FCC PART 15, SUBPART C
IC RSS-247, ISSUE 1, MAY 2015

TEST AND MEASUREMENT REPORT

For

Vocera Communication, Inc.

525 Race Street,

San Jose, CA 95126, USA

FCC ID: QGZB3000N
IC: 4362A-B3000N

Report Type:	**Product Type:**
CIIPC Report	Communication Badge

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R1506221-247	Initial	2015-07-30

1 General Description

1.1 Product Description for Equipment Under Test (EUT)

This test and measurement report was prepared on behalf of *Vocera Communication, Inc*., and their product model: *B3000N*, FCC ID: *QGZB3000N*, IC: *4362A-B3000N* or the "EUT" as referred to in this report. The EUT is an 802.11 a/b/g/n + BT 2.0/3.0 communication badge.

1.2 Mechanical Description of EUT

The EUT measures approximately 9.8 cm (L) x 3.6 cm (W) x 1.8 cm (H) and weighs 54 g.

The test data gathered are from typical production sample, serial number: 36 assigned by Client.

1.3 Objective

This report is prepared on behalf of *Vocera Communication, Inc*. in accordance with Part 15, Subparts C of the Federal Communication Commission's rules.

The objective is to determine compliance with FCC Part 15.247 rules and IC RSS-247 rules for Radiated Spurious Emissions.

1.4 Related Submittal(s)/Grant(s)

DSS and NII submissions with FCC ID: QGZB3000N and IC: 4362A-B3000N.

1.5 Test Methodology

All measurements contained in this report were conducted in accordance with ANSI C63.10-2013, 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 and FCC KDB 558074 D01 DTS Meas Guidance v03r02: Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247

1.6 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in the field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

The following calculation follows the procedures as set forth in clause 7.2.3, ETSI TR 100 028-1 V1.4.1 (2001-12), the expression of Uncertainty in Radiated RF Testing is in accordance to ISO/IEC 17025 and TR 100 028-1 V1.4.1 (2001-12).

The expanded Measurement Uncertainty value having a confidence factor of 95%, is within a range of 5.48 dB. This means that the value of conducted RF carrier power test will be within +/- 2.74 dB of the measuring radiated emissions power versus the expected value.
The expected value is defined as the power at the antenna of the Transmitter under Test.

1.7 Test Facility

Bay area compliance Laboratories Corp. (BACL) is:
1- An independent Commercial Test Laboratory accredited to **ISO 17025: 2005** by **A2LA**, in the fields of: Electromagnetic Compatibility & Telecommunications covering Emissions, Immunity, Radio, RF Exposure, Safety and Telecom. This includes NEBS (Network Equipment Building System), Wireless RF, Telecommunications Terminal Equipment (TTE); Network Equipment; Information Technology Equipment (ITE); Medical Electrical Equipment; Industrial, Commercial, and Medical Test Equipment; Professional Audio and Video Equipment; Electronic (Digital) Products; Industrial and Scientific Instruments; Cabled Distribution Systems and Energy Efficiency Lighting.

2- An ENERGY STAR Recognized Laboratory, for the LM80 Testing, a wide variety of Luminares and Computers.

3- A NIST Designated Phase-I and Phase-II CAB including: ACMA (Australian Communication and Media Authority), BSMI (Bureau of Standards, Metrology and Inspection of Taiwan), IDA (Infocomm Development Authority of Singapore), IC(Industry Canada), Korea (Ministry of Communications Radio Research Laboratory), NCC (Formerly DGT; Directorate General of Telecommunication of Chinese Taipei) OFTA (Office of the Telecommunications Authority of Hong Kong), Vietnam, VCCI - Voluntary Control Council for Interference of Japan and a designated EU CAB (Conformity Assessment Body) (Notified Body) for the EMC and R&TTE Directives.

4- A Product Certification Body accredited to **ISO Guide 65: 1996** by **A2LA** to certify:
1- Unlicensed, Licensed radio frequency devices and Telephone Terminal Equipment for the FCC. Scope A1, A2, A3, A4, B1, B2, B3, B4 & C.
2. Radio Standards Specifications (RSS) in the Category I Equipment Standards List and All Broadcasting Technical Standards (BETS) in Category I Equipment Standards List for Industry Canada.
3. Radio Communication Equipment for Singapore.
4. Radio Equipment Specifications, GMDSS Marine Radio Equipment Specifications, and Fixed Network Equipment Specifications for Hong Kong.
5. Japan MIC Telecommunication Business Law (A1, A2) and Radio Law (B1, B2 and B3).
6. Audio/Video, Battery Charging Systems, Computers, Displays, Enterprise Servers, Imaging Equipment, Set-Top Boxes, Telephony, Televisions, Ceiling Fans, CFLs (Including GU24s),Decorative Light Strings, Integral LED Lamps, Luminaires, Residential Ventilating Fans.

The test site used by BACL Corp. to collect radiated and conducted emissions measurement data is located at its facility in Sunnyvale, California, USA.

The test site at BACL Corp. has been fully described in reports submitted to the Federal Communication Commission (FCC) and Voluntary Control Council for Interference (VCCI). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 11 and December 10, 1997, and Article 8 of the VCCI regulations on December 25, 1997. The test site also complies with the test methods and procedures set forth in CISPR 22:2008 §10.4 for measurements below 1 GHz and §10.6 for measurements above 1 GHz as well as ANSI C63.4-2009, ANSI C63.4-2009, TIA/EIA-603 & CISPR 24:2010.

The Federal Communications Commission and Voluntary Control Council for Interference have the reports on file and they are listed under FCC registration number: 90464 and VCCI Registration No.: A-0027. The test site has been approved by the FCC and VCCI for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, BACL Corp. is an American Association for Laboratory Accreditation (A2LA) accredited laboratory (Lab Code 3297-02). The current scope of accreditations can be found at

http://www.a2la.org/scopepdf/3297-02.pdf?CFID=1132286&CFTOKEN=e42a3240dac3f6ba-6DE17DCB-1851-9E57-477422F667031258&jsessionid=8430d44f1f47cf2996124343c704b367816b

2 System Test Configuration

2.1 Justification

The EUT was configured for testing according to ANSI C63.10-2013 and FCC KDB 558074 D01 DTS Meas Guidance v03r02.

The EUT was tested in a testing mode to represent worst-case results during the final qualification test.

The worst-case data rates are determined to be as follows for each mode based upon investigation by measuring the average power, peak power and PSD across all data rates bandwidths, and modulations.

2.2 EUT Exercise Software

Testing firmware version: 4.0.1.35, provided by *Vocera Communication, Inc.*, and was verified by Jin Yang to comply with the standard requirements being tested against.

2.3 Special Equipment

There were no special accessories were required, included, or intended for use with EUT during these tests.

2.4 Equipment Modifications

No modifications were made to the EUT.

2.5 Local Support Equipment

N/A

2.6 EUT Internal Configuration Details

Manufacturer	Description	Model	Serial Number
Vocera	PCB Board	211-01770E	-

3 Summary of Test Results

Results reported relate only to the product tested.

FCC § IC	Description of Test	Results
FCC §2.1093, §15.247(i) IC RSS-102	RF Exposure	Compliant
FCC §15.205, §15.209, §15.247(d) IC RSS-247 §5.5	Radiated Spurious Emissions	Compliant

4 FCC §15.247(i), §2.1093 & IC RSS 102 - RF Exposure

4.1 Applicable Standards

FCC §2.1093, §15.247(i)
IC RSS-102

4.2 Test Result

Compliance, please refer to the SAR report.

5 FCC §15.205, §15.209 & §15.247(d) & IC RSS-247 §5.5 – Spurious Radiated Emissions

5.1 Applicable Standard

As per FCC §15.35(d): Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1 MHz.

As per FCC §15.209(a) and RSS-Gen: Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table

Frequency (MHz)	Field Strength (micro volts/meter)	Measurement Distance (meters)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/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

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

As Per FCC §15.205(a) and RSS-Gen, except as show in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 – 0.110	16.42 – 16.423	960 – 1240	4. 5 – 5. 15
0.495 – 0.505	16.69475 – 16.69525	1300 – 1427	5. 35 – 5. 46
2.1735 – 2.1905	25.5 – 25.67	1435 – 1626.5	7.25 – 7.75
4.125 – 4.128	37.5 – 38.25	1645.5 – 1646.5	8.025 – 8.5
4.17725 – 4.17775	73 – 74.6	1660 – 1710	9.0 – 9.2
4.20725 – 4.20775	74.8 – 75.2	1718.8 – 1722.2	9.3 – 9.5
6.215 – 6.218	108 – 121.94	2200 – 2300	10.6 – 12.7
6.26775 – 6.26825	123 – 138	2310 – 2390	13.25 – 13.4
6.31175 – 6.31225	149.9 – 150.05	2483.5 – 2500	14.47 – 14.5
8.291 – 8.294	156.52475 – 156.52525	2690 – 2900	15.35 – 16.2
8.362 – 8.366	156.7 – 156.9	3260 – 3267	17.7 – 21.4
8.37625 – 8.38675	162.0125 –167.17	3.332 – 3.339	22.01 – 23.12
8.41425 – 8.41475	167.72 – 173.2	3 3458 – 3 358	23.6 – 24.0
12.29 – 12.293	240 – 285	3.600 – 4.400	31.2 – 31.8
12.51975 – 12.52025	322 – 335.4		36.43 – 36.5
12.57675 – 12.57725	399.9 – 410		Above 38.6
13.36 – 13.41	608 – 614		

As per FCC §15.247 (d) 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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c).

As per IC RSS-247 §5.5 Unwanted Emissions, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

5.2 Test Setup

The radiated emissions tests were performed in the 5-meter Chamber, using the setup in accordance with ANSI C63.10-2013. The specification used was the FCC 15 Subpart C and IC RSS-247 limits.

The spacing between the peripherals was 10 centimeters.
External I/O cables were draped along the edge of the test table and bundle when necessary.

5.3 Test Procedure

The measurements are base on FCC KDB 558074 D01 DTS Meas Guidance v03r02: Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 section 11: Emissions in non-restricted frequency bands and section 12: Emissions in restricted frequency bands.

For the radiated emissions test, the EUT host, and all support equipment power cords was connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

For below 1GHz, the EUT is set 3 meter away from the testing antenna, which is varied from 1-4 meter, and the EUT is placed on a turntable, which is 0.8 meter above ground plane, the table shall be rotated for 360 degrees to find out the highest emission. The receiving antenna should be changed the polarization both of horizontal and vertical. For above 1GHz, the EUT is set 3 meter away from the testing antenna, which is varied from 1-4 meter, and the EUT is placed on a turntable, which is 1.5 meter above ground plane, the table shall be rotated for 360 degrees to find out the highest emission. The receiving antenna should be changed the polarization both of horizontal and vertical. The spectrum analyzer or receiver is set as:

Below 1000 MHz:

RBW = 100 kHz / VBW = 300 kHz / Sweep = Auto

Above 1000 MHz:

(1) Peak: RBW = 1MHz / VBW = 3MHz / Sweep = Auto
(2) Average: RBW = 1MHz / VBW = 10Hz / Sweep = Auto

5.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude (CA) is calculated by adding the Antenna Factor (AF), the Cable Loss (CL), the Attenuator Factor (Atten) and subtracting the Amplifier Gain (Ga) to indicated Amplitude (Ai) reading. The basic equation is as follows:

CA = Ai + AF + CL + Atten – Ga

For example, a corrected amplitude of 40.3 dBuV/m = Indicated Reading (32.5 dBuV) + Antenna Factor (+23.5dB) + Cable Loss (3.7 dB) + Attenuator (10 dB) - Amplifier Gain (29.4 dB)

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of -7 dB means the emission is 7 dB below the maximum limit. The equation for margin calculation is as follows:

Margin = Corrected Amplitude - Limit

5.5 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Sunol Science Corp	System Controller	SC99V	122303-1	N/R	N/R
Sunol Science Corp	Combination Antenna	JB3	A020106-3	2014-09-17	1 year
HP/Agilent	Pre-amplifier	8449B	3008A0113	2015-05-19	1 year
Hewlett Packard	Pre-amplifier	8447D	2944A06639	2015-03-20	1 year
Agilent	Spectrum Analyzer	E4446A	US44300386	2014-09-03	1 year
EMCO	Horn Antenna	3115	9511-4627	2015-01-15	1 year
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100337	2015-03-28	1 year
IW Microwave	High Frequency Cable	DC-1438	SPS-2303-3840-SPS	2014-09-23	1 year
Hewlett-Packard	5 ft N-type cable	-	1268	2014-07-24	1 year
-	SMA cable	-	C0002	Each time[1]	N/A

Note[1]: cable and attenuator included in the test set-up will be checked each time before testing.

Statement of Traceability: BACL *attests that all calibrations have been performed per the A2LA requirements, traceable to NIST.*

5.6 Test Environmental Conditions

Temperature:	22 ºC
Relative Humidity:	52 %
ATM Pressure:	101.9 kPa

The testing was performed by Jin Yang on 2015-06-25 in 5 m chamber 3.

5.7 Summary of Test Results

According to the data hereinafter, the EUT complied with FCC Title 47, Part 15C and IC RSS-247 standard's radiated emissions limits, and had the worst margin of:

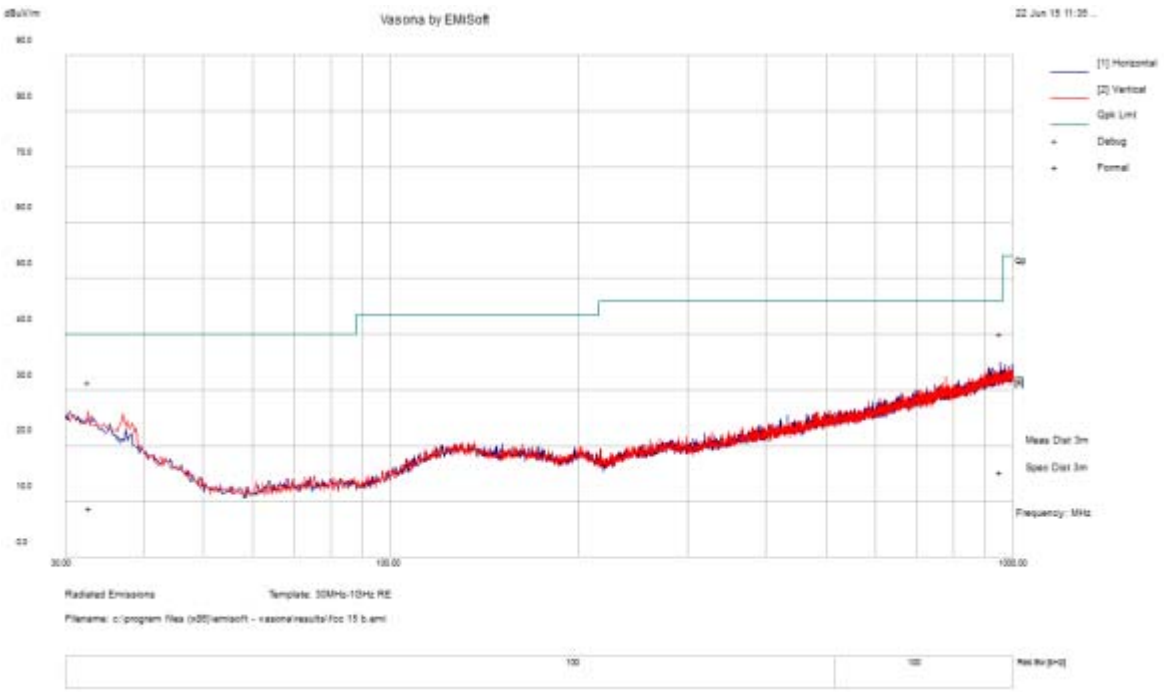
30 MHz – 25 GHz:

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Mode, Channel**
-0.102	4824	Vertical	b-mode, low channel

Please refer to the following table and plots for specific test result details

5.8 Radiated Emissions Test Results

1) 30 MHz – 1 GHz for 2.4 GHz Wi-Fi, Measured at 3 meters



2.4 GHz Band, g mode Middle Channel, Quasi-Peak Measurements @ 3m, worst case

Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
951.28275	15.34	300	H	174	46	-30.66
32.834	8.93	291	V	169	40	-31.07

Note: The worst case result was reported.

2) 1–25 GHz for 2.4 GHz Wi-Fi, Measured at 3 meters

802.11b Mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 2412 MHz, measured at 3 meters											
2412	74.89	0	105	V	28.38	3.23	-	106.5	-	-	Peak
2412	67.96	30	152	H	28.388	3.23	-	99.578	-	-	Peak
2412	71.2	0	100	V	28.38	3.23	-	102.81	-	-	Ave
2412	64.3	30	152	H	28.388	3.23	-	95.918	-	-	Ave
2390	27.65	0	100	V	28.38	3.23	-	59.26	74	-14.74	Peak
2390	28.16	30	100	H	28.388	3.23	-	59.778	74	-14.222	Peak
2390	14.41	0	100	V	28.38	3.23	-	46.02	54	-7.98	Ave
2390	14.35	30	100	H	28.388	3.23	-	45.968	54	-8.032	Ave
4824	56.67	137	171	V	32.808	5.41	36.64	58.248	74	-15.752	Peak
4824	55.34	19	100	H	32.846	5.41	36.64	56.956	74	-17.044	Peak
4824	52.32	137	171	V	32.808	5.41	36.64	53.898	54	-0.102	Ave
4824	51.93	19	100	H	32.846	5.41	36.64	53.546	54	-0.454	Ave
7236	48.56	0	100	V	35.836	6.92	36.42	54.896	74	-19.104	Peak
7236	49.42	0	100	H	35.808	6.92	36.42	55.728	74	-18.272	Peak
7236	33.66	0	100	V	35.836	6.92	36.42	39.996	54	-14.004	Ave
7236	33.64	0	100	H	35.808	6.92	36.42	39.948	54	-14.052	Ave
9648	50.42	0	100	V	37.854	9.84	36.69	61.424	86.5	-25.076	Peak
9648	50.4	0	100	H	37.858	9.84	36.69	61.408	79.578	-18.17	Peak
9648	35.41	0	100	V	37.854	9.84	36.69	46.414	72.81	-26.396	Ave
9648	35.42	0	100	H	37.858	9.84	36.69	46.428	65.918	-19.49	Ave
Middle Channel 2437 MHz, measured at 3 meters											
2437	74.11	0	105	V	28.38	3.23	-	105.72	-	-	Peak
2437	70.42	30	152	H	28.388	3.23	-	102.038	-	-	Peak
2437	70.61	0	105	V	28.38	3.23	-	102.22	-	-	Ave
2437	67.13	30	152	H	28.388	3.23	-	98.748	-	-	Ave
4874	55.88	32	165	V	33.132	5.24	36.63	57.62	74	-16.38	Peak
4874	54.47	25	100	H	33.107	5.24	36.63	56.19	74	-17.81	Peak
4874	51.80	163	107	V	33.132	5.24	36.63	53.54	54	-0.46	Ave
4874	49.97	25	100	H	33.107	5.24	36.63	51.69	54	-2.31	Ave
7311	47.86	0	100	V	36.222	7.39	36.42	55.05	74	-18.95	Peak
7311	48.07	0	100	H	36.246	7.39	36.42	55.29	74	-18.71	Peak
7311	32.66	0	100	V	36.222	7.39	36.42	39.85	54	-14.15	Ave
7311	32.81	0	100	H	36.246	7.39	36.42	40.03	54	-13.97	Ave
9748	49.50	0	100	V	37.852	9.31	36.69	59.97	85.72	-25.75	Peak
9748	49.76	0	100	H	37.843	9.31	36.69	60.22	82.038	-21.82	Peak
9748	34.47	0	100	V	37.852	9.31	36.69	44.94	72.22	-27.28	Ave
9748	34.51	0	100	H	37.843	9.31	36.69	44.97	68.748	-23.78	Ave

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 2472 MHz, measured at 3 meters											
2472	71	0	105	V	28.55	3.26	-	102.81	-	-	Peak
2472	68.41	11	156	H	28.595	3.26	-	100.265	-	-	Peak
2472	67.59	0	100	V	28.55	3.26	-	99.4	-	-	Ave
2472	65.09	11	156	H	28.595	3.26	-	96.945	-	-	Ave
2483.5	26.42	0	100	V	28.55	3.26	-	58.23	74	-15.77	Peak
2483.5	27.19	30	100	H	28.595	3.26	-	59.045	74	-14.955	Peak
2483.5	19.22	0	100	V	28.55	3.26	-	51.03	54	-2.97	Ave
2483.5	14.28	30	100	H	28.595	3.26	-	46.135	54	-7.865	Ave
4944	51.05	166	143	V	33.132	5.24	36.63	52.79	74	-21.21	Peak
4944	50.04	24	142	H	33.107	5.24	36.63	51.76	74	-22.24	Peak
4944	42.58	166	143	V	33.132	5.24	36.63	44.32	54	-9.68	Ave
4944	40.17	24	142	H	33.107	5.24	36.63	41.89	54	-12.11	Ave
7416	48.04	0	100	V	36.449	7.46	36.46	55.49	74	-18.51	Peak
7416	48.24	0	100	H	36.447	7.46	36.46	55.69	74	-18.31	Peak
7416	33.12	0	100	V	36.449	7.46	36.46	40.57	54	-13.43	Ave
7416	33.08	0	100	H	36.447	7.46	36.46	40.53	54	-13.47	Ave
9888	48.98	0	100	V	38.34	9.11	36.71	59.72	82.81	-23.09	Peak
9888	49.83	0	100	H	38.333	9.11	36.71	60.56	80.265	-19.70	Peak
9888	34.68	0	100	V	38.34	9.11	36.71	45.42	69.4	-23.98	Ave
9888	34.52	0	100	H	38.333	9.11	36.71	45.25	66.945	-21.69	Ave

802.11g Mode

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 2412 MHz, measured at 3 meters											
2412	75.9	0	100	V	28.38	3.23	-	107.51	-	-	Peak
2412	63.6	171	154	H	28.388	3.23	-	95.218	-	-	Peak
2412	65.86	0	100	V	28.38	3.23	-	97.47	-	-	Ave
2412	53.16	171	154	H	28.388	3.23	-	84.778	-	-	Ave
2390	31.55	0	100	V	28.38	3.23	-	63.16	74	-10.84	Peak
2390	27.06	171	154	H	28.388	3.23	-	58.678	74	-15.322	Peak
2390	17.13	0	100	V	28.38	3.23	-	48.74	54	-5.26	Ave
2390	14.41	171	154	H	28.388	3.23	-	46.028	54	-7.972	Ave
4824	53.88	335	136	V	32.808	5.41	36.64	55.46	74	-18.54	Peak
4824	53.42	18	100	H	32.846	5.41	36.64	55.04	74	-18.96	Peak
4824	38.66	335	136	V	32.808	5.41	36.64	40.24	54	-13.76	Ave
4824	38.69	18	100	H	32.846	5.41	36.64	40.31	54	-13.69	Ave
7236	48.73	0	100	V	35.836	6.92	36.42	55.07	74	-18.93	Peak
7236	48.17	0	100	H	35.808	6.92	36.42	54.48	74	-19.52	Peak
7236	33.42	0	100	V	35.836	6.92	36.42	39.76	54	-14.24	Ave
7236	33.37	0	100	H	35.808	6.92	36.42	39.68	54	-14.32	Ave
9648	49.97	0	100	V	37.854	9.84	36.69	60.97	87.51	-26.54	Peak
9648	49.24	0	100	H	37.858	9.84	36.69	60.25	75.218	-14.97	Peak
9648	35.22	0	100	V	37.854	9.84	36.69	46.22	67.47	-21.25	Ave
9648	35.18	0	100	H	37.858	9.84	36.69	46.19	54.778	-8.59	Ave
Middle Channel 2437 MHz, measured at 3 meters											
2437	76.95	0	100	V	28.38	3.23	-	108.56	-	-	Peak
2437	69.61	184	156	H	28.388	3.23	-	101.228	-	-	Peak
2437	65.32	0	100	V	28.38	3.23	-	96.93	-	-	Ave
2437	59.29	184	156	H	28.388	3.23	-	90.908	-	-	Ave
4874	54.92	32	189	V	33.132	5.24	36.63	56.66	74	-17.34	Peak
4874	53.51	40	100	H	33.107	5.24	36.63	55.23	74	-18.77	Peak
4874	40.51	32	189	V	33.132	5.24	36.63	42.25	54	-11.75	Ave
4874	38.35	40	100	H	33.107	5.24	36.63	40.07	54	-13.93	Ave
7311	48.47	0	100	V	36.222	7.39	36.42	55.66	74	-18.34	Peak
7311	47.71	0	100	H	36.246	7.39	36.42	54.93	74	-19.07	Peak
7311	33.74	0	100	V	36.222	7.39	36.42	40.93	54	-13.07	Ave
7311	32.96	0	100	H	36.246	7.39	36.42	40.18	54	-13.82	Ave
9748	49.23	0	100	V	37.852	9.31	36.69	59.70	88.56	-28.86	Peak
9748	48.54	0	100	H	37.843	9.31	36.69	59.00	81.228	-22.23	Peak
9748	34.57	0	100	V	37.852	9.31	36.69	45.04	66.93	-21.89	Ave
9748	34.51	0	100	H	37.843	9.31	36.69	44.97	60.908	-15.94	Ave

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 2472 MHz, measured at 3 meters											
2472	74.56	0	100	V	28.55	3.26	-	106.37	-	-	Peak
2472	65.64	174	156	H	28.595	3.26	-	97.495	-	-	Peak
2472	63.67	0	100	V	28.55	3.26	-	95.48	-	-	Ave
2472	55.01	174	156	H	28.595	3.26	-	86.865	-	-	Ave
2483.5	37.88	0	100	V	28.55	3.26	-	69.69	74	-4.31	Peak
2483.5	32.46	174	156	H	28.595	3.26	-	64.315	74	-9.685	Peak
2483.5	21.69	0	100	V	28.55	3.26	-	53.5	54	-0.5	Ave
2483.5	16.71	174	156	H	28.595	3.26	-	48.565	54	-5.435	Ave
4944	49.40	0	100	V	33.132	5.24	36.63	51.14	74	-22.86	Peak
4944	48.34	0	100	H	33.107	5.24	36.63	50.06	74	-23.94	Peak
4944	34.20	0	100	V	33.132	5.24	36.63	35.94	54	-18.06	Ave
4944	34.36	0	100	H	33.107	5.24	36.63	36.08	54	-17.92	Ave
7416	48.31	0	100	V	36.449	7.46	36.46	55.76	74	-18.24	Peak
7416	48.42	0	100	H	36.447	7.46	36.46	55.87	74	-18.13	Peak
7416	33.19	0	100	V	36.449	7.46	36.46	40.64	54	-13.36	Ave
7416	33.16	0	100	H	36.447	7.46	36.46	40.61	54	-13.39	Ave
9888	49.77	0	100	V	38.34	9.11	36.71	60.51	86.37	-25.86	Peak
9888	49.81	0	100	H	38.333	9.11	36.71	60.54	77.495	-16.95	Peak
9888	34.74	0	100	V	38.34	9.11	36.71	45.48	65.48	-20.00	Ave
9888	34.73	0	100	H	38.333	9.11	36.71	45.46	56.865	-11.40	Ave

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Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 2412 MHz, measured at 3 meters											
2412	74.18	0	100	V	28.38	3.23	-	105.79	-	-	Peak
2412	68.23	33	148	H	28.388	3.23	-	99.848	-	-	Peak
2412	63.42	0	100	V	28.38	3.23	-	95.03	-	-	Ave
2412	58.2	33	148	H	28.388	3.23	-	89.818	-	-	Ave
2390	34.53	0	100	V	28.38	3.23	-	66.14	74	-7.86	Peak
2390	27.8	33	148	H	28.388	3.23	-	59.418	74	-14.582	Peak
2390	18.88	0	100	V	28.38	3.23	-	50.49	54	-3.51	Ave
2390	14.67	33	148	H	28.388	3.23	-	46.288	54	-7.712	Ave
4824	53.62	0	145	V	32.808	5.41	36.64	55.20	74	-18.80	Peak
4824	54.31	18	100	H	32.846	5.41	36.64	55.93	74	-18.07	Peak
4824	38.75	0	145	V	32.808	5.41	36.64	40.33	54	-13.67	Ave
4824	39.02	18	100	H	32.846	5.41	36.64	40.64	54	-13.36	Ave
7236	48.81	0	100	V	35.836	6.92	36.42	55.15	74	-18.85	Peak
7236	48.23	0	100	H	35.808	6.92	36.42	54.54	74	-19.46	Peak
7236	34.01	0	100	V	35.836	6.92	36.42	40.35	54	-13.65	Ave
7236	34.07	0	100	H	35.808	6.92	36.42	40.38	54	-13.62	Ave
9648	50.13	0	100	V	37.854	9.84	36.69	61.13	85.79	-24.66	Peak
9648	50.10	0	100	H	37.858	9.84	36.69	61.11	79.848	-18.74	Peak
9648	35.81	0	100	V	37.854	9.84	36.69	46.81	65.03	-18.22	Ave
9648	35.79	0	100	H	37.858	9.84	36.69	46.80	59.818	-13.02	Ave
Middle Channel 2437 MHz, measured at 3 meters											
2437	75.23	22	100	V	28.38	3.23	-	106.84	-	-	Peak
2437	72.98	33	100	H	28.388	3.23	-	104.598	-	-	Peak
2437	65.86	22	100	V	28.38	3.23	-	97.47	-	-	Ave
2437	62.43	33	100	H	28.388	3.23	-	94.048	-	-	Ave
4874	55.22	30	162	V	33.132	5.24	36.63	56.96	74	-17.04	Peak
4874	53.23	20	100	H	33.107	5.24	36.63	54.95	74	-19.05	Peak
4874	40.87	30	162	V	33.132	5.24	36.63	42.61	54	-11.39	Ave
4874	38.88	20	100	H	33.107	5.24	36.63	40.60	54	-13.40	Ave
7311	47.83	0	100	V	36.222	7.39	36.42	55.02	74	-18.98	Peak
7311	48.12	0	100	H	36.246	7.39	36.42	55.34	74	-18.66	Peak
7311	33.29	0	100	V	36.222	7.39	36.42	40.48	54	-13.52	Ave
7311	33.36	0	100	H	36.246	7.39	36.42	40.58	54	-13.42	Ave
9748	49.88	0	100	V	37.852	9.31	36.69	60.35	86.84	-26.49	Peak
9748	50.91	0	100	H	37.843	9.31	36.69	61.37	84.598	-23.23	Peak
9748	35.40	0	100	V	37.852	9.31	36.69	45.87	67.47	-21.60	Ave
9748	35.35	0	100	H	37.843	9.31	36.69	45.81	64.048	-18.24	Ave

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC/IC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 2472 MHz, measured at 3 meters											
2472	74.95	212	112	V	28.55	3.26	-	106.76	-	-	Peak
2472	67.53	168	157	H	28.595	3.26	-	99.385	-	-	Peak
2472	64.88	212	112	V	28.55	3.26	-	96.69	-	-	Ave
2472	56.9	168	112	H	28.595	3.26	-	88.755	-	-	Ave
2483.5	39.97	212	112	V	28.55	3.26	-	71.78	74	-2.22	Peak
2483.5	34.51	168	157	H	28.595	3.26	-	66.365	74	-7.635	Peak
2483.5	18.05	212	112	V	28.55	3.26	-	49.86	54	-4.14	Ave
2483.5	13.86	168	112	H	28.595	3.26	-	45.715	54	-8.285	Ave
4944	49.63	0	150	V	33.132	5.24	36.63	51.37	74	-22.63	Peak
4944	49.26	0	123	H	33.107	5.24	36.63	50.98	74	-23.02	Peak
4944	34.81	0	150	V	33.132	5.24	36.63	36.55	54	-17.45	Ave
4944	35.01	0	123	H	33.107	5.24	36.63	36.73	54	-17.27	Ave
7416	48.38	0	100	V	36.449	7.46	36.46	55.83	74	-18.17	Peak
7416	48.24	0	100	H	36.447	7.46	36.46	55.69	74	-18.31	Peak
7416	33.18	0	100	V	36.449	7.46	36.46	40.63	54	-13.37	Ave
7416	33.26	0	100	H	36.447	7.46	36.46	40.71	54	-13.29	Ave
9888	49.57	0	100	V	38.34	9.11	36.71	60.31	86.76	-26.45	Peak
9888	49.43	0	100	H	38.333	9.11	36.71	60.16	79.385	-19.22	Peak
9888	34.78	0	100	V	38.34	9.11	36.71	45.52	66.69	-21.17	Ave
9888	34.73	0	100	H	38.333	9.11	36.71	45.46	58.755	-13.29	Ave