LS RESEARCH, LLC
WIRELESS PRODUCT DEVELOPMENT
ACCREDITED
Testing Cert. 1255.01
W66 N220 Commerce Court ● Cedarburg, WI 53012 ● USA
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TEST REPORT # Q310378
LSR Job #: C-1177

Compliance Testing of:
Yale Real Living Deadbolt

Test Date(s):
April 6, 18, 20, 26, 2011

Prepared For:
ASSA Abloy
Attn: Mark Caterino
100 Sargent Drive
New Haven, CT 06511

In accordance with:
Federal Communications Commission (FCC)
Part 15, Subpart C, Section 15.247
Industry Canada (IC) RSS 210
Digital Modulation Transmitters (DTS) Operating in the
Frequency Band 2400 MHz – 2483.5 MHz

This Test Report is issued under the Authority of: Thomas T. Smith

Signature: Date: 05.11.11

Test Report Reviewed by:
Thomas T. Smith

Signature: Date: 05.11.11

Tested by:
Peter Feilen, EMC Engineer

Signature: Date: 05.11.11

Shane Rismeyer, EMC Engineer

Signature: Date: 05.11.11

TABLE OF CONTENTS *(page 1 of 2)*

EXHIBIT 1. INTRODUCTION

1.1 SCOPE

References:	FCC Part 15, Subpart C, Section 15.247 and 15.209 FCC Part 2, Section 2.1043 paragraph (b)1. RSS GEN and RSS 210 Annex 8
Title:	FCC : Telecommunication – Code of Federal Regulations, CFR 47, Part 15. IC : Low-power License-exempt Radio-communication Devices (All Frequency Bands): Category I Equipment
Purpose of Test:	To gain FCC and IC Certification Authorization for Low-Power License-Exempt Transmitters.
Test Procedures:	Both conducted and radiated emissions measurements were conducted in accordance with American National Standards Institute ANSI C63.4 – American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.
Environmental Classification:	• Commercial, Industrial or Business • Residential

1.2 NORMATIVE REFERENCES

Publication	Year	Title
47 CFR, Parts 0-15 (FCC)	2008 Oct	Code of Federal Regulations - Telecommunications
RSS 210 Annex 8	2010 Dec	Low-power License-exempt Radio-communication Devices (All Frequency Bands): Category I Equipment
ANSI C63.4	2003	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.
CISPR 16-1-1	2006-03 A1: 2006-09 A2: 2007-07	Specification for radio disturbance and immunity measuring apparatus and methods. Part 1-1: Measuring Apparatus.
CISPR 16-2-1	2003 A1: 2004-04 A2: 2007-07	Specification for radio disturbance and immunity measuring apparatus and methods. Part 201: Conducted disturbance measurement.
FCC Public Notice DA 00-1407	2000	Part 15 Unlicensed Modular Transmitter Approval
FCC ET Docket No. 99-231	2002	Amendment to FCC Part 15 of the Commission's Rules Regarding Spread Spectrum Devices.
FCC Procedures	2007	Measurement of Digital Transmission Systems operating under Section 15.247.

1.3 LS Research, LLC TEST FACILITY

LS Research, LLC is accredited by A2LA (American Association for Laboratory Accreditation) to conform to ISO/IEC 17025, 2005 "General Requirements for the Competence of Calibration and Testing Laboratories".

LS Research, LLC's scope of accreditation includes all test methods listed herein, unless otherwise noted. A copy of the accreditation may be accessed on our web site: www.lsr.com. Accreditation status can be verified at A2LA's web site: www.a2la2.net.

1.4 LOCATION OF TESTING

All testing was performed at LS Research, LLC, W66 N220 Commerce Court, Cedarburg, Wisconsin, 53012 USA, utilizing the facilities listed below, unless otherwise noted.

List of Facilities Located at LS Research, LLC:

- Compact Chamber
- Semi-Anechoic Chamber
- Open Area Test Site (OATS)

1.5 TEST EQUIPMENT UTILIZED

A complete list of equipment utilized in testing is provided in Appendix A of this test report. Calibration dates are indicated in Appendix A. All test equipment is calibrated in accordance with A2LA standards.

EXHIBIT 2. PERFORMANCE ASSESSMENT

2.1 CLIENT INFORMATION

Manufacturer Name:	**Assa Abloy**
Address:	**110 Sargent Drive**
Contact Name:	**Mark Caterino**

2.2 EQUIPMENT UNDER TEST (EUT) INFORMATION

The following information has been supplied by the applicant.

Product Name:	2.4 GHz Door Lock Transmitter
Model Number:	YRDZB
Serial Number:	N/A

2.3 ASSOCIATED ANTENNA DESCRIPTION

Inverted-F PCB trace antenna with a gain of -6.93 dBi.

2.4 EUT'S TECHNICAL SPECIFICATIONS

Additional Information:

EUT Frequency Range (in MHz)	2405-2480 MHz
RF Power in Watts	
Minimum:	0.0002799 W
Maximum:	0.0004645 W
Conducted Output Power (in dBm)	3.6 dBm (maximum, measured on chan. 26)
Field Strength at 3 meters	91.9 dBuV/m at 3m
Occupied Bandwidth (99% BW)	2239
Type of Modulation	O-QPSK
Emission Designator	2M24G1D
EIRP (in mW)	0.5 mW
Transmitter Spurious (worst case) at 3 meters	36.97 dBuV/m @ 3m
Receiver Spurious (worst case) at 3 meters	36.04 dBuV/m @ 3m
Frequency Tolerance %, Hz, ppm	Better than 100 ppm
Microprocessor Model # (if applicable)	L152K6
Antenna Information	
Detachable/non-detachable	Non-detachable
Type	Fixed PCB (F-antenna)
Gain (in dBi)	-6.93 dBi (As measured over a conductive ground plane)
EUT will be operated under FCC Rule Part(s)	15.247
EUT will be operated under RSS Rule Part(s)	RSS-210 Annex 8
Modular Filing	☐ Yes ☒ No
Portable or Mobile?	N/A

RF Technical Information:

Type of Evaluation (check one)		SAR Evaluation: Device Used in the Vicinity of the Human Head
		SAR Evaluation: Body-worn Device
	X	RF Evaluation

If RF Evaluation checked above, test engineer to complete the following:

- Evaluated against exposure limits: ☒ General Public Use ☐ Controlled Use
- Duty Cycle used in evaluation: 100 %
- Standard used for evaluation: OET 65
- Measurement Distance: 20 cm
- RF Value: 0.00092 ☐ V/m ☐ A/m ☒ W/m^2
  ☒ Measured ☐ Computed ☐ Calculated

This unit is exempt from RF and SAR evaluation since the maximum output power is 0.5mW

2.5 PRODUCT DESCRIPTION

The 2.4 GHz door lock can be used to remotely control different radio linked devices in the home that the door lock is associated with. The unit utilized an EM351 2.4GHz Zigbee radio with operation on standard channels. The unit is low powered and power is sourced from 4 AA batteries located inside the lock housing.

EXHIBIT 3. EUT OPERATING CONDITIONS & CONFIGURATIONS DURING TESTS

3.1 CLIMATE TEST CONDITIONS

Temperature:	20-25 ˚C
Humidity:	30-60 % R.H.

3.2 APPLICABILITY & SUMMARY OF EMC EMISSION TEST RESULTS

FCC and IC Paragraph	Test Requirements	Compliance (yes/no)
FCC : 15.207 IC : RSS GEN sect. 7.2.2	Power Line Conducted Emissions Measurements	N/A
FCC : 15.247(a)(2) IC : RSS 210 A8.2(a)	6 dB Bandwidth of a Digital Modulation System	Yes
IC : RSS GEN section 4.6.1	20 dB Bandwidth	Yes
FCC : 15.247(b) & 1.1310 IC : RSS 210 A8.4	Maximum Output Power	Yes
FCC : 15.247(i), 1.1307, 1.1310, 2.1091 & 2.1093 IC : RSS 102	RF Exposure Limit	Yes
FCC :15.247(c) IC : RSS 210 A8.5	RF Conducted Spurious Emissions at the Transmitter Antenna Terminal	Yes
FCC : 15.247(d) IC : RSS 210 A8.2(b)	Transmitted Power Spectral Density of a Digital Modulation System	Yes
FCC : 15.247(c), 15.209 & 15.205 IC : RSS 210 A8.2(b), section 2.2, 2.6 and 2.7	Transmitter Radiated Emissions	Yes
The digital circuit portion of the EUT has been tested and verified to comply with FCC Part 15, Subpart B, Class B Digital Devices (RSS GEN and RSS 210 of IC) and the associated Radio Receiver has also been tested and found to comply with Part 15, Subpart B – Radio Receivers (RSS GEN and RSS 210 of IC). The Receiver Test Report is available upon request.		

3.3 MODIFICATIONS INCORPORATED IN THE EUT FOR COMPLIANCE PURPOSES

☒ **None** ☐ **Yes (explain below)**

EUT operated at software setting power level 5 which corresponds to conducted output power of 2.1 dBm on channel 11, 2.7 dBm on channel 18 and 3.6 dBm on channel 26.

3.4 DEVIATIONS & EXCLUSIONS FROM TEST SPECIFICATIONS

☒ **None** ☐ **Yes (explain below)**

EXHIBIT 4. DECLARATION OF CONFORMITY

The EUT was found to MEET the requirements as described within the specification of FCC Title 47, CFR Part 15.247, and Industry Canada RSS-210, Issue 8 (2010), Section Annex 8 (section 8.2) for a Digital Spread Spectrum (DTS) Transmitter.

If some emissions are seen to be within 3 dB of their respective limits:
As these levels are within the tolerances of the test equipment and site employed, there is a possibility that this unit, or a similar unit selected out of production may not meet the required limit specification if tested by another agency.

LS Research, LLC certifies that the data contained herein was taken under conditions that meet or exceed the requirements of the test specifications. The results in this Test Report apply only to the item(s) tested on the above-specified dates. Any modifications made to the EUT subsequent to the indicated test date(s) will invalidate the data herein, and void this certification.

EXHIBIT 5. RADIATED EMISSIONS TEST

5.1 Test Setup

The test setup was assembled in accordance with Title 47, CFR FCC Part 15, RSS GEN and ANSI C63.4. The EUT was placed on an 80cm high non-conductive pedestal, centered on a flush mounted 2-meter diameter turntable inside a 3 meter Semi-Anechoic, FCC listed Chamber. The EUT was operated in and final testing was performed using transmit and receive modes, using power as provided by 4-AA batteries. The unit has the capability to operate on 16 channels, controllable via laptop PC.

The applicable limits apply at a 3 meter distance. Measurements above 4 GHz were performed at a 1.0 meter separation distance. The calculations to determine these limits are detailed in the following pages. Please refer to Appendix A for a complete list of test equipment. The test sample was operated on one of three (3) standard channels: low (2405 MHz), middle (2440 MHz) and high (2480 MHz) to comply with FCC Part 15.31 (m). The channels and operating modes were changed using a PC with an Ember communications box as the link.

5.2 Test Procedure

Radiated RF measurements were performed on the EUT in a 3 meter Semi-Anechoic, FCC listed Chamber. The frequency range from 30 MHz to 25000 MHz was scanned and investigated. The radiated RF emission levels were manually noted at the various fixed degree settings of azimuth on the turntable and antenna height. The EUT was placed on a non-conductive pedestal in the 3 meter Semi-Anechoic Chamber, with the antenna mast placed such that the antenna was 3 meters from the EUT. A Biconical Antenna was used to measure emissions from 30 MHz to 300 MHz, and a Log Periodic Antenna was used to measure emissions from 300 MHz to 1000 MHz. A Double-Ridged Waveguide Horn Antenna was used from 1 GHz to 18 GHz. The maximum radiated RF emissions were found by raising and lowering the antenna between 1 and 4 meters in height, using both horizontal and vertical antenna polarities. From 18 GHz to 25 GHz, the EUT was measured using a standard gain Horn Antenna and pre-amplifier.

The battery voltage was checked frequently, and the batteries were replaced as necessary.

5.3 Test Equipment Utilized

A list of the test equipment and antennas utilized for the Radiated Emissions test can be found in Appendix A. This list includes calibration information and equipment descriptions. All equipment is calibrated and used according to the operation manuals supplied by the manufacturers. All calibrations of the antennas used were performed at an N.I.S.T. traceable site. In addition, the Connecting Cables were measured for losses using a calibrated Signal Generator and an Agilent E4445A/N9039A EMI System. The resulting correction factors and the cable loss factors from these calibrations were entered into the EMI Receiver database. As a result, the data taken from the EMI Receiver accounts for the antenna correction factor as well as cable loss or other corrections, and can therefore be entered into the database as a corrected meter reading. The EMI Receiver was operated with a resolution bandwidth of 120 kHz for measurements below 1 GHz (video bandwidth of 300 kHz), and a bandwidth of 1 MHz for measurements above 1 GHz (video bandwidth of 1 MHz From 4 GHz to 18 GHz, an Spectrum Analyzer and an EMCO Horn Antenna were used. From 18 GHz to 25 GHz, the Agilent E4446A Spectrum Analyzer with a standard gain horn, and preamp were used.

5.4 Test Results

The EUT was found to **MEET** the Radiated Emissions requirements of Title 47 CFR, FCC Part 15.247 and Canada RSS-210, Issue 8 (2010), Annex 8 for a DTS transmitter. The frequencies with significant RF signal strength were recorded and plotted as shown in the Data Charts and Graphs.

5.5 CALCULATION OF RADIATED EMISSIONS LIMITS

The maximum peak output power of an intentional radiator in the 2400-2483.5 MHz band, as specified in Title 47 CFR 15.247 (b)(3) and RSS 210 A8.4 is 1 Watt. The harmonic and spurious RF emissions, as measured in any 100 kHz bandwidth, as specified in 15.247 (d) and RSS 210 A8.2(b), shall be at least 20 dB below the measured power of the desired signal, and must also meet the requirements described in 15.205(c) for FCC and section 2.2,2.6 and 2.7 of RSS 210 for IC.

The following table depicts the general radiated emission limits above 30 MHz. These limits are obtained from Title 47 CFR, Part 15.209, for radiated emissions measurements. These limits were applied to any signals found in the 15.205 restricted bands. The mentioned limits correspond to those limits listed in RSS 210 section 2.7.

Frequency (MHz)	3 m Limit μV/m	3 m Limit (dBμV/m)	1 m Limit (dBμV/m)
30-88	100	40.0	-
88-216	150	43.5	-
216-960	200	46.0	-
> 960	500	54.0	63.5

Sample conversion from field strength μV/m to dBμV/m:
$dB\mu V/m = 20 \log_{10} (100)$
= 40 dBμV/m (from 30-88 MHz)

For measurements made at 1.0 meter, a 9.5 dB correction has been invoked.

> 960 MHz
500μV/m or 54.0 dB/μV/m at 3 meters
54.0 + 9.5 = 63.5 dB/μV/m at 1 meter

Sample reported data:

Raw Data + Antenna Factor + Cable Factor = Reported Data

82.35 dBμV/m + 28.52 dB + 4.93 dB = 115.8dBμV/m

5.6 RADIATED EMISSIONS TEST DATA CHART

3 Meter Measurements of Electromagnetic Radiated Emissions
Test Standard: 47CFR, Part 15.205 and 15.247(DTS)
RSS 210 A8, sections 2.2, 2.6 and 2.7
Frequency Range Inspected: 30 MHz to 25000 MHz

Manufacturer:	Assa Abloy					
Date(s) of Test:	April , 26, 2011					
Test Engineer(s):	Peter Feilen					
Voltage:	6VDC					
Operation Mode:	continuous transmit					
Environmental Conditions in the Lab:	Temperature: 20 – 25° C Relative Humidity: 30 – 60 %					
EUT Power:		Single Phase ___VAC		3 Phase ___VAC		
	X	Battery (4-AA)		Other:		
EUT Placement:	X	80cm non-conductive table		10cm Spacers		
EUT Test Location:	X	3 Meter Semi-Anechoic FCC Listed Chamber		3/10m OATS		
Measurements:		Pre-Compliance		Preliminary	X	Final
Detectors Used:	X	Peak	X	Quasi-Peak	X	Average

The following table depicts the level of significant spurious radiated RF emissions found:

Frequency (MHz)	Height (m)	Azimuth (degree)	Quasi Peak Reading (dBµV/m)	Quasi Peak Limit (dBµV/m)	Margin (dB)	Antenna Polarity
240.0	1.26	250	36.97	46.0	9.0	H
264.0	1.20	256	34.51	46.0	11.5	H
240.0	1.00	0	30.95	46.0	15.1	V
990.0	1.00	0	28.91	54.0	25.1	V

RADIATED EMISSIONS DATA CHART *(continued)*

The following table depicts the level of significant radiated RF fundamental and harmonic emissions seen on Channel 11:

Polarization	Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (m)	Azimuth (deg)	Limit (dBuV/m)	Margin (dB)
Horizontal	2405.0	92.7	91.9	130.0	210	131.3	39.4
Horizontal	4809.15	67.8	58.1	109.8	39	63.5	5.4
Horizontal	7216.70	61.7	51.0	110.7	334	63.5	12.5
Horizontal	9622.30	60.8	48.9	104.6	29	63.5	14.6
Horizontal	12027.95	58.6	48.6	110.1	360	63.5	14.9
Horizontal	14427.58	55.8	46.0	106.6	49	63.5	17.5
Horizontal	16837.17	55.3	43.7	108.1	291	63.5	19.8
Horizontal	19240.00	Note 3					
Horizontal	21645.00	Note 3					
Horizontal	24050.00	Note 3					
Vertical	4811.18	66.6	56.8	103.3	7	63.5	6.7
Vertical	7216.60	59.5	49.1	118.8	32	63.5	14.5
Vertical	9618.22	59.7	49.2	101.2	25	63.5	14.3
Vertical	12027.78	60.6	49.0	104.3	8	63.5	14.5
Vertical	14433.93	58.5	47.7	99.9	44	63.5	15.8
Vertical	16839.00	55.4	43.7	102.0	11	63.5	19.8
Vertical	19240.00	Note 3					
Vertical	21645.00	Note 3					
Vertical	24050.00	Note 3					

The following table depicts the level of significant radiated RF fundamental and harmonic emissions seen on Channel 18:

Polarization	Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (cm)	Azimuth (deg)	Limit (dBuV/m)	Margin (dB)
Vertical	2440.0	92.5	91.8	1.51	0	131.3	39.5
Horizontal	4879.32	57.9	48.3	113.1	17.4	63.5	15.2
Horizontal	7321.77	68.3	57.3	109	332.7	63.5	6.2
Horizontal	9762.13	51.3	40.7	131.3	332.7	63.5	22.8
Horizontal	12202.68	52.9	41.4	101.5	280.6	63.5	22.1
Horizontal	14640.15	55.9	43.8	99.4	3.4	63.5	19.7
Horizontal	17078.10	60.0	47.6	117.9	7.6	63.5	15.9
Horizontal	19520.00	Note 3				63.5	
Horizontal	21960.00	Note 3				63.5	
Horizontal	24400.00	Note 3				63.5	
Vertical	4879.28	56.9	47.2	102.7	353	63.5	16.3
Vertical	7321.77	63.6	53.2	148	323.2	63.5	10.3
Vertical	9758.05	50.8	40.5	117.2	41.9	63.5	23.0
Vertical	12202.80	55.5	45.5	117.8	361.6	63.5	18.0
Vertical	14643.77	56.0	43.9	102.8	7.7	63.5	19.6
Vertical	17079.17	60.3	47.6	103.8	14.1	63.5	15.9
Vertical	19520.00	Note 3				63.5	

Vertical	21960.00	Note 3				63.5	
Vertical	24400.00	Note 3				63.5	

The following table depicts the level of significant radiated RF fundamental and harmonic emissions seen on Channel 26:

Polarization	Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (m)	Azimuth (deg)	Limit (dBuV/m)	Margin (dB)
Vertical	2480.0	90.6	89.7	1.07	0	131.3	41.6
Horizontal	4961.22	61.107	51.173	102.3	309.5	63.5	12.3
Horizontal	7441.74	72.883	61.32	106.1	324.5	63.5	2.2
Horizontal	9921.97	60.234	48.988	104.8	8.8	63.5	14.5
Horizontal	12397.95	56.6	45.515	103.7	352.1	63.5	18.0
Horizontal	14877.85	55.953	45.248	104.4	13.5	63.5	18.3
Horizontal	17358.87	52.909	41.918	116.5	346.9	63.5	21.6
Horizontal	19840.00	Note 3				63.5	
Horizontal	22320.00	Note 3				63.5	
Horizontal	24800.00	Note 3				63.5	
Vertical	4961.21	64.096	54.197	111.2	12.4	63.5	9.3
Vertical	7438.75	73.054	61.535	103	18.7	63.5	2.0
Vertical	9922.45	60.855	49.083	104.8	7.7	63.5	14.4
Vertical	12397.93	57.265	47.169	128.2	314.9	63.5	16.3
Vertical	14877.88	57.15	45.364	110.8	336.2	63.5	18.1
Vertical	17360.66	54.918	44.153	113.5	6.7	63.5	19.3
Vertical	19840.00	Note 3				63.5	
Vertical	22320.00	Note 3				63.5	
Vertical	24800.00	Note 3				63.5	

Notes:

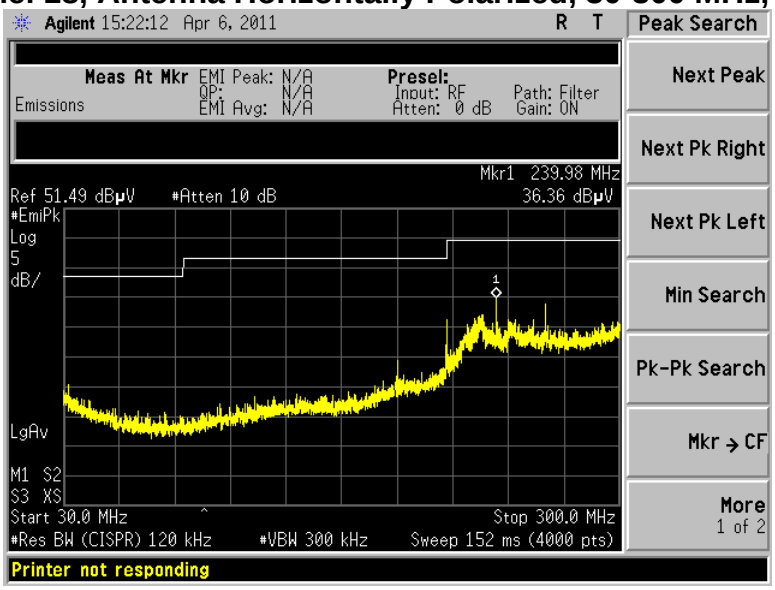
1) A Quasi-Peak Detector was used in measurements below 1 GHz, and a Peak as well as an Average Detector was used in measurements above 1 GHz. The peak detector was used to ensure the peak emissions did not exceed 20 dB above the limits.
2) Measurements above 5 GHz were made at 1 meters of separation from the EUT
3) Measurement at receiver system noise floor.
4) For measurements of the fundamental power, because of spectral bandwidth, the receiver was set to RBW=VBW=3 MHz.

5.7 Screen Captures - Radiated Emissions Test

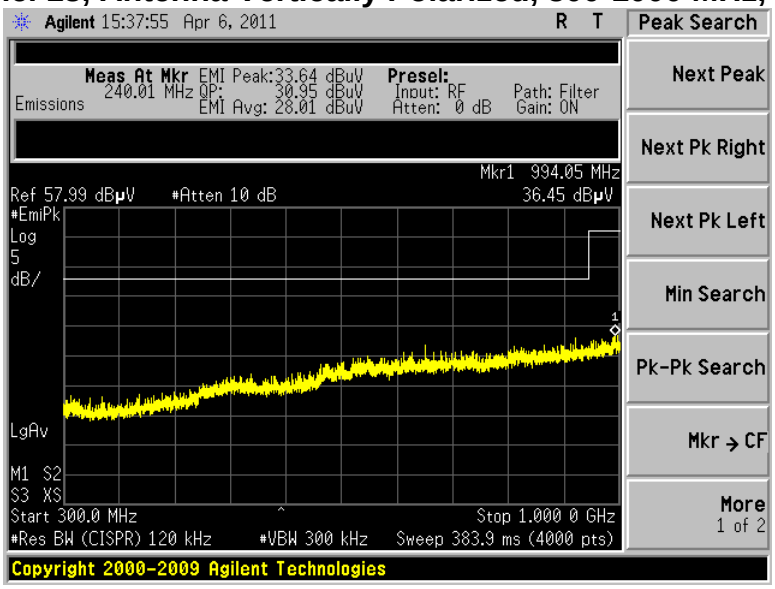
These screen captures represent Peak Emissions. For radiated emission measurements, a Quasi-Peak detector function is utilized when measuring frequencies below 1 GHz, and an Average detector function is utilized when measuring frequencies above 1 GHz.

The signature scans shown here are from worst-case emissions, as measured on channels 11, 18, or 26, with the sense antenna both in vertical and horizontal polarity for worst case presentations.

Channel 18, Antenna Horizontally Polarized, 30-300 MHz, at 3m

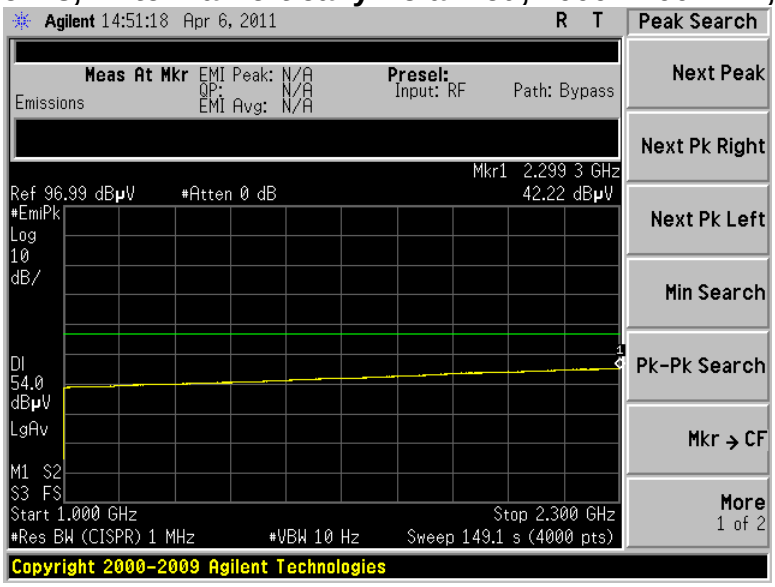


Channel 18, Antenna Vertically Polarized, 300-1000 MHz, at 3m

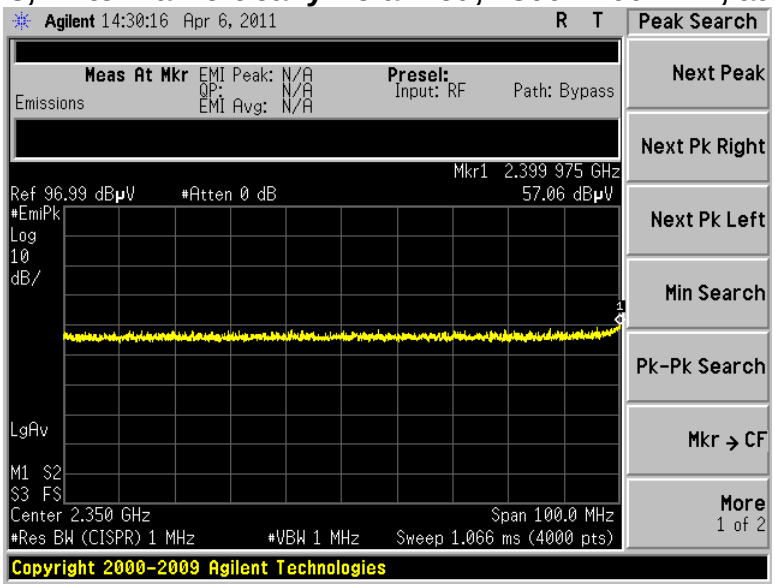


Screen Captures - Radiated Emissions Testing *(continued)*

Channel 18, Antenna Vertically Polarized, 1000-2400 MHz, at 3m

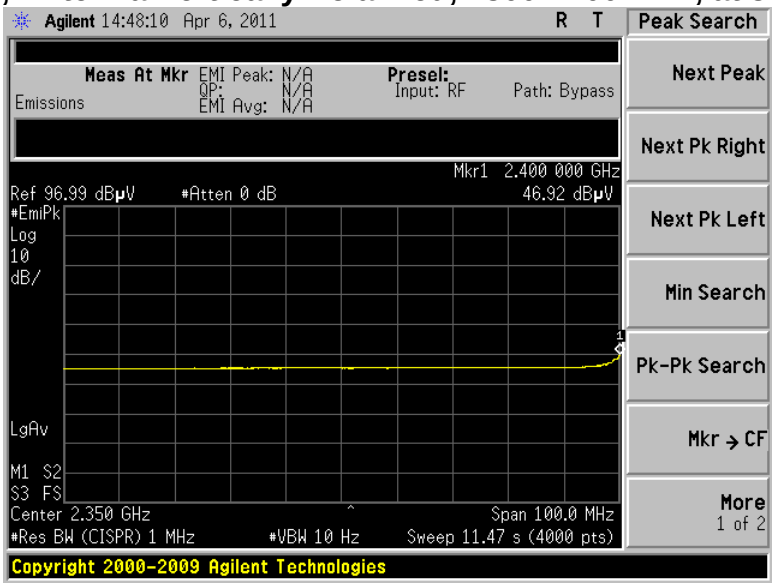


Channel 18, Antenna Vertically Polarized, 2300-2400 MHz, at 3m, Peak

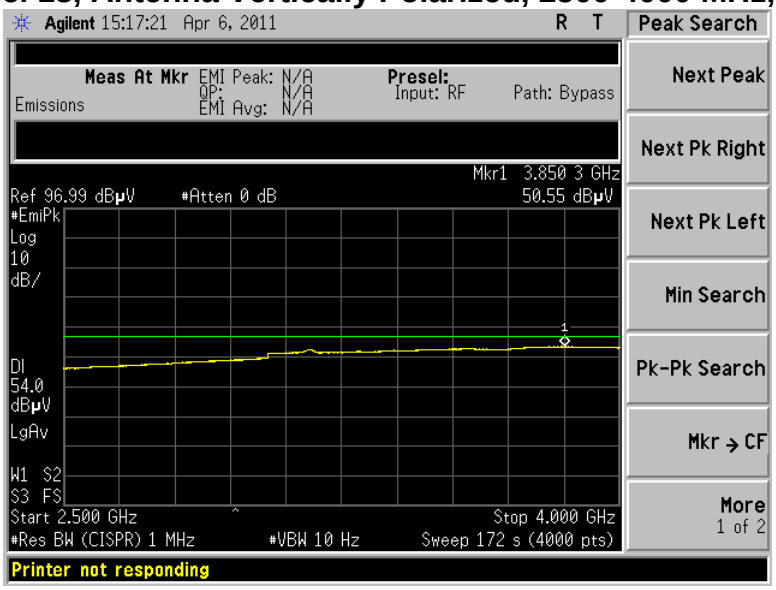


Screen Captures - Radiated Emissions Testing *(continued)*

Channel 18, Antenna Vertically Polarized, 2300-2400 MHz, at 3m, Average

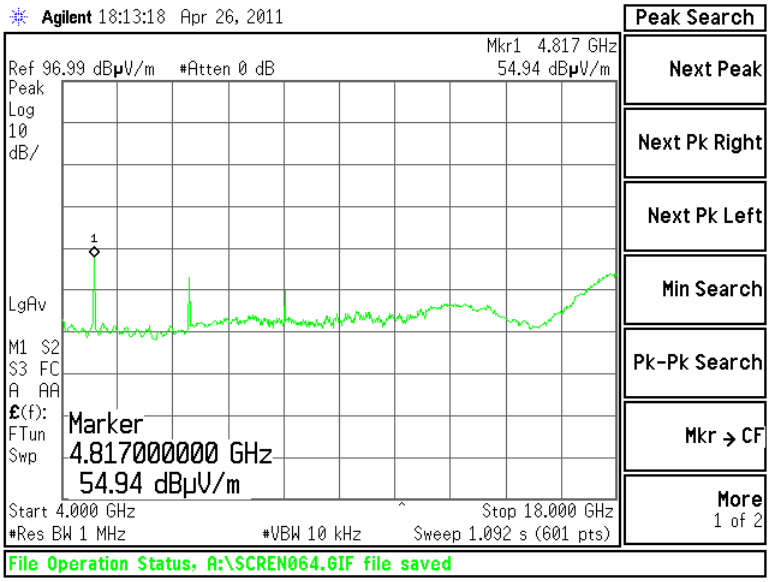


Channel 18, Antenna Vertically Polarized, 2500-4000 MHz, at 3m

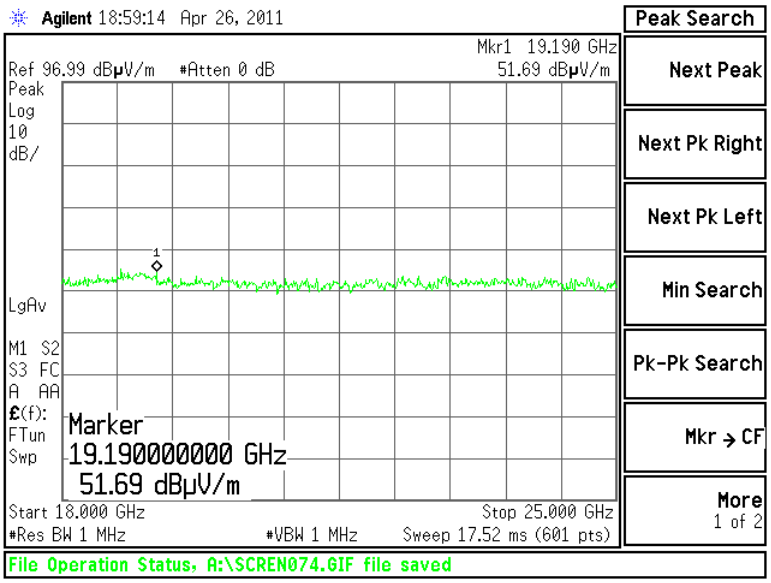


Screen Captures - Radiated Emissions Testing *(continued)*

Channel 18, Antenna Vertically Polarized, 4000-18000 MHz, at 1m



Channel 18, Antenna Vertically Polarized, 18000-25000 MHz, at 1m



5.8 Receive Mode Testing

Per the requirements of RSS-210, the EUT was placed in continuous receive mode and the radiated spurious emissions were measured and compared to the limits stated in RSS-Gen Section 4.10.

The test setup, procedure, and equipment utilized were identical to that described in sections 5.1, 5.2, and 5.3 of this document.

Measurement data and screen captures from the receive tests are presented below:

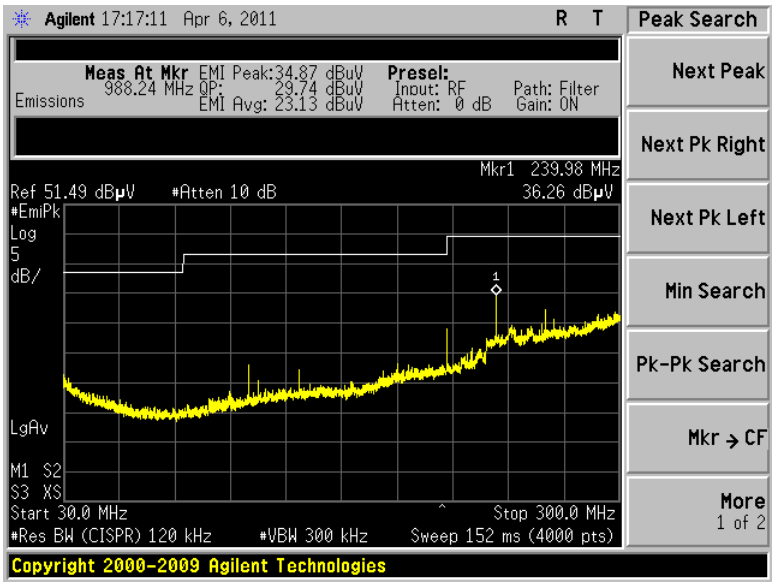
Frequency (MHz)	Height (m)	Azimuth (degree)	Quasi Peak Reading (dBµV/m)	Quasi Peak Limit (dBµV/m)	Margin (dB)	Antenna Polarity	EUT orientation
994.0	1.00	0	30.23	54.0	23.8	H	994.0
240.0	1.34	233	36.04	46.0	10.0	H	240.0
216.0	1.00	252	29.50	46.0	16.5	H	216.0
240.1	1.00	0	30.54	46.0	15.5	V	240.1
2412.6	1.90	0	30.18	54.0	23.8	H	2412.6
2413.4	2.58	0	30.52	54.0	23.5	V	2413.4

Screen Captures - Radiated Emissions Testing – Receive Mode

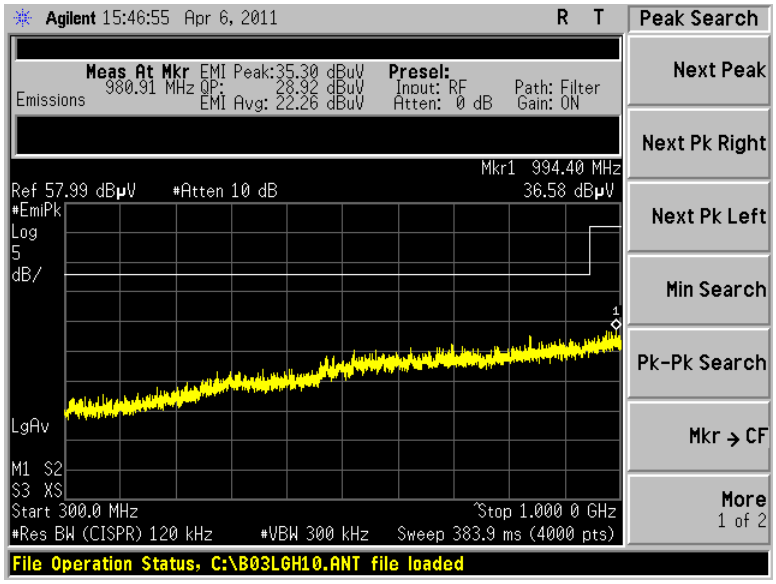
These screen captures represent Peak Emissions. For radiated emission measurements, a Quasi-Peak detector function is utilized when measuring frequencies below 1 GHz, and an Average detector function is utilized when measuring frequencies above 1 GHz.

The signature scans shown here are from worst-case emissions, as measured on channels 11, 18 and 26, with the sense antenna both in vertical and horizontal polarity for worst case presentations.

Channel 18, Antenna Horizontally Polarized, 30-300 MHz at 3m

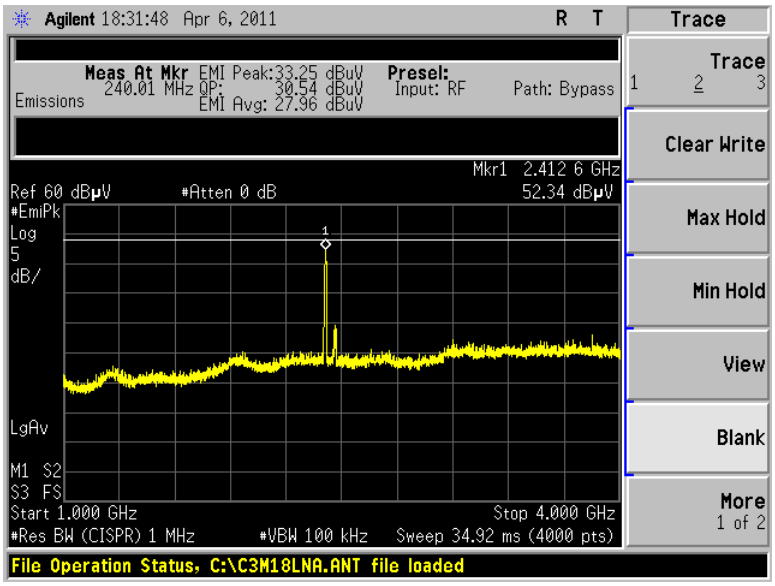


Channel 300-1000, Antenna Horizontally Polarized, 300-1000 MHz at 3m

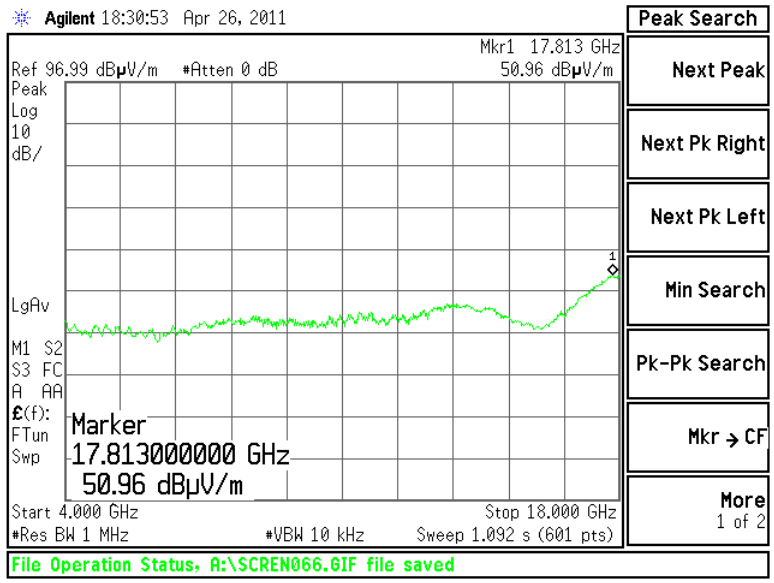


Screen Captures - Radiated Emissions Testing – Receive Mode **(continued)**

Channel 18, Antenna Horizontally Polarized, 1000-4000 MHz at 3m



Channel 18, Antenna Horizontally Polarized, 4000-18000 MHz at 3m



Screen Captures - Radiated Emissions Testing – Receive Mode *(continued)*

Channel 18, Antenna Horizontally Polarized, 18000-25000 MHz at 3m

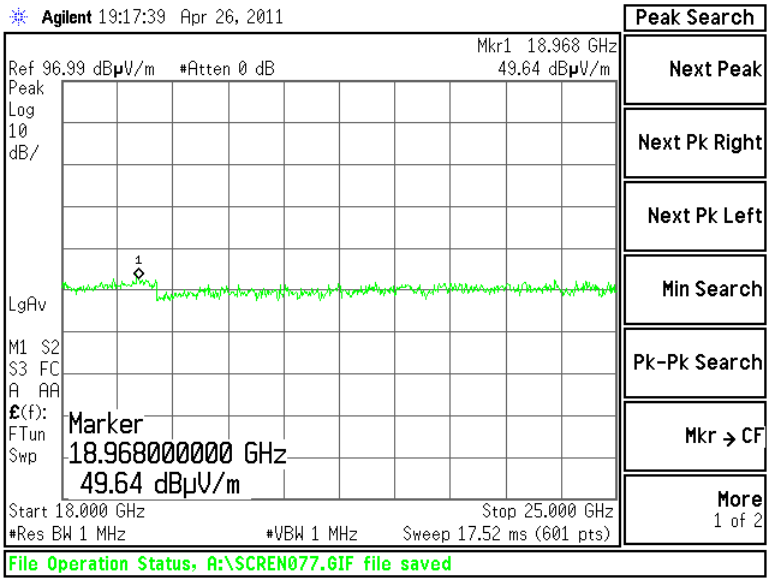


EXHIBIT 6. OCCUPIED BANDWIDTH:

6.1 Limits

For a Digital Modulation System, the 6 dB bandwidth shall be at least 500 kHz.

6.2 Method of Measurements

Refer to ANSI C63.4 and FCC Procedures (2007) for Digital Transmission Systems operating under 15.247.

The transmitter output was connected to the Spectrum Analyzer. The bandwidth of the fundamental frequency was measured with the Spectrum Analyzer using 100 kHz RBW and VBW=300 kHz.

The bandwidth requirement found in FCC Part 15.247(a)(2) and RSS 210 A8.2(a) requires a minimum -6dBc occupied bandwidth of 500 kHz. In addition, Industry Canada (IC RSS GEN 4.6.1) requires the measurement of the -20dBc occupied bandwidth. For this portion of the tests, a direct measurement of the transmitted signal was performed at the antenna port of the EUT, via a cable connection to the Agilent E4446A spectrum analyzer. An attenuator was placed in series with the cable to protect the spectrum analyzer. Any losses from the cable and the attenuator were added on the analyzer as gain offset settings, thereby allowing direct measurements, without the need for any further corrections. A Hewlett Packard model E4407B spectrum analyzer was used with the resolution bandwidth set to 100 kHz for the -6 dB measurements and to 30kHz for the -20 dB portion of the of the tests. The EUT was configured to run in a continuous transmit mode, while being supplied with typical data as a modulation source. The spectrum analyzer was used in peak-hold mode while measurements were made, as presented in the chart below.

From this data, the closest measurement (6 dB bandwidth) when compared to the specified limit, is 1583 kHz, which is above the minimum of 500 kHz.

6.3 Test Equipment List

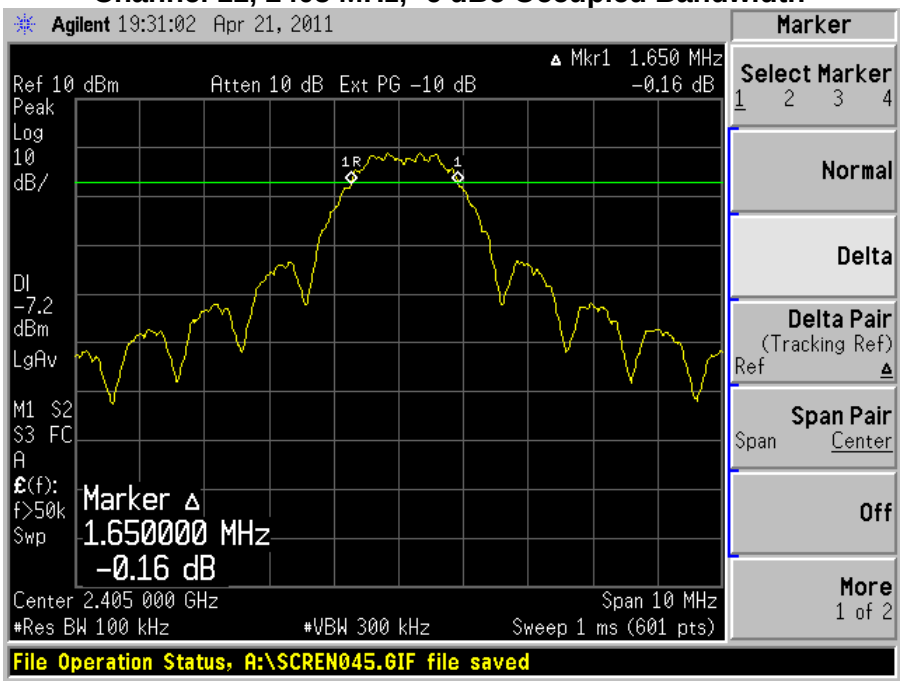
Test Equipment	Manufacturer	Model No.	Serial No.
Spectrum Analyzer	Agilent	E4407B	US39160256
Spectrum Analyzer	Agilent	E4446A	US45300564

6.4 Test Data

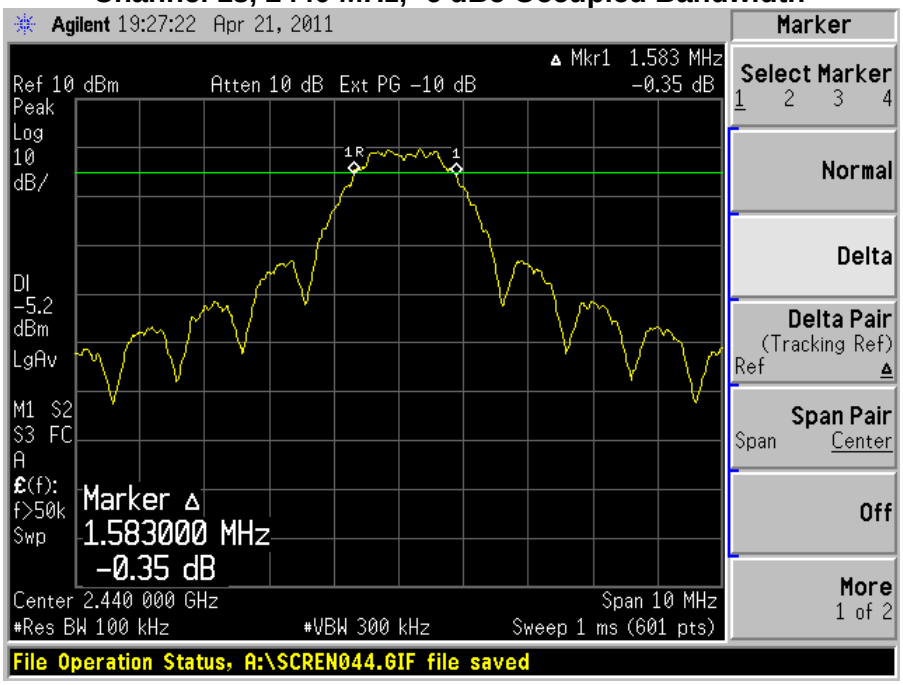
Channel	Center Frequency (MHz)	Measured -6 dBc Occ. BW (kHz)	Minimum -6 dBc Limit (kHz)	Measured -20 dBc Occ.Bw (kHz)	Measured 99% Occ.Bw (kHz)
11	2405	1650	500	2590	2201
18	2440	1583	500	2515	2239
26	2480	1650	500	2475	2226

6.5 Screen Captures - OCCUPIED BANDWIDTH

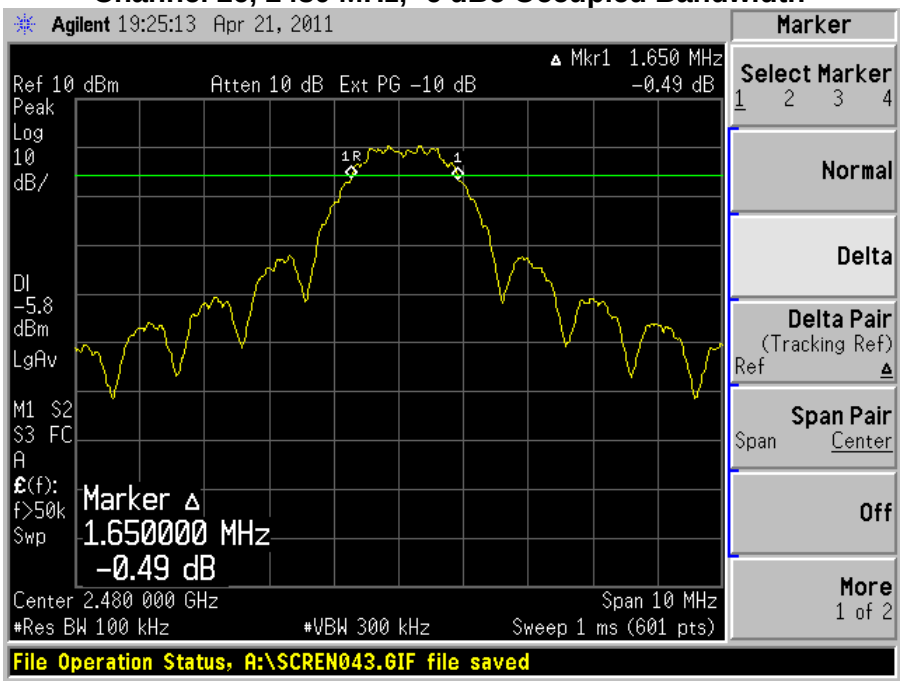
Channel 11, 2405 MHz, -6 dBc Occupied Bandwidth



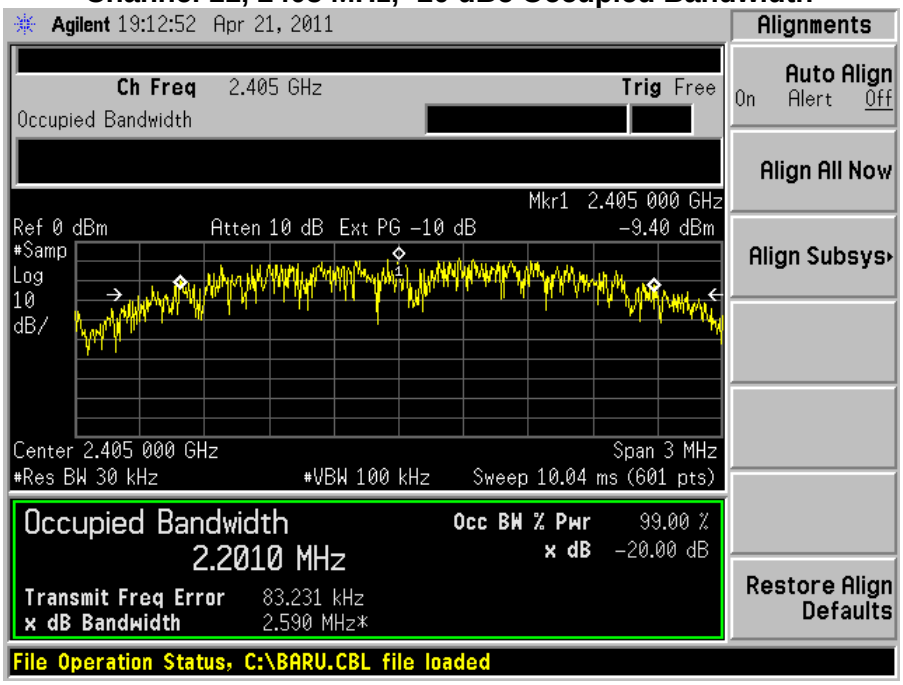
Channel 18, 2440 MHz, -6 dBc Occupied Bandwidth



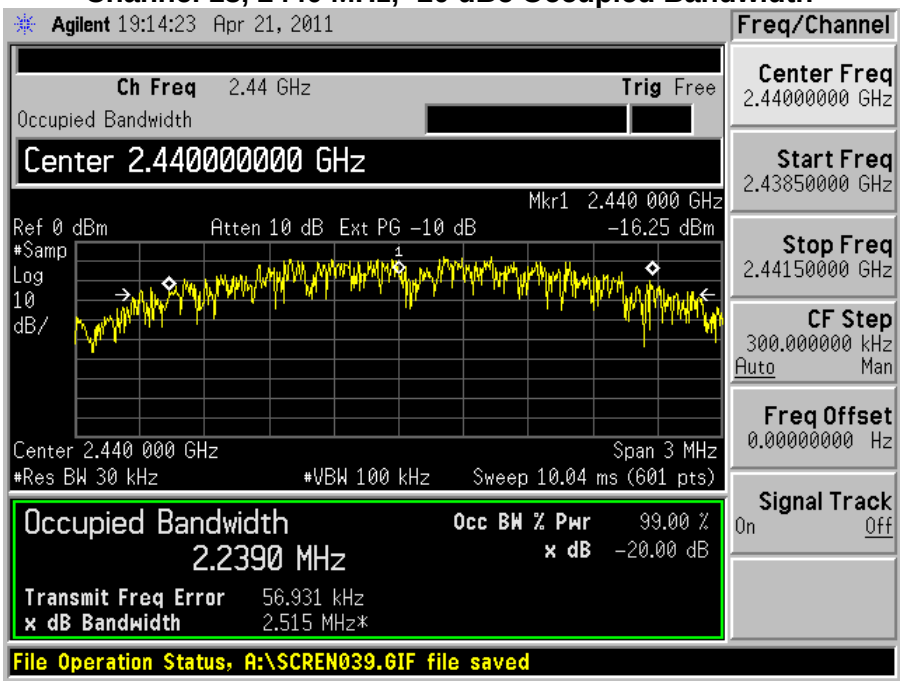
Channel 26, 2480 MHz, -6 dBc Occupied Bandwidth



Channel 11, 2405 MHz, -20 dBc Occupied Bandwidth



Channel 18, 2440 MHz, -20 dBc Occupied Bandwidth



Channel 26, 2480 MHz, -20 dBc Occupied Bandwidth

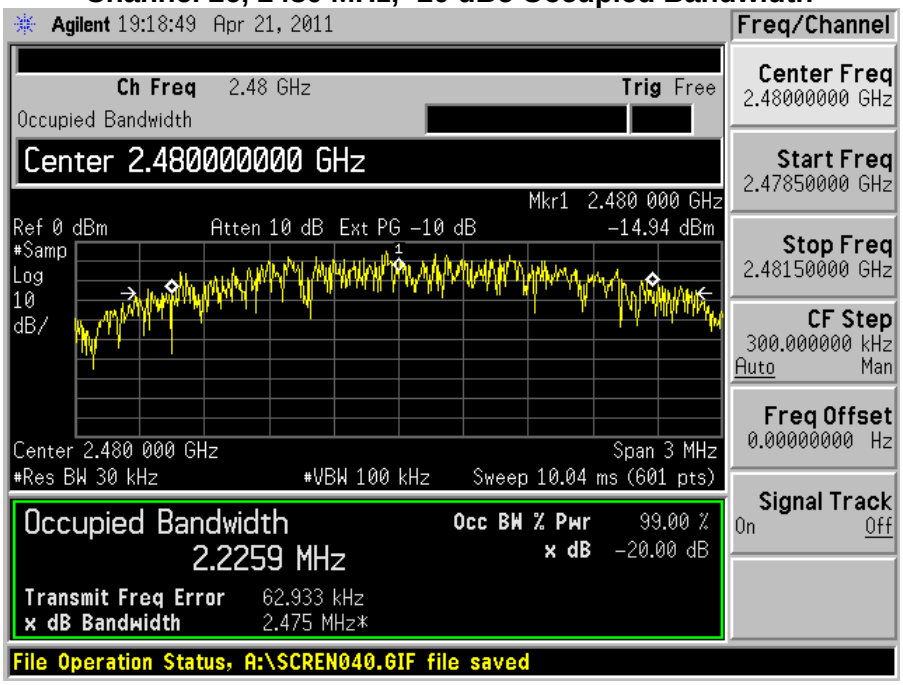


EXHIBIT 7. BAND-EDGE MEASUREMENTS

7.1 Method of Measurements

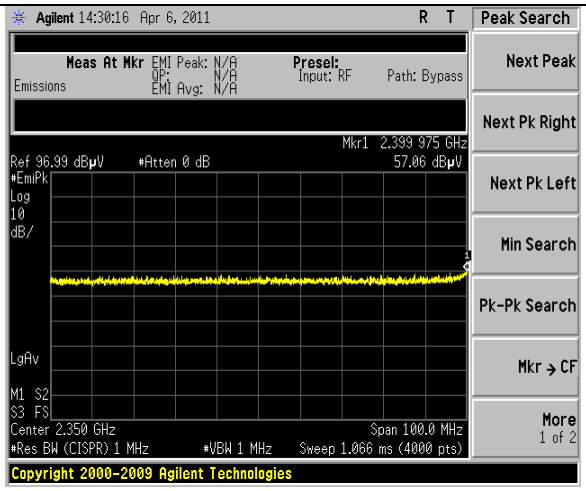
FCC 15.209(b) and 15.247(d) require a measurement of spurious emission levels to be at least 20 dB lower than the fundamental emission level, in particular at the Band-Edges where the intentional radiator operates. Also, RSS 210 Section 2.2 requires that unwanted emissions meet limits listed in tables 2 and 3 of the same standard and also to the limits in the applicable annex. The following screen captures demonstrate compliance of the intentional radiator at the 2400-2483.5 MHz Band-Edges. The EUT was operated in continuous transmit mode with continuous modulation, with internally generated data as the modulating source. The EUT was operated at the lowest channel for the investigation of the lower Band-Edge, and at the highest channel for the investigation of the higher Band-Edge.

The Lower Band-Edge limit, in this case, would be -20 dBc with respect to the fundamental level.

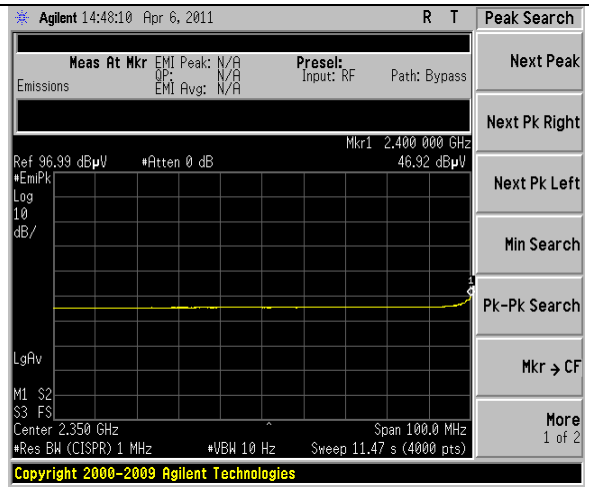
The Upper Band-Edge limit, in this case, would be + 54 dBµV/m at 3m.

7.2 Screen Captures

Screen Capture Demonstrating Compliance at the Lower Band-Edge

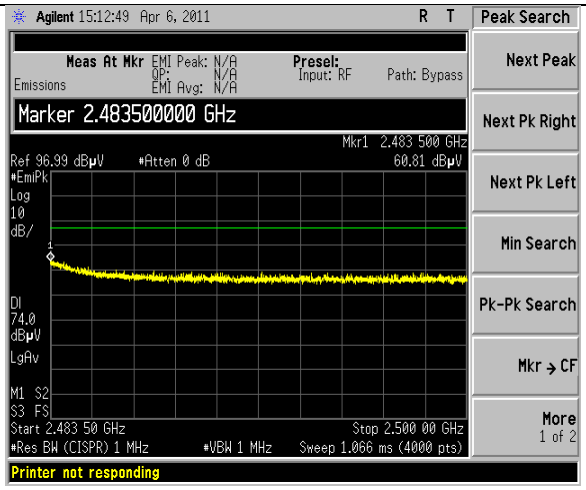


Peak Lower Bandedge

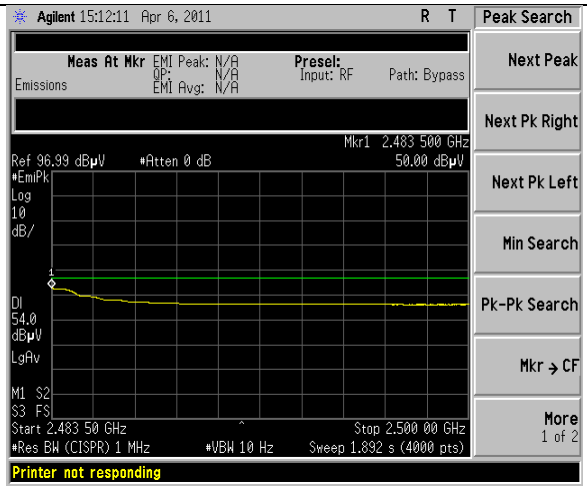


Average Lower Bandedge

Screen Capture Demonstrating Compliance at the Higher Band-Edge



Peak Upper Band edge



Average Upper Band edge

EXHIBIT 8. POWER OUTPUT (CONDUCTED): 15.247(b)

8.1 Method of Measurements

The conducted RF output power of the EUT was measured at the antenna port using a short RF cable along with an attenuator as protection for the spectrum analyzer. The loss from the cable and the attenuator were added on the analyzer as gain offset settings, thereby allowing direct measurements without the need for any further corrections. The unit was configured to run in a continuous transmit mode, while being supplied with typical data from an internal source as a modulation source. The spectrum analyzer was used with resolution and video bandwidths set to 3 MHz, and a span of 10 MHz, with measurements from a peak detector presented in the chart below.

8.2 Test Equipment List

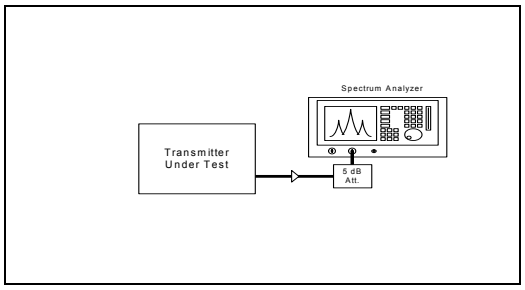
Please see Appendix A

8.3 Test Data

CHANNEL	CENTER FREQ (MHz)	LIMIT (dBm)	MEASURED POWER (dBm)	MARGIN (dB)
11	2405	+30 dBm	2.1	27.6
18	2440	+30 dBm	2.7	27.3
26	2480	+30 dBm	3.6	26.4

Transmitter Channel	Freq. (MHz)	Peak Power at Antenna Terminal (dBm)	Calculated EIRP (dBm) [1]	Conducted Power Limit (dBm)	EIRP Limit (dBm)
Lowest	2405	2.1	-1.5	30.0	36.0
Middle	2440	2.7	-0.9	30.0	36.0
Highest	2480	3.6	0.0	30.0	36.0

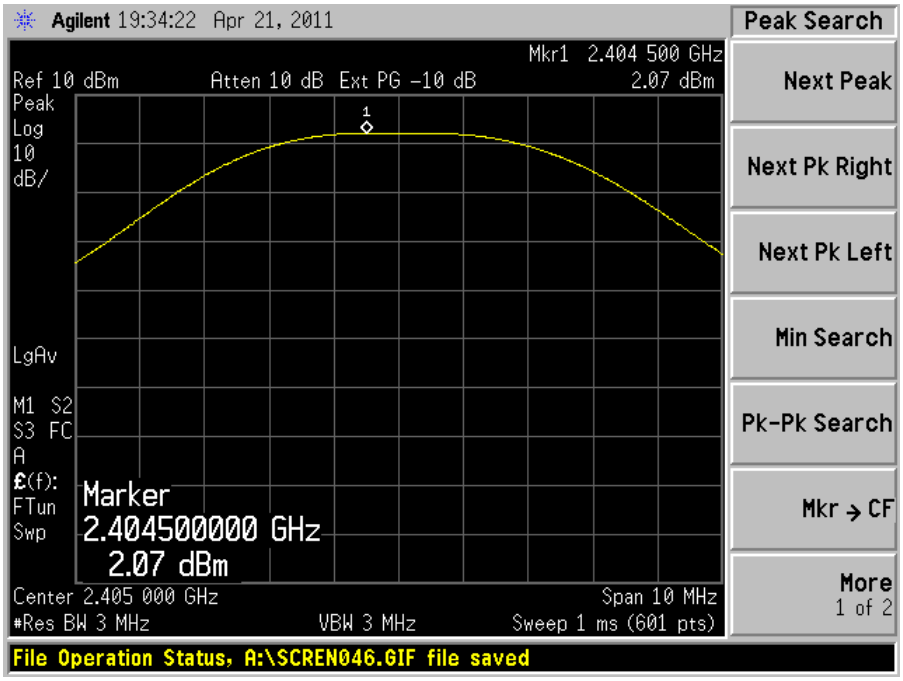
[1] EIRP Calculation:
EIRP = (Peak power at antenna terminal in dBm) + (EUT Antenna gain in dBi)



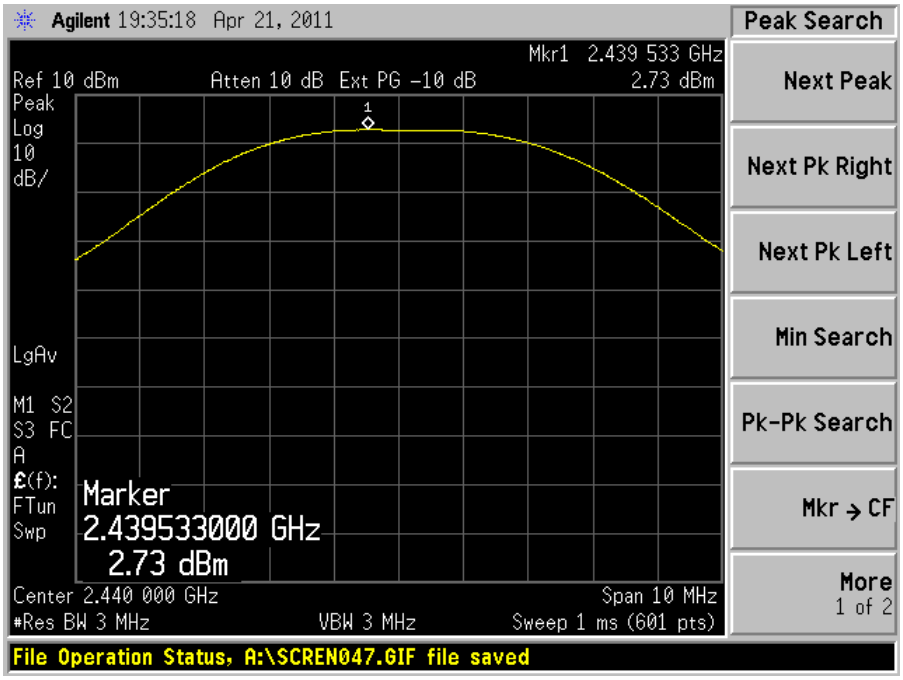
Measured RF Power Output (in Watts): 0.0004645 W

8.4 Screen Captures – Power Output (Conducted)

Channel 11



Channel 18



Channel 26

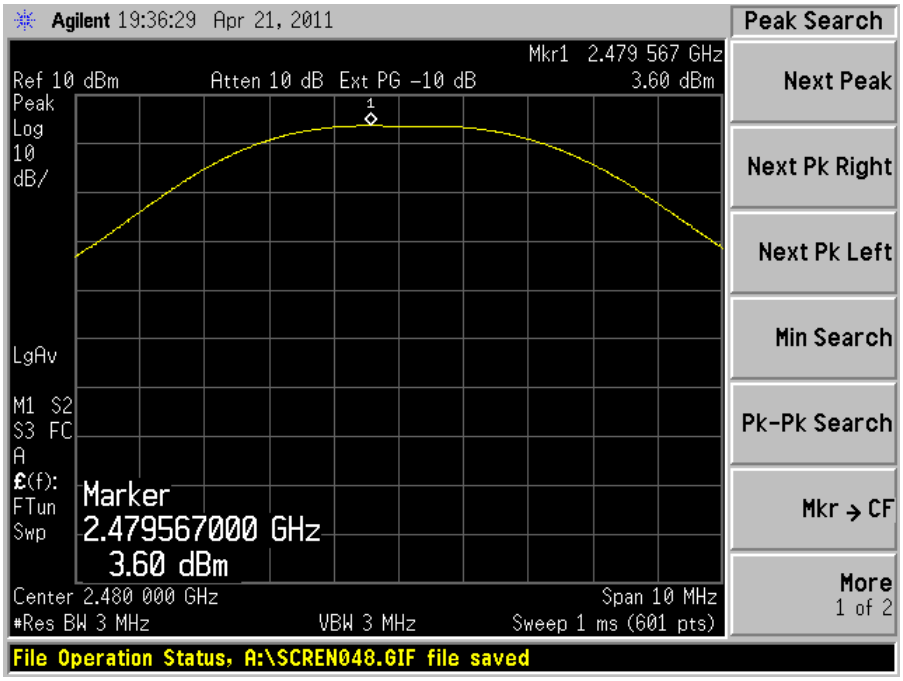

Agilent 19:36:29 Apr 21, 2011
Peak Search
Mkr1 2.479 567 GHz
Ref 10 dBm
Atten 10 dB Ext PG -10 dB
3.60 dBm
Peak
Log
10
dB/
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
LgAv
M1 S2
S3 FC
A
£(f):
FTun
Swp
Marker
2.479567000 GHz
3.60 dBm
Center 2.480 000 GHz
Span 10 MHz
#Res BW 3 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, A:\SCREN048.GIF file saved

EXHIBIT 9. POWER SPECTRAL DENSITY: 15.247(e)

9.1 Limits

For digitally modulate 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.

In accordance with FCC Part 15.247(e) and RSS 210 A8.2(b), the peak power spectral density should not exceed +8 dBm in any 3 kHz band. This measurement was performed along with the conducted power output readings performed as described in previous sections. The peak output frequency for each representative frequency was scanned, with a narrow bandwidth, and reduced sweep, and a power density measurement was performed using the utility built into the Agilent Analyzer. The resultant density was then corrected to a 3 kHz bandwidth. The highest density was found to be no greater than -22.4 dBm, which is under the allowable limit by 30 dB.

9.2 Test Equipment List

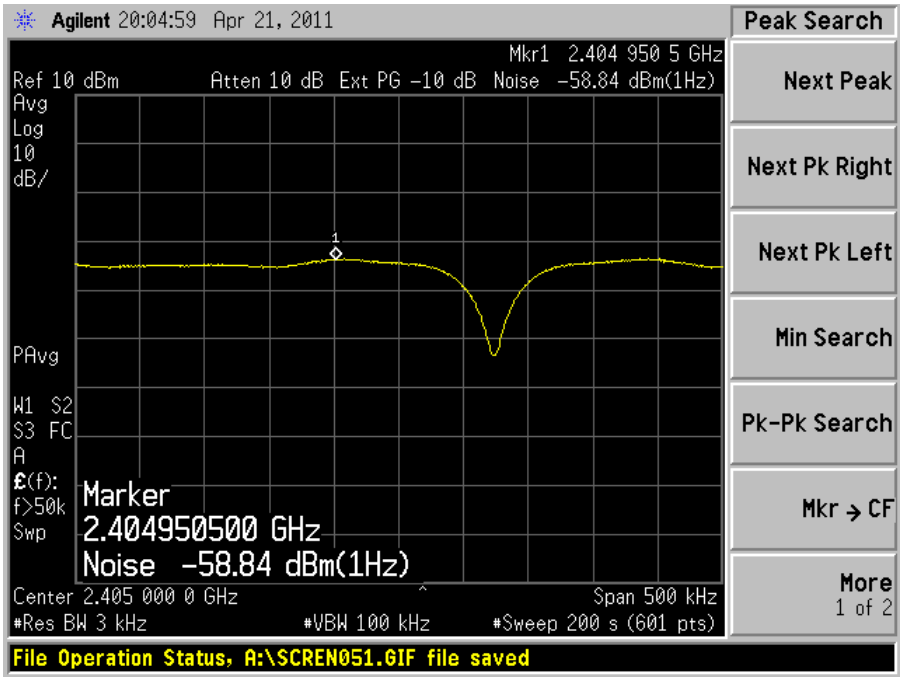
Test Equipment	Manufacturer	Model No.	Serial No.
Spectrum Analyzer	Agilent	E4446A	US45300564

9.3 Test Data

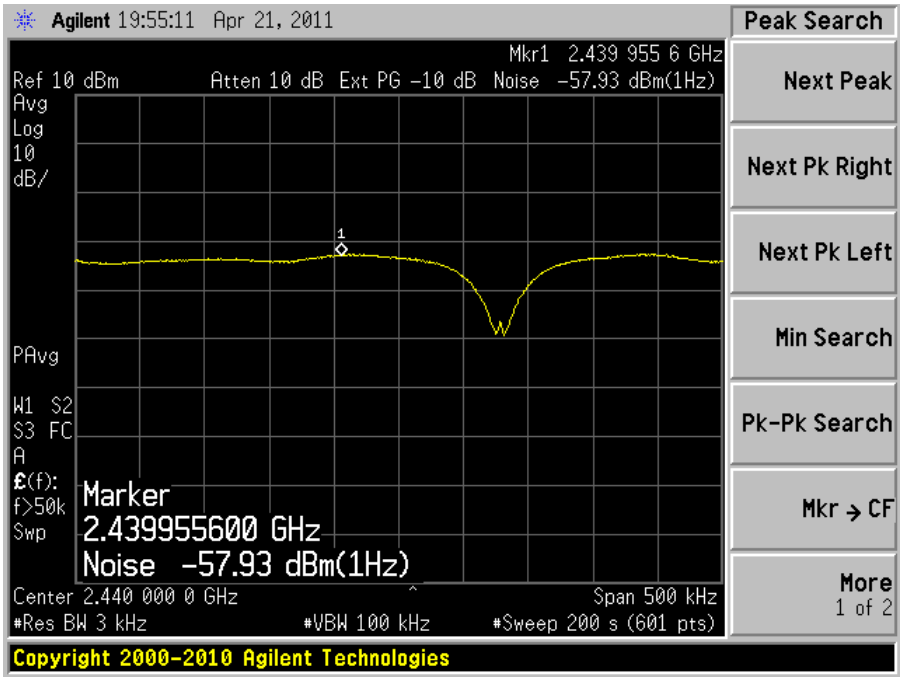
Channel	Center Frequency (MHz)	Measured Channel Power (dBm/1 Hz)	3 kHz Correction (dB)	Corrected Power Measurement (dBm/3kHz)	Limit (dBm)	Margin (dB)
11	2405	-58.8	34.77	-24.1	+8.0	32.1
18	2440	-57.9	34.77	-23.2	+8.0	31.2
26	2480	-57.1	34.77	-22.4	+8.0	30.4

9.4 Screen Captures – Power Spectral Density

Channel 11



Channel 18



Channel 26

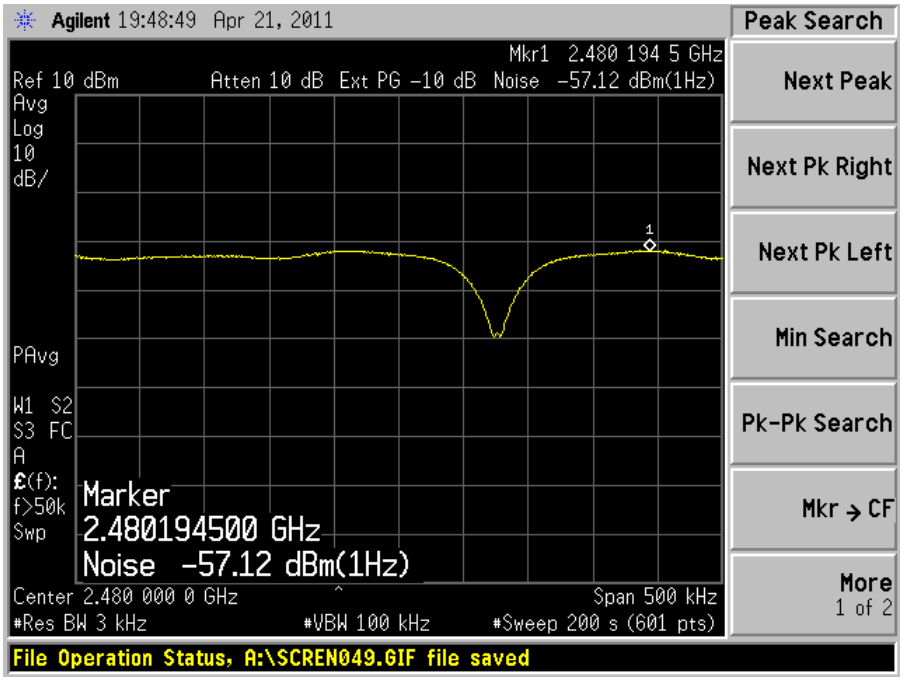

Agilent 19:48:49 Apr 21, 2011
Peak Search
Mkr1 2.480 194 5 GHz
Ref 10 dBm
Atten 10 dB Ext PG -10 dB Noise -57.12 dBm(1Hz)
Avg
Log
10
dB/
Next Peak
Next Pk Right
Next Pk Left
Min Search
PAvg
W1 S2
S3 FC
A
£(f):
f>50k
Swp
Pk-Pk Search
Mkr → CF
Marker
2.480194500 GHz
Noise -57.12 dBm(1Hz)
More
1 of 2
Center 2.480 000 0 GHz
Span 500 kHz
#Res BW 3 kHz
#VBW 100 kHz
#Sweep 200 s (601 pts)
File Operation Status, A:\SCREN049.GIF file saved

EXHIBIT 10. SPURIOUS RADIATED EMISSIONS: 15.247(d)

10.1 Limits

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 a radiated measurement.

In addition, radiated emissions, which fall in the restricted band, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(e)

Remarks:

- Applies to harmonics/spurious emissions that fall in the restricted bands listed in Section 15.205. The maximum permitted average field strength is listed in Section 15.209.
- The emission limits as specified above are based on measurement instrument employing an average detector. The provisions in Section 15.35 for limiting peak emissions apply.

FCC 47 CFR 15.205(a) – Restricted Frequency Bands

MHz	MHz	MHz	GHz
0.090 – 0.110	162.0125 – 167.17	2310 – 2390	9.3 – 9.5
0.49 – 0.51	167.72 – 173.2	2483.5 – 2500	10.6 – 12.7
2.1735 – 2.1905	240 – 285	2655 – 2900	13.25 – 13.4
8.362 – 8.366	322 – 335.4	3260 – 3267	14.47 – 14.5
13.36 – 13.41	399.9 – 410	3332 – 3339	14.35 – 16.2
25.5 – 25.67	608 – 614	3345.8 – 3358	17.7 – 21.4
37.5 – 38.25	960 – 1240	3600 – 4400	22.01 – 23.12
73 – 75.4	1300 – 1427	4500 – 5250	23.6 – 24.0
108 – 121.94	1435 – 1626.5	5350 – 5460	31.2 – 31.8
123 – 138	1660 – 1710	7250 – 7750	36.43 – 36.5
149.9 – 150.05	1718.8 – 1722.2	8025 – 8500	Above 38.6
156.7 – 156.9	2200 – 2300	9000 – 9200	

FCC 47 CFR 15.209(a) Field Strength Limits within Restricted Frequency Bands

Frequency (MHz)	Field Strength Limits (microvolts/m)	Distance (Meters)
0.009 – 0.490	2,400 / F (kHz)	300
0.490 – 1.705	24,000 / F (kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 – 960	200	3
Above 960	500	3

Calculation of Radiated Emission Measurements

Frequency (MHz)	3 m Limit (μV/m)	3 m Limit (dBμV/m)	1 m Limit (dBμV/m)
30-88	100	40.0	-
88-216	150	43.5	-
216-960	200	46.0	-
960-25,000	500	54.0	63.5

FCC Part 15.247(d) and IC RSS 210 A8.5 requires a measurement of conducted harmonic and spurious RF emission levels, as reference to the carrier level when measured in a 100 kHz bandwidth. For this test, the spurious and harmonic RF emissions from the EUT were measured at the EUT antenna port using a short RF cable along with an attenuator as protection for the spectrum analyzer. The loss from the cable and the attenuator were added on the analyzer as gain offset settings, there by allowing direct readings of the measurements made without the need for any further corrections. An Agilent E4446A spectrum analyzer was used with the resolution bandwidth set to 100 kHz for this portion of the tests. The unit was configured to run in a continuous transmit mode, while being supplied with typical data as a modulation source. The spectrum analyzer was used with measurements from a peak detector presented in the chart below. Screen captures were acquired and any noticeable spurious and harmonic signals were identified and measured.

No significant emissions could be noted within -50 dBc of the fundamental level for this product.

Freq\Chan	11\2405	18\2440	26\2480
fo	2.1	2.7	3.6
2fo	-51.0	-56.5	-53.9
3fo	-51.5	-52.3	-49.5
4fo	-61.2	-65.1	-68.5
5fo	-66.7	-66.0	-65.8
6fo	-65.6	-65.6	-65.5
7fo	-65.7	-65.8	-66.2
8fo	-66.1	-65.0	-65.2
9fo	-65.0	-64.9	-65.1
10fo	-64.5	-65.1	-63.5

10.2 Test Equipment List

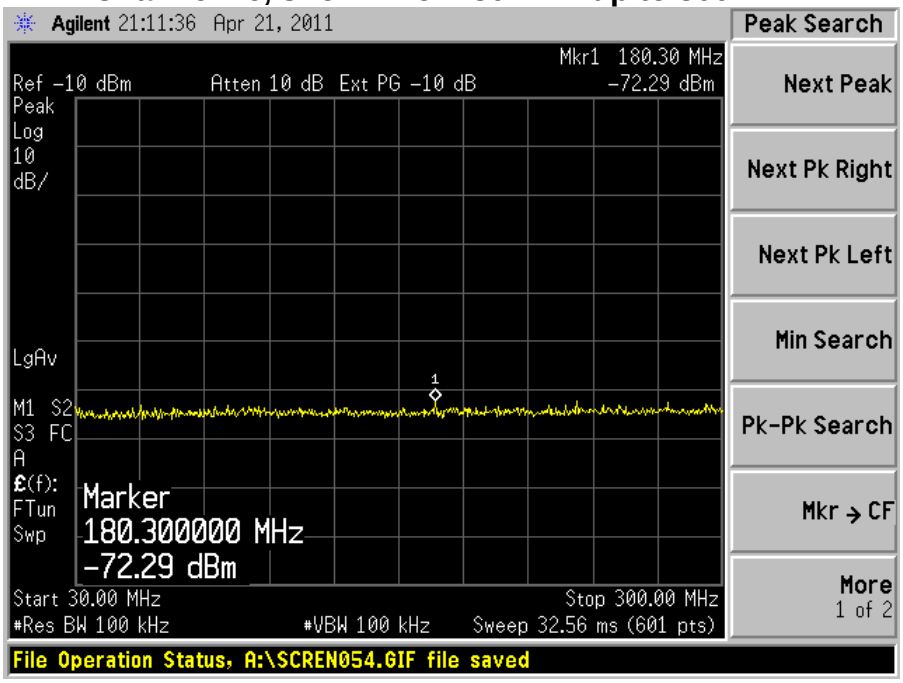
Test Equipment	Manufacturer	Model No.	Serial No.	Frequency Range
Spectrum Analyzer	Agilent	E4446A	US45300564	3Hz To 44 GHz

10.3 Test Data

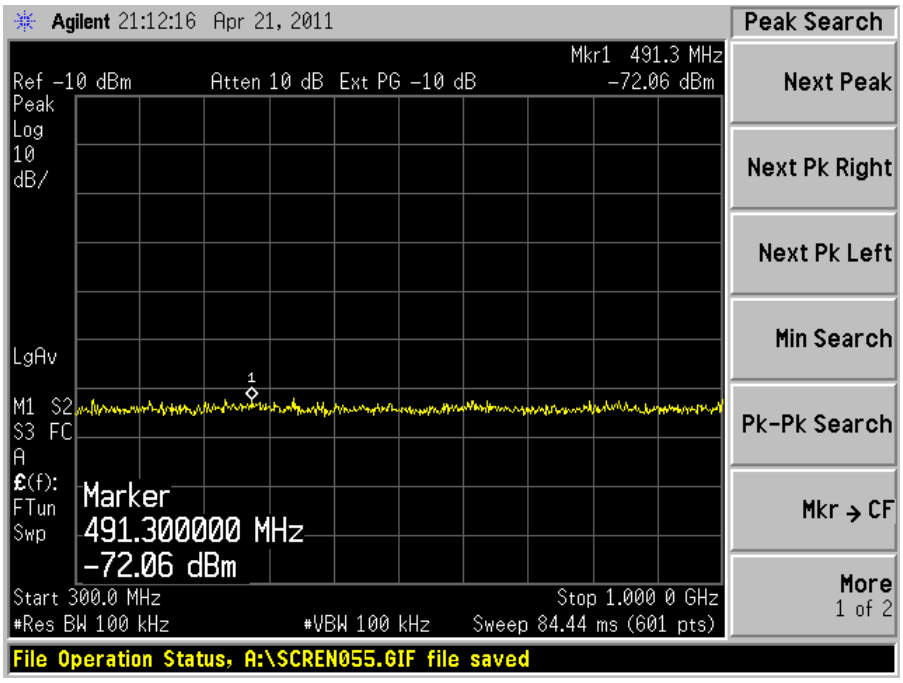
Frequency (MHz)	Channel	Level (dBm)	Pass/ Fail
57.45	26	-72.96	Pass
5515.00	26	-61.26	Pass
5260.00	26	-68.11	Pass
23900.00	26	-62.04	Pass
103.90	11	-72.89	Pass
5830.00	18	-68.66	Pass
937.00	18	-71.86	Pass

10.4 Screen Captures – Spurious Radiated Emissions

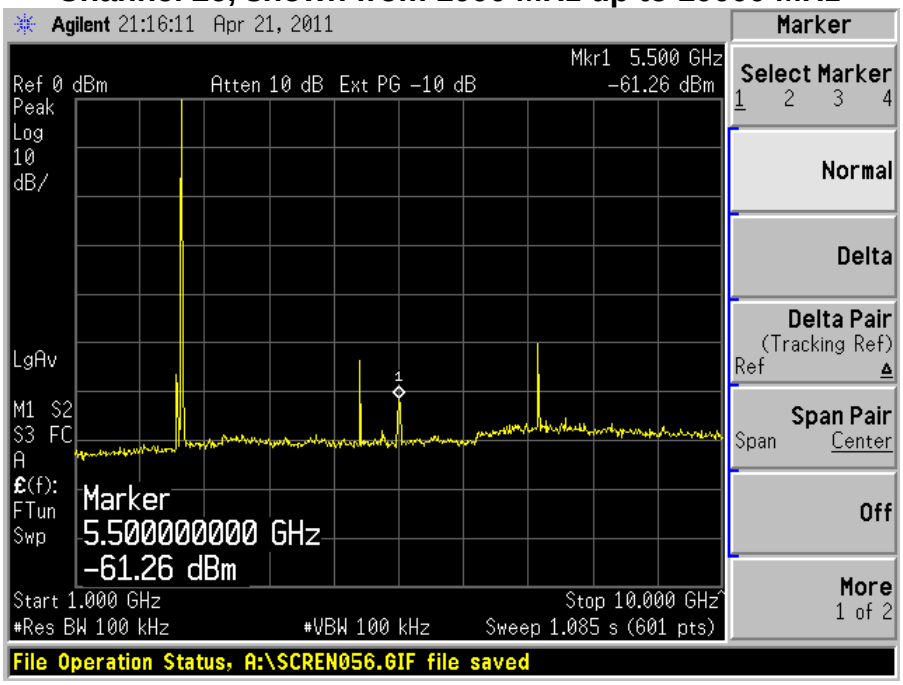
Channel 26, shown from 30 MHz up to 300 MHz



Channel 26, shown from 300 MHz up to 1000 MHz



Channel 26, shown from 1000 MHz up to 10000 MHz



Channel 26, shown from 10000 MHz up to 25000 MHz

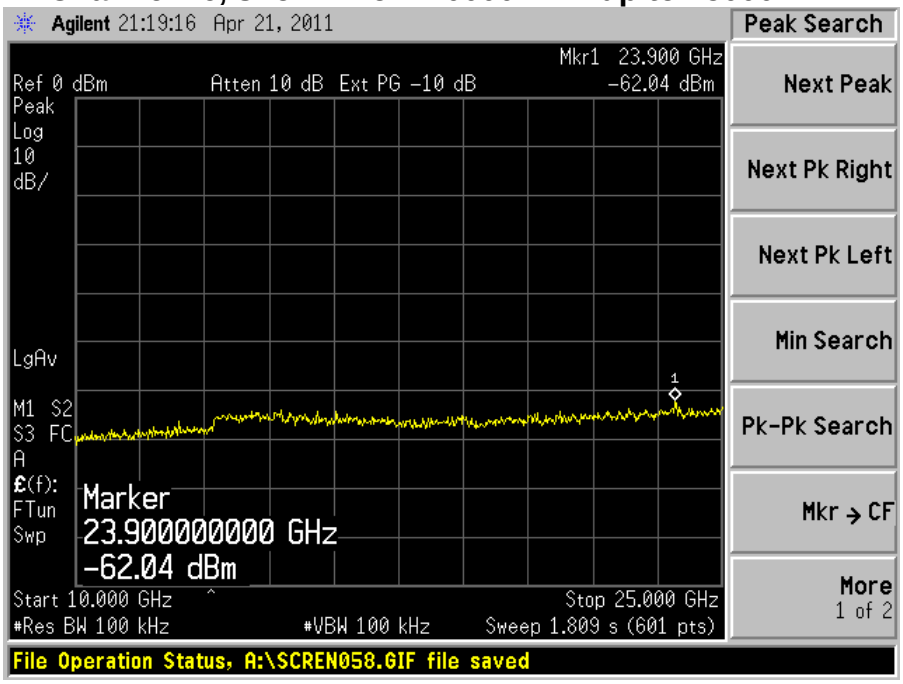


EXHIBIT 11. FREQUENCY & POWER STABILITY OVER VOLTAGE VARIATIONS

The stability of the device was examined as a function of the input voltage available to the EUT. A Spectrum Analyzer was used to measure the frequency at the appropriate frequency markers. Power was supplied by an external bench-type variable power supply, and the frequency of operation was monitored using the spectrum analyzer.

A spectrum analyzer was used to measure the frequency at the appropriate frequency markers. For this test, the EUT was placed in continuous transmit CW mode. Power to the EUT was supplied by an external bench-type variable power supply. The frequency of operation was monitored using the spectrum analyzer with RBW=VBW=1 kHz settings while the voltage was varied. Power stability was also monitored using the spectrum analyzer with RBW=VBW=3MHz settings while the voltage was varied.

5.1 VDC		6.0 VDC		6.9 VDC		
Power	Frequency	Power	Frequency	Power	Frequency	Channel
2.04	2404.638	2.06	2404.9578	2.05	2405.1696	lo
2.73	2439.6353	2.72	2440.5104	2.71	2439.6535	mid
3.58	2479.6623	3.60	2479.6485	3.59	2479.6399	hi

The power was then cycled On/Off to observe system response. No unusual response was observed, the emission characterizes were well behaved, and the system returned to the same state of operation as before the power cycle.

No anomalies were noted in the measured transmit power, varying less than 1 dB, during the voltage variation tests.

APPENDIX A

LS RESEARCH LLC
Wireless Product Development
Equipment Calibration

Date : 19-Apr-2011 Type Test : Radiated Emissions Job # : C-1177

Prepared By: Peter Customer : ASSA ABLOY Quote #: 310378

No.	Asset #	Description	Manufacturer	Model #	Serial #	Cal Date	Cal Due Date	Equipment Status
1	EE 960156	100kHz-1GHz Analog Signal Generator	Agilent	N5181A	MY49060062	6/7/2010	6/7/2011	Active Calibration
2	EE 960157	3Hz-13.2GHz Spectrum Analyzer	Agilent	E4445A	MY48250225	6/7/2010	6/7/2011	Active Calibration
3	EE 960158	RF Preselecter	Agilent	N9039A	MY46520110	6/7/2010	6/7/2011	Active Calibration
4	AA 960078	Log Periodic Antenna	EMCO	93146	9701-4855	10/19/2010	10/19/2011	Active Calibration
5	AA 960150	Bicon Antenna	ETS	3110B	0003-3346	10/19/2010	10/19/2011	Active Calibration
6	AA 960081	Double Ridge Horn Antenna	EMCO	3115	6907	1/4/2011	1/4/2012	Active Calibration
7	EE 960159	0.8 - 21GHz LNA	Mini-Circuits	ZVA-213X-S+	740411007	8/19/2010	8/19/2011	Active Calibration
8	AA 960158	Double Ridge Horn Antenna	EMCO	3117	109300	8/19/2010	8/19/2011	Active Calibration

Project Engineer: Peter Fiduccia Quality Assurance: Thomas J. Smith

LS RESEARCH LLC
Wireless Product Development
Equipment Calibration

Date : 19-Apr-2011 Type Test : Band-Edge Job # : C-1177

Prepared By: Peter Customer : ASSA ABLOY Quote #: 310378

No.	Asset #	Description	Manufacturer	Model #	Serial #	Cal Date	Cal Due Date	Equipment Status
1	AA 960078	Log Periodic Antenna	EMCO	93146	9701-4855	10/19/2010	10/19/2011	Active Calibration
2	EE 960156	100kHz-1GHz Analog Signal Generator	Agilent	N5181A	MY49060062	6/7/2010	6/7/2011	Active Calibration
3	EE 960157	3Hz-13.2GHz Spectrum Analyzer	Agilent	E4445A	MY48250225	6/7/2010	6/7/2011	Active Calibration
4	EE 960158	RF Preselecter	Agilent	N9039A	MY46520110	6/7/2010	6/7/2011	Active Calibration

Project Engineer: Peter Fiduccia Quality Assurance: Thomas J. Smith

LS RESEARCH LLC
Wireless Product Development
Equipment Calibration

Date : 19-Apr-2011 Type Test : Spurious Emissions Job # : C-1177

Prepared By: Peter Customer : ASSA ABLOY Quote #: 310378

No.	Asset #	Description	Manufacturer	Model #	Serial #	Cal Date	Cal Due Date	Equipment Status
1	AA 960144	Phaseflex	Gore	EKD01D010720	5800373	6/4/2010	6/4/2011	Active Calibration
2	EE 960073	Spectrum Analyzer	Agilent	E4446A	US45300564	9/22/2010	9/22/2011	Active Calibration

Project Engineer: Peter Fiduccia Quality Assurance: Thomas J. Smith

LS RESEARCH LLC
Wireless Product Development
Equipment Calibration

Date : 19-Apr-2011 Type Test : Radiated Emissions (109) Job # : C-1177

Prepared By: Peter Customer : ASSA ABLOY Quote #: 310378

No.	Asset #	Description	Manufacturer	Model #	Serial #	Cal Date	Cal Due Date	Equipment Status
1	EE 960156	100kHz-1GHz Analog Signal Generator	Agilent	N5181A	MY49060062	6/7/2010	6/7/2011	Active Calibration
2	EE 960157	3Hz-13.2GHz Spectrum Analyzer	Agilent	E4445A	MY48250225	6/7/2010	6/7/2011	Active Calibration
3	EE 960158	RF Preselecter	Agilent	N9039A	MY46520110	6/7/2010	6/7/2011	Active Calibration
4	AA 960078	Log Periodic Antenna	EMCO	93146	9701-4855	10/19/2010	10/19/2011	Active Calibration
5	AA 960150	Bicon Antenna	ETS	3110B	0003-3346	10/19/2010	10/19/2011	Active Calibration
6	AA 960081	Double Ridge Horn Antenna	EMCO	3115	6907	1/4/2011	1/4/2012	Active Calibration
7	EE 960159	0.8 - 21GHz LNA	Mini-Circuits	ZVA-213X-S+	740411007	8/19/2010	8/19/2011	Active Calibration
8	AA 960158	Double Ridge Horn Antenna	EMCO	3117	109300	8/19/2010	8/19/2011	Active Calibration

Project Engineer: Peter Fiduccia Quality Assurance: Thomas J. Smith

LS RESEARCH LLC
Wireless Product Development
Equipment Calibration

Date : 19-Apr-2011 Type Test : Occupied Bandwidth (6dB & 20dB) Job # : C-1177

Prepared By: Peter Customer : ASSA ABLOY Quote #: 310378

No.	Asset #	Description	Manufacturer	Model #	Serial #	Cal Date	Cal Due Date	Equipment Status
1	AA 960144	Phaseflex	Gore	EKD01D010720	5800373	6/4/2010	6/4/2011	Active Calibration
2	EE 960073	Spectrum Analyzer	Agilent	E4446A	US45300564	9/22/2010	9/22/2011	Active Calibration

Project Engineer: Peter Fiduccia Quality Assurance: Thomas J. Smith

LS RESEARCH LLC
Wireless Product Development
Equipment Calibration

Date : 19-Apr-2011 Type Test : Conducted Power Output Job # : C-1177

Prepared By: Peter Customer : ASSA ABLOY Quote #: 310378

No.	Asset #	Description	Manufacturer	Model #	Serial #	Cal Date	Cal Due Date	Equipment Status
1	AA 960144	Phaseflex	Gore	EKD01D010720	5800373	6/4/2010	6/4/2011	Active Calibration
2	EE 960073	Spectrum Analyzer	Agilent	E4446A	US45300564	9/22/2010	9/22/2011	Active Calibration

Project Engineer: Peter Fiduccia Quality Assurance: Thomas J. Smith

LS RESEARCH LLC
Wireless Product Development
Equipment Calibration

Date : 19-Apr-2011 Type Test : Power Spectral Density Job # : C-1177

Prepared By: Customer : ASSA ABLOY Quote #: 310378

No.	Asset #	Description	Manufacturer	Model #	Serial #	Cal Date	Cal Due Date	Equipment Status
1	AA 960144	Phaseflex	Gore	EKD01D010720	5800373	6/4/2010	6/4/2011	Active Calibration
2	EE 960073	Spectrum Analyzer	Agilent	E4446A	US45300564	9/22/2010	9/22/2011	Active Calibration

Project Engineer: Peter Fiduccia Quality Assurance: Thomas J. Smith

APPENDIX B
TEST STANDARDS – CURRENT PUBLICATION DATES RADIO

STANDARD #	DATE	Am. 1	Am. 2
ANSI C63.4	2009		
ANSI C63.10	2009		
CISPR 11	2009-05	2009-12 P	
CISPR 12	2007-05		
CISPR 14-1	2005-11	2008-11	
CISPR 14-2	2001-11	2001-11	2008-05
CISPR 16-1-1 Note 1	2010-01		
CISPR 16-1-2 Note 1	2003	2004-04	2006-07
CISPR 22	2008-09		
CISPR 24	1997-09	2001-07	2002-10
EN 55011	2007-05		
EN 55014-1	2006		
EN 55014-2	1997		
EN 55022	2006	2007	
EN 60601-1-2	2007-03		
EN 61000-3-2	2006-05		
EN 61000-3-3	2008-12		
EN 61000-4-2	2009-05		
EN 61000-4-3	2006-07	2008-05	
EN 61000-4-4	2004		
EN 61000-4-5	2006-12		
EN 61000-4-6	2009-05		
EN 61000-4-8	1994	2001	
EN 61000-4-11	2004-10		
EN 61000-6-1	2007-02		
EN 61000-6-2	2005-12		
EN 61000-6-3	2007-02		
EN 61000-6-4	2007-02		
FCC 47 CFR, Parts 0-15, 18, 90, 95	2008		
FCC Public Notice DA 00-1407	2000		
FCC ET Docket # 99-231	2002		
FCC Procedures	2007		
ICES 001	2006-06		
ICES 002	2009-08		
ICES 003	2004-02		
IEC 60601-1-2 Note 1	2007-03		
IEC 61000-3-2	2005-11	2008-03	2009-02
IEC 61000-3-3	2008-06		
IEC 61000-4-2	2008-12		
IEC 61000-4-3	2008-04	incl in 2008-04	2009-12 FD

STANDARD #	DATE	Am. 1	Am. 2
IEC 61000-4-4	2004-07	2010-10	
IEC 61000-4-5	2005-11		
IEC 61000-4-6	2008-10		
IEC 61000-4-8	2009-09		
IEC 61000-4-11	2004-03		
IEC 61000-6-1	2005-03		
IEC 61326-1	2006-06		
ISO 14982	1998-07		
MIL Std. 461E	1999-08		
RSS GEN	2007-06		
RSS 119	2007-06		
RSS 123	1999-11		
RSS 125	2000-03		
RSS 131	2003-07		
RSS 136	2002-10		
RSS 137	2009-02		
RSS 210	2007-06		
RSS 213	2005-12		
RSS 243	2005-11		
RSS 310	2007-06		

Note 1: Test not on LSR Scope of Accreditation.

Updated on 02-03-10
P=Project FD= Final Draft

APPENDIX C
Uncertainty Statement

This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level, using a coverage factor of k=2.

Table of Expanded Uncertainty Values, (K=2) for Specified Measurements

Measurement Type	Particular Configuration	Uncertainty Values
Radiated Emissions	3 – Meter chamber, Biconical Antenna	4.24 dB
Radiated Emissions	3-Meter Chamber, Log Periodic Antenna	4.8 dB
Radiated Emissions	10-Meter OATS, Biconical Antenna	4.18 dB
Radiated Emissions	10-Meter OATS, Log Periodic Antenna	3.92 dB
Conducted Emissions	Shielded Room/EMCO LISN	1.60 dB
Radiated Immunity	3 Volts/Meter in 3-Meter Chamber	1.128 Volts/Meter
Conducted Immunity	3 Volts level	1.0 V