COMPLIANCE WORLDWIDE INC.
TEST REPORT 106-07

In Accordance with the Requirements of

Industry Canada RSS 210, Issue 6
Federal Communications Commission CFR Title 47 Part 15.249, Subpart C
Low Power License-Exempt Radio Communication Devices
Intentional Radiators

Issued to

Exavera Technologies, Inc.
195 New Hampshire Ave. Suite155
Portsmouth, NH 03801

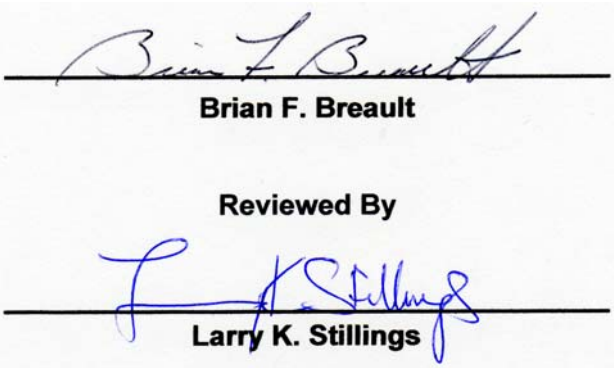
Tel: (603) 570-4000
Fax:(603) 570-4001

for

Vera-T Asset Tag
(Fishercat VTA 311 and Spinner VTA 331)
Transmitters

FCC ID: T2R-VTA311

Report Issued on January 26, 2007



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1. Scope

This test report certifies that the Exavera Technologies, Inc. Vera-T Asset Tag (Fishercat VTA 311 and Spinner VTA 331) Transmitter, as tested, meets the RSS 210 Rules and FCC Part 15, Subpart C 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: Exavera

2.2. Model Number: Vera-T Asset Tag Fishercat VTA 311 (represents transmitter models Fishercat VTA 311 and Spinner VTA 331)

2.3. Serial Number: 101021000003C4

2.4. Description: The Exavera Vera-T Asset Tag (Fishercat VTA 311 and Spinner VTA 331) is part of a complete suite of intelligent RFID devices to maximize safety and optimize workflow in secure environments.

The product dimensions are 2.1 in. x 1.3 in. x .57 in. and the product weight is .7 oz. It can be operated over five programmable frequencies: 905.25 MHz, 910.25 MHz, 915.25 MHz, 920.25 MHz, and 925.25 MHz.

2.5. Power Source: 3 Volt DC integral, non-customer replaceable battery

2.6. EMC Modifications: None

3. Product Configuration

3.1. Operational Characteristics & Software

The Exavera Vera-T Asset Tag (Fishercat VTA 311 and Spinner VTA 331) can be operated over five programmable frequencies as outlined in the product description. The sample provided was tested at the lowest, middle and highest operating frequencies. In addition, the sample provided was programmed to constantly transmit. Under normal operating conditions, the product would transmit for a short time period (approximately 6 milliseconds) followed by several seconds of being idle. All operational characteristics were programmed into the product firmware.

3.2. Block Diagram

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4. Measurements Parameters

4.1. Measurement Equipment Used to Perform Test

Device	Manufacturer	Model No.	Serial No.	Cal Due
Spectrum Analyzer	Hewlett Packard	8593E	3829A03887	3/13/2007
Microwave Preamp	Hewlett Packard	8449B	3008A01323	9/21/2008
Biconilog Antenna	Com-Power	AC220	25509	7/31/2007
Horn Antenna	Electro-Metrics	EM-6961	6337	8/25/2007

4.2. Measurement & Equipment Setup

Test Date:	1/11/2007
Test Engineer:	Brian Breault
Normal Site Temperature (15 - 35°C):	21.6
Relative Humidity (20 -75%RH):	35
Frequency Range:	902.8 – 927.54 MHz
Measurement Distance:	3 Meters
EMI Receiver IF Bandwidth:	Depends on measurement
EMI Receiver Avg Bandwidth:	Depends on measurement
Detector Function:	Depends on measurement

4.3. Measurement Procedure

Test measurements were made in accordance FCC Part 15.249: Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz, 5725 - 5875 MHz, and 24.0 - 24.25 GHz.

The test methods used to generate the data is this test report is 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

In accordance with ANSI C63.4-2003, section 13.1.4.1, c), the device under test was rotated through three orthogonal axes to determine which attitude produced the highest emission relative to the limit. The attitude that produced the highest emission relative to the limit was used for all radiated emission measurements.

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5. Measurement Summary

Test Requirement	FCC Rule Requirement	Test Report Section	Result	Comment
Antenna Requirement	15.203	N.A	Compliant	Unit has an internal PCB etched antenna.
Radiated Field Strength of Fundamental	15.249 (a)	6.1	Compliant	
Radiated Field Strength of Harmonics	15.249 (a)	6.2	Compliant	
Occupied Bandwidth		6.3	Compliant	
99% Bandwidth		6.4	Compliant	
Band Edge Measurements	15.249 (d), 15.209	6.5	Compliant	
Spurious Radiated Emissions	15.249 (d), 15.209	6.6	Compliant	No measurable spurious emissions.
Determination of Average Factor		6.7	Compliant	
Conducted Emissions	15.207	N/A	N/A	DUT utilizes an internal 3 VDC lithium battery that is not customer replaceable.

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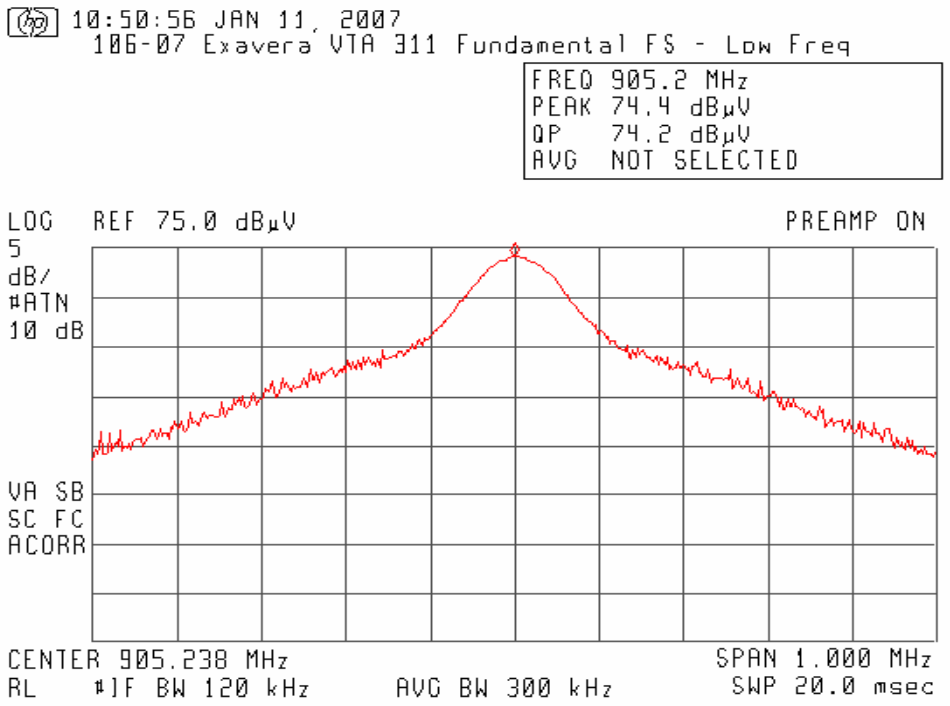
6. Measurement Data

6.1. Radiated Field Strength of Fundamental (15.249, Section (a))

Requirement: The 3 meter field strength of the fundamental emissions from intentional radiators operated within the 902-928 MHz frequency bands shall comply with the following requirement: 50 millivolts/meter (94 dBµV/m), quasi-peak mode measurement.

Channel	Frequency (MHz)	Amplitude (dBµV/m)		Q-Peak Limit	Margin (dB)	Ant Pol	Ant Ht	TT Pos	Result
		Peak	Q-Peak			H/V	cm	Deg	P/F
Low	905.238	74.4	74.2	94.0	19.8	H	100	230	Passed
Middle	915.238	73.2	73.0	94.0	21.0	H	100	280	Passed
High	925.233	73.8	73.3	94.0	20.7	H	100	60	Passed

6.1.1. Radiated Field Strength of Fundamental – Low Frequency



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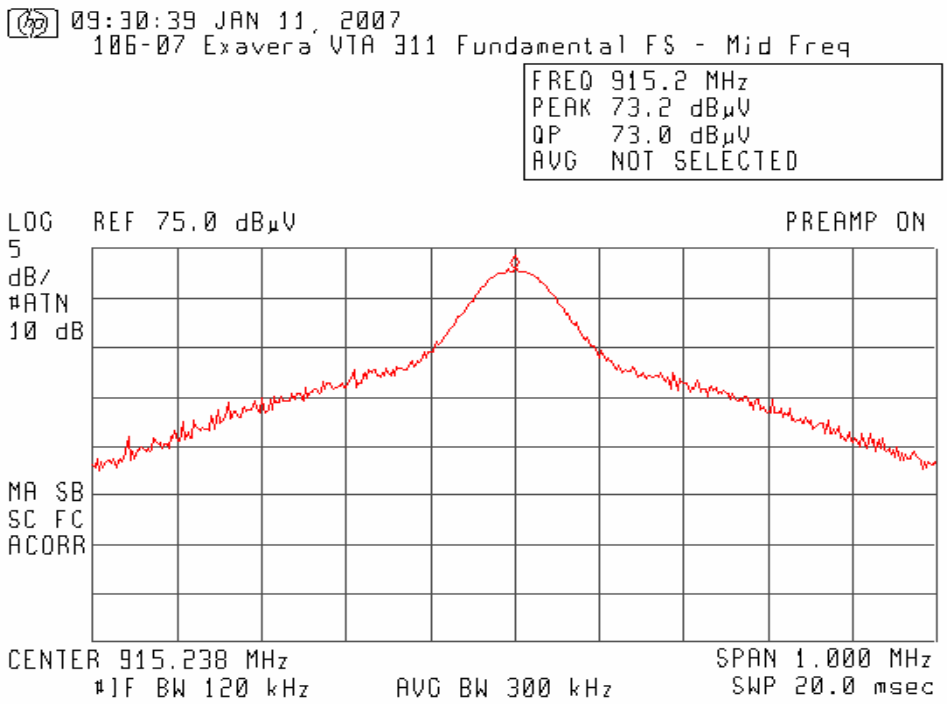
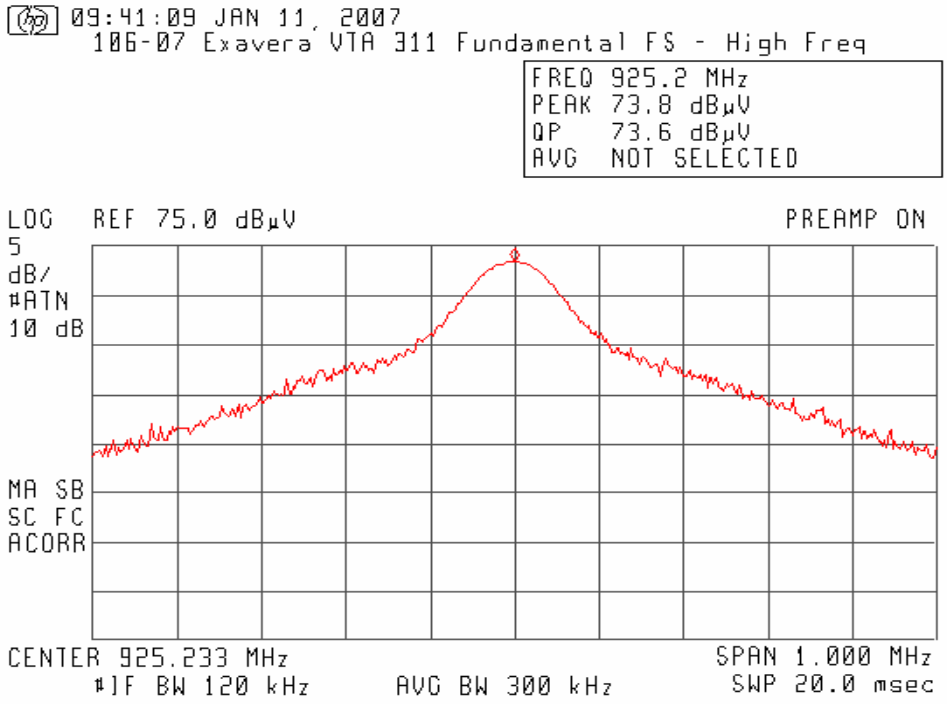
6. Measurement Data (continued)

6.1.2. Radiated Field Strength of Fundamental – Middle Frequency



6.1.3. Radiated Field Strength of Fundamental – High Frequency



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6. Measurement Data (continued)

6.2. Radiated Field Strength of Harmonics (15.249, Section (a))

Requirement: The 3 meter field strength of the harmonic emissions from intentional radiators operated within the 902-928 MHz frequency bands shall comply with the following: 500 microvolts/meter (54 dBµV/m), average mode measurement. Peak field strength may not be greater than 20 dB above the average limit (74 dBµV/m).

6.2.1. Low Channel (905.240 MHz)

Frequency (MHz)	Amplitude (dBµV)		Corr. Fact. (dB)	Amplitude (dBµV/m)		Average Limit	Margin (dB)	Ant Pol	Ant Ht	TT Pos	Result
	Peak	Avg		Peak	Avg			H/V	cm	Deg	
1810.480	63.98	43.98	-3.96	60.02	40.02	54.00	-13.98	H	100	270	Passed
2715.720[1]	47.13	27.13	1.45	48.58	28.58	54.00	-25.42	H	101	0	Passed
3620.960[1]	45.70	25.70	3.80	49.50	29.50	54.00	-24.50	H	100	181	Passed
4526.200[1]	44.00	24.00	7.72	51.72	31.72	54.00	-22.28	H	100	0	Passed
5431.440	44.92	24.92	8.40	53.32	33.32	54.00	-20.68	Noise Floor			Passed
6336.680	42.26	22.26	8.21	50.47	30.47	54.00	-23.53	Noise Floor			Passed
7241.920[1]	44.22	24.22	11.35	55.57	35.57	54.00	-18.43	Noise Floor			Passed
8147.160[1]	44.60	24.60	16.02	60.62	40.62	54.00	-13.38	Noise Floor			Passed
9052.400	43.19	23.19	19.38	62.57	42.57	54.00	-11.43	Noise Floor			Passed

[1] Frequency falls within the Restricted Bands of Operation. See FCC Part 15, Section 15.205 for additional information.

6.2.2. Middle Channel (915.240 MHz)

Frequency (MHz)	Amplitude (dBµV)		Corr. Fact. (dB)	Amplitude (dBµV/m)		Average Limit	Margin (dB)	Ant Pol	Ant Ht	TT Pos	Result
	Peak	Avg		Peak	Avg			H/V	cm	Deg	
1830.480	65.80	45.80	-3.99	61.81	41.81	54.00	-12.19	H	100	90	Passed
2745.720[1]	52.71	32.71	0.77	53.48	33.48	54.00	-20.52	H	208	20	Passed
3660.960[1]	46.81	26.81	3.76	50.57	30.57	54.00	-23.43	H	100	10	Passed
4576.200[1]	48.16	28.16	8.57	56.73	36.73	54.00	-17.27	H	100	5	Passed
5491.440	43.21	23.21	8.86	52.07	32.07	54.00	-21.93	Noise Floor			Passed
6406.680	43.01	23.01	9.49	52.50	32.50	54.00	-21.50	Noise Floor			Passed
7321.920[1]	42.31	22.31	14.16	56.47	36.47	54.00	-17.53	Noise Floor			Passed
8237.160[1]	43.42	23.42	16.08	59.50	39.50	54.00	-14.50	Noise Floor			Passed
9152.400[1]	44.28	24.28	19.18	63.46	43.46	54.00	-10.54	Noise Floor			Passed

[1] Frequency falls within the Restricted Bands of Operation. See FCC Part 15, Section 15.205 for additional information.

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6. Measurement Data (continued)

6.2.3. High Channel (925.240 MHz)

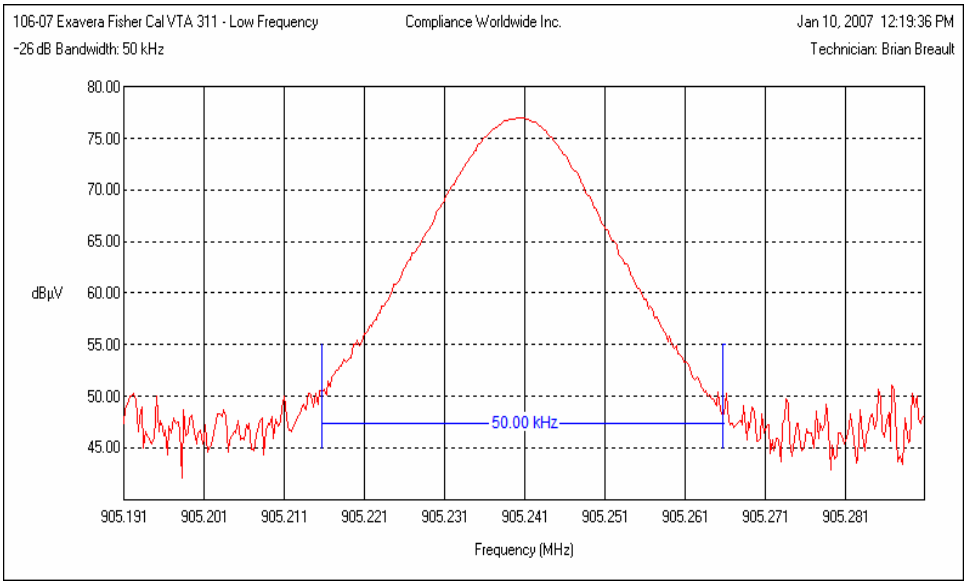
Frequency (MHz)	Amplitude (dBµV)		Corr. Fact. (dB)	Amplitude (dBµV/m)		Average Limit	Margin (dB)	Ant Pol	Ant Ht	TT Pos	Result
	Peak	Avg		Peak	Avg			H/V	cm	Deg	
1850.480	64.77	44.77	-3.87	60.90	40.90	54.00	-13.10	H	100	270	Passed
2775.720[1]	49.48	29.48	0.94	50.42	30.42	54.00	-23.58	H	100	0	Passed
3700.960[1]	47.06	27.06	3.29	50.35	30.35	54.00	-23.65	H	167	270	Passed
4626.200[1]	46.20	26.20	7.56	53.76	33.76	54.00	-20.24	H	100	270	Passed
5551.440	44.61	22.61	8.49	53.10	33.10	54.00	-20.90	Noise Floor			Passed
6476.680	43.41	23.41	10.52	53.93	33.93	54.00	-20.07	Noise Floor			Passed
7401.920[1]	45.03	25.03	14.40	59.43	39.43	54.00	-14.57	Noise Floor			Passed
8327.160[1]	44.05	22.05	17.13	61.18	41.18	54.00	-12.82	Noise Floor			Passed
9252.400[1]	43.58	23.58	20.53	64.11	44.11	54.00	-9.89	Noise Floor			Passed

[1] Frequency falls within the Restricted Bands of Operation. See FCC Part 15, Section 15.205 for additional information.

6.3 Occupied Bandwidth

Requirement: The occupied bandwidth measurements on an intentional radiator shall be made in accordance with the requirements outlined in ANSI C63.4-2003, Section 13.1.7.

6.3.1. Occupied Bandwidth, Low Channel -26 dB Bandwidth = 50 kHz



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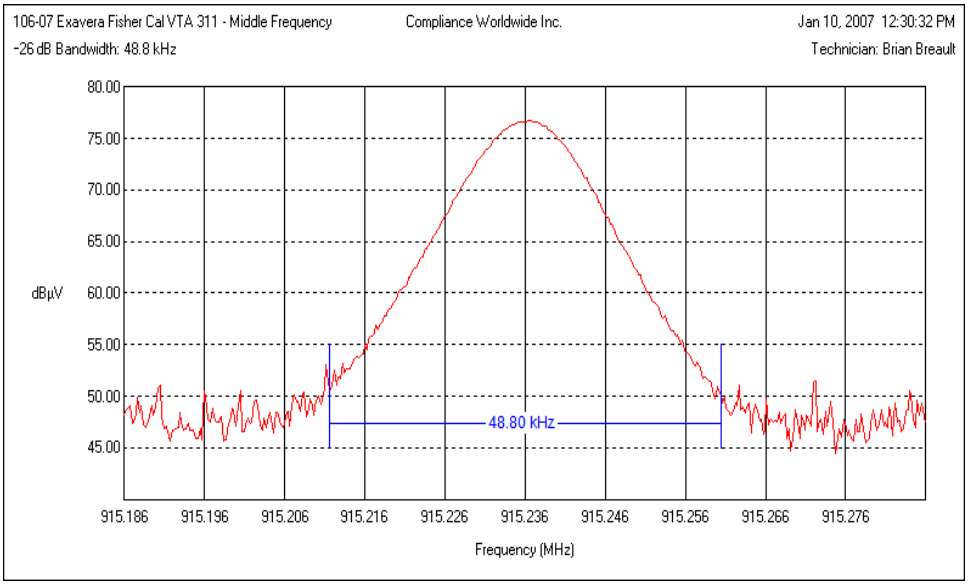
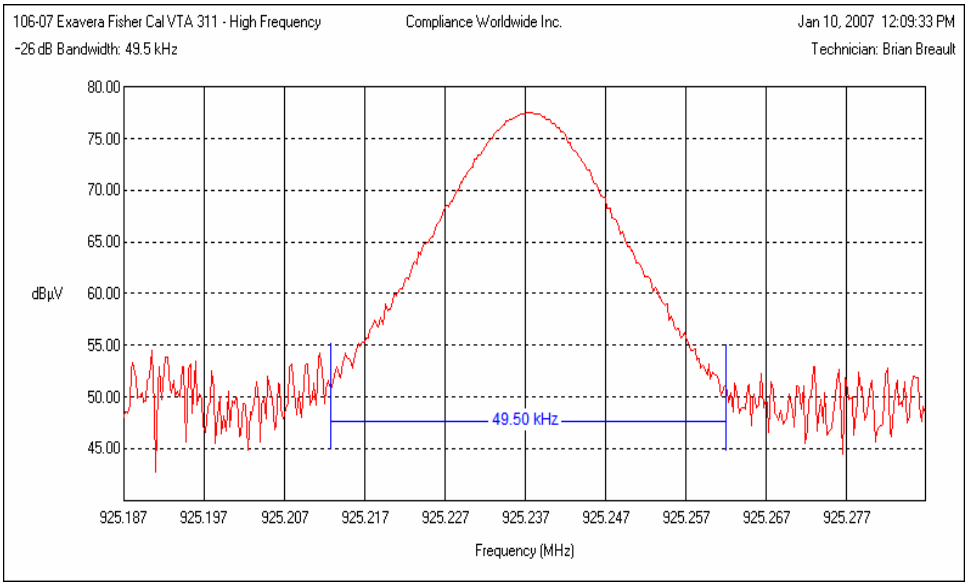
6. Measurement Data (continued)

6.3. Occupied Bandwidth (continued)

6.3.2. Occupied Bandwidth, Middle Channel
-26 dB Bandwidth = 48.8 kHz



6.3.3. Occupied Bandwidth, High Channel
-26 dB Bandwidth = 49.5 kHz



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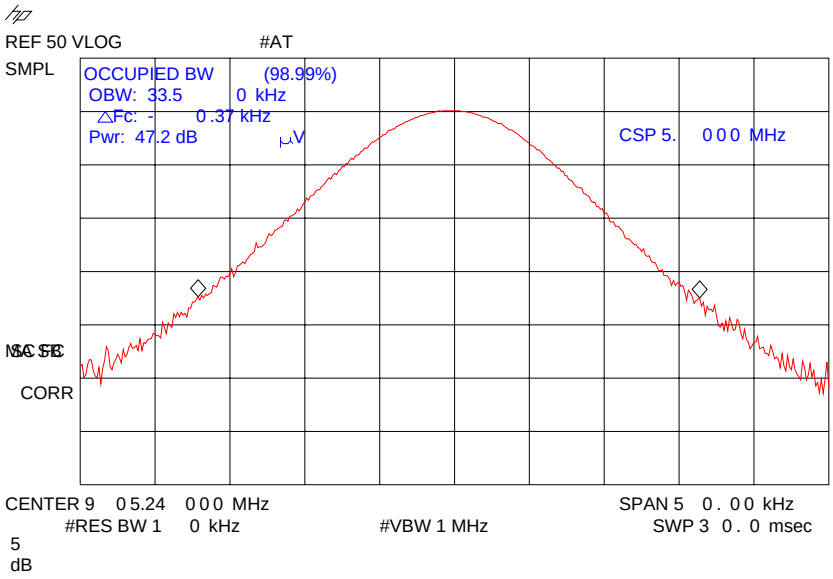
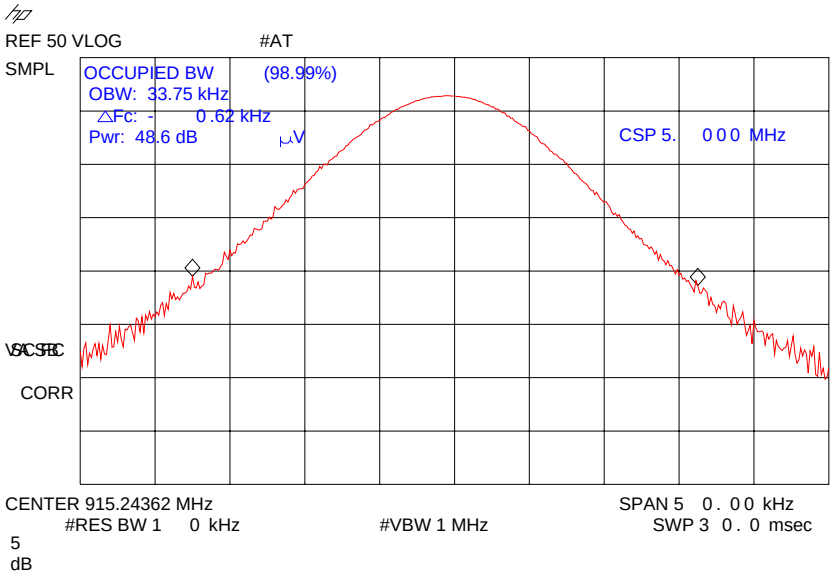
6. Measurement Data (continued)

6.4. 99% Bandwidth

6.4.1. 99% Bandwidth, Low Channel = 33.50 kHz



6.4.2. 99% Bandwidth, Middle Channel = 33.75 kHz



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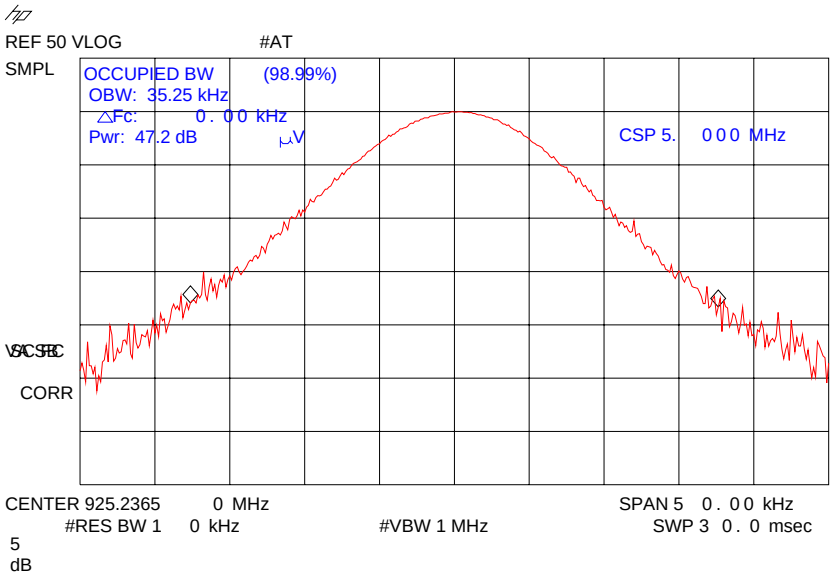
6. Measurement Data (continued)

6.4. 99% Bandwidth

6.4.3. 99% Bandwidth, High Channel = 35.25 kHz



6.5. Band Edge Measurements

Requirement: Emissions radiated outside of the specified frequency band of 902 MHz to 928 MHz, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

Channel	Frequency (MHz)	Amplitude (dBµV/m)		Band Edge (dBµV/m)		Limit (dBµV/m)	Margin (dB)	Result
		Peak	Q-Peak	Freq MHz	Q-Peak	Q-Peak	Deg	P/F
Low	905.238	74.4	74.2	902	40.5	54	-13.5	Passed
High	925.233	73.8	73.3	928	37.2	54	-16.8	Passed

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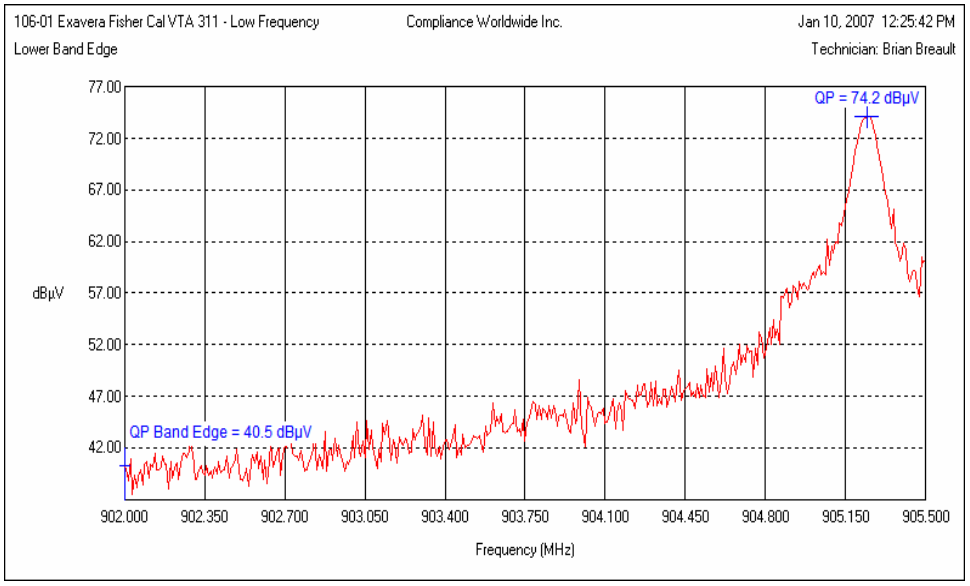
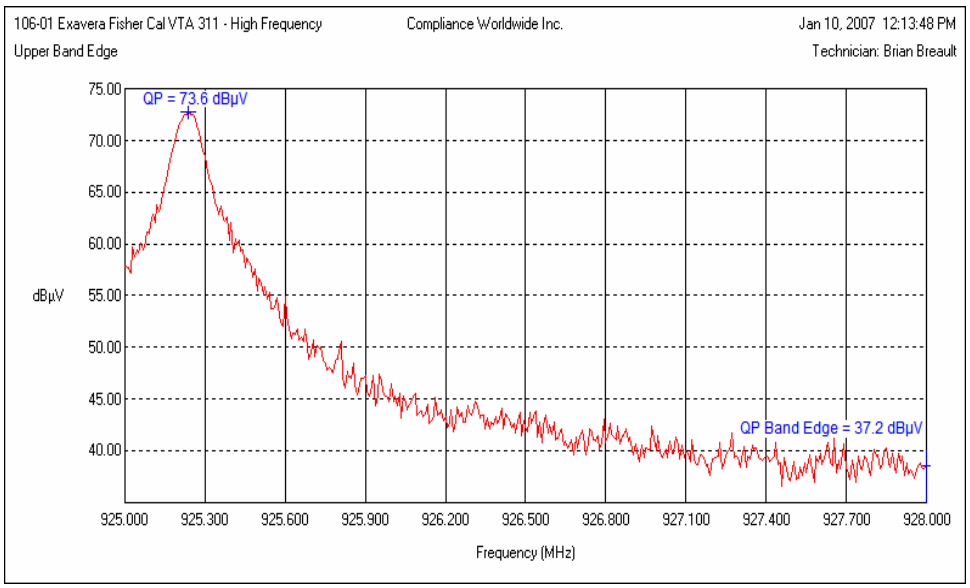
6. Measurement Data (continued)

6.5. Band Edge Measurements (continued)

6.5.1. Measurement Results – Lower Band Edge



6.5.2. Measurement Results – Upper Band Edge



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6. Measurement Data (continued)

6.6. Spurious Radiated Emissions, 30 MHz to EUT 10th Harmonic (15.249, Section (d))

Requirement: Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

6.6.1. Spurious Radiated Emissions, 30 MHz to EUT 10th Harmonic Test Setup

6.5.1.1. Regulatory Limit: FCC Part 209, Quasi-Peak & Average

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
Above 960	3	54.0

6.6.1.2. Measurement Equipment Used to Perform Test

Device	Manufacturer	Model No.	Serial No.	Cal Due
Spectrum Analyzer	Hewlett Packard	8593E	3829A03887	3/13/2007
Microwave Preamp	Hewlett Packard	8449B	3008A01323	9/21/2008
Biconilog Antenna	Com-Power	AC220	25509	7/31/2007
Horn Antenna	Electro-Metrics	EM-6961	6337	8/25/2007

6.6.1.3. Measurement & Equipment Setup

Test Date:	1/11/2007
Test Engineer:	Brian Breault
Site Temperature (°C):	21.0
Relative Humidity (%RH):	36
Frequency Range:	30 MHz to 1 GHz
EMI Receiver IF Bandwidth :	120 kHz
EMI Receiver Avg Bandwidth:	300 kHz
Detector Functions:	Peak and Quasi-Peak
Frequency Range:	1 GHz to 10th Harmonic
EMI Receiver IF Bandwidth :	1 MHz
EMI Receiver Avg Bandwidth:	3 MHz
Detector Functions:	Peak and Average
Antenna Height:	1 to 4 meters
Measurement Distance:	3 Meters

6.6.1.4. Test Procedure

Test measurements were made in accordance with ANSI C63.4-2003, Standard Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronics Equipment in the Range of 9 kHz to 40 GHz.

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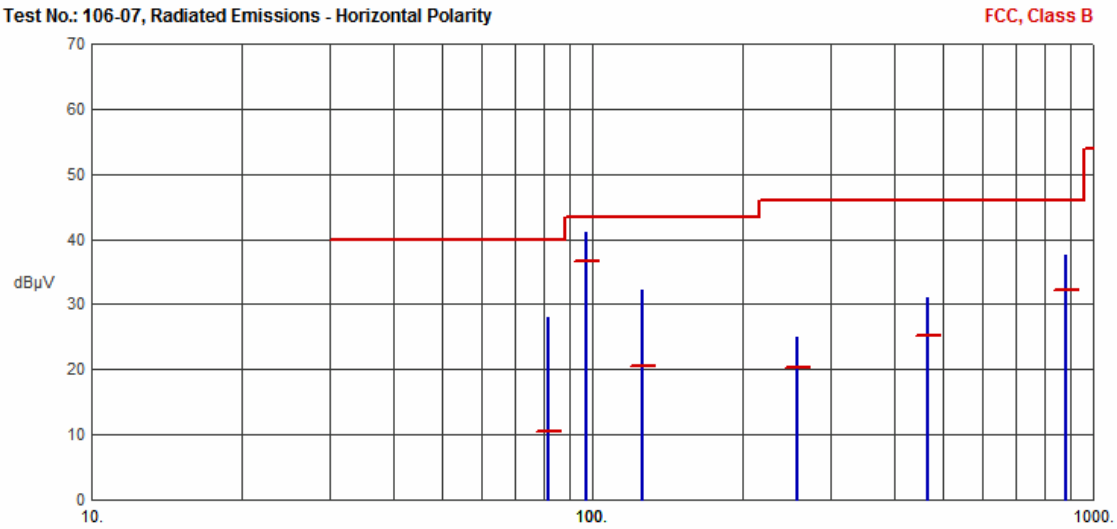
6. Measurement Data (continued)

6.6. Spurious Radiated Emissions, 30 MHz to EUT 10th Harmonic (15.249, Section (d))

6.6.2. Spurious Radiated Emissions, (30 MHz – 1 GHz) Test Results

6.6.2.1. Spurious Radiated Emissions, (30 MHz – 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
81.4024	28.02	10.46	40.00	-29.54	N/A	N/A	
97.2511	41.02	36.69	43.50	-6.81	N/A	N/A	
125.6497	32.11	20.46	43.50	-23.04	N/A	N/A	
256.7742	24.98	20.27	46.00	-25.73	N/A	N/A	
466.4501	31.03	25.24	46.00	-20.76	N/A	N/A	
879.3586	37.58	32.12	46.00	-13.88	N/A	N/A	

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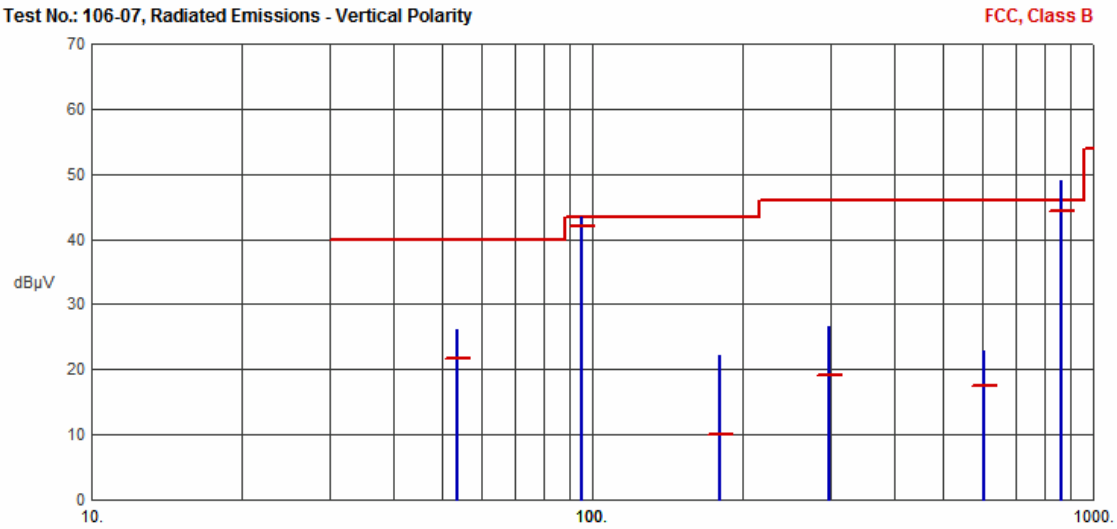
6. Measurement Data (continued)

6.6. Spurious Radiated Emissions, 30 MHz to EUT 10th Harmonic (15.249, Section (d))

6.6.2. Spurious Radiated Emissions, (30 MHz – 1 GHz) Test Results

6.6.2.1. Spurious Radiated Emissions, (30 MHz – 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
53.8518	26.24	21.61	40.00	-18.39	N/A	N/A	
94.9536	43.47	41.95	43.50	-1.55	N/A	N/A	
179.3123	22.06	9.99	43.50	-33.51	N/A	N/A	
297.4752	26.70	19.09	46.00	-26.91	N/A	N/A	
603.6379	22.97	17.53	46.00	-28.47	N/A	N/A	
863.6054	49.00	44.40	46.00	-1.60	N/A	N/A	

6.6.3. Spurious Radiated Emissions, (1 GHz – 9253 MHz) Test Results

There were no spurious emissions other than the harmonics previously reported.

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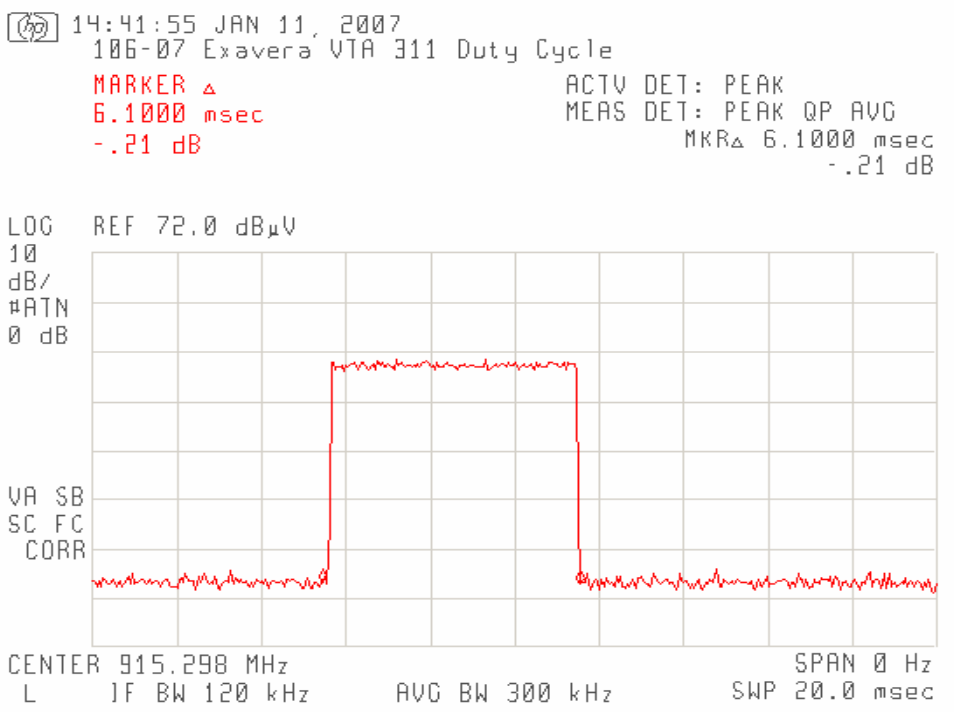
6. Measurement Data (continued)

6.7. Determination of Average Factor

Total Duration of 1 cycle:	Typically greater than 2 seconds
Maximum Duration of 1 cycle:	100 ms
Total On-Time in 1 cycle:	6.1 ms
On-Time divided by cycle:	6.10 ms / 100 ms = 0.0610
Average Factor:	20*log(0.0610) = -24.3dB

FCC and IC maximum allowed average factor is –20dB.

6.7.1. Plot showing total duration of pulse train



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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.

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