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FCC / IC Certification Application

EMI / RF Test Report on Vocera Communications badge Model: B2000

FCC ID: QGZB2000
IC ID: 4362A-B2000
Report No. VOC_IC_03

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General Information

Unit(s) Under Test: (UUT) Vocera Communications badge

Model: B2000

Product Description: IEEE 802.11 B/G voice communications device

FCC ID: QGZB2000
IC ID: 4362A-B2000

Tested For: Vocera Communications
20600 Lazaneo Drive
3rd Floor
Cupertino, CA 95014

Tested At: Elliott Laboratories
684 West Maude Ave
Sunnyvale, CA 94086

Tested By: Juan Martinez, Sr. Test Engineer, Elliott Laboratories
David Waitt, (Independent Consultant)

Tested To: FCC CFR 47, Part 15.247
IC RSS210 Issue 7

Tested On: June 2007

Tested Per: ANSI C63.4 (2003) / CISPR 22

Requested Certification: FCC Part 15.247 / Part 15 Subpart C Certification
IC RSS210 Issue 7 Certification

The manufacturer should ensure that all production products of this series are in conformity with the product sample tested.

Detailed Product Information

The Vocera Communications system provides hands-free, voice-activated communications throughout any 802.11 B/G networked building or campus. The Vocera Communications system is made up of two elements:

- Vocera Server Software
- Vocera Communications Badge.

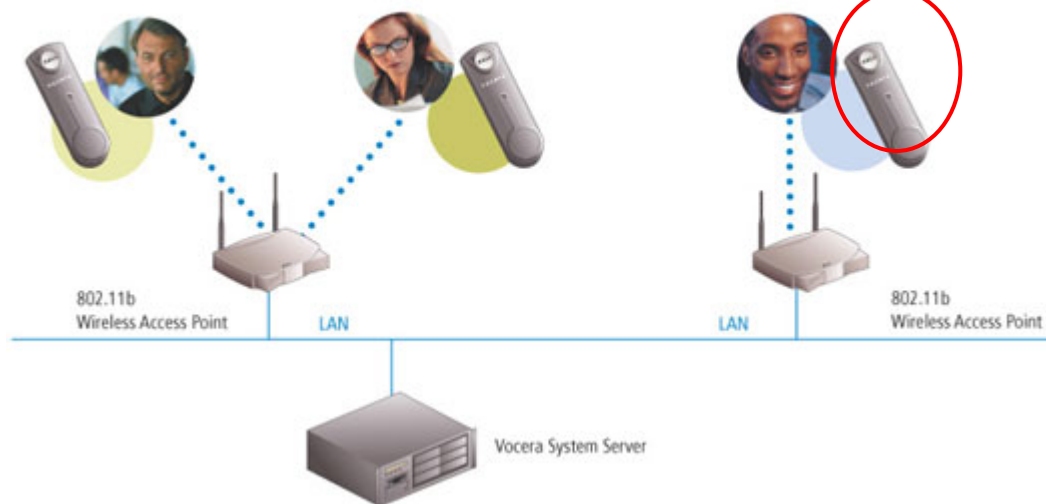
Vocera Communications Badge is a wearable IEEE802.11 B/G device that weighs less than two ounces and can be clipped to a shirt pocket or worn on a lanyard. It enables two-way voice conversation through a campus 802.11 B/G network infrastructure.

The unit also has an internal antenna with an approximate peak gain of 2.2 dBi.

The unit is powered by a removable rechargeable battery.



Vocera Communications Network Diagram



Only the communications badge is being certified by Vocera. The wireless access points shown above are not part of the Vocera product line.

Test Facilities

The certification tests were performed at:

Elliott Labs
684 West Maude Ave
Sunnyvale, CA 94086

General:

Final radiated test measurements were taken in June 2007 at the Elliott Laboratories anechoic chamber #5

The test site contains separate areas for radiated and conducted emissions testing. Pursuant to section 2.948 of the Rules, construction, calibration, and equipment data has been filed with the Commission.

The FCC recommends that ambient noise at the test site be at least 6 dB below the allowable limits. Ambient levels are below this requirement with the exception of predictable local TV, radio, and mobile communications traffic. The test site contains separate areas for radiated and conducted emissions testing. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent FCC requirements.

Antenna, Antenna Mast and Turntable

The Horn antenna used to measure radiated emissions above 1000MHz are mounted on a non-conductive antenna mast equipped with a motor drive to vary the antenna height.

ANSI C63.4 specifies that the test height above the ground plane shall be 80cm unless the equipment is intended to be floor mounted. During the radiated emissions tests the equipment is positioned on a motorized turntable in conformance with the ANSI requirement.

Equipment Lists

Instrument Calibration

All test equipment is regularly checked to ensure that performance is maintained in accordance with the manufacturer's specifications. All antennas are calibrated at regular intervals with respect to tuned half-wave dipoles. An exhibit of this report contains the list of test equipment used and calibration information.

The following test equipment was used to perform the testing

Elliott Test Equipment

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
Agilent	Spectrum Analyzer	E4440A	1771	11 Jul 2007
EMCO	Horn Antenna S/N 1366	3115	1366	11 Jul 2007
HP	Pre Amp	8449B	263	16 Mar 2008

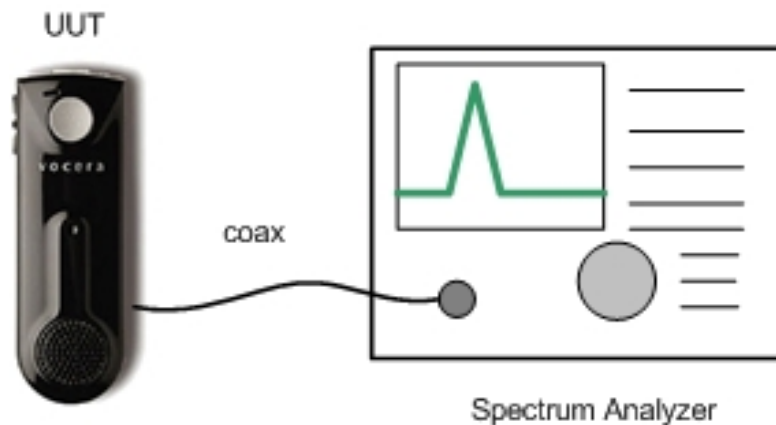
Test Methods

The tests are performed at a low, middle and high channel of the applicable band. The typical frequencies used for the Part 15.247 , 2.4 GHz tests are listed to the right. Unless otherwise noted, all testing was performed on these channels / frequencies

ISM 802.11 B/G		
2400 - 2483.5 MHz		
	Channel	Freq(MHz)
Low	CH 1	2412
Mid	CH 6	2437
High	Ch 11	2462

The tests listed below are performed using the basic “conducted RF” test setup shown below unless otherwise noted. Since the UUT does not have an antenna connector, a EUT was modified by installing a coax to allow the measurements to be made and was running special diagnostic software to allow it to transmit random data on a particular channel indefinitely.

Part 15	RSS210	Test
15.247	A8.4(4)	RF Transmit Power
15.247(a)(1)	A8.2(A)	6dB / 99% Bandwidth
15.247(c)	A8.5	Out of Band Conducted RF Emissions
15.247(a)(1)(i)	A8.2(B)	Power Spectral Density



Basic Conducted RF Bench Test Setup

Unless otherwise noted, the support equipment for the bench tests is listed below.

Support Equipment				
Description	Model number	FCC ID or SN	Manufacturer	Power Cable
NONE				

The test results in this test report refer only to the sample tested. This test report cannot be reproduced, exception full, without prior written permission of Vocera Communications.

Test Results

Detailed test procedures and test results are contained in the following sections. In cases where the test setup differs from the Conducted RF test setup, the test setup is also presented.

Test Conditions			
Temperature	Approx 22C	Humidity:	Approx 50%
ATM pressure	Approx 1014 mBar	Grounding:	None
Tested By	David Waitt , Juan Martinez	Date of Test:	June 2007
Test Reference	Refer to individual test results		
Tested Range	Test Dependent		
Test Voltage	Internal battery		
Modifications	No modifications were made to the unit during the tests		

802.11 B Maximum RF Power Output at Antenna Terminals

Specification:

FCC Specification: Paragraph 15.247(b)

IC Specification: Section: RSS210 A8.4(4)

Procedure:

The Vocera communication badge does not have an accessible antenna connector to measure RF transmit power directly. To make the “conducted” RF measurements, a unit was modified and the antenna removed and replaced with a small length of semi-rigid coax that had to be soldered directly to the trace on the printed circuit board. This allowed direct measurements of the RF transmit power, bandwidth, PSD and other RF “conducted” tests

The test was configured as shown in the conducted RF test setup.

The integrated channel transmit PK power was measured on the standard test channels and integrated over the 99% channel BW.

The average power reported below is the power measured at the SAR lab prior to testing SAR for this device. (as required, only the 802.11 B power levels are reported in the SAR report)

RF Transmit Power Test Result:

802.11	802.11 B/G Channel	Freq (MHz)	Integrated Ch Power Out (PEAK dBm)	Power Output (AVG dBm)	RF Pout Limit (dBm)	PK Delta Spec (dB)
B	1	2412	15.25	12.20	30	14.75
B	6	2437	16.66	13.40	30	13.34
B	7	2442	17.37	13.20	30	12.63
B	11	2462		13.80	30	
G	1	2412	22.80	11.65	30	7.20
G	6	2437	24.40	12.48	30	5.60
G	11	2462	25.00	12.54	30	5.00

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6 dB / 99% bandwidth

Specifications

FCC Specification: Paragraph 15.247(a)(2)

IC Specification: Section: RSS210 A8.2(A)

Procedure:

The Vocera communications badge operates on the standard IEEE 802.11 B/G channels. The 6dB bandwidth (FCC) and 99% BW (Canada) was measured on the low, middle and high channel of the 2.4 GHz ISM band using the bench conducted RF test setup. The spectrum analyzer was configured for MAX HOLD and the trace allowed to stabilize. A peak search was performed and the then delta-marker used to locate the points –6dB below the peak.

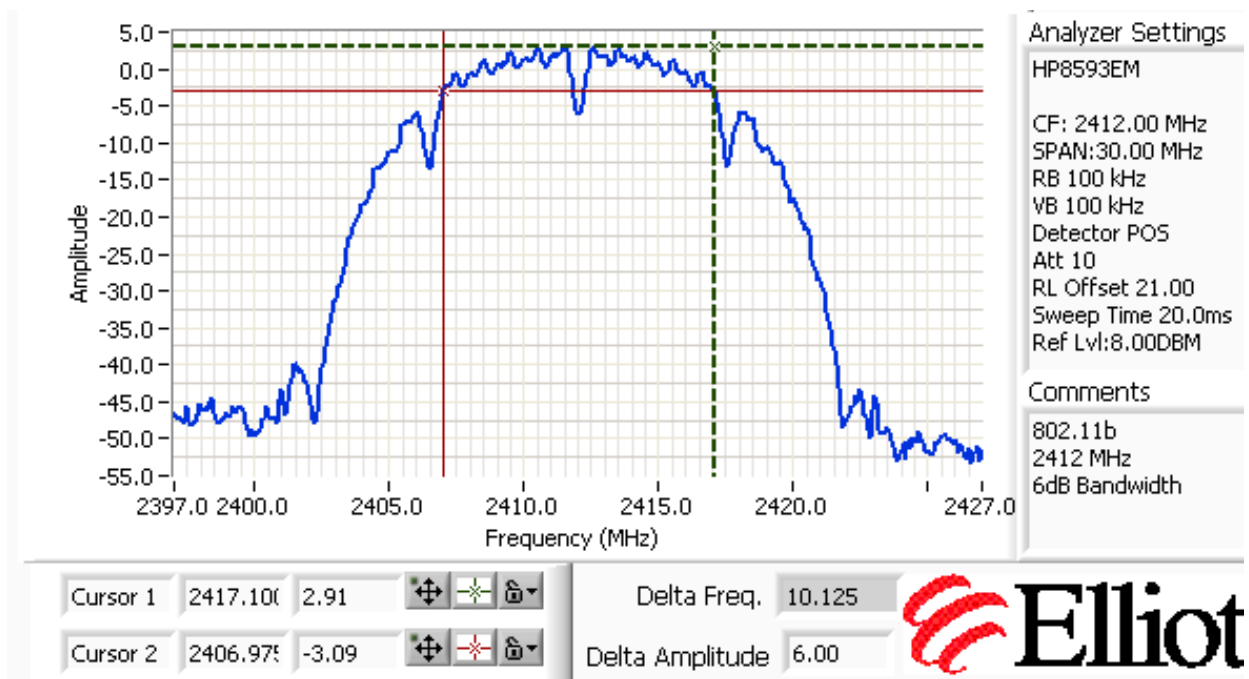
Once this initial reference measurement was complete, the point was used as a reference and another delta-marker measurement was performed and an attempt made to make the two markers “level” (0dB difference). The delta frequency between the two markers was measured as the 6 dB BW of the signal. The bandwidth test was performed at the power settings that will be used in the final system configuration. The 6 dB BW was measured using RBW = VBW = 100K which is approximately 1% of the signal BW

The 99% bandwidth was measured in accordance with RSS GEN using the built in 99% occupied BW function of the spectrum analyzer. The bandwidth settings of RBW > 1% of the span and VBW > 3*RBW were used for the 99% BW measurement.

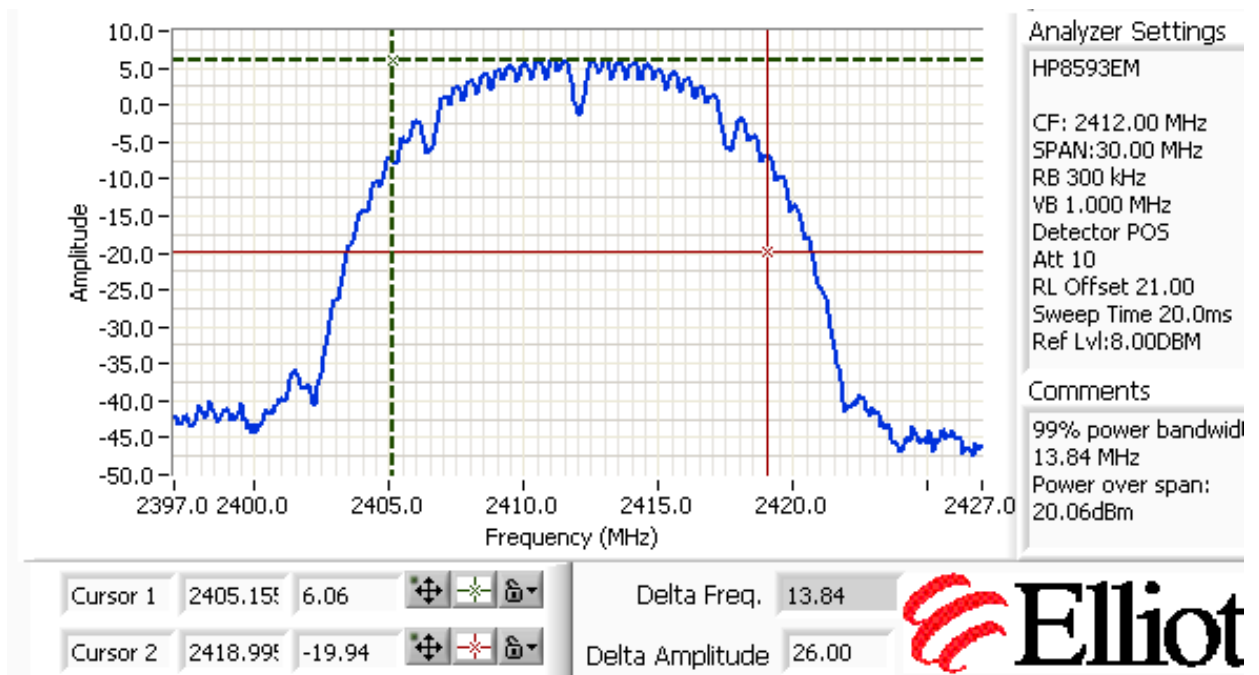
Test Results:

Mode	Channel	6dB BW (MHz)	99% BW (MHz)	Spec (MHz min)	Delta (MHz)
802.11 B	1	10.125	13.84	0.5	9.625
802.11 B	6	10.05	13.92	0.5	9.55
802.11 B	11	10.125	13.92	0.5	9.625
802.11 G	1	16.57	16.91	0.5	16.07
802.11 G	6	16.57	16.98	0.5	16.07
802.11 G	11	16.57	16.98	0.5	16.07

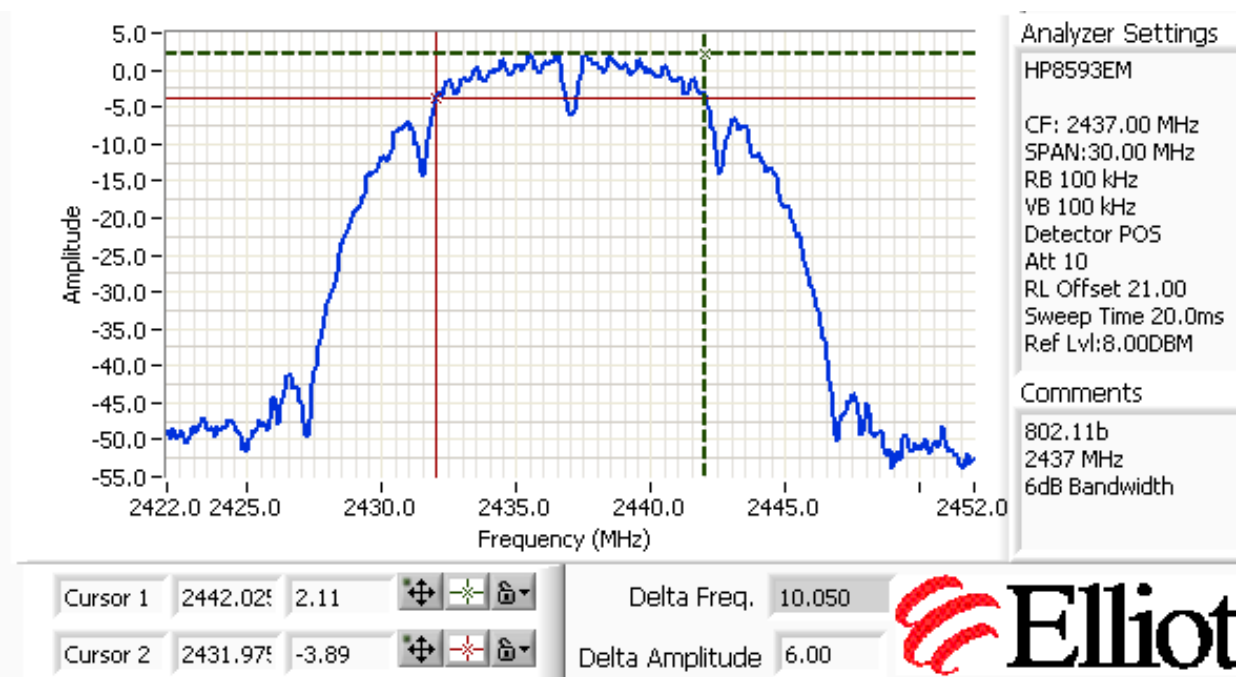
The test results in this test report refer only to the sample tested. This test report cannot be reproduced, exception full, without prior written permission of Vocera Communications.



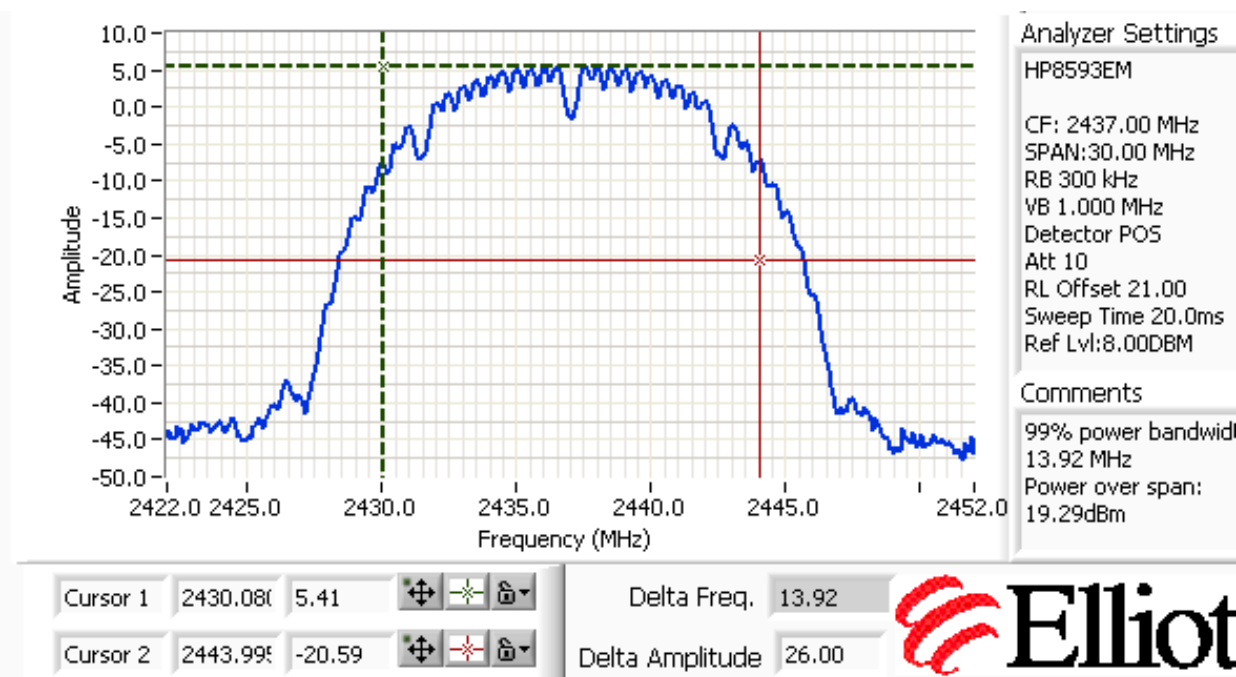
6 dB BW 2412, 802.11 B



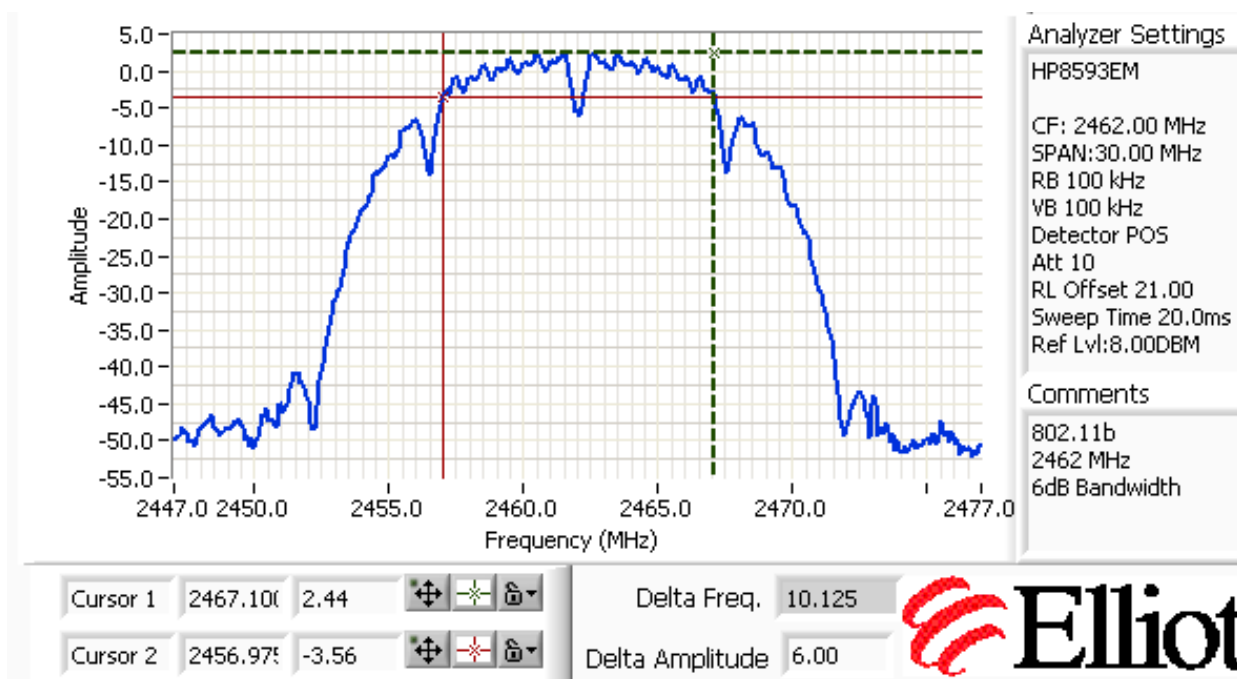
99% BW 2412, 802.11 B



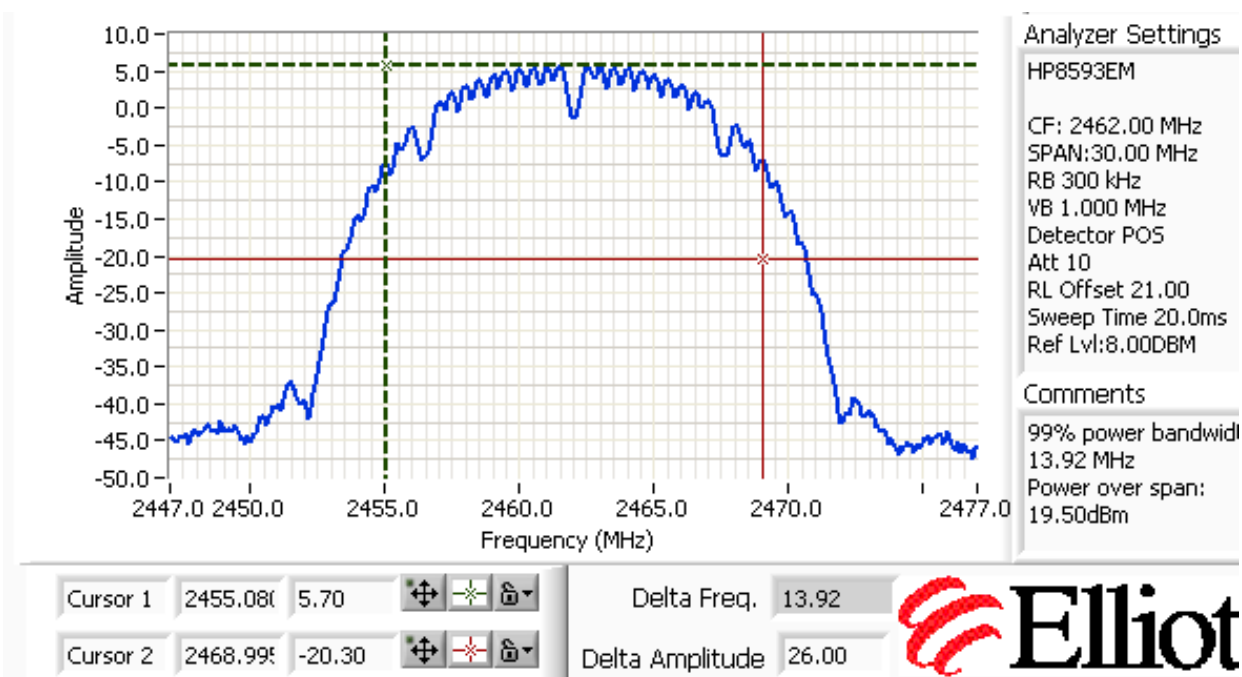
6 dB BW 2437, 802.11 B



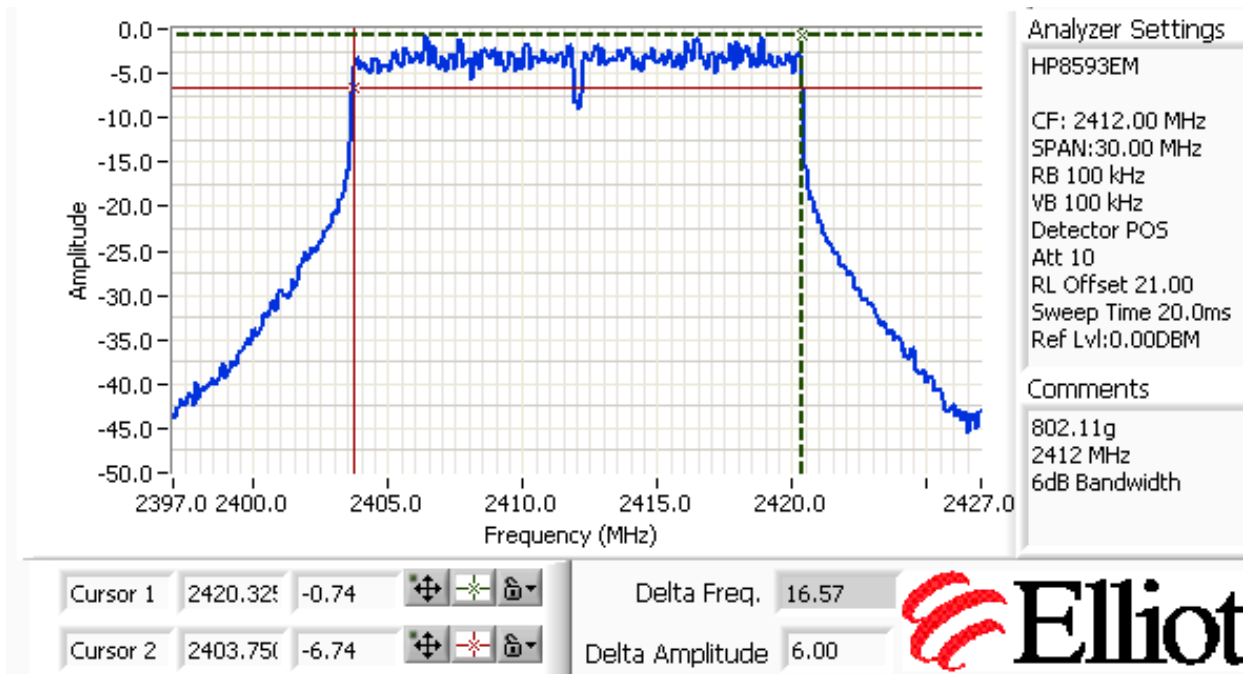
99% BW 2437, 802.11 B



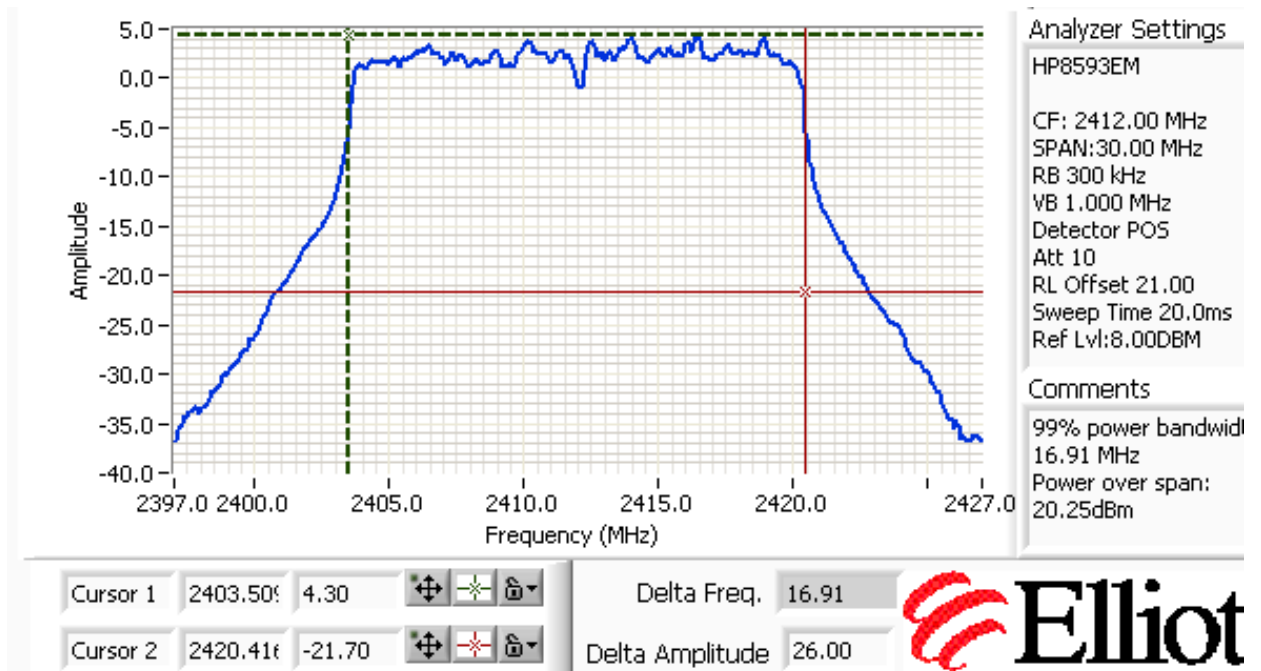
6 dB BW 2462, 802.11 B



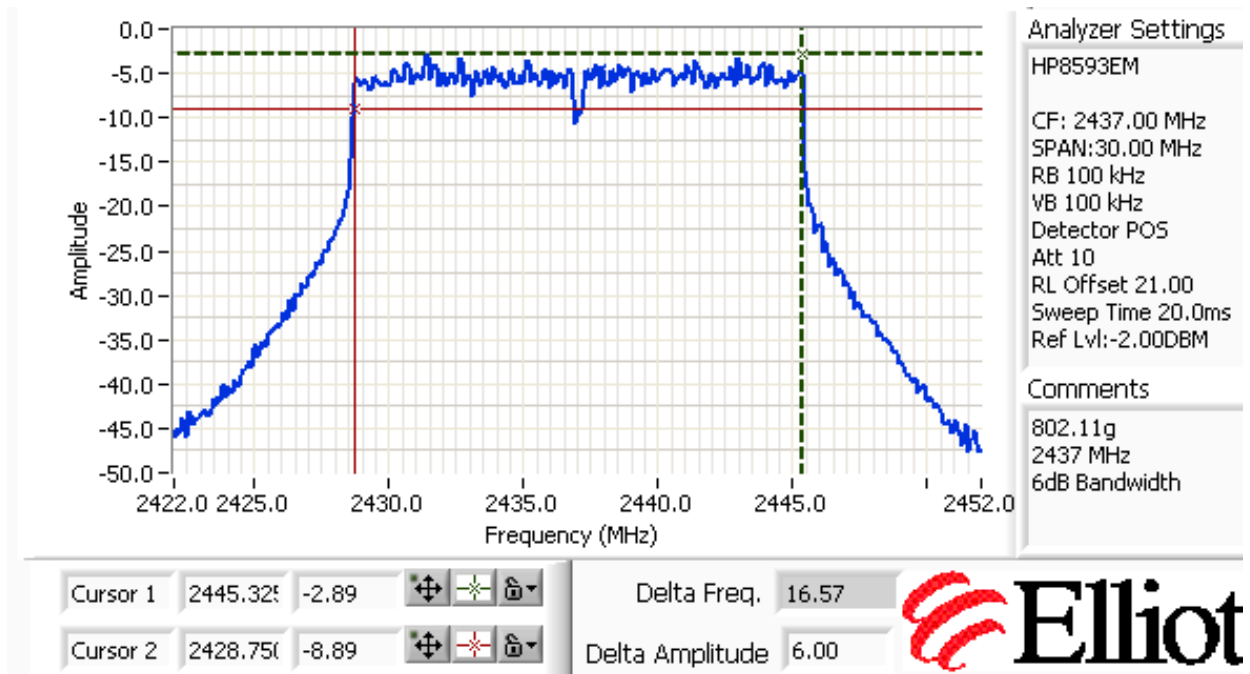
99% BW 2462, 802.11 B



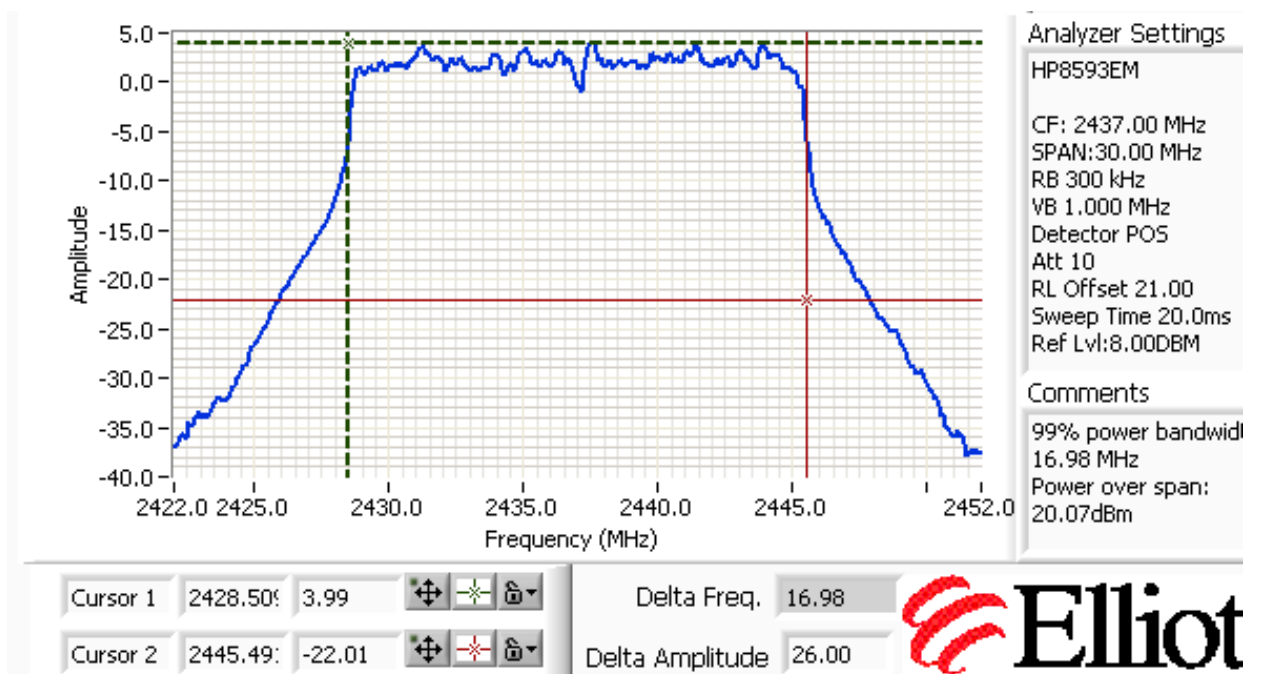
6 dB BW 2412, 802.11 G



99% BW 2412, 802.11 G

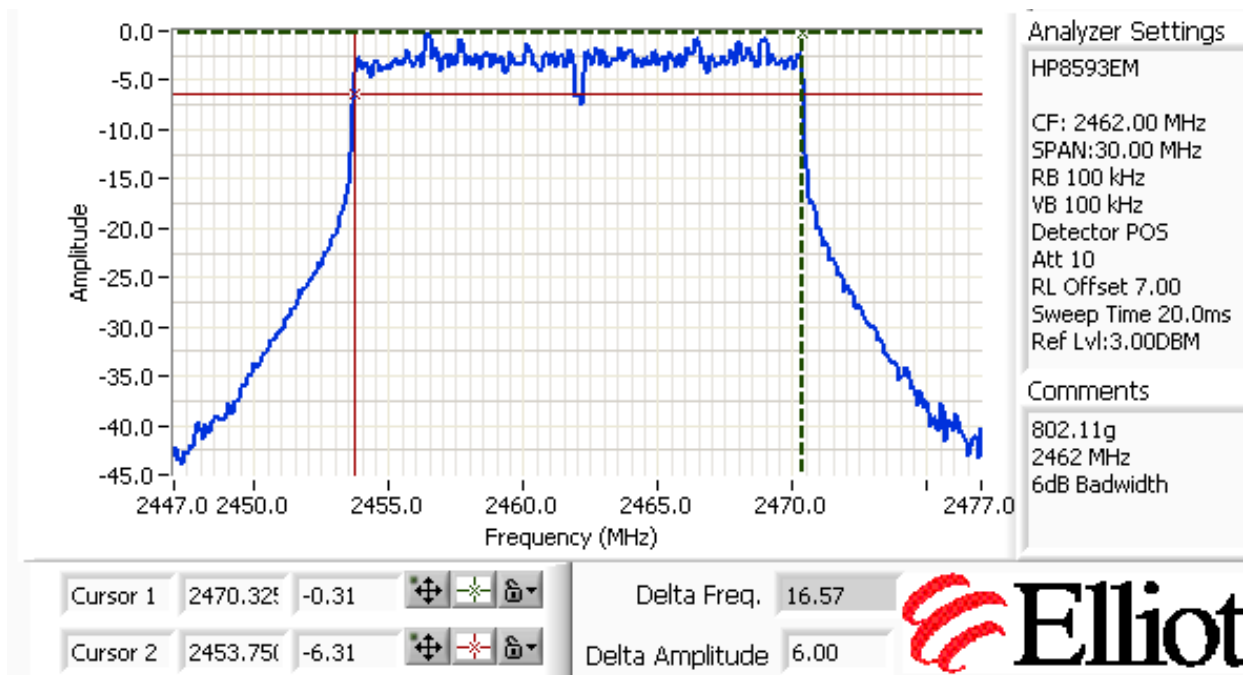


6 dB BW 2437, 802.11 G

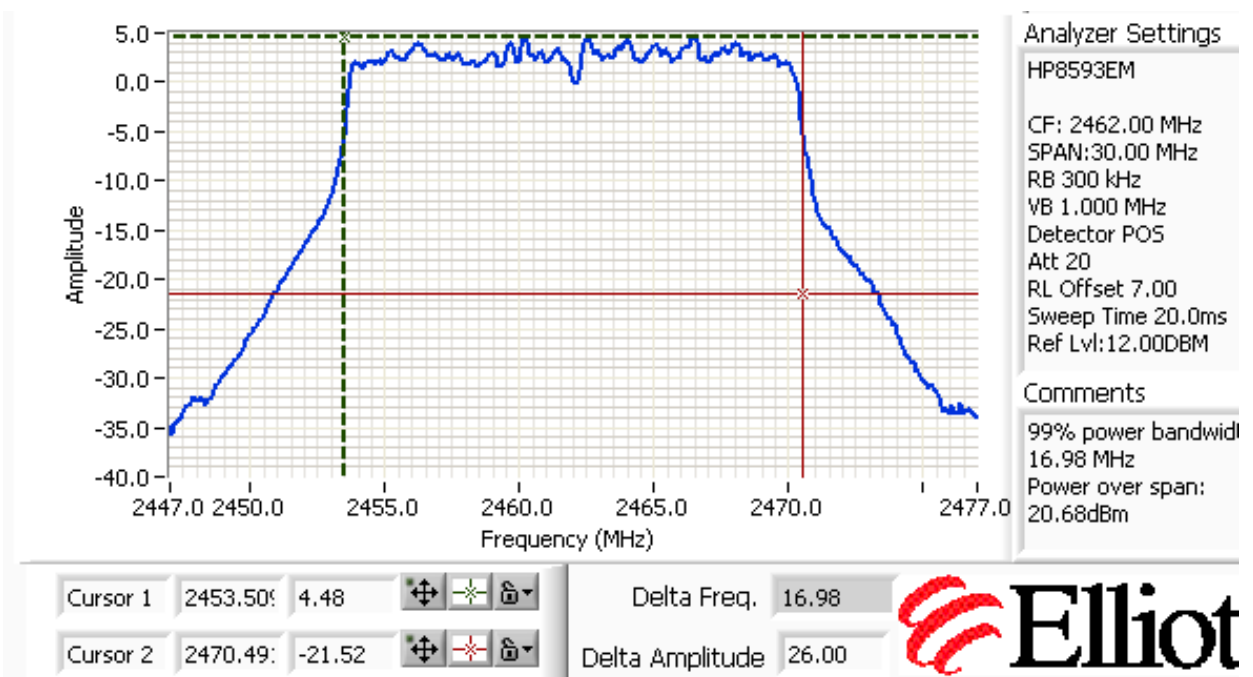


99% BW 2437, 802.11 G

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6 dB BW 2462, 802.11 G



99% BW 2462, 802.11 G

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Power Spectral Density

Specifications

FCC Specification: 15.247(4)(d)

IC Specification: RSS210 A8.2(B)

Procedure:

The test setup was configured as shown in the bench conducted RF test setup. The UUT was configured to continuously transmit data.

Initially the bandwidth of the entire channel was examined. Using MAX HOLD, the trace was allowed to stabilize. Once the trace was stable, a peak search was performed and the frequency with the maximum power was determined.

The measurement span was then narrowed to 300kHz and centered on the "MAX power" frequency, the RBW was set to 3 kHz and the sweep time set to 100 sec to yield a 3kHz / second sweep rate. This method averages the data for 1 second for every 3 kHz BW.

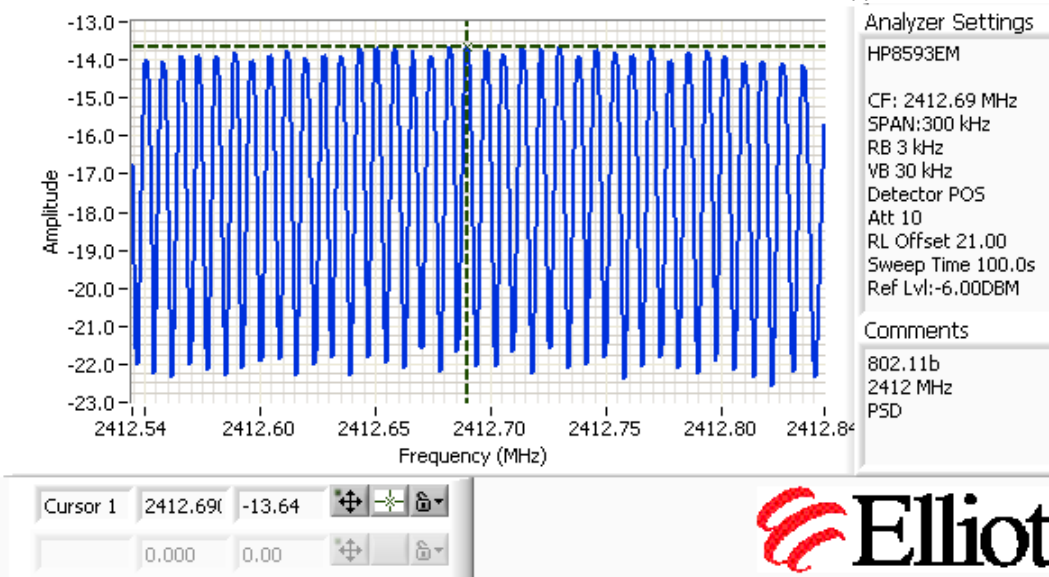
The power spectral density was measured at the low, middle and high-test channels.

Test Results:

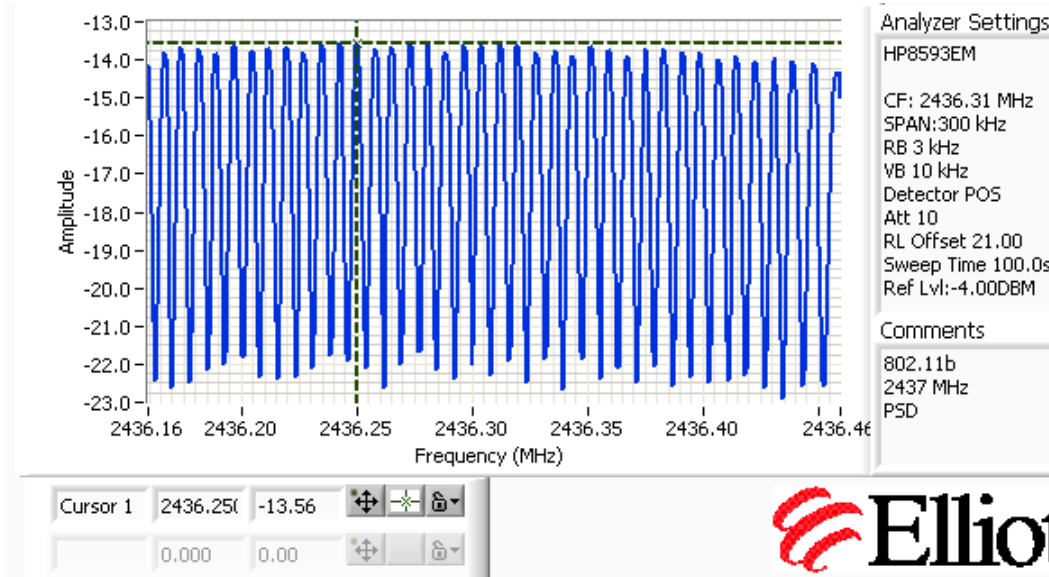
PSD test results are below

Mode	Channel	Frequency (MHz)	Specification dBm / 3kHz	Measured PSD (dBm / 3kHz)
802.11 B	1	2412	8dBm/3kHz	-13.64
802.11 B	6	2437	8dBm/3kHz	-13.56
802.11 B	11	2462	8dBm/3kHz	-13.13
802.11 G	1	2412	8dBm/3kHz	-15.73
802.11 G	6	2437	8dBm/3kHz	-17.43
802.11 G	11	2462	8dBm/3kHz	-15.51

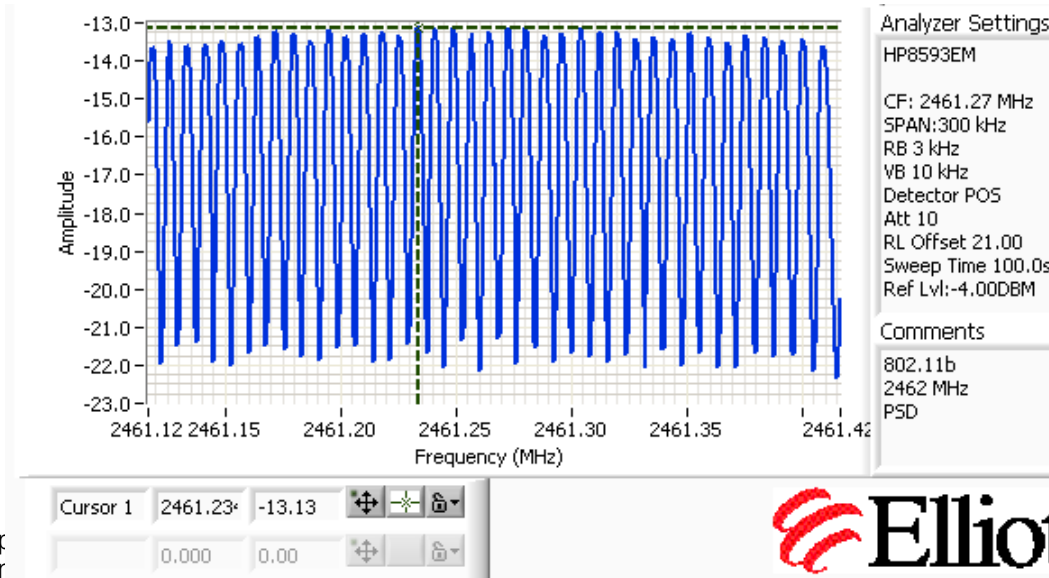
PSD 2412 MHz -B



PSD 2437 MHz -B

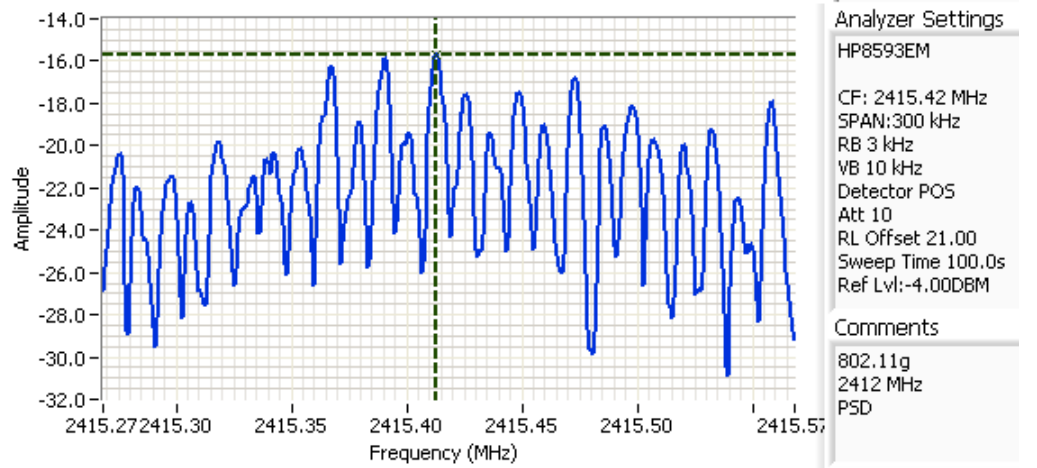


PSD 2462 MHz -B

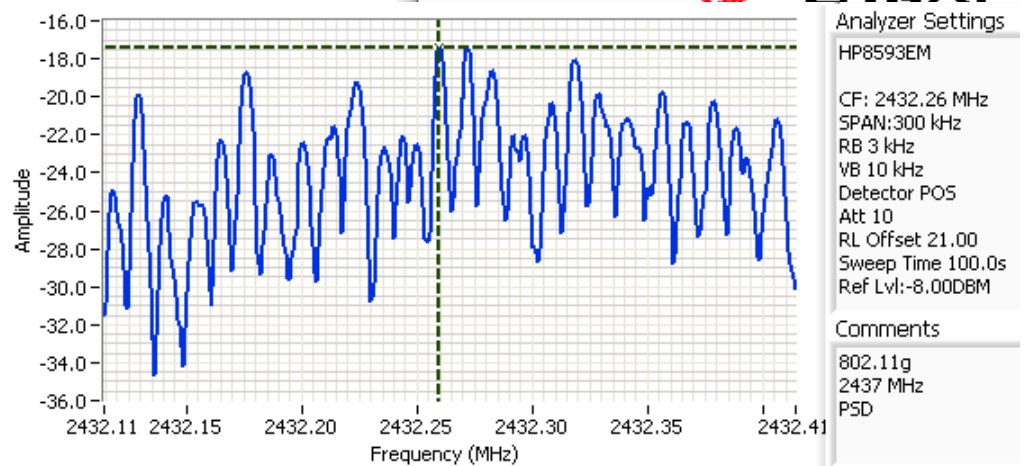


The test results in report cannot be rep Vocera Communicator

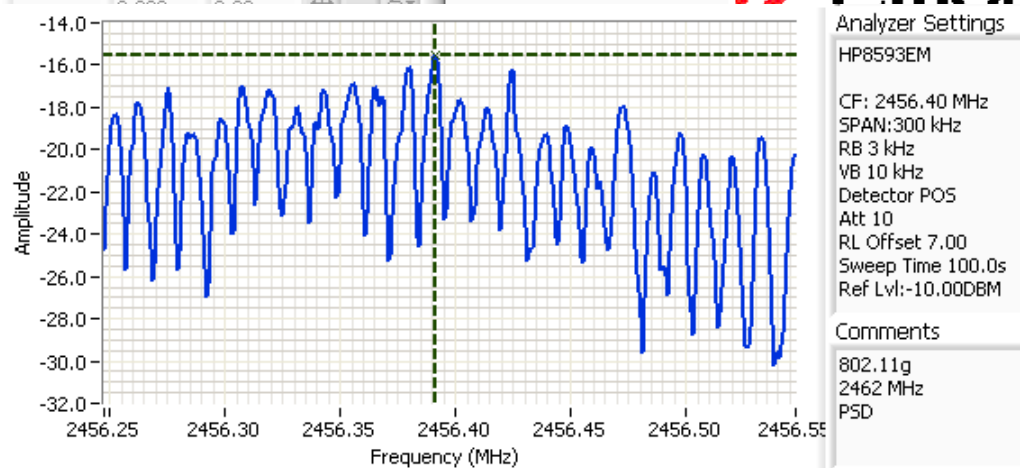
PSD 2412 MHz-G



PSD 2437 MHz-G



PSD 2462 MHz-G



Out of Band Conducted Emissions

Specifications:

FCC Specification: Paragraph 15.247(c)

IC Specification: RSS210 A8.5

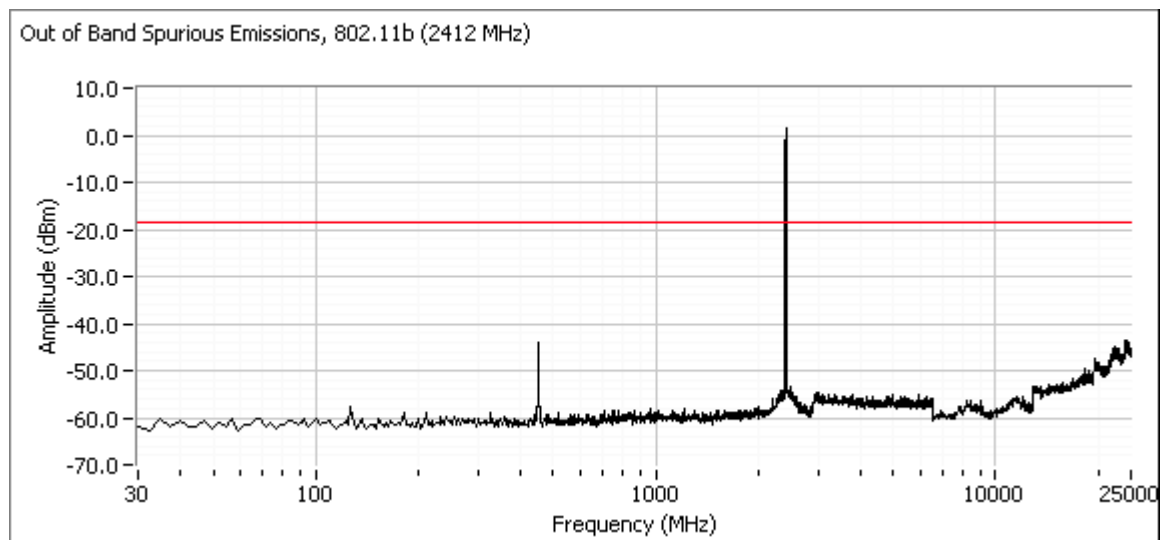
Procedure:

The test was configured as shown in the bench conducted RF test setup. The UUT was configured to continuously transmit random data. The band from 1 GHz to 25GHz was examined for spurious emissions. This test was conducted the low middle and high channels. Bandwidth settings: RBW = 100kHz, VBW = 300kHz

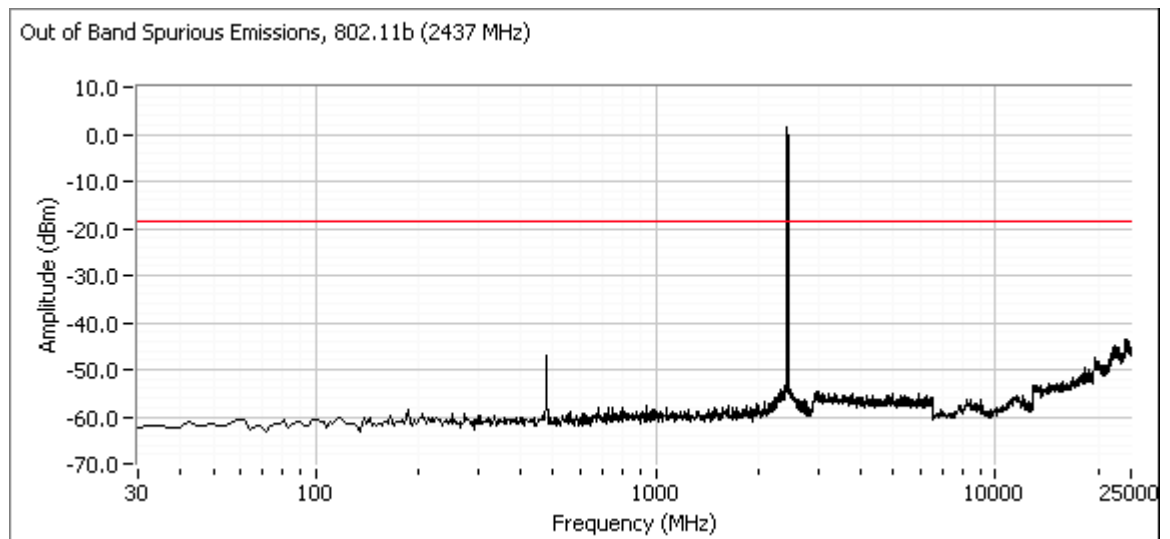
Test Results:

The entire band of interest was examined at one time to clearly demonstrate compliance. There were no spurious emissions above the limit (-20dBc)

OOB
Emissions,
Channel 1 B
(2412MHz)

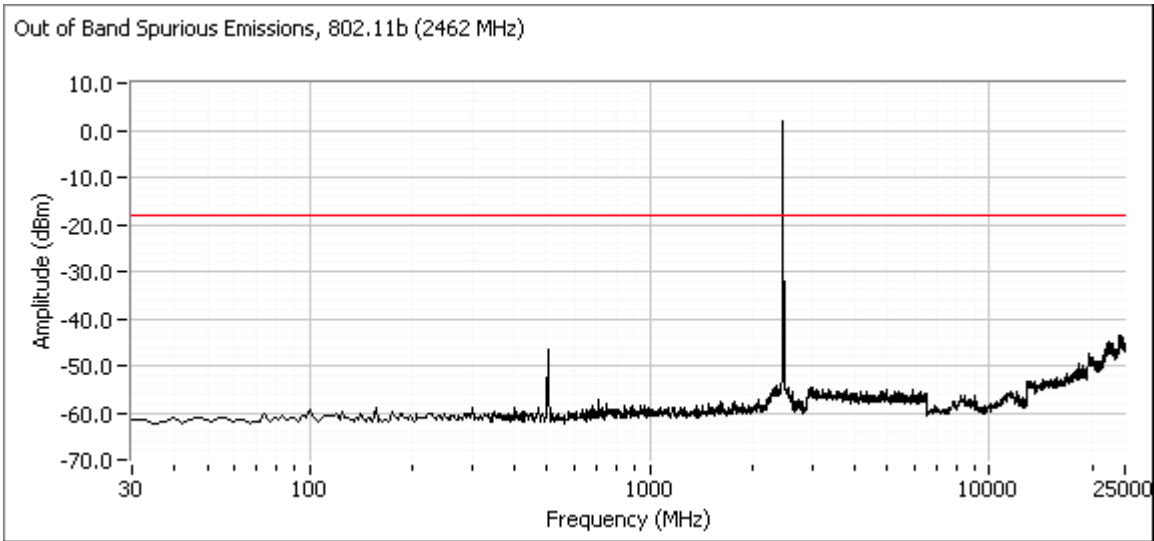


OOB
Emissions,
Channel 6 B
(2437MHz)

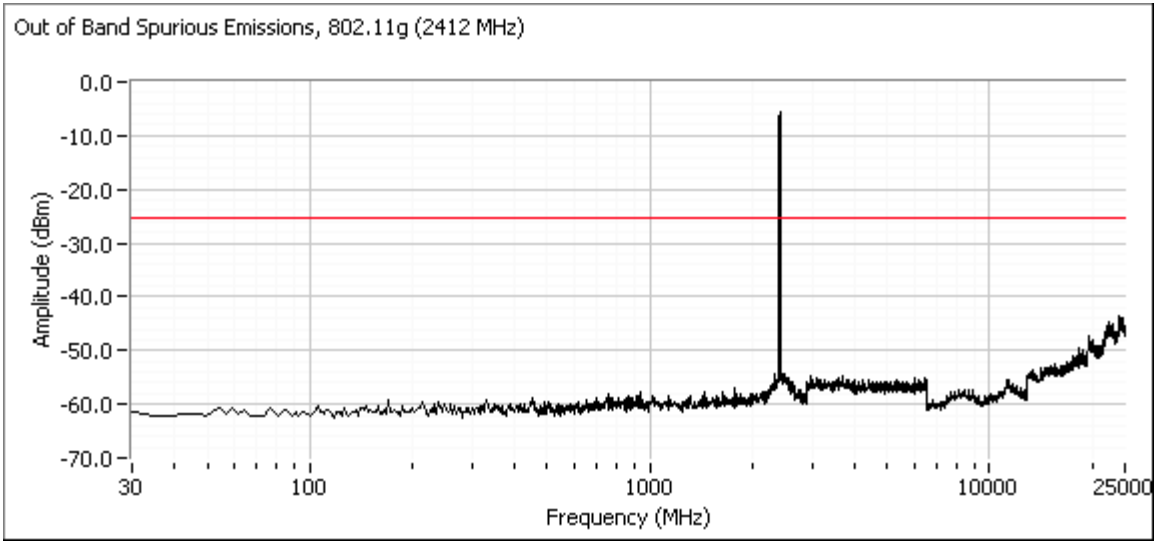


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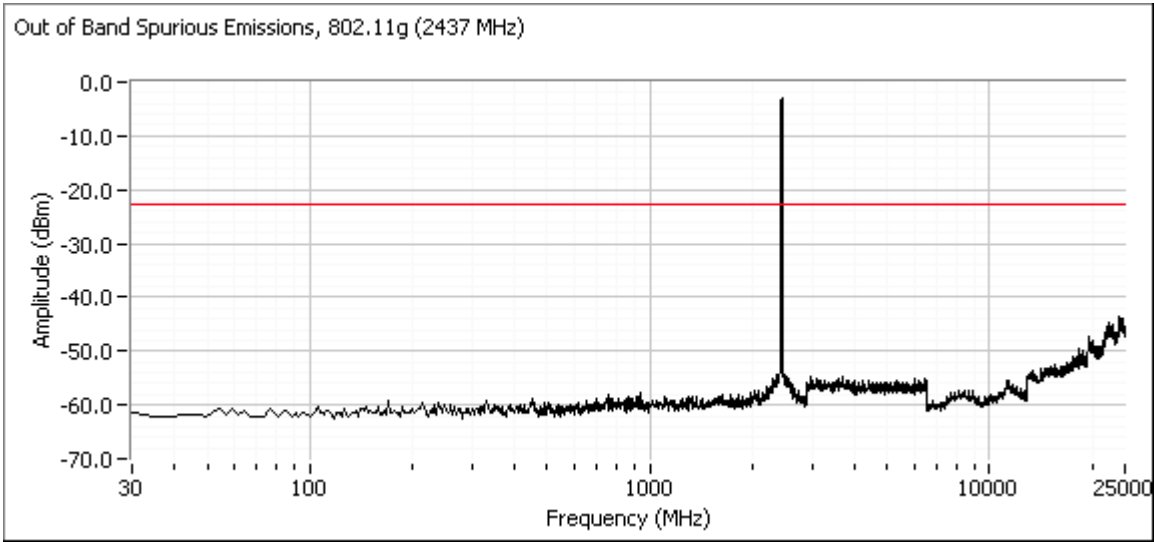
OOB
Emissions,
Channel
11 B
(2462MHz)



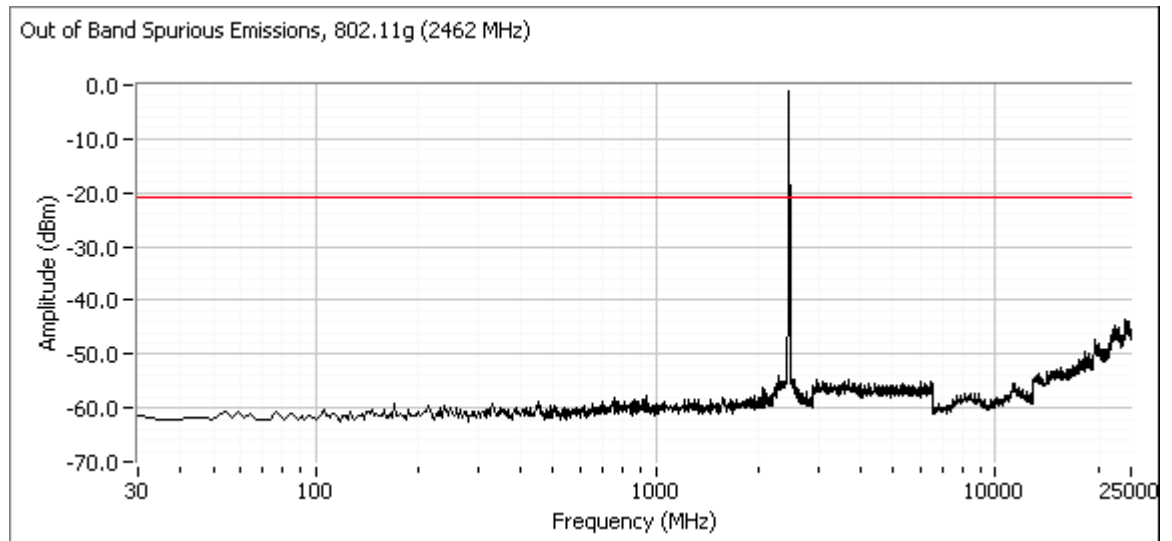
OOB
Emissions,
Channel 1
G
(2412MHz)



OOB
Emissions,
Channel 6
G
(2437MHz)



OOB
Emissions,
Channel 11
G
(2462MHz)



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Out Of Band Radiated Emissions (Including Restricted Bands)

Specifications:

FCC Specification 15.247(c)

IC Specification: RSS210 A8.5

Procedure:

This test was conducted in a 5-meter anechoic chamber at Elliott Laboratories Fremont, California facility. The unit was placed on a rotating wooden table 80cm above the ground plane. A Horn antenna was secured to a mast 3 meters away. The unit was tested for out of band / restricted band emissions at the Low, Mid and High test channels. The EUT was running in the diagnostic mode and set to transmit continuous data rated transmit power. The test equipment was configured as shown below.

The EUT was rotated 360 degrees and the height of the antenna adjusted from 1 to 4 meters above the ground plane to determine the maximum level of the emission. The level of the emission was measured in two modes, "Peak" and "Average" using the following measurement bandwidths

Peak Measurements: RBW & VBW: 1 MHz

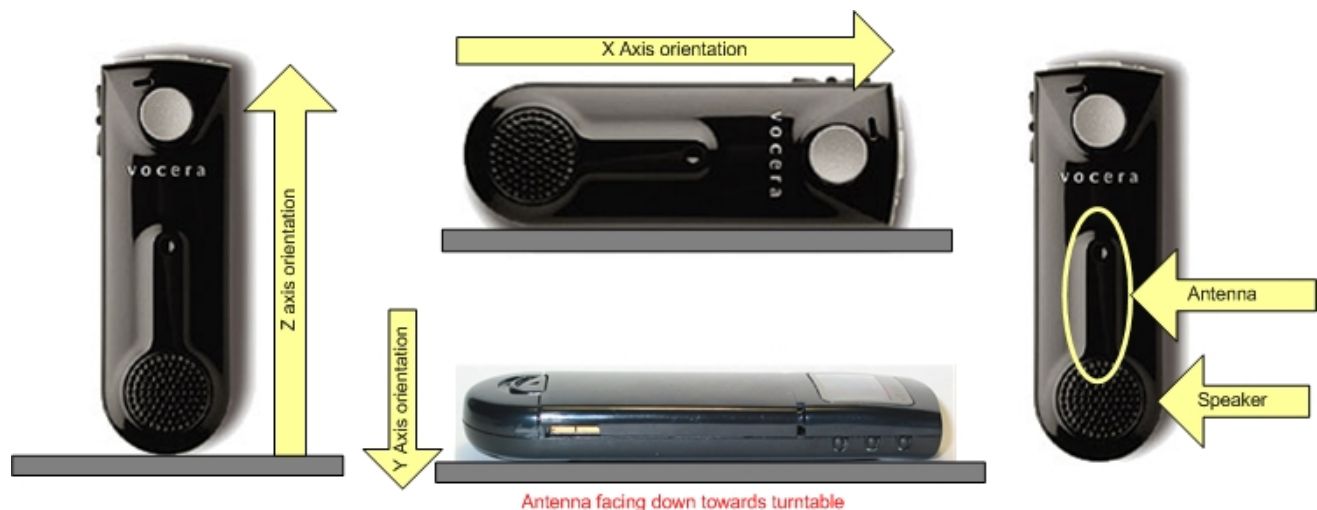
Average Measurements: RBW: 1MHz & VBW: 10 Hz.

The spectrum analyzer reading was corrected by the measurement software to take into account the various equipment characteristics (antenna factor, cable loss, pre-amplifier gain, HPF loss...) to obtain a final corrected measurement. In cases where the measured PEAK level was below the AVERAGE limit, the AVERAGE level was not measured.

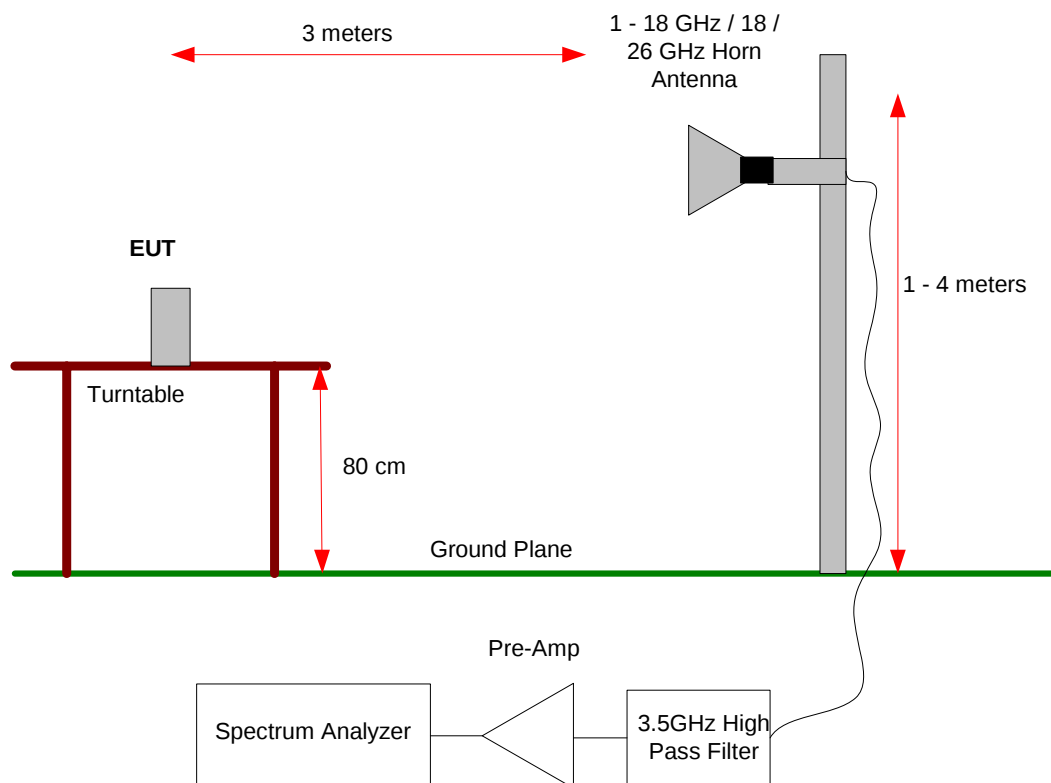
The band up to 26 GHz was examined though in most cases no emissions were noticeable above 12 GHz. If emissions were detected, the data is presented. All emissions, whether or not they fell within a restricted band were evaluated against the "Restricted Band Limits" of 15.209 since this is a worst case limit.

Preliminary readings were gathered for each of three orthogonal axes. The worst case position was determined and the final data gathered in that configuration. In each case the Z axis shown below was the worst case positioning.

This procedure was repeated for channel 6 and 11 within the 802.11 B band.



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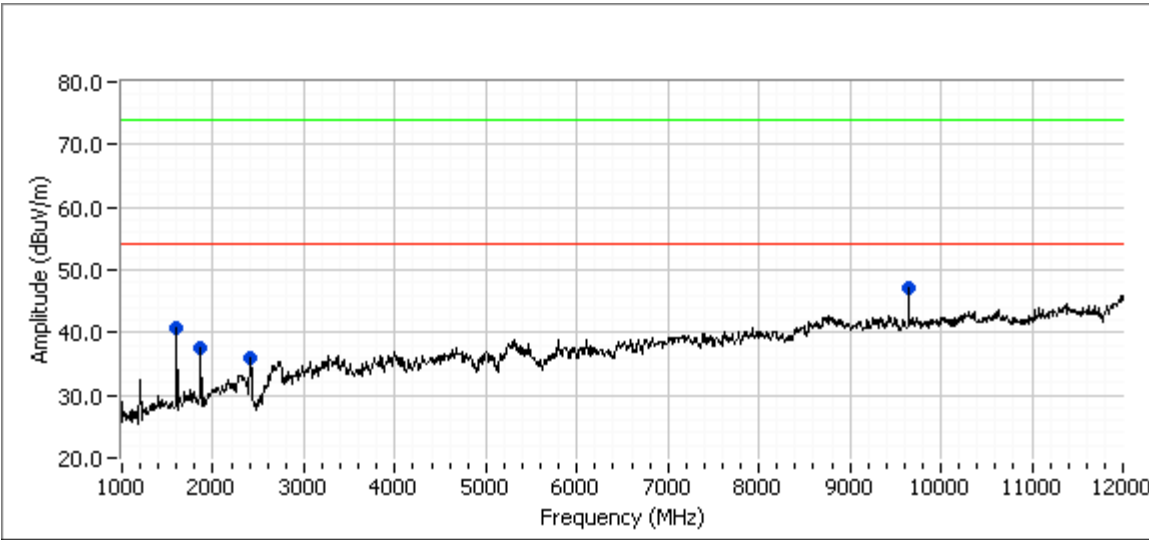


Radiated Emissions in Restricted Bands Test Setup

Support Equipment				
Description	Model number	FCC ID or SN	Mfg	Power Cable
NONE				

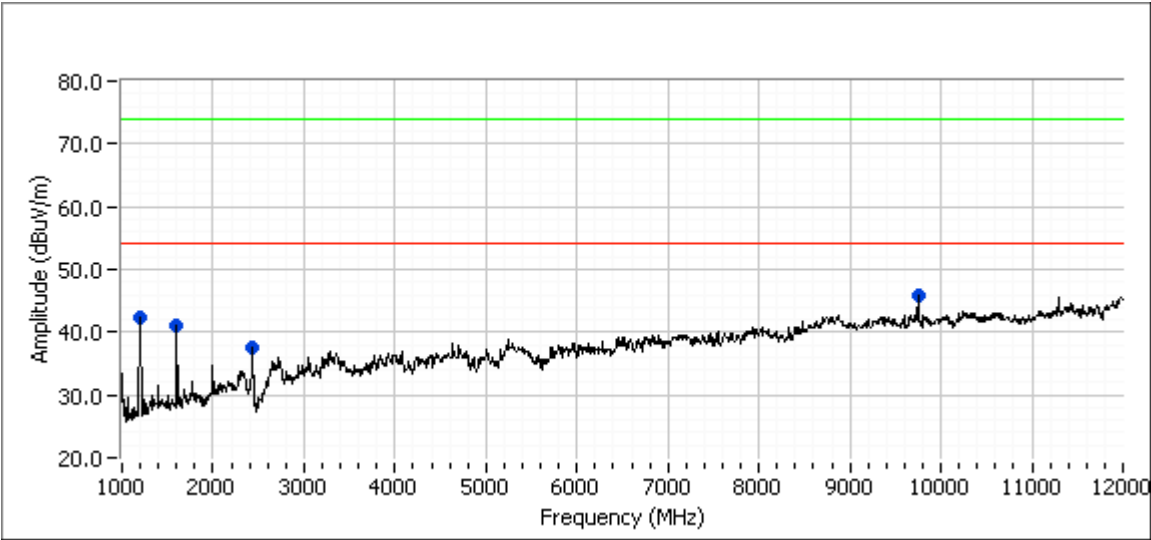
Test Conditions			
Temperature	Approx 23 C	Humidity:	Approx 62%
ATM pressure	Approx 1003mBar	Grounding:	None
Tested By	David Waitt, Juan Martinez Rafael Veralas	Date of Test:	June 2007
Test Reference	FCC Part 15.205 IC Paragraph RSS210, 6.2.3 (c)		
Setup Method	ANSI C63.4		
Tested Range	1 GHz to 26 GHz		
Test Voltage	4.2 VDC internal battery		
Modifications	No modifications were made to the unit		

Test Results
OOB Emissions, Transmit on Channel 1 G (2412MHz)



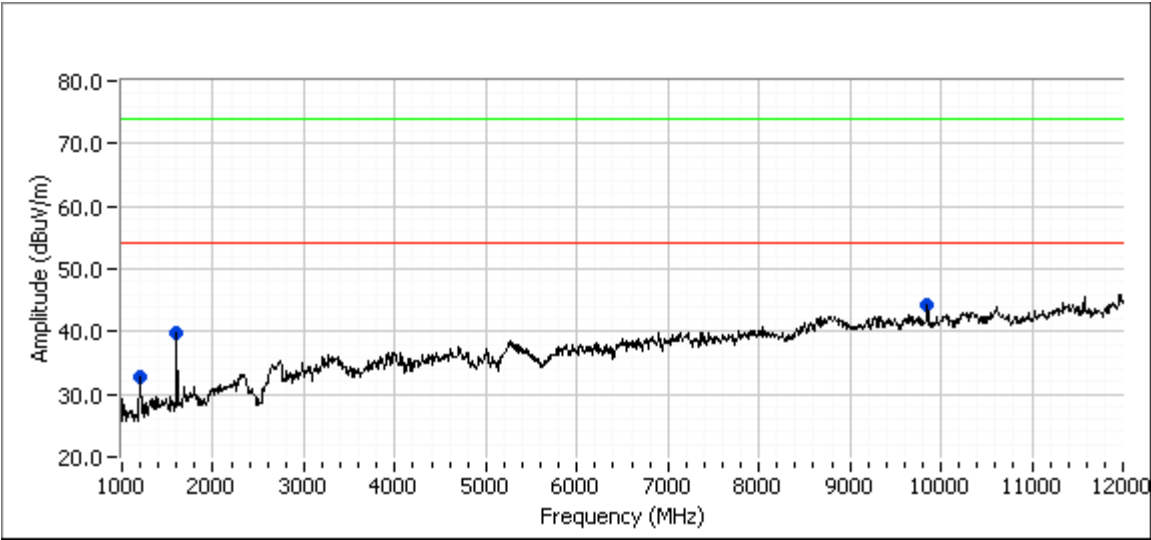
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height
MHz	dB μ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters
1595.830	40.8	H	54.0	-13.2	Peak	279	1.0
1861.670	37.6	V	54.0	-16.4	Peak	300	1.0
2412.000	35.8	H	54.0	-18.2	Peak	259	2.0
9648.000	47.2	V	54.0	-6.8	Peak	359	1.5

OOB Emissions, Transmit on Channel 6G (2437MHz)



Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height
MHz	dB μ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters
1201.670	42.2	V	54.0	-11.8	Peak	102	1.0
1595.830	41.0	H	54.0	-13.0	Peak	273	1.0
2437.000	37.6	V	54.0	-16.4	Peak	303	1.5
9748.000	45.8	V	54.0	-8.2	Peak	357	1.0

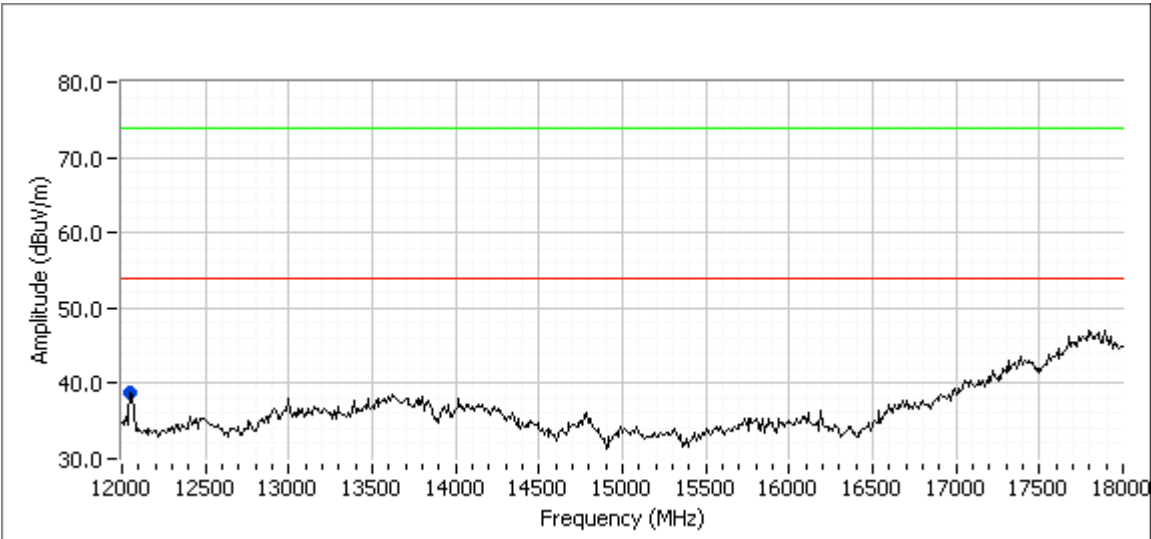
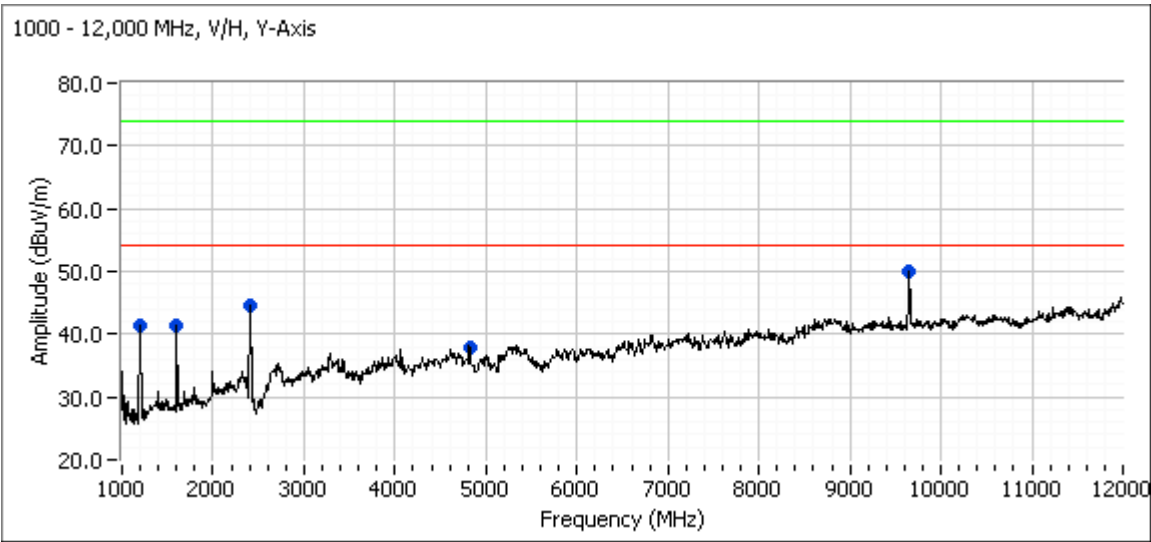
OOB Emissions,, Transmit on Channel 11 G (2462MHz)



Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height
MHz	dB μ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters
1192.500	32.7	V	54.0	-21.3	Peak	43	1.0
1595.830	39.8	V	54.0	-14.2	Peak	299	1.0
9845.830	44.4	H	54.0	-9.6	Peak	292	1.5

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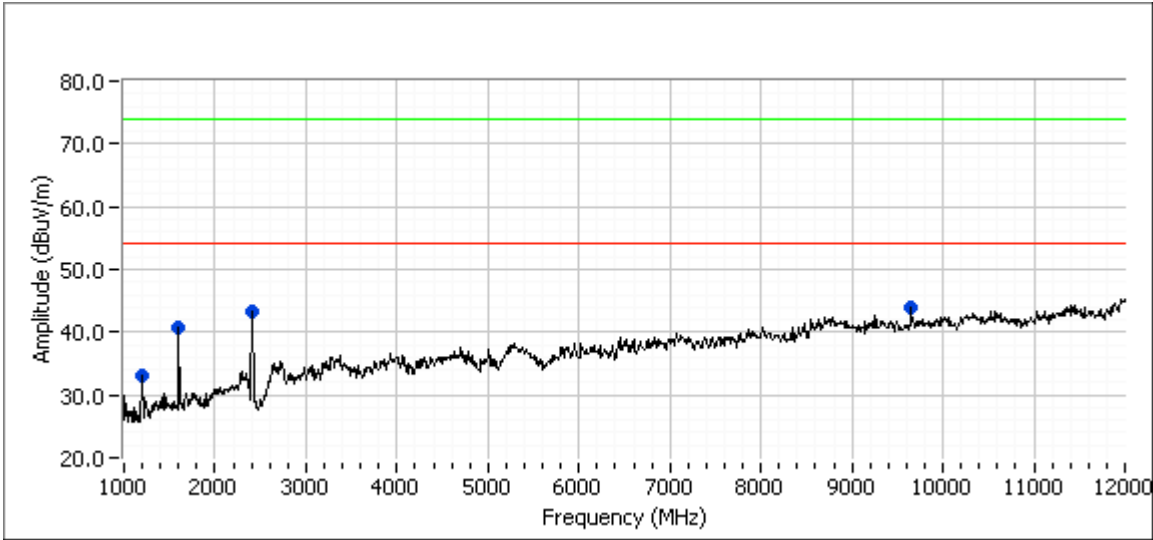
OOB Emissions,, Transmit on Channel 1 B (2412MHz)



Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height
MHz	dBμV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters
1192.500	41.5	V	54.0	-12.5	Peak	300	1.0
1595.830	41.3	H	54.0	-12.7	Peak	279	1.0
2412.000	44.7	V	54.0	-9.3	Peak	309	1.5
4824.000	38.0	H	54.0	-16.0	Peak	76	1.5
9648.000	50.0	V	54.0	-4.0	Peak	343	1.5
12060.00	38.9	V	54.0	-15.1	Peak	69	1.0

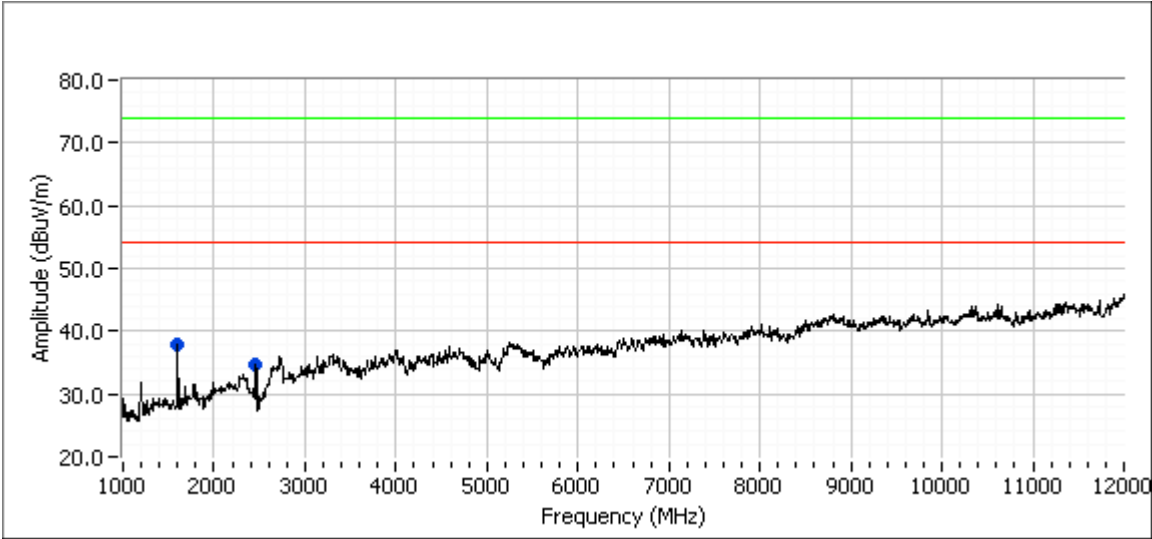
The test results in this test report refer only to the sample tested. This test report cannot be reproduced, exception full, without prior written permission of Vocera Communications.

OOB Emissions,, Transmit on Channel 6 B (2437MHz)



Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height
MHz	dBμV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters
1201.670	33.0	V	54.0	-21.0	Peak	295	1.0
1595.830	40.8	V	54.0	-13.2	Peak	287	1.0
2412.000	43.2	H	54.0	-10.8	Peak	28	2.0
9648.000	44.0	V	54.0	-10.0	Peak	180	1.5

OOB Emissions,, Transmit on Channel 11 B (2462MHz)



Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height
MHz	dBμV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters
1595.830	40.3	V	54.0	-13.7	Peak	291	1.0
2462.000	35.0	H	54.0	-19.0	Peak	251	2.0

Radiated emissions in restricted bands near the operating band edge

Since this is an 802.11 B / G product, there are restricted just outside the band of operation at



Restricted Bands close to the ISM operating band

Procedure

The radiated level of the emissions in the restricted bands was measured directly in the semi-anechoic chamber. The same procedure of maximization was used as was used for the typical radiated emissions test. Peak and average levels were measured using the following BW settings on the spectrum analyzer.

PEAK: RBW = 1MHz, VBW=1MHz

AVERAGE: : RBW = 1MHz, VBW=10Hz

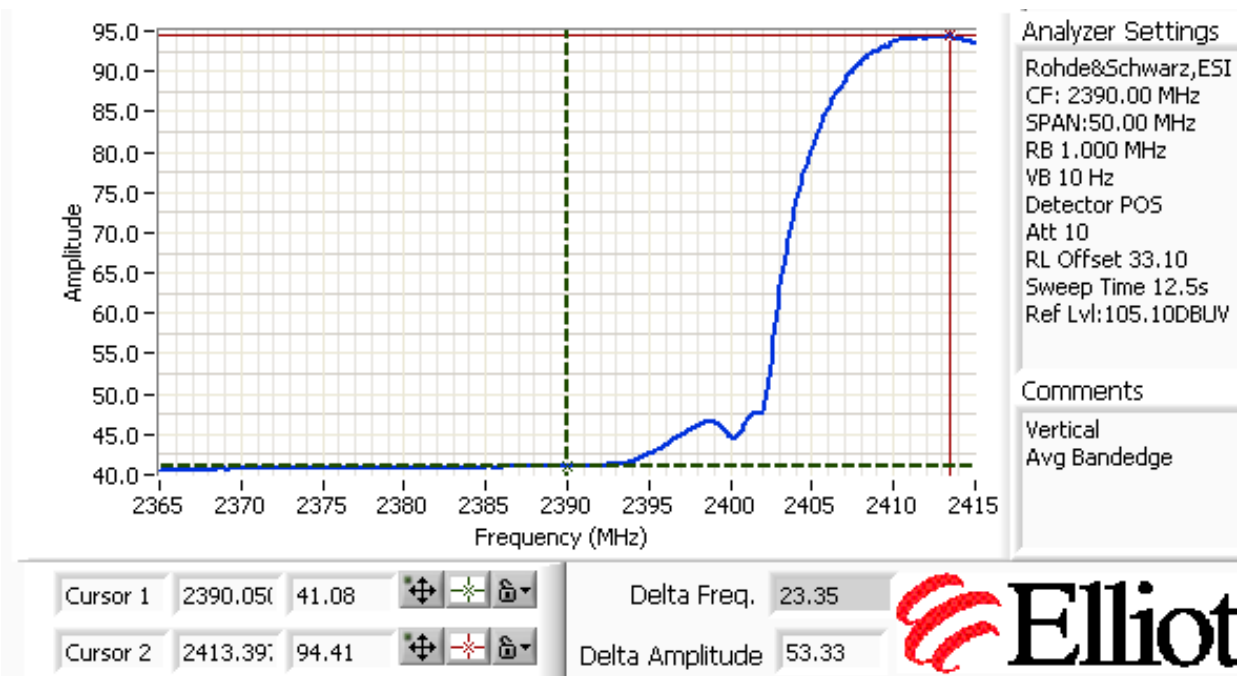
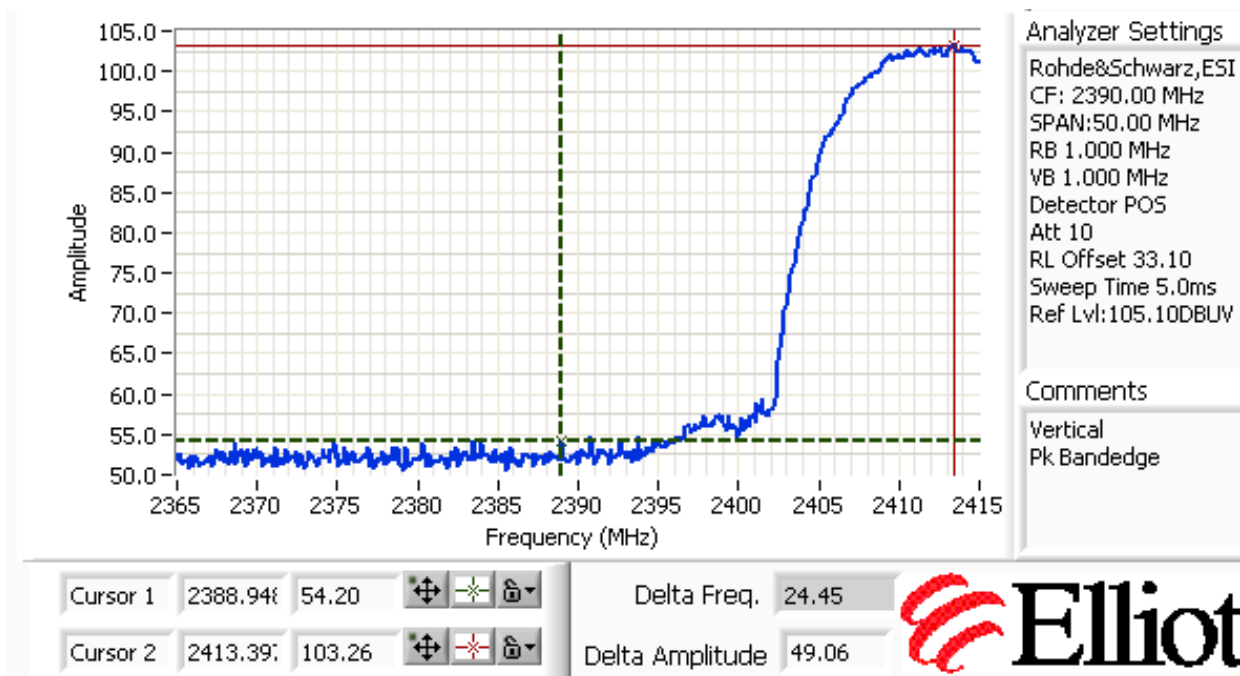
Test Results

Horizontal and vertical polarities were measured. The orientation that produced the maximum measured level in each case was the Z axis.

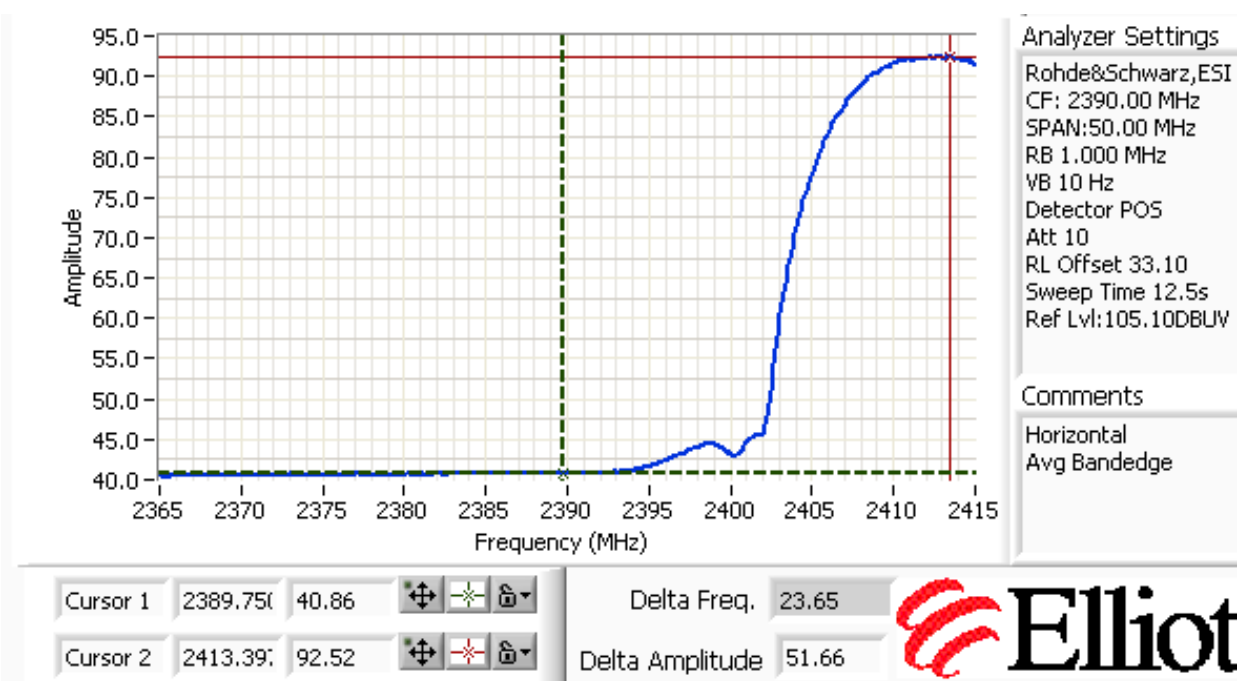
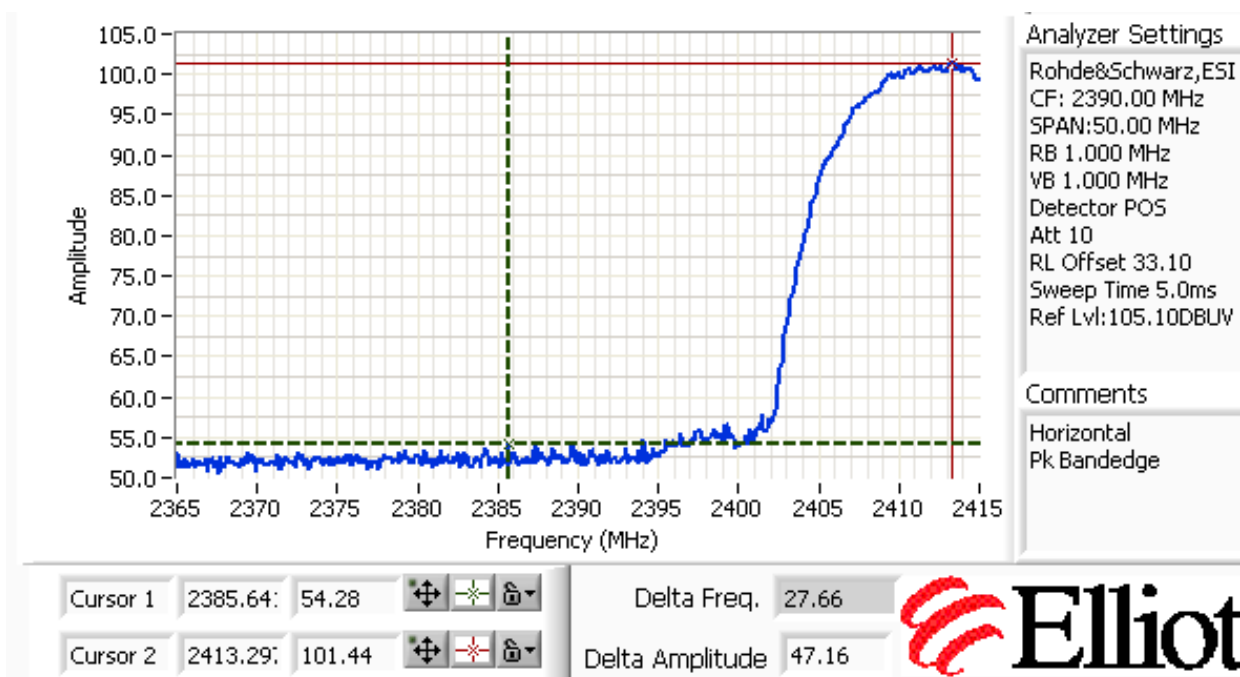
Mode	Band Edge	Pol	Pk/ Avg	Level (dBuV/m)	Spec	Delta (dB)
802.11 B	Low	Vert	Pk	54.2	74	19.8
802.11 B	Low	Vert	Avg	41.08	54	12.92
802.11 B	Low	Horz	Pk	54.28	74	19.72
802.11 B	Low	Horz	Avg	40.86	54	13.14
802.11 B	High	Vert	Pk	54.34	74	19.66
802.11 B	High	Vert	Avg	41.69	54	12.31
802.11 B	High	Horz	Pk	53.78	74	20.22
802.11 B	High	Horz	Avg	40.77	54	13.23
802.11 G	Low	Vert	Pk	57.09	74	16.91
802.11 G	Low	Vert	Avg	43.21	54	10.79
802.11 G	Low	Horz	Pk	54.76	74	19.24
802.11 G	Low	Horz	Avg	43.21	54	10.79
802.11 G	High	Vert	Pk	54.25	74	19.75
802.11 G	High	Vert	Avg	40.88	54	13.12
802.11 G	High	Horz	Pk	54.27	74	19.73
802.11 G	High	Horz	Avg	40.88	54	13.12

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Radiated Emissions at the low band edge @ 2390.0 MHz 802.11 B

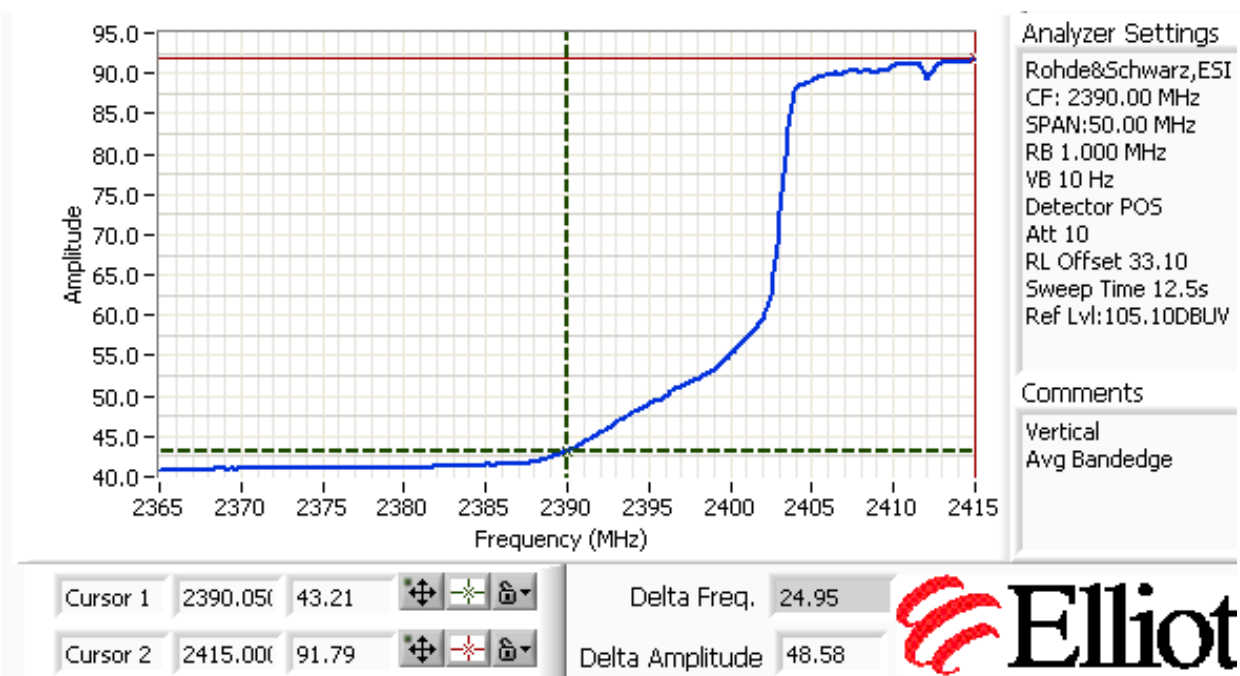
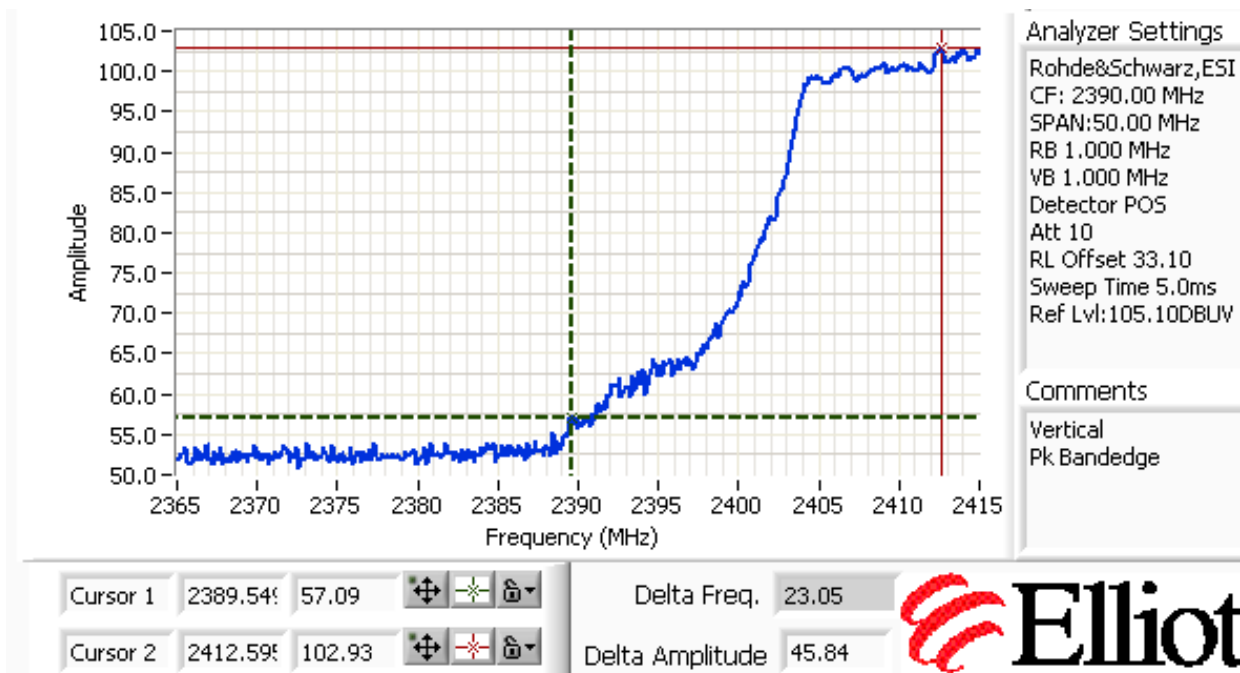


The test results in this test report refer only to the sample tested. This test report cannot be reproduced, exception full, without prior written permission of Vocera Communications.

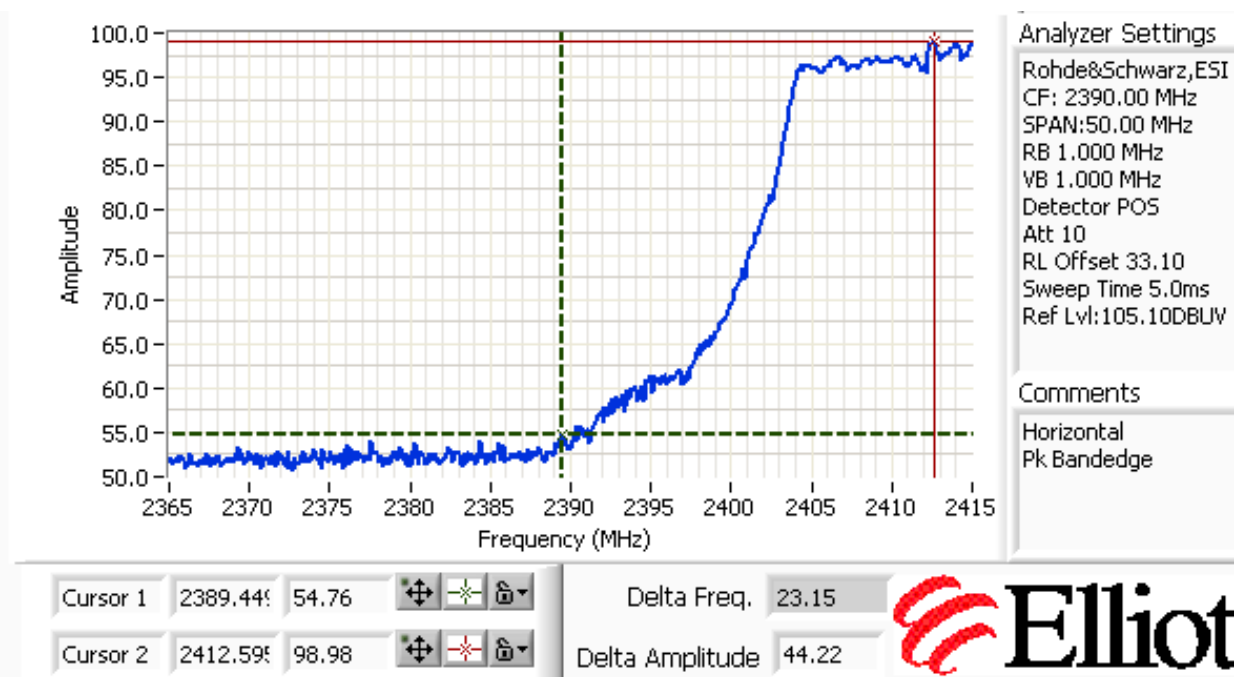
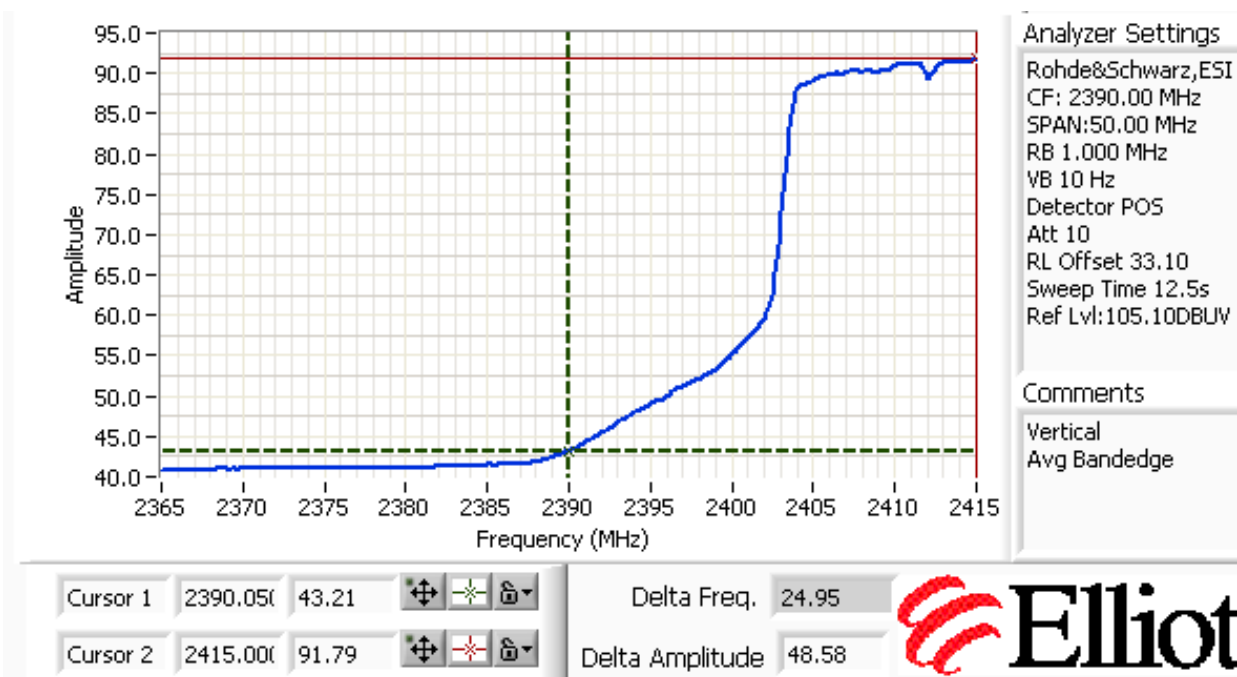


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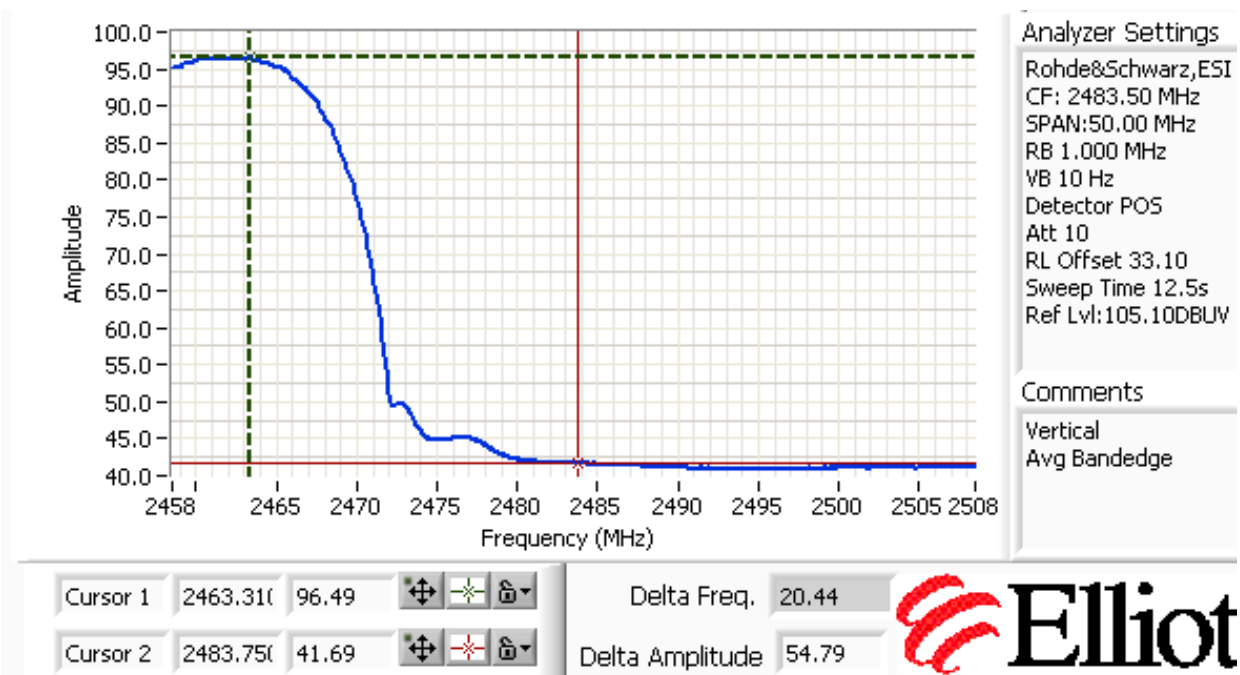
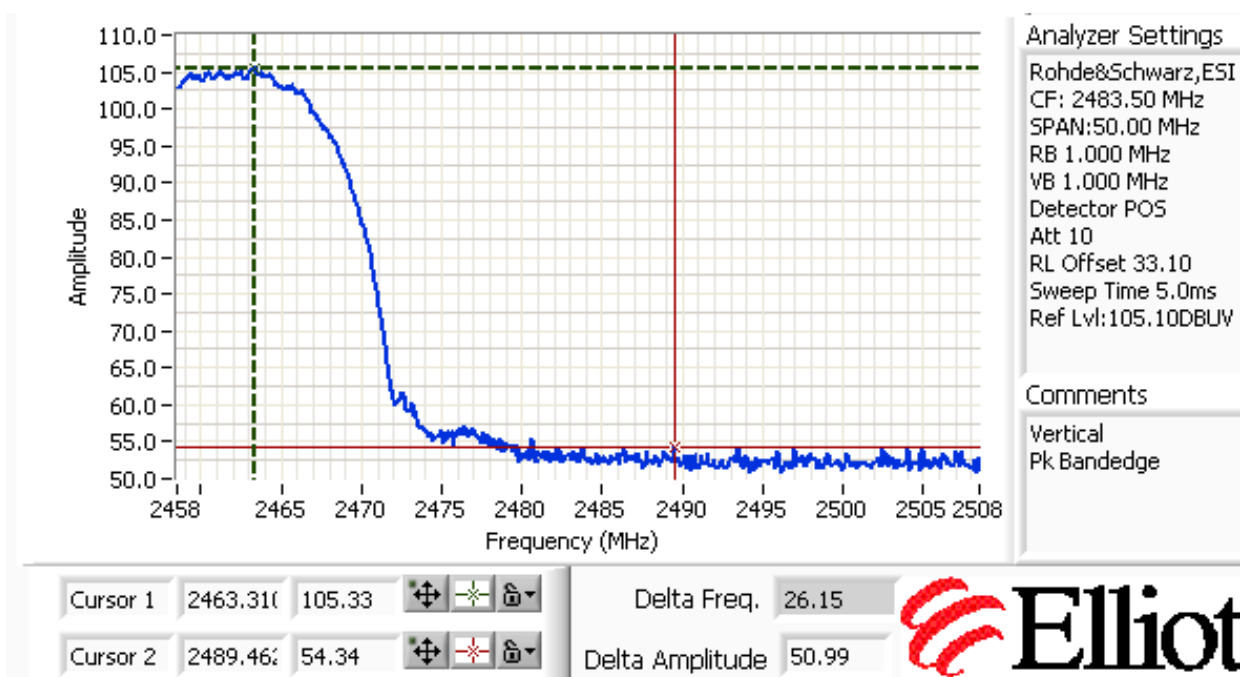
Radiated Emissions at the low band edge @ 2390.0 MHz 802.11 G



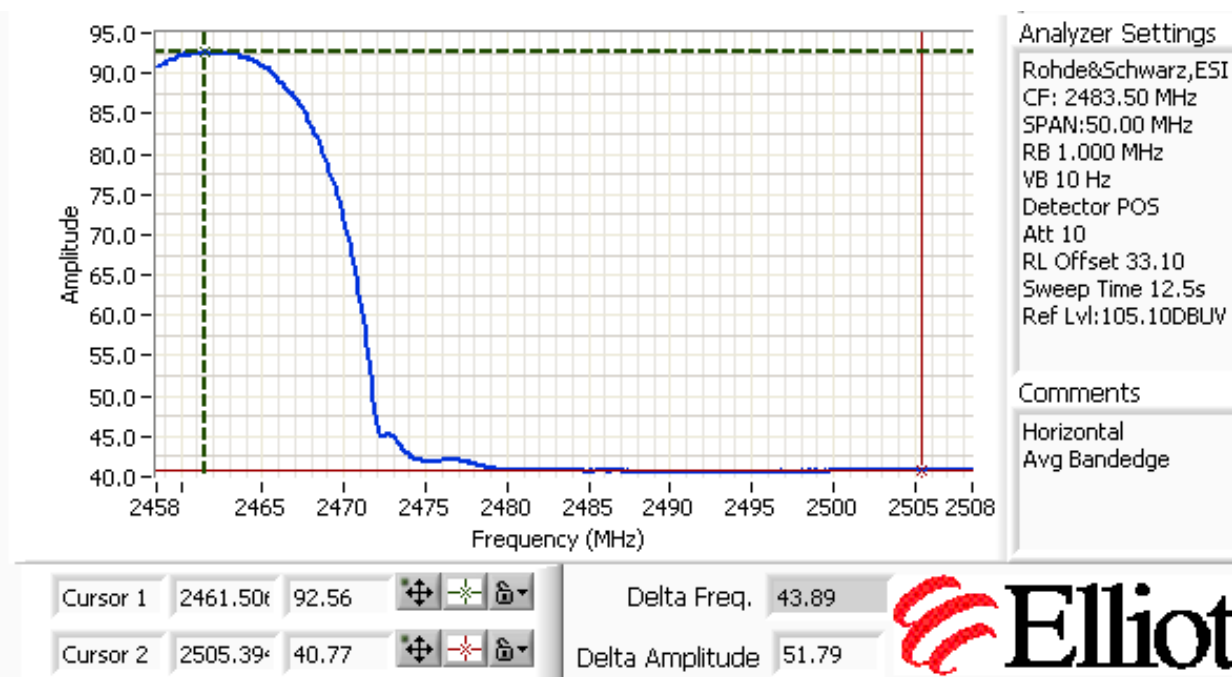
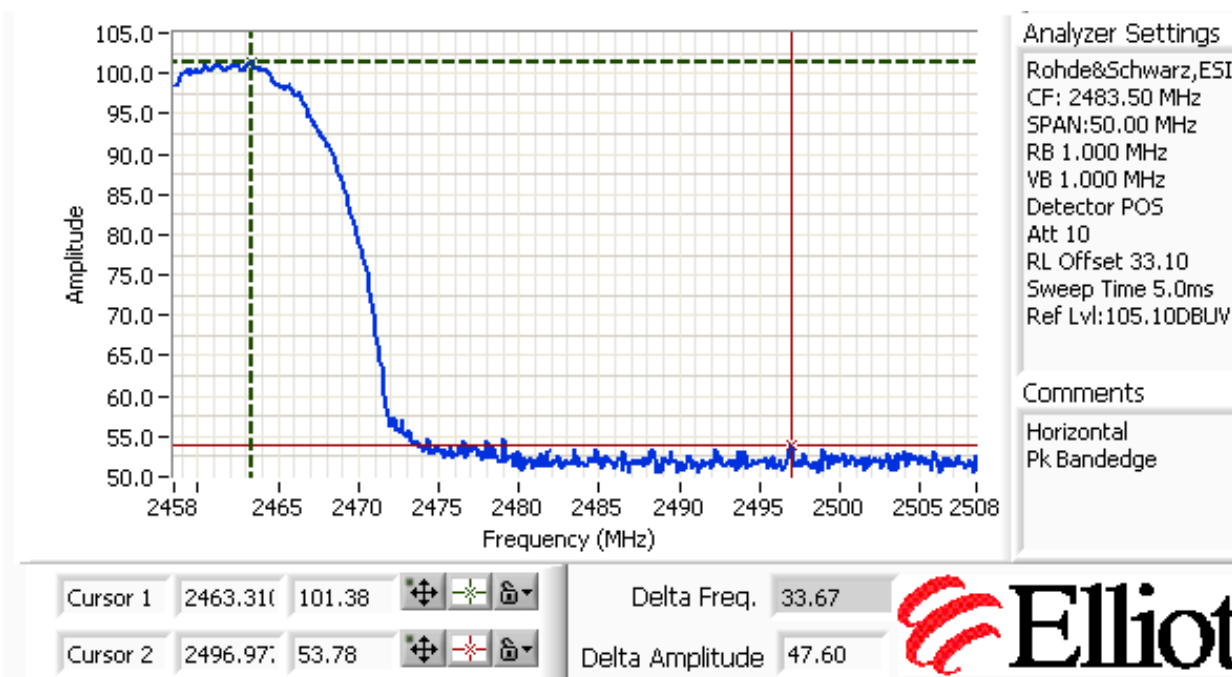
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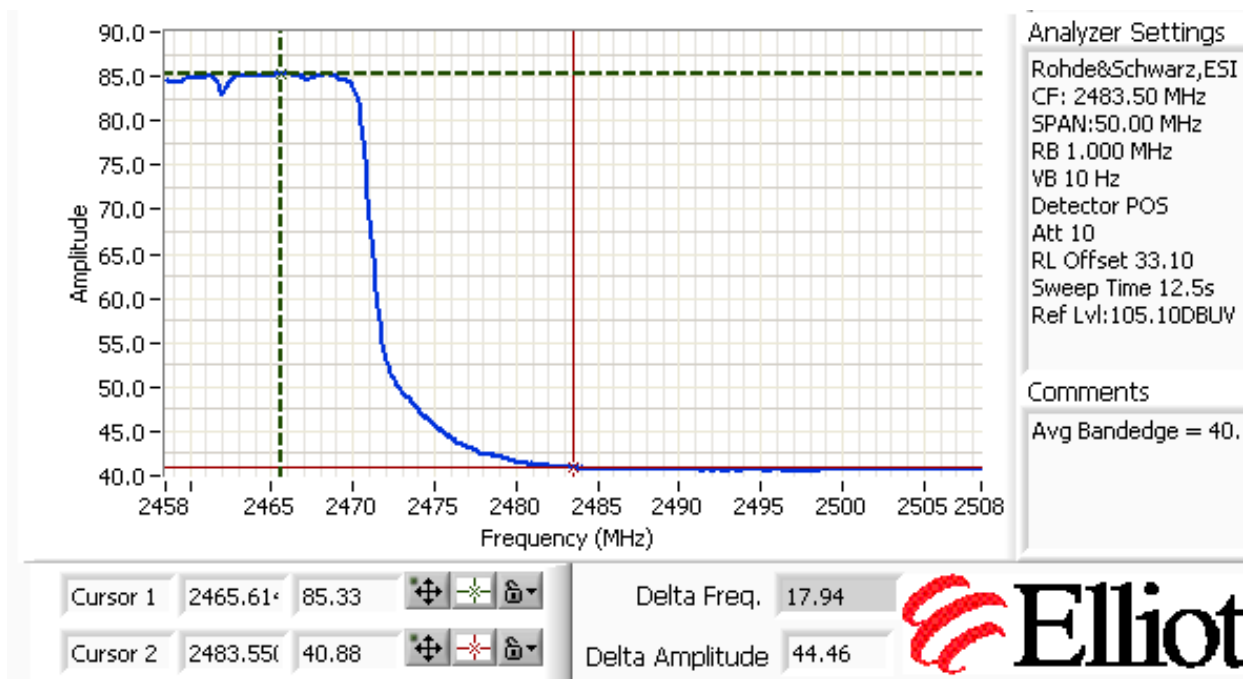
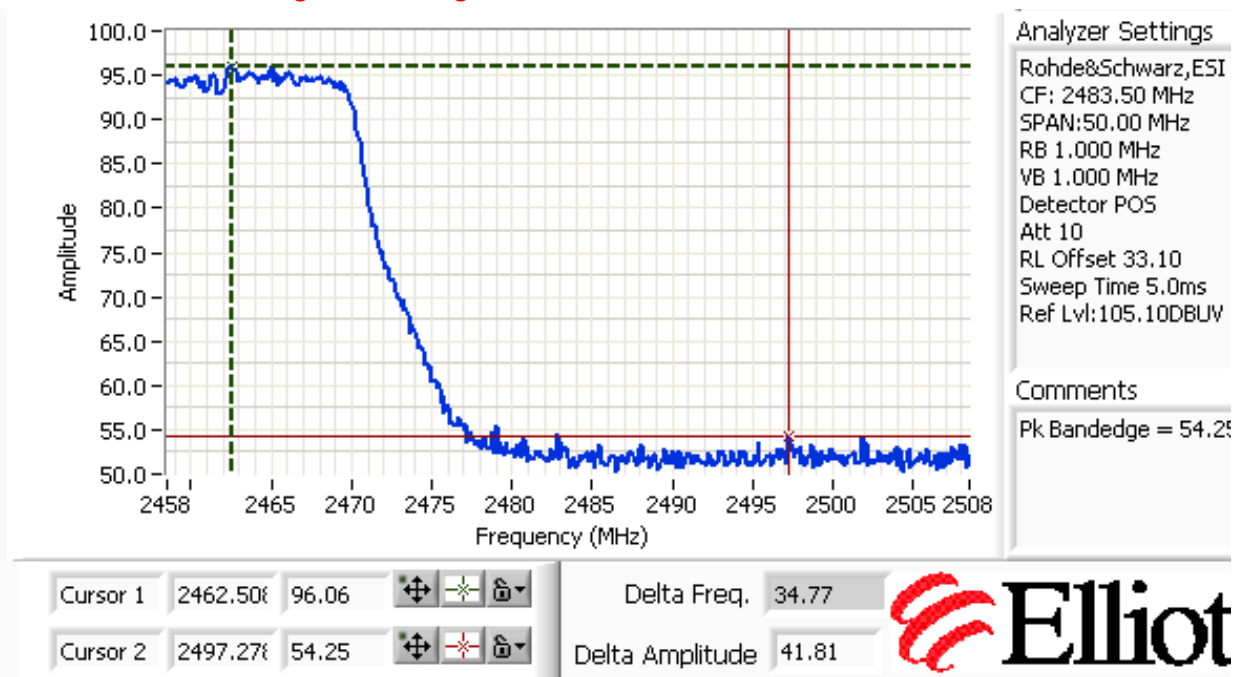
Radiated Emissions at the high band edge @ 2483.5 MHz 802.11 B



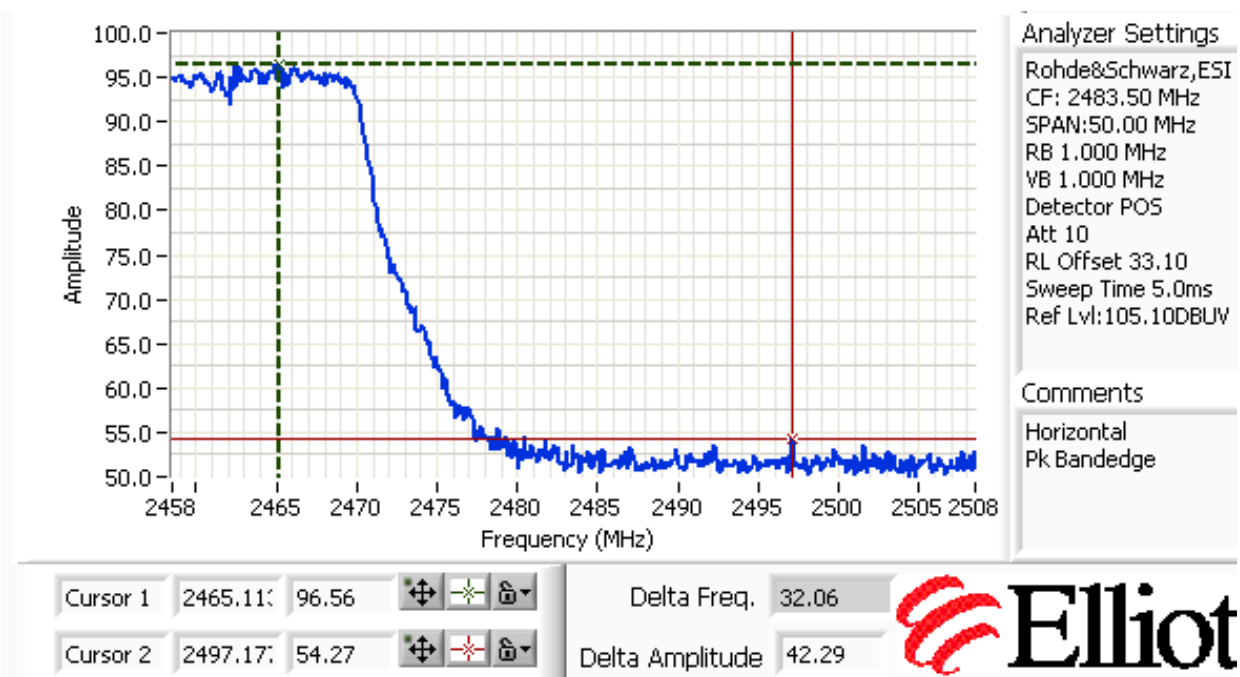
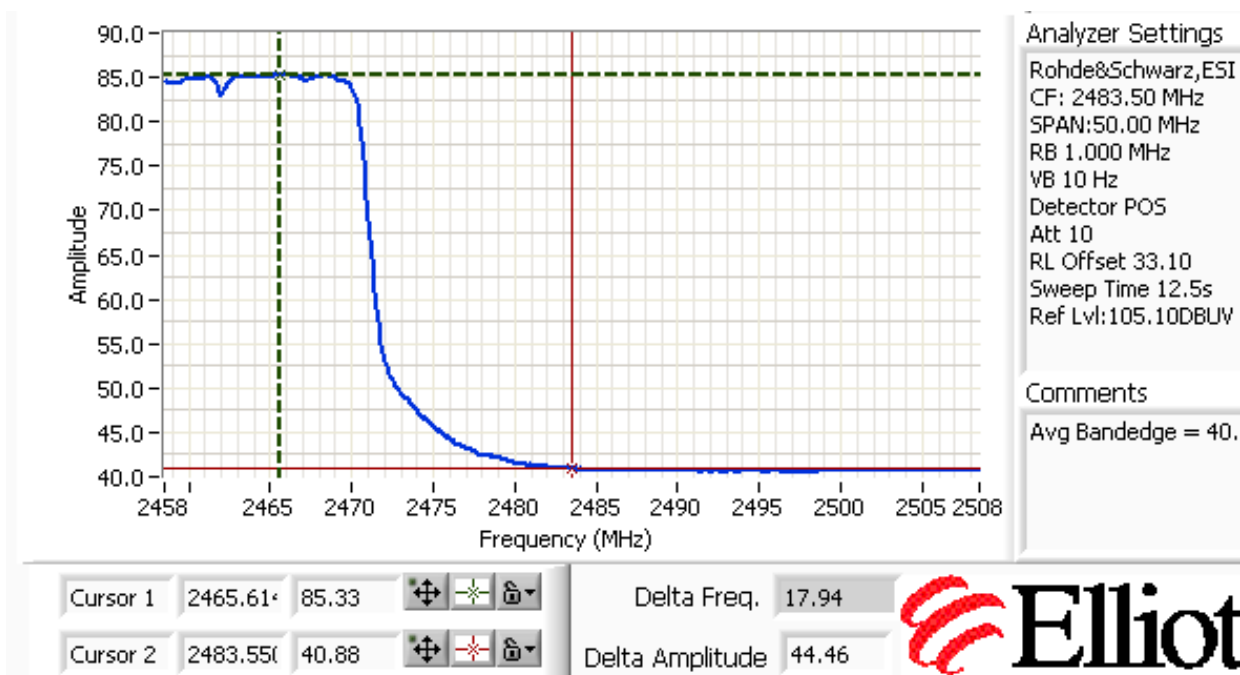
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Radiated Emissions at the high band edge @ 2483.5 MHz 802.11 G



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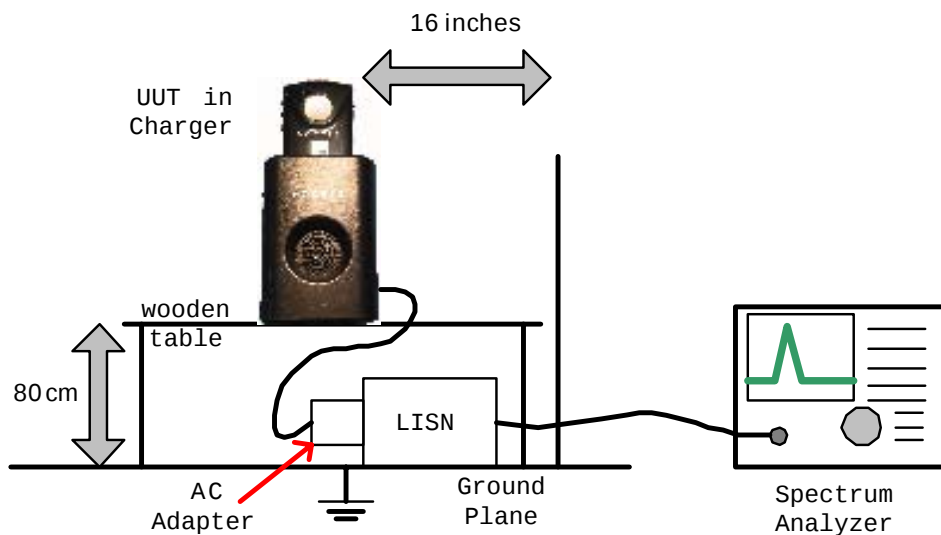
AC Line Conducted Emissions

Specification: CISPR 22

Procedure:

The test was set up according to the guidelines set forth in EN55022:1998 and FCC Part 2 for AC Line Conducted Emissions. The measurement used a LISN line on each AC line and an EMI receiver. A peak scan was made over the measurement frequency range (150 kHz to 30 MHz). The highest peaks were compared to the average limit. The unit was configured to transmit packets at the max data rate.

The test was configured as shown below. The product was tested while running on 120 VAC @ 60 Hz .



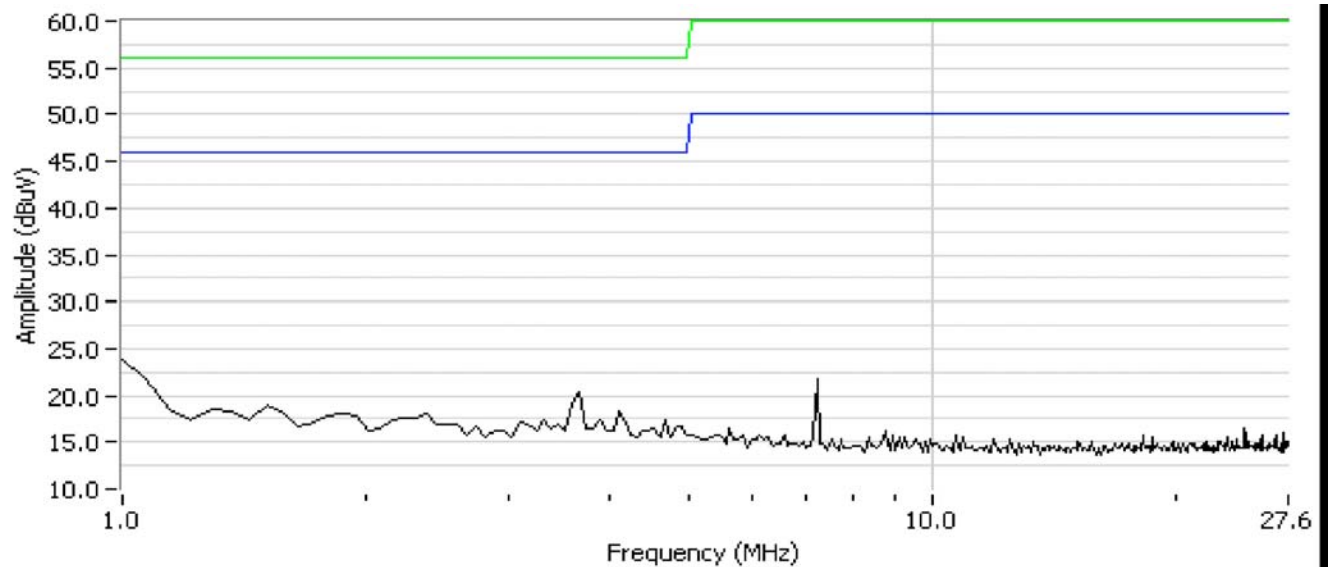
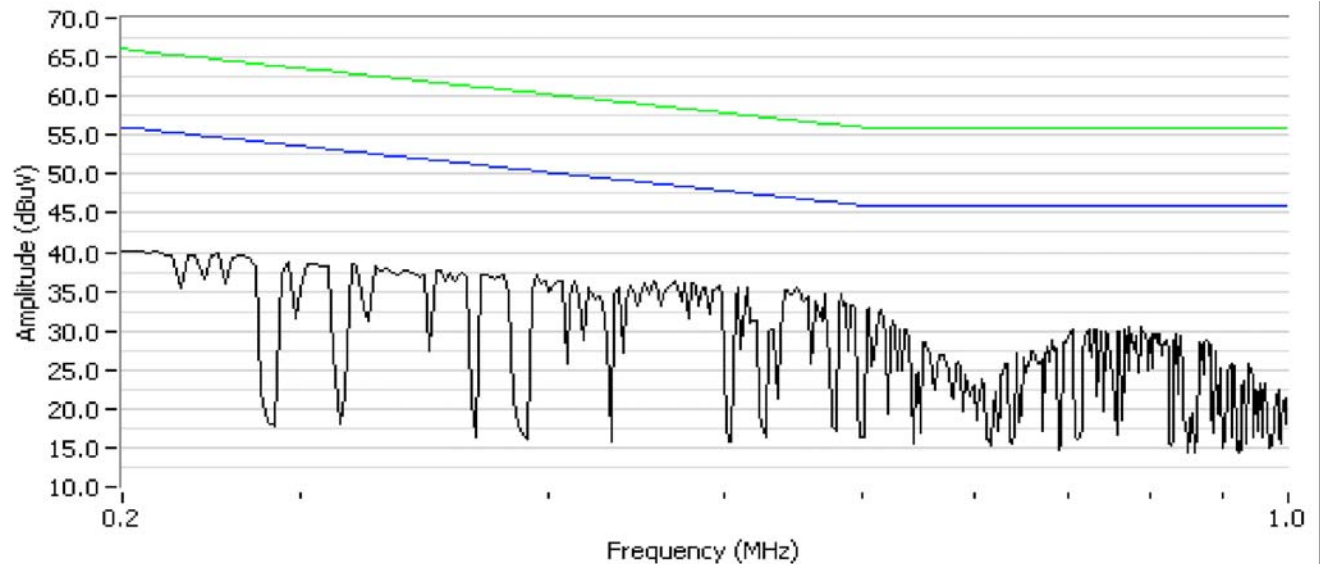
Test Results:

The AC Line conducted Emissions test results, relative to the EN55022 B limits, are shown below. None of the peak readings below were within 6 dB of the average limit therefore no measurements were Quasi-peaked.

	Level	AC	EN55022 B		Detector
MHz	dBμV	Line	Limit	Margin	QP/Ave
0.483	34.5	Line	46.3	-11.8	Peak
0.254	38.9	Neutral	51.6	-12.8	Peak
0.161	40.9	Neutral	55.4	-14.5	Peak
0.158	40.0	Line	55.5	-15.5	Peak
1.000	23.9	Line	46.0	-22.2	Peak
3.603	21.7	Neutral	46.0	-24.3	Peak
3.676	20.3	Line	46.0	-25.7	Peak
7.219	21.7	Line	50.0	-28.3	Peak
7.219	21.3	Neutral	50.0	-28.7	Peak

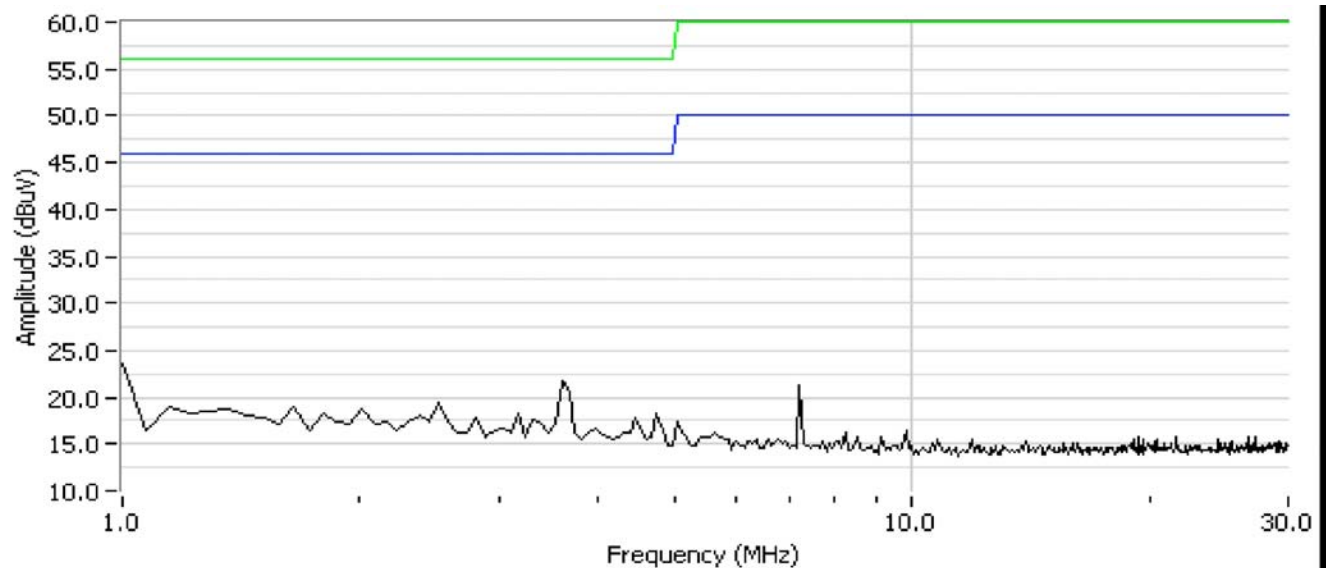
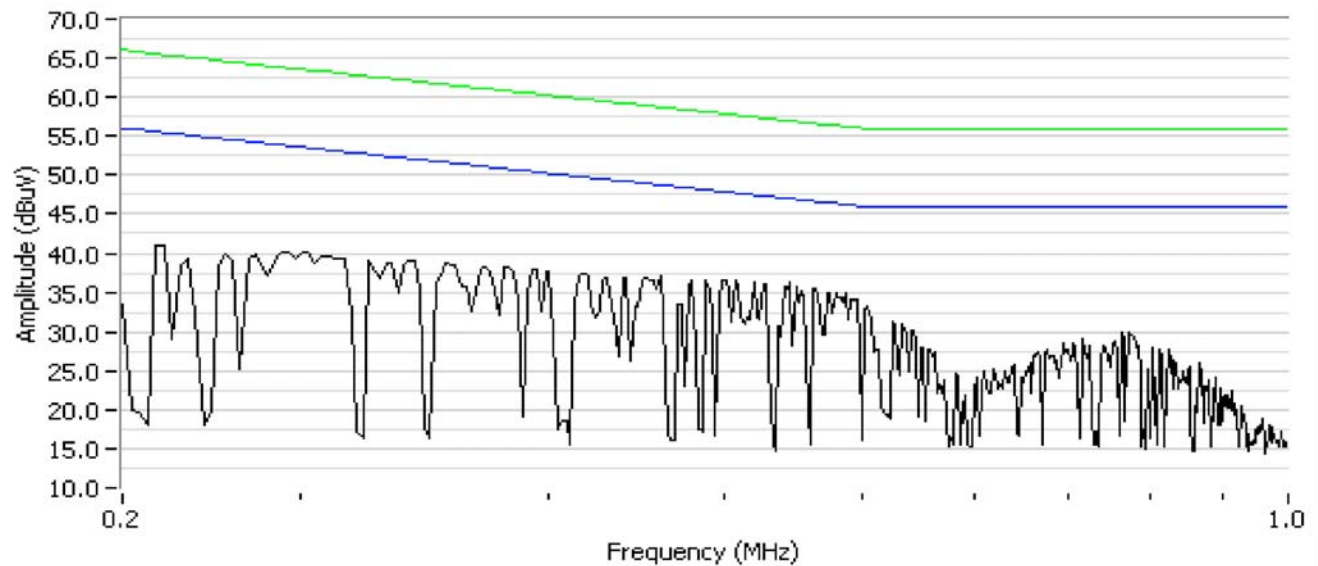
The test results in this test report refer only to the sample tested. This test report cannot be reproduced, exception full, without prior written permission of Vocera Communications.

AC Line conducted emissions, Vocera single bay charger. 120 VAC, Line.



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AC Line conducted emissions, Vocera single bay charger. 120 VAC, Neutral.



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EN 55022 Radiated Emissions from Digital Portion of the Device

Specification: EN55022

Procedure:

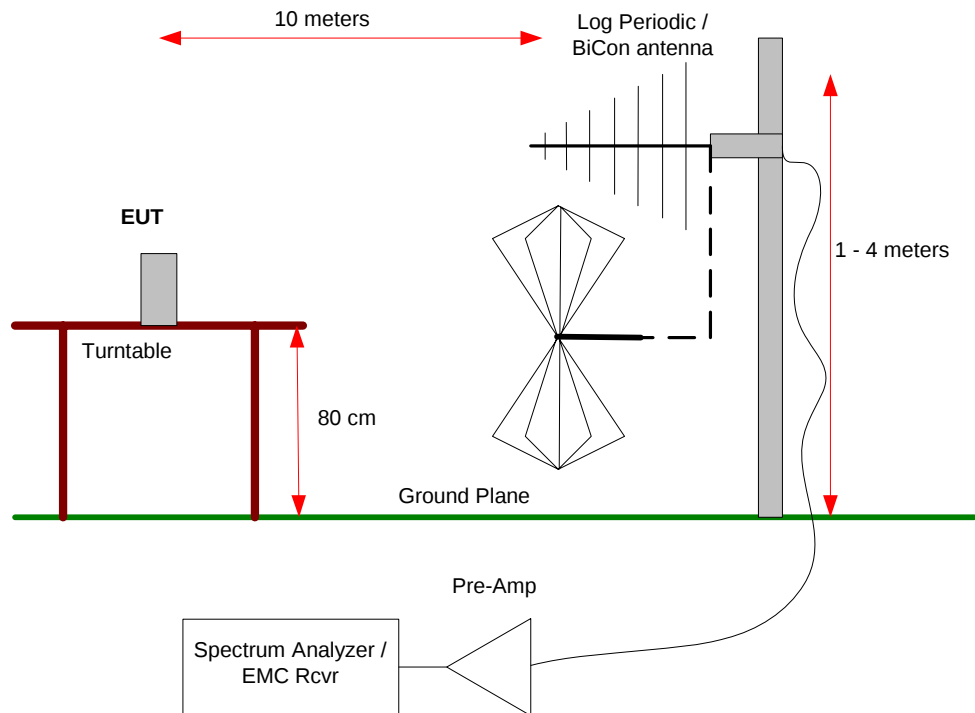
The procedure used was ANSI C63.4-2003. The band from 30-1000MHz was scanned. The EUT was measured for both vertical and horizontal polarized emissions. Preliminary scans of the EUT were conducted in three orthogonal planes, and final data gathered in the worst case orientation.

This test was conducted in a “10-meter” anechoic chamber at Elliott Laboratories Fremont, California facility. The unit was placed on a rotating wooden table 80cm above the ground plane. The Biconical / Log periodic antenna was secured to a mast 10 meters away. The UUT was running in the diagnostic mode and set to transmit continuous packet data at the maximum rated transmit power.

The EUT was rotated 360 degrees and the height of the antenna adjusted from 1 to 4 meters above the ground plane to determine the maximum level of the emission. The test equipment was configured as shown below.

The spectrum analyzer reading was corrected by the measurement software to take into account the various equipment characteristics (antenna factor, cable loss, pre-amplifier gain, HPF loss).

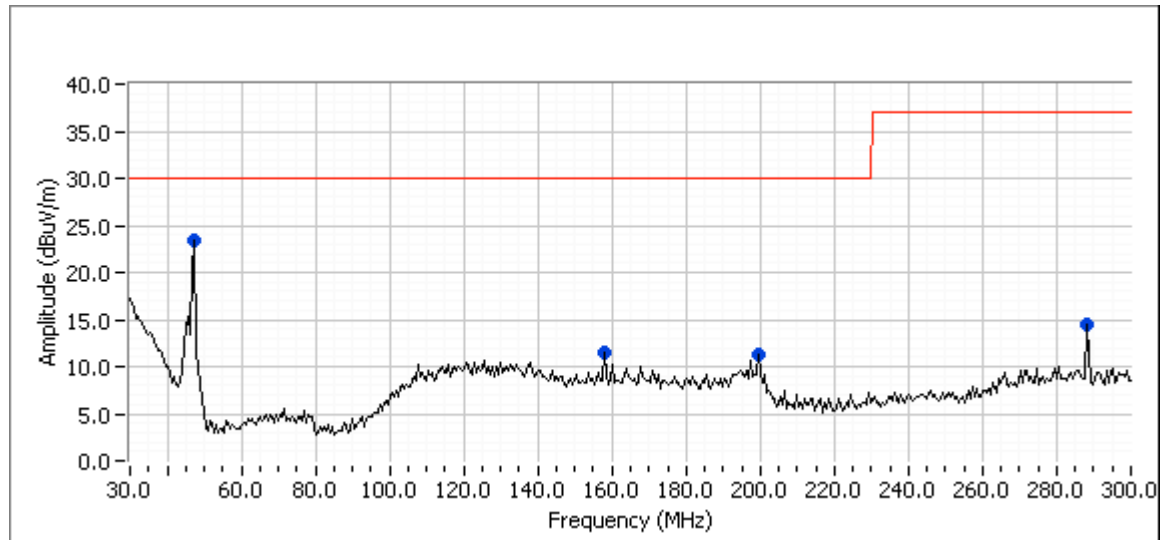
The measurements were made with a 120 kHz BW and a Quasi - Peak detector



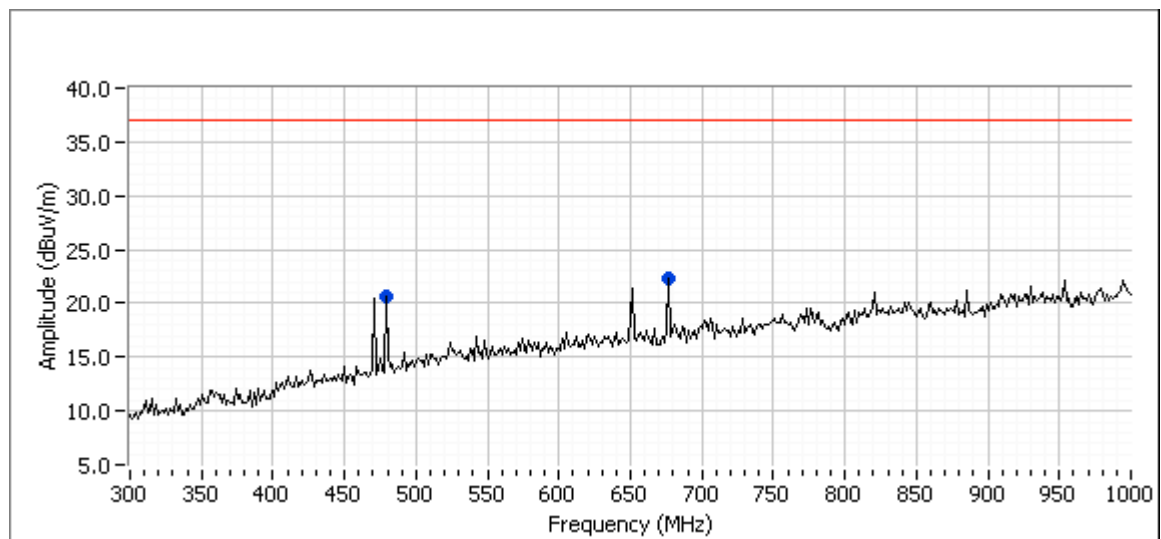
Test Results:

Frequency MHz	Level dB μ V/m	Pol v/h	EN55022 Class B		Detector Pk/QP/Avg	Azimuth degrees	Height meters
675.237	23.0	V	Limit	Margin	QP	148	3.0
480.005	22.8	H	37.0	-14.2	QP	105	1.0
199.460	13.4	V	30.0	-16.6	QP	203	3.5
158.236	12.6	H	30.0	-17.4	QP	0	2.5
288.002	16.9	V	37.0	-20.1	QP	0	3.0
48.672	8.3	V	30.0	-21.7	QP	128	1.0

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“Digital Emissions” 30 MHz - 300 MHz



“Digital Emissions” 300 MHz - 1000 MHz

Radiated Emissions from Receiver

Specification: RSS210 2.6

Procedure:

The same procedure was used to test the radiated emission for the receiver as was used for the digital emissions from the device with the exception that the device was not transmitting.

Test Results

Frequency	Level	Pol	EN55022 Class B		Detector	Azimuth	Height
MHz	dBμV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters
838.675	23.4	H	37.0	-13.6	QP	70	2.0
651.248	23.1	H	37.0	-13.9	QP	101	3.0
480.022	22.7	H	37.0	-14.3	QP	284	1.0
131.529	13.6	H	30.0	-16.4	QP	0	2.0
288.008	15.5	V	37.0	-21.5	QP	109	2.0
48.253	8.2	H	30.0	-21.8	QP	299	4.0

