLCT92	
Test Number		VL713303	
Max Limit		100	dB
Min Limit		60	dB
krads		0	30
LL		60.000	60.000
Min		81.800	81.300
Average		85.020	84.040
Max		89.700	87.100
UL		100.000	100.000



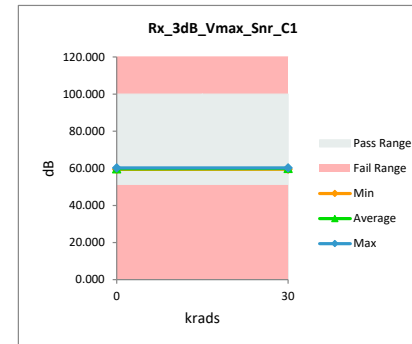
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Rx_3dB_Vmax_Snr_C1						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	60.200	60.200	0.000	0.00%	0.00%
0	C2	59.500	59.500	0.000	0.00%	0.00%
0	C3	59.800	59.700	0.100	0.17%	0.20%
0	C4	60.000	59.800	0.200	0.33%	0.41%
0	C5	59.300	59.400	-0.100	-0.17%	0.20%
30	1	60.000	60.000	0.000	0.00%	0.00%
30	2	60.100	60.200	-0.100	-0.17%	0.20%
30	3	59.600	59.700	-0.100	-0.17%	0.20%
30	4	59.300	59.500	-0.200	-0.34%	0.41%
30	5	59.600	60.000	-0.400	-0.67%	0.82%
Max		60.200	60.200	0.200	0.33%	0.82%
Average		59.740	59.800	-0.060	-0.10%	0.24%
Min		59.300	59.400	-0.400	-0.67%	0.00%
Std Dev		0.327	0.291	0.165	0.28%	0.25%



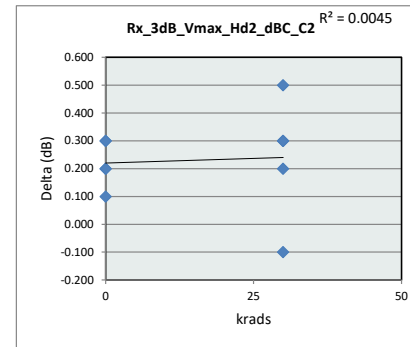
Rx_3dB_Vmax_Snr_C1		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	59.400	59.500
Average	59.720	59.880
Max	60.200	60.200
UL	100.000	100.000



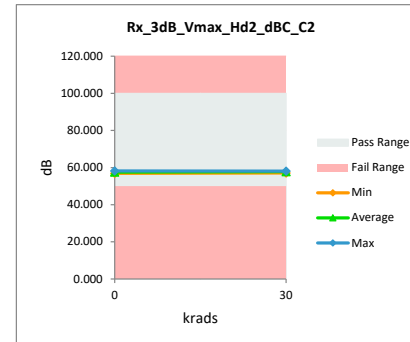
TID Report

AFE7903-SEPM

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Test Site		CLAB	CLAB			
Tester		VLCT92	VLCT92			
Test Number		VL713303	VL713303			
Unit		dB	dB			
Max Limit		100	100			
Min Limit		50	50			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	57.700	57.400	0.300	0.52%	0.60%
0	C2	57.800	57.700	0.100	0.17%	0.20%
0	C3	57.200	56.900	0.300	0.52%	0.60%
0	C4	57.700	57.500	0.200	0.35%	0.40%
0	C5	58.400	58.200	0.200	0.34%	0.40%
30	1	58.400	58.100	0.300	0.51%	0.60%
30	2	57.300	57.100	0.200	0.35%	0.40%
30	3	58.400	58.100	0.300	0.51%	0.60%
30	4	58.500	58.000	0.500	0.85%	1.00%
30	5	57.600	57.700	-0.100	-0.17%	0.20%
Max		58.500	58.200	0.500	0.85%	1.00%
Average		57.900	57.670	0.230	0.40%	0.50%
Min		57.200	56.900	-0.100	-0.17%	0.20%
Std Dev		0.488	0.445	0.157	0.27%	0.24%



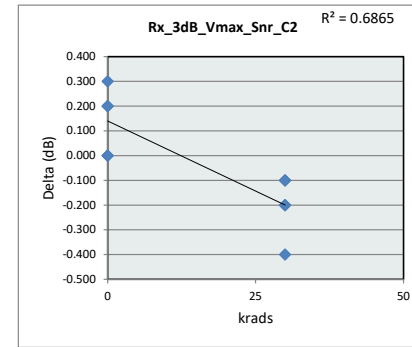
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Test Site		CLAB	
Tester		VLCT92	
Test Number		VL713303	
Max Limit		100	dB
Min Limit		50	dB
krads		0	30
LL		50.000	50.000
Min		56.900	57.100
Average		57.540	57.800
Max		58.200	58.100
UL		100.000	100.000



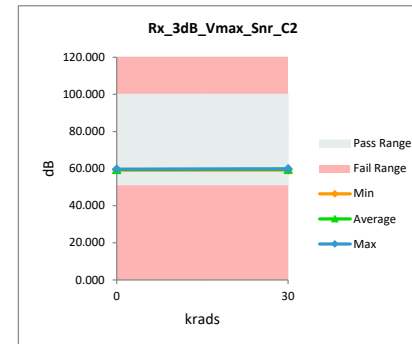
TID Report

AFE7903-SEPM

Rx_3dB_Vmax_Snr_C2						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	59.500	59.500	0.000	0.00%	0.00%
0	C2	59.500	59.200	0.300	0.50%	0.61%
0	C3	59.300	59.300	0.000	0.00%	0.00%
0	C4	59.900	59.700	0.200	0.33%	0.41%
0	C5	59.900	59.700	0.200	0.33%	0.41%
30	1	59.500	59.900	-0.400	-0.67%	0.82%
30	2	59.700	59.800	-0.100	-0.17%	0.20%
30	3	59.400	59.600	-0.200	-0.34%	0.41%
30	4	59.100	59.200	-0.100	-0.17%	0.20%
30	5	59.400	59.600	-0.200	-0.34%	0.41%
Max		59.900	59.900	0.300	0.50%	0.82%
Average		59.520	59.550	-0.030	-0.05%	0.35%
Min		59.100	59.200	-0.400	-0.67%	0.00%
Std Dev		0.253	0.246	0.216	0.36%	0.26%



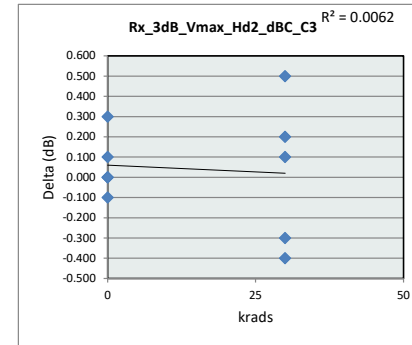
Rx_3dB_Vmax_Snr_C2		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	59.200	59.200
Average	59.480	59.620
Max	59.700	59.900
UL	100.000	100.000



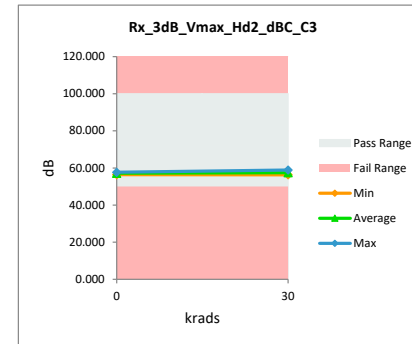
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Rx_3dB_Vmax_Hd2_dBC_C3						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	50		50			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	58.000	57.700	0.300	0.52%	0.60%
0	C2	56.400	56.400	0.000	0.00%	0.00%
0	C3	57.500	57.400	0.100	0.17%	0.20%
0	C4	57.400	57.500	-0.100	-0.17%	0.20%
0	C5	56.900	56.900	0.000	0.00%	0.00%
30	1	56.400	56.300	0.100	0.18%	0.20%
30	2	58.600	58.900	-0.300	-0.51%	0.60%
30	3	57.400	57.200	0.200	0.35%	0.40%
30	4	58.800	58.300	0.500	0.85%	1.00%
30	5	56.200	56.600	-0.400	-0.71%	0.80%
Max		58.800	58.900	0.500	0.85%	1.00%
Average		57.360	57.320	0.040	0.07%	0.40%
Min		56.200	56.300	-0.400	-0.71%	0.00%
Std Dev		0.909	0.832	0.267	0.46%	0.34%



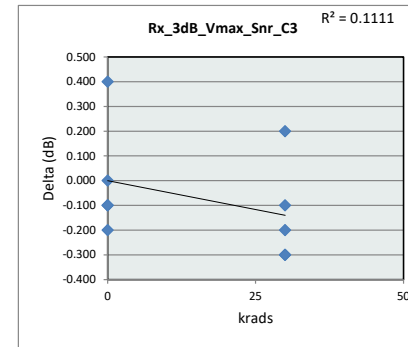
Rx_3dB_Vmax_Hd2_dBC_C3		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	50	dB
krads	0	30
LL	50.000	50.000
Min	56.400	56.300
Average	57.180	57.460
Max	57.700	58.900
UL	100.000	100.000



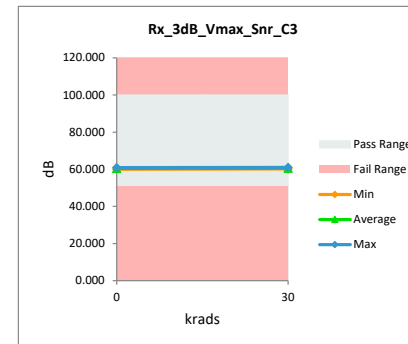
TID Report

AFE7903-SEPM

Rx_3dB_Vmax_Snr_C3						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	60.700	60.700	0.000	0.00%	0.00%
0	C2	60.400	60.000	0.400	0.66%	0.82%
0	C3	60.200	60.300	-0.100	-0.17%	0.20%
0	C4	60.700	60.900	-0.200	-0.33%	0.41%
0	C5	60.400	60.500	-0.100	-0.17%	0.20%
30	1	60.400	60.700	-0.300	-0.50%	0.61%
30	2	60.900	61.000	-0.100	-0.16%	0.20%
30	3	60.500	60.300	0.200	0.33%	0.41%
30	4	60.600	60.800	-0.200	-0.33%	0.41%
30	5	59.900	60.200	-0.300	-0.50%	0.61%
Max		60.900	61.000	0.400	0.66%	0.82%
Average		60.470	60.540	-0.070	-0.12%	0.39%
Min		59.900	60.000	-0.300	-0.50%	0.00%
Std Dev		0.283	0.331	0.221	0.37%	0.24%



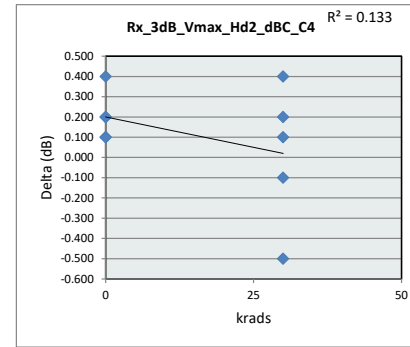
Rx_3dB_Vmax_Snr_C3		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	60.000	60.200
Average	60.480	60.600
Max	60.900	61.000
UL	100.000	100.000



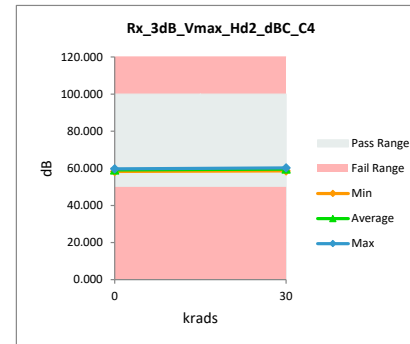
TID Report

AFE7903-SEPM

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Test Site		CLAB	CLAB			
Tester		VLCT92	VLCT92			
Test Number		VL713303	VL713303			
Unit		dB	dB			
Max Limit		100	100			
Min Limit		50	50			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	59.900	59.500	0.400	0.67%	0.80%
0	C2	58.900	58.800	0.100	0.17%	0.20%
0	C3	59.500	59.300	0.200	0.34%	0.40%
0	C4	58.400	58.300	0.100	0.17%	0.20%
0	C5	59.900	59.700	0.200	0.33%	0.40%
30	1	59.000	58.600	0.400	0.68%	0.80%
30	2	60.400	60.200	0.200	0.33%	0.40%
30	3	59.400	59.900	-0.500	-0.84%	1.00%
30	4	59.700	59.800	-0.100	-0.17%	0.20%
30	5	59.400	59.300	0.100	0.17%	0.20%
Max		60.400	60.200	0.400	0.68%	1.00%
Average		59.450	59.340	0.110	0.18%	0.46%
Min		58.400	58.300	-0.500	-0.84%	0.20%
Std Dev		0.576	0.610	0.260	0.44%	0.30%



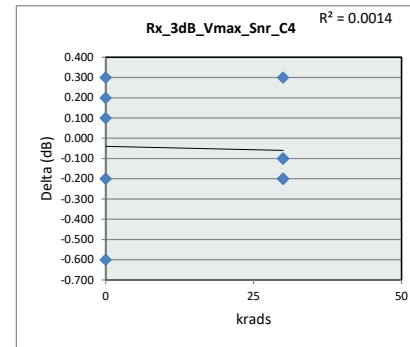
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Test Site		CLAB	
Tester		VLCT92	
Test Number		VL713303	
Max Limit		100	dB
Min Limit		50	dB
krads		0	30
LL		50.000	50.000
Min		58.300	58.600
Average		59.120	59.560
Max		59.700	60.200
UL		100.000	100.000



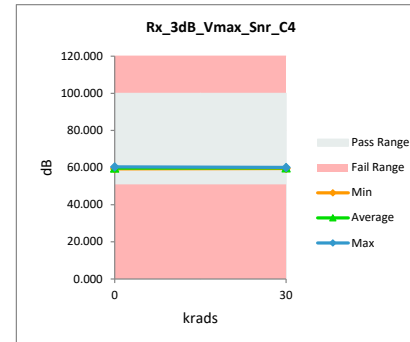
TID Report

AFE7903-SEPM

Rx_3dB_Vmax_Snr_C4						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	59.800	60.400	-0.600	-1.00%	1.22%
0	C2	59.400	59.600	-0.200	-0.34%	0.41%
0	C3	59.400	59.300	0.100	0.17%	0.20%
0	C4	59.900	59.600	0.300	0.50%	0.61%
0	C5	59.900	59.700	0.200	0.33%	0.41%
30	1	59.700	59.800	-0.100	-0.17%	0.20%
30	2	59.800	60.000	-0.200	-0.33%	0.41%
30	3	59.800	59.900	-0.100	-0.17%	0.20%
30	4	59.800	59.500	0.300	0.50%	0.61%
30	5	59.900	60.100	-0.200	-0.33%	0.41%
Max		59.900	60.400	0.300	0.50%	1.22%
Average		59.740	59.790	-0.050	-0.08%	0.47%
Min		59.400	59.300	-0.600	-1.00%	0.20%
Std Dev		0.190	0.321	0.280	0.47%	0.30%



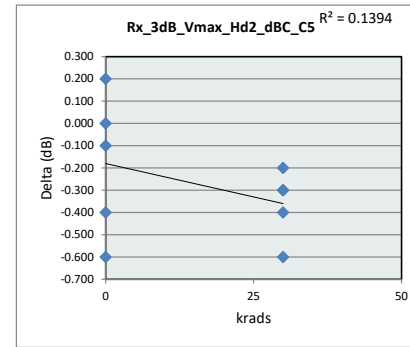
Rx_3dB_Vmax_Snr_C4		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	59.300	59.500
Average	59.720	59.860
Max	60.400	60.100
UL	100.000	100.000



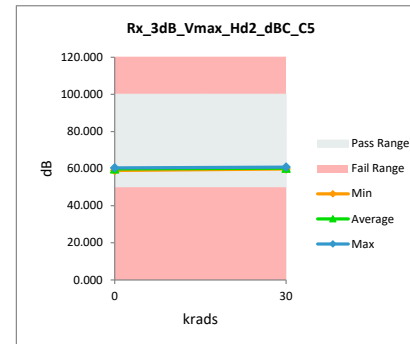
TID Report

AFE7903-SEPM

Rx_3dB_Vmax_Hd2_dBC_C5						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	50		50			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	60.400	60.400	0.000	0.00%	0.00%
0	C2	60.300	60.100	0.200	0.33%	0.40%
0	C3	59.300	59.400	-0.100	-0.17%	0.20%
0	C4	59.600	60.200	-0.600	-1.01%	1.20%
0	C5	58.600	59.000	-0.400	-0.68%	0.80%
30	1	59.500	59.800	-0.300	-0.50%	0.60%
30	2	60.600	60.800	-0.200	-0.33%	0.40%
30	3	59.300	59.900	-0.600	-1.01%	1.20%
30	4	59.800	60.100	-0.300	-0.50%	0.60%
30	5	60.200	60.600	-0.400	-0.66%	0.80%
Max		60.600	60.800	0.200	0.33%	1.20%
Average		59.760	60.030	-0.270	-0.45%	0.62%
Min		58.600	59.000	-0.600	-1.01%	0.00%
Std Dev		0.620	0.540	0.254	0.43%	0.39%



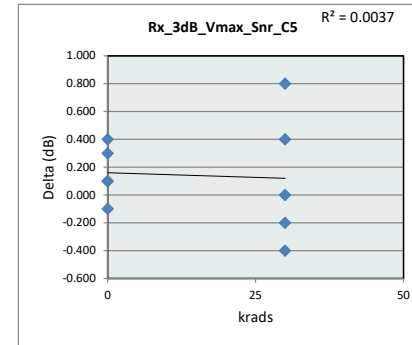
Rx_3dB_Vmax_Hd2_dBC_C5		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	50	dB
krads	0	30
LL	50.000	50.000
Min	59.000	59.800
Average	59.820	60.240
Max	60.400	60.800
UL	100.000	100.000



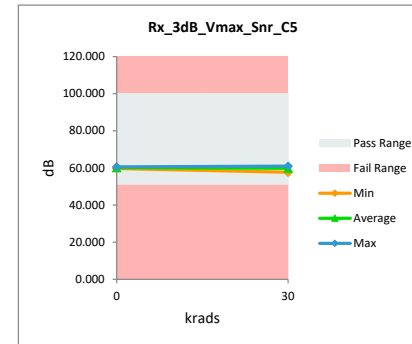
TID Report

AFE7903-SEPM

Rx_3dB_Vmax_Snr_C5						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	60.700	60.600	0.100	0.16%	0.20%
0	C2	60.500	60.400	0.100	0.17%	0.20%
0	C3	59.900	60.000	-0.100	-0.17%	0.20%
0	C4	60.600	60.300	0.300	0.50%	0.61%
0	C5	60.100	59.700	0.400	0.67%	0.82%
30	1	61.000	60.200	0.800	1.31%	1.63%
30	2	60.400	60.000	0.400	0.66%	0.82%
30	3	60.300	60.300	0.000	0.00%	0.00%
30	4	57.300	57.700	-0.400	-0.70%	0.82%
30	5	60.800	61.000	-0.200	-0.33%	0.41%
Max		61.000	61.000	0.800	1.31%	1.63%
Average		60.160	60.020	0.140	0.23%	0.57%
Min		57.300	57.700	-0.400	-0.70%	0.00%
Std Dev		1.056	0.889	0.347	0.58%	0.48%



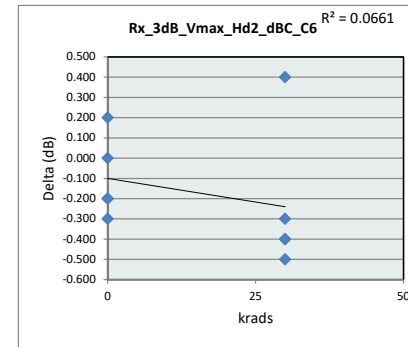
Rx_3dB_Vmax_Snr_C5		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	59.700	57.700
Average	60.200	59.840
Max	60.600	61.000
UL	100.000	100.000



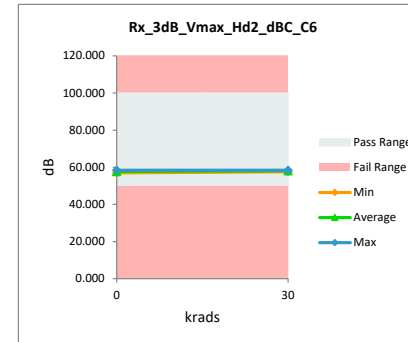
TID Report

AFE7903-SEPM

Rx_3dB_Vmax_Hd2_dBC_C6						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	50		50			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	58.100	57.900	0.200	0.34%	0.40%
0	C2	57.100	57.300	-0.200	-0.35%	0.40%
0	C3	58.200	58.200	0.000	0.00%	0.00%
0	C4	56.800	57.000	-0.200	-0.35%	0.40%
0	C5	58.100	58.400	-0.300	-0.52%	0.60%
30	1	58.700	58.300	0.400	0.68%	0.80%
30	2	57.500	57.900	-0.400	-0.70%	0.80%
30	3	57.800	58.300	-0.500	-0.87%	1.00%
30	4	57.300	57.600	-0.300	-0.52%	0.60%
30	5	58.000	58.400	-0.400	-0.69%	0.80%
Max		58.700	58.400	0.400	0.68%	1.00%
Average		57.760	57.930	-0.170	-0.30%	0.58%
Min		56.800	57.000	-0.500	-0.87%	0.00%
Std Dev		0.578	0.490	0.287	0.49%	0.29%



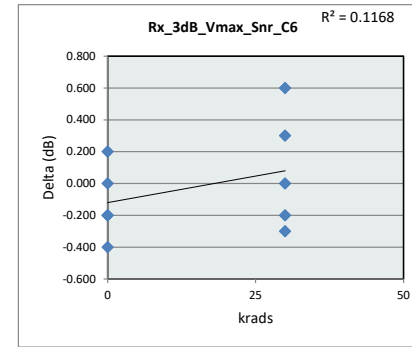
Rx_3dB_Vmax_Hd2_dBC_C6		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	50	dB
krads	0	30
LL	50.000	50.000
Min	57.000	57.600
Average	57.760	58.100
Max	58.400	58.400
UL	100.000	100.000



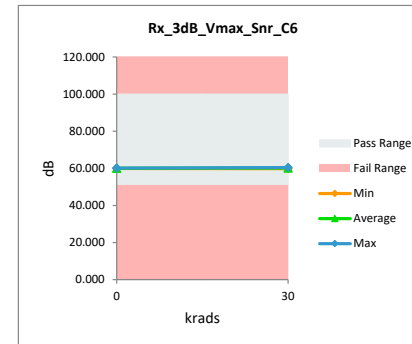
TID Report

AFE7903-SEPM

Rx_3dB_Vmax_Snr_C6						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	59.900	60.100	-0.200	-0.33%	0.41%
0	C2	60.200	60.000	0.200	0.33%	0.41%
0	C3	59.600	60.000	-0.400	-0.67%	0.82%
0	C4	59.700	59.900	-0.200	-0.34%	0.41%
0	C5	60.100	60.100	0.000	0.00%	0.00%
30	1	60.600	60.000	0.600	0.99%	1.22%
30	2	60.400	60.100	0.300	0.50%	0.61%
30	3	60.200	60.400	-0.200	-0.33%	0.41%
30	4	59.800	59.800	0.000	0.00%	0.00%
30	5	60.100	60.400	-0.300	-0.50%	0.61%
Max		60.600	60.400	0.600	0.99%	1.22%
Average		60.060	60.080	-0.020	-0.04%	0.49%
Min		59.600	59.800	-0.400	-0.67%	0.00%
Std Dev		0.313	0.193	0.308	0.51%	0.36%



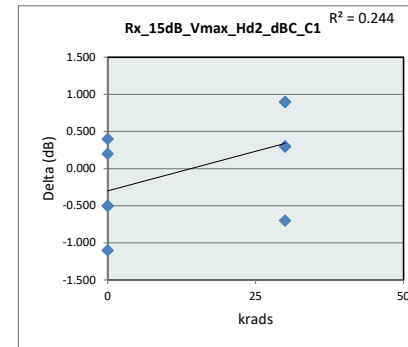
Rx_3dB_Vmax_Snr_C6		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	59.900	59.800
Average	60.020	60.140
Max	60.100	60.400
UL	100.000	100.000



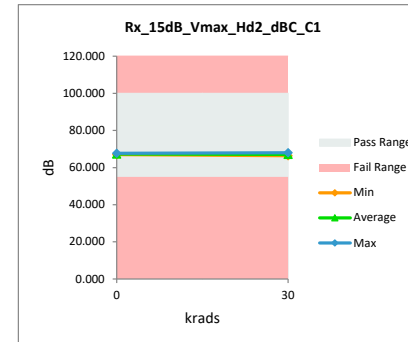
TID Report

AFE7903-SEPM

Rx_15dB_Vmax_Hd2_dBC_C1						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	55		55			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	66.700	67.200	-0.500	-0.75%	1.11%
0	C2	67.200	67.000	0.200	0.30%	0.44%
0	C3	68.100	67.700	0.400	0.59%	0.89%
0	C4	66.400	67.500	-1.100	-1.66%	2.44%
0	C5	66.700	67.200	-0.500	-0.75%	1.11%
30	1	68.300	67.400	0.900	1.32%	2.00%
30	2	67.900	67.000	0.900	1.33%	2.00%
30	3	66.700	66.400	0.300	0.45%	0.67%
30	4	66.900	66.600	0.300	0.45%	0.67%
30	5	67.300	68.000	-0.700	-1.04%	1.56%
Max		68.300	68.000	0.900	1.33%	2.44%
Average		67.220	67.200	0.020	0.02%	1.29%
Min		66.400	66.400	-1.100	-1.66%	0.44%
Std Dev		0.666	0.483	0.683	1.02%	0.68%



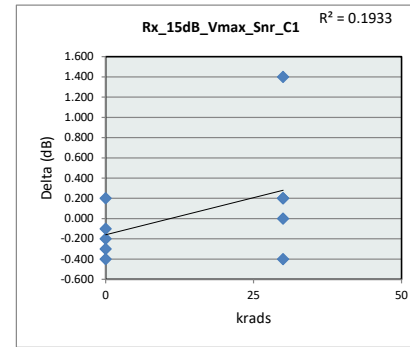
Rx_15dB_Vmax_Hd2_dBC_C1		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	55	dB
krads	0	30
LL	55.000	55.000
Min	67.000	66.400
Average	67.320	67.080
Max	67.700	68.000
UL	100.000	100.000



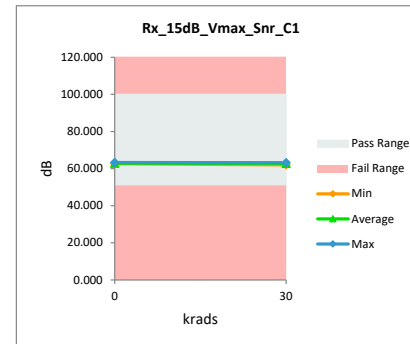
TID Report

AFE7903-SEPM

Rx_15dB_Vmax_Snr_C1						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	62.900	63.100	-0.200	-0.32%	0.41%
0	C2	63.000	63.300	-0.300	-0.48%	0.61%
0	C3	62.300	62.700	-0.400	-0.64%	0.82%
0	C4	63.100	62.900	0.200	0.32%	0.41%
0	C5	62.500	62.600	-0.100	-0.16%	0.20%
30	1	63.400	63.200	0.200	0.32%	0.41%
30	2	63.000	62.800	0.200	0.32%	0.41%
30	3	63.400	62.000	1.400	2.21%	2.86%
30	4	63.200	63.200	0.000	0.00%	0.00%
30	5	62.300	62.700	-0.400	-0.64%	0.82%
Max		63.400	63.300	1.400	2.21%	2.86%
Average		62.910	62.850	0.060	0.09%	0.69%
Min		62.300	62.000	-0.400	-0.64%	0.00%
Std Dev		0.412	0.387	0.527	0.83%	0.80%



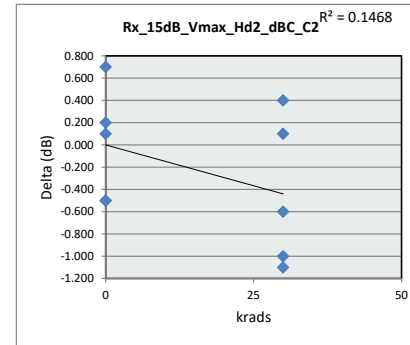
Rx_15dB_Vmax_Snr_C1		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	62.600	62.000
Average	62.920	62.780
Max	63.300	63.200
UL	100.000	100.000



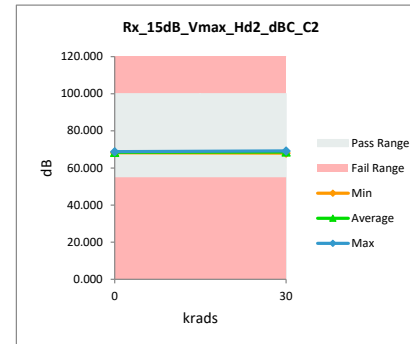
TID Report

AFE7903-SEPM

Rx_15dB_Vmax_Hd2_dBC_C2						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	55		55			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	69.000	68.300	0.700	1.01%	1.56%
0	C2	67.700	68.200	-0.500	-0.74%	1.11%
0	C3	68.300	68.800	-0.500	-0.73%	1.11%
0	C4	68.500	68.300	0.200	0.29%	0.44%
0	C5	68.800	68.700	0.100	0.15%	0.22%
30	1	67.700	68.300	-0.600	-0.89%	1.33%
30	2	69.100	68.700	0.400	0.58%	0.89%
30	3	68.200	69.200	-1.000	-1.47%	2.22%
30	4	68.900	68.800	0.100	0.15%	0.22%
30	5	66.900	68.000	-1.100	-1.64%	2.44%
Max		69.100	69.200	0.700	1.01%	2.44%
Average		68.310	68.530	-0.220	-0.33%	1.16%
Min		66.900	68.000	-1.100	-1.64%	0.22%
Std Dev		0.705	0.365	0.605	0.89%	0.77%



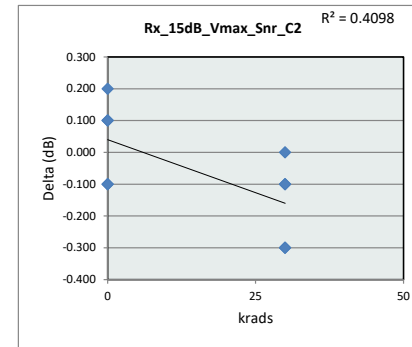
Rx_15dB_Vmax_Hd2_dBC_C2		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	55	dB
krads	0	30
LL	55.000	55.000
Min	68.200	68.000
Average	68.460	68.600
Max	68.800	69.200
UL	100.000	100.000



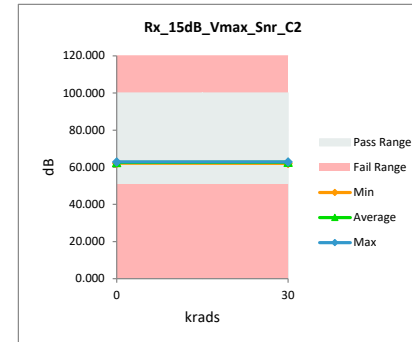
TID Report

AFE7903-SEPM

Rx_15dB_Vmax_Snr_C2						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	63.000	62.900	0.100	0.16%	0.20%
0	C2	62.700	62.800	-0.100	-0.16%	0.20%
0	C3	62.300	62.400	-0.100	-0.16%	0.20%
0	C4	62.900	62.700	0.200	0.32%	0.41%
0	C5	62.300	62.200	0.100	0.16%	0.20%
30	1	62.600	62.900	-0.300	-0.48%	0.61%
30	2	62.400	62.700	-0.300	-0.48%	0.61%
30	3	62.800	62.900	-0.100	-0.16%	0.20%
30	4	62.800	62.900	-0.100	-0.16%	0.20%
30	5	62.100	62.100	0.000	0.00%	0.00%
Max		63.000	62.900	0.200	0.32%	0.61%
Average		62.590	62.650	-0.060	-0.10%	0.29%
Min		62.100	62.100	-0.300	-0.48%	0.00%
Std Dev		0.300	0.306	0.165	0.26%	0.20%



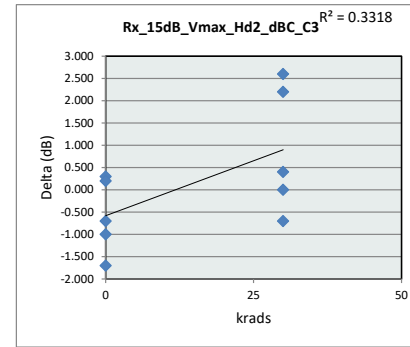
Rx_15dB_Vmax_Snr_C2		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	62.200	62.100
Average	62.600	62.700
Max	62.900	62.900
UL	100.000	100.000



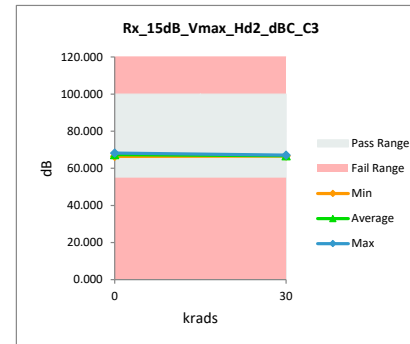
TID Report

AFE7903-SEPM

Rx_15dB_Vmax_Hd2_dBC_C3						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	55		55			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	66.300	67.000	-0.700	-1.06%	1.56%
0	C2	66.600	67.600	-1.000	-1.50%	2.22%
0	C3	66.700	66.400	0.300	0.45%	0.67%
0	C4	66.500	68.200	-1.700	-2.56%	3.78%
0	C5	67.800	67.600	0.200	0.29%	0.44%
30	1	66.900	66.900	0.000	0.00%	0.00%
30	2	68.800	66.600	2.200	3.20%	4.89%
30	3	66.400	67.100	-0.700	-1.05%	1.56%
30	4	67.000	66.600	0.400	0.60%	0.89%
30	5	69.200	66.600	2.600	3.76%	5.78%
Max		69.200	68.200	2.600	3.76%	5.78%
Average		67.220	67.060	0.160	0.21%	2.18%
Min		66.300	66.400	-1.700	-2.56%	0.00%
Std Dev		1.033	0.576	1.354	1.99%	1.98%



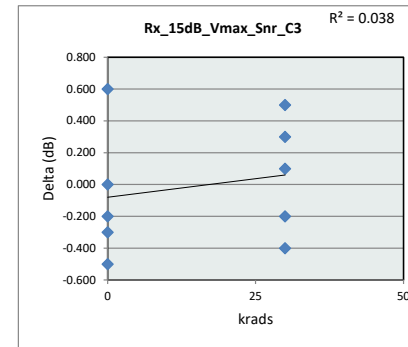
Rx_15dB_Vmax_Hd2_dBC_C3		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	55	dB
krads	0	30
LL	55.000	55.000
Min	66.400	66.600
Average	67.360	66.760
Max	68.200	67.100
UL	100.000	100.000



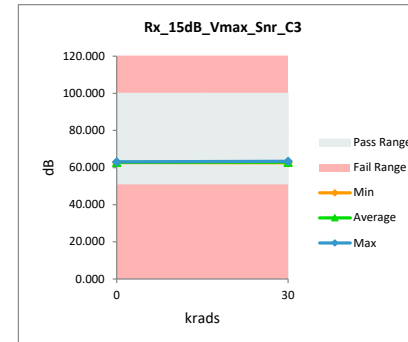
TID Report

AFE7903-SEPM

Rx_15dB_Vmax_Snr_C3						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	63.400	62.800	0.600	0.95%	1.22%
0	C2	62.800	63.100	-0.300	-0.48%	0.61%
0	C3	62.500	62.700	-0.200	-0.32%	0.41%
0	C4	63.000	63.000	0.000	0.00%	0.00%
0	C5	62.200	62.700	-0.500	-0.80%	1.02%
30	1	63.400	62.900	0.500	0.79%	1.02%
30	2	63.000	62.900	0.100	0.16%	0.20%
30	3	63.000	62.700	0.300	0.48%	0.61%
30	4	63.200	63.400	-0.200	-0.32%	0.41%
30	5	62.200	62.600	-0.400	-0.64%	0.82%
Max		63.400	63.400	0.600	0.95%	1.22%
Average		62.870	62.880	-0.010	-0.02%	0.63%
Min		62.200	62.600	-0.500	-0.80%	0.00%
Std Dev		0.442	0.239	0.378	0.60%	0.39%



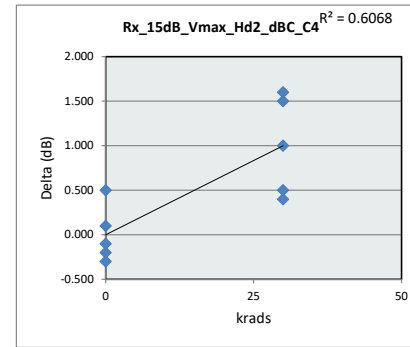
Rx_15dB_Vmax_Snr_C3		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	62.700	62.600
Average	62.860	62.900
Max	63.100	63.400
UL	100.000	100.000



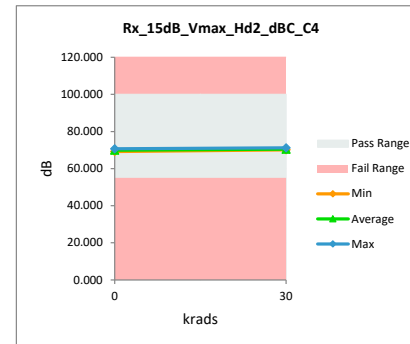
TID Report

AFE7903-SEPM

Rx_15dB_Vmax_Hd2_dBC_C4						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	55		55			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	69.600	69.900	-0.300	-0.43%	0.67%
0	C2	69.500	69.400	0.100	0.14%	0.22%
0	C3	70.200	70.400	-0.200	-0.28%	0.44%
0	C4	69.700	69.200	0.500	0.72%	1.11%
0	C5	70.600	70.700	-0.100	-0.14%	0.22%
30	1	71.100	70.100	1.000	1.41%	2.22%
30	2	71.700	70.200	1.500	2.09%	3.33%
30	3	71.600	71.200	0.400	0.56%	0.89%
30	4	72.200	70.600	1.600	2.22%	3.56%
30	5	70.800	70.300	0.500	0.71%	1.11%
Max		72.200	71.200	1.600	2.22%	3.56%
Average		70.700	70.200	0.500	0.70%	1.38%
Min		69.500	69.200	-0.300	-0.43%	0.22%
Std Dev		0.951	0.596	0.677	0.94%	1.23%



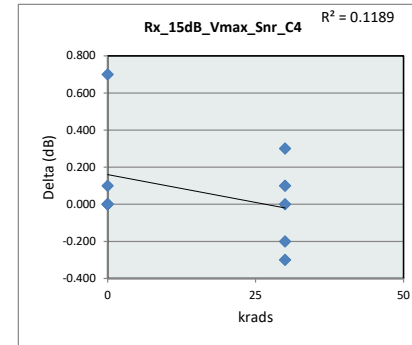
Rx_15dB_Vmax_Hd2_dBC_C4		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	55	dB
krads	0	30
LL	55.000	55.000
Min	69.200	70.100
Average	69.920	70.480
Max	70.700	71.200
UL	100.000	100.000



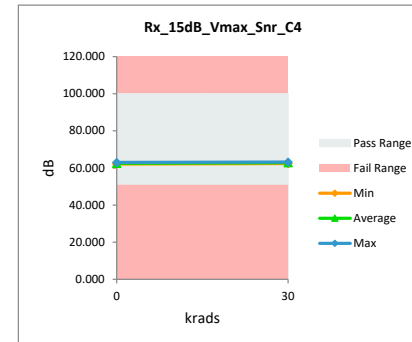
TID Report

AFE7903-SEPM

Rx_15dB_Vmax_Snr_C4						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	63.000	63.000	0.000	0.00%	0.00%
0	C2	62.700	62.700	0.000	0.00%	0.00%
0	C3	62.200	62.100	0.100	0.16%	0.20%
0	C4	63.000	62.300	0.700	1.11%	1.43%
0	C5	62.500	62.500	0.000	0.00%	0.00%
30	1	62.900	63.200	-0.300	-0.48%	0.61%
30	2	63.000	62.900	0.100	0.16%	0.20%
30	3	62.700	62.700	0.000	0.00%	0.00%
30	4	62.700	62.900	-0.200	-0.32%	0.41%
30	5	62.700	62.400	0.300	0.48%	0.61%
Max		63.000	63.200	0.700	1.11%	1.43%
Average		62.740	62.670	0.070	0.11%	0.35%
Min		62.200	62.100	-0.300	-0.48%	0.00%
Std Dev		0.255	0.343	0.275	0.44%	0.45%



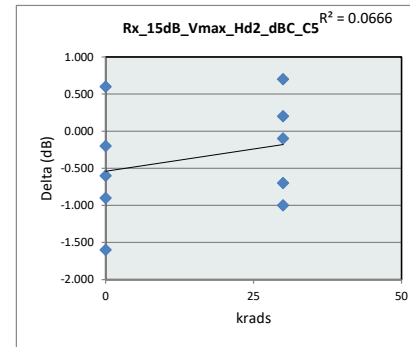
Rx_15dB_Vmax_Snr_C4		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	62.100	62.400
Average	62.520	62.820
Max	63.000	63.200
UL	100.000	100.000



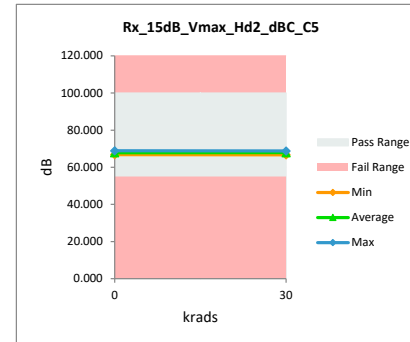
TID Report

AFE7903-SEPM

Rx_15dB_Vmax_Hd2_dBC_C5						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	55		55			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	67.200	68.100	-0.900	-1.34%	2.00%
0	C2	67.300	68.900	-1.600	-2.38%	3.56%
0	C3	67.400	67.600	-0.200	-0.30%	0.44%
0	C4	67.100	67.700	-0.600	-0.89%	1.33%
0	C5	67.400	66.800	0.600	0.89%	1.33%
30	1	66.900	67.600	-0.700	-1.05%	1.56%
30	2	68.600	68.700	-0.100	-0.15%	0.22%
30	3	67.400	66.700	0.700	1.04%	1.56%
30	4	67.900	67.700	0.200	0.29%	0.44%
30	5	67.800	68.800	-1.000	-1.47%	2.22%
Max		68.600	68.900	0.700	1.04%	3.56%
Average		67.500	67.860	-0.360	-0.54%	1.47%
Min		66.900	66.700	-1.600	-2.38%	0.22%
Std Dev		0.488	0.773	0.735	1.09%	0.99%



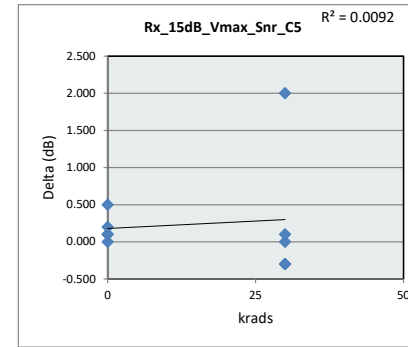
Rx_15dB_Vmax_Hd2_dBC_C5		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	55	dB
krads	0	30
LL	55.000	55.000
Min	66.800	66.700
Average	67.820	67.900
Max	68.900	68.800
UL	100.000	100.000



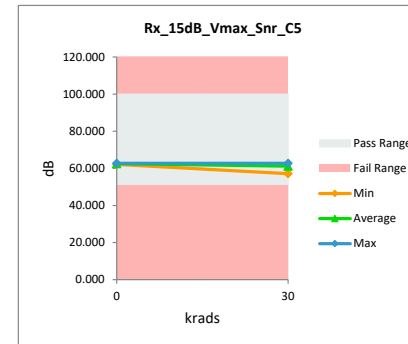
TID Report

AFE7903-SEPM

Rx_15dB_Vmax_Snr_C5						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	62.800	62.700	0.100	0.16%	0.20%
0	C2	63.100	62.600	0.500	0.79%	1.02%
0	C3	62.400	62.300	0.100	0.16%	0.20%
0	C4	62.900	62.700	0.200	0.32%	0.41%
0	C5	62.100	62.100	0.000	0.00%	0.00%
30	1	62.800	60.800	2.000	3.18%	4.08%
30	2	62.700	62.700	0.000	0.00%	0.00%
30	3	62.400	62.700	-0.300	-0.48%	0.61%
30	4	56.800	57.100	-0.300	-0.53%	0.61%
30	5	62.600	62.500	0.100	0.16%	0.20%
Max		63.100	62.700	2.000	3.18%	4.08%
Average		62.060	61.820	0.240	0.38%	0.73%
Min		56.800	57.100	-0.300	-0.53%	0.00%
Std Dev		1.870	1.757	0.660	1.06%	1.22%



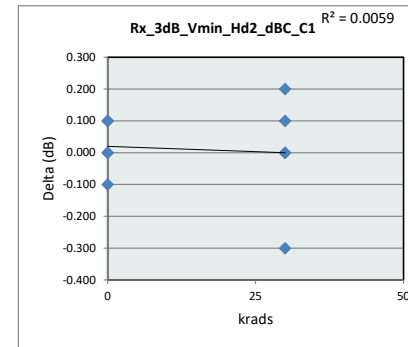
Rx_15dB_Vmax_Snr_C5		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	62.100	57.100
Average	62.480	61.160
Max	62.700	62.700
UL	100.000	100.000



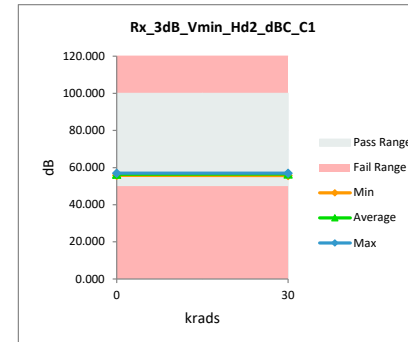
TID Report

AFE7903-SEPM

Rx_3dB_Vmin_Hd2_dBC_C1						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	50		50			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	56.600	56.600	0.000	0.00%	0.00%
0	C2	55.700	55.800	-0.100	-0.18%	0.20%
0	C3	57.100	57.000	0.100	0.18%	0.20%
0	C4	56.400	56.300	0.100	0.18%	0.20%
0	C5	56.300	56.300	0.000	0.00%	0.00%
30	1	56.600	56.600	0.000	0.00%	0.00%
30	2	57.200	57.000	0.200	0.35%	0.40%
30	3	56.400	56.400	0.000	0.00%	0.00%
30	4	55.800	55.700	0.100	0.18%	0.20%
30	5	56.700	57.000	-0.300	-0.53%	0.60%
Max		57.200	57.000	0.200	0.35%	0.60%
Average		56.480	56.470	0.010	0.02%	0.18%
Min		55.700	55.700	-0.300	-0.53%	0.00%
Std Dev		0.483	0.469	0.137	0.24%	0.20%



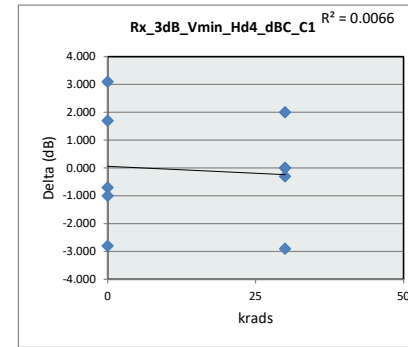
Rx_3dB_Vmin_Hd2_dBC_C1		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	50	dB
krads	0	30
LL	50.000	50.000
Min	55.800	55.700
Average	56.400	56.540
Max	57.000	57.000
UL	100.000	100.000



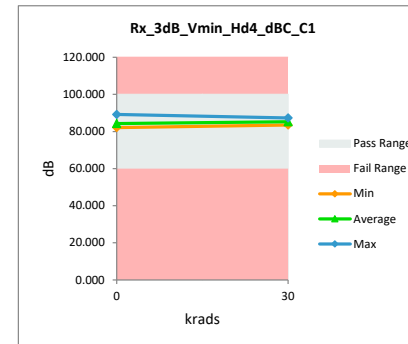
TID Report

AFE7903-SEPM

Rx_3dB_Vmin_Hd4_dBC_C1						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	60		60			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	86.400	89.200	-2.800	-3.24%	7.00%
0	C2	84.200	82.500	1.700	2.02%	4.25%
0	C3	83.800	84.500	-0.700	-0.84%	1.75%
0	C4	82.100	83.100	-1.000	-1.22%	2.50%
0	C5	85.200	82.100	3.100	3.64%	7.75%
30	1	87.300	87.300	0.000	0.00%	0.00%
30	2	82.900	85.800	-2.900	-3.50%	7.25%
30	3	85.500	85.800	-0.300	-0.35%	0.75%
30	4	83.900	83.900	0.000	0.00%	0.00%
30	5	85.500	83.500	2.000	2.34%	5.00%
Max		87.300	89.200	3.100	3.64%	7.75%
Average		84.680	84.770	-0.090	-0.11%	3.62%
Min		82.100	82.100	-2.900	-3.50%	0.00%
Std Dev		1.594	2.252	1.951	2.30%	3.04%



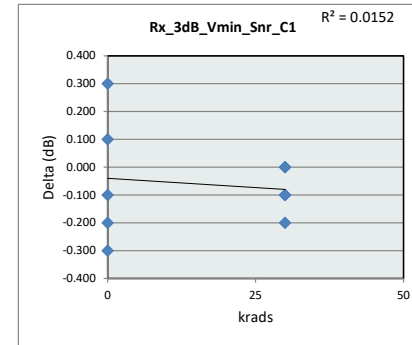
Rx_3dB_Vmin_Hd4_dBC_C1		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	60	dB
krads	0	30
LL	60.000	60.000
Min	82.100	83.500
Average	84.280	85.260
Max	89.200	87.300
UL	100.000	100.000



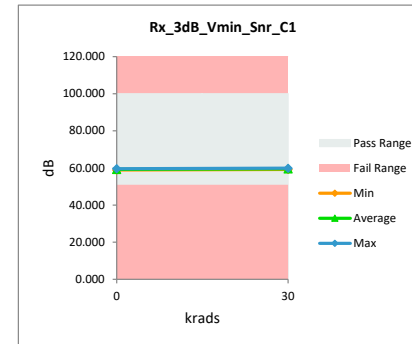
TID Report

AFE7903-SEPM

Rx_3dB_Vmin_Snr_C1						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	59.300	59.600	-0.300	-0.51%	0.61%
0	C2	59.000	58.900	0.100	0.17%	0.20%
0	C3	58.900	59.100	-0.200	-0.34%	0.41%
0	C4	59.700	59.400	0.300	0.50%	0.61%
0	C5	59.100	59.200	-0.100	-0.17%	0.20%
30	1	59.600	59.600	0.000	0.00%	0.00%
30	2	59.800	59.900	-0.100	-0.17%	0.20%
30	3	59.200	59.400	-0.200	-0.34%	0.41%
30	4	59.200	59.200	0.000	0.00%	0.00%
30	5	59.500	59.600	-0.100	-0.17%	0.20%
Max		59.800	59.900	0.300	0.50%	0.61%
Average		59.330	59.390	-0.060	-0.10%	0.29%
Min		58.900	58.900	-0.300	-0.51%	0.00%
Std Dev		0.306	0.296	0.171	0.29%	0.22%



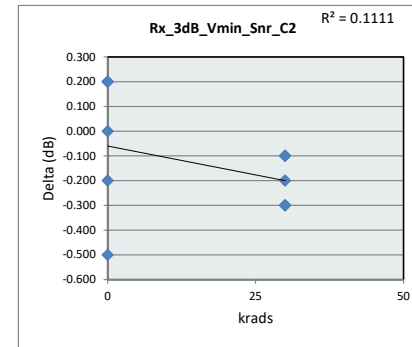
Rx_3dB_Vmin_Snr_C1		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	58.900	59.200
Average	59.240	59.540
Max	59.600	59.900
UL	100.000	100.000



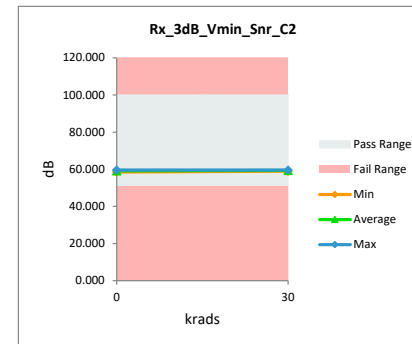
TID Report

AFE7903-SEPM

Rx_3dB_Vmin_Snr_C2						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	58.600	59.100	-0.500	-0.85%	1.02%
0	C2	59.200	59.000	0.200	0.34%	0.41%
0	C3	58.700	58.500	0.200	0.34%	0.41%
0	C4	59.400	59.600	-0.200	-0.34%	0.41%
0	C5	59.500	59.500	0.000	0.00%	0.00%
30	1	59.200	59.500	-0.300	-0.51%	0.61%
30	2	59.300	59.600	-0.300	-0.51%	0.61%
30	3	59.200	59.300	-0.100	-0.17%	0.20%
30	4	58.900	59.000	-0.100	-0.17%	0.20%
30	5	59.200	59.400	-0.200	-0.34%	0.41%
Max		59.500	59.600	0.200	0.34%	1.02%
Average		59.120	59.250	-0.130	-0.22%	0.43%
Min		58.600	58.500	-0.500	-0.85%	0.00%
Std Dev		0.294	0.350	0.221	0.38%	0.28%



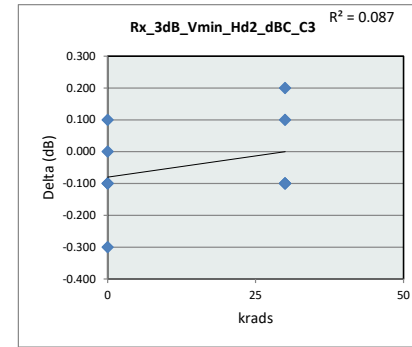
Rx_3dB_Vmin_Snr_C2		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	58.500	59.000
Average	59.140	59.360
Max	59.600	59.600
UL	100.000	100.000



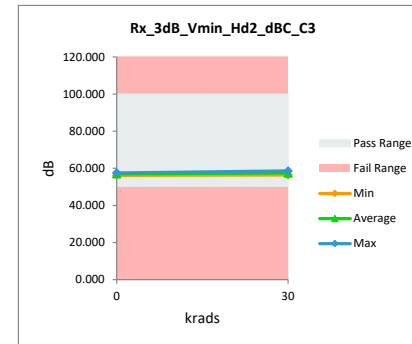
TID Report

AFE7903-SEPM

Rx_3dB_Vmin_Hd2_dBC_C3						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	50		50			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	57.200	57.500	-0.300	-0.52%	0.60%
0	C2	56.200	56.200	0.000	0.00%	0.00%
0	C3	57.300	57.200	0.100	0.17%	0.20%
0	C4	57.400	57.500	-0.100	-0.17%	0.20%
0	C5	56.600	56.700	-0.100	-0.18%	0.20%
30	1	56.500	56.400	0.100	0.18%	0.20%
30	2	58.800	58.600	0.200	0.34%	0.40%
30	3	57.400	57.500	-0.100	-0.17%	0.20%
30	4	58.400	58.500	-0.100	-0.17%	0.20%
30	5	56.300	56.400	-0.100	-0.18%	0.20%
Max		58.800	58.600	0.200	0.34%	0.60%
Average		57.210	57.250	-0.040	-0.07%	0.24%
Min		56.200	56.200	-0.300	-0.52%	0.00%
Std Dev		0.866	0.845	0.143	0.25%	0.16%



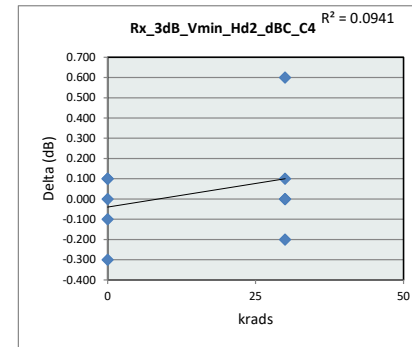
Rx_3dB_Vmin_Hd2_dBC_C3		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	50	dB
krads	0	30
LL	50.000	50.000
Min	56.200	56.400
Average	57.020	57.480
Max	57.500	58.600
UL	100.000	100.000



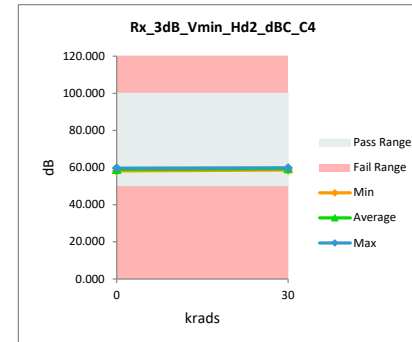
TID Report

AFE7903-SEPM

Rx_3dB_Vmin_Hd2_dBC_C4						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	50		50			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	59.800	59.700	0.100	0.17%	0.20%
0	C2	58.700	58.600	0.100	0.17%	0.20%
0	C3	58.800	59.100	-0.300	-0.51%	0.60%
0	C4	58.100	58.200	-0.100	-0.17%	0.20%
0	C5	59.500	59.500	0.000	0.00%	0.00%
30	1	58.700	58.700	0.000	0.00%	0.00%
30	2	60.500	59.900	0.600	0.99%	1.20%
30	3	59.900	59.900	0.000	0.00%	0.00%
30	4	59.400	59.600	-0.200	-0.34%	0.40%
30	5	59.000	58.900	0.100	0.17%	0.20%
Max		60.500	59.900	0.600	0.99%	1.20%
Average		59.240	59.210	0.030	0.05%	0.30%
Min		58.100	58.200	-0.300	-0.51%	0.00%
Std Dev		0.712	0.595	0.241	0.40%	0.37%



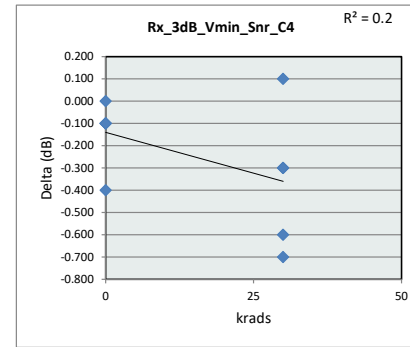
Rx_3dB_Vmin_Hd2_dBC_C4		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	50	dB
krads	0	30
LL	50.000	50.000
Min	58.200	58.700
Average	59.020	59.400
Max	59.700	59.900
UL	100.000	100.000



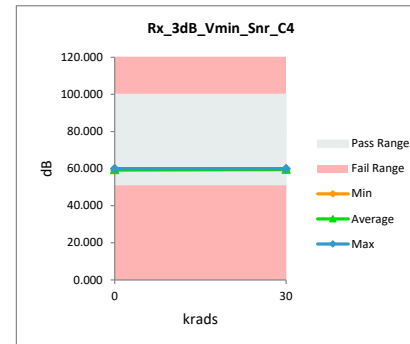
TID Report

AFE7903-SEPM

Rx_3dB_Vmin_Snr_C4						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	59.600	60.000	-0.400	-0.67%	0.82%
0	C2	59.200	59.200	0.000	0.00%	0.00%
0	C3	59.000	59.100	-0.100	-0.17%	0.20%
0	C4	59.500	59.600	-0.100	-0.17%	0.20%
0	C5	59.600	59.700	-0.100	-0.17%	0.20%
30	1	59.400	59.700	-0.300	-0.51%	0.61%
30	2	59.300	59.600	-0.300	-0.51%	0.61%
30	3	58.800	59.400	-0.600	-1.02%	1.22%
30	4	59.300	60.000	-0.700	-1.18%	1.43%
30	5	59.600	59.500	0.100	0.17%	0.20%
Max		59.600	60.000	0.100	0.17%	1.43%
Average		59.330	59.580	-0.250	-0.42%	0.55%
Min		58.800	59.100	-0.700	-1.18%	0.00%
Std Dev		0.271	0.297	0.259	0.44%	0.48%



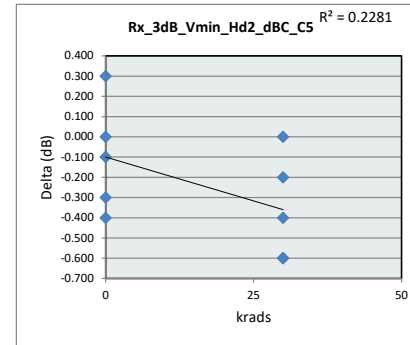
Rx_3dB_Vmin_Snr_C4		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	59.100	59.400
Average	59.520	59.640
Max	60.000	60.000
UL	100.000	100.000



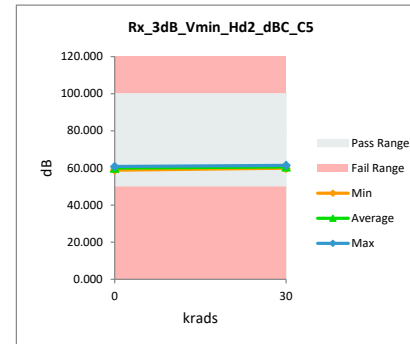
TID Report

AFE7903-SEPM

		Rx_3dB_Vmin_Hd2_dBC_C5				
Test Site		CLAB	CLAB			
Tester		VLCT92	VLCT92			
Test Number		VL713303	VL713303			
Unit		dB				
Max Limit		100	100			
Min Limit		50	50			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	60.300	60.400	-0.100	-0.17%	0.20%
0	C2	60.400	60.800	-0.400	-0.66%	0.80%
0	C3	59.300	59.600	-0.300	-0.51%	0.60%
0	C4	60.400	60.100	0.300	0.50%	0.60%
0	C5	58.800	58.800	0.000	0.00%	0.00%
30	1	59.700	59.900	-0.200	-0.34%	0.40%
30	2	61.400	61.400	0.000	0.00%	0.00%
30	3	59.700	60.300	-0.600	-1.01%	1.20%
30	4	59.400	60.000	-0.600	-1.01%	1.20%
30	5	60.700	61.100	-0.400	-0.66%	0.80%
	Max	61.400	61.400	0.300	0.50%	1.20%
	Average	60.010	60.240	-0.230	-0.38%	0.58%
	Min	58.800	58.800	-0.600	-1.01%	0.00%
	Std Dev	0.769	0.753	0.287	0.48%	0.44%



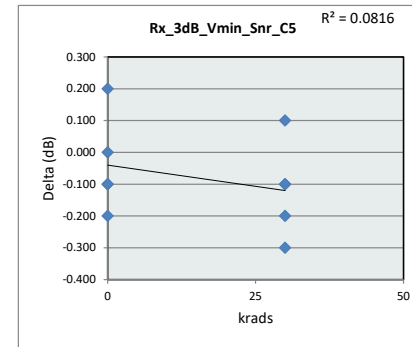
Rx_3dB_Vmin_Hd2_dBC_C5		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	50	dB
krads	0	30
LL	50.000	50.000
Min	58.800	59.900
Average	59.940	60.540
Max	60.800	61.400
UL	100.000	100.000



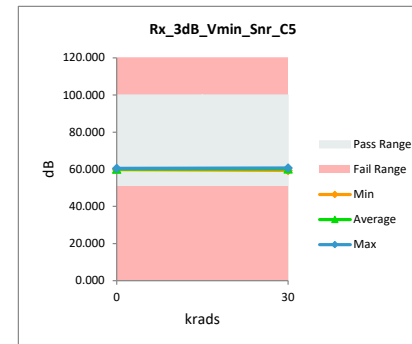
TID Report

AFE7903-SEPM

Rx_3dB_Vmin_Snr_C5						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	59.900	59.900	0.000	0.00%	0.00%
0	C2	60.600	60.400	0.200	0.33%	0.41%
0	C3	59.600	59.800	-0.200	-0.34%	0.41%
0	C4	60.400	60.500	-0.100	-0.17%	0.20%
0	C5	59.900	60.000	-0.100	-0.17%	0.20%
30	1	60.400	60.300	0.100	0.17%	0.20%
30	2	60.500	60.700	-0.200	-0.33%	0.41%
30	3	60.200	60.300	-0.100	-0.17%	0.20%
30	4	59.100	59.400	-0.300	-0.51%	0.61%
30	5	60.300	60.400	-0.100	-0.17%	0.20%
Max		60.600	60.700	0.200	0.33%	0.61%
Average		60.090	60.170	-0.080	-0.13%	0.29%
Min		59.100	59.400	-0.300	-0.51%	0.00%
Std Dev		0.468	0.389	0.148	0.25%	0.17%



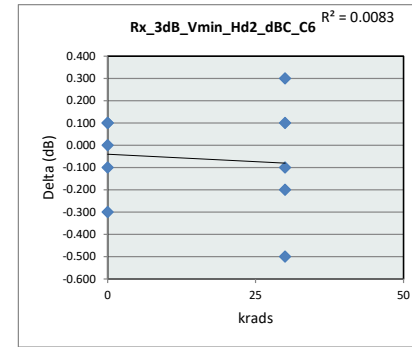
Rx_3dB_Vmin_Snr_C5		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	59.800	59.400
Average	60.120	60.220
Max	60.500	60.700
UL	100.000	100.000



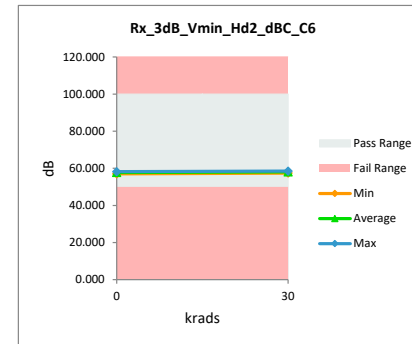
TID Report

AFE7903-SEPM

Rx_3dB_Vmin_Hd2_dBC_C6						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	50		50			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	57.700	57.800	-0.100	-0.17%	0.20%
0	C2	57.000	57.300	-0.300	-0.53%	0.60%
0	C3	58.200	58.200	0.000	0.00%	0.00%
0	C4	57.100	57.000	0.100	0.18%	0.20%
0	C5	58.300	58.200	0.100	0.17%	0.20%
30	1	58.800	58.500	0.300	0.51%	0.60%
30	2	57.400	57.500	-0.100	-0.17%	0.20%
30	3	57.900	58.400	-0.500	-0.86%	1.00%
30	4	57.500	57.400	0.100	0.17%	0.20%
30	5	58.300	58.500	-0.200	-0.34%	0.40%
Max		58.800	58.500	0.300	0.51%	1.00%
Average		57.820	57.880	-0.060	-0.10%	0.36%
Min		57.000	57.000	-0.500	-0.86%	0.00%
Std Dev		0.583	0.551	0.232	0.40%	0.30%



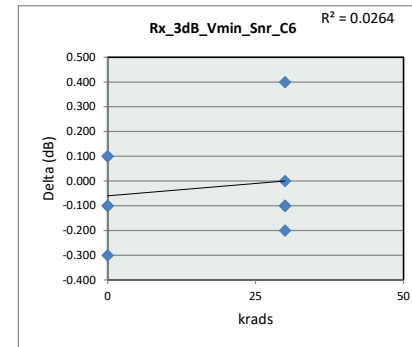
Rx_3dB_Vmin_Hd2_dBC_C6		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	50	dB
krads	0	30
LL	50.000	50.000
Min	57.000	57.400
Average	57.700	58.060
Max	58.200	58.500
UL	100.000	100.000



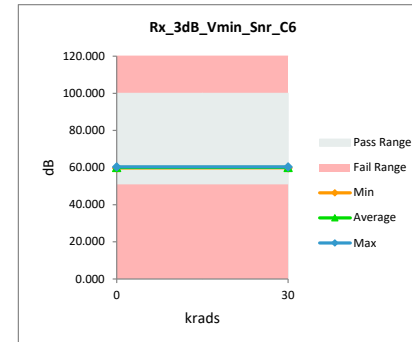
TID Report

AFE7903-SEPM

Rx_3dB_Vmin_Snr_C6						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	59.900	59.800	0.100	0.17%	0.20%
0	C2	59.700	60.000	-0.300	-0.50%	0.61%
0	C3	59.800	59.900	-0.100	-0.17%	0.20%
0	C4	60.100	60.200	-0.100	-0.17%	0.20%
0	C5	60.500	60.400	0.100	0.17%	0.20%
30	1	59.900	60.100	-0.200	-0.33%	0.41%
30	2	60.300	60.400	-0.100	-0.17%	0.20%
30	3	60.300	59.900	0.400	0.66%	0.82%
30	4	59.900	59.900	0.000	0.00%	0.00%
30	5	60.100	60.200	-0.100	-0.17%	0.20%
Max		60.500	60.400	0.400	0.66%	0.82%
Average		60.050	60.080	-0.030	-0.05%	0.31%
Min		59.700	59.800	-0.300	-0.50%	0.00%
Std Dev		0.255	0.215	0.195	0.32%	0.24%



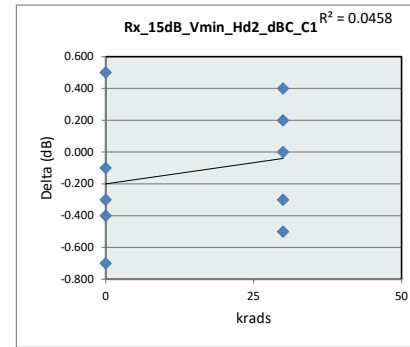
Rx_3dB_Vmin_Snr_C6		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	59.800	59.900
Average	60.060	60.100
Max	60.400	60.400
UL	100.000	100.000



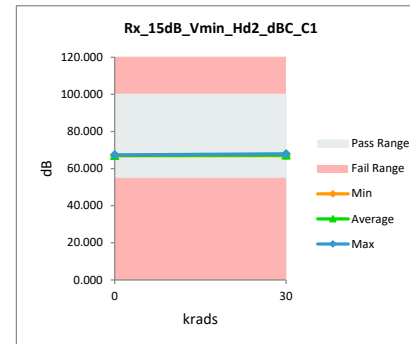
TID Report

AFE7903-SEPM

Rx_15dB_Vmin_Hd2_dBC_C1						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	55		55			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	66.500	67.200	-0.700	-1.05%	1.56%
0	C2	66.500	66.900	-0.400	-0.60%	0.89%
0	C3	67.700	67.200	0.500	0.74%	1.11%
0	C4	66.600	66.900	-0.300	-0.45%	0.67%
0	C5	67.300	67.400	-0.100	-0.15%	0.22%
30	1	67.700	68.000	-0.300	-0.44%	0.67%
30	2	67.400	67.200	0.200	0.30%	0.44%
30	3	67.200	67.200	0.000	0.00%	0.00%
30	4	66.500	67.000	-0.500	-0.75%	1.11%
30	5	67.500	67.100	0.400	0.59%	0.89%
Max		67.700	68.000	0.500	0.74%	1.56%
Average		67.090	67.210	-0.120	-0.18%	0.76%
Min		66.500	66.900	-0.700	-1.05%	0.00%
Std Dev		0.511	0.318	0.394	0.59%	0.46%



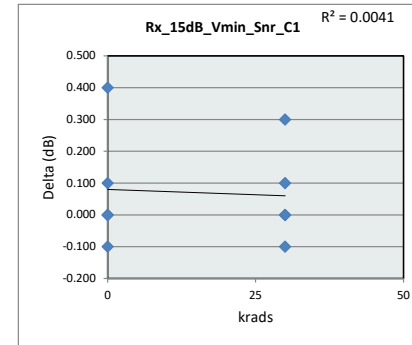
Rx_15dB_Vmin_Hd2_dBC_C1		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	55	dB
krads	0	30
LL	55.000	55.000
Min	66.900	67.000
Average	67.120	67.300
Max	67.400	68.000
UL	100.000	100.000



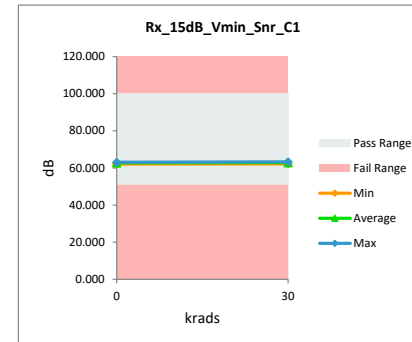
TID Report

AFE7903-SEPM

Rx_15dB_Vmin_Snr_C1						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	63.000	63.100	-0.100	-0.16%	0.20%
0	C2	63.100	63.000	0.100	0.16%	0.20%
0	C3	62.500	62.100	0.400	0.64%	0.82%
0	C4	63.100	63.100	0.000	0.00%	0.00%
0	C5	62.500	62.500	0.000	0.00%	0.00%
30	1	63.000	63.100	-0.100	-0.16%	0.20%
30	2	62.900	62.900	0.000	0.00%	0.00%
30	3	63.000	63.000	0.000	0.00%	0.00%
30	4	63.400	63.300	0.100	0.16%	0.20%
30	5	62.500	62.200	0.300	0.48%	0.61%
Max		63.400	63.300	0.400	0.64%	0.82%
Average		62.900	62.830	0.070	0.11%	0.22%
Min		62.500	62.100	-0.100	-0.16%	0.00%
Std Dev		0.306	0.414	0.164	0.26%	0.28%



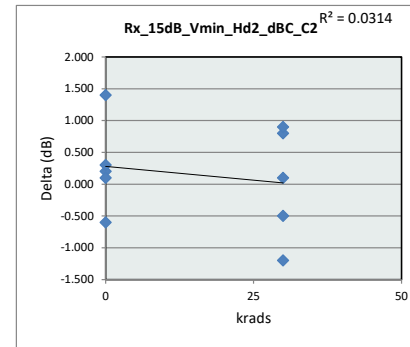
Rx_15dB_Vmin_Snr_C1		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	62.100	62.200
Average	62.760	62.900
Max	63.100	63.300
UL	100.000	100.000



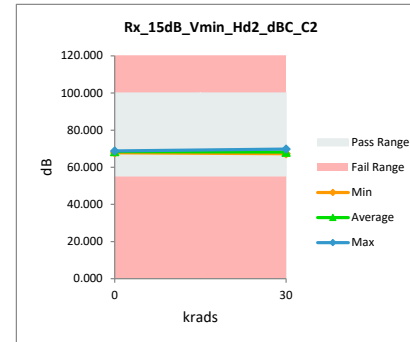
TID Report

AFE7903-SEPM

Rx_15dB_Vmin_Hd2_dBC_C2						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	55		55			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	69.200	67.800	1.400	2.02%	3.11%
0	C2	69.000	68.800	0.200	0.29%	0.44%
0	C3	68.000	68.600	-0.600	-0.88%	1.33%
0	C4	68.900	68.800	0.100	0.15%	0.22%
0	C5	68.500	68.200	0.300	0.44%	0.67%
30	1	68.100	68.600	-0.500	-0.73%	1.11%
30	2	68.100	67.300	0.800	1.17%	1.78%
30	3	68.600	69.800	-1.200	-1.75%	2.67%
30	4	68.700	67.800	0.900	1.31%	2.00%
30	5	67.600	67.500	0.100	0.15%	0.22%
Max		69.200	69.800	1.400	2.02%	3.11%
Average		68.470	68.320	0.150	0.22%	1.36%
Min		67.600	67.300	-1.200	-1.75%	0.22%
Std Dev		0.508	0.751	0.774	1.13%	1.02%



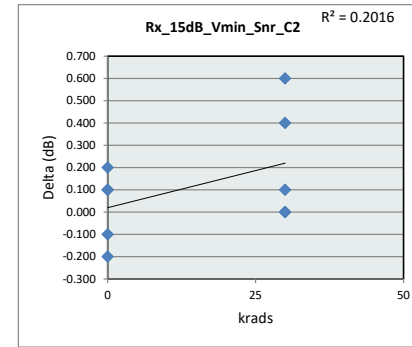
Rx_15dB_Vmin_Hd2_dBC_C2		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	55	dB
krads	0	30
LL	55.000	55.000
Min	67.800	67.300
Average	68.440	68.200
Max	68.800	69.800
UL	100.000	100.000



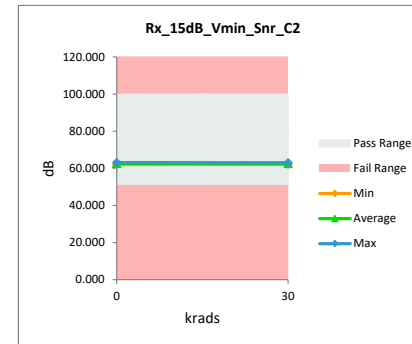
TID Report

AFE7903-SEPM

Rx_15dB_Vmin_Snr_C2						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	62.700	62.900	-0.200	-0.32%	0.41%
0	C2	63.000	63.100	-0.100	-0.16%	0.20%
0	C3	62.200	62.000	0.200	0.32%	0.41%
0	C4	62.900	62.800	0.100	0.16%	0.20%
0	C5	62.500	62.400	0.100	0.16%	0.20%
30	1	63.100	63.000	0.100	0.16%	0.20%
30	2	62.700	62.100	0.600	0.96%	1.22%
30	3	62.900	62.900	0.000	0.00%	0.00%
30	4	63.100	62.700	0.400	0.63%	0.82%
30	5	62.400	62.400	0.000	0.00%	0.00%
Max		63.100	63.100	0.600	0.96%	1.22%
Average		62.750	62.630	0.120	0.19%	0.37%
Min		62.200	62.000	-0.200	-0.32%	0.00%
Std Dev		0.306	0.383	0.235	0.37%	0.38%



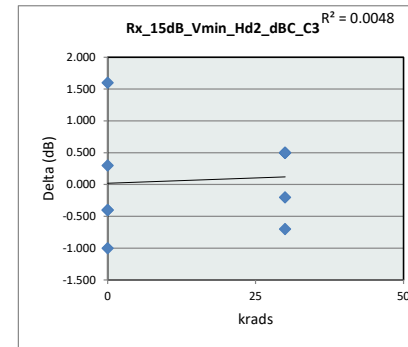
Rx_15dB_Vmin_Snr_C2		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	62.000	62.100
Average	62.640	62.620
Max	63.100	63.000
UL	100.000	100.000



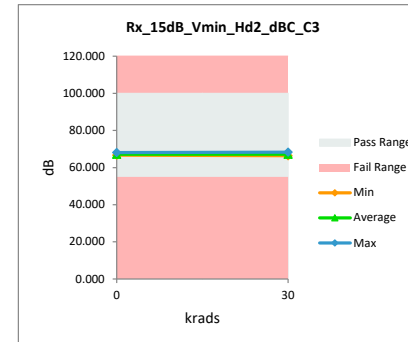
TID Report

AFE7903-SEPM

Rx_15dB_Vmin_Hd2_dBC_C3						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	55		55			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	67.300	67.000	0.300	0.45%	0.67%
0	C2	67.100	68.100	-1.000	-1.49%	2.22%
0	C3	66.300	66.700	-0.400	-0.60%	0.89%
0	C4	66.700	67.100	-0.400	-0.60%	0.89%
0	C5	68.600	67.000	1.600	2.33%	3.56%
30	1	66.900	66.400	0.500	0.75%	1.11%
30	2	67.200	67.400	-0.200	-0.30%	0.44%
30	3	66.400	67.100	-0.700	-1.05%	1.56%
30	4	67.300	66.800	0.500	0.74%	1.11%
30	5	68.800	68.300	0.500	0.73%	1.11%
Max		68.800	68.300	1.600	2.33%	3.56%
Average		67.260	67.190	0.070	0.10%	1.36%
Min		66.300	66.400	-1.000	-1.49%	0.44%
Std Dev		0.837	0.597	0.760	1.12%	0.92%



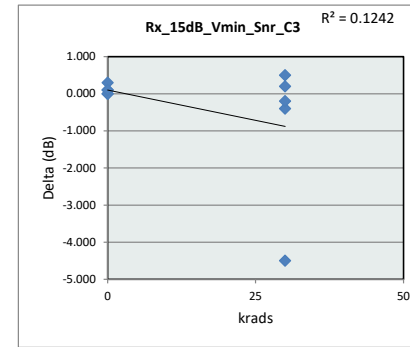
Rx_15dB_Vmin_Hd2_dBC_C3		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	55	dB
krads	0	30
LL	55.000	55.000
Min	66.700	66.400
Average	67.180	67.200
Max	68.100	68.300
UL	100.000	100.000



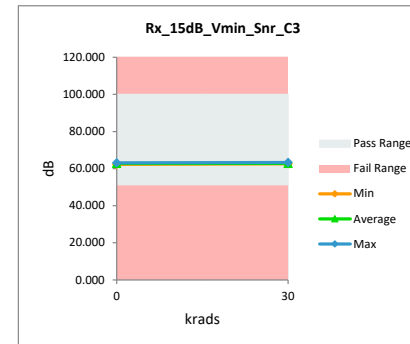
TID Report

AFE7903-SEPM

Rx_15dB_Vmin_Snr_C3						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	63.000	62.900	0.100	0.16%	0.20%
0	C2	62.800	62.800	0.000	0.00%	0.00%
0	C3	62.600	62.300	0.300	0.48%	0.61%
0	C4	63.100	63.100	0.000	0.00%	0.00%
0	C5	62.700	62.600	0.100	0.16%	0.20%
30	1	62.900	63.300	-0.400	-0.64%	0.82%
30	2	62.700	62.900	-0.200	-0.32%	0.41%
30	3	58.100	62.600	-4.500	-7.75%	9.18%
30	4	63.100	62.600	0.500	0.79%	1.02%
30	5	62.800	62.600	0.200	0.32%	0.41%
Max		63.100	63.300	0.500	0.79%	9.18%
Average		62.380	62.770	-0.390	-0.68%	1.29%
Min		58.100	62.300	-4.500	-7.75%	0.00%
Std Dev		1.513	0.291	1.465	2.51%	2.79%



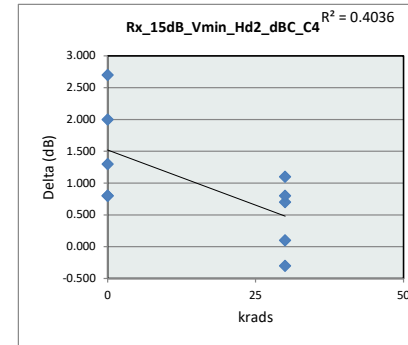
Rx_15dB_Vmin_Snr_C3		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	62.300	62.600
Average	62.740	62.800
Max	63.100	63.300
UL	100.000	100.000



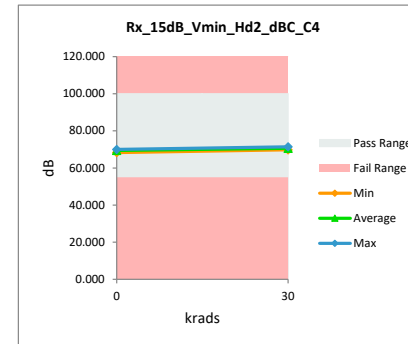
TID Report

AFE7903-SEPM

Rx_15dB_Vmin_Hd2_dBC_C4						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	55		55			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	72.700	70.000	2.700	3.71%	6.00%
0	C2	70.300	69.000	1.300	1.85%	2.89%
0	C3	71.900	69.900	2.000	2.78%	4.44%
0	C4	69.100	68.300	0.800	1.16%	1.78%
0	C5	70.800	70.000	0.800	1.13%	1.78%
30	1	71.000	69.900	1.100	1.55%	2.44%
30	2	71.900	71.200	0.700	0.97%	1.56%
30	3	71.100	71.400	-0.300	-0.42%	0.67%
30	4	70.900	70.800	0.100	0.14%	0.22%
30	5	70.600	69.800	0.800	1.13%	1.78%
Max		72.700	71.400	2.700	3.71%	6.00%
Average		71.030	70.030	1.000	1.40%	2.36%
Min		69.100	68.300	-0.300	-0.42%	0.22%
Std Dev		0.990	0.942	0.863	1.19%	1.73%



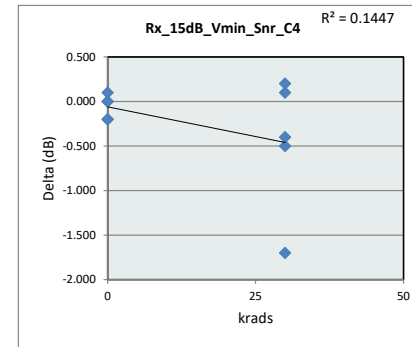
Rx_15dB_Vmin_Hd2_dBC_C4		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	55	dB
krads	0	30
LL	55.000	55.000
Min	68.300	69.800
Average	69.440	70.620
Max	70.000	71.400
UL	100.000	100.000



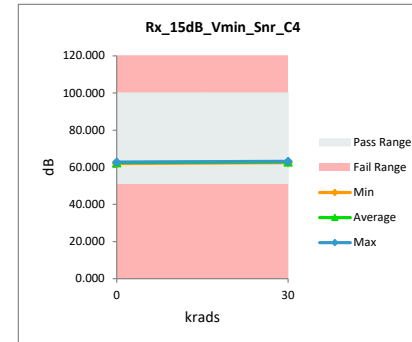
TID Report

AFE7903-SEPM

Rx_15dB_Vmin_Snr_C4						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	62.600	62.800	-0.200	-0.32%	0.41%
0	C2	62.400	62.400	0.000	0.00%	0.00%
0	C3	62.100	62.000	0.100	0.16%	0.20%
0	C4	62.800	62.800	0.000	0.00%	0.00%
0	C5	62.300	62.500	-0.200	-0.32%	0.41%
30	1	62.700	63.200	-0.500	-0.80%	1.02%
30	2	62.800	62.700	0.100	0.16%	0.20%
30	3	61.100	62.800	-1.700	-2.78%	3.47%
30	4	62.600	63.000	-0.400	-0.64%	0.82%
30	5	62.700	62.500	0.200	0.32%	0.41%
Max		62.800	63.200	0.200	0.32%	3.47%
Average		62.410	62.670	-0.260	-0.42%	0.69%
Min		61.100	62.000	-1.700	-2.78%	0.00%
Std Dev		0.513	0.337	0.554	0.90%	1.03%



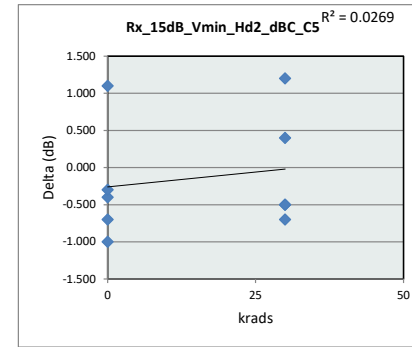
Rx_15dB_Vmin_Snr_C4		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	62.000	62.500
Average	62.500	62.840
Max	62.800	63.200
UL	100.000	100.000



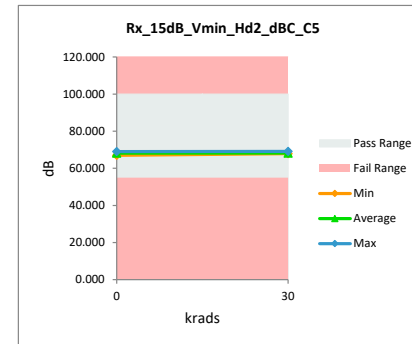
TID Report

AFE7903-SEPM

Rx_15dB_Vmin_Hd2_dBC_C5						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	55		55			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	67.900	68.300	-0.400	-0.59%	0.89%
0	C2	68.700	69.000	-0.300	-0.44%	0.67%
0	C3	67.500	68.500	-1.000	-1.48%	2.22%
0	C4	69.100	68.000	1.100	1.59%	2.44%
0	C5	66.300	67.000	-0.700	-1.06%	1.56%
30	1	67.400	68.100	-0.700	-1.04%	1.56%
30	2	68.600	69.100	-0.500	-0.73%	1.11%
30	3	67.500	68.000	-0.500	-0.74%	1.11%
30	4	69.100	67.900	1.200	1.74%	2.67%
30	5	68.400	68.000	0.400	0.58%	0.89%
Max		69.100	69.100	1.200	1.74%	2.67%
Average		68.050	68.190	-0.140	-0.22%	1.51%
Min		66.300	67.000	-1.000	-1.48%	0.67%
Std Dev		0.892	0.597	0.771	1.13%	0.71%



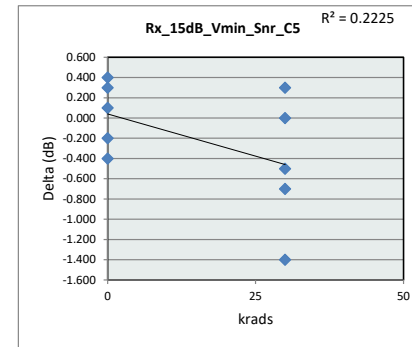
Rx_15dB_Vmin_Hd2_dBC_C5		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	55	dB
krads	0	30
LL	55.000	55.000
Min	67.000	67.900
Average	68.160	68.220
Max	69.000	69.100
UL	100.000	100.000



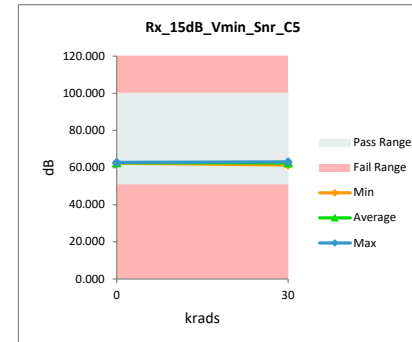
TID Report

AFE7903-SEPM

Rx_15dB_Vmin_Snr_C5						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	62.900	62.800	0.100	0.16%	0.20%
0	C2	63.100	62.800	0.300	0.48%	0.61%
0	C3	62.200	62.400	-0.200	-0.32%	0.41%
0	C4	62.900	62.500	0.400	0.64%	0.82%
0	C5	62.100	62.500	-0.400	-0.64%	0.82%
30	1	62.400	63.100	-0.700	-1.12%	1.43%
30	2	62.700	62.700	0.000	0.00%	0.00%
30	3	63.100	62.800	0.300	0.48%	0.61%
30	4	60.000	61.400	-1.400	-2.33%	2.86%
30	5	62.100	62.600	-0.500	-0.81%	1.02%
Max		63.100	63.100	0.400	0.64%	2.86%
Average		62.350	62.560	-0.210	-0.35%	0.88%
Min		60.000	61.400	-1.400	-2.33%	0.00%
Std Dev		0.914	0.455	0.559	0.92%	0.81%



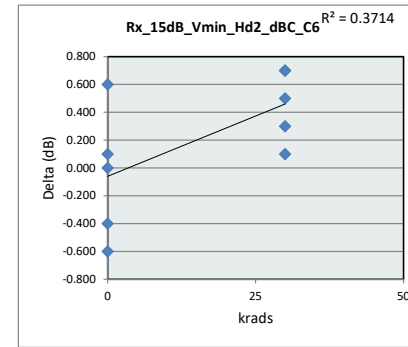
Rx_15dB_Vmin_Snr_C5		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	62.400	61.400
Average	62.600	62.520
Max	62.800	63.100
UL	100.000	100.000



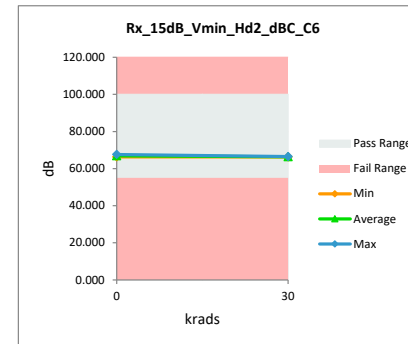
TID Report

AFE7903-SEPM

Rx_15dB_Vmin_Hd2_dBC_C6						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	55		55			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	66.900	66.300	0.600	0.90%	1.33%
0	C2	66.500	66.500	0.000	0.00%	0.00%
0	C3	66.400	66.800	-0.400	-0.60%	0.89%
0	C4	67.300	67.200	0.100	0.15%	0.22%
0	C5	67.000	67.600	-0.600	-0.90%	1.33%
30	1	66.500	66.400	0.100	0.15%	0.22%
30	2	67.000	66.300	0.700	1.04%	1.56%
30	3	66.600	66.300	0.300	0.45%	0.67%
30	4	66.900	66.400	0.500	0.75%	1.11%
30	5	67.200	66.500	0.700	1.04%	1.56%
	Max	67.300	67.600	0.700	1.04%	1.56%
	Average	66.830	66.630	0.200	0.30%	0.89%
	Min	66.400	66.300	-0.600	-0.90%	0.00%
	Std Dev	0.313	0.442	0.450	0.67%	0.58%



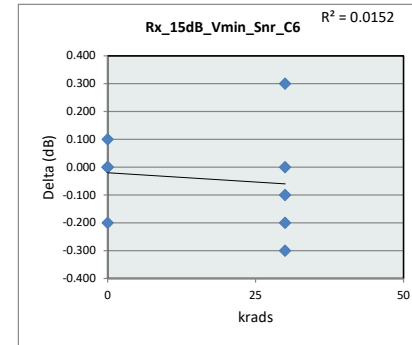
Rx_15dB_Vmin_Hd2_dBC_C6		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	55	dB
krads	0	30
LL	55.000	55.000
Min	66.300	66.300
Average	66.880	66.380
Max	67.600	66.500
UL	100.000	100.000



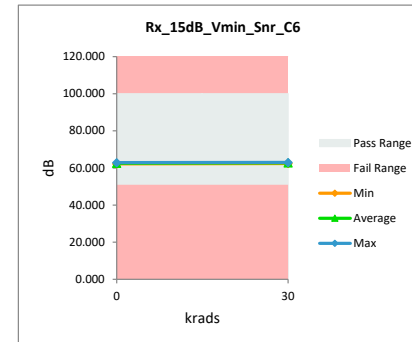
TID Report

AFE7903-SEPM

Rx_15dB_Vmin_Snr_C6						
Test Site	CLAB		CLAB			
Tester	VLCT92		VLCT92			
Test Number	VL713303		VL713303			
Unit	dB		dB			
Max Limit	100		100			
Min Limit	51		51			
krads	Serial #	Pre	Post	Delta	Delta %	% of Limit Range
0	C1	62.800	62.800	0.000	0.00%	0.00%
0	C2	62.500	62.700	-0.200	-0.32%	0.41%
0	C3	62.200	62.200	0.000	0.00%	0.00%
0	C4	62.900	62.900	0.000	0.00%	0.00%
0	C5	62.300	62.200	0.100	0.16%	0.20%
30	1	63.000	62.700	0.300	0.48%	0.61%
30	2	62.600	62.900	-0.300	-0.48%	0.61%
30	3	62.800	63.000	-0.200	-0.32%	0.41%
30	4	62.900	62.900	0.000	0.00%	0.00%
30	5	62.300	62.400	-0.100	-0.16%	0.20%
Max		63.000	63.000	0.300	0.48%	0.61%
Average		62.630	62.670	-0.040	-0.06%	0.24%
Min		62.200	62.200	-0.300	-0.48%	0.00%
Std Dev		0.291	0.298	0.171	0.27%	0.25%



Rx_15dB_Vmin_Snr_C6		
Test Site	CLAB	
Tester	VLCT92	
Test Number	VL713303	
Max Limit	100	dB
Min Limit	51	dB
krads	0	30
LL	51.000	51.000
Min	62.200	62.400
Average	62.560	62.780
Max	62.900	63.000
UL	100.000	100.000



5 Revision History

NOTE: Page numbers for previous revisions may differ from page numbers in the current version.

Changes from Revision * (May 2026) to Revision A (June 2026)	Page
• Deleted details about MEO and GEO orbits.....	1
• Updated the number of RF-sampling transmitter chains from <i>four</i> to <i>two</i>	2
• Updated the number of RF-sampling receiver chains from <i>four</i> to <i>two</i>	2
• Deleted details about RF-sampling feedback chains.....	2
• Updated RF sampling details from <i>L, S, C and X-band frequency ranges</i> to <i>HF, VHF, UHF, L, S and C band</i> ..	2
• Updated Tx, Rx, and PLL analog supplies from 1.2V to 1.25V.....	3
• Updated VDD digital supply voltage from 0.9V to 0.95V.....	3
• Updated IO supplies from 1.8V to 1.85V.....	3
• Deleted Typical power dissipation value.....	3

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