Test of Strix MWS 100 802.11 Wireless AP

To: FCC 47 CFR Part15.247 & IC RSS-210

Test Report Serial No.: STRX17-A4 Rev A

TEST REPORT

FROM

MiCOM Labs

Test of Strix MWS 100 802.11 Wireless AP

to

To FCC 47 CFR Part15.247 & IC RSS-210

Test Report Serial No.: STRX17-A4 Rev A

Note: this report only contains data with regards to the 2.4 and 5.8 GHz operational modes of the Strix Wireless Access Point. 5150-5250 MHz test data is reported in MiCOM Labs test report STRX17-A8

This report supersedes: None

Applicant: Strix Systems Inc
26610 Agoura Road,
Calabasas
California 91302 USA

Product Function: Wireless Access Point

Copy No: pdf **Issue Date:** 28th August 2008

This Test Report is Issued Under the Authority of;

MiCOM Labs, Inc.
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Pleasanton, CA 94566 USA
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A2LA ACCREDITED
CERTIFICATE #2381.01

MiCOM Labs is an ISO 17025 Accredited Testing Laboratory

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ACCREDITATION & LISTINGS

MiCOM Labs, Inc. an accredited laboratory complies with the international standard BS EN ISO/IEC 17025. The company is accredited by the American Association for Laboratory Accreditation (A2LA) www.a2la.org test laboratory number 2381.01. MiCOM Labs test schedule is available at the following URL; http://www.a2la.org/scopepdf/2381-01.pdf

ilac-MRA

THE AMERICAN ASSOCIATION FOR LABORATORY ACCREDITATION

ACCREDITED LABORATORY

A2LA has accredited

MICOM LABS
Pleasanton, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 18 June 2005*).

Presented this 26th day of February 2008.

President
For the Accreditation Council
Certificate Number 2381.01
Valid to November 30, 2009

For the tests or types of tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

LISTINGS

MiCOM Labs test facilities are listed by the following organizations;

North America

United States of America
Federal Communications Commission (FCC) Listing #: 102167

Canada
Industry Canada (IC) Listing #: 4143A-2

RECOGNITION

APEC MRA (Asia-Pacific Economic Community Mutual Recognition Agreement)

Conformity Assessment Body (CAB) – MiCOM Labs

Test data generated by MiCOM Labs is accepted in the following countries under the APEC MRA.

Country	Recognition Body	Phase	CAB Identification No.
Australia	Australian Communications and Media Authority (ACMA)	I	US0159
Hong Kong	Office of the Telecommunication Authority (OFTA)	I	
Korea	Ministry of Information and Communication Radio Research Laboratory (RRL)	I	
Singapore	Infocomm Development Authority (IDA)	I	
Taiwan	Directorate General of Telecommunications (DGT) Bureau of Standards, Metrology and Inspection (BSMI)	I I	

DOCUMENT HISTORY

Document History		
Revision	Date	Comments
Draft		
		This document was initially released as STRX16-A4. Client modified the enclosure and to ensure continued compliance radiated emissions 0.03 – 1 GHz was completed and re-issued as STRX17-A4, see Section 5.1.6.2 Radiated Spurious Emissions (0.03 – 1 GHz), ac/dc adapter. With the case change the EUT can now be used indoors and outdoors
Rev A	28th August 2008	Initial Release

1. TEST RESULT CERTIFICATE

Applicant:	Strix Systems Inc 26610 Agoura Road, Calabasas California 91302 USA	Tested By:	MiCOM Labs, Inc. 440 Boulder Court Suite 200 Pleasanton California, 94566, USA
EUT:	Wireless Access Point	Telephone:	+1 925 462 0304
Model:	MWS 100	Fax:	+1 925 462 0306
S/N:	001		
Test Date(s):	17th Jan to 15th Feb and 14th Aug '08	Website:	www.micomlabs.com

STANDARD(S)	TEST RESULTS
FCC 47 CFR Part15.247 & IC RSS-210	EQUIPMENT COMPLIES

MiCOM Labs, Inc. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.

Notes:

1. This document reports conditions under which testing was conducted and the results of testing performed.
2. Details of test methods used have been recorded and kept on file by the laboratory.
3. Test results apply only to the item(s) tested.

ACCREDITED
CERTIFICATE #2381.01

Approved & Released for MiCOM Labs, Inc. by:

Graeme Grieve
Quality Manager MiCOM Labs,

Gordon Hurst
President & CEO MiCOM Labs, Inc.

2. REFERENCES AND MEASUREMENT UNCERTAINTY

2.1. Normative References

Ref.	Publication	Year	Title
(i)	FCC 47 CFR Part 15.247	2007	Code of Federal Regulations
(ii)	Industry Canada RSS-210	Issue 7 June 2007	Low Power License-Exempt Radiocommunication Devices (All Frequency Bands)
(iii)	Industry Canada RSS-Gen	Issue 2 June 2007	General Requirements and Information for the Certification of Radiocommunication Equipment.
(iv)	ANSI C63.4	2003	American National Standards for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
(v)	CISPR 22/ EN 55022	1997 1998	Limits and Methods of Measurements of Radio Disturbance Characteristics of Information Technology Equipment
(vi)	M 3003	Edition 1 Dec. 1997	Expression of Uncertainty and Confidence in Measurements
(vii)	LAB34	Edition 1 Aug 2002	The expression of uncertainty in EMC Testing
(viii)	ETSI TR 100 028	2001	Parts 1 and 2 Electromagnetic compatibility and Radio Spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics
(ix)	A2LA	14th September 2005	Reference to A2LA Accreditation Status – A2LA Advertising Policy

2.2. Test and Uncertainty Procedures

Conducted and radiated emission measurements were conducted in accordance with American National Standards Institute ANSI C63.4, listed in the Normative References section of this report.

Measurement uncertainty figures are calculated in accordance with ETSI TR 100 028 Parts 1 and 2.

Measurement uncertainties stated are based on a standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95 % in accordance with UKAS document M 3003 listed in the Normative References section of this report.

3. PRODUCT DETAILS AND TEST CONFIGURATIONS

3.1. Technical Details

Details	Description
Purpose:	Test of the Strix MWS 100 802.11 Wireless AP to FCC Part 15.247 and Industry Canada RSS-210 regulations.
Applicant:	Strix Systems Inc 26610 Agoura Road, Calabasas California 91302 USA
Manufacturer:	As applicant.
Laboratory performing the tests:	MiCOM Labs, Inc. 440 Boulder Court, Suite 200 Pleasanton, California 94566 USA
Test report reference number:	STRX17-A4 Rev A
Date EUT received:	17TH January 2008
Standard(s) applied:	FCC 47 CFR Part15.247 & IC RSS-210
Dates of test (from - to):	17th Jan to 15th Feb and 14th Aug '08
No of Units Tested:	1
Type of Equipment:	802.11a/b/g Wireless Access Point
Manufacturers Trade Name:	Wireless Access Point
Model:	MWS 100
Location for use:	Indoor and Outdoor
Declared Frequency Range(s):	2400 - 2483.5 MHz 5725 - 5850 MHz
Type of Modulation:	Per 802.11 – CCK, OFDM
Declared Nominal Output Power:	802.11b: +27 dBm 802.11g: +26 dBm 802.11a: +26dBm
EUT Modes of Operation:	802.11a/b/g
Transmit/Receive Operation:	Time Division Duplex
Rated Input Voltage:	10.8 - 48 Vdc,
Operating Temperature Range:	Client declared range -40 to +80ºC
ITU Emission Designator:	802.11b – 15M0W7D 802.11g – 19M4W7D 802.11a – 15M4W7D
Microprocessor(s) Model:	Atheros AR5312
Clock/Oscillator(s):	25 MHz, 40 MHz
Frequency Stability:	±20 ppm max
Equipment Dimensions:	9.5” X 6” X 2”
Weight:	1.5 lbs
Primary function of equipment:	802.11 Device

3.2. Scope of Test Program

The scope of the test program was to test the Strix MWS 100 wireless Access Point in the frequency ranges 2400 - 2483.5 MHz, and 5725 – 5850 MHz for compliance against FCC 47 CFR Part 15.247 and Industry Canada RSS-210 specifications.

As a result of the modification to the case the EUT was retested for emissions below 1 GHz. This document was generated to satisfy FCC's Class II Permissive change.

Strix MWS 100
Wireless Access Point (new case style)

3.3. Equipment Model(s) and Serial Number(s)

Type (EUT/ Support)	Equipment Description (Including Brand Name)	Mfr	Model No.	Serial No.
EUT	Wireless AP	Strix	MWS 100	001
Support	Power Supply	Strix	SA07H1724	None
Support	POE	Strix	POE 48i	010615
Support	Laptop PC	IBM	ThinkPad	None

3.4. Antenna Details

Dome antenna manufactured by Huber & Suhner Model SWA2459

Gain 2400 -5875 MHz; 4dBi

Rubber Ducky antenna manufactured by Connex Wireless Model RD2458-5

Gain @ 2400 MHz; 3 dBi

Gain @ 5725 MHz; 5 dBi

Omni antenna manufactured by Larsen Model R380.500.220

Gain 2400 – 2500 MHz; 8 dBi

Omni antenna manufactured by Pacific Wireless Model OD58 12dBi

Gain 5470 – 5850 MHz; 12 dBi

3.5. Cabling and I/O Ports

Number and type of I/O ports

1. 10/100 Ethernet with POE
2. RF Main (SMA)
3. RF Aux (SMA)
4. Vdc, 4mm supply connector

3.6. Test Configurations

Matrix of Channel test configurations.

Operational Mode (802.11)	Frequencies (MHz)
b, g	2,412 2,437 2,462
a	5,745 5,785 5,825

Matrix of Access Point Data Rate Configurations

'b' Mode Data Rate	'a' and 'g' Mode Data Rate
1 Mb/s	6 Mb/s

3.7. Equipment Modifications

The following modifications were required to bring the equipment into compliance:

1. Radiated Band-Edge Issue

   Irrespective of antenna type the EUT had problems meeting the average power limit for radiated band-edge emissions. The output power of the EUT was reduced however this did not have an effect on the transmitted energy in the restricted-band.

   To fix the problem the transmitter gain constants in the radio calibration data were adjusted to optimize the transmitter signal to noise ratio thereby lowering the transmitted noise floor in restricted bands.

2. ART Software Power Settings for Band-Edge

   As a result of radiate non-compliant band edge issues the power settings in the Atheros Radio Test (ART) software for some configurations had to be reduced to bring the EUT into compliance.

Antenna	Configuration	Channel (MHz)	Art Full Power	ART Band Edge Power Setting
Rubber Ducky 3 dBi @2.4GHz	2.4b	2412	27.0	26.0
	2.4g	2412	26.0	25.5
8 dBi Omni	2.4g	2412	26.0	23.5

All other Band Edge measurements were made with the ART software power set to full power.

3. Emissions 0.03 – 1 GHz

   To comply with the digital emissions requirement (below 1 GHz) a ferrite was required on the Ethernet cable. Ferrite Fair-rite #: 0461167281 was used to reduce the emissions below the limit.

3.8. Deviations from the Test Standard

The following deviations from the test standard were required in order to complete the test program:

1. NONE

3.9. Subcontracted Testing or Third Party Data

1. NONE

4. TEST SUMMARY

List of Measurements

The following table represents the list of measurements required under the **FCC CFR47 Part 15.247** and **Industry Canada RSS-210** and **Industry Canada RSS-Gen.**

Section(s)	Test Items	Description	Condition	Result	Test Report Section
15.247(a)(2) **A8.2(1)** **4.4**	6 dB and 99 % Bandwidths	≥500 kHz	Conducted	Complies	5.1.1
15.247(b)(3) **15.31(e)** **A8.4(4)**	Peak Output Power Voltage Variation	Shall not exceed 1W Variation of supply voltage 85 % -115 %	Conducted	Complies	5.1.2
15.247(e) **A8.2**	Peak Power Spectral Density	Shall not be greater than +8 dBm in any 3 kHz band	Conducted	Complies	5.1.3
15.247(i) **5.5**	Maximum Permissible Exposure	Exposure to radio frequency energy levels	Conducted	Complies	5.1.4
15.247(d) **15.205 /** **15.209** **A8.5** **2.2** **4.7**	Spurious Emissions (30MHz - 26 GHz b/g and 30 MHz – 40 GHz a)	The radiated emission in any 100 kHz of out-band shall be at least 20 dB below the highest in-band spectral density	Conducted	Complies	5.1.5

List of Measurements (continued)

The following table represents the list of measurements required under the **FCC CFR47 Part 15.247, Industry Canada RSS-210,** and **Industry Canada RSS-Gen.**

Section(s)	Test Items	Description	Condition	Result	Test Report Section
15.247(d) **15.205 /** **15.209** **A8.5** **2.2** **2.6** **4.7**	Radiated Emissions	Restricted Bands	Radiated	Complies	5.1.6
	Transmitter Radiated Spurious Emissions	Emissions above 1 GHz		Complies	*5.1.6.1*
Industry Canada only **RSS-Gen §4.8, §6**	Receiver Radiated Spurious Emissions	Emissions above 1 GHz		Complies	*5.1.6.2*
	Radiated Band Edge	Band edge results		Complies	*5.1.6.2.1*
15.205 / **15.209** **2.2**	Radiated Spurious Emissions	Emissions <1 GHz (30M-1 GHz)	Radiated	Complies	*5.1.6.3*
15.207 **7.2.2**	AC Wireline Conducted Emissions 150 kHz–30 MHz	Conducted Emissions	Conducted	Complies	*5.1.7*

Note 1: *Test results reported in this document relate only to the items tested*
Note 2: *The required tests demonstrated compliance as per client declaration of test configuration, monitoring methodology and associated pass/fail criteria*
Note 3: *Appendix A - Equipment Modifications highlights the equipment modifications that were required to bring the product into compliance with the above test matrix*

5. TEST RESULTS

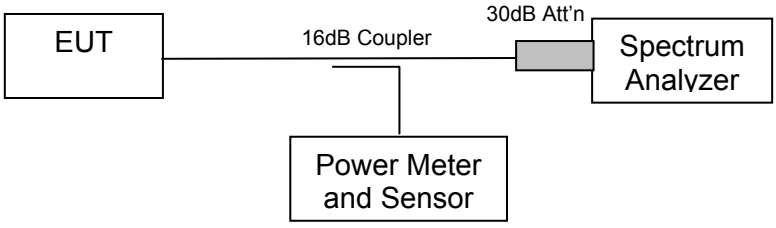
5.1. Device Characteristics

5.1.1. 6 dB and 99 % Bandwidth

FCC, Part 15 Subpart C §15.247(a)(2)
Industry Canada RSS-210 §A8.2
Industry Canada RSS-Gen §4.4

Test Procedure
The bandwidth at 6 dB and 99 % is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency. The analyzer was set for a 6 dB resolution bandwidth filter during this measurement.

Test Measurement Set up



Measurement set up for 6 dB and 99 % bandwidth test

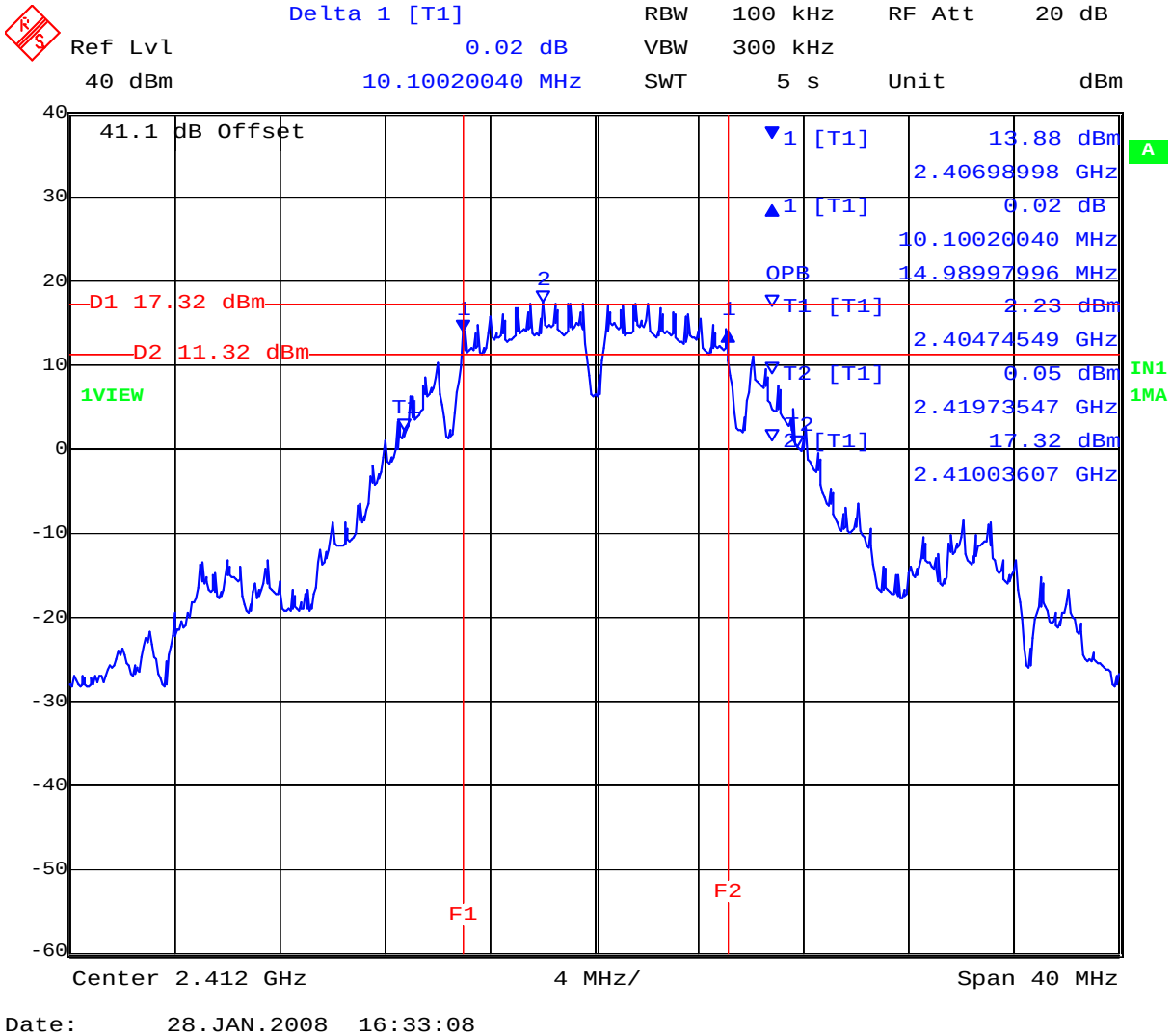
Measurement Results for 6 dB and 99 % Operational Bandwidth(s)

Ambient conditions.
Temperature: 17 to 23 °C Relative humidity: 31 to 57 % Pressure: 999 to 1012 mbar

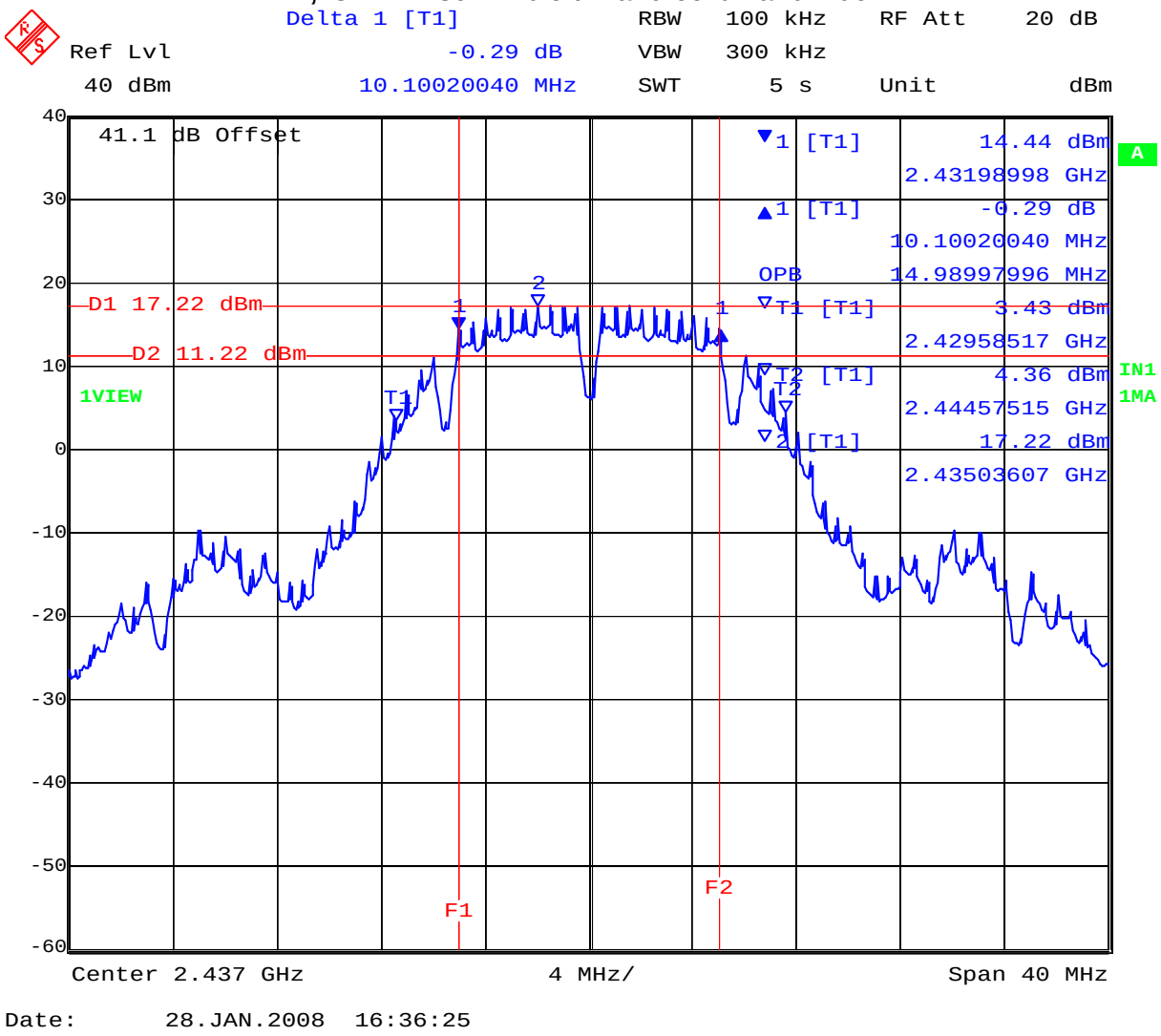
TABLE OF RESULTS – **802.11b - 1 Mb/s**

Center Frequency (MHz)	6 dB Bandwidth (MHz)	99 % BW (MHz)
2,412	10.100	14.990
2,437	10.100	14.990
2,462	10.100	14.669

2,412 MHz 802.11b 6 dB and 99% Bandwidth



2,437 MHz 802.11b 6 dB and 99% Bandwidth



2,462 MHz 802.11b 6 dB and 99% Bandwidth

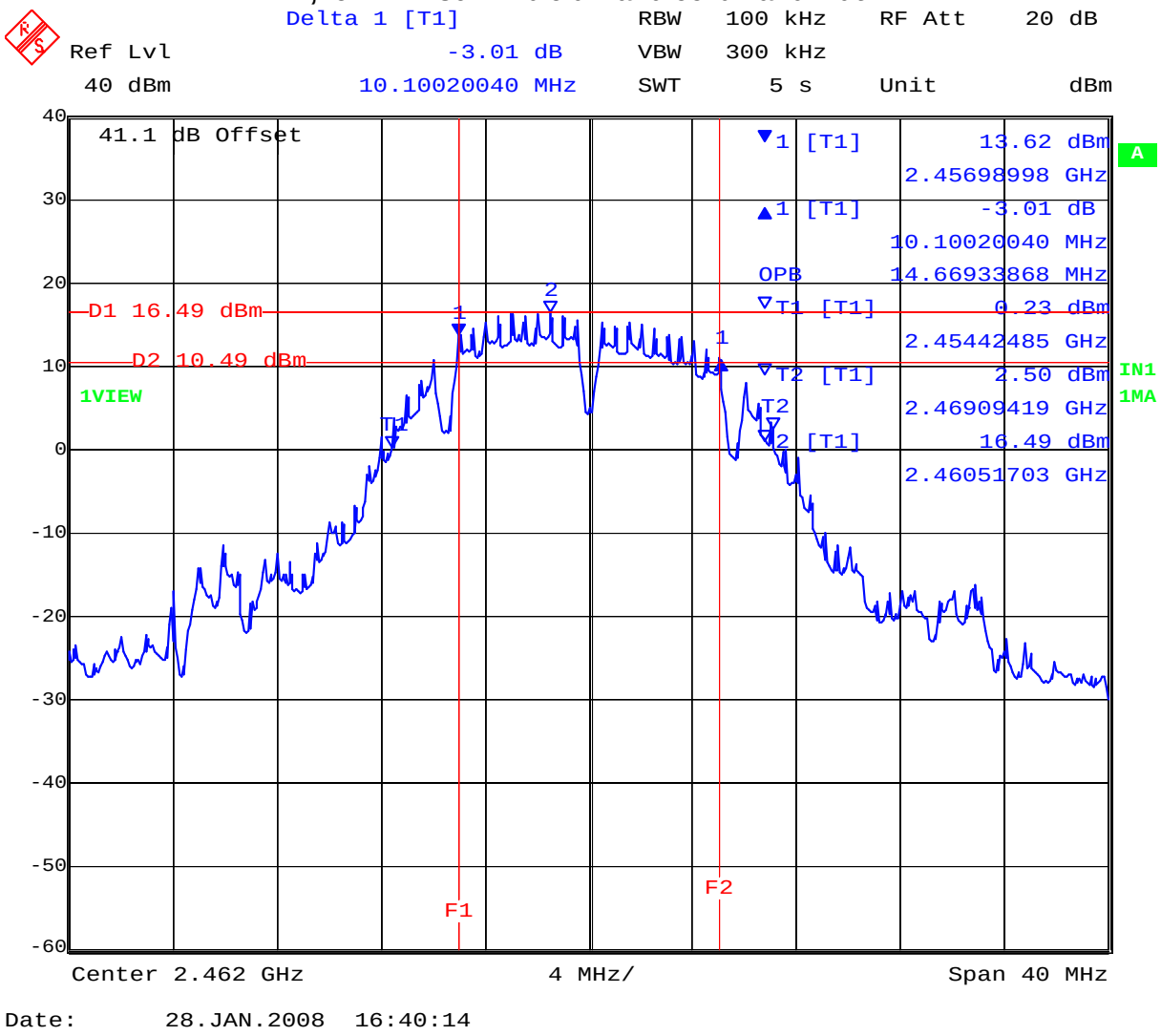
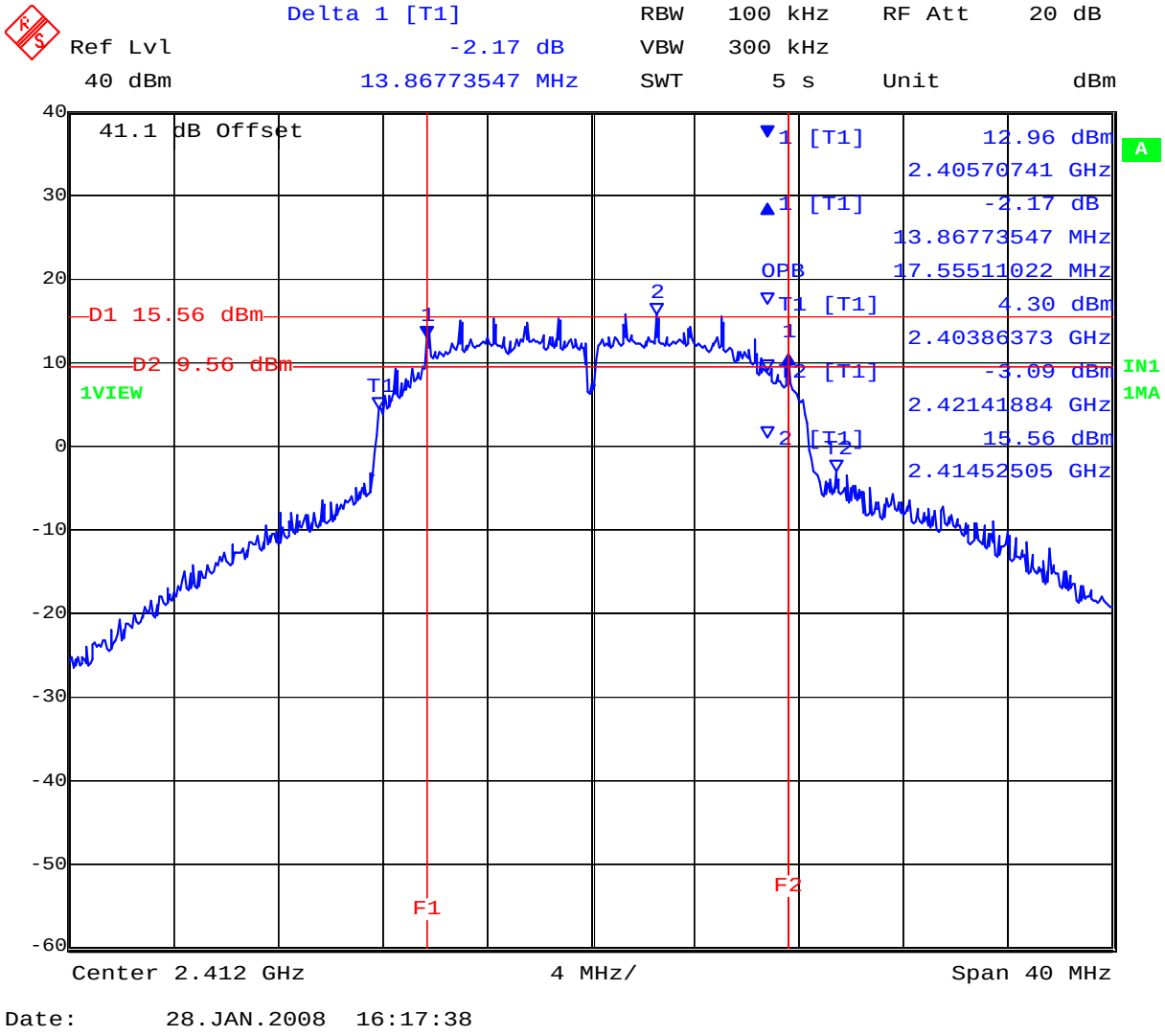


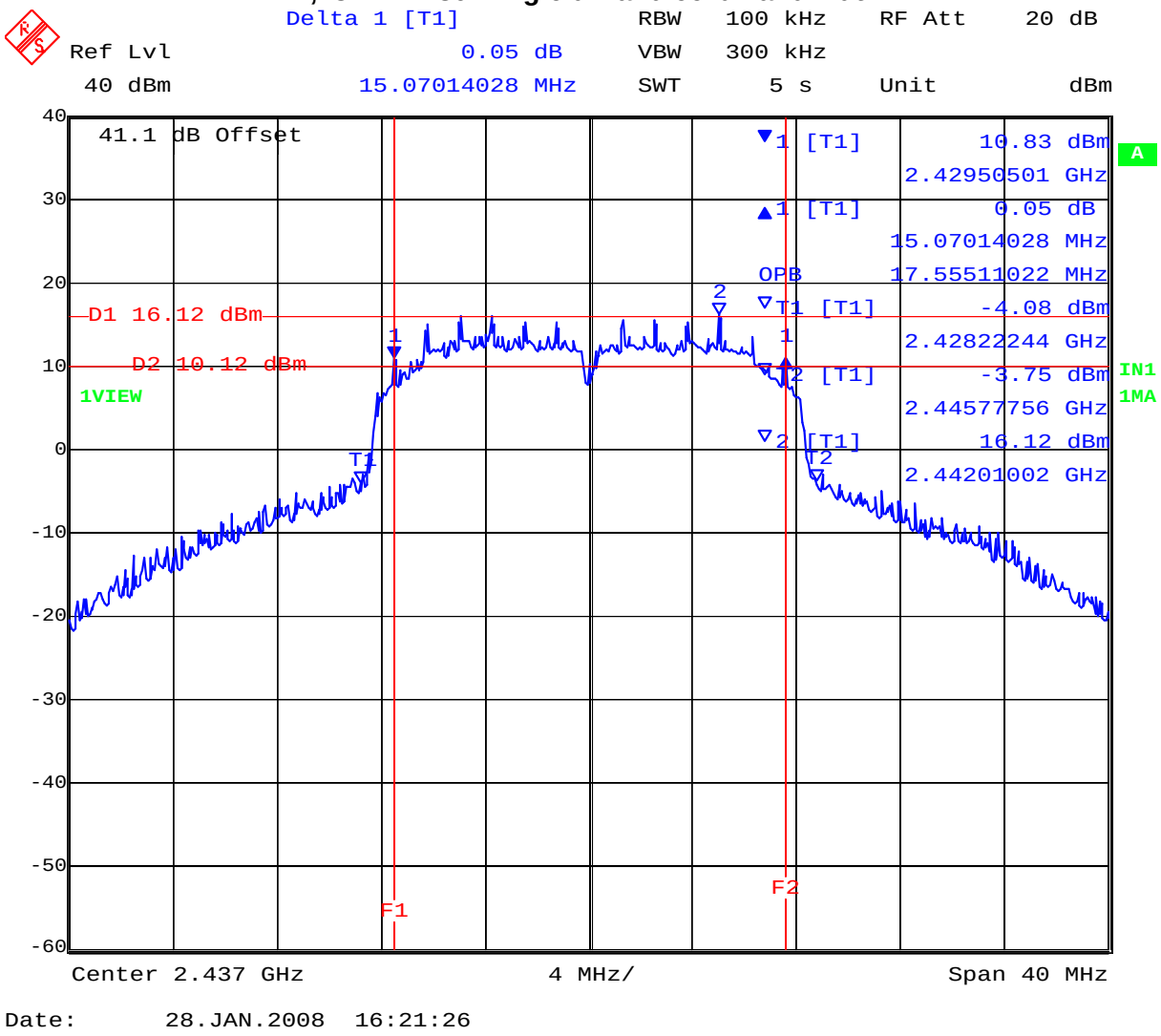
TABLE OF RESULTS – **802.11g - 6 Mb/s**

Center Frequency (MHz)	6 dB Bandwidth (MHz)	99 % BW (MHz)
2,412	13.868	17.555
2,437	15.070	17.555
2,462	13.788	19.319

2,412 MHz 802.11g 6 dB and 99% Bandwidth



2,437 MHz 802.11g 6 dB and 99% Bandwidth



2,462 MHz 802.11g 6 dB and 99% Bandwidth

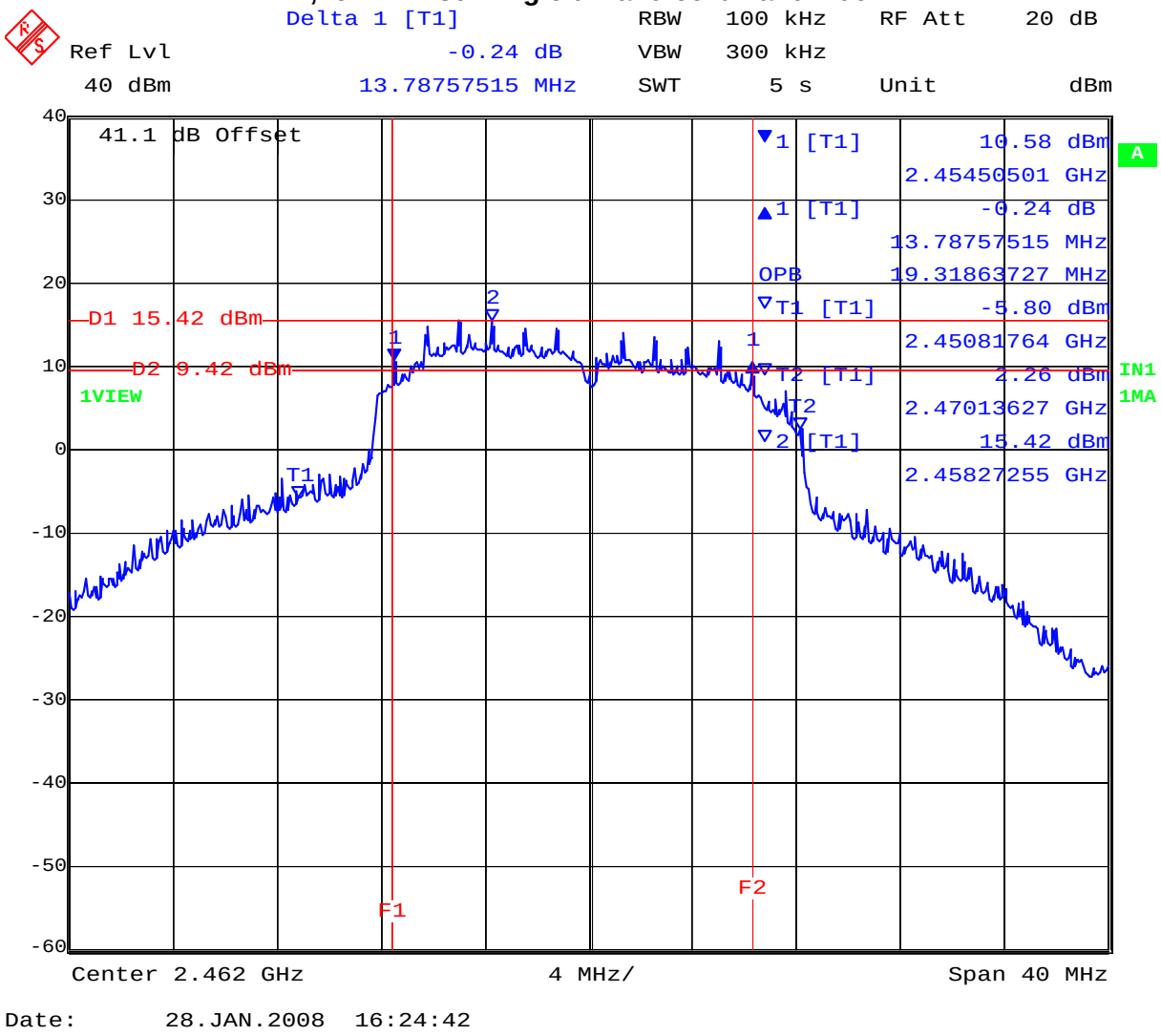
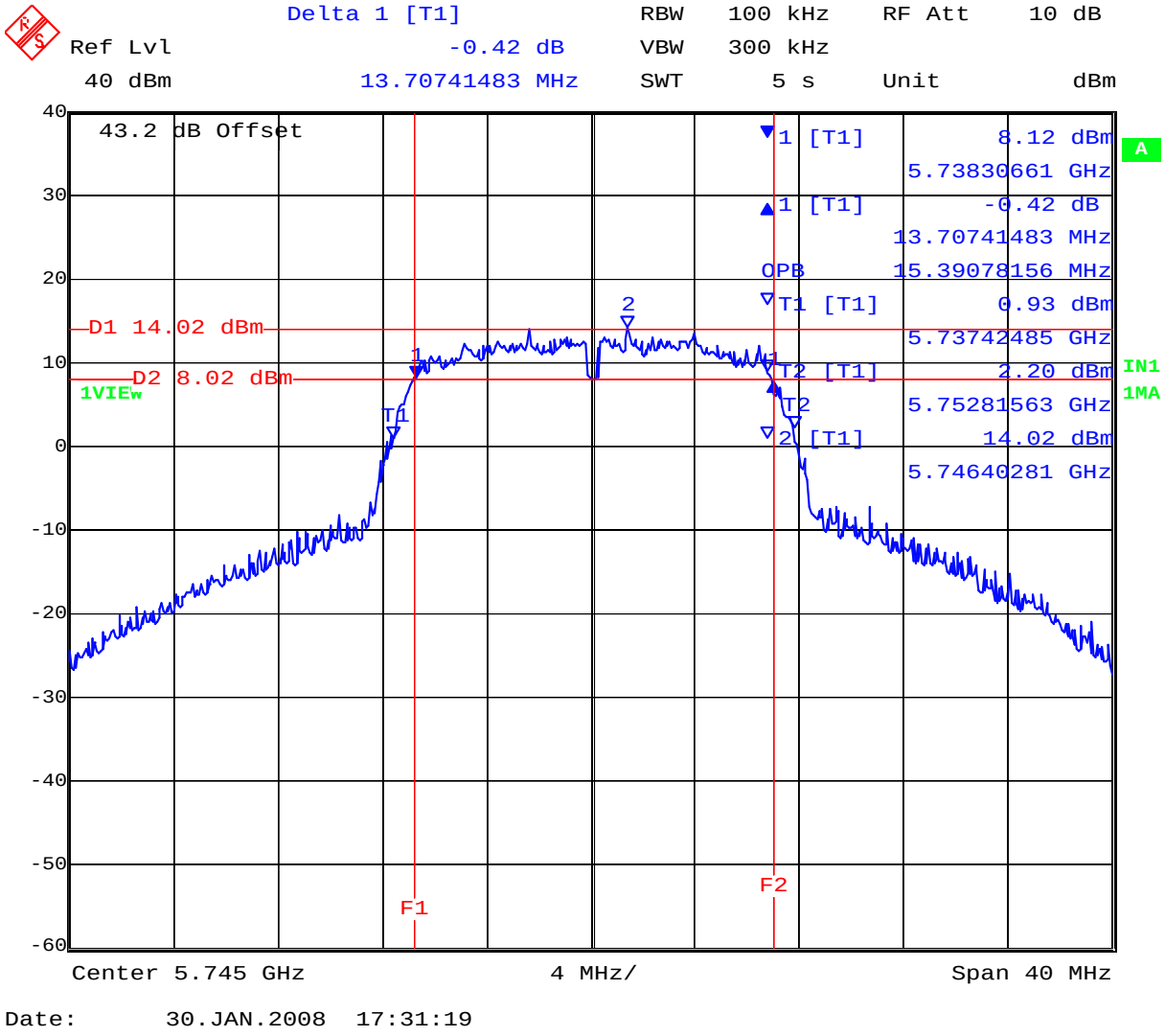


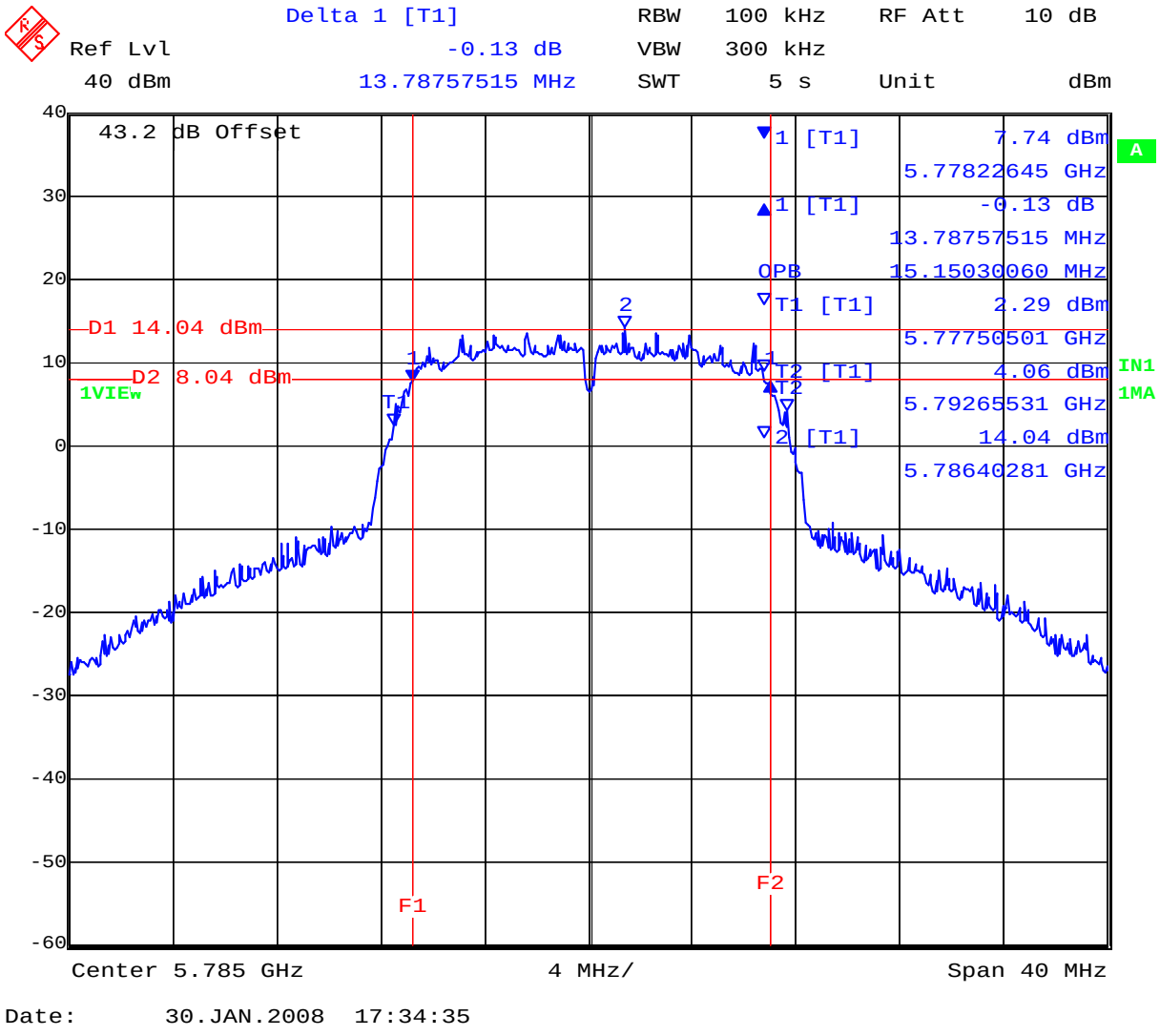
TABLE OF RESULTS – **802.11a - 6 Mb/s**

Center Frequency (MHz)	6 dB Bandwidth (MHz)	99 % BW (MHz)
5,745	13.707	15.391
5,785	13.788	15.150
5,825	13.868	15.150

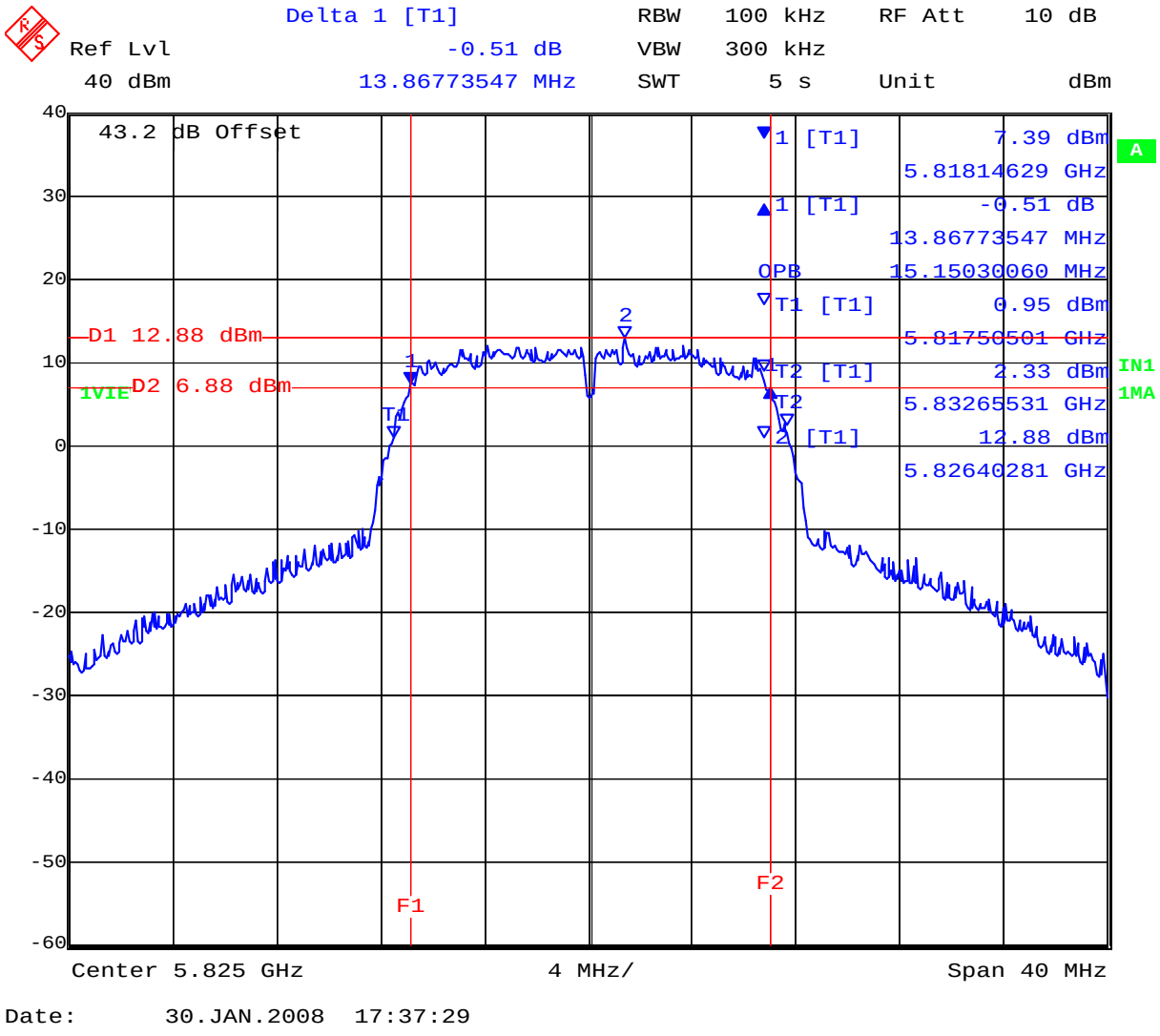
5,745 MHz 802.11a 6 dB Bandwidth



5,785 MHz 802.11a 6 dB Bandwidth



5,825 MHz 802.11a 6 dB Bandwidth



Specification

Limits

§15.247 (a)(2) & RSS-210 §A8.2(1)
The minimum 6 dB bandwidth shall be at least 500 kHz.

§ IC RSS-Gen 4.4.1 Occupied Bandwidth When an occupied bandwidth value is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99% emission bandwidth, as calculated or measured.

§ IC RSS-Gen 4.4.2 6 dB Bandwidth Where indicated, the 6 dB bandwidth is measured at the points when the spectral density of the signal is 6 dB down from the in –band spectral density of the modulated signal, with the transmitter modulated by a representative signal.

Laboratory Measurement Uncertainty for Spectrum Measurement

Measurement uncertainty	±2.81 dB

Traceability

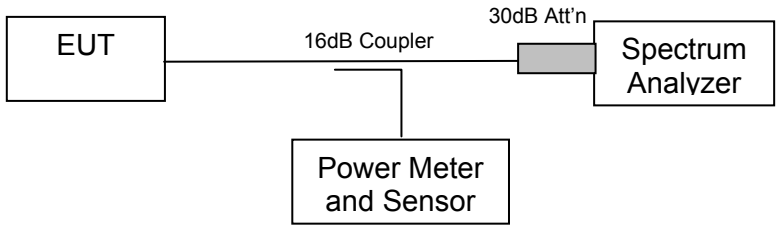
Method	Test Equipment Used
Measurements were made per work instruction WI-03 'Measurement of RF Spectrum Mask'	0158, 0193, 0252, 0313, 0314, 0070, 0116, 0117

5.1.2. Peak Output Power

FCC, Part 15 Subpart C §15.247(b)(3), §15.31(e)
Industry Canada RSS-210 §A8.4(4)

Test Procedure
The transmitter terminal of EUT was connected to the input of the spectrum analyzer set to measure peak power. The Peak output power was measured using an average power meter.

Test Measurement Set up



Measurement set up for Transmitter Peak Output Power

Ambient conditions.

Temperature: 17 to 23 °C Relative humidity: 31 to 57 % Pressure: 999 to 1012 mbar

b/g (2.4 GHz) Maximum Antenna Gain = +8 dBi
a (5.8 GHz) Maximum Antenna Gain = +12 dBi

15.247 (c) Operation with directional antenna gains greater than 6 dBi.

If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Frequency Band (GHz)	Antenna Gain (dBi)	Antenna Gain >6dBi (dB)	Power Reduction (dB)	Max. Allowable Conducted Peak Power (dBm)	Maximum EIRP (dBm)
2.4	+8	2	2	+28	+36
5.8	+12	6	6	+24	+36

NOTE: The peak power measurements were taken using an average power meter.

TABLE OF RESULTS – **802.11b – 1Mb/s**

Center Frequency (MHz)	99% Measurement Bandwidth (MHz)	Peak Power (dBm)
2,412	14.990	+27.38
2,437	14.990	+27.70
2,462	14.669	+25.70

TABLE OF RESULTS – **802.11g – 6 Mb/s**

Center Frequency (MHz)	99% Measurement Bandwidth (MHz)	Peak Power (dBm)
2,412	17.555	+26.01
2,437	17.555	+26.35
2,462	19.319	+24.60

TABLE OF RESULTS – **802.11a – 6 Mb/s**

Center Frequency (MHz)	99% Measurement Bandwidth (MHz)	Peak Power (dBm)
5,745	15.391	+25.70
5,785	15.150	+25.10
5,825	15.150	+24.04

Specification

Limits

§15.247 (b) The maximum peak output power of the intentional radiator shall not exceed the following:

§15.247 (b) (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz bands: 1.0 watt.

§15.31 (e) For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.

§ RSS-210 A8.4(4) For systems employing digital modulation techniques operating in the 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz bands the maximum peak conducted power shall not exceed 1 watt.

Laboratory Measurement Uncertainty for Power Measurements

Measurement uncertainty	±1.33 dB

Traceability

Method	Test Equipment Used
Measurements were made per work instruction WI-01 'Measuring RF Output Power'	0158, 0193, 0252, 0313, 0314, 0070, 0116, 0117

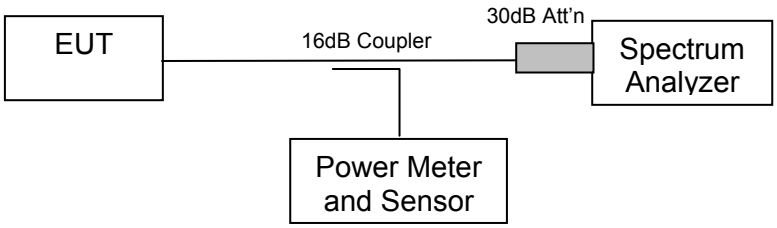
5.1.3. Peak Power Spectral Density

FCC, Part 15 Subpart C §15.247(e)
Industry Canada RSS-210 §A8.2

Test Procedure

The transmitter output was connected to a spectrum analyzer and the maximum level in a 3 kHz bandwidth was measured. A peak value was found over the full emission bandwidth and the frequency span reduced to obtain enhanced resolution. Sweep time ≥ span / 3 kHz with video averaging turned off. The Peak Power Spectral Density is the highest level found across the emission in a 3 kHz resolution bandwidth.

Test Measurement Set up



Measurement set up for Peak Power Spectral Density

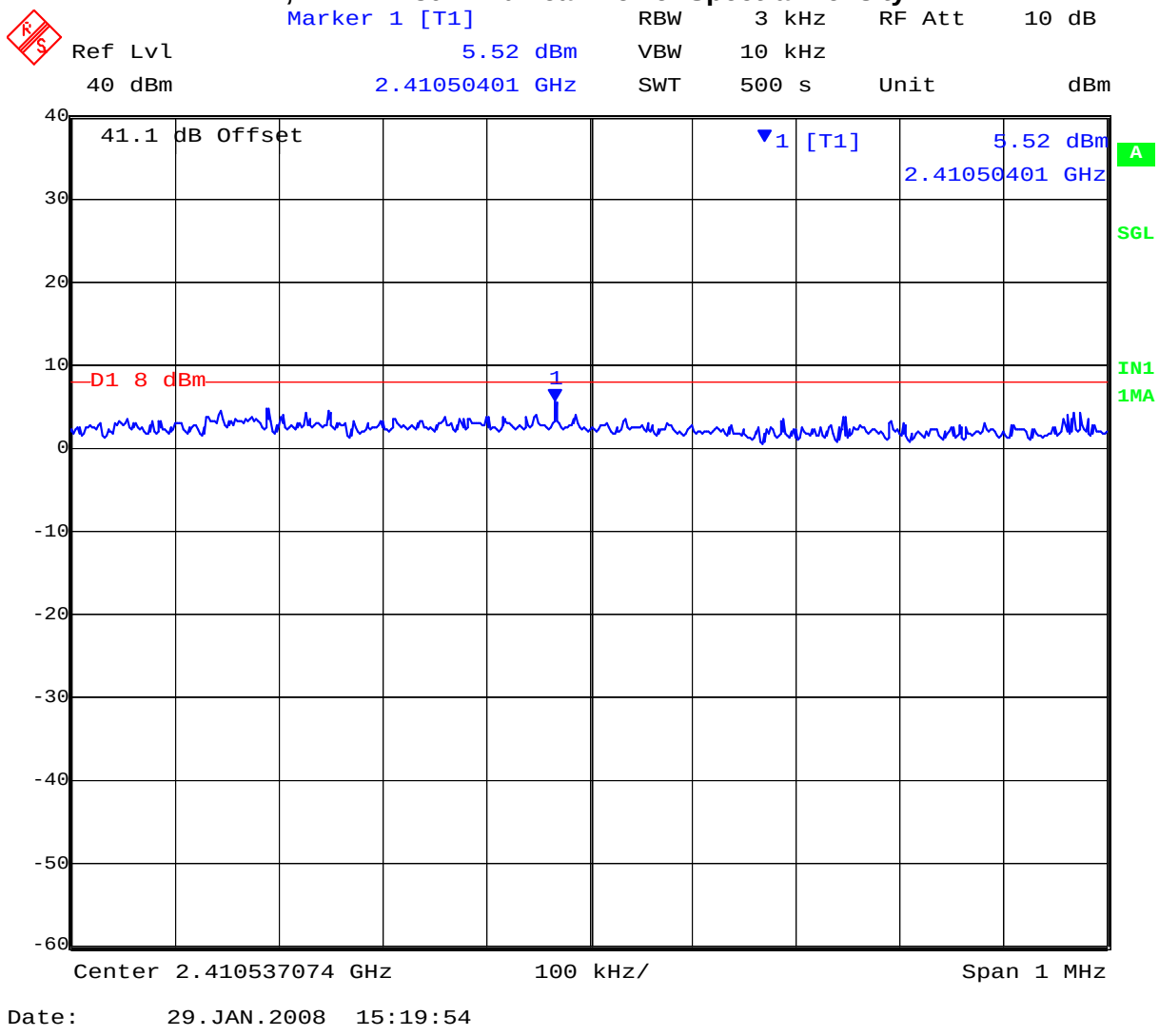
Measurement Results for Peak Power Spectral Density

Ambient conditions.
Temperature: 17 to 23 °C Relative humidity: 31 to 57 % Pressure: 999 to 1012 mbar

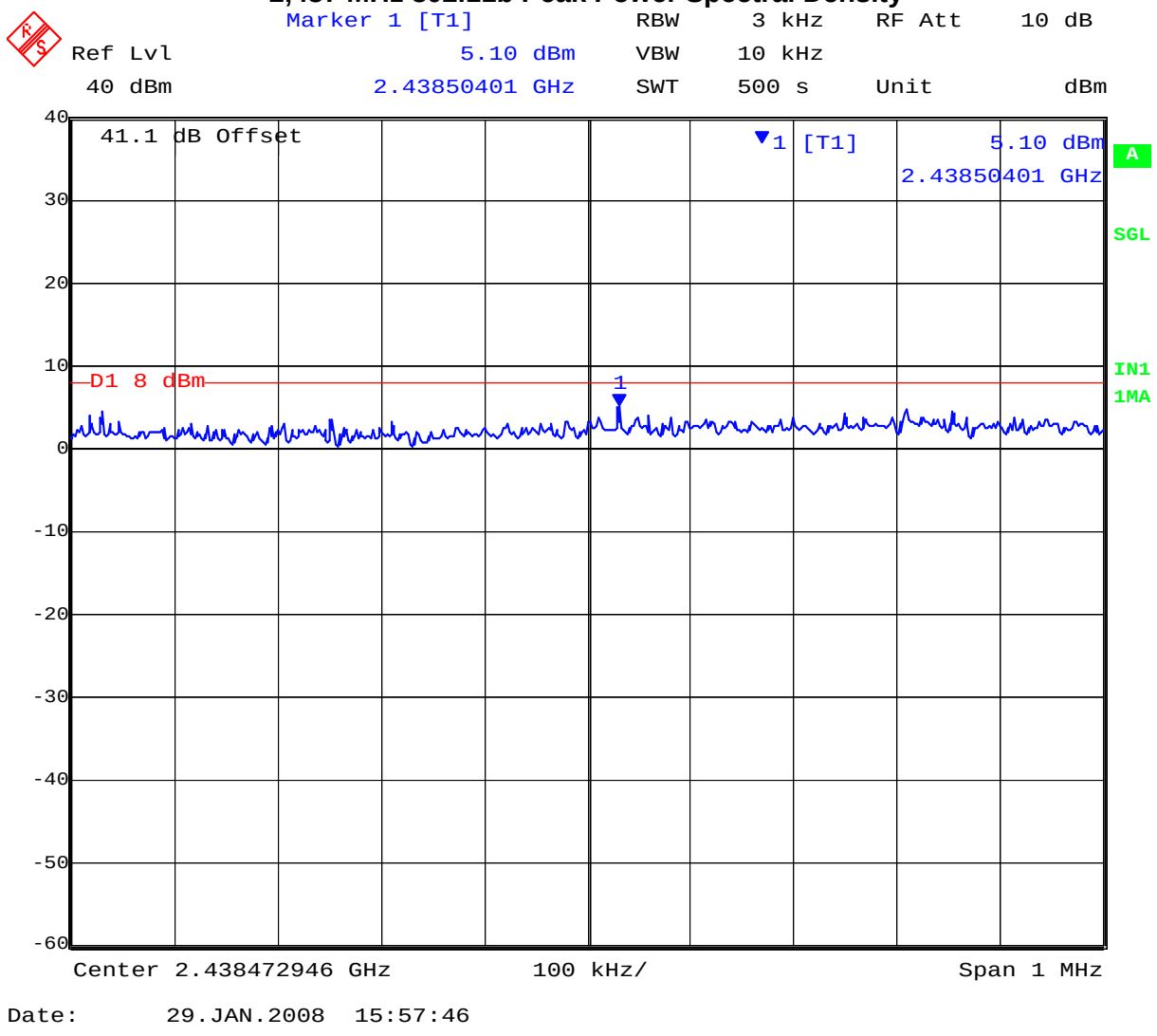
TABLE OF RESULTS – **802.11b – 1Mb/s**

Center Frequency (MHz)	Peak Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dBm)
2,412	2410.50401	+5.52	+8	-2.48
2,437	2438.50401	+5.10	+8	-2.90
2,462	2460.50401	+4.08	+8	-3.92

2,412 MHz 802.11b Peak Power Spectral Density



2,437 MHz 802.11b Peak Power Spectral Density



2,462 MHz 802.11b Peak Power Spectral Density

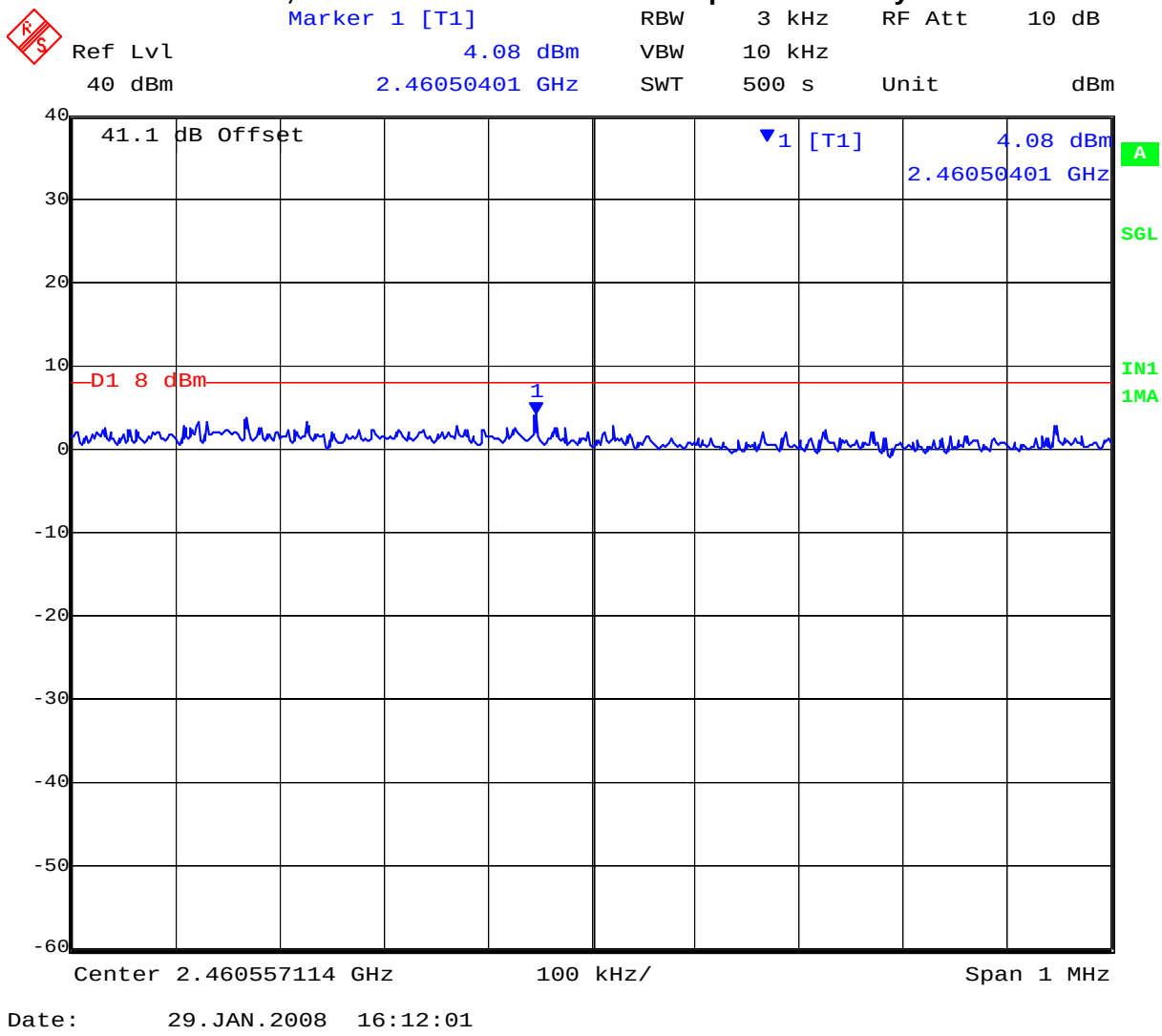
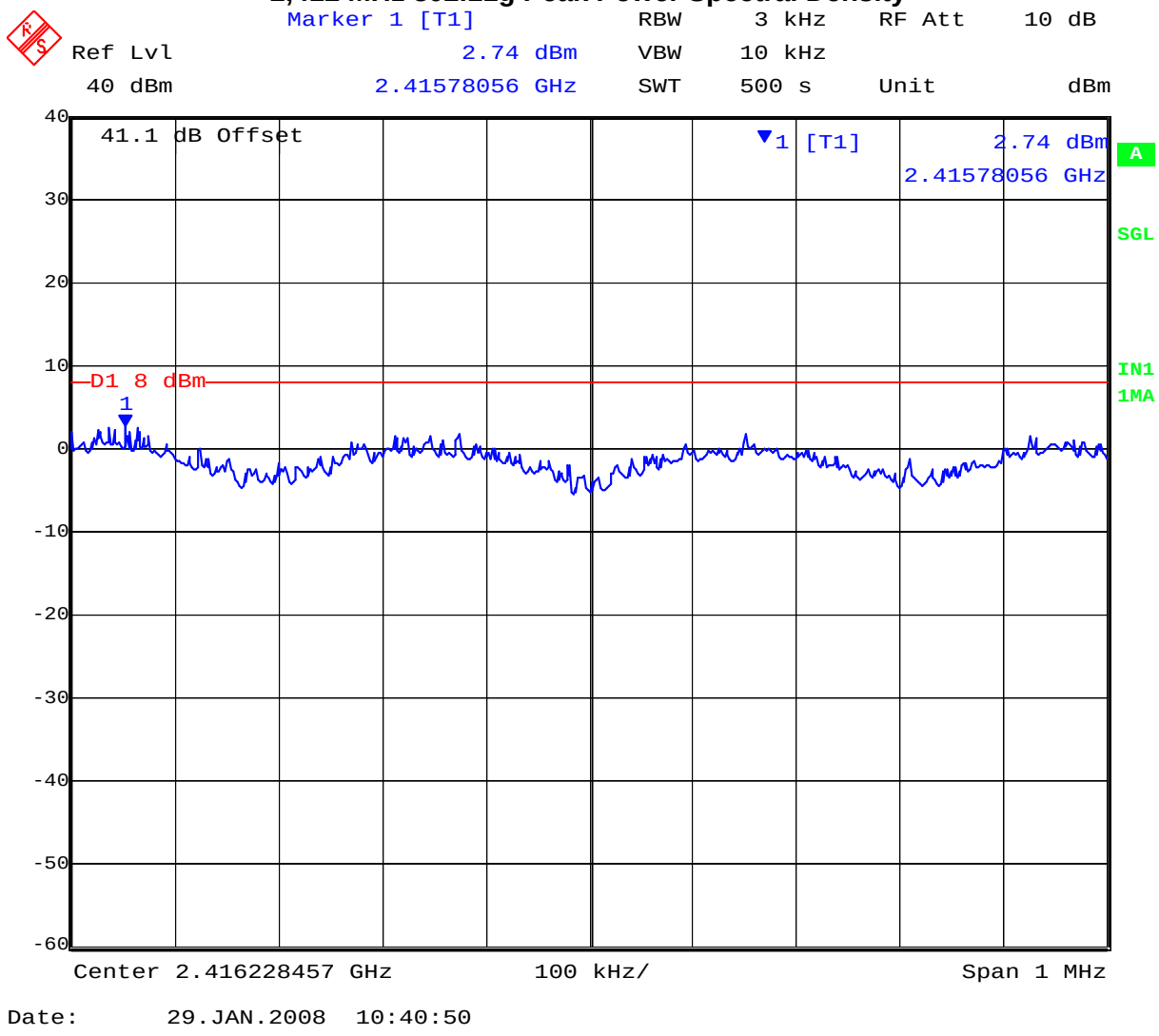


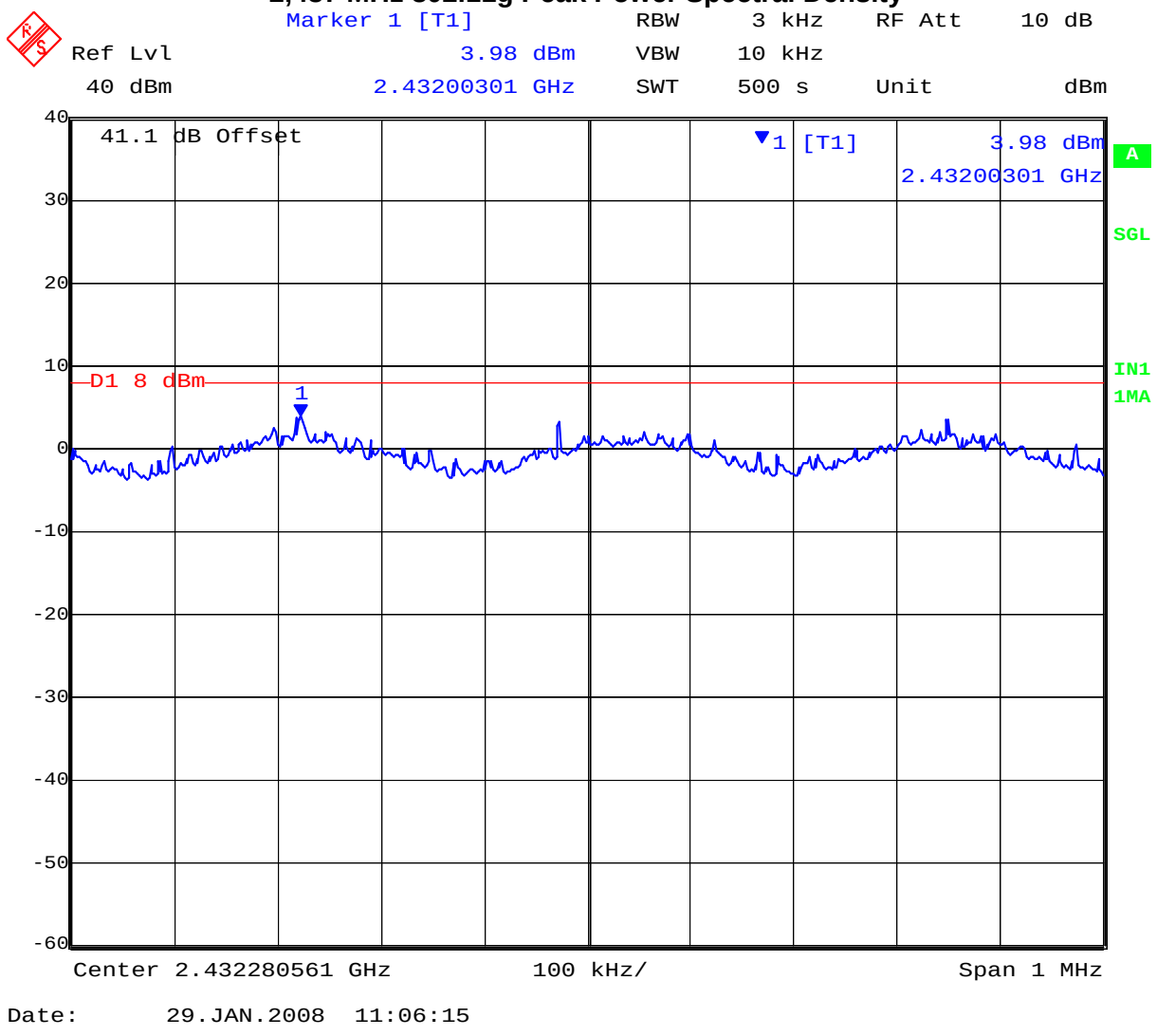
TABLE OF RESULTS – **802.11g – 54 Mb/s**

Center Frequency (MHz)	Peak Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dBm)
2,412	2415.78056	+2.74	+8	-5.26
2,437	2432.00301	+3.98	+8	-4.02
2,462	2457.28056	+3.12	+8	-4.88

2,412 MHz 802.11g Peak Power Spectral Density



2,437 MHz 802.11g Peak Power Spectral Density



2,462 MHz 802.11g Peak Power Spectral Density

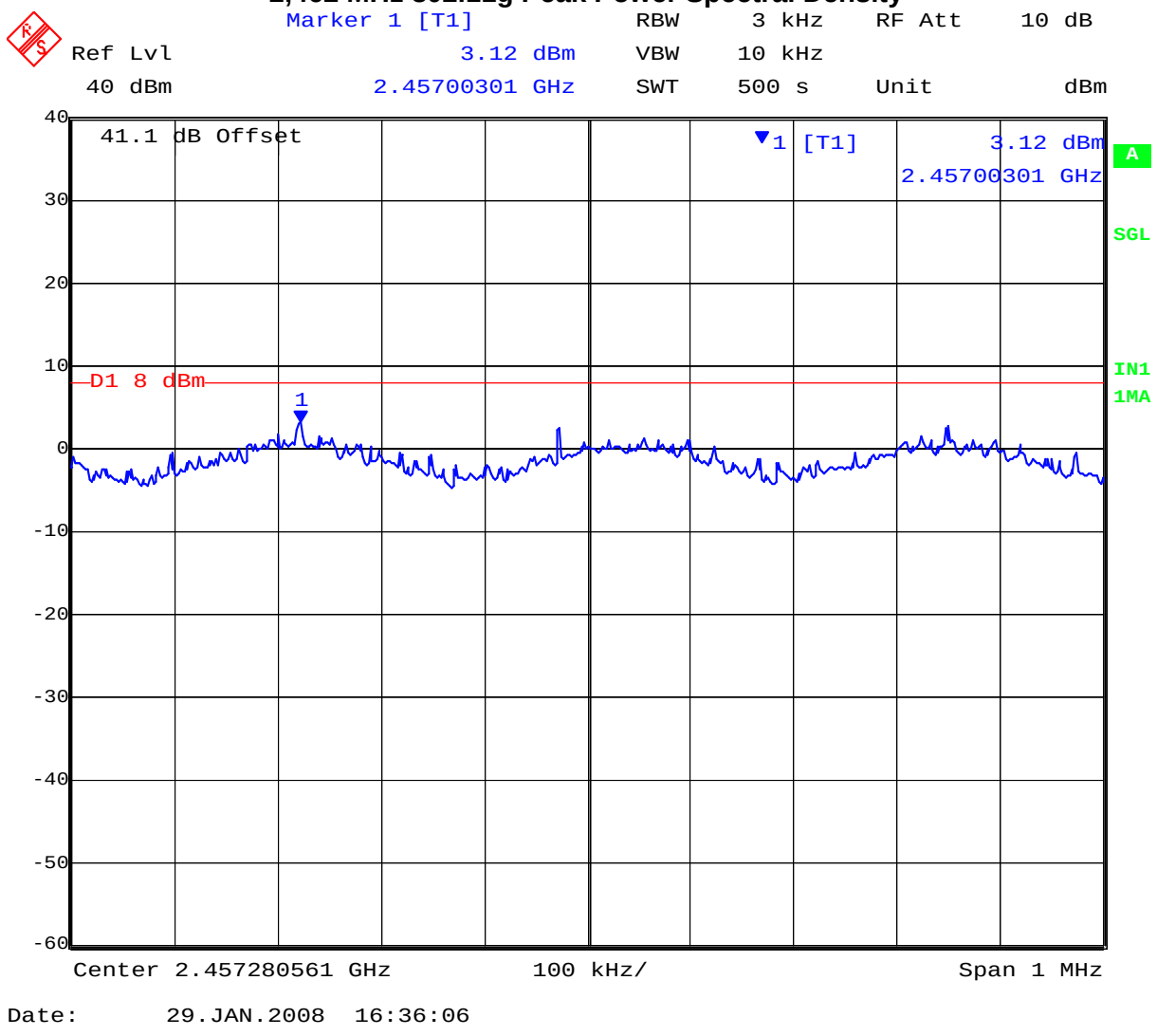
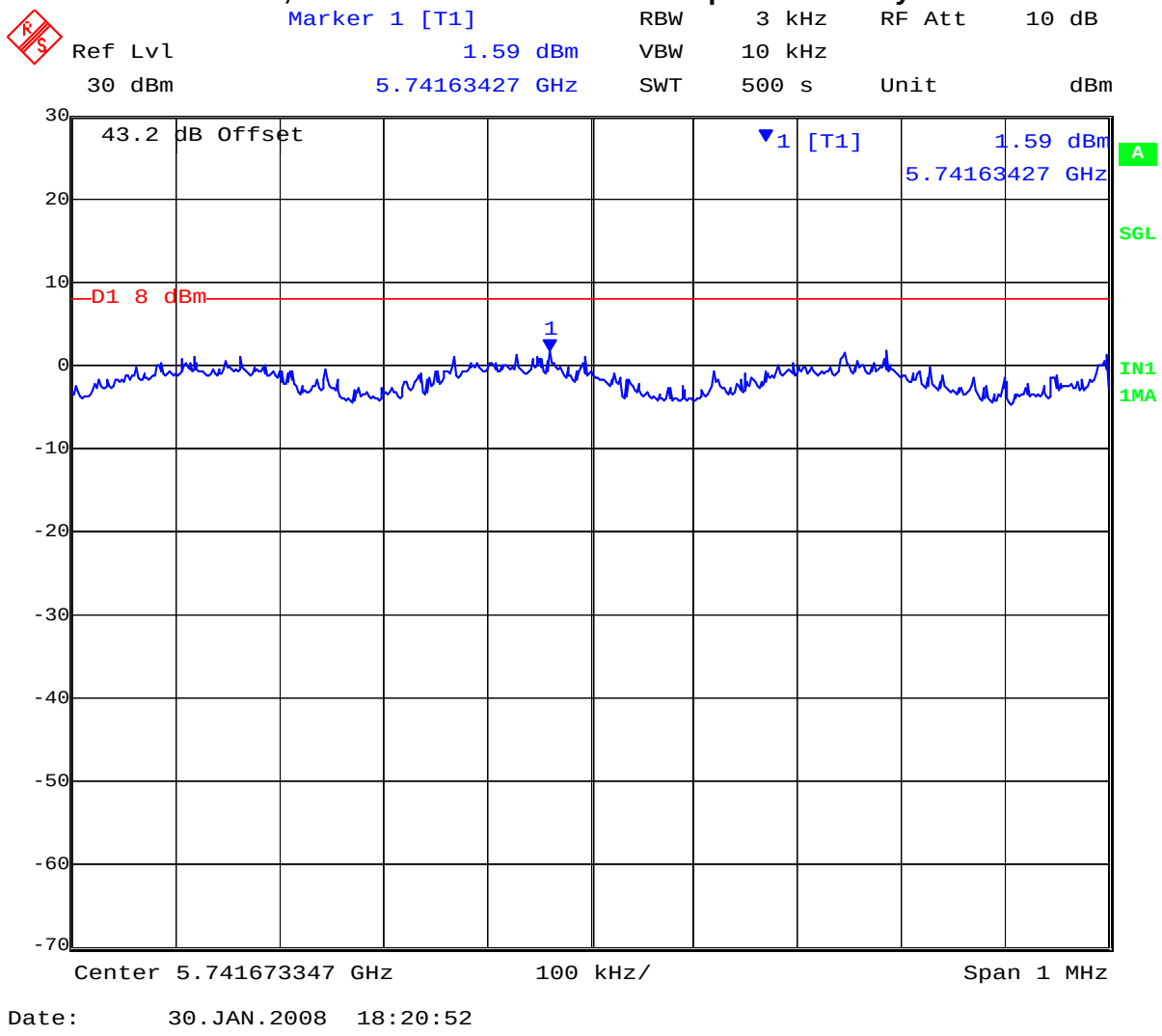


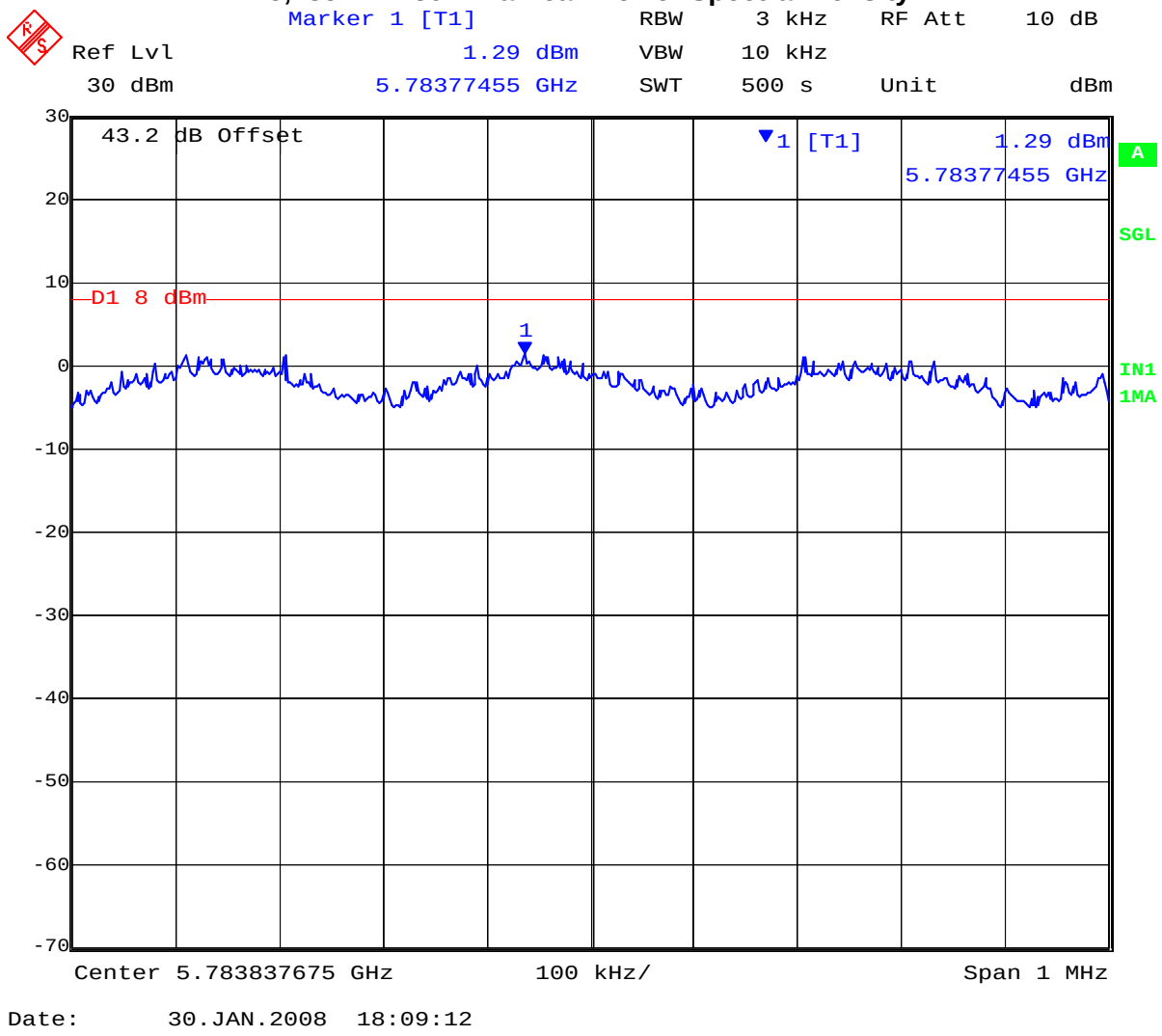
TABLE OF RESULTS – **802.11a – 54Mbit/s**

Center Frequency (MHz)	Peak Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dBm)
5,745	5741.67334	+1.59	+8	-6.41
5,785	5783.77455	+1.29	+8	-6.71
5,825	5821.96293	+0.77	+8	-7.12

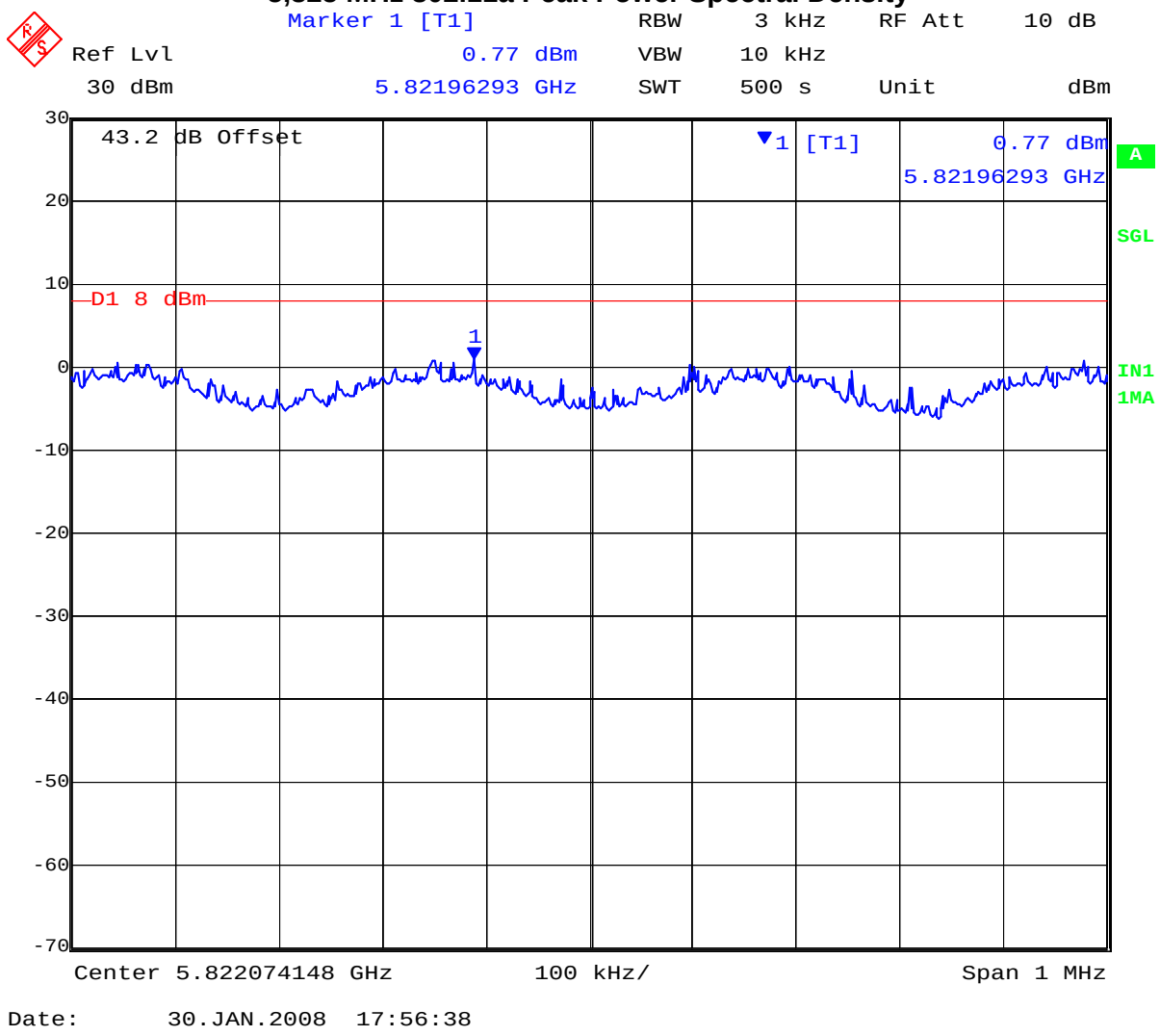
5,745 MHz 802.11a Peak Power Spectral Density



5,785 MHz 802.11a Peak Power Spectral Density



5,825 MHz 802.11a Peak Power Spectral Density



Specification
Peak Power Spectral Density Limits

§15.247(e) For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than +8 dBm in any 3 kHz band during any time interval of continuous transmission

RSS-210 §**A8.2(2)** The transmitter power spectral density (into the antenna) shall not be greater than +8 dBm in any 3 kHz band during any time interval of continuous transmission or over 1.0 second if the transmission exceeds 1.0 second duration.

Laboratory Measurement Uncertainty for Spectral Density

Measurement uncertainty	±1.33 dB

Traceability

Method	Test Equipment Used
Measurements were made per work instruction WI-01 'Measuring RF Output Power'	0158, 0193, 0252, 0313, 0314, 0070, 0116, 0117

5.1.4. Maximum Permissible Exposure

FCC, Part 15 Subpart C §15.247(i)
Industry Canada RSS-Gen §5.5

Calculations for Maximum Permissible Exposure Levels

Power Density = Pd (mW/cm^2) = $EIRP/(4\pi d^2)$

EIRP = P * G

P = Peak output power (mW)

G = Antenna numeric gain (numeric)

d = Separation distance (cm)

Numeric Gain = 10 ^ (G (dBi)/10)

Because the EUT belongs to the General Population/Uncontrolled Exposure the limit of power density is 1.0 mW/cm^2

Freq. Band (GHz)	Antenna Gain (dBi)	Numeric Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Calculated Safe Distance @ 1mW/cm² Limit(cm)	Minimum Separation Distance (cm)
2.4	8.0	6.31	+27.70	588.8	17.2	20.0
5.8	12.0	15.85	+24.00	250.0	17.8	20.0

Note: for mobile or fixed location transmitters the minimum separation distance is 20cm, even if calculations indicate the MPE distance to be less.

Specification

Maximum Permissible Exposure Limits

§15.247(i) Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency levels in excess of the Commission's guidelines.

FCC §1.1310 Limit = 1mW / cm^2 from 1.310 Table 1

RSS-Gen §5.5 Before equipment certification is granted, the applicable requirements of RSS-102 shall be met.

Laboratory Measurement Uncertainty for Power Measurements

Measurement uncertainty	±1.33 dB

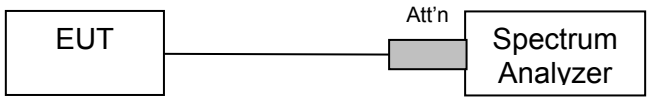
5.1.5. Conducted Spurious Emissions

FCC, Part 15 Subpart C §15.247(d); 15.205; 15.209
Industry Canada RSS-210 §A8.5, §2.2
Industry Canada RSS-Gen 4.7

Test Procedure

Conducted emissions were measured at a limit of 20 dB below the highest in-band spectral density measured with a spectrum analyzer connected to the antenna terminal. Emissions at the band edge were measured and recorded. Measurements were made while EUT was operating in transmit mode of operation at the appropriate center frequency.

Test Measurement Set up



Band-edge measurement test configuration

Measurement Results of Conducted Spurious Emissions

Ambient conditions.
Temperature: 17 to 23 °C Relative humidity: 31 to 57 % Pressure: 999 to 1012 mbar

Conducted Band-Edge Results

Measurements were performed with the transmitter tuned to the channel closest to the band-edge being measured. All emissions were maximized during measurement.

TABLE OF RESULTS – **802.11b – 1 Mbit/s**

Center Frequency (MHz)	Band edge Frequency (MHz)	Limit (20 dB below peak of fundamental)	Amplitude @ Band edge (dBm)	Margin (dB)
2,412	2,400	-2.45	-17.53	-15.08
2,462	2,483.5	-3.34	-36.78	-33.44

TABLE OF RESULTS – **802.11g – 6 Mbit/s**

Center Frequency (MHz)	Band edge Frequency (MHz)	Limit (20 dB below peak of fundamental)	Amplitude @ Band edge (dBm)	Margin (dB)
2,412	2,400	-4.34	-9.59	-5.25
2,462	2,483.5	-4.19	-36.33	-32.14

TABLE OF RESULTS – **802.11a – 6 Mbit/s**

Center Frequency (MHz)	Band edge Frequency (MHz)	Limit (20 dB below peak of fundamental)	Amplitude @ Band edge (dBm)	Margin (dB)
5,745	5,725	-5.47	-22.88	-17.41
5,825	5,850	-5.47	-30.85	-25.38

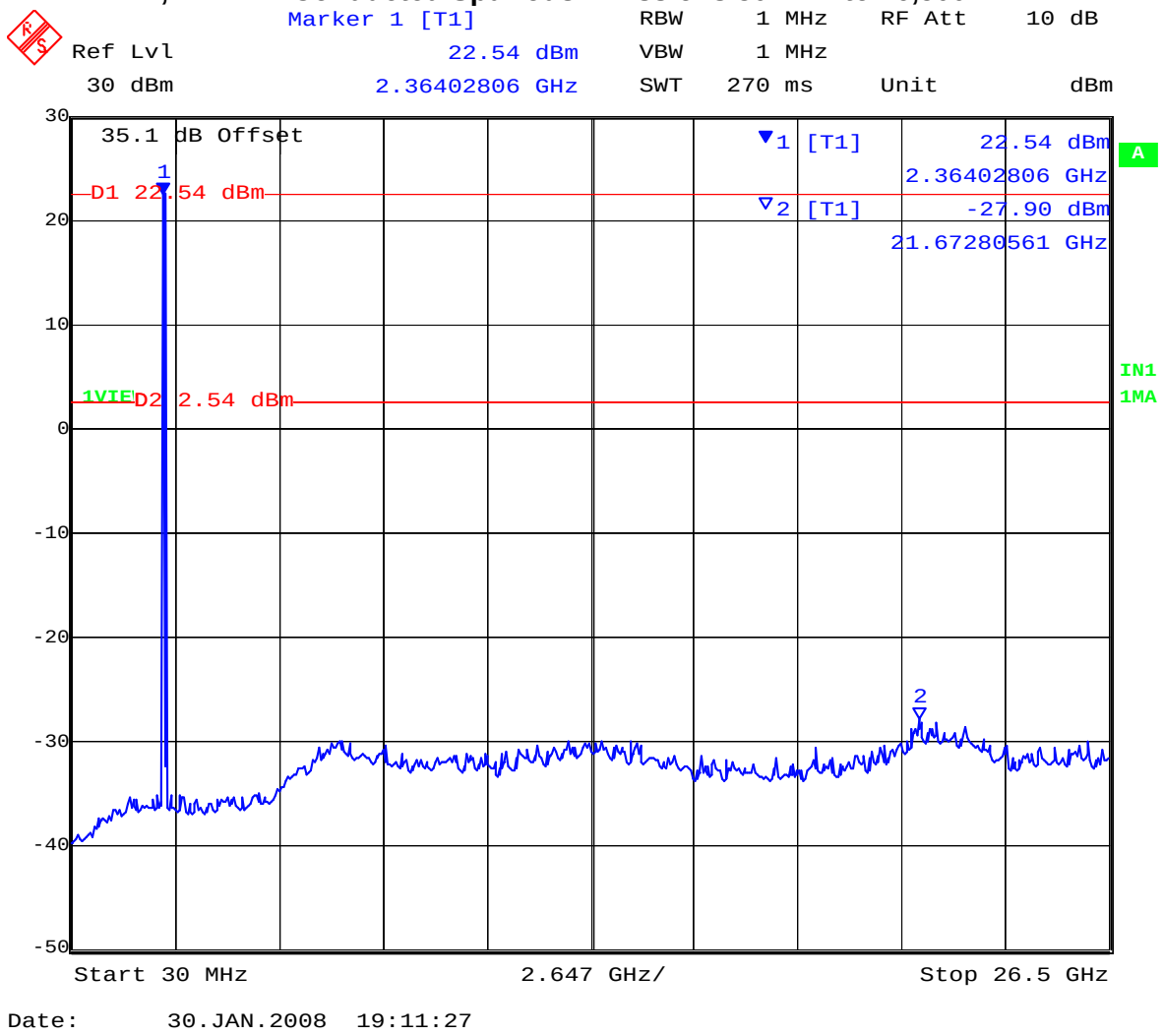
Spurious Emissions (30 - 26,500 MHz)

TABLE OF RESULTS – **802.11b – 1 Mbit/s**

Channel Centre Frequency (MHz)	Start Frequency (MHz)	Stop Frequency (MHz)	Maximum Emission Observed (dBm)	Limit (dBm)	Margin (dB)
2,412	30	26,500	-27.90	2.54	-30.44

802.11b – 1 Mbit/s

2,412 MHz Conducted Spurious Emissions 30 MHz to 26,500 MHz



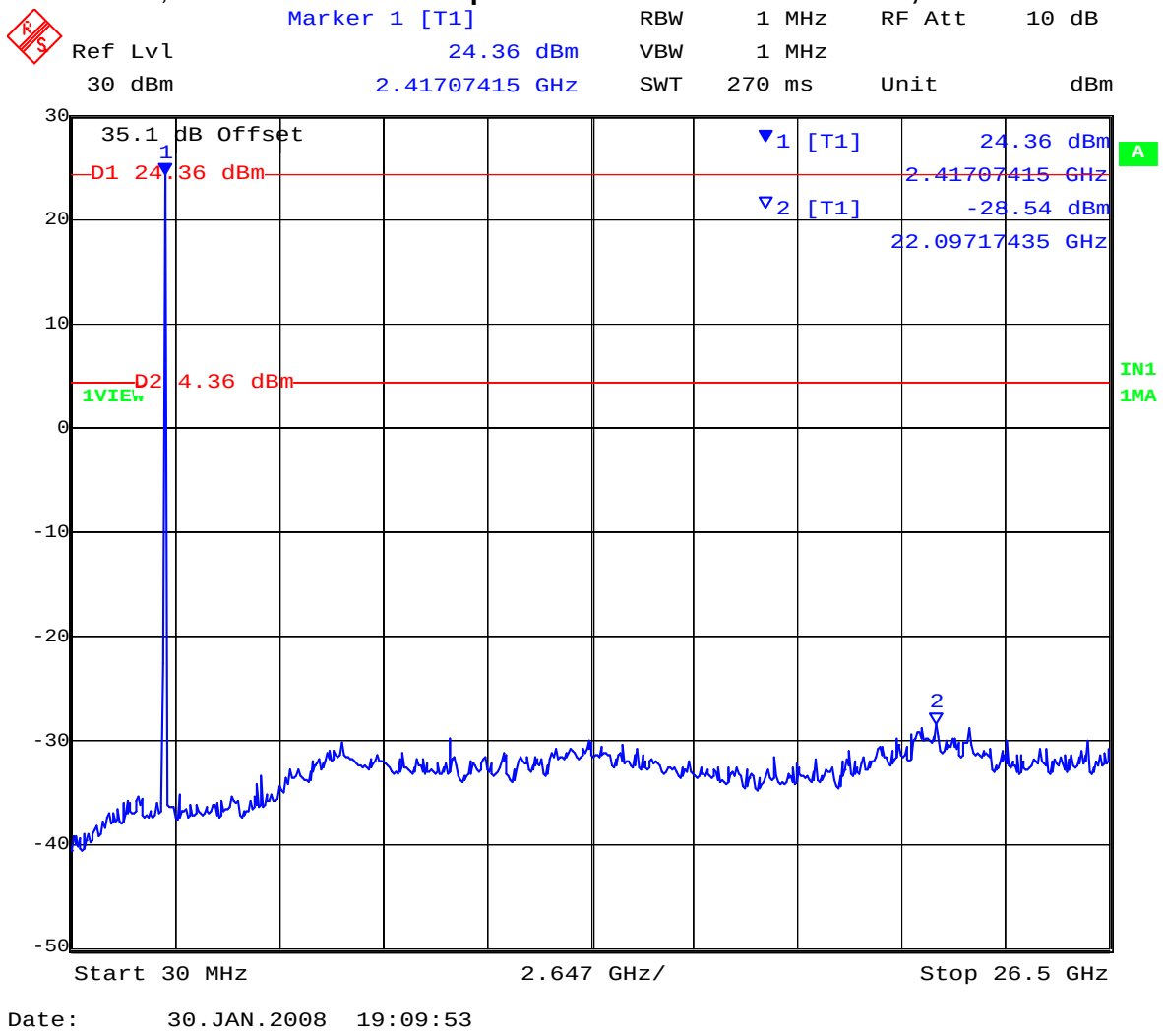
Spurious Emissions (30 - 26,500 MHz)

TABLE OF RESULTS – **802.11b – 1 Mbit/s**

Channel Centre Frequency (MHz)	Start Frequency (MHz)	Stop Frequency (MHz)	Maximum Emission Observed (dBm)	Limit (dBm)	Margin (dB)
2,437	30	26,500	-28.54	4.36	-32.90

802.11b – 1 Mbit/s

2,437 **MHz Conducted Spurious Emissions 30 MHz to 26,500 MHz**



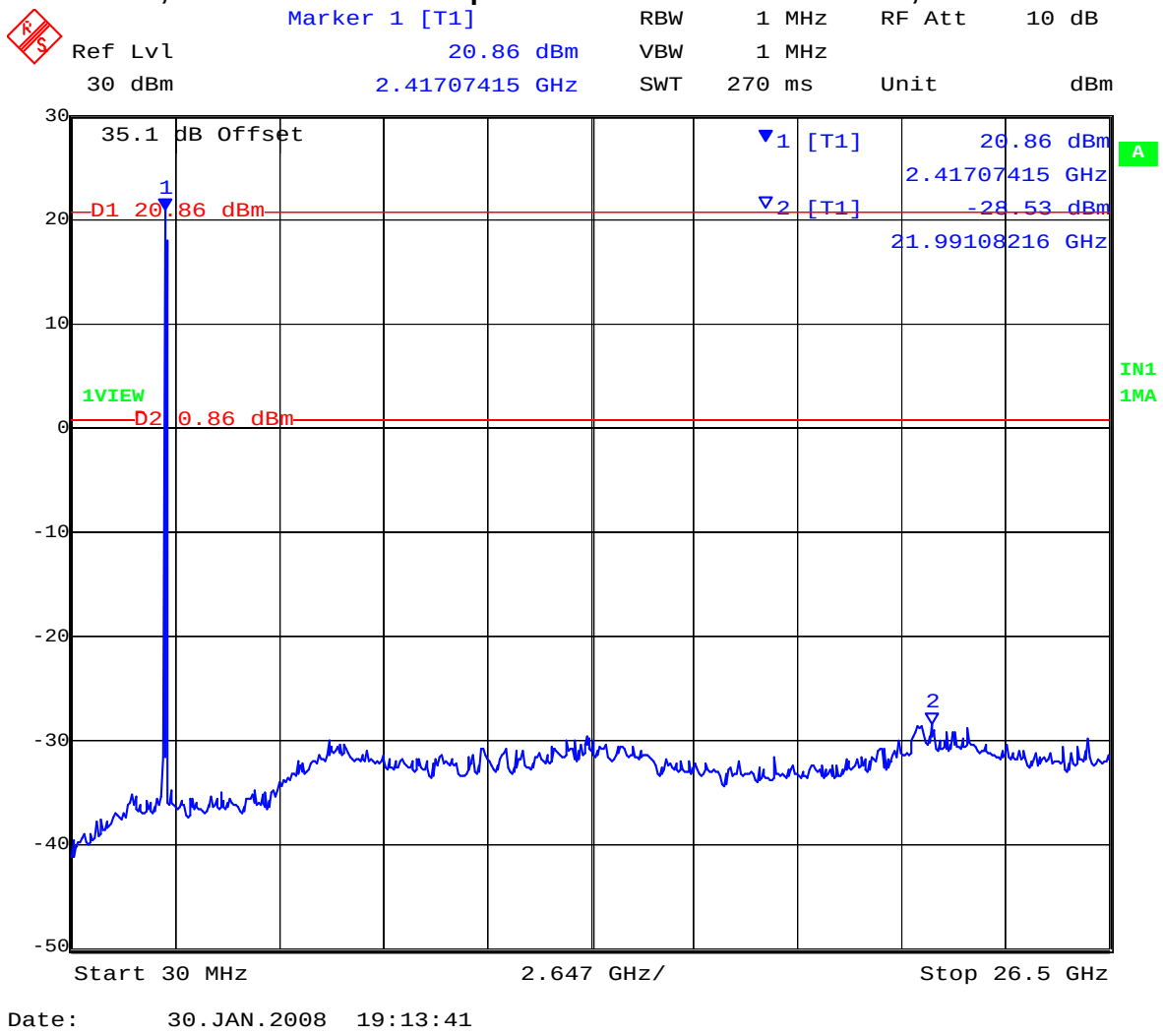
Spurious Emissions (30 - 26,500 MHz)

TABLE OF RESULTS – **802.11b – 1 Mbit/s**

Channel Centre Frequency (MHz)	Start Frequency (MHz)	Stop Frequency (MHz)	Maximum Emission Observed (dBm)	Limit (dBm)	Margin (dB)
2,462	30	26,500	-28.53	0.86	-29.39

802.11b – 1 Mbit/s

2,462 MHz Conducted Spurious Emissions 30 MHz to 26,500 MHz



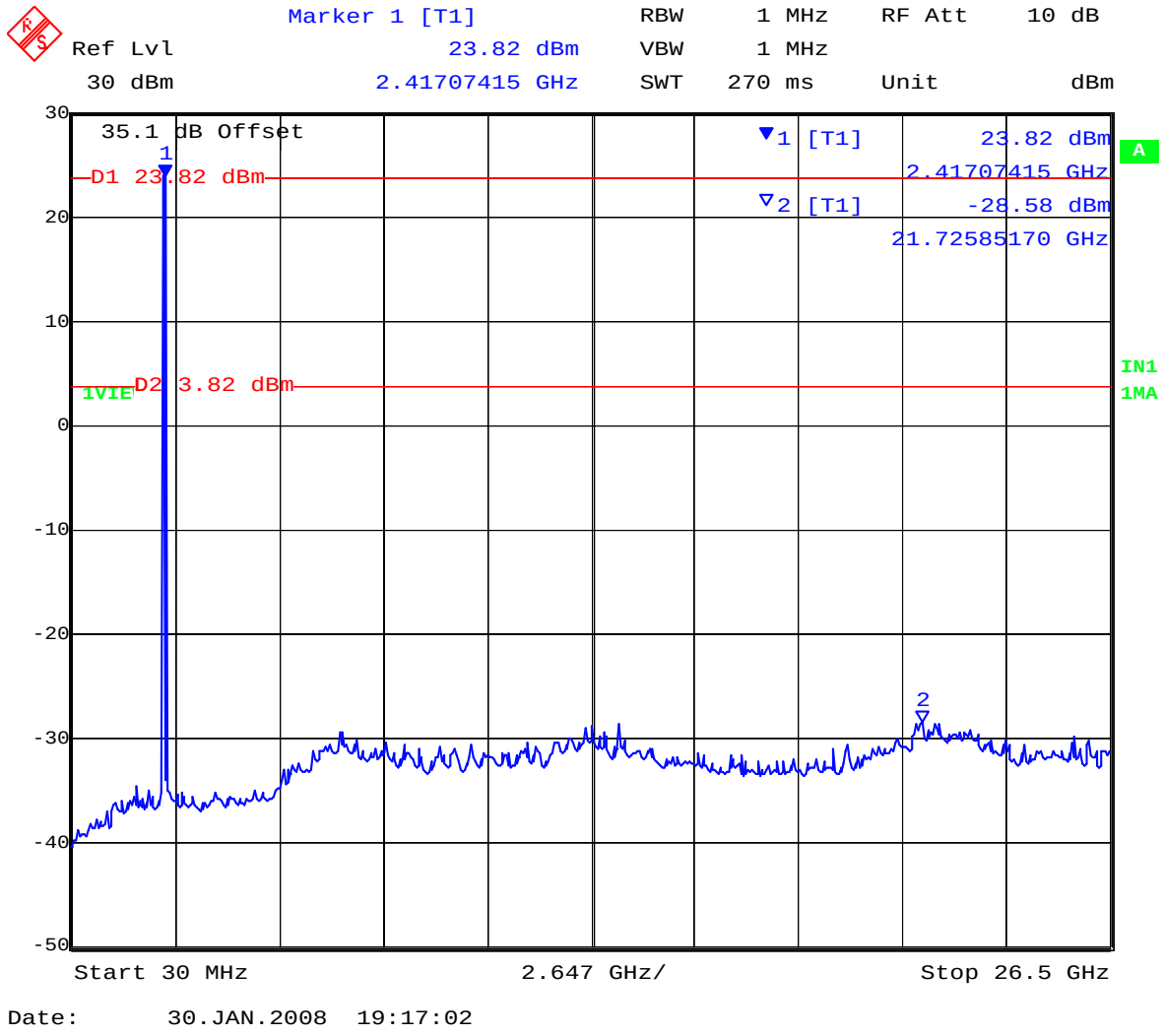
Spurious Emissions (30 - 26,500 MHz)

TABLE OF RESULTS – **802.11g – 6 Mbit/s**

Channel Centre Frequency (MHz)	Start Frequency (MHz)	Stop Frequency (MHz)	Maximum Emission Observed (dBm)	Limit (dBm)	Margin (dB)
2,412	30	26,500	-28.58	3.82	-32.40

802.11g – 6 Mbit/s

2,412 MHz Conducted Spurious Emissions 30 MHz to 26,500 MHz



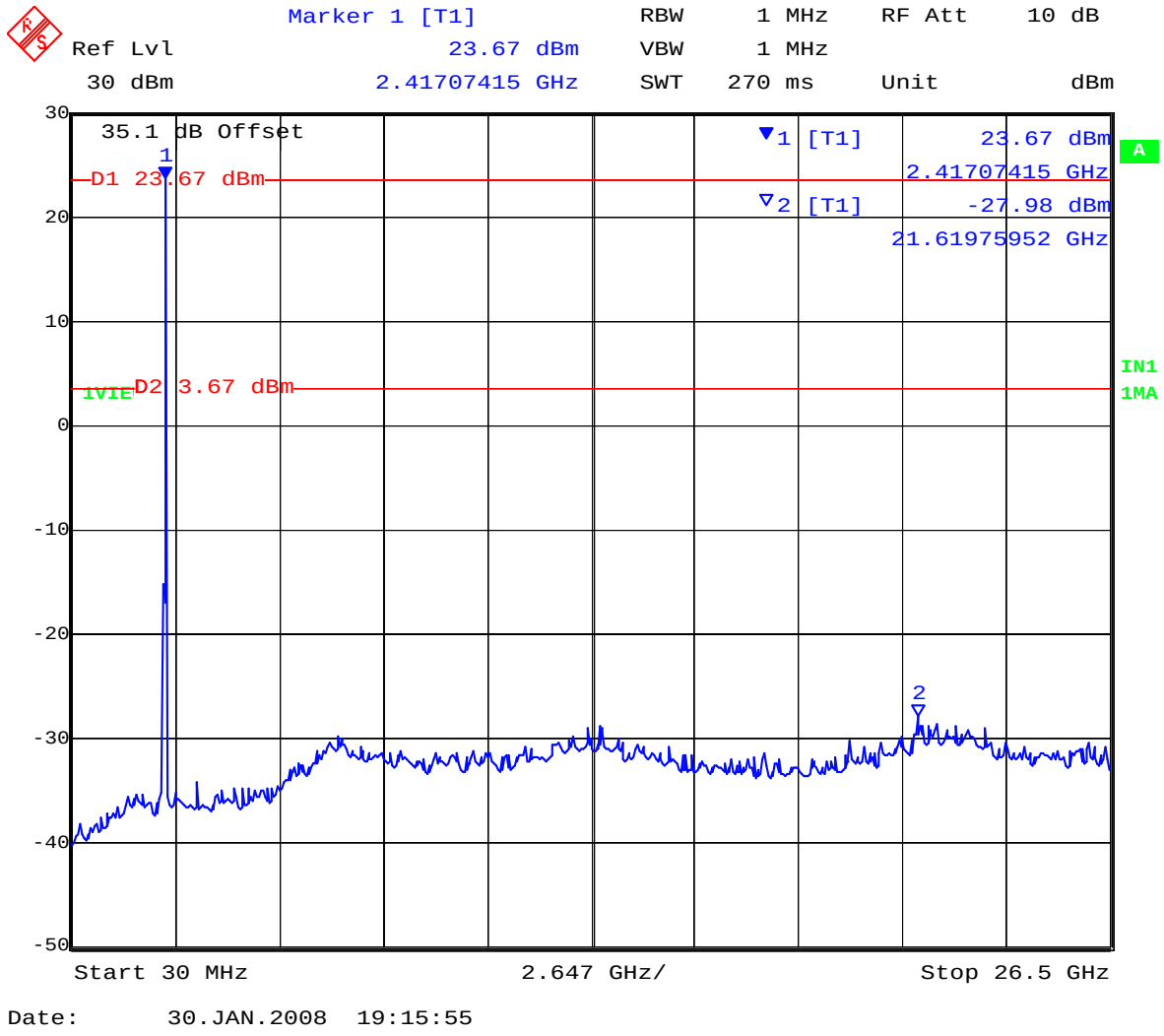
Spurious Emissions (30 - 26,500 MHz)

TABLE OF RESULTS – **802.11g – 6 Mbit/s**

Channel Centre Frequency (MHz)	Start Frequency (MHz)	Stop Frequency (MHz)	Maximum Emission Observed (dBm)	Limit (dBm)	Margin (dB)
2,437	30	26,500	-27.98	3.67	-31.65

802.11g – 6 Mbit/s

2,437 MHz Conducted Spurious Emissions 30 MHz to 26,500 MHz



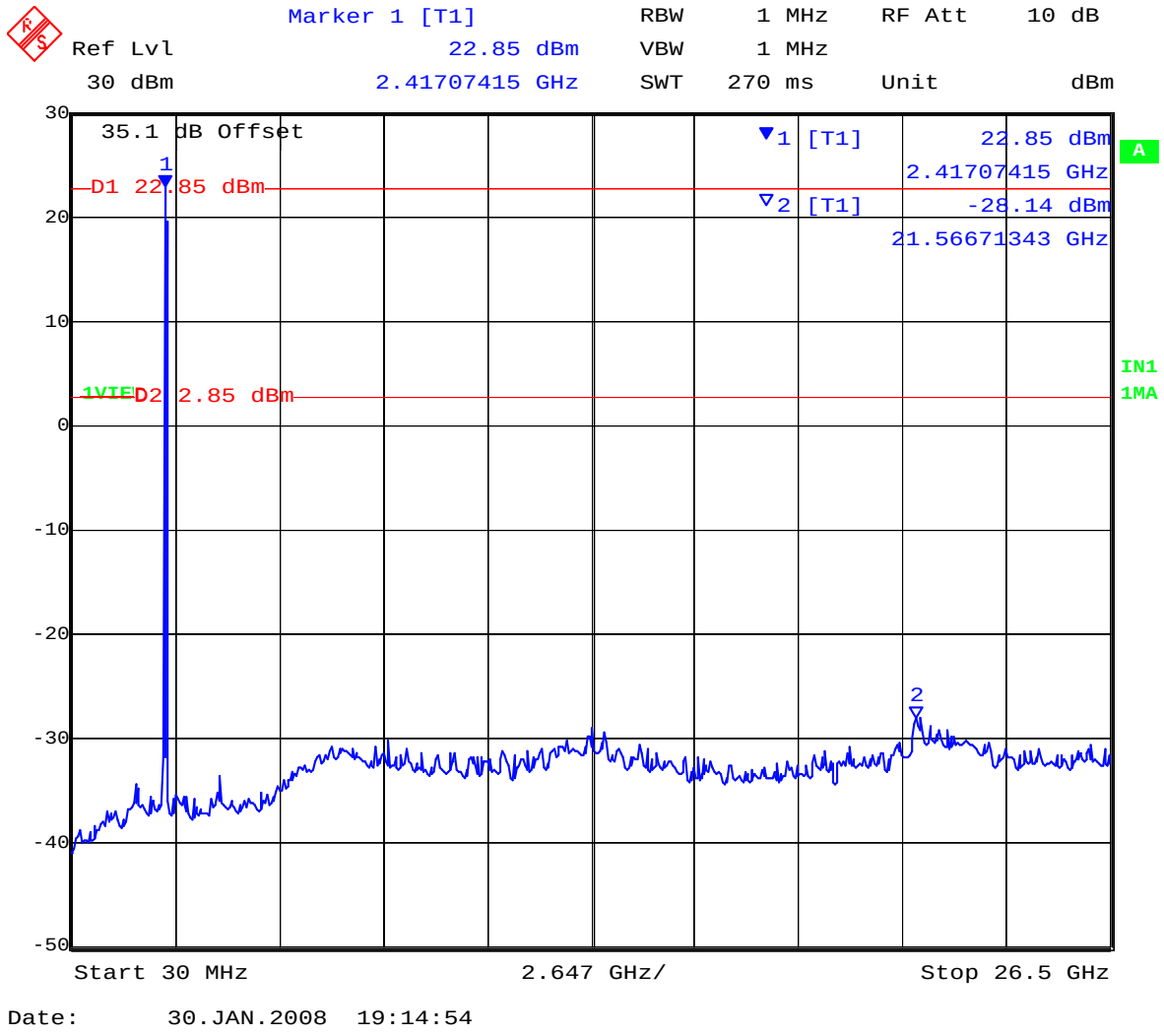
Spurious Emissions (30 - 26,500 MHz)

TABLE OF RESULTS – **802.11g – 6 Mbit/s**

Channel Centre Frequency (MHz)	Start Frequency (MHz)	Stop Frequency (MHz)	Maximum Emission Observed (dBm)	Limit (dBm)	Margin (dB)
2,462	30	26,500	-28.14	2.85	-31.00

802.11g – 6 Mbit/s

2,462 MHz Conducted Spurious Emissions 30 MHz to 26,500 MHz



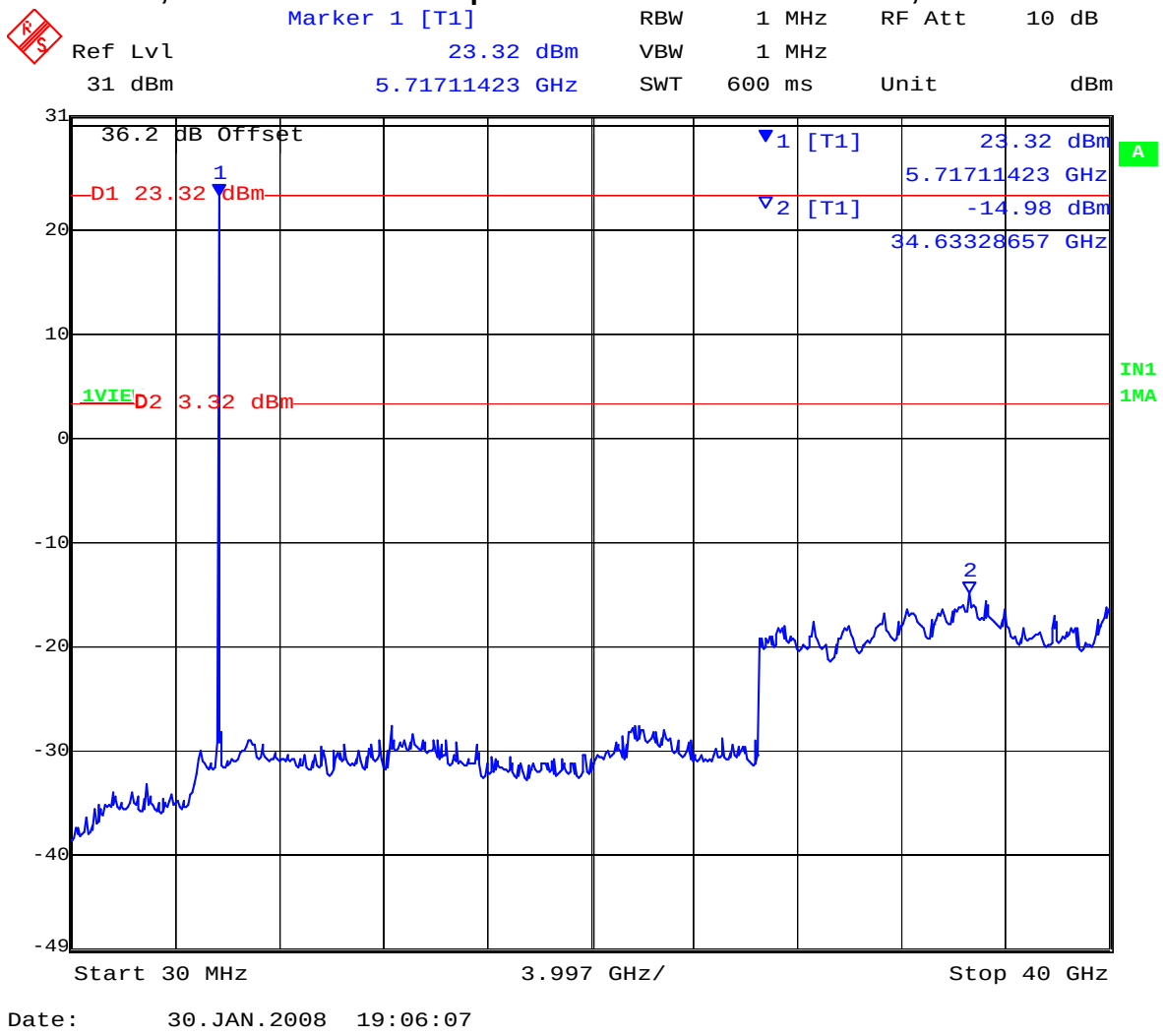
Spurious Emissions (30 - 40,000 MHz)

TABLE OF RESULTS – **802.11a – 6 Mbit/s**

Channel Centre Frequency (MHz)	Start Frequency (MHz)	Stop Frequency (MHz)	Maximum Emission Observed (dBm)	Limit (dBm)	Margin (dB)
5,745	30	40,000	-14.98	3.32	-18.30

802.11a – 6 Mbit/s

5,745 MHz Conducted Spurious Emissions 30 MHz to 40,000 MHz



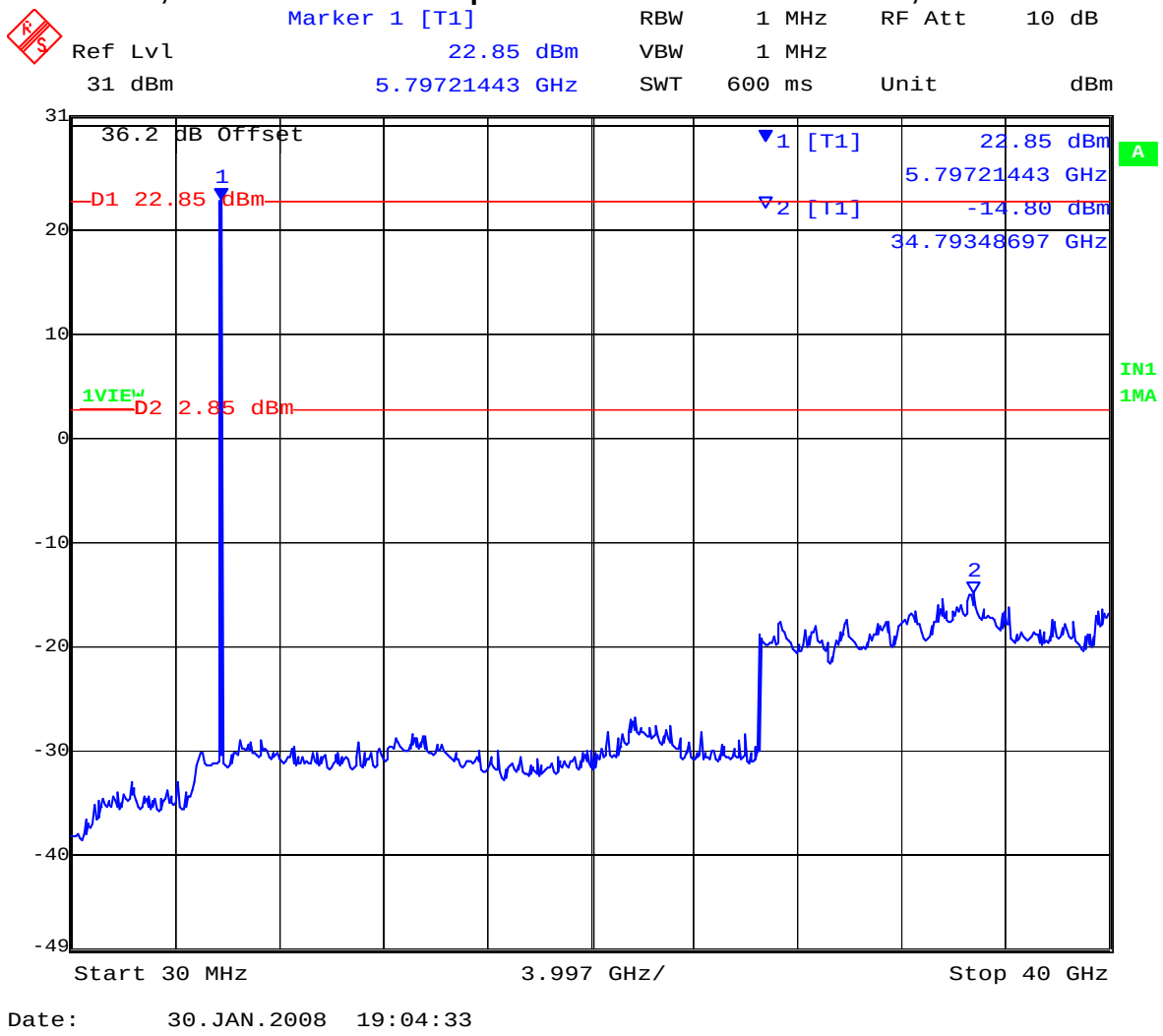
Spurious Emissions (30 - 40,000 MHz)

TABLE OF RESULTS – **802.11a – 6 Mbit/s**

Channel Centre Frequency (MHz)	Start Frequency (MHz)	Stop Frequency (MHz)	Maximum Emission Observed (dBm)	Limit (dBm)	Margin (dB)
5,785	30	40,000	-14.80	2.85	-17.65

802.11a – 6 Mbit/s

5,785 MHz Conducted Spurious Emissions 30 MHz to 40,000 MHz



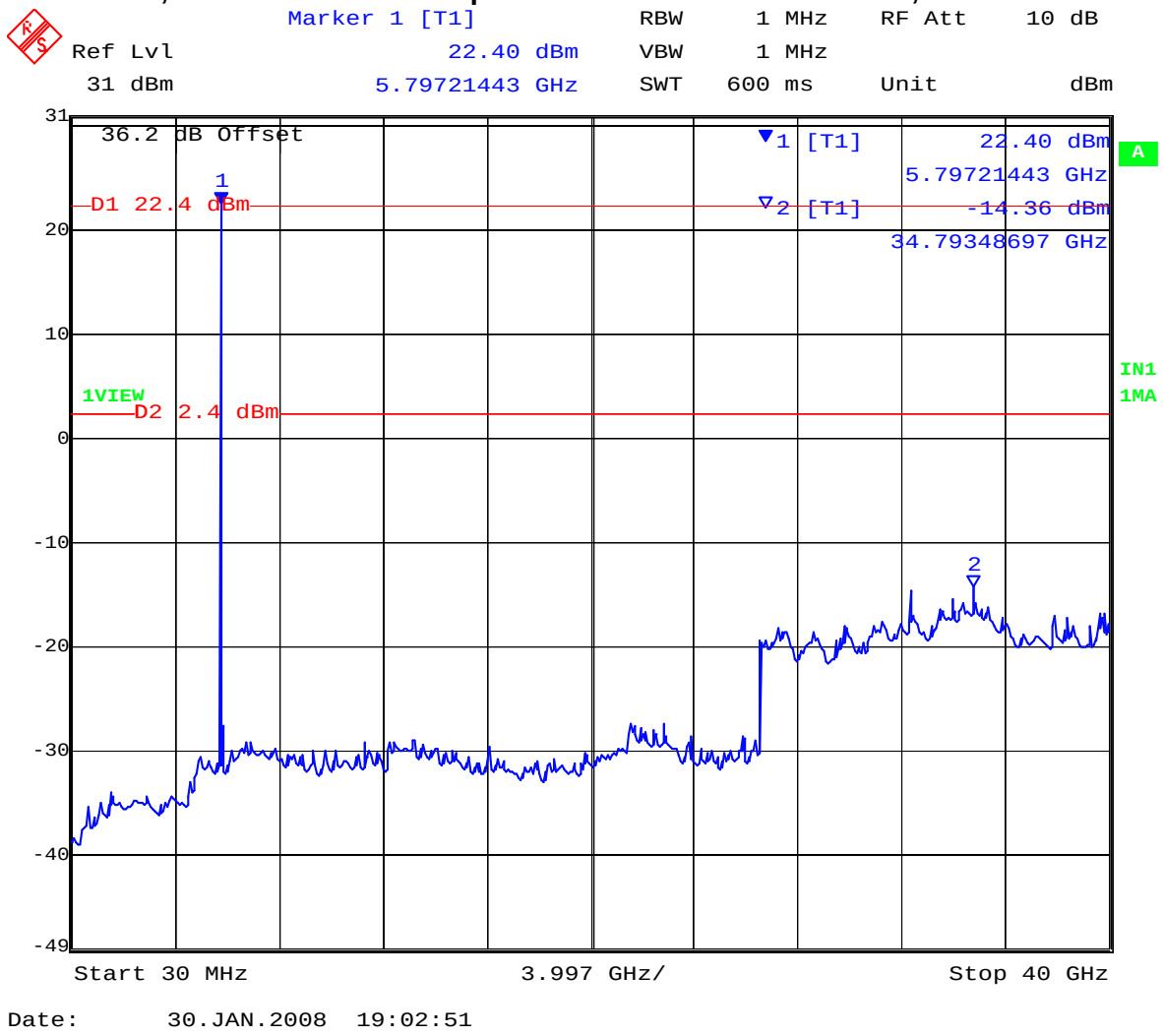
Spurious Emissions (30 - 40,000 MHz)

TABLE OF RESULTS – **802.11a – 6 Mbit/s**

Channel Centre Frequency (MHz)	Start Frequency (MHz)	Stop Frequency (MHz)	Maximum Emission Observed (dBm)	Limit (dBm)	Margin (dB)
5,825	30	40,000	-14.36	2.40	-16.76

802.11a – 6 Mbit/s

5,825 MHz Conducted Spurious Emissions 30 MHz to 40,000 MHz



Specification

Limits Band-Edge

Lower Limit Band-edge	Upper Limit Band-edge	Limit below highest level of desired power
2,400 MHz	2,483.5 MHz	≥ 20 dB

§15.247(d) and RSS-210 §A8.5 In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

§15.247(d)
If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section §15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(a)).

RSS-210 §A8.5 If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under section A8.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Tables 2 and 3 is not required. In addition, radiated emissions which fall in the restricted bands of Table 1 must also comply with the radiated emission limits specified in Tables 2 and 3.

RSS-Gen §4.7
The search for unwanted emissions shall be from the lowest frequency internally generated or used in the device (local oscillator, intermediate of carrier frequency), or from 30 MHz , whichever is the lowest frequency, to the 5th harmonic of the highest frequency generated without exceeding 40 GHz.

Laboratory Measurement Uncertainty for Conducted Spurious Emissions

Measurement uncertainty	±2.37 dB

Traceability

Method	Test Equipment Used
Measurements were made per work instruction WI-05 'Measurement of Spurious Emissions'	0088, 0158, 0193, 0252, 0313, 0314, 0070, 0116, 0117.

5.1.6. Radiated Emissions

5.1.6.1. Transmitter Radiated Spurious Emissions (above 1 GHz)

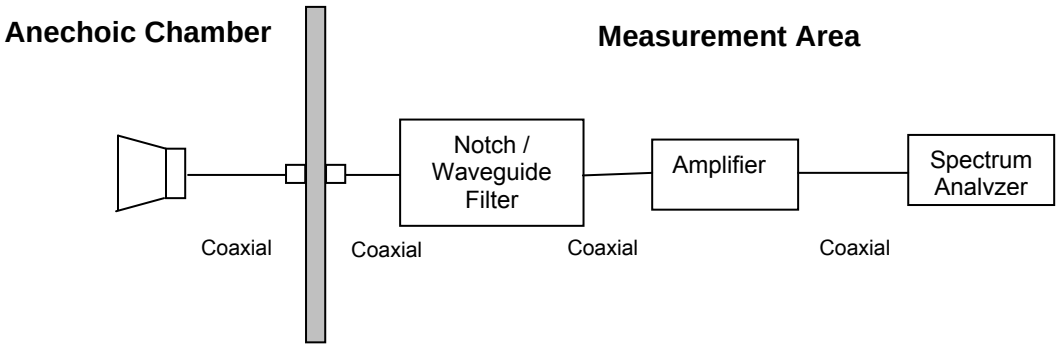
FCC, Part 15 Subpart C §15.247(d) 15.205; 15.209
Industry Canada RSS-210 §A8.5, §2.2, §2.6
Industry Canada RSS-Gen §4.7

Test Procedure

Radiated emissions above 1 GHz are measured in the anechoic chamber at a 3-meter distance on every azimuth in both horizontal and vertical polarities. The emissions are recorded and maximized as a function of azimuth by rotation through 360° with a spectrum analyzer in peak hold mode. Depending on the frequency band spanned a notch filter and waveguide filter was used to remove the fundamental frequency. The highest emissions relative to the limit are listed for each frequency spanned.

All measurements on any frequency or frequencies over 1 MHz are based on the use of measurement instrumentation employing an average detector function. All measurements above 1 GHz were performed using a minimum resolution bandwidth of 1 MHz.

Test Measurement Set up



Measurement set up for Radiated Emission Test

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. All factors are included in the reported data.

FS = R + AF + CORR - FO
where: FS = Field Strength
R = Measured Spectrum analyzer Input Amplitude
AF = Antenna Factor
CORR = Correction Factor = CL – AG + NFL
CL = Cable Loss
AG = Amplifier Gain
FO = Distance Falloff Factor
NFL = Notch Filter Loss or Waveguide Loss

For example:
Given receiver input reading of 51.5 dBμV; Antenna Factor of 8.5 dB; Cable Loss of 1.3 dB; Falloff Factor of 0 dB, an Amplifier Gain of 26 dB and Notch Filter Loss of 1 dB. The Field Strength of the measured emission is:

FS = 51.5 + 8.5 + 1.3 - 26.0 +1 = 36.3 dBμV/m

Conversion between dBμV/m (or dBμV) and μV/m (or μV) are done as:

Level (dBμV/m) = 20 * Log (level (μV/m))

40 dBμV/m = 100 μV/m
48 dBμV/m = 250 μV/m

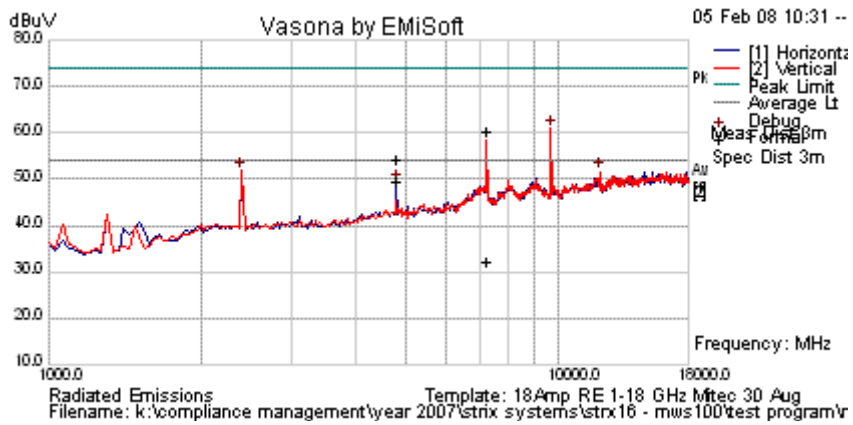
Maximum Emissions
It was found that the AP lying flat on the polystyrene table was the worst case orientation for radiated emissions.

Radiated Emissions > 1GHz 4dBi Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/10:31, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch1, 2412 Power: Maximum ART=27 Data Rate: 1 Mbps ANT: H/S Dome

Graphical Data



Formal Data

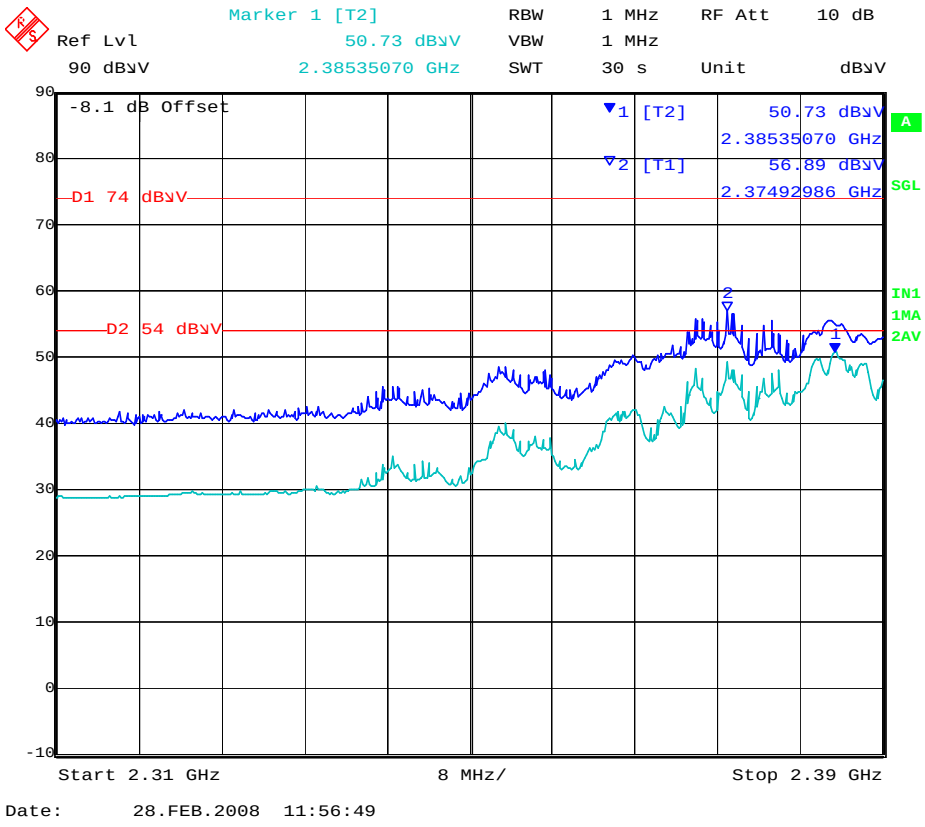
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	7236.811	56.1	5.4	-3.0	58.5	Peak Max	H	98	165	74.0	-15.5	Pass	
2	4823.938	56.9	4.5	-9.2	52.1	Peak Max	H	138	4	74.0	-21.9	Pass	
3	7236.811	46.4	5.4	-3.0	49.1	Average Max	V	132	133	54.0	-4.9	Pass	
4	4823.938	52.1	4.5	-9.2	47.4	Average Max	H	138	4	54.0	-6.6	Pass	

Radiated Band Edge - 4dBi Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/10:31, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch1, 2412 Power: Maximum ART=27 Data Rate: 1 Mbps ANT: H/S Dome

Graphical Data



Formal Data

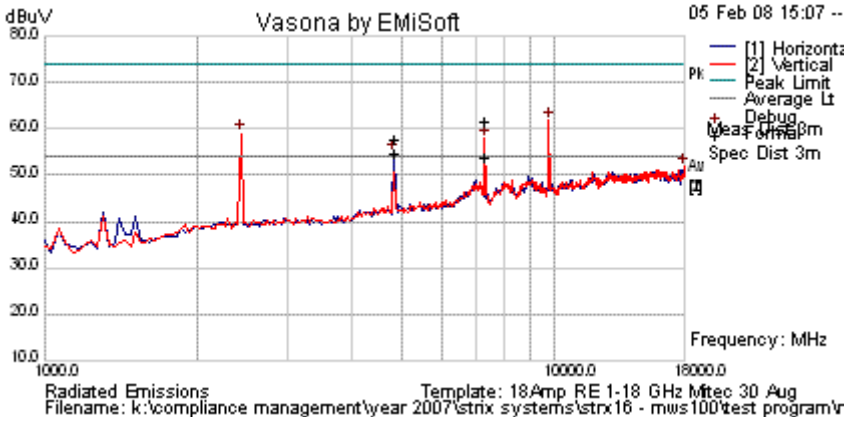
	2390.00				56.89	Peak	H			74	-17.11	Pass	Band edge
	2390.00				50.73	Average	H			54	-3.27	Pass	Band edge

Radiated Emissions > 1GHz 4dBi Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/15:07, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch1, 2437 Power: Maximum ART=27 Data Rate: 1 Mbps ANT: H/S Dome

Graphical Data



Formal Data

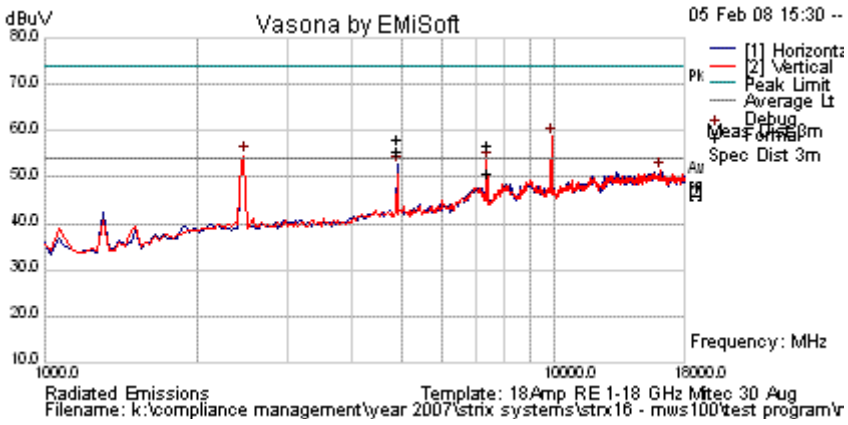
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	7311.823	57.8	5.4	-3.5	59.7	Peak Max	H	99	200	74.0	-14.3	Pass	
2	4874.048	60.2	4.5	-9.2	55.6	Peak Max	H	151	24	74.0	-18.4	Pass	
3	7311.823	50.0	5.4	-3.5	51.9	Average Max	H	98	200	54.0	-2.1	Pass	
4	4874.048	57.4	4.5	-9.2	52.7	Average Max	H	98	360	54.0	-1.3	Pass	

Radiated Emissions > 1GHz 4dBi Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/15:30, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch1, 2462 Power: Maximum ART=27 Data Rate: 1 Mbps ANT: H/S Dome

Graphical Data



Formal Data

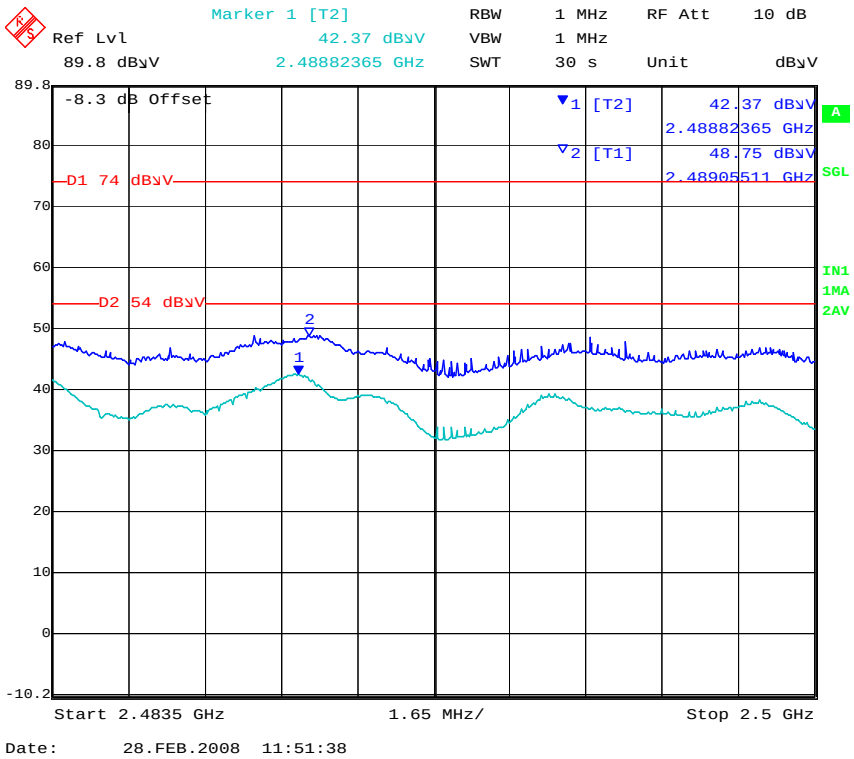
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	7385.245	53.4	5.5	-4.0	54.9	Peak Max	V	129	214	74.0	-19.1	Pass	
2	4923.980	61.0	4.6	-9.2	56.3	Peak Max	H	123	0	74.0	-17.7	Pass	
3	7385.245	47.2	5.5	-4.0	48.6	Average Max	V	129	214	54.0	-5.4	Pass	
4	4923.980	58.2	4.6	-9.2	53.5	Average Max	H	123	0	54.0	-.5	Pass	

Radiated Band Edge - 4dBi Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/15:30, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch1, 2462 Power: Maximum ART=27 Data Rate: 1 Mbps ANT: H/S Dome

Graphical Data



Formal Data

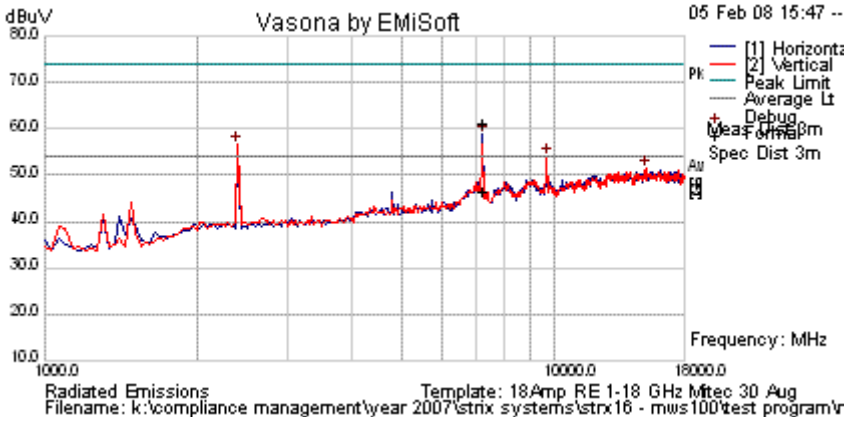
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
	2483.5				48.75	Peak	H			74	-25.25	Pass	Band edge
	2483.5				42.37	Average	H			54	-11.63	Pass	Band edge

Radiated Emissions > 1GHz 4dBi Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/15:47, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch1, 2412 Power: Maximum ART=26 Data Rate: 6 Mbps ANT: H/S Dome

Graphical Data



Formal Data

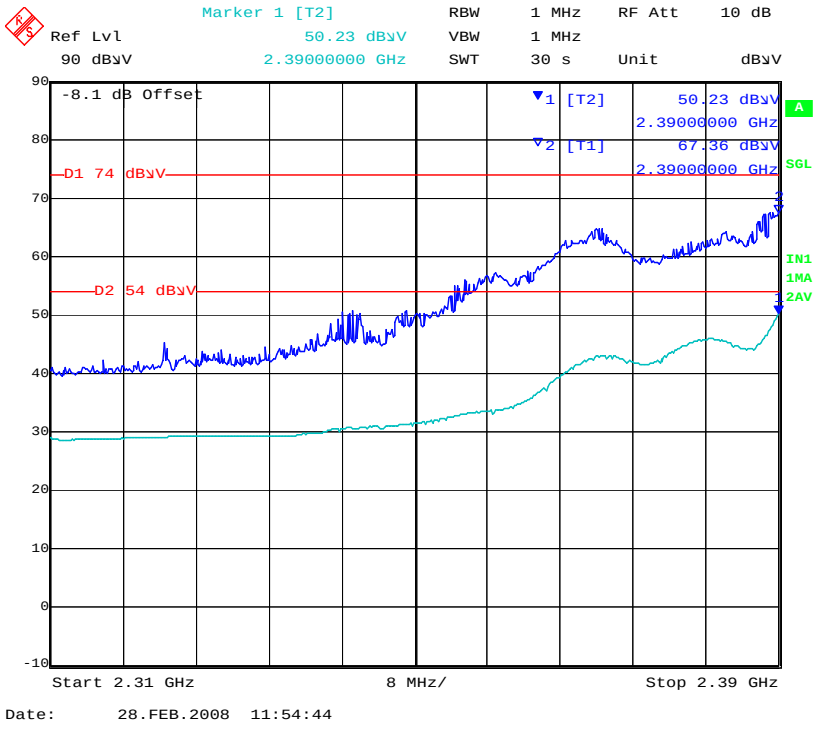
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	7238.728	56.7	5.4	-3.0	59.1	Peak Max	H	136	162	74.0	-14.9	Pass	
2	7238.728	42.2	5.4	-3.0	44.6	Average Max	H	135	162	54.0	-9.4	Pass	

Radiated Band Edge - 4dBi Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/15:47, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch1, 2412 Power: Maximum ART=26 Data Rate: 6 Mbps ANT: H/S Dome

Graphical Data



Formal Data

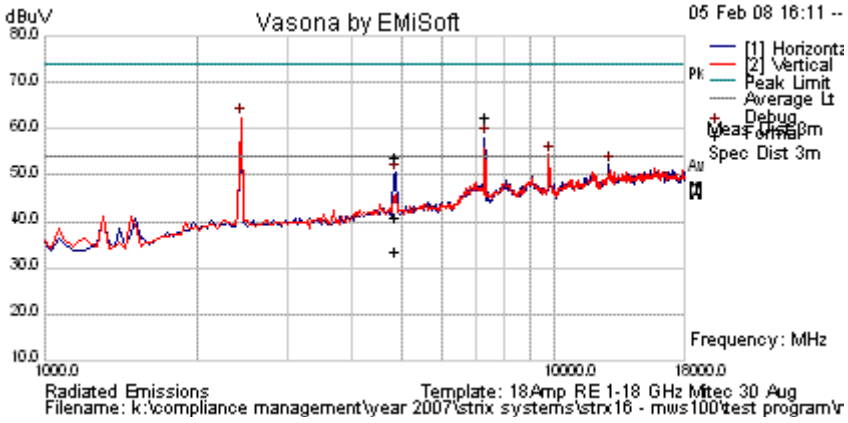
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
	2390.00				67.36	Peak	H			74	-6.64	Pass	Band edge
	2390.00				50.23	Average	H			54	-3.77	Pass	Band edge

Radiated Emissions > 1GHz 4dBi Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/16:11, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch 6, 2437 Power: Maximum ART=26 Data Rate: 6 Mbps ANT: H/S Dome

Graphical Data



Formal Data

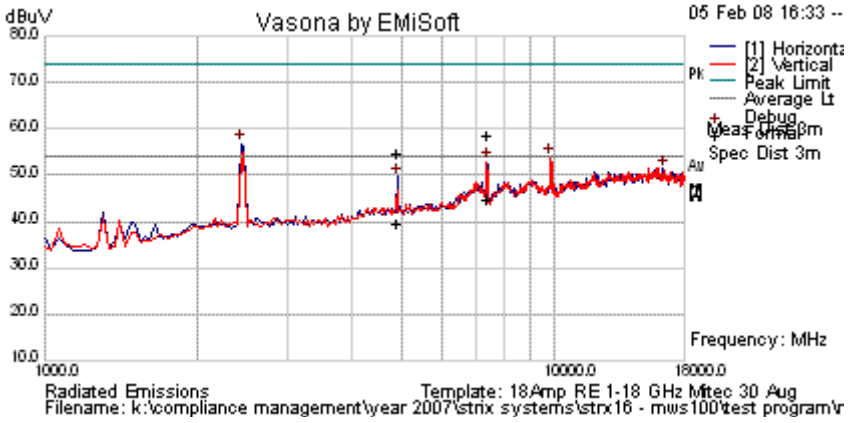
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	7314.930	58.4	5.4	-3.5	60.4	Peak Max	H	118	197	74.0	-13.6	Pass	
2	4873.848	56.4	4.5	-9.2	51.7	Peak Max	H	98	0	74.0	-22.3	Pass	
3	4873.798	35.9	4.5	-9.2	31.3	Average Max	H	119	197	54.0	-22.7	Pass	
4	4873.848	43.4	4.5	-9.2	38.8	Average Max	H	98	0	54.0	-15.2	Pass	

Radiated Emissions > 1GHz 4dBi Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/16:33, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch 11, 2462 Power: Maximum ART=26 Data Rate: 6 Mbps ANT: H/S Dome

Graphical Data



Formal Data

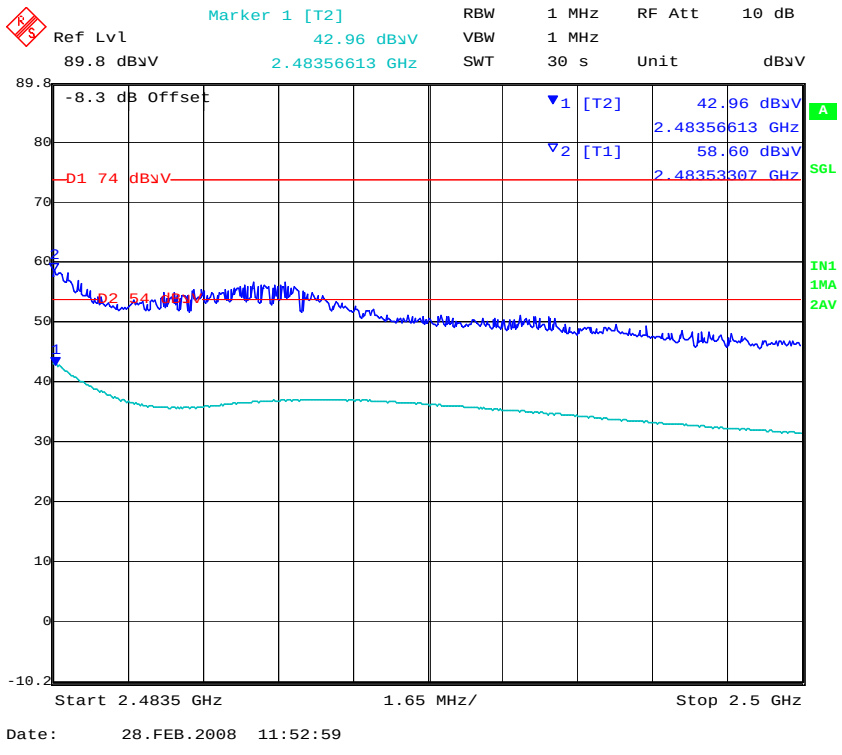
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
1	7382.515	55.1	5.5	-4.0	56.6	Peak Max	V	127	216	74.0	-17.4	Pass	
2	4919.790	57.3	4.6	-9.2	52.6	Peak Max	H	108	0	74.0	-21.4	Pass	
3	7382.515	41.2	5.5	-4.0	42.7	Average Max	V	127	216	54.0	-11.3	Pass	
4	4919.790	42.0	4.6	-9.2	37.3	Average Max	H	108	0	54.0	-16.7	Pass	

Radiated Band Edge - 4dBi Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/16:33, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch 11, 2462 Power: Maximum ART=26 Data Rate: 6 Mbps ANT: H/S Dome

Graphical Data



Formal Data

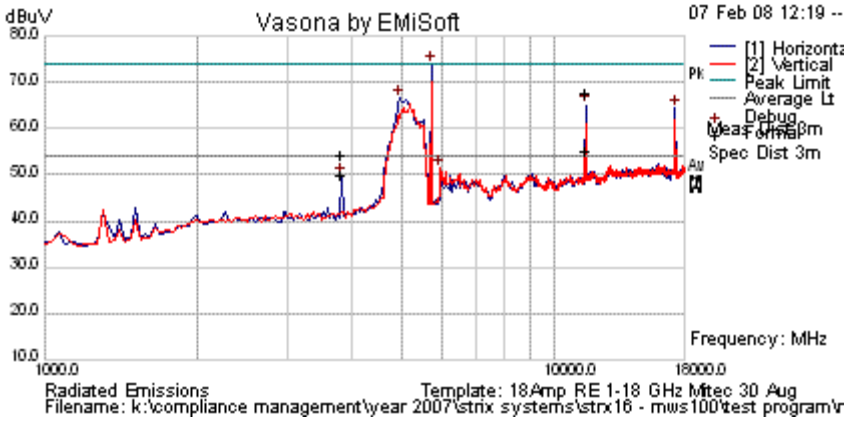
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
	2483.5				58.60	Peak	H			74	-15.40	Pass	Band edge
	2483.5				42.96	Average	H			54	-11.04	Pass	Band edge

Radiated Emissions > 1GHz 4dBi Antenna 802.11a

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	07 Feb 08/12:19, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch149, 5745 MHz Power: Maximum ART=26 Data Rate: 6 Mbps ANT: H/S Dome

Graphical Data



Formal Data

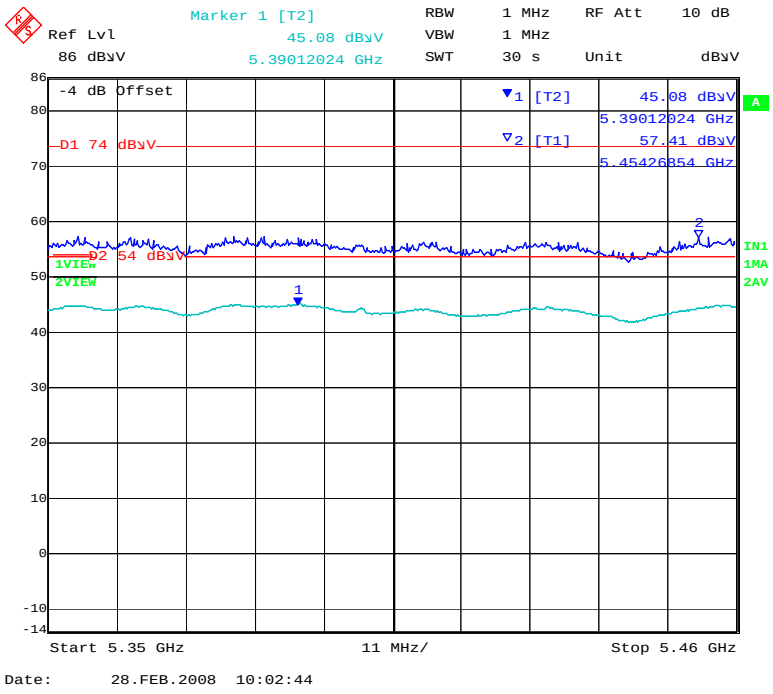
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
1	11491.984	60.7	6.8	-1.7	65.8	Peak Max	H	107	161	74.0	-8.2	Pass	
2	3829.966	59.5	3.8	-11.0	52.3	Peak Max	H	136	20	74.0	-21.7	Pass	
3	11491.984	48.1	6.8	-1.7	53.2	Average Max	H	105	160	54.0	-.8	Pass	
4	3829.966	55.4	3.8	-11.0	48.1	Average Max	H	136	20	54.0	-5.9	Pass	

Radiated Band Edge - 4dBi Antenna 802.11a

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	07 Feb 08/12:19, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch149, 5745 MHz Power: Maximum ART=26 Data Rate: 6 Mbps ANT: H/S Dome

Graphical Data



Formal Data

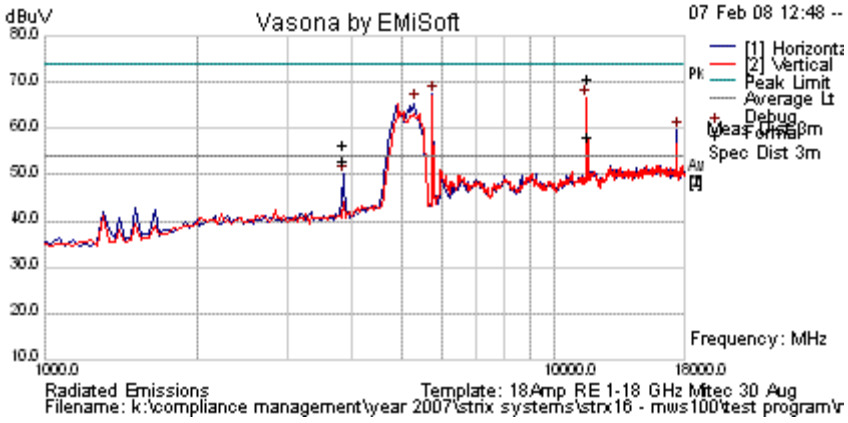
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
	5460.00				57.41	Peak	H			74	-16.59	Pass	Band edge
	5460.00				45.08	Average	H			54	-8.92	Pass	Band edge

Radiated Emissions > 1GHz 4dBi Antenna 802.11a

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	07 Feb 08/12:48, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch157, 5785 MHz Power: Maximum ART=26 Data Rate: 6 Mbps ANT: H/S Dome

Graphical Data



Formal Data

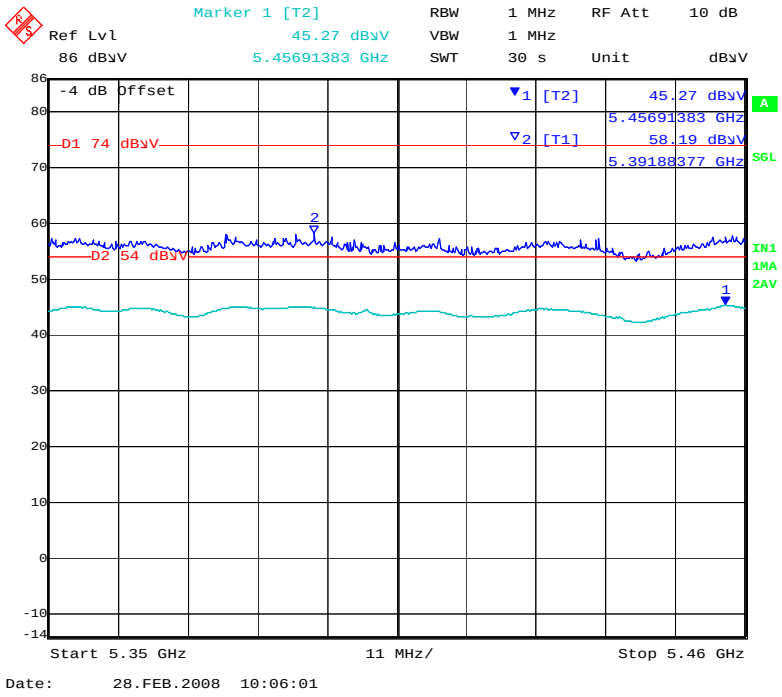
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
1	11567.886	63.6	6.8	-1.6	68.8	Peak Max	V	99	183	74.0	-5.2	Pass	
2	3856.675	61.4	3.8	-10.9	54.3	Peak Max	H	132	41	74.0	-19.7	Pass	
3	11567.886	48.2	6.8	-1.6	53.4	Average Max	V	99	183	54.0	-.5	Pass	
4	3856.675	57.9	3.8	-10.9	50.8	Average Max	H	132	41	54.0	-3.2	Pass	

Radiated Band Edge - 4dBi Antenna 802.11a

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	07 Feb 08/12:48, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch157, 5785 MHz Power: Maximum ART=26 Data Rate: 6 Mbps ANT: H/S Dome

Graphical Data



Formal Data

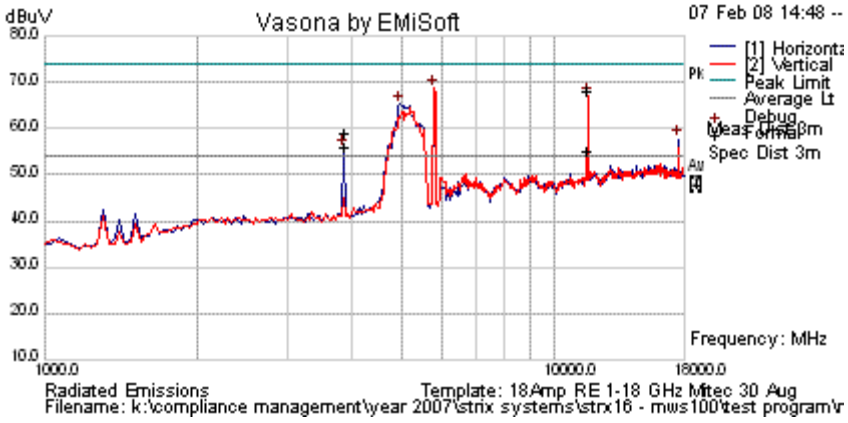
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
	5460.00				58.19	Peak	H			74	-15.81	Pass	Band edge
	5460.00				45.27	Average	H			54	-8.73	Pass	Band edge

Radiated Emissions > 1GHz 4dBi Antenna 802.11a

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	07 Feb 08/14:48, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch165, 5825 MHz Power: Maximum ART=24 Data Rate: 6 Mbps ANT: H/S Dome.

Graphical Data



Formal Data

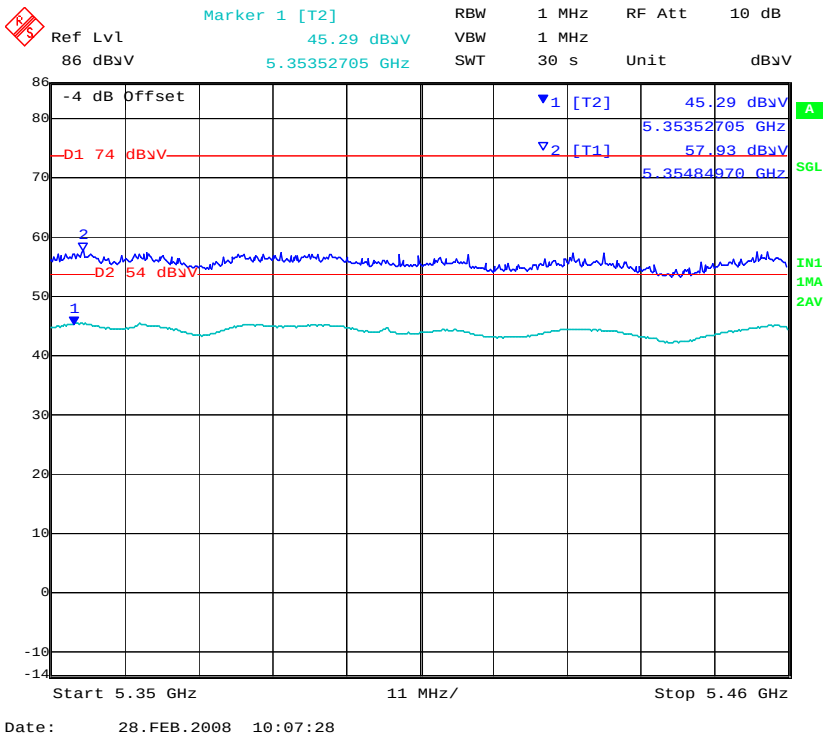
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
1	11648.998	60.6	6.8	-1.4	66.0	Peak Max	V	98	172	74.0	-8.0	Pass	
2	3883.404	63.9	3.8	-10.9	56.8	Peak Max	H	131	32	74.0	-17.2	Pass	
3	11648.998	47.9	6.8	-1.4	53.2	Average Max	V	98	172	54.0	-.8	Pass	
4	3883.404	60.8	3.8	-10.9	53.8	Average Max	H	130	32	54.0	-.2	Pass	

Radiated Band Edge - 4dBi Antenna 802.11a

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	07 Feb 08/14:48, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch165, 5825 MHz Power: Maximum ART=24 Data Rate: 6 Mbps ANT: H/S Dome.

Graphical Data



Formal Data

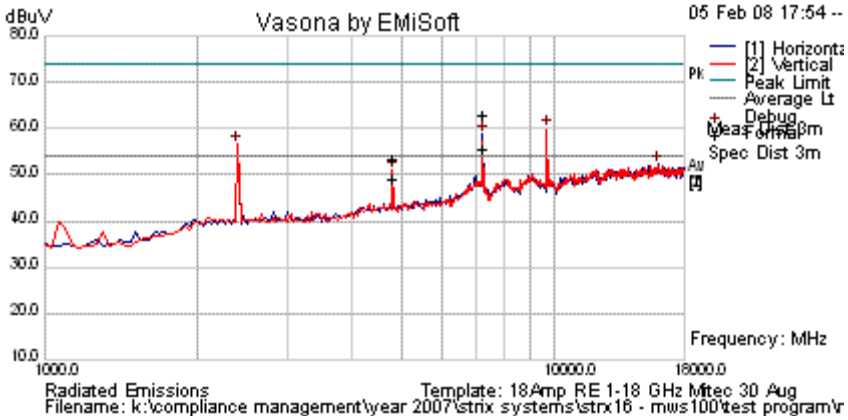
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
	5460.00				57.93	Peak	H			74	-16.07	Pass	Band edge
	5460.00				45.29	Average	H			54	-8.71	Pass	Band edge

Radiated Emissions > 1GHz 3 dBi Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/17:54, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch 1, 2412 Power: Maximum ART=27 Data Rate: 1 Mbps ANT: 3 dBi Rubber Ducky

Graphical Data



Formal Data

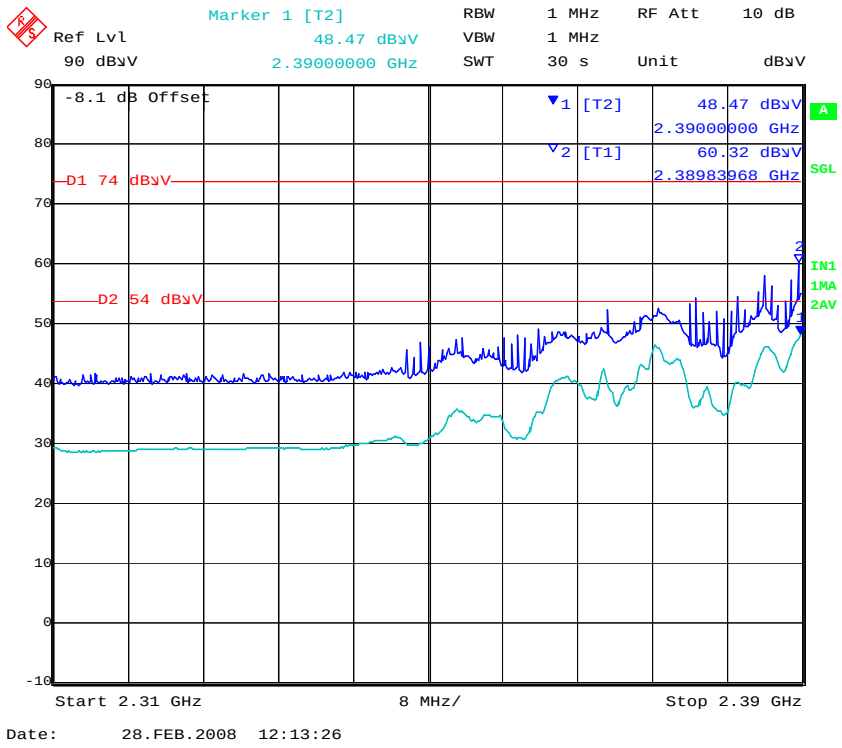
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
1	7235.170	58.5	5.4	-3.0	60.9	Peak Max	H	100	166	74.0	-13.1	Pass	
2	4824.192	56.0	4.5	-9.2	51.3	Peak Max	V	109	225	74.0	-22.7	Pass	
3	7235.120	51.2	5.4	-3.0	53.6	Average Max	H	99	161	54.0	-0.4	Pass	
4	4824.192	51.6	4.5	-9.2	46.9	Average Max	V	109	225	54.0	-7.1	Pass	

Radiated Band Edge - 3 dBi Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/17:54, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch 1, 2412 Power: Maximum ART=26 Data Rate: 1 Mbps ANT: 3 dBi Rubber Ducky

Graphical Data



Formal Data

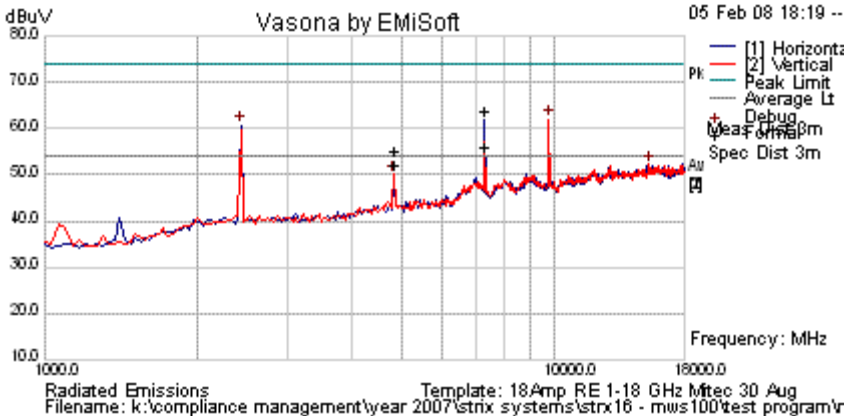
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
	2390.00				60.32	Peak	H			74	-13.68	Pass	Band edge
	2390.00				48.47	Average	H			54	-5.53	Pass	Band edge

Radiated Emissions > 1GHz 3dBi Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/18:19, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch 6, 2437 Power: Maximum ART=27 Data Rate: 1 Mbps ANT: 3 dBi Rubber Ducky

Graphical Data



Formal Data

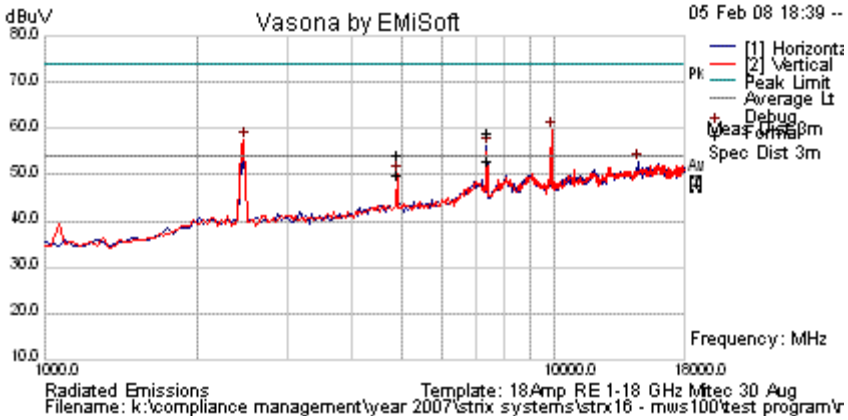
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
1	7310.120	59.7	5.4	-3.5	61.6	Peak Max	H	98	200	74.0	-12.4	Pass	
2	4874.063	57.7	4.5	-9.2	53.1	Peak Max	V	106	213	74.0	-20.9	Pass	
3	7310.070	52.0	5.4	-3.5	53.9	Average Max	H	98	195	54.0	-0.1	Pass	
4	4874.063	54.6	4.5	-9.2	50.0	Average Max	V	106	213	54.0	-4.0	Pass	

Radiated Emissions > 1GHz 3dBi Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/18:39, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch 11, 2462 Power: Maximum ART=27 Data Rate: 1 Mbps ANT: 3 dBi Rubber Ducky

Graphical Data



Formal Data

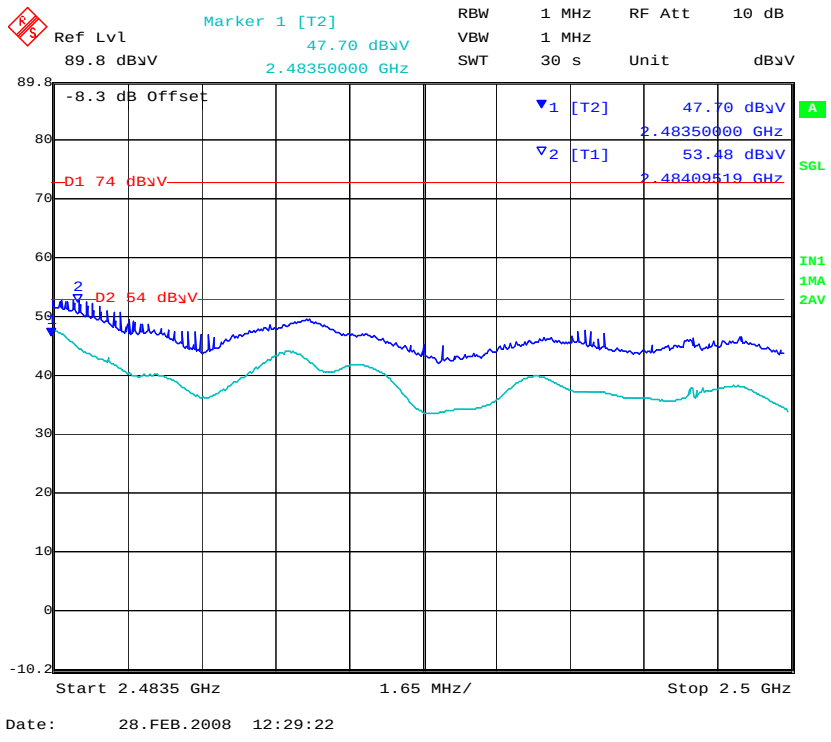
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
1	7386.773	55.5	5.5	-4.0	57.0	Peak Max	H	106	182	74.0	-17.0	Pass	
2	4923.785	56.9	4.6	-9.2	52.2	Peak Max	V	115	209	74.0	-21.8	Pass	
3	7386.773	49.3	5.5	-4.0	50.8	Average Max	H	106	182	54.0	-3.2	Pass	
4	4923.785	52.6	4.6	-9.2	47.9	Average Max	V	115	209	54.0	-6.1	Pass	

Radiated Band Edge - 3dBi Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/18:39, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch 11, 2462 Power: Maximum ART=27 Data Rate: 1 Mbps ANT: 3 dBi Rubber Ducky

Graphical Data



Formal Data

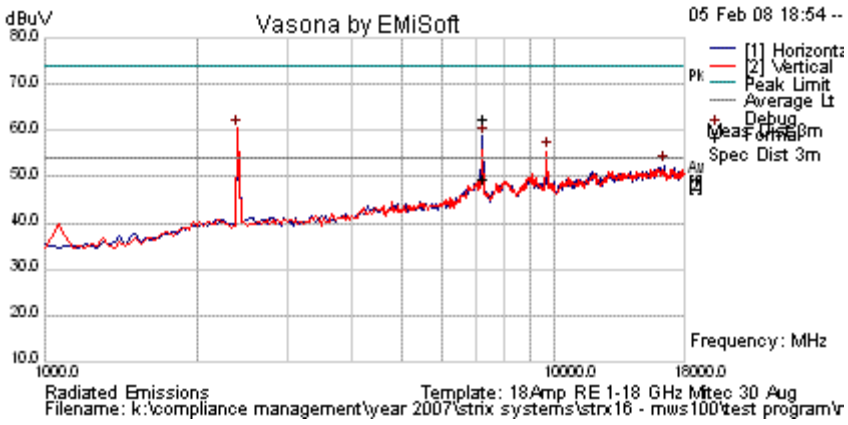
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
	2483.5				53.48	Peak	H			74	-20.52	Pass	Band edge
	2483.5				47.70	Average	H			54	-6.30	Pass	Band edge

Radiated Emissions > 1GHz 3dBi Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/18:54, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Freq.: Ch 1, 2412 Power: Maximum ART=26 Data Rate: 6 Mbps ANT: 3 dBi Rubber Ducky

Graphical Data



Formal Data

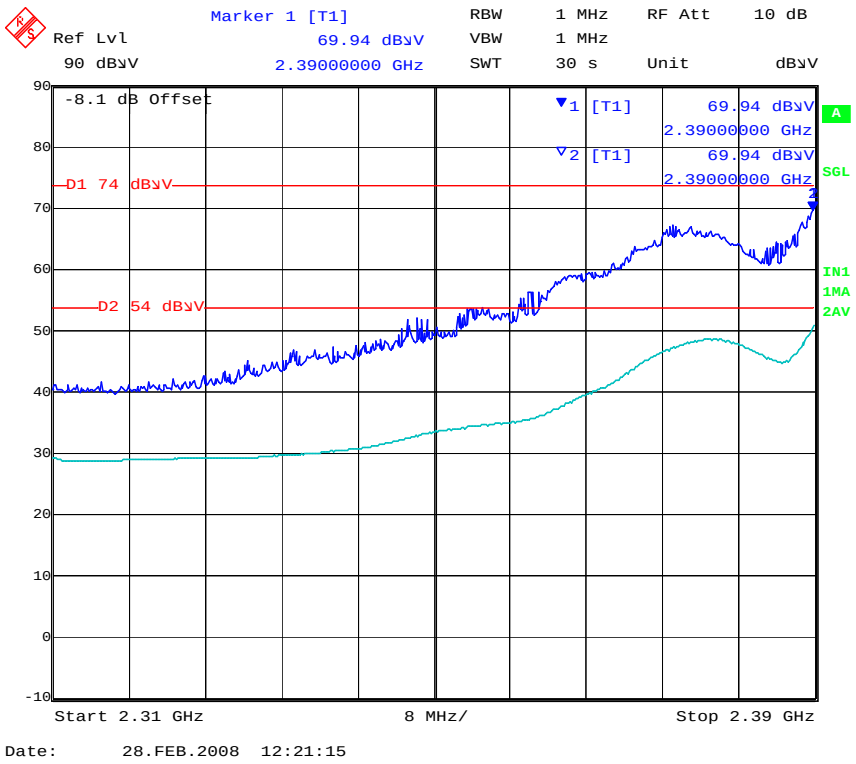
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	7236.373	58.2	5.4	-3.0	60.7	Peak Max	H	111	165	74.0	-13.3	Pass	
2	7236.323	45.1	5.4	-3.0	47.5	Average Max	H	111	165	54.0	-6.5	Pass	

Radiated Band Edge - 3dBi Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/18:54, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Freq.: Ch 1, 2412 Power: Maximum ART=25.5 Data Rate: 6 Mbps ANT: 3 dBi Rubber Ducky

Graphical Data



Formal Data

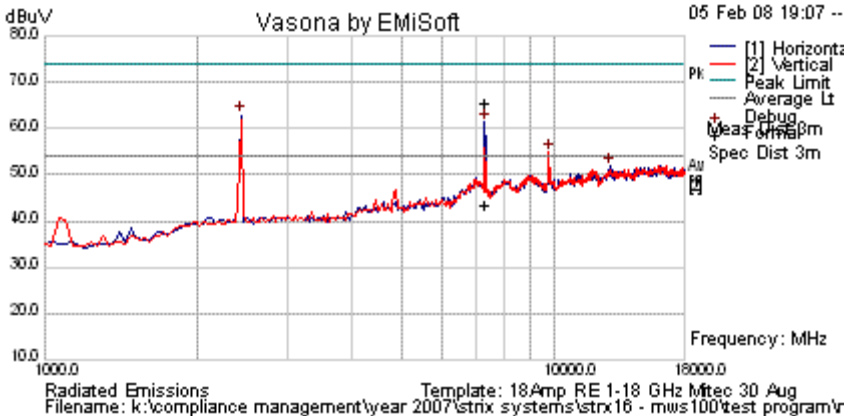
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
	2390.00				70.54	Peak	H			74	-3.46	Pass	Band edge
	2390.00				53.02	Average	H			54	-0.98	Pass	Band edge

Radiated Emissions > 1GHz 3dBi Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/19:07, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Freq.: Ch 6, 2437 Power: Maximum ART=26 Data Rate: 6 Mbps ANT: 3 dBi Rubber Ducky

Graphical Data



Formal Data

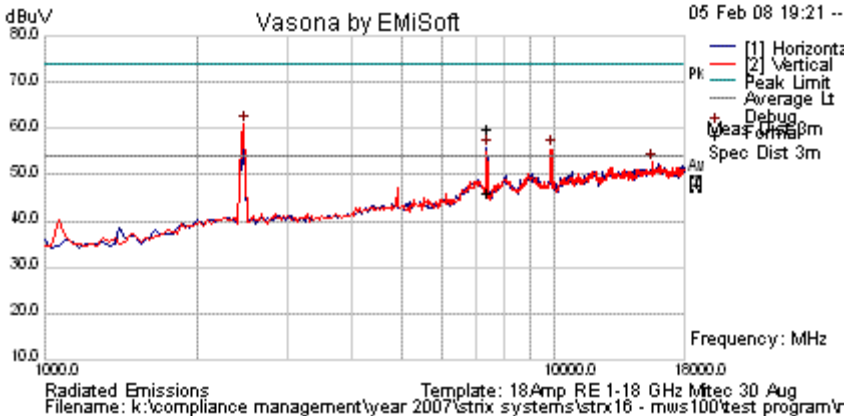
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
1	7312.375	61.6	5.4	-3.5	63.5	Peak Max	H	98	199	74.0	-10.5	Pass	
2	7312.325	39.3	5.4	-3.5	41.2	Average Max	V	99	199	54.0	-12.8	Pass	

Radiated Emissions > 1GHz 3dBi Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/19:21, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Freq.: Ch 11, 2462 Power: Maximum ART=26 Data Rate: 6 Mbps ANT: 3 dBi Rubber Ducky

Graphical Data



Formal Data

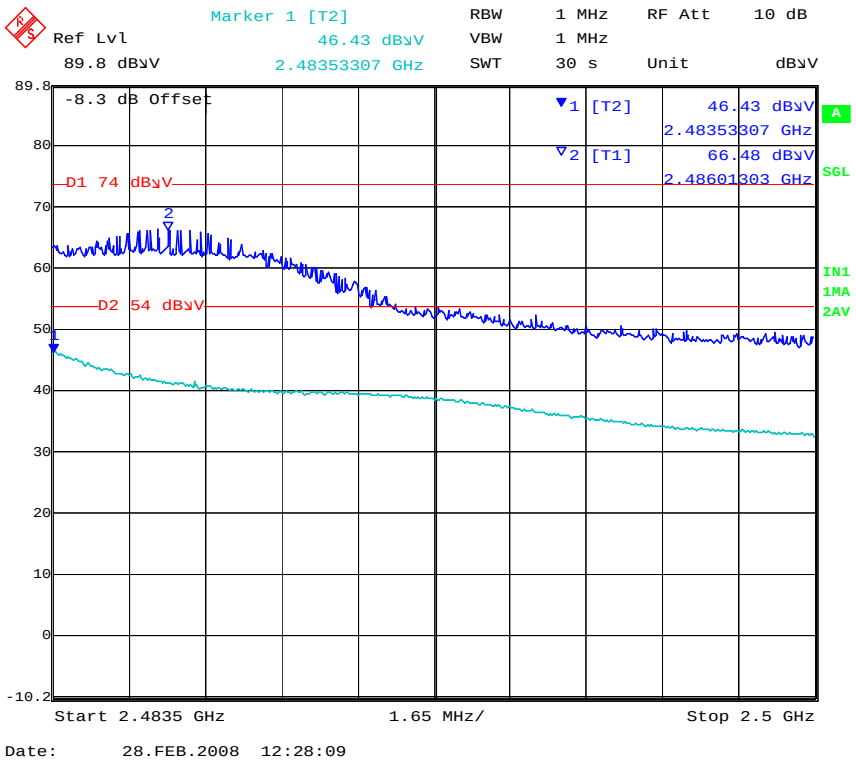
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
1	7385.871	56.4	5.5	-4.0	57.9	Peak Max	H	124	182	74.0	-16.1	Pass	
2	7385.871	42.6	5.5	-4.0	44.0	Average Max	H	124	182	54.0	-10.0	Pass	

Radiated Band Edge - 3dBi Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/19:21, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Freq.: Ch 11, 2462 Power: Maximum ART=26 Data Rate: 6 Mbps ANT: 3 dBi Rubber Ducky

Graphical Data



Formal Data

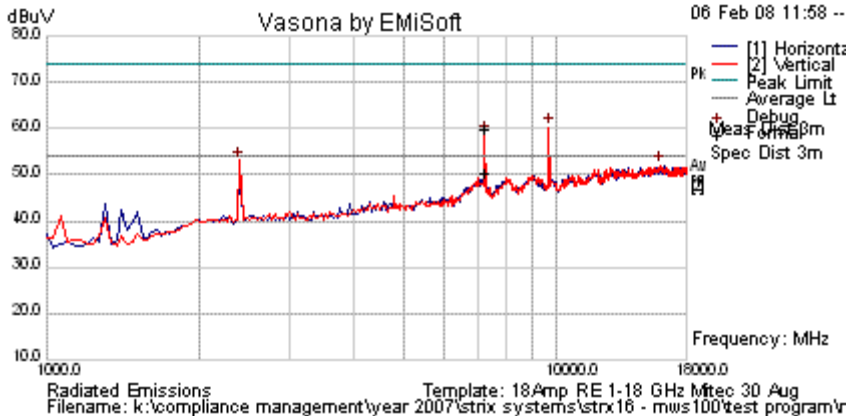
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
	2483.5				66.48	Peak	H			74	-7.52	Pass	Band edge
	2483.5				46.43	Average	H			54	-7.57	Pass	Band edge

Radiated Emissions > 1GHz 8 dBi Omni Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/11:58, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	b Freq. 2412, Ch 1 Power: Full Power (ART = 27.0) Data Rate: 1 Mbps ANT: 8 dBi omni

Graphical Data



Formal Data

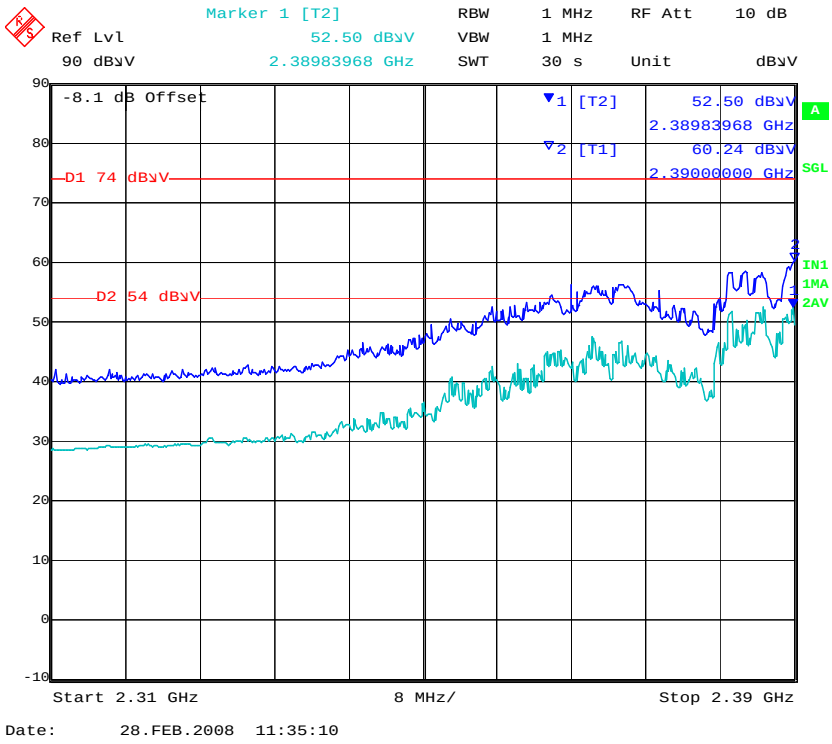
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
1	7236.974	55.7	5.4	-3.0	58.1	Peak Max	H	98	203	74.0	-15.9	Pass	
2	7236.924	45.9	5.4	-3.0	48.3	Average Max	H	98	203	54.0	-5.7	Pass	

Radiated Band Edge - 8dBi Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/11:58, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	b Freq. 2412, Ch 1 Power: Full Power (ART = 27.0) Data Rate: 1 Mbps ANT: 8 dBi omni

Graphical Data



Formal Data

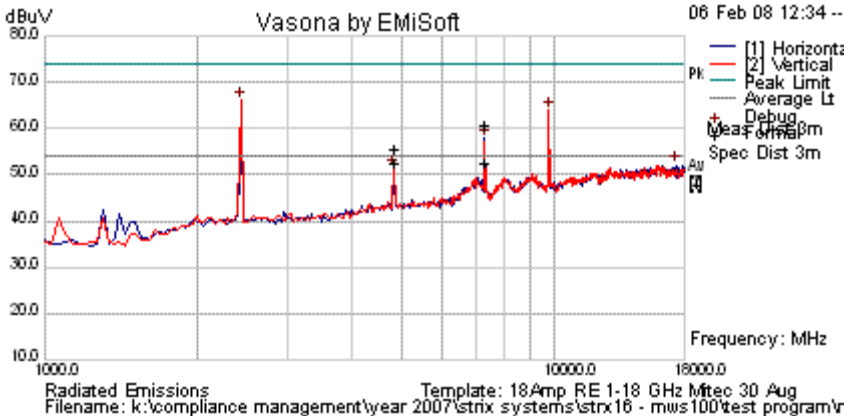
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
	2390.00				60.24	Peak	H			74	-13.76	Pass	Band edge
	2390.00				52.50	Average	H			54	-1.50	Pass	Band edge

Radiated Emissions > 1GHz 8 dBi Omni Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/12:34, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	b Freq. 2437, Ch 6 Power: Full Power (ART = 27.0) Data Rate: 1 Mbps ANT: 8 dBi omni

Graphical Data



Formal Data

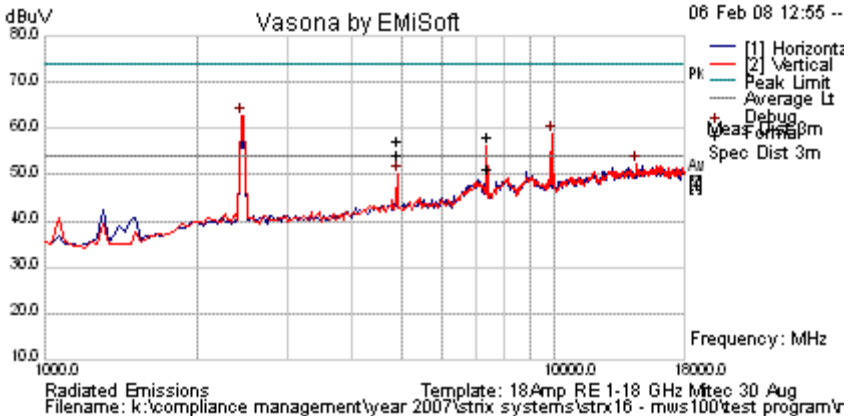
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
1	7311.848	56.8	5.4	-3.5	58.8	Peak Max	H	106	183	74.0	-15.2	Pass	
2	4873.973	58.2	4.5	-9.2	53.6	Peak Max	V	98	359	74.0	-20.4	Pass	
3	7311.848	48.6	5.4	-3.5	50.6	Average Max	H	107	182	54.0	-3.4	Pass	
4	4873.973	55.2	4.5	-9.2	50.6	Average Max	V	98	359	54.0	-3.4	Pass	

Radiated Emissions > 1GHz 8 dBi Omni Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/12:55, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	b Freq. 2462, Ch 11 Power: Full Power (ART = 27.0) Data Rate: 1 Mbps ANT: 8 dBi omni

Graphical Data



Formal Data

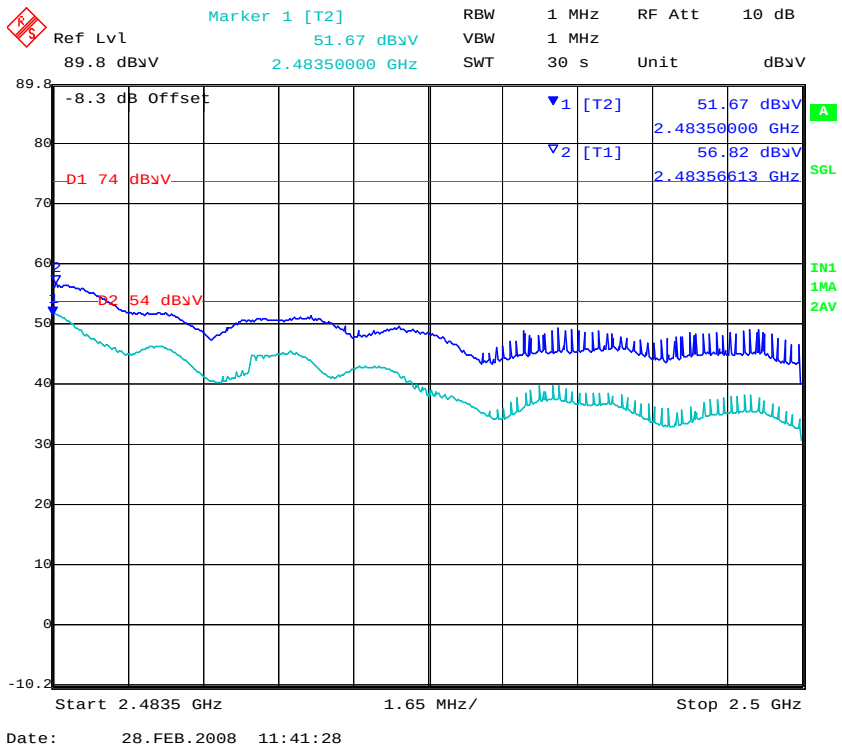
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
1	7386.853	54.5	5.5	-4.0	56.0	Peak Max	V	98	189	74.0	-18.0	Pass	
2	4924.051	59.8	4.6	-9.2	55.1	Peak Max	V	128	215	74.0	-18.9	Pass	
3	7386.853	47.6	5.5	-4.0	49.1	Average Max	V	98	189	54.0	-4.9	Pass	
4	4924.051	56.9	4.6	-9.2	52.2	Average Max	V	128	215	54.0	-1.8	Pass	

Radiated Band Edge - 8dBi Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/12:55, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	b Freq. 2462, Ch 11 Power: Full Power (ART = 27.0) Data Rate: 1 Mbps ANT: 8 dBi omni

Graphical Data



Formal Data

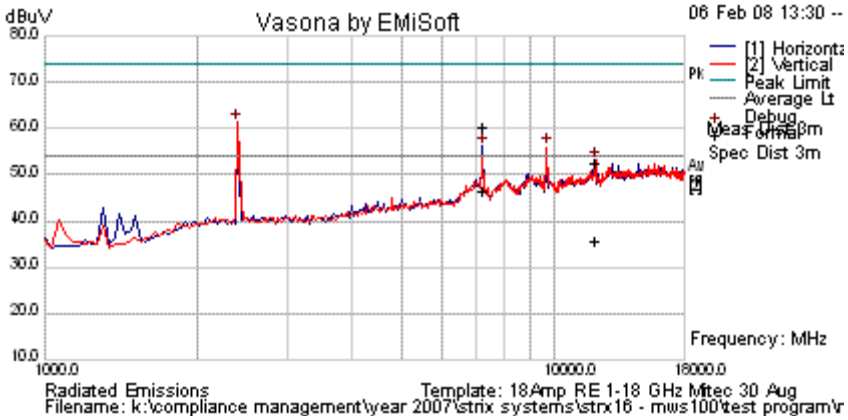
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
	2483.5				56.82	Peak	H			74	-17.18	Pass	Band edge
	2483.5				51.67	Average	H			54	-2.33	Pass	Band edge

Radiated Emissions > 1GHz 8 dBi Omni Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/13:30, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Freq. 2412, Ch 1 Power: Full Power (ART = 26.0) Data Rate: 6 Mbps ANT: 8 dBi omni

Graphical Data



Formal Data

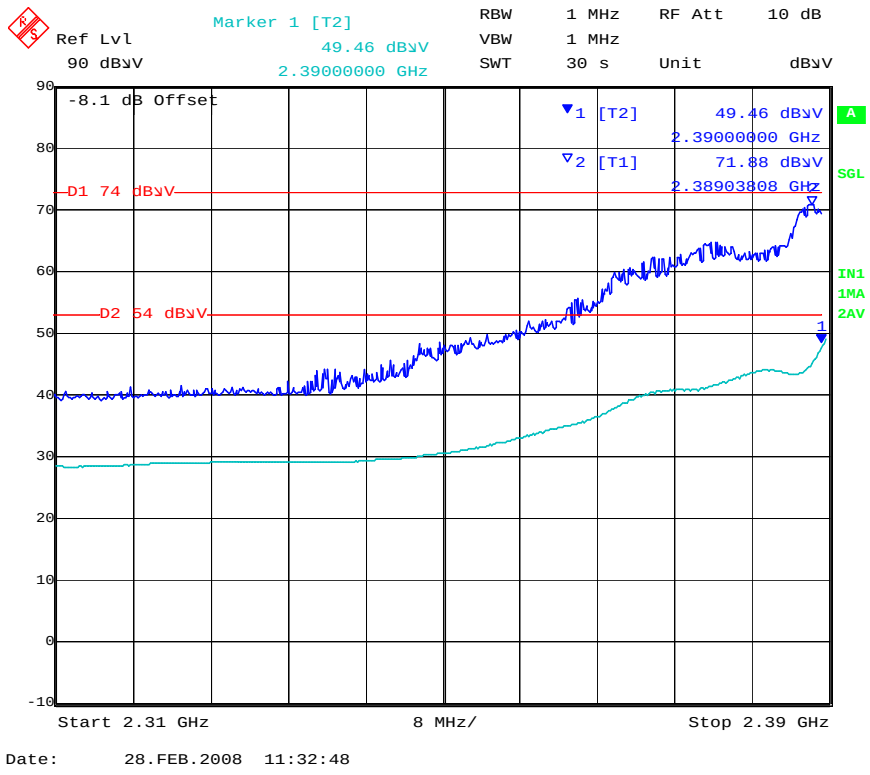
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	7235.020	55.9	5.4	-3.0	58.3	Peak Max	H	98	201	74.0	-15.7	Pass	
2	12060.154	44.9	6.9	-1.2	50.6	Peak Max	H	164	183	74.0	-23.4	Pass	
3	7235.070	42.1	5.4	-3.0	44.5	Average Max	H	98	200	54.0	-9.5	Pass	
4	12060.154	27.8	6.9	-1.2	33.5	Average Max	H	164	183	54.0	-20.5	Pass	

Radiated Band Edge - 8dBi Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/13:30, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Freq. 2412, Ch 1 Power: Full Power (ART = 23.5) Data Rate: 6 Mbps ANT: 8 dBi omni

Graphical Data



Formal Data

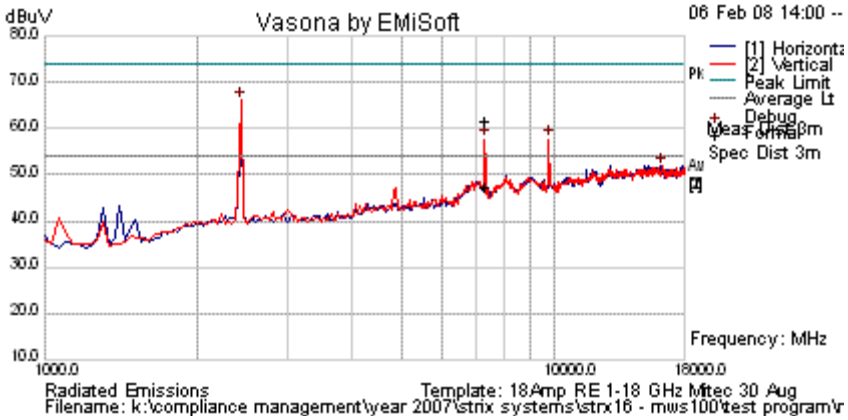
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
	2390.00				71.88	Peak	H			74	-2.12	Pass	Band edge
	2390.00				49.46	Average	H			54	-4.54	Pass	Band edge

Radiated Emissions > 1GHz 8 dBi Omni Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/14:00, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Freq. 2437, Ch 6 Power: Full Power (ART = 26.0) Data Rate: 6 Mbps ANT: 8 dBi omni

Graphical Data



Formal Data

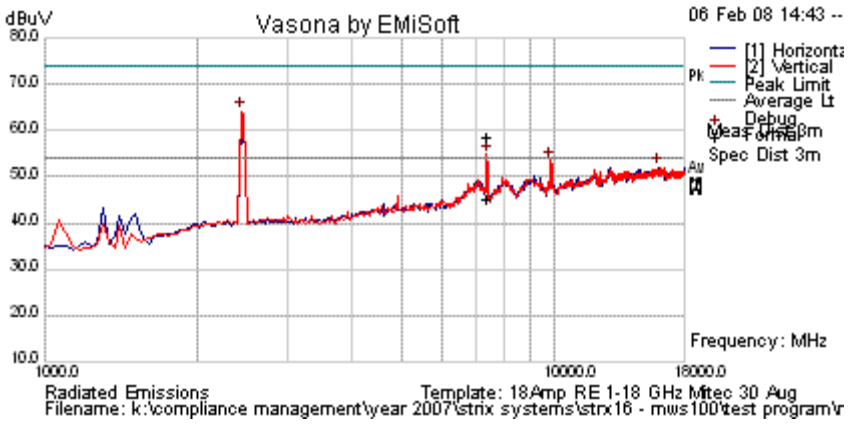
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
1	7311.096	57.6	5.4	-3.5	59.5	Peak Max	H	123	187	74.0	-14.5	Pass	
2	7311.096	43.4	5.4	-3.5	45.4	Average Max	H	123	187	54.0	-8.6	Pass	

Radiated Emissions > 1GHz 8 dBi Omni Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/14:43, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Freq. 2462, Ch 11 Power: Full Power (ART = 26.0) Data Rate: 6 Mbps ANT: 8 dBi omni

Graphical Data



Formal Data

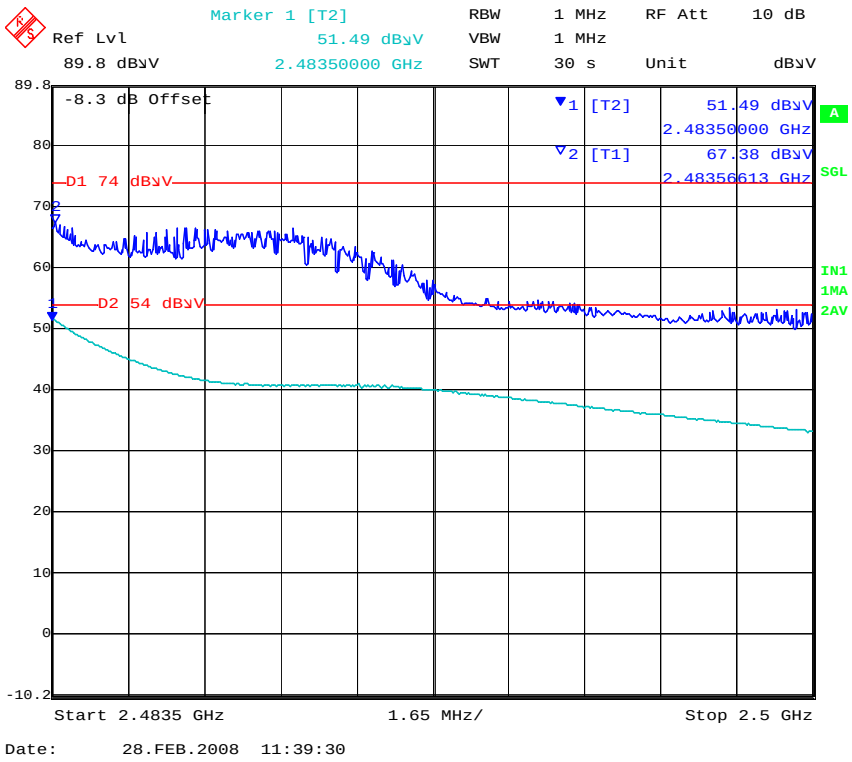
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	7385.170	55.2	5.5	-4.0	56.6	Peak Max	V	98	188	74.0	-17.4	Pass	
2	7385.170	41.7	5.5	-4.0	43.2	Average Max	V	98	188	54.0	-10.8	Pass	

Radiated Band Edge - 8dBi Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/14:43, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Freq. 2462, Ch 11 Power: Full Power (ART = 26.0) Data Rate: 6 Mbps ANT: 8 dBi omni

Graphical Data



Formal Data

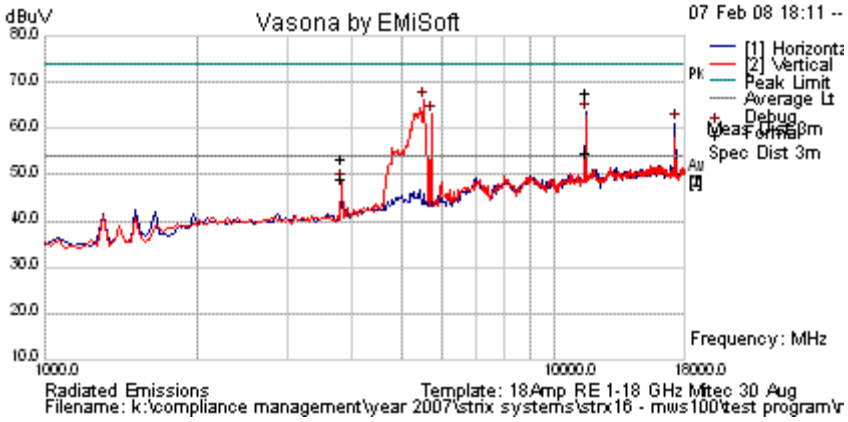
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
	2483.5				67.38	Peak	H			74	-6.62	Pass	Band edge
	2483.5				51.59	Average	H			54	-2.41	Pass	Band edge

Radiated Emissions > 1GHz 12 dBi Omni Antenna 802.11a

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	07 Feb 08/18:11, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch149, 5745 MHz Power: Maximum ART=24 Data Rate: 6 Mbps ANT: 12 dBi OMNI

Graphical Data



Formal Data

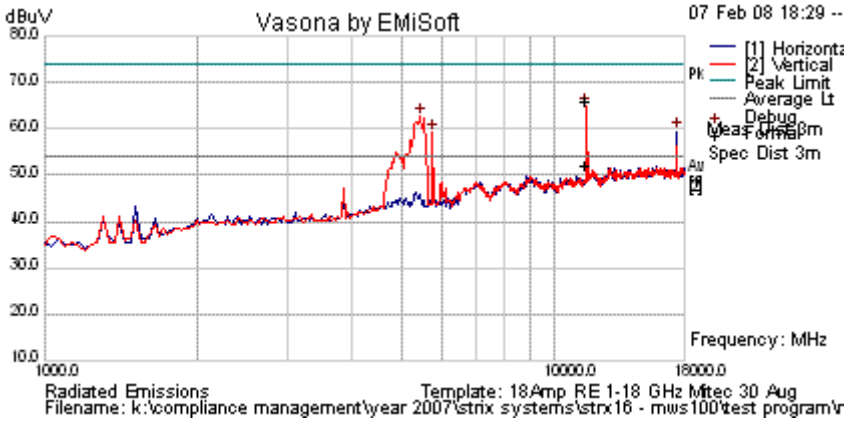
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	11489.228	60.4	6.8	-1.7	65.5	Peak Max	V	99	192	74.0	-8.5	Pass	
2	3830.044	58.5	3.8	-11.0	51.3	Peak Max	V	98	69	74.0	-22.7	Pass	
3	11489.228	47.5	6.8	-1.7	52.5	Average Max	V	99	192	54.0	-1.5	Pass	
4	3830.044	54.2	3.8	-11.0	47.0	Average Max	V	98	69	54.0	-7.0	Pass	
5	17250.501	53.0	8.6	-.5	61.1	Peak [Scan]	H	100	0	104.4	-43.3	Pass	NRB

Radiated Emissions > 1GHz 12 dBi Omni Antenna 802.11a

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	07 Feb 08/18:29, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch157, 5785 MHz Power: Maximum ART=24 Data Rate: 6 Mbps ANT: 12 dBi OMNI

Graphical Data



Formal Data

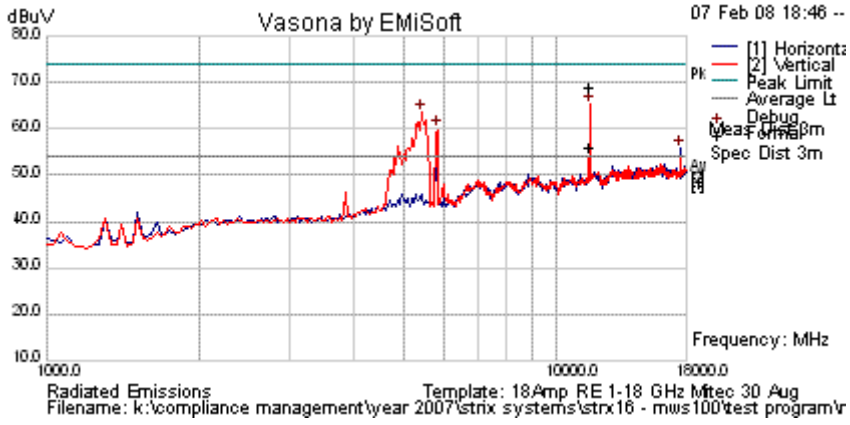
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
1	11564.429	58.8	6.8	-1.6	64.0	Peak Max	V	108	183	74.0	-10.0	Pass	
2	11564.429	44.8	6.8	-1.6	50.1	Average Max	V	108	183	54.0	-3.9	Pass	
3	17386.774	51.4	8.7	-.6	59.4	Peak [Scan]	H	100	0	103.3	-43.9	Pass	NRB

Radiated Emissions > 1GHz 12 dBi Omni Antenna 802.11a

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	07 Feb 08/18:46, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Freq.: Ch165, 5825 MHz Power: Maximum ART=24 Data Rate: 6 Mbps ANT: 12 dBi OMNI

Graphical Data



Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass / Fail	Comments
1	11648.046	61.7	6.8	-1.4	67.1	Peak Max	V	98	185	74.0	-6.9	Pass	
2	11648.046	48.5	6.8	-1.4	53.9	Average Max	V	98	181	54.0	-.1	Pass	
3	17488.978	47.7	8.8	-.6	55.9	Peak [Scan]	H	100	0	102.0	-46.1	Pass	NRB

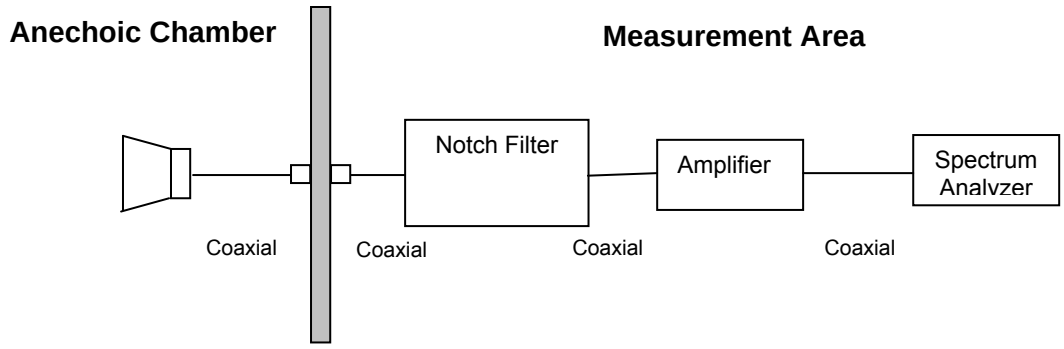
5.1.6.1.1. Peak Field Strength Measurements

Test Procedure

Radiated emissions above 1 GHz are measured in the anechoic chamber at a 3-meter distance on every azimuth in both horizontal and vertical polarities. The emissions are recorded and maximized as a function of azimuth by rotation through 360° with a spectrum analyzer in peak hold mode. The highest emissions relative to the limit are listed for each frequency scanned.

All measurements on any frequency or frequencies over 1 MHz are based on the use of measurement instrumentation employing an average detector function. All measurements above 1 GHz were performed using a minimum resolution bandwidth of 1 MHz.

Test Measurement Set up



Measurement set up for Radiated Emission Test

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. All factors are included in the reported data.

FS = R + AF + CORR - FO

where: FS = Field Strength
R = Measured Spectrum analyzer Input Amplitude
AF = Antenna Factor
CORR = Correction Factor = CL – AG + NFL
CL = Cable Loss
AG = Amplifier Gain
FO = Distance Falloff Factor
NFL = Band-stop Filter Loss or Waveguide Loss

For example:
Given receiver input reading of 51.5 dBμV; Antenna Factor of 8.5 dB; Cable Loss of 1.3 dB; Falloff Factor of 0 dB, an Amplifier Gain of 26 dB and Notch Filter Loss of 1 dB. The Field Strength of the measured emission is:

FS = 51.5 + 8.5 + 1.3 - 26.0 +1 = 36.3 dBμV/m

Conversion between dBμV/m (or dBμV) and μV/m (or μV) are done as:

Level (dBμV/m) = 20 * Log (level (μV/m))

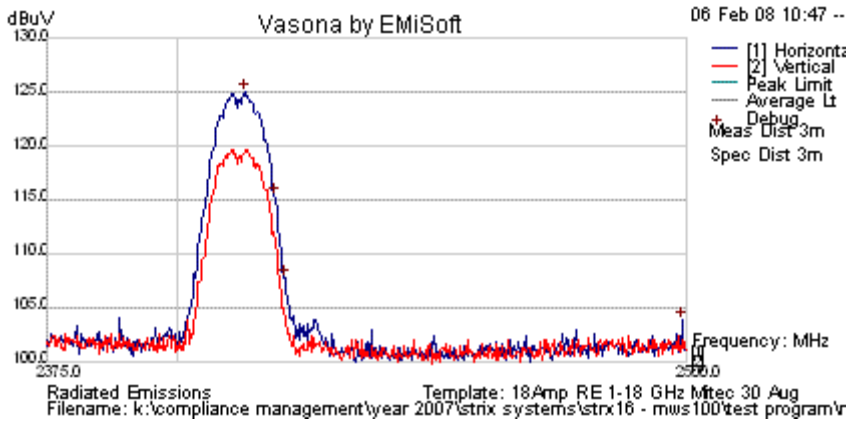
40 dBμV/m = 100 μV/m
48 dBμV/m = 250 μV/m

Peak Field Strength - 4 dBi Dome Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	2375 - 2500MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/10:47, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	b Peak Emission Freq.: Ch 1, 2412 Power: Maximum ART=27 Data Rate: 1 Mbps ANT: 4 dBi Dome

Graphical Data



Formal Data

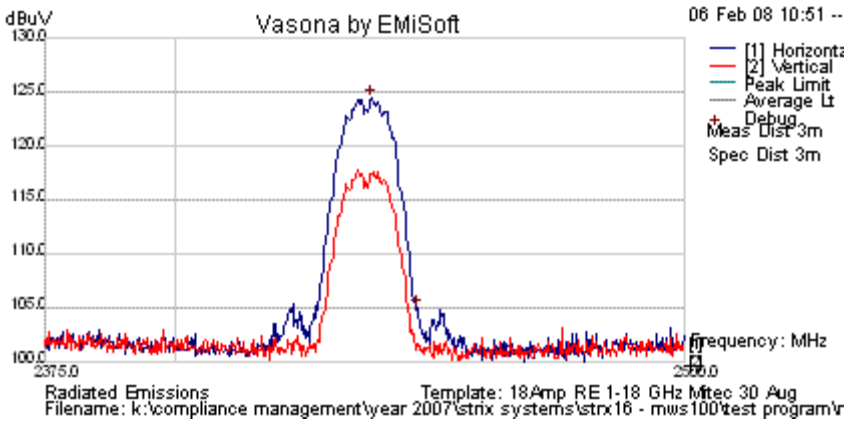
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2413.076	59.7	33.0	32.4	125.0	Peak [Scan]	H	100	0				

Peak Field Strength - 4 dBi Dome Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	2375 - 2500MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/10:51, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	b Peak Emission Freq.: Ch 6, 2437 Power: Maximum ART=27 Data Rate: 1 Mbps ANT: 4 dBi Dome

Graphical Data



Formal Data

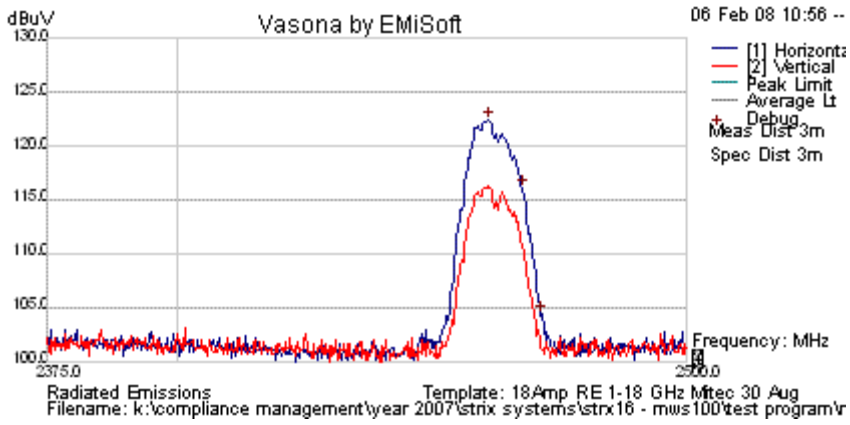
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2438.126	59.0	33.0	32.4	124.4	Peak [Scan]	H	100	0				

Peak Field Strength - 4 dBi Dome Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	2375 - 2500MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/10:56, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	b Peak Emission Freq.: Ch 11, 2462 Power: Maximum ART=27 Data Rate: 1 Mbps ANT: 4 dBi Dome

Graphical Data



Formal Data

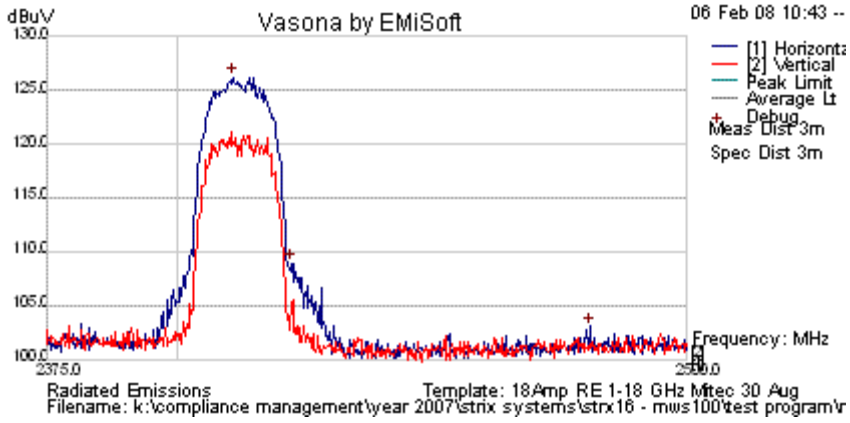
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2460.671	57.0	33.0	32.4	122.4	Peak [Scan]	H	100	0				

Peak Field Strength - 4 dBi Dome Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	2375 - 2500MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/10:43, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Peak Emission Freq.: Ch 1, 2412 Power: Maximum ART=26 Data Rate: 6 Mbps ANT: 4 dBi Dome

Graphical Data



Formal Data

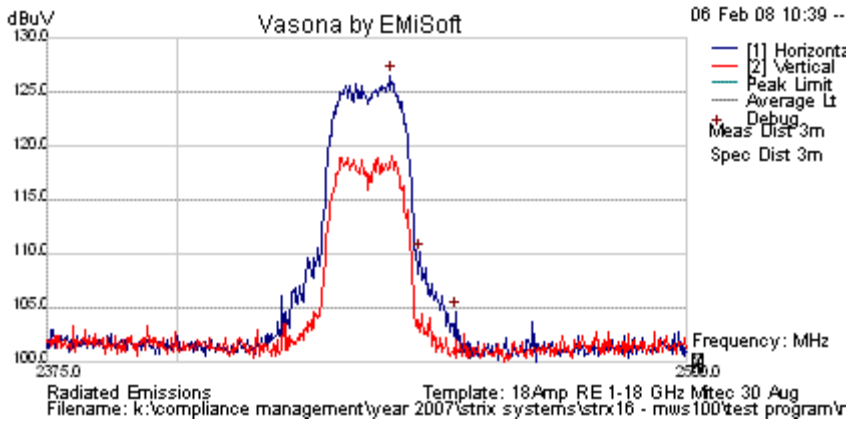
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2410.822	60.9	33.0	32.4	126.2	Peak [Scan]	H	100	0				

Peak Field Strength - 4 dBi Dome Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	2375 - 2500MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/10:39, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Peak Emission Freq.: Ch 6, 2437 Power: Maximum ART=26 Data Rate: 6 Mbps ANT: 4 dBi Dome

Graphical Data



Formal Data

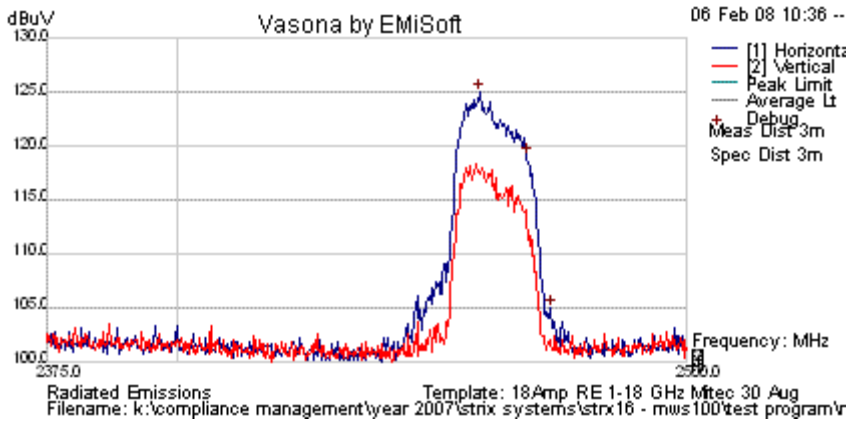
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2441.383	61.2	33.0	32.4	126.6	Peak [Scan]	H	100	0				

Peak Field Strength - 4 dBi Dome Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	2375 - 2500MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/10:36, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Peak Emission Freq.: Ch 11, 2462 Power: Maximum ART=26 Data Rate: 6 Mbps ANT: 4 dBi Dome

Graphical Data



Formal Data

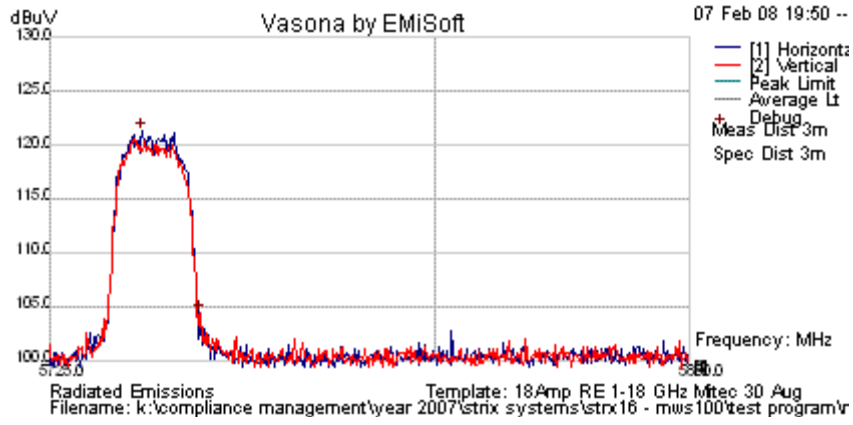
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2458.918	59.7	33.0	32.4	125.0	Peak [Scan]	H	100	0				

Peak Field Strength - 4 dBi Dome Antenna 802.11a

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	5725 - 5850MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	07 Feb 08/19:50, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Peak Emission Freq.: Ch 149 5745 MHz ANT: 4 dBi Dome

Graphical Data



Formal Data

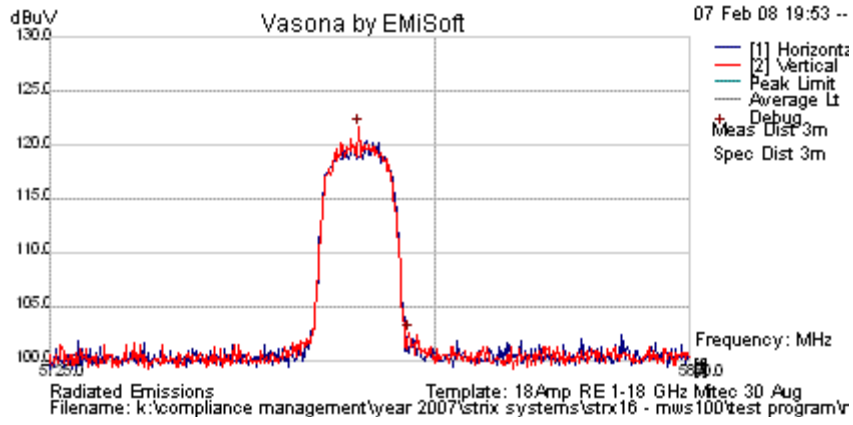
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	5743.036	51.4	34.8	35.1	121.2	Peak [Scan]	H	100	0				

Peak Field Strength - 4 dBi Dome Antenna 802.11a

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	5725 - 5850MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	07 Feb 08/19:53, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Peak Emission Freq.: Ch 157 5785 MHz ANT: 4 dBi Dome

Graphical Data



Formal Data

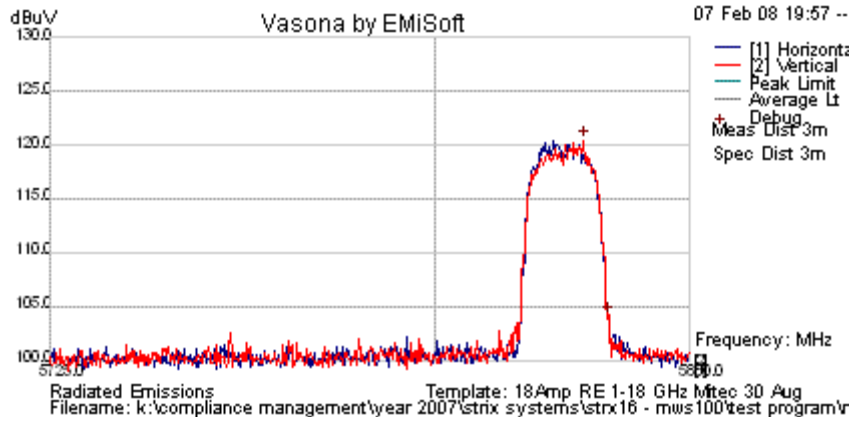
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	5785.120	51.8	34.8	35.1	121.7	Peak [Scan]	V	100	0				

Peak Field Strength - 4 dBi Dome Antenna 802.11a

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	5725 - 5850MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	07 Feb 08/19:57, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Peak Emission Freq.: Ch 165 5825 MHz ANT: 4 dBi Dome

Graphical Data



Formal Data

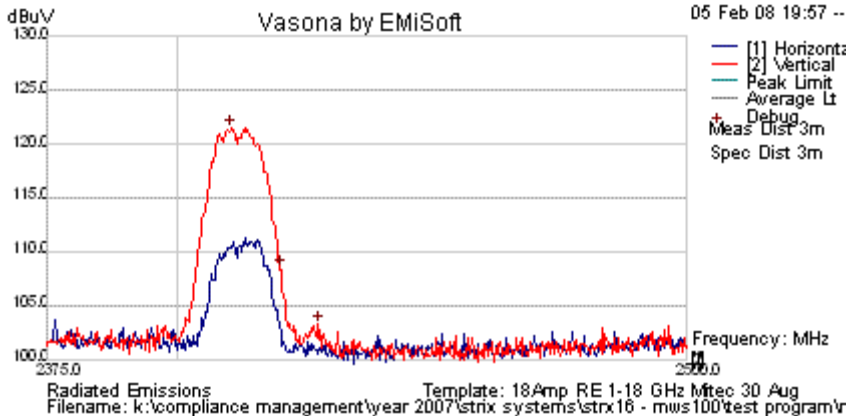
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	5829.208	50.5	34.8	35.2	120.4	Peak [Scan]	V	100	0				

Peak Field Strength – 3 dBi Rubber Ducky Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	2375 - 2500MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/19:57, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	b Peak Emission Freq.: Ch 1, 2412 Power: Maximum ART=27 Data Rate: 1 Mbps ANT: 3 dBi Rubber Ducky

Graphical Data



Formal Data

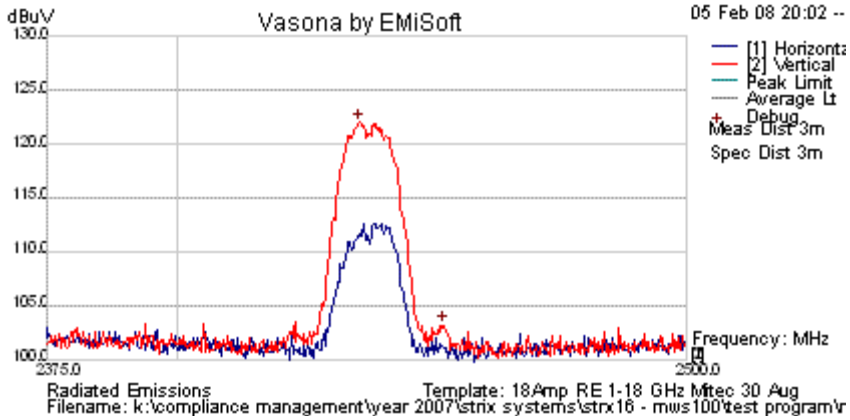
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2410.571	56.2	33.0	32.4	121.5	Peak [Scan]	V	100					

Peak Field Strength – 3 dBi Rubber Ducky Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	2375 - 2500MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/20:02, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	b Peak Emission Freq.: Ch 6, 2437 Power: Maximum ART=27 Data Rate: 1 Mbps ANT: 3 dBi Rubber Ducky

Graphical Data



Formal Data

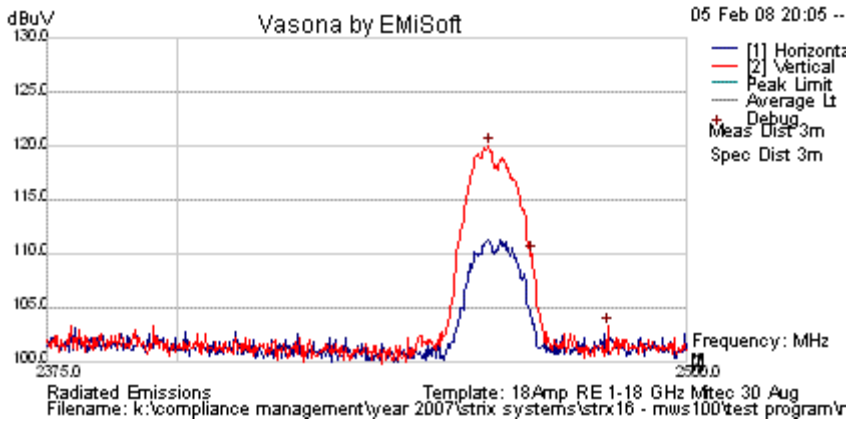
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2435.371	56.7	33.0	32.4	122.0	Peak [Scan]	V	100	0				

Peak Field Strength – 3 dBi Rubber Ducky Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	2375 - 2500MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/20:05, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	b Peak Emission Freq.: Ch 11, 2462 Power: Maximum ART=27 Data Rate: 1 Mbps ANT: 3 dBi Rubber Ducky

Graphical Data



Formal Data

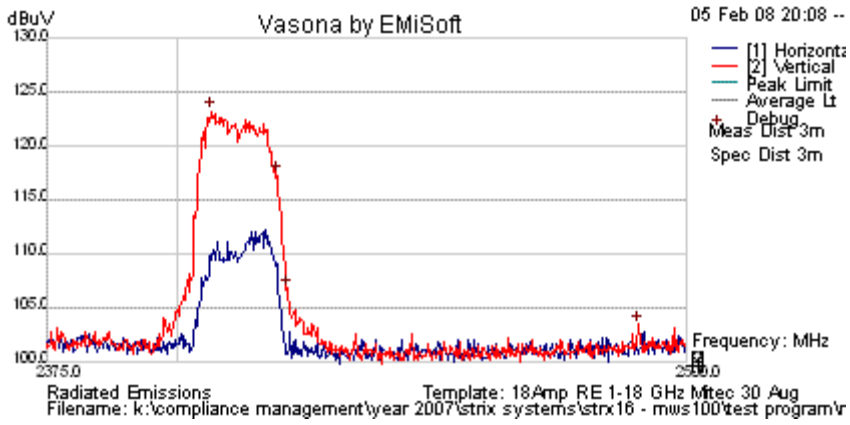
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2460.671	54.6	33.0	32.4	120.0	Peak [Scan]	V	100	0				

Peak Field Strength – 3 dBi Rubber Ducky Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	2375 - 2500MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/20:08, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Peak Emission Freq.: Ch 1, 2412 Power: Maximum ART=26 Data Rate: 1 Mbps ANT: 3 dBi Rubber Ducky

Graphical Data



Formal Data

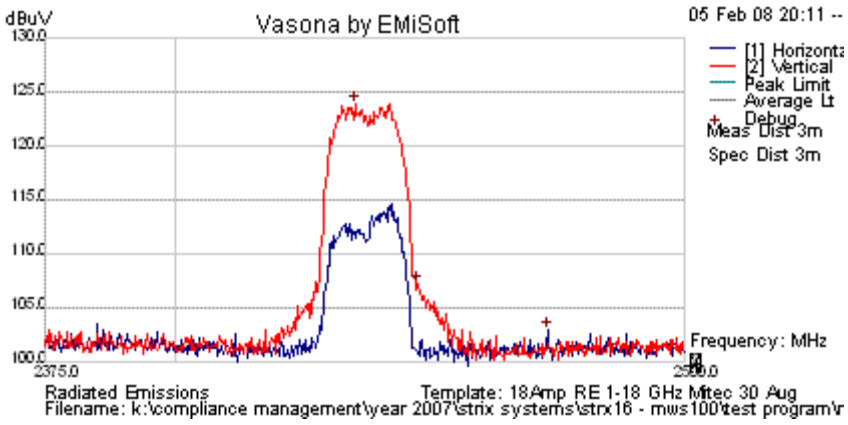
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2406.563	57.9	33.0	32.3	123.2	Peak [Scan]	V	100	0				

Peak Field Strength – 3 dBi Rubber Ducky Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	2375 - 2500MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/20:11, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Peak Emission Freq.: Ch 6, 2437 Power: Maximum ART=26 Data Rate: 1 Mbps ANT: 3 dBi Rubber Ducky

Graphical Data



Formal Data

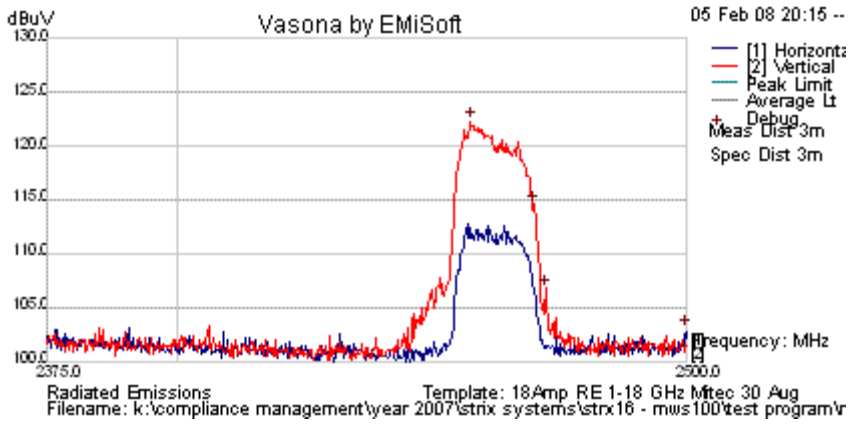
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2434.870	58.6	33.0	32.4	123.9	Peak [Scan]	V	100	0				

Peak Field Strength – 3 dBi Rubber Ducky Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	2375 - 2500MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/20:15, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Peak Emission Freq.: Ch 11, 2462 Power: Maximum ART=26 Data Rate: 1 Mbps ANT: 3 dBi Rubber Ducky

Graphical Data



Formal Data

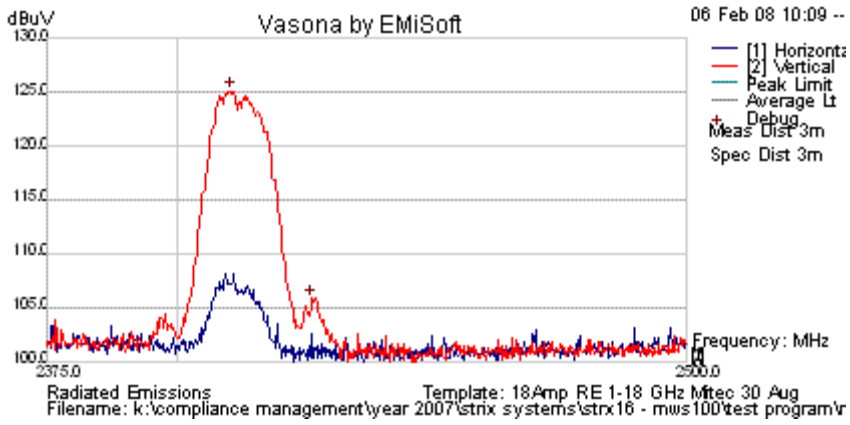
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2457.164	57.0	33.0	32.4	122.3	Peak [Scan]	V	100	0				

Peak Field Strength – 8 dBi Rubber Ducky Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	2375 - 2500MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/10:09, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	b Peak Emission Freq.: Ch 1, 2412 Power: Maximum ART=27 Data Rate: 1 Mbps ANT: 8 dBi

Graphical Data



Formal Data

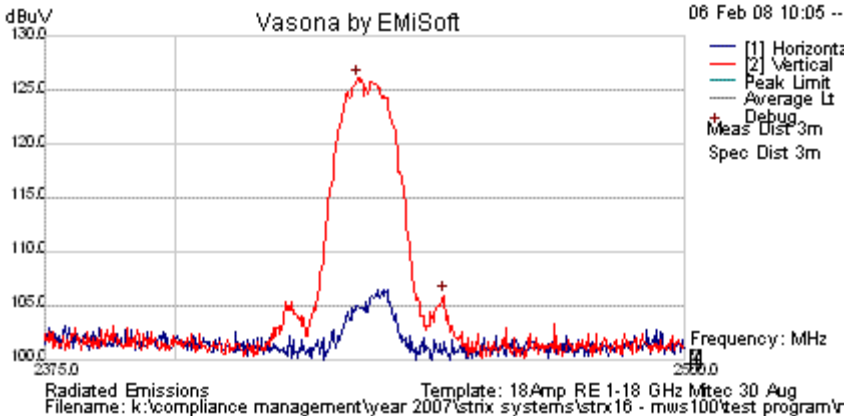
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2410.571	59.8	33.0	32.4	125.1	Peak [Scan]	V	100	0				

Peak Field Strength – 8 dBi Rubber Ducky Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	2375 - 2500MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/10:05, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	b Peak Emission Freq.: Ch 6, 2437 Power: Maximum ART=27 Data Rate: 1 Mbps ANT: 8 dBi

Graphical Data



Formal Data

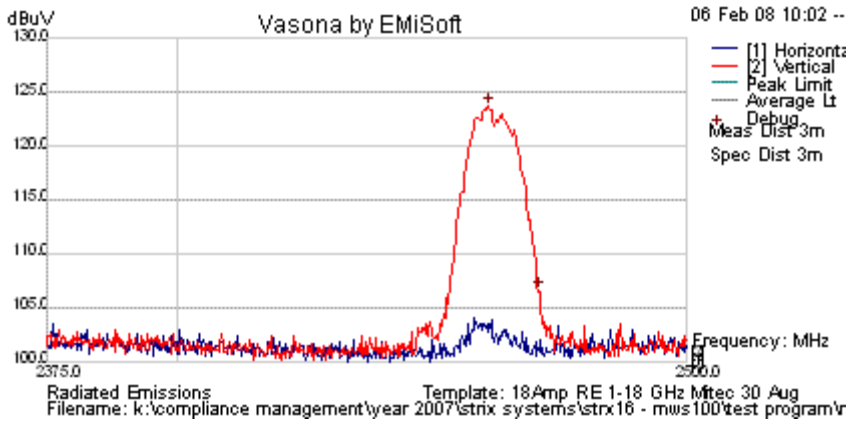
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2435.371	60.8	33.0	32.4	126.1	Peak [Scan]	V	100	0				

Peak Field Strength – 8 dBi Rubber Ducky Antenna 802.11b

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	2375 - 2500MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/10:02, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	b Peak Emission Freq.: Ch 11, 2462 Power: Maximum ART=27 Data Rate: 1 Mbps ANT: 8 dBi

Graphical Data



Formal Data

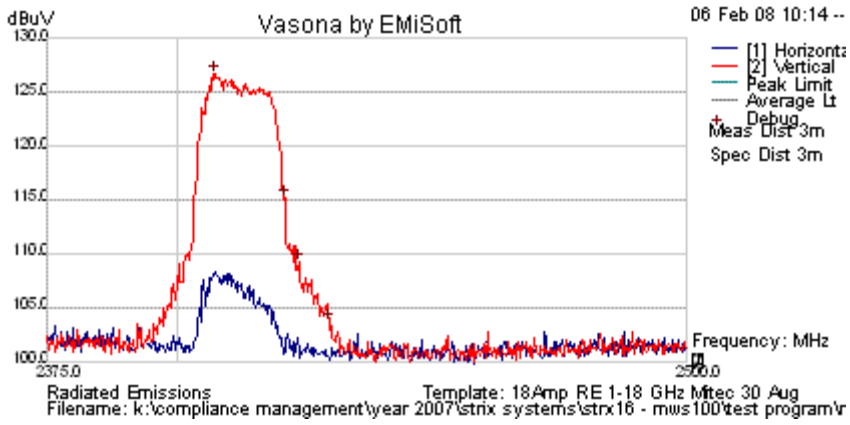
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2460.671	58.3	33.0	32.4	123.7	Peak [Scan]	V	100	0				

Peak Field Strength – 8 dBi Rubber Ducky Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	2375 - 2500MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/10:14, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Peak Emission Freq.: Ch 1, 2412 Power: Maximum ART=26 Data Rate: 6 Mbps ANT: 8 dBi

Graphical Data



Formal Data

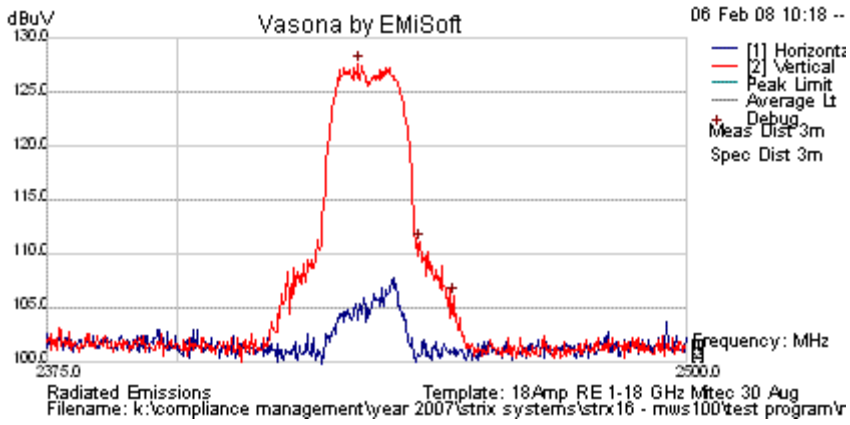
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2407.315	61.3	33.0	32.3	126.6	Peak [Scan]	V	100	0				

Peak Field Strength – 8 dBi Rubber Ducky Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	2375 - 2500MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/10:18, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Peak Emission Freq.: Ch 6, 2437 Power: Maximum ART=26 Data Rate: 6 Mbps ANT: 8 dBi

Graphical Data



Formal Data

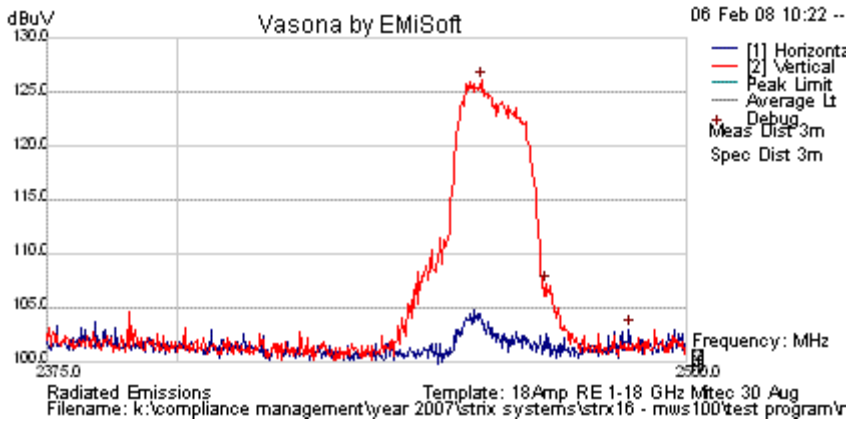
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2435.120	62.2	33.0	32.4	127.5	Peak [Scan]	V	100	0				

Peak Field Strength – 8 dBi Rubber Ducky Antenna 802.11g

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	2375 - 2500MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	06 Feb 08/10:22, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Peak Emission Freq.: Ch 11, 2462 Power: Maximum ART=26 Data Rate: 6 Mbps ANT: 8 dBi

Graphical Data



Formal Data

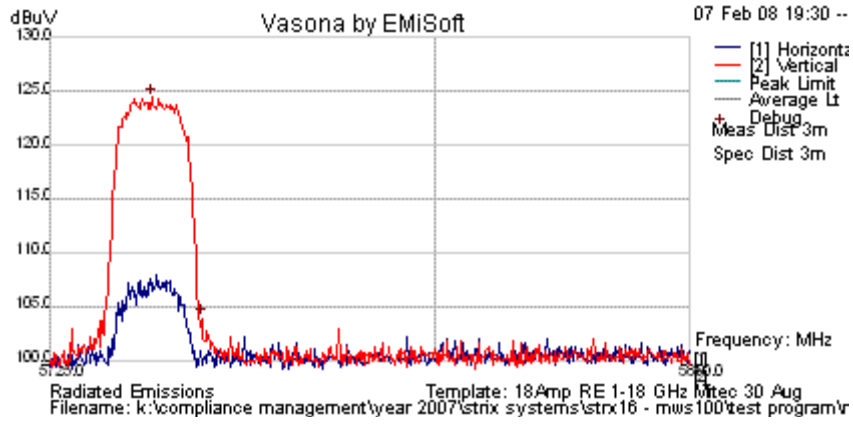
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	2459.419	60.8	33.0	32.4	126.2	Peak [Scan]	V	100	0				

Peak Field Strength – 12 dBi Omni Antenna 802.11a

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	5725 - 5850MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	07 Feb 08/19:30, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Peak Emission Freq.: Ch 149, 5745 MHz ANT: 12 dBi OMNI

Graphical Data



Formal Data

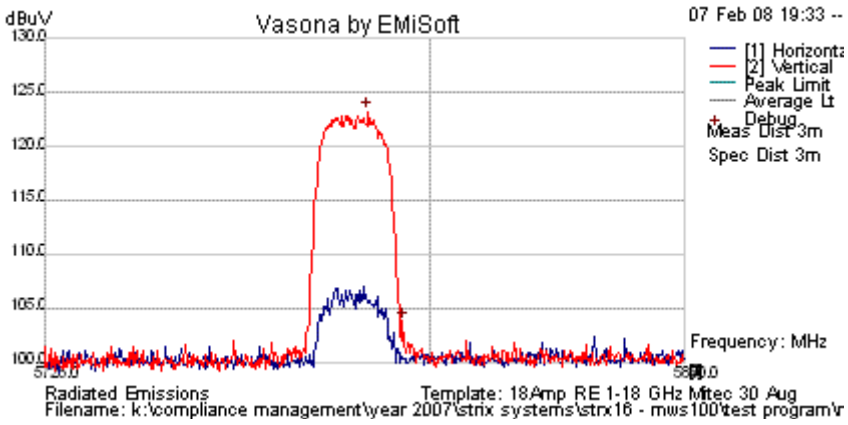
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	5744.790	54.5	34.8	35.1	124.4	Peak [Scan]	V	100					

Peak Field Strength – 12 dBi Omni Antenna 802.11a

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	5725 - 5850MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	07 Feb 08/19:33, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Peak Emission Freq.: Ch 157, 5785 MHz ANT: 12 dBi OMNI

Graphical Data



Formal Data

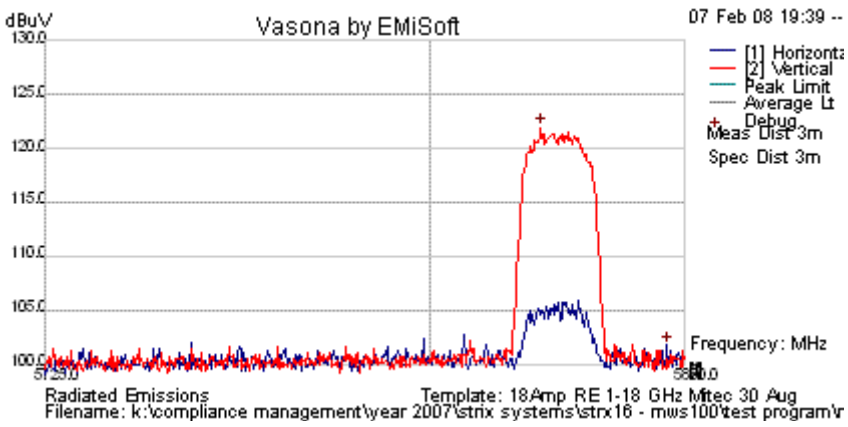
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	5787.876	53.3	34.8	35.1	123.3	Peak [Scan]	V	100	0				

Peak Field Strength – 12 dBi Omni Antenna 802.11a

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	5725 - 5850MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	07 Feb 08/19:39, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Peak Emission Freq.: Ch 165, 5825 MHz ANT: 12 dBi OMNI

Graphical Data



Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	5821.693	52.0	34.8	35.2	122.0	Peak [Scan]	V	100	0				

Specification Limits

FCC §15.247(d) and RSS-210 §A8.5 In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

FCC §15.247(d)
If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section §15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(a)).

IC RSS-210 §A8.5 If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under section A8.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Tables 2 and 3 is not required. In addition, radiated emissions which fall in the restricted bands of Table 1 must also comply with the radiated emission limits specified in Tables 2 and 3.

IC RSS-Gen §4.7
The search for unwanted emissions shall be from the lowest frequency internally generated or used in the device (local oscillator, intermediate of carrier frequency), or from 30 MHz , whichever is the lowest frequency, to the 5th harmonic of the highest frequency generated without exceeding 40 GHz.

FCC §15.205 (a) Except as shown in paragraph (d) of 15.205 (a), only spurious emissions are permitted in any of the frequency bands listed.

FCC §15.205 (a) Except as shown in paragraphs (d) and (e) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

FCC §15.209 (a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table.

Frequency (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance (meters)
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

Laboratory Measurement Uncertainty for Radiated Emissions

Measurement uncertainty	+5.6/ -4.5 dB

Traceability

Method	Test Equipment Used
Measurements were made per work instruction WI-03 'Measurement of Radiated Emissions'	0088, 0158, 0134, 0304, 0311, 0315, 0310, 0312

5.1.6.2. Radiated Spurious Emissions (30M-1 GHz)

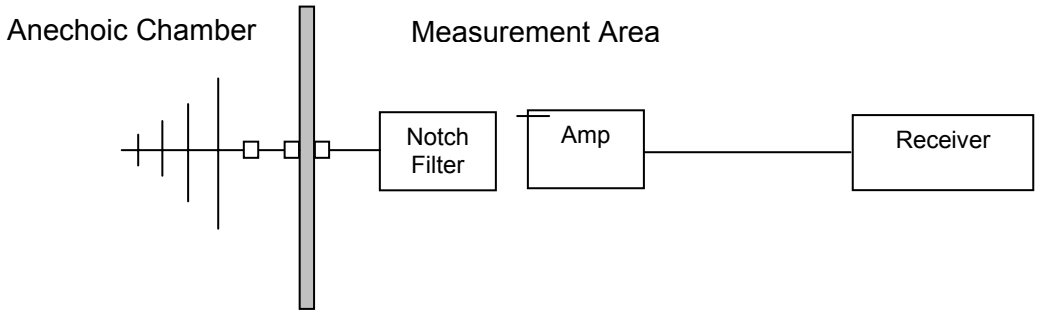
FCC, Part 15 Subpart C §15.205/ §15.209
Industry Canada RSS-210 §2.2

Test Procedure

Testing 30M-1 GHz was performed in a 3-meter anechoic chamber using a CISPR compliant receiver. Preliminary radiated emissions were measured on every azimuth and with the receiving antenna in both horizontal and vertical polarizations. To further maximize emissions the receive antenna was varied between 1 and 4 meters. The emissions are recorded with receiver in peak hold mode. Emissions closest to the limits are measured in the quasi-peak mode with the tuned receiver using a bandwidth of 120 kHz. Only the highest emissions relative to the limit are listed. The anechoic chamber test set-up is identified in Section 6 Test Set-Up Photographs.

Radiated Spurious emissions were maximized by operating all three transmitters simultaneously

Test Measurement Set up



Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. In this test facility, the Antenna Factor, Cable Loss, and Amplifier Gains are loaded into the Rohde & Schwarz Receiver and the corrected field strength can be read directly on the receiver.

$$FS = R + AF + CORR$$

where:

FS = Field Strength
R = Measured Receiver Input Amplitude
AF = Antenna Factor
CORR = Correction Factor = CL – AG + NFL
CL = Cable Loss
AG = Amplifier Gain

For example:
Given a Receiver input reading of 51.5dBμV; Antenna Factor of 8.5dB; Cable Loss of 1.3dB; Falloff Factor of 0dB, an Amplifier Gain of 26dB and Notch Filter Loss of 1dB. The Field Strength of the measured emission is:

FS = 51.5 + 8.5 + 1.3 - 26.0 +1 = 36.3dBμV/m

Conversion between dBμV/m (or dBμV) and μV/m (or μV) are done as:

Level (dBμV/m) = 20 * Log (level (μV/m))

40 dBμV/m = 100μV/m
48 dBμV/m = 250μV/m

Measurement Results for Spurious Emissions (30 MHz – 1 GHz)

Ambient conditions.
Temperature: 17 to 23 °C Relative humidity: 31 to 57 % Pressure: 999 to 1012 mbar

EUT parameters.
Data Rate(s): 11MBit/s
Three channel operating simultaneously – 802.11b Channels 1, 6, and 11.
Power Level: Maximum

Radio parameters.

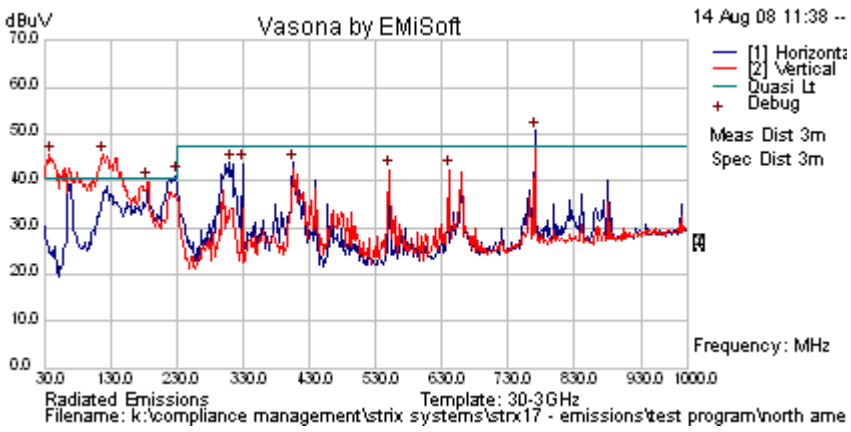
Radiated Emissions below 1GHz – ac/dc adapter to 12Vdc Power Supply

EMiSoft - Vasona Results	
Test	Radiated Emissions [Electric Field]
Class/Spec	B / CISPR22 RE B at 3m
Range	30 - 1000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	30-3GHz
Date/Time	14 Aug 08/19:07, Status: Filed on
Manufacturer	Strix Systems
EUT	MWS100
Config	802.11abg ac/dc variant. Device operating full power 1m N-Type cable connected. New case style.

Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	39.42	59.34	3.56	-22.72	40.18	Quasi Max	V	100	0	40.5	-0.32	Pass	
2	219.955	64.40	4.86	-31.42	37.85	Quasi Max	H	100	128	40.5	-2.65	Pass	
3	769.983	52.34	6.99	-21.70	37.64	Quasi Max	H	100	197	47.5	-9.86	Pass	
4	118.918	60.10	4.20	-27.89	36.50	Quasi Max	V	100	118	40.5	-3.90	Pass	
5	229.456	62.05	4.75	-30.52	36.28	Quasi Max	H	100	127	40.5	-4.22	Pass	
6	310.021	62.80	5.25	-28.78	39.27	Quasi Max	H	100	125	47.5	-8.23	Pass	

Graphical Data



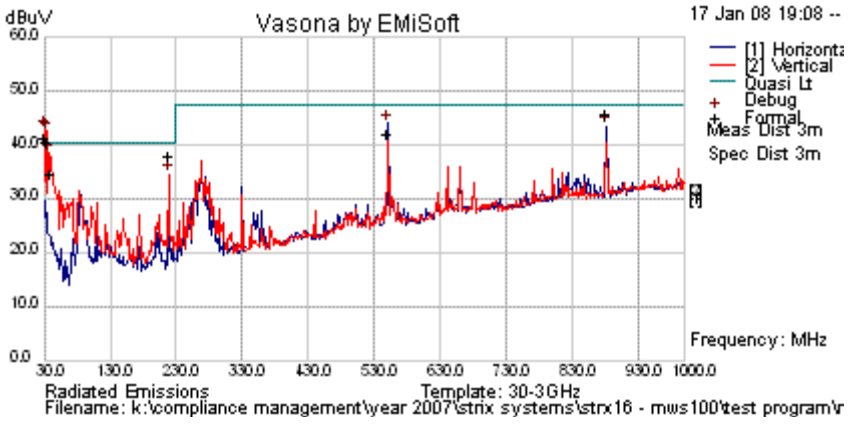
Note: Ferrite required on Ethernet cable, see Section 3.7 Equipment Modifications

Radiated Emissions below 1GHz – POE Supply

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / CISPR22 RE B at 3m
Range	30 - 1000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	30-3GHz
Date/Time	17 Jan 08/19:08, Status: Filed on
Manufacturer	Strix Systems
EUT	MWS100
Config	802.11abg. Device operating full power on 2,437 MHz and 5,805 MHz. Huber & Suhner dome antenna 5 dBi connected to EUT via 1m SMA cable. w/ POE Injecter. Included Fair-Rite clamp-on ferrite # 0461167281 on ethernet cable at EUT.

Graphical Data



Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	30.631	43.0	3.4	-6.8	39.6	Quasi Max	V	98	153	40.5	-.9	Pass	
2	34.641	45.6	3.5	-10.2	38.9	Quasi Max	V	130	170	40.5	-1.6	Pass	
3	39.436	43.6	3.6	-14.1	33.0	Quasi Max	V	98	209	40.5	-7.5	Pass	
4	549.993	45.2	6.2	-11.3	40.2	Quasi Max	V	202	183	47.5	-7.3	Pass	
5	879.997	44.0	7.3	-7.1	44.1	Quasi Max	H	188	329	47.5	-3.4	Pass	
6	220.000	50.6	4.9	-19.1	36.3	Quasi Max	V	98	348	40.5	-4.2	Pass	

Specification

Limits

§15.205 (a) Except as shown in paragraph (d) of 15.205 (a), only spurious emissions are permitted in any of the frequency bands listed.

§15.205 (a) Except as shown in paragraphs (d) and (e) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

§15.209 (a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table.

§15.209 (a) and **RSS-Gen §2.2** Limit Matrix

Frequency(MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance (meters)
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

Laboratory Measurement Uncertainty for Radiated Emissions

Measurement uncertainty	+5.6/ -4.5 dB

Traceability

Method	Test Equipment Used
Measurements were made per Sanmina work instruction	8546A HP Receiver and RF Filter, HP Pre-amp, Antenna EMCO Biconilog

5.1.6.3. Receiver Radiated Spurious Emissions (above 1 GHz)

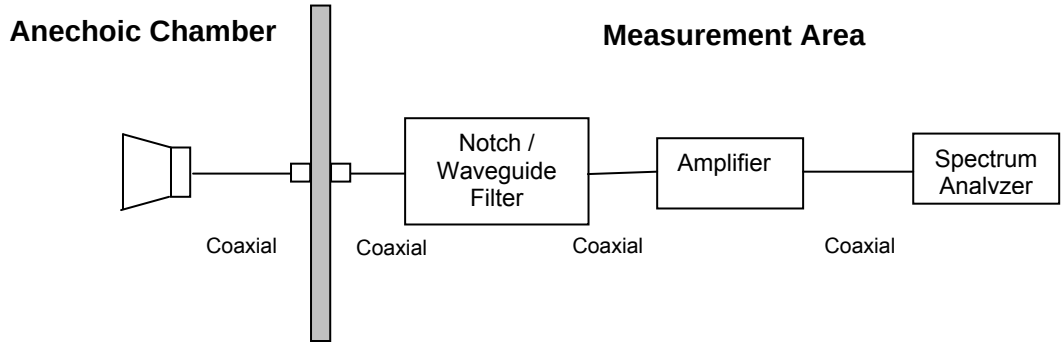
Industry Canada RSS-Gen §4.8, §6

Test Procedure

Radiated emissions above 1 GHz are measured in the anechoic chamber at a 3-meter distance on every azimuth in both horizontal and vertical polarities. The emissions are recorded and maximized as a function of azimuth by rotation through 360° with a spectrum analyzer in peak hold mode. Depending on the frequency band spanned a notch filter and waveguide filter was used to remove the fundamental frequency. The highest emissions relative to the limit are listed for each frequency spanned.

All measurements on any frequency or frequencies over 1 MHz are based on the use of measurement instrumentation employing an average detector function. All measurements above 1 GHz were performed using a minimum resolution bandwidth of 1 MHz.

Test Measurement Set up



Measurement set up for Radiated Emission Test

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. All factors are included in the reported data.

FS = R + AF + CORR - FO

where: FS = Field Strength
R = Measured Spectrum analyzer Input Amplitude
AF = Antenna Factor
CORR = Correction Factor = CL – AG + NFL
CL = Cable Loss
AG = Amplifier Gain
FO = Distance Falloff Factor
NFL = Notch Filter Loss or Waveguide Loss

For example:
Given receiver input reading of 51.5 dBμV; Antenna Factor of 8.5 dB; Cable Loss of 1.3 dB; Falloff Factor of 0 dB, an Amplifier Gain of 26 dB and Notch Filter Loss of 1 dB. The Field Strength of the measured emission is:

FS = 51.5 + 8.5 + 1.3 - 26.0 +1 = 36.3 dBμV/m

Conversion between dBμV/m (or dBμV) and μV/m (or μV) are done as:

Level (dBμV/m) = 20 * Log (level (μV/m))

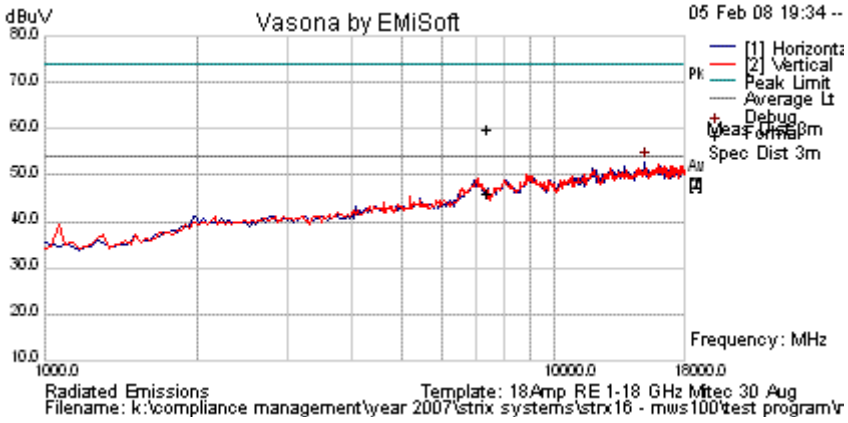
40 dBμV/m = 100 μV/m
48 dBμV/m = 250 μV/m

Receiver Radiated Spurious Emissions above 1 GHz – 4dBi Dome antenna

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/19:34, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	b Receiver Freq.: Ch 6, 2437 ANT: 4 dBi Dome

Graphical Data



Formal Data

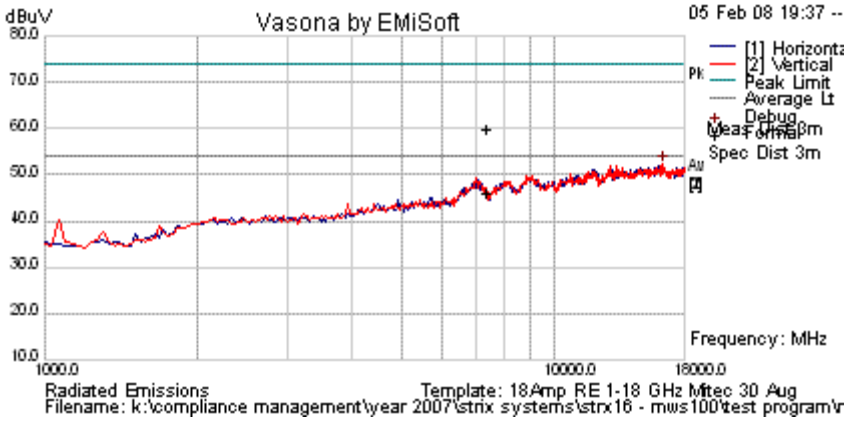
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	7385.871	56.4	5.5	-4.0	57.9	Peak Max	H	124	182	74.0	-16.1	Pass	
2	7385.871	42.6	5.5	-4.0	44.0	Average Max	H	124	182	54.0	-10.0	Pass	

Receiver Radiated Spurious Emissions above 1 GHz – 4dBi Dome antenna

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/19:37, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Receiver Freq.: Ch 6, 2437 ANT: 4 dBi Dome

Graphical Data



Formal Data

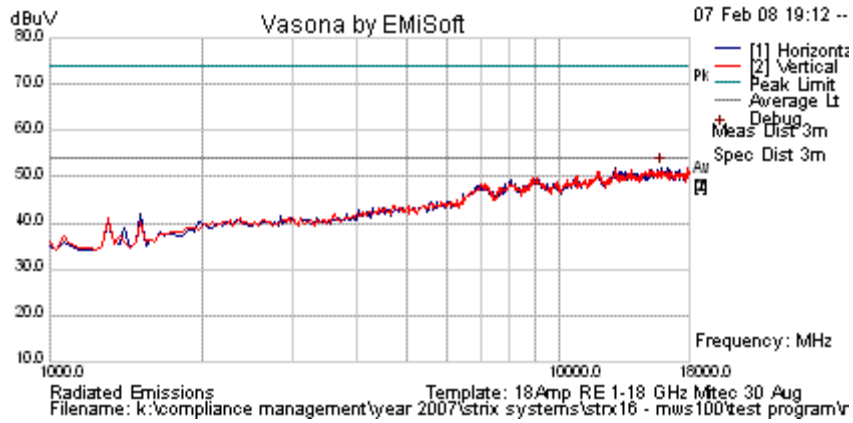
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	7385.871	56.4	5.5	-4.0	57.9	Peak Max	H	124	182	74.0	-16.1	Pass	
2	7385.871	42.6	5.5	-4.0	44.0	Average Max	H	124	182	54.0	-10.0	Pass	

Receiver Radiated Spurious Emissions above 1 GHz – 4dBi Dome antenna

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	07 Feb 08/19:12, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Receiver Freq.: Ch 157, 5785 MHz ANT: 4 dBi Dome

Graphical Data



Formal Data

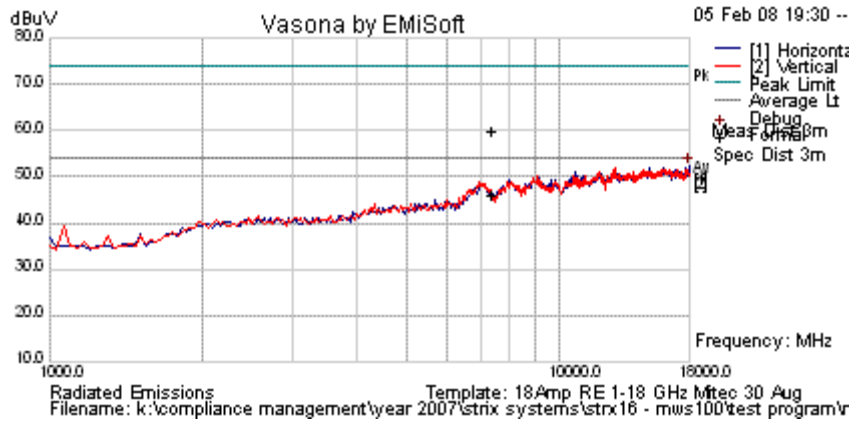
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	15785.571	44.5	8.7	-1.1	52.0	Peak [Scan]	H	100	0	54.0	-2.0	Pass	

Receiver Radiated Spurious Emissions above 1 GHz – 3 dBi Rubber Ducky antenna

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/19:30, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	b Receiver Freq.: Ch 6, 2437 ANT: 3 dBi Rubber Ducky

Graphical Data



Formal Data

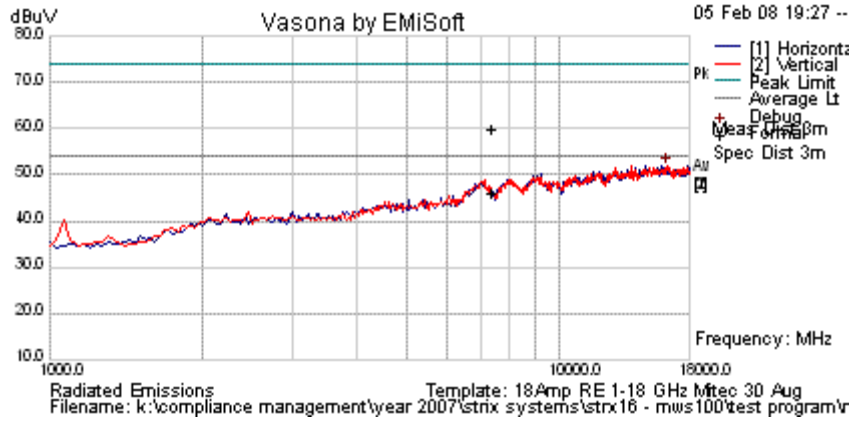
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	7385.871	56.4	5.5	-4.0	57.9	Peak Max	H	124	182	74.0	-16.1	Pass	
2	7385.871	42.6	5.5	-4.0	44.0	Average Max	H	124	182	54.0	-10.0	Pass	

Receiver Radiated Spurious Emissions above 1 GHz – 3 dBi Rubber Ducky antenna

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	05 Feb 08/19:27, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Receiver Freq.: Ch 6, 2437 ANT: 3 dBi Rubber Ducky

Graphical Data



Formal Data

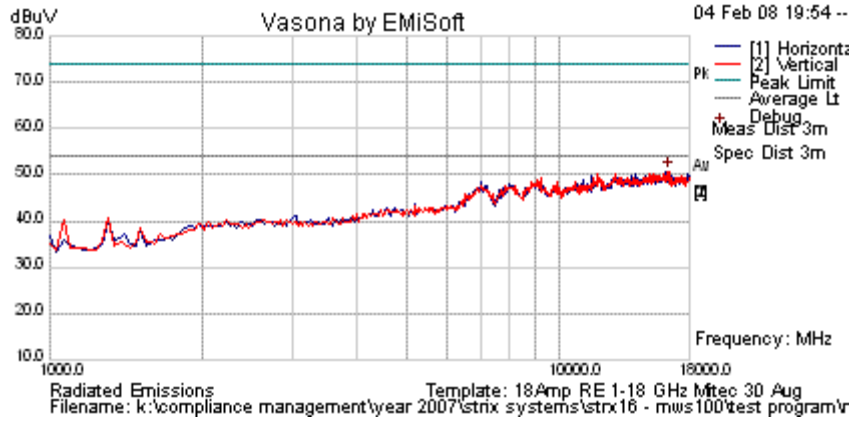
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	7385.871	56.4	5.5	-4.0	57.9	Peak Max	H	124	182	74.0	-16.1	Pass	
2	7385.871	42.6	5.5	-4.0	44.0	Average Max	H	124	182	54.0	-10.0	Pass	

Receiver Radiated Spurious Emissions above 1 GHz – 8 dBi omni antenna

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	04 Feb 08/19:54, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	b Freq. 2437 Receive Mode ANT: 8 dBi omni

Graphical Data



Formal Data

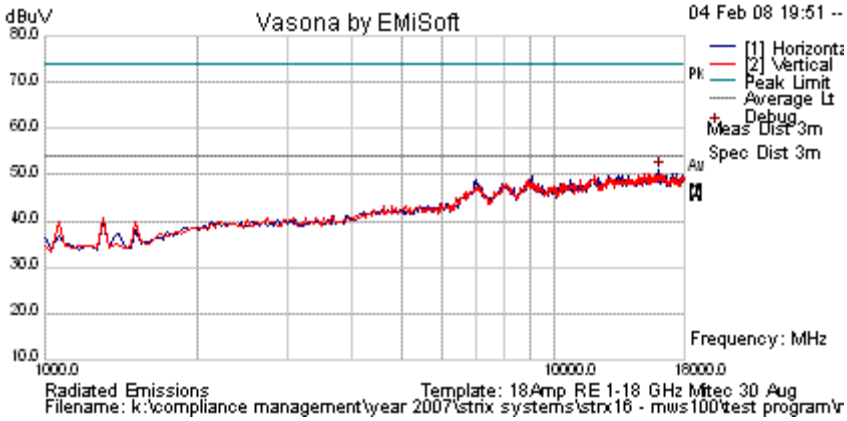
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	16364.729	42.8	8.9	-.9	50.8	Peak [Scan]	V	100	0	54.0	-3.2	Pass	

Receiver Radiated Spurious Emissions above 1 GHz – 8 dBi omni antenna

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	04 Feb 08/19:51, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	g Freq. 2437 Receive Mode ANT: 8 dBi omni

Graphical Data



Formal Data

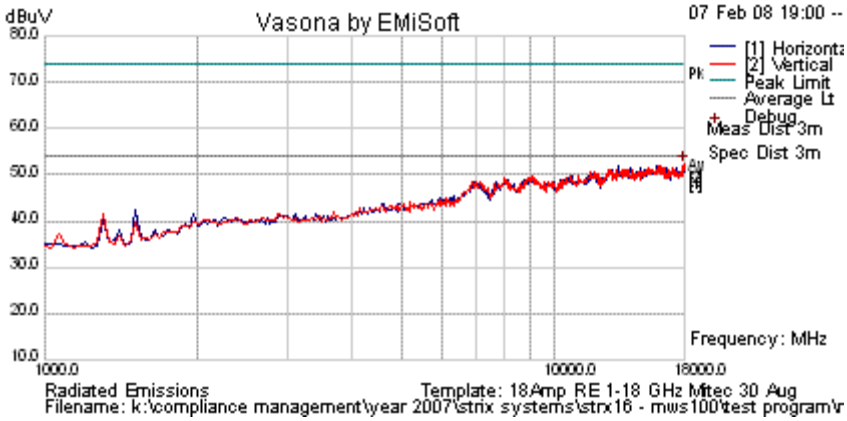
No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	16024.048	43.0	9.0	-1.0	51.0	Peak [Scan]	H	100	0	54.0	-3.0	Pass	

Receiver Radiated Spurious Emissions above 1 GHz – 12 dBi antenna

EMiSoft - Vasona Results

Test	Radiated Emissions [Electric Field]
Class/Spec	B / fcc part 15 peak limits
Range	1000 - 18000MHz
For	Gordon Hurst
Lab Used	MiCOM Labs
Template	18Amp RE 1-18 GHz Mitec 30 Aug
Date/Time	07 Feb 08/19:00, Status: Filed on
Manufacturer	Strix Systems, Inc.
EUT	MWS100
Config	Receiver Freq.: Ch157, 5785 MHz ANT: 12 dBi OMNI

Graphical Data



Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
1	17931.864	43.9	8.8	-.4	52.3	Peak [Scan]	V	100	0	54.0	-1.7	Pass	

Specification

Receiver Radiated Spurious Emissions

Industry Canada RSS-Gen §4.8,
The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is the higher, to at least 3 times the highest tunable or local oscillator frequency, whichever is the higher, without exceeding 40 GHz.

RSS-Gen §6
The following receiver spurious emission limits shall be complied with;
(a) If a radiated measurement is made, all spurious emissions hall comply with the limits of Table 1.

Frequency (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance (meters)
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

Laboratory Measurement Uncertainty for Radiated Emissions

Measurement uncertainty	+5.6/ -4.5 dB

Traceability

Method	Test Equipment Used
Measurements were made per work instruction WI-03 'Measurement of Radiated Emissions'	0088, 0158, 0134, 0304, 0311, 0315, 0310, 0312

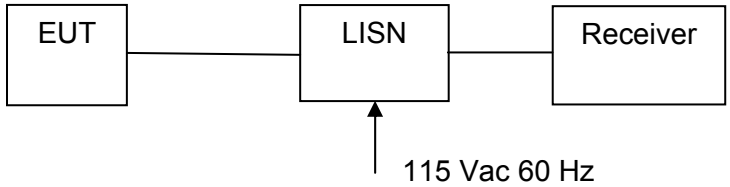
5.1.7. AC Wireline Conducted Emissions (150 kHz – 30 MHz)

FCC, Part 15 Subpart C §15.207
Industry Canada RSS-Gen §7.2.2

Test Procedure

The EUT is configured in accordance with ANSI C63.4. The conducted emissions are measured in a shielded room with a spectrum analyzer in peak hold in the first instance. Emissions closest to the limit are measured in the quasi-peak mode (QP) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation. The highest emissions relative to the limit are listed.

Test Measurement Set up



Measurement set up for AC Wireline Conducted Emissions Test

Measurement Results for AC Wireline Conducted Emissions (150 kHz – 30 MHz)

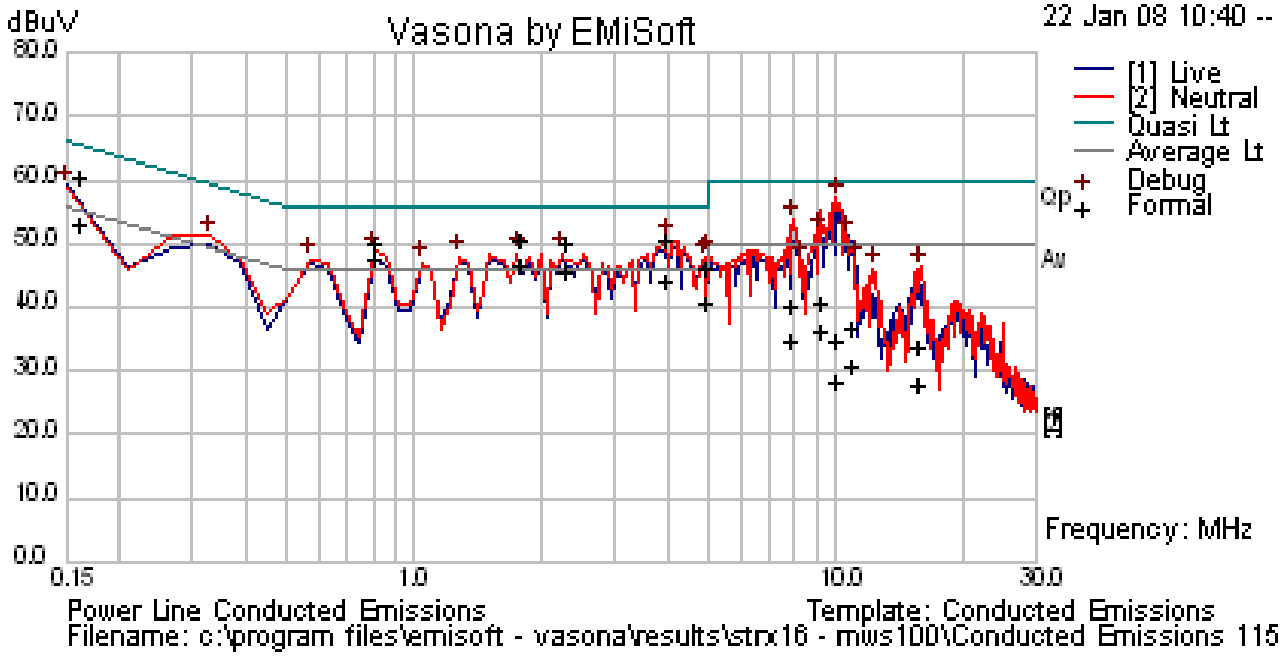
Ambient conditions.
Temperature: 17 to 23 °C Relative humidity: 31 to 57 % Pressure: 999 to 1012 mbar

EUT parameters.
Data Rate(s): 11MBit/s
Three channel operating simultaneously – 802.11b Channels 1, 6, and 11.
Power Level: Maximum

TABLE OF RESULTS –

Freq (MHz)	LIne	Peak (dBµV)	QP (dBµV)	QP Limit (dBµV)	QP Margin (dB)	Ave. (dBµV)	Ave. Limit (dBµV)	Ave. Margin (dB)
0.164	L	59.09	58.20	65.26	-7.06	50.72	55.26	-4.54
0.820	N	48.83	47.65	56	-8.35	45.24	46	-0.76
1.807	N	48.64	48.06	56	-7.94	44.21	46	-1.79
2.300	N	48.62	47.65	56	-8.35	43.20	46	-2.80
4.024	N	50.84	48.09	56	-7.91	42.05	46	-3.95
5.011	N	48.04	43.83	60	-16.17	38.32	50	-11.68
7.963	N	53.65	37.76	60	-22.24	32.53	50	-17.47
9.280	N	51.80	38.20	60	-21.80	33.85	50	-16.15
10.079	N	57.14	32.41	60	-27.59	26.04	50	-23.96
11.084	N	47.24	34.45	60	-25.55	28.49	50	-21.51
15.883	N	46.42	31.64	60	-28.36	25.66	50	-24.34

AC Wireline Conducted Emissions – 150 kHz – 30 MHz



Specification

Limit

§15.207 (a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μΩ line impedance stabilization network (LISN), see §15.207 (a) matrix below. Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal.

RSS-Gen §7.2.2
The radio frequency voltage that is conducted back into the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in the table below. The tighter limit applies at the frequency range boundaries.

§15.207 (a) and **RSS-Gen §7.2.2** Limit Matrix
The lower limit applies at the boundary between frequency ranges

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency

Laboratory Measurement Uncertainty for Conducted Emissions

Measurement uncertainty	±2.64 dB

Traceability

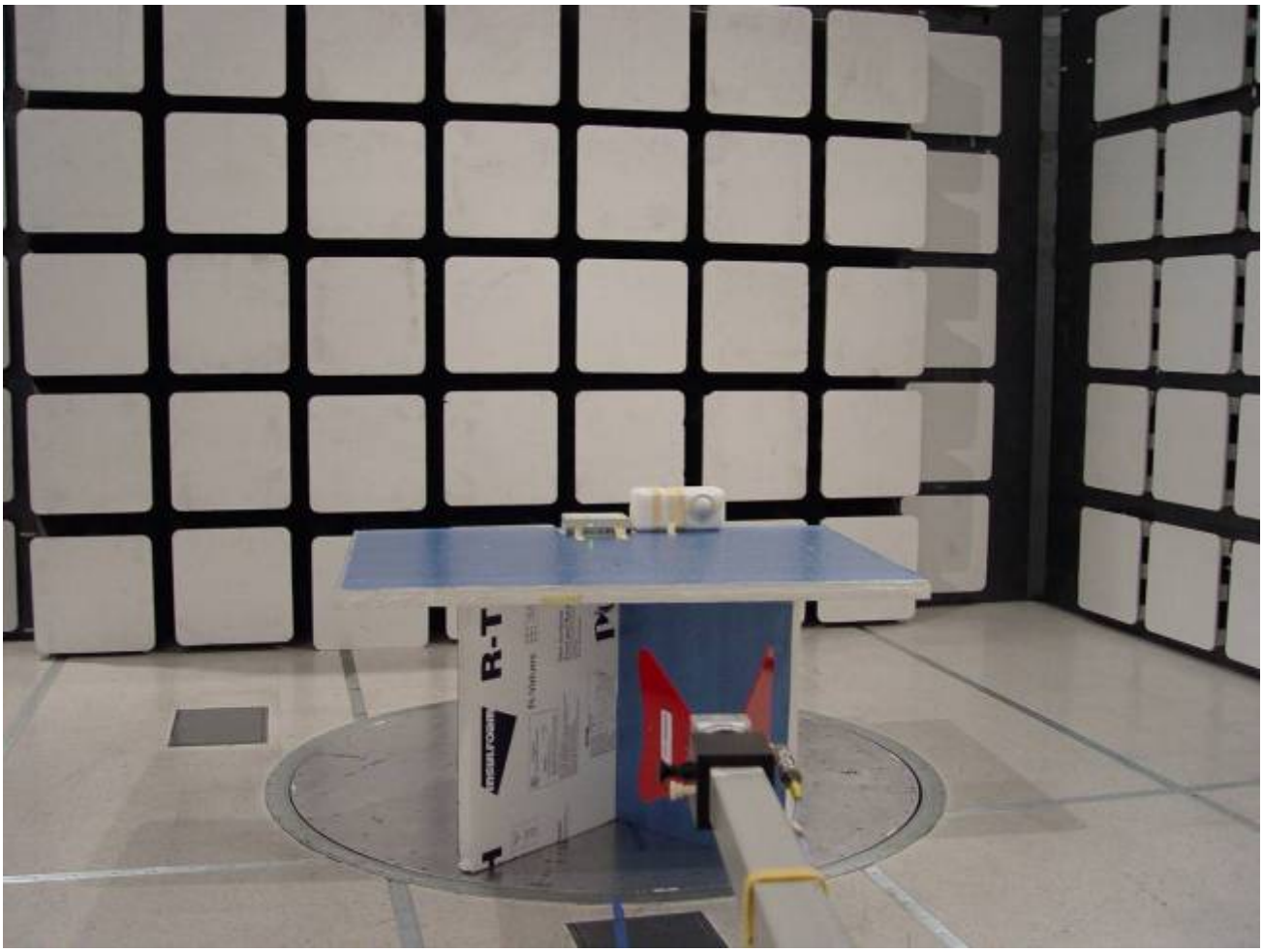
Method	Test Equipment Used
Measurements were made per work instruction WI-EMC-01 'Measurement of Conducted Emissions'	0158, 0184, 0193, 0190, 0293, 0307

6. PHOTOGRAPHS

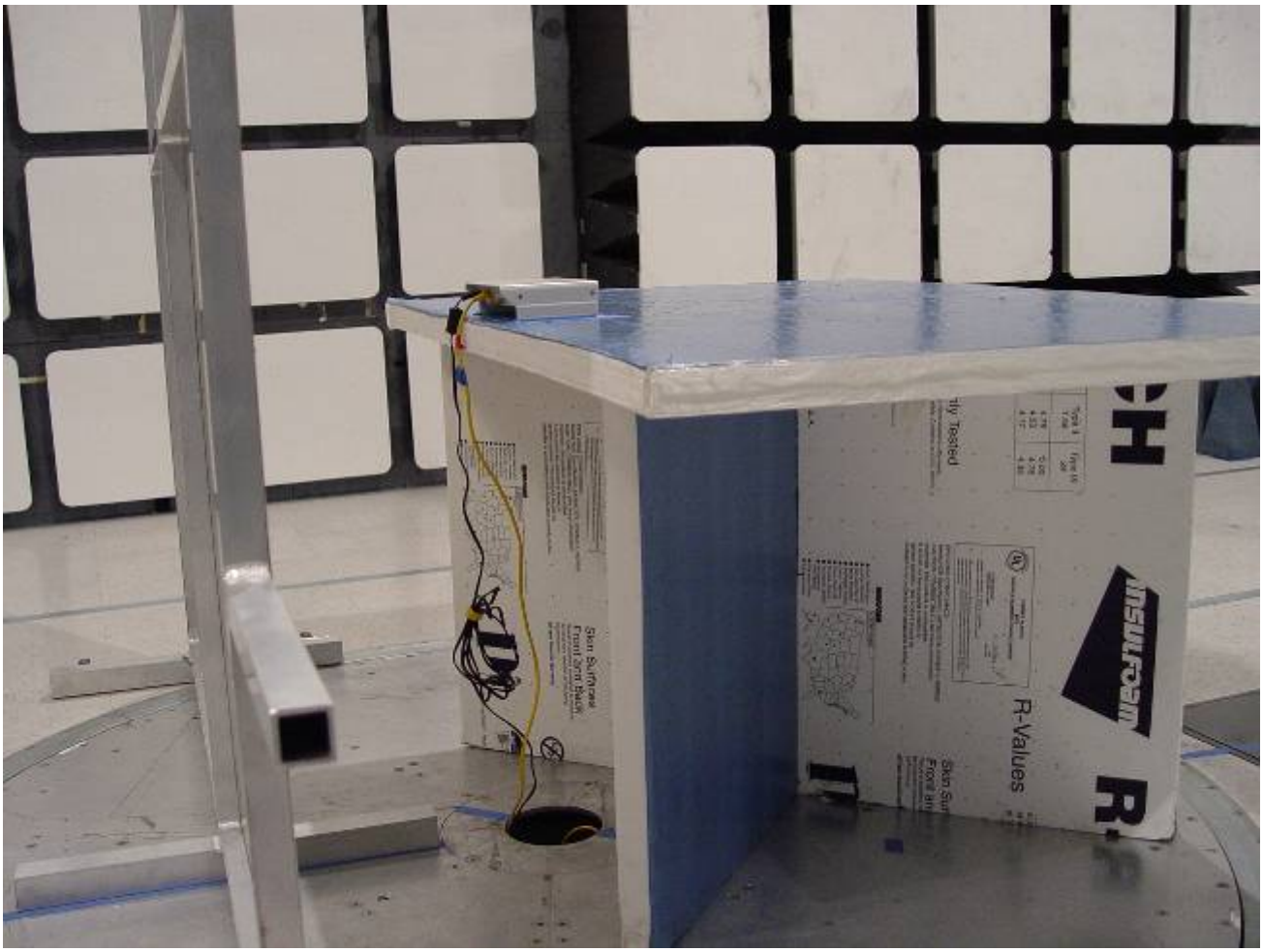
6.1. Radiated Emissions (30 MHz-1 GHz)

New case style

6.2. Spurious Emissions >1 GHz



6.3. AC Wireline Emissions (150 kHz - 30 MHz)



6.4. General Measurement Test Set-Up

7. TEST EQUIPMENT DETAILS

Asset #	Instrument	Manufacturer	Part #	Serial #
0088	Spectrum Analyzer	Hewlett Packard	8564E	3410A00141
0134	Amplifier	Com Power	PA 122	181910
0158	Barometer /Thermometer	Control Co.	4196	E2846
0193	EMI Receiver	Rhode & Schwartz	ESI 7	838496/007
0252	SMA Cable	Megaphase	Sucoflex 104	None
0310	2m SMA Cable	Micro-Coax	UFA210A-0-0787-3G03G0	209089-001
0312	3m SMA Cable	Micro-Coax	UFA210A-1-1181-3G0300	209092-001
0313	Coupler	Hewlett Packard	86205A	3140A01285
0314	30dB N-Type Attenuator	ARRA	N9444-30	1623
0070	Power Meter	Hewlett Packard	437B	3125U11552
0116	Power Sensor	Hewlett Packard	8485A	3318A19694
0117	Power Sensor	Hewlett Packard	8487D	3318A00371
0184	Pulse Limiter	Rhode & Schwartz	ESH3Z2	357.8810.52
0190	LISN	Rhode & Schwartz	ESH3Z5	836679/006
0293	BNC Cable	Megaphase	1689 1GVT4	15F50B001
0301	5.6 GHz Notch Filter	Micro-Tronics	RBC50704	001
0302	5.25 GHz Notch Filter	Micro-Tronics	BRC50703	002
0303	5.8 GHz Notch Filter	Micro-Tronics	BRC50705	003
0304	2.4GHzHz Notch Filter	Micro-Tronics	--	001
0307	BNC Cable	Megaphase	1689 1GVT4	15F50B002
0335	1-18GHz Horn Antenna	ETS- Lindgren	3117	00066580
0337	Amplifier	MiCOM Labs	--	--
0338	Antenna	Sunol Sciences	JB-3	A052907

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