



Flom Test Labs
EMI, EMC, RF Testing Experts Since 1963

toll-free: (866) 311-3268
fax: (480) 926-3598
<http://www.flomlabs.com>
info@flomlabs.com

Date: January 8, 2008

Federal Communications Commission
Via: Electronic Filing

Attention: Authorization & Evaluation Division

Applicant: Privaris, Inc.
Equipment: plusID 75
FCC ID: THX-CPID03
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,

Hoosamuddin S. Bandukwala, Lab Director

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

Applicant: Privaris, Inc.

FCC ID: THX-CPID03

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 F.T.L. Inc.

- A. Testimonial & Statement of Certification
- B. Statement of Qualifications



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Transmitter Certification

of

FCC ID: THX-CPID03
Model: plusID 75

to

Federal Communications Commission

Rule Part(s) 15.247

Date Of Report: January 8, 2008

On the Behalf of the Applicant: Privaris, Inc.
11208 Waples Mill Road, Suite 103
Fairfax, VA 22030

Attention of: Michael Cherniawski
434-244-4207; fax: 434-293-4033
E-mail: mcherniawski@privaris.com

Supervised By:

Hoosamuddin S. Bandukwala, Lab Director

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.

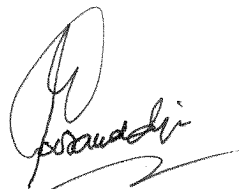
Information detailing any alternative method used to supply the special accessories for a grant of equipment authorization or retained in the verification records, as appropriate. The party responsible for the equipment, as detailed in § 2.909 of this chapter, shall ensure that these special accessories 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.

Certifying Engineer:



Hoosamuddin S. Bandukwala, Lab Director

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Required information per ISO 17025-2005, paragraph 5.10.2:

a) **Test Report**

b) Laboratory: Flom Test Lab, Inc.
(FCC: 31040/SIT) 3356 N. San Marcos Place, Suite 107
(Canada: IC 2044A-1) Chandler, AZ 85225

c) Report Number: d0810003

d) Client: Privaris, Inc.

e) Identification: plusID 75

Description: bluetooth security biometric device

f) EUT Condition: Not required unless specified in individual tests.

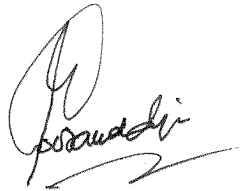
g) Report Date: January 8, 2008
EUT Received:

h, j, k): As indicated in individual tests.

i) Sampling method: No sampling procedure used.

l) Uncertainty: In accordance with FTL internal quality manual.

m) Supervised by:



Hoosamuddin S. Bandukwala, Lab Director

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: Privaris, Inc.

(c)(2): **FCC ID:** THX-CPID03

Model Number: plusID 75

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

Please See Attached Exhibits

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

(c)(5): **FREQUENCY RANGE, MHz:** 2402 to 2480

(c)(6): **Power Rating, W:** 0.000087 W
☐ Switchable ☐ Variable ☒ N/A

(c)(7): **Maximum Power Rating, W:** 1 W

15.203: Antenna Requirement:

- ☒ 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

The unit was tested with a chip antenna with a gain of 2.0 dBi.

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

☒ 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 C63.4-2004, 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 Flom Test Labs, Inc. 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



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	Pass	
15.247(d), 15.209(a), 15.205	Radiated Spurious Emissions	Pass	
15.247(d), 15.209(a), 15.205	Emissions At Band Edges	Pass	
15.247(a)	Occupied Bandwidth	Pass	
15.247(a)	Channel Spacing	Pass	
15.247(a)	Dwell Time	Pass	
15.247(a)	Number of Hopping Channels	Pass	
15.207	A/C Powerline Conducted Emissions	Pass	

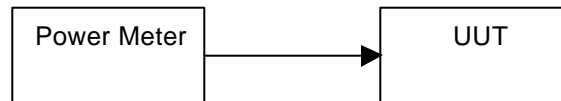
Name of Test: Peak Output Power
Specification: 15.247(b)
Test Equipment Utilized: 87830, Office-01, i00331

Test Date: 1/7/2008

Test Procedure

The UUT was connected directly to a power meter input. The peak readings were taken and the result was then compared to the limit.

Test Setup



Transmitter Peak Output Power

Tuned Frequency MHz	Recorded Measurement	Specification Limit	Result
2402	0.000087 W	1 W	Pass
2441	0.000066 W	1 W	Pass
2480	0.000078 W	1 W	Pass

Name of Test: Conducted Spurious Emissions
Specification: 15.247(d)
Spec. Limit -20 dBc
Test Equipment Utilized 87830, Office-01, i00331

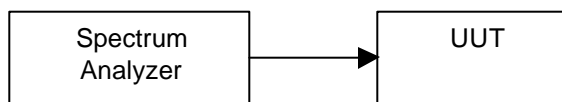
Test Date: 1/7/2008

Test Procedure

The UUT was connected directly to a spectrum analyzer to verify that the UUT met the requirements for spurious emissions. The reference level was offset for the peak power output with the resolution bandwidth set for 1 MHz. The frequency range from 30 MHz to the 10th harmonic of the fundamental transmitter was observed. Only detectable spurious emissions were recorded and plotted. The reference level is added to the recorded measurement to provide the corrected level dBc

Only the worst case is recorded in the Conducted Spurious Emissions Summary Test Table.

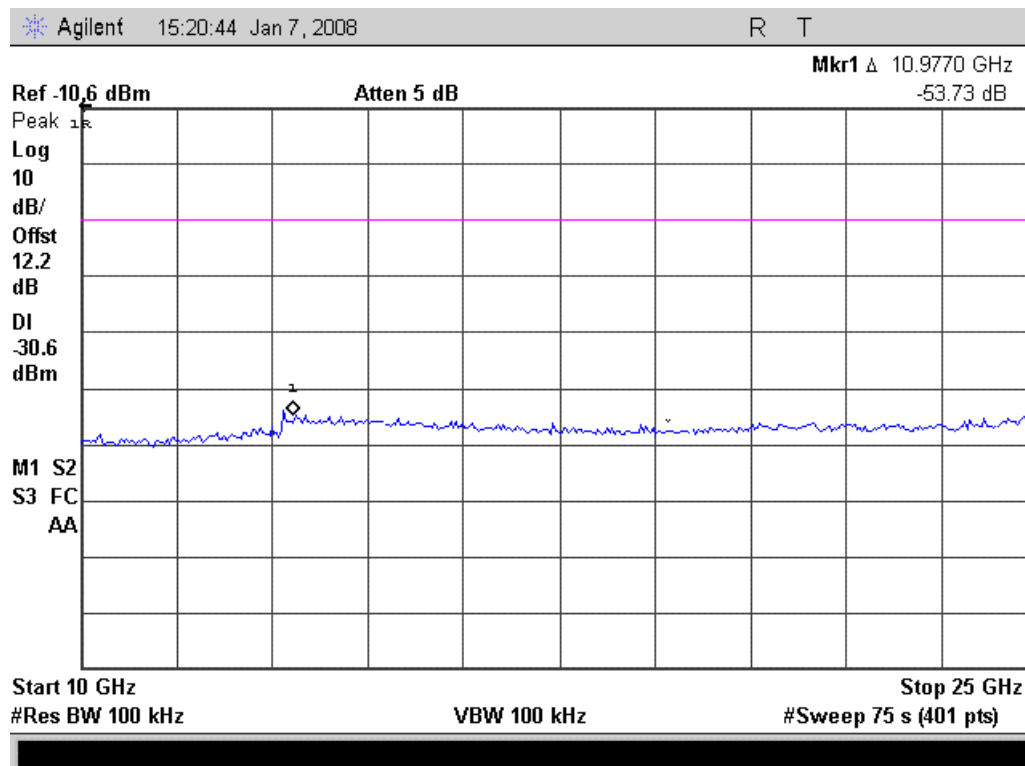
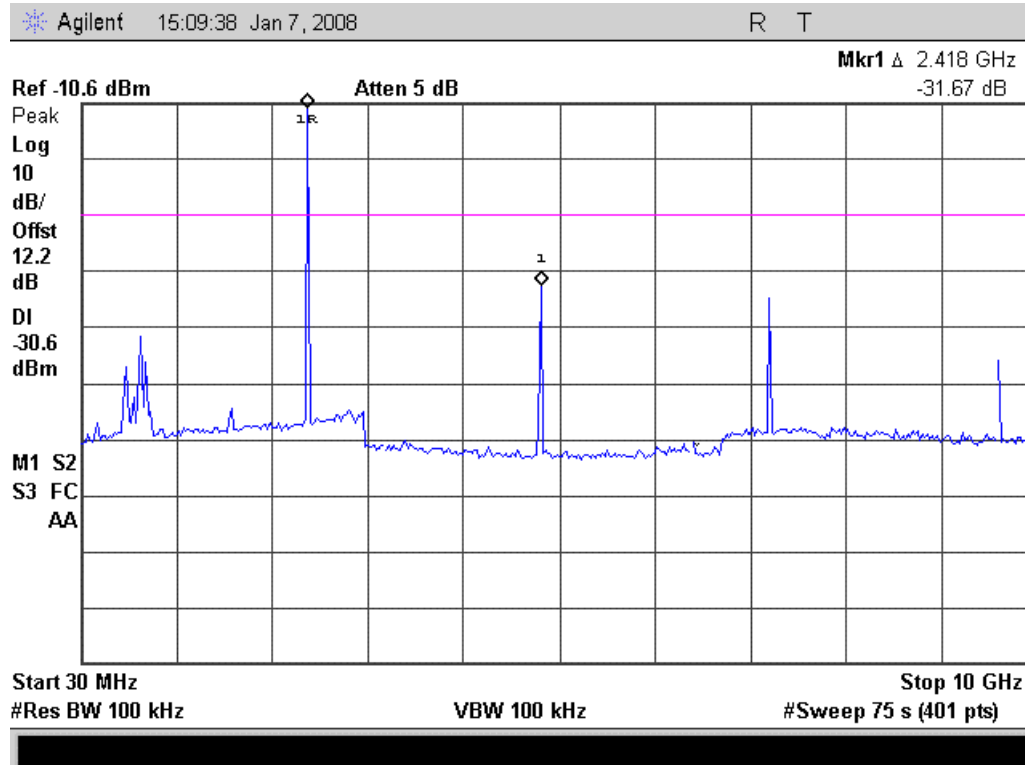
Test Setup



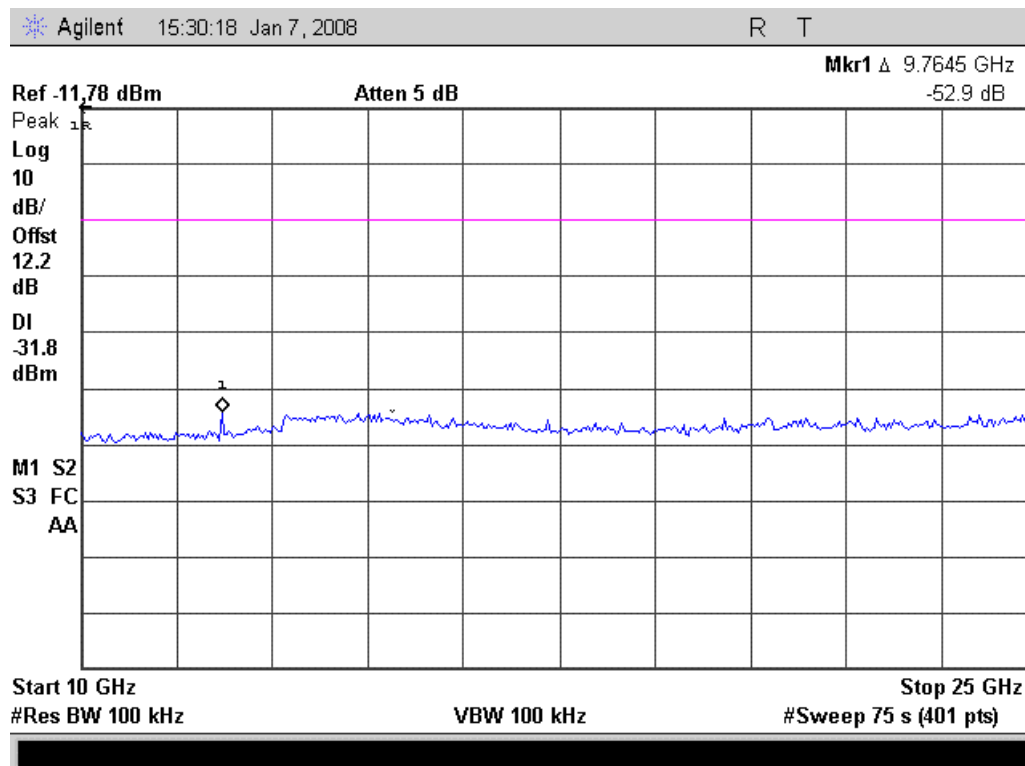
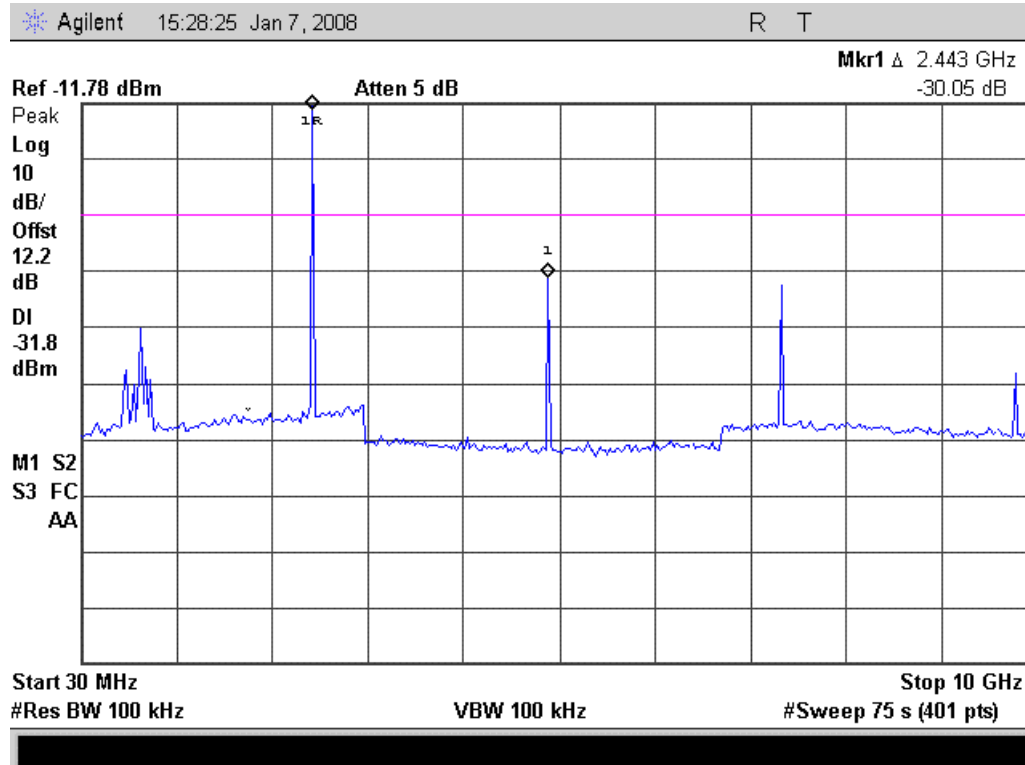
Conducted Spurious Emissions Summary Test Table

Tuned Frequency MHz	Emission Frequency MHz	Recorded Measurement	Specification Limit	Result
2402	4820	-31.67 dBc	-20 dBc	Pass
2441	4884	-30.05 dBc	-20 dBc	Pass
2480	7440	-31.77 dBc	-20 dBc	Pass

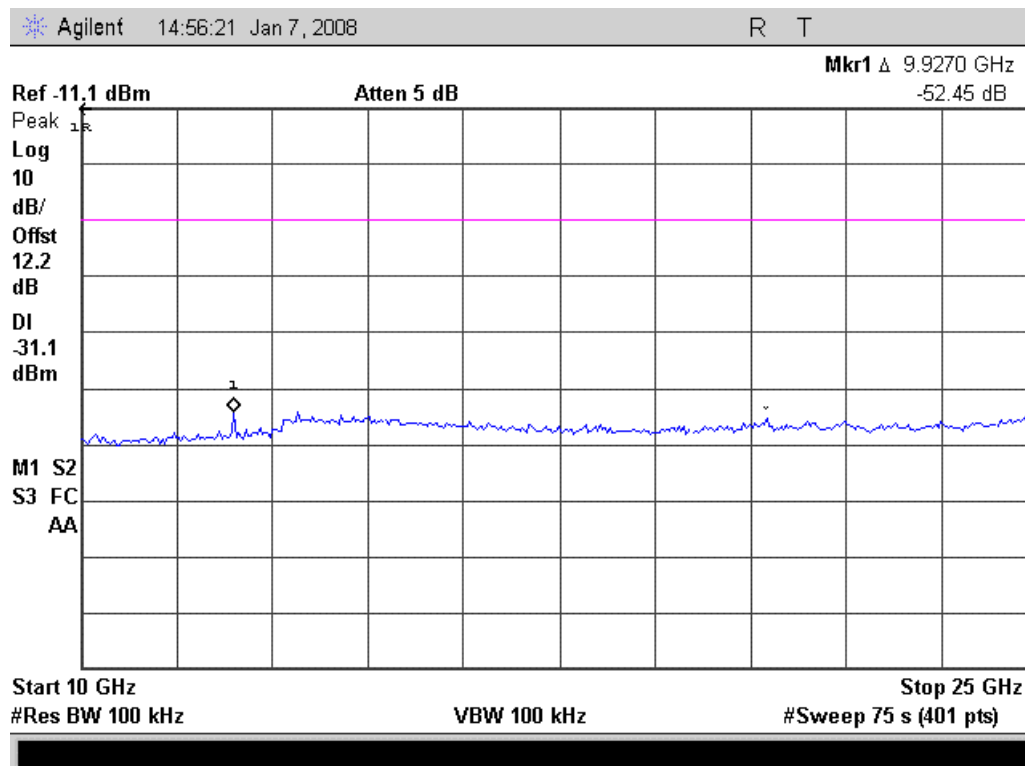
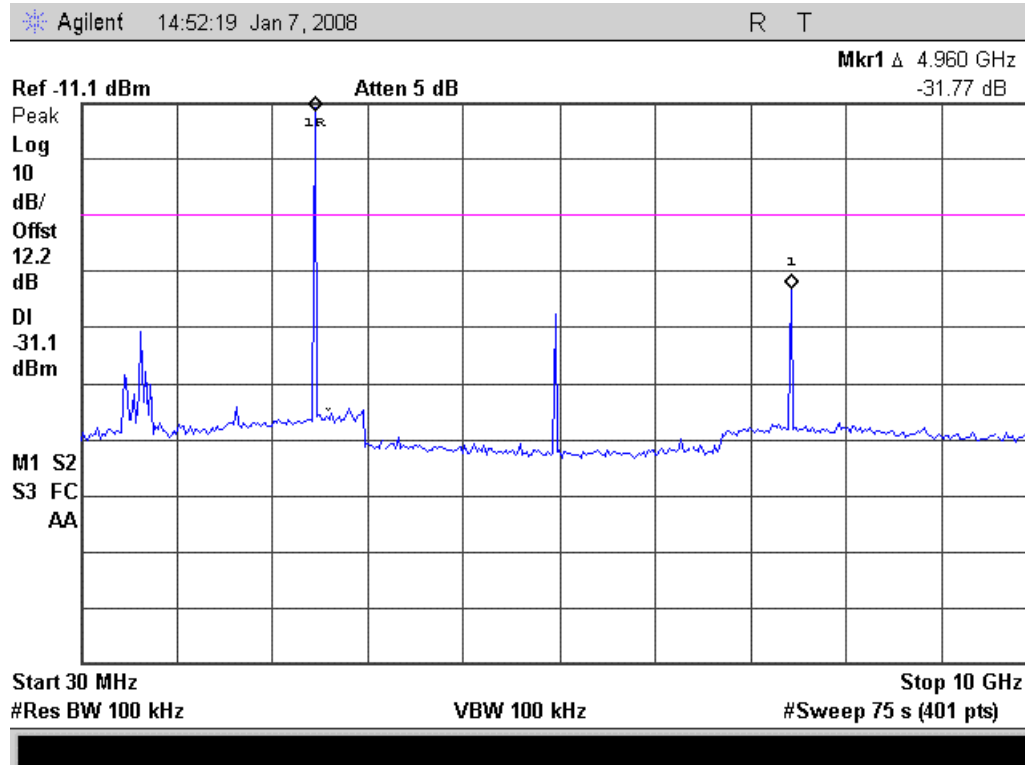
Conducted Spurious Emissions 2402 MHz



Conducted Spurious Emissions 2441 MHz



Conducted Spurious Emissions 2480 MHz



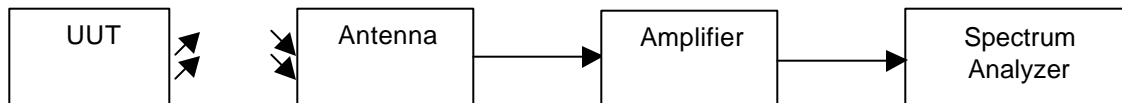
Name of Test: Radiated Spurious Emissions
Specification: 15.247(d), 15.209(a), 15.205
Spec. Limit See Table
Test Equipment Utilized 87830, Office-01, i00271, i00291

Test Date: 1/8/2008

Test Procedure

The UUT was tested in a semi-anechoic chamber set 3m from the receiving antenna. A spectrum analyzer was used to verify that the UUT 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



Detector Settings	RBW	VBW	Span
Peak	1 MHz	1 MHz	as necessary
Average	1 MHz	10 Hz	0 Hz

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
2402	4803.98	44.6	74.0	23.7	54.0	Pass
2402	7205.98	32.5	74.0	21.9	54.0	Pass
2441	4882.07	33.5	74.0	20.1	54.0	Pass
2441	7323.63	34.1	74.0	22.2	54.0	Pass
2480	4959.94	45.6	74.0	23.7	54.0	Pass
2480	7439.48	35.4	74.0	21.7	54.0	Pass

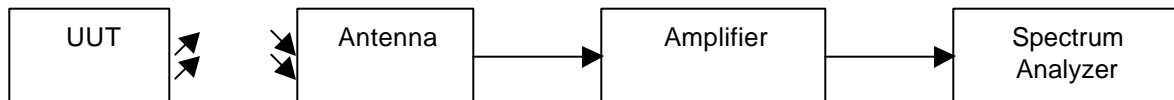
No other emissions were detectable. All emissions were greater than -20 dBc.

Name of Test: Emissions At Band Edges
Specification: 15.247(d), 15.209(a), 15.205
Limit -20 dBc and for restricted band 54 dBuV average and 74 dBuV peak
Test Equipment Utilized 87830, Office-01, i00271, i00291 **Test Date:** 1/8/2008

Test Procedure

The UUT was tested in a semi-anechoic chamber set 3m from the receiving transducer. A spectrum analyzer was used to verify that the UUT 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



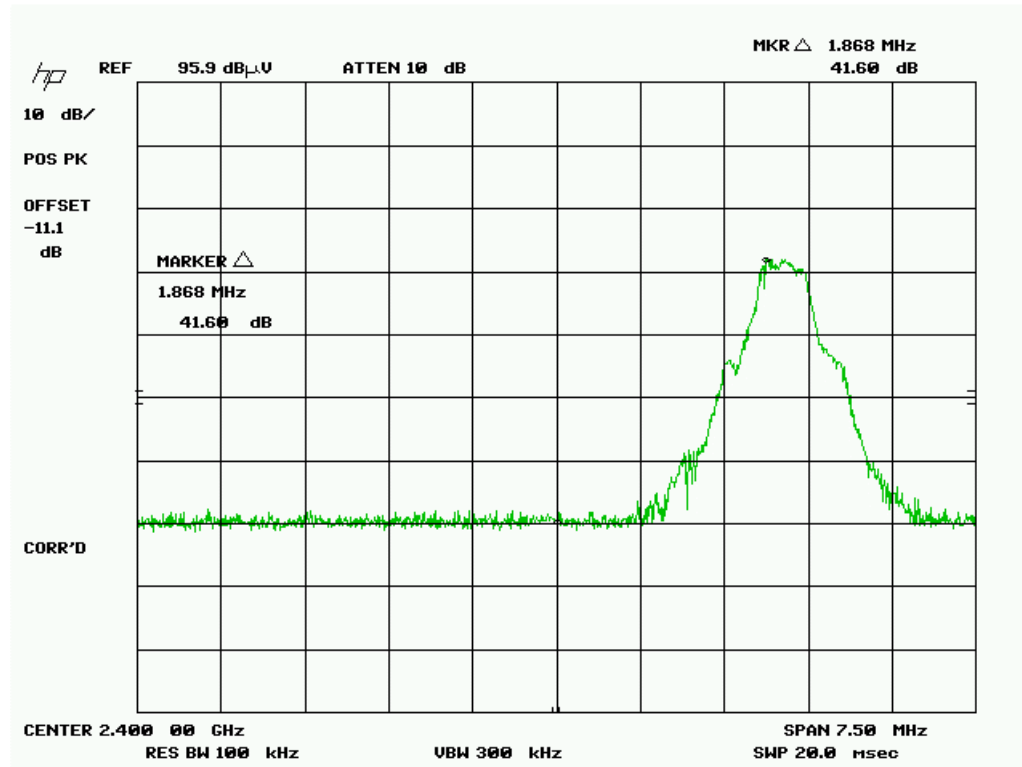
Band Edge Emissions Summary

Tuned Freq (MHz)	Emission Freq (MHz)	Monitored Level	Detector	Limit	Result
2402	2400	-41.6 dBc	Peak	-20 dBc	Pass
2480	2483.5	-47.3 dBc	Peak	-20 dBc	Pass

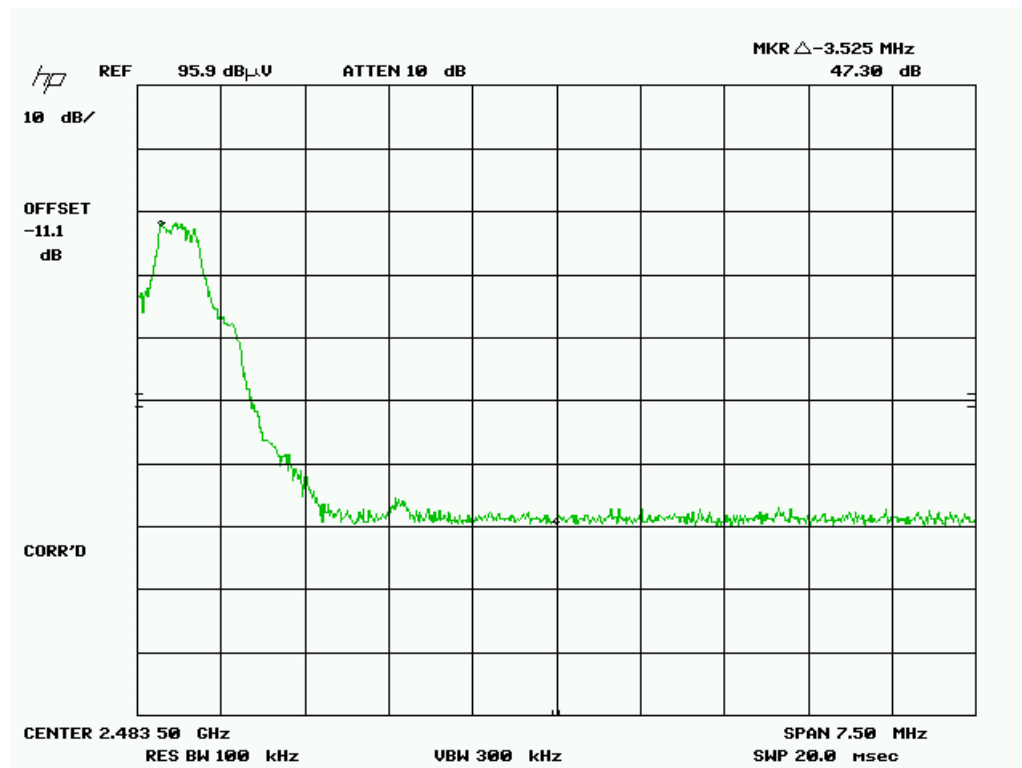
Restricted Band Emissions Summary

Tuned Freq (MHz)	Emission Freq (MHz)	Monitored Level (dBuV/m)	Detector	Limit (dBuV/m)	Result
2402	2400	34.6	Peak	74	Pass
2402	2400	25.2	Quasi-Peak	54	Pass
2480	2483.5	38.7	Peak	74	Pass
2480	2483.5	25.7	Quasi-Peak	54	Pass

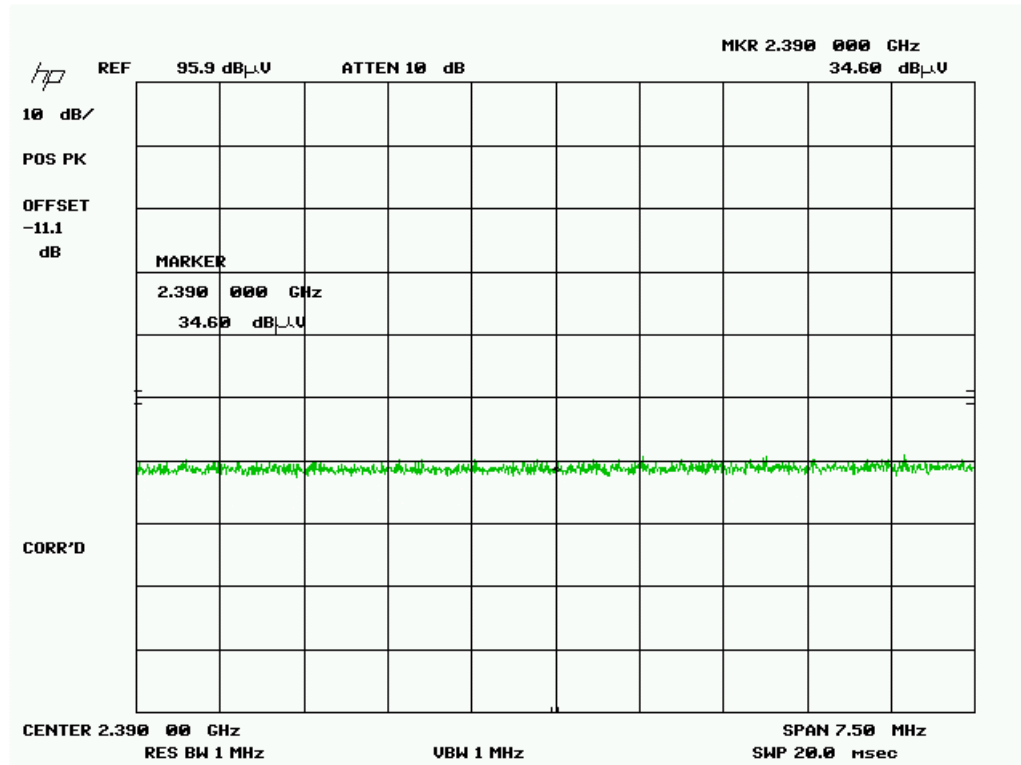
Band Edge 2400 MHz



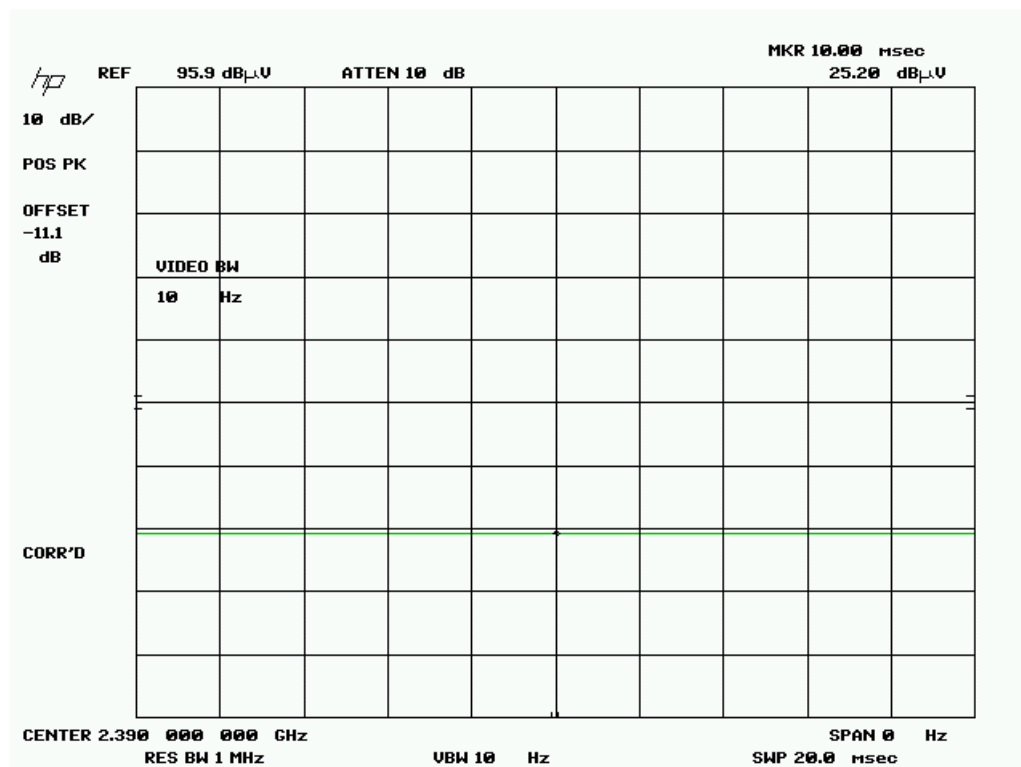
Band Edge 2483.5 MHz



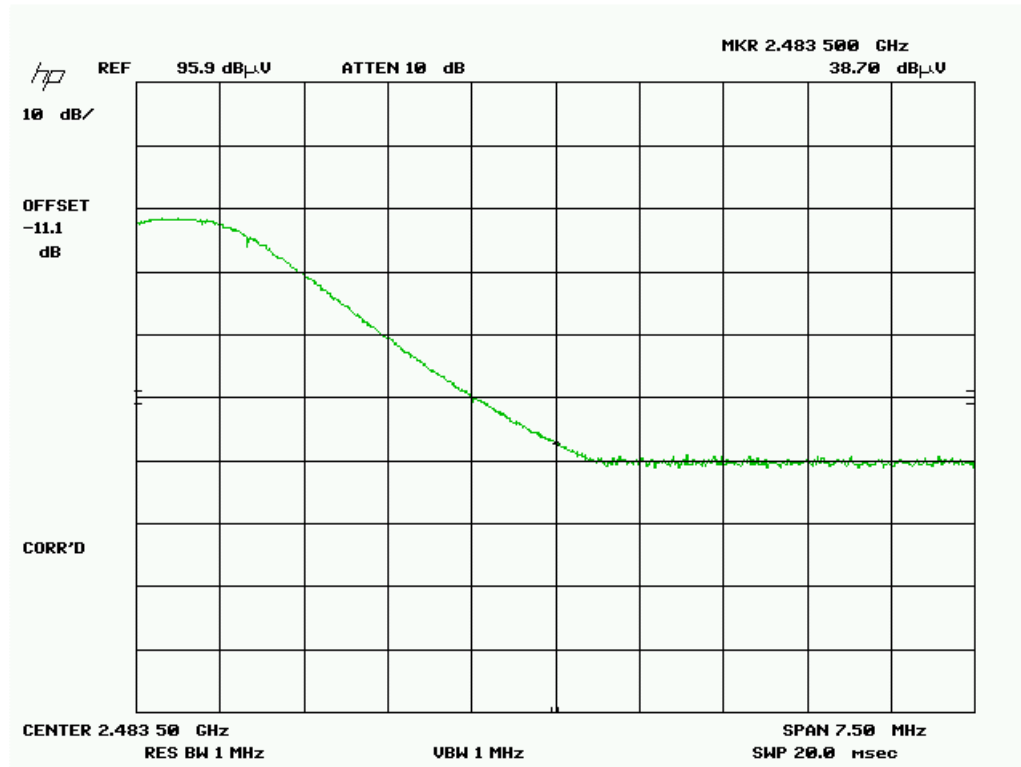
Restricted Band Peak 2390 MHz



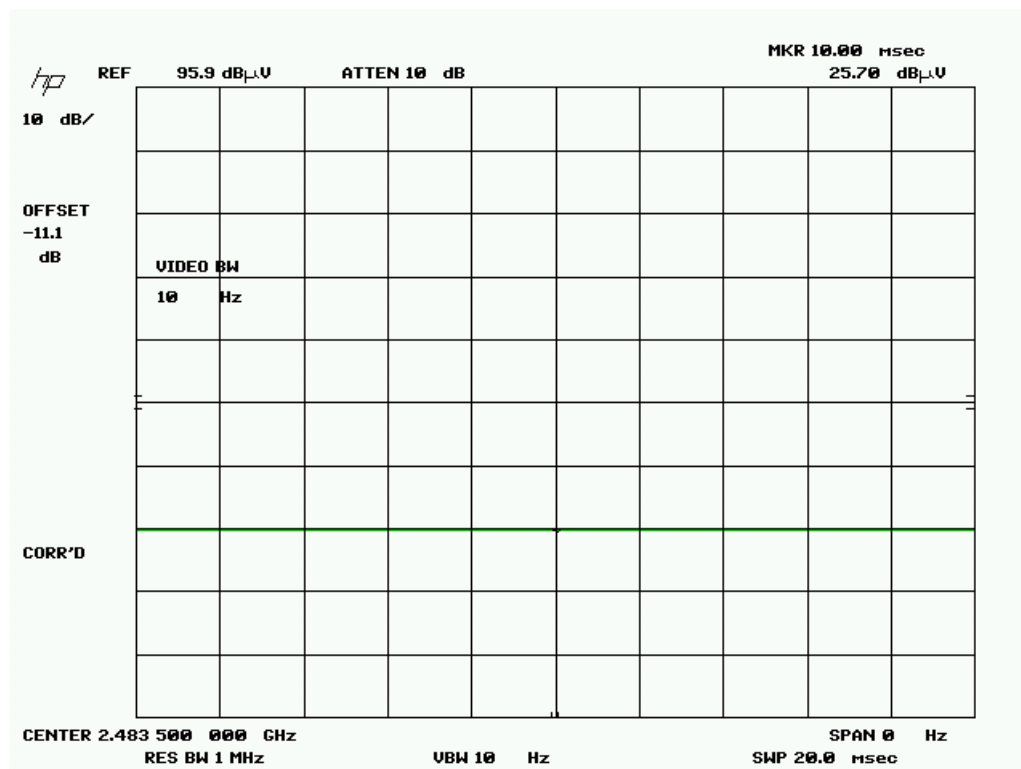
Restricted Band Average 2390 MHz



Restricted Band Peak 2483.5 MHz



Restricted Band Average 2483.5 MHz



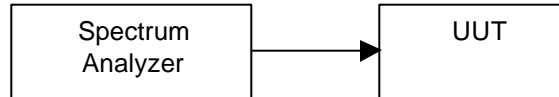
Name of Test: Occupied Bandwidth
Specification: 15.247(a)
Test Equipment Utilized 87830, Office-01, i00331

Test Date: 1/7/2008

Test Procedure

The UUT was connected directly to a spectrum analyzer. 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 -20 dB bandwidth was measured.

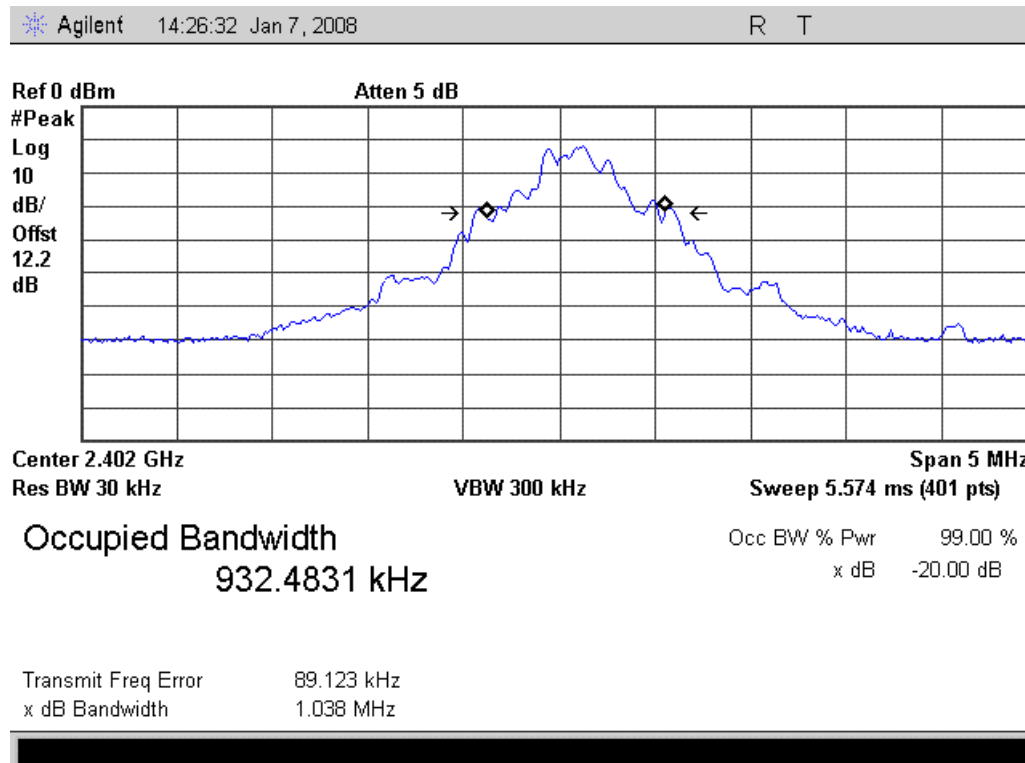
Test Setup



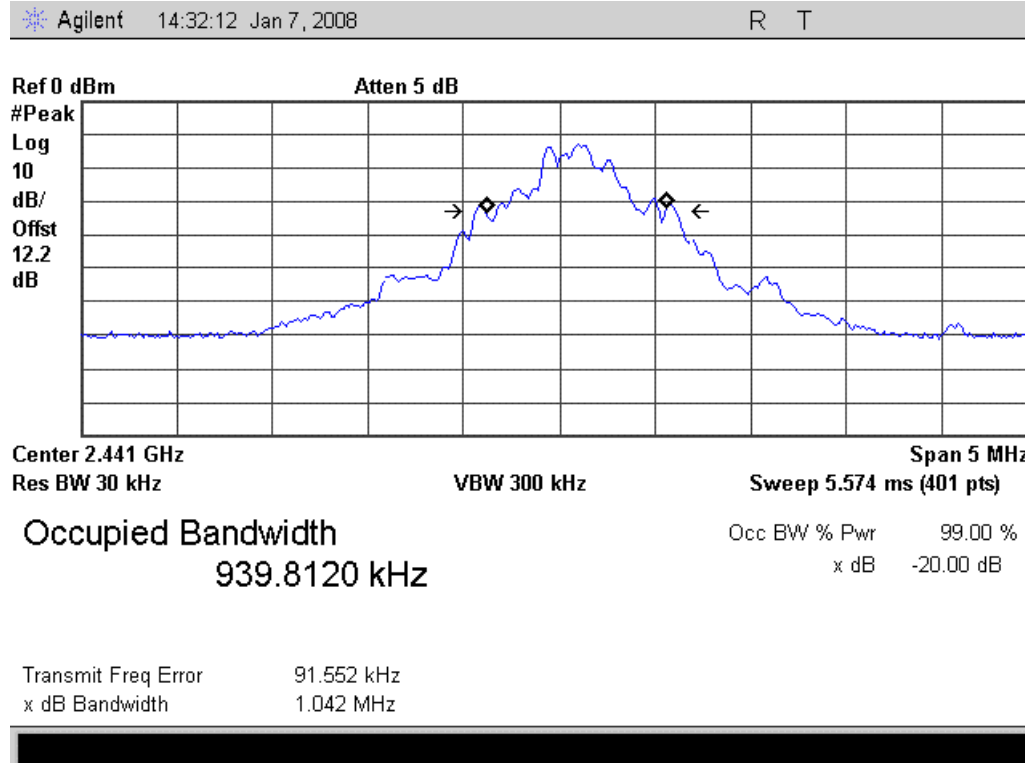
-20 dB Bandwidth Summary

Frequency MHz	Recorded Measurement	Specification Limit	Result
2402	1.038 MHz		Pass
2441	1.042 MHz		Pass
2480	1.041 MHz		Pass

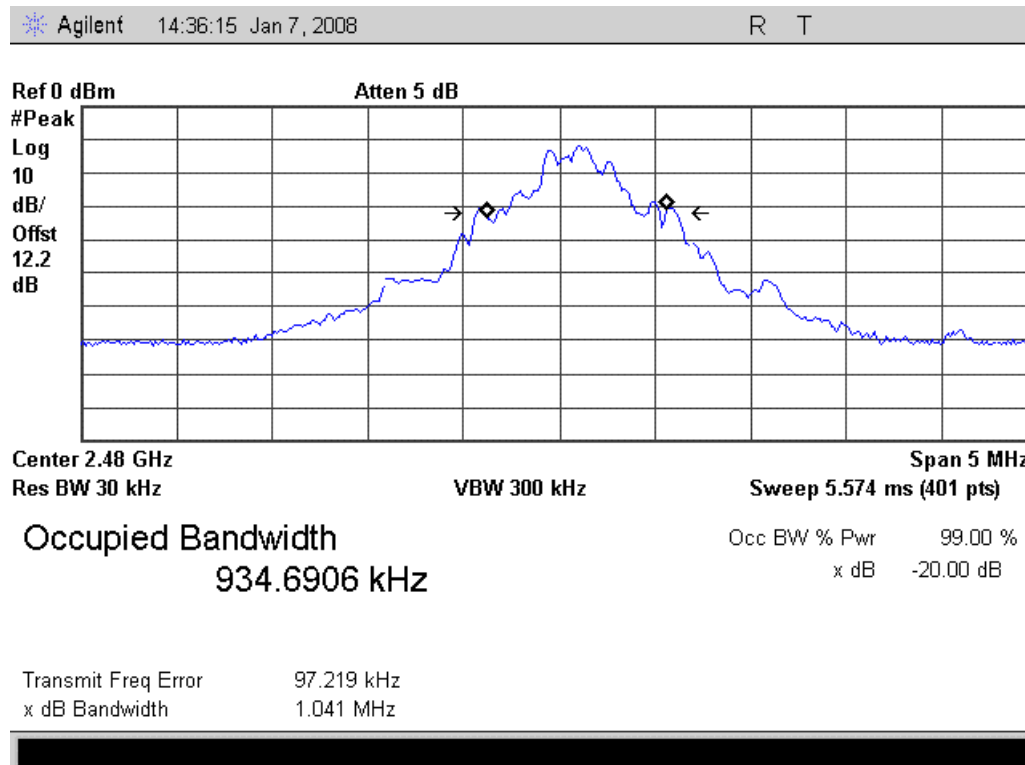
Bandwidth 2402 MHz



Bandwidth 2441 MHz



Bandwidth 2480 MHz



Name of Test: Channel Spacing
Specification: 15.247(a)
Test Equipment Utilized 87830, Office-01, i00331

Test Date: 1/7/2008

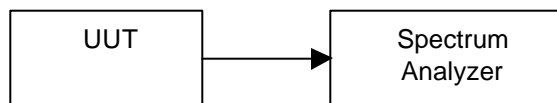
Test Procedure

The UUT was connected directly to a spectrum analyzer. The UUT was set to hopping mode with the spectrum analyzer span set to capture adjacent channels. The distance between these channels was measured and compared to the limit specified by the following criteria.

Channel Spacing Limit = $\frac{2}{3}$ of the -20 dB Bandwidth

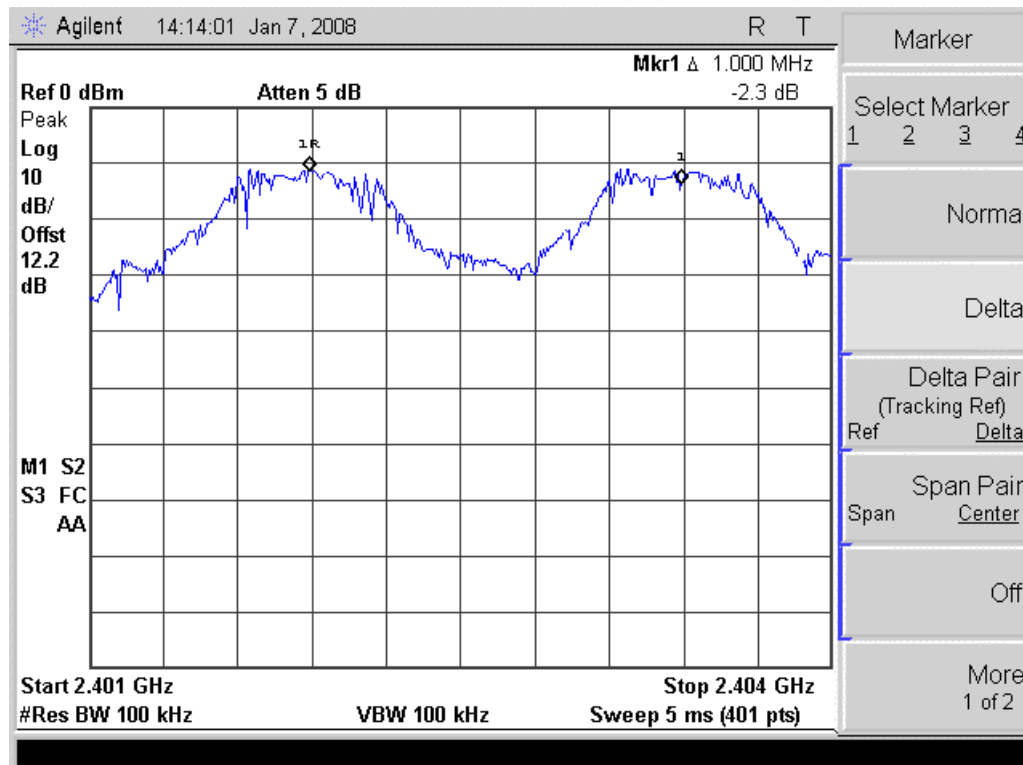
694 KHz = $\frac{2}{3}$ (1.042 MHz)

Test Setup



Channel Spacing

Recorded Measurement	Specification Limit	Result
1 MHz	694 KHz	Pass



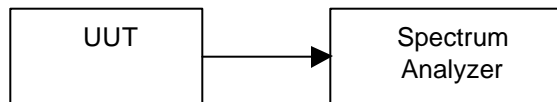
Name of Test: Dwell Time
Specification: 15.247(a)
Test Equipment Utilized 87830, Office-01, i00331
Test Procedure

Test Date: 1/7/2008

The UUT was connected directly to a spectrum analyzer. The UUT was set to hopping mode with the spectrum analyzer set to 0 span. A single transmit ion was captured and the dwell time was calculated by the following formula.

Average Dwell Time = Time Slot Length * (Hops per Second / (2 * Number of Frequencies)) * 31.6 second period

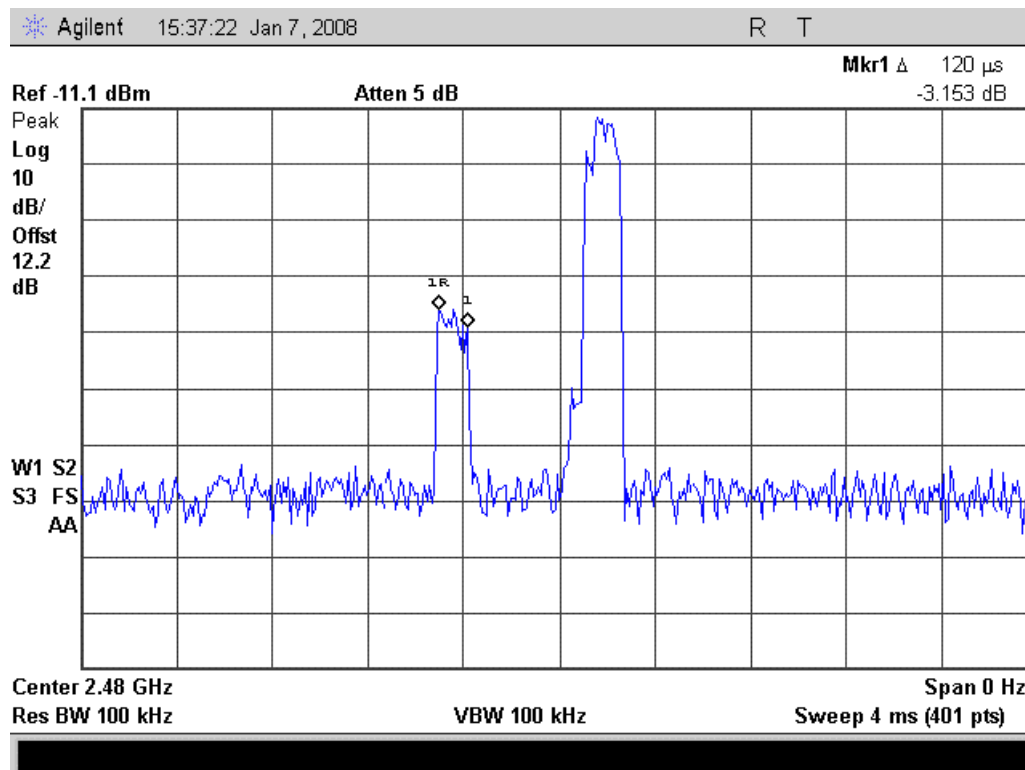
Test Setup



Average Frequency Dwell Time Calculation

$$38.4 \text{ mS} = 120 \mu\text{S} * (1600 / (2 * 79)) * 31.6$$

Time Slot Length Plot



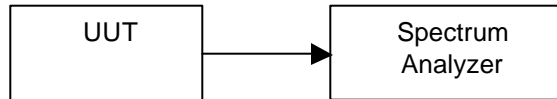
Name of Test: Number of Hopping Channels
Specification: 15.247(a)
Test Equipment Utilized 87830, Office-01, i00331

Test Date: 1/7/2008

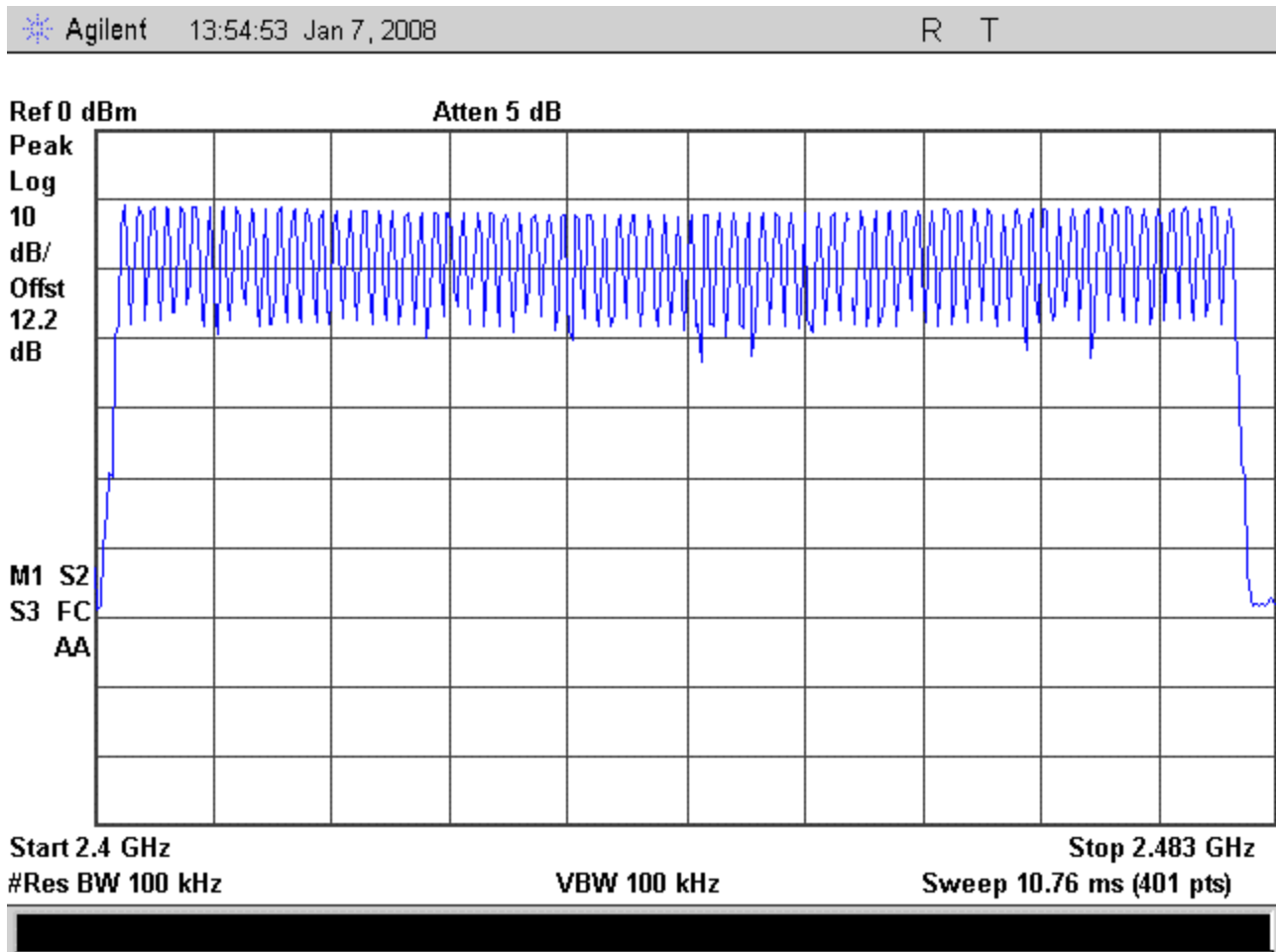
Test Procedure

The UUT was connected directly to a spectrum analyzer. The Span was set to the specified band end points. The UUT was then set to operate in hopping mode. The MAX HOLD function of the spectrum analyzer was utilized to verify the number of hopping channels.

Test Setup



79 Hopping channels

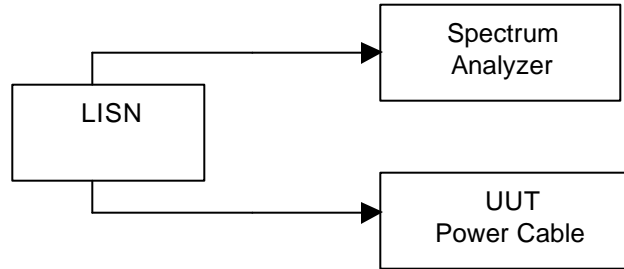


Name of Test: A/C Powerline Conducted Emissions
Specification: 15.207
Test Equipment Utilized: 87830, Office-01, i00033, i00270
Test Date: 1/8/2008

Test Procedure

The UUT power cable connected to a LISN and the monitored output of the LISN was connected directly to a spectrum analyzer. The conducted emissions from 150 kHz to 30 MHz were monitored and compared to the specification limits. The 6 highest measurements of each line are recorded in the tables below.

Test Setup



L1 – Phase Test Results

Emission Frequency	Monitored Level (dBuV/m)	LISN Factor (dB)	Cable Correction Factor	Attenuation (dB)	Corrected Level (dBuV/m)	Limit (dBuV/m)	Margin	Detector
206.39 KHz	30.88	0.2	0.04	10	41.12	54.39	-13.27	AVG
206.39 KHz	47.45	0.2	0.04	10	57.69	64.39	-6.7	QP
152.37 KHz	40.98	0.28	0.02	10	51.28	65.93	-14.65	QP
151.6 KHz	40.4	0.28	0.02	10	50.7	65.95	-15.25	QP
150.65 KHz	41.54	0.29	0.02	10	51.85	65.98	-14.13	QP
150.37 KHz	49.06	0.3	0.02	10	59.38	65.99	-6.61	QP

L2 - Neutral Test Results

Emission Frequency	Monitored Level (dBuV/m)	LISN Factor (dB)	Cable Correction Factor	Attenuation (dB)	Corrected Level (dBuV/m)	Limit (dBuV/m)	Margin	Detector
152.14 KHz	46.01	0.28	0.02	10	56.31	65.94	-9.63	QP
151.15 KHz	46.14	0.29	0.02	10	56.45	65.97	-9.52	QP
150.4 KHz	46.24	0.3	0.02	10	56.56	65.99	-9.43	QP
150.32 KHz	51.89	0.3	0.02	10	62.21	65.99	-3.78	QP
150.06 KHz	45.82	0.3	0.02	10	56.14	66	-9.86	QP
150.0 KHz	52.4	0.3	0.02	10	62.72	66	-3.28	QP

Test Equipment Utilized

Description	MFG	Model Number	FTL Asset Number	Last Cal Date	Cal Due Date
Spectrum Analyzer	HP	85462A	i00033	10/1//2007	10/1//2008
LISN	FCC	FCC-LISN-50-32-2-01	i00270	10/25/2005	10/25/2007
Horn Antenna	ARA	DRG-1181A	i00271	3/6/2007	3/6/2010
Spectrum Analyzer	HP	8566B	i00291	8/7/2007	8/7/2008
Spectrum Analyzer	HP	E4407B	i00331	10/31/2007	10/31/2008
Test Laptop PC	Gateway	400SD4	Office-01	N/A	N/A

Rental Test Equipment Utilized

Description	MFG	Model Number	Telogy Number	Last Cal Date	Cal Due Date
Bluetooth test Set	Anritsu	MT8850S	87830	11/7/2007	11/7/2008

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