FCC PART 15, SUBPART C

TEST AND MEASUREMENT REPORT

For

Kit Check, Inc.

803 7th Street NW, Suite #350,

Washington DC, 20001, USA

FCC ID: 2AFEQ-AC001

Report Type:	**Product Type:**
Original Report	RFID Printer Terminal

Prepared By:	Jin Yang Test Engineer
Report Number:	R1507023-245
Report Date:	2015-08-06
Reviewed By:	Simon Ma RF Lead

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R1507023-245	Original Report	2015-08-06

1 General Description

1.1 Product Description for Equipment Under Test (EUT)

This test and measurement report has been compiled on behalf of *Kit Check Inc*., and their product, *FCC ID: 2AFEQ-AC001* model number: Anesthesia Check, which henceforth is referred to as the EUT (Equipment Under Test.) The EUT is a touch screen, computer, and label printer with UHF RFID transmitter/receiver.

1.2 Mechanical Description of EUT

The EUT measures approximately 36 cm (L) x 27 cm (W) x 31 cm (H) and weighs approximately 4 kg.

The data gathered are from a typical production sample provided by the manufacturer with serial number: 200020, assigned by Gener8, Inc.

1.3 Objective

This report is prepared on behalf of *Kit Check, Inc.*, in accordance with Part 2, Subpart J, and Part 15, Subparts B and C of the Federal Communication Commission's rules.

The objective is to determine compliance with FCC Part 15.245 for Antenna Requirements, AC Line Conducted Emissions, and Radiated Spurious Emissions.

1.4 Related Submittal(s)/Grant(s)

N/A

1.5 Test Methodology

All measurements contained in this report were conducted in accordance with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

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 C63.10-2013.
The EUT has three antennas but cannot transmit at the same time. All fundamental strength from three antennas has been investigated and the back antenna is determined to be the worst case.

2.2 EUT Exercise Software

The test software that installed in the EUT was provided by Kit Check, Inc., and was verified by Jin Yang 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	Serial Number
SIIG, Inc	Keyboard	SIIG AXX2502X	JK-US0312-S1
HP	Mouse	X1250	CNP3400Z8

2.5 EUT Internal Configuration Details

Manufacturer	Description	Type	Serial Number
LEX	-	MB-31380C-US19-001	-
Intel	Wi-Fi/BT	AC 3160	-
AMS	RFID	AS3991	-
Addmaster	Printer	KR25C	-

2.6 Power Supply and Line Filters

Manufacturer	Description	Model	Part Number
FSP	Power Adapter	FSP060-DBAE1	H00001571

2.7 External Ports and Cabling

Cable Description	Length (m)	From	To
USB	0.2	EUT	Keyboard
USB	0.2	EUT	Mouse

3 Summary of Test Results

Results reported relate only to the product tested.

FCC Rules	Description of Test	Results
§15.203	Antenna Requirement	Compliant
§15.207(a)	AC Line Conducted Emissions	Compliant
§15.209, §15.245 (b)	Radiated Emissions	Compliant

4 FCC §15.203 – Antenna Requirements

4.1 Applicable Standards

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.

4.2 Antenna Description

Antenna Location	Antenna Gain (dBi)
Internal	1.7

The Highest Gain is 1.7 dBi, and the antenna consists of non-standard (UFL) connectors. Please refer to the internal photos.

5 FCC §15.207– AC Line Conducted Emissions

5.1 Applicable Standards

As per FCC §15.207 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 *	56 to 46 *
0.5-5	56	46
5-30	60	50

** The level decreases linearly with the logarithm of the frequency.*
*** A linear average detector is required.*

5.2 Test Setup

The measurement was performed at shield room, using the setup per ANSI C63.4-2014 measurement procedure. The specification used was FCC §15.207.

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.

5.3 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”.

5.4 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:

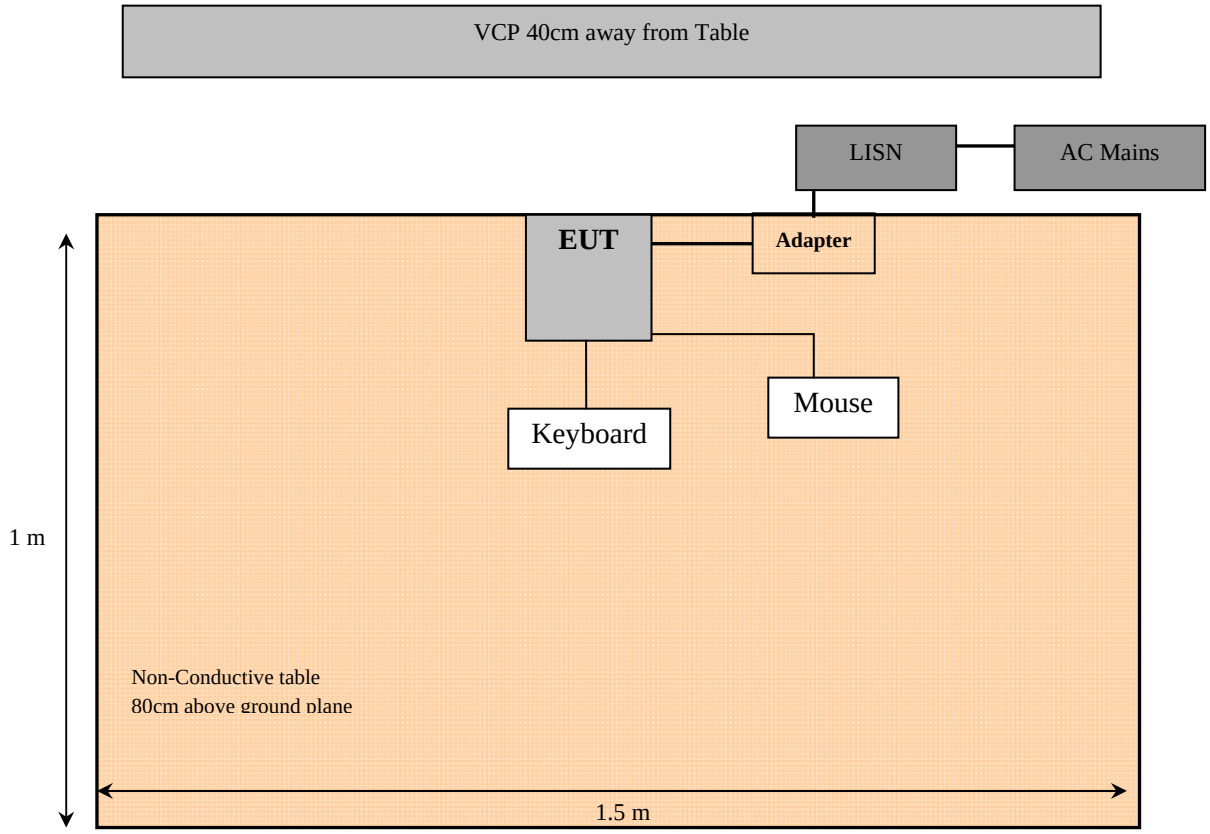
CA = Ai + CL + Atten

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

5.5 Test Setup Block Diagram



5.6 Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Interval
Rohde & Schwarz	Receiver, EMI Test	ESCI 1166.5950K03	100337	2015-06-18	1 year
FCC	LISN	FCC-LISN-50-2-10-CISPR16 1PA ANSI 14	160130	2015-04-07	1 year
TTE INCORPORATED	High Pass Filter	H985-150k-50-720N	H 886	2015-01-09	1 year
Ericsson	Pulse Limiter	ESH 3-Z2	101964	N/A	N/A
Suirong	30 ft conductive emission cable	LMR 400	-	2015-03-05	1 year
Hewlett-Packard	5 ft N-type RF cable	-	1268	2015-05-15	1 year

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

5.7 Test Environmental Conditions

Temperature:	25º C
Relative Humidity:	42%
ATM Pressure:	101.31 kPa

The testing was performed by Jin Yang on 2015-07-17 in 5 chamber2

5.8 Summary of Test Results

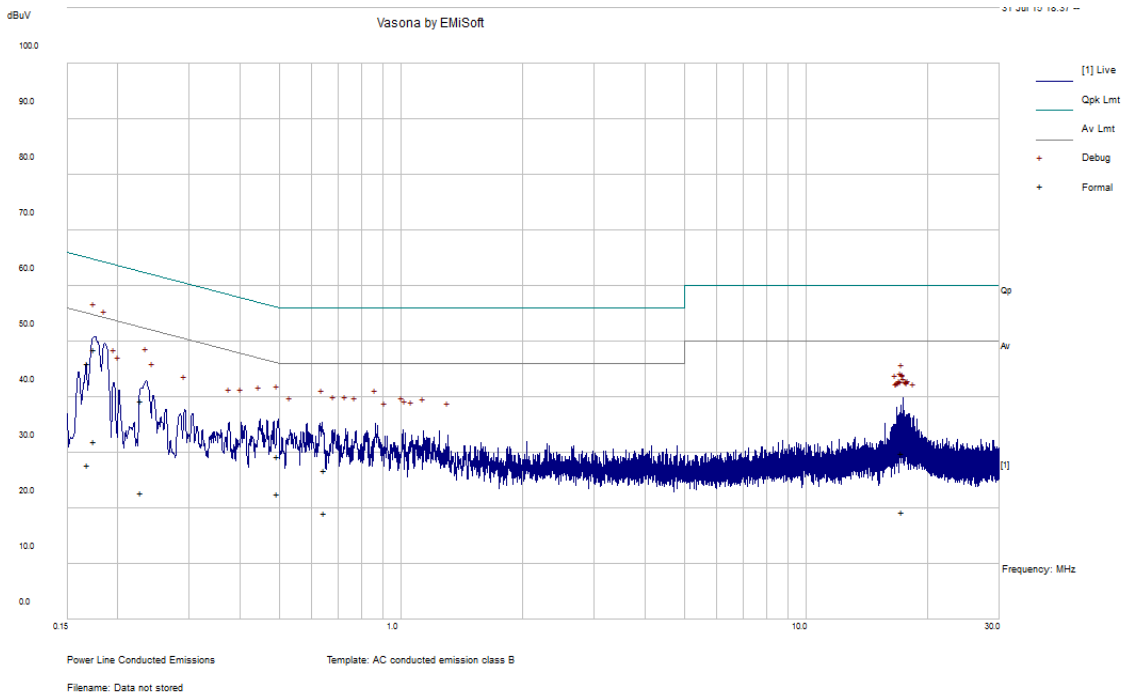
According to the recorded data in following table, the EUT complied with the FCC 15C standard's conducted emissions limits, with the margin reading of:

Connection: AC/DC adapter connected to 120 V/60 Hz, AC			
Margin (dB)	**Frequency (MHz)**	**Conductor Mode (Live/Neutral)**	**Range (MHz)**
-16.19	0.174996	Live	0.15-30

5.9 Conducted Emissions Test Plots and Data

Note: EUT was configured to radio co-located mode with all radios activated while testing.

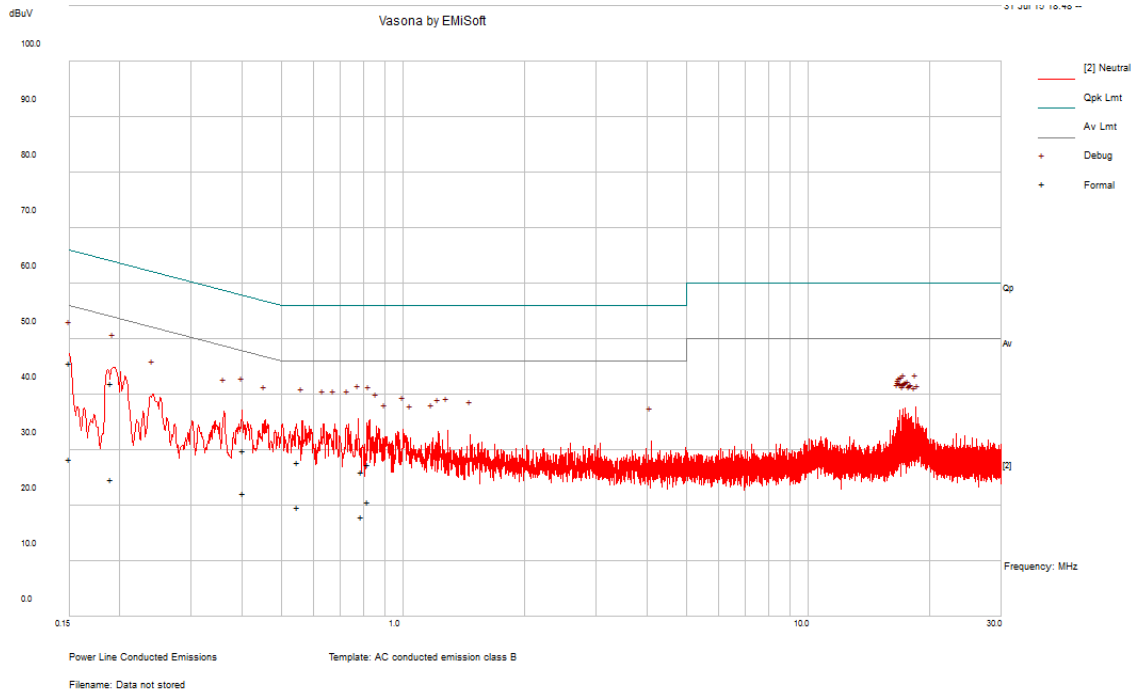
120 V, 60 Hz – Line



Frequency (MHz)	Corrected Amplitude (dBuV)	Conductor (L/N)	Limit (dBuV)	Margin (dB)	Detector (QP/Ave.)
0.168405	46.14	L	65.04	-18.9	QP
0.174996	48.53	L	64.72	-16.19	QP
0.228261	39.35	L	62.51	-23.16	QP
0.495582	29.46	L	56.07	-26.62	QP
17.30552	30.01	L	60	-29.99	QP
0.647175	26.9	L	56	-29.1	QP

Frequency (MHz)	Corrected Amplitude (dBuV)	Conductor (L/N)	Limit (dBuV)	Margin (dB)	Detector (QP/Ave.)
0.168405	27.76	L	55.04	-27.28	Ave.
0.174996	32.14	L	54.72	-22.58	Ave.
0.228261	22.79	L	52.51	-29.73	Ave.
0.495582	22.73	L	46.07	-23.35	Ave.
17.30552	19.44	L	50	-30.56	Ave.
0.647175	19.08	L	46	-26.92	Ave.

120 V, 60 Hz – Neutral



Frequency (MHz)	Corrected Amplitude (dBuV)	Conductor (L/N)	Limit (dBuV)	Margin (dB)	Detector (QP/Ave.)
0.150228	45.78	N	65.99	-20.21	QP
0.190596	42.03	N	64.01	-21.98	QP
0.790446	26.02	N	56	-29.98	QP
0.821205	27.53	N	56	-28.47	QP
0.549963	27.87	N	56	-28.13	QP
0.403392	29.98	N	57.78	-27.81	QP

Frequency (MHz)	Corrected Amplitude (dBuV)	Conductor (L/N)	Limit (dBuV)	Margin (dB)	Detector (QP/Ave.)
0.150228	28.49	N	55.99	-27.49	Ave.
0.190596	24.73	N	54.01	-29.28	Ave.
0.790446	18.08	N	46	-27.92	Ave.
0.821205	20.64	N	46	-25.36	Ave.
0.549963	19.76	N	46	-26.24	Ave.
0.403392	22.3	N	47.78	-25.48	Ave.

6 FCC §15.205, §15.209 & §15.245(b) – Radiated Emissions

6.1 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 §15.245 (b), The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency (MHz)	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (millivolts/meter)
902-928	500	1.6
2435-2465	500	1.6
5785-5815	500	1.6
10500-10550	2500	25.0
24075-24175	2500	25.0

(1) Regardless of the limits shown in the above table, harmonic emissions in the restricted bands below 17.7 GHz, as specified in §15.205, shall not exceed the field strength limits shown in §15.209. Harmonic emissions in the restricted bands at and above 17.7 GHz shall not exceed the following field strength limits:

(i) For the second and third harmonics of field disturbance sensors operating in the 24075-24175 MHz band and for other field disturbance sensors designed for use only within a building or to open building doors, 25.0 mV/m.

(ii) For all other field disturbance sensors, 7.5 mV/m.

(iii) Field disturbance sensors designed to be used in motor vehicles or aircraft must include features to prevent continuous operation unless their emissions in the restricted bands, other than the second and third harmonics from devices operating in the 24075-24175 MHz band, fully comply with the limits given in §15.209. Continuous operation of field disturbance sensors designed to be used in farm equipment, vehicles such as fork lifts that are intended primarily for use indoors or for very specialized operations, or railroad locomotives, railroad cars and other equipment which travels on fixed tracks is permitted. A field disturbance sensor will be considered not to be operating in a continuous mode if its operation is limited to specific activities of limited duration (e.g., putting a vehicle into reverse gear, activating a turn signal, etc.).

(2) Field strength limits are specified at a distance of 3 meters.

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

(4) The emission limits shown above are based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply.

6.2 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 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.

6.3 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.

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

6.4 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

6.5 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
Wisewave	Horn Antenna	ARH-4223-02	10555-01	2012-08-09	3 years
Wisewave	Horn Antenna	ARH-2823-02	10555-02	2012-08-09	3 years
IW Microwave	High Frequency Cable	DC-1438	SPS-2303-3840-SPS	2014-09-23	1 year
Hewlett-Packard	5 ft N-type RF cable	-	1268	2015-05-15	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.*

6.6 Test Environmental Conditions

Temperature:	23º C
Relative Humidity:	33 %
ATM Pressure:	102.1 kPa

The testing was performed by Jin Yang on 2015-07-17 in 5m chamber3.

6.7 Summary of Test Results

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

Fundamental Radiated Emission:

Antenna	Corrected Amplitude(dBμV/m)					
	Low Channel		Middle Channel		High Channel	
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal
Front Antenna	109.05	108.49	-	-	-	-
Main Antenna	109.69	109.71	-	-	-	-
Back Antenna	109.21	**110.6**	106.93	108.66	104.67	105.42

Note: The EUT has three antennas but cannot transmit at the same time. All fundamental strength from three antennas has been investigated and the back antenna is determined to be the worst case.

30-1000 MHz:

Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Mode**
-0.6	300.0165	H	Radio Collocation

Above 1 GHz:

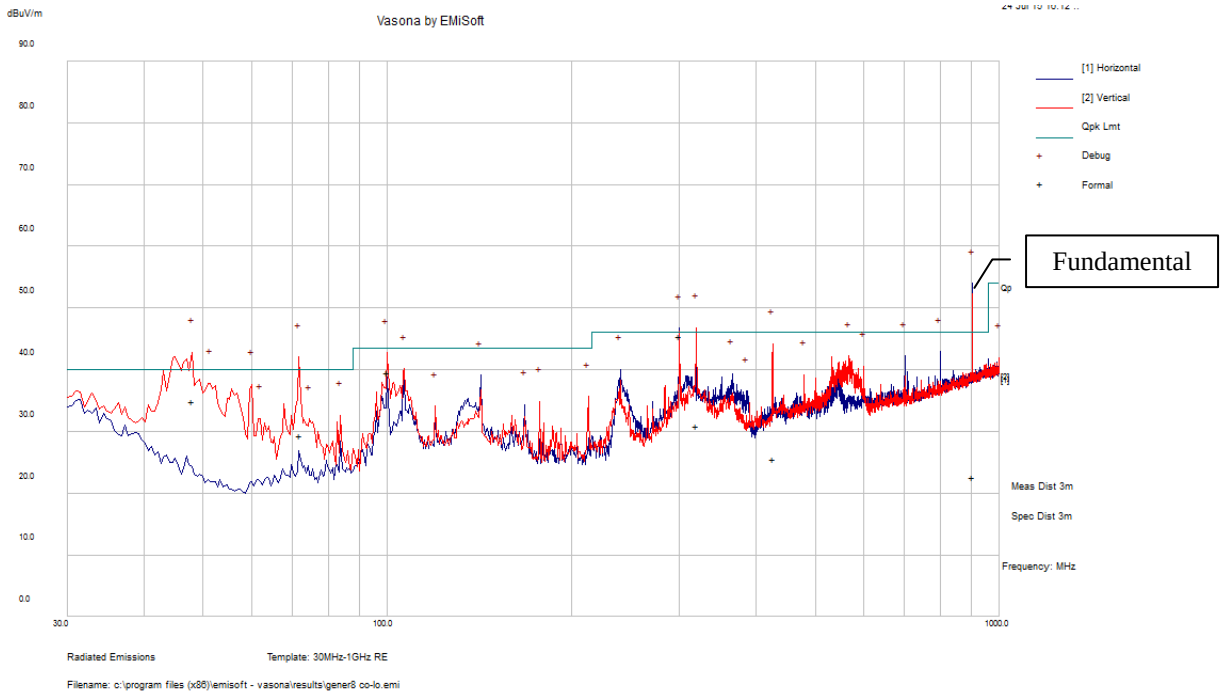
Mode: Transmitting			
Margin (dB)	**Frequency (MHz)**	**Polarization (Horizontal/Vertical)**	**Mode, Channel**
-1.382	17295	H	Radio Collocation

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

6.8 Radiated Emissions Test Data and Plots

1) 30 MHz – 1 GHz

Radio collocation configuration:



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (degrees)	Limit (dBµV/m)	Margin (dB)	Comments
47.97225	34.87	102	V	90	40	-5.13	QP
71.93525	29.35	271	V	236	40	-10.65	QP
319.526	30.94	158	V	168	46	-15.06	QP
300.0165	45.4	106	H	306	46	-0.6	QP
99.97975	39.65	100	V	121	43.5	-3.85	QP
426.4473	25.52	100	V	214	46	-20.48	QP

2) Fundamental & Radiated emissions above 1 GHz

900 MHz Signal Radio

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Low Channel 903 MHz											
903	83.53	278	106	V	22.13	3.55	-	109.21	134	-24.79	Peak
903	84.89	167	187	H	22.13	3.55	-	110.57	134	-23.43	Peak
903	36.32	278	106	V	22.13	3.55	-	62	114	-52	Ave
903	37.27	167	187	H	22.13	3.55	-	62.95	114	-51.05	Ave
902	22.69	278	106	V	22.32	3.55	-	48.56	74	-25.44	Peak
902	27.3	167	187	H	22.32	3.55	-	53.17	74	-20.83	Peak
902	3.63	278	106	V	22.32	3.55	-	29.5	54	-24.5	Ave
902	8.14	167	187	H	22.32	3.55	-	34.01	54	-19.99	Ave
1806	61.88	205	164	V	27.218	2.93	38.67	53.358	84.1	-30.742	Peak
1806	66.35	338	167	H	27.218	2.93	38.67	57.828	84.1	-26.272	Peak
1806	45.62	205	164	V	27.218	2.93	38.67	37.098	64.1	-27.002	Ave
1806	48.51	338	167	H	27.218	2.93	38.67	39.988	64.1	-24.112	Ave
2709	59.3	352	228	V	29.077	3.73	38.3	53.807	74	-20.193	Peak
2709	57.28	176	197	H	29.077	3.73	38.3	51.787	74	-22.213	Peak
2709	43.63	352	228	V	29.077	3.73	38.3	38.137	54	-15.863	Ave
2709	42.3	176	197	H	29.077	3.73	38.3	36.807	54	-17.193	Ave
3612	53.28	353	231	V	31.431	4.55	38.11	51.151	74	-22.849	Peak
3612	51.96	276	235	H	31.431	4.55	38.11	49.831	74	-24.169	Peak
3612	38.89	353	231	V	31.431	4.55	38.11	36.761	54	-17.239	Ave
3612	37.19	276	235	H	31.431	4.55	38.11	35.061	54	-18.939	Ave
4515	50.55	0	100	V	32.039	5.02	37.83	49.779	74	-24.221	Peak
4515	49.95	0	100	H	32.039	5.02	37.83	49.179	74	-24.821	Peak
4515	35.28	0	100	V	32.039	5.02	37.83	34.509	54	-19.491	Ave
4515	35.25	0	100	H	32.039	5.02	37.83	34.479	54	-19.521	Ave

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Middle Channel 915 MHz											
915	81.02	278	105	V	22.36	3.55	-	106.93	134	-27.07	Peak
915	82.75	168	187	H	22.36	3.55	-	108.66	134	-25.34	Peak
915	34.91	278	105	V	22.36	3.55	-	60.82	114	-53.18	Ave
915	36.04	168	187	H	22.36	3.55	-	61.95	114	-52.05	Ave
1830	60.65	255	194	V	27.218	2.76	38.67	51.958	84.1	-32.142	Peak
1830	62.08	349	208	H	27.218	2.76	38.67	53.388	84.1	-30.712	Peak
1830	43.34	255	194	V	27.218	2.76	38.67	34.648	64.1	-29.452	Ave
1830	44.76	349	208	H	27.218	2.76	38.67	36.068	64.1	-28.032	Ave
2745	58.74	350	234	V	29.077	3.73	38.3	53.247	74	-20.753	Peak
2745	56.32	173	203	H	29.077	3.73	38.3	50.827	74	-23.173	Peak
2745	43.33	350	234	V	29.077	3.73	38.3	37.837	54	-16.163	Ave
2745	40.45	173	203	H	29.077	3.73	38.3	34.957	54	-19.043	Ave
3660	51.21	281	230	V	31.892	4.55	37.9	49.752	74	-24.248	Peak
3660	50.01	0	100	H	31.892	4.55	37.9	48.552	74	-25.448	Peak
3660	36.53	281	230	V	31.892	4.55	37.9	35.072	54	-18.928	Ave
3660	35.47	0	100	H	31.892	4.55	37.9	34.012	54	-19.988	Ave
4575	48.88	0	100	V	32.2	5.02	37.89	48.21	74	-25.79	Peak
4575	47.92	0	100	H	32.2	5.02	37.89	47.25	74	-26.75	Peak
4575	34.07	0	100	V	32.2	5.02	37.89	33.4	54	-20.6	Ave
4575	34.1	0	100	H	32.2	5.02	37.89	33.43	54	-20.57	Ave

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
High Channel 927 MHz											
927	78.63	281	100	V	22.49	3.55	-	104.67	134	-29.33	Peak
927	79.38	167	154	H	22.49	3.55	-	105.42	134	-28.58	Peak
927	34.37	281	100	V	22.49	3.55	-	60.41	114	-53.59	Ave
927	34.94	167	154	H	22.49	3.55	-	60.98	114	-53.02	Ave
928	18.59	281	100	V	22.47	3.55	-	44.61	74	-29.39	Peak
928	18.75	167	154	H	22.47	3.55	-	44.77	74	-29.23	Peak
928	3.17	281	100	V	22.47	3.55	-	29.19	54	-24.81	Ave
928	4.42	167	154	H	22.47	3.55	-	30.44	54	-23.56	Ave
1854	60.63	307	234	V	27.568	2.76	38.58	52.378	84.1	-31.722	Peak
1854	62.99	355	208	H	27.568	2.76	38.58	54.738	84.1	-29.362	Peak
1854	44.39	307	234	V	27.568	2.76	38.58	36.138	64.1	-27.962	Ave
1854	45.73	355	208	H	27.568	2.76	38.58	37.478	64.1	-26.622	Ave
2781	57.93	348	210	V	28.969	3.73	38.33	52.299	74	-21.701	Peak
2781	53.6	129	127	H	28.969	3.73	38.33	47.969	74	-26.031	Peak
2781	43.44	348	210	V	28.969	3.73	38.33	37.809	54	-16.191	Ave
2781	39.02	129	127	H	28.969	3.73	38.33	33.389	54	-20.611	Ave
3708	51.23	286	261	V	31.892	4.62	37.9	49.842	74	-24.158	Peak
3708	49.86	0	100	H	31.892	4.62	37.9	48.472	74	-25.528	Peak
3708	37.58	286	261	V	31.892	4.62	37.9	36.192	54	-17.808	Ave
3708	35.54	0	100	H	31.892	4.62	37.9	34.152	54	-19.848	Ave
4635	50.16	0	100	V	32.2	5.02	37.89	49.49	74	-24.51	Peak
4635	49.72	0	100	H	32.2	5.02	37.89	49.05	74	-24.95	Peak
4635	35.5	0	100	V	32.2	5.02	37.89	34.83	54	-19.17	Ave
4635	35.48	0	100	H	32.2	5.02	37.89	34.81	54	-19.19	Ave

Radio Collocation

Frequency (MHz)	S.A. Reading (dBµV)	Turntable Azimuth (degrees)	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Reading (dBµV/m)	FCC		Comments
			Height (cm)	Polarity (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	
Collocation: 903 MHz, BT & Wi-Fi											
1806	60.28	265	178	V	26.6	2.76	38.67	50.97	84.1	-33.13	Peak
1806	63.63	332	198	H	26.6	2.76	38.67	54.32	84.1	-29.78	Peak
1806	44.25	265	178	V	26.6	2.76	38.67	34.94	64.1	-29.16	Ave
1806	46.14	332	198	H	26.6	2.76	38.67	36.83	64.1	-27.27	Ave
2709	56.24	347	225	V	29.376	3.73	38.3	51.046	74	-22.954	Peak
2709	54.95	125	130	H	29.376	3.73	38.3	49.756	74	-24.244	Peak
2709	41.51	347	225	V	29.376	3.73	38.3	36.316	54	-17.684	Ave
2709	40.36	125	130	H	29.376	3.73	38.3	35.166	54	-18.834	Ave
3612	51.5	351	201	V	30.102	4.55	38.11	48.042	74	-25.958	Peak
3612	48.82	54	174	H	30.102	4.55	38.11	45.362	74	-28.638	Peak
3612	37.49	351	201	V	30.102	4.55	38.11	34.032	54	-19.968	Ave
3612	35.12	54	174	H	30.102	4.55	38.11	31.662	54	-22.338	Ave
4515	48.73	0	100	V	32.59	5.02	37.83	48.51	74	-25.49	Peak
4515	48.61	0	100	H	32.59	5.02	37.83	48.39	74	-25.61	Peak
4515	33.54	0	100	V	32.59	5.02	37.83	33.32	54	-20.68	Ave
4515	33.28	0	100	H	32.59	5.02	37.83	33.06	54	-20.94	Ave
4824	51.44	162	169	V	33.751	5.34	37.85	52.681	74	-21.319	Peak
4824	50.45	116	101	H	33.751	5.34	37.85	51.691	74	-22.309	Peak
4824	34.71	162	169	V	33.751	5.34	37.85	35.951	54	-18.049	Ave
4824	33.95	116	101	H	33.751	5.34	37.85	35.191	54	-18.809	Ave
4953	51.53	0	100	V	34.236	5.25	37.75	53.266	74	-20.734	Peak
4938	52.5	0	100	H	33.851	5.25	37.75	53.851	74	-20.149	Peak
4953	32.7	0	100	V	34.236	5.25	37.75	34.436	54	-19.564	Ave
4938	32.79	0	100	H	33.851	5.25	37.75	34.141	54	-19.859	Ave
7828	48.17	0	100	V	37.607	6.86	37.61	55.027	74	-18.973	Peak
7780	48.19	0	100	H	37.607	6.86	37.61	55.047	74	-18.953	Peak
7828	33.15	0	100	V	37.607	6.86	37.61	40.007	54	-13.993	Ave
7780	32.59	0	100	H	37.607	6.86	37.61	39.447	54	-14.553	Ave
11530	47.84	0	100	V	40.736	10.71	37.43	61.856	74	-12.144	Peak
11530	48.13	0	100	H	40.736	10.71	37.43	62.146	74	-11.854	Peak
11530	33.09	0	100	V	40.736	10.71	37.43	47.106	54	-6.894	Ave
11530	33.11	0	100	H	40.736	10.71	37.43	47.126	54	-6.874	Ave
17295	48.39	0	100	V	44.308	12.05	36.7	68.048	74	-5.952	Peak
17295	47.5	0	100	H	44.308	12.05	36.7	67.158	74	-6.842	Peak
17295	32.92	0	100	V	44.308	12.05	36.7	52.578	54	-1.422	Ave
17295	32.96	0	100	H	44.308	12.05	36.7	52.618	54	-1.382	Ave

Note: the host device contains 2.4G & 5G Wi-Fi, Bluetooth and RFID radios. Collocation refers to all radios are activated.