Compliance Testing, LLC
Previously Flom Test Lab
RF, EMC and Safety Testing Experts Since 1963
toll-free: (866) 311-3268
fax: (480) 926-3598
http://www.ComplianceTesting.com
info@ComplianceTesting.com

Date: January 22, 2010

Federal Communications Commission
Via: Electronic Filing

Attention: Authorization & Evaluation Division

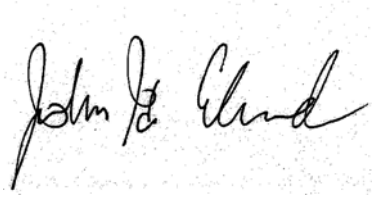
Applicant: Xtreme Power Systems, LLC
Equipment: Micro Rx
FCC ID: X5L-XPSRX6NP
FCC Rules: 15.247

Gentlemen:

On behalf of the Applicant, enclosed please find Application Form 731, Engineering Test Report and all pertinent documentation, the whole for approval of the referenced equipment as shown.

We trust the same is in order. Should you need any further information, kindly contact the writer who is authorized to act as agent.

Sincerely yours,



John Erhard, Engineering Manager

List Of Exhibits

(FCC **Certification** (Transmitters) - Revised 9/28/98)

Applicant: Xtreme Power Systems, LLC

FCC ID: X5L-XPSRX6NP

By Applicant:

1. Letter Of Authorization

2. Identification Drawings
   - __ Id Label
   - __ Location Info
   - __ Attestation Statement(S)
   - __ Location of Compliance Statement

3. Documentation: 2.1033(B)
   - (3) User Manual(S)
   - (4) Operational Description
   - (5) Block Diagram
   - (5) Schematic Diagram
   - (7) External Photographs
   - Internal Photographs
   - Parts List
   - Active Devices

By Compliance Testing:

A. Testimonial & Statement of Certification

B. Statement of Qualifications

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Test Report

for

FCC ID: X5L-XPSRX6NP

Model: Micro Rx

to

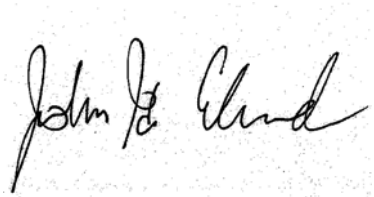
Federal Communications Commission

Rule Part(s) 15.247

Date Of Report: January 22, 2010

On the Behalf of the Applicant: Xtreme Power Systems, LLC
2440 Kiowa Blvd. N., Suite 102
Lake Havasu City, AZ 86403

Attention of: Jim Drew
Ph: (928) 854-9228
Fax: (928) 854-9228
E-mail: jd@extremepowersystems.net



Supervised By: John Erhard, Engineering Manager

Test Report Revision History

Revision	Date	Revised By	Reason for revision
1.0	January 22, 2010	G. Corbin	Original Document
2.0	February 15, 2010	G. Corbin	Corrected data in Radiated Emissions Spurious table, page 9

The applicant has been cautioned as to the following:

15.21 Information to User.

The users manual or instruction manual for an intentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

15.27(a) Special Accessories.

Equipment marketed to a consumer must be capable of complying with the necessary regulations in the configuration in which the equipment is marketed. Where special accessories, such as shielded cables and/or special connectors are required to enable an unintentional or intentional radiator to comply with the emission limits in this part, the equipment must be marketed with, i.e. shipped and sold with, those special accessories. However, in lieu of shipping or packaging the special accessories with the unintentional or intentional radiator, the responsible party may employ other methods of ensuring that the special accessories are provided to the consumer, without additional charge.

Information detailing any alternative method used to supply the special accessories for a grant of equipment authorization or retained in the verification records, as appropriate. The party responsible for the equipment, as detailed in § 2.909 of this chapter, shall ensure that these special accessories are provided with the equipment. The instruction manual for such devices shall include appropriate instructions on the first page of text concerned with the installation of the device that these special accessories must be used with the device. It is the responsibility of the user to use the needed special accessories supplied with the equipment.

Testimonial And Statement Of Certification

This is to certify that:

1. **That** the application was prepared either by, or under the direct supervision of, the undersigned.
2. **That** the technical data supplied with the application was taken under my direction and supervision.
3. **That** the data was obtained on representative units, randomly selected.
4. **That**, to the best of my knowledge and belief, the facts set forth in the application and accompanying technical data are true and correct.

Greg Corbin

Certifying Engineer: Greg Corbin

Compliance Testing
3356 N. San Marcos Place, Suite 107
Chandler, Arizona 85225-7176
(866) 311-3268 phone, (480) 926-3598 fax

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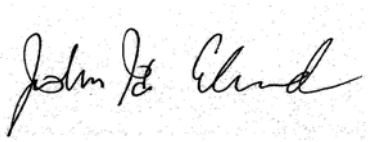
Required information per ISO 17025-2005, paragraph 5.10.2:

a) **Test Report**

b) Laboratory: (FCC: 31040/SIT) (Canada: IC 2044A-1)	Compliance Testing 3356 N. San Marcos Place, Suite 107 Chandler, AZ 85225
c) Report Number:	d1010015
d) Client:	Xtreme Power Systems, LLC
e) Identification:	Micro Rx
Description:	Zigbee Transceiver
f) EUT Condition:	Not required unless specified in individual tests.
g) Report Date:	January 22, 2010
h, j, k):	As indicated in individual tests.
i) Sampling method:	No sampling procedure used.
l) Uncertainty:	In accordance with Compliance Testing internal quality manual.

m) Supervised by:



John Erhard, Engineering Manager

n) Results:	The results presented in this report relate only to the item tested.
o) Reproduction:	This report must not be reproduced, except in full, without written permission from this laboratory.

List Of General Information Required For Certification

In Accordance with FCC Rules and Regulations,
Volume II, Part 2 and to 15.247

Sub-Part 2.1033
(c)(1):

Name and Address of Applicant: Xtreme Power Systems, LLC

(c)(2): **FCC ID**: X5L-XPSRX6NP

Model Number: Micro Rx

(c)(3): **Instruction Manual(s)**:

Please See Attached Exhibits

(c)(4): **Type of Emission**: DSS

(c)(5): **FREQUENCY RANGE, MHz**: 2405 – 2475 MHz

(c)(6): **Power Rating, W**:
____ Switchable ____ Variable __X__ N/A

(c)(7): **Maximum Power Rating, W**: .004

15.203: **Antenna Requirement**:
__X__ The antenna is permanently attached to the EUT
_____ The antenna uses a unique coupling
_____ The EUT must be professionally installed
_____ The antenna requirement does not apply

Subpart 2.1033 (continued)

(c)(8): **Circuit Diagram/Circuit Description**:
Including description of circuitry & devices provided for determining and stabilizing frequency, for suppression of spurious radiation, for limiting modulation and limiting power.

Please See Attached Exhibits

(c)(9): **Label Information**:

Please See Attached Exhibits

(c)(10): **Photographs**:

Please See Attached Exhibits

(c)(11): **Digital Modulation Description**:

___ Attached Exhibits
_X_ N/A

(c)(12): **Test And Measurement Data**:

Follows

Sub-part 2.1033(b): **Test And Measurement Data**

All tests and measurement data shown were performed in accordance with FCC Rules and Regulations, Volume II; Part 2 and the following individual Parts:

15.247 Operation within bands 902-928, 2400-2483.5, 5725-5850 MHz

Standard Test Conditions and Engineering Practices

Except as noted herein, the following conditions and procedures were observed during the testing:

In accordance with ANSI C63.4-2009, FCC DTS Guide March 23, 2005, and unless otherwise indicated in the specific measurement results, the ambient temperature of the actual EUT was maintained within the range of 10° to 40°C (50° to 104 °F) unless the particular equipment requirements specify testing over a different temperature range. Also, unless otherwise indicated, the humidity levels were in the range of 10% to 90% relative humidity.

Measurement results, unless otherwise noted, are worst-case measurements.

A2LA

"A2LA has accredited Compliance Testing in Chandler, AZ for technical competence in the field of Electrical testing. The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO 17025:2005 'General Requirements for the Competence of Testing and Calibration Laboratories' and any additional program requirements in the identified field of testing."

Please refer to www.a2la.org for current scope of accreditation.

Certificate number: 2152.01

ACCREDITED
TESTING CERT# 2152.01

FCC OATS Reg. #933597

IC O.A.T.S. Number: 2044A-1

Test Results Summary

Specification	Test Name	Pass, Fail, N/A	Comments
15.247(b)	Peak Output Power	Pass	
15.247(d)	Conducted Spurious Emissions	N/A	EUT could not be modified for Conducted tests per the manufacturer
15.247(d), 15.209(a), 15.205	Radiated Spurious Emissions	Pass	
RSS Gen 6 (a)	Receiver Spurious	Pass	
15.247(d), 15.209(a), 15.205	Emissions At Band Edges	Pass	
15.247(a)(2)	Occupied Bandwidth	Pass	
15.247(e)	Transmitter Power Spectral Density	Pass	
15.207	A/C Powerline Conducted Emissions	N/A	DC powered device with no connections to the AC mains

Name of Test: Peak Output Power
Specification: 15.247(b) **Engineer: Greg Corbin**
Test Equipment Utilized i00103, i00331 **Test Date: 1/21/2010**

Test Procedure

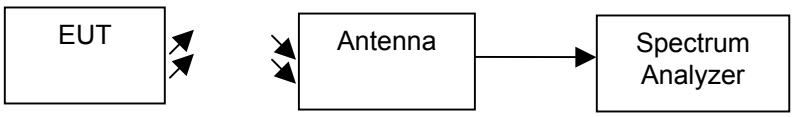
The EUT could not be modified for conducted measurements per the manufacturer.
The EUT was placed in a semi-anechoic chamber and the Peak Output Power was measured radiated per the FCC Guidelines " Measurement of DTS Operating under Section 15.247" dated March 23, 2005.
The Peak Output Power was then calculated per the FCC formula provided in the guidelines mentioned above.
The calculated Output Power was then compared to the limit.

P=(E x d) squared / (30 x G)

P = power in watts
E = the measured maximum field strength in V/m
G = the numeric gain of the transmitting antenna over an isotropic radiator
d = the distance in meters from which the field strength was measured

G = 1.41 (based on 1.5 dBi antenna gain from the manufacturer)
D = 3

Test Setup



Transmitter Peak Output Power

Tuned Frequency MHz	Measured Output Power V/m	Calculated Output Power Watts	Specification Limit Watts	Result
2405	0.1387	0.0040	1	Pass
2440	0.0910	0.0017	1	Pass
2475	0.1214	0.0031	1	Pass

Name of Test: Conducted Spurious Emissions
Specification: 15.247(d) **Engineer: Greg Corbin**
Test Equipment Utilized N/A **Test Date: N/A**

Not Applicable

The EUT could not be modified for conducted measurements per the manufacturer.

Name of Test: Radiated Spurious Emissions
Specification: 15.247(d), 15.209(a), 15.205 **Engineer: G. Corbin**
Test Equipment Utilized i00177, i00271, i00331, i00337 **Test Date: 1/21/2010, 1/25/2010**

Test Procedure

The EUT was tested in a semi-anechoic chamber set 3m from the receiving antenna. A spectrum analyzer was used to verify that the EUT met the requirements for Radiated Spurious Emissions. The antenna and cable correction factors were summed with the amplifier gain and input into the spectrum analyzer as an offset to ensure accurate readings. The spectrum for each tuned frequency was examined to the 10th harmonic.

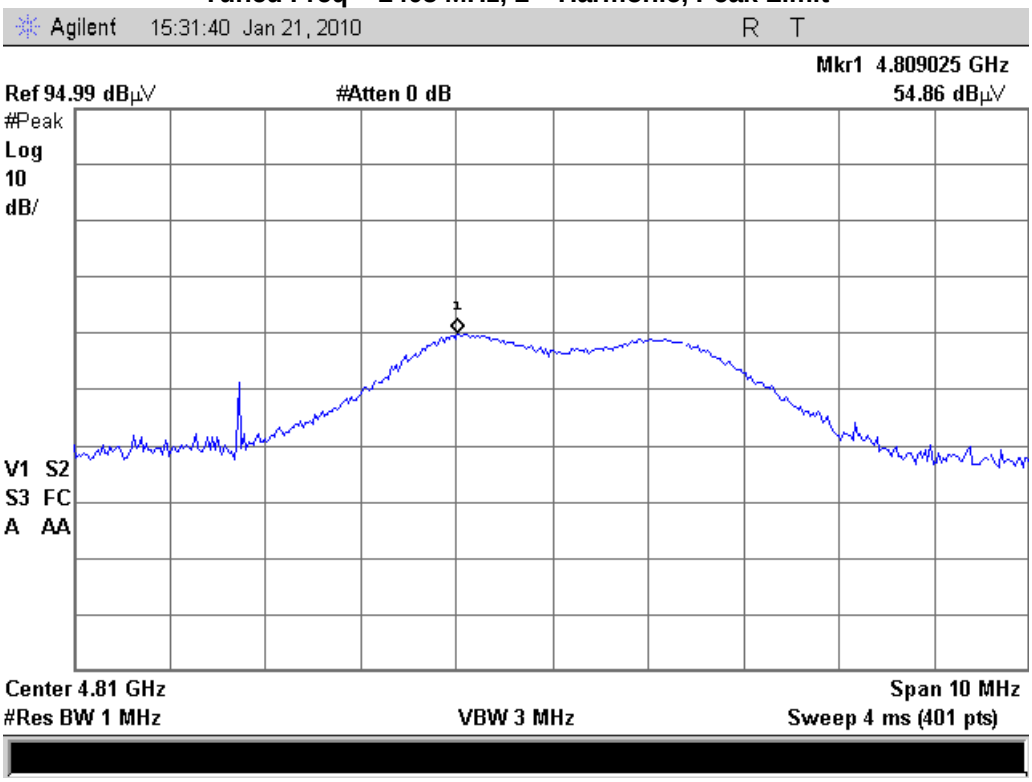
Test Setup

Radiated Spurious Emissions

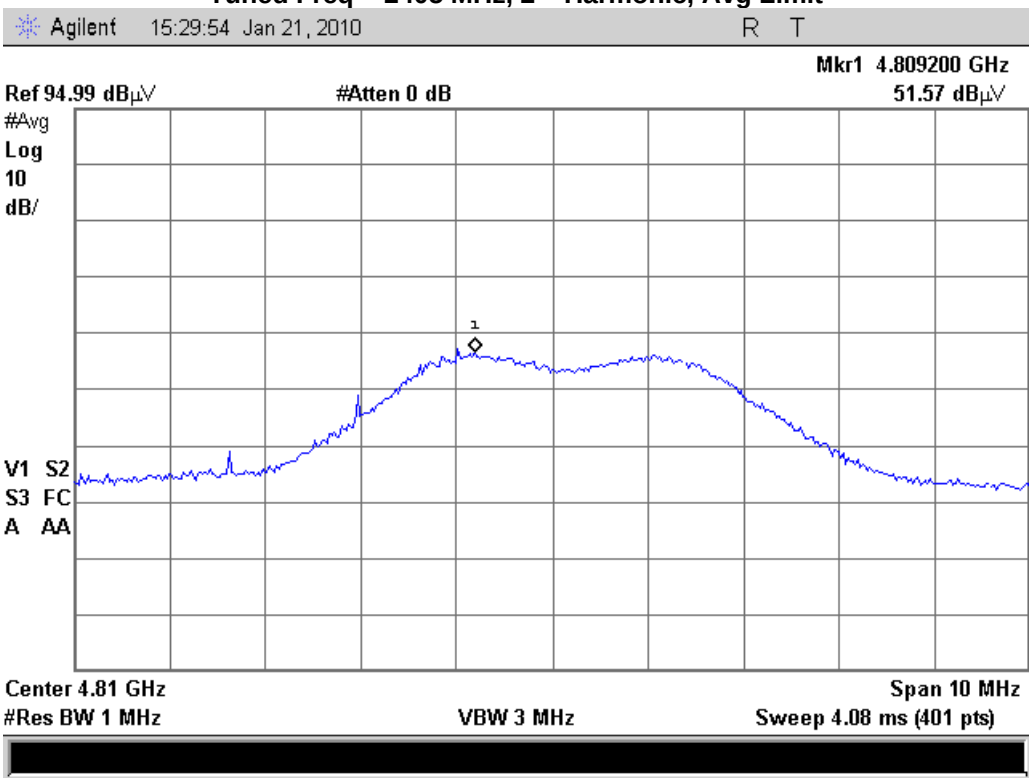
Tuned Freq (MHz)	Emission Freq (MHz)	Peak Monitored Level (dBuV/m)	Peak Limit (dBuV/m)	Average Monitored Level (dBuV/m)	Average Limit (dBuV/m)	Result
2405	4809	54.8	74.0	51.5	54.0	Pass
2405	7216	47.8	74.0	42.8	54.0	Pass
2405	9620	33.9	74.0	27.5	54.0	Pass
2440	4879	53.3	74.0	50.3	54.0	Pass
2440	7321	47.8	74.0	43.1	54.0	Pass
2440	9760	36.1	74.0	28.0	54.0	Pass
2475	4951	54.2	74.0	52.2	54.0	Pass
2475	7426	45.6	74.0	42.1	54.0	Pass
2475	9901	36.5	74.0	28.8	54.0	Pass

No other emissions were detectable. All emissions were greater than –20 dBc.

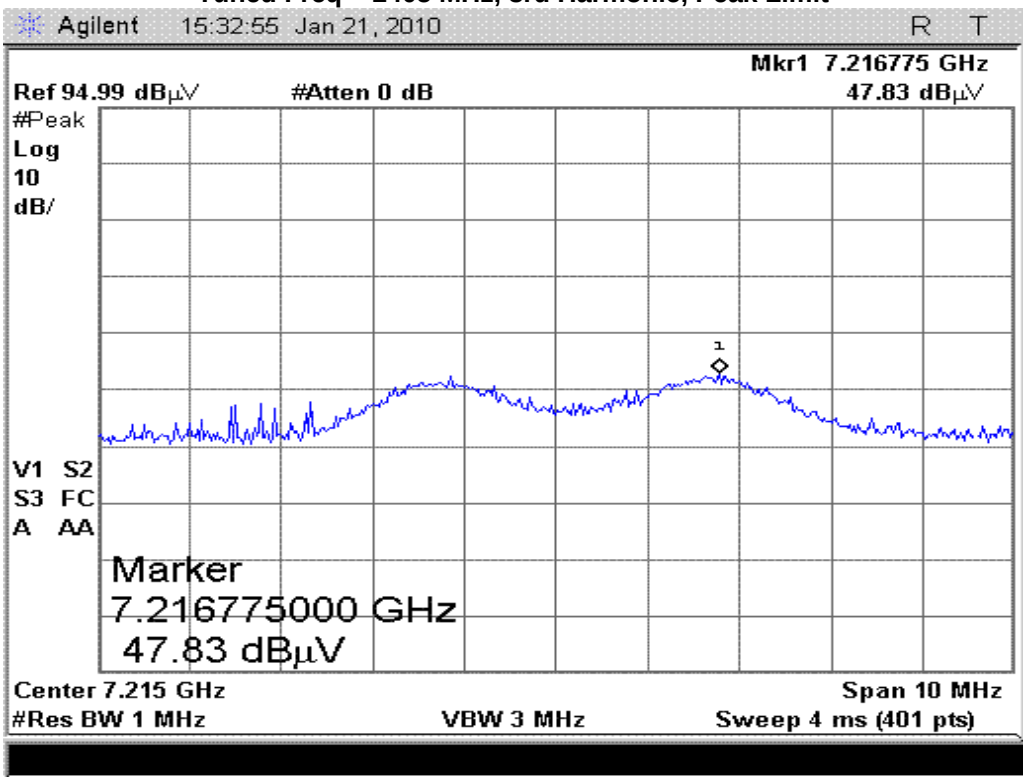
Tuned Freq = 2405 MHz, 2nd Harmonic, Peak Limit



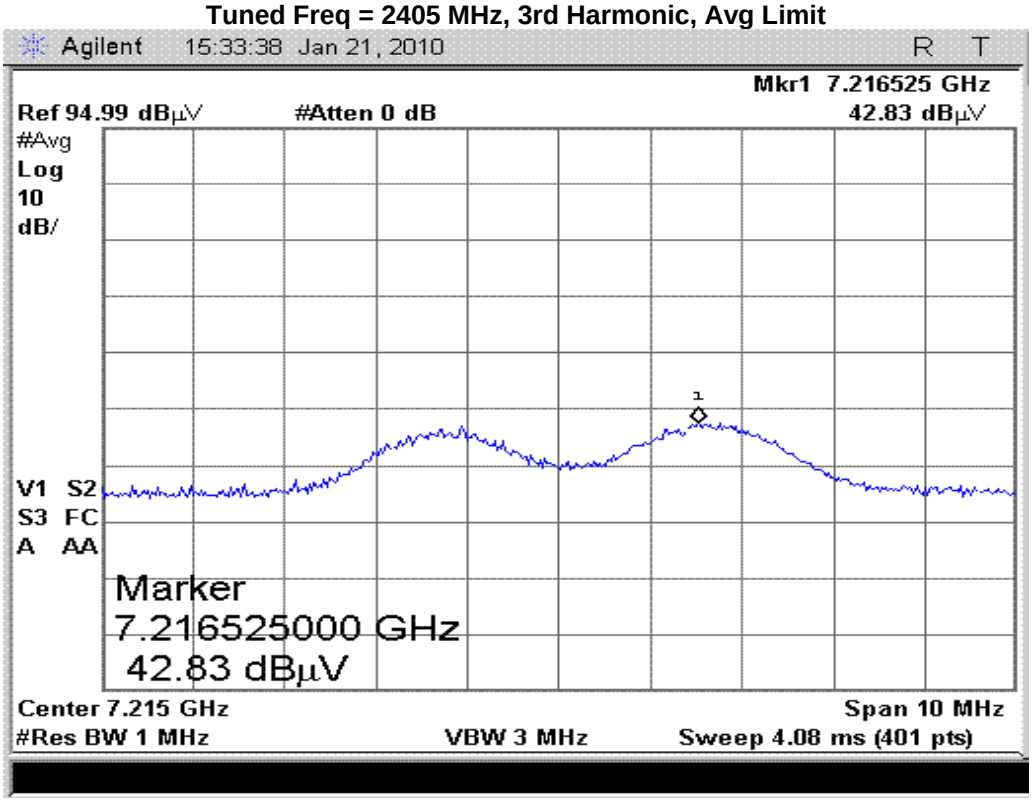
Tuned Freq = 2405 MHz, 2nd Harmonic, Avg Limit



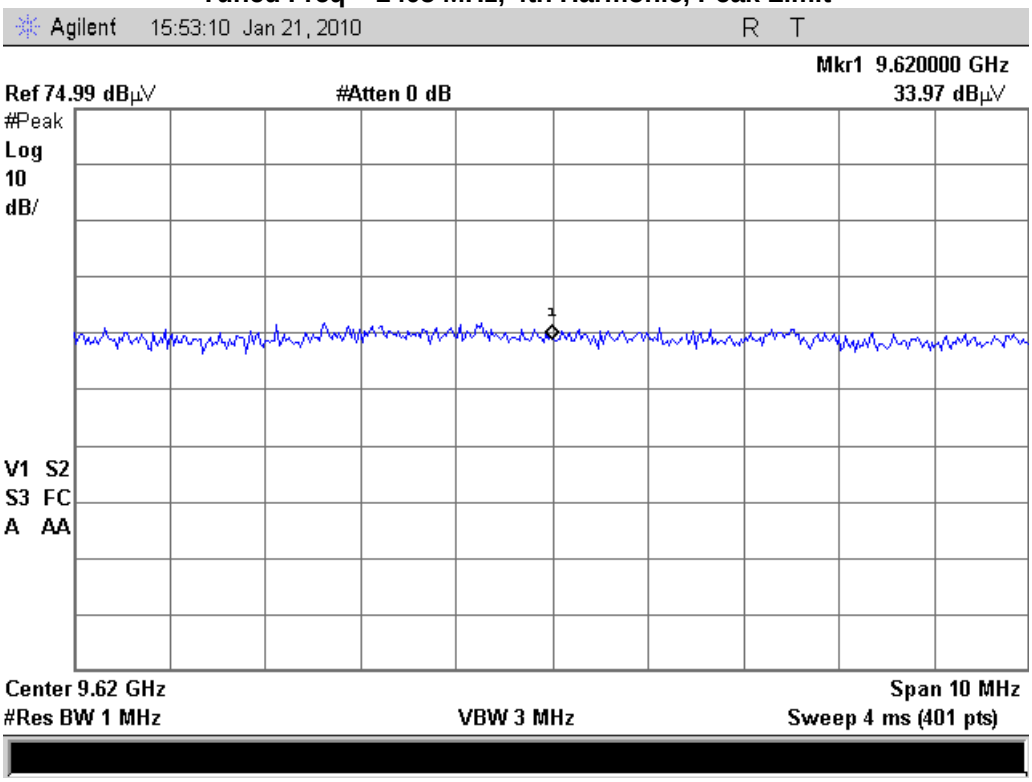
Tuned Freq = 2405 MHz, 3rd Harmonic, Peak Limit



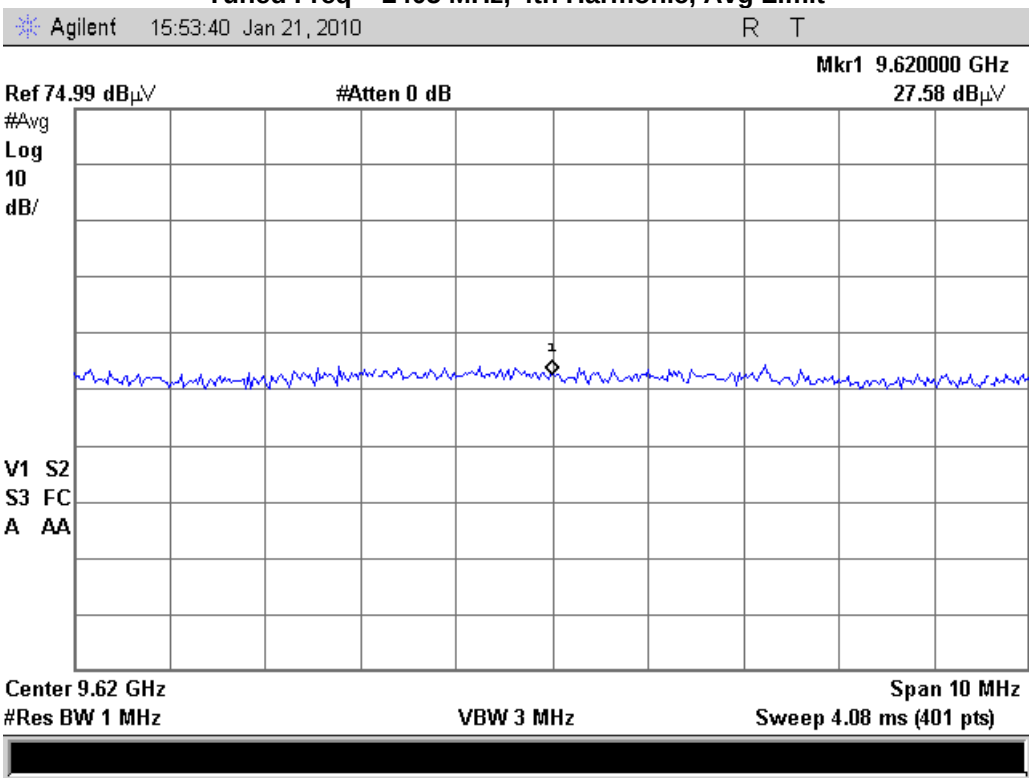
Tuned Freq = 2405 MHz, 3rd Harmonic, Avg Limit



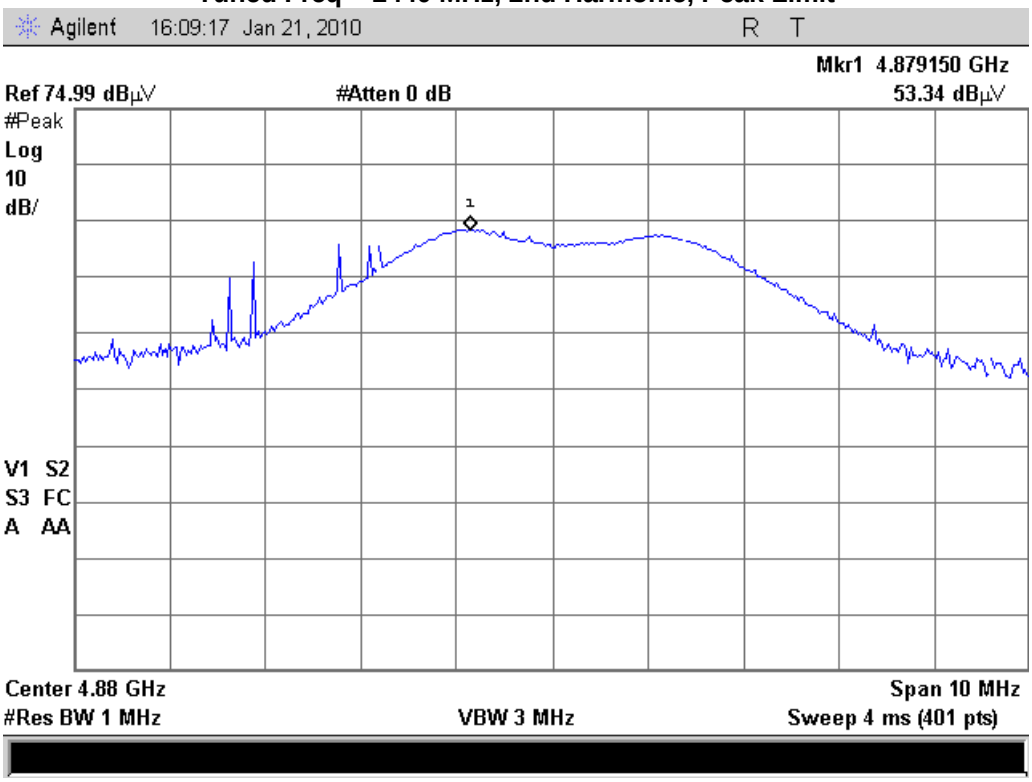
Tuned Freq = 2405 MHz, 4th Harmonic, Peak Limit



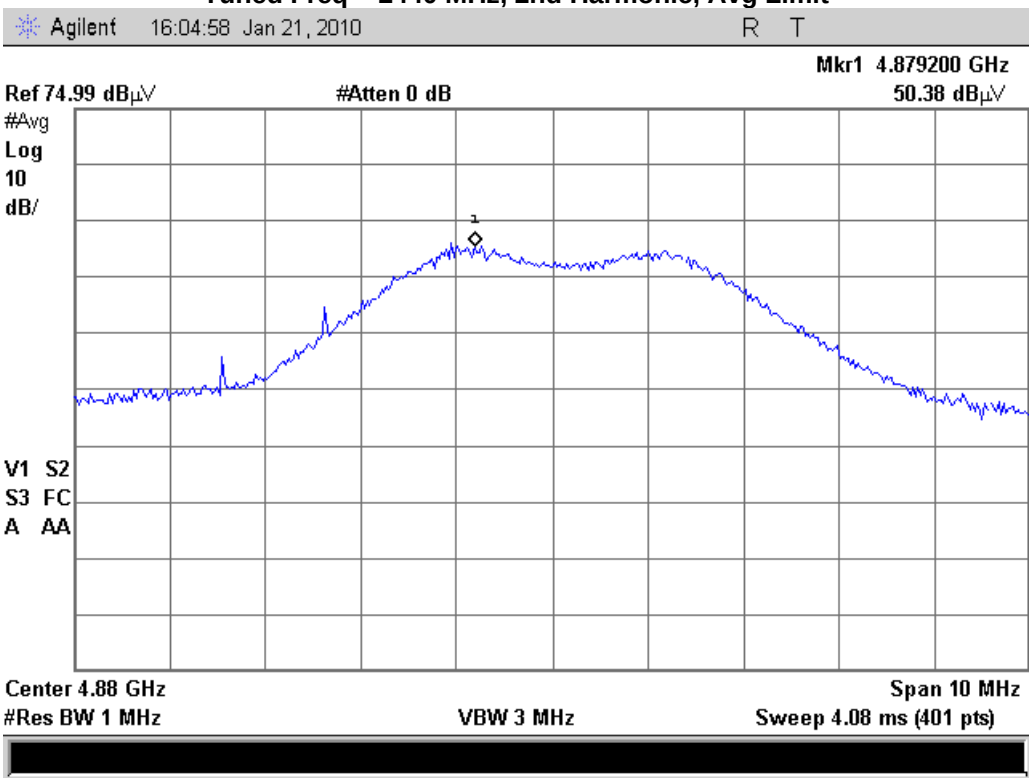
Tuned Freq = 2405 MHz, 4th Harmonic, Avg Limit



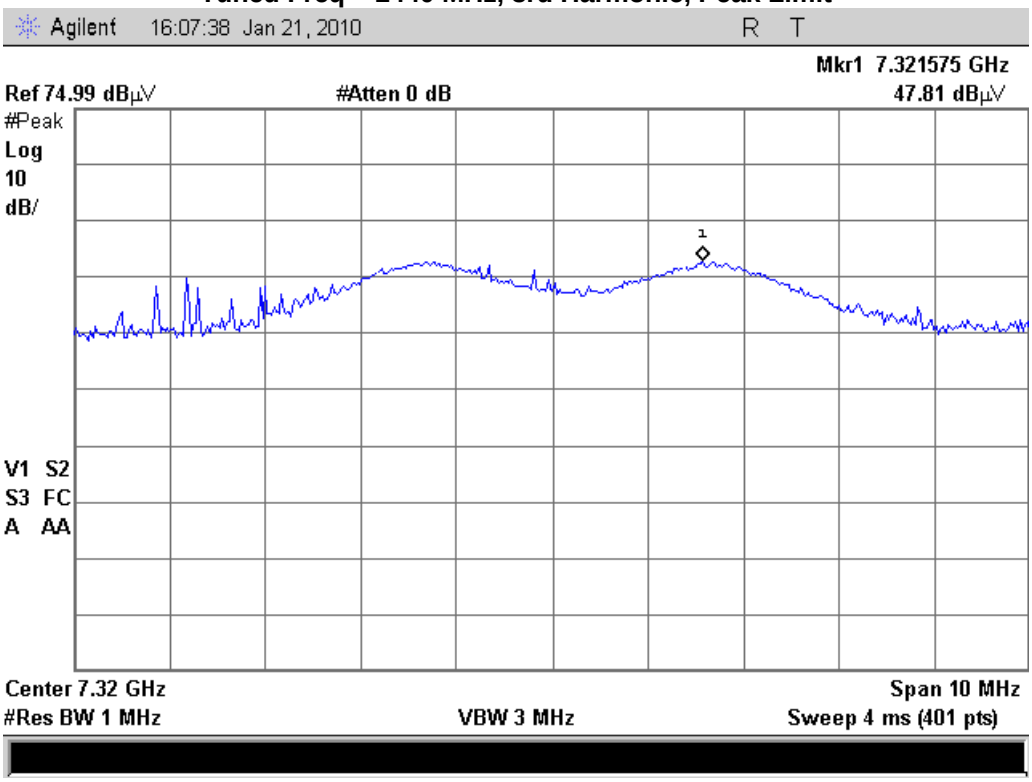
Tuned Freq = 2440 MHz, 2nd Harmonic, Peak Limit



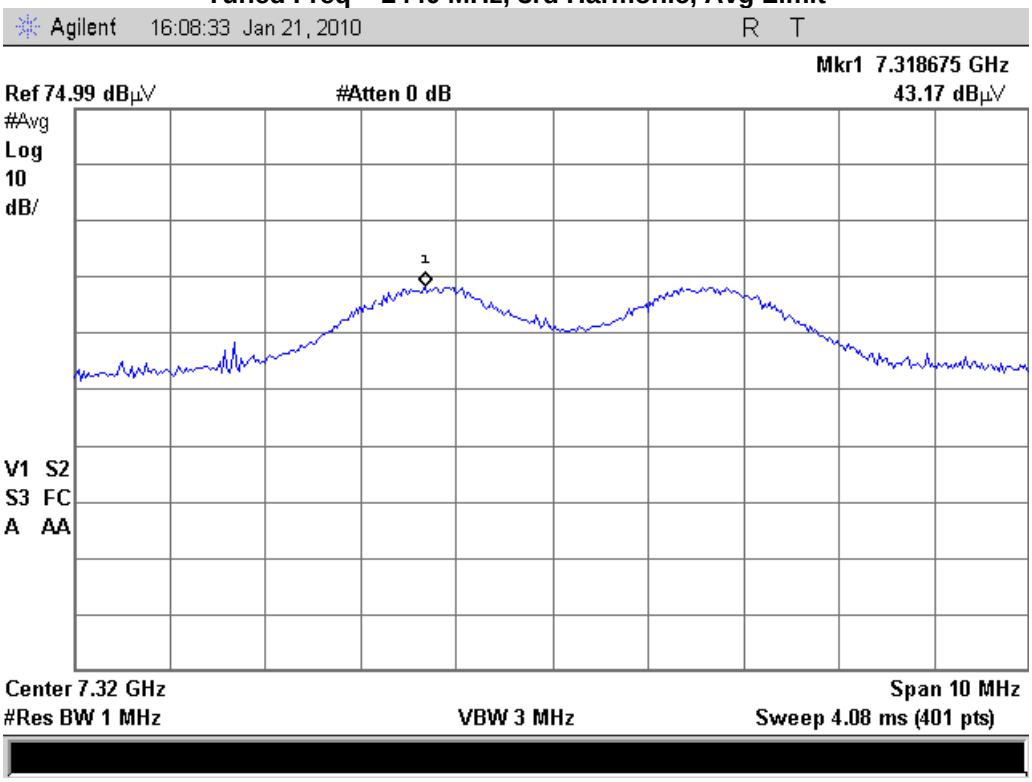
Tuned Freq = 2440 MHz, 2nd Harmonic, Avg Limit



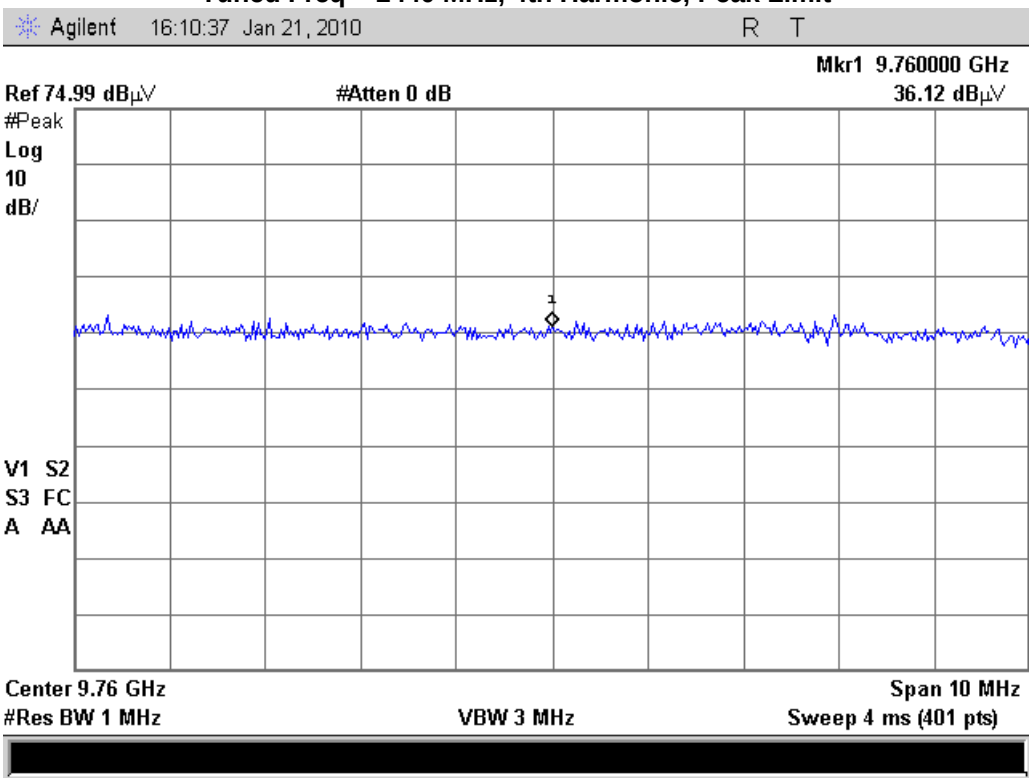
Tuned Freq = 2440 MHz, 3rd Harmonic, Peak Limit



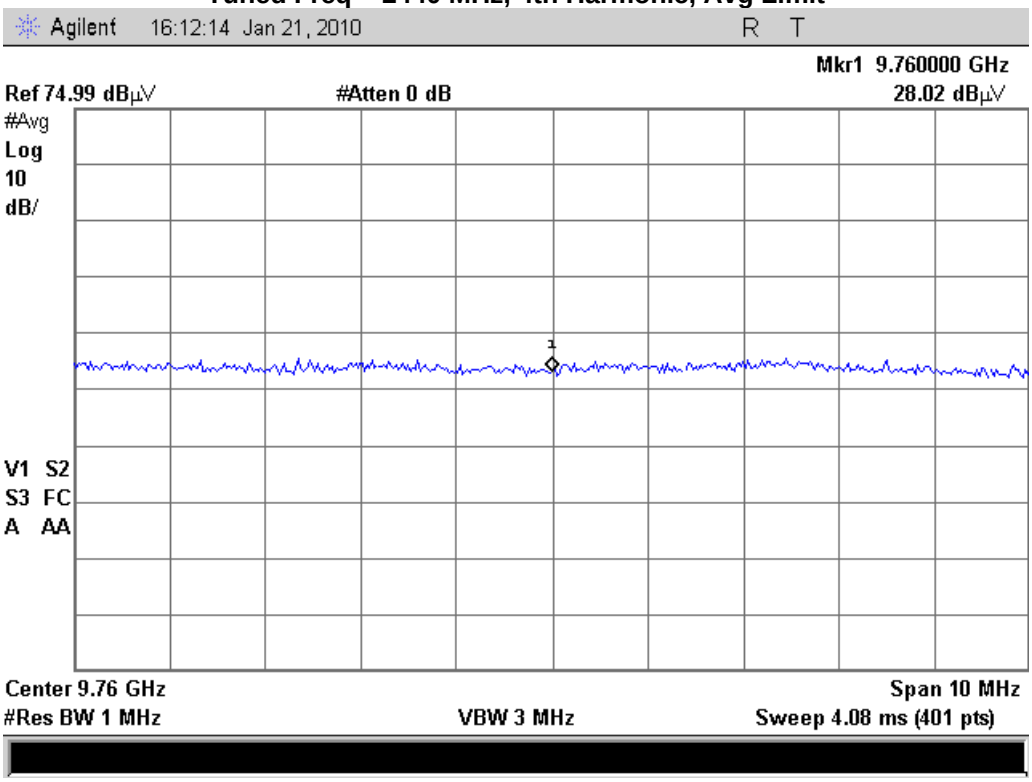
Tuned Freq = 2440 MHz, 3rd Harmonic, Avg Limit



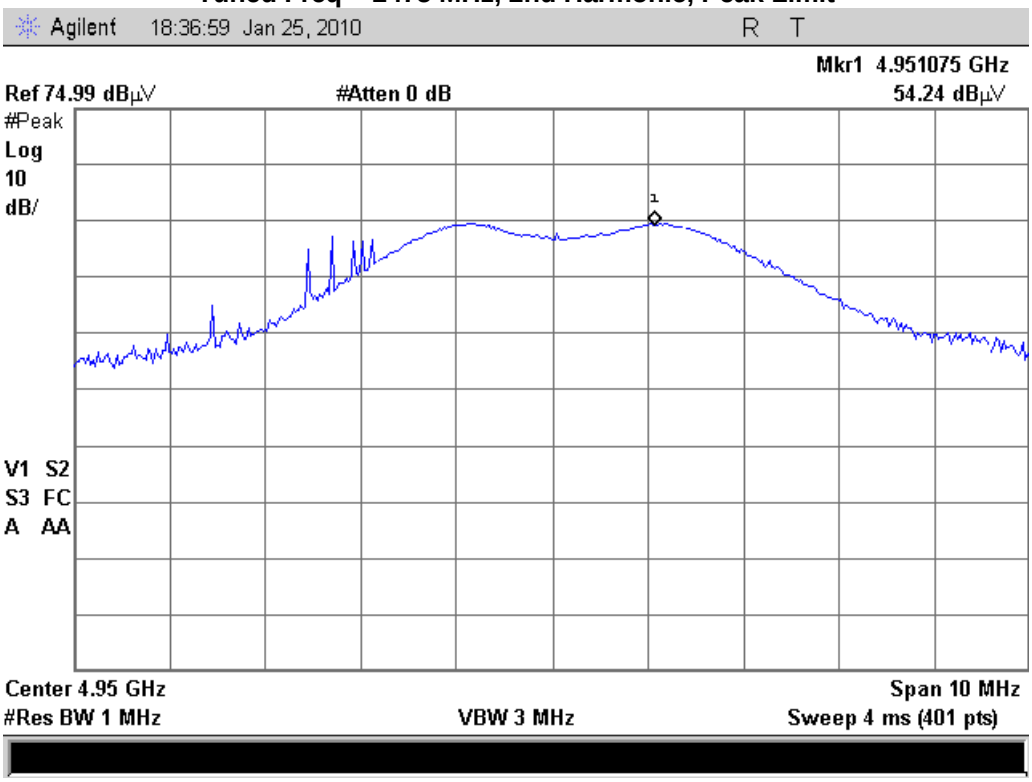
Tuned Freq = 2440 MHz, 4th Harmonic, Peak Limit



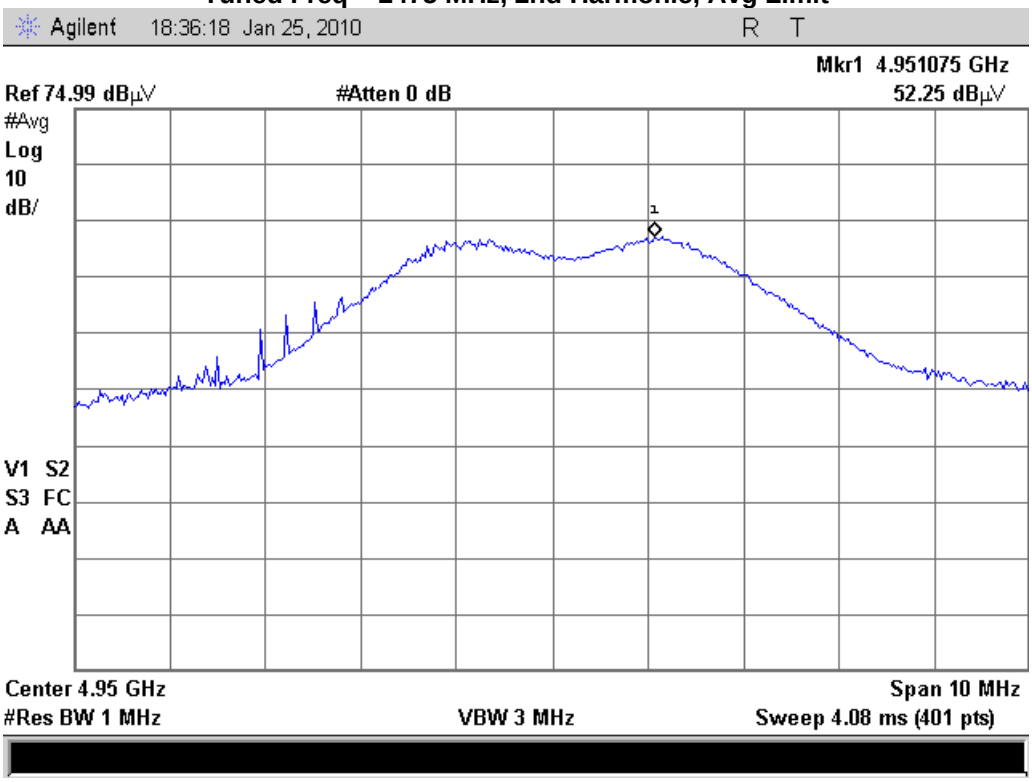
Tuned Freq = 2440 MHz, 4th Harmonic, Avg Limit



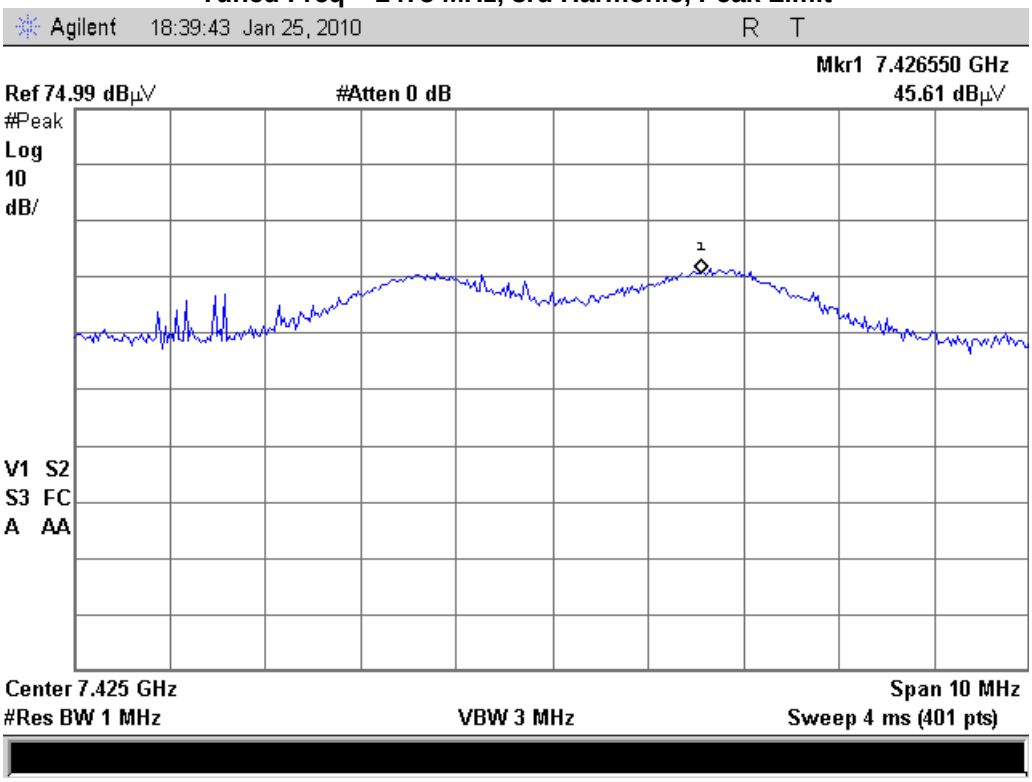
Tuned Freq = 2475 MHz, 2nd Harmonic, Peak Limit



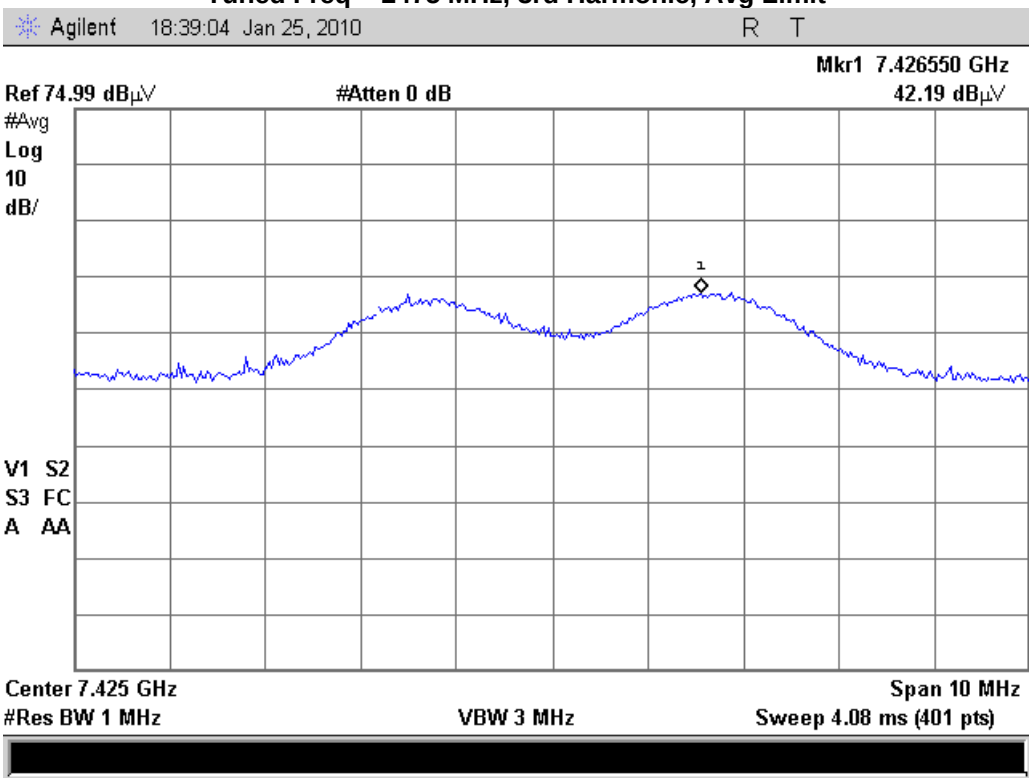
Tuned Freq = 2475 MHz, 2nd Harmonic, Avg Limit



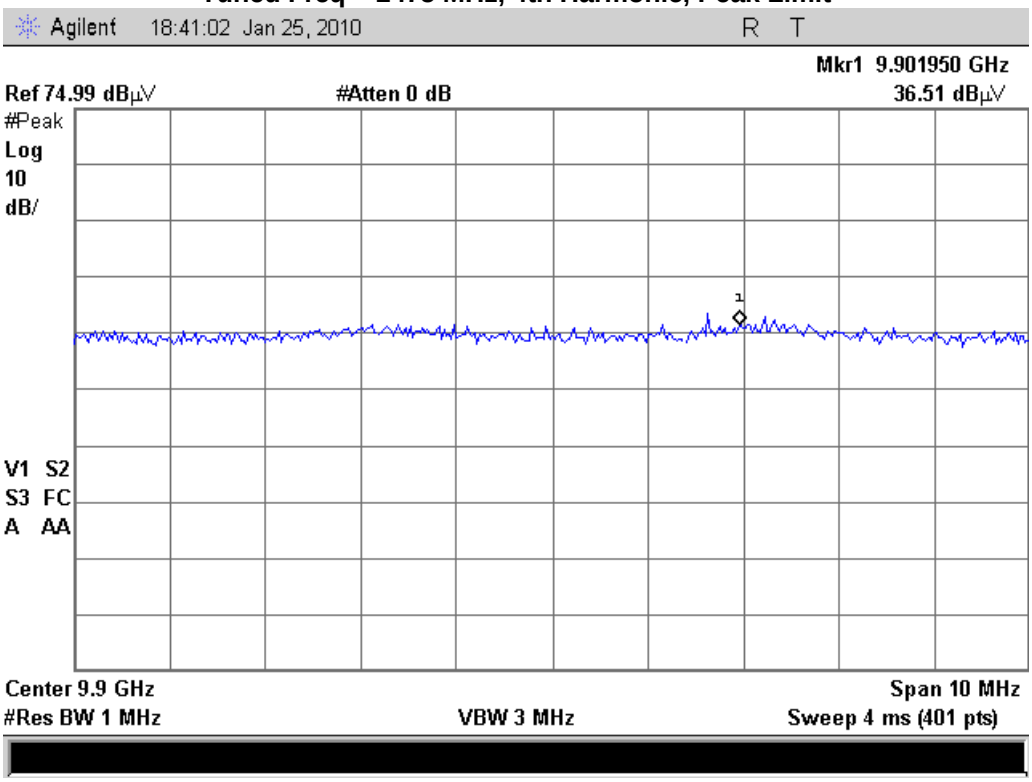
Tuned Freq = 2475 MHz, 3rd Harmonic, Peak Limit



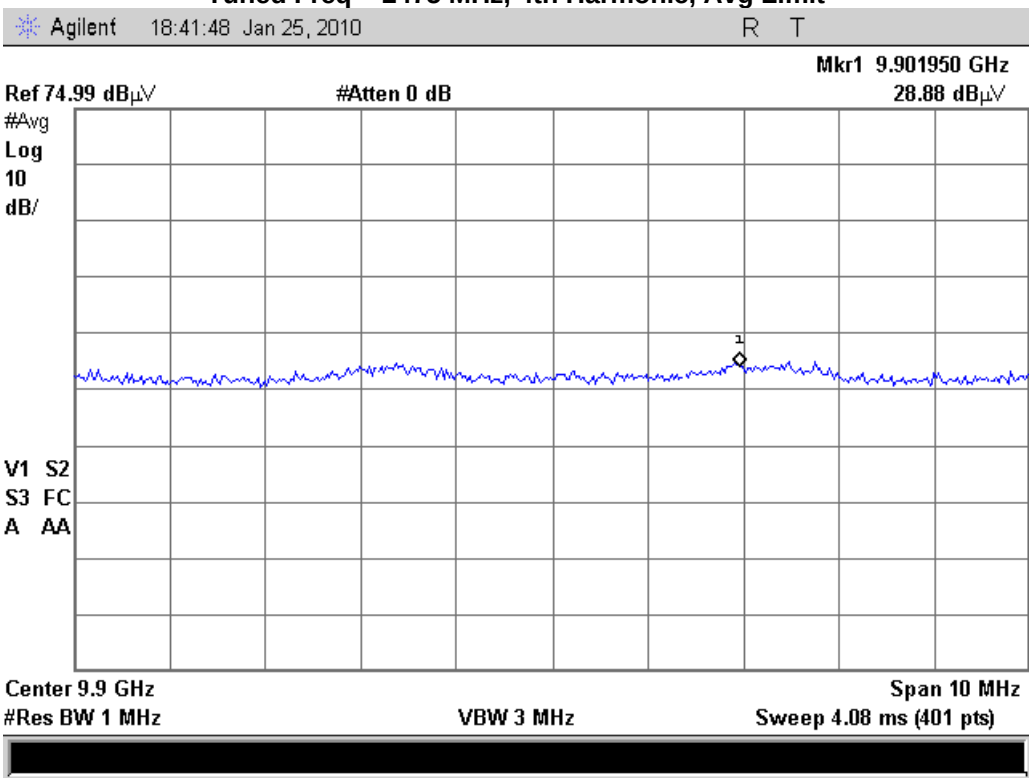
Tuned Freq = 2475 MHz, 3rd Harmonic, Avg Limit



Tuned Freq = 2475 MHz, 4th Harmonic, Peak Limit



Tuned Freq = 2475 MHz, 4th Harmonic, Avg Limit



Name of Test: Receiver Spurious Emissions
Specification: RSS Gen 6(a) **Engineer: G. Corbin**
Test Equipment Utilized: i00028, i00033, i00103, i00331, i00349 **Test Date: 1/22/2010**

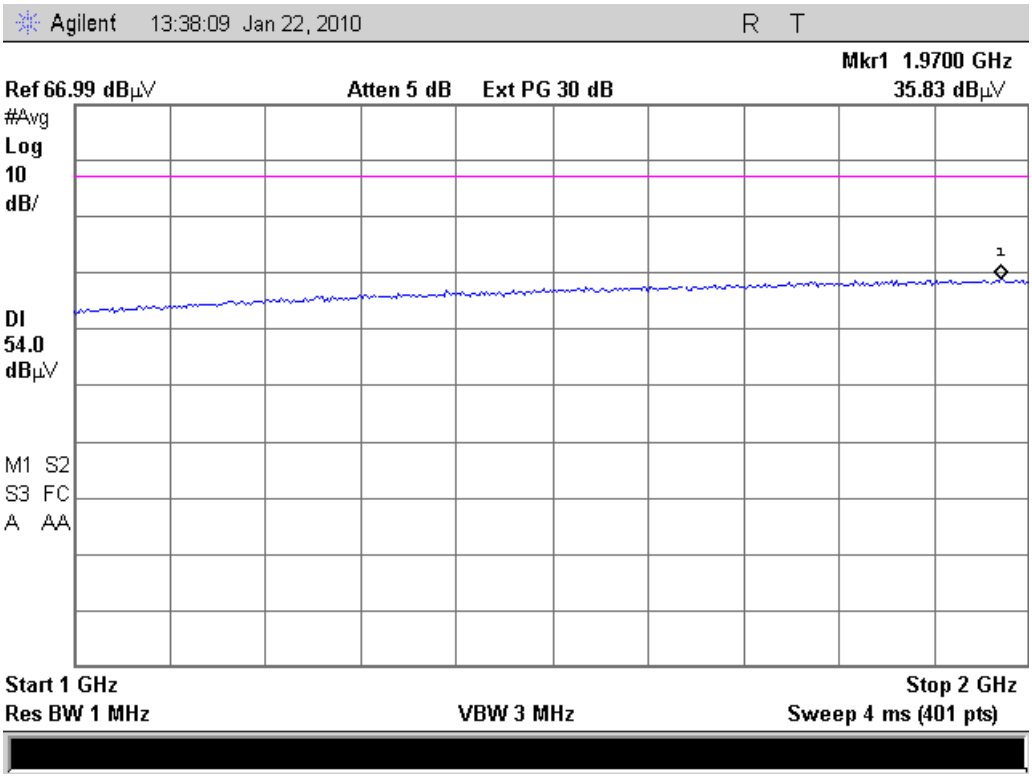
Test Procedure

The EUT could not be modified for conducted measurements per the manufacturer.
From 30 MHz to 1 GHz, Receiver Spurious measurements were performed on an OATS using a spectrum analyzer with a quasi-peak detector and the associated bandwidth.
From 1 GHz to 7.5 GHz the EUT was placed in a semi-anechoic chamber and the Receiver Spurious was measured with an average detector and a 1 MHz resolution bandwidth..
RSS Gen specification limits are in uV/m. The Limits were converted from uV/m to dBuV/m to match the recorded measurements on the supplied graphs.
dBuV/m = 20*LOG(uV/m)

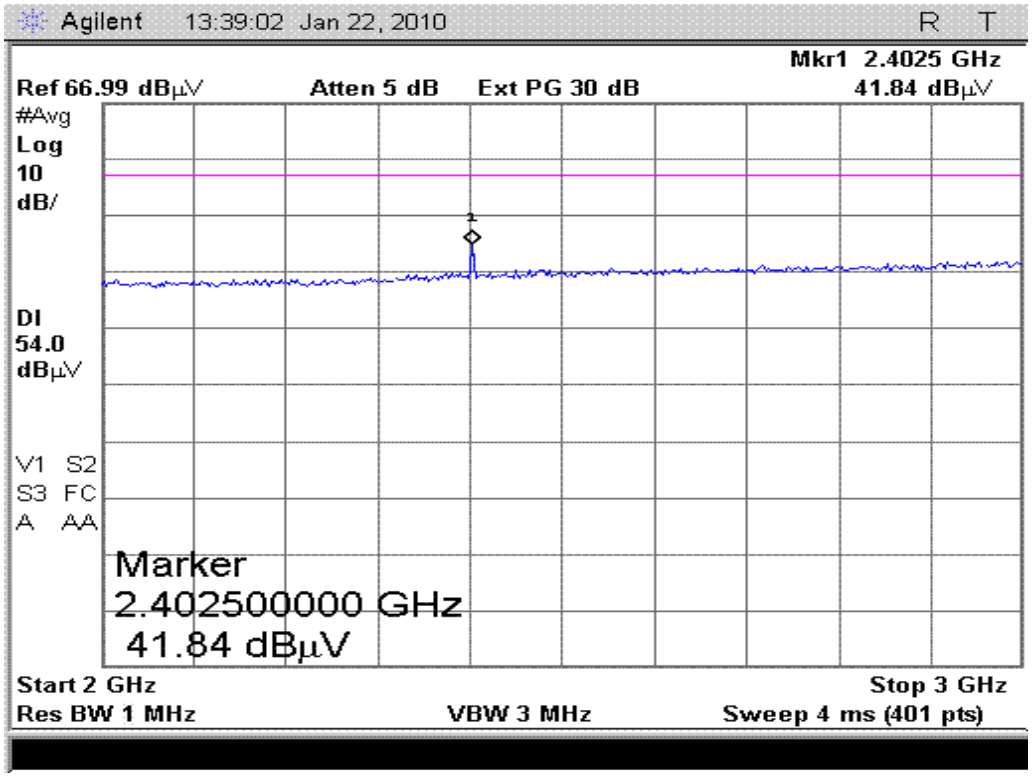
Receiver Spurious Emissions Summary Test Table

Measurement Range	Spurious Frequency MHz	Measured Spurious Level dBuV/m	Specification Limit dBuV/m	Result
30 - 1000	140.25	27.6	43.5	Pass
30 - 1000	666.7	37.4	46	Pass
1000 - 2000	1970	35.8	54	Pass
2000 - 3000	2402.5	41.8	54	Pass
3000 - 4000	3995	41.1	54	Pass
4000 - 5000	4610	40.8	54	Pass
5000 - 6000	5747.5	41.0	54	Pass
6000 - 7450	7363	42.0	54	Pass

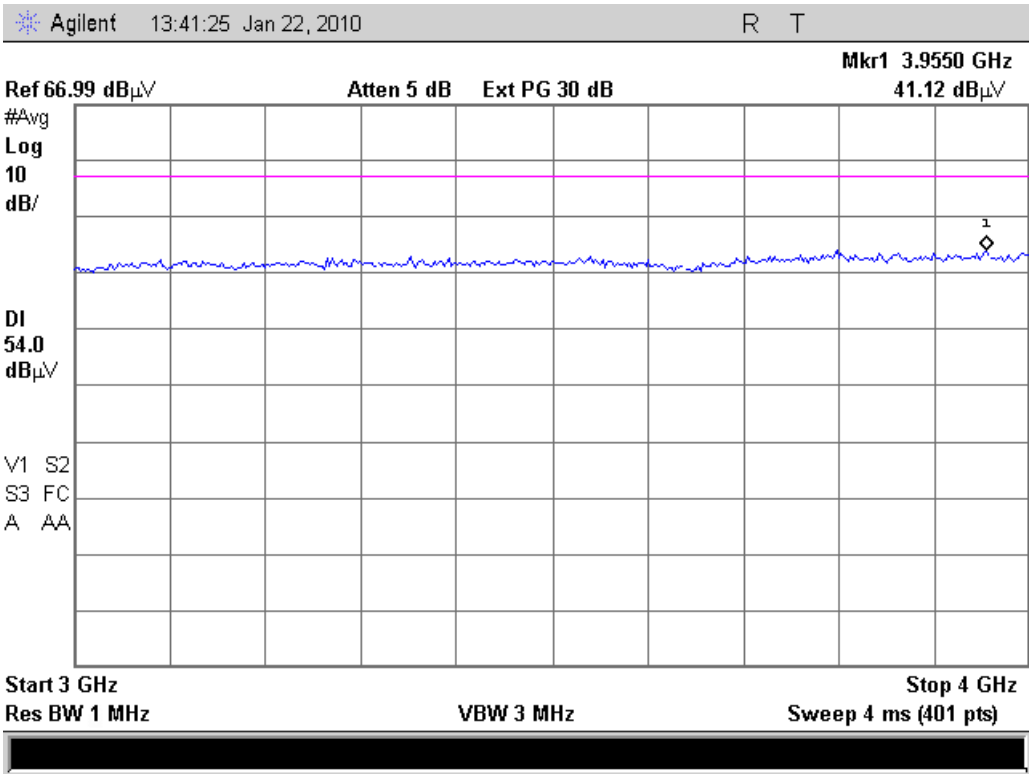
Receiver Spurious
1 – 2 GHz



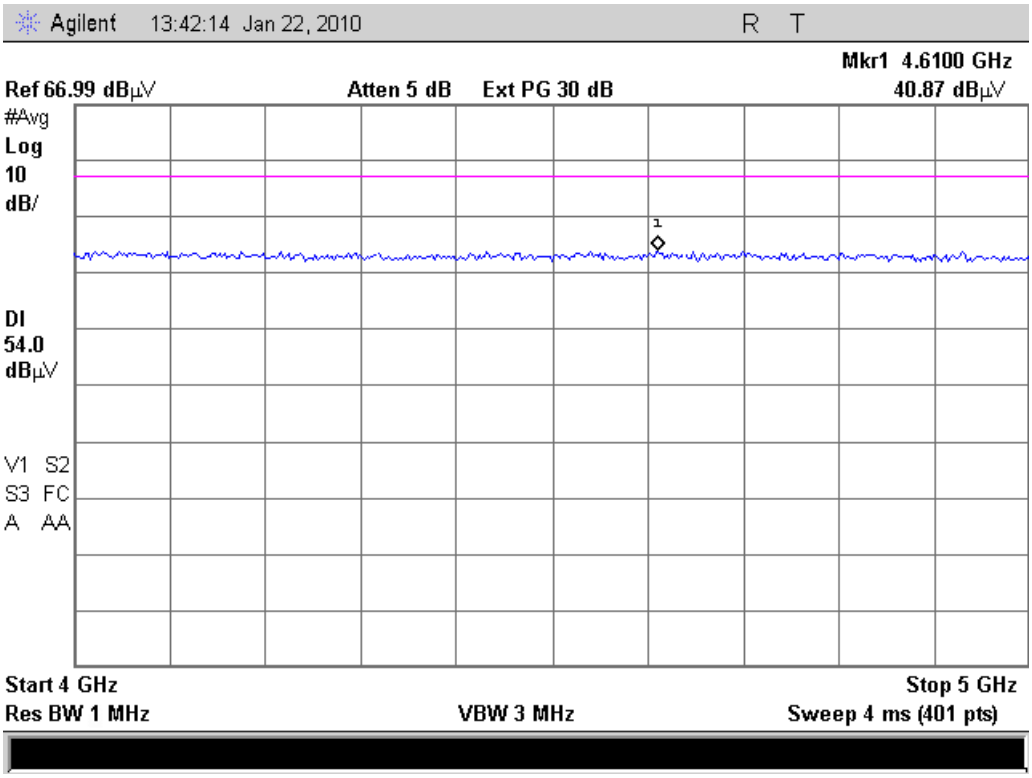
Receiver Spurious
2 – 3 GHz



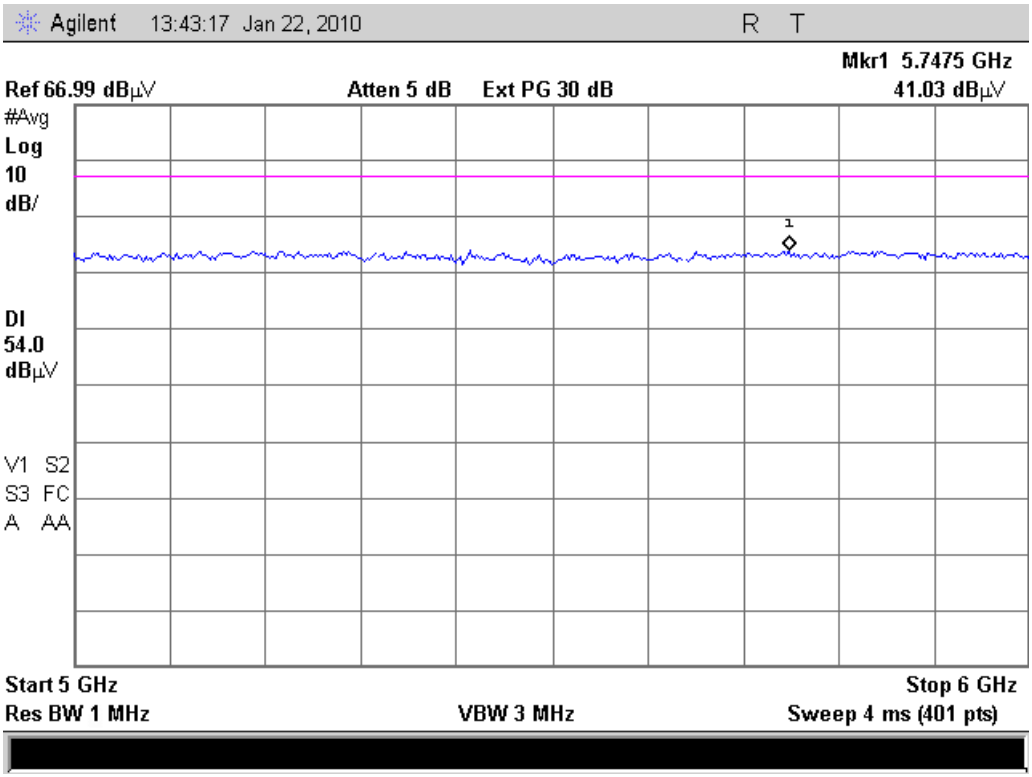
Receiver Spurious
3 – 4 GHz



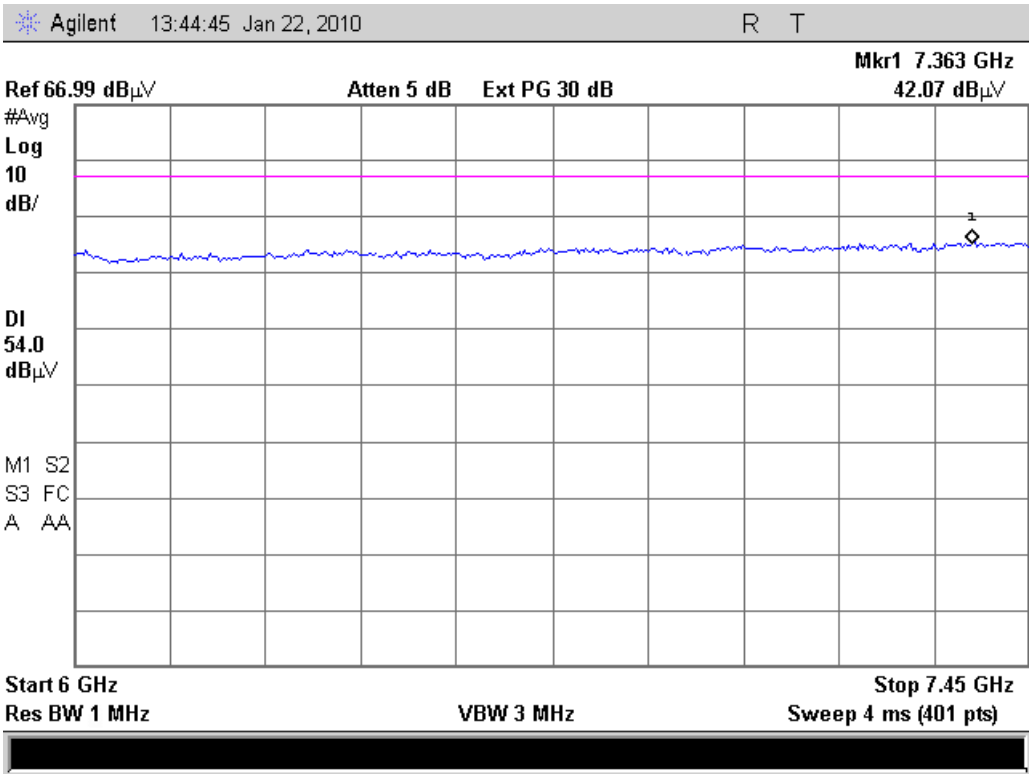
Receiver Spurious
4 – 5 GHz



Receiver Spurious
5 – 6 GHz



Receiver Spurious
6 – 7.45 GHz

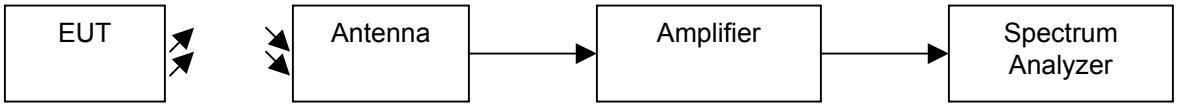


Name of Test: Emissions At Band Edges
Specification: 15.247(d), 15.209(a), 15.205 **Engineer: G. Corbin**
Test Equipment Utilized i00028, i00103, i00331 **Test Date: 1/21/2010**

Test Procedure

The EUT was tested in a semi-anechoic chamber set 3m from the receiving transducer. A spectrum analyzer was used to verify that the EUT met the requirements for band edge with both peak and average measurements. The cable and transducer correction factors were input into the analyzer as a reference level offset to ensure accurate readings were obtained.

Test Setup



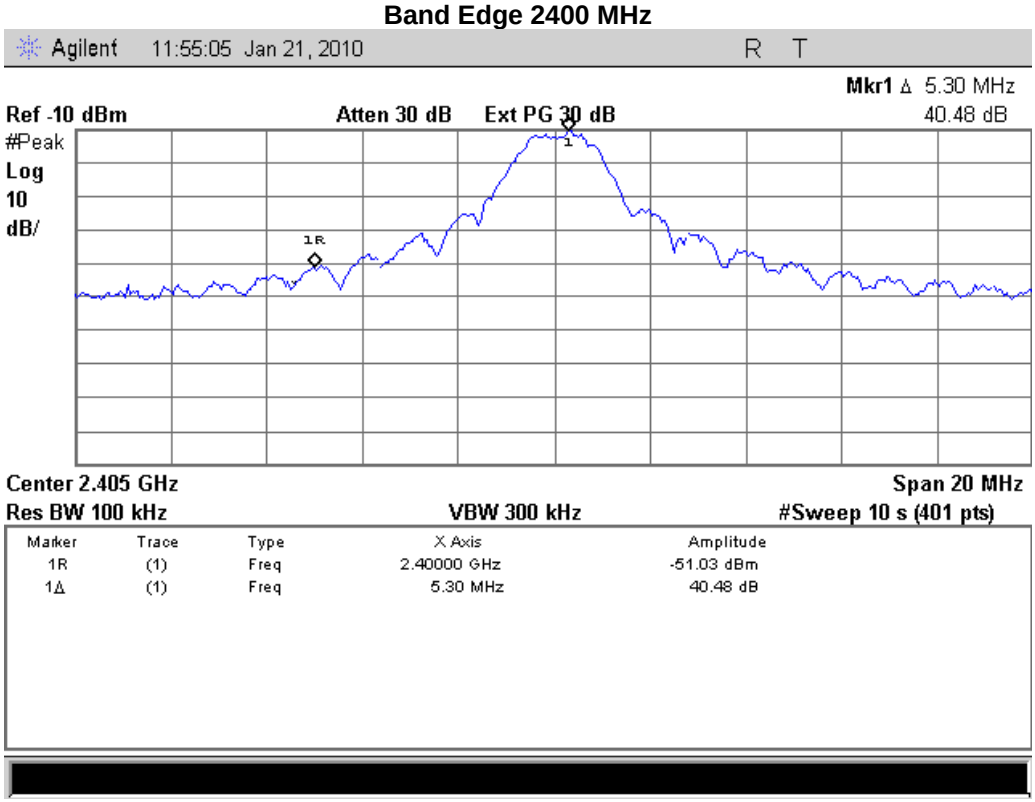
Band Edge Emissions Summary

Tuned Freq (MHz)	Emission Freq (MHz)	Monitored Level	Detector	Limit	Result
2405	2400	-40.4 dBc	Peak	-20 dBc	Pass
2475	2483.5	-48.2 dBc	Peak	-20 dBc	Pass

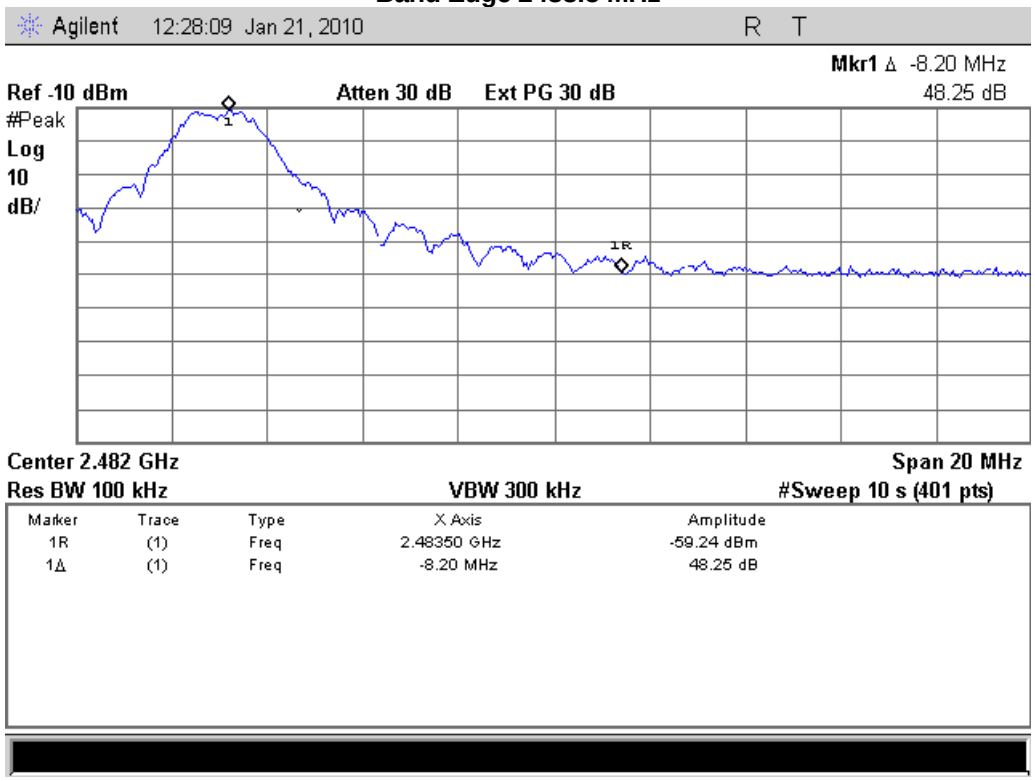
Restricted Band Emissions Summary

Tuned Freq (MHz)	Emission Freq (MHz)	Monitored Level (dBuV/m)	Detector	Limit (dBuV/m)	Result
2405	2390	49.2	Avg	54	Pass
2405	2390	65.6	Peak	74	Pass
2475	2483.5	52.9	Avg	54	Pass
2475	2483.5	60.5	Peak	74	Pass

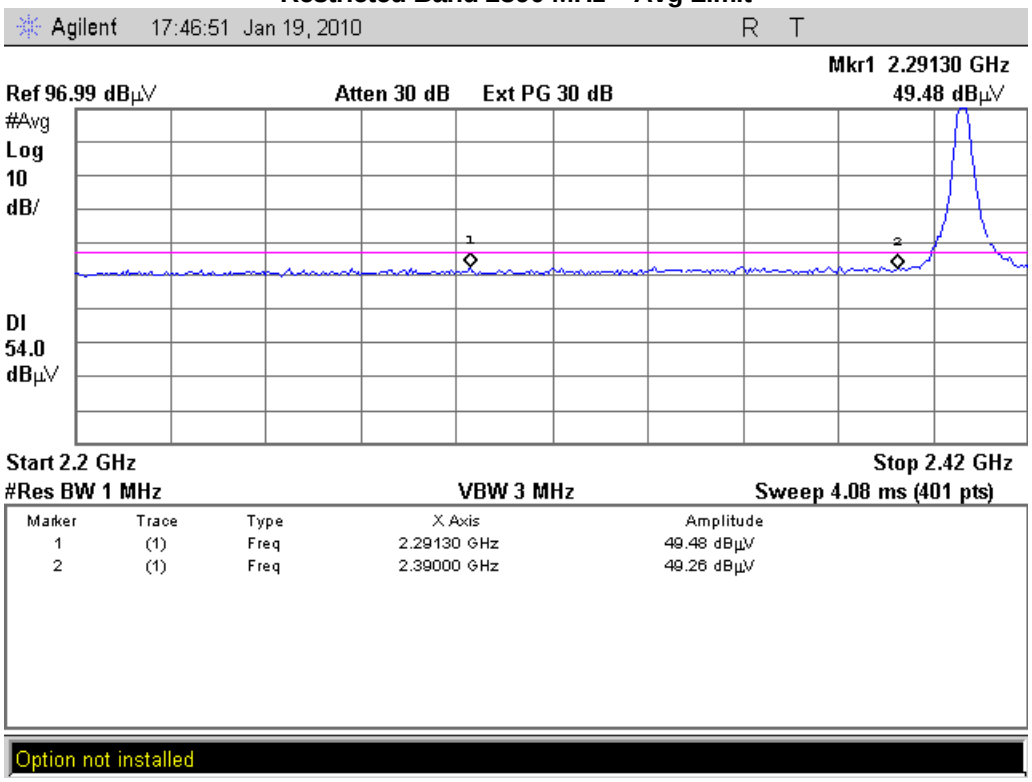
Band Edge 2400 MHz



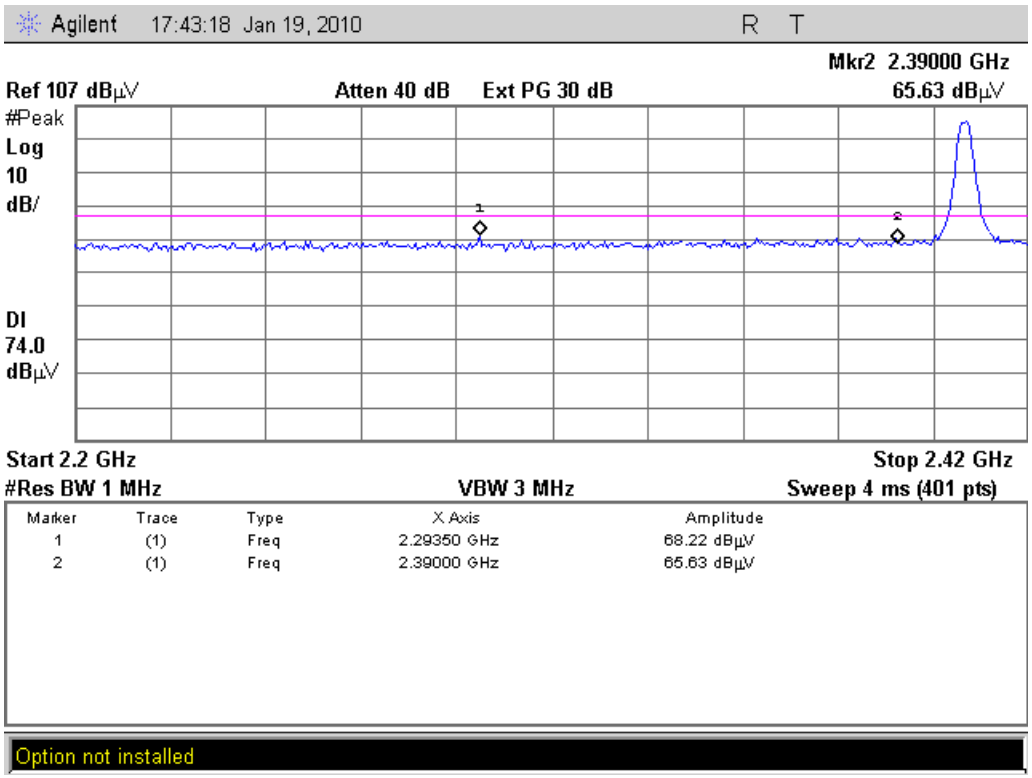
Band Edge 2483.5 MHz



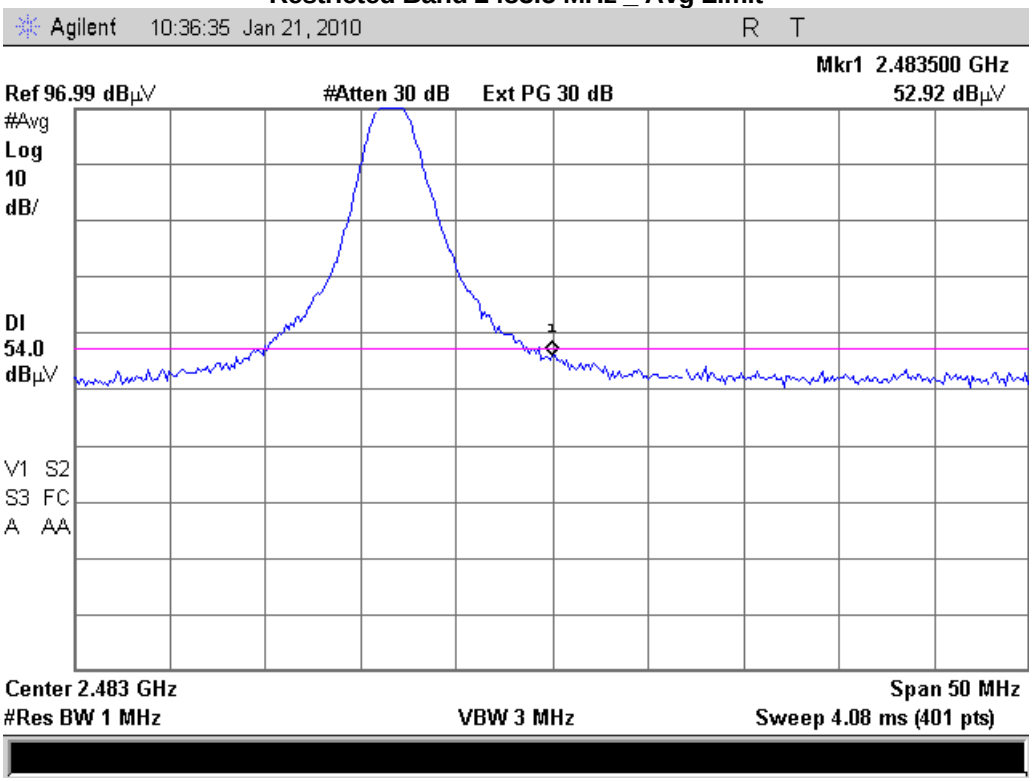
Restricted Band 2390 MHz – Avg Limit



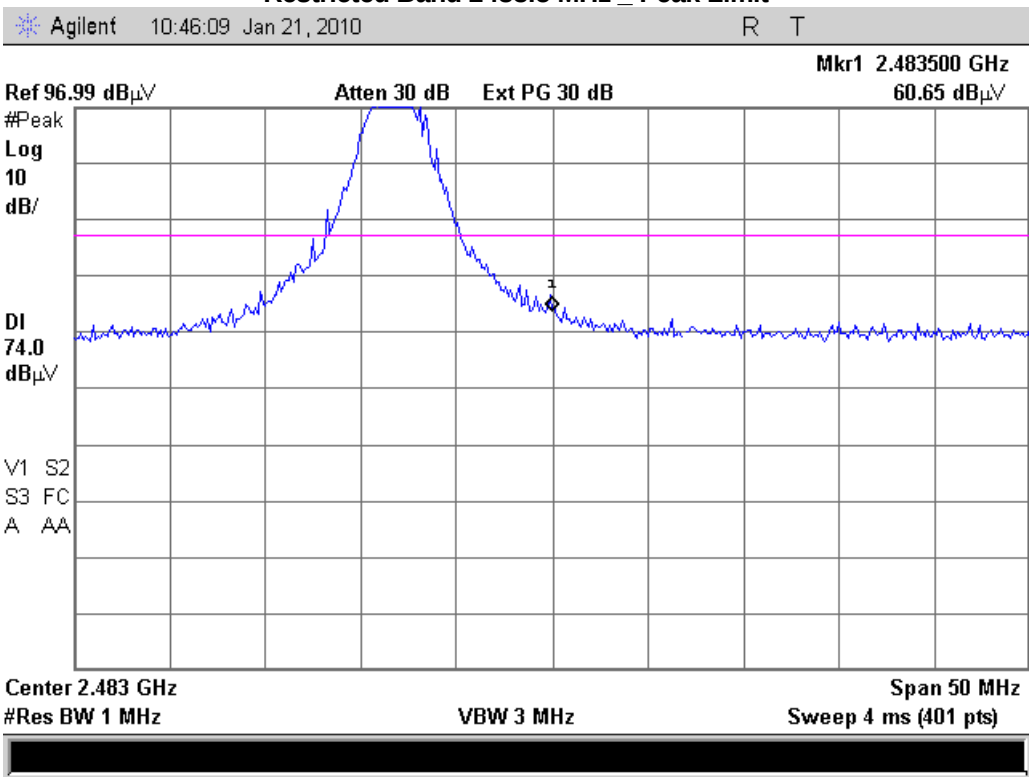
Restricted Band 2390 MHz – Peak Limit



Restricted Band 2483.5 MHz _ Avg Limit



Restricted Band 2483.5 MHz _ Peak Limit

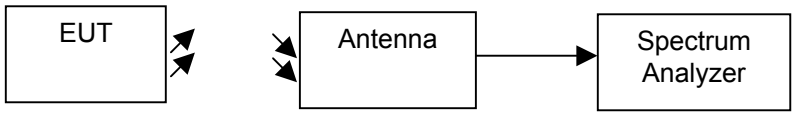


Name of Test: Occupied Bandwidth
Specification: 15.247(a)(2) **Engineer: G. Corbin**
Test Equipment Utilized i00103, i00331 **Test Date: 1/21/2010**

Test Procedure

The EUT was placed in a semi-anechoic chamber and the Occupied Bandwidth was measured radiated. The Span was set wide enough to capture the entire transmit spectrum and the resolution bandwidth was set to at least 1% of the span. The analyzer was set to max hold and when the entire spectrum was captured the 6dB and 99% bandwidths were measured to verify the bandwidth met the specification.

Test Setup



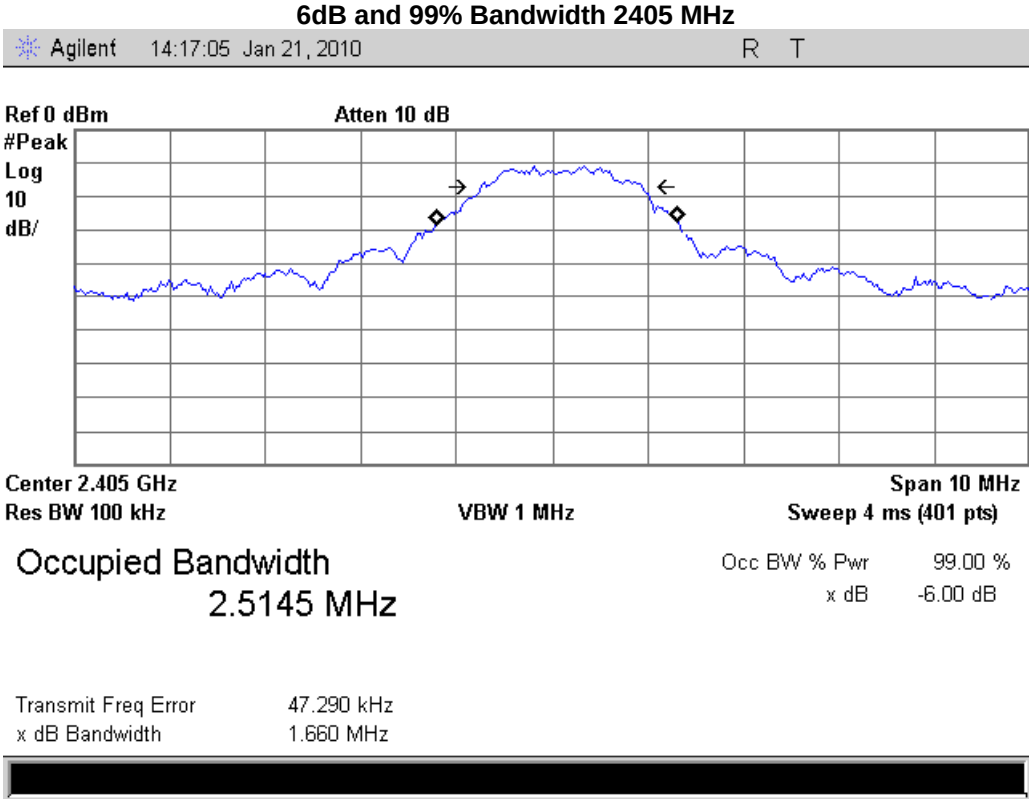
Occupied Bandwidth Summary

Frequency MHz	Recorded Measurement	Specification Limit	Result
2405	1.660 MHz	≥ 500 KHz	Pass
2440	1.627 MHz	≥ 500 KHz	Pass
2475	1.657 MHz	≥ 500 KHz	Pass

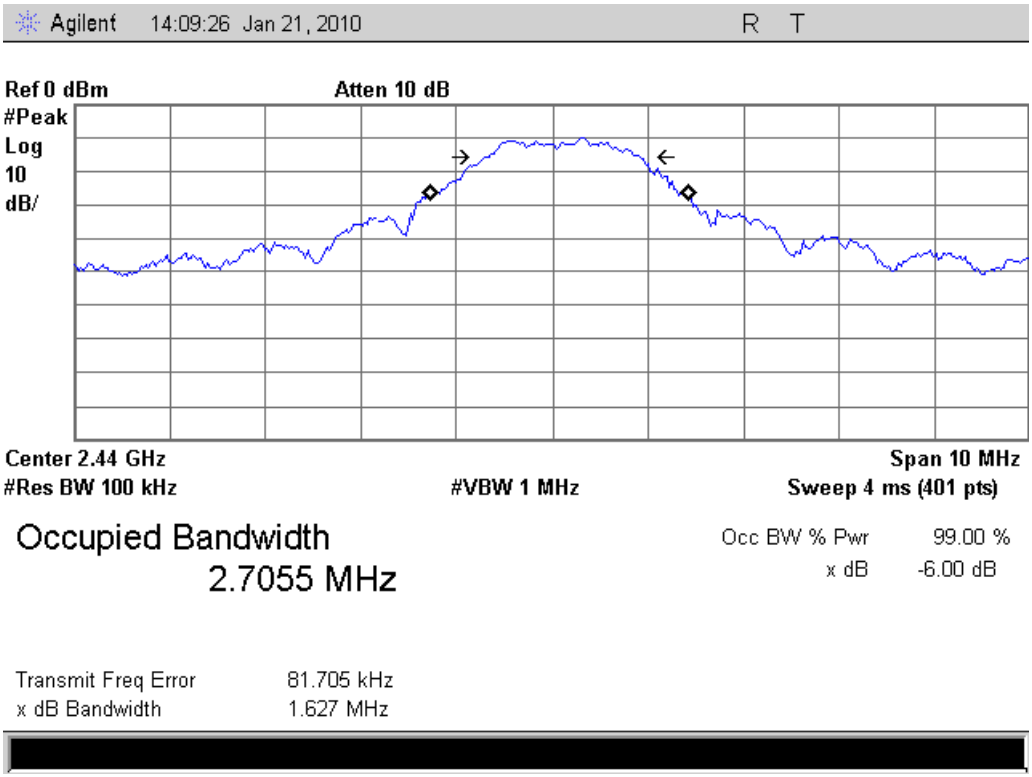
99% Bandwidth Summary

Frequency MHz	Recorded Measurement	Result
2405	2.5145 MHz	Pass
2440	2.7055 MHz	Pass
2475	2.9056 MHz	Pass

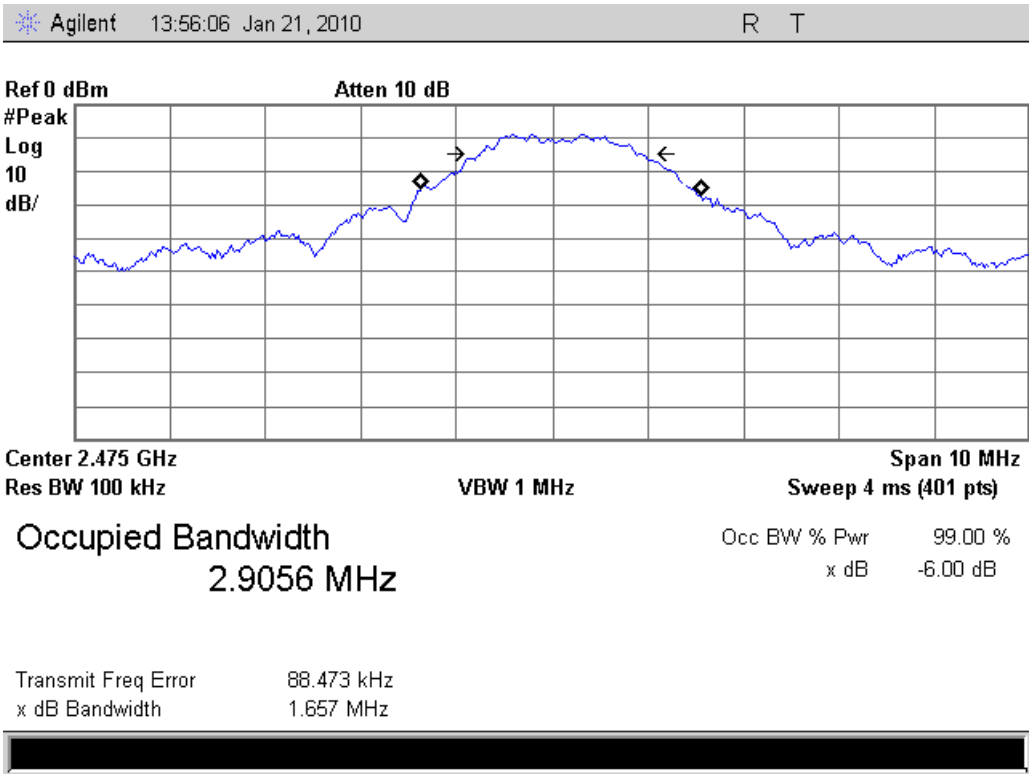
6dB and 99% Bandwidth 2405 MHz



6dB and 99% Bandwidth 2440 MHz



6dB and 99% Bandwidth 2475 MHz



Name of Test: Transmitter Power Spectral Density (PSD)
Specification: 15.247(e) **Engineer: G. Corbin**
Test Equipment Utilized i00103, i00331 **Test Date: 1/19/2010**

Test Procedure

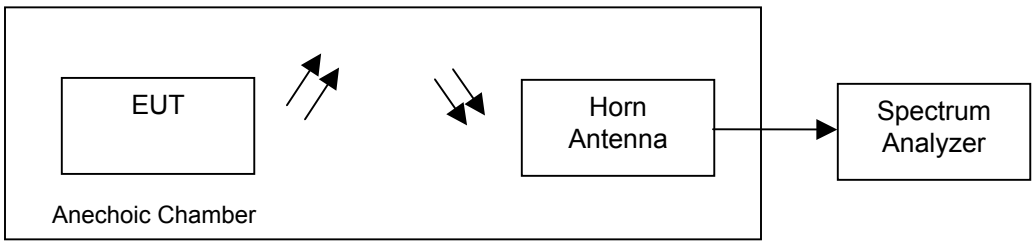
The EUT could not be modified for conducted measurements per the manufacturer.
The EUT was placed in an anechoic chamber and the Power Spectral Density was measured radiated per the FCC Guidelines " Measurement of DTS Operating under Section 15.247" dated March 23, 2005.
The Power Spectral Density was then calculated per the FCC formula provided in the guidelines mentioned above under Alternative Test Procedures.
The calculated Power spectral Density was then compared to the limit.

P=(E x d) squared / (30 x G)

P = power in watts
E = the measured maximum field strength in V/m
G = the numeric gain of the transmitting antenna over an isotropic radiator
d = the distance in meters from which the field strength was measured

G = 1.41 (based on 1.5 dBi antenna gain from the manufacturer)
d = 3

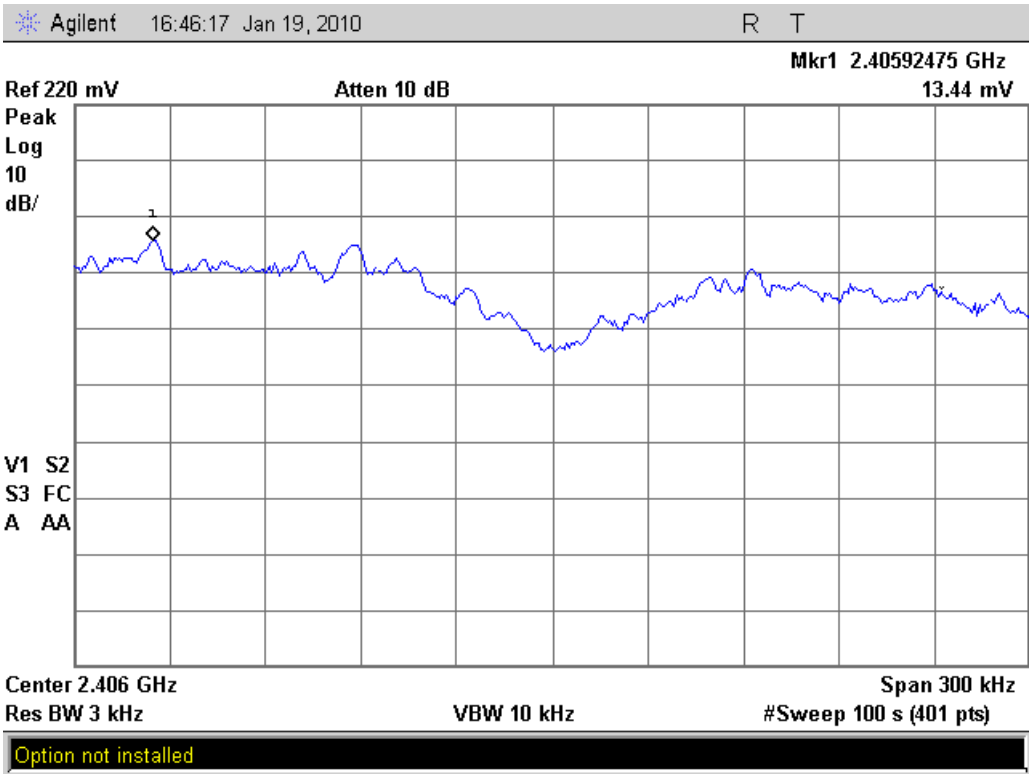
Test Setup



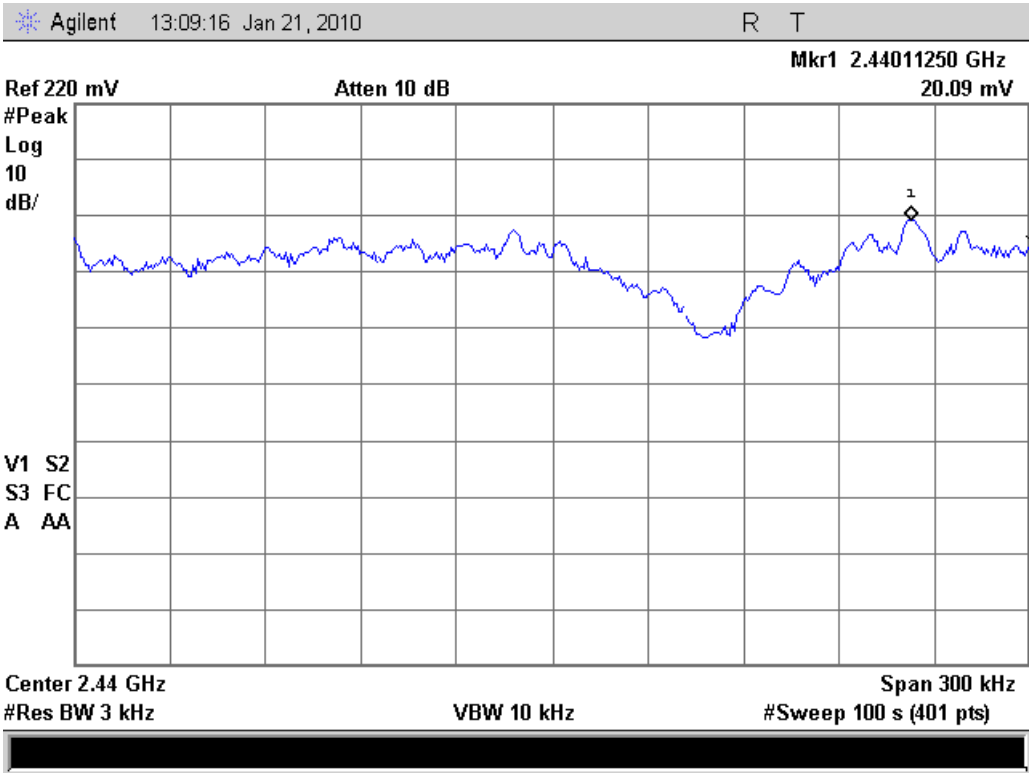
PSD Summary

Tuned Frequency MHz	Measured Peak Emission V/m	Calculated Power Spectral Density	Specification Limit	Result
2405	.01344	0.0384 mw	8 dBm (6.3 mw)	Pass
2440	.02009	0.0858 mw	8 dBm (6.3 mw)	Pass
2475	.02199	0.1028 mw	8 dBm (6.3 mw)	Pass

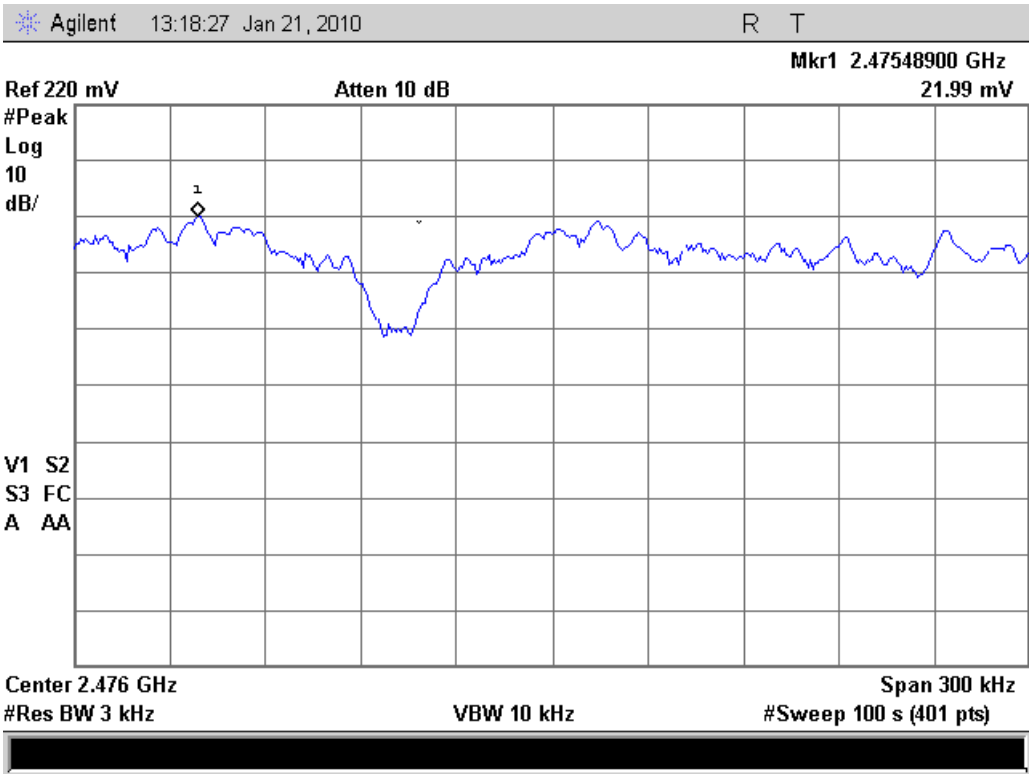
Measured Peak Emission - 2405 MHz



Measured Peak Emission - 2440 MHz



Measured Peak Emission - 2475 MHz



Name of Test: A/C Powerline Conducted Emissions
Specification: 15.207 **Engineer: G. Corbin**
Test Equipment Utilized N/A **Test Date: N/A**

Not Applicable

DC battery powered device with no connections to the AC mains

Test Equipment Utilized

Description	MFG	Model Number	CT Asset Number	Last Cal Date	Cal Due Date
Preamplifier	HP	8449A	i00028	6/29/2009	6/29/2010
EMI Receiver	HP	8546A	i00033	11/04/2009	11/04/2010
Horn Antenna	EMCO	3115	i00103	11/25/2008	11/25/2010
High pass Filter	Trilithic	4HX3400-3-KK	i00177	NCR	NCR
Horn Antenna	ARA	DRG-118/A	i00271	4/17/2009	4/17/2011
Spectrum Analyzer	Agilent	E4407B	i00331	11/03/09	11/03/2010
Bandpass Filter	Mini-Circuits	VHF3100+	i00337	NCR	NCR
Bi Log Antenna	Schaffner	CBL 6111D	i00349	6/26/2009	6/26/2010

In addition to the above listed equipment standard RF connectors and cables were utilized in the testing of the described equipment. Prior to testing these components were tested to verify proper operation.

END OF TEST REPORT