EMC Test Report

Project Number: 4158282
Report Number: 4158282EMC02 **Revision Level:** 0
Client: Vinylux, Inc.

Equipment Under Test: Vintage Vinyl Bluetooth Speaker
Model Number: VVBS1
FCC ID: 2AL98VVBS1

Applicable Standards: FCC Part 15 Subpart C, § 15.247
ANSI C63.10: 2013

Report issued on: 15 June 2017
Test Result: Compliant

Tested by: _____
Jeremy O. Pickens, Senior EMC Engineer

Reviewed by: _____
David Schramm, EMC/RF/SAR/HAC Manager

Remarks:
This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

Table of Contents

1 Summary of Test Results

Test Description	Test Specification		Test Result
Occupied Bandwidth	15.247(a)(1)	RSS-247 5.1(1)	Compliant
Peak Power Output	15.247(a)(1)	RSS-247 5.4(2)	Compliant
Conducted Spurious Emissions	15.247(d)	RSS-247 5.5	Compliant
Band Edge	15.247(d)	RSS-247 5.5	Compliant
Radiated Spurious Emissions	15.247(d), 15.35(b),15.209	RSS-GEN 8.10	Compliant
Pseudo-Random Hop Sequence	15.247(a)(1)	RSS-247 5.1(1)	Compliant
Channel Separation	15.247(a)(1)	RSS-247 5.1(2)	Compliant
Number of Hopping Channels	15.247(a)(1)(iii)	RSS-247 5.1(4)	Compliant
Dwell Time	15.247(a)(1)(iii)	RSS-247 5.1(4)	Compliant
Number of hopping frequencies	15.247(a)(1)(iii)	RSS-247 5.1(4)	Compliant
AC Powerline Conducted Emission	15.107, 15.207	RSS-GEN 7.2.4	Compliant

1.1 *Modifications Required for Compliance*

None

2 General Information

2.1 *Client Information*

Name:	Vinylux, Inc.
Address:	104 E Moreland Ave
City, State, Zip, Country:	Philadelphia, PA 19118, USA

2.1 *Test Laboratory*

Name:	SGS North America, Inc.
Address:	620 Old Peachtree Road NW, Suite 100
City, State, Zip, Country:	Suwanee, GA 30024, USA
Accrediting Body:	A2LA
Type of lab:	Testing Laboratory
Certificate Number:	3212.01

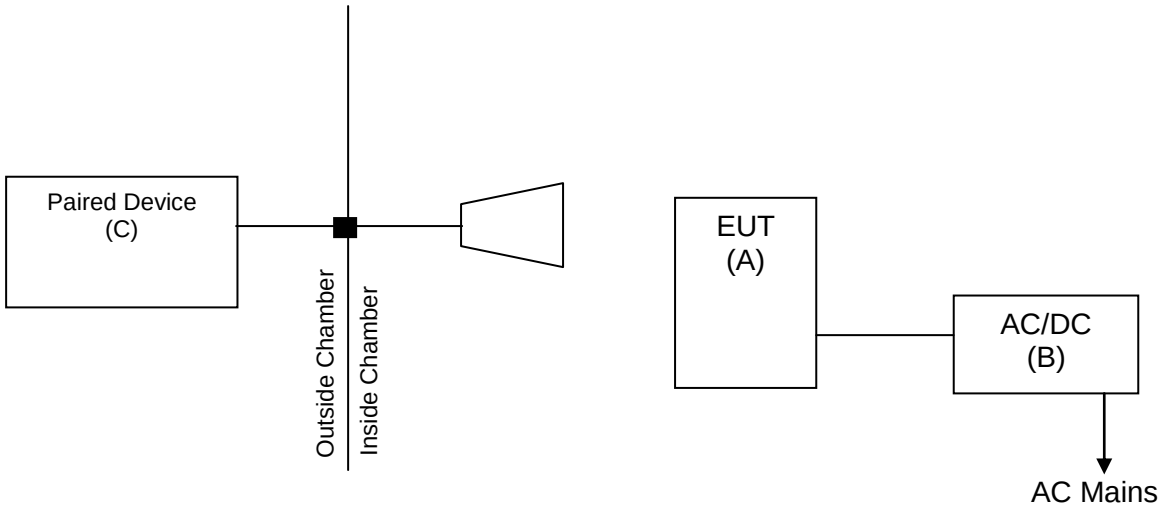
2.2 *General Information of EUT*

Type of Product:	Vintage Vinyl Bluetooth Speaker
Model Number:	VVBS1
Serial Number:	Not labeled
Frequency Range:	2402 to 2480 MHz, 79 Channels
Antenna:	PCB Trace
Rated Voltage:	19.0 Vdc (Speaker) 100-240Vac, 50/60Hz (AC/DC Adapter)
Test Voltage:	19.0 Vdc (Speaker) 120Vac, 60Hz (AC/DC Adapter)
Sample Received Date:	06 June 2017
Dates of testing:	08 – 14 June 2017

2.3 *Operating Modes and Conditions*

Test modes were not available for this system. The EUT was exercised in hopping mode by streaming a 1kHz tone from a paired Android device.

2.4 *EUT Connection Block Diagram*



2.5 *System Configurations*

Device reference	Manufacturer	Description	Model Number	Serial Number
A	Vinylux, Inc.	Vintage Vinyl Bluetooth Speaker	VVBS1	None
B	Hunt-key	AC/DC Adaptor	HKA03619021-8C	Y36WAA1691000162
C	Honeywell	Android Mobile Computer	1015CP01	004X1700300

3 Occupied Bandwidth

3.1 *Test Result*

Test Description	Basic Standards	Test Result
99% bandwidth	15.247(a)(1) RSS-247 5.1(1) ANSI C63.10: 2013	Compliant

3.2 *Test Method*

Occupied bandwidth measurements were taken using the methods defined an ANSI C63.10, Clause 6.9; Measurements were recorded using the 99% OBW function of the measurement receiver.

3.3 *Test Site*

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature: 22.4 °C
Relative Humidity: 49.5 %

3.4 *Test Equipment*

Test Date: 9-Jun-2017 Tester: JOP

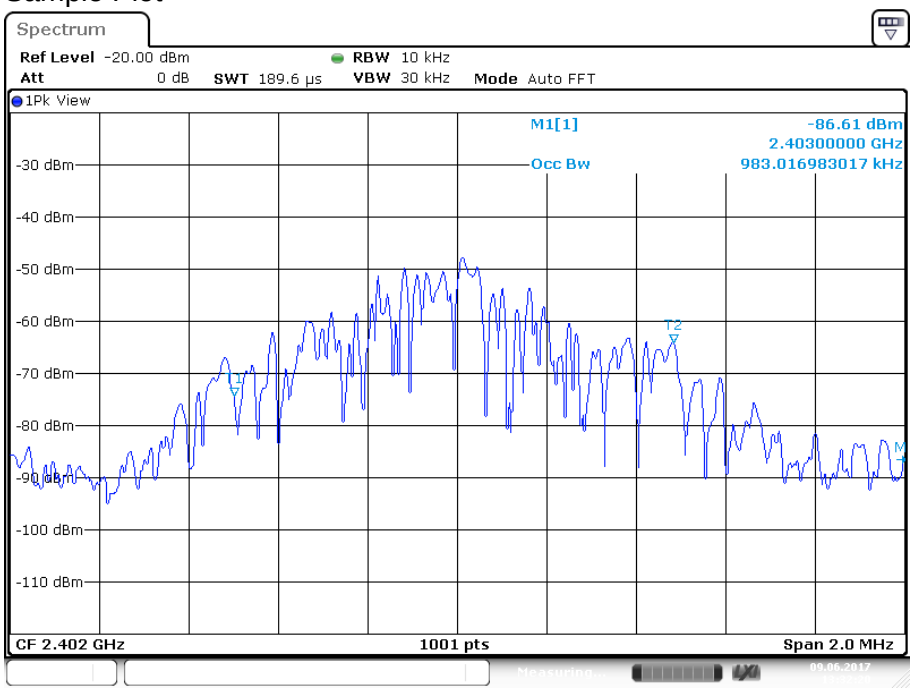
Equipment	Model	Manufacturer	Asset Number	Cal Due Date
EMI TEST RECEIVER	ESU8	ROHDE & SCHWARZ	B085759	21-Jul-2017
RF CABLE	141	HUBER & SUHNER	B095587	26-Jul-2017
RF CABLE	141	HUBER & SUHNER	B095586	26-Jul-2017
RF ENCLOSURE	T/T	LINDGREN RF ENCLOSURES	17011	CNR

Note: The equipment calibration period is 1 year except for the FSV which is one a 2 year cal cycle per manufacturer's recommendations.

3.5 *Test Data*

Frequency	Channel No	99% bandwidth kHz
2402	0	983.0
2441	39	913.1
2480	78	917.1

Sample Plot



Date: 9.JUN.2017 13:32:21

4 Peak Output Power

4.1 *Test Result*

Test Description	Test Specification	Test Result
Peak Output Power	15.247(a)(1) RSS-247 5.4(2) ANSI C63.10: 2013	Compliant

4.2 *Test Method*

Because the device did not have a detachable antenna or accessible port, output power measurements were taken using the radiated methods defined an ANSI C63.10.

Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 hopping channels: 1 watt.

4.3 *Test Site*

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature: 22.9 °C
Relative Humidity: 55.7 %

4.4 *Test Equipment*

Test Date: 13-Jun-2017 Tester: JOP

Equipment	Model	Manufacturer	Asset Number	Cal Due Date
EMI TEST RECEIVER	ESU40	ROHDE & SCHWARZ	B079629	20-Jun-2017
ANTENNA, DRG HORN (MEDIUM)	3117	ETS LINDGREN	B079691	27-Jul-2017
RF CABLE	NMS-290-236.2-NMS	FLORIDA RF LABS	B095020	29-Jul-2017
RF CABLE	NFS-290-78.7-NFS	FLORIDA RF LABS	B095019	28-Jul-2017
RF CABLE	SF106	HUBER & SUHNER	B079660	25-Jul-2017
RF CABLE	104PE	HUBER & SUHNER	B079793	27-Jul-2017
LOW NOISE AMPLIFIER	TS-PR18	ROHDE & SCHWARZ	B094463	22-Feb-2018

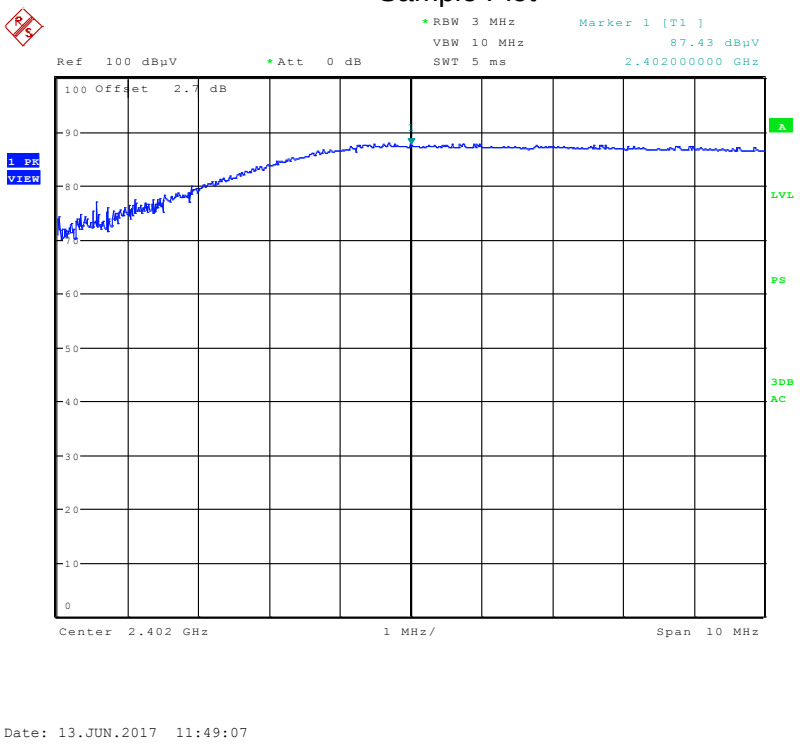
Note: The equipment calibration period is 1 year.

4.5 *Test Data*

Modulation	Frequency (MHz)	Field Strength (dBµV/m)	Peak Power (dBm)	Peak Power (Watts)
Basic Rate (GFSK)	2402.000000	87.4	-7.8	0.0002
	2441.000000	85.7	-9.5	0.0001
	2480.000000	83.6	-11.6	0.0001

- Peak Power was calculated by adjusting the field strength measurement by 95.2dB

Sample Plot



5 Conducted Spurious Emissions

5.1 *Test Result*

Test Description	Test Specification	Test Result
Conducted Spurious Emissions	15.247(d) RSS-247 5.4(2) ANSI C63.10: 2013	Compliant

5.2 *Test Method*

Conducted spurious emissions measurements were taken using the methods defined an ANSI C63.10, Clauses 5.5 and 5.6. Authorized band edge measurements were recorded using the methods in clause 6.10.4. For this test, a coaxial interface was soldered to the output pins of the Bluetooth chipset.

The limit is 20 dB below the measured peak power.

5.3 *Test Site*

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature: 23.3 °C
Relative Humidity: 50.7 %

5.4 *Test Equipment*

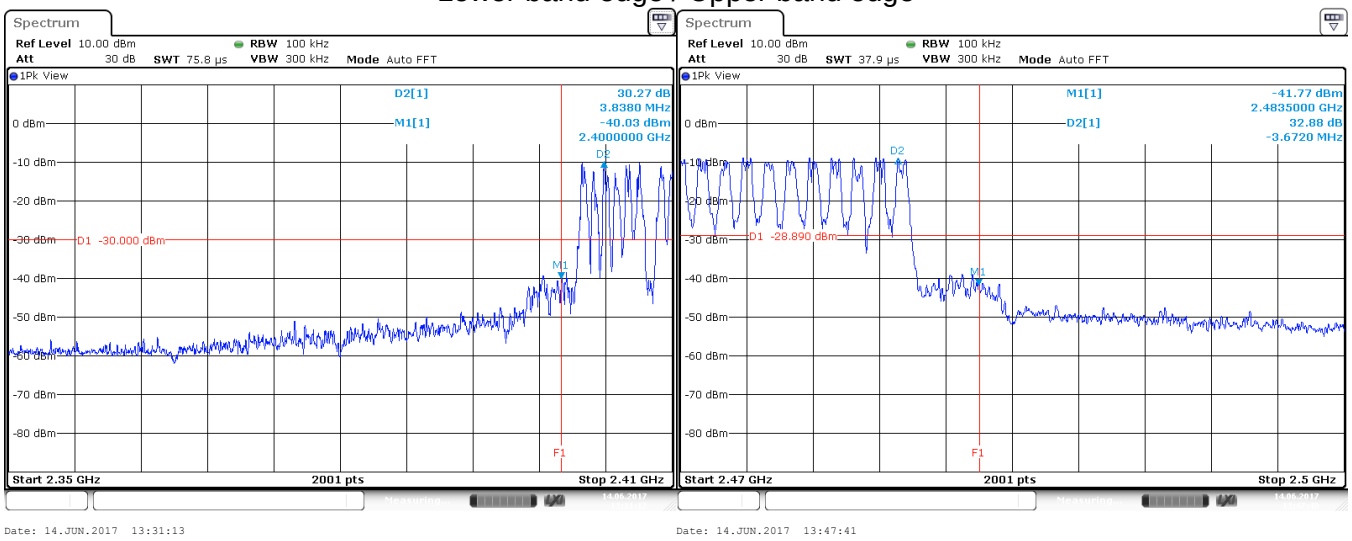
Test Date: 14-Jun-2017 Tester: JOP

Equipment	Model	Manufacturer	Asset Number	Cal Due Date
SIGNAL ANALYZER	FSV30	ROHDE & SCHWARZ	B085749	8-Oct-2017
RF CABLE	141	HUBER & SUHNER	B095587	26-Jul-2017
RF CABLE	141	HUBER & SUHNER	B095586	26-Jul-2017
RF ENCLOSURE	T/T	LINDGREN RF ENCLOSURES	17011	CNR

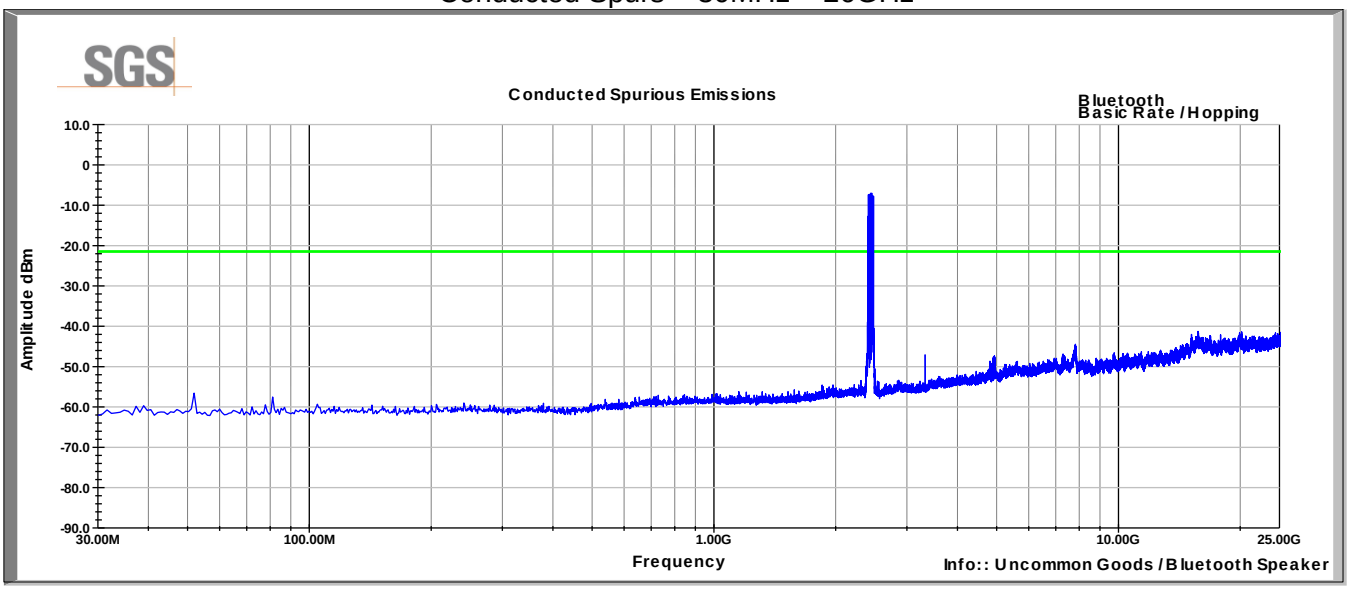
Note: The equipment calibration period is 1 year except for the FSV which is one a 2 year cal cycle per manufacturer's recommendations.

5.5 *Test Data*

Basic Rate – Hopping
Lower band edge / Upper band edge



Conducted Spurs – 30MHz – 26GHz



6 Field Strength of Spurious Radiation

6.1 *Test Result*

Test Description	Test Specification	Test Result
Field strength of spurious radiation	15.247(d), 15.35(b), 15.209, RSS-GEN S8.10	Compliant

6.2 *Test Method*

Exploratory scans were performed over the frequency range as indicated in the tables below using the max hold function and incorporating a Peak detector and using TILE! software. The final test data was measured using a Quasi-Peak detector below 1GHz and a Peak detector above 1GHz. For harmonics of the fundamental, Average measurements were made by correcting the peak value with the duty cycle correction factor. For emissions other than harmonics of the fundamental, the Average measurements were made using the Average detector. The receivers resolution bandwidth was set to 120 kHz for measurements taken in the 30MHz to 1GHz frequency range and 1MHz for measurements for 1GHZ and higher. Measurements were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna height was varied from 1 m to 4 m and the EUT was rotated 360° to find the maximum emitting point for each frequency. The radiated measurements were recorded and compared to the limits indicated in the table below.

Test distance:

9k to 30 MHz – Near field prescan to determine if there were any emissions.
30 MHz to 1 GHz - The EUT to measurement antenna distance is 3 meters
1 to 18 GHz - The EUT to measurement antenna distance is 3 meters
18 to 40 GHz - The EUT to measurement antenna distance is 3 meters

Frequency	Limits(1)		Peak Limits dBuV/m
	Microvolts/m	dBuV/m	
30 - 88 MHz	100	40 (2)	--
88 - 216 MHz	150	43.5 (2)	--
216 - 960 MHz	200	46 (2)	--
960 - 1000 MHz	500	54 (2)	--
1 - 40 GHz	500	54 (3)	74

(1) These limits are applicable to emissions outside of the intentional transmit frequency band.
(2) Quasi-peak limit
(3) Average limit

6.3 *Test Site*

10m Absorber Lined Shielded Enclosure (ALSE), Suwanee, GA

Environmental Conditions

Temperature: 23.2 °C
Relative Humidity: 44.5 %

6.4 *Test Equipment*

Test Date: 12-Jun-2017 Tester: JOP

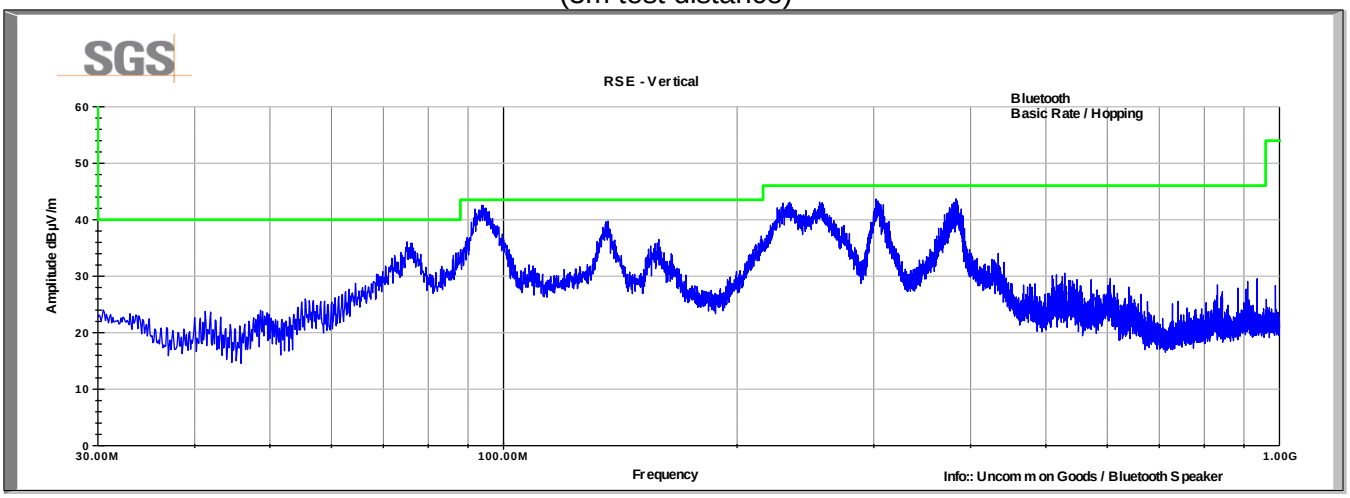
Equipment	Model	Manufacturer	Asset Number	Cal Due Date
EMI TEST RECEIVER	ESU40	ROHDE & SCHWARZ	B079629	25-Apr-2018
ANTENNA, BILOG	JB6	SUNOL	B079689	8-Sep-2017
RF CABLE	NMS-290-236.2-NMS	FLORIDA RF LABS	B095020	29-Jul-2017
RF CABLE	NFS-290-78.7-NFS	FLORIDA RF LABS	B095019	28-Jul-2017
RF CABLE	SF106	HUBER & SUHNER	B079660	25-Jul-2017
RF CABLE	104PE	HUBER & SUHNER	B079793	27-Jul-2017
LOW NOISE AMPLIFIER	TS-PR18	ROHDE & SCHWARZ	B094463	22-Feb-2018
ANTENNA, DRG HORN (MEDIUM)	3117	ETS LINDGREN	B079691	27-Jul-2017
HORN(SMALL)	LB-180400-20-C-KF	A-INFO	15007	21-Mar-2018
RF CABLE	SF102	HUBER & SUHNER	B079822	27-Jul-2017
RF CABLE	SF102	HUBER & SUHNER	B079824	27-Jul-2017
LOW NOISE AMPLIFIER	NSP1840-HG	MITEQ	B087572	29-Jul-2017

Note: The equipment calibration period is 1 year.

6.5 *Test Data – Peak Plots*

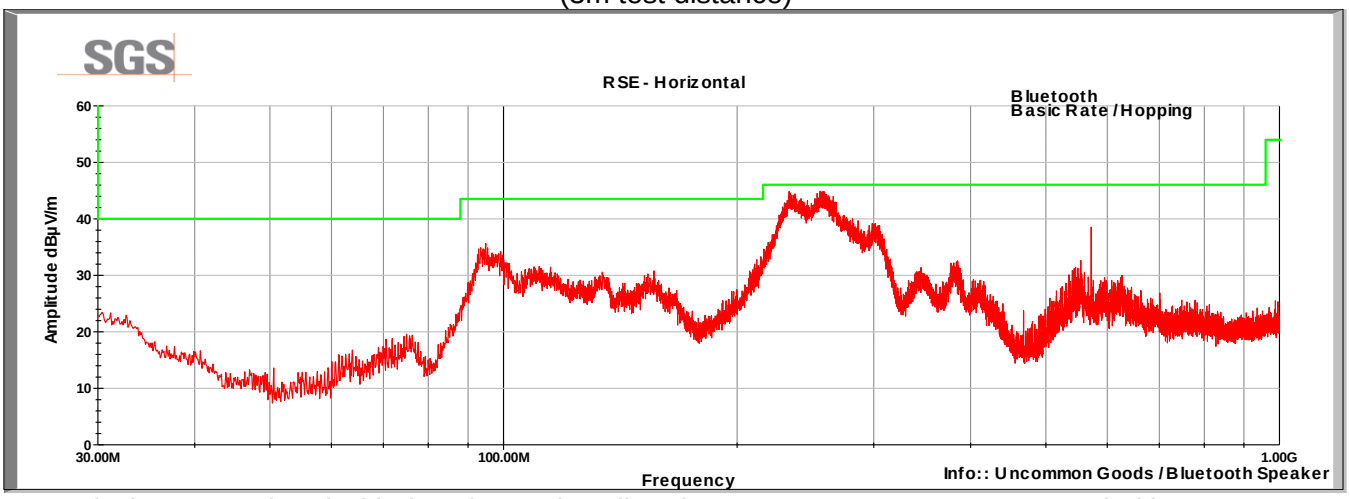
No emissions associated with the radio were detected in the range 9kHz to 30MHz.

Bluetooth, Hopping
30-1000MHz
Vertical
(3m test distance)



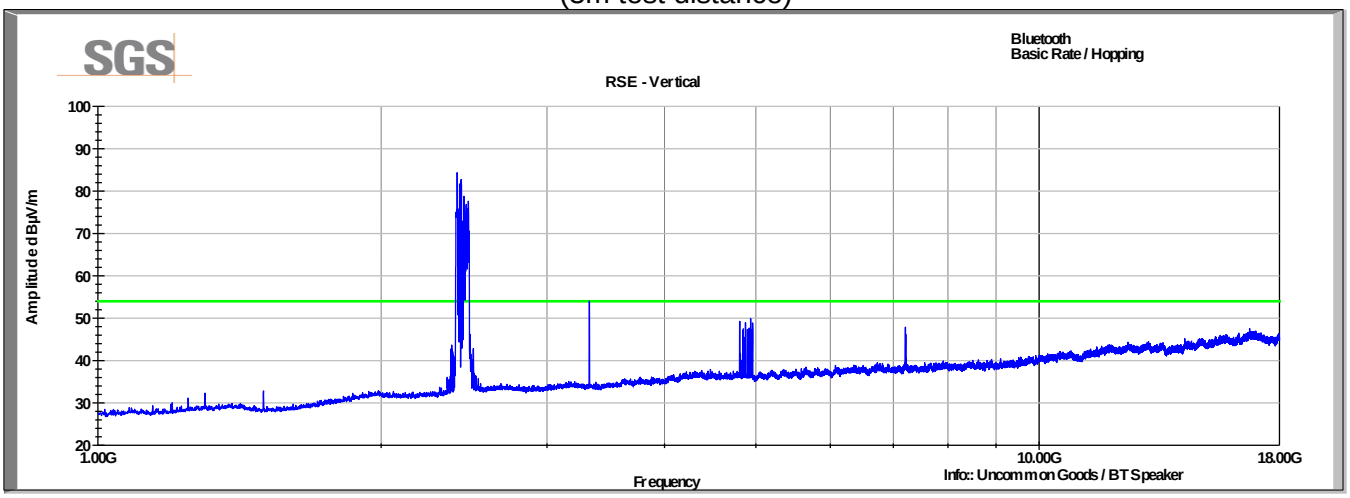
No emissions associated with the Bluetooth radio. These measurements were recorded in an FCC Part 15, Supbart B evaluation.

Bluetooth, Hopping
30-1000MHz
Horizontal
(3m test distance)

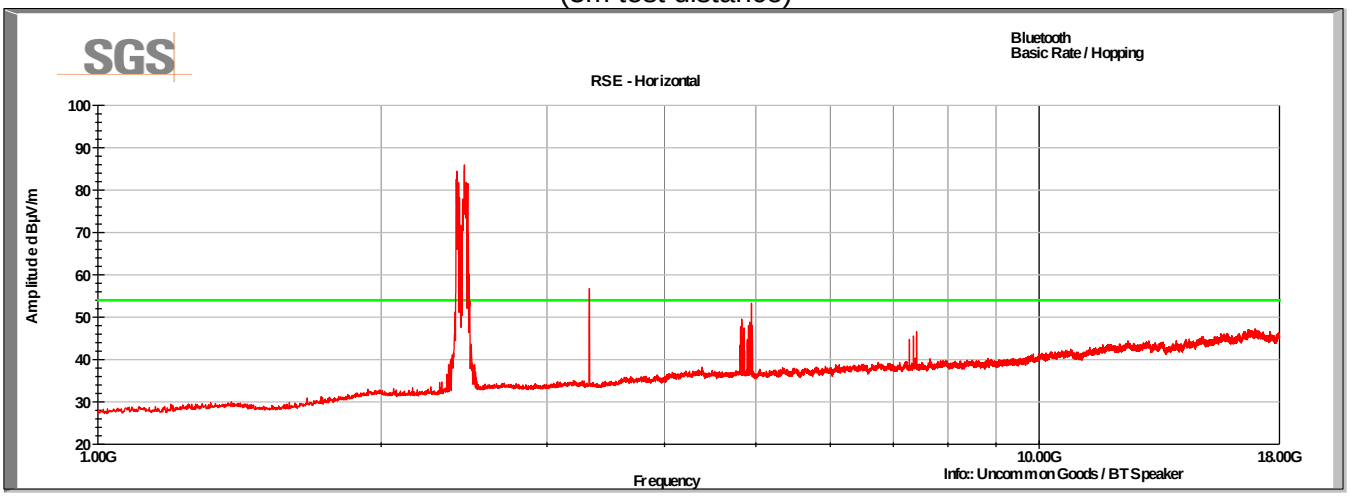


No emissions associated with the Bluetooth radio. These measurements were recorded in an FCC Part 15, Supbart B evaluation.

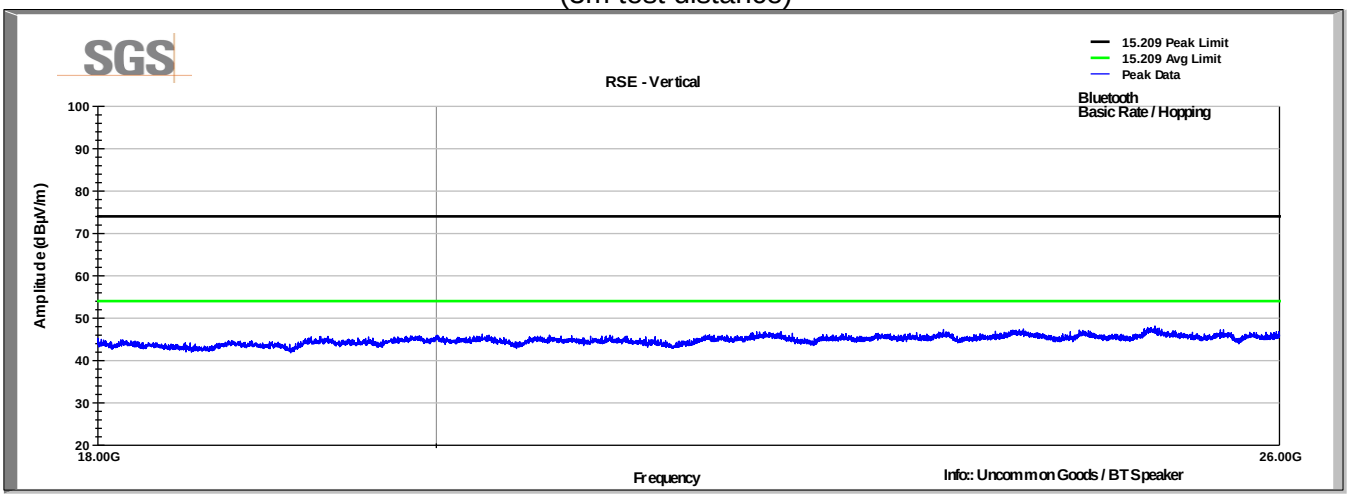
Bluetooth, Hopping
1-18GHz
Vertical
(3m test distance)



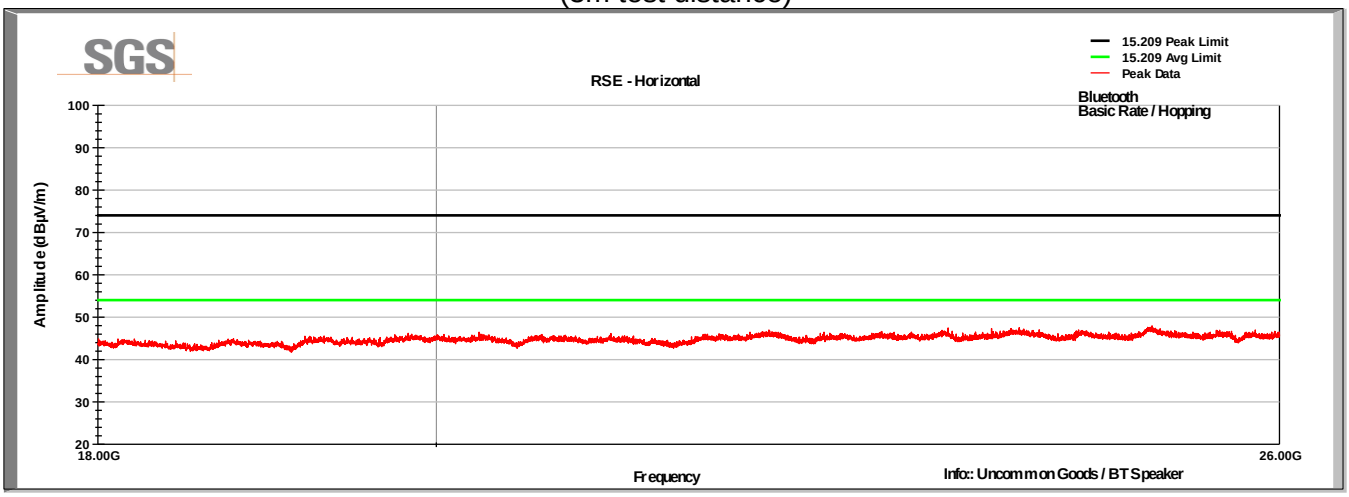
Bluetooth, Hopping
1-18GHz
Horizontal
(3m test distance)



Bluetooth, Hopping
18-26GHz
Vertical
(3m test distance)



Bluetooth, Hopping
18-26GHz
Horizontal
(3m test distance)



6.6 *Test Data – Tabular Data*

Frequency MHz	Raw Meas (dBuV)	Polarity (V/H)	Correction (dB/m)	Corr Value dBuV/m	Limit (dBuV/m)	Margin (dB)	Detector	
3327.96	52.6	V	1.4	54.0	NA	NA	Peak	*
3327.96	49.6	V	1.4	51.0	NA	NA	Average	*
3327.96	55.3	H	1.4	56.7	NA	NA	Peak	*
3327.96	52.2	H	1.4	53.6	NA	NA	Average	*
4804.00	46.2	V	3.0	49.2	74.0	-24.8	Peak	
4804.00	37.4	V	3.0	40.4	54.0	-13.6	Average	
4804.00	44.8	H	3.0	47.8	74.0	-26.2	Peak	
4804.00	36.0	H	3.0	39.0	54.0	-15.0	Average	
4880.00	45.8	V	3.1	48.9	74.0	-25.1	Peak	
4880.00	37.0	V	3.1	40.1	54.0	-13.9	Average	
4880.00	41.6	H	3.1	44.7	74.0	-29.3	Peak	
4880.00	32.8	H	3.1	35.9	54.0	-18.1	Average	
4960.00	45.7	V	3.2	48.9	74.0	-25.1	Peak	
4960.00	36.9	V	3.2	40.1	54.0	-13.9	Average	
4960.00	50.1	H	3.2	53.3	74.0	-20.7	Peak	
4960.00	41.3	H	3.2	44.5	54.0	-9.5	Average	

* These emissions did not fall within a restricted band.

7 Radiated Emissions at Band Edge / Restricted Band

7.1 *Test Result*

Test Description	Test Specification	Test Result
Field strength of spurious radiation	15.247(d), 15.35(b), 15.209, RSS-GEN S8.10 ANSI C63.10: 2013	Compliant

7.2 *Test Method*

Peak and average field strength measurements were performed at the restricted band edges of 2390MHz and 2483.5MHz. Measurements were made using the radiated methods defined in ANSI C63.10.

7.3 *Test Site*

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature: 22.9 °C
Relative Humidity: 55.7 %

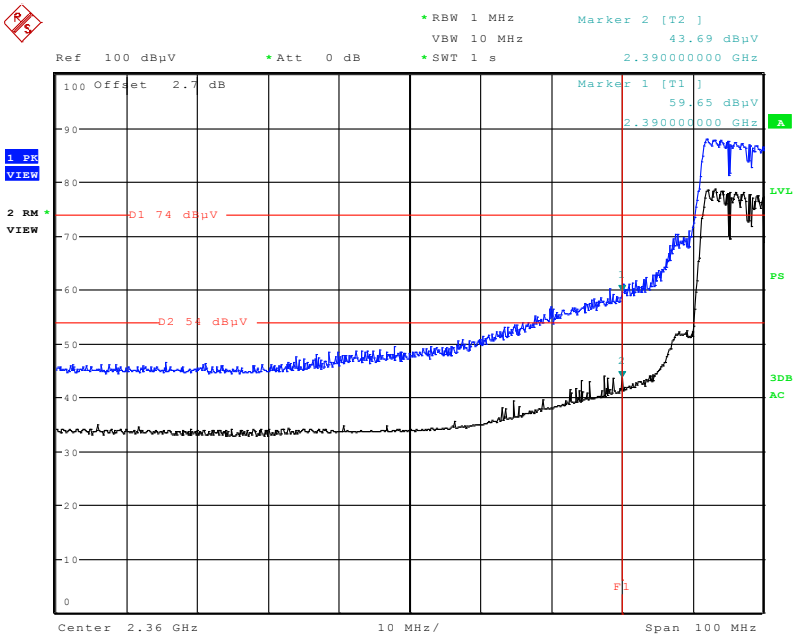
7.4 *Test Equipment*

Test Date: 13-Jun-2017 Tester: JOP

Equipment	Model	Manufacturer	Asset Number	Cal Due Date
EMI TEST RECEIVER	ESU40	ROHDE & SCHWARZ	B079629	20-Jun-2017
ANTENNA, DRG HORN (MEDIUM)	3117	ETS LINDGREN	B079691	27-Jul-2017
RF CABLE	NMS-290-236.2-NMS	FLORIDA RF LABS	B095020	29-Jul-2017
RF CABLE	NFS-290-78.7-NFS	FLORIDA RF LABS	B095019	28-Jul-2017
RF CABLE	SF106	HUBER & SUHNER	B079660	25-Jul-2017
RF CABLE	104PE	HUBER & SUHNER	B079793	27-Jul-2017
LOW NOISE AMPLIFIER	TS-PR18	ROHDE & SCHWARZ	B094463	22-Feb-2018

Note: The equipment calibration period is 1 year.

7.5 *Test Data*



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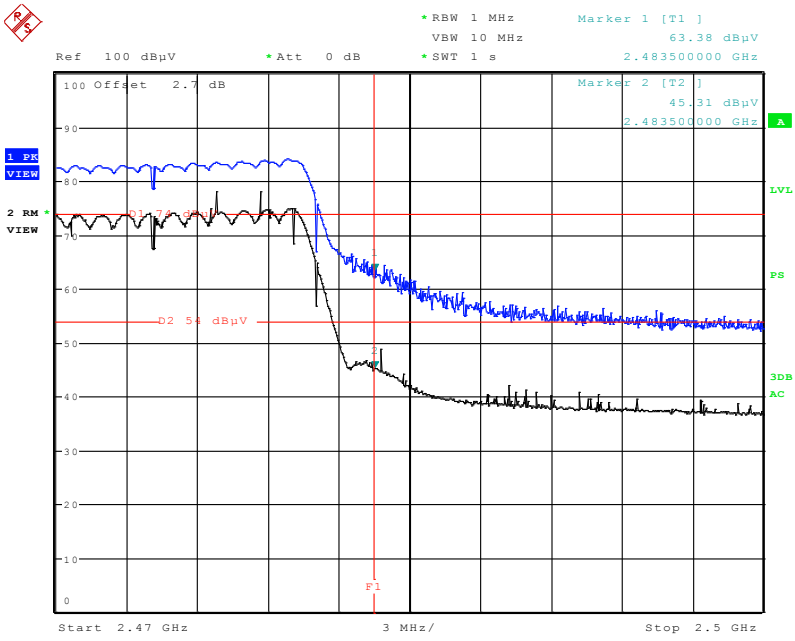


Date: 13.JUN.2017 11:22:47

8 Pseudo-Random Hop Sequence

8.1 *Test Result*

Test Description	Test Specification	Test Result
Pseudo-Random Hop Sequence	15.247(a)(1), RSS-247 5.1(1) ANSI C63.10	Compliant(1)

Note (1): The theory of operation states that the device is Bluetooth and operates using a pseudo-random hopping technique.

8.2 *Test Method*

Compliance is demonstrated by Manufacturer's declaration or is stated in the Theory of Operation.

Requirement

The hopset shall be such that the near-term distribution of frequencies appears random, with sequential hops randomly distributed in both direction and magnitude of change in the hopset, while the long-term distribution appears evenly distributed.

9 Channel Separation

9.1 *Test Result*

Test Description	Test Specification	Test Result
Number of Hopping Channels	15.247(a)(1)(iii) RSS-247 5.1(2) ANSI C63.10	Compliant

9.2 *Test Method*

Measurements were taken using the methods defined in ANSI C63.10, Clause 7.8.2. The test data was measured using a spectrum analyzer with Peak detector (max hold) and a resolution bandwidth of 10 kHz. The trace was allowed to stabilize until all channels were displayed.

Requirement

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the -20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the band 2400-2483.5 MHz may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the -20 dB bandwidth of the hopping channel, whichever is greater, provided that the systems operate with an output power no greater than 0.125 W.

9.3 *Test Site*

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature: 23.6 °C
Relative Humidity: 45.3 %

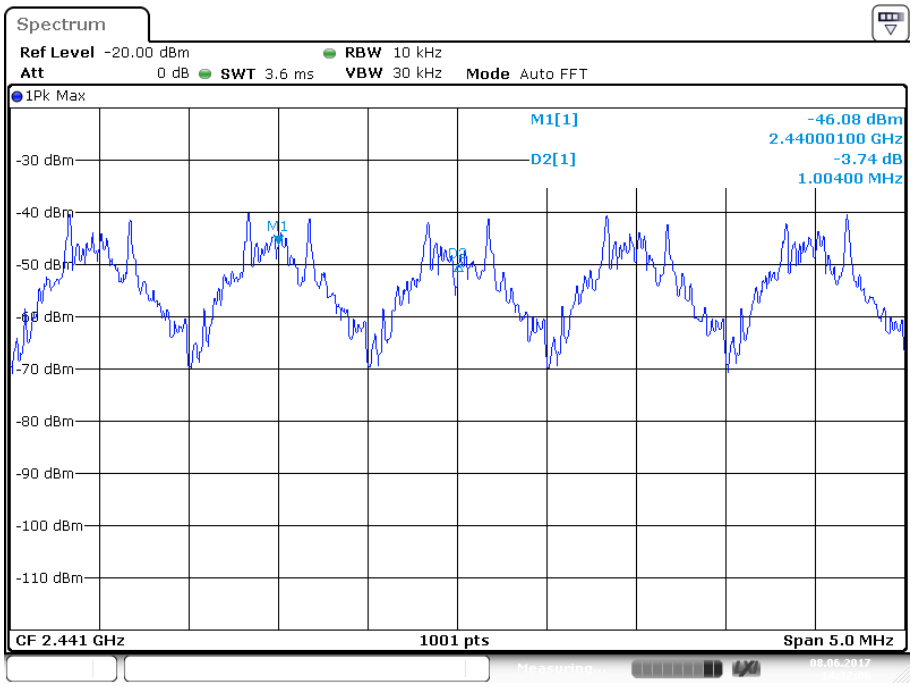
9.4 *Test Equipment*

Test Date: 8-Jun-2017 Tester: JOP

Equipment	Model	Manufacturer	Asset Number	Cal Due Date
SIGNAL ANALYZER	FSV30	ROHDE & SCHWARZ	B085749	8-Oct-2017
RF CABLE	141	HUBER & SUHNER	B095587	26-Jul-2017
RF CABLE	141	HUBER & SUHNER	B095586	26-Jul-2017
RF ENCLOSURE	T/T	LINDGREN RF ENCLOSURES	17011	CNR

Note: The equipment calibration period is 1 year except for the FSV which is one a 2 year cal cycle per manufacturer's recommendations.

9.5 *Test Data*



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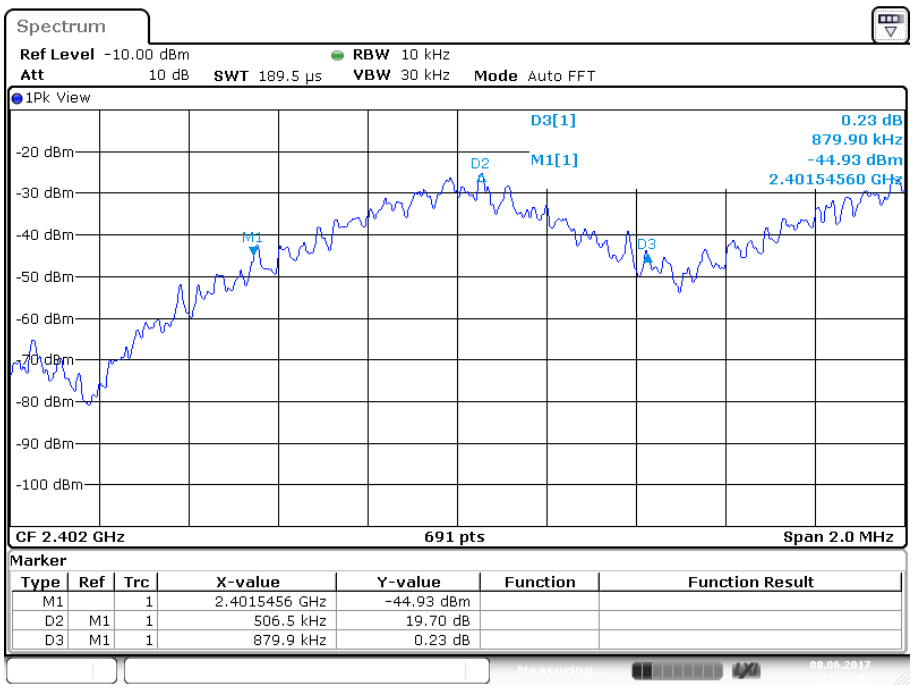


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4015456 GHz	-44.93 dBm		
D2	M1	1	506.5 kHz	19.70 dB		
D3	M1	1	879.9 kHz	0.23 dB		

Date: 8.JUN.2017 13:23:05

10 Number of Hopping Channels

10.1 *Test Result*

Test Description	Test Specification	Test Result
Number of Hopping Channels	15.247(a)(1)(iii) RSS-247 5.1(4)	Compliant

10.2 *Test Method*

Measurements were taken using the methods defined in ANSI C63.10, Clause 7.8.3. The test data was measured using a spectrum analyzer with Peak detector (max hold) and a resolution bandwidth of 10 kHz. The trace was allowed to stabilize until all channels were displayed.

Requirement
Frequency hopping systems operating in the band 2400-2483.5 MHz shall use at least 15 hopping channels.

10.3 *Test Site*

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions
Temperature: 23.6 °C
Relative Humidity: 45.3 %

10.4 *Test Equipment*

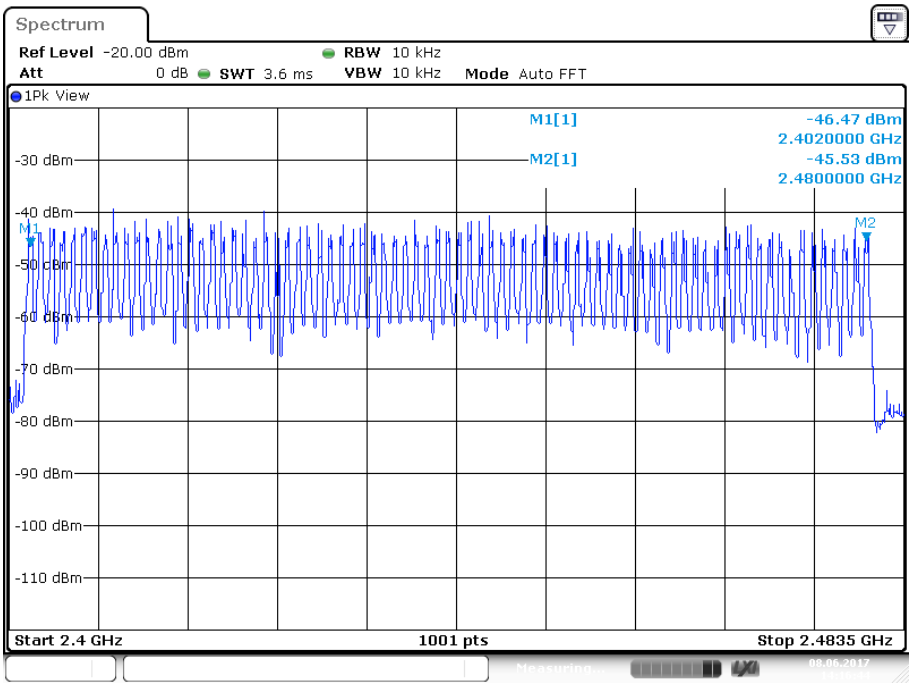
Test Date: 8-Jun-2017 Tester: JOP

Equipment	Model	Manufacturer	Asset Number	Cal Due Date
SIGNAL ANALYZER	FSV30	ROHDE & SCHWARZ	B085749	8-Oct-2017
RF CABLE	141	HUBER & SUHNER	B095587	26-Jul-2017
RF CABLE	141	HUBER & SUHNER	B095586	26-Jul-2017
RF ENCLOSURE	T/T	LINDGREN RF ENCLOSURES	17011	CNR

Note: The equipment calibration period is 1 year except for the FSV which is one a 2 year cal cycle per manufacturer's recommendations.

10.5 *Test Data*

There are 79 Channels.



Date: 8.JUN.2017 14:16:44

11 Dwell Time

11.1 *Test Result*

Test Description	Test Specification	Test Result
Dwell Time	15.247(a)(1)(iii) RSS-247 5.1(4)	Compliant

11.2 *Test Method*

Measurements were taken using the methods defined in ANSI C63.10, Clause 7.8.4. The EUT was set to test mode which allowed it to be controlled by the Bluetooth Tester. The Bluetooth Tester was then set to operate on US/EU Hopping Scheme with pseudo-random data. For each packet type and data rate, the pulse width of the packet was measured and the pulses were counted over the total observation period.

Requirement
The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds, multiplied by the number of hopping channels employed (0.4*79=31.6s).

11.3 *Test Site*

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions
Temperature: 23.6 °C
Relative Humidity: 45.3 %

11.4 *Test Equipment*

Test Date: 8-Jun-2017 Tester: JOP

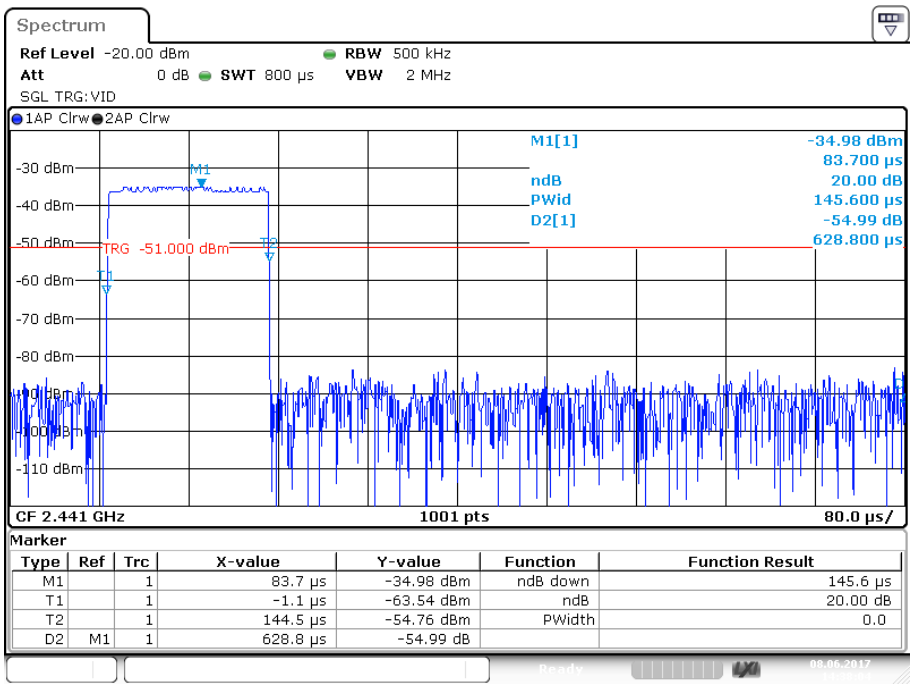
Equipment	Model	Manufacturer	Asset Number	Cal Due Date
SIGNAL ANALYZER	FSV30	ROHDE & SCHWARZ	B085749	8-Oct-2017
RF CABLE	141	HUBER & SUHNER	B095587	26-Jul-2017
RF CABLE	141	HUBER & SUHNER	B095586	26-Jul-2017
RF ENCLOSURE	T/T	LINDGREN RF ENCLOSURES	17011	CNR

Note: The equipment calibration period is 1 year except for the FSV which is one a 2 year cal cycle per manufacturer's recommendations.

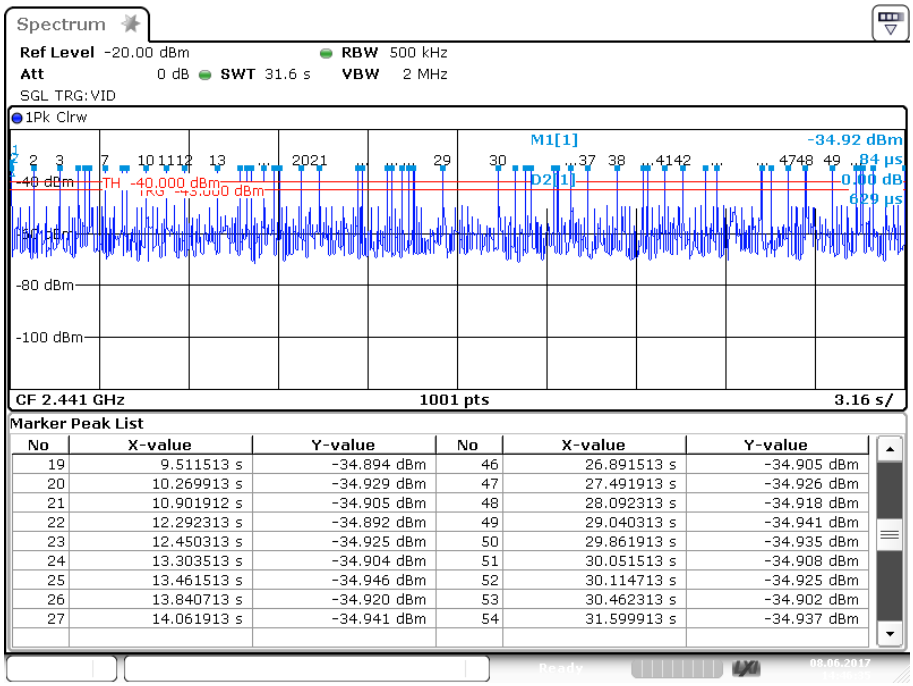
11.5 *Test Data*

Pulse Width ms	Pulses per 31.6 sec	Dwell Time Sec	Limit	Result
0.146	54	0.008	0.4	PASS

11.6 *Plots*



Date: 8.JUN.2017 14:38:04



Date: 8.JUN.2017 14:46:36

12 Conducted Emissions

12.1 *Test Result*

Test Description	Basic Standards	Test Result
Conducted Emission	RSS-GEN, Issue 4 ANSI C63.4:2014	Compliant

12.2 *Test Method*

With the receiver resolution bandwidth set to 9 kHz, exploratory scans were performed over the measuring frequency range (0.15MHz to 30MHz) using a max hold mode incorporating a Peak detector and Average detector and using the TILE! software. The final test data was measured using a Quasi-Peak detector and Average detector and compared against the limits indicated in the table below.

Frequency Range	Class B Limits (dBuV)
0.15 to 0.5 MHz	Avg 56 to 46 QP 66 to 56
0.5 to 5 MHz	Avg 46 Pk 56
5 to 30 MHz	Avg 50 Pk 60

12.3 *Test Site*

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature:	23.5 °C
Relative Humidity:	50.9 %
Atmospheric Pressure:	97.9kPa

12.4 *Test Equipment*

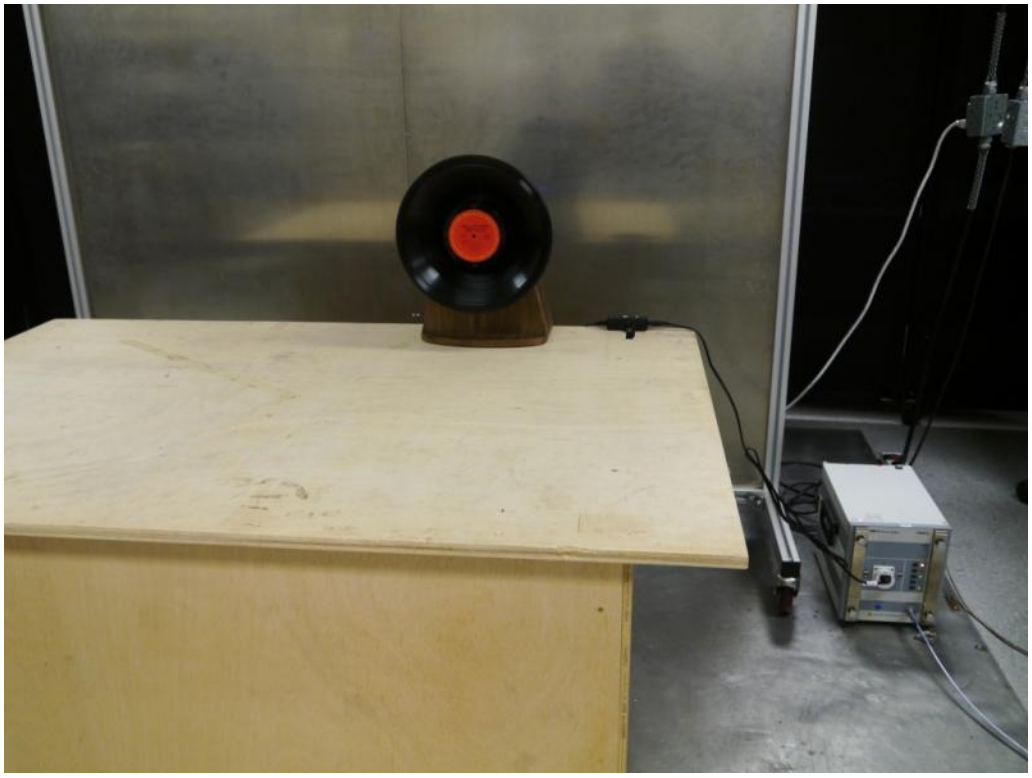
Test Date: 15-Jun-2017 Tester: JOP

Equipment	Model	Manufacturer	Asset Number	Cal Due Date
EMI TEST RECEIVER	ESU8	ROHDE & SCHWARZ	B085759	21-Jul-2017
LINE IMPEDANCE STABILIZATION NETWORK	NNB 51	TESEQ	B087573	16-Nov-2017
RF CABLE	SF106	HUBER & SUHNER	B079659	26-Jul-2017

Note: The equipment calibration period is 1 year.

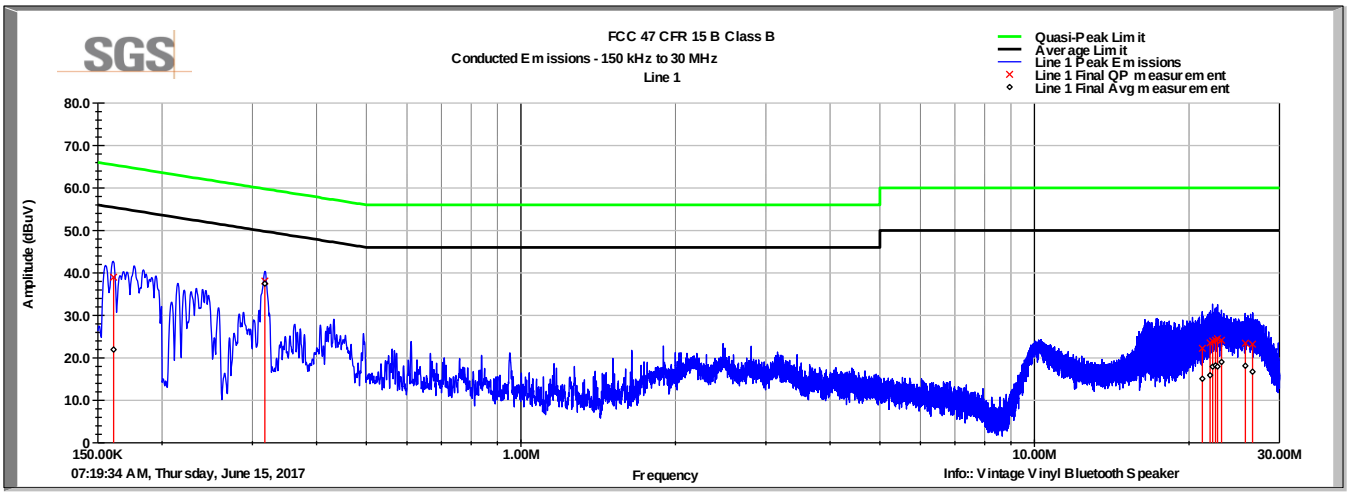
Software:
“Conducted Emissions” TILE! profile dated Dec 2015

12.5 *Test Setup Photographs*



12.6 *Test Data*

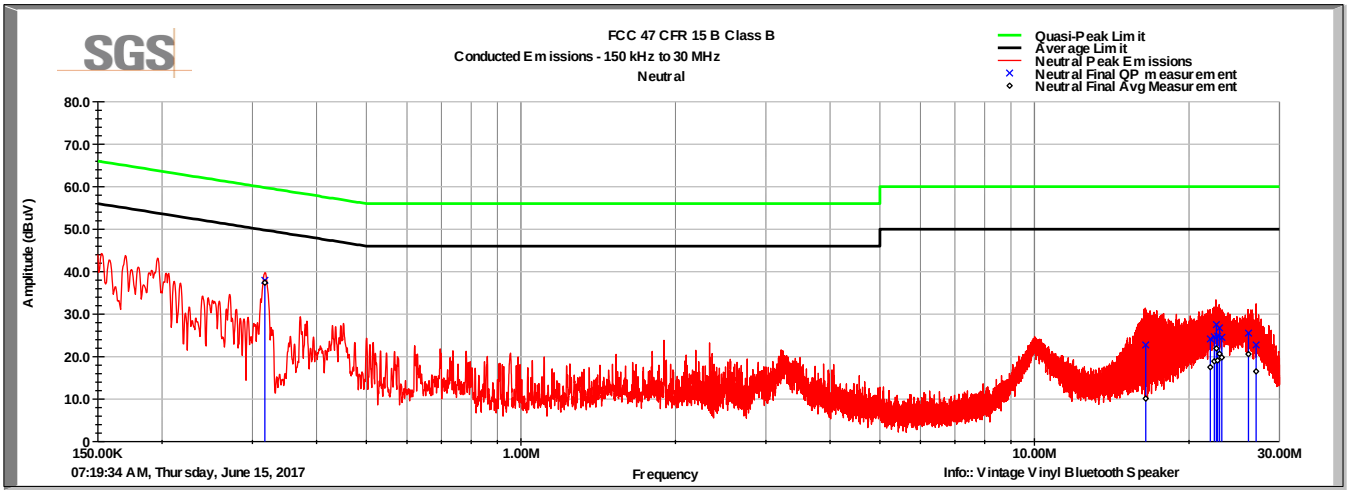
Line 1 Conducted Emissions Plot



Line 1 Conducted Emissions Data

Frequency MHz	QP Value dBuV	QP Limit dBuV	QP Margin dB	Avg Value dBuV	Avg Limit dBuV	Avg Margin dB
0.161	39.0	65.4	-26.5	21.9	55.4	-33.5
0.317	38.1	59.8	-21.7	37.5	49.8	-12.3
21.235	22.2	60.0	-37.8	15.1	50.0	-34.9
21.979	23.5	60.0	-36.5	15.9	50.0	-34.1
22.239	24.0	60.0	-36.0	17.9	50.0	-32.1
22.530	24.1	60.0	-35.9	18.2	50.0	-31.8
22.722	24.5	60.0	-35.5	17.9	50.0	-32.1
23.139	24.1	60.0	-35.9	19.0	50.0	-31.0
25.751	23.4	60.0	-36.6	18.1	50.0	-31.9
26.588	23.2	60.0	-36.8	16.7	50.0	-33.3

Neutral Conducted Emissions Plot



Neutral Conducted Emissions Data

Frequency MHz	QP Value dBuV	QP Limit dBuV	QP Margin dB	Avg Value dBuV	Avg Limit dBuV	Avg Margin dB
0.317	37.9	59.8	-21.8	37.4	49.8	-12.4
16.472	22.8	60.0	-37.2	10.1	50.0	-39.9
22.011	24.2	60.0	-35.8	17.5	50.0	-32.5
22.403	24.6	60.0	-35.4	18.9	50.0	-31.1
22.610	27.5	60.0	-32.5	21.9	50.0	-28.1
22.735	24.8	60.0	-35.2	19.1	50.0	-30.9
22.924	26.7	60.0	-33.3	20.7	50.0	-29.3
23.173	24.5	60.0	-35.5	19.8	50.0	-30.2
26.114	25.5	60.0	-34.5	20.6	50.0	-29.4
27.021	22.8	60.0	-37.2	16.5	50.0	-33.5

13 Revision History

Revision Level	Description of changes	Revision Date
0	Initial release	15 June 2017