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: May 15, 2007

Federal Communications Commission
Via: Electronic Filing

Attention: Authorization & Evaluation Division

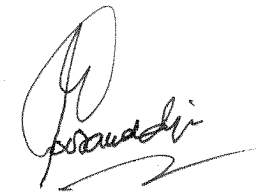
Applicant: Unigen Corporation
Equipment: LETO-M
FCC ID: R8KUGWG4USHN33A
FCC Rules: 15.247

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

enclosure(s)
cc: Applicant
HSB/je

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

p0740023, d0750058

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

Applicant: Unigen Corporation

FCC ID: R8KUGWG4USHN33A

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: R8KUGWG4USHN33A
Model: LETO-M

to

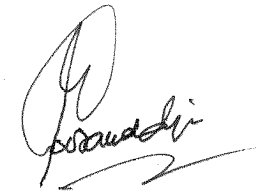
Federal Communications Commission

Rule Part(s) 15.247

Date Of Report: May 15, 2007
Date of revised report: June 29, 2007

On the Behalf of the Applicant: Unigen Corporation
45388 Warm Springs Blvd.
Fremont, CA 94539

Attention of: Mark Morrissey, Director of Business Development
(800) 826-0808; (510) 668-2088 ext 2087
Email: mmorrissey@unigen.com



Supervised By:

Hoosamuddin S. Bandukwala, Lab Director

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Chandler, Arizona 85225-7176
(866) 311-3268 phone, (480) 926-3598 fax

p0740023, d0750058

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.

Flom Test Labs
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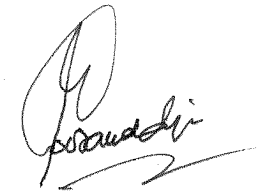
Testimonial And Statement Of Certification

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

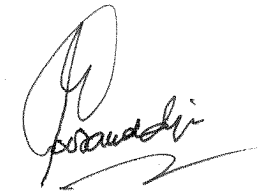
Flom Test Labs
3356 N. San Marcos Place, Suite 107
Chandler, Arizona 85225-7176
(866) 311-3268 phone, (480) 926-3598 fax

p0740023, d0750058

Table Of Contents

Required information per ISO 17025-2005, paragraph 5.10:

a) **Test Report**

b) Laboratory: (FCC: 31040/SIT) (Canada: IC 2044)	Flom Test Lab, Inc. 3356 N. San Marcos Place, Suite 107 Chandler, AZ 85225
c) Report Number:	d0750058
d) Client:	Unigen Corporation
e) Identification:	LETO-M
Description:	2.4 MHz DSS transmitter and receiver
f) EUT Condition:	Not required unless specified in individual tests.
g) Report Date: EUT Received:	May 15, 2007
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: Unigen Corporation

(c)(2): **FCC ID**: R8KUGWG4USHN33A

Model Number: LETO-M

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

Please See Attached Exhibits

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

(c)(5): **FREQUENCY RANGE, MHz**: 2404 to 2467

(c)(6): **Power Rating, W**: 2.5 mW

____ Switchable ____ Variable __X__ N/A

(c)(7): **FCC Limit Power Rating, W**: 125 mW

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

The unit was tested utilizing a PCB Trace antenna with a gain of 2 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
_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 2400-2483.5 MHz (spread spectrum)

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, 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.

Prior to testing, the EUT was tuned up in accordance with the manufacturer's alignment procedures. All external gain controls were maintained at the position of maximum and/or optimum gain throughout the testing.

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

ACCREDITED
CERT NO: 2152-01

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)(2)	Occupied Bandwidth	Pass	
15.247(e)	Transmitter Power Spectral Density	Pass	
15.207	A/C Powerline Conducted Emissions	Pass	

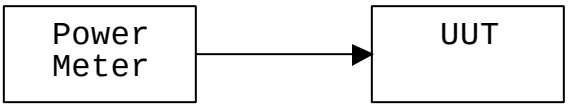
All Tests were conducted at the maximum data rate of 1MBPs.

Name of Test: Peak Output Power
Specification: 15.247(b)
Test Equipment Utilized i00228, i00317

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
2404	2.5 mW	250 mW	Pass
2434	2.0 mW	250 mW	Pass
2467	1.5 mW	250 mW	Pass

Name of Test: Conducted Spurious Emissions
Specification: 15.247(d)
Spec. Limit -20 dBC
Test Equipment Utilized i00029, i00329

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.

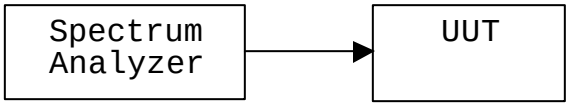
Sample Calculation

Reference Level Offset - Recorded Level = Corrected Level

Settings

RBW = 100 KHz
VBW = 300 KHz
Detector - Peak

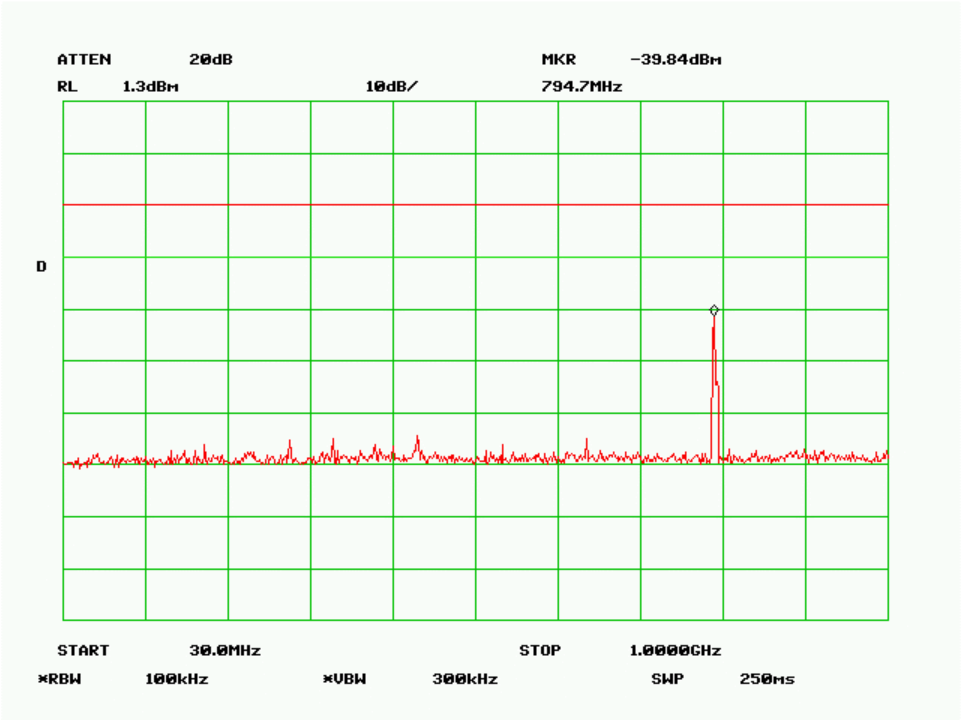
Test Setup

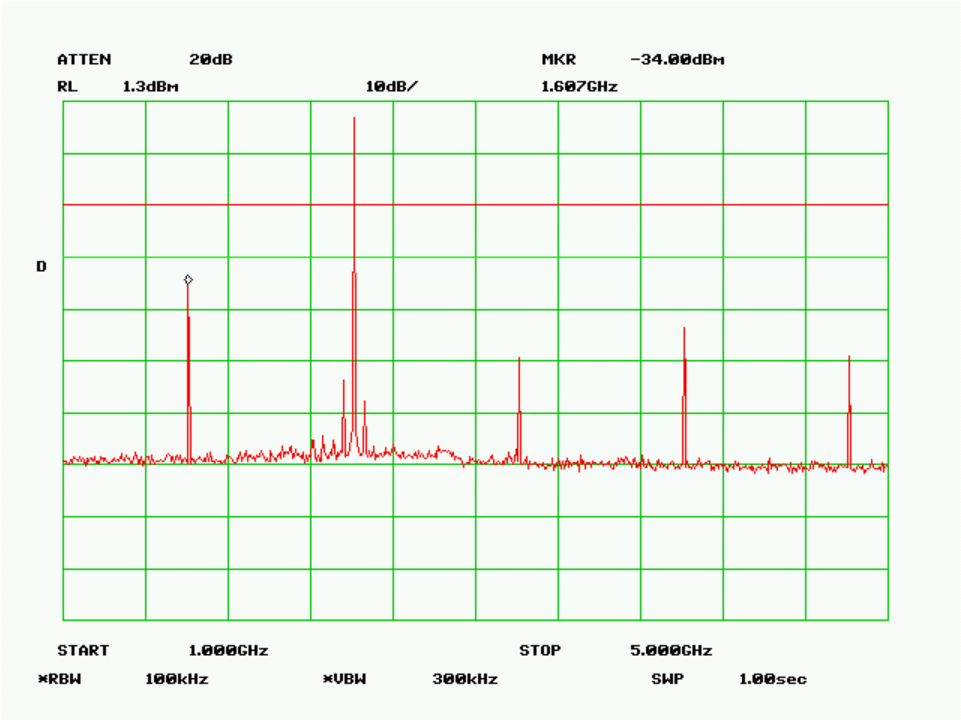


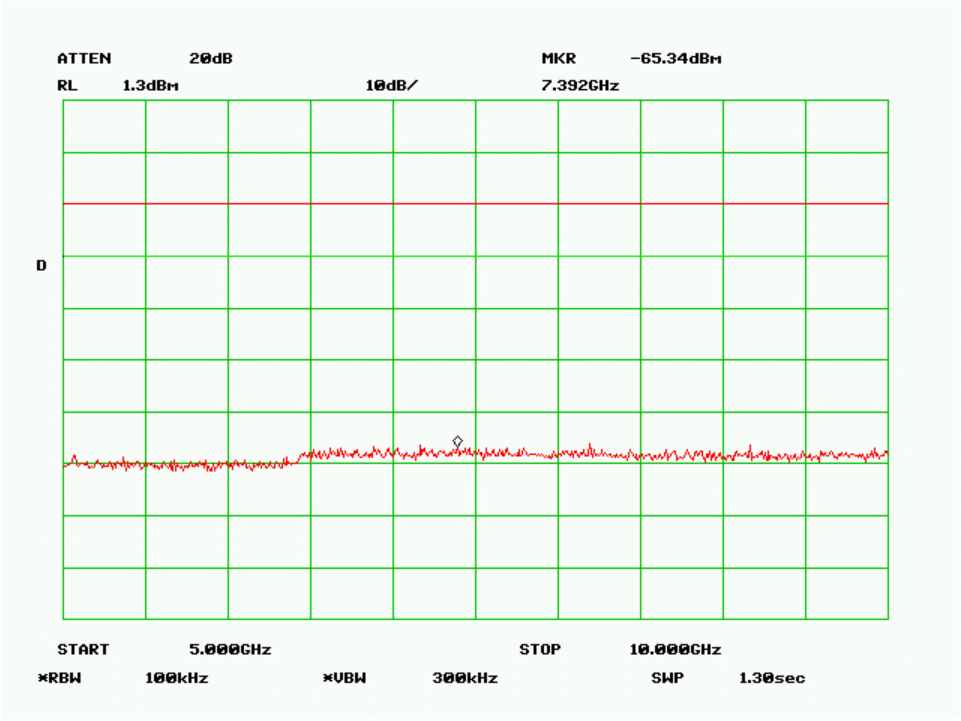
Conducted Spurious Emissions Summary Test Table

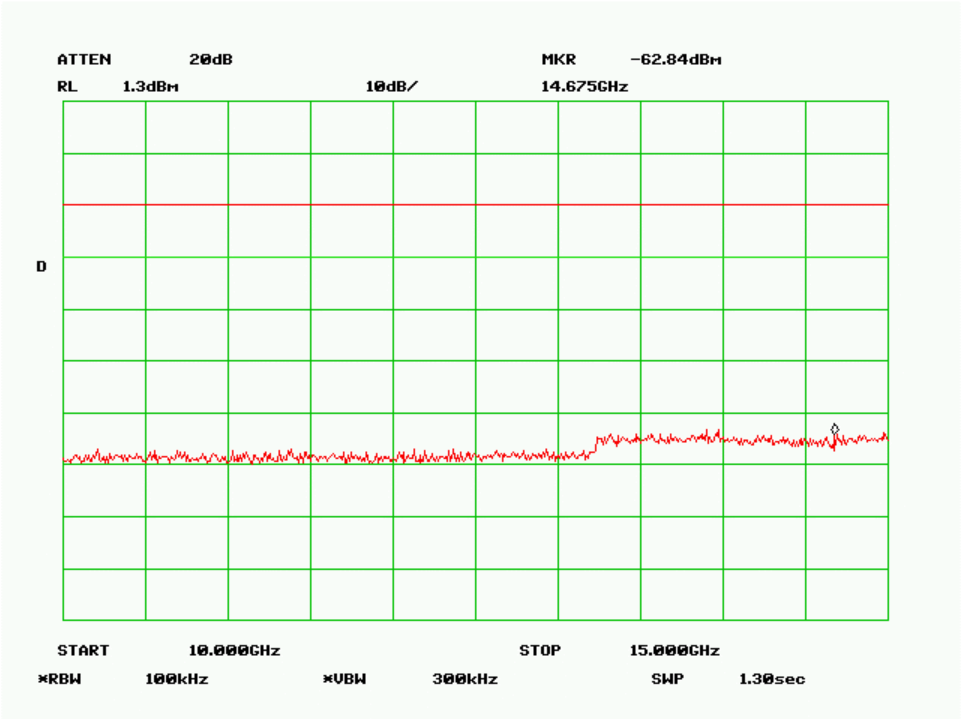
Tuned Frequency MHz	Emission Frequency MHz	Recorded Level dBm	Reference Level Offset dBm	Corrected level dBc	Specification Limit	Result
2404	1607	-34.00	1.3	-35.30	-20 dBc	Pass
2434	1627	-32.77	1.2	-33.97	-20 dBc	Pass
2467	1647	-32.00	0.8	-32.80	-20 dBc	Pass

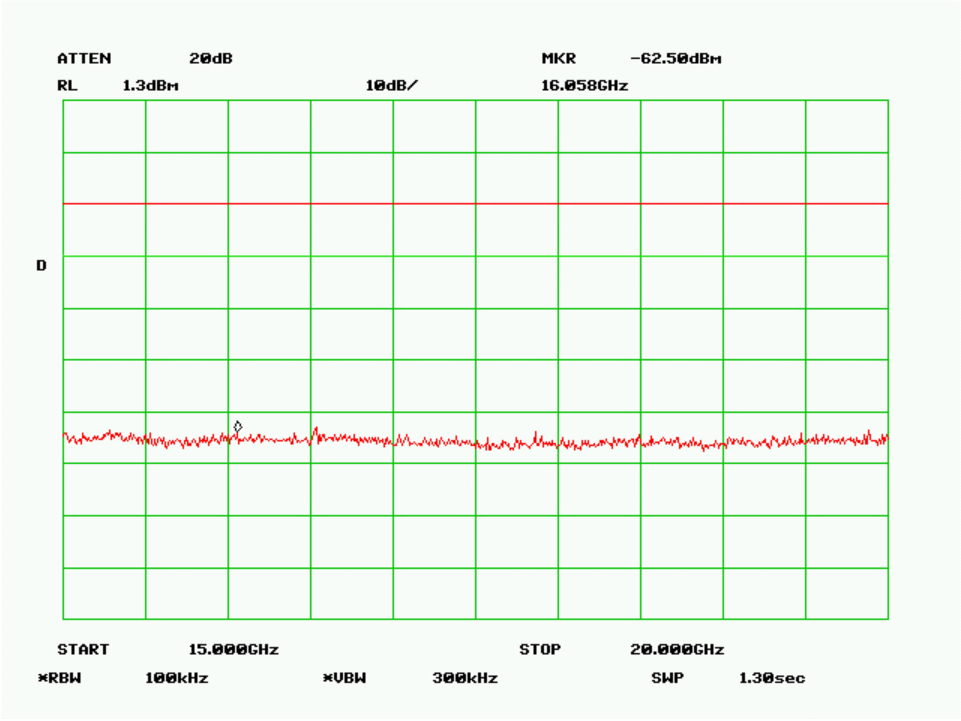
Conducted Spurious Emissions 2404 MHz

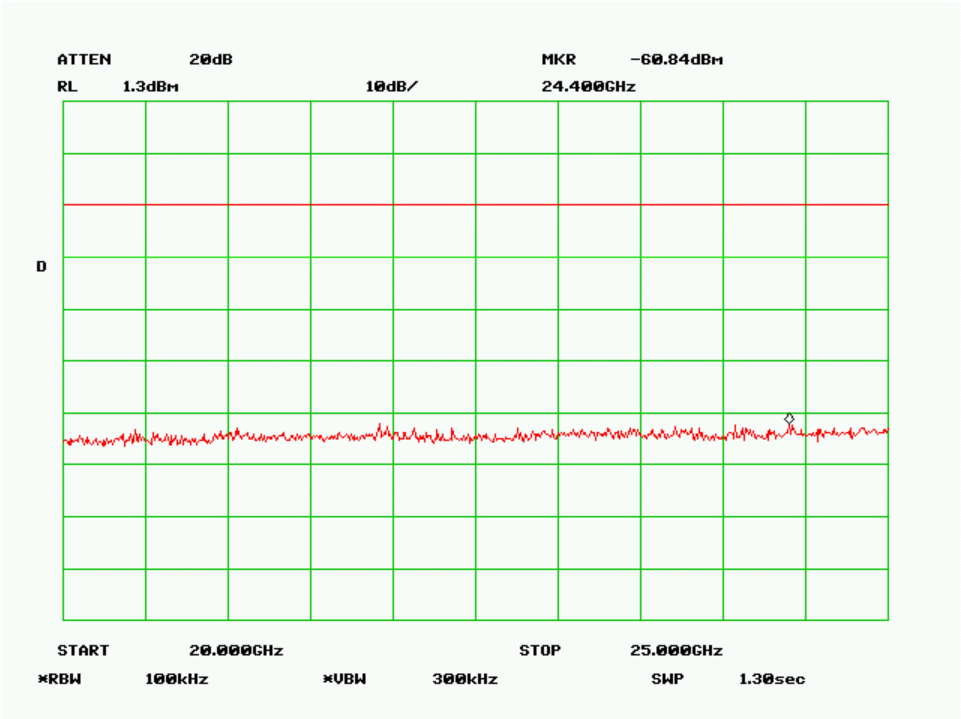




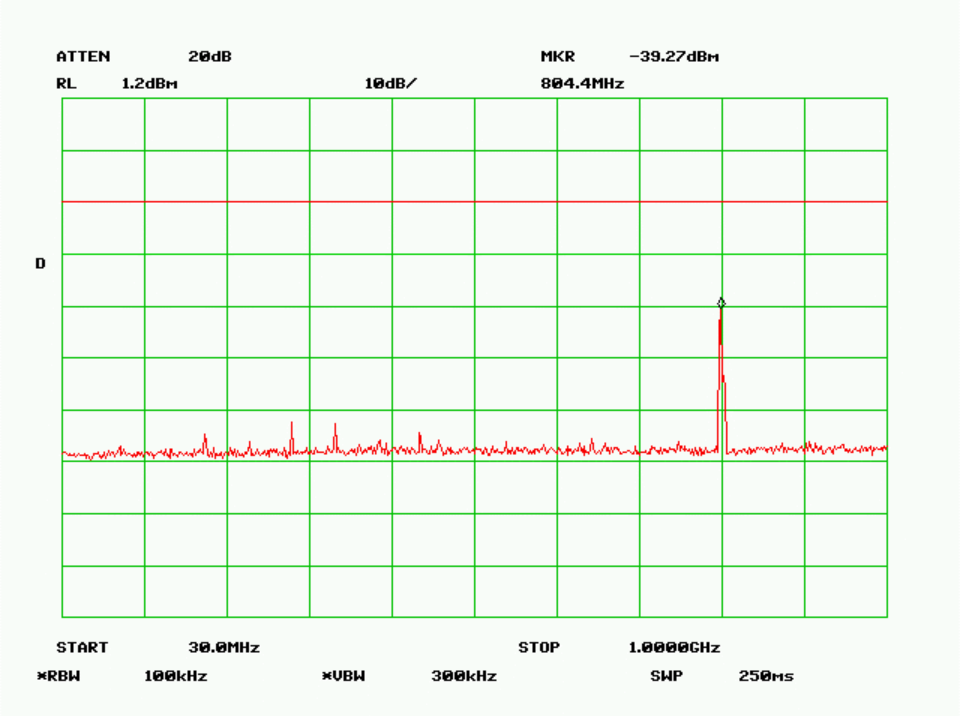

ATTEN 20dB
MKR -65.34dBm
RL 1.3dBm
10dB/
7.392GHz
D
START 5.000GHz
STOP 10.000GHz
*RBW 100kHz
*VBW 300kHz
SWP 1.30sec

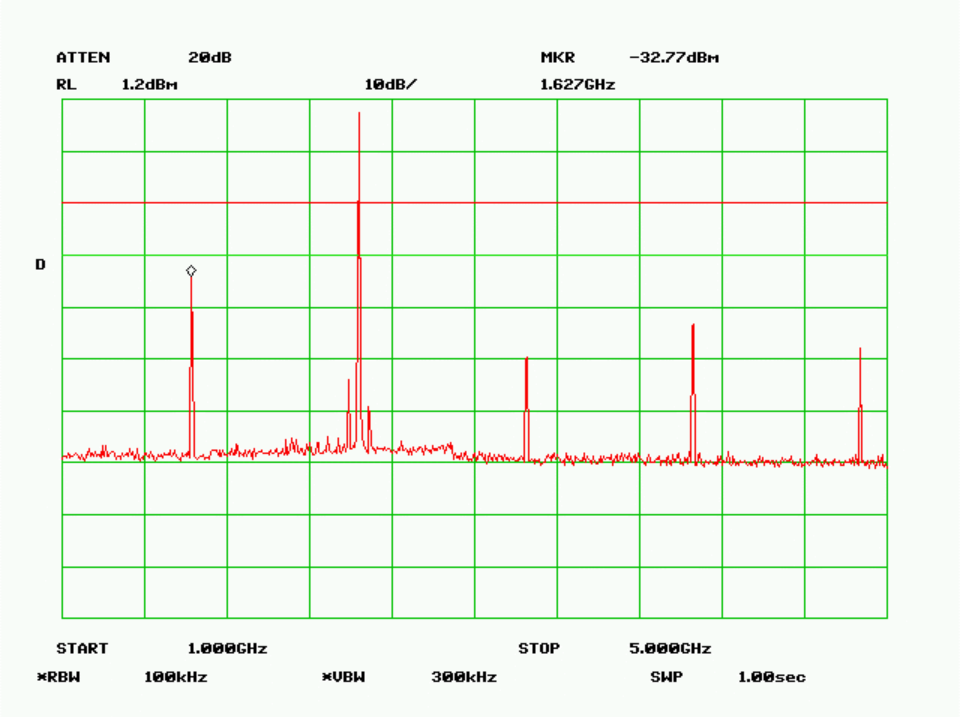

ATTEN 20dB
MKR -62.84dBm
RL 1.3dBm
10dB/
14.675GHz
D
START 10.000GHz
STOP 15.000GHz
*RBW 100kHz
*VBW 300kHz
SWP 1.30sec

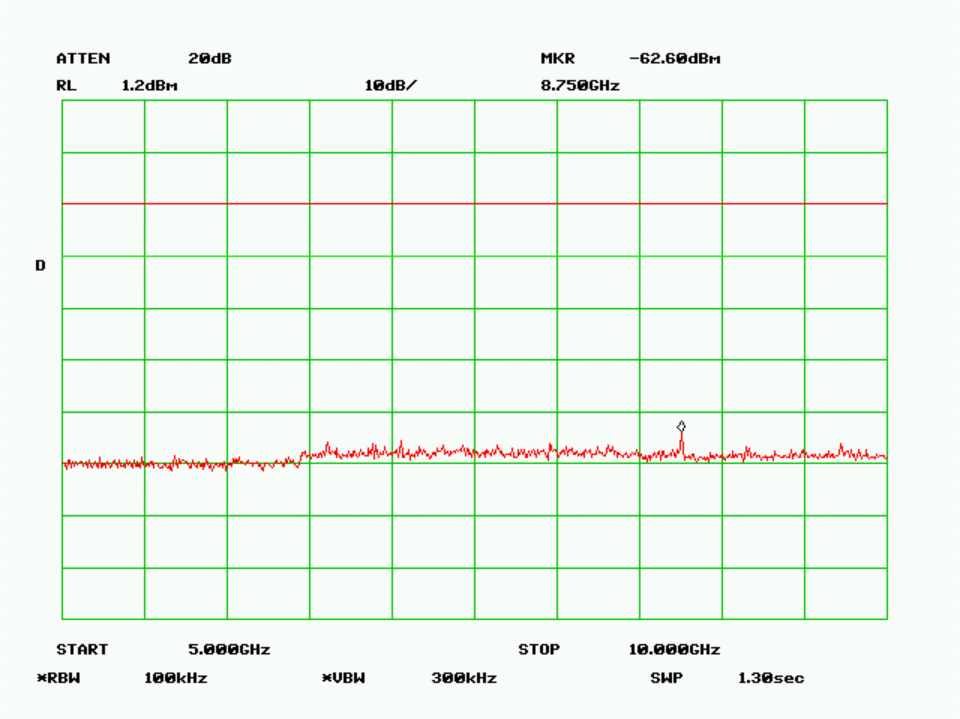

ATTEN 20dB
MKR -62.50dBm
RL 1.3dBm
10dB/
16.058GHz
D
START 15.000GHz
STOP 20.000GHz
*RBW 100kHz
*VBW 300kHz
SWP 1.30sec

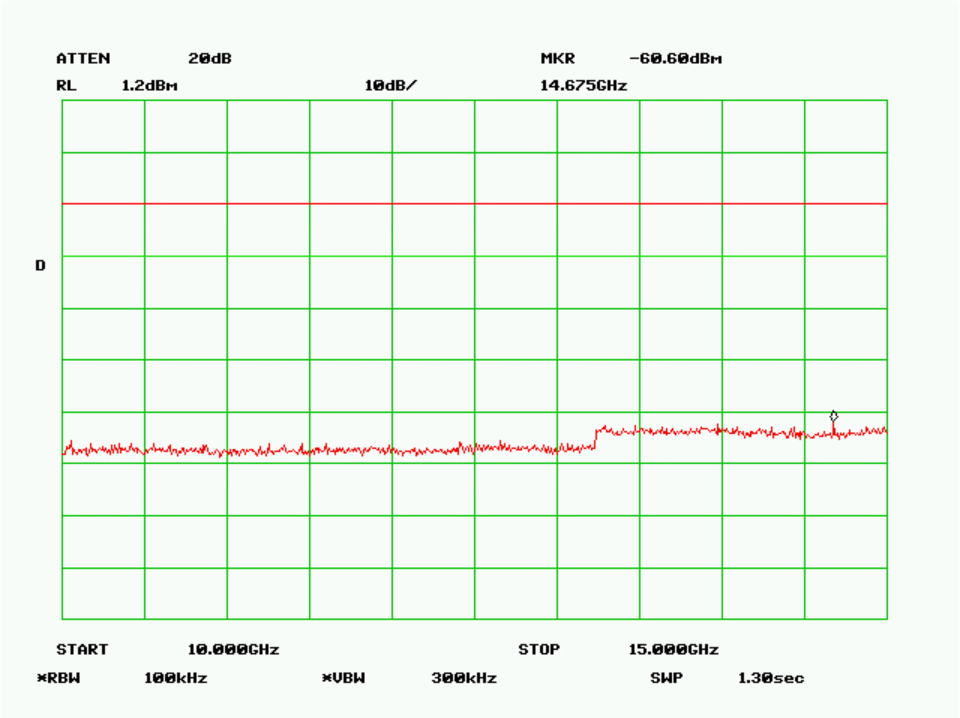

ATTEN 20dB
MKR -60.84dBm
RL 1.3dBm
10dB/
24.400GHz
D
START 20.000GHz
STOP 25.000GHz
*RBW 100kHz
*VBW 300kHz
SWP 1.30sec

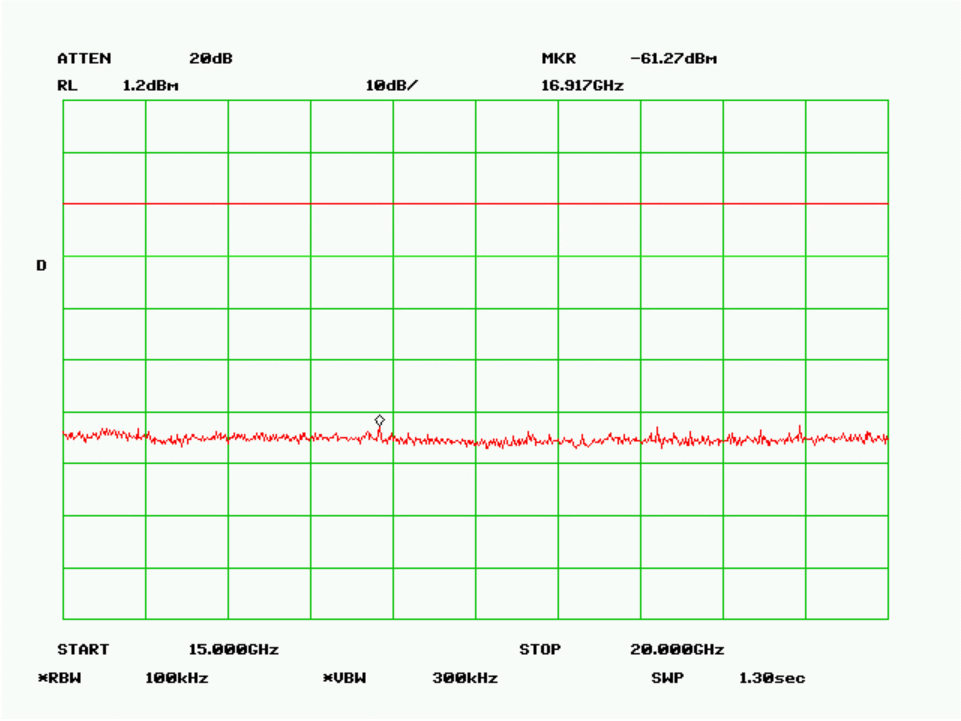
Conducted Spurious Emissions 2434 MHz






ATTEN 20dB
MKR -62.60dBm
RL 1.2dBm
10dB/
8.750GHz
D
START 5.000GHz
STOP 10.000GHz
*RBW 100kHz
*VBW 300kHz
SWP 1.30sec


ATTEN 20dB
MKR -60.60dBm
RL 1.2dBm
10dB/
14.675GHz
D
START 10.000GHz
STOP 15.000GHz
*RBW 100kHz
*VBW 300kHz
SWP 1.30sec


ATTEN 20dB
MKR -61.27dBm
RL 1.2dBm
10dB/
16.917GHz
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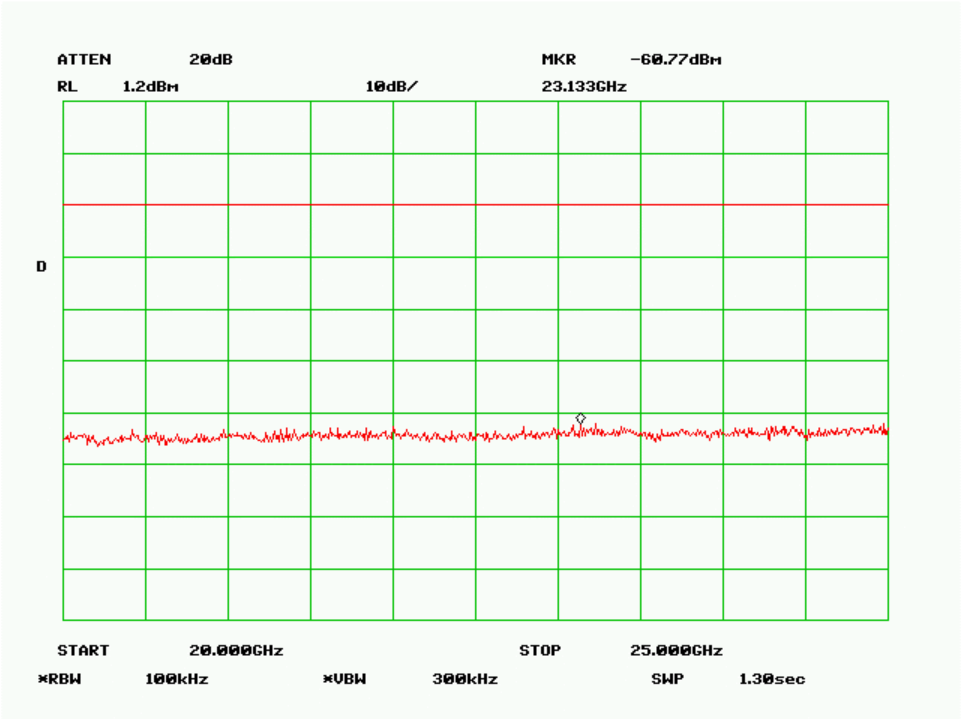
START 15.000GHz
STOP 20.000GHz
*RBW 100kHz
*VBW 300kHz
SWP 1.30sec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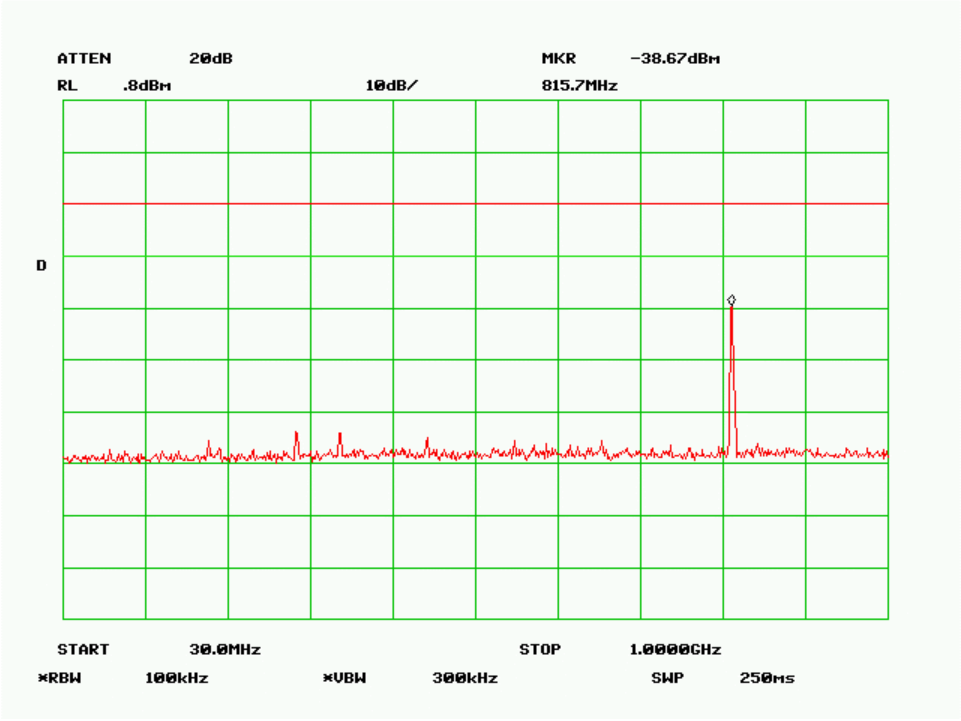
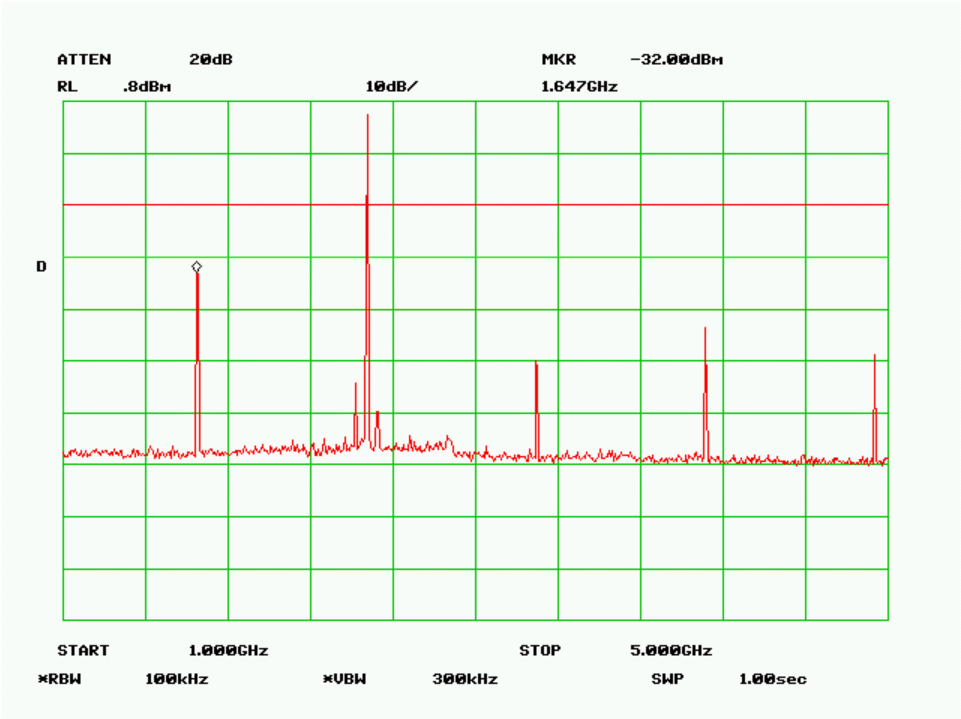
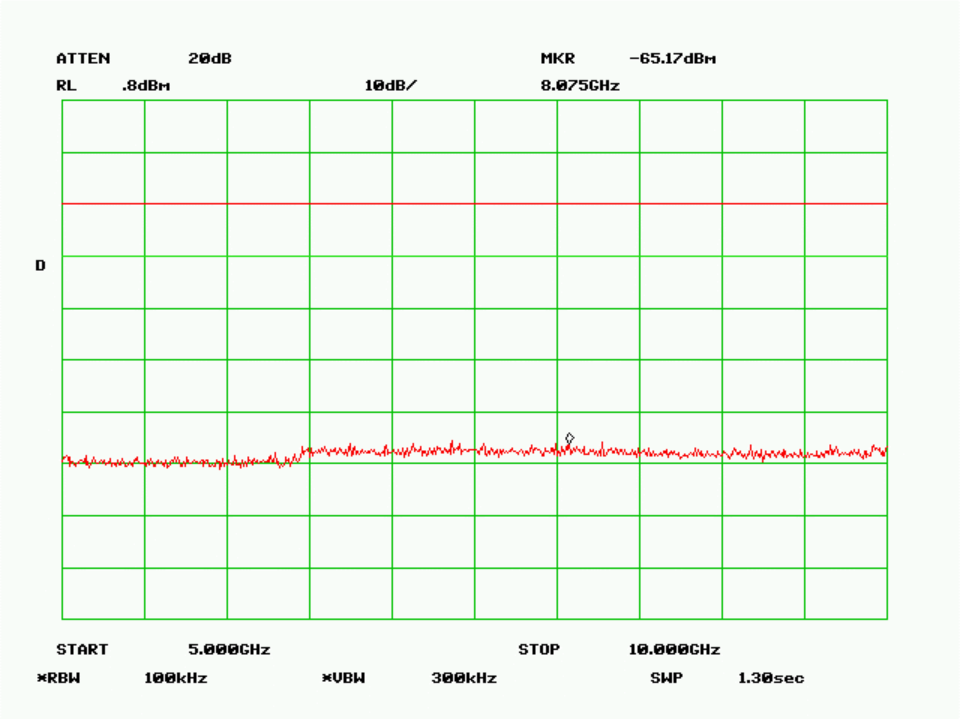
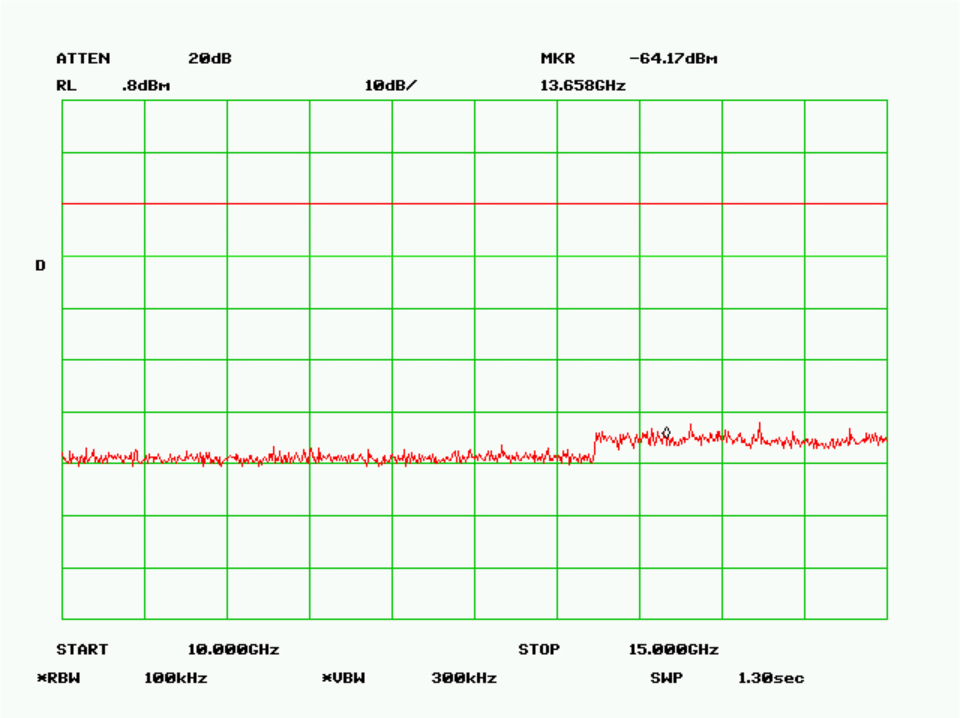
MKR -60.77dBm
RL 1.2dBm
10dB/
23.133GHz
D
START 20.000GHz
STOP 25.000GHz
*RBW 100kHz
*VBW 300kHz
SWP 1.30sec

Conducted Spurious Emissions 2467 MHz






ATTEN 20dB
MKR -65.17dBm
RL .8dBm
10dB/
8.075GHz
D
START 5.000GHz
STOP 10.000GHz
*RBW 100kHz
*VBW 300kHz
SWP 1.30sec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RL .8dBm
10dB/
13.658GHz
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STOP 15.000GHz
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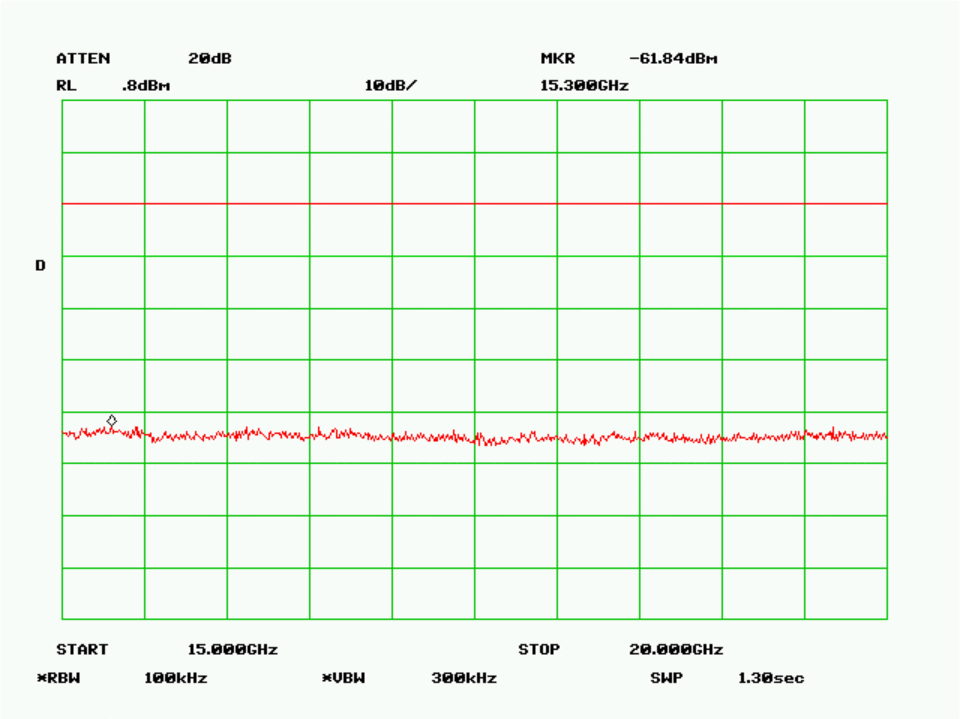
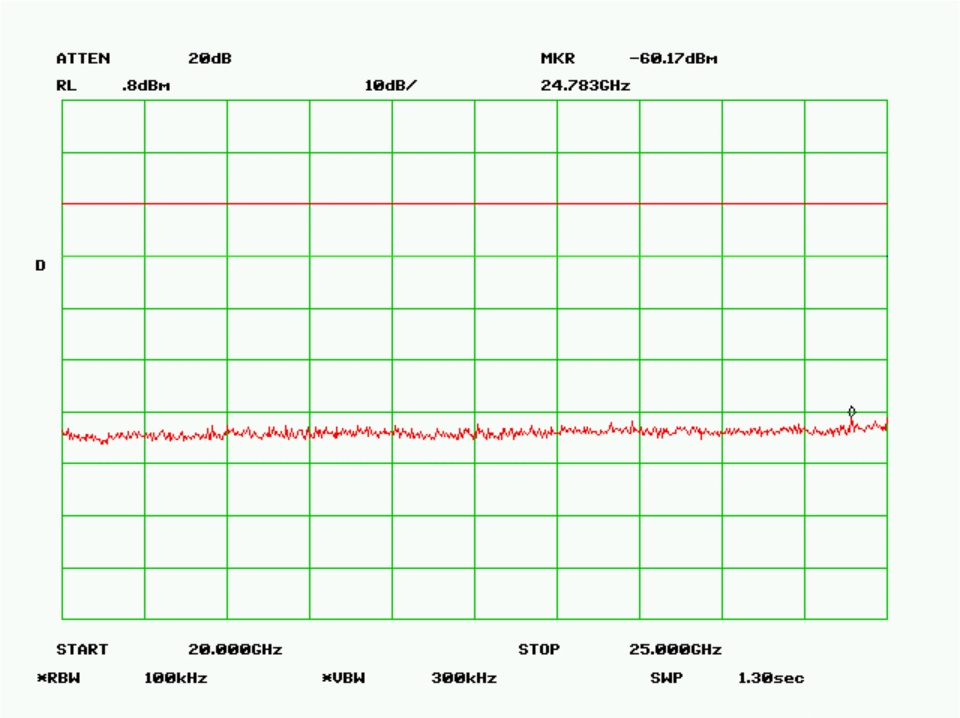
*VBW 300kHz
SWP 1.30sec


ATTEN 20dB
MKR -61.84dBm
RL .8dBm
10dB/
15.300GHz
D
START 15.000GHz
STOP 20.000GHz
*RBW 100kHz
*VBW 300kHz
SWP 1.30sec


ATTEN 20dB
MKR -60.17dBm
RL .8dBm
10dB/
24.783GHz
D
START 20.000GHz
STOP 25.000GHz
*RBW 100kHz
*VBW 300kHz
SWP 1.30sec

Name of Test: Radiated Spurious Emissions
Specification: 15.247(c), 15.209(a), 15.205
Spec. Limit See Table
Test Equipment Utilized i00029, i00033, i00088, i00089, i00103

Test Procedure

The UUT was tested in an Open Area Test Site (OATS) set 3m from the receiving transducer. A spectrum analyzer was used to verify that the UUT met the requirements for Radiated Spurious Emissions. The frequency range from 30 MHz to the 10th harmonic of the fundamental transmitter was observed. Rotating the UUT 360° and raising the antenna from 1 – 4 meters in both the horizontal and vertical antenna polarizations maximized the signals. High, middle, and low channels were tested and the six highest emissions are recorded.

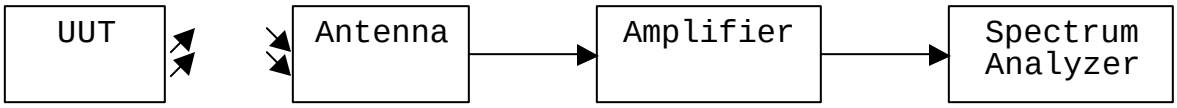
Sample Calculation

Monitored Level + Correction Factor = Corrected Level
Correction Factor = ACF + Cable Loss+ Distance Correction Factor
Distance Correction Factor = 10 Log D1/D2

Settings

RBW = 100 KHz
VBW = 100 KHz
Detector – Quasi-Peak

Test Setup



Radiated Spurious Emissions

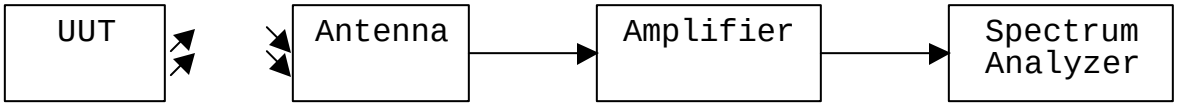
Tuned Freq (MHz)	Emission Freq (MHz)	Monitored Level (dBuV/m)	Correction Factor (dB)	Corrected Value (dBuV/m)	Limit (dBuV/m)	Result
2467	39.995	21.0	14.4	35.4	50	Pass
2467	150.044	21.0	17.5	38.5	50	Pass
2404	224.995	21.3	19.8	41.1	50	Pass
2404	299.995	22.0	18.7	40.1	57	Pass
2404	749.995	21.5	27.4	48.9	57	Pass
2434	924.997	14.9	29.7	44.6	57	Pass

Name of Test: Emissions At Band Edges
Specification: 15.247(c), 15.209(a), 15.205
Limit -20 dBC and for restricted band 54 dBuV average and 74 dBuV peak
Test Equipment Utilized i00028, i00271, i00290

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. The peak plots were captured and the average values were recorded.

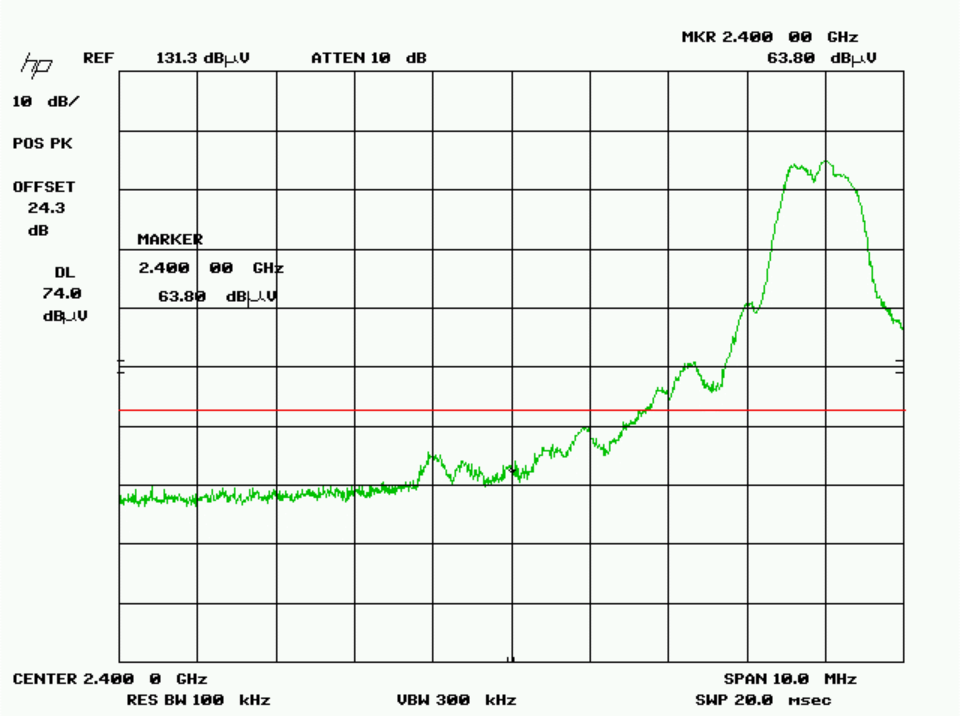
Test Setup



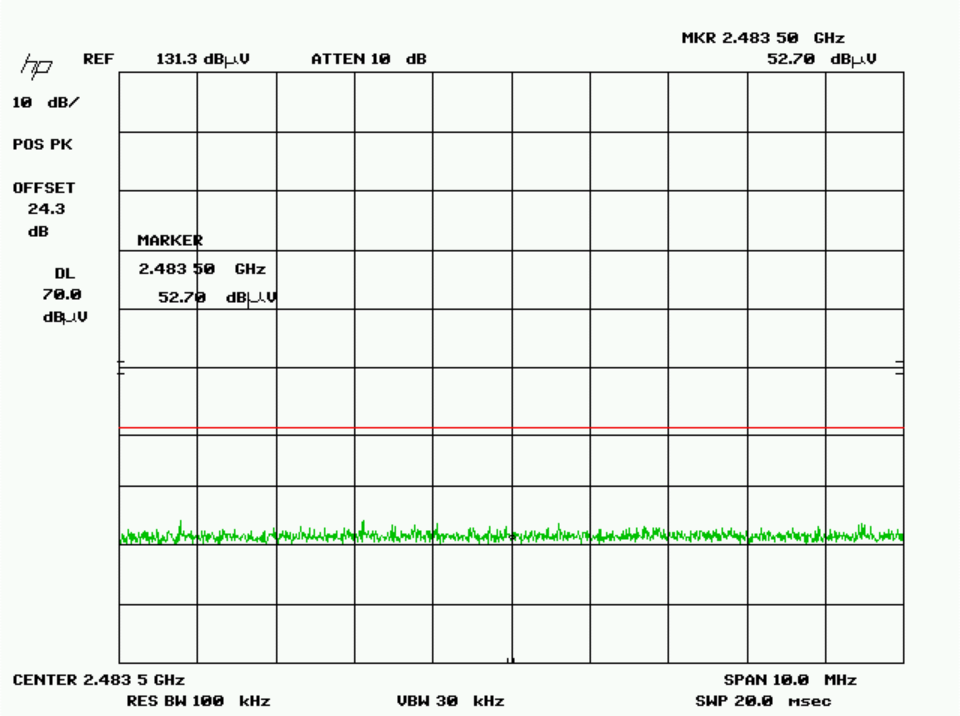
Band Edge / Restricted Band Emissions Summary

Tuned Freq (MHz)	Emission Freq (MHz)	Monitored Level (dBuV/m)	Detector	Limit (dBuV/m)	Result
2404	2400	63.8	Peak	74	Pass
2467	2483.5	52.7	Peak	74	Pass
2404	2400	45.3	Average	54	Pass
2467	2483.5	34.6	Average	54	Pass

Band Edge Peak 2400 MHz



Band Edge Peak 2467 MHz

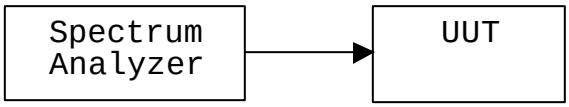


Name of Test: Occupied Bandwidth
Specification: 15.247(a)(2)
Limit BW = 500 KHz
Test Equipment Utilized i00329

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 6dB and 99% bandwidths were measured to verify the bandwidth met the specification.

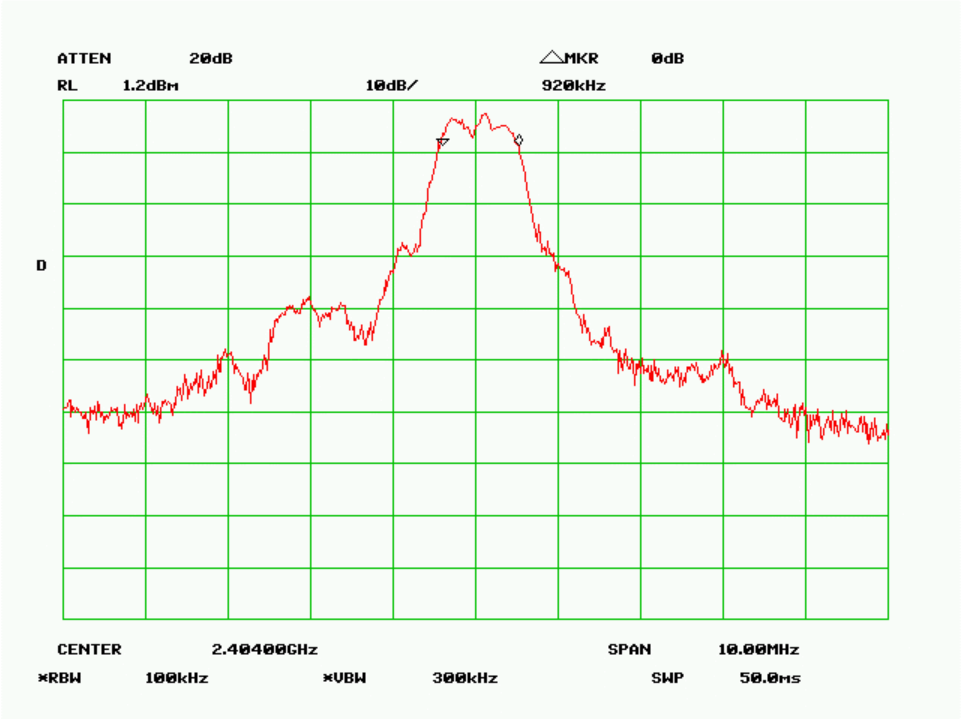
Test Setup



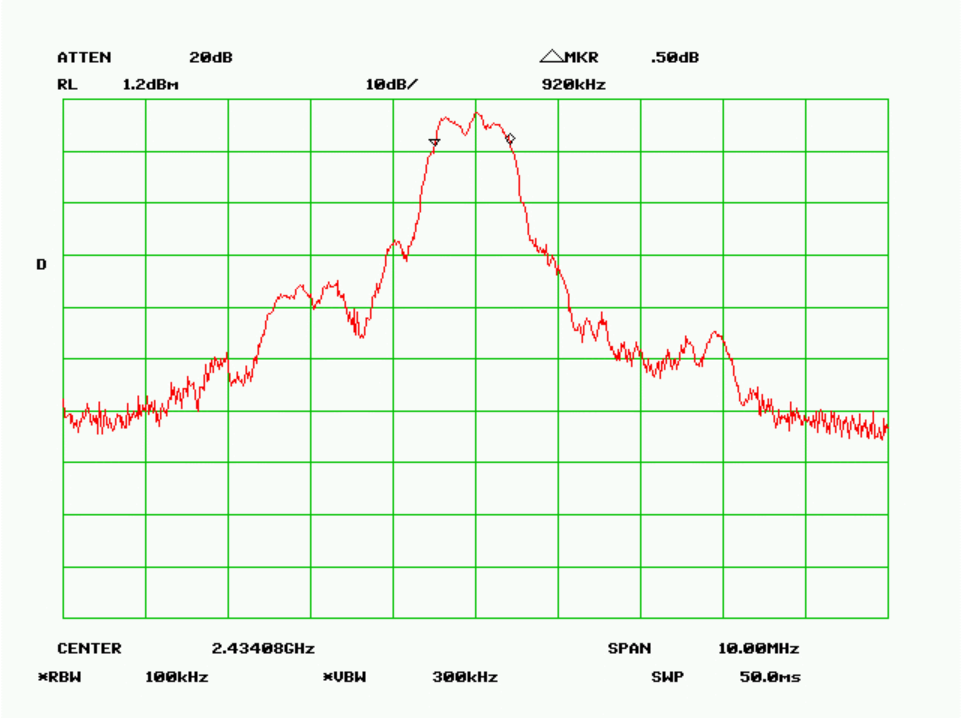
Occupied Bandwidth Summary

Frequency MHz	Recorded Measurement	Specification Limit	Result
2404	920 kHz	= 500 KHz	Pass
2434	920 kHz	= 500 KHz	Pass
2467	900 kHz	= 500 KHz	Pass

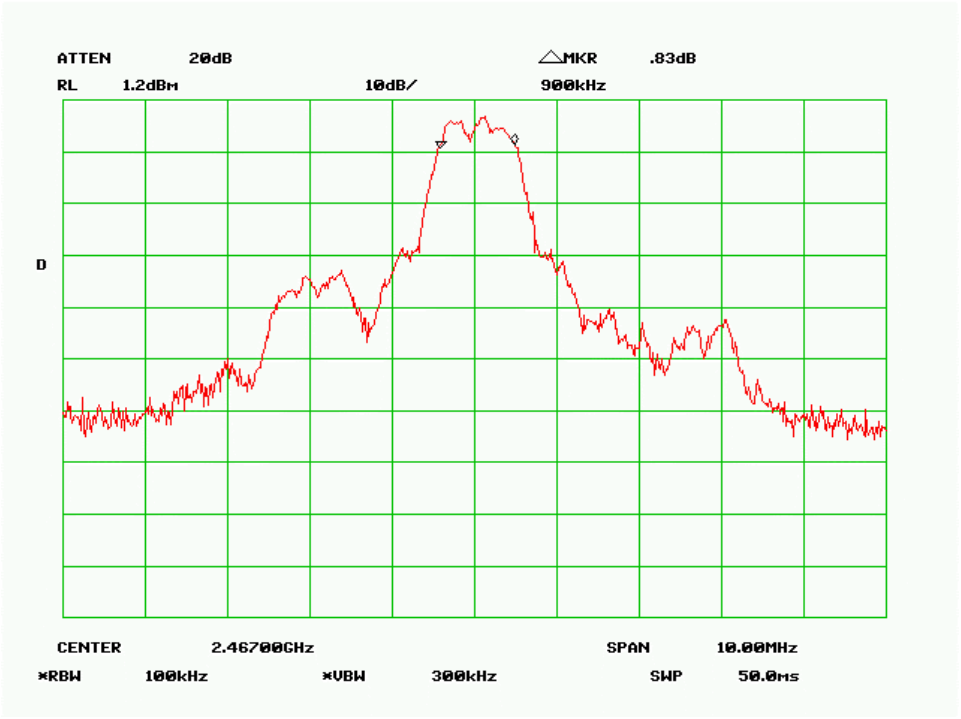
6dB Bandwidth 2404 MHz



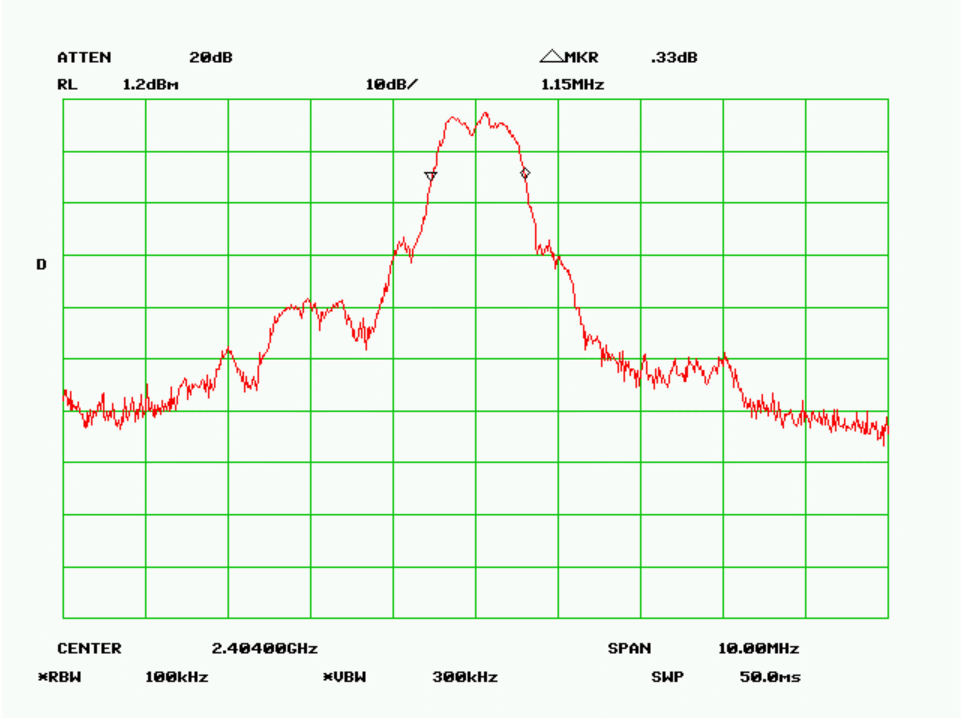
6dB Bandwidth 2434 MHz



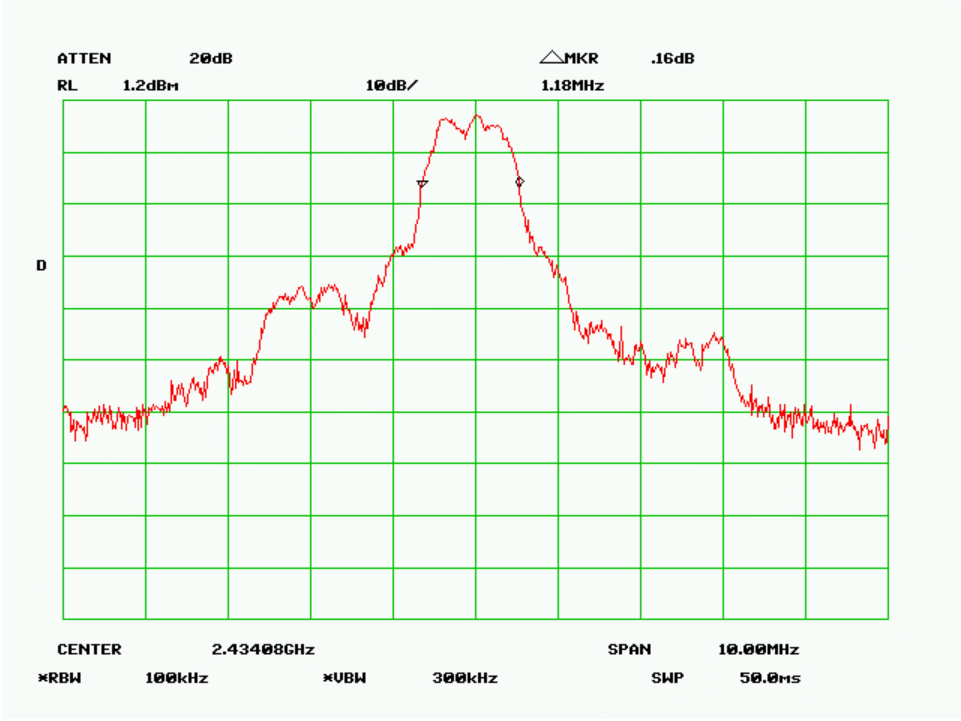
6dB Bandwidth 2467 MHz



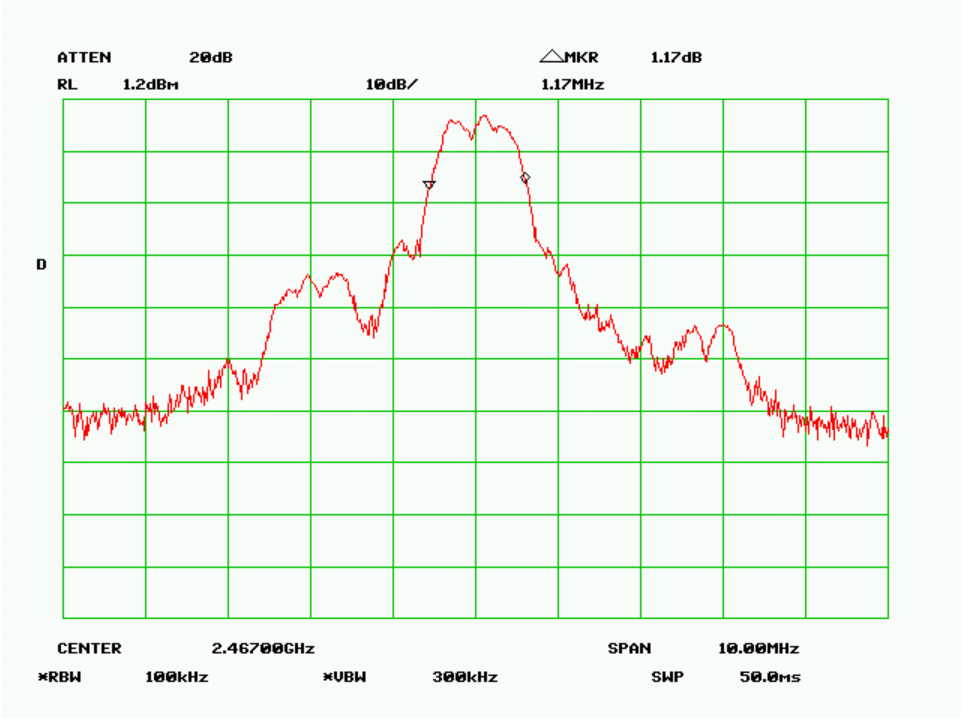
99% Bandwidth 2404 MHz



99% Bandwidth 2434 MHz



99% Bandwidth 2467 MHz

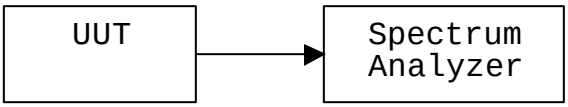


Name of Test: Transmitter Power Spectral Density (PSD)
Specification: 15.247(d)
Limit 8 dBm in any 3 kHz Bandwidth
Test Equipment Utilized i00329

Test Procedure

The UUT was connected directly to a spectrum analyzer. The Span was set to 1.5 MHz and the resolution bandwidth was set to 3 KHz. The analyzer was set for a sweep time of 500 seconds. When the entire spectrum was captured the marker peak function of the analyzer was utilized to verify the PSD met the specification.

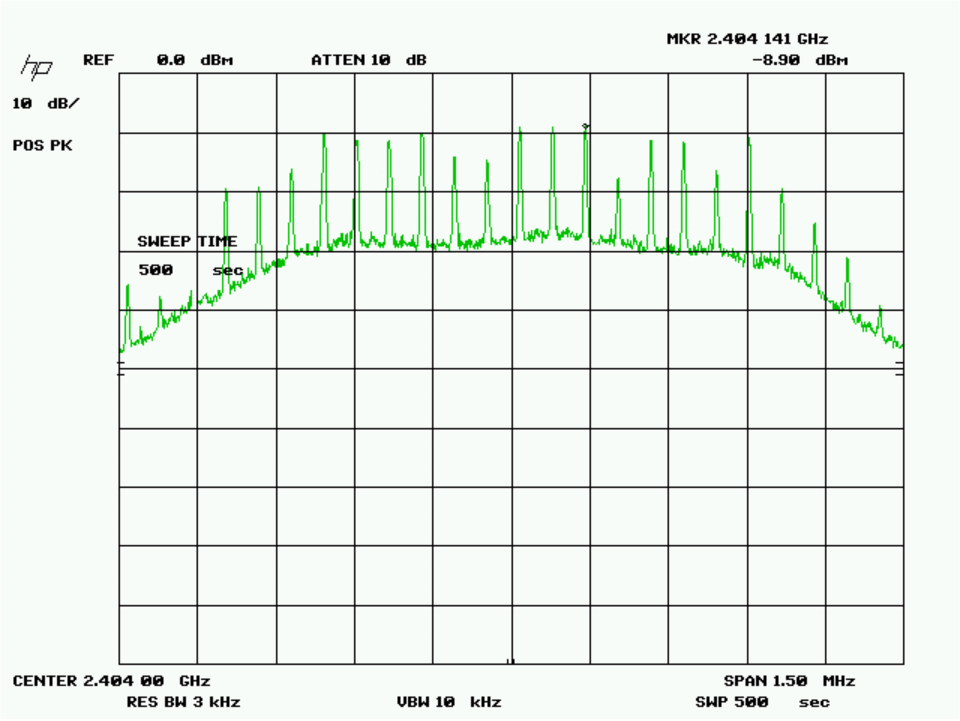
Test Setup



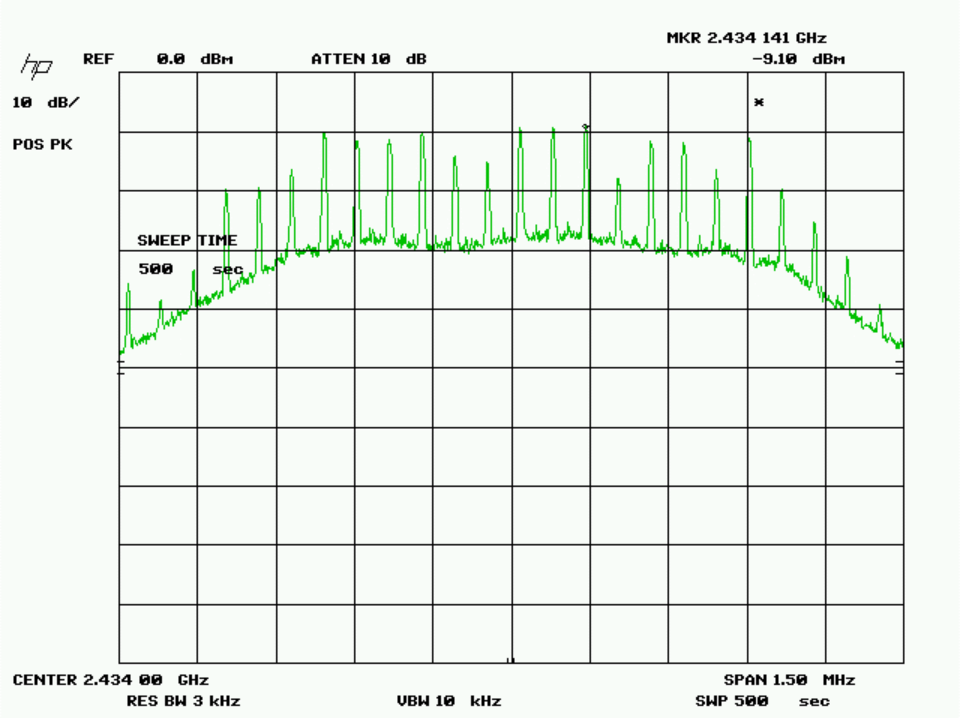
PSD Summary

Frequency MHz	Recorded Measurement	Specification Limit	Result
2404	-8.9 dBm	8 dBm	Pass
2434	-9.1 dBm	8 dBm	Pass
2467	-9.1 dBm	8 dBm	Pass

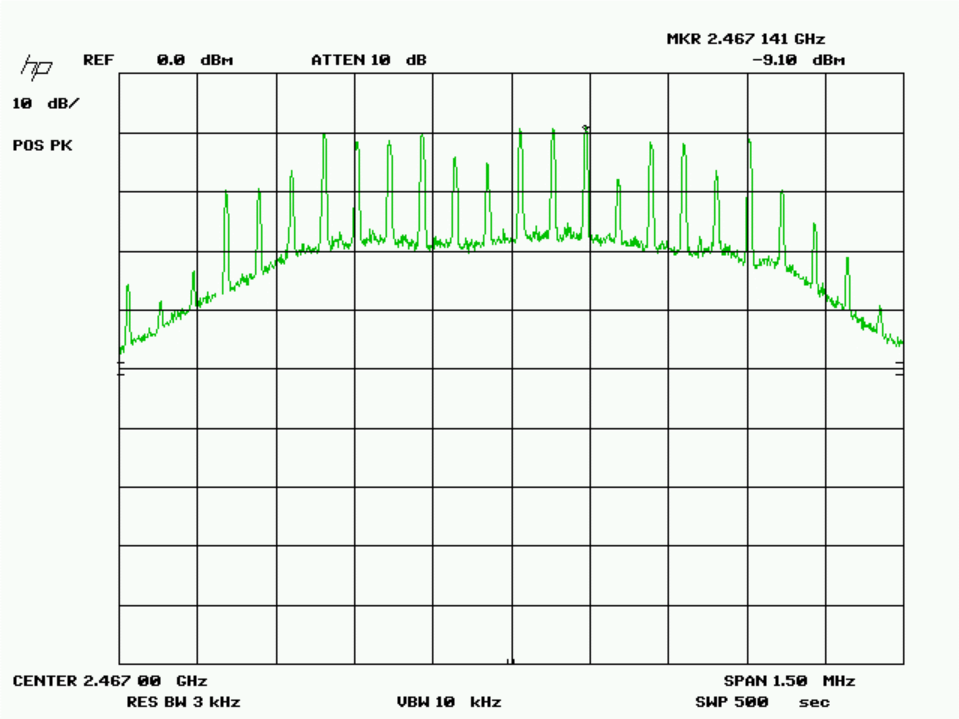
PSD 2404 MHz



PSD 2434 MHz



PSD 2467 MHz

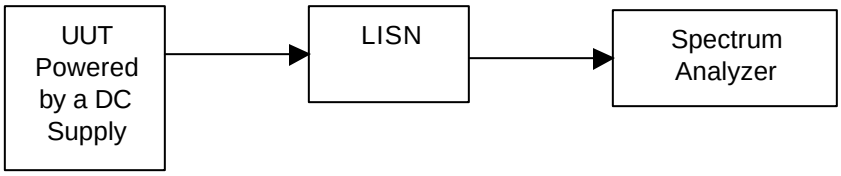

MKR 2.467 141 GHz
REF 0.0 dBm
ATTEN 10 dB
-9.10 dBm
10 dB/
POS PK
CENTER 2.467 00 GHz
SPAN 1.50 MHz
RES BW 3 kHz
VBW 10 kHz
SWP 500 sec

Name of Test: AC Conducted Emissions
Specification: 15.207
Test Equipment: i00033, i00270

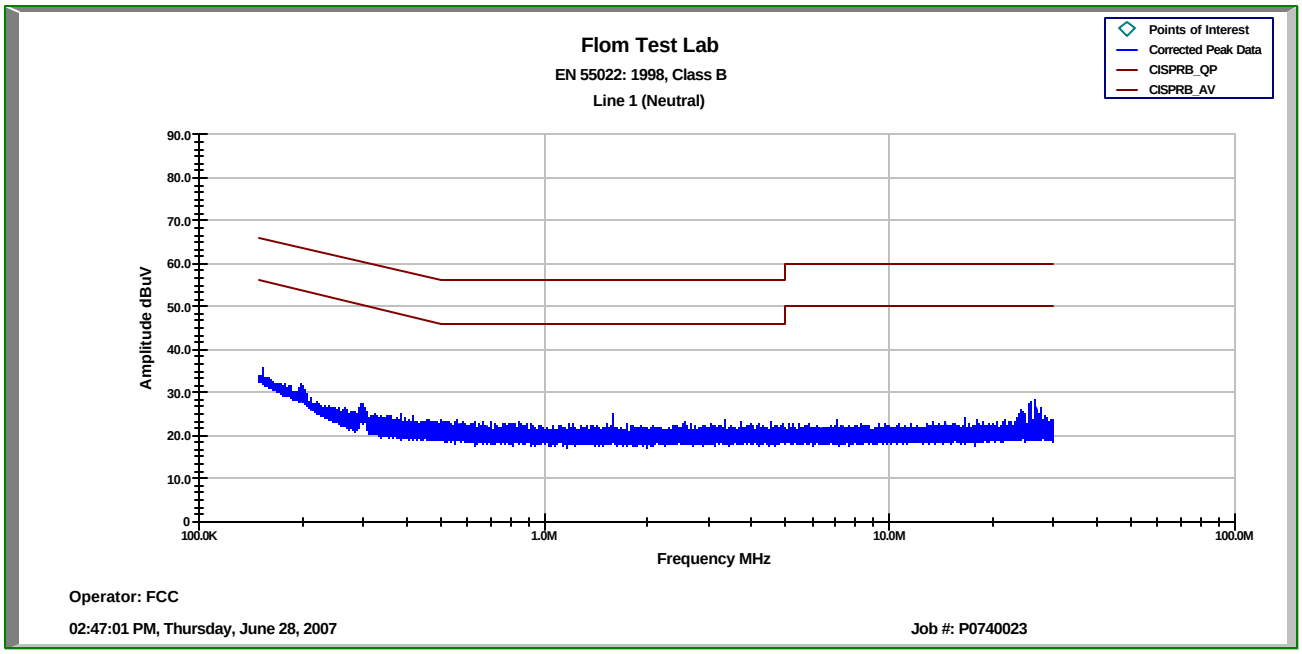
Test Procedure

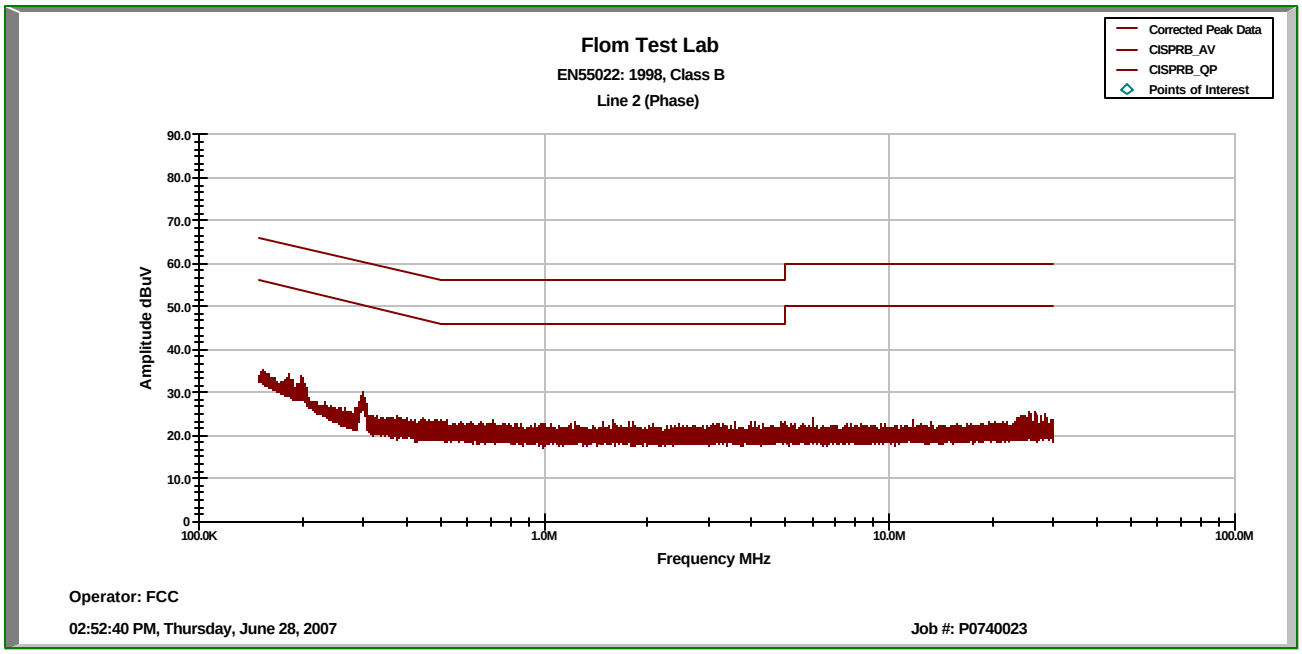
The UUT was tested by connecting an AC powered DC Supply through a LISN and monitoring the AC Conducted Emissions with a spectrum analyzer. Emissions from 150kHz to 30 MHz were monitored in peak detection mode. As no peak levels were within 20 dB of the average or quasi-peak limits on values were recorded and only peak plots are provided.

Test Setup



Test Results





No emissions were within 20 dB of the limit.

Test Equipment Utilized

Description	MFG	Model Number	FTL Asset Number	Last Cal Date	Cal Due Date
RF Pre-Amplifier	HP	8449	i00028	1/23/07	1/23/09
Spectrum Analyzer	HP	8563E	i00029	1/26/06	1/26/07
Spectrum Analyzer	HP	85462A	i00033	11/03/06	11/03/07
Bi-conical Antenna	EMCO	3109B	i00088	10/14/05	10/14/07
Log Periodic Antenna	Aprel	2001	i00089	10/20/05	10/20/07
Horn Antenna	EMCO	3115	i00103	9/5/06	9/5/07
Power Sensor	HP	E4418B	i00228	8/1/06	8/1/07
LISN	FCC	FCC-LISN-50-32-2-01	i00270	10/25/05	10/25/07
Horn Antenna	ARA	DRG-1181A	i00271	2/1/04	2/1/07
Spectrum Analyzer	HP	8566B	i00290	6/16/06	6/16/07
Power Meter	HP	8481A	i00317	10/1/06	10/1/07
Spectrum Analyzer	HP	8566B	i00329	4/16/07	4/16/08
Test PC	Dell	Dimension 2400	SN/0932RY	N/A	N/A

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. All tests were performed with the UUT connected to the Test PC utilizing a USB 2.0 connection.

END OF TEST REPORT