FCC PART 15, SUBPART C
IC RSS-210, ISSUE 8, DECEMBER 2010

TEST AND MEASUREMENT REPORT

For

GoPro Inc.

3000 Clearview Way, San Mateo, CA 94402, USA

FCC ID: CNFHWBD1
IC: 10193A-HWBD1

Report Type: Original Report	**Product Type:** Portable Camera with 2.4 GHz WLAN and BLE
Prepared By	Cipher Chu Test Engineer
Report Number	R1406135-247
Report Date	2014-09-08
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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R1406135-247	Original Report	2014-09-08

1 General Description

1.1 Product Description for Equipment Under Test (EUT)

This test and measurement report has been compiled on behalf of *GoPro Inc.*, and their product, FCC ID: CNFHWBD1, IC: 10193A-HWBD1, model number: HWBD1, which henceforth is referred to as the EUT (Equipment Under Test.) The EUT is a portable camera with 2.4 GHz WLAN and BLE.

1.2 Mechanical Description of EUT

The EUT measures approximately 59 mm (L) x 41.6 mm (W) x 28.7 mm (H) and weighs approximately 65 g (without battery) or 87g (with battery).

The data gathered are from a typical production sample provided by the manufacturer with serial number: BDDVT161.

1.3 Objective

This report is prepared on behalf of *GoPro Inc.*, in accordance with Part 2, Subpart J, and Part 15, Subparts B and C of the Federal Communication Commission's rules and IC RSS-210 Issue 8, Dec 2010.

The objective is to determine compliance with FCC Part 15.247 and IC RSS-210 rules for Output Power, Antenna Requirements, AC Line Conducted Emissions, 6 dB Bandwidth, power spectral density, 100 kHz Bandwidth of Band Edges Measurement, Spurious Emissions, Conducted and Radiated Spurious Emissions.

1.4 Related Submittal(s)/Grant(s)

R1406135-SAR

1.5 Test Methodology

All measurements contained in this report were conducted in accordance with ANSI C63.4-2009, 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.

Based on CISPR16-4-2:2011, The Treatment of Uncertainty in EMC Measurements, the values ranging from $\pm$2.0 dB for Conducted Emissions tests and $\pm$4.0 dB for Radiated Emissions tests are the most accurate estimates pertaining to uncertainty of EMC measurements at BACL Corp.

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:
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 C63.4-2009 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 PPSD across all data rates bandwidths, and modulations.

2.2 EUT Exercise Software

The test utility used was *Tera Term* was provided by *GoPro Inc.*, and was verified by Chaoran Chu to comply with the standard requirements being tested against.

2.3 Equipment Modifications

No modifications were made to the EUT.

2.4 Local Support Equipment

Manufacturer	Description	Model No.	Serial No.
Samsung	HD Screen	UN22D5003BF	23S13CRC00363D
DELL	Laptop	Latitude E6530	-

2.5 EUT Internal Configuration Details

Manufacturer	Description	Type	Serial Number
AT&S	Mother Board	MX3SH	4.2
AT&S	Camera Board	-	4.0
AT&S	USB Board	-	4.0
Lexar	Micro SD Memory Card 32 GB	-	-
GoPro	Li-ion Battery Pack	-	-

2.6 Power Supply and Line Filters

Manufacturer	Description	Model	Part Number
GoPro	Power Adapter	Switching Power Adapter	SPA011AU5W2
DELL	AC Adapter	AA90PM111	

2.7 Interface Ports and Cabling

Cable Description	Length (m)	To	From
USB Cable	1M	Plug	EUT
HDMI Cable	1M	EUT	Monitor
RF Cable	<1M	EUT	PSA

3 Summary of Test Results

Results reported relate only to the product tested.

FCC & IC Rules	Description of Test	Results
FCC §15.247(i), §2.1093 IC RSS-102	RF Exposure	Compliant
FCC §15.203 IC RSS-Gen §7.1.2	Antenna Requirement	Compliant
FCC §15.207(a) IC RSS-Gen §7.2.4	AC Line Conducted Emissions	Compliant
FCC §15.247 (d) IC RSS-210 §A8.5	Spurious Emissions at Antenna Port	Compliant Note 1
FCC §15.205 IC RSS-210 §2.2	Restricted Bands	Compliant
FCC §15.209, §15.247 (d) IC RSS-210 §A8.5	Radiated Spurious Emissions	Compliant
FCC §15.247(a)(2) IC RSS-210 §A8.2	6 dB Emission Bandwidth	Compliant Note 1
FCC §15.247(b)(3) IC RSS-210 §A8.4	Maximum Peak Output Power	Compliant Note 1
FCC §15.247(d) IC RSS-210 §A8.5	100 kHz Bandwidth of Frequency Band Edge	Compliant Note 1
FCC §15.247(e) IC RSS-210 §A8.2(b)	Power Spectral Density	Compliant Note 1

Note 1: Based on the manufacturer's declaration, in all safety, electromagnetic and wireless (Wi-Fi and Bluetooth LE) aspects and physical size, the EUT is identical to the similar certified product (FCC ID: CNFHWPP1, IC: 10193A-HWPP1). All conducted data at antenna port can be referred to the approved product and BACL project R1406136 reports.

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

4.1 Applicable Standards

FCC §2.1093, §15.247(i) and IC RSS-102

4.2 Test Result

Compliance, please refer to the SAR report: R1406135-SAR.

5 FCC §15.203 & IC RSS-Gen §7.1.2 – Antenna Requirements

5.1 Applicable Standard

According to FCC §15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

And according to FCC §15.247 (b) (4), if transmitting antennas of directional gain greater than 6 dBi are used the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to IC RSS-Gen §7.1.2: Transmitter Antenna

A transmitter can only be sold or operated with antennas with which it was certified. A transmitter may be certified with multiple antenna types. An antenna type comprises antennas having similar in-band and out-of-band radiation patterns. Testing shall be performed using the highest-gain antenna of each combination of transmitter and antenna type for which certification is being sought, with the transmitter output power set at the maximum level. Any antenna of the same type and having equal or lesser gain as an antenna that had been successfully tested for certification with the transmitter, will also be considered certified with the transmitter, and may be used and marketed with the transmitter. The manufacturer shall include with the application for certification a list of acceptable antenna types to be used with the transmitter.

When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on measurement or on data from the antenna manufacturer. Any antenna gain in excess of 6 dBi (6 dB above isotropic gain) shall be added to the measured RF output power before using the power limits specified in RSS-210 or RSS-310 for devices of RF output powers of 10 mW or less. For devices of output powers greater than 10 mW, except devices subject to RSS-210 Annex 8 (Frequency Hopping and Digital Modulation Systems Operating in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz Bands) or RSS-210 Annex 9 (Local Area Network Devices), the total antenna gain shall be added to the measured RF output power before using the specified power limits. For devices subject to RSS-210 Annex 8 or Annex 9, the antenna gain shall not be added.

5.2 Antenna Description

Antenna Location	Antenna Gain (dBi) @ 2.4 GHz
Internal	0

The Highest Gain is 0 dBi, and the antenna consists of non-standard (UFL) connectors; Antenna gain that exceeds 6 dBi was added to RF measurement therefore, it complies with the antenna requirement. Please refer to the internal photos.

6 FCC §15.207 & IC RSS-Gen §7.2.4 – AC Line Conducted Emissions

6.1 Applicable Standards

As per FCC §15.207 and IC RSS-Gen §7.2.4 Conducted limits:

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequencies ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56 Note	56 to 46 Note
0.5-5	56	46
5-30	60	50

Note: Decreases with the logarithm of the frequency.

6.2 Test Setup

The measurement was performed at shield room, using the setup per ANSI C63.4-2009 measurement procedure. The specification used was FCC §15.207 and IC RSS-Gen §7.2.4 limits.

External I/O cables were draped along the edge of the test table and bundle when necessary.

The AC/DC power adapter of the EUT was connected with LISN-1 which provided 120 V / 60 Hz AC power.

6.3 Test Procedure

During the conducted emissions test, the power cord of the EUT host system was connected to the mains outlet of the LISN-1 and the power cord of the support equipment was connected to LISN-2.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the peak detection mode, quasi-peak and average. Quasi-Peak readings are distinguished with a “QP.” Average readings are distinguished with an “Ave”.

6.4 Corrected Amplitude & Margin Calculation

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

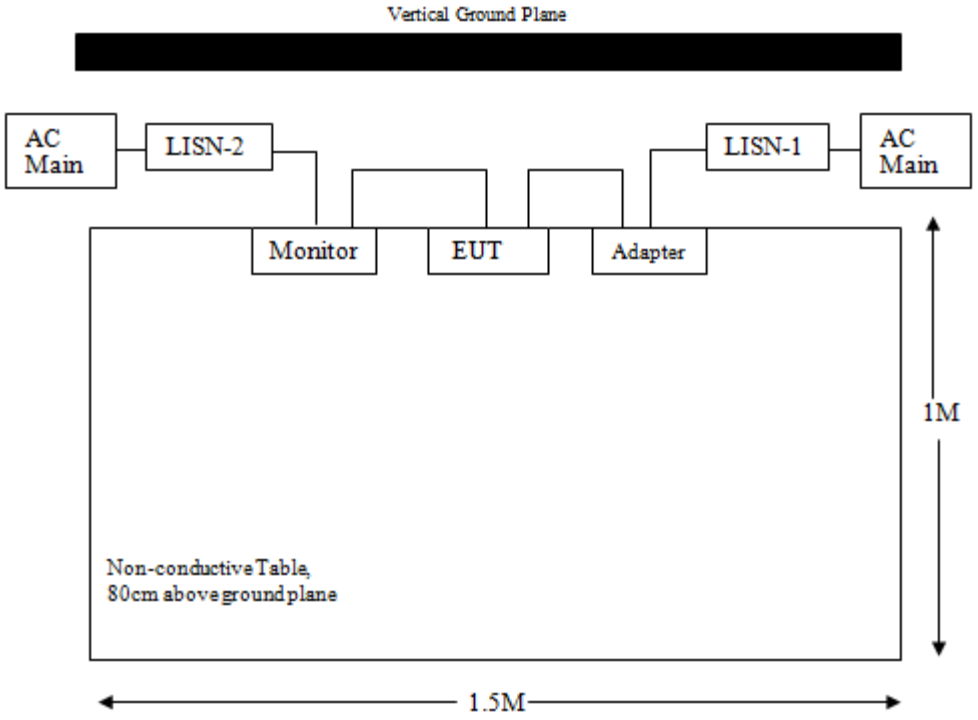
CA = Ai + CL + Atten

For example, a corrected amplitude of 46.2 dBuV = Indicated Reading (32.5 dBuV) + Cable Loss (3.7 dB) + Attenuator (10 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

6.5 Test Setup Block Diagram



6.6 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100337	2013-09-28	1 year
Solar Electronics	LISN-1	9252-50-R-24-N	511205	2014-06-25	1 year
Solar Electronics	LISN-2	9252-50-R-24-N	511213	2014-06-25	1 year
TTE	Filter, High Pass	H962-150k-50-21378	K7133	2014-01-30	1 year

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

6.7 Test Environmental Conditions

Temperature:	22-24º C
Relative Humidity:	40-41 %
ATM Pressure:	103.1-104.1 KPa

The testing was performed by Cipher Chu on 2014-07-14 to 2014-07-23 in 5m chamber3.

6.8 Summary of Test Results

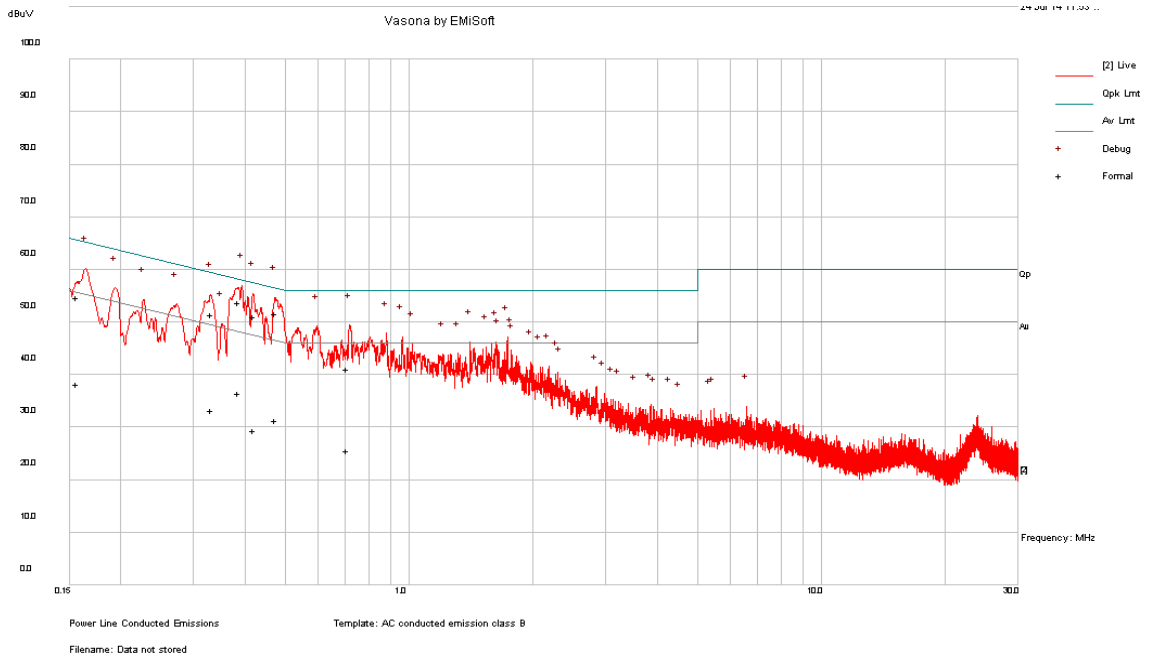
According to the recorded data in following table, the EUT complied with the FCC 15C and IC RSS-Gen standard's conducted emissions limits, with the margin reading of:

Connection: AC/DC adapter connected to 120 V/60 Hz, AC			
Margin (dB)	**Frequency (MHz)**	**Conductor Mode (Line/Neutral)**	**Range (MHz)**
-3.81	0.386309	Neutral	0.15-30

6.9 Conducted Emissions Test Plots and Data

Operation Mode: Wi-Fi and BLE Co-location

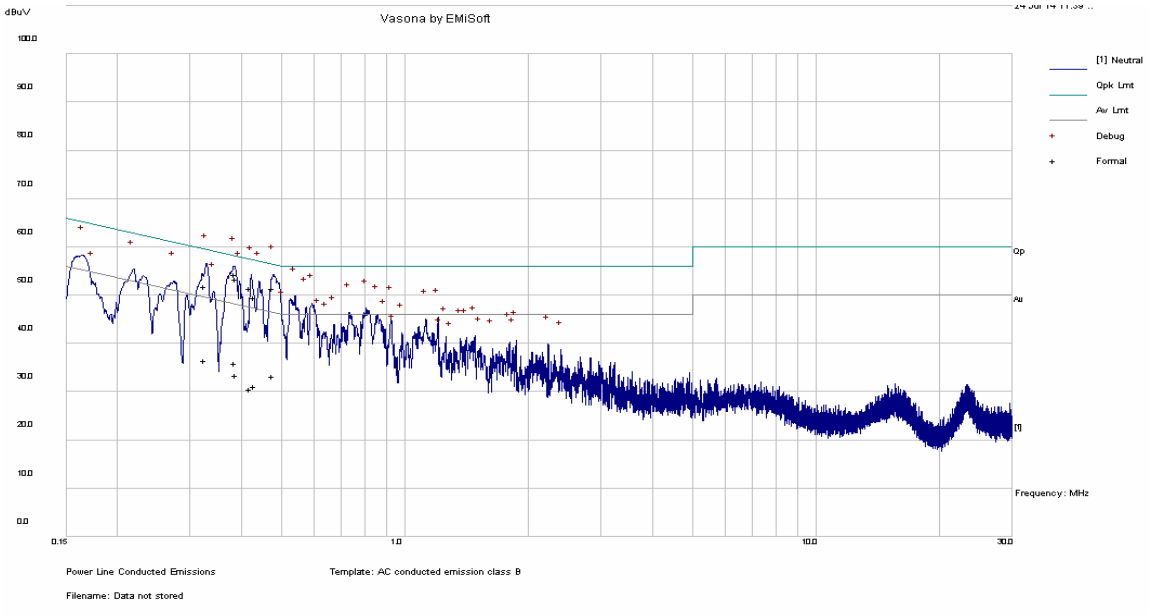
120 V, 60 Hz – Line



Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
0.387701	53.74	Line	58.11	-4.37	QP
0.474762	51.56	Line	56.43	-4.87	QP
0.42065	51.15	Line	57.44	-6.29	QP
0.332805	51.37	Line	59.38	-8.01	QP
0.156578	54.79	Line	65.64	-10.85	QP
0.71039	41.19	Line	56	-14.81	QP

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
0.387701	36.41	Line	48.11	-11.7	Ave.
0.474762	31.3	Line	46.43	-15.13	Ave.
0.42065	29.35	Line	47.44	-18.08	Ave.
0.332805	33.23	Line	49.38	-16.15	Ave.
0.156578	38.19	Line	55.64	-17.45	Ave.
0.535496	25.56	Line	46	-20.44	Ave.

120 V, 60 Hz – Neutral



Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
0.47939	51.36	Neutral	56.35	-4.99	QP
0.386309	54.34	Neutral	58.14	**-3.81**	QP
0.327122	51.92	Neutral	59.52	-7.61	QP
0.422147	51.45	Neutral	57.41	-5.96	QP
0.430223	49.48	Neutral	57.25	-7.77	QP
0.388269	53.43	Neutral	58.1	-4.67	QP

Frequency (MHz)	Corrected Amplitude (dBµV)	Conductor (Line/Neutral)	Limit (dBµV)	Margin (dB)	Detector (QP/Ave.)
0.47939	33.21	Neutral	46.35	-13.14	Ave.
0.386309	35.92	Neutral	48.14	-12.22	Ave.
0.327122	36.54	Neutral	49.52	-12.98	Ave.
0.422147	30.48	Neutral	47.41	-16.92	Ave.
0.430223	31.08	Neutral	47.25	-16.17	Ave.
0.388269	33.49	Neutral	48.1	-14.61	Ave.

7 FCC §15.205, §15.209 & §15.247(d) & IC RSS-210 §A8.5 – Spurious Radiated Emissions

7.1 Applicable Standards

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-210: 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) 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-210 A8.5 Out-of-band 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 A8.4 (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.

7.2 Test Setup

The radiated emissions tests were performed in the 5-meter Chamber, using the setup in accordance with ANSI C63.4-2009. The specification used was the FCC 15 Subpart C and IC RSS-210 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.

7.3 Test Procedure

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.

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.

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

7.4 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

7.5 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Rohde & Schwarz	EMI Test Receiver	ESCI 1166.5950K03	100337	2013-09-28	1 year
Agilent	Spectrum Analyzer	E4440A	MY44303352	2013-10-16	1 year
Sunol Science Corp	System Controller	SC99V	011003-1	N/R	N/R
Sunol Science Corp	Combination Antenna	JB3	A020106-3	2013-09-18	1 year
EMCO	Horn Antenna	3115	9511-4627	2013-10-17	1 year
Hewlett Packard	Pre-amplifier	8447D	2944A10187	2013-08-08	1 year
WiseWave	Horn Antenna	ARH-4223-02	10555-01	2012-08-09	3 years
Hewlett Packard	Pre-amplifier	8449B	3147A00400	2014-03-10	1 year

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

7.6 Test Environmental Conditions

Temperature:	22-24º C
Relative Humidity:	40-41 %
ATM Pressure:	103.1-104.1 KPa

The testing was performed by Cipher Chu on 2014-07-14 to 2014-07-23 in 5m chamber3.

7.7 Summary of Test Results

According to the data hereinafter, the EUT complied with the FCC Title 47, Part 15C and IC RSS-210 standard's radiated emissions limits, and had the worst margin of:

30-1000 MHz:

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Mode, Channel**
-0.59	287.9995	Horizontal	802.11b mode High Channel

1 – 25 GHz:

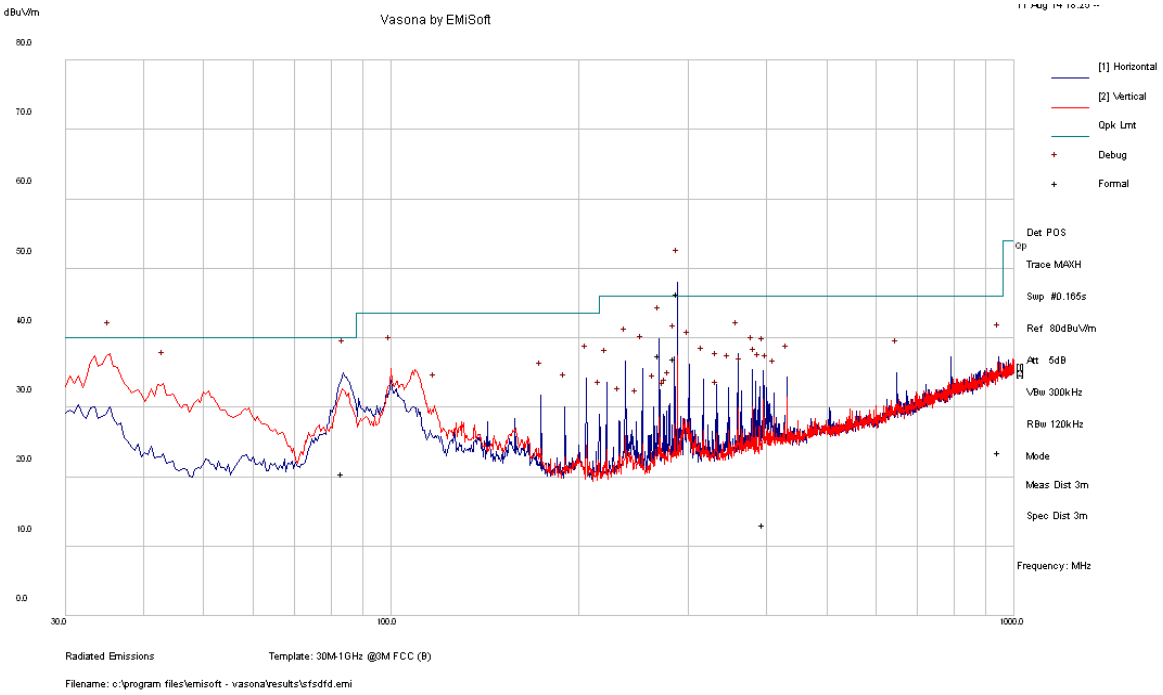
Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Mode, Channel**
-0.784	2390	Horizontal	802.11 g mode Low Channel

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

7.8 Radiated Emissions Test Data and Plots

1) 30 MHz – 1 GHz

2.4 Wi-Fi Band and BLE Co-location



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)
287.9995	45.41	98	H	137	46	-0.59
83.61675	20.41	178	H	138	40	-19.59
269.1275	37.51	98	H	147	46	-8.49
944.41525	23.57	293	H	191	46	-22.43
284.94075	37.06	98	H	145	46	-8.94
395.753	13.10	113	H	152	46	-32.90

2) 1–25 GHz

2.4 GHz Wi-Fi, 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											
2412	77.75	33	100	V	28.956	3.12	0	109.826	-	-	Peak
2412	80.32	181	121	H	28.956	3.12	0	112.396	-	-	Peak
2412	74.08	33	100	V	28.956	3.12	0	106.156	-	-	Ave
2412	76.81	181	121	H	28.956	3.12	0	108.886	-	-	Ave
2390	29.57	33	100	V	28.956	3.12	0	61.646	74	-12.354	Peak
2390	30.44	181	121	H	28.956	3.12	0	62.516	74	-11.484	Peak
2390	18.96	33	100	V	28.956	3.12	0	51.036	54	-2.964	Ave
2390	20.85	181	121	H	28.956	3.12	0	52.926	54	-1.074	Ave
4824	43.12	30	100	V	33.097	4.56	36.5	44.277	74	-29.723	Peak
4824	44.24	178	100	H	33.097	4.56	36.5	45.397	74	-28.603	Peak
4824	34.92	30	100	V	33.097	4.56	36.5	36.077	54	-17.923	Ave
4824	34.14	178	100	H	33.097	4.56	36.5	35.297	54	-18.703	Ave
7236	42.36	0	100	V	35.928	5.49	36.7	47.078	89.826	-42.748	Peak
7236	42.43	0	100	H	35.928	5.49	36.7	47.148	92.396	-45.248	Peak
7236	27.92	0	100	V	35.928	5.49	36.7	32.638	86.156	-53.518	Ave
7236	27.76	0	100	H	35.928	5.49	36.7	32.478	88.886	-56.408	Ave
9648	41.14	0	100	V	37.954	6.54	36.9	48.734	89.826	-41.092	Peak
9648	41.02	0	100	H	37.954	6.54	36.9	48.614	92.396	-43.782	Peak
9648	27.14	0	100	V	37.954	6.54	36.9	34.734	86.156	-51.422	Ave
9648	27.13	0	100	H	37.954	6.54	36.9	34.724	88.886	-54.162	Ave
Middle Channel 2437 MHz											
2437	77.87	31	100	V	28.956	3.12	0	109.946	-	-	Peak
2437	79.43	180	121	H	28.956	3.12	0	111.506	-	-	Peak
2437	74.21	31	100	V	28.956	3.12	0	106.286	-	-	Ave
2437	76.5	180	121	H	28.956	3.12	0	108.576	-	-	Ave
4874	42.91	31	100	V	33.327	4.54	36.5	44.277	74	-29.723	Peak
4874	44.03	180	100	H	33.327	4.54	36.5	45.397	74	-28.603	Peak
4874	34.71	31	100	V	33.327	4.54	36.5	36.077	54	-17.923	Ave
4874	33.93	180	100	H	33.327	4.54	36.5	35.297	54	-18.703	Ave
7311	42.15	0	100	V	36.369	5.57	36.7	47.389	74	-26.611	Peak
7311	42.22	0	100	H	36.369	5.57	36.7	47.459	74	-26.541	Peak
7311	27.71	0	100	V	36.369	5.57	36.7	32.949	54	-21.051	Ave
7311	27.55	0	100	H	36.369	5.57	36.7	32.789	54	-21.211	Ave
9748	40.93	0	100	V	38.087	6.62	36.9	48.737	89.946	-41.209	Peak
9748	40.81	0	100	H	38.087	6.62	36.9	48.617	91.506	-42.889	Peak
9748	26.93	0	100	V	38.087	6.62	36.9	34.737	86.286	-51.549	Ave
9748	26.92	0	100	H	38.087	6.62	36.9	34.727	88.576	-53.849	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 2462 MHz											
2462	78.45	22	100	V	29.155	3.25	0	110.855	-	-	Peak
2462	79.94	175	120	H	29.155	3.25	0	112.345	-	-	Peak
2462	74.93	22	100	V	29.155	3.25	0	107.335	-	-	Ave
2462	76.58	175	120	H	29.155	3.25	0	108.985	-	-	Ave
2483.5	30.51	22	100	V	29.155	3.25	0	62.915	74	-11.085	Peak
2483.5	30.84	175	120	H	29.155	3.25	0	63.245	74	-10.755	Peak
2483.5	18.75	22	100	V	29.155	3.25	0	51.155	54	-2.845	Ave
2483.5	19.72	175	120	H	29.155	3.25	0	52.125	54	-1.875	Ave
4924	43.29	28	100	V	33.327	4.52	36.5	44.637	74	-29.363	Peak
4924	44.41	178	100	H	33.327	4.52	36.5	45.757	74	-28.243	Peak
4924	35.09	28	100	V	33.327	4.52	36.5	36.437	54	-17.563	Ave
4924	34.31	178	100	H	33.327	4.52	36.5	35.657	54	-18.343	Ave
7386	42.53	0	100	V	36.565	5.62	36.7	48.015	74	-25.985	Peak
7386	42.6	0	100	H	36.565	5.62	36.7	48.085	74	-25.915	Peak
7386	28.09	0	100	V	36.565	5.62	36.7	33.575	54	-20.425	Ave
7386	27.93	0	100	H	36.565	5.62	36.7	33.415	54	-20.585	Ave
9848	41.31	0	100	V	38.287	6.55	36.9	49.247	88.225	-38.978	Peak
9848	41.19	0	100	H	38.287	6.55	36.9	49.127	90.605	-41.478	Peak
9848	27.31	0	100	V	38.287	6.55	36.9	35.247	85.235	-49.988	Ave
9848	27.3	0	100	H	38.287	6.55	36.9	35.237	87.905	-52.668	Ave

2.4 GHz Wi-Fi, 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											
2412	72.94	33	100	V	28.956	3.12	0	105.016	-	-	Peak
2412	75.13	182	122	H	28.956	3.12	0	107.206	-	-	Peak
2412	60.55	33	100	V	28.956	3.12	0	92.626	-	-	Ave
2412	62.44	182	122	H	28.956	3.12	0	94.516	-	-	Ave
2390	35.15	33	100	V	28.956	3.12	0	67.226	74	-6.774	Peak
2390	37.37	182	122	H	28.956	3.12	0	69.446	74	-4.554	Peak
2390	19.65	33	100	V	28.956	3.12	0	51.726	54	-2.274	Ave
2390	21.14	182	122	H	28.956	3.12	0	53.216	54	-0.784	Ave
4824	42.95	33	100	V	33.097	4.56	36.5	44.107	74	-29.893	Peak
4824	44.07	182	100	H	33.097	4.56	36.5	45.227	74	-28.773	Peak
4824	34.75	33	100	V	33.097	4.56	36.5	35.907	54	-18.093	Ave
4824	33.97	182	100	H	33.097	4.56	36.5	35.127	54	-18.873	Ave
7236	42.19	0	100	V	35.928	5.49	36.7	46.908	85.016	-38.108	Peak
7236	42.26	0	100	H	35.928	5.49	36.7	46.978	87.206	-40.228	Peak
7236	27.75	0	100	V	35.928	5.49	36.7	32.468	72.626	-40.158	Ave
7236	27.59	0	100	H	35.928	5.49	36.7	32.308	74.516	-42.208	Ave
9648	40.97	0	100	V	37.954	6.54	36.9	48.564	85.016	-36.452	Peak
9648	40.85	0	100	H	37.954	6.54	36.9	48.444	87.206	-38.762	Peak
9648	26.97	0	100	V	37.954	6.54	36.9	34.564	72.626	-38.062	Ave
9648	26.96	0	100	H	37.954	6.54	36.9	34.554	74.516	-39.962	Ave
Middle Channel 2437 MHz											
2437	72.87	30	100	V	28.956	3.12	0	104.946	-	-	Peak
2437	74.43	178	120	H	28.956	3.12	0	106.506	-	-	Peak
2437	60.78	30	100	V	28.956	3.12	0	92.856	-	-	Ave
2437	61.54	178	120	H	28.956	3.12	0	93.616	-	-	Ave
4874	42.78	30	100	V	33.327	4.54	36.5	44.147	74	-29.853	Peak
4874	43.9	178	100	H	33.327	4.54	36.5	45.267	74	-28.733	Peak
4874	34.58	30	100	V	33.327	4.54	36.5	35.947	54	-18.053	Ave
4874	33.8	178	100	H	33.327	4.54	36.5	35.167	54	-18.833	Ave
7311	42.02	0	100	V	36.369	5.57	36.7	47.259	74	-26.741	Peak
7311	42.09	0	100	H	36.369	5.57	36.7	47.329	74	-26.671	Peak
7311	27.58	0	100	V	36.369	5.57	36.7	32.819	54	-21.181	Ave
7311	27.42	0	100	H	36.369	5.57	36.7	32.659	54	-21.341	Ave
9748	40.8	0	100	V	38.087	6.62	36.9	48.607	84.946	-36.339	Peak
9748	40.68	0	100	H	38.087	6.62	36.9	48.487	86.506	-38.019	Peak
9748	26.8	0	100	V	38.087	6.62	36.9	34.607	72.856	-38.249	Ave
9748	26.79	0	100	H	38.087	6.62	36.9	34.597	73.616	-39.019	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 2462 MHz											
2462	72.54	21	100	V	29.155	3.25	0	104.945	-	-	Peak
2462	74.33	179	148	H	29.155	3.25	0	106.735	-	-	Peak
2462	60.58	21	100	V	29.155	3.25	0	92.985	-	-	Ave
2462	61.73	179	148	H	29.155	3.25	0	94.135	-	-	Ave
2483.5	37.11	21	100	V	29.155	3.25	0	69.515	74	-4.485	Peak
2483.5	38.46	179	148	H	29.155	3.25	0	70.865	74	-3.135	Peak
2483.5	19.89	21	100	V	29.155	3.25	0	52.295	54	-1.705	Ave
2483.5	20.59	179	148	H	29.155	3.25	0	52.995	54	-1.005	Ave
4924	43.16	21	100	V	33.327	4.52	36.5	44.507	74	-29.493	Peak
4924	44.28	179	100	H	33.327	4.52	36.5	45.627	74	-28.373	Peak
4924	34.96	21	100	V	33.327	4.52	36.5	36.307	54	-17.693	Ave
4924	34.18	179	100	H	33.327	4.52	36.5	35.527	54	-18.473	Ave
7386	42.4	0	100	V	36.565	5.62	36.7	47.885	74	-26.115	Peak
7386	42.47	0	100	H	36.565	5.62	36.7	47.955	74	-26.045	Peak
7386	27.96	0	100	V	36.565	5.62	36.7	33.445	54	-20.555	Ave
7386	27.8	0	100	H	36.565	5.62	36.7	33.285	54	-20.715	Ave
9848	41.18	0	100	V	38.287	6.55	36.9	49.117	84.945	-35.828	Peak
9848	41.06	0	100	H	38.287	6.55	36.9	48.997	86.735	-37.738	Peak
9848	27.18	0	100	V	38.287	6.55	36.9	35.117	72.985	-37.868	Ave
9848	27.17	0	100	H	38.287	6.55	36.9	35.107	74.135	-39.028	Ave

2.4 GHz Wi-Fi, 802.11n-HT20 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											
2412	71.28	32	100	V	28.956	3.12	0	103.356	-	-	Peak
2412	72.5	179	122	H	28.956	3.12	0	104.576	-	-	Peak
2412	59.39	32	100	V	28.956	3.12	0	91.466	-	-	Ave
2412	60.93	179	122	H	28.956	3.12	0	93.006	-	-	Ave
2390	34.76	32	100	V	28.956	3.12	0	66.836	74	-7.164	Peak
2390	35.77	179	122	H	28.956	3.12	0	67.846	74	-6.154	Peak
2390	19.62	32	100	V	28.956	3.12	0	51.696	54	-2.304	Ave
2390	20.46	179	122	H	28.956	3.12	0	52.536	54	-1.464	Ave
4824	42.71	32	100	V	33.097	4.56	36.5	43.867	74	-30.133	Peak
4824	43.83	179	100	H	33.097	4.56	36.5	44.987	74	-29.013	Peak
4824	34.51	32	100	V	33.097	4.56	36.5	35.667	54	-18.333	Ave
4824	33.73	179	100	H	33.097	4.56	36.5	34.887	54	-19.113	Ave
7236	41.95	0	100	V	35.928	5.49	36.7	46.668	83.356	-36.688	Peak
7236	42.02	0	100	H	35.928	5.49	36.7	46.738	84.576	-37.838	Peak
7236	27.51	0	100	V	35.928	5.49	36.7	32.228	71.466	-39.238	Ave
7236	27.35	0	100	H	35.928	5.49	36.7	32.068	73.006	-40.938	Ave
9648	40.73	0	100	V	37.954	6.54	36.9	48.324	83.356	-35.032	Peak
9648	40.61	0	100	H	37.954	6.54	36.9	48.204	84.576	-36.372	Peak
9648	26.73	0	100	V	37.954	6.54	36.9	34.324	71.466	-37.142	Ave
9648	26.72	0	100	H	37.954	6.54	36.9	34.314	73.006	-38.692	Ave
Middle Channel 2437 MHz											
2437	71.57	30	100	V	28.956	3.12	0	103.646	-	-	Peak
2437	72.63	179	121	H	28.956	3.12	0	104.706	-	-	Peak
2437	59.21	30	100	V	28.956	3.12	0	91.286	-	-	Ave
2437	61.01	179	121	H	28.956	3.12	0	93.086	-	-	Ave
4874	42.72	30	100	V	33.327	4.54	36.5	44.087	74	-29.913	Peak
4874	43.84	179	100	H	33.327	4.54	36.5	45.207	74	-28.793	Peak
4874	34.52	30	100	V	33.327	4.54	36.5	35.887	54	-18.113	Ave
4874	33.74	179	100	H	33.327	4.54	36.5	35.107	54	-18.893	Ave
7311	41.96	0	100	V	36.369	5.57	36.7	47.199	74	-26.801	Peak
7311	42.03	0	100	H	36.369	5.57	36.7	47.269	74	-26.731	Peak
7311	27.52	0	100	V	36.369	5.57	36.7	32.759	54	-21.241	Ave
7311	27.36	0	100	H	36.369	5.57	36.7	32.599	54	-21.401	Ave
9748	40.74	0	100	V	38.087	6.62	36.9	48.547	83.646	-35.099	Peak
9748	40.62	0	100	H	38.087	6.62	36.9	48.427	84.706	-36.279	Peak
9748	26.74	0	100	V	38.087	6.62	36.9	34.547	71.286	-36.739	Ave
9748	26.73	0	100	H	38.087	6.62	36.9	34.537	73.086	-38.549	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 2462 MHz											
2462	71.15	38	100	V	29.155	3.25	0	103.555	-	-	Peak
2462	74.54	183	118	H	29.155	3.25	0	106.945	-	-	Peak
2462	59.3	38	100	V	29.155	3.25	0	91.705	-	-	Ave
2462	62.59	183	118	H	29.155	3.25	0	94.995	-	-	Ave
2483.5	32.5	38	100	V	29.155	3.25	0	64.905	74	-9.095	Peak
2483.5	35.14	183	118	H	29.155	3.25	0	67.545	74	-6.455	Peak
2483.5	17.73	38	100	V	29.155	3.25	0	50.135	54	-3.865	Ave
2483.5	20.08	183	118	H	29.155	3.25	0	52.485	54	-1.515	Ave
4924	42.75	38	100	V	33.327	4.52	36.5	44.097	74	-29.903	Peak
4924	43.87	183	100	H	33.327	4.52	36.5	45.217	74	-28.783	Peak
4924	34.55	38	100	V	33.327	4.52	36.5	35.897	54	-18.103	Ave
4924	33.77	183	100	H	33.327	4.52	36.5	35.117	54	-18.883	Ave
7386	41.99	0	100	V	36.565	5.62	36.7	47.475	74	-26.525	Peak
7386	42.06	0	100	H	36.565	5.62	36.7	47.545	74	-26.455	Peak
7386	27.55	0	100	V	36.565	5.62	36.7	33.035	54	-20.965	Ave
7386	27.39	0	100	H	36.565	5.62	36.7	32.875	54	-21.125	Ave
9848	40.77	0	100	V	38.287	6.55	36.9	48.707	83.555	-34.848	Peak
9848	40.65	0	100	H	38.287	6.55	36.9	48.587	86.945	-38.358	Peak
9848	26.77	0	100	V	38.287	6.55	36.9	34.707	71.705	-36.998	Ave
9848	26.76	0	100	H	38.287	6.55	36.9	34.697	74.995	-40.298	Ave

2.4 GHz, BLE

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 2402 MHz											
2402	63.83	47	100	V	28.956	3.12	0	95.906	-	-	Peak
2402	64.62	181	126	H	28.956	3.12	0	96.696	-	-	Peak
2402	59.25	47	100	V	28.956	3.12	0	91.326	-	-	Ave
2402	60.22	181	126	H	28.956	3.12	0	92.296	-	-	Ave
2390	26.5	47	100	V	28.956	3.12	0	58.576	74	-15.424	Peak
2390	26.19	181	126	H	28.956	3.12	0	58.266	74	-15.734	Peak
2390	15.26	47	100	V	28.956	3.12	0	47.336	54	-6.664	Ave
2390	15.47	181	126	H	28.956	3.12	0	47.546	54	-6.454	Ave
4804	54.42	305	115	V	33.097	4.56	36.5	55.577	74	-18.423	Peak
4804	57.15	69	117	H	33.097	4.56	36.5	58.307	74	-15.693	Peak
4804	45.74	305	115	V	33.097	4.56	36.5	46.897	54	-7.103	Ave
4804	49.47	69	117	H	33.097	4.56	36.5	50.627	54	-3.373	Ave
7206	46.43	0	100	V	35.928	5.49	36.7	51.148	75.906	-24.758	Peak
7206	46.99	0	100	H	35.928	5.49	36.7	51.708	76.696	-24.988	Peak
7206	34.67	0	100	V	35.928	5.49	36.7	39.388	71.326	-31.938	Ave
7206	34.61	0	100	H	35.928	5.49	36.7	39.328	72.296	-32.968	Ave
9608	45.91	0	100	V	37.954	6.54	36.9	53.504	75.906	-22.402	Peak
9608	45.67	0	100	H	37.954	6.54	36.9	53.264	76.696	-23.432	Peak
9608	34.37	0	100	V	37.954	6.54	36.9	41.964	71.326	-29.362	Ave
9608	34.31	0	100	H	37.954	6.54	36.9	41.904	72.296	-30.392	Ave
Middle Channel 2440 MHz											
2440	63.43	28	100	V	28.956	3.12	0	95.506	-	-	Peak
2440	65.92	174	123	H	28.956	3.12	0	97.996	-	-	Peak
2440	58.41	28	100	V	28.956	3.12	0	90.486	-	-	Ave
2440	61.51	174	123	H	28.956	3.12	0	93.586	-	-	Ave
4880	53.41	304	110	V	33.327	4.54	36.5	54.777	74	-19.223	Peak
4880	55.31	66	100	H	33.327	4.54	36.5	56.677	74	-17.323	Peak
4880	45.16	304	110	V	33.327	4.54	36.5	46.527	54	-7.473	Ave
4880	46.64	66	100	H	33.327	4.54	36.5	48.007	54	-5.993	Ave
7320	46.57	0	100	V	36.369	5.57	36.7	51.809	74	-22.191	Peak
7320	46.84	0	100	H	36.369	5.57	36.7	52.079	74	-21.921	Peak
7320	34.7	0	100	V	36.369	5.57	36.7	39.939	54	-14.061	Ave
7320	34.71	0	100	H	36.369	5.57	36.7	39.949	54	-14.051	Ave
9760	45.51	0	100	V	38.087	6.62	36.9	53.317	75.506	-22.189	Peak
9760	45.55	0	100	H	38.087	6.62	36.9	53.357	77.996	-24.639	Peak
9760	34.38	0	100	V	38.087	6.62	36.9	42.187	70.486	-28.299	Ave
9760	34.34	0	100	H	38.087	6.62	36.9	42.147	73.586	-31.439	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 2480 MHz											
2480	62.36	77	100	V	29.155	3.25	0	94.765	-	-	Peak
2480	61.43	287	100	H	29.155	3.25	0	93.835	-	-	Peak
2480	57.87	77	100	V	29.155	3.25	0	90.275	-	-	Ave
2480	57.25	287	100	H	29.155	3.25	0	89.655	-	-	Ave
2483.5	26.36	77	100	V	29.155	3.25	0	58.765	74	-15.235	Peak
2483.5	26.09	287	100	H	29.155	3.25	0	58.495	74	-15.505	Peak
2483.5	15.5	77	100	V	29.155	3.25	0	47.905	54	-6.095	Ave
2483.5	15.17	287	100	H	29.155	3.25	0	47.575	54	-6.425	Ave
4960	50.14	317	100	V	33.327	4.52	36.5	51.487	74	-22.513	Peak
4960	53.24	65	110	H	33.327	4.52	36.5	54.587	74	-19.413	Peak
4960	39.96	317	100	V	33.327	4.52	36.5	41.307	54	-12.693	Ave
4960	44.76	65	110	H	33.327	4.52	36.5	46.107	54	-7.893	Ave
7440	46.76	0	100	V	36.565	5.62	36.7	52.245	74	-21.755	Peak
7440	47.2	0	100	H	36.565	5.62	36.7	52.685	74	-21.315	Peak
7440	34.71	0	100	V	36.565	5.62	36.7	40.195	54	-13.805	Ave
7440	34.68	0	100	H	36.565	5.62	36.7	40.165	54	-13.835	Ave
9920	45.43	0	100	V	38.287	6.55	36.9	53.367	74.765	-21.398	Peak
9920	45.54	0	100	H	38.287	6.55	36.9	53.477	73.835	-20.358	Peak
9920	34.37	0	100	V	38.287	6.55	36.9	42.307	70.275	-27.968	Ave
9920	34.35	0	100	H	38.287	6.55	36.9	42.287	69.655	-27.368	Ave