

COMPLIANCE WORLDWIDE INC. TEST REPORT 206-10R2

In Accordance with the Requirements of
Federal Communications Commission Part 15.247, Subpart C
Industry Canada RSS 210, Issue 7, Annex 8

Low Power License-Exempt Radio Communication Devices
Intentional Radiators

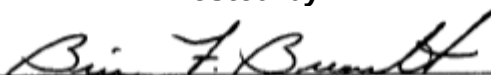
Issued to
NAPCO Security Systems, Inc.
333 Bayview Ave.
Amityville, NY 11701
(631) 842-9400

for the
NETWORX Gateway

FCC ID: AD8-ALNET1
IC: 596A-ALNET1

Report Issued on August 24, 2010

Tested by


Brian F. Breault

Reviewed by


Larry K. Stillings

This test report shall not be reproduced, except in full, without written permission from Compliance Worldwide, Inc.

Table of Contents

1. Scope	3
2. Product Details	3
2.1. Manufacturer	3
2.2. Model Number	3
2.3. Serial Number.....	3
2.4. Description.....	3
2.5. Power Source	3
2.6. Hardware Revision	3
2.7. Software Revision.....	3
2.8. EMC Modifications.....	3
3. Product Configuration.....	3
3.1. Support Equipment.....	3
3.2. Cables	3
3.3. Operational Characteristics & Software.....	3
3.4. Block Diagram	4
4. Measurements Parameters	4
4.1. Measurement Equipment Used to Perform Test	4
4.2. Measurement & Equipment Setup.....	4
4.3. Measurement Procedure	5
4.4. Choice of Operating Frequencies	5
6. Measurement Summary	6
7. Measurement Data	7
6.1. Antenna Requirement.....	7
6.2. Minimum 6 dB Bandwidth.....	7
6.3. 99% Bandwidth.....	9
6.4. Maximum Peak Conducted Output Power	11
6.4. Lower and Upper Band Edge Measurements	14
6.5. Spurious Radiated Emissions.....	16
6.5. Spurious Radiated Emissions (Harmonic Emissions)	18
6.7. Power Spectral Density	19
6.8. Conducted Emissions.....	20
6.9. Public Exposure to Radio Frequency Energy Levels	22
6.10. Spurious Emissions of License Exempt Receivers	22
7. Test Site Description	23

1. Scope

This test report certifies that the NAPCO Security Systems, Inc. NETWORKX Gateway, as tested, meets the FCC Part 15, Subpart C and Industry Canada RSS 210 requirements. The scope of this test report is limited to the test sample provided by the client, only in as much as that sample represents other production units. If any significant changes are made to the unit, the changes shall be evaluated and a retest may be required.

2. Product Details

- 2.1. Manufacturer:** NAPCO Security Systems, Inc.
- 2.2. Model Numbers:** NETWORKX Gateway module (Represents AL-IME, AL-IM80211, AL-IMEPOE and AL-IMEPOEP) and utilized by PDL-6100 Lockset representing the following models: DL6100, PDL 6500, DL6500, ETPDLN, ETDLN, NETPDK/DK)
- 2.3. Serial Number:** N/A
- 2.4. Description:** Hardwired Gateway Interface Module supports up to 2000 Networkx Locks, connects directly to a network using a standard RJ-45 Ethernet cable. This model has two antennas that are used to transmit to the locks via an Alarm Lock proprietary radio connection. Powered with Class 2, 6 VAC transformer (supplied).
- 2.5. Power Source:** 120 VAC to a supplied 6 VAC transformer
- 2.6. Hardware Rev.:** Gateway Circuit Board: 06767 Rev E
- 2.7. Software Rev.:** 3.81 (Firmware revision)
- 2.8. EMC Modifications:** None

3. Product Configuration

3.1. Support Equipment

Device	Manufacturer	Model	Serial No.	Comment
None				Device firmware is configured to simulate normal product operation.

3.2. Cables

Cable Type	Length	Shield	From	To
Generic CAT5 Cable	2 Meters	No	DUT	Unterminated

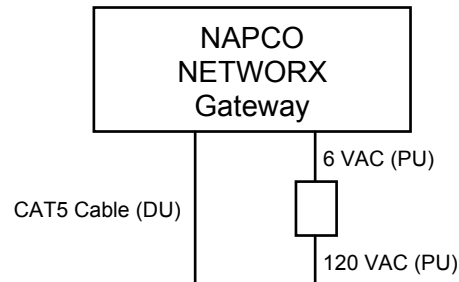
3.3. Operational Characteristics & Software

Entering the Gateway Test Mode

1. Plug in the power pack (6 VAC transformer).
2. Wait at least 30 seconds for the gateway to power up.
3. Using the eraser end of a pencil through the access hole, press and release the button on the gateway.
4. The unit will start transmitting at 915MHz.
5. Press and hold the button until the frequency changes. Once the unit reaches the highest channel it will cycle to the lowest channel.
6. Remove the power to stop transmitting.

3. Product Configuration (continued)

3.4. Block Diagram



4. Measurements Parameters

4.1. Measurement Equipment Used to Perform Tests

Device	Manufacturer	Model No.	Serial No.	Cal Due
Spectrum Analyzer	Agilent	E4407B	MY4510449	7/09/2010
EMI Receiver	Hewlett Packard	8546A	3330A00115	10/28/2010
Microwave Preamp	Hewlett Packard	8449B	3008A01323	9/22/2010
Bilog Antenna	Com-Power	AC-220	25509	8/6/2010
Horn Antenna	Electro-Metrics	EM-6961	6337	7/22/2010
Bandpass Filter	Mini-Circuits	VHP-16	0341	11/27/2010

4.2. Measurement & Equipment Setup

Test Dates:	4/5/2010 – 4/9/2010
Test Engineer:	Brian Breault
Normal Site Temperature (15 - 35°C):	21.6
Relative Humidity (20 -75%RH):	31
Frequency Range:	30 MHz to 9.22 GHz
Measurement Distance:	3 Meters
EMI Receiver IF Bandwidth:	100 kHz - 30 MHz to 1 GHz 1 MHz - Above 1 GHz
EMI Receiver Average Bandwidth:	300 kHz - 30 MHz to 1 GHz 3 MHz - Above 1 GHz
Detector Function:	Peak, Quasi-Peak & Average

4. Measurements Parameters (continued)

4.3. Measurement Procedure

The measurements detailed in this test report are based on the requirements in FCC Part 15, Section 15.247: Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz.

The test methods used to generate the data in this test report are in accordance with 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.

Radiated emissions limits are based on the requirements detailed in FCC Part 15, Section 15.209: Radiated emission limits, general requirements. Conducted emissions limits are based on the requirements detailed in FCC Part 15, Section 15.207: Conducted Limits.

The DUT was tested on its horizontal and vertical axes to determine which attitude produced the highest emissions relative to the limit. The attitude that produced the highest emissions relative to the limit was used in making final radiated emission measurements.

4.4. Choice of Operating Frequencies

The NAPCO Security Systems NETWORKX Gateway employs 9 channels in the 902 MHz to 928 MHz frequency band. In accordance with ANSI C63.4, Section 13.1.1, three channels are detailed in this test report:

- Low Channel – 906.775 MHz
- Middle Channel – 913.965 MHz
- High Channel – 921.155 MHz

5. Measurement Summary

Test Requirement	FCC Part 15.247 Reference	IC RSS Reference	Test Report Section	Result	Comment
Antenna Requirement	15.203		6.1	Compliant	
Minimum 6 dB Bandwidth	15.247 (a)	RSS-210 A8.2	6.2	Compliant	
99% Bandwidth	NA	RSS-GEN 4.6.1	6.3	Compliant	Industry Canada
Maximum Peak Conducted Output Power	15.247 (b) (3)	RSS-210 A8.4	6.4	Compliant	
Operation with directional antenna gains greater than 6 dBi	15.247 (b) (4)	NA	NA	Compliant	Antenna has 3 dBi gain
Lower and Upper Band Edge	15.247 (d)	RSS-210 A8.5	6.5	Compliant	
Spurious Radiated Emissions	15.247 (d)	RSS-210 Annex 7	6.6	Compliant	
Spurious Radiated Emissions (> GHz) - Harmonic Measurements	15.247 (d)	RSS-210 Annex 7	6.7	Compliant	
Power Spectral Density	15.247(e)	RSS-210 A8.2	6.7	Compliant	
Conducted Emissions	FCC Part 15	RSS-GEN 7.2.2	6.8	Compliant	
Public Exposure to Radio Frequency Energy Levels	1.1307 (b) (1)	NA	6.9	Compliant	
Spurious Emissions of License Exempt Receivers	NA	RSS-210 2.3 RSS-GEN 7.2.3	6.9	Compliant	

6. Measurement Data

6.1. Antenna Requirement (Section 15.203)

Requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section.

Status: The unit under test employs an external PCB mounted antenna which is non-user replaceable.

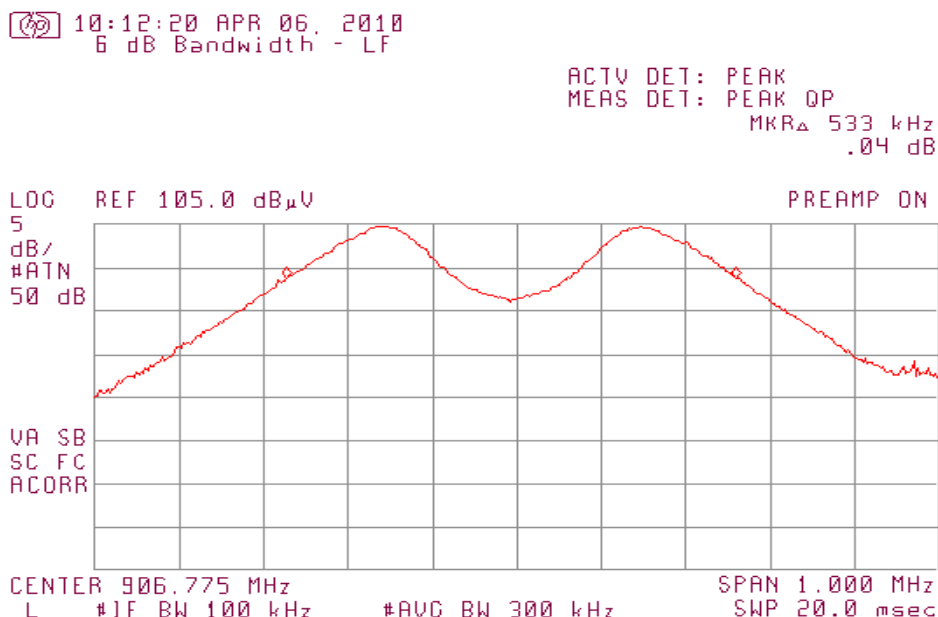
6.2. Minimum 6 dB Bandwidth (Section 15.247 (a))

Requirements: Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Note: In addition to the minimum 6 dB bandwidth measurements, 99% power bandwidth measurements are also provided.

Channel	Frequency (MHz)	6 dB Bandwidth (kHz)	Minimum 6 dB Bandwidth (kHz)	Result
Low	906.775	533	.500	Compliant
Mid	913.965	540	.500	Compliant
High	921.155	535	.500	Compliant

6.2.1. 6 dB Bandwidth – Low Channel



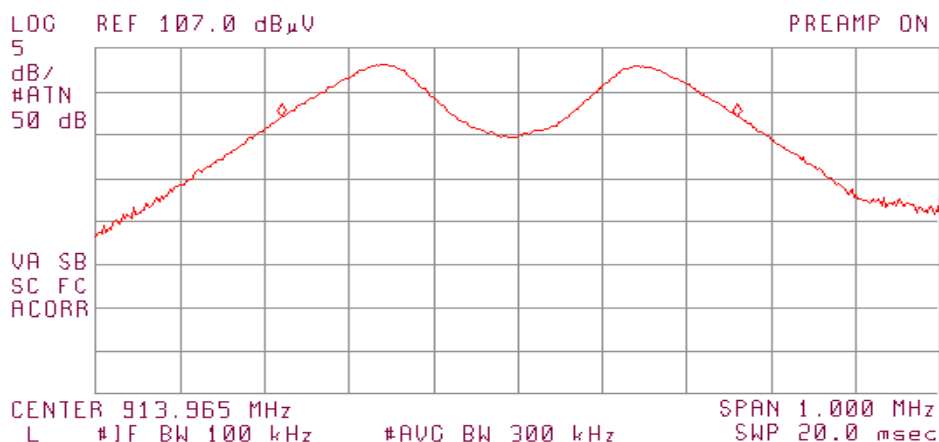
6. Measurement Data (continued)

6.2. Minimum 6 dB Bandwidth (Section 15.247 (a))

6.2.2. 6 dB Bandwidth – Middle Channel

11:09:44 APR 06, 2010
6 dB Bandwidth - MF

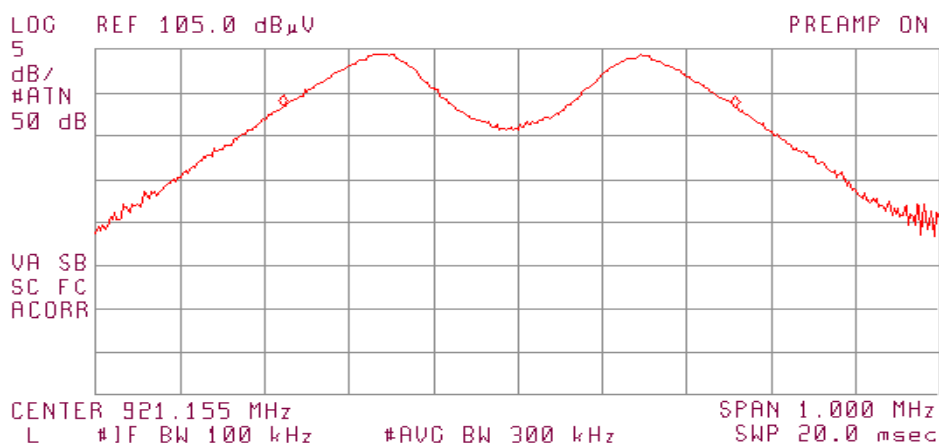
ACTV DET: PEAK
MEAS DET: PEAK QP
MKR Δ 540 kHz
.06 dB



6.2.3. 6 dB Bandwidth – High Channel

09:57:20 APR 06, 2010
6 dB Bandwidth - HF

ACTV DET: PEAK
MEAS DET: PEAK QP
MKR Δ 535 kHz
-.07 dB

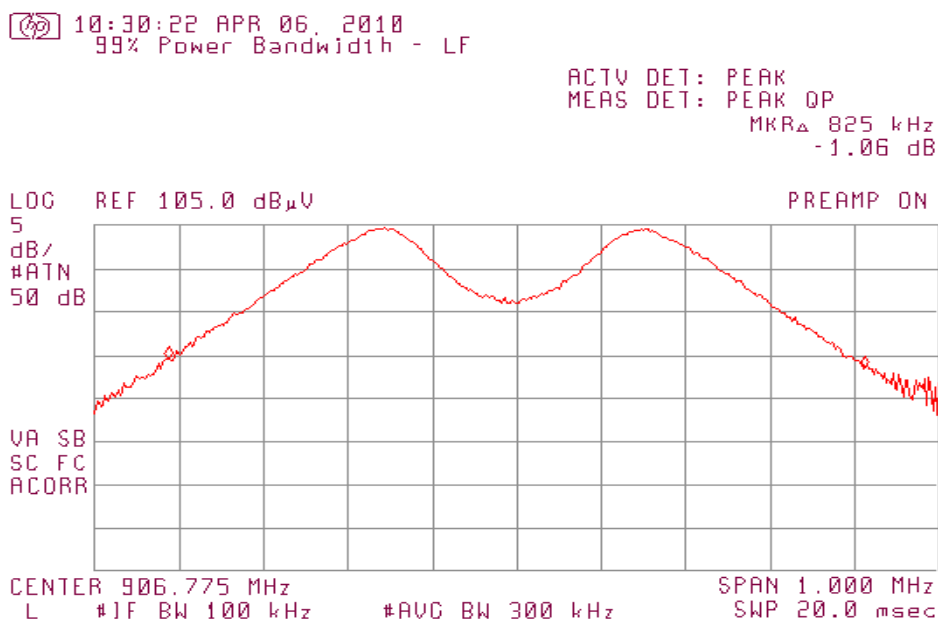


6. Measurement Data (continued)

6.3. 99% Power Bandwidth (RSS-GEN 4.6.1)

Channel	Frequency (MHz)	99% Bandwidth (kHz)
Low	906.775	825
Mid	913.965	855
High	921.155	835

6.3.1. 99% Power Bandwidth – Low Channel



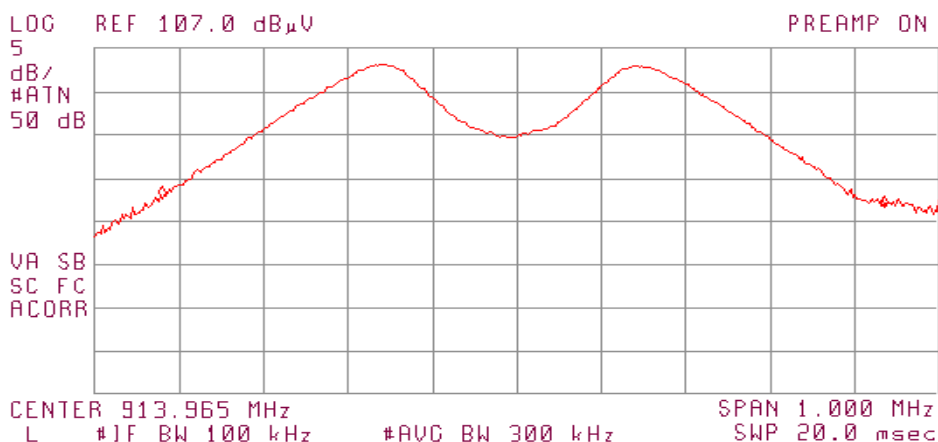
6. Measurement Data (continued)

6.3. 99% Power Bandwidth (RSS-GEN 4.6.1)

6.3.2. 99% Power Bandwidth – Middle Channel

10:53:51 APR 06, 2010
99% Power Bandwidth - MF

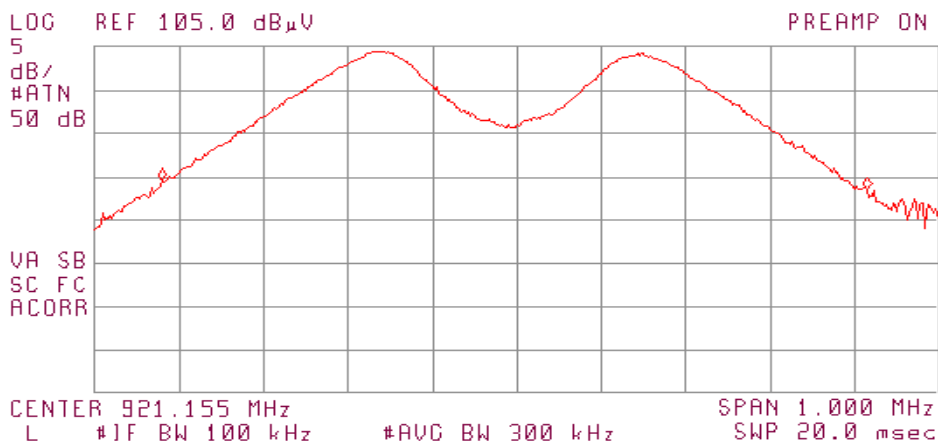
ACTV DET: PEAK
MEAS DET: PEAK QP
MKR Δ 855 kHz
-1.05 dB



6.3.3. 99% Power Bandwidth – High Channel

10:38:53 APR 06, 2010
99% Power Bandwidth - HF

ACTV DET: PEAK
MEAS DET: PEAK QP
MKR Δ 835 kHz
-1.06 dB



6. Measurement Data (continued)

6.4. Maximum Peak Conducted Output Power (Section 15.247 (b)(3))

Requirement: The maximum peak conducted output power of the intentional radiator shall not exceed the following: For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.

Note: The device under test is configured with a non-removable PCB antenna. The maximum peak conducted output power was derived according to the procedure outlined in KDB Publication No. 558074: Guidance on Measurements for Digital Transmission Systems: Alternative Test Procedures. Refer to page 6 of the DTS Attachment.

<https://fjallfoss.fcc.gov/oetcf/kdb/forms/FTSSearchResultPage.cfm?switch=P&id=21124>

https://fjallfoss.fcc.gov/oetcf/report_detail.cfm?report_url=/kdb/GetAttachment.html?id=20422

From this publication, the following formula was used to convert the field strength measurements to maximum peak conducted output power:

$$P = \frac{(E \times d)^2}{(30 \times G)}$$

P = the power in Watts.

E = the measured maximum field in V/m

d = the distance in meters of the field strength measurement

G = the numeric gain of the transmitting antenna over an isotropic radiator.

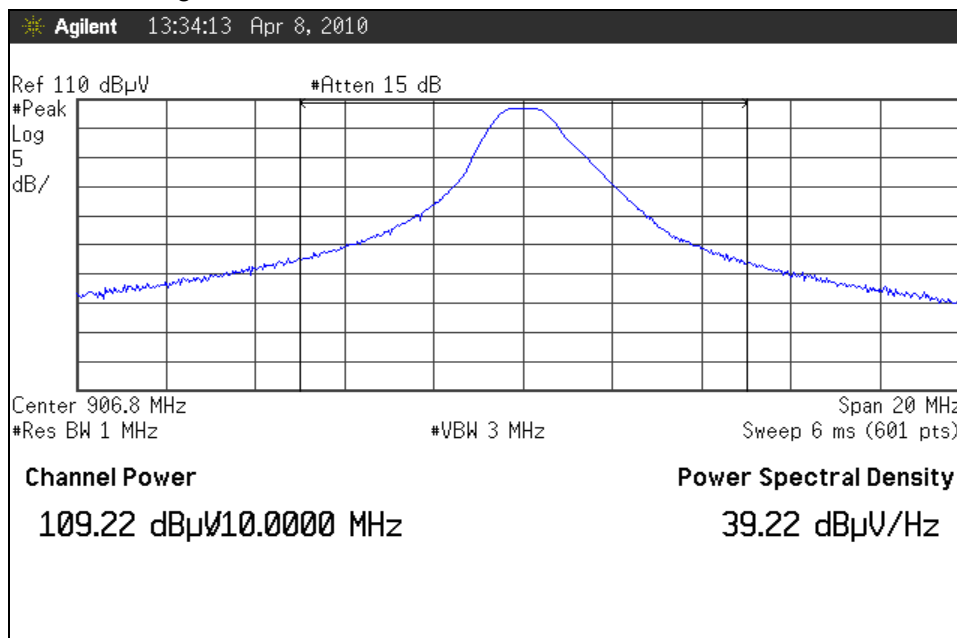
Channel	Frequency	Peak Field Strength	Distance	Antenna Gain ¹	Measured Output Power	Output Power Limit	Result
	(MHz)	(dBμV/m)	(m)	(dBi)	(mW)	(mW)	
Low	906.78	109.22	3.0	3.0	12.564	1000	Compliant
Middle	913.97	105.07	3.0	3.0	4.832	1000	Compliant
High	921.16	107.03	3.0	3.0	7.588	1000	Compliant

¹ Antenna gain data provided by the product manufacturer.

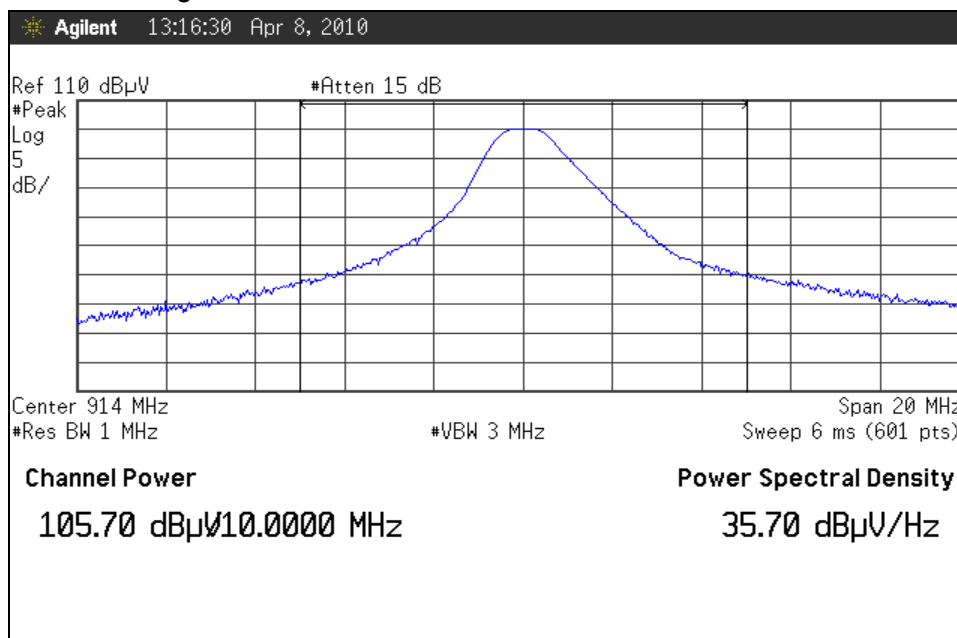
6. Measurement Data (continued)

6.4. Maximum Peak Conducted Output Power (Section 15.247 (b)(3))

6.4.1. Peak Field Strength – Low Channel



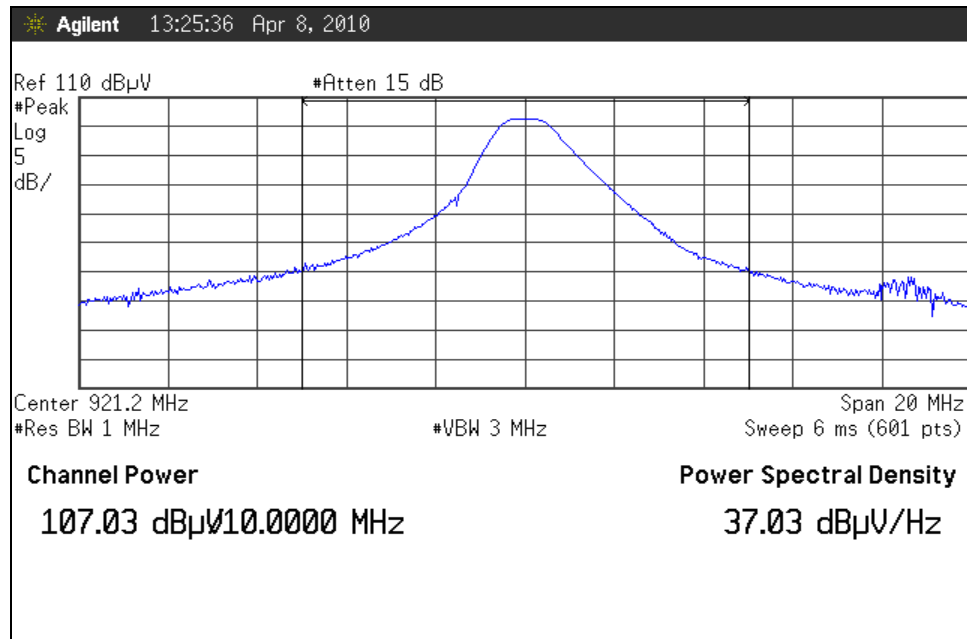
6.4.2. Peak Field Strength – Middle Channel



6. Measurement Data (continued)

6.4. Maximum Peak Conducted Output Power (Section 15.247 (b)(3)) (continued)

6.4.3. Peak Field Strength – High Channel



6. Measurement Data (continued)

6.5. Lower and Upper Band Edge (Section 15.247 (d))

Requirement: 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, provided the transmitter demonstrates compliance with the peak conducted power limits. 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(c)).

Lower Band Edge

Lowest Channel	Field Strength		Band Edge Frequency	Field Strength		15.209 Limit	Margin >20 dB	Result
	(dBµV/m)			(dBµV/m)		(dB)		
(MHz)	Peak	Average	(MHz)	Peak	Average	Average		
906.78	109.22	---	902	68.77	---	NA	-36.13	Compliant

Upper Band Edge

Highest Channel	Field Strength		Band Edge Frequency	Field Strength		15.209 Limit	Margin	Result
	(dBµV/m)			(dBµV/m)		(dB)	(dB)	
(MHz)	Peak	Average	(MHz)	Peak	Average	Average		
921.16	107.03	---	928	68.27	---	NA	-36.73	Compliant

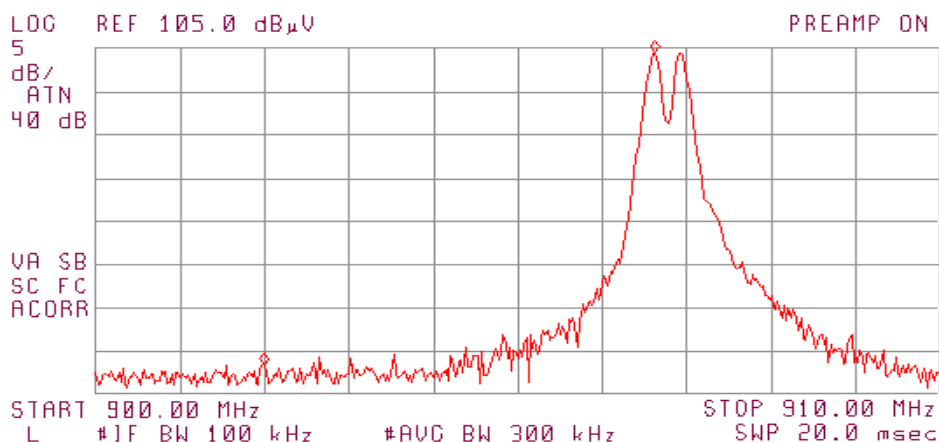
6. Measurement Data (continued)

6.5. Lower and Upper Band Edge (Section 15.247 (d)) (continued)

6.5.1. Lower Band Edge

13:55:28 APR 06, 2010
Upper Band Edge

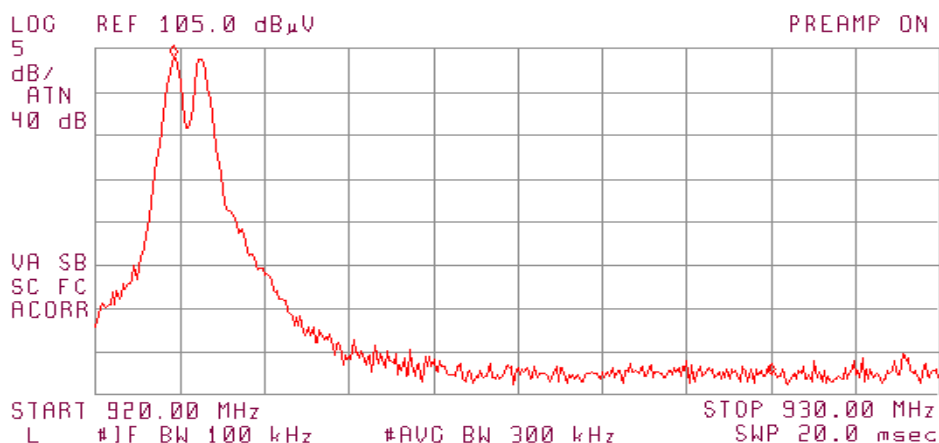
ACTV DET: PEAK
MEAS DET: PEAK QP
MKR Δ 4.63 MHz
36.13 dB



6.5.2. Upper Band Edge

13:50:34 APR 06, 2010
Upper Band Edge

ACTV DET: PEAK
MEAS DET: PEAK QP
MKR Δ -7.08 MHz
36.73 dB



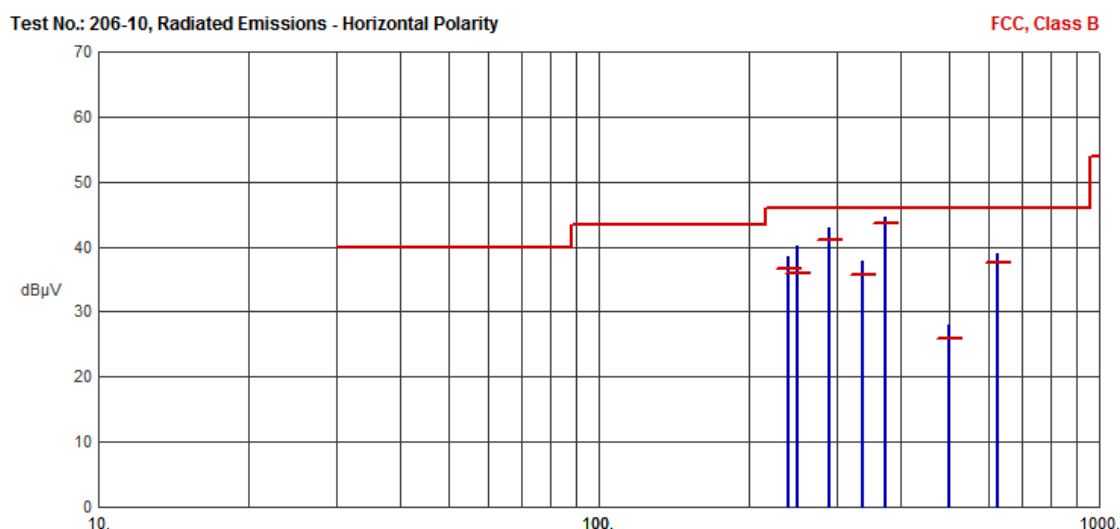
6. Measurement Data (continued)

6.6. Spurious Radiated Emissions (30 MHz to 40 GHz)

6.6.1. Regulatory Limit: FCC Part 209, Quasi-Peak

Frequency Range (MHz)	Distance (Meters)	Limit (dBμV/m)
30 to 88	3	40.0
88 to 216	3	43.5
216 to 960	3	46.0
>960	3	54.0

6.6.2. Test Results, 30 MHz to 1 GHz, Horizontal Polarity

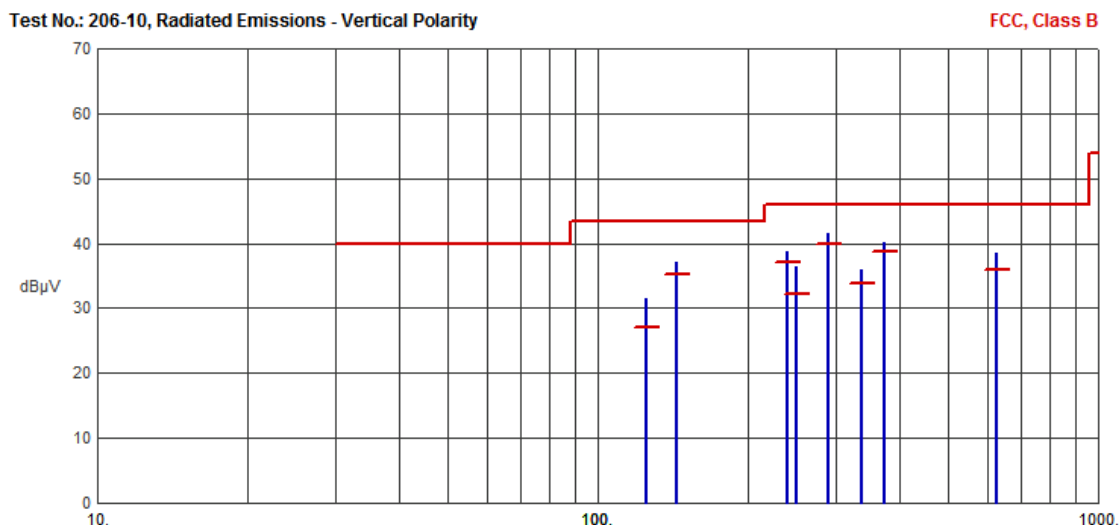


Frequency (MHz)	Pk Amp (dBμV/m)	QP Amp (dBμV/m)	QP Limit (dBμV/m)	Margin (dB)	Ant Ht (cm)	Table (Deg)	Comments
240.0058	38.46	36.57	46.00	-9.43	N/A	N/A	
250.0090	40.04	35.91	46.00	-10.09	N/A	N/A	
287.9926	42.88	41.14	46.00	-4.86	N/A	N/A	
336.0062	37.85	35.68	46.00	-10.32	N/A	N/A	
375.0043	44.61	43.72	46.00	-2.28	N/A	N/A	
500.0003	27.99	25.90	46.00	-20.10	N/A	N/A	
625.0131	38.99	37.56	46.00	-8.44	N/A	N/A	

6. Measurement Data (continued)

6.6. Spurious Radiated Emissions (30 MHz to 40 GHz) (continued)

6.6.3. Test Results, 30 MHz to 1 GHz, Vertical Polarity



Frequency (MHz)	Pk Amp (dBμV/m)	QP Amp (dBμV/m)	QP Limit (dBμV/m)	Margin (dB)	Ant Ht (cm)	Table (Deg)	Comments
124.9908	31.49	27.08	43.50	-16.42	N/A	N/A	
144.0116	37.08	35.34	43.50	-8.16	N/A	N/A	
239.9968	38.68	37.00	46.00	-9.00	N/A	N/A	
249.9914	36.49	32.28	46.00	-13.72	N/A	N/A	
288.0136	41.64	39.94	46.00	-6.06	N/A	N/A	
336.0080	36.00	33.76	46.00	-12.24	N/A	N/A	
374.9993	40.08	38.78	46.00	-7.22	N/A	N/A	
625.0115	38.59	36.02	46.00	-9.98	N/A	N/A	

6.6.4. Test Results Above 1 GHz

There were no measurable emissions other than the emissions tabled in Section 6.7.

6. Measurement Data (continued)

6.7. Spurious Radiated Emissions (Harmonic Emissions)

Frequency (MHz)	Peak (dBμV/m) ¹	Avg (dBμV/m) ¹	Limit (dB)	Margin (dB)	Pol (H/V)	Ht (cm)	TT Pos (Deg)	Notes	Results
1813.55	59.28	51.52	54	-2.48	V	127	0	Low Frequency	Compliant
2720.33	51.27	42.45	54	-11.55	V	188	260		
3627.10	51.42	43.45	54	-10.55	V	127	355		
4533.88	51.77	41.07	54	-12.93	V	127	280		
5440.65	58.07	50.48	54	-3.52	V	116	15		
6347.43	54.01	43.82	54	-10.18	V	138	345		
7254.20	54.49	42.78	54	-11.22	V	146	3		
8160.98	54.02	40.17	54	-13.83	V	146	0		
9067.75	53.28	40.31	54	-13.69	V	140	0		
1827.93	45.58	34.25	54	-19.75	V	132	355	Middle Frequency	Compliant
2741.90	52.14	45.15	54	-8.85	H	116	178		
3655.86	51.60	42.68	54	-11.32	H	103	178		
4569.83	53.10	44.24	54	-9.76	H	161	275		
5483.79	59.40	51.20	54	-2.80	H	131	175		
6397.76	53.83	43.52	54	-10.48	V	151	357		
7311.72	55.22	46.67	54	-7.33	V	160	5		
8225.69	53.20	43.84	54	-10.16	H	101	0		
9139.65	53.33	40.47	54	-13.53	V	100	0		
1842.31	48.04	41.39	54	-12.61	H	100	250	High Frequency	Compliant
2763.47	50.45	43.33	54	-10.67	H	100	180		
3684.62	50.71	41.46	54	-12.54	V	126	355		
4605.78	57.06	49.44	54	-4.56	V	127	30		
5526.93	58.70	51.17	54	-2.83	H	118	185		
6448.09	58.70	49.17	54	-4.83	V	174	355		
7369.24	53.87	44.20	54	-9.80	V	173	175		
8290.40	52.89	39.90	54	-14.10	H	100	0		
9211.55	53.52	40.70	54	-13.30	V	100	0		

¹ All correction factors are stored in the spectrum analyzer and applied to this column entry.

6. Measurement Data (continued)

6.8. Power Spectral Density

Requirement: 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.

Note: Refer to Section 6.4: Maximum Peak Conducted Output Power for the method used to determine the power spectral density.

Channel	PSD ¹	Distance	Antenna Gain ²	PSD ³	Limit	Result
	(dBμV/Hz)			(dBm/3 kHz)	(dBm/3 kHz)	
Low	39.22	3.0	3.0	-24.009	8	Compliant
Middle	35.70	3.0	3.0	-27.529	8	Compliant
High	37.03	3.0	3.0	-26.199	8	Compliant

¹ Refer to Section 6.4: Maximum Peak Conducted Output Power

² The antenna gain data was provided by the product manufacturer.

³ A correction factor of 35 dB was added to for the spectral conversion.

6. Measurement Data (continued)

6.9. Conducted Emissions

6.9.1. FCC Part 15.107, Conducted Emissions Limits

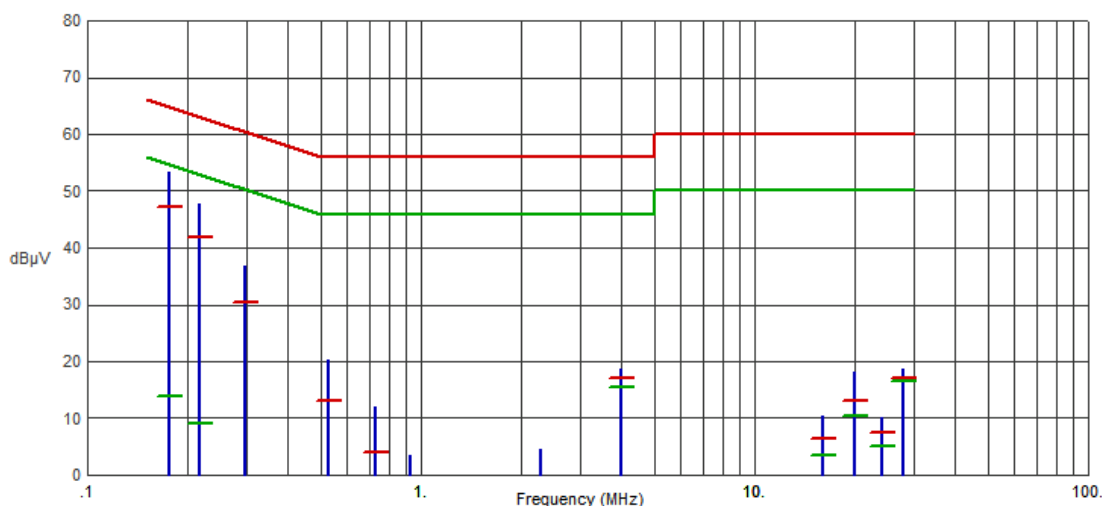
Frequency Range (MHz)	Limits (dBμV)	
	Quasi-Peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5.0	56	46
5.0 to 30.0	60	50

* Decreases with the logarithm of the frequency.

6.9.2. 120 Volts, 60 Hz, Phase

Test No.: 206-10, 120 Volts, 60 Hz Phase

FCC, Class B



Frequency (MHz)	Pk Amp (dBμV)	QP Amp (dBμV)	QP Limit (dBμV)	QP Margin (dB)	Avg Amp (dBμV)	Avg Limit (dBμV)	Avg Margin (dB)	Comments
.1751	53.37	47.27	64.71	-17.44	13.74	54.71	-40.97	
.2173	47.68	41.80	62.92	-21.12	9.07	52.92	-43.85	
.2958	36.91	30.31	60.36	-30.05	-2.10	50.36	-52.46	
.5306	20.21	13.09	56.00	-42.91	-8.77	46.00	-54.77	
.7299	11.91	3.96	56.00	-52.04	-7.69	46.00	-53.69	
.9304	3.52	-1.33	56.00	-57.33	-7.65	46.00	-53.65	
2.2843	4.44	-.44	56.00	-56.44	-7.04	46.00	-53.04	
4.0001	18.69	16.97	56.00	-39.03	15.42	46.00	-30.58	
16.0021	10.33	6.40	60.00	-53.60	3.43	50.00	-46.57	
19.9987	18.20	13.00	60.00	-47.00	10.41	50.00	-39.59	
24.0012	10.08	7.59	60.00	-52.41	5.14	50.00	-44.86	
28.0016	18.70	17.16	60.00	-42.84	16.41	50.00	-33.59	

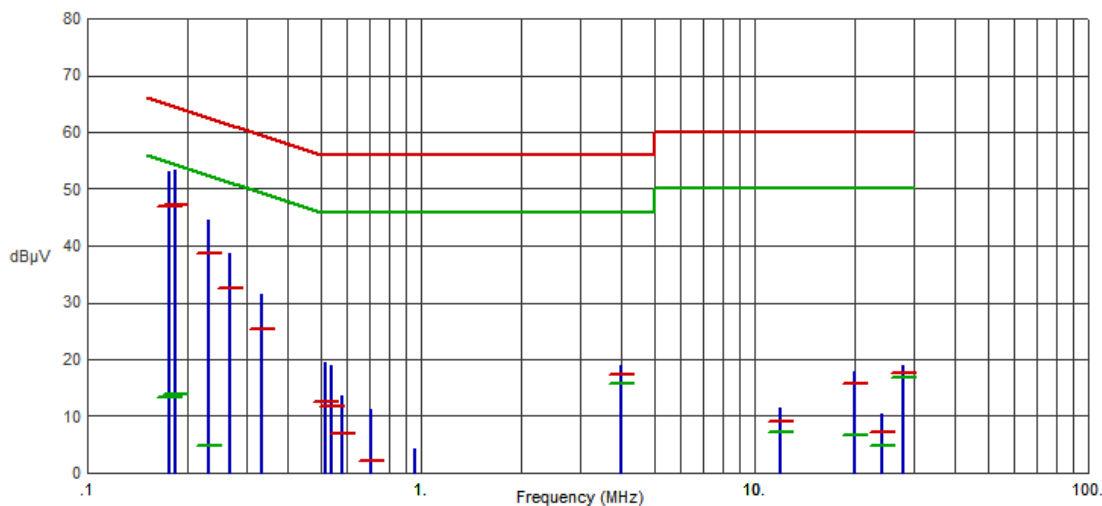
6. Measurement Data (continued)

6.9. Conducted Emissions

6.9.3. 120 Volts, 60 Hz, Neutral

Test No.: 206-10, 120 Volts, 60 Hz Neutral

FCC, Class B



Frequency (MHz)	Pk Amp (dBμV)	QP Amp (dBμV)	QP Limit (dBμV)	QP Margin (dB)	Avg Amp (dBμV)	Avg Limit (dBμV)	Avg Margin (dB)	Comments
.1757	52.96	46.99	64.69	-17.70	13.35	54.69	-41.34	
.1828	53.37	47.30	64.36	-17.06	13.91	54.36	-40.45	
.2317	44.50	38.57	62.39	-23.82	4.75	52.39	-47.64	
.2680	38.79	32.59	61.18	-28.59	-0.02	51.18	-51.20	
.3321	31.49	25.27	59.40	-34.13	-6.10	49.40	-55.50	
.5173	19.43	12.45	56.00	-43.55	-8.63	46.00	-54.63	
.5404	18.86	11.83	56.00	-44.17	-8.65	46.00	-54.65	
.5785	13.62	6.83	56.00	-49.17	-7.78	46.00	-53.78	
.7090	11.27	2.08	56.00	-53.92	-7.73	46.00	-53.73	
.9596	4.29	-1.30	56.00	-57.30	-7.63	46.00	-53.63	
3.9996	19.01	17.27	56.00	-38.73	15.70	46.00	-30.30	
12.0009	11.49	9.07	60.00	-50.93	7.33	50.00	-42.67	
19.9797	17.96	15.83	60.00	-44.17	6.62	50.00	-43.38	
23.9993	10.33	7.20	60.00	-52.80	4.71	50.00	-45.29	
28.0014	18.96	17.48	60.00	-42.52	16.73	50.00	-33.27	

6. Measurement Data (continued)

6.9. Public Exposure to Radio Frequency Energy Levels (15.247(i) (1.1307 (b)(1)) RSS-GEN 5.5, RSS 102

Channel	Freq.	MPE Distance (cm)	DUT Output Power (dBm)	DUT Antenna Gain (dBi)	Power Density		Limit (mW/cm2)	Result
					(mW/cm2)	(W/m2)		
		(1)	(2)	(3)	(4)		(5)	
Low	906.775	20.0	10.99	3.00	0.0049871	0.0498714	1	Compliant
Middle	913.965	20.0	6.84	3.00	0.0019180	0.0191801	1	Compliant
High	921.155	20.0	8.80	3.00	0.0030120	0.0301198	1	Compliant

$$PD = \frac{OP + AG}{(4 \times \pi \times d^2)}$$

PD = Power Density (mW/cm²)

OP = DUT Output Power (dBm)

AG = DUT Antenna Gain (dBi)

d = MPE Distance (cm)

1. Reference CFR 2.1093(b): For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user.
2. Sections 6.4 of this test report.
3. Data provided by the product manufacturer.
4. Power density is calculated from field strength measurement and antenna gain.
5. Reference CFR 1.1310, Table 1: Limits for Maximum Permissible Exposure (MPE), Section (B): Limits for General Population/Uncontrolled Exposure.

6. Measurement Data (continued)

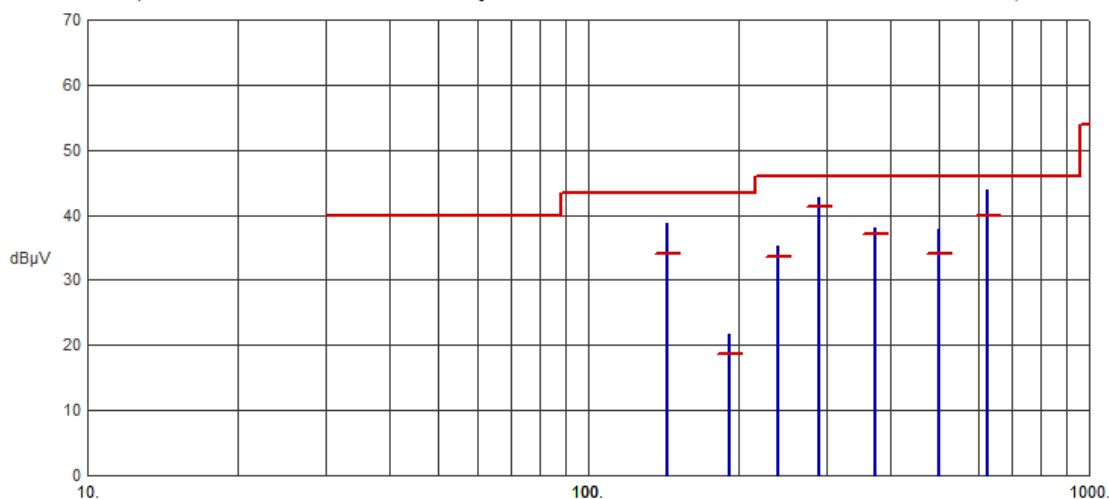
6.10. Spurious Emissions of License Exempt Receivers RSS-210 2.3, RSS-GEN 7.2.3

Requirement: Category I license-exempt receivers are required to have their spurious emissions comply with Section 7.2.3 of RSS-Gen.

6.10.1. Horizontal Polarity

Test No.: 206-10, Radiated Emissions - Horizontal Polarity

FCC, Class B



Frequency (MHz)	Pk Amp (dBμV/m)	QP Amp (dBμV/m)	QP Limit (dBμV/m)	Margin (dB)	Ant Ht (cm)	Table (Deg)	Comments
143.9939	38.75	33.95	43.50	-9.55	N/A	N/A	
192.0096	21.70	18.61	43.50	-24.89	N/A	N/A	
240.0034	35.34	33.57	46.00	-12.43	N/A	N/A	
288.0030	42.62	41.22	46.00	-4.78	N/A	N/A	
374.9994	38.14	37.16	46.00	-8.84	N/A	N/A	
499.9994	37.75	34.17	46.00	-11.83	N/A	N/A	
625.0138	43.92	39.92	46.00	-6.08	N/A	N/A	

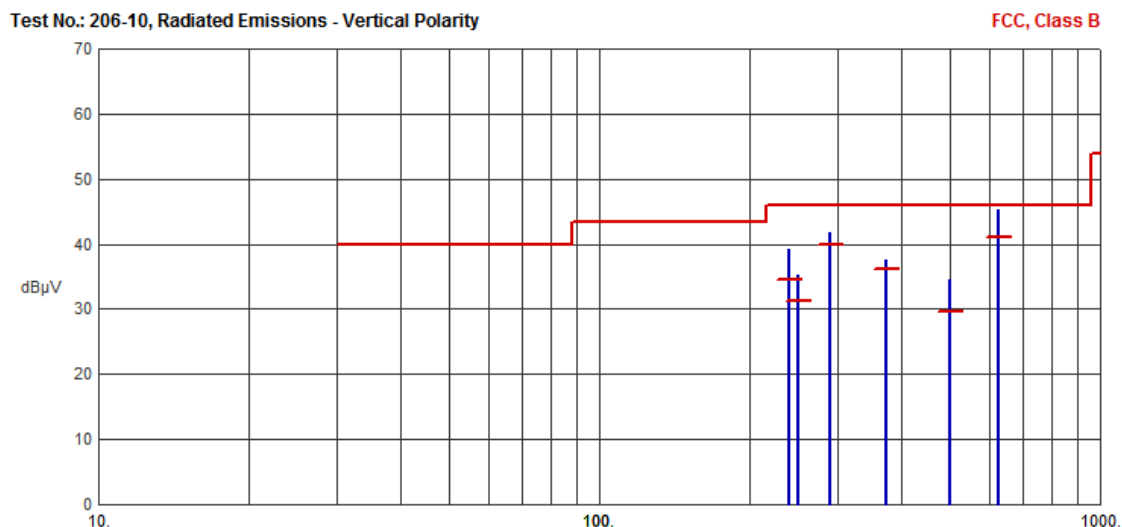
Test Number: 206-10R2

Issue Date: 8/27/2010

6. Measurement Data (continued)

6.10. Spurious Emissions of License Exempt Receivers RSS-210 2.3, RSS-GEN 7.2.3

6.10.2. Vertical Polarity



Frequency (MHz)	Pk Amp (dBμV/m)	QP Amp (dBμV/m)	QP Limit (dBμV/m)	Margin (dB)	Ant Ht (cm)	Table (Deg)	Comments
240.0092	39.25	34.63	46.00	-11.37	N/A	N/A	
249.9956	35.28	31.32	46.00	-14.68	N/A	N/A	
288.0206	41.83	39.84	46.00	-6.16	N/A	N/A	
375.0100	37.64	36.26	46.00	-9.74	N/A	N/A	
499.9995	34.45	29.63	46.00	-16.37	N/A	N/A	
625.0004	45.34	41.12	46.00	-4.88	N/A	N/A	

7. Test Site Description

Compliance Worldwide is located at 357 Main Street in Sandown, New Hampshire. The test sites at Compliance Worldwide are used for conducted and radiated emissions testing in accordance with Federal Communications Commission (FCC) and Industry Canada standards. A description of the test sites is on file with the FCC (registration number **96392**) and Industry Canada (file number **IC 3023A-1**).

The radiated emissions test site is a 3 and 10 meter enclosed open area test site (OATS). Personnel, support equipment and test equipment are located in the basement beneath the OATS ground plane.

The conducted emissions site is part of a 16' x 20' x 12' ferrite tile chamber and uses one of the walls for the vertical ground plane required by EN 55022.

Both sites are designed to test products or systems 1.5 meter W x 1.5 meter L x 2.0 meter H, floor standing or table top.