

	Δ	Description	Sheet Effected	Date	Drawn	Checked
A				18/1/07	S.Cohen	S.Cohen
B				01/02/2007	S.Cohen	S.Cohen

EMC Laboratory

Deko 2489 Minirepeater

Manufactured by
dekolink Ltd.

EMC Test Report-corrected

According FCC Part 15 and Part 90 Requirements

January 07

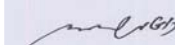
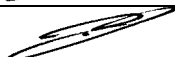
	Function/Title	Name	Signature	Date
Prepared by	Test Engineer	S.Kozliner		01/02/2007
Checked by	Test Engineer	S.Cohen		01/02/2007
Approved by	EMC Lab. Manager	S.Cohen		01/02/2007

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1 GENERAL Information

a. Description of equipment under test

Equipment under Test:	DEKO 2489
FCCID:	OIWCCSR2489IW70
Manufacturer:	DECOLINK WIRELESS .
Serial Numbers:	002
Mode of Operation:	TX MODE
Operating frequency:	Up-link: 806-824MHz 896-901MHz Down-link: 851-869MHz 935-940MHz
Year of Manufacture:	2006

b. Applicant Information:

Applicant:	DECOLINK WIRELESS Ltd.
Applicant Address:	16 Bazel St. Petach Tikva 49510 ISRAEL
Telephone:	+972-3-9180180
FAX:	+972-3-9180190
The testing was observed by:	Mr. Shmuel Bliechman
Following applicant's personnel:	

c. Test Performance:

Date of reception for testing:	1.1.07
Dates of testing	3.1.07-9.1.07
Test Laboratory Location	TADIRAN EMC LAB, Hashoftim 26 Holon 58102 ISRAEL Tel: 972-3-5574476 Fax: 972-3- 5575320

Applicable EMC Specification: Federal Communication Commission (FCC),
Code of Federal Regulations 47,FCC, Part
15: Radio Frequency Devices, Sections
15.109, FCC, Part 90: sections 90.205,
90.209, 90.210, 90.213

2 Test Summary and Signatures.

TADIRAN EMC Laboratory has completed testing of E.U.T in accordance with the requirements of the FCC part 15 and FCC part 90

The E.U.T was found to comply with the requirements of the FCC Part 15.109 Regulations given below

Test Description	Specificati on Referen ce	Date of Testing	Test Report Paragraph	Complianc e PASS/FAI L
Unintentional radiated emission	15.109	02/01/07	9	PASS

The E.U.T was found to comply with the requirements of the FCC Part 90 Regulations given below

Clause	Test Method	Test Description	Required	Result
90.205	2.1046	Output power	Y	PASS
90.210	2.1051	Conducted spurious emissions	Y	PASS
90.210	2.1051	Radiated spurious emissions	Y	PASS
90.213	2.1055	Frequency stability	Y	PASS
90.214		Transient Behavior	N	N/A
90.219		Use of boosters	Y	PASS
2-11-04/EAB/RF	2.1049	Occupied bandwidth	Y	PASS
2-11-04/EAB/RF		Out of band rejection	Y	PASS

a. Test performed by:

Mr. S. Kozliner Test Engineer

**b. Test Report prepared by:**

Mr. Samuel Cohen EMC Lab. Manager

**c. Test Report Approved by:**

Mr. Samuel Cohen EMC Lab. Manager

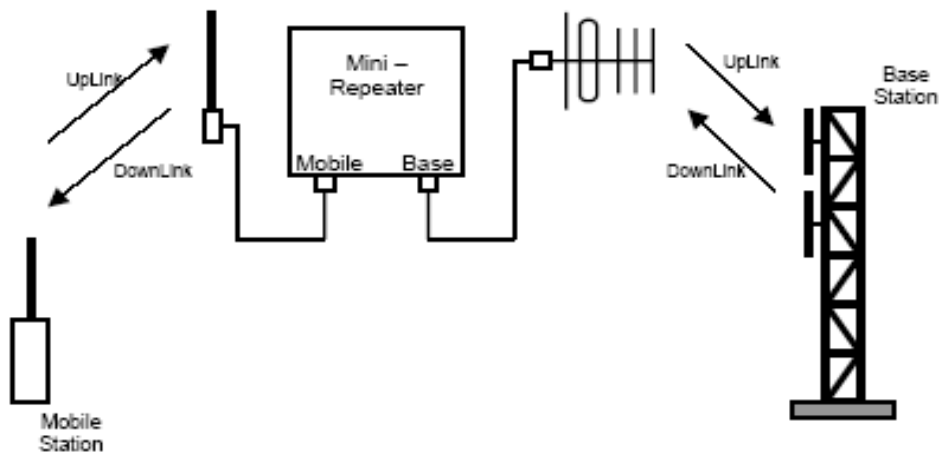


3 EUT Description

The Deko2489 Mini-Repeater is a dual-band RF repeater for both SMR 800 MHz and SMR 900 MHz bands. This repeater is band selectable in the 800 MHz range [18 MHz or 7 MHz bandwidth] and fixed band in the 900 MHz range [5 MHz bandwidth]. These capabilities make the Mini-Repeater fully-rebandable ready.

a. E.U.T Normal Operational Configuration

EUT Normal operational configuration is shown in figure bellow



b. E.U.T Operation description

(1) Operating Frequency:

- *Downlink: 851-869 MHz*
935-940MHz
- *Uplink: 806-824 MHz*
896-901MHz

(2) Emission Designator: GXW

(3) Rated Power: 24.0 dBm

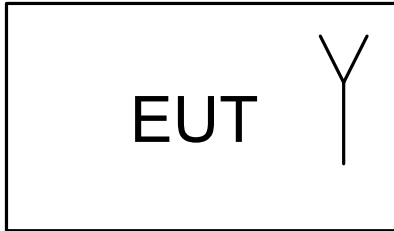
(4) Measured Power: 24.2 dBm

(5) Modulation: iDEN (16-QAM, Data Rate: 64 kbps)

(6) Power Source: **100 to 240 VAC**

c. E.U.T Test Configuration

EUT test configuration is shown in figure bellow

**d. E.U.T Mode of Operation description**

(1) Operating transmit Frequencies:

- *Downlink: 851-869 MHz*
935-940MHz
- *Uplink: 806-824 MHz*
896-901MHz

(2) The EUT was operated with 50 Ω termination or load attenuator at it's ports according the test requirements

(3) The EUT was fed with iDEN modulated or CW RF signal at a level required to normal operation or max level according to test requirements

4 Unintentional radiated emission test according to 15.109

E.U.T: DEKO2489 S/N: 002
Test Method: ANSI 63.4
Date: 04/01/07
Relative Humidity: 25%
Ambient Temperature: 23c
Air Pressure: 1047hpa

Testing Engineer: Shimon Kozliner

Date 9.1.07

a. **Test Results Summary & Conclusions**

The E.U.T was found in compliance with unintentional radiated emission requirements.

b. **Limit:**

Unintentional radiated emission must comply with 15.109 Limits. See limits in table 9b bellow.

Table 9b Limits For 15.109 Class B equipment

Frequency Range (MHz)	Quasi-peak Limits (dB μ V/m)
30 - 88	40
88 - 216	43
216 - 960	46
960 - 2000	54

c. Test Results

Table 9.c .Preliminary test results

Antenna Polarization	Frequency Range(MHz)	Plots Results	PASS/FAIL
Both	30-1000	1	PASS
	1-2.8GHz	2	PASS
	2.9 – 6GHz	-	PASS
	6.4GHz – 10GHz	3	PASS

Table 9c1 Six Highest 15.109

Freq. (MHz)	QP Reading (dbμV/m)	QP Limit (dbμV/m)	Margin (db)	Compliance PASS/FAIL
30-10000	The emission at least 20db bellow the limit			

d. Test Instrumentation and Equipment

Table 9.d Test Instrumentation and Equipment

Item	Model	Manufacturer	Next Date Calibration
Broadband Antenna	BTA-L	Frankonia	10.04.07
Double Ridged Guide Ant (1 - 18) GHz	3105	EMCO	02.05.07
Low Noise Amplifier (0-1GHz)	AM-1300-N	MITEQ	14.01.08
Low Noise Amplifier (1-4GHz)	AMM 003N	AVANTE K	14.01.08
Low Noise Amplifier (2-6GHz)	MWA-02060	ELISRA	14.01.08
Low Noise Amplifier (6-18GHz)	MWA-06180	ELISRA	14.01.08
Spectrum Analyzer	8593A	hp	31.01.08

Test Results Plot No 1

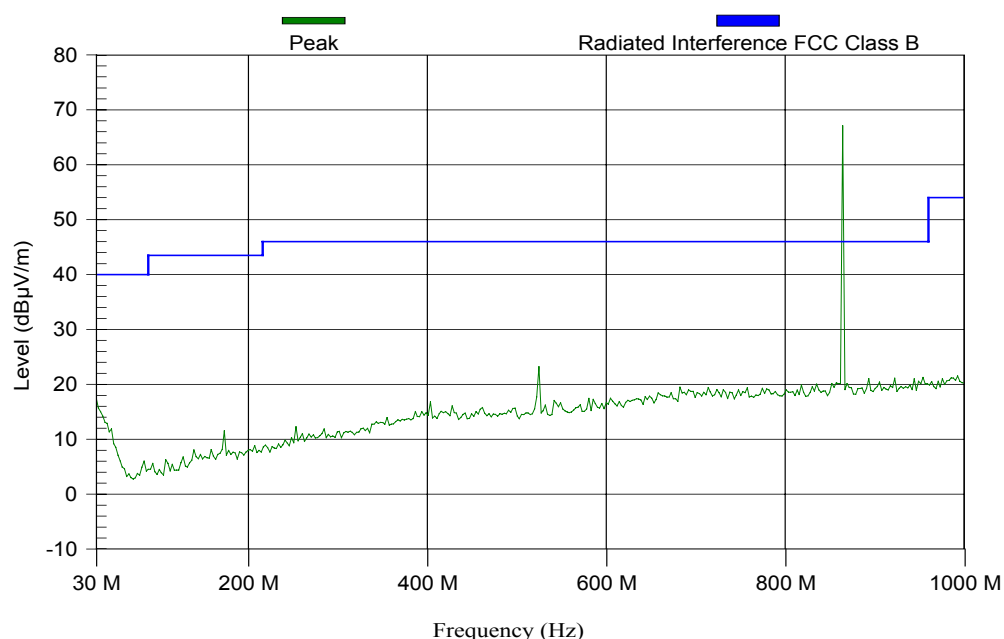
FCC Part 15 30-1000MHz (TX-860MHz, Input Pwr=-16dbm).

Test & EUT General Information		Receiver Setting	
EUT Name:	DEKO 2489 - Mini Repeater	Spect Analyzer	S.A HP 8593E
S/N:	002	Ref. Level:	70 dB μ V
Date of Test:		RBW:	100 kHz
Test Engineer:	SHIMON KOZLINER	VBW:	1000 kHz
Antenna:	Frankonia gray BTA-L_B 3m	Sweep Time:	Auto: 291 ms
Polarization:	Horizontal and Vertical	Pre Amplifier	LNA MITEQ 0.01-1GHz No-3

TEST REMARKS: Thursday, January 04, 2007

4:58:42 PM

Input/Output Attenuated with 30db.



MAXIMUM RESULT DEVIATION:

Detect all peaks above 6 dB below the limit line with a maximum of 6 peaks.

Nr	Frequency (MHz)	PK MaxHold (dB μ V/m)	QP Value (dB μ V/m)	QP Limit (dB μ V/m)	Result
1	864.2	67.1	17.2	46	Pass

Test Results Plot No 2

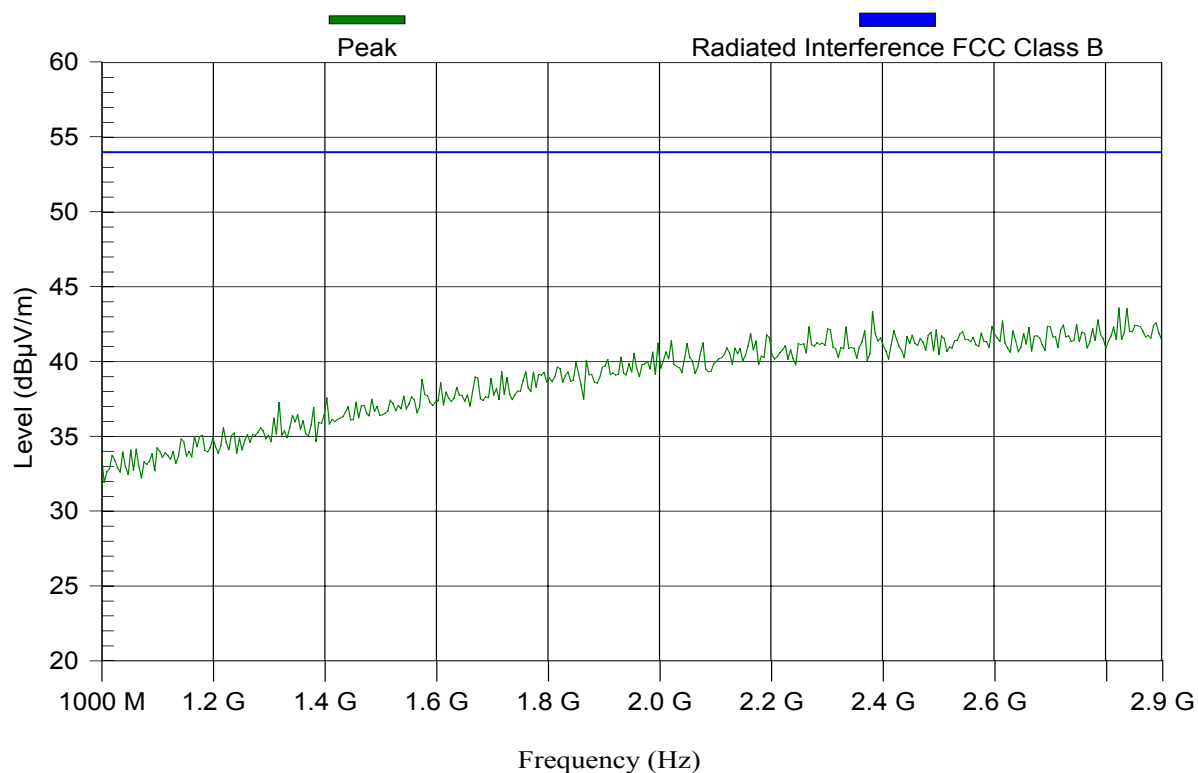
FCC Part 15 1000-2900MHz (TX-860MHz,Input Pwr=-16dbm).

Test & EUT General Information		Receiver Setting	
EUT Name:	DEKO 2489 - Mini Repeater	Spect Analyzer	S.A HP 8593E
S/N:	002	Ref. Level:	70 dB μ V
Date of Test:		RBW:	1000 kHz
Test Engineer:	SHIMON KOZLINER	VBW:	1000 kHz
Antenna:	ARA DRG-118/A 1-18GHz 1319	Sweep Time:	Auto: 38 ms
Polarization:	Horizontal and Vertical	Pre Amplifier	pre amp 1GHz-4GHz

TEST REMARKS: Thursday, January 04, 2007

5:27:11 PM

Input/Output Attenuated with 30db.



MAXIMUM RESULT DEVIATION:

Detect all peaks above 6 dB below the limit line with a maximum of 6 peaks.

None

Test Results Plot No 3

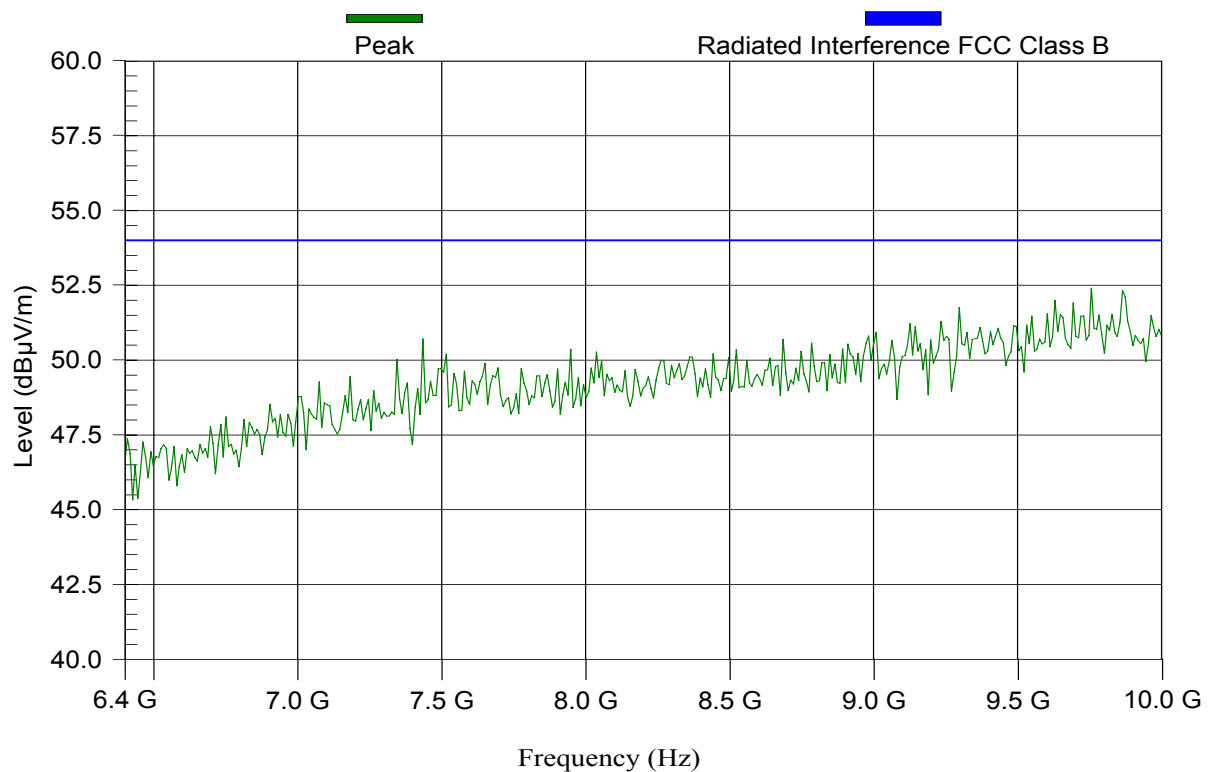
FCC Part 15 6.4-10GHz (TX-860MHz,Input Pwr=-16dbm).

Test & EUT General Information		Receiver Setting	
EUT Name:	DEKO 2489 - Mini Repeater	Spect Analyzer	S.A HP 8593E
S/N:	002	Ref. Level:	70 dB μ V
Date of Test:		RBW:	300 kHz
Test Engineer:	SHIMON KOZLINER	VBW:	1000 kHz
Antenna:	ARA DRG-118/A 1-18GHz 1319	Sweep Time:	Auto: 89.83 ms
Polarization:	Horizontal and Vertical	Pre Amplifier	PLANAR 2-18 GHz 40dB

TEST REMARKS:Thursday, January 04, 2007

5:58:01 PM

Input/Output Attenuated with 30db.



MAXIMUM RESULT DEVIATION:

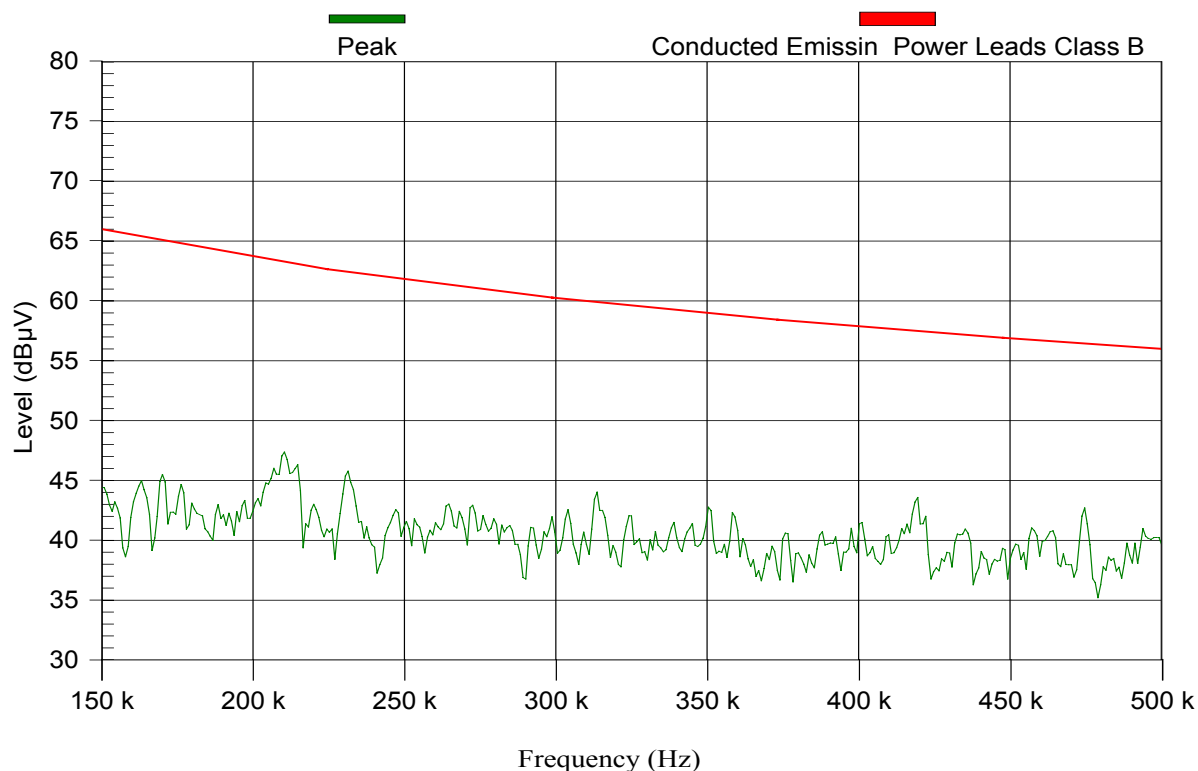
Detect all peaks above 6 dB below the limit line with a maximum of 6 peaks.

Nr	Frequency (MHz)	PK MaxHold (dB μ V/m)	Result	Angle (degrees)	Height (m)	H/V
1	9298	51.8	pass	270	1	H
2	9604	51.6	pass	0	1	V
3	9631	52	pass	90	1.3	V
4	9649	51.5	pass	0	1	H
5	9694	51.9	pass	180	1.3	H
6	9757	52.4	pass	0	1	V
7	9784	51.5	pass	270	1.6	H
8	9829	51.5	pass	0	1	V
9	9865	52.3	pass	270	1.6	V
10	9874	52.1	pass	0	1	V

Test Results Plot No 4
FCC Part 15 0.15-0.50MHz PHASE

Test & EUT General Information		Receiver Setting	
EUT Name:	DEKO 2489 - Mini Repeater	Spect Analyzer	AGILENT E7405A DC COUPLING
S/N:	002	Ref. Level:	80 dB μ V
Date of Test:		RBW:	9 kHz
Test Engineer:	SHIMON KOZLINER	VBW:	1000 kHz
Antenna:	No Description Available	Sweep Time:	Auto: 11.52 ms
Polarization:	3 polarization	Pre Amplifier	Attenuator 20db

TEST REMARKS: Tuesday, January 09, 2007
 3:42:15 PM
 f=815MHz ; Pwr= -14dbm.



MAXIMUM RESULT DEVIATION:

Detect all peaks above 6 dB below the limit line with a maximum of 6 peaks.

Nr	Frequency (MHz)	PK MaxHold (dB μ V)	Result	Line
1	0.15	44.1	PASS	Line 1

Test Results Plot No 5

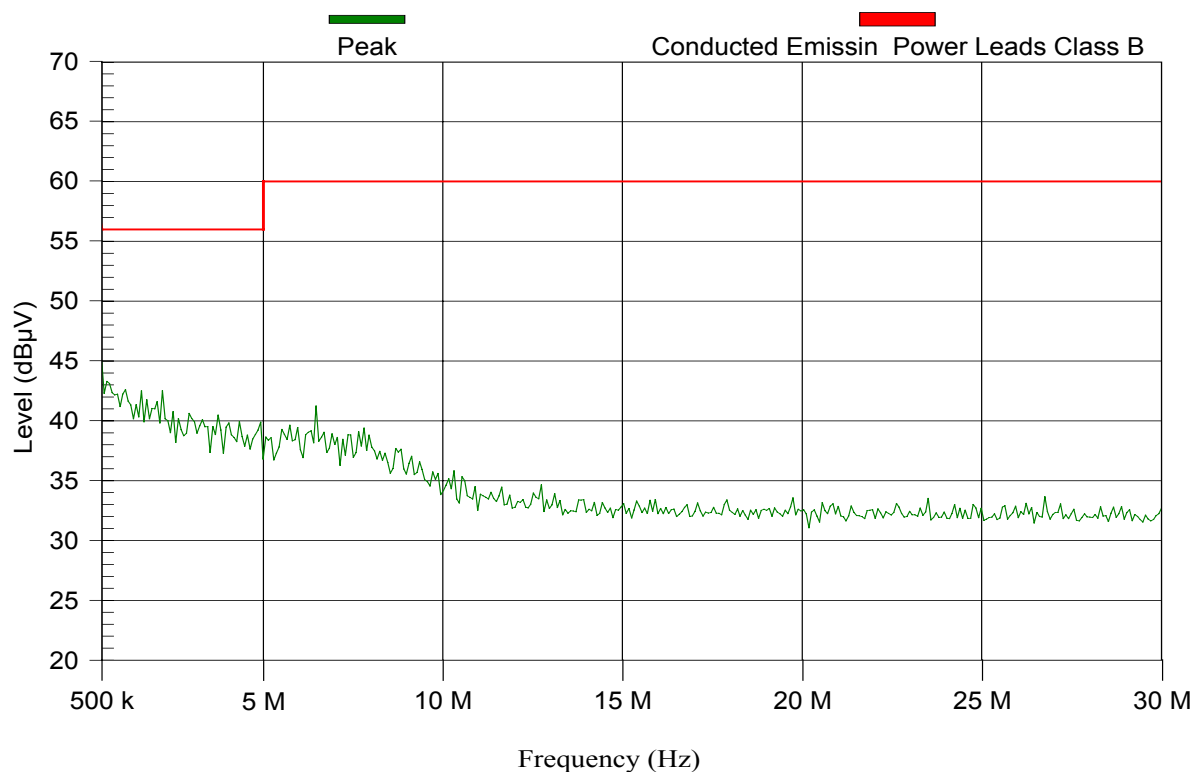
FCC Part 15 0.5-30MHz PHASE

Test & EUT General Information		Receiver Setting	
EUT Name:	DEKO 2489 - Mini Repeater	Spect Analyzer	AGILENT E7405A DC COUPLING
S/N:	002	Ref. Level:	80 dB μ V
Date of Test:		RBW:	9 kHz
Test Engineer:	SHIMON KOZLINER	VBW:	1000 kHz
Antenna:	No Description Available	Sweep Time:	Auto: 819.45 ms
Polarization:	1 polarization	Pre Amplifier	Attenuator 20db

TEST REMARKS: Tuesday, January 09, 2007

3:48:39 PM

f=815MHz ; Pwr= -14dbm.



MAXIMUM RESULT DEVIATION:

Detect all peaks above 6 dB below the limit line with a maximum of 6 peaks.

None

Test Results Plot No 6

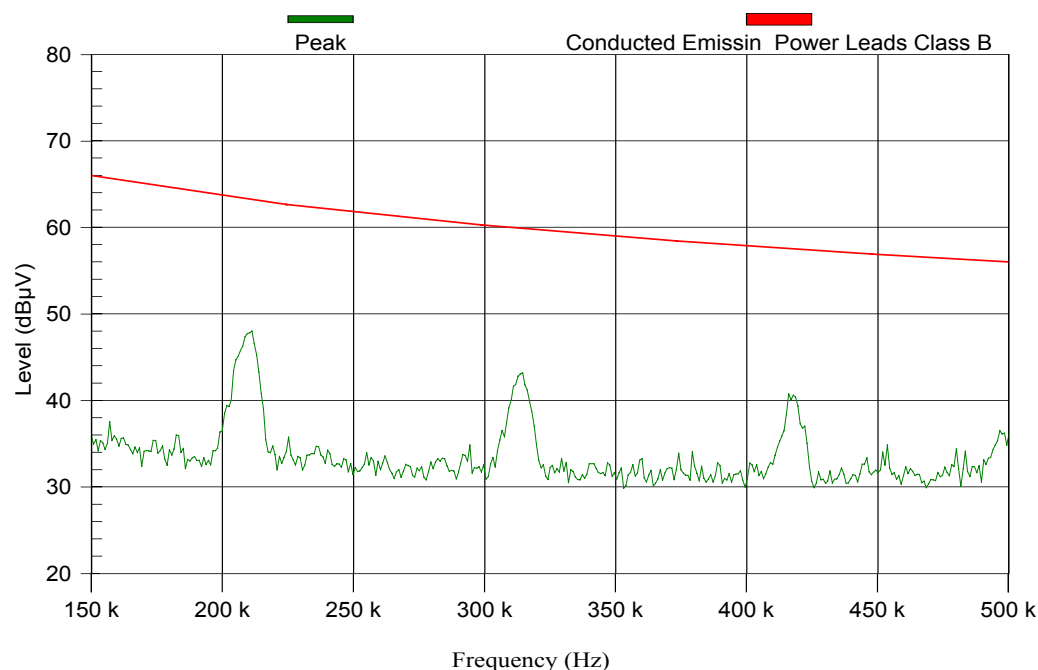
FCC Part 15 0.15-0.50MHz NEUTRAL

Test & EUT General Information		Receiver Setting	
EUT Name:	DEKO 2489 - Mini Repeater	Spect Analyzer	AGILENT E7405A DC COUPLING
S/N:	002	Ref. Level:	80 dB μ V
Date of Test:		RBW:	9 kHz
Test Engineer:	SHIMON KOZLINER	VBW:	1000 kHz
Antenna:	No Description Available	Sweep Time:	Auto: 11.52 ms
Polarization:	2 polarization	Pre Amplifier	Attenuator 20db

TEST REMARKS: Tuesday, January 09, 2007

3:37:20 PM

f=815MHz ; Pwr= -14dbm.



MAXIMUM RESULT DEVIATION:

Detect all peaks above 6 dB below the limit line with a maximum of 6 peaks.

Nr	Frequency (MHz)	PK MaxHold (dB μ V)	QP Value (dB μ V)	QP Limit (dB μ V)	Result	Line
1	0.15	35.9	28.8	66	Pass	Neutral

Test Results Plot No 7

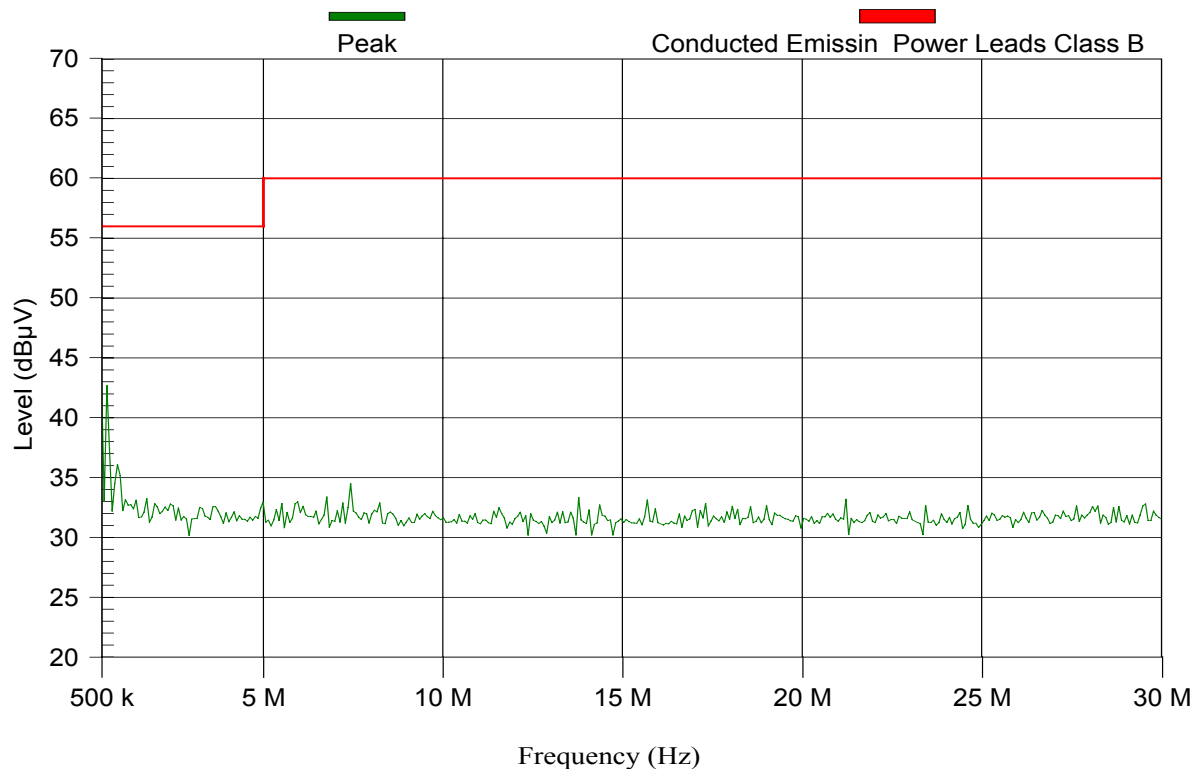
FCC Part 15 0.5-30MHz NEUTRAL

Test & EUT General Information		Receiver Setting	
EUT Name:	DEKO 2489 - Mini Repeater	Spect Analyzer	AGILENT E7405A DC COUPLING
S/N:	002	Ref. Level:	80 dB μ V
Date of Test:		RBW:	9 kHz
Test Engineer:	SHIMON KOZLINER	VBW:	1000 kHz
Antenna:	No Description Available	Sweep Time:	Auto: 819.45 ms
Polarization:	3 polarization	Pre Amplifier	Attenuator 20db

TEST REMARKS: Tuesday, January 09, 2007

3:34:01 PM

f=815MHz ; Pwr= -14dbm.



MAXIMUM RESULT DEVIATION:

Detect all peaks above 6 dB below the limit line with a maximum of 6 peaks.

None

5 Output power of carrier 90.205

E.U.T: DEKO2489 **S/N: 002**
Test Method: ANSI 63.4
Date:
Relative Humidity: 26%
Ambient Temperature: 22c
Air Pressure: 1047hpa
Test Setup: Figure 8.e
Modulation : idEN

Testing Engineer: Shimon Kozliner

Date 7.1.07

a. Test Results Summary & Conclusions

The E.U.T was found in compliance for output power test

b. Limit & Test Results

Table 10.b output power Uplink

Transmit Freq, MHz	Measured mean (dBm)	Rated Power (dBm)	Plot no
805.925	21.0	24.0	15
814.925	21.8	24.0	14
823.925	21.4	24.0	13
895.950	21.6	24.0	18
898.450	21.2	24.0	17
900.950	21.0	24.0	16

Table 10.c output power Downlink

Transmit Freq, MHz	Measured mean (dBm)	Rated Power (dBm)	Plot no
850.950	23.6	24.0	10
859.950	24.0	24.0	9
868.950	23.6	24.0	11
935.000	23.8	24.0	12
937.450	23.9	24.0	20
939.450	24.0	24.0	19

c. Test Instrumentation and Equipment**Table 10.d Test Instrumentation and Equipment**

Item	Model	Manufacturer	Next Date Calibration
Spectrum Analyzer	8593E	HP	31.01.08

d. Test Procedure for output power measurement

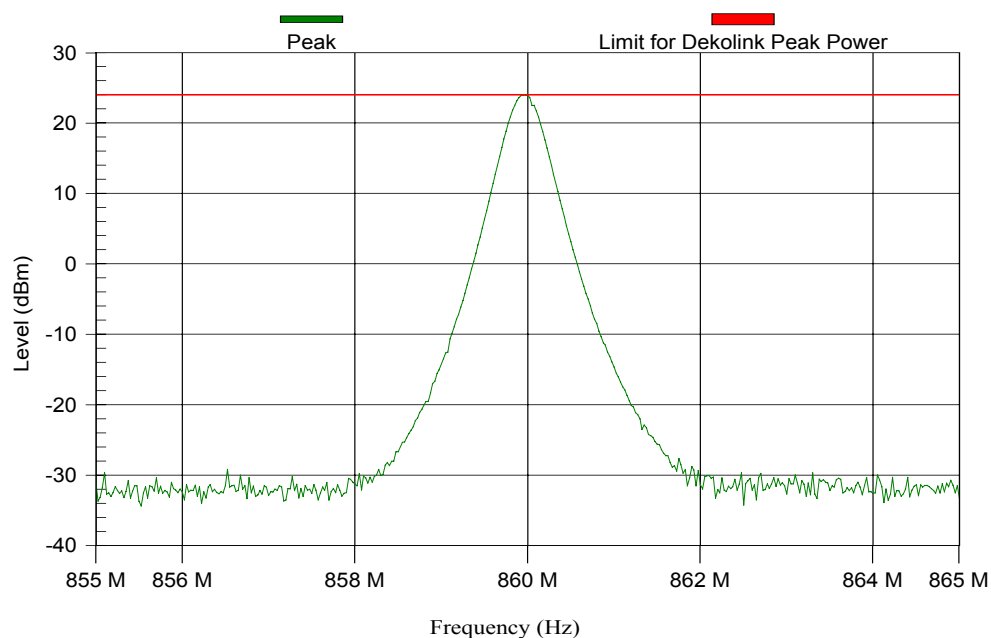
- (1) The EUT was setup to operate at the selected uplink & downlink preselected frequencies
- (2) The Input signal was modulated with idEN modulation
- (3) The Spectrum analyzer was set to 1 MHz bandwidth

Test Results Plot No 9

FCC Part 90 Peak Power 855-865MHz (TX-860MHz, Input Pwr=-14dbm).

Test & EUT General Information		Receiver Setting	
EUT Name:	DEKO 2489 - Mini Repeater	Spect Analyzer	S.A HP 8593E
S/N:	002	Ref. Level:	100 dB μ V
Date of Test:		RBW:	300 kHz
Test Engineer:	SHIMON KOZLINER	VBW:	1000 kHz
Antenna:	ZERO CF 1Hz - 40GHz	Sweep Time:	Auto: 20 ms
Polarization:	Vertical	Pre Amplifier	Attenuator 40db

TEST REMARKS: Sunday, January 07, 2007
11:59:15 AM


MAXIMUM RESULT DEVIATION:

Detect all peaks above 6 dB below the limit line with a maximum of 6 peaks.

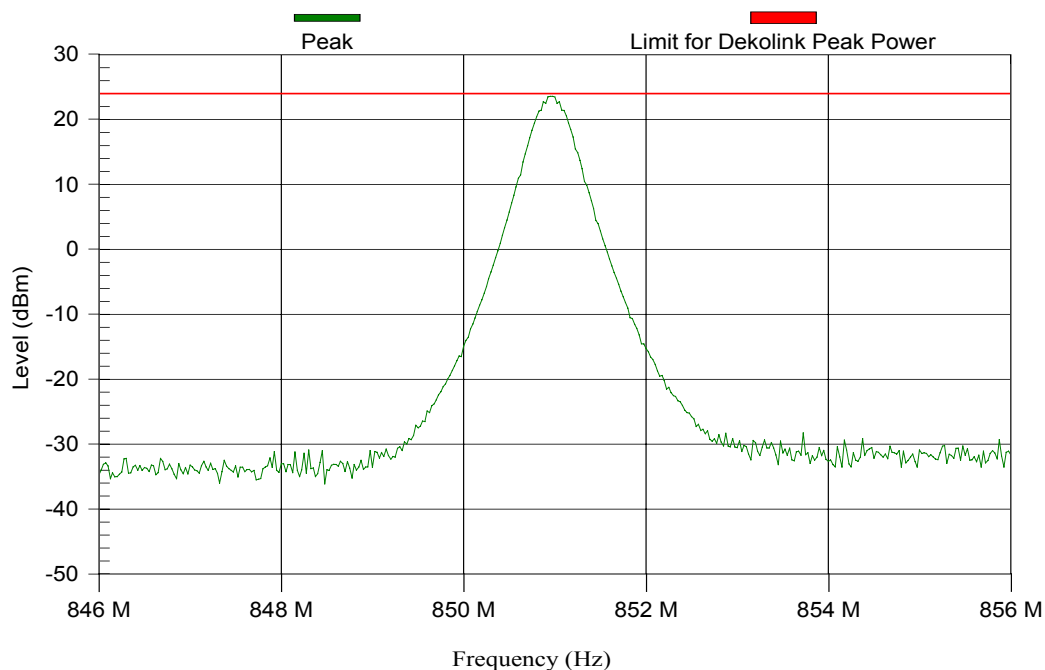
Nr	Frequency (MHz)	PK MaxHold (dBm)	PK Limit (dBm)	Result
1	859.95	24	24	Pass

Test Results Plot No 10

FCC Part 90 Peak Power 846-856MHz (TX-851MHz, Input Pwr=-13dbm).

Test & EUT General Information		Receiver Setting	
EUT Name:	DEKO 2489 - Mini Repeater	Spect Analyzer	S.A HP 8593E
S/N:	002	Ref. Level:	100 dB μ V
Date of Test:		RBW:	300 kHz
Test Engineer:	SHIMON KOZLINER	VBW:	1000 kHz
Antenna:	ZERO CF 1Hz - 40GHz	Sweep Time:	Auto: 20 ms
Polarization:	Vertical	Pre Amplifier	Attenuator 40db

TEST REMARKS: Sunday, January 07, 2007
1:03:39 PM


MAXIMUM RESULT DEVIATION:

Detect all peaks above 6 dB below the limit line with a maximum of 6 peaks.

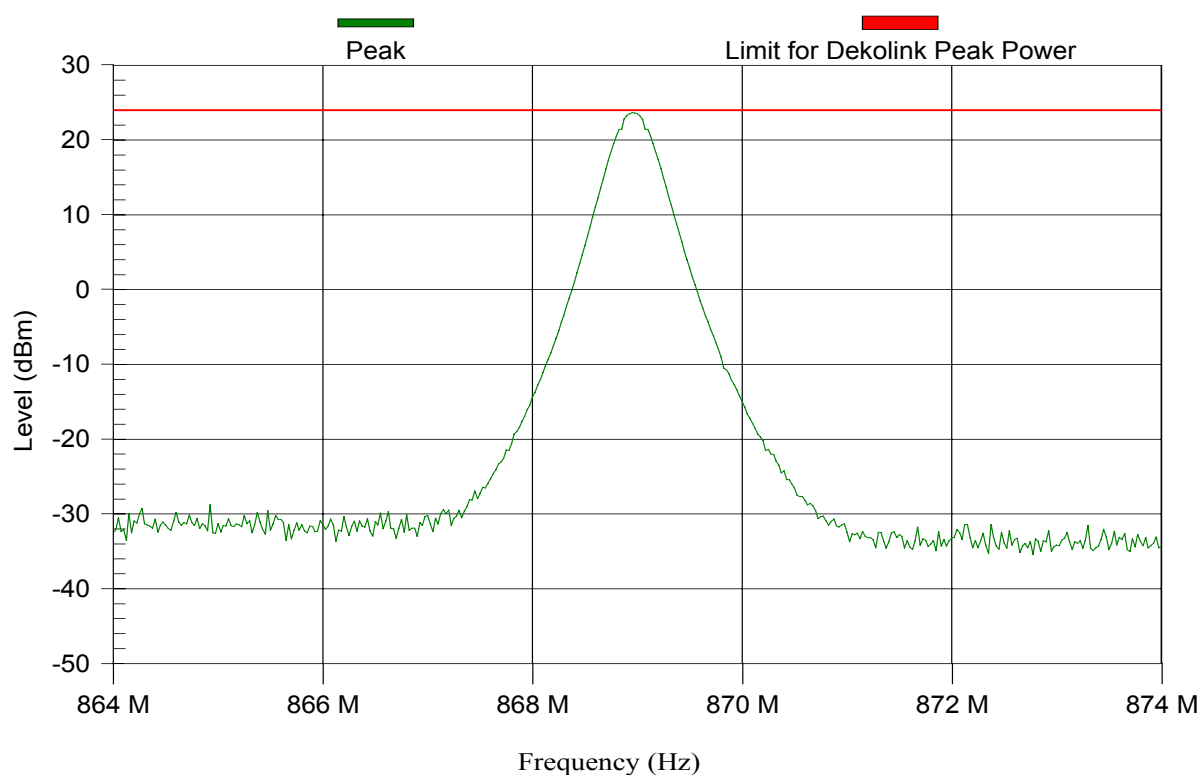
Nr	Frequency (MHz)	PK MaxHold (dBm)	PK Limit (dBm)	Result
1	850.95	23.6	24	Pass

Test Results Plot No 11

FCC Part 90 Peak Power 864-874MHz (TX-869MHz, Input Pwr=-12dbm).

Test & EUT General Information		Receiver Setting	
EUT Name:	DEKO 2489 - Mini Repeater	Spect Analyzer	S.A HP 8593E
S/N:	002	Ref. Level:	100 dB μ V
Date of Test:		RBW:	300 kHz
Test Engineer:	SHIMON KOZLINER	VBW:	1000 kHz
Antenna:	ZERO CF 1Hz - 40GHz	Sweep Time:	Auto: 20 ms
Polarization:	Vertical	Pre Amplifier	Attenuator 40db

TEST REMARKS: Sunday, January 07, 2007
1:08:39 PM


MAXIMUM RESULT DEVIATION:

Detect all peaks above 6 dB below the limit line with a maximum of 6 peaks.

Nr	Frequency (MHz)	PK MaxHold (dBm)	PK Limit (dBm)	Result
1	868.95	23.6	24	Pass

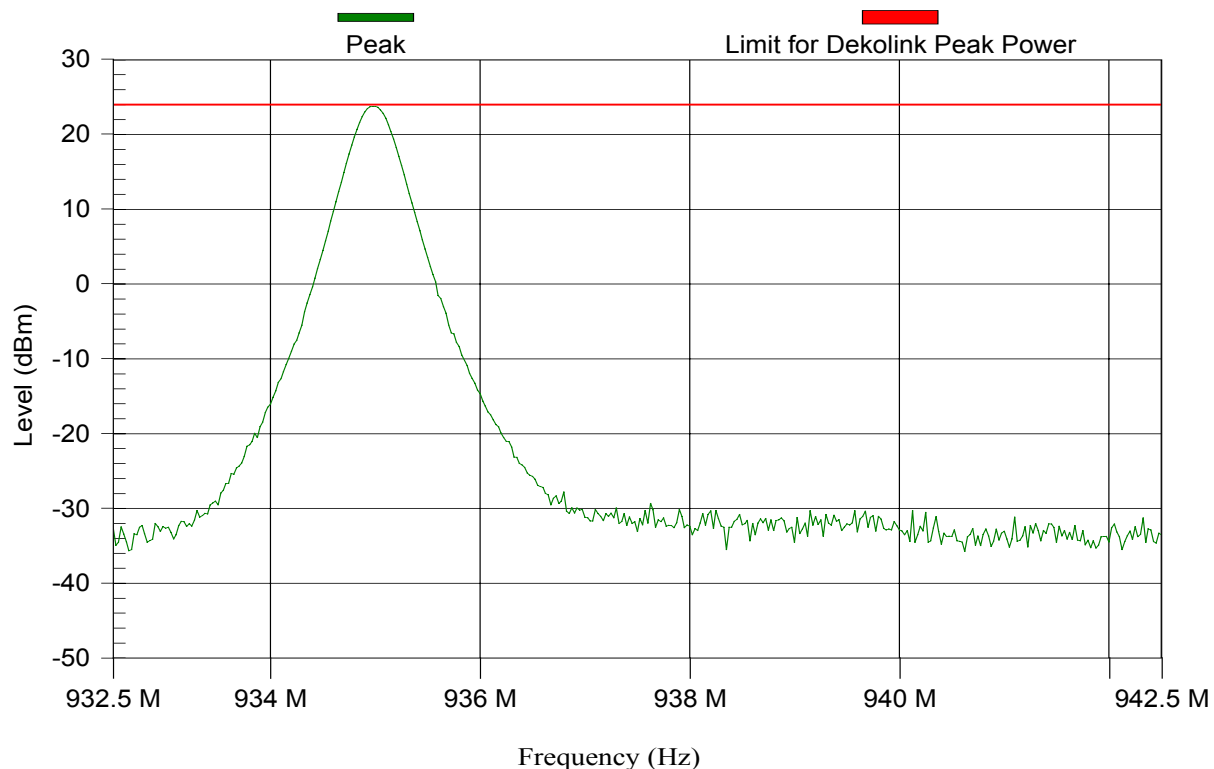
Test Results Plot No 12

FCC Part 90 Peak Power 932.5-942.5MHz (TX-935MHz,Input
Pwr=-10.5dbm).

Test & EUT General Information		Receiver Setting	
EUT Name:	DEKO 2489 - Mini Repeater	Spect Analyzer	S.A HP 8593E
S/N:	002	Ref. Level:	100 dB μ V
Date of Test:		RBW:	300 kHz
Test Engineer:	SHIMON KOZLINER	VBW:	1000 kHz
Antenna:	ZERO CF 1Hz - 40GHz	Sweep Time:	Auto: 20 ms
Polarization:	Vertical	Pre Amplifier	Attenuator 40db

TEST REMARKS:Sunday, January 07, 2007

1:15:40 PM



MAXIMUM RESULT DEVIATION:

Detect all peaks above 6 dB below the limit line with a maximum of 6 peaks.

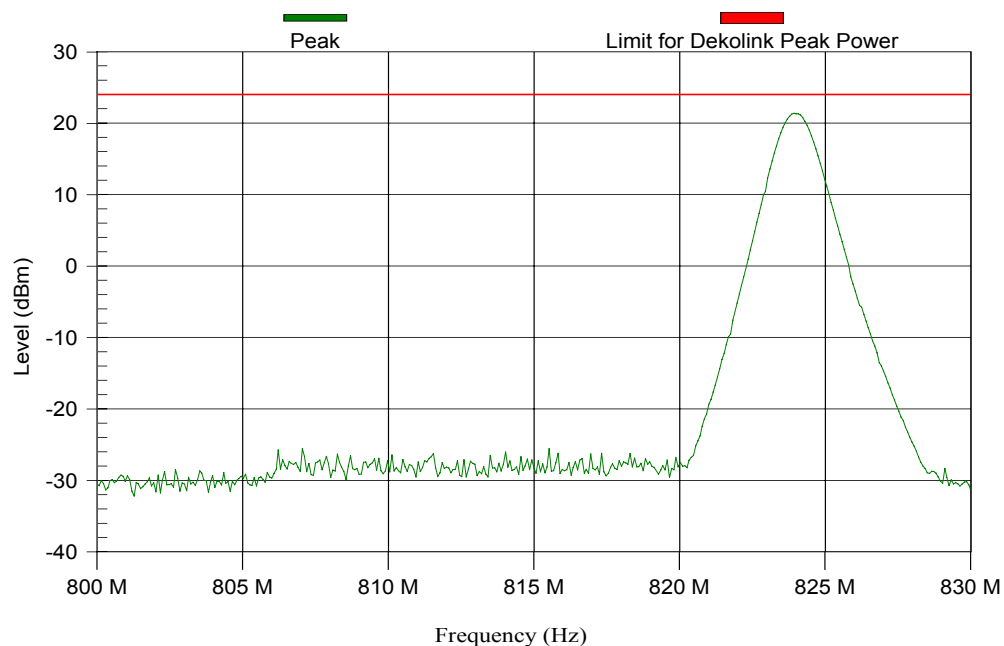
Nr	Frequency (MHz)	PK MaxHold (dBm)	PK Limit (dBm)	Result
1	935	23.8	24	Pass

Test Results Plot No 13

FCC Part 90 Peak Power 800-830MHz (RX-824MHz, Input Pwr=-18dbm).

Test & EUT General Information		Receiver Setting	
EUT Name:	DEKO 2489 - Mini Repeater	Spect Analyzer	S.A HP 8593E
S/N:	002	Ref. Level:	100 dB μ V
Date of Test:		RBW:	1000 kHz
Test Engineer:	SHIMON KOZLINER	VBW:	1000 kHz
Antenna:	ZERO CF 1Hz - 40GHz	Sweep Time:	Auto: 20 ms
Polarization:	Vertical	Pre Amplifier	Attenuator 40db

TEST REMARKS: Sunday, January 07, 2007
1:37:48 PM


MAXIMUM RESULT DEVIATION:

Detect all peaks above 6 dB below the limit line with a maximum of 6 peaks.

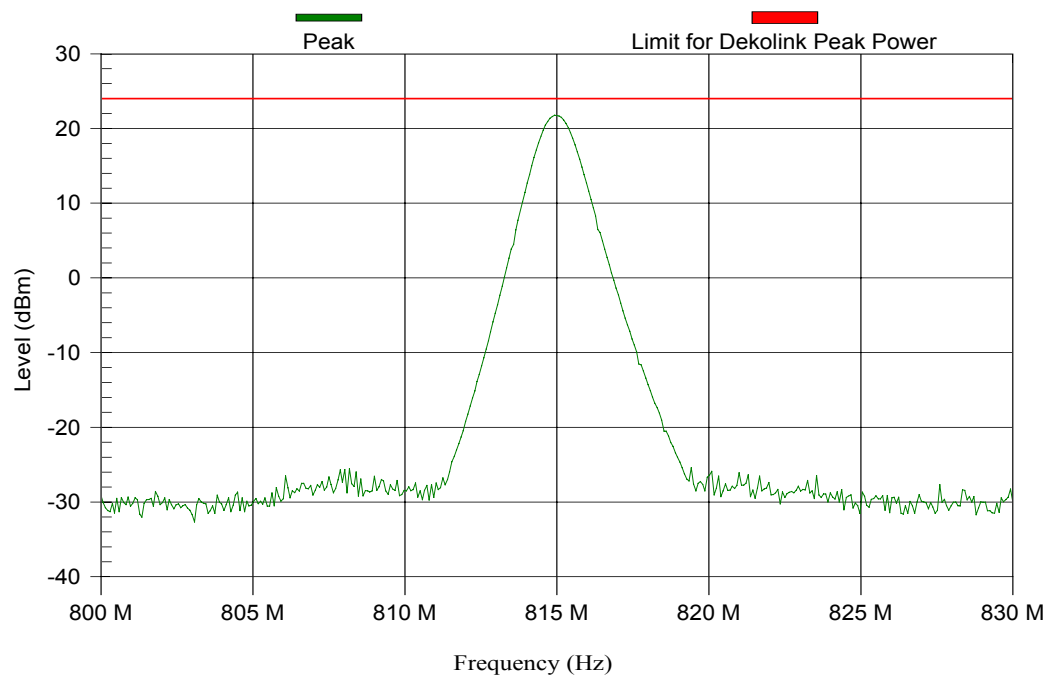
Nr	Frequency (MHz)	PK MaxHold (dBm)	PK Limit (dBm)	Result
1	823.925	21.4	24	Pass

Test Results Plot No 14

FCC Part 90 Peak Power 800-830MHz (RX-815MHz, Input Pwr=-18dbm).

Test & EUT General Information		Receiver Setting	
EUT Name:	DEKO 2489 - Mini Repeater	Spect Analyzer	S.A HP 8593E
S/N:	002	Ref. Level:	100 dB μ V
Date of Test:		RBW:	1000 kHz
Test Engineer:	SHIMON KOZLINER	VBW:	1000 kHz
Antenna:	ZERO CF 1Hz - 40GHz	Sweep Time:	Auto: 20 ms
Polarization:	Vertical	Pre Amplifier	Attenuator 40db

TEST REMARKS: Sunday, January 07, 2007
1:36:56 PM


MAXIMUM RESULT DEVIATION:

Detect all peaks above 6 dB below the limit line with a maximum of 6 peaks.

Nr	Frequency (MHz)	PK MaxHold (dBm)	PK Limit (dBm)	Result
1	814.925	21.8	24	Pass

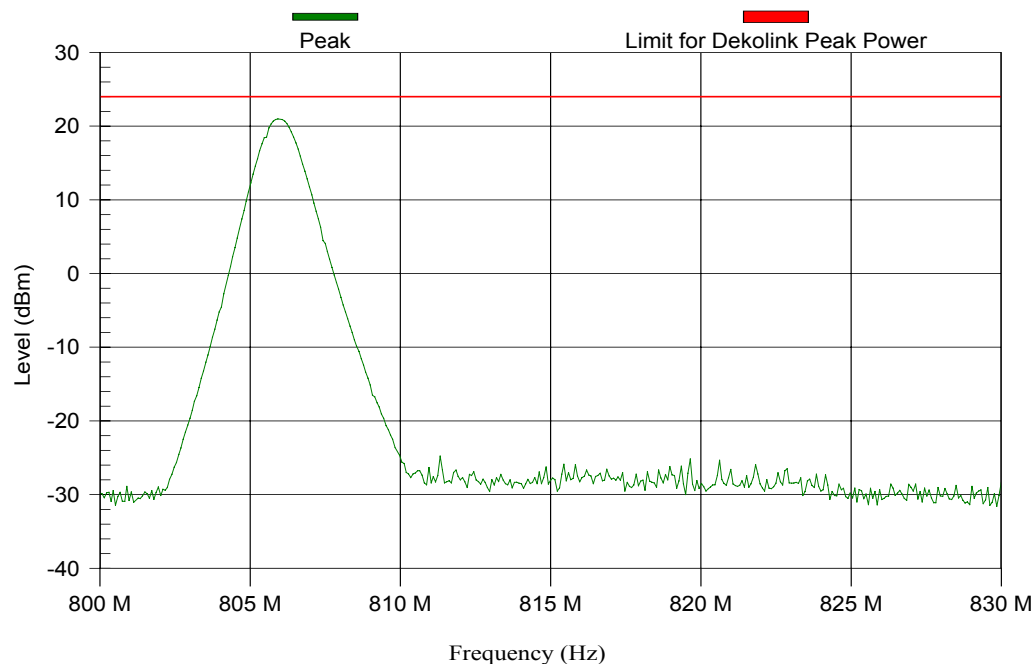
Test Results Plot No 15

FCC Part 90 Peak Power 800-830MHz (RX-806MHz, Input Pwr=-16dbm).

Test & EUT General Information		Receiver Setting	
EUT Name:	DEKO 2489 - Mini Repeater	Spect Analyzer	S.A HP 8593E
S/N:	002	Ref. Level:	100 dB μ V
Date of Test:		RBW:	1000 kHz
Test Engineer:	SHIMON KOZLINER	VBW:	1000 kHz
Antenna:	ZERO CF 1Hz - 40GHz	Sweep Time:	Auto: 20 ms
Polarization:	Vertical	Pre Amplifier	Attenuator 40db

TEST REMARKS: Sunday, January 07, 2007

1:35:24 PM


MAXIMUM RESULT DEVIATION:

Detect all peaks above 6 dB below the limit line with a maximum of 6 peaks.

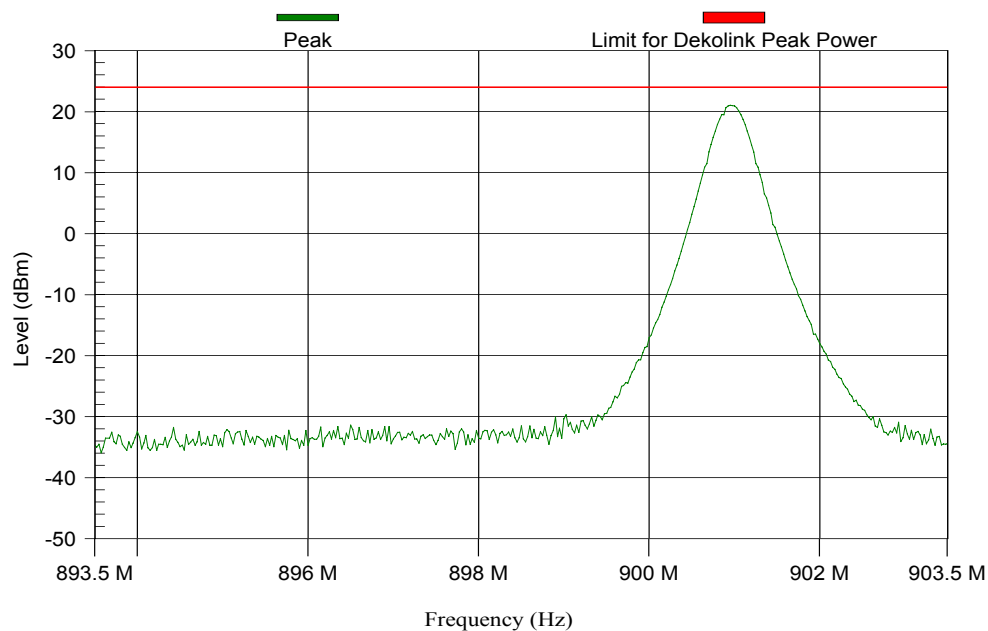
Nr	Frequency (MHz)	PK MaxHold (dBm)	PK Limit (dBm)	Result
1	805.925	21	24	Pass

Test Results Plot No 16

FCC Part 90 Peak Power 893.5-903.5MHz (RX-901MHz,Input
Pwr=-15dbm).

Test & EUT General Information		Receiver Setting	
EUT Name:	DEKO 2489 - Mini Repeater	Spect Analyzer	S.A HP 8593E
S/N:	002	Ref. Level:	100 dB μ V
Date of Test:		RBW:	300 kHz
Test Engineer:	SHIMON KOZLINER	VBW:	1000 kHz
Antenna:	ZERO CF 1Hz - 40GHz	Sweep Time:	Auto: 20 ms
Polarization:	Vertical	Pre Amplifier	Attenuator 40db

TEST REMARKS: Sunday, January 07, 2007
1:31:04 PM



MAXIMUM RESULT DEVIATION:

Detect all peaks above 6 dB below the limit line with a maximum of 6 peaks.

Nr	Frequency (MHz)	PK MaxHold (dBm)	PK Limit (dBm)	Result
1	900.95	21	24	Pass

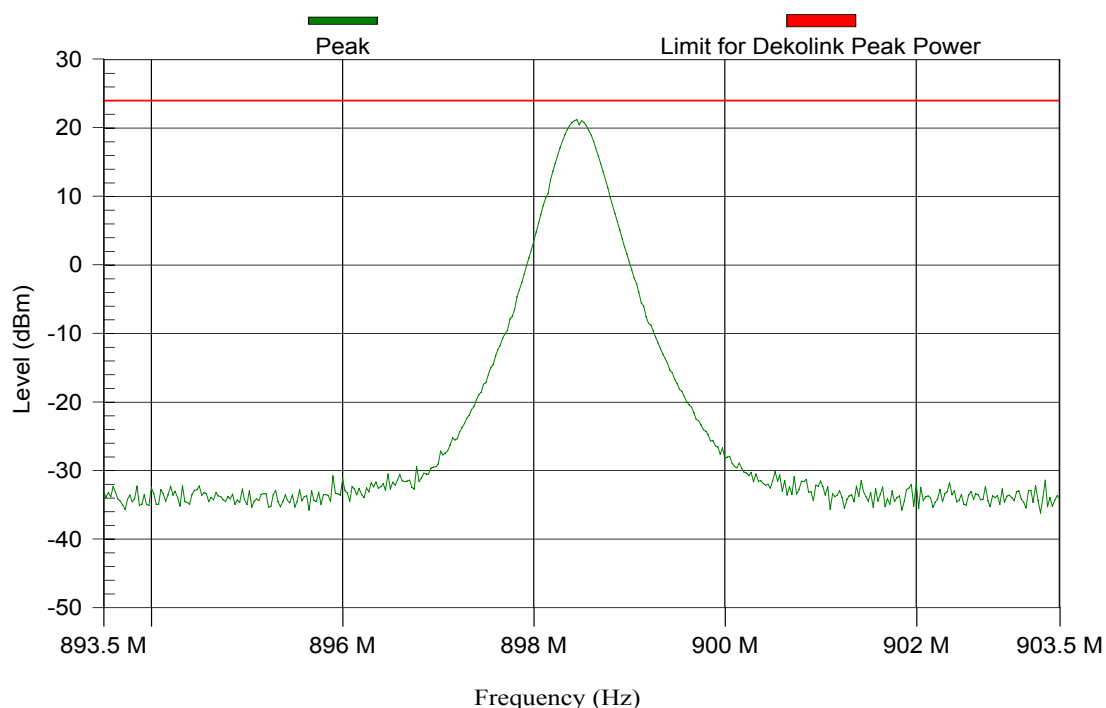
Test Results Plot No 17

FCC Part 90 Peak Power 893.5-903.5MHz (RX-898.5MHz,Input
Pwr=-16dbm).

Test & EUT General Information		Receiver Setting	
EUT Name:	DEKO 2489 - Mini Repeater	Spect Analyzer	S.A HP 8593E
S/N:	002	Ref. Level:	100 dB μ V
Date of Test:		RBW:	300 kHz
Test Engineer:	SHIMON KOZLINER	VBW:	1000 kHz
Antenna:	ZERO CF 1Hz - 40GHz	Sweep Time:	Auto: 20 ms
Polarization:	Vertical	Pre Amplifier	Attenuator 40db

TEST REMARKS: Sunday, January 07, 2007

1:29:35 PM


MAXIMUM RESULT DEVIATION:

Detect all peaks above 6 dB below the limit line with a maximum of 6 peaks.

Nr	Frequency (MHz)	PK MaxHold (dBm)	PK Limit (dBm)	Result	H/V
1	898.45	21.2	24	Pass	V

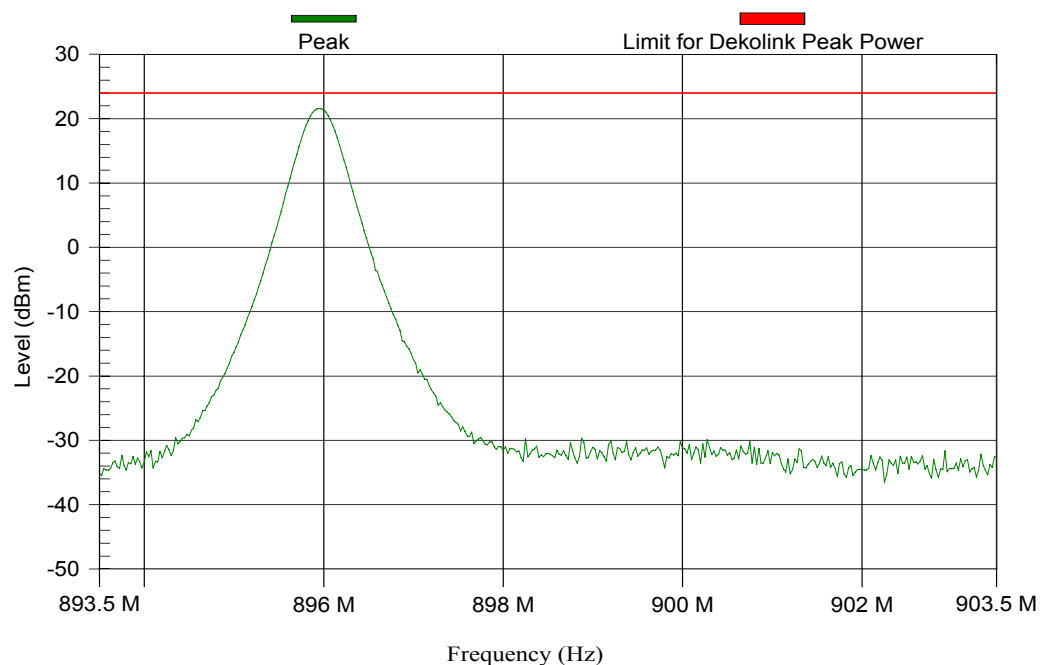
Test Results Plot No 18

FCC Part 90 Peak Power 893.5-903.5MHz (RX-896MHz,Input
Pwr=-16dbm).

Test & EUT General Information		Receiver Setting	
EUT Name:	DEKO 2489 - Mini Repeater	Spect Analyzer	S.A HP 8593E
S/N:	002	Ref. Level:	100 dB μ V
Date of Test:		RBW:	300 kHz
Test Engineer:	SHIMON KOZLINER	VBW:	1000 kHz
Antenna:	ZERO CF 1Hz - 40GHz	Sweep Time:	Auto: 20 ms
Polarization:	Vertical	Pre Amplifier	Attenuator 40db

TEST REMARKS: Sunday, January 07, 2007

1:27:59 PM



MAXIMUM RESULT DEVIATION:

Detect all peaks above 6 dB below the limit line with a maximum of 6 peaks.

Nr	Frequency (MHz)	PK MaxHold (dBm)	PK Limit (dBm)	Result
1	895.95	21.6	24	Pass

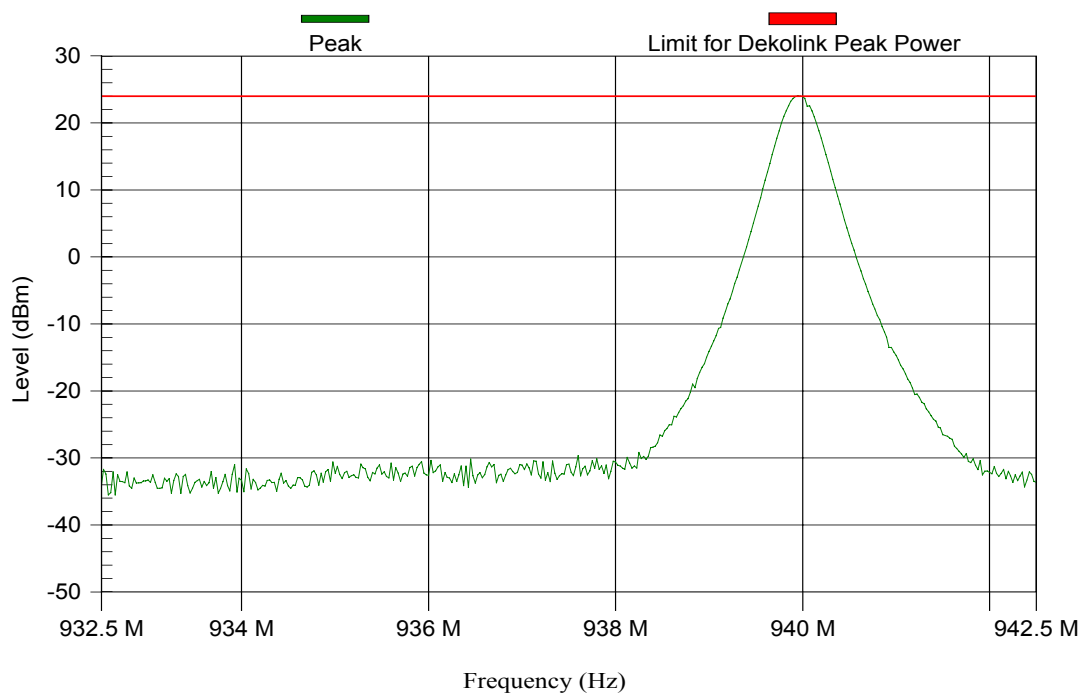
Test Results Plot No 19

FCC Part 90 Peak Power 932.5-942.5MHz (TX-940MHz,Input
Pwr=-12.5dbm).

Test & EUT General Information		Receiver Setting	
EUT Name:	DEKO 2489 - Mini Repeater	Spect Analyzer	S.A HP 8593E
S/N:	002	Ref. Level:	100 dBμV
Date of Test:		RBW:	300 kHz
Test Engineer:	SHIMON KOZLINER	VBW:	1000 kHz
Antenna:	ZERO CF 1Hz - 40GHz	Sweep Time:	Auto: 20 ms
Polarization:	Vertical	Pre Amplifier	Attenuator 40db

TEST REMARKS: Sunday, January 07, 2007

1:19:30 PM



MAXIMUM RESULT DEVIATION:

Detect all peaks above 6 dB below the limit line with a maximum of 6 peaks.

Nr	Frequency (MHz)	PK MaxHold (dBm)	PK Limit (dBm)	Result
1	939.95	24	24	Pass

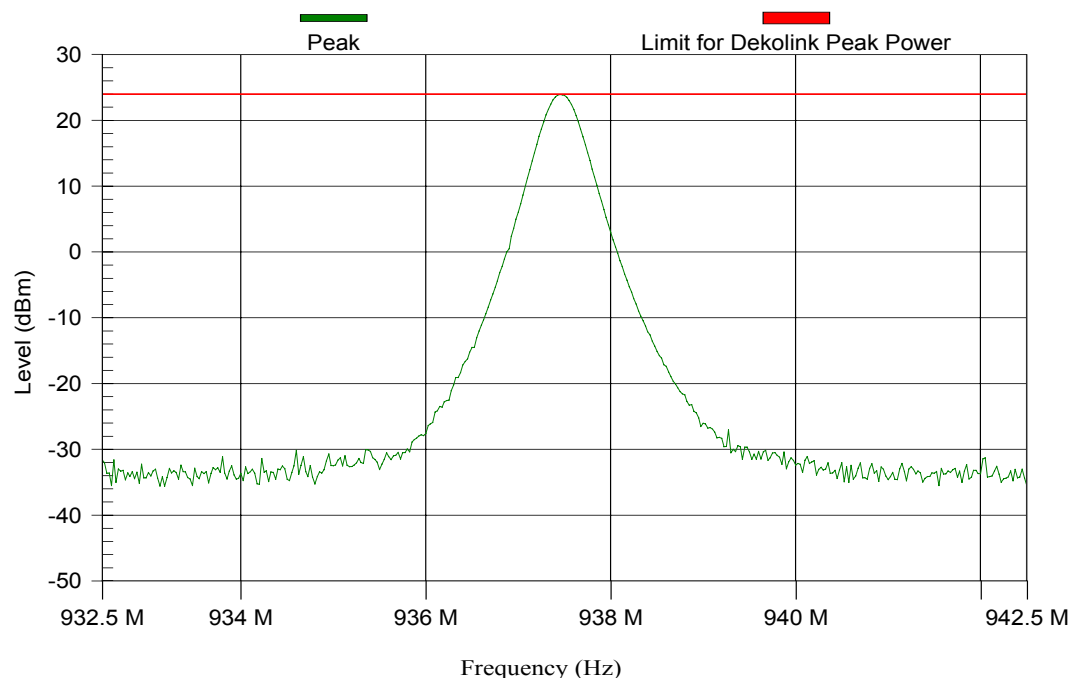
Test Results Plot No 20

FCC Part 90 Peak Power 932.5-942.5MHz (TX-937.5MHz,Input
Pwr=-13.5dbm).

Test & EUT General Information		Receiver Setting	
EUT Name:	DEKO 2489 - Mini Repeater	Spect Analyzer	S.A HP 8593E
S/N:	002	Ref. Level:	100 dB μ V
Date of Test:		RBW:	300 kHz
Test Engineer:	SHIMON KOZLINER	VBW:	1000 kHz
Antenna:	ZERO CF 1Hz - 40GHz	Sweep Time:	Auto: 20 ms
Polarization:	Vertical	Pre Amplifier	Attenuator 40db

TEST REMARKS: Sunday, January 07, 2007

1:17:35 PM


MAXIMUM RESULT DEVIATION:

Detect all peaks above 6 dB below the limit line with a maximum of 6 peaks.

Nr	Frequency (MHz)	PK MaxHold (dBm)	PK Limit (dBm)	Result
1	937.45	23.9	24	Pass

6 Conducted Spurious Emission Measurements According to 90.210

E.U.T:	DEKO2489	S/N: 002
Test Method:	ANSI 63.4	
Date:	January 07, 2007	
Relative Humidity:	26%	
Ambient Temperature:	22c	
Air Pressure:	1047hpa	
Test Setup:	Figure 13.e	

Testing Engineer: Shimon Kozliner

Date **7.1.07**

a. Test Results Summary & Conclusions

(1) The E.U.T was found in compliance with the conducted emission spurious test requirement

b. Test Procedure for field strength measurement

- (1) The EUT was setup to operate at the selected uplink & downlink preselected frequencies
- (2) The conducted spurious emissions at the antenna terminal were investigated with the EUT operated with Iden modulated signal .
- (3) The EUT was fed at each band with the TX signal at low, mid and high frequency for uplink & downlink channel
- (4) Intermodulation tests procedure
 - *The input signal level was set to max drive*
 - *The test was conducted twice*
 - *3 signal test -2 signals close to each other at one edge of passband and one signal at the other edge of passband.*
 - *2 signals test hi & low band edge -2 signals close to each other at one edge of passband and than another 2 signals at the other eds of passband .*
- (5) The spectrum was investigated for spurious emissions from 9kHz 30 MHz from 30Mhz to 1GHz and from 1GHz to 10GHz.
- (6) Test data is presented on the plots below.
- (7) The Spectrum analyzer RBW was set according the requirements :
 - *9kHz 30 MHz was set to 10 KHz bandwidth*
 - *30Mhz to 1GHz was set to 10 KHz bandwidth*
 - *1GHz to 10GHz was set to 1000 KHz bandwidth*

c. Limits of conducted spurious emission

The test unit shall meet the limits of Table 13.b below

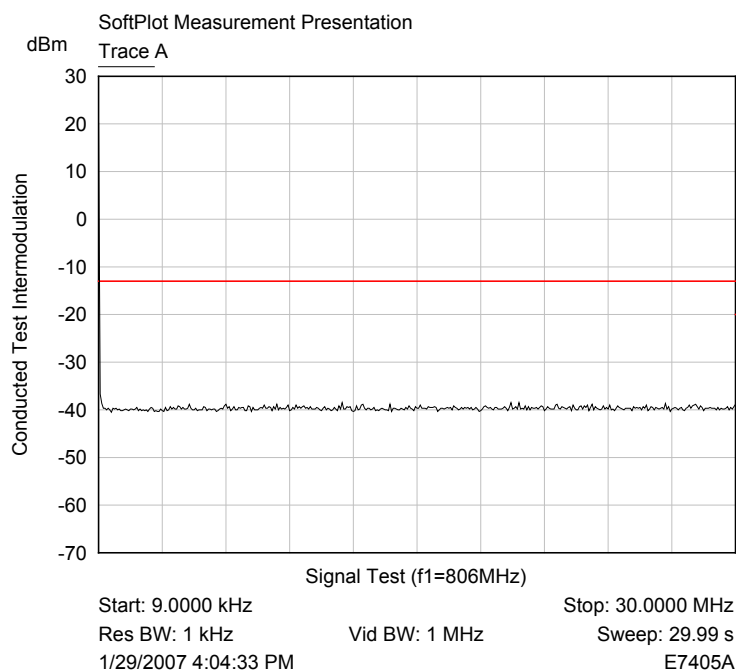
Table 13.a Limits For conducted emission

Mask	Transmit Freq, (MHz)	Limit (dbc)	ERP (dbm)
H	0.009 – 10 th Harmonics	43+10logP	-13
G	0.009 – 10 th Harmonics	43+10logP	-13
J	0.009 – 10 th Harmonics	50+10logP	-20

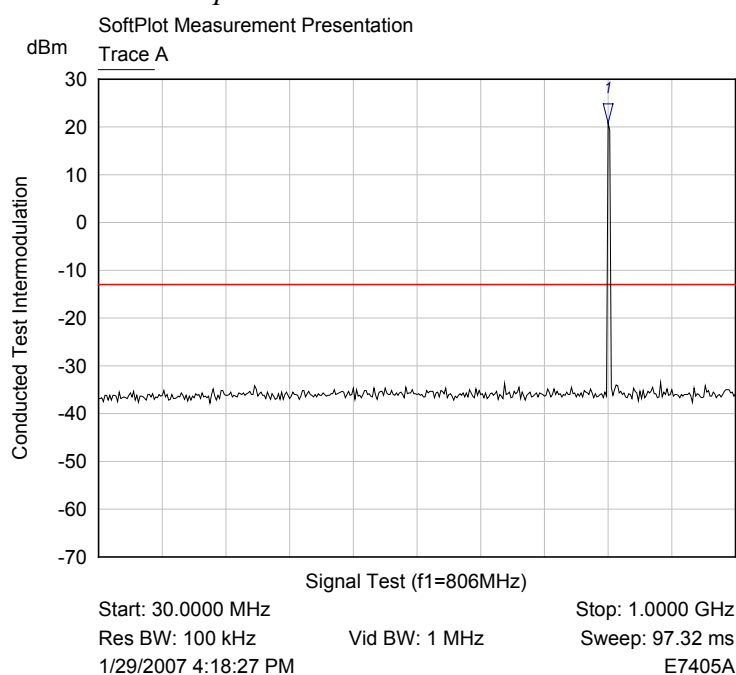
d. **Test Results**

e. **Test Results for Conducted Spurious Emission Test**
Table 13.b Results for Conducted Spurious Emission Test

Channels	Band Freq. (MHz)	Transmit Freq (MHz)	Limit (dbc)	Freq. Range (MHz)	Plot No.	Pass/Fail
Uplink	806 - 824	806	-13	0.009 – 30	Rad Spur Em/ 1	Pass
				30 -1,000	Rad Spur Em/ 2	Pass
				1,000 – 10,000	Rad Spur Em/ 3	Pass
		815		0.009 – 30	Rad Spur Em/ 4	Pass
				30 -1,000	Rad Spur Em/ 5	Pass
				1,000 – 10,000	Rad Spur Em/ 6	Pass
		824		0.009 – 30	Rad Spur Em/ 7	Pass
				30 -1,000	Rad Spur Em/ 8	Pass
				1,000 – 10,000	Rad Spur Em/ 9	Pass
Uplink	896 - 901	896	-20	0.009 – 30	Rad Spur Em/ 10	Pass
				30 -1,000	Rad Spur Em/ 11	Pass
				1,000 – 10,000	Rad Spur Em/ 12	Pass
		898.5		0.009 – 30	Rad Spur Em/ 13	Pass
				30 -1,000	Rad Spur Em/ 14	Pass
				1,000 – 10,000	Rad Spur Em/ 15	Pass
		901		0.009 – 30	Rad Spur Em/ 16	Pass
				30 -1,000	Rad Spur Em/ 17	Pass
				1,000 – 10,000	Rad Spur Em/ 18	Pass
Downlink	851 - 869	851	-13	0.009 – 30	Rad Spur Em/ 19	Pass
				30 -1,000	Rad Spur Em/ 20	Pass
				1,000 – 10,000	Rad Spur Em/ 21	Pass
		860		0.009 – 30	Rad Spur Em/ 22	Pass
				30 -1,000	Rad Spur Em/ 23	Pass
				1,000 – 10,000	Rad Spur Em/ 24	Pass
		869		0.009 – 30	Rad Spur Em/ 25	Pass
				30 -1,000	Rad Spur Em/ 26	Pass
				1,000 – 10,000	Rad Spur Em/ 27	Pass
Downlink	935 - 940	935	-20	0.009 – 30	Rad Spur Em/ 28	Pass
				30 -1,000	Rad Spur Em/ 29	Pass
				1,000 – 10,000	Rad Spur Em/ 30	Pass
		937.5		0.009 – 30	Rad Spur Em/ 31	Pass
				30 -1,000	Rad Spur Em/ 32	Pass
				1,000 – 10,000	Rad Spur Em/ 33	Pass
		940		0.009 – 30	Rad Spur Em/ 34	Pass
				30 -1,000	Rad Spur Em/ 35	Pass
				1,000 – 10,000	Rad Spur Em/ 36	Pass

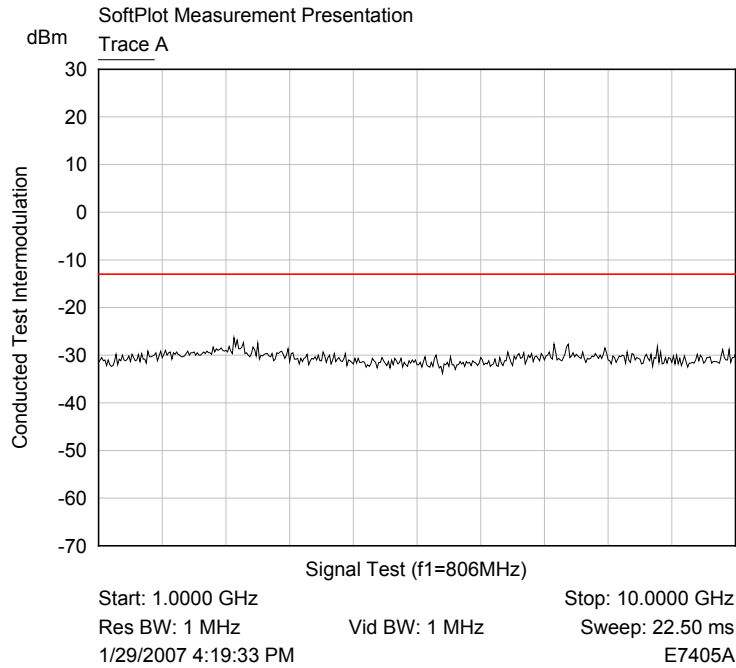


Plot Rad Spur Em/ 1

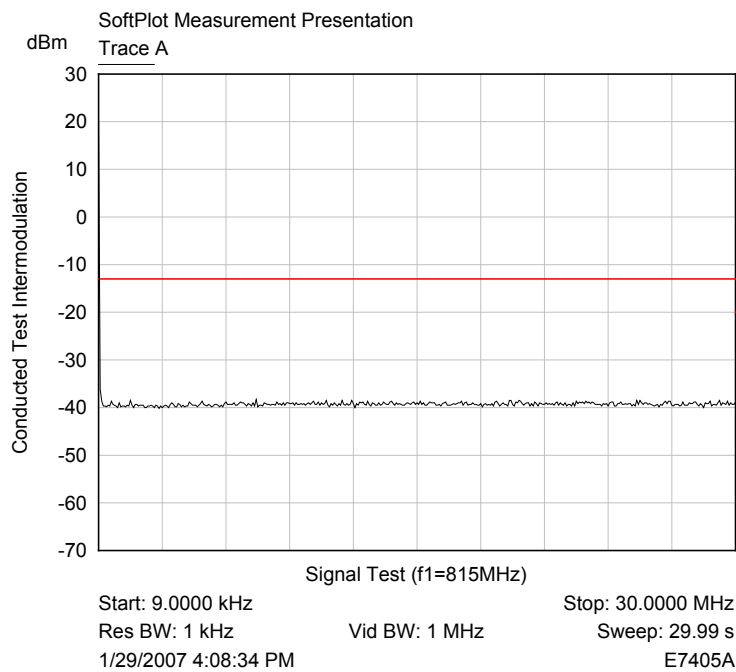


Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	806.0000 MHz	20.91 dBm	

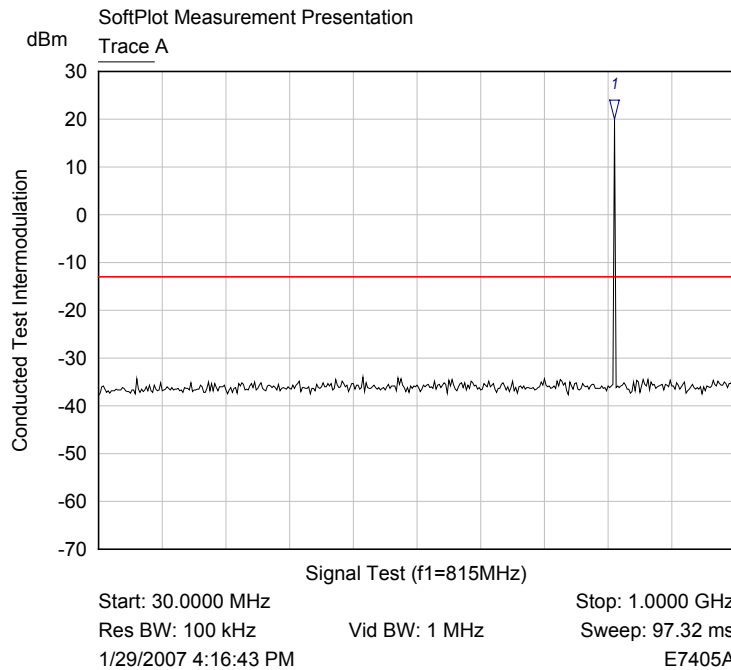
Plot Rad Spur Em/ 2



Plot Rad Spur Em/ 3

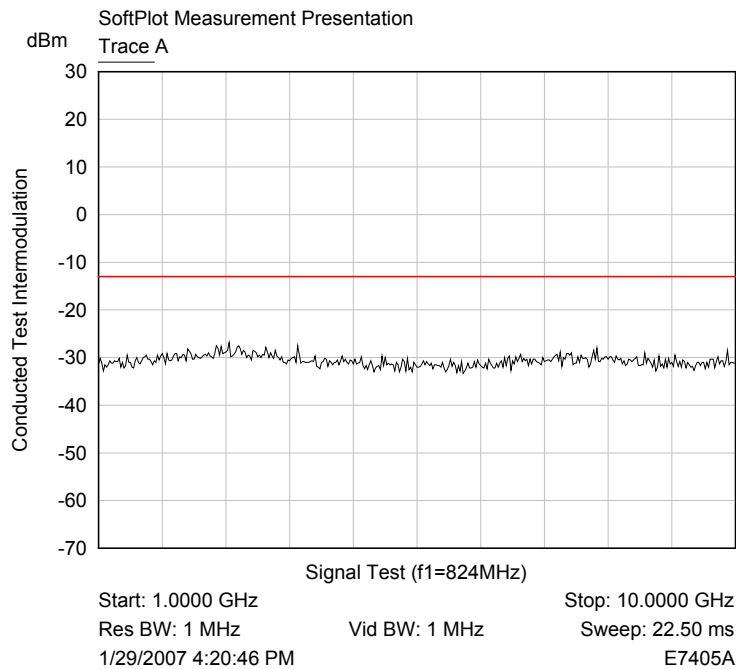


Plot Rad Spur Em/ 4

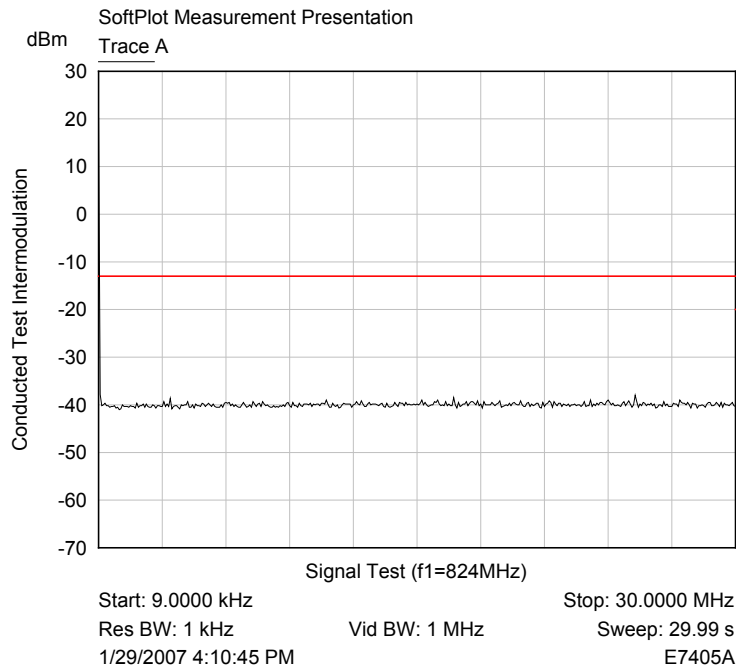


Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	815.7000 MHz	19.92 dBm	

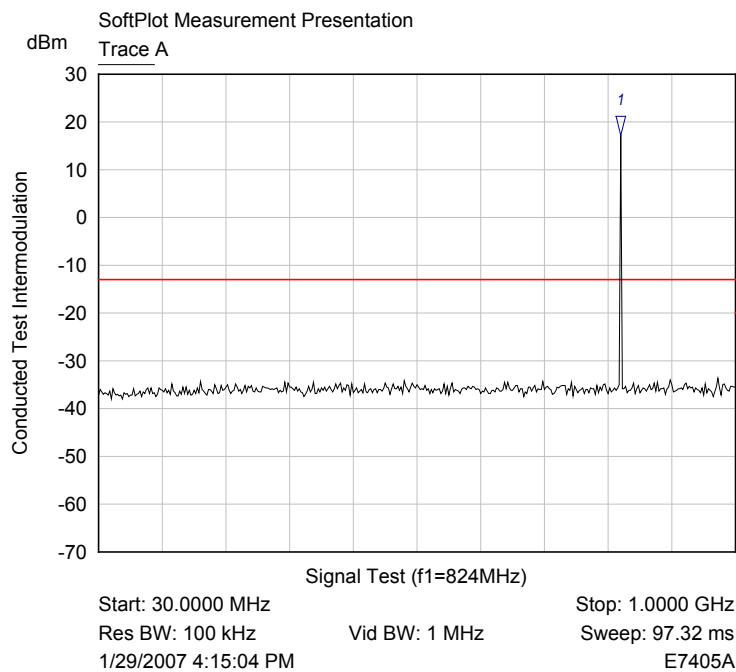
Plot Rad Spur Em/ 5



Plot Rad Spur Em/ 6

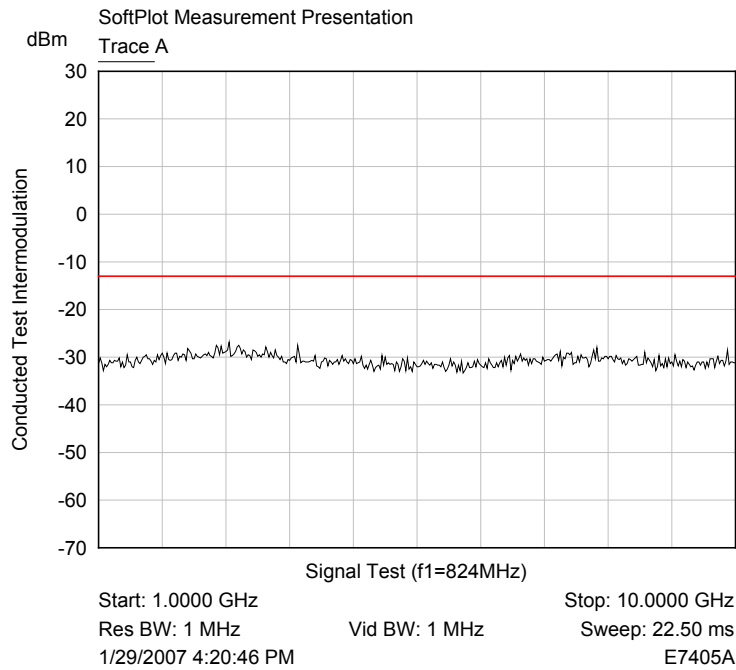


Plot Rad Spur Em/ 7

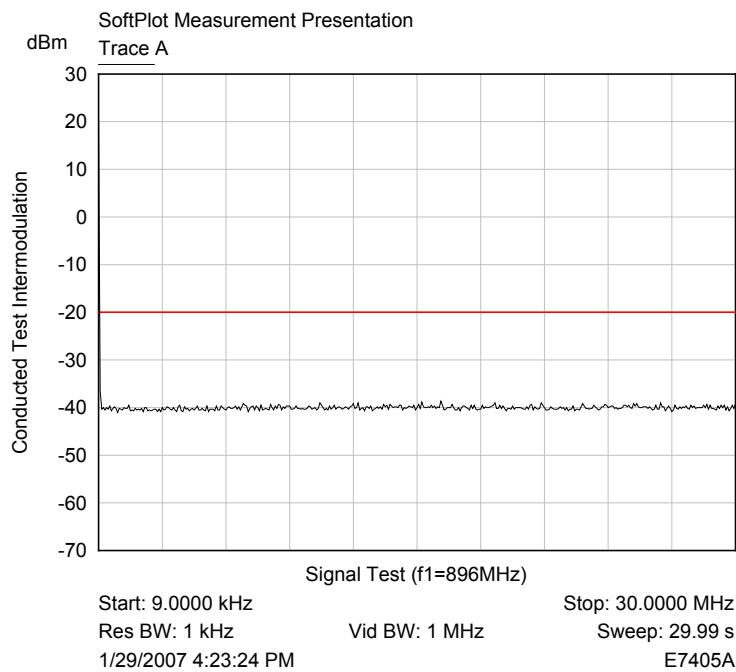


Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	825.4000 MHz	17.10 dBm	

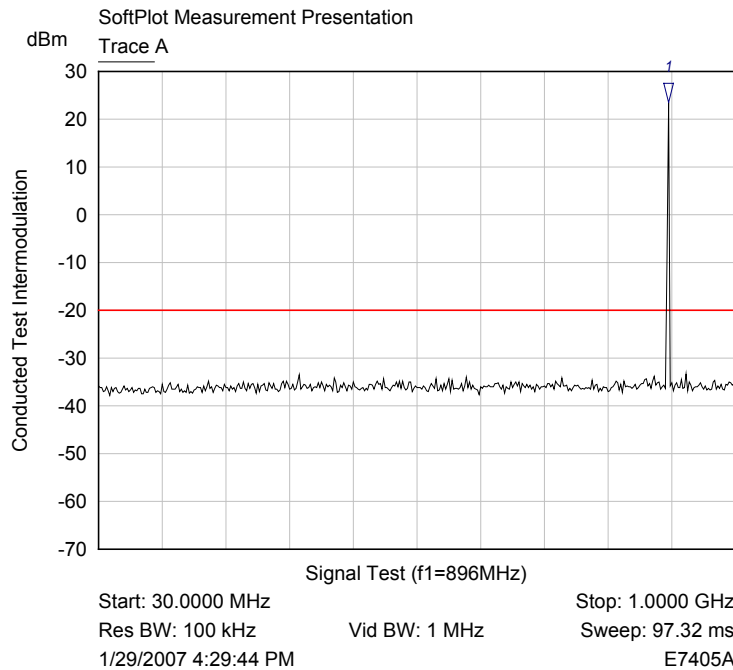
Plot Rad Spur Em/ 8



Plot Rad Spur Em/ 9

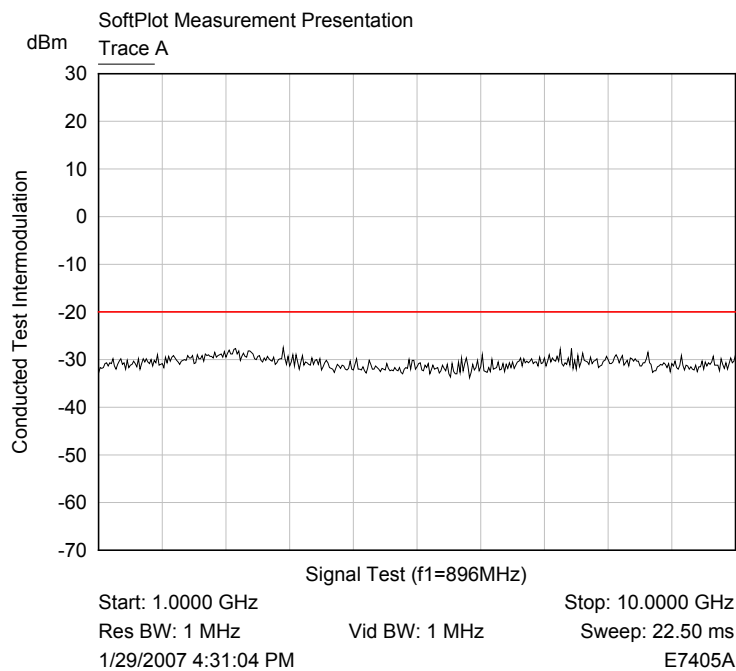


Plot Rad Spur Em/ 10

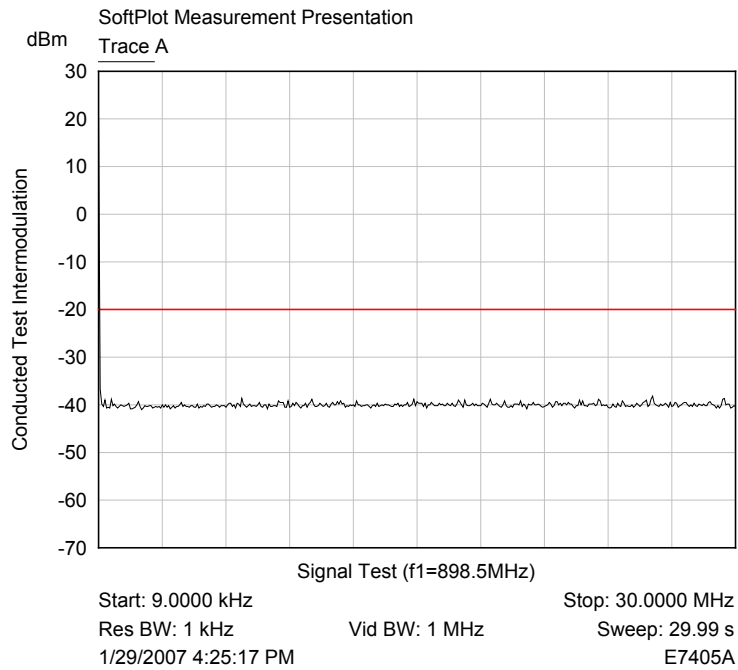


Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	898.1500 MHz	23.46 dBm	

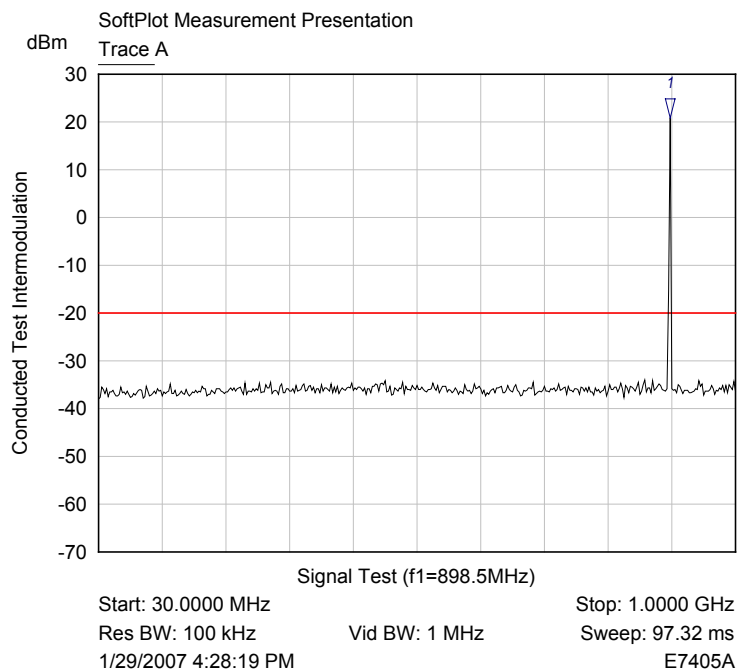
Plot Rad Spur Em/ 11



Plot Rad Spur Em/ 12

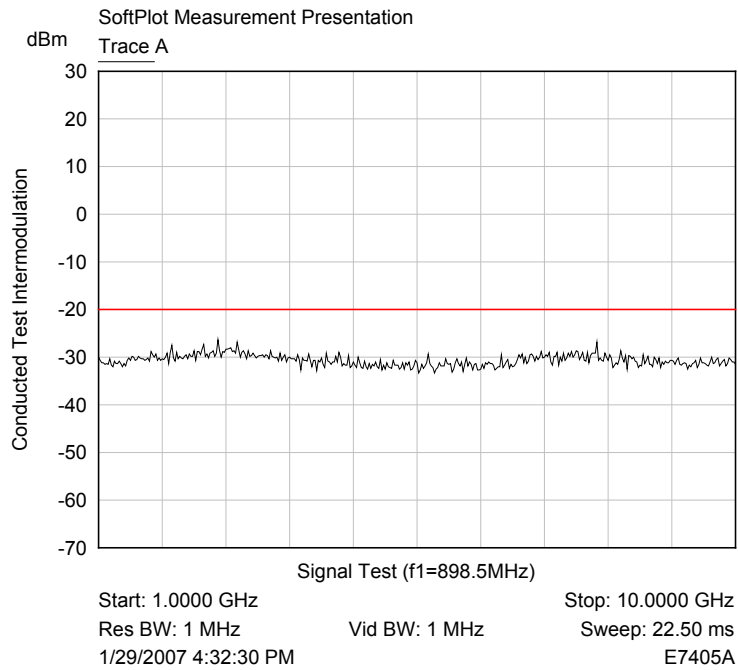


Plot Rad Spur Em/ 13

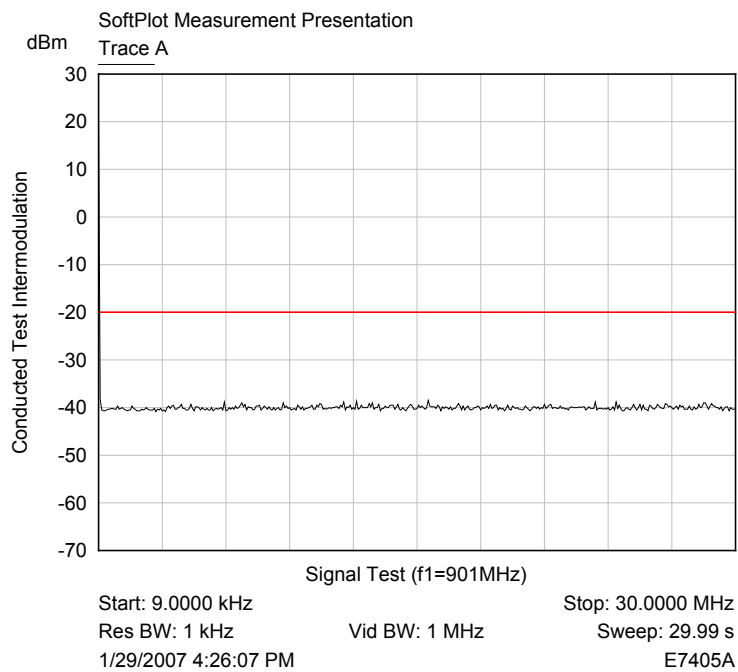


Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	900.5750 MHz	20.89 dBm	

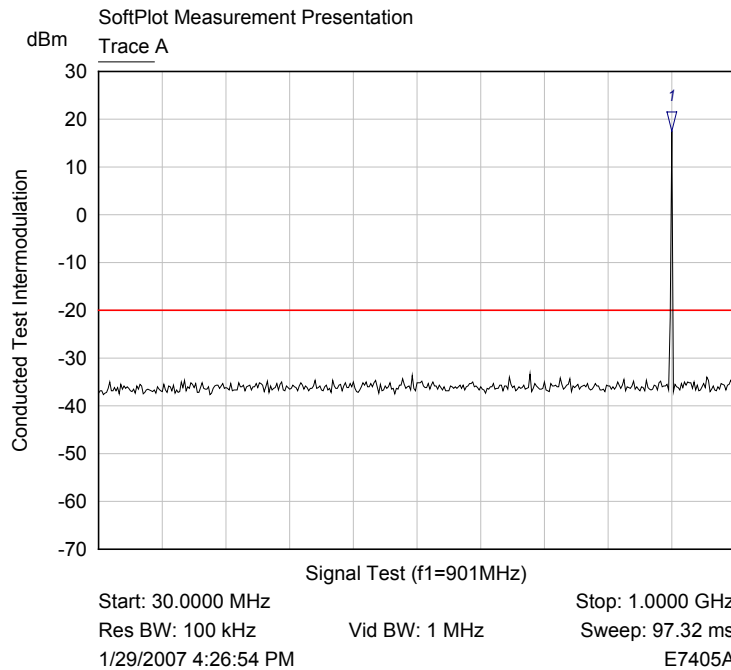
Plot Rad Spur Em/ 14



Plot Rad Spur Em/ 15

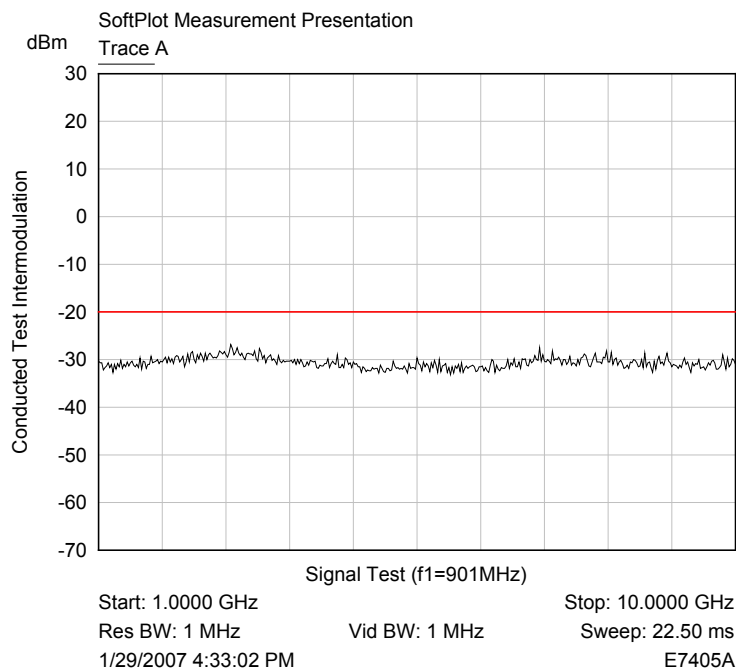


Plot Rad Spur Em/ 16

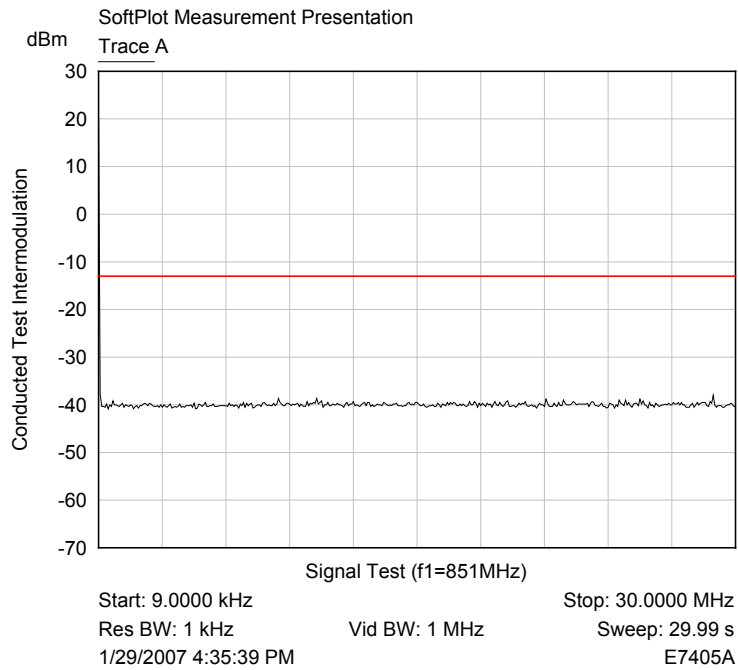


Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	903.0000 MHz	17.58 dBm	

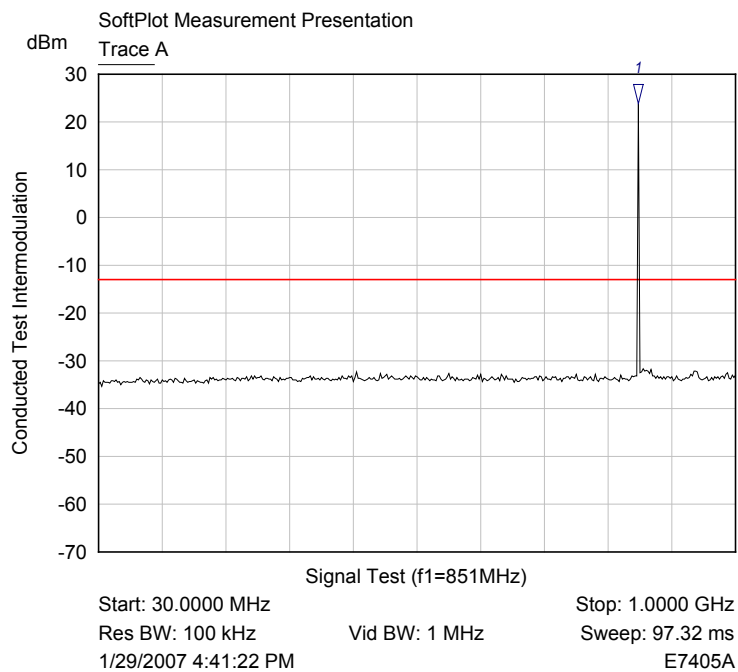
Plot Rad Spur Em/ 17



Plot Rad Spur Em/ 18

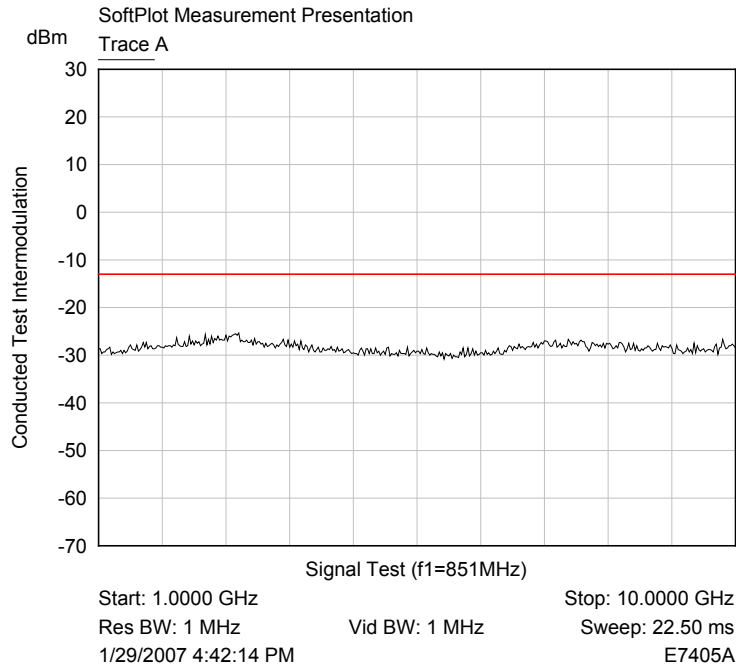


Plot Rad Spur Em/ 19

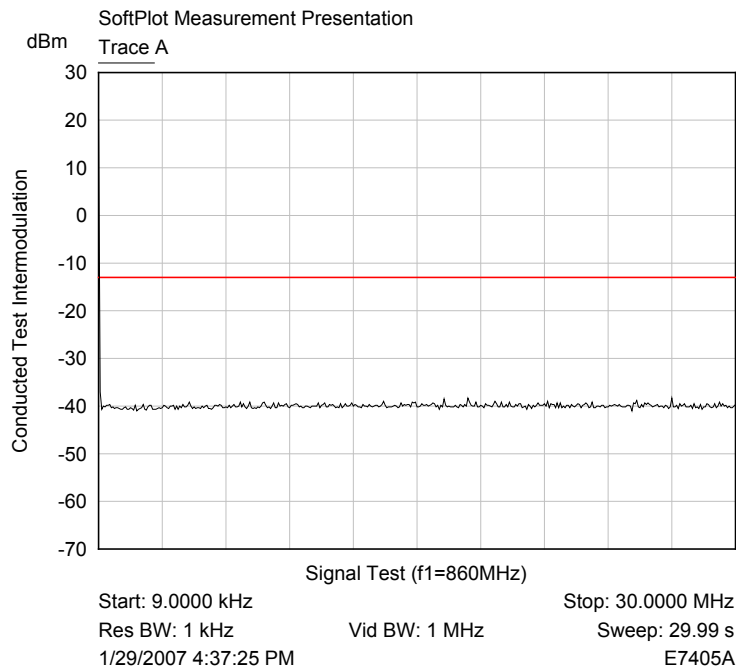


Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	852.0750 MHz	23.85 dBm	

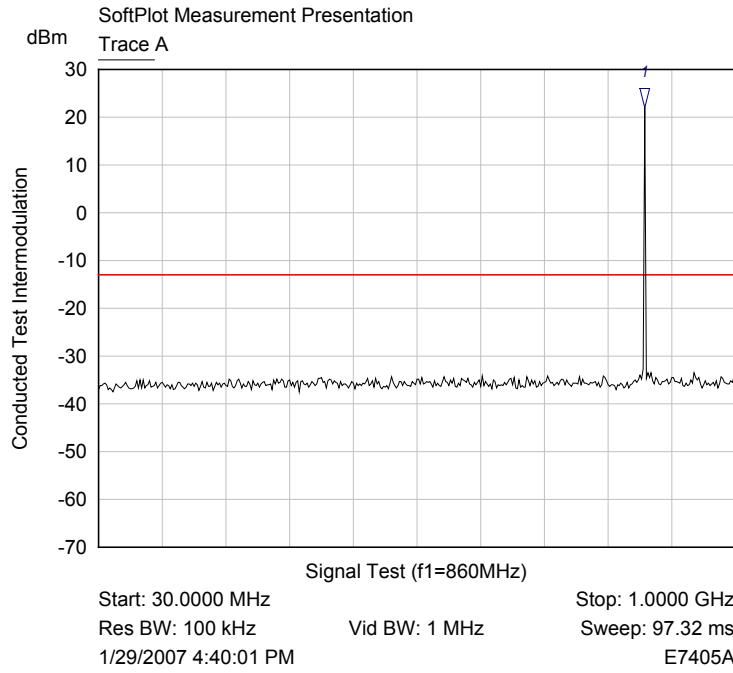
Plot Rad Spur Em/ 20



Plot Rad Spur Em/ 21

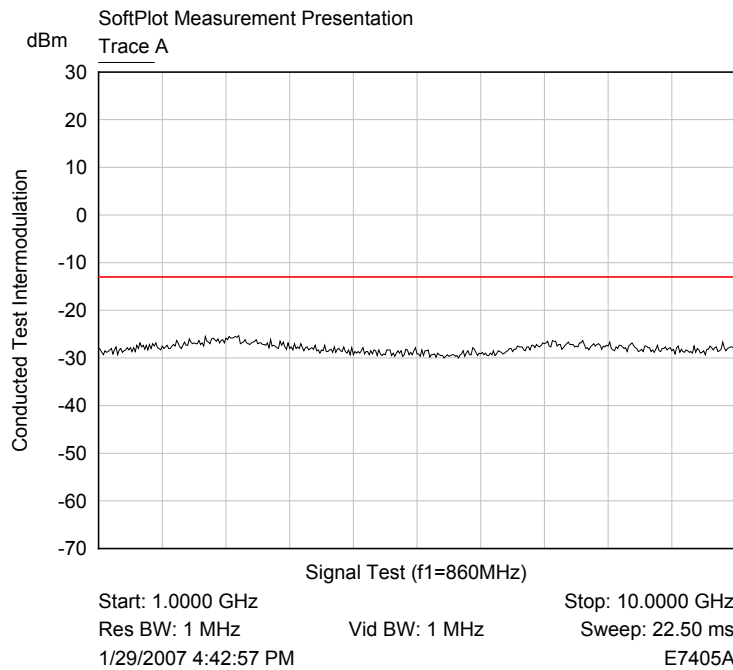


Plot Rad Spur Em/ 22

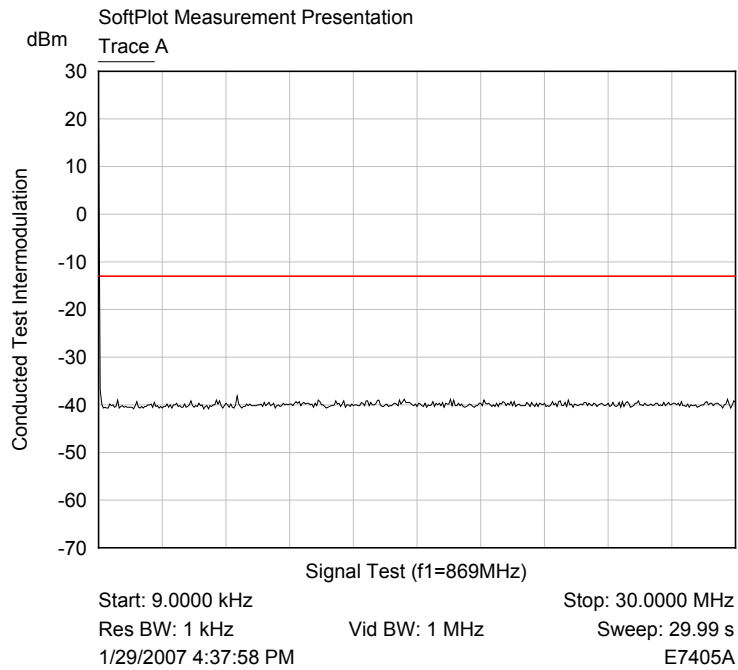


Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	861.7750 MHz	21.99 dBm	

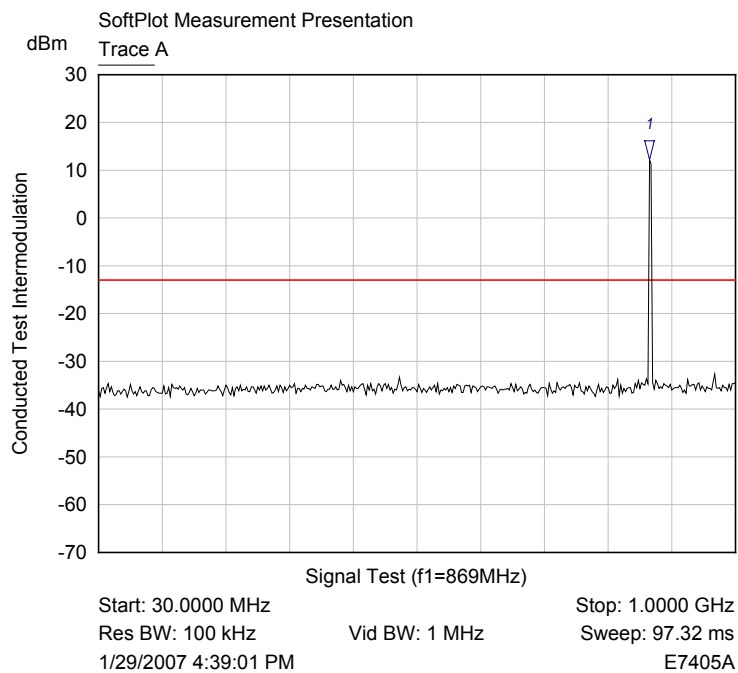
Plot Rad Spur Em/ 23



Plot Rad Spur Em/ 24

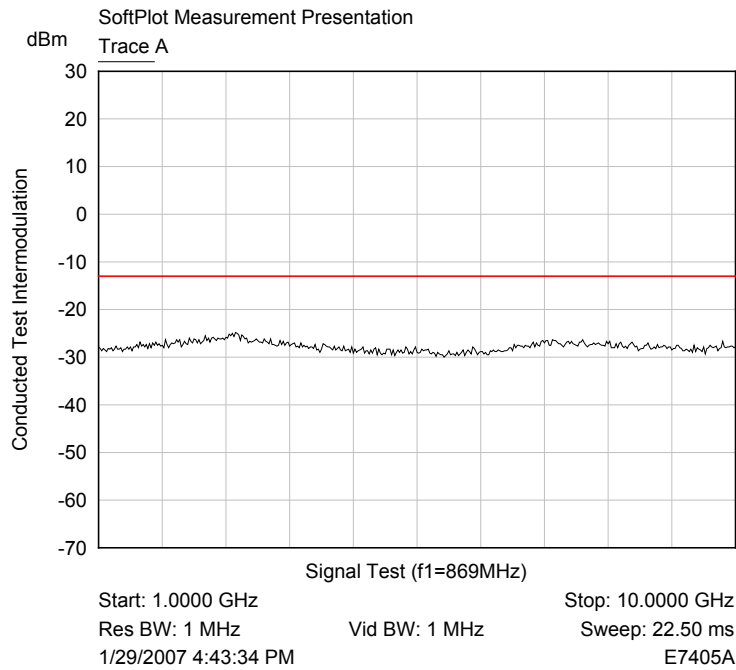


Plot Rad Spur Em/ 25

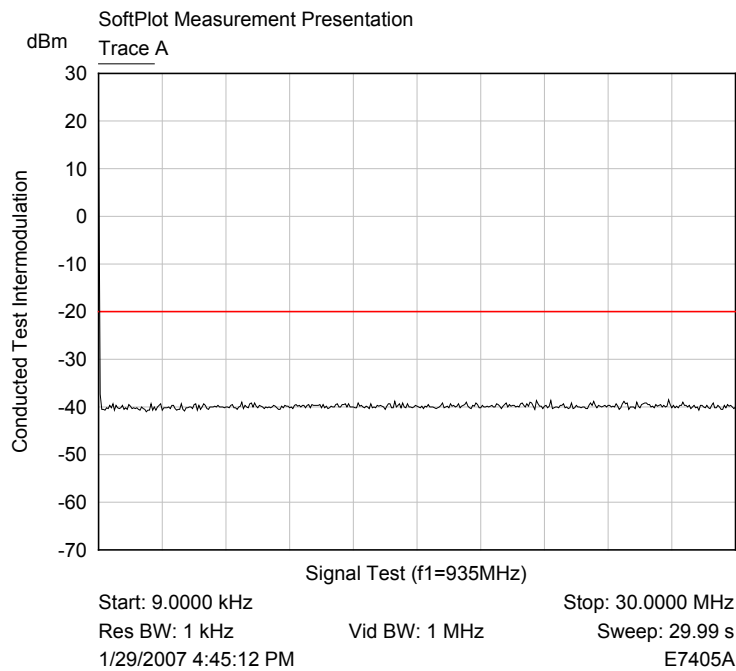


Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	869.0500 MHz	12.21 dBm	

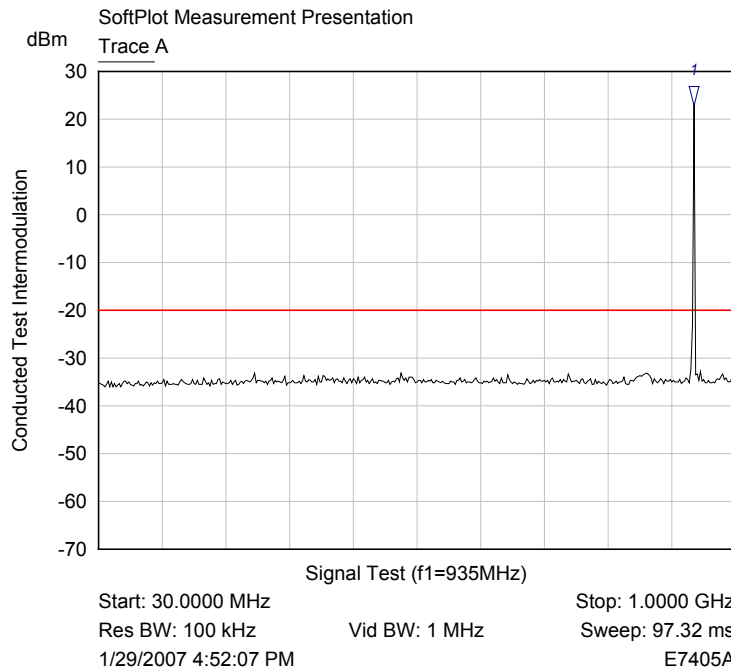
Plot Rad Spur Em/ 26



Plot Rad Spur Em/ 27

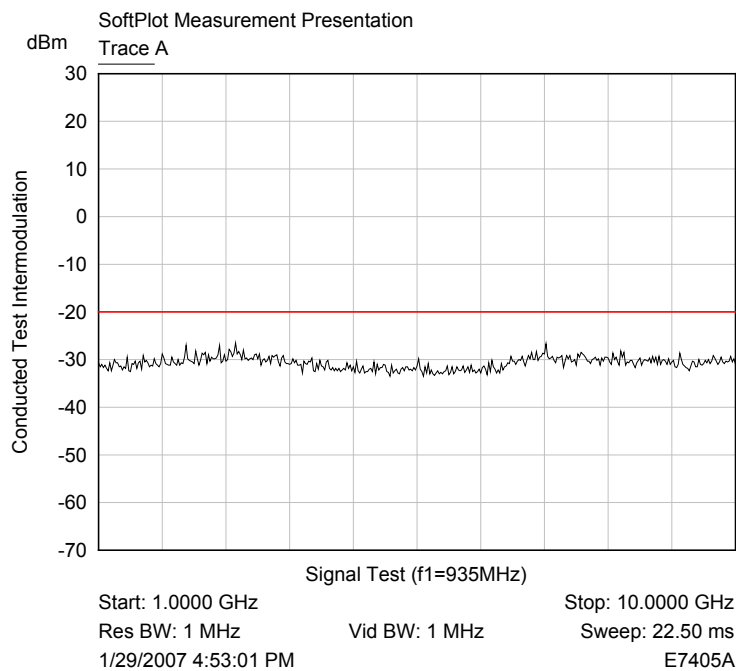


Plot Rad Spur Em/ 28

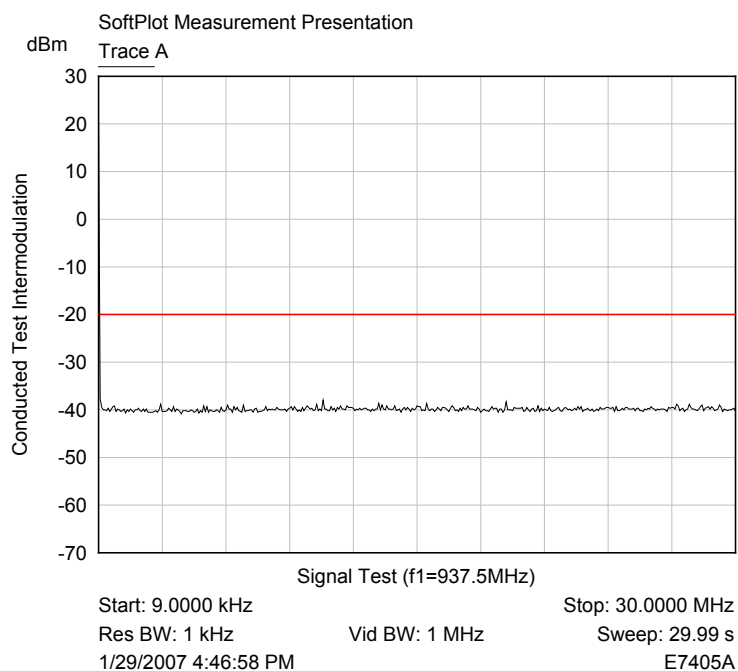


Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	936.9500 MHz	22.76 dBm	

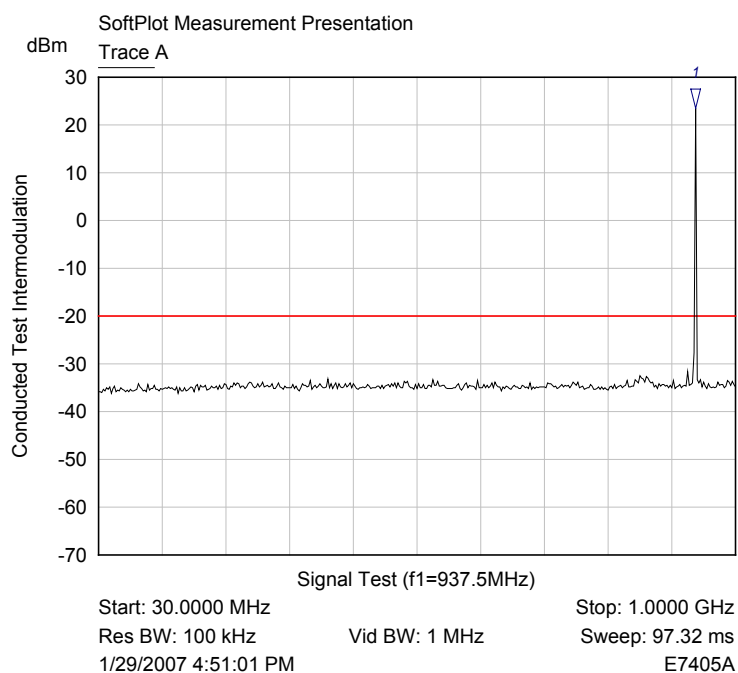
Plot Rad Spur Em/ 29



Plot Rad Spur Em/ 30

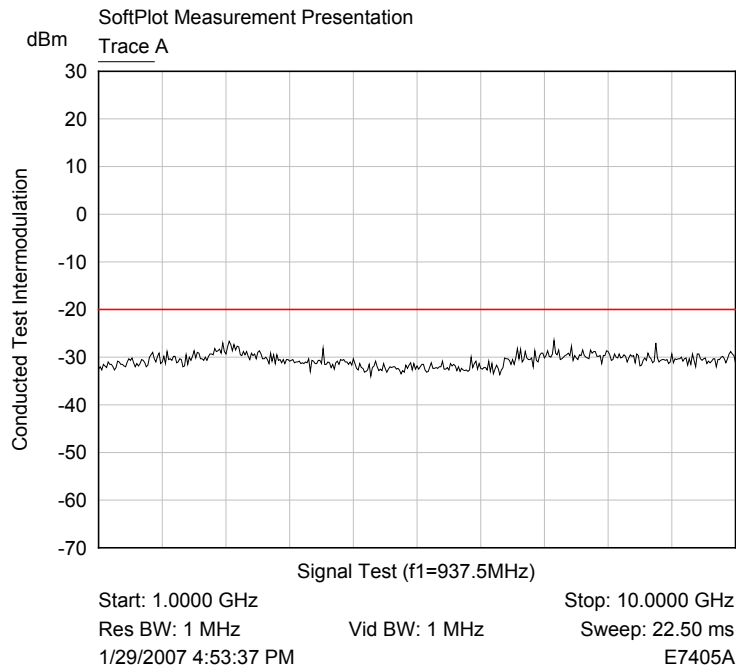


Plot Rad Spur Em/ 31

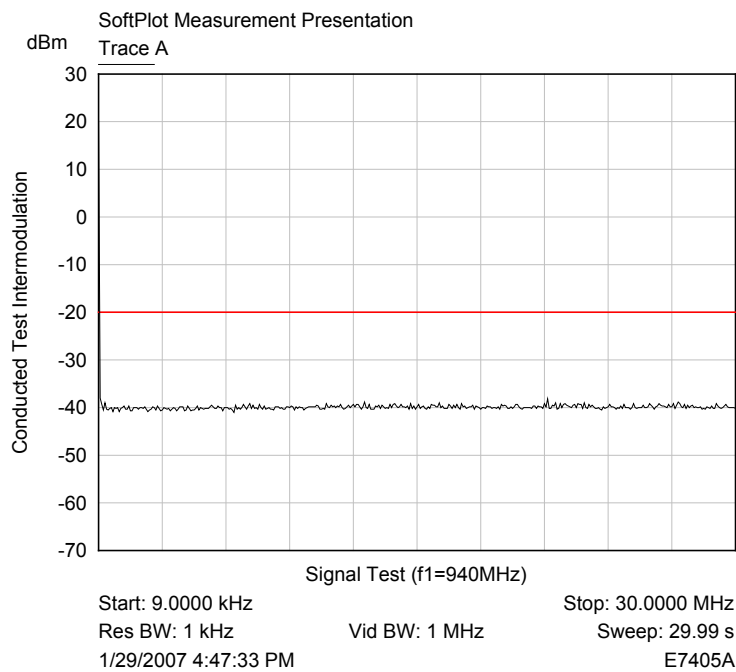


Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	939.3750 MHz	23.54 dBm	

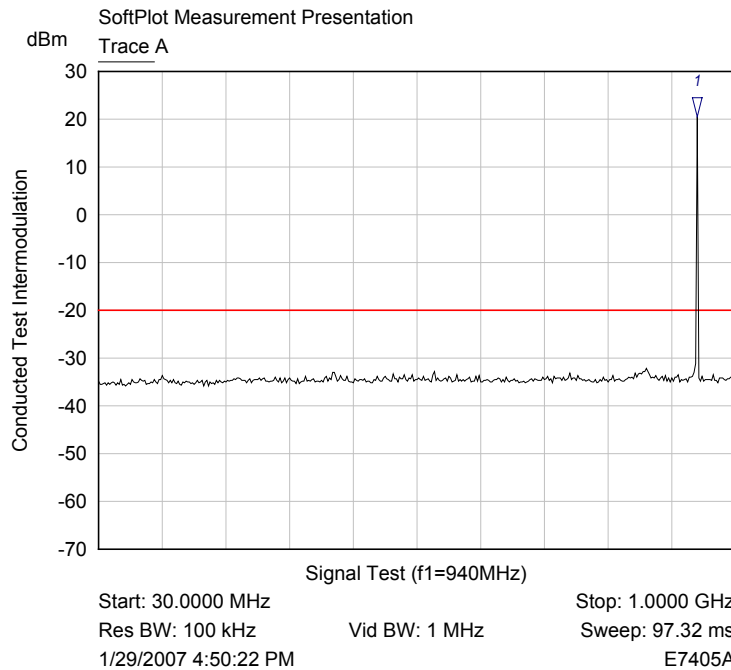
Plot Rad Spur Em/ 32



Plot Rad Spur Em/ 33

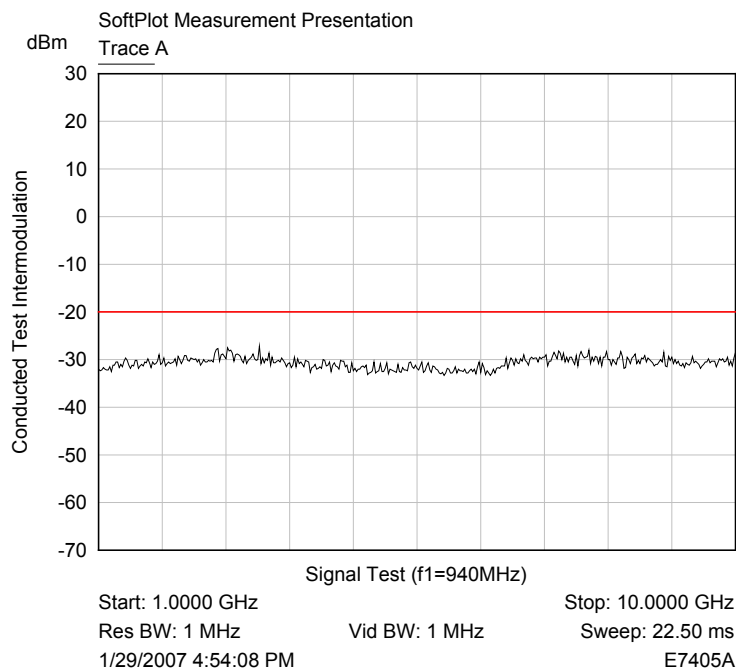


Plot Rad Spur Em/ 34



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	941.8000 MHz	20.55 dBm	

Plot Rad Spur Em/ 35

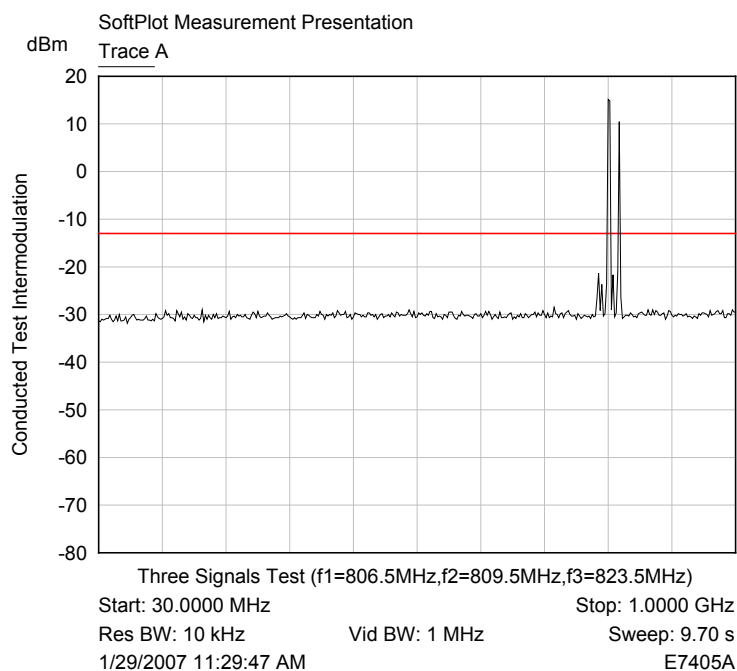


Plot Rad Spur Em/ 36

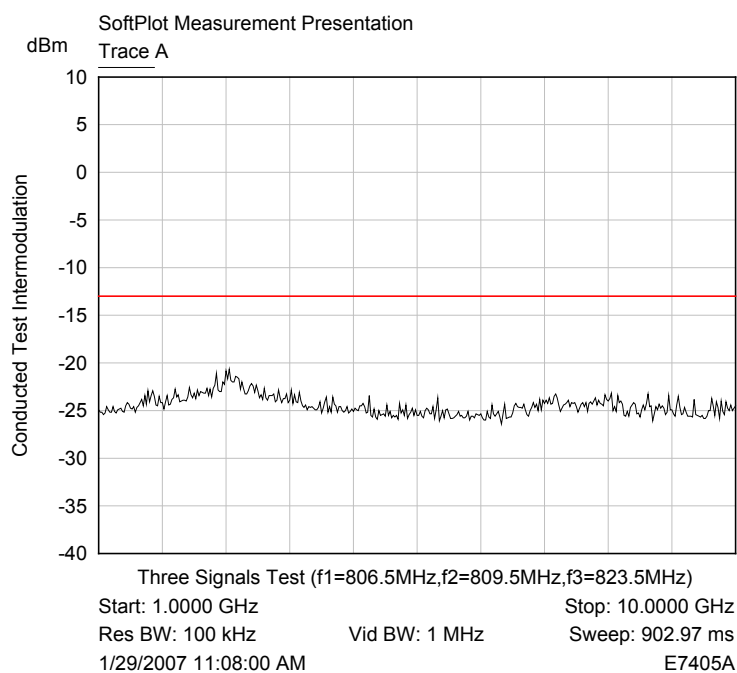
f. Results for conducted emission intermodulation test

Table 13.c Results for Conducted Emission Intermodulation Test

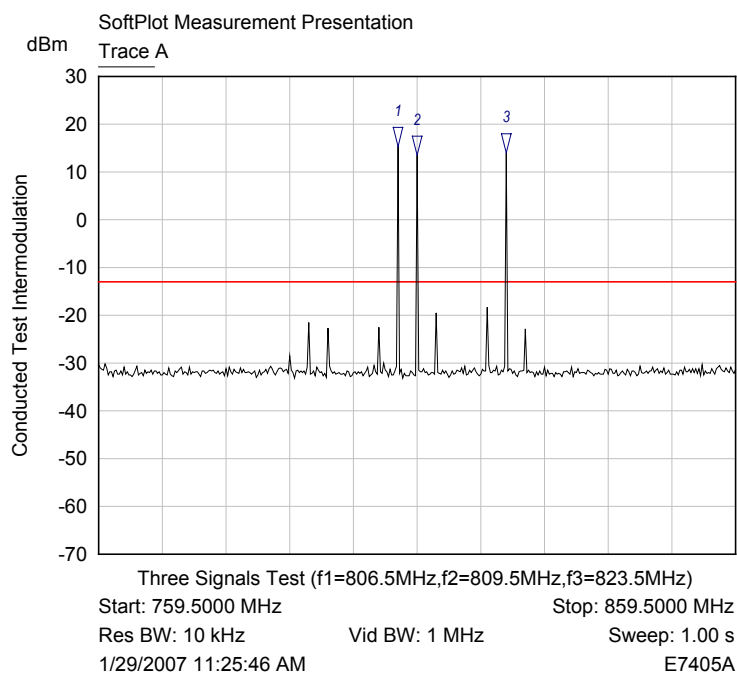
Channels	Band Freq. (MHz)	Signals for Imod Test			Limit (dbc)	Freq. Range (MHz)	Plot No.	
		I	II	III				
Uplink	806 - 824	806	809.5	823.5	-13	30– 1,000	Con Em Inter/ 1	Pass
						1,000 -10,000	Con Em Inter/ 2	Pass
						759.5 – 859.5	Con Em Inter/ 3	Pass
		806	809.5			30– 1,000	Con Em Inter/ 4	Pass
						1,000 -10,000	Con Em Inter/ 5	Pass
						800.5 – 815.5	Con Em Inter/ 6	Pass
						30– 1,000	Con Em Inter/ 7	Pass
		820.5	823.5			1,000 -10,000	Con Em Inter/ 8	Pass
						794.5 – 845.5	Con Em Inter/ 9	Pass
Uplink	896 - 901	896.5	898.5	900.5	-20	30– 1,000	Con Em Inter/ 10	Pass
						1,000 -10,000	Con Em Inter/ 11	Pass
						873.5 923.5	Con Em Inter/ 12	Pass
		896.5	899.5			30– 1,000	Con Em Inter/ 13	Pass
						1,000 -10,000	Con Em Inter/ 14	Pass
						887.5 – 907.5	Con Em Inter/ 15	Pass
						30– 1,000	Con Em Inter/ 16	Pass
		897.5	900.5			1,000 -10,000	Con Em Inter/ 17	Pass
						889.909	Con Em Inter/ 18	Pass
Downlink	851 - 869	851.5	854.5	868.5	-13	30– 1,000	Con Em Inter/ 19	Pass
						1,000 -10,000	Con Em Inter/ 20	Pass
						829.5 – 879.5	Con Em Inter/ 21	Pass
		851.5	854.5			30– 1,000	Con Em Inter/ 22	Pass
						1,000 -10,000	Con Em Inter/ 23	Pass
						843 - 863	Con Em Inter/ 24	Pass
						30– 1,000	Con Em Inter/ 25	Pass
		865.5	868.5			1,000 -10,000	Con Em Inter/ 26	Pass
						857.5 – 877.5	Con Em Inter/ 27	Pass
Downlink	935 - 940	935.5	937.5	939.5	-20	30– 1,000	Con Em Inter/ 28	Pass
						1,000 -10,000	Con Em Inter/ 29	Pass
						927.5 – 947.5	Con Em Inter/ 30	Pass
		935.5	937.5			30– 1,000	Con Em Inter/ 31	Pass
						1,000 -10,000	Con Em Inter/ 32	Pass
						928.5 943.5	Con Em Inter/ 33	Pass
						30– 1,000	Con Em Inter/ 34	Pass
		937.5	939.5			1,000 -10,000	Con Em Inter/ 35	Pass
						931- 946	Con Em Inter/ 36	Pass



Plot Cond Emis Inter/ 1

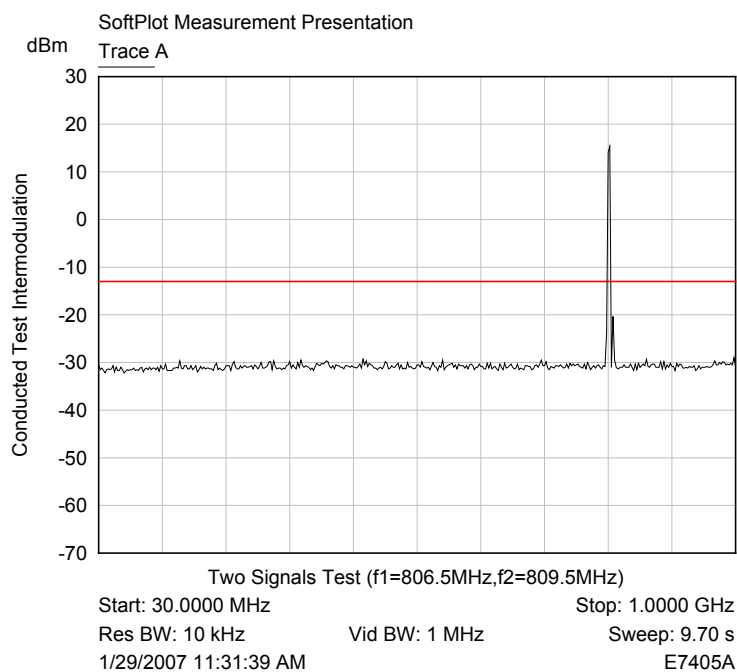


Plot Cond Emis Inter/ 2

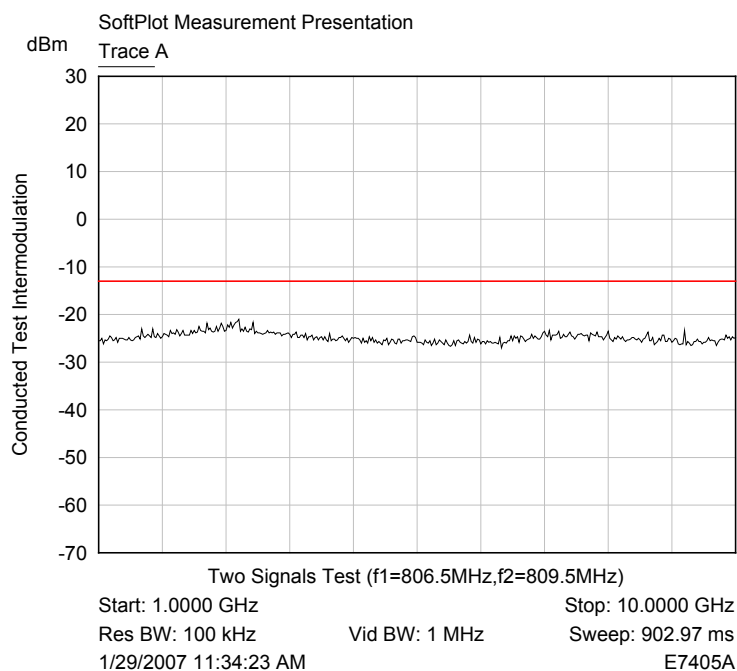


Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	806.5000 MHz	15.37 dBm	
2 ▽	Trace A	809.5000 MHz	13.51 dBm	
3 ▽	Trace A	823.5000 MHz	14.06 dBm	

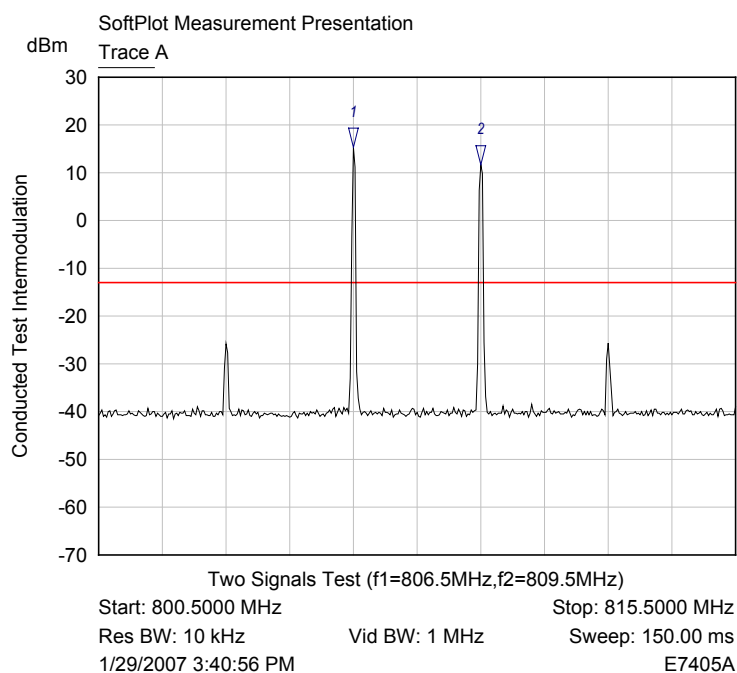
Plot Cond Emis Inter/ 3



Plot Cond Emis Inter/ 4

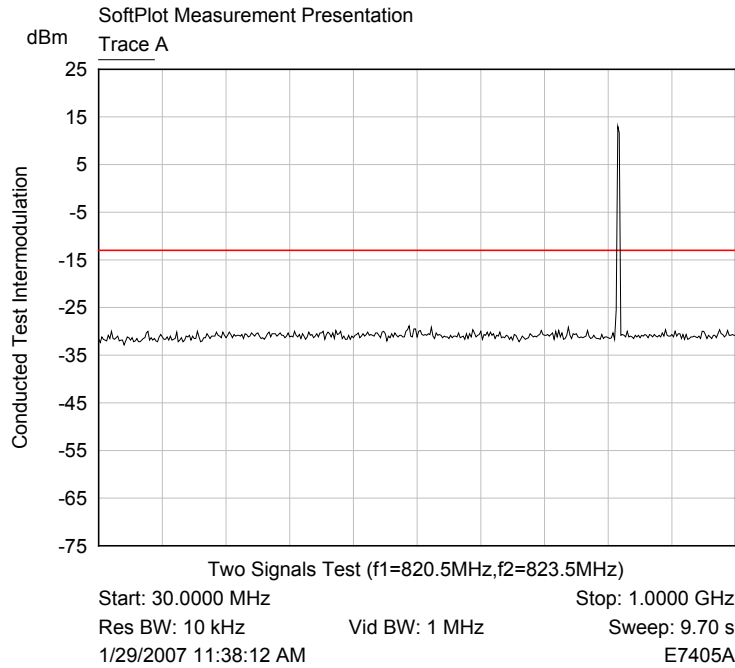


Plot Cond Emis Inter/ 5

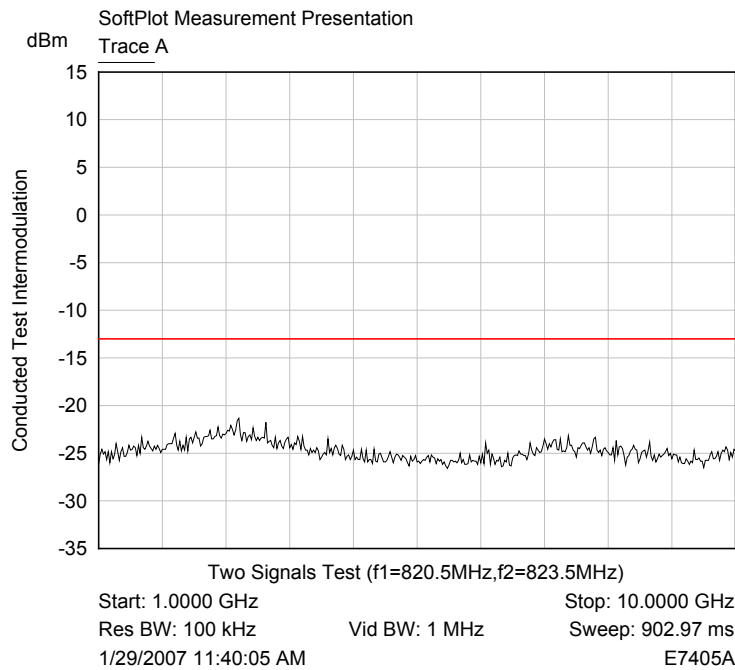


Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	806.5000 MHz	15.38 dBm	
2 ▽	Trace A	809.5000 MHz	11.61 dBm	

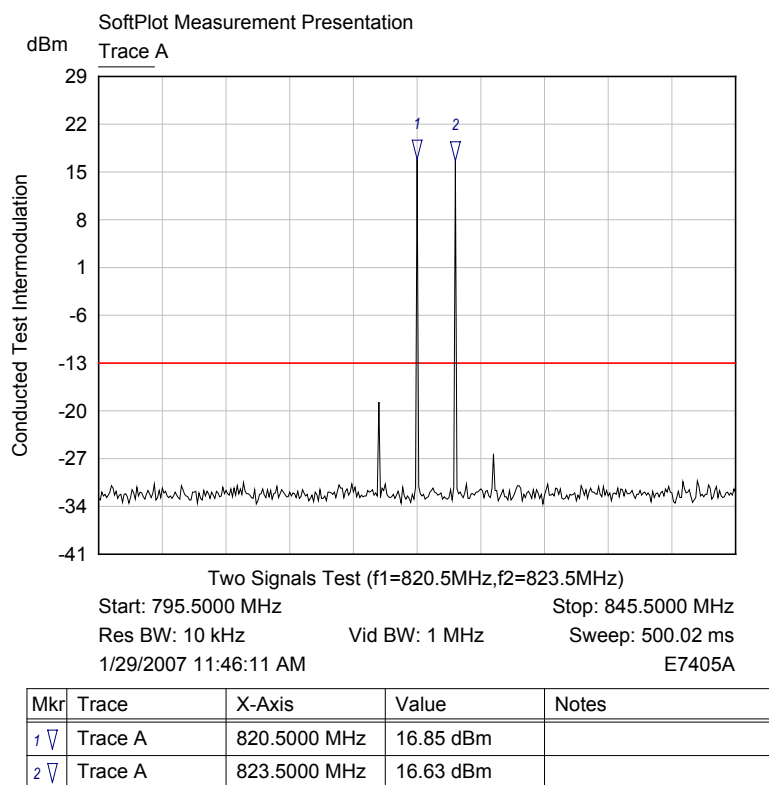
Plot Cond Emis Inter/ 6



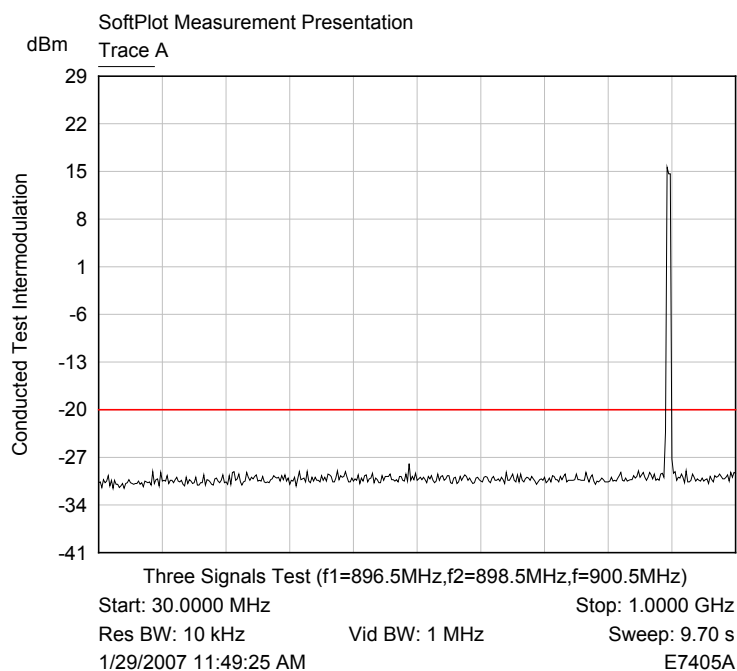
Plot Cond Emis Inter/ 7



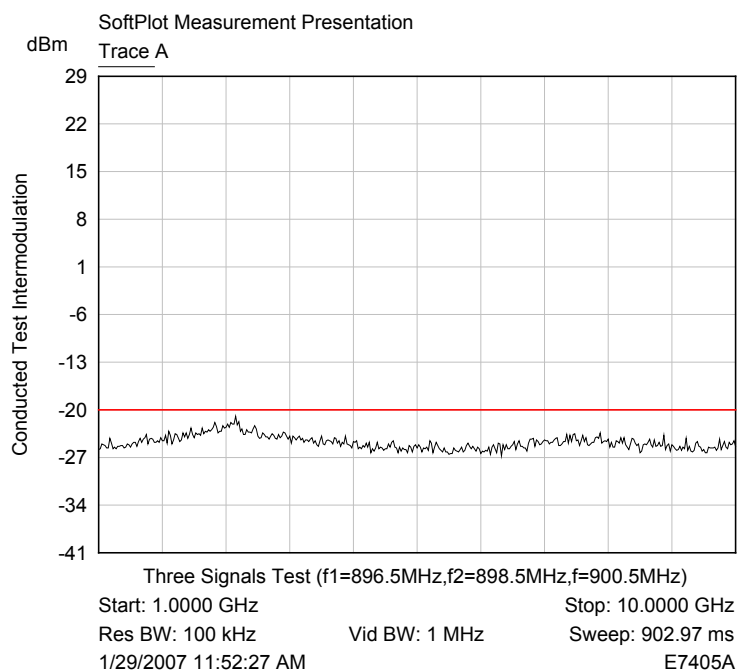
Plot Cond Emis Inter/ 8



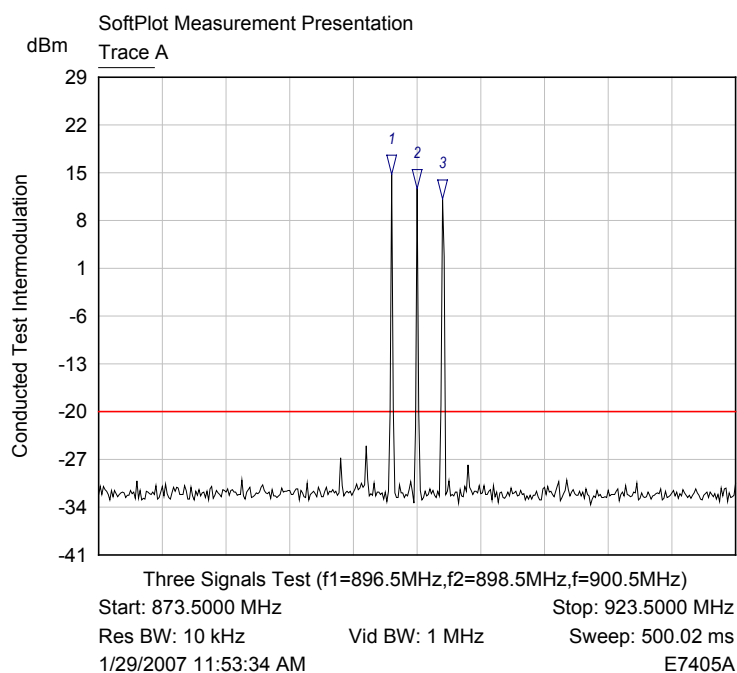
Plot Cond Emis Inter/ 9



Plot Cond Emis Inter/ 10

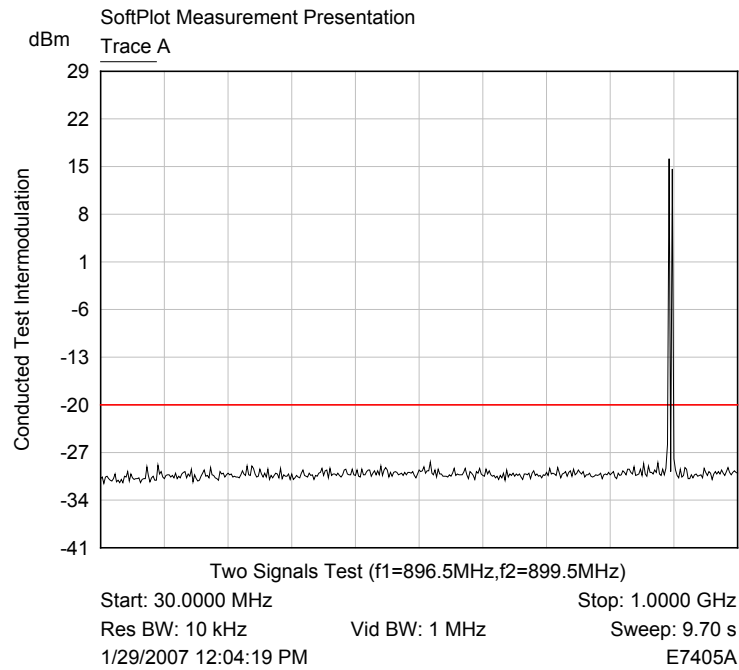


Plot Cond Emis Inter/ 11

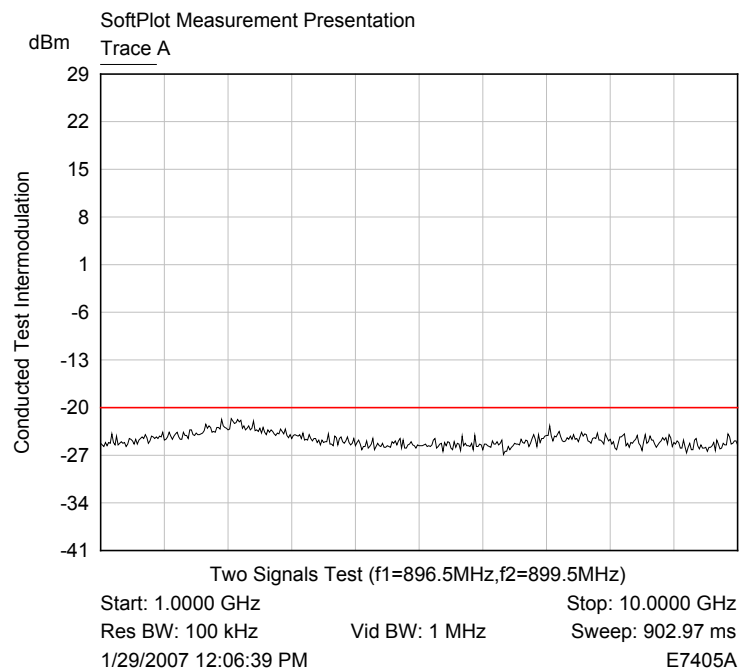


Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	896.5000 MHz	14.71 dBm	
2 ▽	Trace A	898.5000 MHz	12.69 dBm	
3 ▽	Trace A	900.5000 MHz	11.09 dBm	

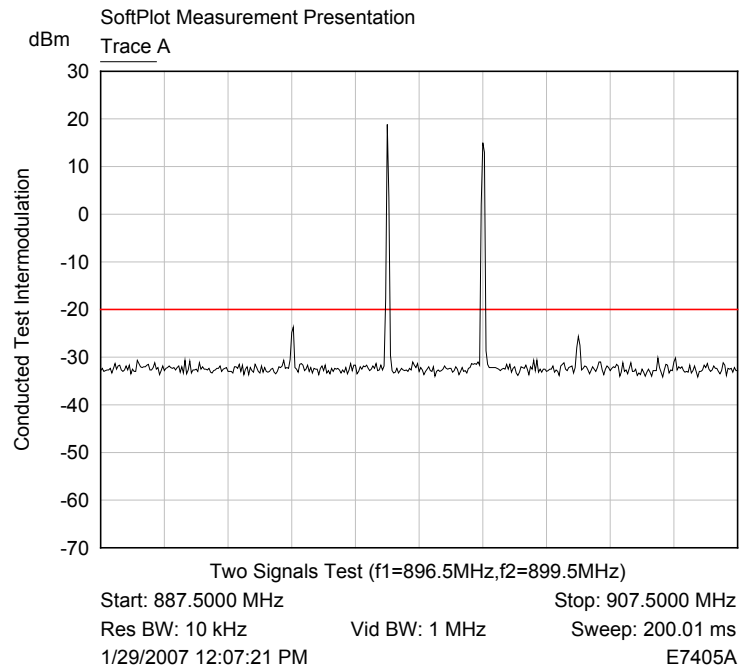
Plot Cond Emis Inter/ 12



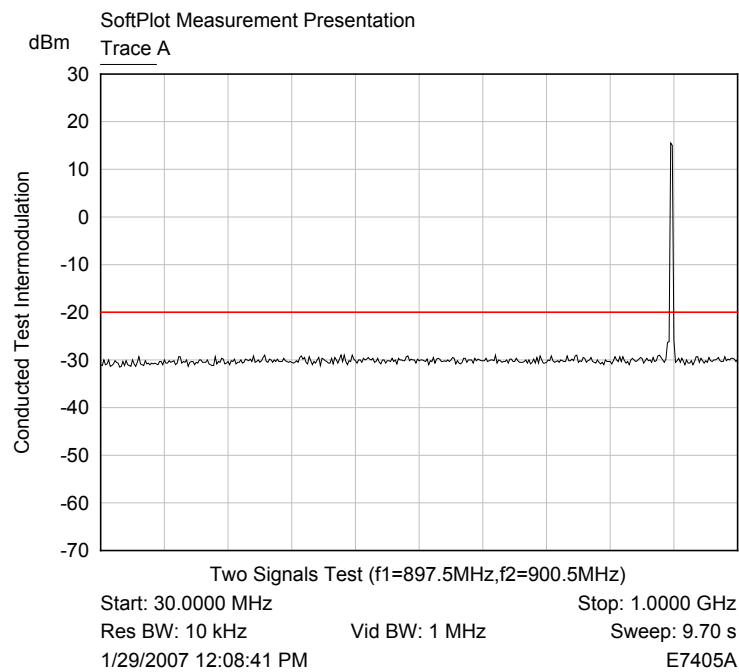
Plot Cond Emis Inter/ 13



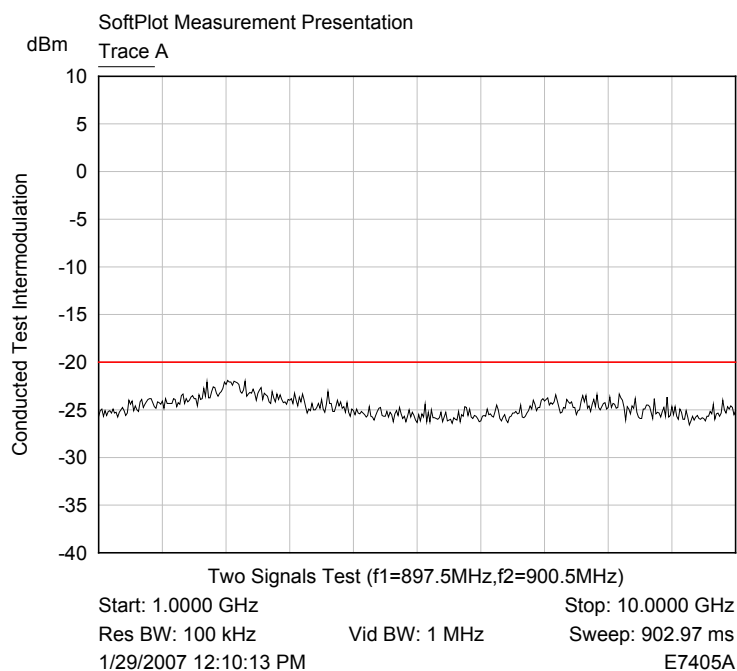
Plot Cond Emis Inter/ 14



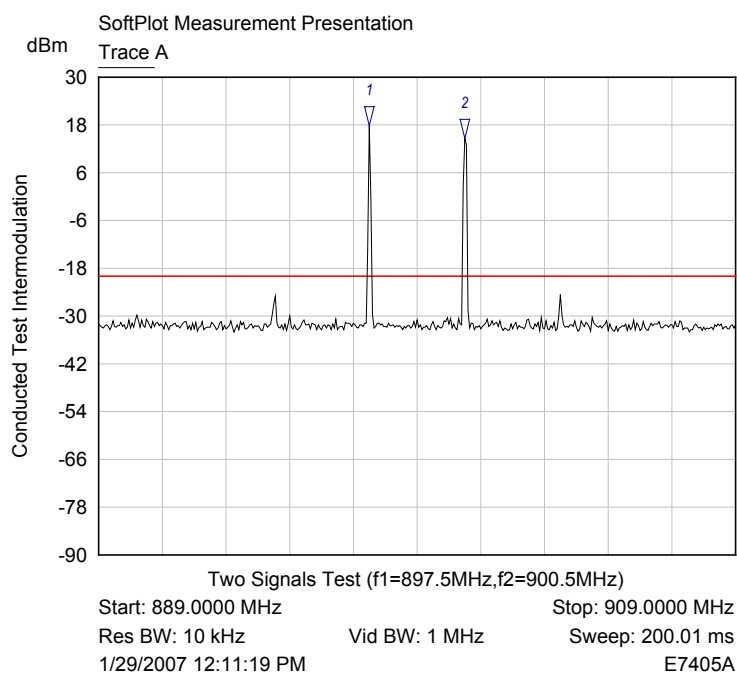
Plot Cond Emis Inter/ 15



Plot Cond Emis Inter/ 16

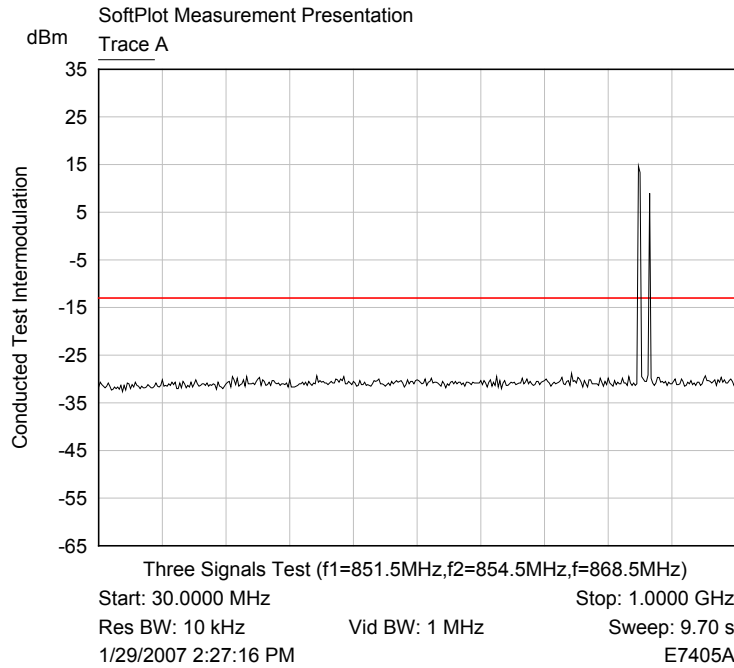


Plot Cond Emis Inter/ 17

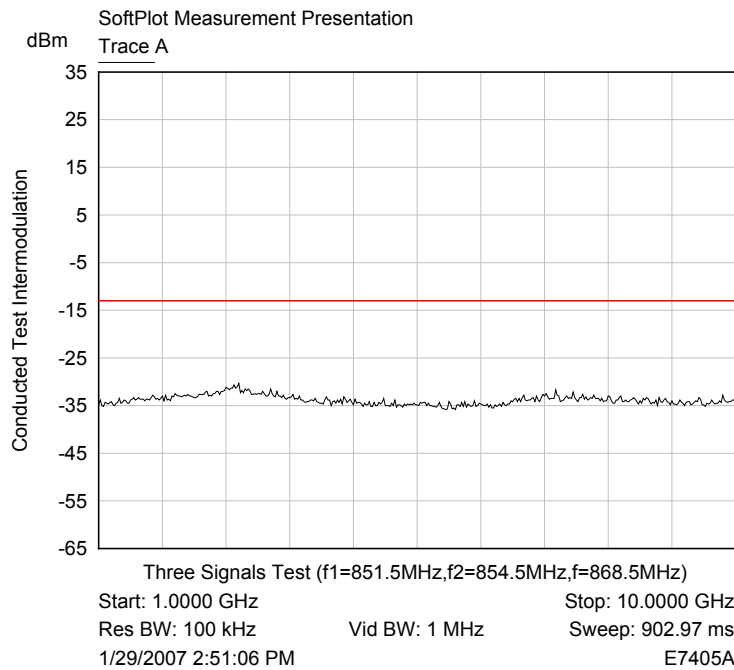


Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	897.5000 MHz	17.87 dBm	
2 ▽	Trace A	900.5000 MHz	14.61 dBm	

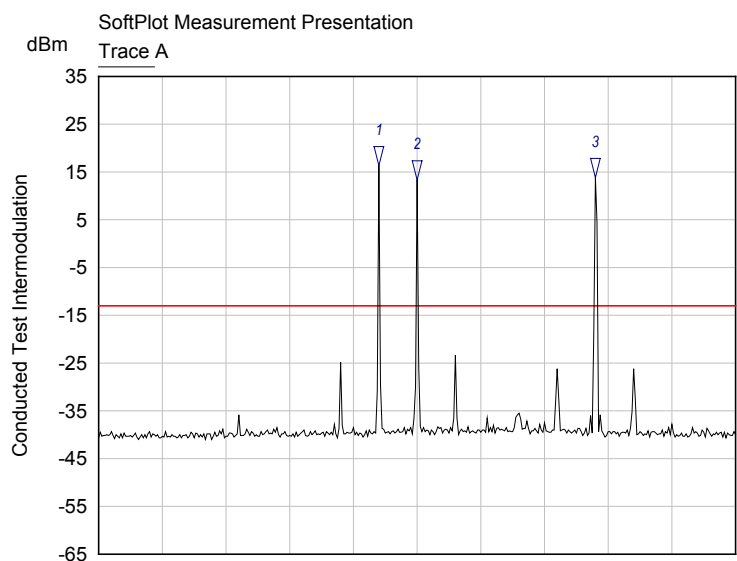
Plot Cond Emis Inter/ 18



Plot Cond Emis Inter/ 19



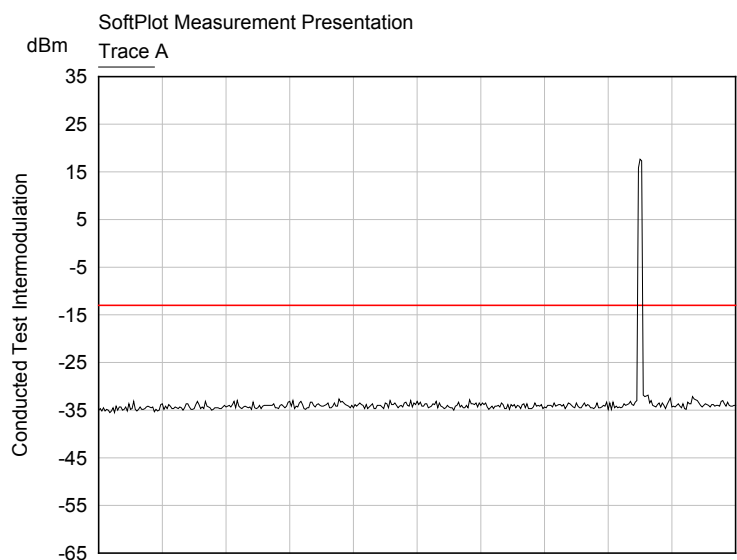
Plot Cond Emis Inter/ 20



Three Signals Test (f1=851.5MHz,f2=854.5MHz,f=868.5MHz)
 Start: 829.5000 MHz Stop: 879.5000 MHz
 Res BW: 10 kHz Vid BW: 1 MHz Sweep: 500.02 ms
 1/29/2007 3:17:14 PM E7405A

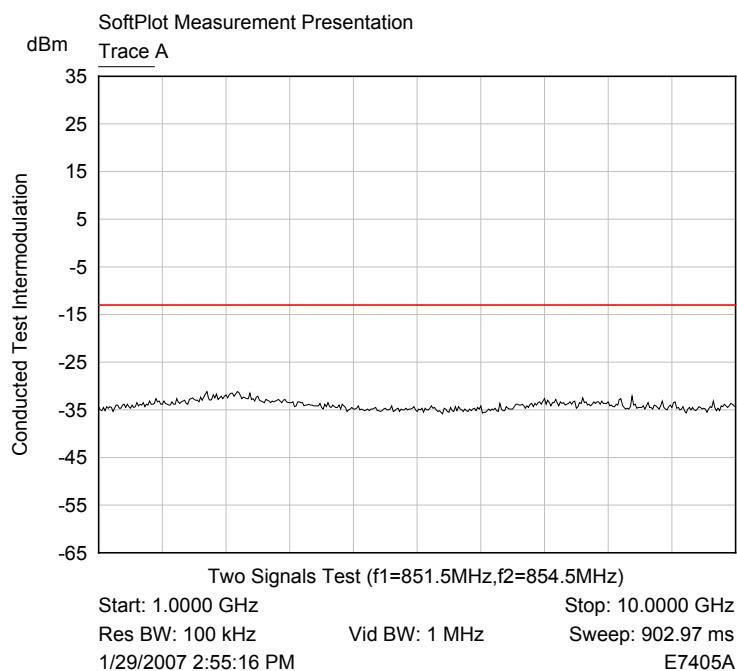
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	851.5000 MHz	16.27 dBm	
2 ▽	Trace A	854.5000 MHz	13.37 dBm	
3 ▽	Trace A	868.5000 MHz	13.84 dBm	

Plot Cond Emis Inter/ 21

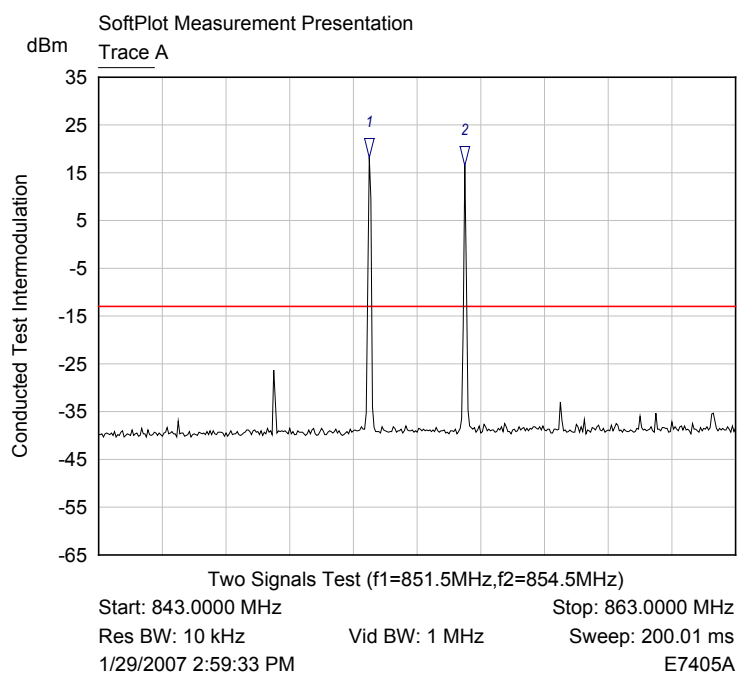


Two Signals Test (f1=851.5MHz,f2=854.5MHz)
 Start: 30.0000 MHz Stop: 1.0000 GHz
 Res BW: 10 kHz Vid BW: 1 MHz Sweep: 9.70 s
 1/29/2007 2:53:34 PM E7405A

Plot Cond Emis Inter/ 22

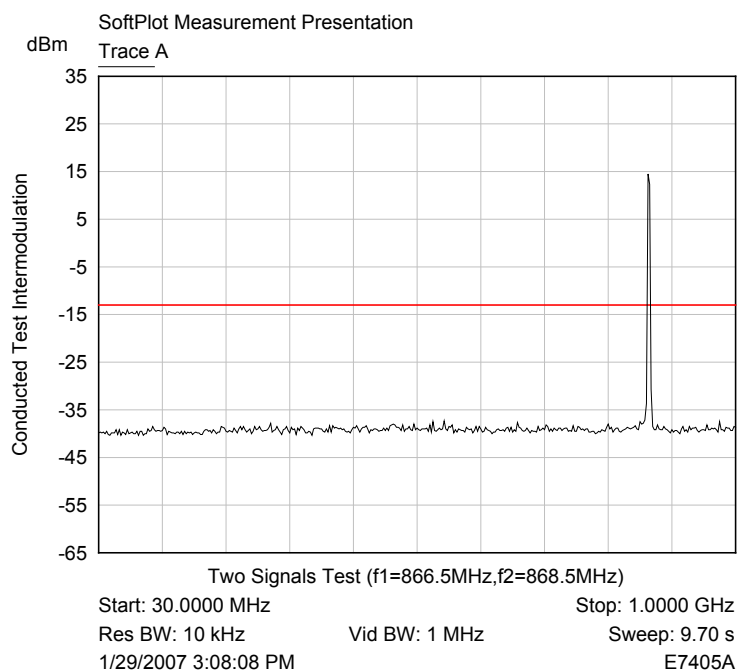


Plot Cond Emis Inter/ 23

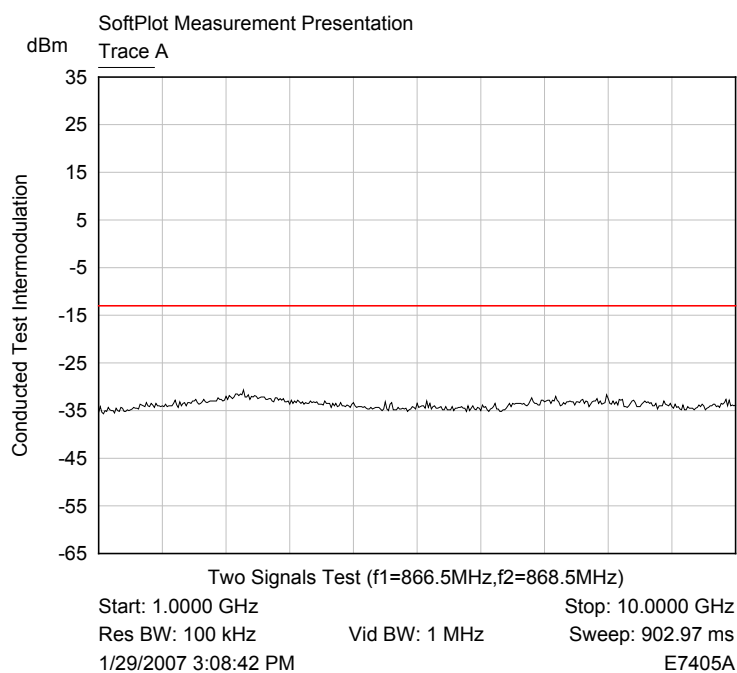


Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	851.5000 MHz	18.11 dBm	
2 ▽	Trace A	854.5000 MHz	16.57 dBm	

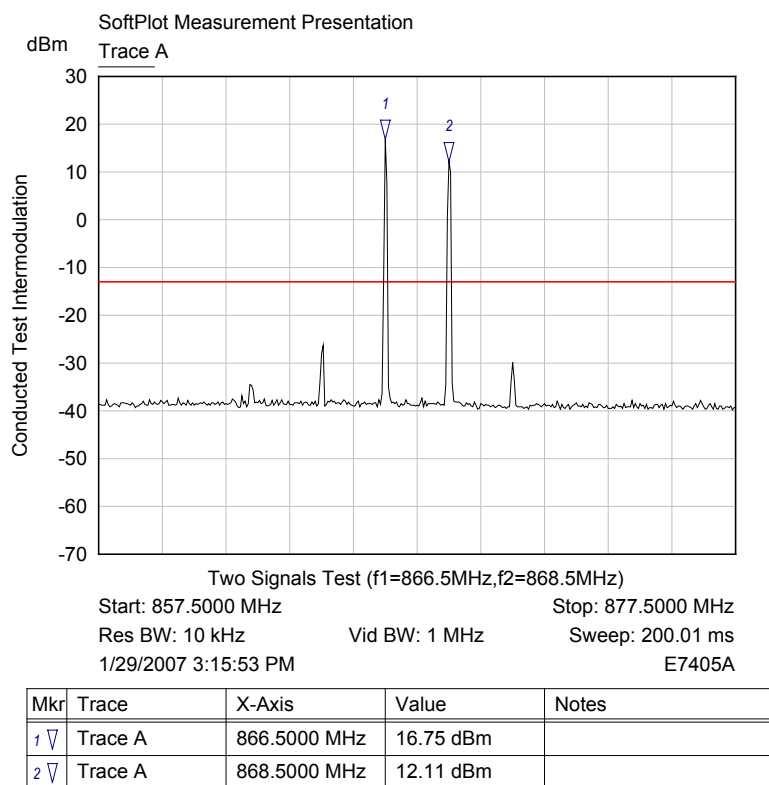
Plot Cond Emis Inter/ 24



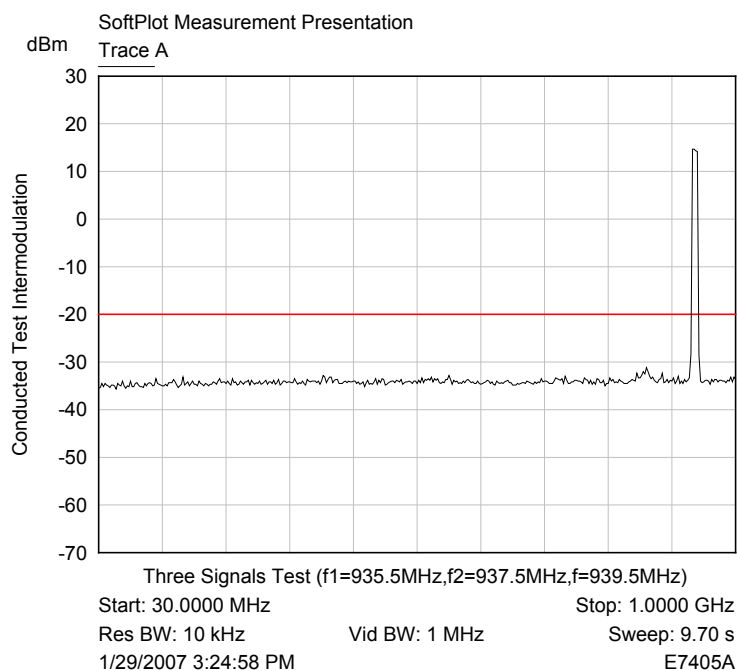
Plot Cond Emis Inter/ 25



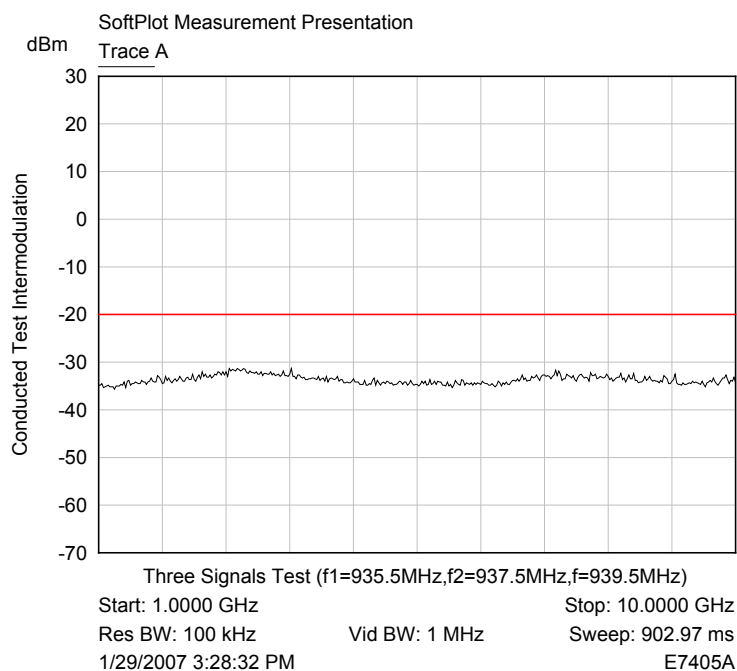
Plot Cond Emis Inter/ 26



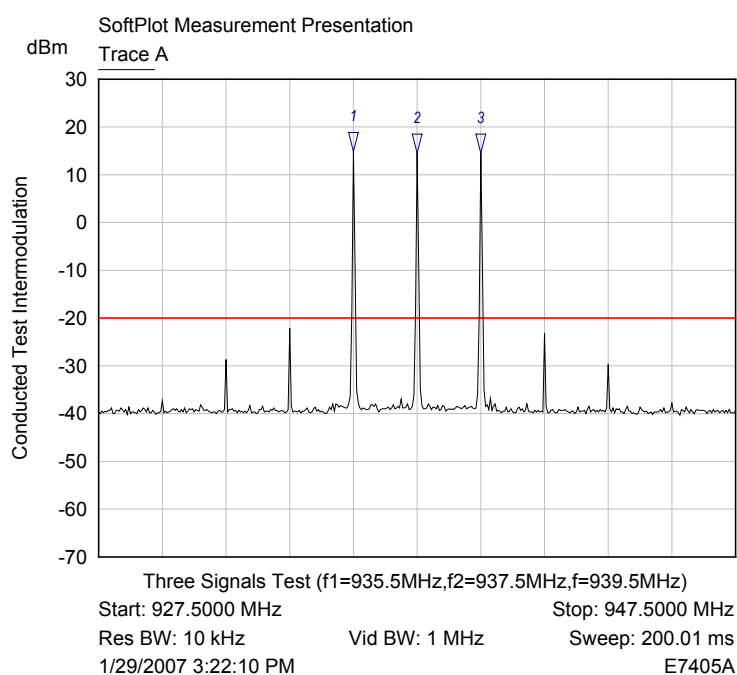
Plot Cond Emis Inter/ 27



Plot Cond Emis Inter/ 28

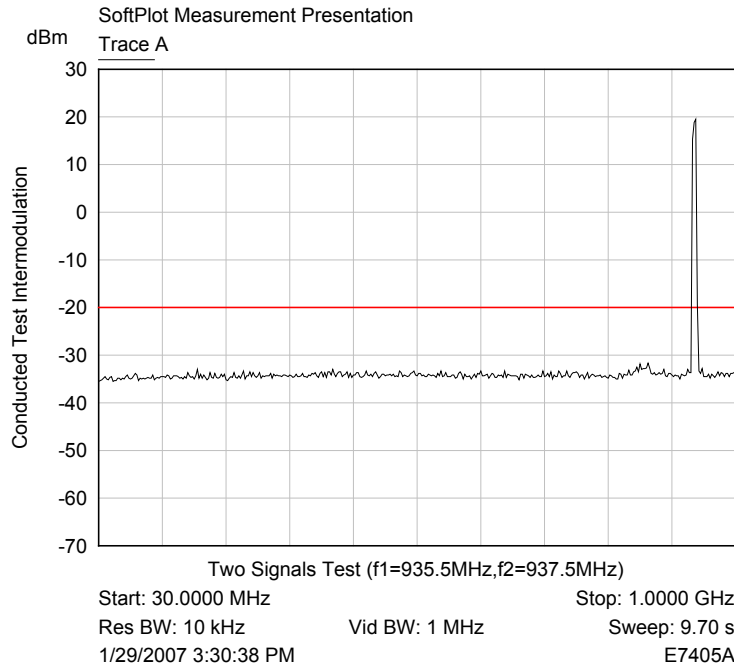


Plot Cond Emis Inter/ 29

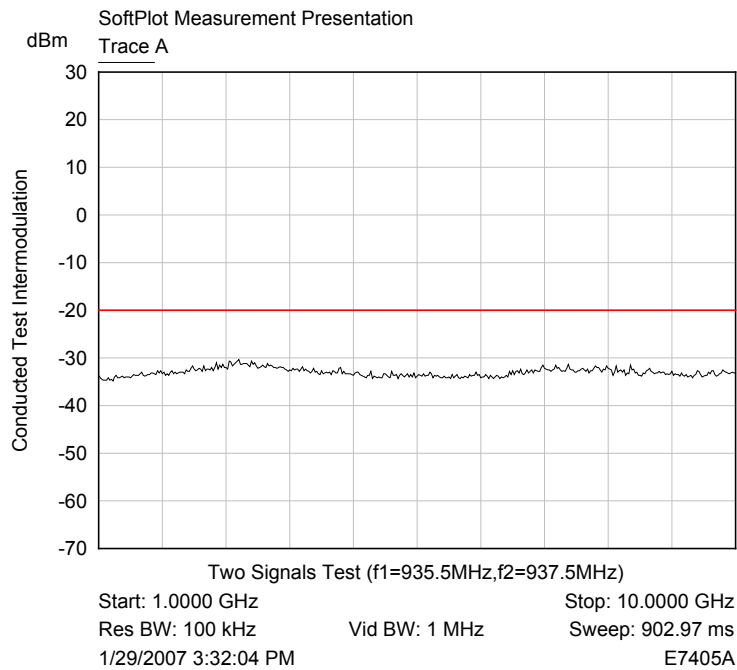


Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	935.5000 MHz	14.78 dBm	
2 ▽	Trace A	937.5000 MHz	14.51 dBm	
3 ▽	Trace A	939.5000 MHz	14.46 dBm	

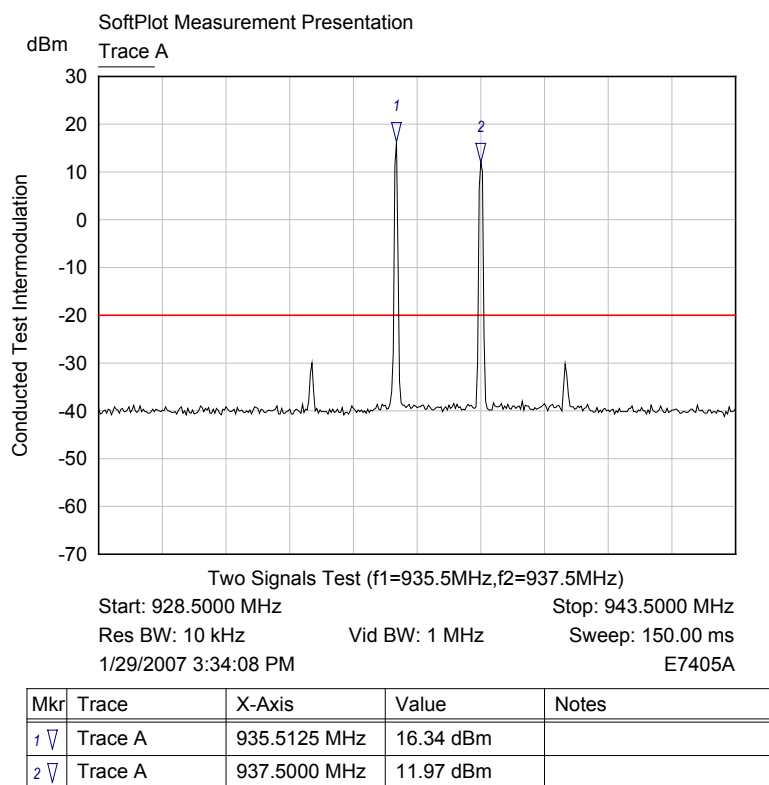
Plot Cond Emis Inter/ 30



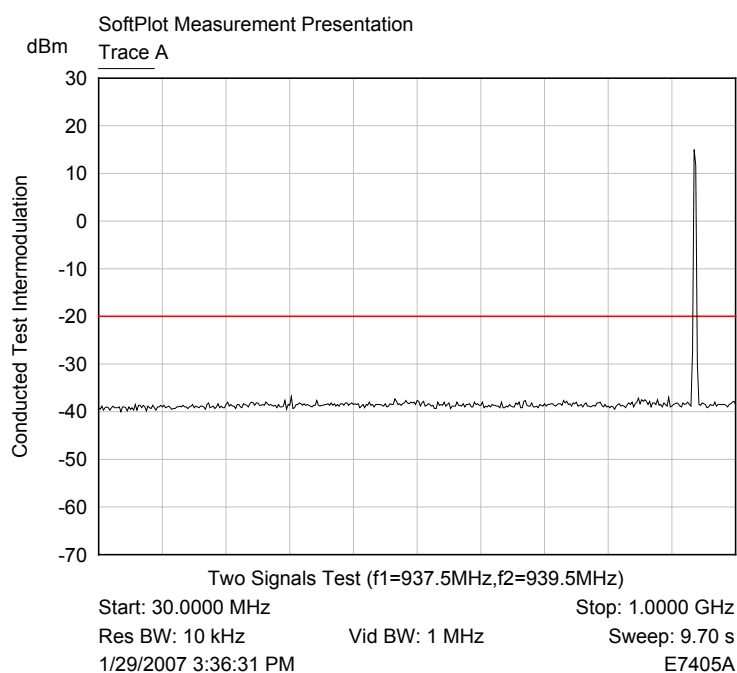
Plot Cond Emis Inter/ 31



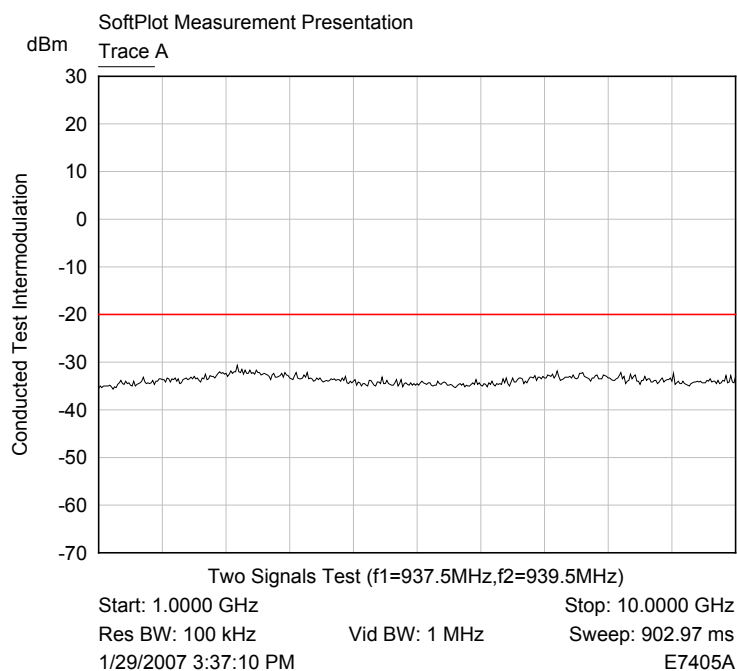
Plot Cond Emis Inter/ 32



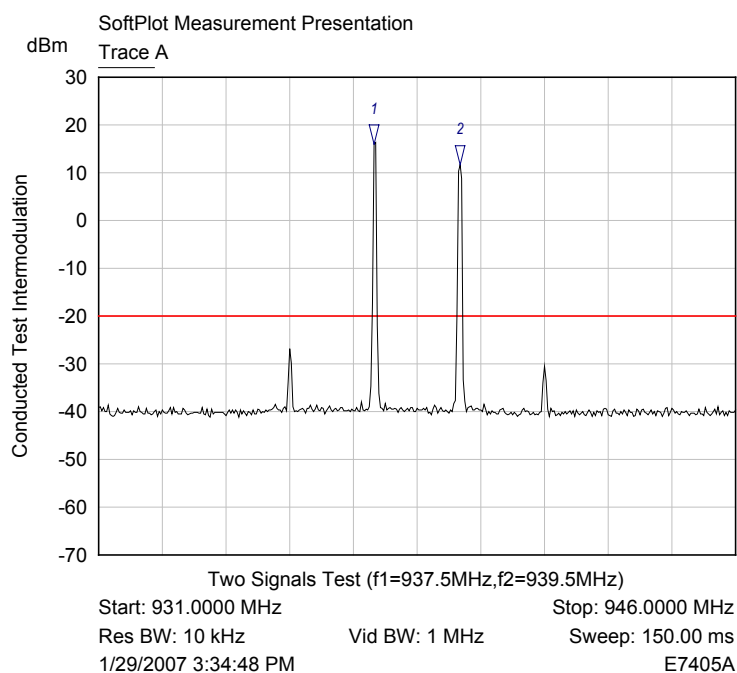
Plot Cond Emis Inter/ 33



Plot Cond Emis Inter/ 34



Plot Cond Emis Inter/ 35



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	937.4875 MHz	15.94 dBm	
2 ▽	Trace A	939.5125 MHz	11.69 dBm	

Plot Cond Emis Inter/ 36

g. Test Instrumentation and Equipment**Table 13.d Test Instrumentation and Equipment**

Item	Model	Manufacturer	Next Date Calibration
Spectrum Analyzer	8593E	HP	31.01.08