RHEIN TECH LABORATORIES, INC.

Engineering Solutions & Electromagnetic Compatibility Services

FCC Part 15.247 & RSS-210 Intentional Radiated Emissions Test Report

Test Lab:	Applicant:
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FCC ID: **IC:**	CFS8DLWLE200N2 573F-WLE200N2	**Test Report Date**	June 26, 2014
Platform	N/A	**RTL Work Order Number**	2014046
Model #	WLE200N2	**RTL Quote Number**	QRTL14-046C
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		
American National Standard Institute	ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices		
FCC Classification	DTS – Part 15 Digital Transmission System		
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 (10-01-13)		
IC Rule Part(s)	RSS-210 Issue 8: Licence-exempt Radio Apparatus (All Frequency Bands): Category I Equipment RSS-Gen Issue 3: General Requirements and Information for the Certification of Radio Apparatus		

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 , IC RSS-210, IC RSS-Gen and, ANSI C63.4.

Signature: _____ Date: June 26, 2014

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.
- RSS-210 Issue 8: Licence-exempt Radio Apparatus (All Frequency Bands): Category I Equipment
- RSS-Gen Issue 3: General Requirements and Information for the Certification of Radio Apparatus

This test report addresses the intentional radiated emissions requirements per FCC 15.247, which are the harmonic/spurious radiated emissions occurring in the restricted bands per FCC 15.205 (against the FCC 15.209 limits).

1.2 Description of EUT

Equipment Under Test	WLE200N2
Power Supply	9VDC AC Adapter; 7.2V 3700mAh NiMH battery
Modulation Type	DSSS
Frequency Range	2412 – 2462 MHz
Antenna Connector Type	PCB
Antenna Types	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 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: Frequencies Tested

Channel	Frequency
Low	2412
Mid	2437
High	2462

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. 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), IC RSS-210/RSS-Gen

FCC Reference	IC Reference	C63.10 Procedure	Test	Pass/Fail or N/A
FCC 15.209	RSS-Gen 7.2.5	6.5, 6.6	Radiated Emissions	Pass

2.4 Related Submittal(s)/Grant(s)

This report is to support an application for certification under FCC ID: CFS8DLWLE200N2, IC: 573F-WLE200N2.

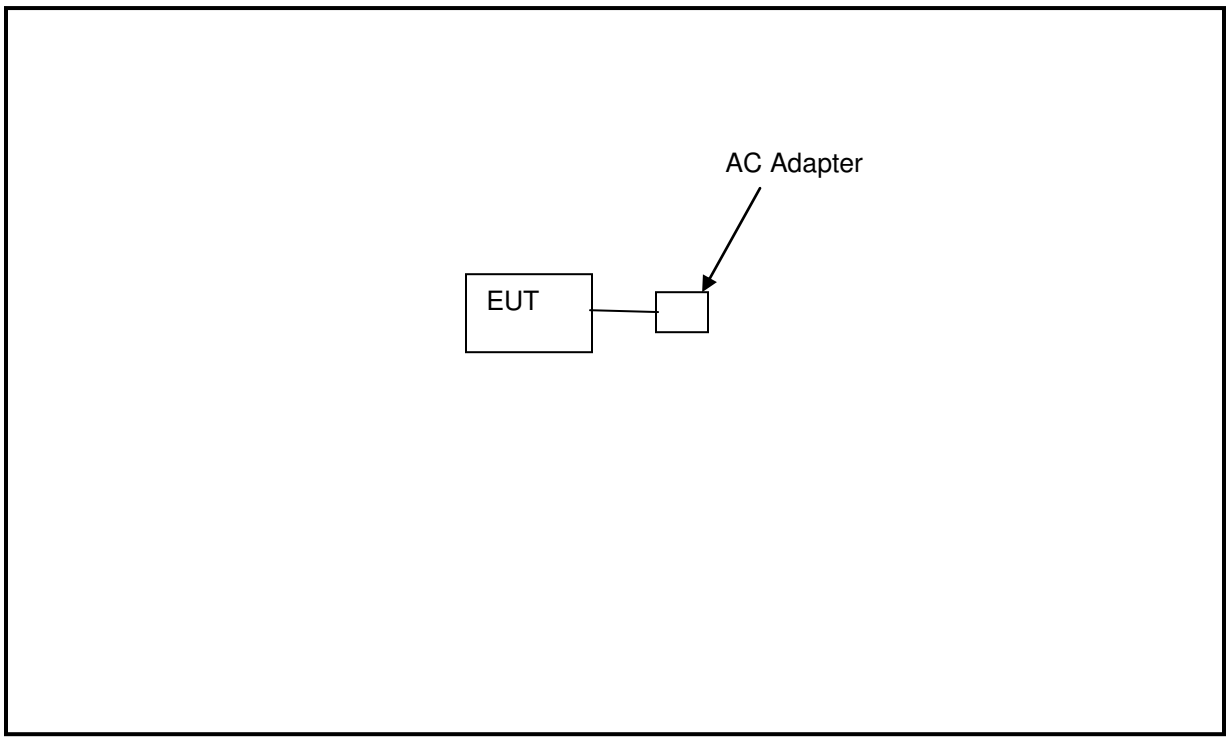
2.5 Test System Details

The test samples were received on March 11, 2014. 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

Part	Manufacturer	Model #	Serial Number	FCC ID	RTL Bar Code
802.11 b/g/n Wi-Fi 2x2 MIMO	Honeywell International	WLE200N2	23765493	CFS8DLWLE200N2	21115
AC Adapter	Honeywell International	300-04065V1	886618162299	N/A	21114

Figure 2-1: Configuration of Tested System



3 Radiated Emissions – FCC 15.209; IC RSS-210

3.1 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.

3.2 Radiated Emissions Measurement Test Procedure

Procedure: C63.10-2009 6.5, 6.6

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 1,000 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 3-1: Radiated Emissions Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
900932	Hewlett Packard	8449B OPT H02	Preamplifier (1 - 26.5 GHz)	3008A00505	8/27/14
900878	Rhein Tech Laboratories, Inc.	AM3-1197-0005	3 meter antenna mast, polarizing	OATS1	N/A
901592	Insulated Wire Inc.	KPS-1503-3600-KPR	SMK RF Cables 20’	NA	8/27/14
901593	Insulated Wire Inc.	KPS-1503-360-KPR	SMK RF Cables 36”	NA	8/27/14
901242	Rhein Tech Laboratories, Inc.	WRT-000-0003	Wood rotating table	N/A	N/A
900724	Antenna Research Associates, Inc.	LPB-2520	BiLog Antenna (25 – 1000 MHz)	1037	4/19/14
901218	EMCO	3160-09	Horn Antenna (18 - 26.5 GHz)	960281-003	4/19/14
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	3160-07	Horn Antennas (8.2 – 12.4 GHz)	9605-1054	4/19/14
900356	EMCO	3160-08	Horn Antennas (12.4 – 18 GHz)	9607-1044	4/19/14

3.3 Radiated Emissions Test Results

3.3.1 Radiated Emissions Harmonics/Spurious

Table 3-2: 2412 MHz; 802.11b; 11 mbps; Channel 1; Average Mode

Frequency (MHz)	Spectrum Analyzer Average Level (1 MHz RBW/10 Hz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Average Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4824.000	53.0	-1.1	51.9	54.0	-2.1
12060.000	28.7	10.2	38.9	54.0	-15.1
14472.000	29.9	14.7	44.6	54.0	-9.4
19296.000	19.9	20.5	40.4	54.0	-13.6

Table 3-3: 2437 MHz; 802.11b; 11 mbps; Channel 6; Average Mode

Frequency (MHz)	Spectrum Analyzer Average Level (1 MHz RBW/10 Hz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Average Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4874.000	48.2	-1.0	47.2	54.0	-6.8
7311.000	31.5	0.9	32.4	54.0	-21.6
12185.000	28.3	11.1	39.4	54.0	-14.6
19496.000	19.8	20.2	40.0	54.0	-14.0

Table 3-4: 2462 MHz; 802.11b; 11 mbps; Channel 11; Average Mode

Frequency (MHz)	Spectrum Analyzer Average Level (1 MHz RBW/10 Hz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Average Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4924.000	44.8	-1.0	43.8	54.0	-10.2
7386.000	33.8	1.0	34.8	54.0	-19.2
12310.000	26.9	12.0	38.9	54.0	-15.1
19696.000	20.6	20.4	41.0	54.0	-13.0
22158.000	20.6	21.9	42.5	54.0	-11.5
24620.000	21.4	21.8	43.2	54.0	-10.8

Table 3-5: 2412 MHz; 802.11g; 54 mbps; Channel 1; Average Mode

Frequency (MHz)	Spectrum Analyzer Average Level (1 MHz RBW/10 Hz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Average Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4824.000	47.6	-1.1	46.5	54.0	-7.5
12060.000	28.6	10.2	38.8	54.0	-15.2
14472.000	27.1	14.7	41.8	54.0	-12.2
19296.000	20.1	20.5	40.6	54.0	-13.4

Table 3-6: 2437 MHz; 802.11g; 54 mbps; Channel 6; Average Mode

Frequency (MHz)	Spectrum Analyzer Average Level (1 MHz RBW/10 Hz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Average Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4874.000	45.5	-1.0	44.5	54.0	-9.5
7311.000	30.9	0.9	31.8	54.0	-22.2
12185.000	28.4	11.1	39.5	54.0	-14.5
19496.000	20.0	20.2	40.2	54.0	-13.8

Table 3-7: 2462 MHz; 802.11g; 54 mbps; Channel 11; Average Mode

Frequency (MHz)	Spectrum Analyzer Average Level (1 MHz RBW/10 Hz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Average Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4924.000	44.7	-1.0	43.7	54.0	-10.3
7386.000	32.9	1.0	33.9	54.0	-20.1
12310.000	24.6	12.0	36.6	54.0	-17.4
19696.000	20.8	20.4	41.2	54.0	-12.8
22158.000	20.7	21.9	42.6	54.0	-11.4
24620.000	21.5	21.8	43.3	54.0	-10.7

Table 3-8: 2412 MHz; 802.11n; 65 mbps; Channel 1; Average Mode

Frequency (MHz)	Spectrum Analyzer Average Level (1 MHz RBW/10 Hz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Average Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4824.000	46.4	-1.1	45.3	54.0	-8.7
12060.000	28.6	10.2	38.8	54.0	-15.2
14472.000	27.0	14.7	41.7	54.0	-12.3
19296.000	20.2	20.5	40.7	54.0	-13.3

Table 3-9: 2437 MHz; 802.11n; 65 mbps; Channel 6; Average Mode

Frequency (MHz)	Spectrum Analyzer Average Level (1 MHz RBW/10 Hz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Average Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4874.000	44.2	-1.0	43.2	54.0	-10.8
7311.000	30.8	0.9	31.7	54.0	-22.3
12185.000	28.2	11.1	39.3	54.0	-14.7
19496.000	20.1	20.2	40.3	54.0	-13.7

Table 3-10: 2462 MHz; 802.11n; 65 mbps; Channel 11; Average Mode

Frequency (MHz)	Spectrum Analyzer Average Level (1 MHz RBW/10 Hz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Average Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4924.000	32.7	1.0	33.7	54.0	-20.3
7386.000	24.9	12.0	36.9	54.0	-17.1
12310.000	20.8	20.4	41.2	54.0	-12.8
19696.000	20.7	21.9	42.6	54.0	-11.4
22158.000	21.5	21.8	43.3	54.0	-10.7
24620.000	32.7	1.0	33.7	54.0	-20.3

Table 3-11: 2412 MHz; 802.11b; 11 mbps; Channel 1; Peak Mode

Frequency (MHz)	Spectrum Analyzer Peak Level (1 MHz RBW/3 MHz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Peak Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4824.000	66.4	-1.1	65.3	74.0	-8.7
12060.000	41.7	10.2	51.9	74.0	-22.1
14472.000	42.3	14.7	57.0	74.0	-17.0
19296.000	32.1	20.5	52.6	74.0	-21.4

Table 3-12: 2437 MHz; 802.11b; 11 mbps; Channel 6; Peak Mode

Frequency (MHz)	Spectrum Analyzer Peak Level (1 MHz RBW/3 MHz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Peak Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4874.000	62.0	-1.0	61.0	74.0	-13.0
7311.000	44.1	0.9	45.0	74.0	-29.0
12185.000	40.3	11.1	51.4	74.0	-22.6
19496.000	33.6	20.2	53.8	74.0	-20.2

Table 3-13: 2462 MHz; 802.11b; 11 mbps; Channel 11; Peak Mode

Frequency (MHz)	Spectrum Analyzer Peak Level (1 MHz RBW/3 MHz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Peak Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4924.000	60.0	-1.0	59.0	74.0	-15.0
7386.000	46.8	1.0	47.8	74.0	-26.2
12310.000	34.9	12.0	46.9	74.0	-27.1
19696.000	33.7	20.4	54.1	74.0	-19.9
22158.000	33.3	21.9	55.2	74.0	-18.8
24620.000	35.3	21.8	57.1	74.0	-16.9

Table 3-14: 2412 MHz; 802.11g; 54 mbps; Channel 1; Peak Mode

Frequency (MHz)	Spectrum Analyzer Peak Level (1 MHz RBW/3 MHz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Peak Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4824.000	61.0	-1.1	59.9	74.0	-14.1
12060.000	41.2	10.2	51.4	74.0	-22.6
14472.000	40.8	14.7	55.5	74.0	-18.5
19296.000	33.0	20.5	53.5	74.0	-20.5

Table 3-15: 2437 MHz; 802.11g; 54 mbps; Channel 6; Peak Mode

Frequency (MHz)	Spectrum Analyzer Peak Level (1 MHz RBW/3 MHz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Peak Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4874.000	60.1	-1.0	59.1	74.0	-14.9
7311.000	43.9	0.9	44.8	74.0	-29.2
12185.000	40.2	11.1	51.3	74.0	-22.7
19496.000	32.8	20.2	53.0	74.0	-21.0

Table 3-16: 2462 MHz; 802.11g; 54 mbps; Channel 11; Peak Mode

Frequency (MHz)	Spectrum Analyzer Peak Level (1 MHz RBW/3 MHz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Peak Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4924.000	58.7	-1.0	57.7	74.0	-16.3
7386.000	48.5	1.0	49.5	74.0	-24.5
12310.000	36.0	12.0	48.0	74.0	-26.0
19696.000	34.1	20.4	54.5	74.0	-19.5
22158.000	33.9	21.9	55.8	74.0	-18.2
24620.000	35.0	21.8	56.8	74.0	-17.2

Table 3-17: 2412 MHz; 802.11n; 65 mbps; Channel 1; Peak Mode

Frequency (MHz)	Spectrum Analyzer Peak Level (1 MHz RBW/3 MHz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Peak Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4824.000	60.9	-1.1	59.8	74.0	-14.2
12060.000	42.5	10.2	52.7	74.0	-21.3
14472.000	40.0	14.7	54.7	74.0	-19.3
19296.000	34.4	20.5	54.9	74.0	-19.1

Table 3-18: 2437 MHz; 802.11n; 65 mbps; Channel 6; Peak Mode

Frequency (MHz)	Spectrum Analyzer Peak Level (1 MHz RBW/3 MHz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Peak Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4874.000	60.3	-1.0	59.3	74.0	-14.7
7311.000	44.2	0.9	45.1	74.0	-28.9
12185.000	40.5	11.1	51.6	74.0	-22.4
19496.000	33.9	20.2	54.1	74.0	-19.9

Table 3-19: 2462 MHz; 802.11n; 65 mbps; Channel 11; Peak Mode

Frequency (MHz)	Spectrum Analyzer Peak Level (1 MHz RBW/3 MHz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Peak Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4924.000	59.5	1.0	58.5	74.0	-15.5
7386.000	47.4	12.0	48.4	74.0	-25.6
12310.000	36.6	20.4	48.6	74.0	-25.4
19696.000	33.9	21.9	54.3	74.0	-19.7
22158.000	33.6	21.8	55.5	74.0	-18.5
24620.000	34.5	1.0	56.3	74.0	-17.7

Test Personnel:

Daniel W. Baltzell		March 11, 2014
EMC 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/3 MHz VBW) and average (1 MHz RBW/10 Hz VBW) corrected radiated measurements were taken within the restricted band to show compliance.

Table 4-1: Band Edge Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
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	8/27/14
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	FSU	Spectrum Analyzer	1166.1660.50	11/13/14

4.2 Restricted Band Edge Test Results

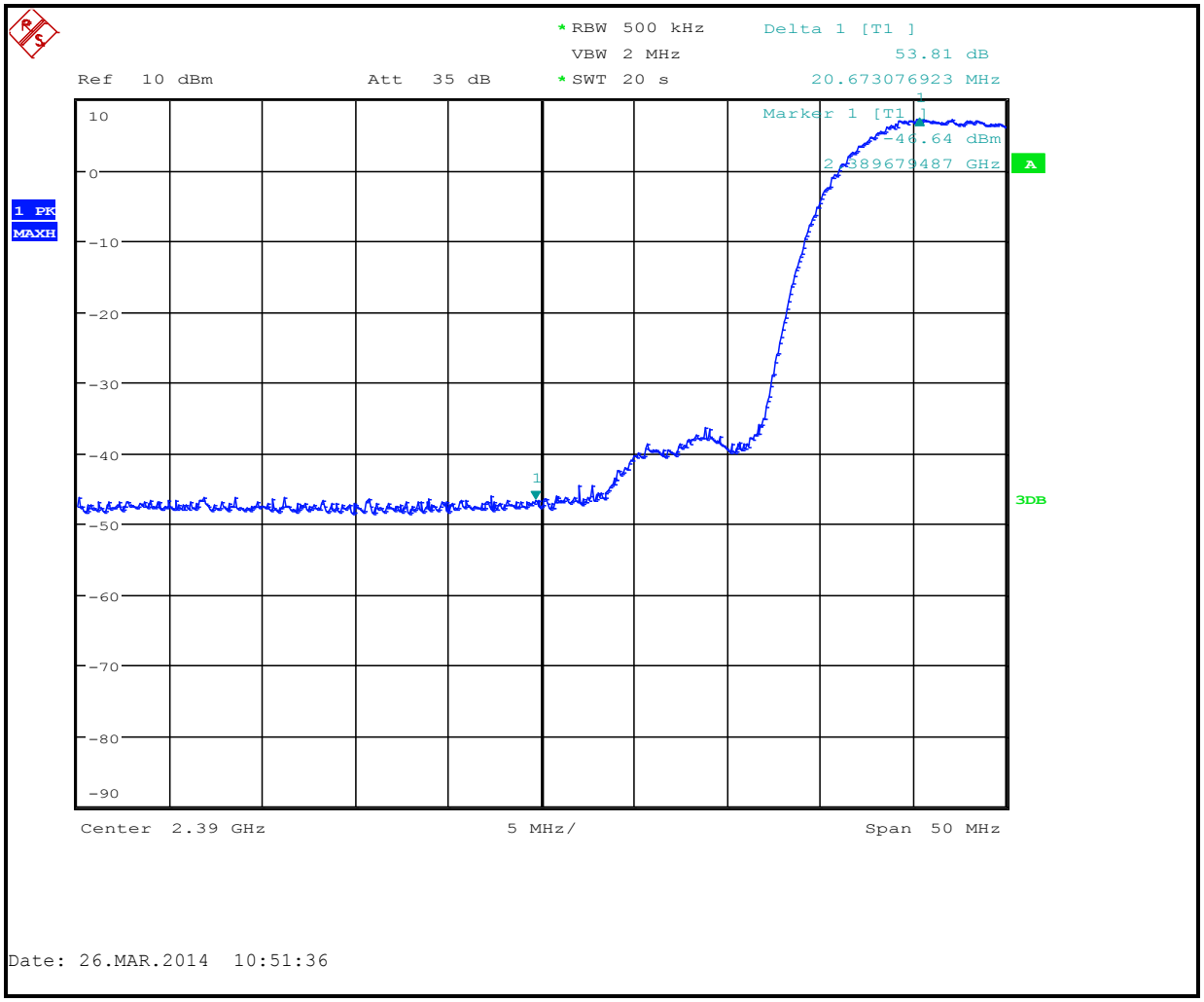
4.2.1 Lower Band Edge – 802.11b

102.0 dBuV/m is the average field strength measurement, from which the delta measurement of 53.8 dB is subtracted (reference plots), resulting in a level 48.2 dB. This level has a margin of 5.8 dB below the limit of 54 dBuV/m.

Calculation: 102.0 dBuV/m – 53.8 dB – 54 dBuV/m = -5.8 dB

Peak Field Strength of Lower Band Edge (1 MHz RBW/3 MHz VBW) = 111.2 dBuV/m
Average Field Strength of Lower Band Edge (1 MHz RBW/10 Hz VBW) = 102.0 dBuV/m
Delta measurement = 53.8 dB

Plot 4-1: In Band Emissions - Channel 1 (2412 MHz); 802.11b (11 Mbps)



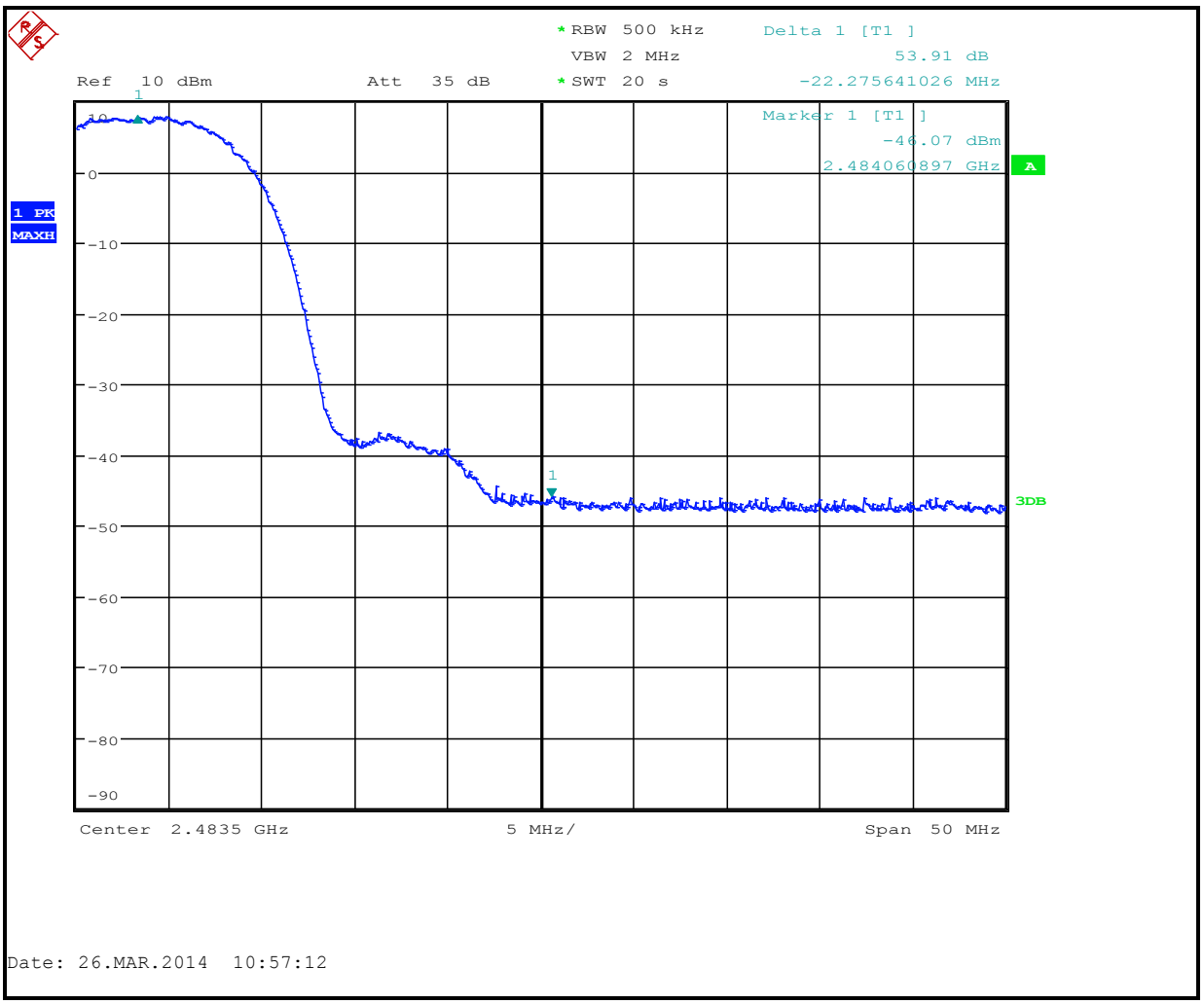
4.2.2 Upper Band Edge – 802.11b

101.8 dBuV/m is the average field strength measurement, from which the delta measurement of 53.9 dB is subtracted (reference plots), resulting in a level 47.9 dB. This level has a margin of 6.1 dB below the limit of 54 dBuV/m.

Calculation: 101.8 dBuV/m – 53.9 dB – 54 dBuV/m = -6.1 dB

Peak Field Strength of Upper Band Edge (1 MHz RBW/1 MHz VBW) = 111.6 dBuV/m
Average Field Strength of Upper Band Edge (1 MHz RBW/10 Hz VBW) = 101.8 dBuV/m
Delta measurement = 53.9 dB

Plot 4-2: In Band Emissions - Channel 13 (2462 MHz); 802.11b (11 Mbps)



4.2.3 Lower Band Edge – 802.11g

96.7 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 52.3 dB This level has a margin of 1.7 dB below the limit of 54 dBuV/m.

Calculation: 96.7 dBuV/m – 44.4 dB – 54 dBuV/m = -1.7 dB

Peak Field Strength of Lower Band Edge (1 MHz RBW/3 MHz VBW) = 110.3 dBuV/m
Average Field Strength of Lower Band Edge (1 MHz RBW/10 Hz VBW) = 96.7 dBuV/m
Delta measurement = 44.4 dB

Plot 4-3: In Band Emissions - Channel 1 (2412 MHz); 802.11g (54 Mbps)

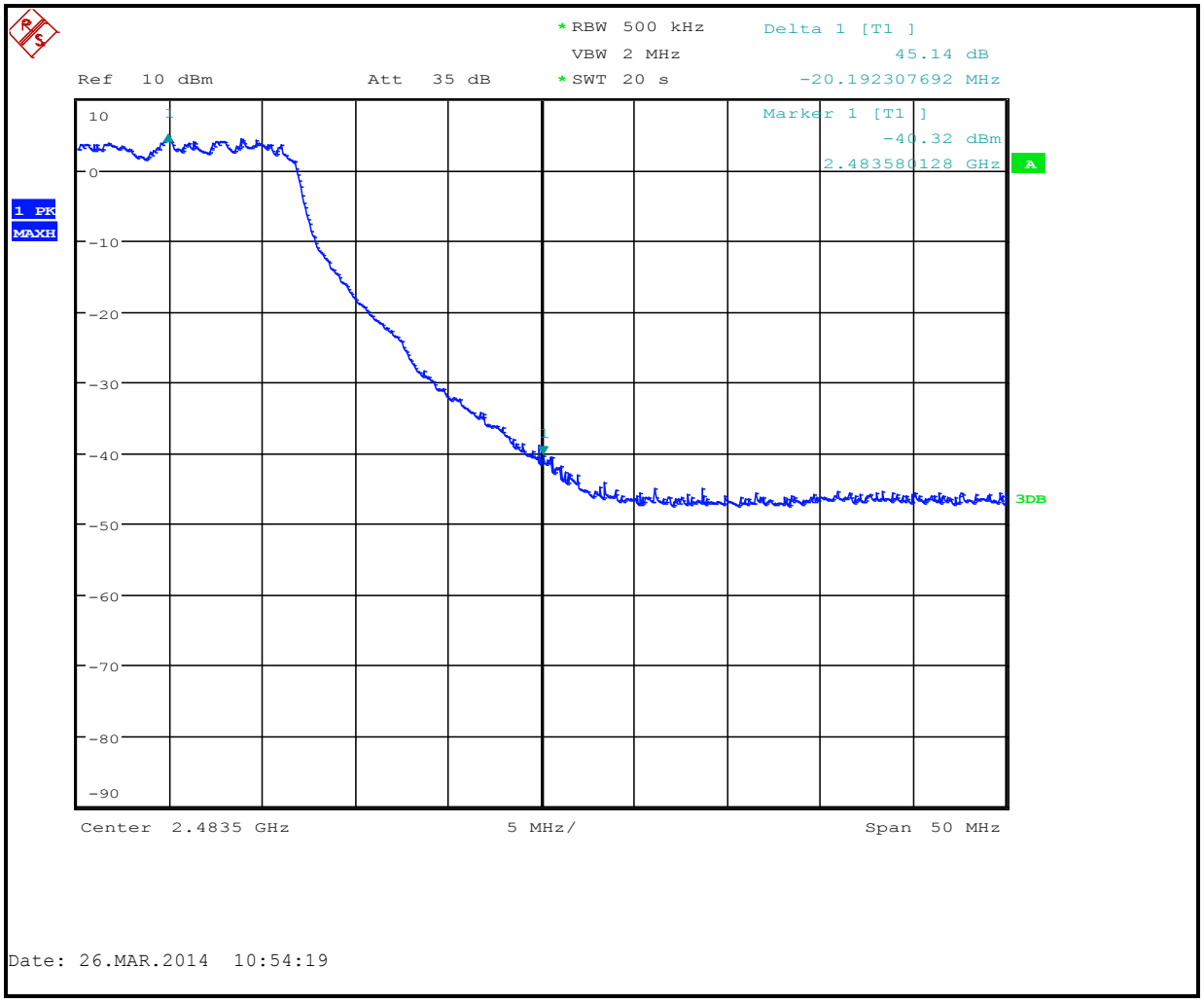
4.2.4 Upper Band Edge – 802.11g

97.3 dBuV/m is the average field strength measurement, from which the delta measurement of 45.1 dB is subtracted (reference plots), resulting in a level 52.2 dB. This level has a margin of 1.8 dB below the limit of 54 dBuV/m.

Calculation: 97.3 dBuV/m – 45.1 dB – 54 dBuV/m = -1.8 dB

Peak Field Strength of Upper Band Edge (1 MHz RBW/1 MHz VBW) = 107.8 dBuV/m
Average Field Strength of Upper Band Edge (1 MHz RBW/10 Hz VBW) = 97.3 dBuV/m
Delta measurement = 45.1 dB

Plot 4-4: In Band Emissions - Channel 13 (2462 MHz); 802.11g (54 Mbps)



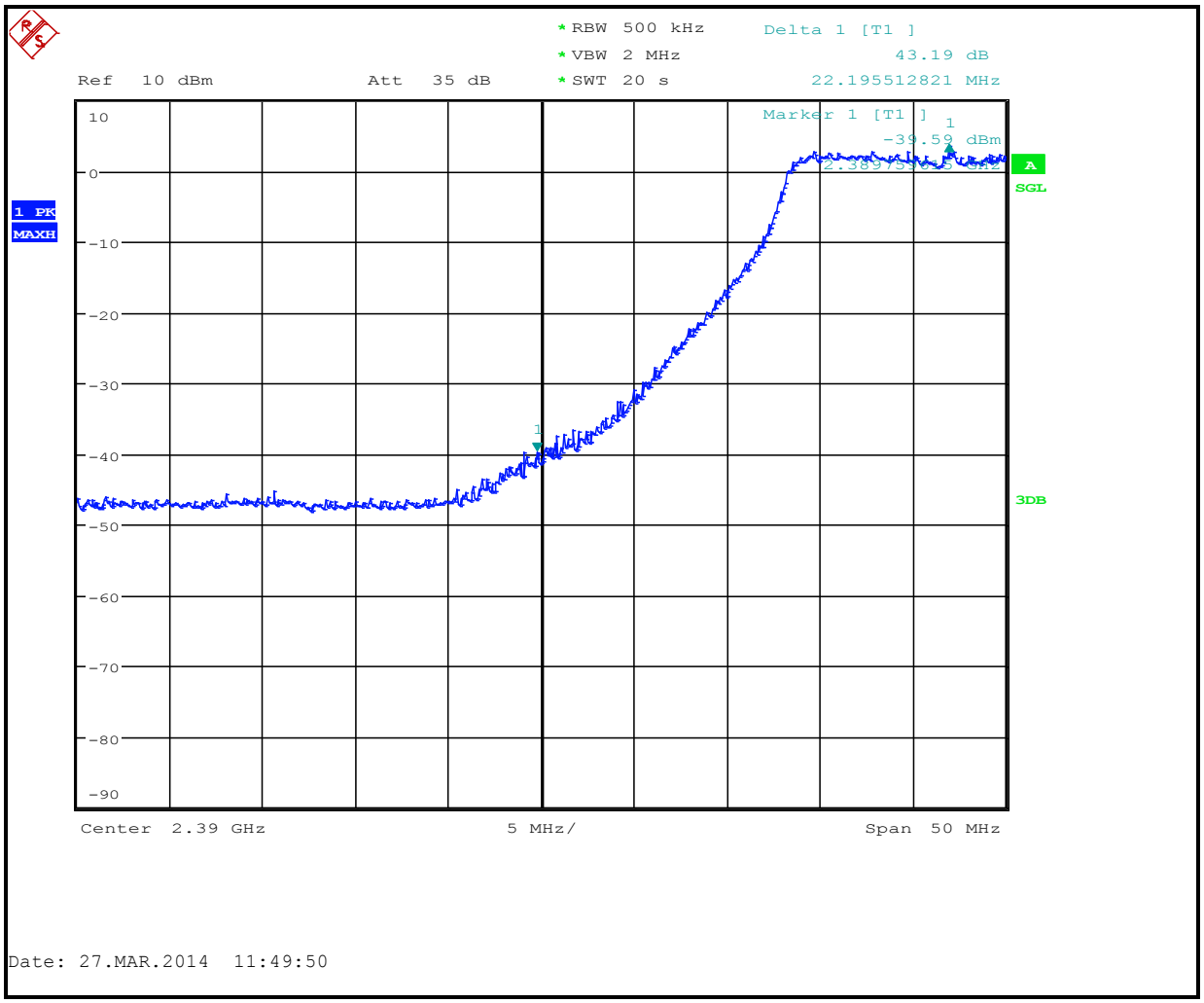
4.2.5 Lower Band Edge – 802.11n

96.7 dBuV/m is the average field strength measurement, from which the delta measurement of 43.2 dB is subtracted (reference plots), resulting in a level 53.5 dB. This level has a margin of 0.5 dB below the limit of 54 dBuV/m.

Calculation: 96.7 dBuV/m – 43.2 dB – 54 dBuV/m = -0.5 dB

Peak Field Strength of Lower Band Edge (1 MHz RBW/3 MHz VBW) = 108.8 dBuV/m
Average Field Strength of Lower Band Edge (1 MHz RBW/10 Hz VBW) = 96.7 dBuV/m
Delta measurement = 43.2 dB

Plot 4-5: In Band Emissions - Channel 1 (2412 MHz); 802.11n (65 Mbps)



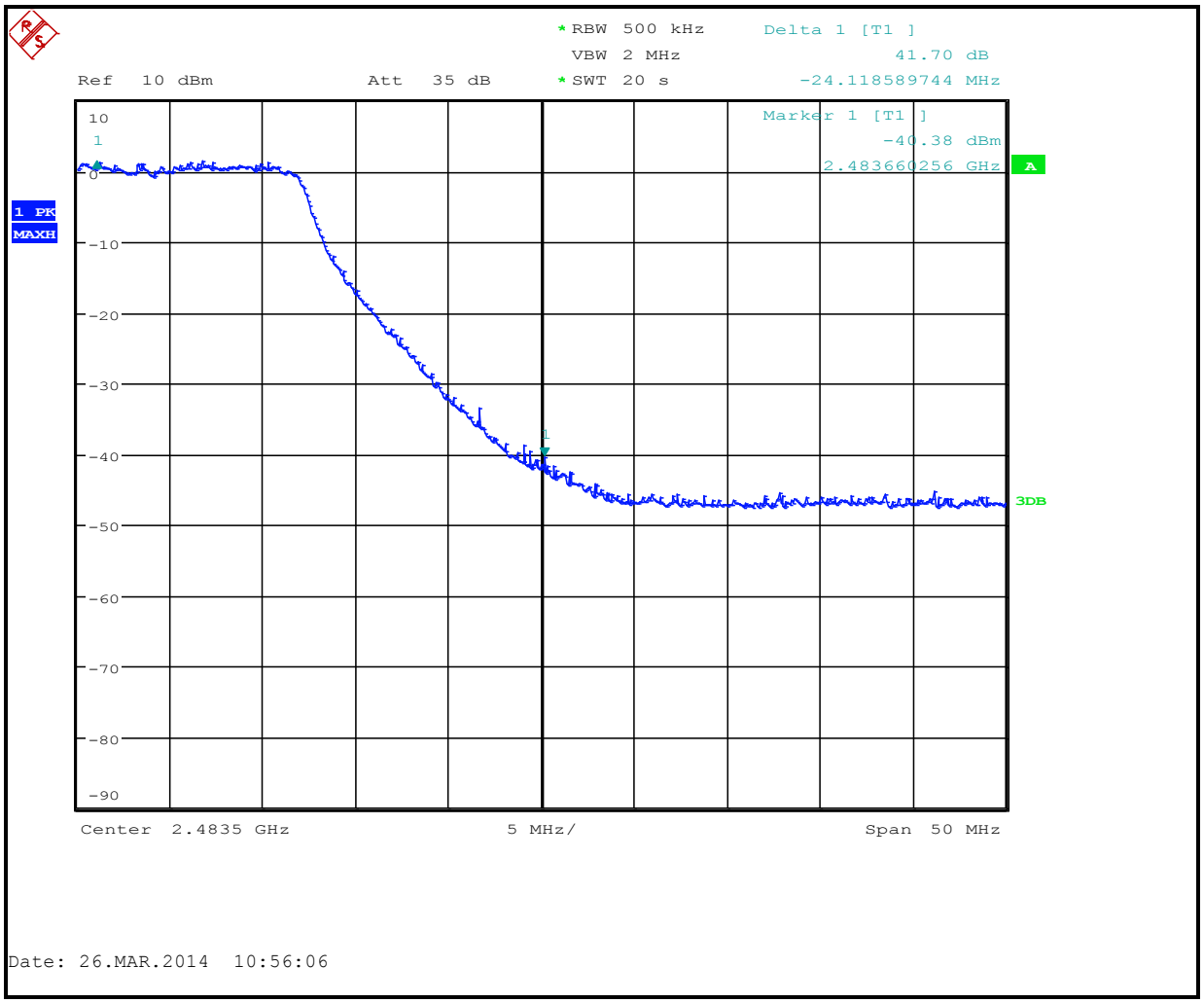
4.2.6 Upper Band Edge – 802.11n

93.8 dBuV/m is the average field strength measurement, from which the delta measurement of 41.7 dB is subtracted (reference plots), resulting in a level 52.1 dB. This level has a margin of 1.9 dB below the limit of 54 dBuV/m.

Calculation: 93.8 dBuV/m – 41.7 dB – 54 dBuV/m = -1.9 dB

Peak Field Strength of Upper Band Edge (1 MHz RBW/1 MHz VBW) = 106.6 dBuV/m
Average Field Strength of Upper Band Edge (1 MHz RBW/10 Hz VBW) = 93.8 dBuV/m
Delta measurement = 41.7 dB

Plot 4-6: In Band Emissions - Channel 13 (2462 MHz); 802.11n (65 Mbps)



Test Personnel:

Daniel W. Baltzell	Daniel W. Baltzell	March 26-27, 2014
Test Engineer	Signature	Dates of Test

5 Conclusion

The data in this measurement report shows that the Honeywell International Model WLE200N2, FCC ID: CFS8DLWLE200N2, IC: 573F-WLE200N2, complies with the applicable intentional radiated requirements of Parts 2 and 15 of the FCC rules and regulations and Industry Canada RSS-Gen and RSS-210.

Appendix A: Test Photographs

Photograph 1: Radiated Testing – Front View

Photograph 2: Radiated Testing – Back View