RHEIN TECH LABORATORIES, INC.

Engineering Solutions & Electromagnetic Compatibility Services

Certification Application Report
FCC Part 15.247 & Industry Canada RSS-210

Test Lab:	Applicant:
Rhein Tech Laboratories, Inc. Phone: 703-689-0368 360 Herndon Parkway Fax: 703-689-2056 Suite 1400 www.rheintech.com Herndon, VA 20170 E-Mail: atcbinfo@rheintech.com	Vocollect, Inc. Phone: 412-349-2580 703 Rodi Road Fax: 412-829-1063 Pittsburgh, PA 15235 Contact: Joe Lesik

FCC ID/ IC	MQO-TAP700-01/ 2570A-TAP70001	**Test Report Date**	October 29, 2012
Platform	N/A	**RTL Work Order #**	2012302
Model Name/ Model Number	T5 TERMINAL/ TAP700-01	**RTL Quote Number**	QRTL12-302A
American National Standard Institute	ANSI C63.4-2003 Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz		
FCC Classification	DSS – Part 15 Spread Spectrum Transmitter		
FCC Rule Part(s)	FCC Rules Part 15.247: Operation within the bands 920-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz Direct Sequence System (10-01-11)		
Industry Canada	RSS-210 Issue 8: Low Power License-Exempt Communications Devices		
Digital Interface Information	Digital Interface was found to be compliant		

Frequency Range (MHz)	Output Power (W)	Frequency Tolerance	Emission Designator
2402-2480	0.002	N/A	1M05FXD

** power is peak conducted*

I, the undersigned, hereby declare that the equipment tested and referenced in this report conforms to the identified standard(s) as described in this test report. No modifications were made to the equipment during testing in order to achieve compliance with these standards. Furthermore, there was no deviation from, additions to, or exclusions from, the applicable parts of FCC Part 2, FCC Part 15, FCC 97-114, ANSI C63.4, and Industry Canada RSS-210.

Signature: _____ Date: October 29, 2012

Typed/Printed Name: Desmond A. Fraser Position: President

These tests are accredited and meet the requirements of ISO/IEC 17025 as verified by ANSI-ASQ National Accreditation Board/ACLASS. Refer to certificate and scope of accreditation AT-1445.

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1 General Information

1.1 Scope

Applicable Standards:

- FCC Rules Part 15.247: Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz.
- Industry Canada RSS-210: Low Power License-Exempt Communications Devices

1.2 Description of EUT

Equipment Under Test	Transceiver
Model Name / Model #	T5 TERMINAL / TAP700-01
Power Supply	Battery (Model: BT-700)
Modulation Type	FHSS – Bluetooth
Transfer Rate	1, 2, 3 Mb/s
Frequency Range	2402–2480 MHz
Antenna Connector Type	Internal trace
Antenna Type	3.6 dBi Trace

1.3 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located at 360 Herndon Parkway, Suite 1400, Herndon, Virginia 20170. This site has been fully described in a report and approved by the Federal Communications Commission to perform AC line conducted and radiated emissions testing (ANSI C63.4 2003).

1.4 Related Submittal(s)/Grant(s)

This is an original certification application for Vocollect, Inc. Model #: TAP700-01, FCC ID: MQO-TAP700-01, IC: 2570A-TAP70001.

1.5 Modifications

No modifications were required for compliance.

2 Test Information

2.1 Description of Test Modes

In accordance with FCC 15.31(m), and because the EUT utilizes an operating band greater than 10 MHz, the following frequencies were tested:

Table 2-1: Test Frequencies

Channel	Frequency (MHz)
0	2402
38	2440
78	2480

2.2 Exercising the EUT

The EUT was tested in all three orthogonal planes in order to determine worst-case emissions. The EUT was provided with software to continuously transmit during testing. The carrier was also checked to verify that information was being transmitted, and all modes were investigated and the worst-case mode was used for final testing. There were no deviations from the test standard(s) and/or methods. The test results reported relate only to the item tested.

2.3 Test Result Summary

Table 2-2: Test Result Summary – FCC Part 15, Subpart C (Section 15.247)

Standard	Test	Pass/Fail or N/A
FCC 15.207	AC Power Conducted Emissions	Pass
FCC 15.209	Radiated Emissions	Pass
FCC 15.247(b)	Maximum Peak Power Output	Pass
FCC 15.247(d)	Antenna Conducted Spurious Emissions	Pass
FCC 15.247(d)	Band Edge Measurement	Pass
FCC 15.247(a)(1)	Carrier Frequency Separation	Pass
FCC 15.247(a)(1)(ii)	20 dB Bandwidth	Pass
FCC 15.247(a)(1)(iii)	Hopping Characteristics	Pass
FCC 15.247(a)(1)(iii)	Average Time of Occupancy	Pass

2.4 Test System Details

The test sample was received on October 25, 2012. The FCC identifiers for all applicable equipment, plus descriptions of all cables used in the tested system, are identified in the following tables.

Table 2-3: Equipment Under Test (EUT)

Part	Manufacturer	Model #	Serial Number	FCC ID	Cable Description	RTL Bar Code
BT Transceiver (conducted)	Vocollect, Inc.	TAP700-01	20241001	MQO-TAP700-01	0.8m shielded U.FL Connector	20936
BT Transceiver	Vocollect, Inc.	TAP700-01	202421005	MQO-TAP700-01	N/A	20934
Li-Ion Battery	Vocollect, Inc.	BT-700	3505008954	N/A	N/A	20473

Table 2-4: Support Equipment

Part	Manufacturer	Model #	Serial Number	FCC ID	Cable Description	RTL Bar Code
Laptop	Samsung	NP300E5A-A01UB	HJVF93EB 903201D	N/A	N/A	901550

2.5 Configuration of Tested System

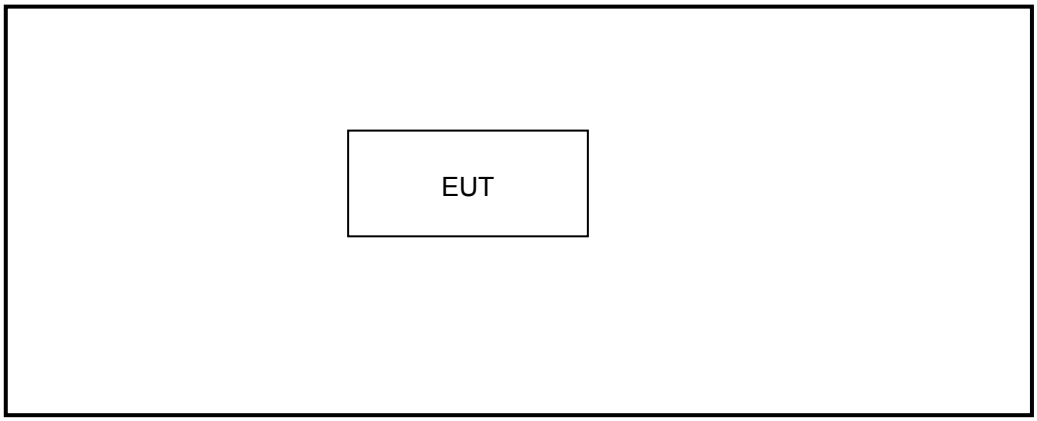


Figure 2-1: Configuration of System Under Test

3 Peak Output Power – FCC 15.247(b)(1); RSS-210 A8.4(4)

3.1 Power Output Test Procedure

A conducted power measurement of the EUT was taken using an Agilent EXA Signal Analyzer.

Table 3-1: Power Output Test Equipment

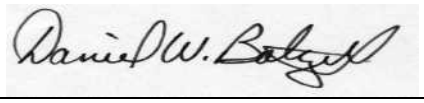
RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901583	Agilent Technologies	N9010A	EXA Signal Analyzer (10 Hz - 26.5 GHz)	MY51250846	3/13/13

3.2 Power Output Test Data

Table 3-2: Power Output Test Data

Channel	Frequency (MHz)	Peak Power Conducted Output (dBm)
0	2402	2.3
38	2440	2.6
78	2480	2.2

Test Personnel:



Daniel W. Baltzell		October 25, 2012
Test Engineer	Signature	Date of Test

4 Compliance with the Band Edge – FCC 15.247(d); RSS-210 2.2

4.1 Band Edge Test Procedure

The transmitter output was connected to its appropriate antenna. Peak (1 MHz RBW/VBW) and average (1 MHz RBW/10 Hz VBW) radiated measurements were taken with a suitable span to encompass the peak of the fundamental. A delta measurement was performed from the highest peak in the restricted band to the peak of the fundamental, and subtracted from the field strength; the result was compared to the limit in the restricted band (54 dBuV/m).

Table 4-1: Band Edge Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901583	Agilent Technologies	N9010A	EXA Signal Analyzer (10 Hz - 26.5 GHz)	MY51250846	3/13/13
900878	Rhein Tech Laboratories, Inc.	AM3-1197-0005	3 meter antenna mast, polarizing	Outdoor Range 1	Not Required
901235	IW Microwave Products	KPS-1503-360-KPS	High Frequency RF Cables	36"	7/8/13
901242	Rhein Tech Laboratories, Inc.	WRT-000-0003	Wood rotating table	N/A	Not Required
900772	EMCO	3161-02	Horn Antenna (2 - 4 GHz)	9804-1044	4/19/14
901581	Rohde & Schwarz	1166.1660.50	Spectrum Analyzer	2001006	6/3/13

4.2 Restricted Band Edge Test Results

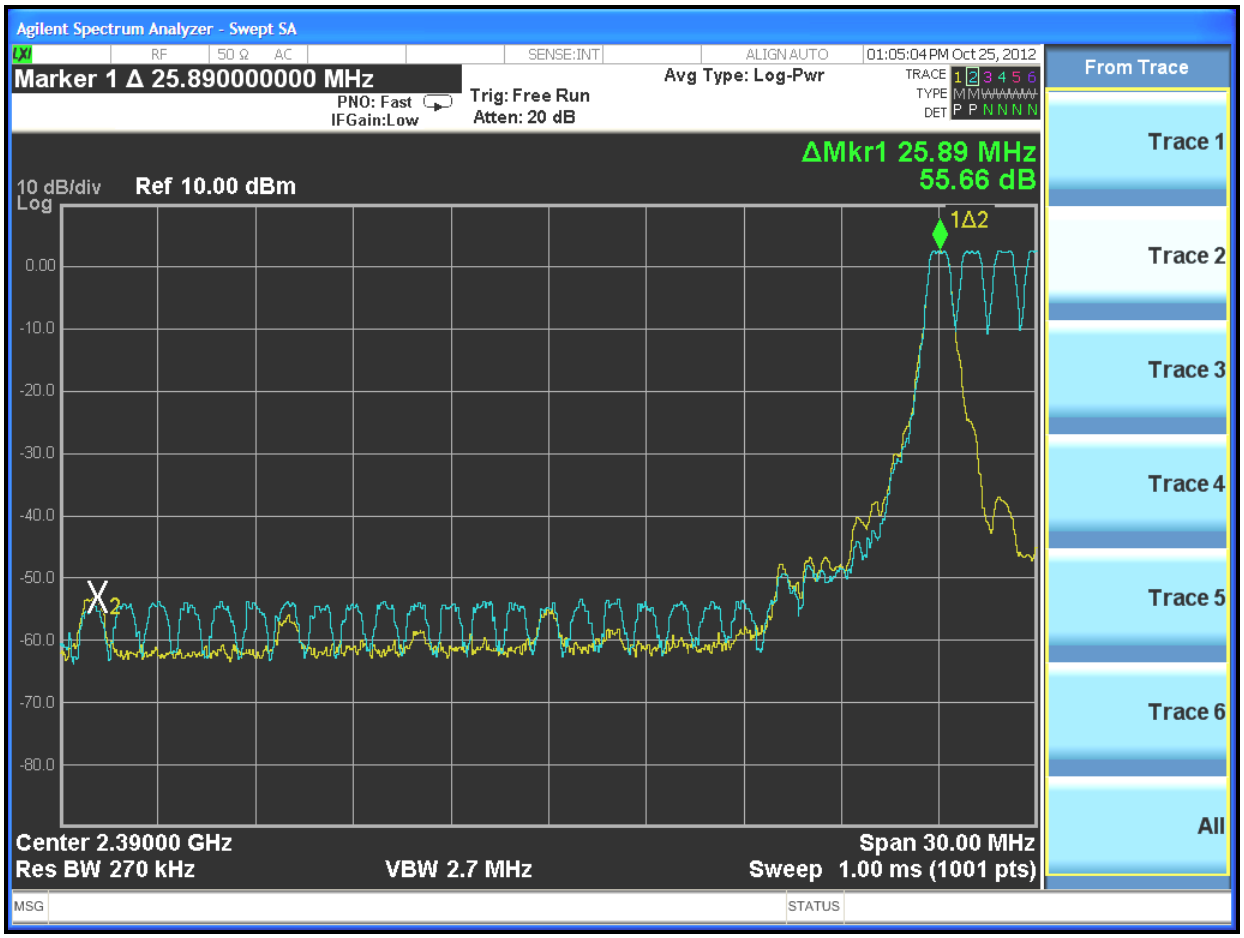
4.2.1 Calculation of Lower Band Edge

93.9 dBuV/m is the average field strength measurement, from which the delta measurement of 55.7 dB is subtracted (reference plots), resulting in a level of 38.2 dB. This level has a margin 15.8 dB below the limit of 54 dBuV/m.

Calculation: 93.9 dBuV/m – 55.7 dB – 54 dBuV/m = -15.8 dB

Peak Field Strength of Upper Band Edge (1 MHz RBW/1 MHz VBW) = 94.2 dBuV/m
Average Field Strength of Upper Band Edge (1 MHz RBW/10 Hz VBW) = 93.9 dBuV/m
Delta measurement = 55.7 dB

Plot 4-1: Lower Band Edge - 2402 MHz



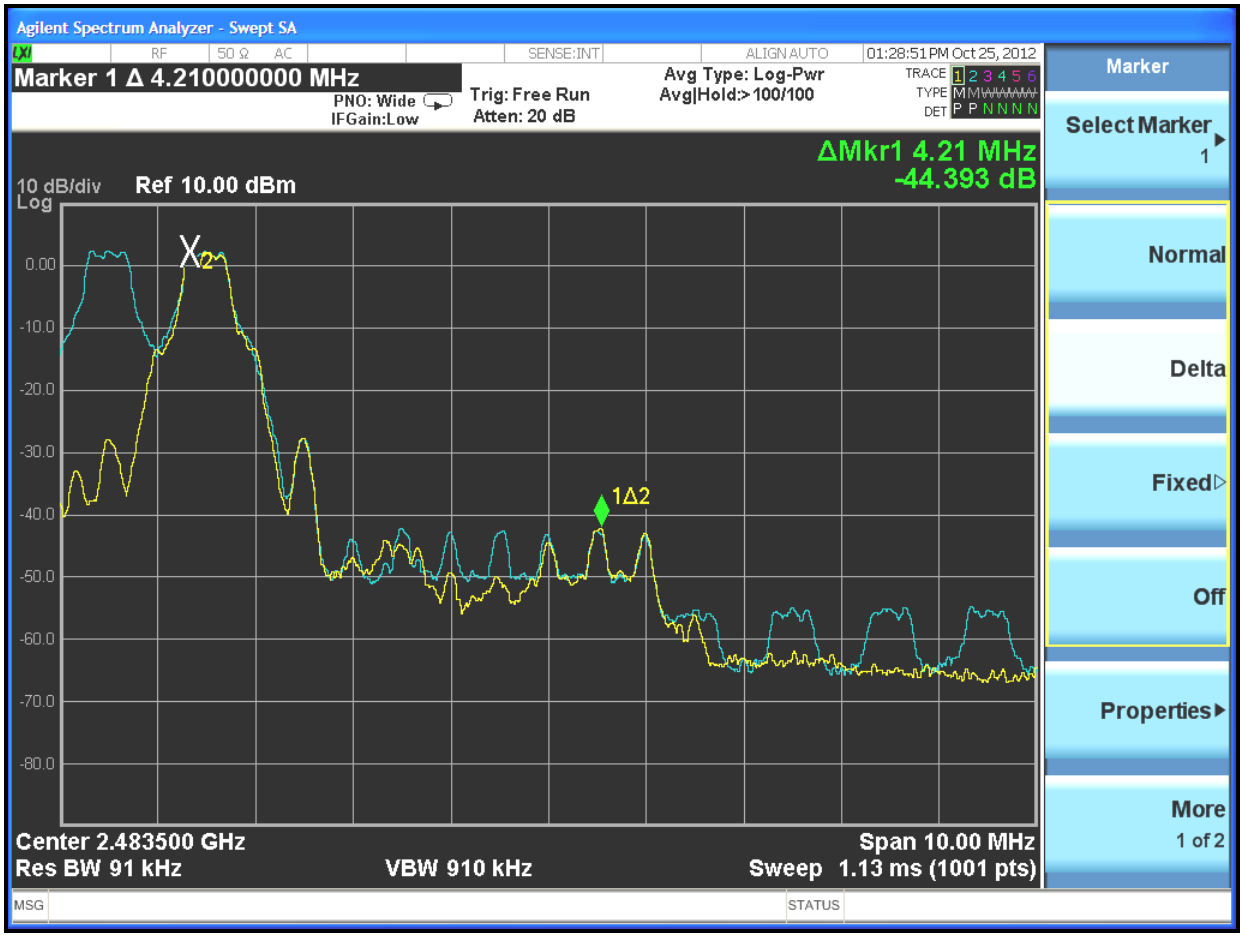
4.2.2 Calculation of Upper Band Edge

94.8 dBuV/m is the average field strength measurement, from which the delta measurement of 44.4 dB is subtracted (reference plots), resulting in a level 50.4 dB. This level has a margin of 3.6 dB below the limit of 54 dBuV/m.

Calculation: 94.8 dBuV/m – 44.4 dB – 54 dBuV/m = -3.6 dB

Peak Field Strength of Upper Band Edge (1 MHz RBW/1 MHz VBW) = 95.3 dBuV/m
Average Field Strength of Upper Band Edge (1 MHz RBW/10 Hz VBW) = 94.8 dBuV/m
Delta measurement = 44.4 dB

Plot 4-2: Upper Band Edge - 2480 MHz



Test Personnel:

Daniel W. Baltzell	Daniel W. Baltzell	October 25, 2012
Test Engineer	Signature	Date of Test

5 Antenna Conducted Spurious Emissions – FCC 15.247(d); RSS-Gen

5.1 Antenna Conducted Spurious Emissions Test Procedures

Antenna spurious emissions per FCC 15.247(c) were measured from the EUT antenna port using a 50-ohm spectrum analyzer with the resolution bandwidth set at 100 kHz, and the video bandwidth set at 100 kHz. The modulated carrier was identified at the following frequencies: 2402 MHz, 2440 MHz and 2480 MHz.

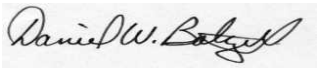
5.2 Antenna Conducted Spurious Emissions Test Results

No harmonics or spurs were found within 20 dB (note that we are reporting power as peak) of the carrier level from the carrier to the 10th harmonic of the carrier frequency. Per FCC 15.31(o), no data is being reported.

Table 5-1: Antenna Conducted Spurious Emissions Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901583	Agilent Technologies	N9010A	EXA Signal Analyzer (10 Hz - 26.5 GHz)	MY51250846	3/13/13

Test Personnel:

Dan Baltzell		October 25, 2012
Test Engineer	Signature	Date of Test

6 20 dB Bandwidth – FCC 15.247(a)(1)); RSS-210 A8.1(a)(b)(d)

6.1 20 dB Bandwidth Test Procedure

The minimum 20 dB bandwidths per RSS-210 were measured using a 50-ohm spectrum analyzer. The carrier was adjusted on the analyzer so that it was displayed entirely on the spectrum analyzer. The sweep time was set to auto and allowed through several sweeps with the max hold function used in peak detector mode. The resolution bandwidth was set to 47 kHz, and the video bandwidth set at 470 kHz. The minimum 20 dB bandwidths were measured using the spectrum analyzer delta marker set 20 dB down from the peak of the carrier. The table below contains the bandwidth measurement results.

Table 6-1: 20 dB Bandwidth Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901583	Agilent Technologies	N9010A	EXA Signal Analyzer (10 Hz - 26.5 GHz)	MY51250846	3/13/13

6.2 20 dB Modulated Bandwidth Test Data

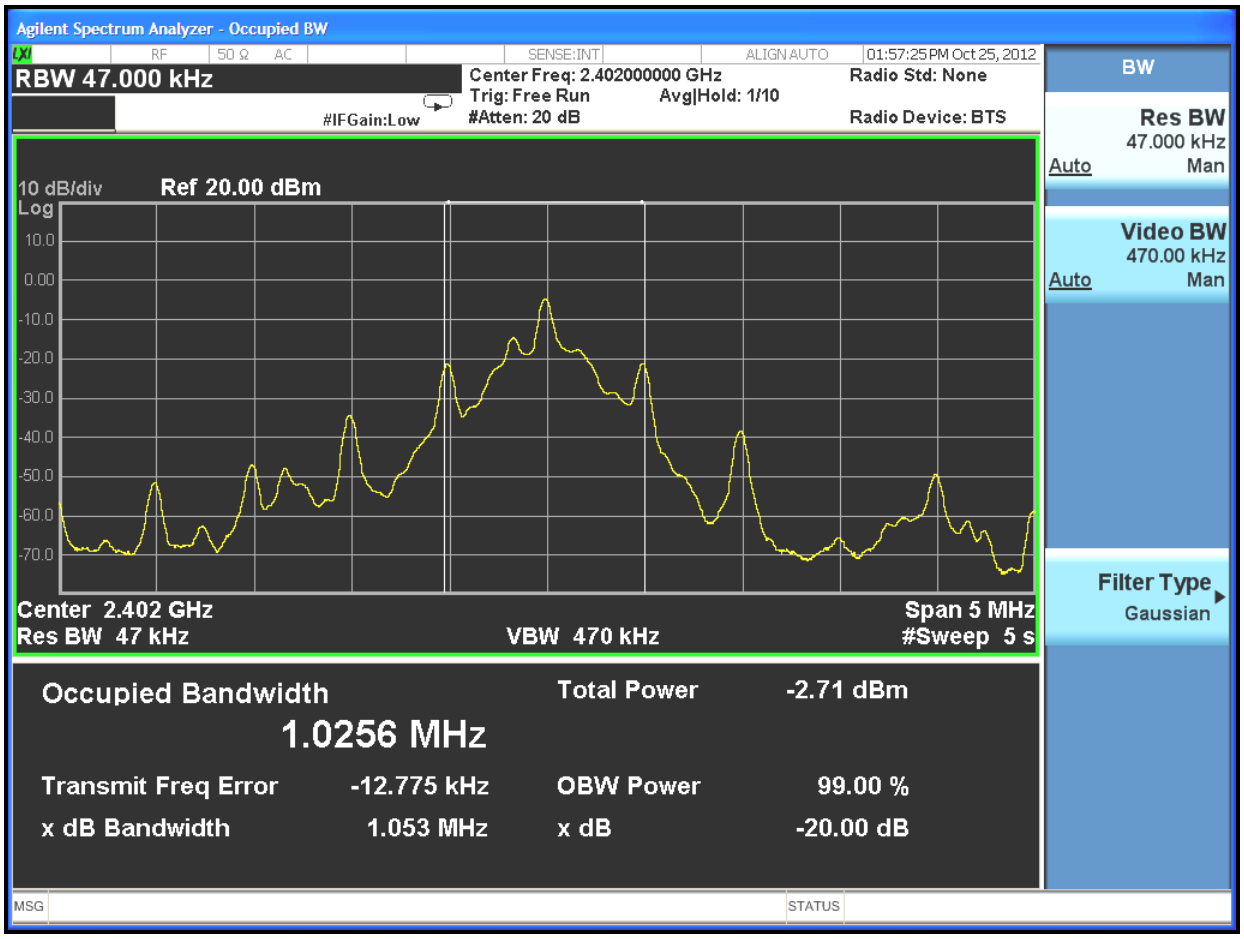
Table 6-2: 20 dB Modulated Bandwidth Test Data

Minimum 20 dB bandwidths

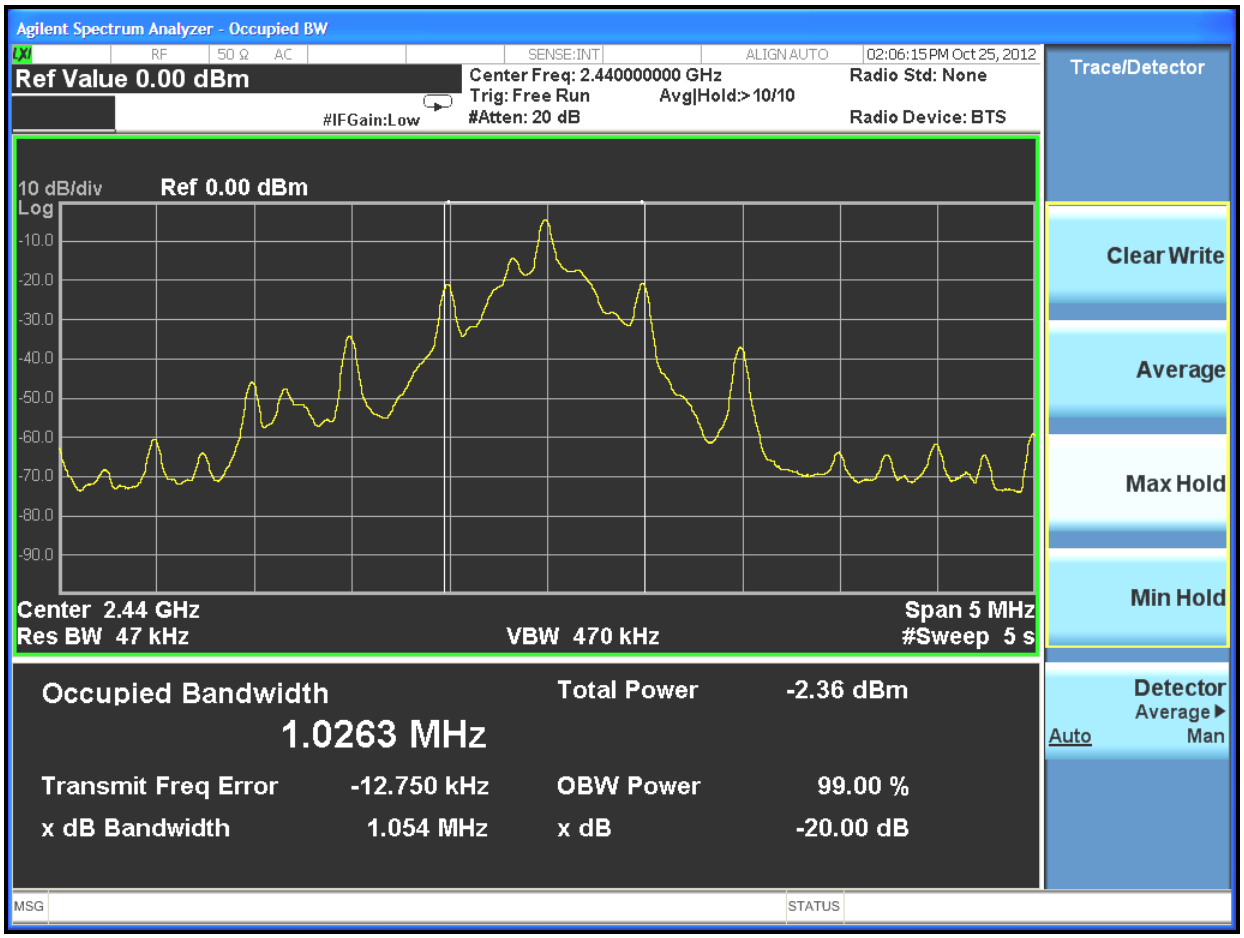
Frequency	20 dB Bandwidth (MHz)
2402	1.053
2440	1.054
2480	1.054

6.3 20 dB Bandwidth Plots

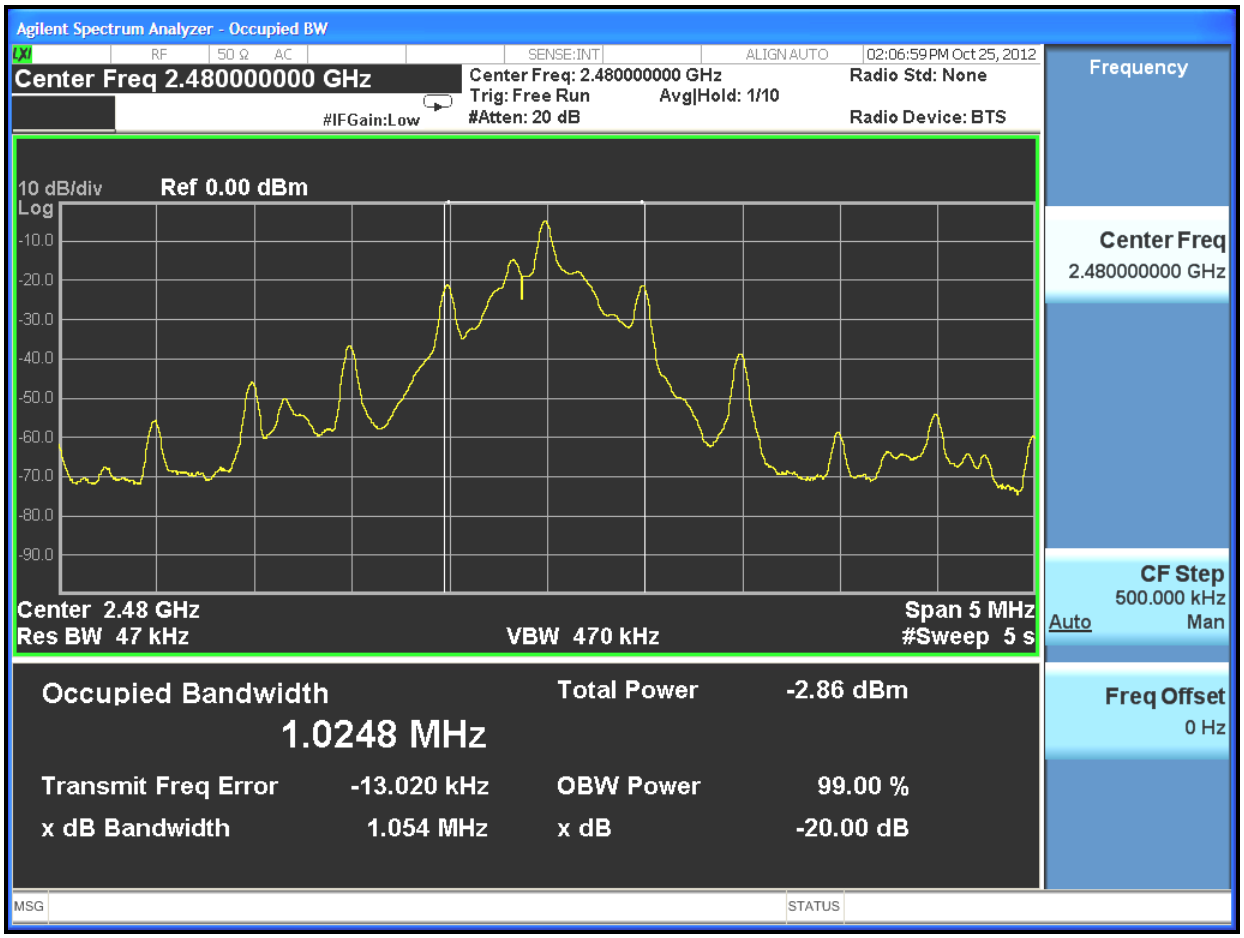
Plot 6-1: 20 dB Bandwidth - 2402 MHz



Plot 6-2: 20 dB Bandwidth - 2440 MHz



Plot 6-3: 20 dB Bandwidth - 2480 MHz



Test Personnel:

Dan Baltzell	Daniel W. Baltzell	October 25, 2012
Test Engineer	Signature	Date of Test

7 Carrier Frequency Separation – FCC 15.247(a)(1); IC RSS-210 A8.1(b)

7.1 Carrier Frequency Separation Test Procedure

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

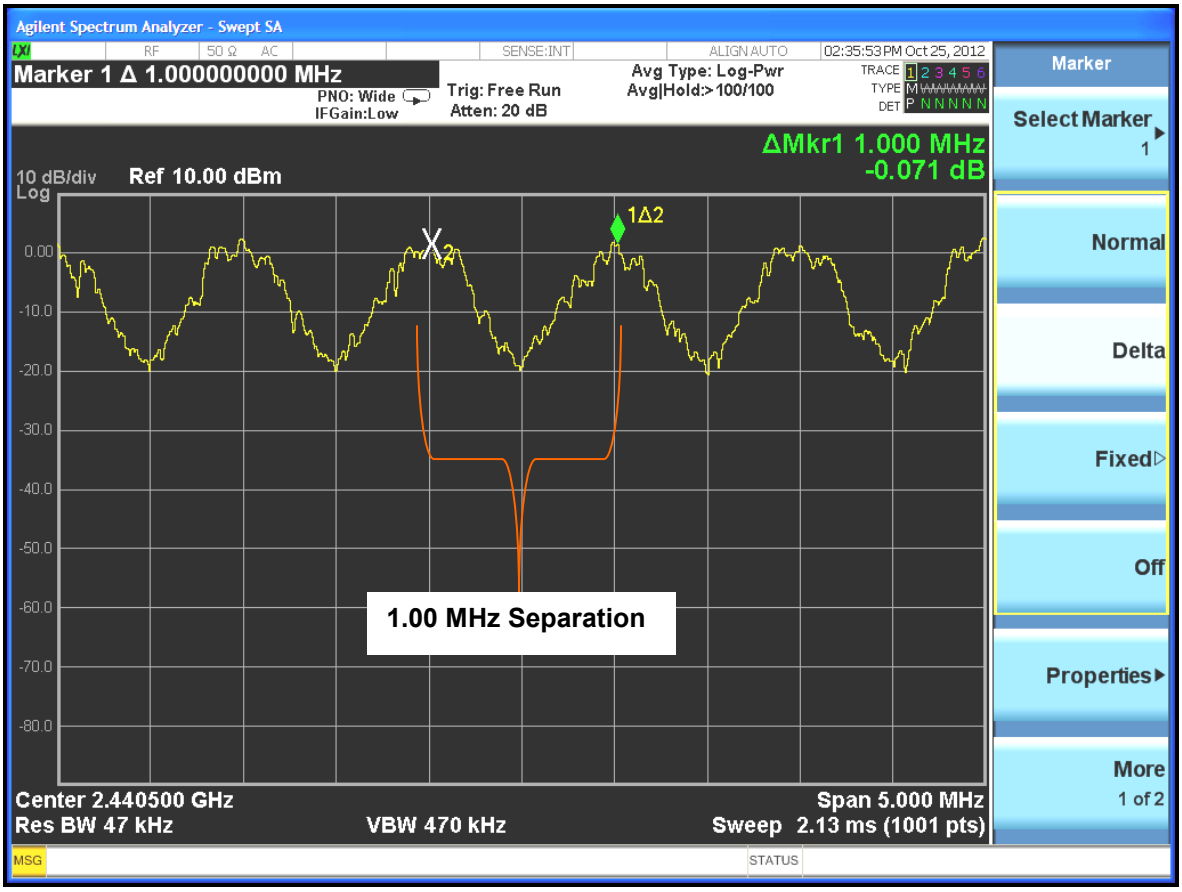
Measured frequency separation = 1.00 MHz

Table 7-1: Carrier Frequency Separation Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901583	Agilent Technologies	N9010A	EXA Signal Analyzer (10 Hz - 26.5 GHz)	MY51250846	3/13/13

7.2 Carrier Frequency Separation Test Data

Plot 7-1: Carrier Frequency Separation



Test Personnel:

Dan Baltzell		October 25, 2012
Test Engineer	Signature	Date of Test

8 Hopping Characteristics – FCC 15.247(a)(1)(iii); IC RSS-210 A8.1(d)

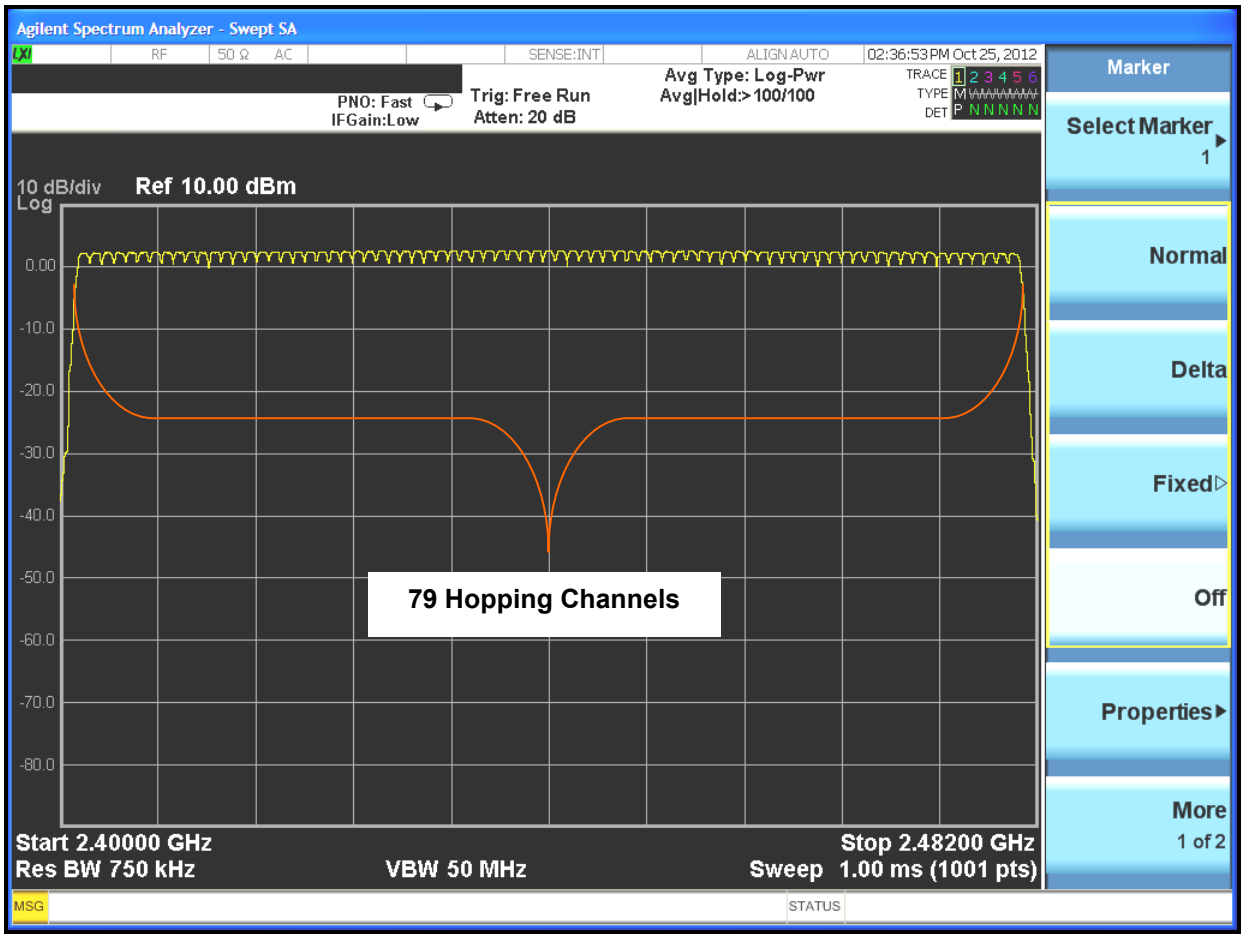
8.1 Hopping Characteristics Test Procedure

Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels is used.

Table 8-1: Hopping Characteristics Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901583	Agilent Technologies	N9010A	EXA Signal Analyzer (10 Hz - 26.5 GHz)	MY51250846	3/13/13

Plot 8-1: Number of Hopping Frequencies



Test Personnel:

Dan Baltzell	Daniel W. Baltzell	October 25, 2012
Test Engineer	Signature	Date of Test

8.2 Average Time of Occupancy

The spectrum analyzer gate function was used to determine the pulse width using the gate start and stop times, with a zero span to capture a pulse from the device under test. The delta response was used to measure the dwell time for this pulse. The sweep was then set to single sweep for 3.16 s (it was not possible to get a suitable display with a sweep time of 31.6 s).

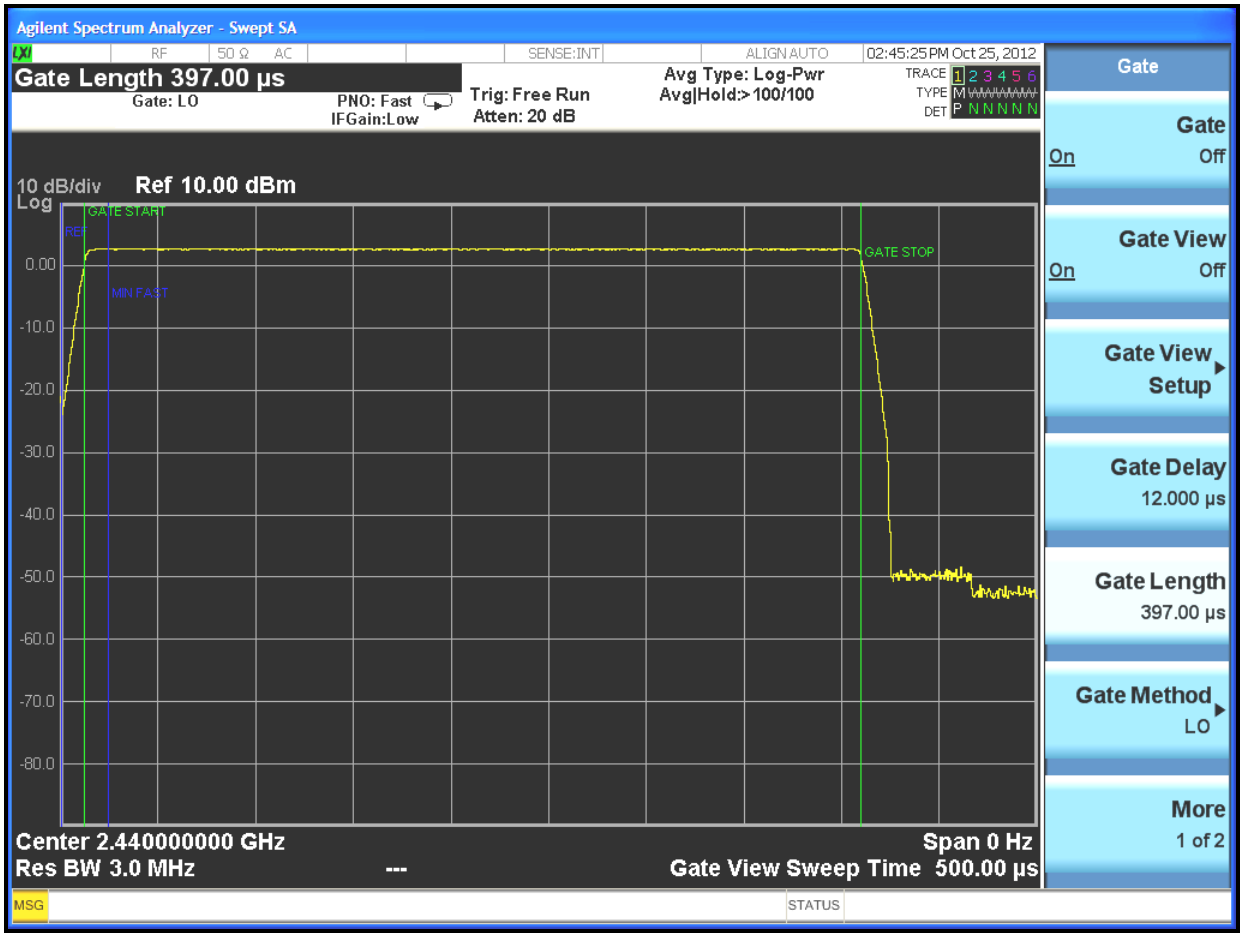
The number of pulses in 3.16 s was 32. Therefore, the number of pulses in a period of 0.4 seconds x 79 hopping channels (31.6 s) would be 320 pulses.

The average time of occupancy in the above period (31.6 s) is equal to 320 pulses x 0.385 ms = 123 ms, which meets the limit as defined by 15.247(a)(1)(iii) of 0.4 seconds.

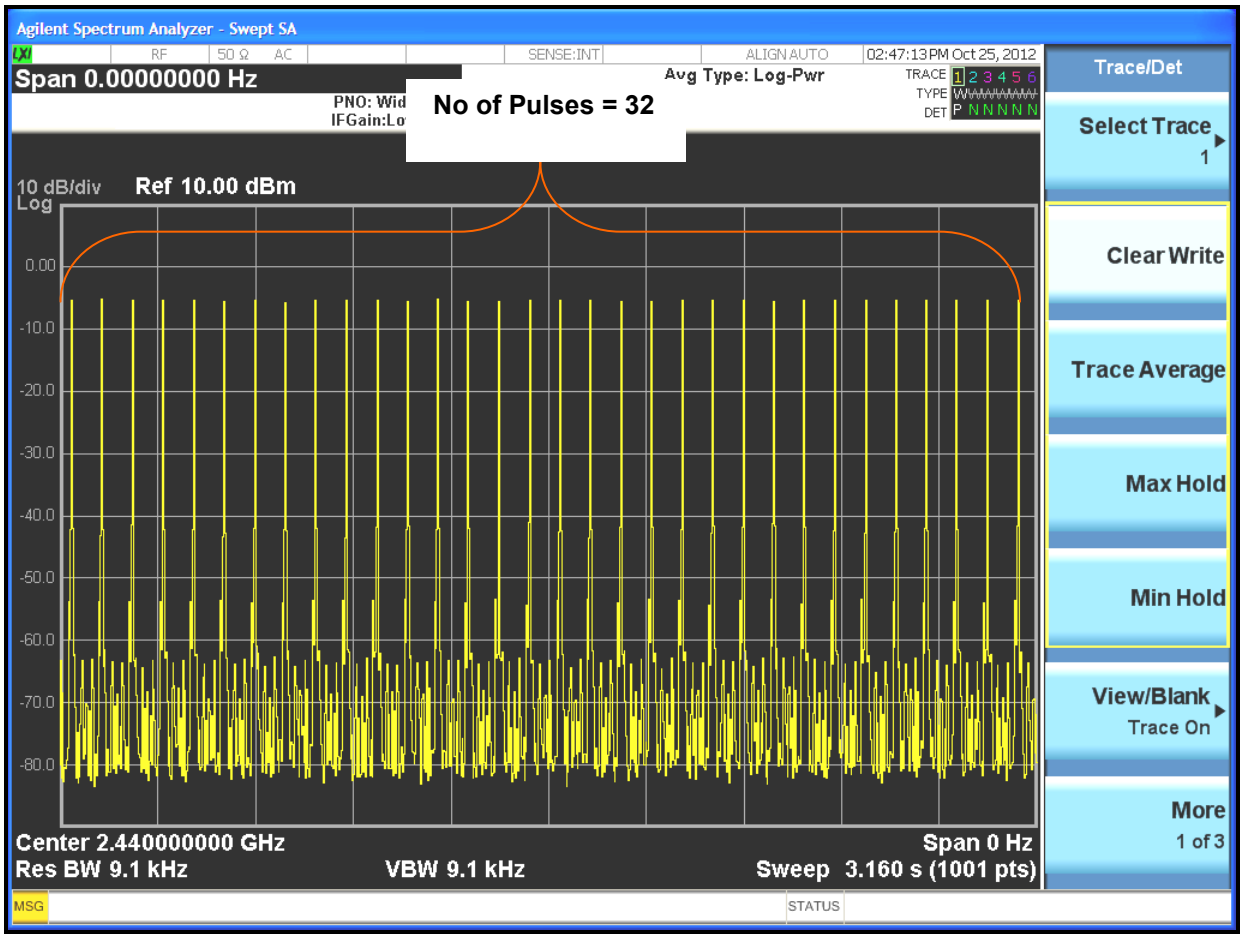
Table 8-2: Average Time of Occupancy Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901583	Agilent Technologies	N9010A	EXA Signal Analyzer (10 Hz - 26.5 GHz)	MY51250846	3/13/13

Plot 8-2: Time of Occupancy (Dwell Time)



Plot 8-3: Time of Occupancy (Dwell Time 3.2 Second Sweep)



Number of pulses in 3.16 seconds: 32

Therefore, the number of pulses in the period of 0.4 s x 79 channels would be 320 pulses.

Test Personnel:

Dan Baltzell	Daniel W. Baltzell	October 25, 2012
Test Engineer	Signature	Date of Test

9 Conducted Emissions Measurement Limits – FCC 15.207; RSS-Gen

9.1 Limits of Conducted Emissions Measurement

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

9.2 Conducted Emissions Measurement Test Procedure

The conducted emissions measurements were performed in a Series 81 type shielded enclosure manufactured by Rayproof. The EUT was assembled on a wooden table 0.8 meters high. Power was fed to the EUT through a 50 Ω/50 μH Line Impedance Stabilization Network (LISN). The EUT LISN was fed power through an AC filter box on the outside of the shielded enclosure. The filter box and EUT LISN housing are bonded to the ground plane of the shielded enclosure. A second LISN, the peripheral LISN, provides isolation for the EUT test peripherals. This peripheral LISN was also fed AC power. A metal power outlet box, which is bonded to the ground plane and electrically connected to the peripheral LISN, powers the EUT host peripherals.

The spectrum analyzer was connected to the AC line through an isolation transformer. The 50-ohm output of the EUT LISN was connected to the spectrum analyzer input through a Solar 7 kHz high-pass filter. The filter was used to prevent overload of the spectrum analyzer from noise below 7 kHz. Conducted emission levels were measured on each current-carrying line with the spectrum analyzer operating in the CISPR quasi-peak mode (or average mode if applicable). The analyzer's 6 dB bandwidth was set to 9 kHz. No video filter less than 10 times the resolution bandwidth was used. Average measurements were performed in a linear mode using a 10 kHz resolution bandwidth, a 1 Hz video bandwidth, and by decreasing the sweep time in order to obtain a calibrated measurement. The highest emissions amplitudes relative to the appropriate limits were measured and have been recorded in this report.

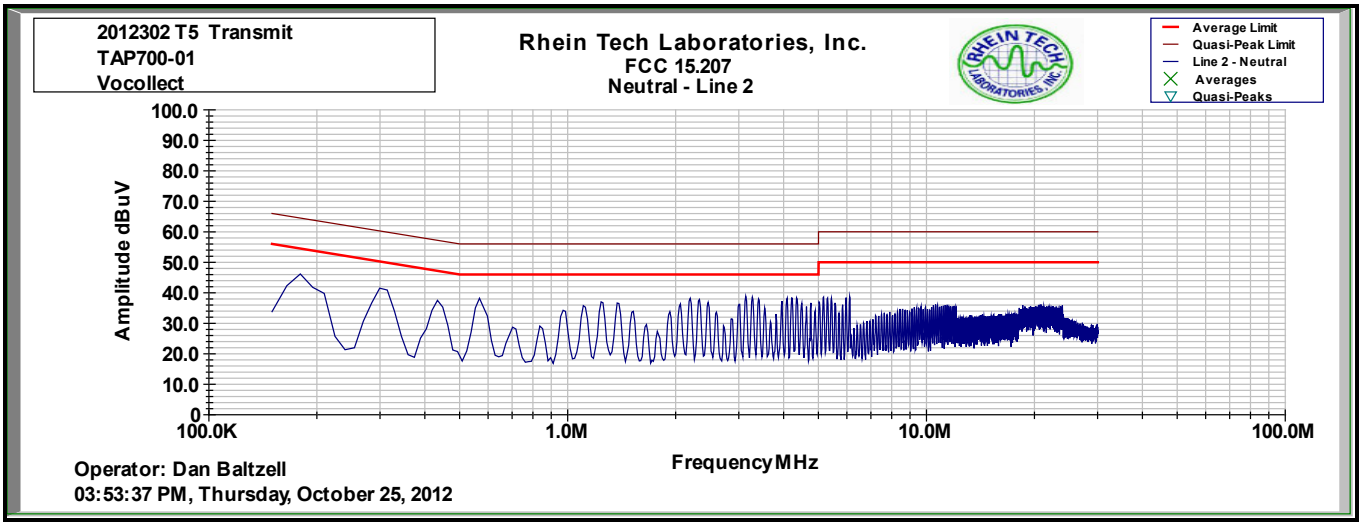
Table 9-1: Conducted Emissions Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
900968	Hewlett Packard	8567A	Spectrum Analyzer (10 kHz - 1.5 GHz)	2602A00160	11/17/12
900969	Hewlett Packard	85650A	Quasi-Peak Adapter	2412A00414	11/17/12
900970	Hewlett Packard	85662A	Spectrum Analyzer Display	2542A11239	11/17/12
901083	AFJ International	LS16	16A LISN (110 V)	16010020080	4/18/13
N/A	Rhein Tech Laboratories, Inc.	Automated Emission Tester	Emissions testing software Rev. 14.0.0.2	N/A	N/A

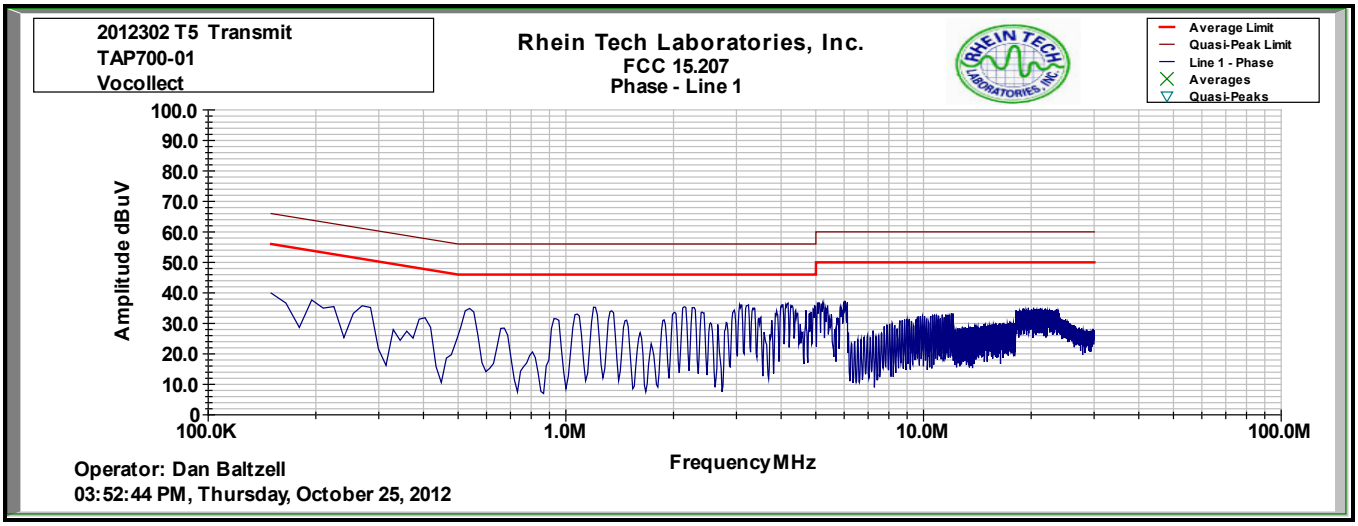
9.3 Conducted Emissions Test Results

9.3.1 Conducted Emissions Transmit Center Channel

Plot 9-1: Conducted Emissions Transmit Center Channel - Neutral Side

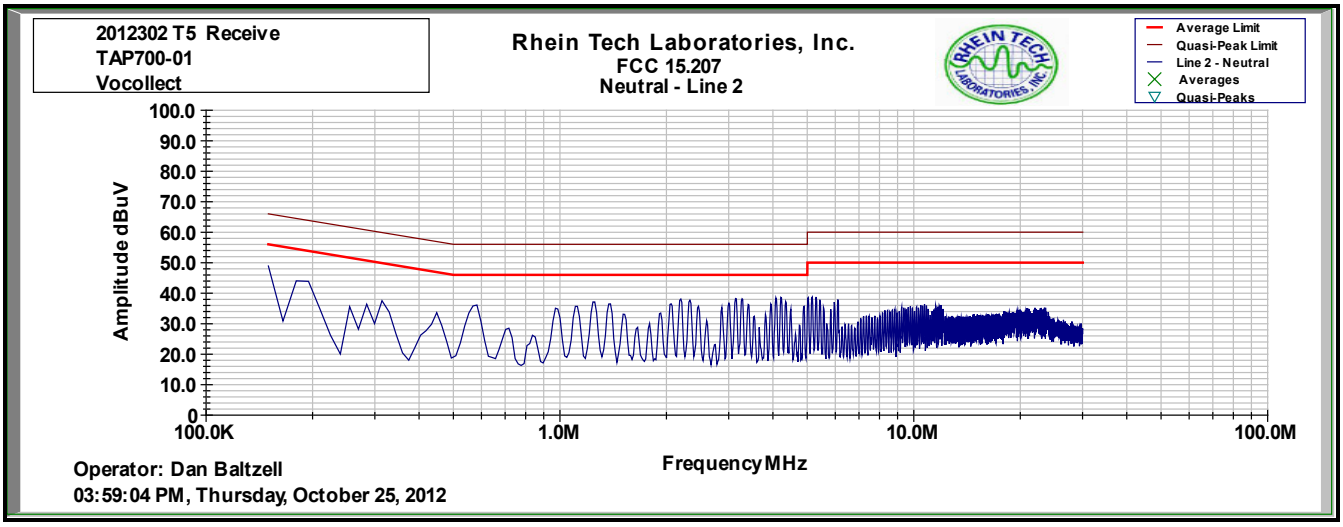


Plot 9-2: Conducted Emissions Transmit Center Channel - Hot Side

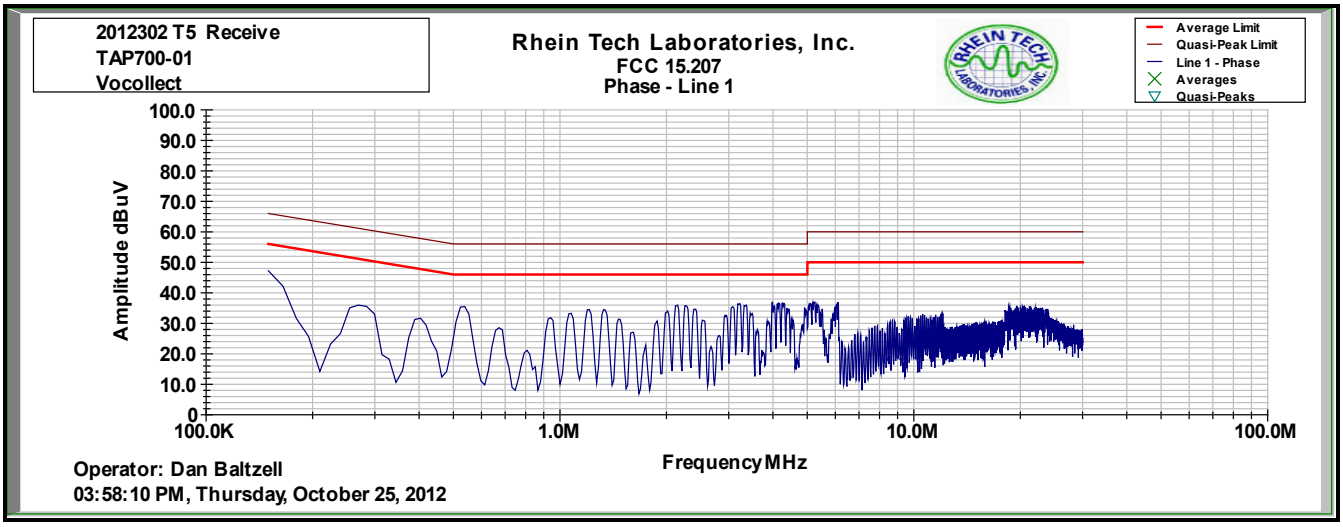


9.3.2 Conducted Emissions Receive

Plot 9-3: Conducted Emissions Receive - Neutral Side



Plot 9-4: Conducted Emissions Receive - Hot Side



Test Personnel:

Daniel W. Baltzell	Daniel W. Baltzell	October 25, 2012
Test Engineer	Signature	Date of Test

10 Radiated Emissions – FCC 15.209; RSS-210 A8.5

10.1 Limits of Radiated Emissions Measurement

Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009-0.490	2400/f (kHz)	300
0.490-1.705	2400/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

As shown in 15.35(b), for frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any circumstances of modulation.

10.2 Radiated Emissions Measurement Test Procedure

Before final measurements of radiated emissions were made on the open-field three/ten meter range, the EUT was scanned indoors at one and three meter distances. This was done in order to determine its emissions spectrum signature. The physical arrangement of the test system and associated cabling was varied in order to determine the effect on the EUT's emissions in amplitude, direction and frequency. This process was repeated during final radiated emissions measurements on the open-field range, at each frequency, in order to ensure that maximum emission amplitudes were attained.

Final radiated emissions measurements were made on the three/ten-meter, open-field test site. The EUT was placed on a nonconductive turntable 0.8 meters above the ground plane. The spectrum was examined from 9 kHz to the 10^{th} harmonic of the highest fundamental transmitter frequency (24.8 GHz).

At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the emission's maximum level. Measurements were taken using both horizontal and vertical antenna polarizations. For frequencies between 30 and 1000 MHz, the spectrum analyzer's 6 dB bandwidth was set to 120 kHz, and the analyzer was operated in the CISPR quasi-peak detection mode. For emissions above 1000 MHz, emissions are measured using the average detector function with a minimum resolution bandwidth of 1 MHz. No video filter less than 10 times the resolution bandwidth was used. The highest emission amplitudes relative to the appropriate limit were measured and recorded in this report.

Table 10-1: Radiated Emissions Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
900151	Rohde and Schwarz	HFH2-Z2	Antenna (Loop, 9 kHz - 30 MHz)	827525/019	10/1/13
900932	Hewlett Packard	8449B OPT H02	Preamplifier (1 - 26.5 GHz)	3008A00505	7/14/13
901595	Mini-Circuits	ZHL-4240V	Amplifier	H090293-5	2/17/13
900878	Rhein Tech Laboratories, Inc.	AM3-1197-0005	3 meter antenna mast, polarizing	Outdoor Range 1	Not Required
901592	Insulated Wire Inc.	KPS-1503-3600-KPR	SMK RF Cables 20'	NA	8/16/13
901593	Insulated Wire Inc.	KPS-1503-360-KPR	SMK RF Cables 36"	NA	8/16/13
901242	Rhein Tech Laboratories, Inc.	WRT-000-0003	Wood rotating table	N/A	Not Required
900772	EMCO	3161-02	Horn Antenna (2 - 4 GHz)	9804-1044	4/19/14
900321	EMCO	3161-03	Horn Antennas (4 – 8.2 GHz)	9508-1020	4/19/14
900323	EMCO	3160-7	Horn Antennas (8,2 – 12.4 GHz)	9605-1054	4/19/14
900356	EMCO	3160-08	Horn Antenna (12.4 – 18 GHz)	9607-1044	4/19/14
900325	EMCO	3160-9	Horn Antennas (18 - 26.5 GHz)	9605-1051	4/19/14
900392	Hewlett Packard	1197OK	Harmonic Mixer (18 – 26.5 GHz)	3525A00159	4/19/14
900791	Chase	CBL6111B	Bilog Antenna (30 MHz – 2000 MHz)	N/A	1/31/13
900913	Hewlett Packard	85462A	EMI Receiver RF Section (9 kHz – 6.5 GHz)	3325A00159	9/20/13
900914	Hewlett Packard	8546OA	RF Filter Section (100 kHz – 6.5 GHz)	3330A00107	9/20/13
901581	Rohde & Schwarz	1166.1660.50	Spectrum Analyzer	2001006	6/3/13

10.3 Radiated Emissions Test Results

10.3.1 Radiated Emissions Harmonics/Spurious Test Data – Fixed Frequency

Table 10-2: Radiated Emissions Harmonics/Spurious - 2402 MHz - Peak

Emission Frequency (MHz)	Peak Analyzer Reading (dBuV) (1 MHz RBW/ VBW)	Site Correction Factor (dB/m)	Peak Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)
4804	50.2	-1.1	49.1	74.0	-24.9
12010	43.6	9.8	53.4	74.0	-20.6
19216	33.0	20.6	53.6	74.0	-20.4

Table 10-3: Radiated Emissions Harmonics/Spurious - 2402 MHz - Average

Emission Frequency (MHz)	Average Analyzer Reading (dBuV) (1 MHz RBW/ 10 Hz VBW)	Site Correction Factor (dB/m)	Average Emission Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)
4804	43.7	-1.1	42.6	54.0	-11.4
12010	33.1	9.8	42.9	54.0	-11.1
19216	22.9	20.6	43.5	54.0	-10.5

Table 10-4: Radiated Emissions Harmonics/Spurious - 2440 MHz - Peak

Emission Frequency (MHz)	Peak Analyzer Reading (dBuV) (1 MHz RBW/ VBW)	Site Correction Factor (dB/m)	Peak Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)
4880	49.5	-1.0	48.5	74.0	-25.5
7320	46.8	0.9	47.7	74.0	-26.3
12200	42.9	11.2	54.1	74.0	-19.9
19520	35.2	20.2	55.4	74.0	-18.6

Table 10-5: Radiated Emissions Harmonics/Spurious - 2440 MHz - Average

Emission Frequency (MHz)	Average Analyzer Reading (dBuV) (1 MHz RBW/ 10 Hz VBW)	Site Correction Factor (dB/m)	Average Emission Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)
4880	45.3	-1.0	44.3	54.0	-9.7
7320	40.7	0.9	41.6	54.0	-12.4
12200	32.6	11.2	43.8	54.0	-10.2
19520	24.8	20.2	45.0	54.0	-9.0

Table 10-6: Radiated Emissions Harmonics/Spurious - 2480 MHz - Peak

Emission Frequency (MHz)	Peak Analyzer Reading (dBuV) (1 MHz RBW/ VBW)	Site Correction Factor (dB/m)	Peak Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)
4960	51.1	-1.0	50.1	74.0	-23.9
7440	46.9	1.1	48.0	74.0	-26.0
12400	42.3	12.6	54.9	74.0	-19.1
19840	34.3	20.6	54.9	74.0	-19.1
22320	34.8	21.8	56.6	74.0	-17.4

Table 10-7: Radiated Emissions Harmonics/Spurious - 2480 MHz – Average

Emission Frequency (MHz)	Average Analyzer Reading (dBuV) (1 MHz RBW/ 10 Hz VBW)	Site Correction Factor (dB/m)	Average Emission Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)
4960	47.7	-1.0	46.7	54.0	-7.3
7440	41.2	1.1	42.3	54.0	-11.7
12400	32.9	12.6	45.5	54.0	-8.5
19840	24.5	20.6	45.1	54.0	-8.9
22320	24.6	21.8	46.4	54.0	-7.6

10.3.2 Radiated Emissions Harmonics/Spurious Test Data – Hopping

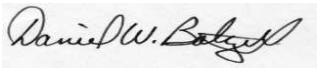
Table 10-8: Radiated Emissions Harmonics/Spurious Hopping Mode - Peak

Emission Frequency (MHz)	Peak Analyzer Reading (dBuV) (1 MHz RBW/ VBW)	Site Correction Factor (dB/m)	Peak Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Peak Margin (dB)
4806	46.6	-1.1	45.5	74.0	-28.5
4880	47.4	-1.0	46.4	74.0	-27.6
4926	48.0	-1.0	47.0	74.0	-27.0
4959	48.3	-1.0	47.3	74.0	-26.7
7322.9	43.1	1.0	44.1	74.0	-29.9
7338	44.8	1.0	45.8	74.0	-28.2

Table 10-9: Radiated Emissions Harmonics/Spurious Hopping Mode - Average

Emission Frequency (MHz)	Average Analyzer Reading (dBuV) (1 MHz RBW/ 10 Hz VBW)	Site Correction Factor (dB/m)	Average Emission Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)
4806	39.7	-1.1	38.6	54.0	-15.4
4880	41.7	-1.0	40.7	54.0	-13.3
4926	42.7	-1.0	41.7	54.0	-12.3
4959	42.8	-1.0	41.8	54.0	-12.2
7322.9	38.3	1.0	39.3	54.0	-14.7
7338	38.2	1.0	39.2	54.0	-14.8

Test Personnel:

Daniel W. Baltzell		October 26, 2012
Test Engineer	Signature	Date of Test

11 Conclusion

The data in this measurement report shows that the EUT as tested, Vocollect, Inc. Model # TAP700-01, FCC ID: MQO-TAP700-01, IC: 2570A-TAP70001, complies with all the applicable requirements of Parts 2 and 15 of the FCC Rules and Regulations, and Industry Canada RSS-210.