

FCC Test Report

Product Name	SoundBar Speaker
Model No	Motion Vision X
FCC ID.	R48-SB218

Applicant	Meiloon Industrial Co., Ltd.
Address	No. 99, Xingfu Road, Taoyuan Dist., Taoyuan City 330, Taiwan

Date of Receipt	Mar. 19, 2015
Issue Date	Sep. 28, 2015
Report No.	1530388R-RFUSP02V00
Report Version	V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

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Test Report

Issue Date: Sep. 28, 2015

Report No.: 1530388R-RFUSP02V00



Product Name	SoundBar Speaker
Applicant	Meiloon Industrial Co., Ltd.
Address	No. 99, Xingfu Road, Taoyuan Dist., Taoyuan City 330, Taiwan
Manufacturer	Martin Logan LTD
Model No.	Motion Vision X
FCC ID.	R48-SB218
EUT Rated Voltage	AC 100-240V, 50-60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	Martin Logan
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2014 ANSI C63.4: 2014, ANSI C63.10: 2013 KDB 558074 D01 DTS Meas Guidance v03r03
Test Result	Complied

Documented By

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(Senior Adm. Specialist / Rita Huang)

Tested By

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(Engineer / Jack Hsu)

Approved By

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(Director / Vincent Lin)

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Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	SoundBar Speaker
Trade Name	Martin Logan
Model No.	Motion Vision X
FCC ID.	R48-SB218
Frequency Range	2412-2462MHz for 802.11b/g/n-20BW, 2422-2452MHz for 802.11n-40BW
Number of Channels	802.11b/g/n-20MHz: 11, n-40MHz: 7
Data Speed	802.11b: 1-11Mbps, 802.11g: 6-54Mbps, 802.11n: up to 150Mbps
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK) 802.11g/n:OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna Type	PIFA Antenna
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
Power Cord	Non-Shielded, 2.0m

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	MAGLAYERS	MSA-3310-25GC4-A14 (170mm) MSA-3310-25GC4-A15 (220mm)	PIFA Antenna	2.28 dBi For 2.4GHz

Note:

1. The antenna of EUT conforms to FCC 15.203.

802.11b/g/n-20MHz Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2412 MHz	Channel 02:	2417 MHz	Channel 03:	2422 MHz	Channel 04:	2427 MHz
Channel 05:	2432 MHz	Channel 06:	2437 MHz	Channel 07:	2442 MHz	Channel 08:	2447 MHz
Channel 09:	2452 MHz	Channel 10:	2457 MHz	Channel 11:	2462 MHz		

802.11n-40MHz Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 03:	2422 MHz	Channel 04:	2427 MHz	Channel 05:	2432 MHz	Channel 06:	2437 MHz
Channel 07:	2442 MHz	Channel 08:	2447 MHz	Channel 09:	2452 MHz		

Note:

1. The EUT is a SoundBar Speaker with a built-in WLAN and Bluetooth transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. At result of pretests, module supports dual-channel transmission, only the worst case is shown in the report.
4. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report.
(802.11b is 1Mbps 、 802.11g is 6Mbps 、 802.11n(20M-BW) is 7.2Mbps and 802.11n(40M-BW) is 15Mbps)
5. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11b/g/n transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.

Test Mode:	Mode 1: Transmit (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)
	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)
	Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

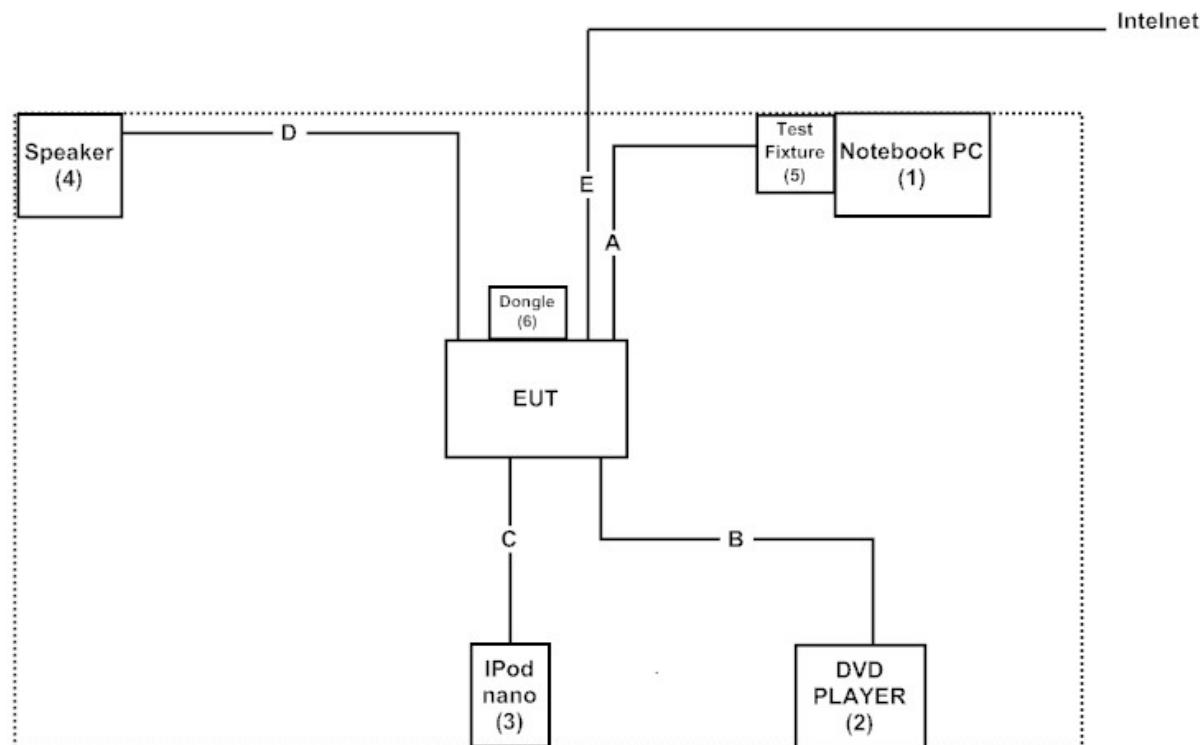
1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	DELL	PPT	N/A	Non-Shielded, 0.8m
2	DVD PLAYER	BenQ	JH300	N/A	Non-Shielded, 1.8m
3	IPod nano	Apple	A1236	7K823DN6Y0P	N/A
4	Speaker	Logitech	N/A	N/A	N/A
5	Test Fixture	Meiloon	N/A	N/A	N/A
6	Dongle	Meiloon	N/A	N/A	N/A

Signal Cable Type		Signal cable Description
A	Single Cable	Non-Shielded, 1.0m
B	Audio Cable	Non-Shielded, 1.8m
C	USB Cable	Non-Shielded, 1.8m
D	Audio Cable	Non-Shielded, 1.8m
E	LAN Cable	Non-Shielded, 2.5m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

- (1) Setup the EUT as shown on 1.4
- (2) Execute “Tera TermV4.67” program on the EUT.
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Start the continuous transmission.
- (5) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from

QuieTek Corporation's Web Site: <http://www.quietek.com/chinese/about/certificates.aspx?bval=5>

The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site:

<http://www.quietek.com/>

Site Description: File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Registration Number: 92195

Site Name: Quietek Corporation
Site Address: No.5-22, Ruishukeng,
Linkou Dist. New Taipei City 24451,
Taiwan, R.O.C.
TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

2. Conducted Emission

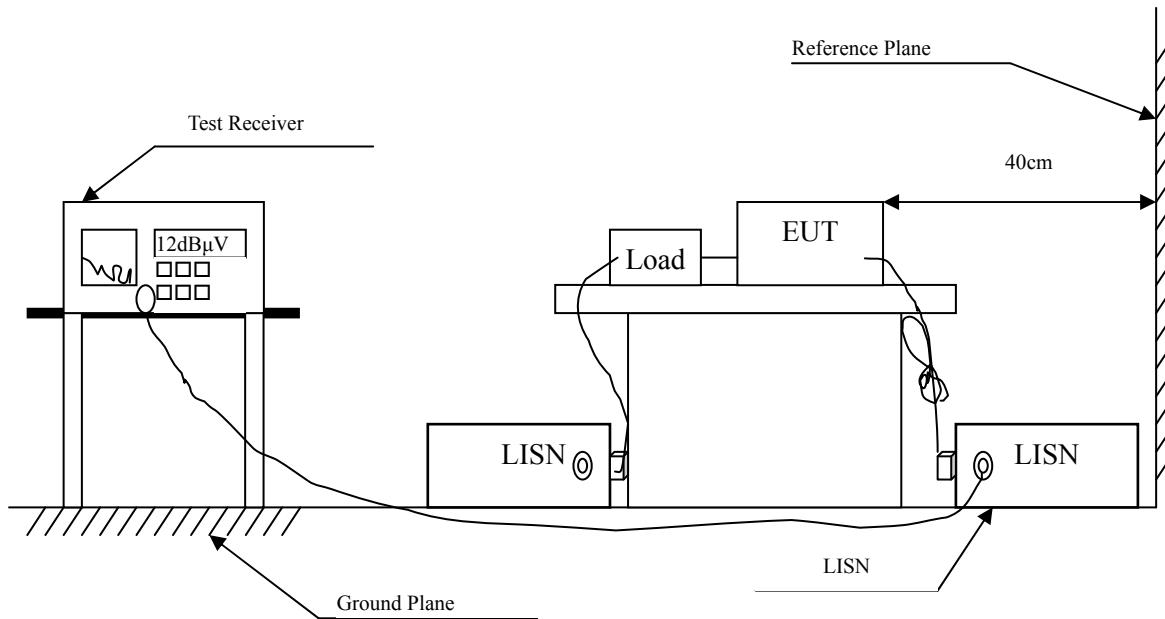
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2015	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2015	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2015	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar., 2015	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2015	
	No.1 Shielded Room				

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dB μ V) Limit		
Frequency MHz	Limits	
	QP	AVG
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : SoundBar Speaker
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB μ V	dB μ V	dB	dB μ V
Line 1					
Quasi-Peak					
0.162	9.761	32.570	42.331	-23.326	65.657
0.205	9.755	27.290	37.045	-27.384	64.429
0.361	9.767	18.210	27.977	-31.994	59.971
0.552	9.782	26.390	36.172	-19.828	56.000
1.912	9.897	25.650	35.547	-20.453	56.000
24.576	10.182	31.790	41.972	-18.028	60.000
Average					
0.162	9.761	12.930	22.691	-32.966	55.657
0.205	9.755	8.960	18.715	-35.714	54.429
0.361	9.767	12.610	22.377	-27.594	49.971
0.552	9.782	24.860	34.642	-11.358	46.000
1.912	9.897	21.560	31.457	-14.543	46.000
24.576	10.182	31.050	41.232	-8.768	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “  ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : SoundBar Speaker
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB μ V	dB μ V	dB	dB μ V
Line 2					
Quasi-Peak					
0.166	9.760	31.920	41.680	-23.863	65.543
0.236	9.758	24.570	34.328	-29.215	63.543
0.326	9.764	17.670	27.434	-33.537	60.971
0.545	9.781	22.740	32.521	-23.479	56.000
1.826	9.890	26.000	35.890	-20.110	56.000
24.576	10.372	31.380	41.752	-18.248	60.000
Average					
0.166	9.760	14.600	24.360	-31.183	55.543
0.236	9.758	4.730	14.488	-39.055	53.543
0.326	9.764	9.170	18.934	-32.037	50.971
0.545	9.781	18.080	27.861	-18.139	46.000
1.826	9.890	22.780	32.670	-13.330	46.000
24.576	10.372	30.090	40.462	-9.538	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. ““ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

3. Peak Power Output

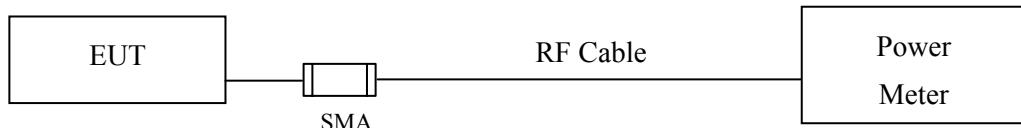
3.1. Test Equipment

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X Power Meter	Anritsu	ML2495A/6K00003357	May, 2015
X Power Sensor	Anritsu	MA2411B/0738448	Jun., 2015

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

3.2. Test Setup



3.3. Limits

The maximum peak power shall be less 1 Watt.

3.4. Test Procedure

The EUT was tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements. The maximum peak conducted output power using KDB 558074 D01 DTS Meas Guidance v03r02 section 9.1.2 PKPM1 Peak power meter method.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Peak Power Output

Product : SoundBar Speaker
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit	Result
		1	2	5.5	11			
		Measurement Level (dBm)						
01	2412	14.47	--	--	--	16.65	<30dBm	Pass
06	2437	14.50	14.32	14.11	13.97	16.66	<30dBm	Pass
11	2462	14.52	--	--	--	16.91	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

Product : SoundBar Speaker
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54			
		Measurement Level (dBm)										
01	2412	10.14	--	--	--	--	--	--	--	19.88	<30dBm	Pass
06	2437	13.68	13.51	13.39	13.24	13.09	12.95	12.80	12.66	21.02	<30dBm	Pass
11	2462	12.98	--	--	--	--	--	--	--	20.42	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

Product : SoundBar Speaker
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		7.2	14.4	21.7	28.9	43.3	57.8	65	72.2			
		Measurement Level (dBm)										
01	2412	10.16	--	--	--	--	--	--	--	19.04	<30dBm	Pass
06	2437	12.96	12.77	12.49	12.27	12.04	11.80	11.57	11.33	20.54	<30dBm	Pass
11	2462	12.36	--	--	--	--	--	--	--	20.66	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

Product : SoundBar Speaker
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		15	30	45	60	90	120	135	150			
		Measurement Level (dBm)										
03	2422	8.33	--	--	--	--	--	--	--	17.61	<30dBm	Pass
06	2437	11.22	11.03	10.88	10.70	10.53	10.36	10.19	10.02	19.97	<30dBm	Pass
09	2452	11.34	--	--	--	--	--	--	--	20.02	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

4. Radiated Emission

4.1. Test Equipment

The following test equipments are used during the radiated emission test:

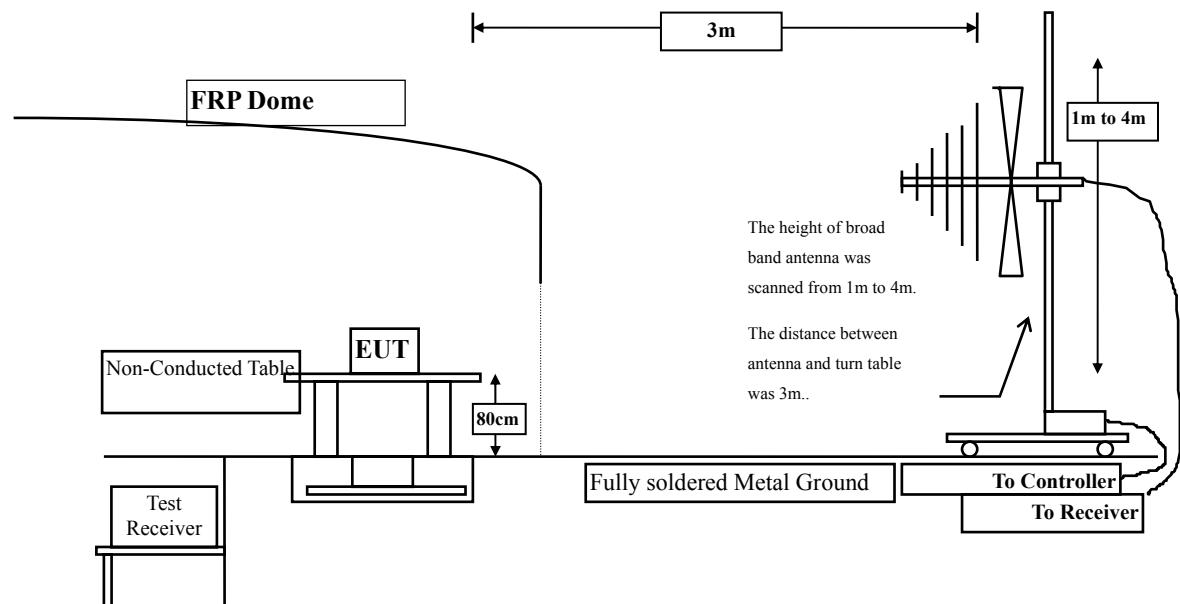
Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3	X	Magnetic Loop Antenna	Teseq	HLA6121/ 37133	Sep., 2015
	X	Bilog Antenna	Schaffner Chase	CBL6112B/ 2707	Jun., 2015
	X	EMI Test Receiver	R&S	ESCS 30/838251/ 001	Jun., 2015
	X	Coaxial Cable	QTK(Arnist)	RG 214/ LC003-RG	Jun., 2015
	X	Coaxial signal switch	Arnist	MP59B/ 6200798682	Jun., 2015

Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
☒ CB # 8	X	Spectrum Analyzer	R&S	FSP40/ 100339	Oct., 2014
	X	Horn Antenna	ETS-Lindgren	3117/ 35205	Mar., 2015
	X	Horn Antenna	Schwarzbeck	BBHA9170/209	Jan., 2015
	X	Horn Antenna	TRC	AH-0801/95051	Aug., 2015
	X	Pre-Amplifier	EMCI	EMC012630SE/980210	Jan., 2015
	X	Pre-Amplifier	MITEQ	JS41-001040000-58-5P/153945	Jul., 2015
	X	Pre-Amplifier	NARDA	DBL-1840N506/013	Jul., 2015

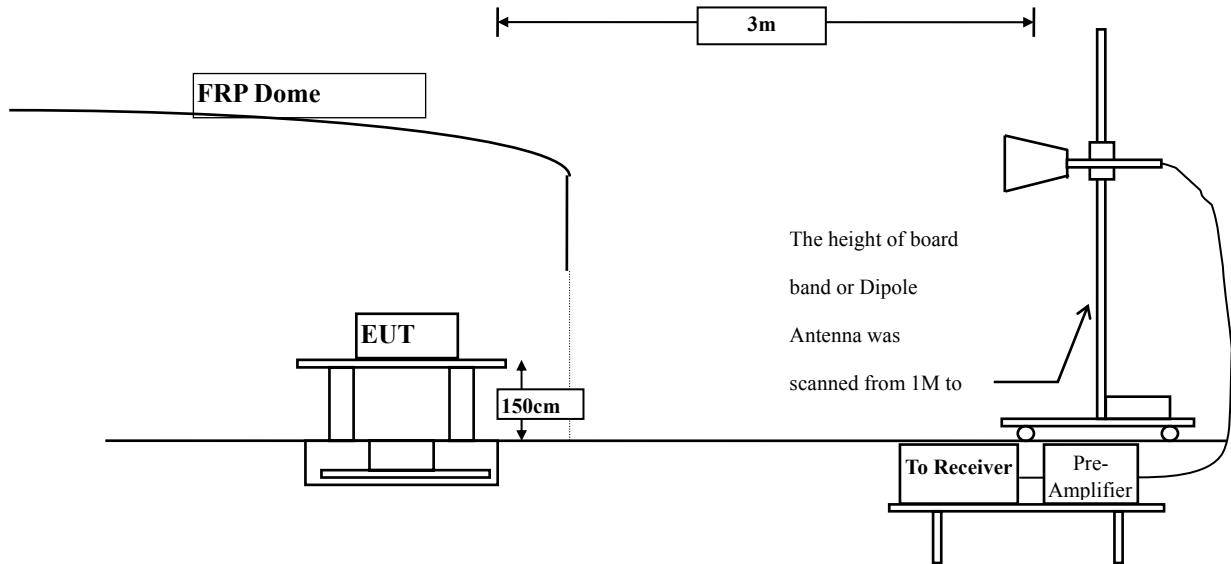
Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with "X" are used to measure the final test results.

4.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remarks: E field strength (dB μ V/m) = 20 log E field strength (uV/m)

4.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Measuring the frequency range below 1GHz, the EUT is placed on a turn table which is 0.8 meter above ground, when measuring the frequency range above 1GHz, the EUT is placed on a turn table which is 1.5 meter above ground.

The turn table is rotated 360 degrees to determine the position of the maximum emission level.

The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

The measurement frequency range from 9kHz - 10th Harmonic of fundamental was investigated.

4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : SoundBar Speaker
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dB μ V	Measurement Level dB μ V/m	Margin dB	Limit dB μ V/m
Horizontal					
Peak Detector:					
4824.000	3.261	48.830	52.091	-21.909	74.000
7236.000	10.650	35.670	46.320	-27.680	74.000
9648.000	13.337	32.620	45.956	-28.044	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	39.550	45.971	-28.029	74.000
7236.000	11.495	33.040	44.535	-29.465	74.000
9648.000	13.807	32.620	46.426	-27.574	74.000

Average Detector:

--

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : SoundBar Speaker
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Frequency MHz	Correct Factor	Reading Level dB μ V	Measurement Level dB μ V/m	Margin dB	Limit dB μ V/m
Horizontal					
Peak Detector:					
4874.000	3.038	50.220	53.257	-20.743	74.000
7311.000	11.795	35.020	46.814	-27.186	74.000
9748.000	12.635	32.650	45.285	-28.715	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	40.410	46.221	-27.779	74.000
7311.000	12.630	33.510	46.139	-27.861	74.000
9748.000	13.126	32.920	46.046	-27.954	74.000

Average Detector:

--

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : SoundBar Speaker
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB μ V	dB μ V/m	dB	dB μ V/m

Horizontal

Peak Detector:

4924.000	2.858	49.900	52.757	-21.243	74.000
7386.000	12.127	34.980	47.108	-26.892	74.000
9848.000	12.852	33.350	46.203	-27.797	74.000

Average Detector:

--

Vertical

Peak Detector:

4924.000	5.521	39.020	44.540	-29.460	74.000
7386.000	13.254	33.850	47.104	-26.896	74.000
9848.000	13.367	33.430	46.797	-27.203	74.000

Average Detector:

--

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : SoundBar Speaker
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB μ V	dB μ V/m	dB	dB μ V/m

Horizontal

Peak Detector:

4924.000	2.858	45.450	48.307	-25.693	74.000
7236.000	10.650	33.720	44.370	-29.630	74.000
9648.000	13.337	32.850	46.186	-27.814	74.000

Average Detector:

--

Vertical

Peak Detector:

4824.000	6.421	36.360	42.781	-31.219	74.000
7236.000	11.495	32.640	44.135	-29.865	74.000
9648.000	13.807	32.570	46.376	-27.624	74.000

Average Detector:

--

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : SoundBar Speaker
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dB μ V	Measurement Level dB μ V/m	Margin dB	Limit dB μ V/m
Horizontal					
Peak Detector:					
4874.000	3.038	48.960	51.997	-22.003	74.000
7311.000	11.795	35.270	47.064	-26.936	74.000
9748.000	12.635	32.910	45.545	-28.455	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	38.240	44.051	-29.949	74.000
7311.000	12.630	33.500	46.129	-27.871	74.000
9748.000	13.126	32.940	46.066	-27.934	74.000

Average Detector:

--

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : SoundBar Speaker
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB μ V	dB μ V/m	dB	dB μ V/m

Horizontal

Peak Detector:

4924.000	2.858	46.980	49.837	-24.163	74.000
7386.000	12.127	34.440	46.568	-27.432	74.000
9848.000	12.852	33.610	46.463	-27.537	74.000

Average Detector:

--

Vertical

Peak Detector:

4924.000	5.521	36.300	41.820	-32.180	74.000
7386.000	13.254	33.340	46.594	-27.406	74.000
9848.000	13.367	33.550	46.917	-27.083	74.000

Average Detector:

--

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : SoundBar Speaker
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB μ V	dB μ V/m	dB	dB μ V/m

Horizontal

Peak Detector:

4824.000	3.261	44.180	47.441	-26.559	74.000
7236.000	10.650	33.430	44.080	-29.920	74.000
9648.000	13.337	33.140	46.476	-27.524	74.000

Average Detector:

--

Vertical

Peak Detector:

4824.000	6.421	36.220	42.641	-31.359	74.000
7236.000	11.495	32.480	43.975	-30.025	74.000
9648.000	13.807	32.890	46.696	-27.304	74.000

Average Detector:

--

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : SoundBar Speaker
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dB μ V	Measurement Level dB μ V/m	Margin dB	Limit dB μ V/m
Horizontal					
Peak Detector:					
4874.000	3.038	49.410	52.447	-21.553	74.000
7311.000	11.795	35.360	47.154	-26.846	74.000
9748.000	12.635	32.600	45.235	-28.765	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	37.440	43.251	-30.749	74.000
7311.000	12.630	32.900	45.529	-28.471	74.000
9748.000	13.126	32.780	45.906	-28.094	74.000

Average Detector:

--

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : SoundBar Speaker
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dB μ V	Measurement Level dB μ V/m	Margin dB	Limit dB μ V/m
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Horizontal

Peak Detector:

4924.000	2.858	45.960	48.817	-25.183	74.000
7386.000	12.127	33.810	45.938	-28.062	74.000
9848.000	12.852	33.460	46.313	-27.687	74.000

Average Detector:

--

Vertical

Peak Detector:

4924.000	5.521	35.810	41.330	-32.670	74.000
7386.000	13.254	33.440	46.694	-27.306	74.000
9848.000	13.367	33.700	47.067	-26.933	74.000

Average Detector:

--

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : SoundBar Speaker
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2422MHz)

Frequency MHz	Correct Factor dB	Reading Level dB μ V	Measurement Level dB μ V/m	Margin dB	Limit dB μ V/m
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Horizontal

Peak Detector:

4844.000	3.171	42.920	46.091	-27.909	74.000
7266.000	11.162	32.380	43.542	-30.458	74.000
9688.000	12.964	33.050	46.015	-27.985	74.000

Average Detector:

--

Vertical

Peak Detector:

4844.000	6.178	34.580	40.758	-33.242	74.000
7266.000	11.982	32.020	44.002	-29.998	74.000
9688.000	13.507	33.050	46.558	-27.442	74.000

Average Detector:

--

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : SoundBar Speaker
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB μ V	dB μ V/m	dB	dB μ V/m
Horizontal					
Peak Detector:					
4874.000	3.038	49.200	52.237	-21.763	74.000
7311.000	11.795	34.880	46.674	-27.326	74.000
9748.000	12.635	32.660	45.295	-28.705	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	37.020	42.831	-31.169	74.000
7311.000	12.630	33.080	45.709	-28.291	74.000
9748.000	13.126	32.730	45.856	-28.144	74.000

Average Detector:

--

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : SoundBar Speaker
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2452 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB μ V	dB μ V/m	dB	dB μ V/m

Horizontal

Peak Detector:

4904.000	2.914	42.740	45.655	-28.345	74.000
7356.000	11.995	32.780	44.774	-29.226	74.000
9808.000	12.475	32.790	45.265	-28.735	74.000

Average Detector:

--

Vertical

Peak Detector:

4904.000	5.530	34.070	39.601	-34.399	74.000
7356.000	13.005	33.360	46.364	-27.636	74.000
9808.000	12.901	32.810	45.711	-28.289	74.000

Average Detector:

--

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : SoundBar Speaker
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)(2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB μ V	dB μ V/m	dB	dB μ V/m
Horizontal					
177.440	-10.838	49.130	38.292	-5.208	43.500
256.980	-5.424	45.240	39.816	-6.184	46.000
344.280	-1.814	40.432	38.618	-7.382	46.000
431.580	0.757	36.761	37.518	-8.482	46.000
542.160	3.925	34.232	38.157	-7.843	46.000
687.660	3.302	35.249	38.551	-7.449	46.000
Vertical					
146.400	-5.456	43.372	37.916	-5.584	43.500
264.740	-5.071	44.201	39.131	-6.869	46.000
369.500	-0.423	36.980	36.557	-9.443	46.000
499.480	-0.199	36.441	36.241	-9.759	46.000
565.440	-2.433	40.782	38.349	-7.651	46.000
699.300	-0.024	39.029	39.005	-6.995	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : SoundBar Speaker
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)(2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dB μ V	Measurement Level dB μ V/m	Margin dB	Limit dB μ V/m
Horizontal					
165.800	-9.915	47.976	38.061	-5.439	43.500
276.380	-6.526	45.336	38.810	-7.190	46.000
359.800	-0.226	37.099	36.873	-9.127	46.000
418.000	-0.231	37.782	37.551	-8.449	46.000
547.980	4.028	32.828	36.856	-9.144	46.000
658.560	1.892	35.304	37.196	-8.804	46.000
Vertical					
146.400	-5.456	42.898	37.442	-6.058	43.500
245.340	-5.908	43.796	37.888	-8.112	46.000
324.880	-3.120	41.148	38.028	-7.972	46.000
516.940	0.380	36.686	37.066	-8.934	46.000
664.380	-0.978	36.585	35.607	-10.393	46.000
786.600	2.724	34.251	36.976	-9.024	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : SoundBar Speaker
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB μ V	dB μ V/m	dB	dB μ V/m
Horizontal					
177.440	-10.838	49.184	38.346	-5.154	43.500
260.860	-5.460	42.927	37.467	-8.533	46.000
344.280	-1.814	40.819	39.005	-6.995	46.000
418.000	-0.231	37.465	37.234	-8.766	46.000
522.760	3.176	35.359	38.535	-7.465	46.000
726.460	3.832	32.984	36.816	-9.184	46.000
Vertical					
146.400	-5.456	42.414	36.958	-6.542	43.500
245.340	-5.908	43.273	37.365	-8.635	46.000
324.880	-3.120	41.313	38.193	-7.807	46.000
516.940	0.380	36.115	36.495	-9.505	46.000
627.520	-0.327	41.034	40.707	-5.293	46.000
786.600	2.724	34.295	37.020	-8.980	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : SoundBar Speaker
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dB μ V	dB μ V/m	dB	dB μ V/m
Horizontal					
146.400	-7.756	48.459	40.703	-2.797	43.500
251.160	-5.988	47.818	41.830	-4.170	46.000
369.500	0.787	39.719	40.506	-5.494	46.000
431.580	0.757	36.537	37.294	-8.706	46.000
499.480	1.991	39.634	41.624	-4.376	46.000
749.740	3.963	35.170	39.133	-6.867	46.000
Vertical					
152.220	-5.306	43.975	38.669	-4.831	43.500
264.740	-5.071	41.748	36.678	-9.322	46.000
324.880	-3.120	41.559	38.439	-7.561	46.000
369.500	-0.423	36.353	35.930	-10.070	46.000
499.480	-0.199	35.960	35.760	-10.240	46.000
664.380	-0.978	37.307	36.329	-9.671	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss -Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

5. RF antenna conducted test

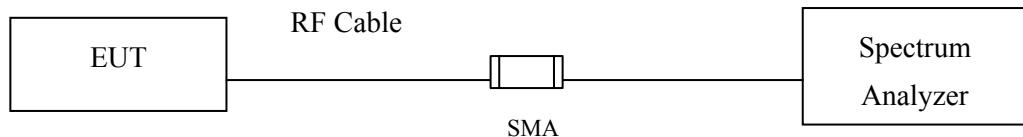
5.1. Test Equipment

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2015
Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2015
X Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with “X” are used to measure the final test results.

5.2. Test Setup

RF antenna Conducted Measurement:



5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.4. Test Procedure

The EUT was tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

5.5. Uncertainty

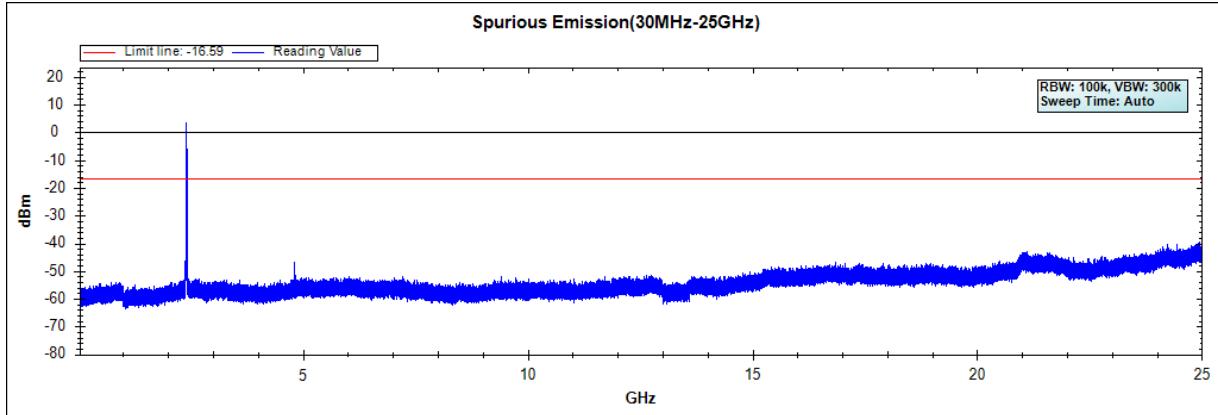
The measurement uncertainty

Conducted is defined as $\pm 1.27\text{dB}$

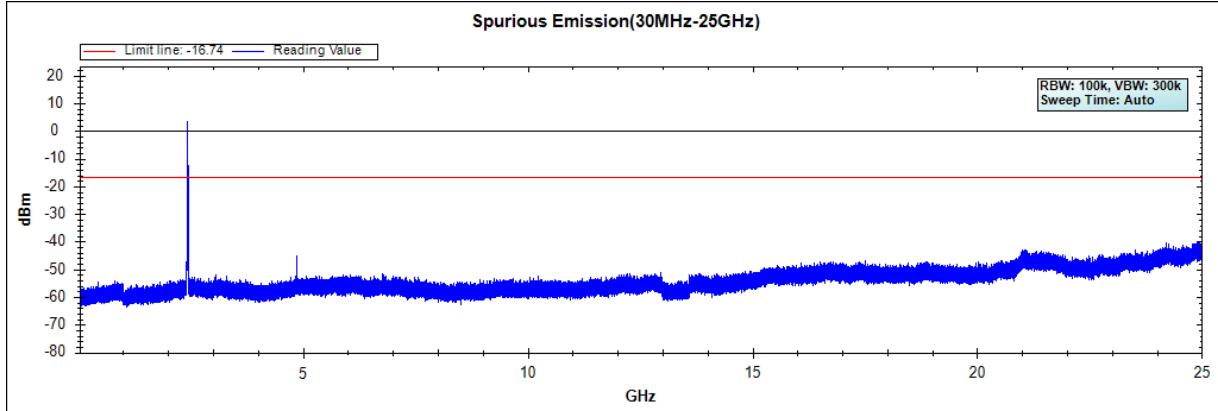
5.6. Test Result of RF antenna conducted test

Product : SoundBar Speaker
 Test Item : RF antenna conducted test
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

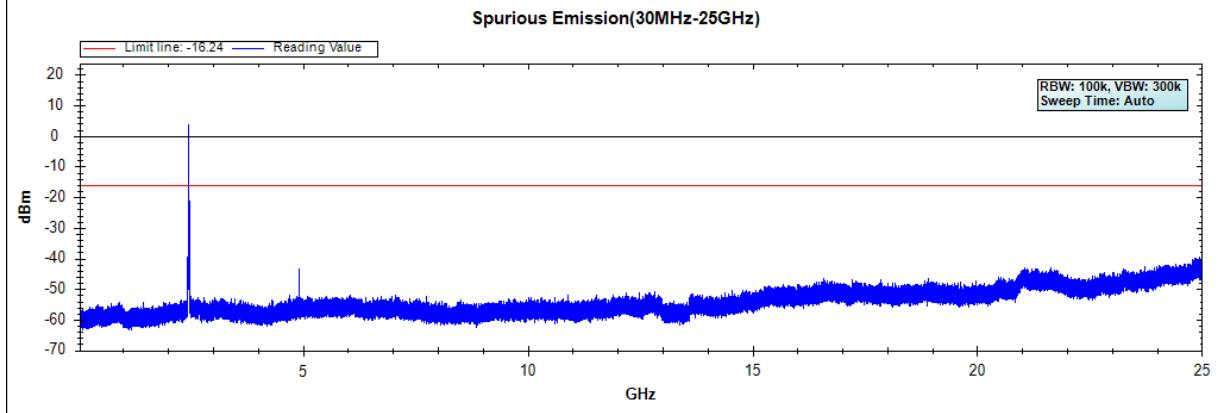
Channel 01 (2412MHz)



Channel 06 (2437MHz)



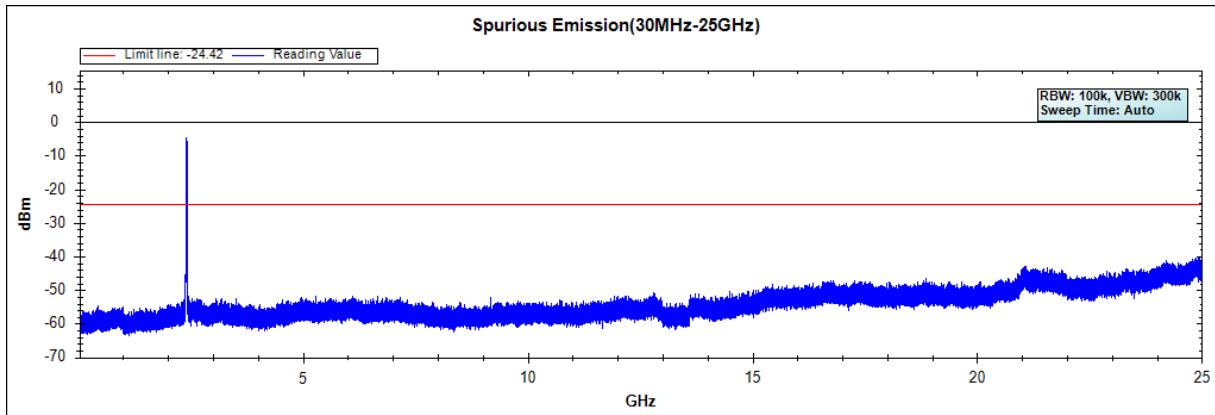
Channel 11 (2462MHz)



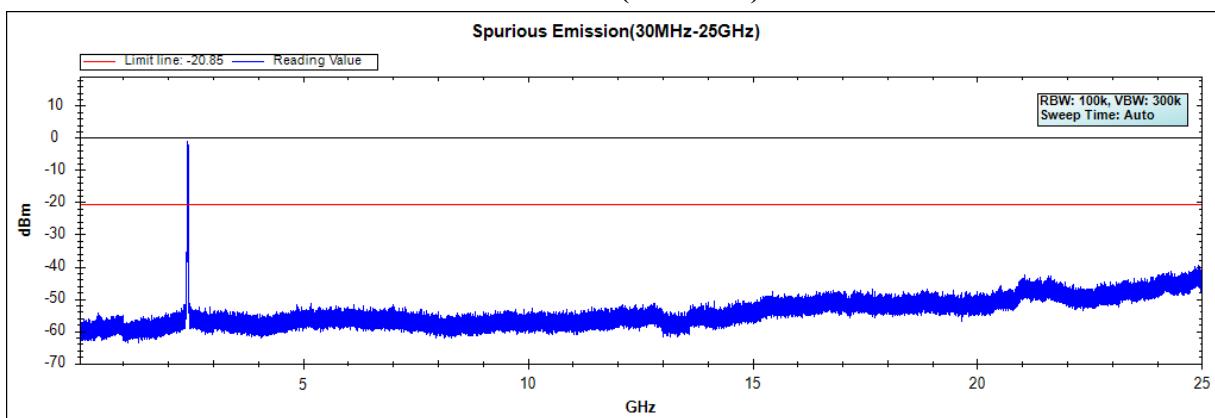
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : SoundBar Speaker
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

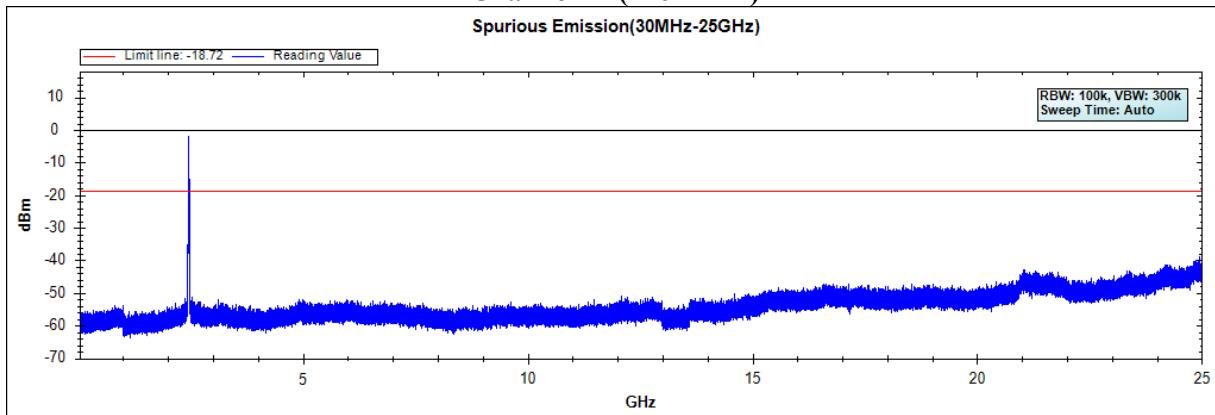
Channel 01 (2412MHz)



Channel 06 (2437MHz)



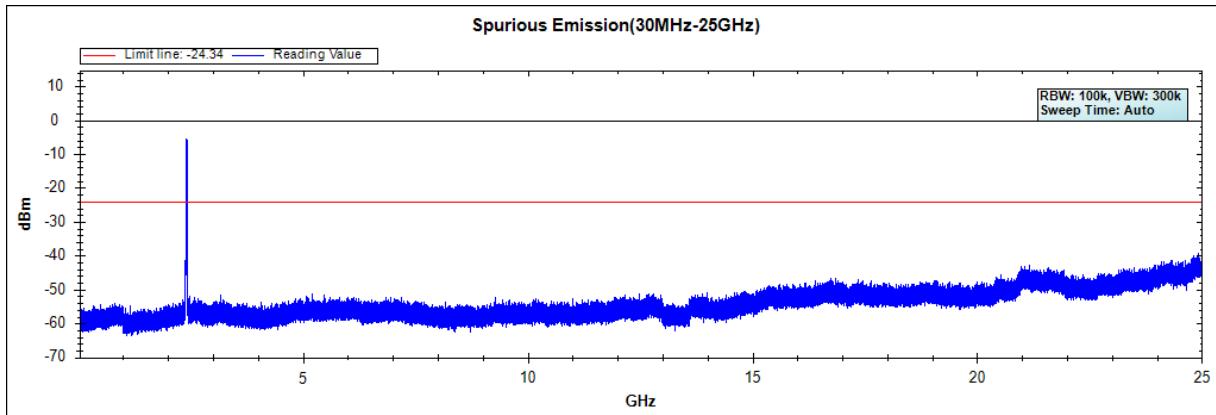
Channel 11 (2462MHz)



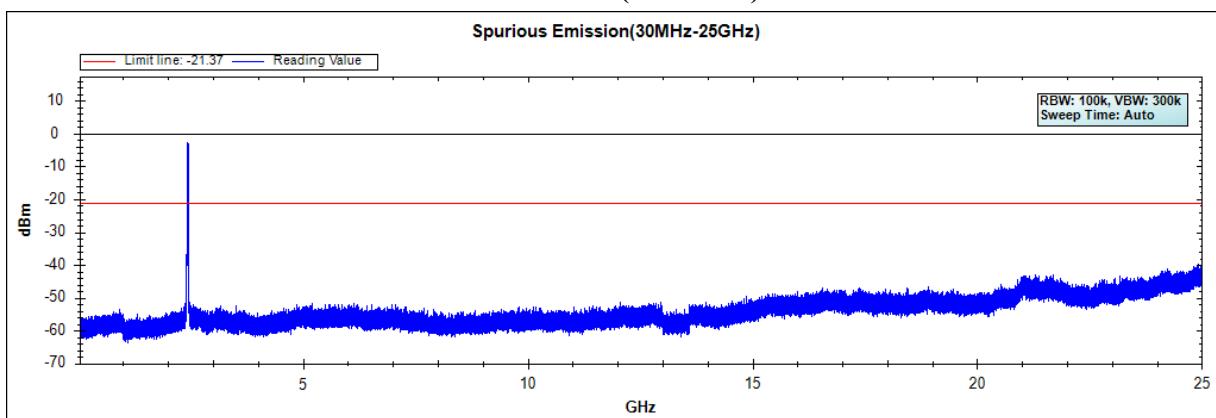
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : SoundBar Speaker
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

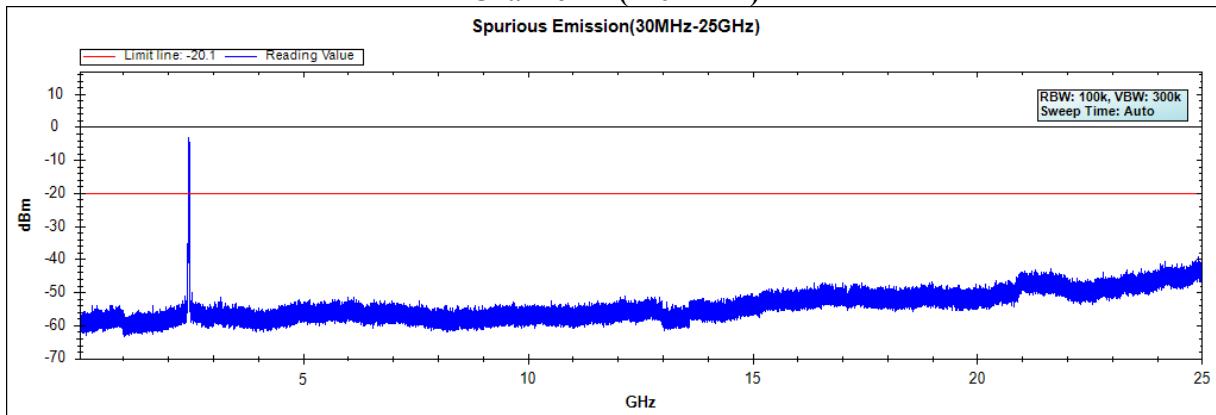
Channel 01 (2412MHz)



Channel 06 (2437MHz)



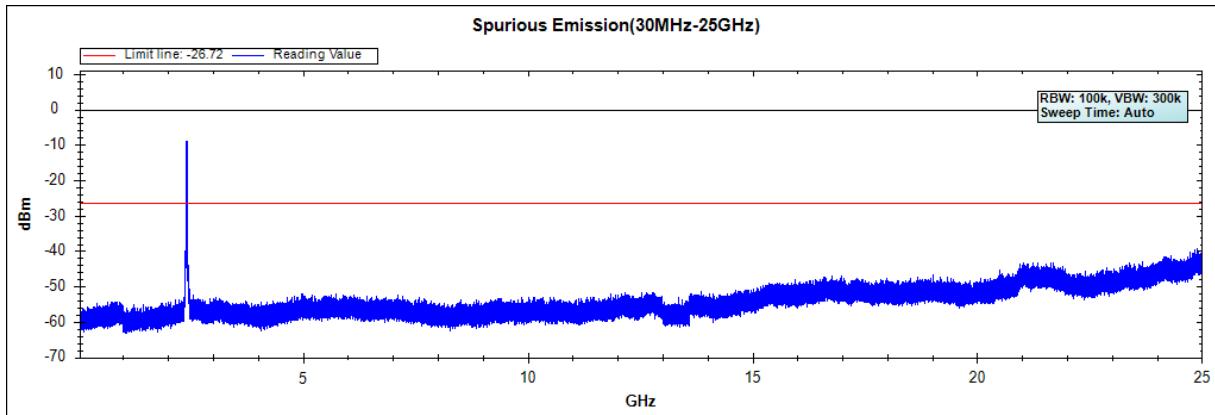
Channel 11 (2462MHz)



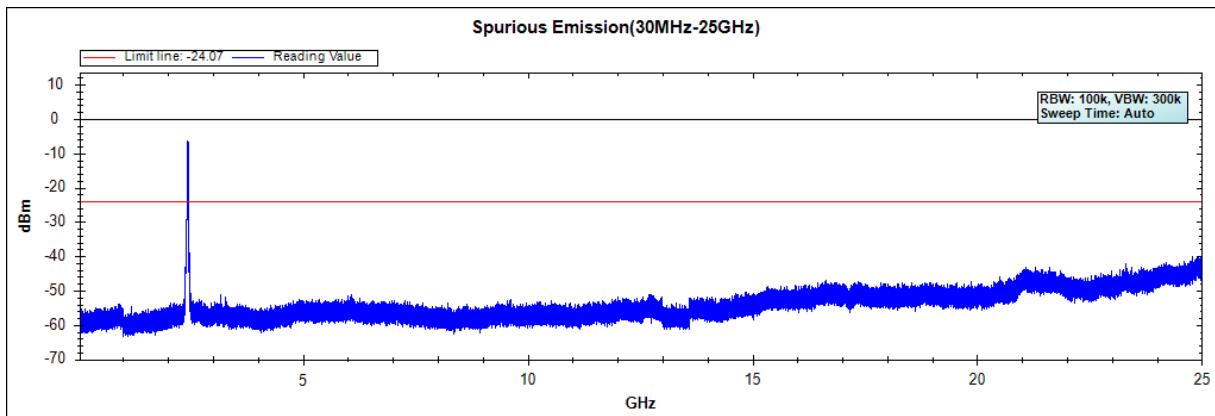
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : SoundBar Speaker
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

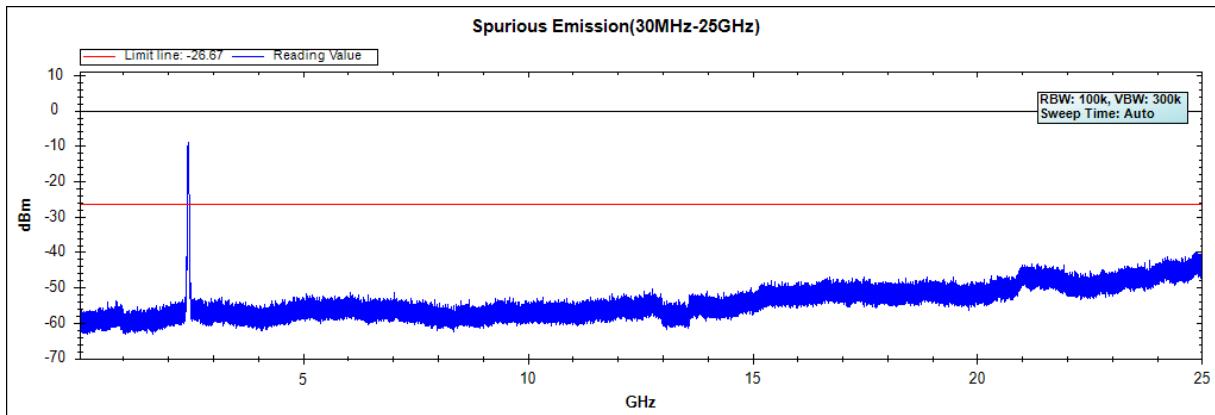
Channel 03 (2422MHz)



Channel 06 (2437MHz)



Channel 09 (2452MHz)



Note: The above test pattern is synthesized by multiple of the frequency range.

6. Band Edge

6.1. Test Equipment

RF Radiated Measurement:

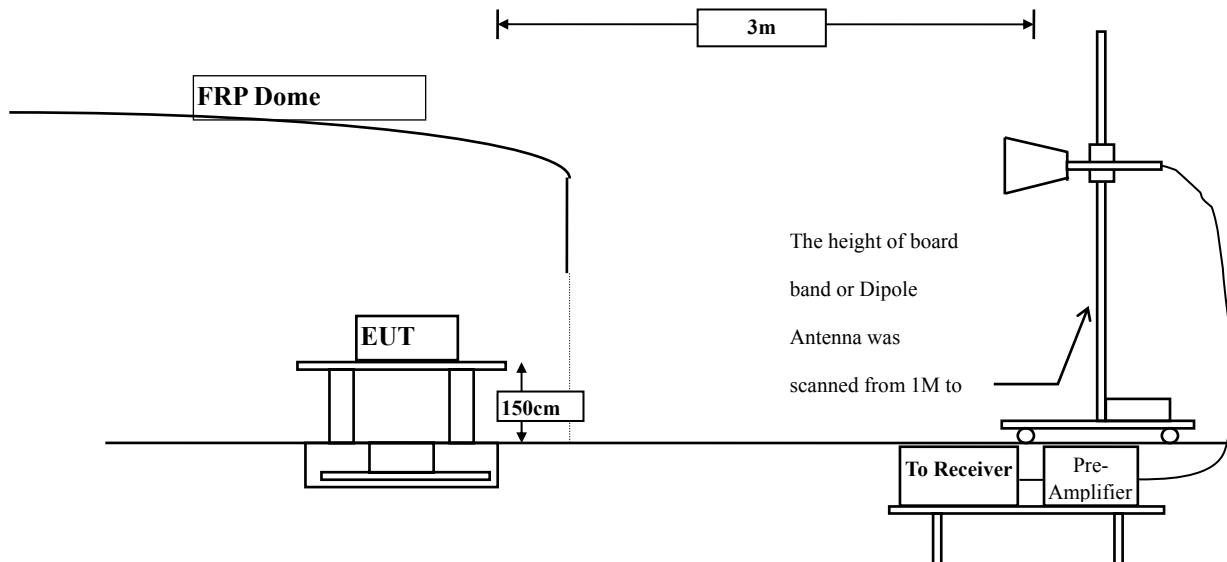
The following test equipments are used during the band edge tests:

Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
☒ CB # 8	X	Spectrum Analyzer	R&S	FSP40/ 100339	Oct., 2014
	X	Horn Antenna	ETS-Lindgren	3117/ 35205	Mar., 2015
	X	Horn Antenna	Schwarzbeck	BBHA9170/209	Jan., 2015
	X	Horn Antenna	TRC	AH-0801/95051	Aug., 2015
	X	Pre-Amplifier	EMCI	EMC012630SE/980210	Jan., 2015
	X	Pre-Amplifier	MITEQ	JS41-001040000-58-5P/153945	Jul., 2015
	X	Pre-Amplifier	NARDA	DBL-1840N506/013	Jul., 2015

Note: 1. All instruments are calibrated every one year.
 2. The test instruments marked by "X" are used to measure the final test results.

6.2. Test Setup

RF Radiated Measurement:



6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

6.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.

6.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

6.6. Test Result of Band Edge

Product : SoundBar Speaker
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
01 (Peak)	2375.200	-2.752	62.229	59.477	74.00	54.00	Pass
01 (Peak)	2390.000	-2.687	59.988	57.301	74.00	54.00	Pass
01 (Peak)	2397.600	-2.664	77.252	74.588	--	--	--
01 (Peak)	2400.000	-2.660	66.617	63.957	--	--	--
01 (Peak)	2411.000	-2.644	107.877	105.233	--	--	--
01 (Average)	2386.400	-2.703	54.340	51.637	74.00	54.00	Pass
01 (Average)	2390.000	-2.687	49.890	47.203	74.00	54.00	Pass
01 (Average)	2397.800	-2.663	69.259	66.595	--	--	--
01 (Average)	2400.000	-2.660	61.107	58.447	--	--	--
01 (Average)	2411.200	-2.643	104.239	101.596	--	--	--

Figure Channel 01:

Horizontal (Peak)

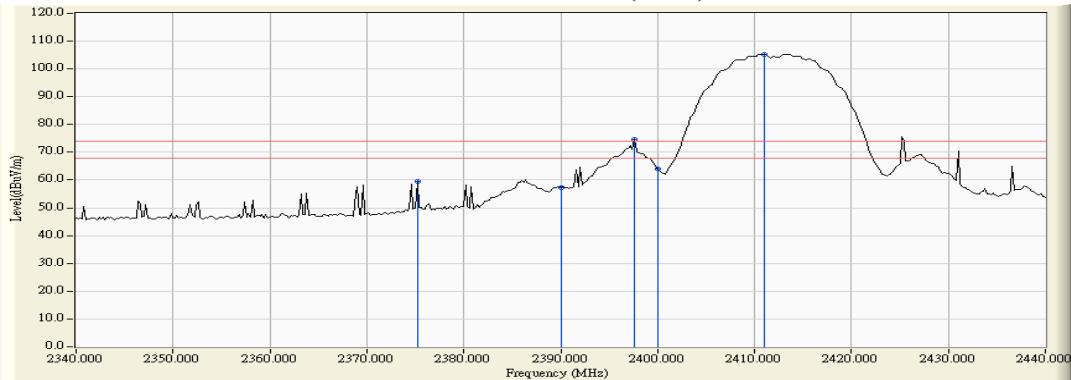
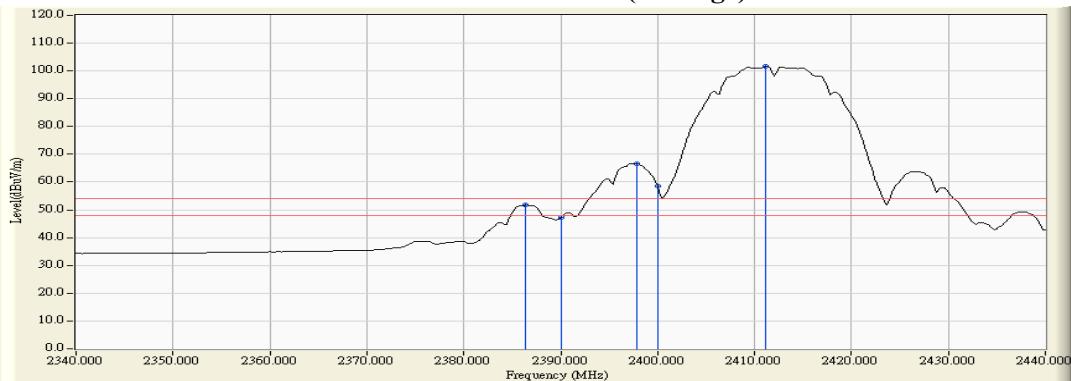


Figure Channel 01:

Horizontal (Average)



Note: 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “*”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : SoundBar Speaker
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
01 (Peak)	2389.000	-4.156	59.582	55.427	74.00	54.00	Pass
01 (Peak)	2390.000	-4.159	55.873	51.714	74.00	54.00	Pass
01 (Peak)	2399.600	-4.171	73.072	68.901	--	--	--
01 (Peak)	2400.000	-4.171	61.795	57.624	--	--	--
01 (Peak)	2411.000	-4.169	102.868	98.699	--	--	--
01 (Average)	2386.200	-4.146	49.556	45.410	74.00	54.00	Pass
01 (Average)	2390.000	-4.159	45.416	41.257	74.00	54.00	Pass
01 (Average)	2397.800	-4.171	64.365	60.194	--	--	--
01 (Average)	2400.000	-4.171	55.940	51.769	--	--	--
01 (Average)	2411.200	-4.168	99.180	95.012	--	--	--

Figure Channel 01:

VERTICAL (Peak)

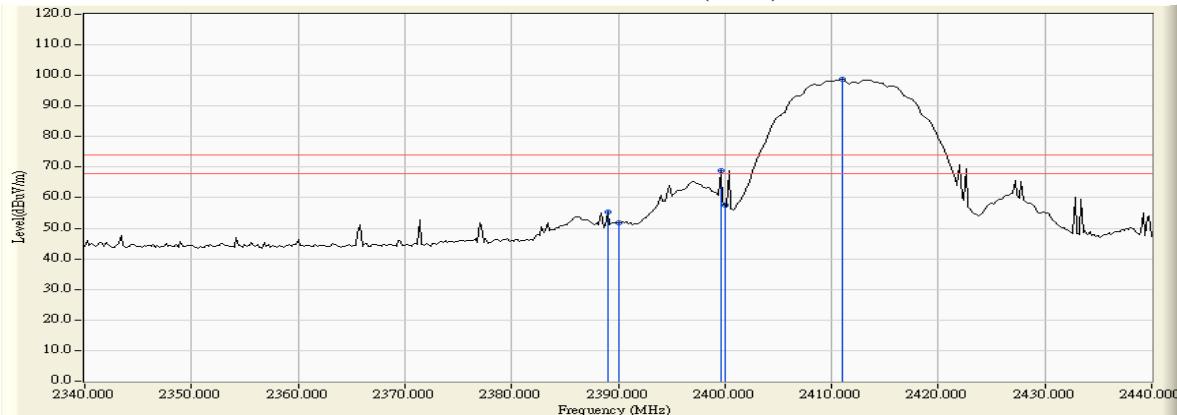
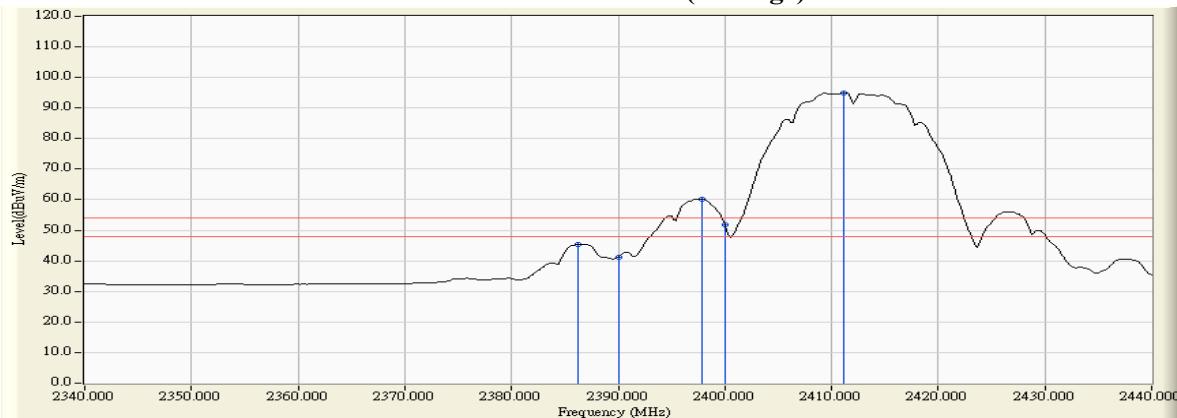


Figure Channel 01:

VERTICAL (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “*”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : SoundBar Speaker
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
11 (Peak)	2463.300	-2.622	107.358	104.737	--	--	--
11 (Peak)	2483.500	-2.601	58.005	55.403	74.00	54.00	Pass
11 (Peak)	2486.700	-2.598	67.553	64.954	74.00	54.00	Pass
11 (Average)	2461.300	-2.624	103.602	100.979	--	--	--
11 (Average)	2483.500	-2.601	49.060	46.458	74.00	54.00	Pass
11 (Average)	2487.500	-2.598	52.843	50.245	74.00	54.00	Pass

Figure Channel 11:

Horizontal (Peak)

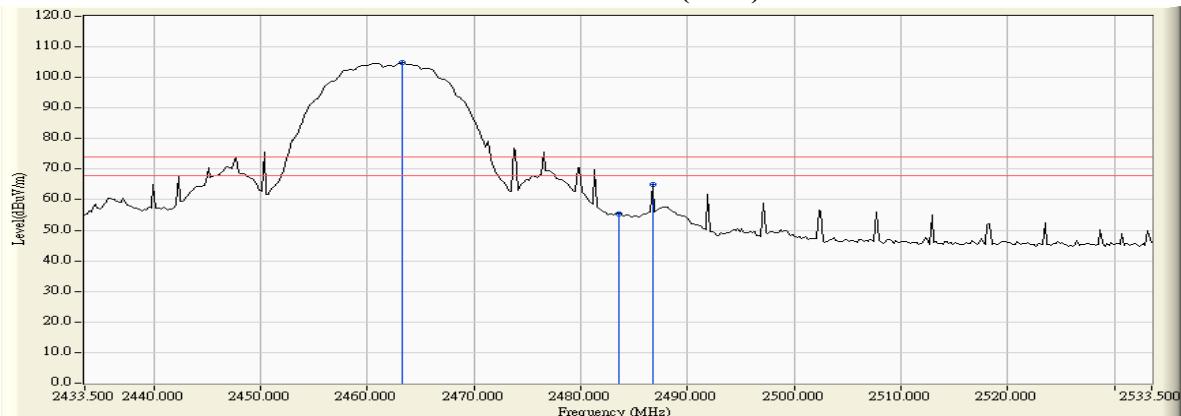
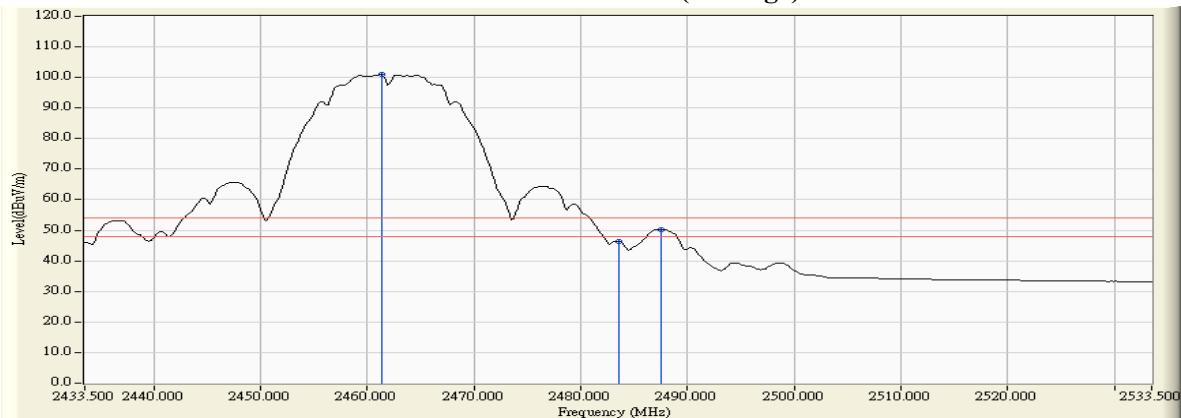


Figure Channel 11:

Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “*”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : SoundBar Speaker
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
11 (Peak)	2460.900	-4.037	101.572	97.534	--	--	--
11 (Peak)	2483.500	-3.966	51.893	47.926	74.00	54.00	Pass
11 (Peak)	2488.300	-3.952	58.032	54.080	74.00	54.00	Pass
11 (Average)	2461.100	-4.037	98.003	93.966	--	--	--
11 (Average)	2483.500	-3.966	41.970	38.003	74.00	54.00	Pass
11 (Average)	2487.500	-3.954	45.121	41.167	74.00	54.00	Pass

Figure Channel 11:

VERTICAL (Peak)

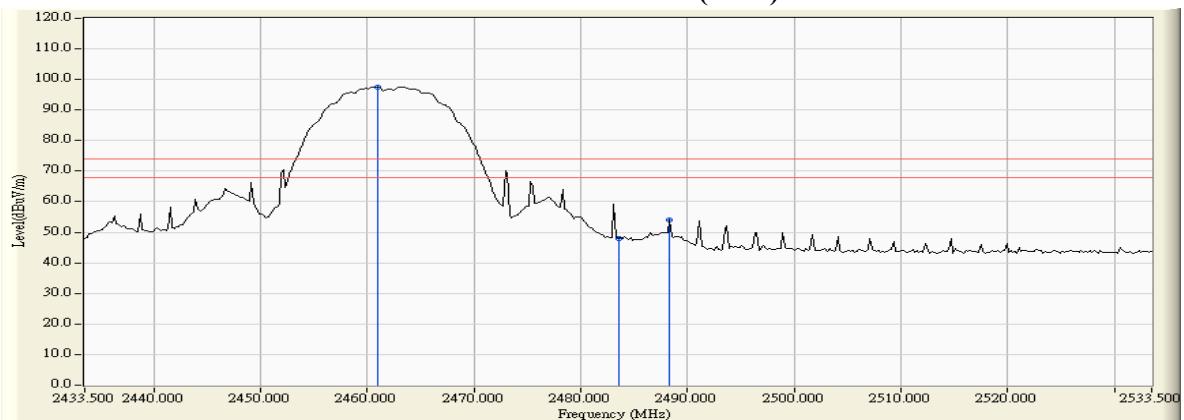
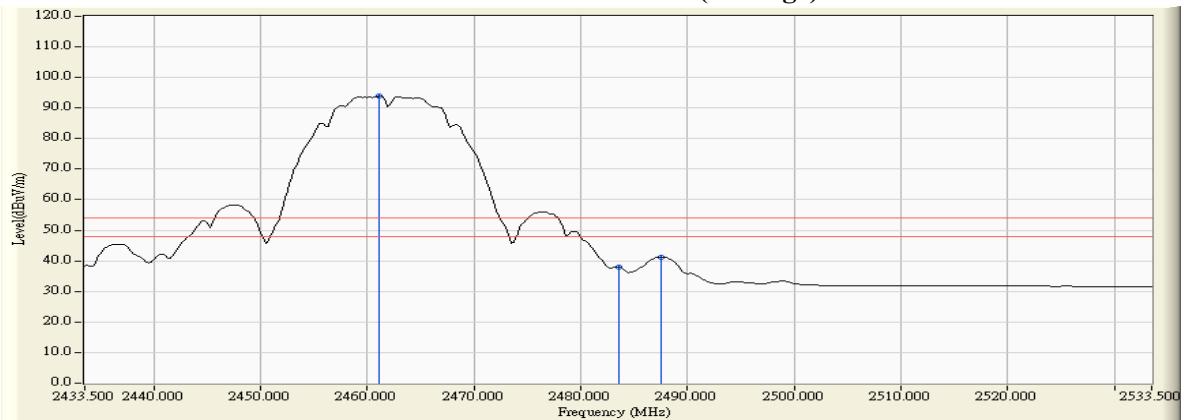


Figure Channel 11:

VERTICAL (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “*”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : SoundBar Speaker
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
01 (Peak)	2390.000	-2.687	70.012	67.325	74.00	54.00	Pass
01 (Peak)	2391.400	-2.681	73.992	71.311	--	--	--
01 (Peak)	2400.000	-2.660	73.662	71.002	--	--	--
01 (Peak)	2408.800	-2.647	105.867	103.220	--	--	--
01 (Average)	2390.000	-2.687	52.718	50.031	74.00	54.00	Pass
01 (Average)	2400.000	-2.660	61.897	59.237	--	--	--
01 (Average)	2409.600	-2.645	96.921	94.275	--	--	--

Figure Channel 01:

Horizontal (Peak)

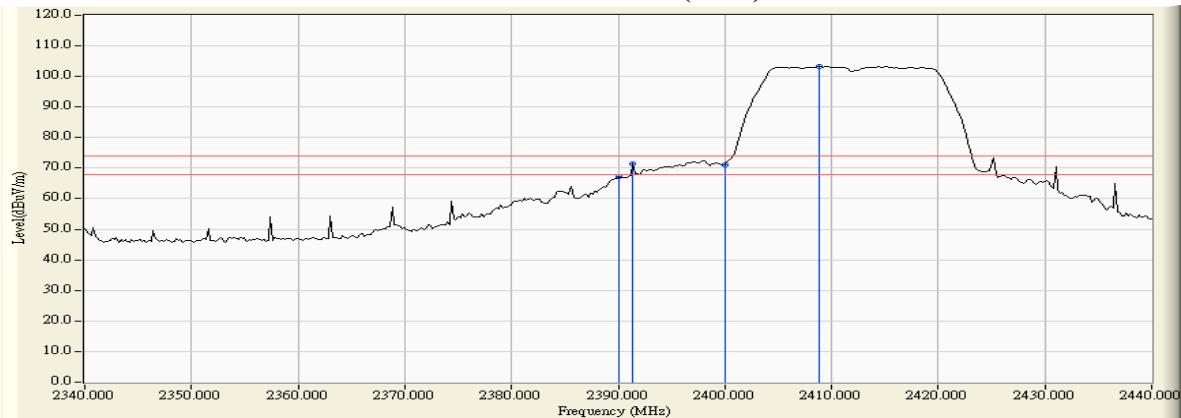
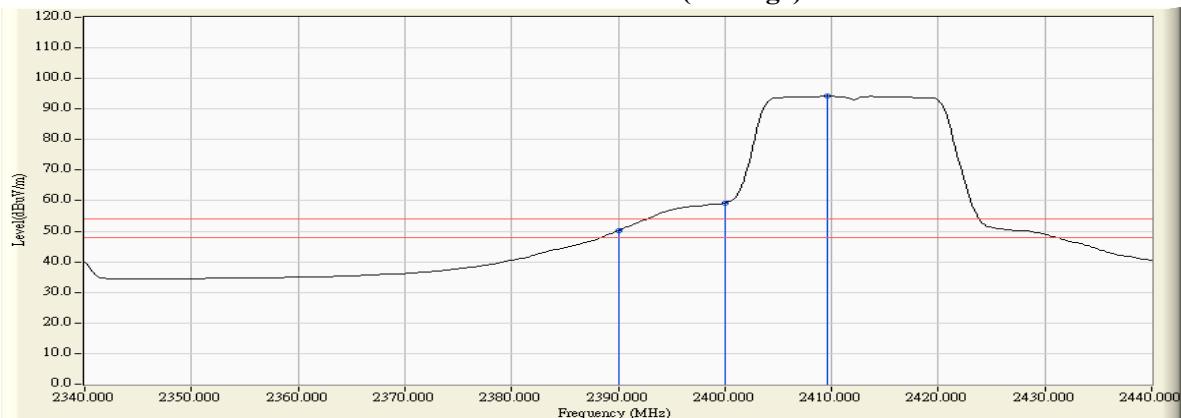


Figure Channel 01:

Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “*”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : SoundBar Speaker
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
01 (Peak)	2390.000	-4.159	64.295	60.136	74.00	54.00	Pass
01 (Peak)	2397.400	-4.171	72.403	68.231	--	--	--
01 (Peak)	2400.000	-4.171	67.166	62.995	--	--	--
01 (Peak)	2405.200	-4.170	99.461	95.291	--	--	--
01 (Average)	2390.000	-4.159	47.130	42.971	74.00	54.00	Pass
01 (Average)	2400.000	-4.171	55.393	51.222	--	--	--
01 (Average)	2406.200	-4.169	90.433	86.263	--	--	--

Figure Channel 01:

VERTICAL (Peak)

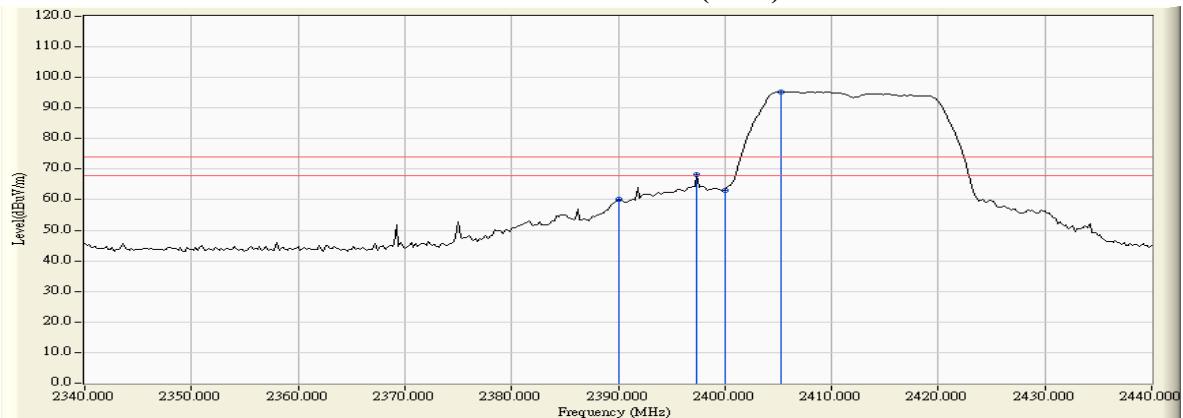
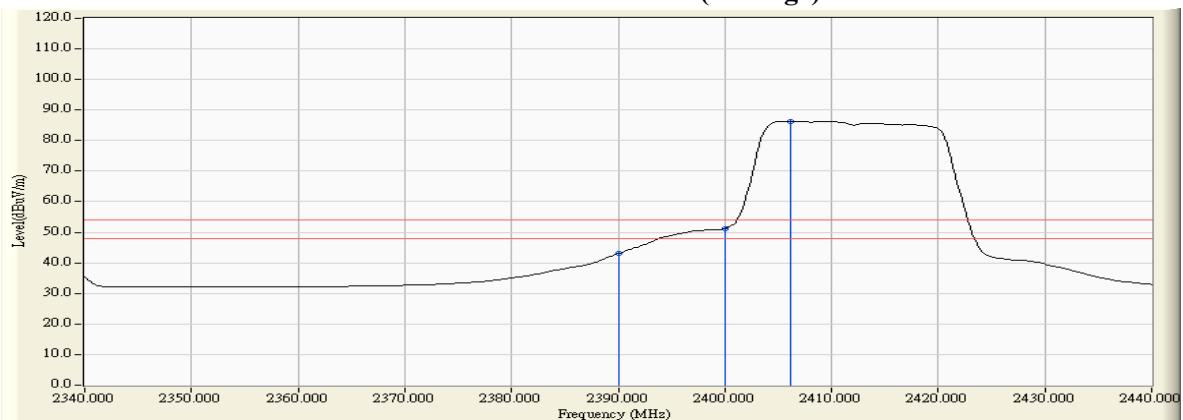


Figure Channel 01:

VERTICAL (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “*”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : SoundBar Speaker
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
11 (Peak)	2464.300	-2.620	107.308	104.688	--	--	--
11 (Peak)	2483.500	-2.601	75.123	72.521	74.00	54.00	Pass
11 (Peak)	2483.700	-2.601	75.346	72.744	74.00	54.00	Pass
11 (Average)	2463.900	-2.621	98.171	95.550	--	--	--
11 (Average)	2483.500	-2.601	55.529	52.927	74.00	54.00	Pass

Figure Channel 11:

Horizontal (Peak)

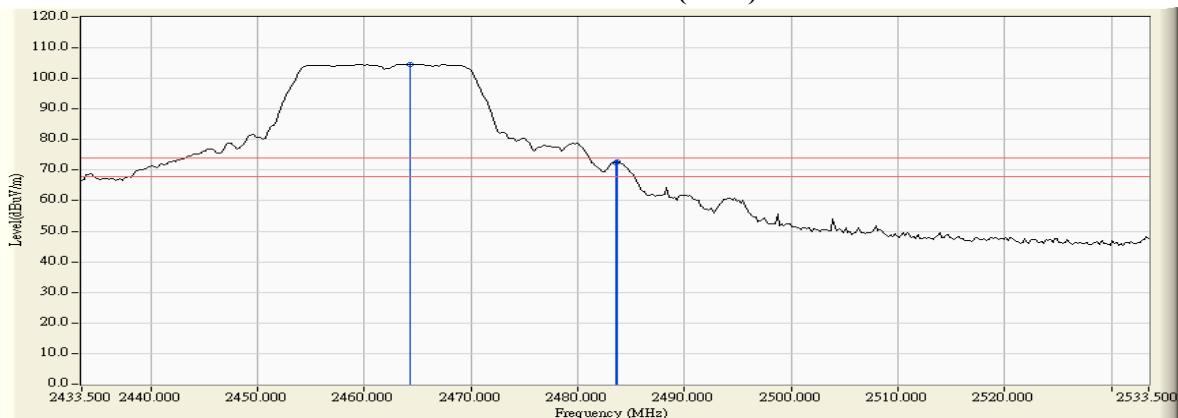
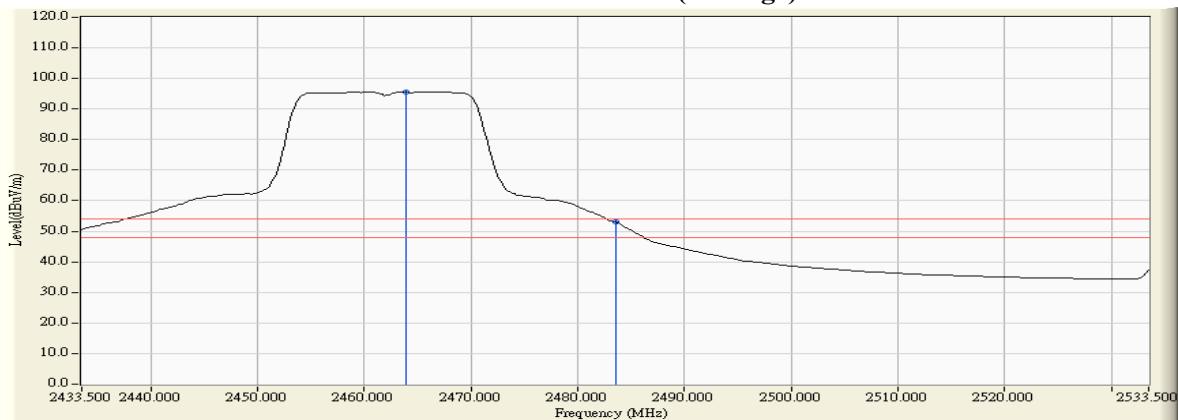


Figure Channel 11:

Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “*”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : SoundBar Speaker
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
11 (Peak)	2464.300	-4.027	101.486	97.459	--	--	--
11 (Peak)	2483.500	-3.966	68.018	64.051	74.00	54.00	Pass
11 (Peak)	2483.700	-3.966	68.254	64.288	74.00	54.00	Pass
11 (Average)	2464.100	-4.027	92.550	88.522	--	--	--
11 (Average)	2483.500	-3.966	48.385	44.418	74.00	54.00	Pass

Figure Channel 11:

VERTICAL (Peak)

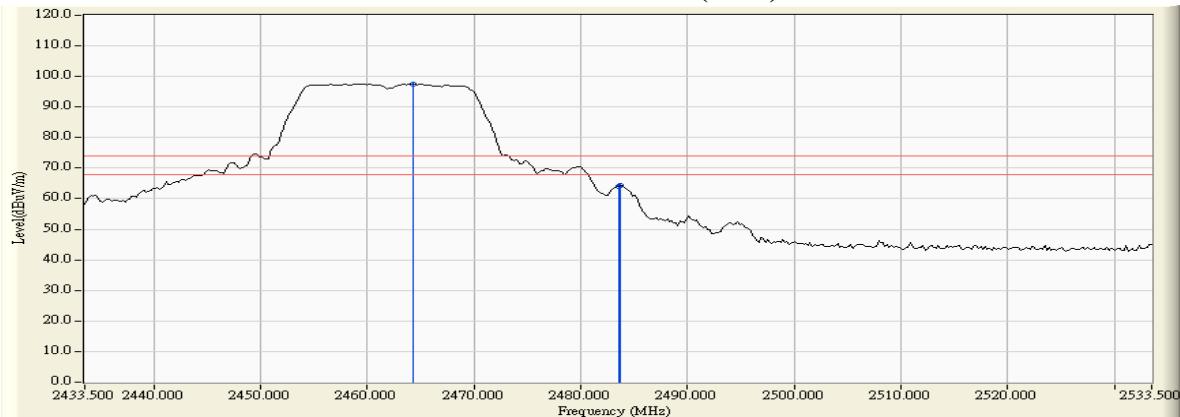
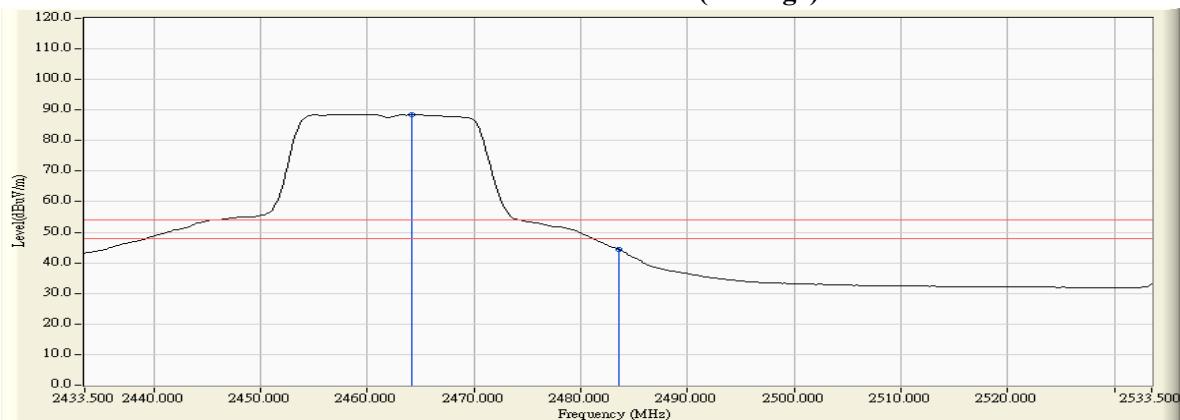


Figure Channel 11:

VERTICAL (Average)



Note: 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
 4. “*”, means this data is the worst emission level.
 5. Measurement Level = Reading Level + Correct Factor.
 6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : SoundBar Speaker
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
01 (Peak)	2390.000	-2.687	73.978	71.291	74.00	54.00	Pass
01 (Peak)	2398.600	-2.663	79.444	76.782	--	--	--
01 (Peak)	2400.000	-2.660	77.560	74.900	--	--	--
01 (Peak)	2415.200	-2.643	106.019	103.377	--	--	--
01 (Average)	2390.000	-2.687	54.816	52.129	74.00	54.00	Pass
01 (Average)	2400.000	-2.660	61.325	58.665	--	--	--
01 (Average)	2415.200	-2.643	95.905	93.263	--	--	--

Figure Channel 01:

Horizontal (Peak)

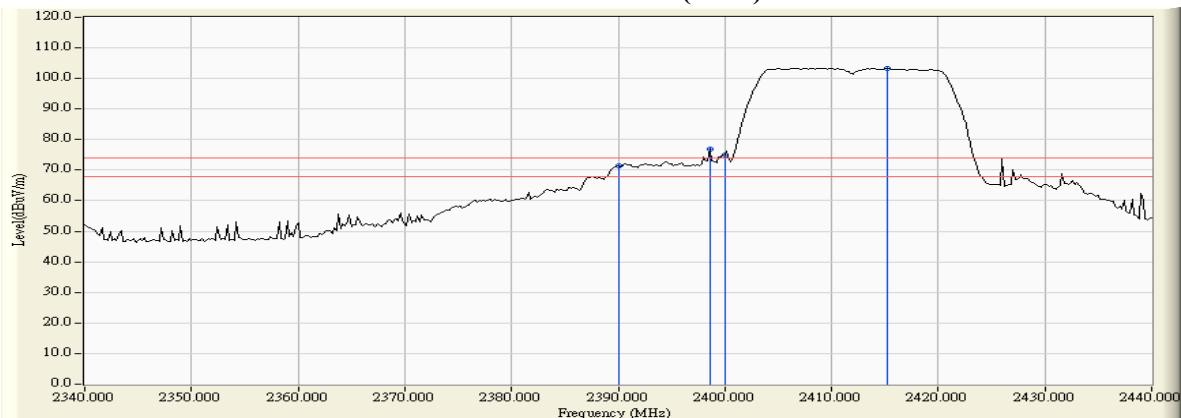
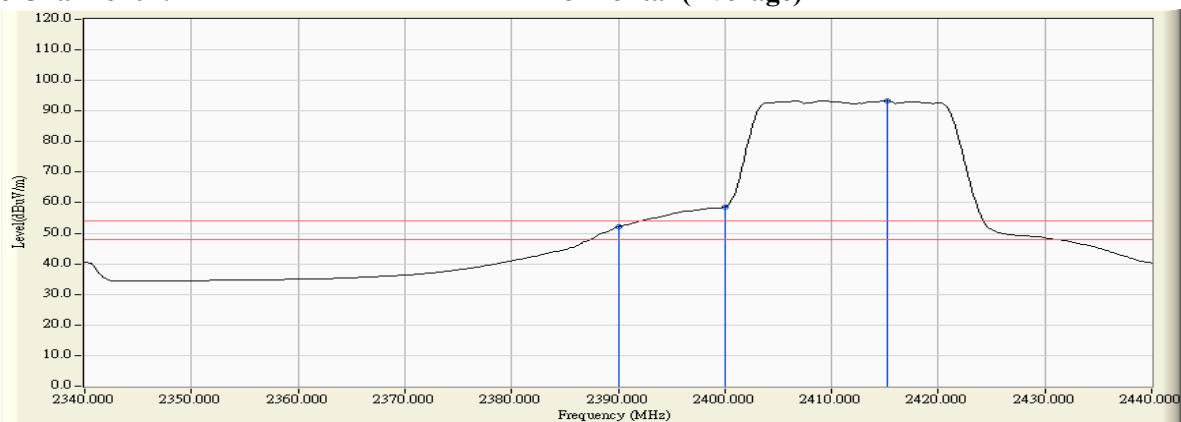


Figure Channel 01:

Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “*”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : SoundBar Speaker
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
01 (Peak)	2389.800	-4.158	67.397	63.239	74.00	54.00	Pass
01 (Peak)	2390.000	-4.159	67.380	63.221	74.00	54.00	Pass
01 (Peak)	2400.000	-4.171	70.772	66.601	--	--	--
01 (Peak)	2406.600	-4.169	99.463	95.293	--	--	--
01 (Average)	2390.000	-4.159	49.319	45.160	74.00	54.00	Pass
01 (Average)	2400.000	-4.171	55.564	51.393	--	--	--
01 (Average)	2406.400	-4.169	90.098	85.928	--	--	--

Figure Channel 01:

VERTICAL (Peak)

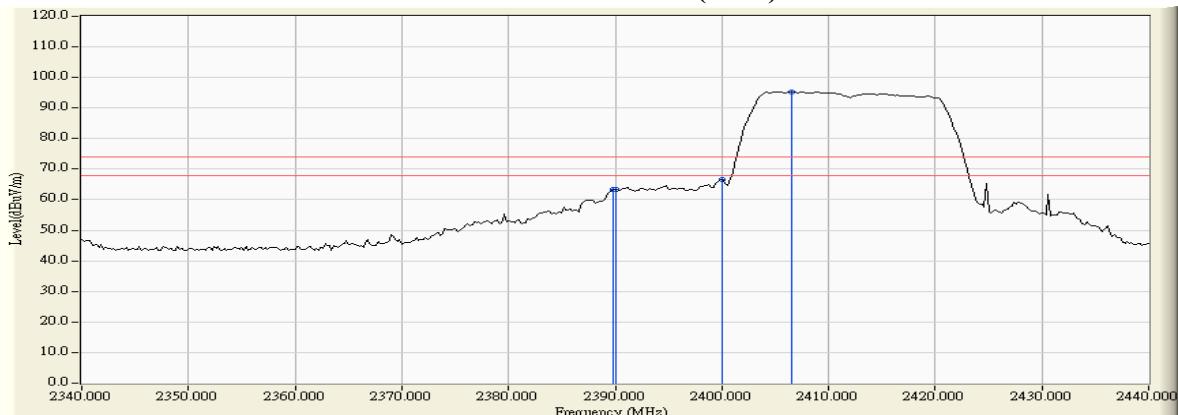
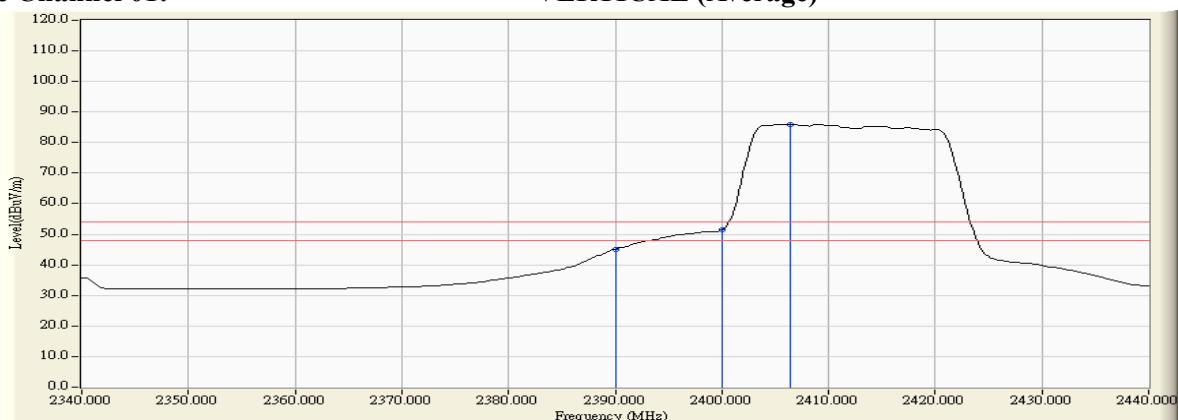


Figure Channel 01:

VERTICAL (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “*”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : SoundBar Speaker
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
11 (Peak)	2465.100	-2.620	106.120	103.500	--	--	--
11 (Peak)	2483.500	-2.601	72.939	70.337	74.00	54.00	Pass
11 (Average)	2465.100	-2.620	96.611	93.991	--	--	--
11 (Average)	2483.500	-2.601	54.208	51.606	74.00	54.00	Pass

Figure Channel 11:

Horizontal (Peak)

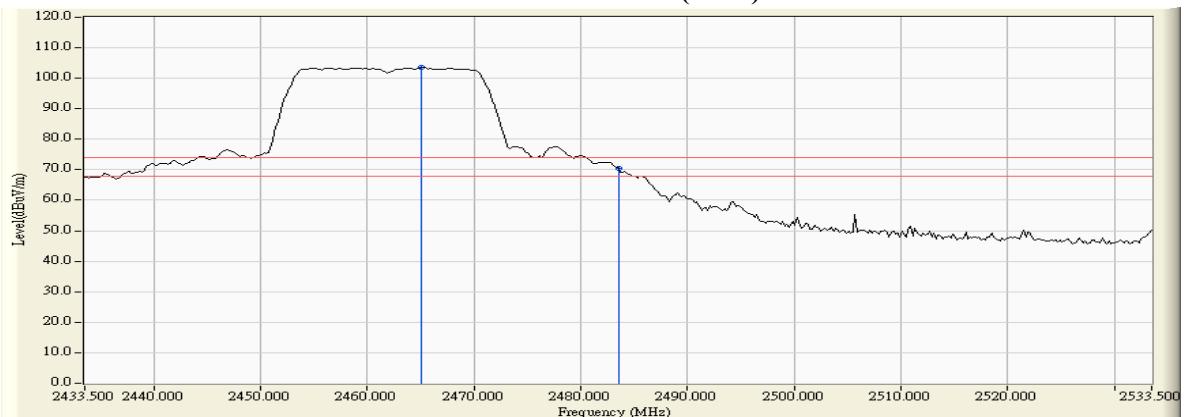
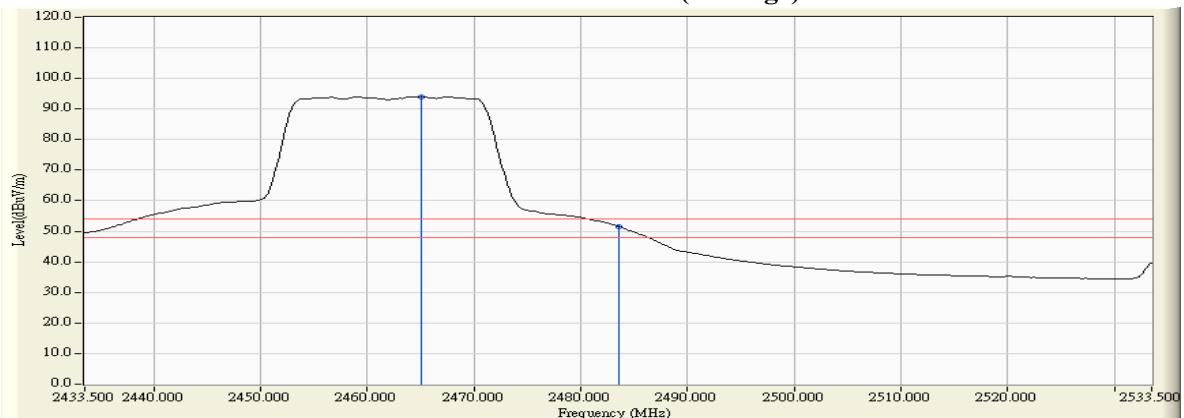


Figure Channel 11:

Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “*”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : SoundBar Speaker
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
11 (Peak)	2456.500	-4.051	100.379	96.328	--	--	--
11 (Peak)	2483.500	-3.966	64.903	60.936	74.00	54.00	Pass
11 (Average)	2458.900	-4.044	90.924	86.880	--	--	--
11 (Average)	2483.500	-3.966	46.823	42.856	74.00	54.00	Pass

Figure Channel 11:

VERTICAL (Peak)

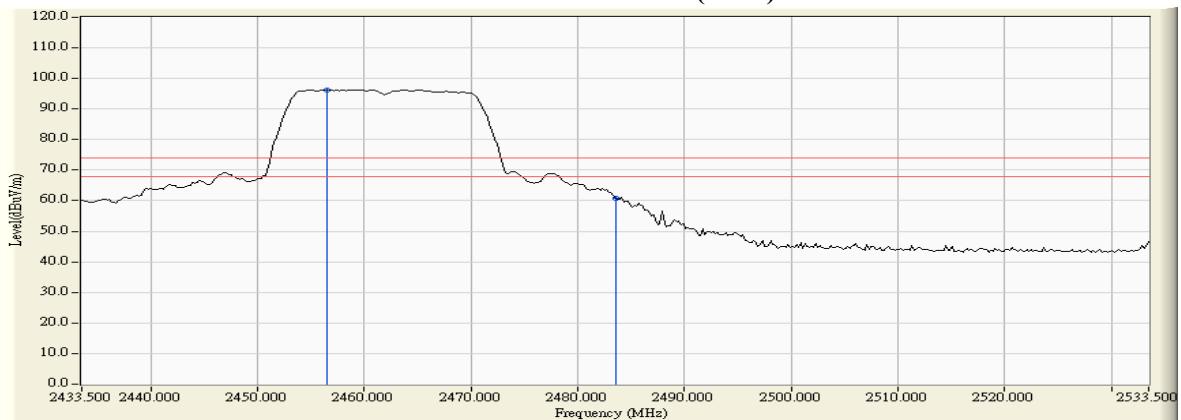
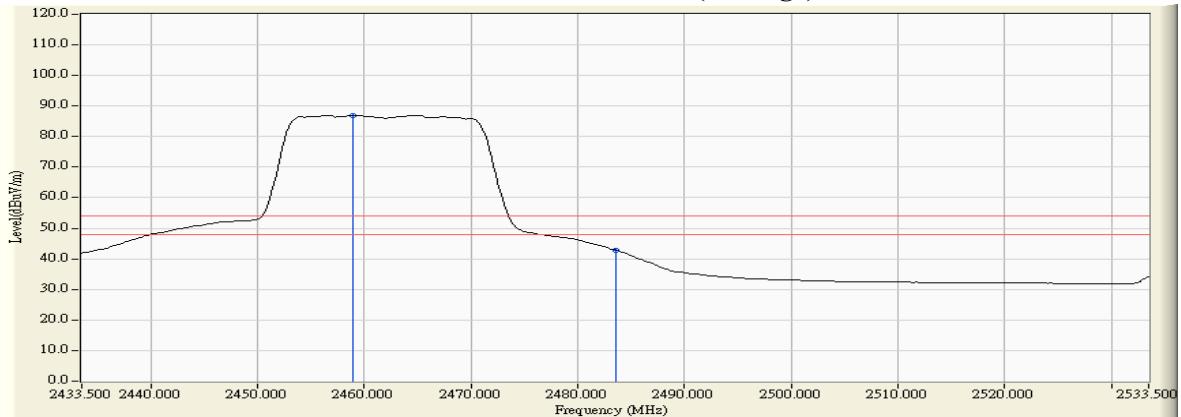


Figure Channel 11:

VERTICAL (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “*”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : SoundBar Speaker
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2422MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
03 (Peak)	2388.600	-2.694	72.277	69.584	74.00	54.00	Pass
03 (Peak)	2390.000	-2.687	70.414	67.727	74.00	54.00	Pass
03 (Peak)	2398.200	-2.663	73.124	70.461	--	--	--
03 (Peak)	2400.000	-2.660	72.573	69.913	--	--	--
03 (Peak)	2414.200	-2.643	101.295	98.652	--	--	--
03 (Average)	2390.000	-2.687	55.684	52.997	74.00	54.00	Pass
03 (Average)	2400.000	-2.660	56.427	53.767	--	--	--
03 (Average)	2410.200	-2.645	87.867	85.222	--	--	--

Figure Channel 03:

Horizontal (Peak)

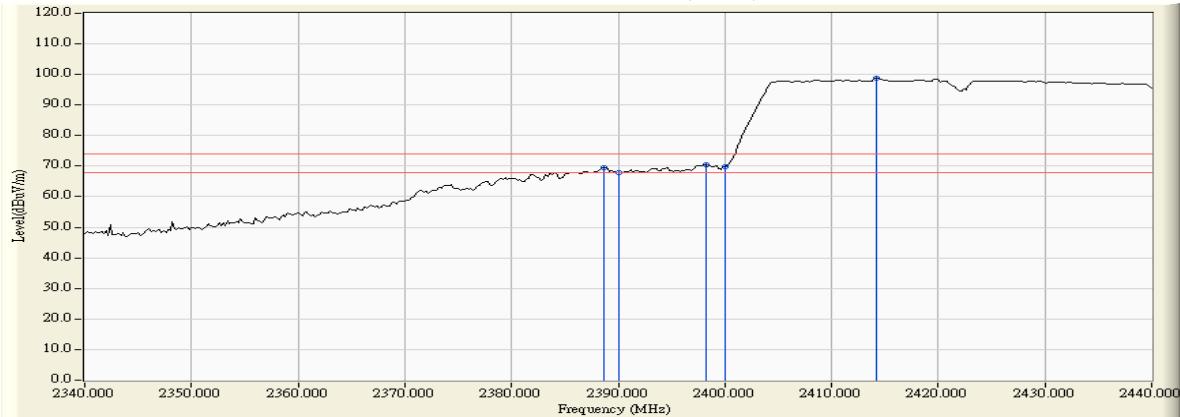
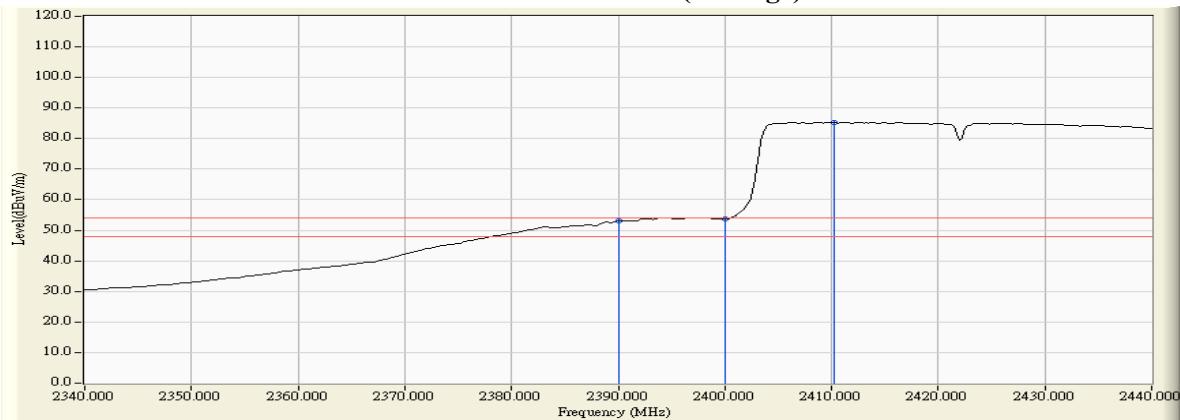


Figure Channel 03:

Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
 4. “*”, means this data is the worst emission level.
 5. Measurement Level = Reading Level + Correct Factor.
 6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : SoundBar Speaker
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2422MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
03 (Peak)	2389.600	-4.157	67.102	62.945	74.00	54.00	Pass
03 (Peak)	2390.000	-4.159	65.068	60.909	74.00	54.00	Pass
03 (Peak)	2399.000	-4.172	67.444	63.273	--	--	--
03 (Peak)	2400.000	-4.171	67.351	63.180	--	--	--
03 (Peak)	2419.800	-4.147	97.022	92.874	--	--	--
03 (Average)	2390.000	-4.159	52.847	48.688	74.00	54.00	Pass
03 (Average)	2400.000	-4.171	54.285	50.114	--	--	--
03 (Average)	2427.000	-4.130	87.470	83.340	--	--	--

Figure Channel 03:

VERTICAL (Peak)

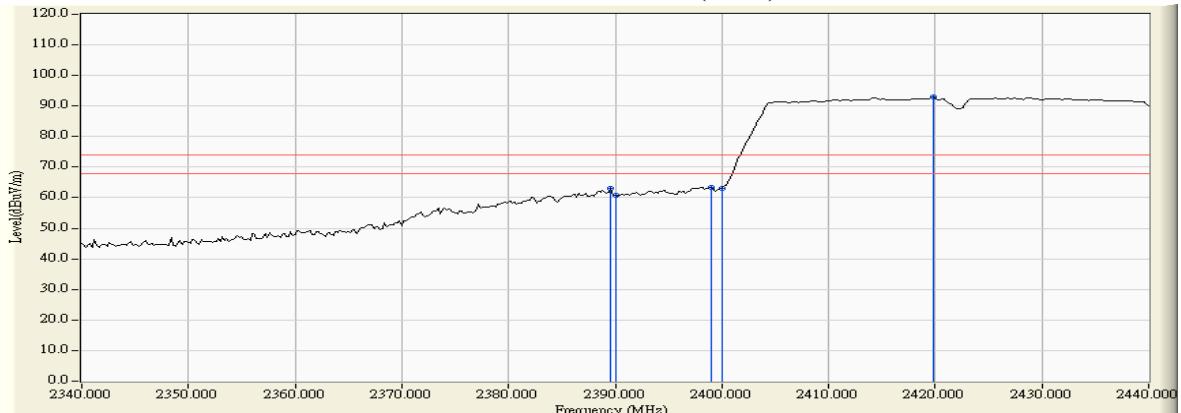
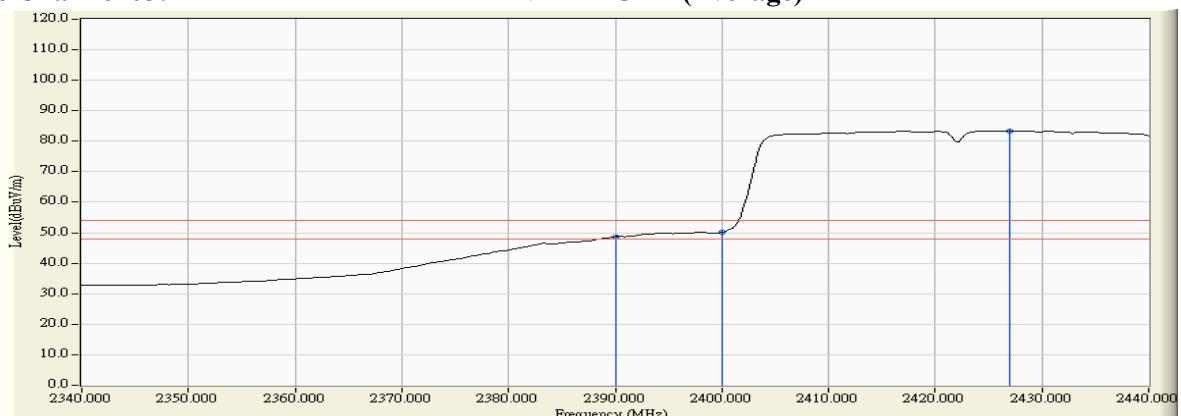


Figure Channel 03:

VERTICAL (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “*”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : SoundBar Speaker
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2452MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
09 (Peak)	2444.100	-2.635	102.021	99.385	--	--	--
09 (Peak)	2483.500	-2.601	68.849	66.247	74.00	54.00	Pass
09 (Peak)	2487.500	-2.598	71.383	68.785	74.00	54.00	Pass
09 (Average)	2436.100	-2.638	92.444	89.807	--	--	--
09 (Average)	2483.500	-2.601	55.516	52.914	74.00	54.00	Pass

Figure Channel 09:

Horizontal (Peak)

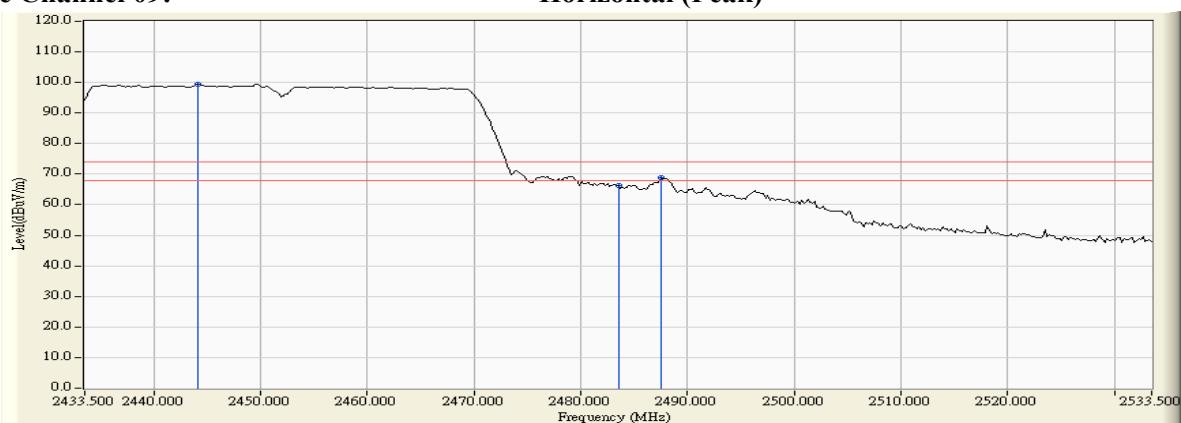
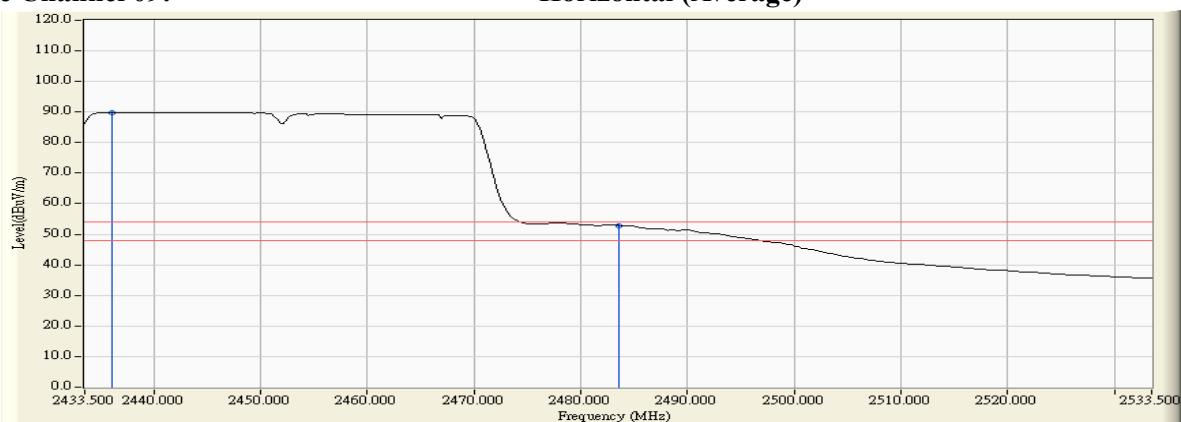


Figure Channel 09:

Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “*”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : SoundBar Speaker
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2452MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
09 (Peak)	2449.700	-4.072	96.189	92.117	--	--	--
09 (Peak)	2483.500	-3.966	60.918	56.951	74.00	54.00	Pass
09 (Peak)	2488.100	-3.952	63.545	59.593	74.00	54.00	Pass
09 (Average)	2448.900	-4.075	86.626	82.551	--	--	--
09 (Average)	2483.500	-3.966	48.115	44.148	74.00	54.00	Pass

Figure Channel 09:

VERTICAL (Peak)

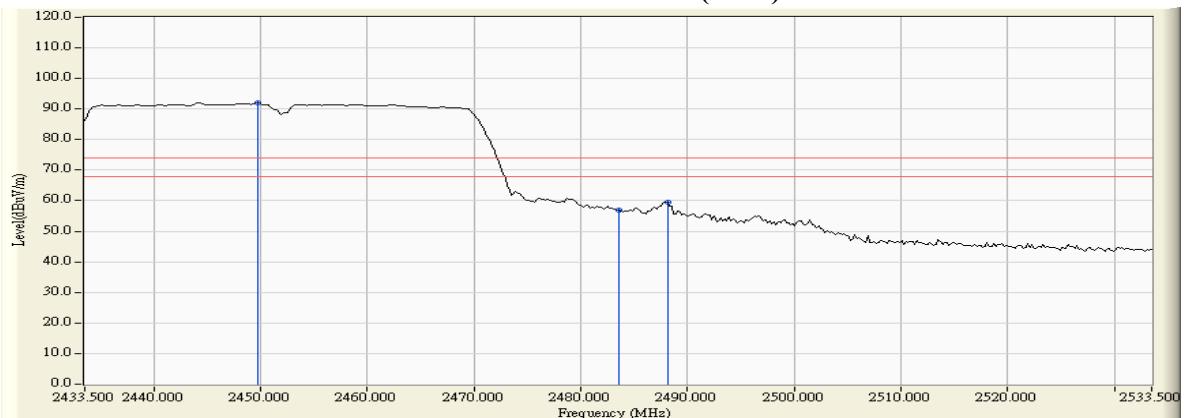
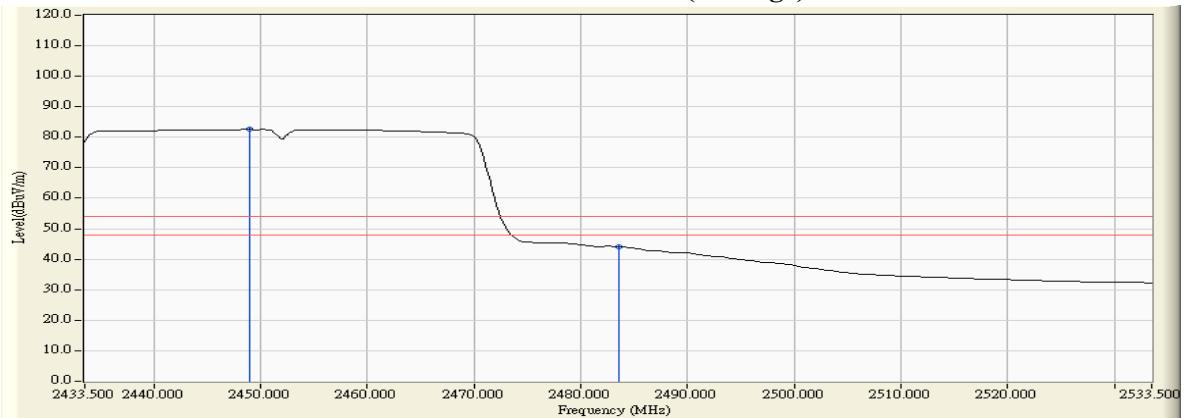


Figure Channel 09:

VERTICAL (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “*”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

7. Occupied Bandwidth

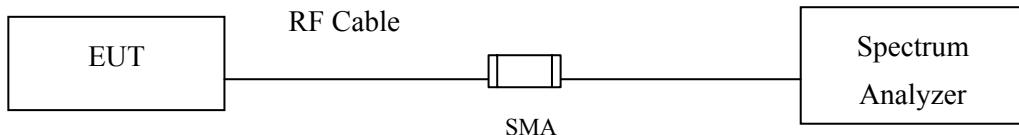
7.1. Test Equipment

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2015
Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2015
X Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

7.2. Test Setup



7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

The EUT was setup according to ANSI C63.4: 2014; tested according to DTS test procedure of Jan KDB558074 for compliance to FCC 47CFR 15.247 requirements.

7.5. Uncertainty

± 150Hz

7.6. Test Result of Occupied Bandwidth

Product : SoundBar Speaker
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	10100	>500	Pass
06	2437	10100	>500	Pass
11	2462	10100	>500	Pass

Figure Channel 01:

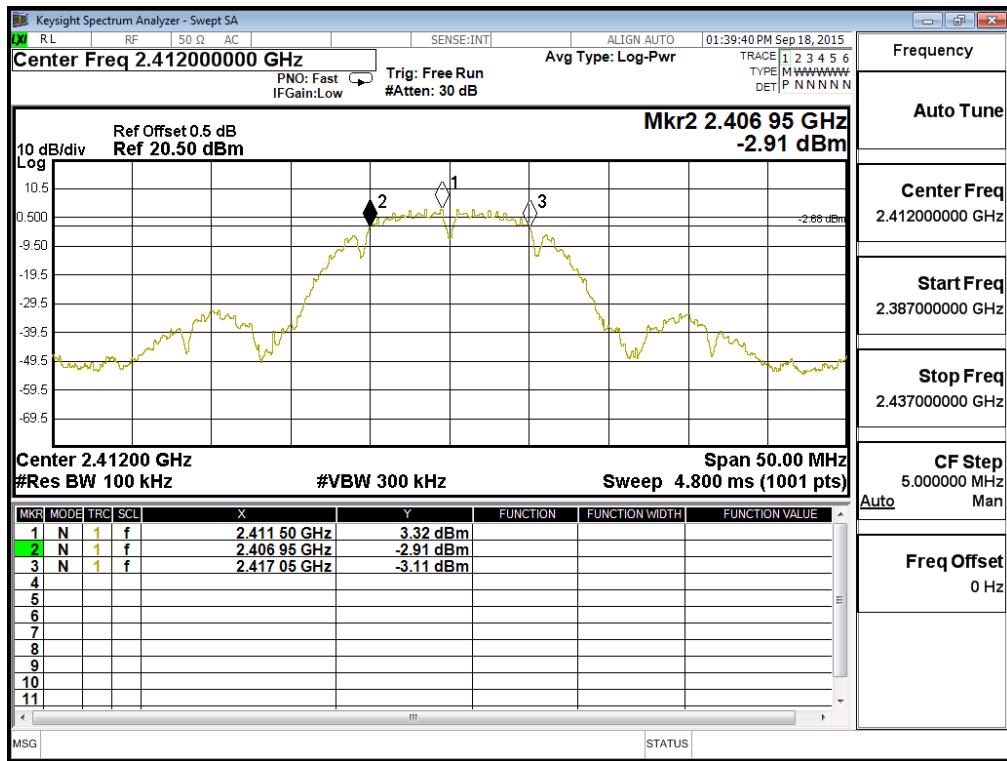


Figure Channel 06:

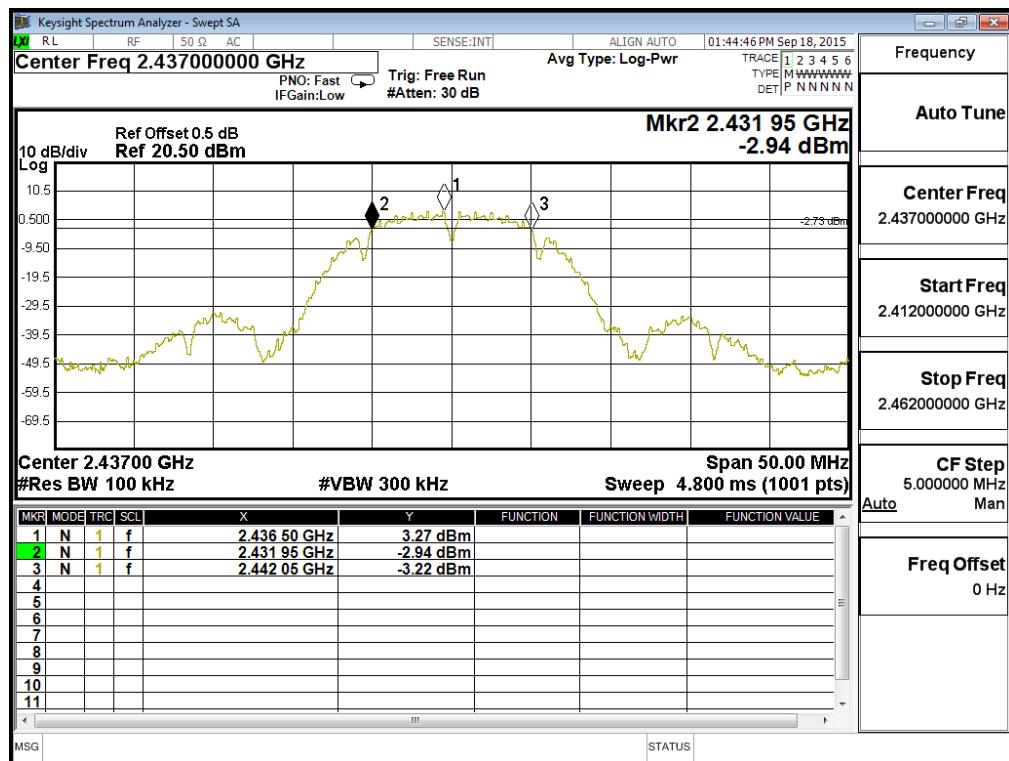
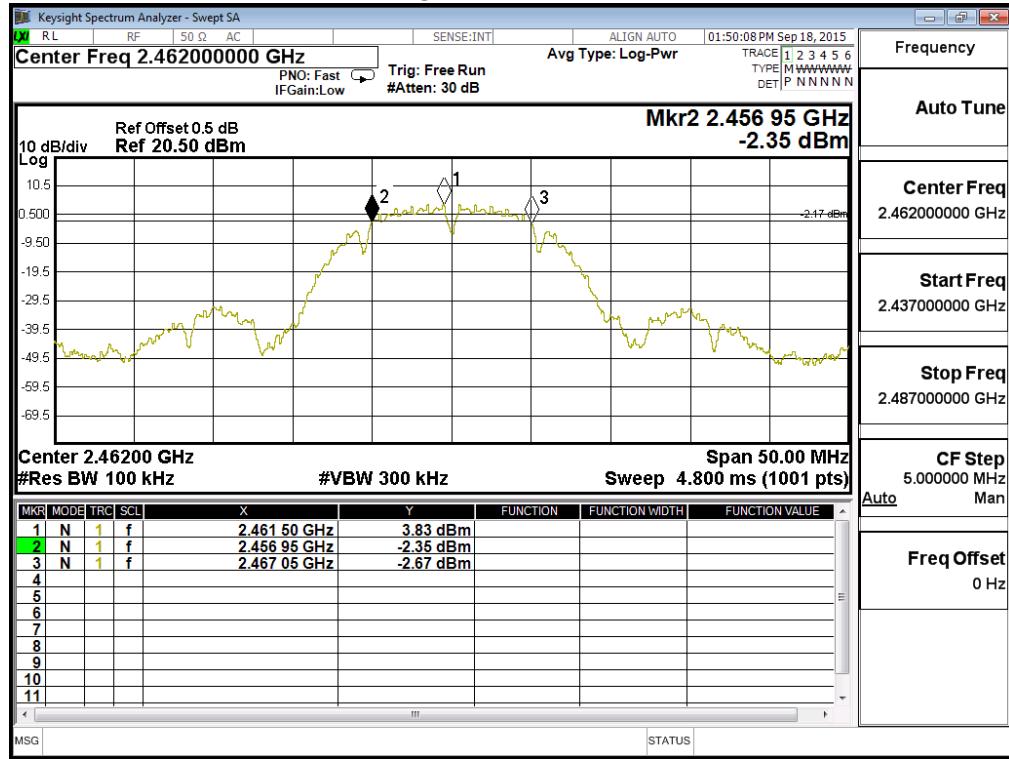


Figure Channel 11:



Product : SoundBar Speaker
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	16600	>500	Pass
06	2437	16700	>500	Pass
11	2462	16650	>500	Pass

Figure Channel 01:

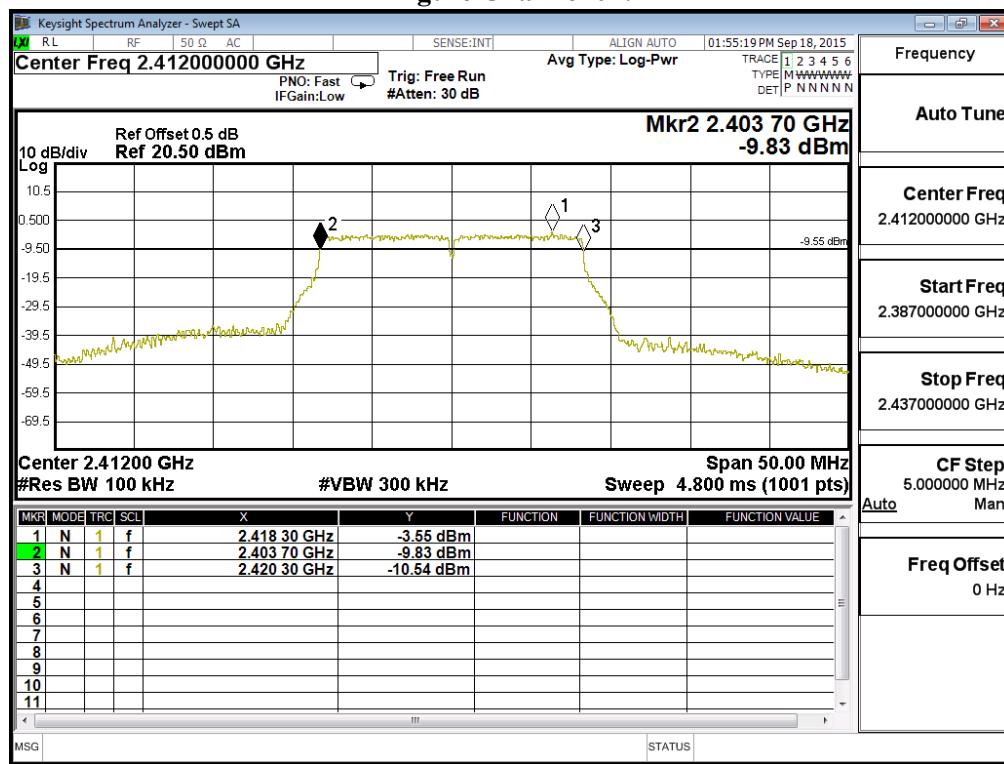


Figure Channel 06:

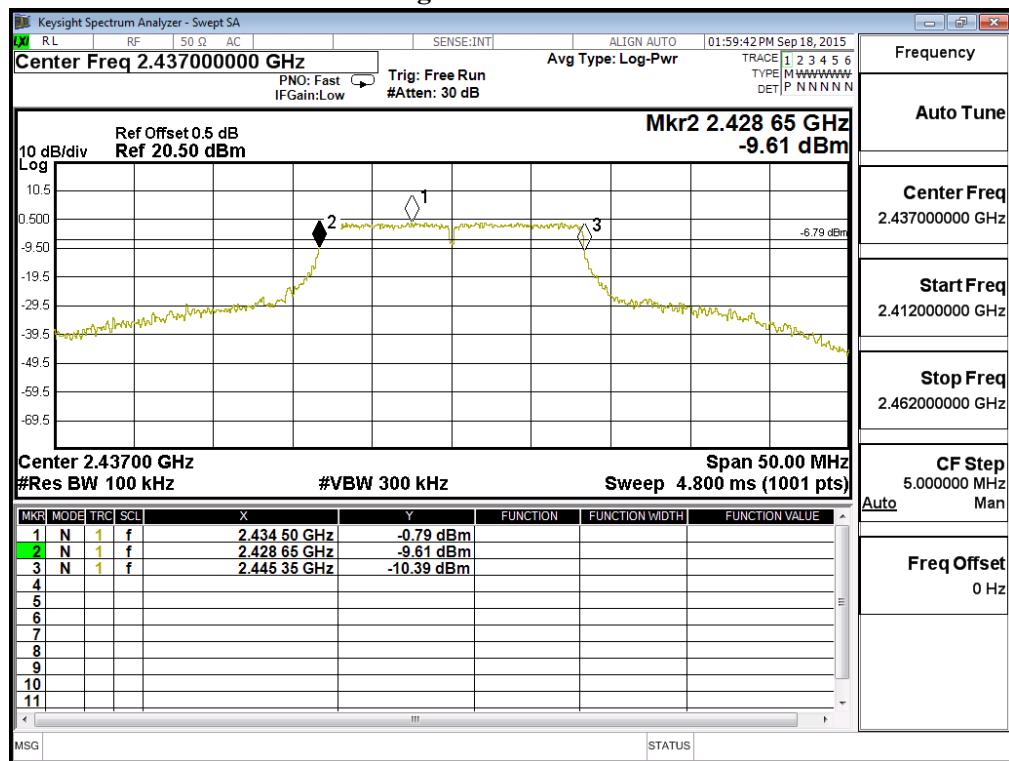
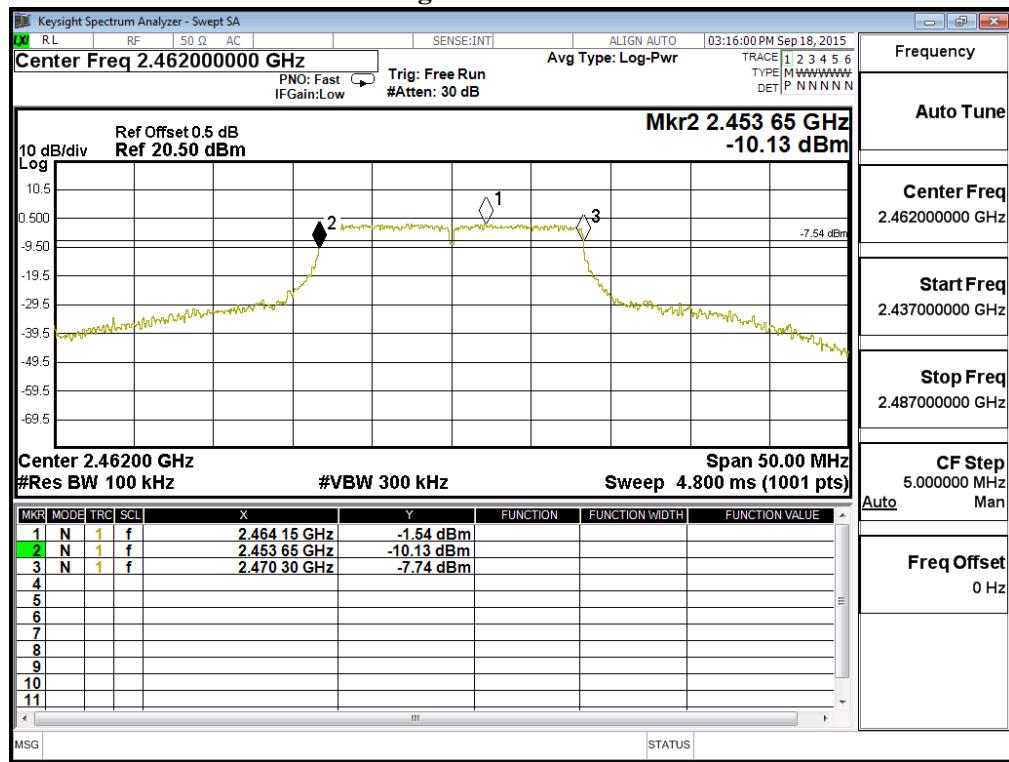


Figure Channel 11:



Product : SoundBar Speaker
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	17700	>500	Pass
06	2437	17900	>500	Pass
11	2462	17900	>500	Pass

Figure Channel 01:

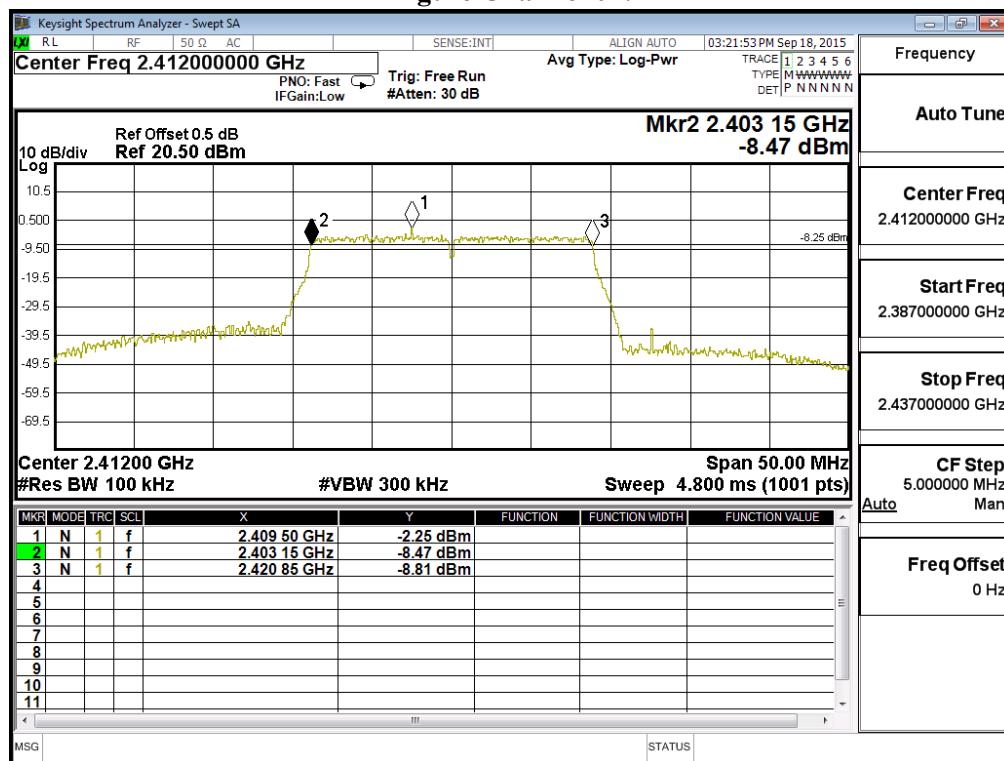


Figure Channel 06:

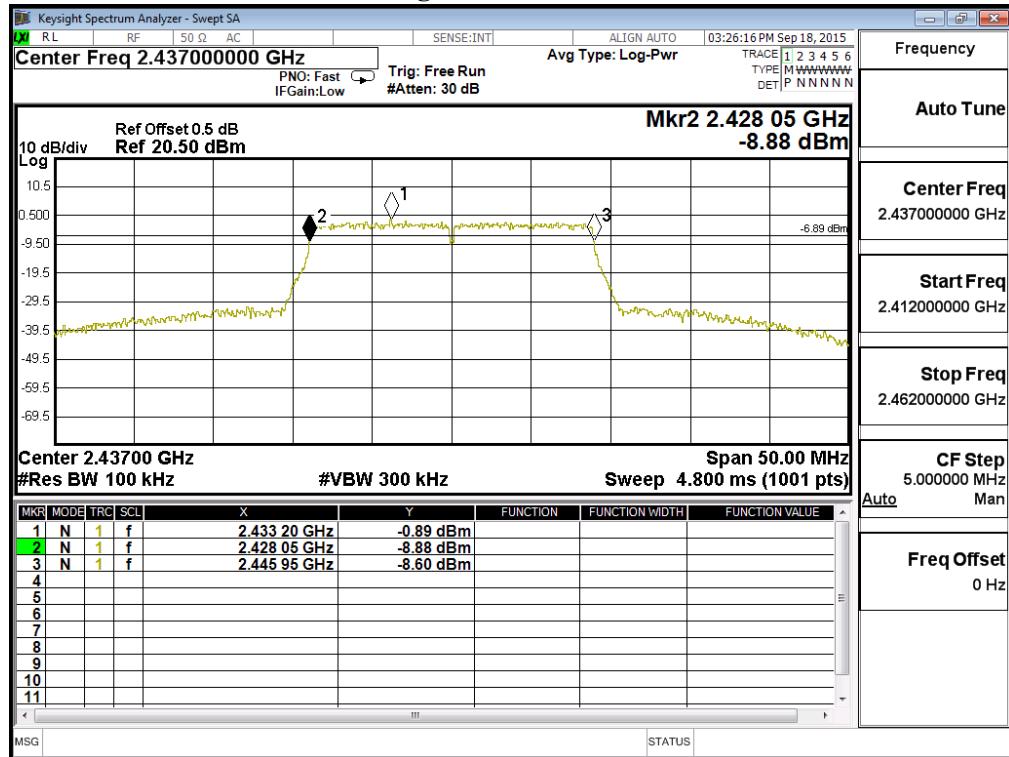
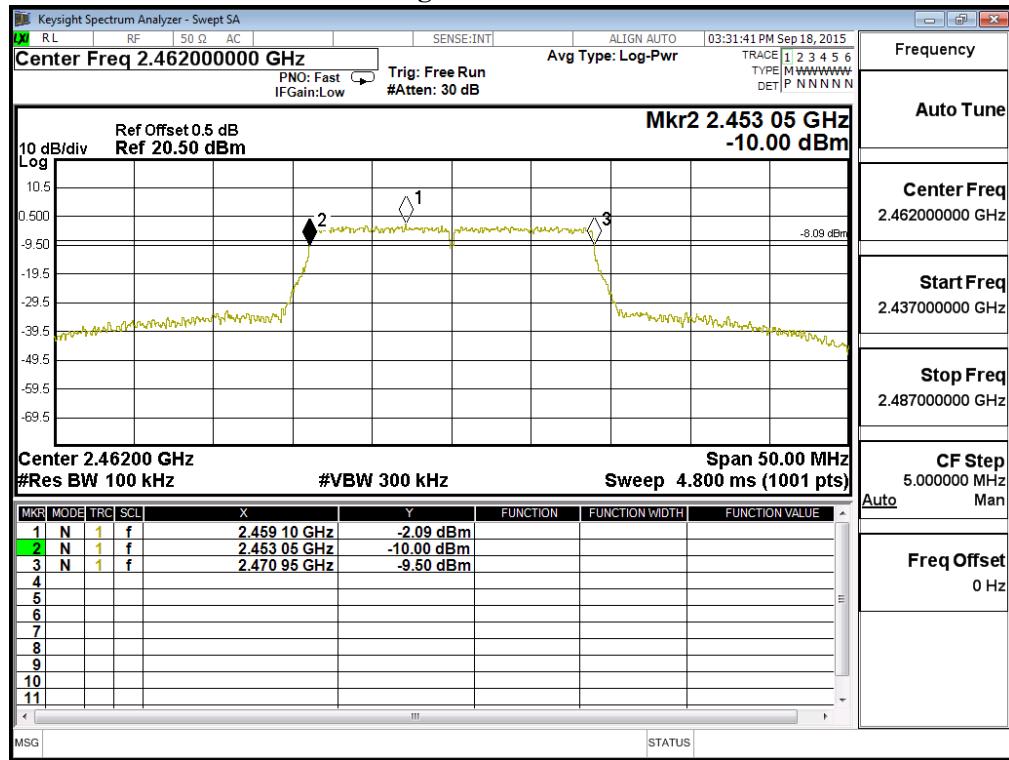


Figure Channel 11:



Product : SoundBar Speaker
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
03	2422	36600	>500	Pass
06	2437	36600	>500	Pass
09	2452	36600	>500	Pass

Figure Channel 03:

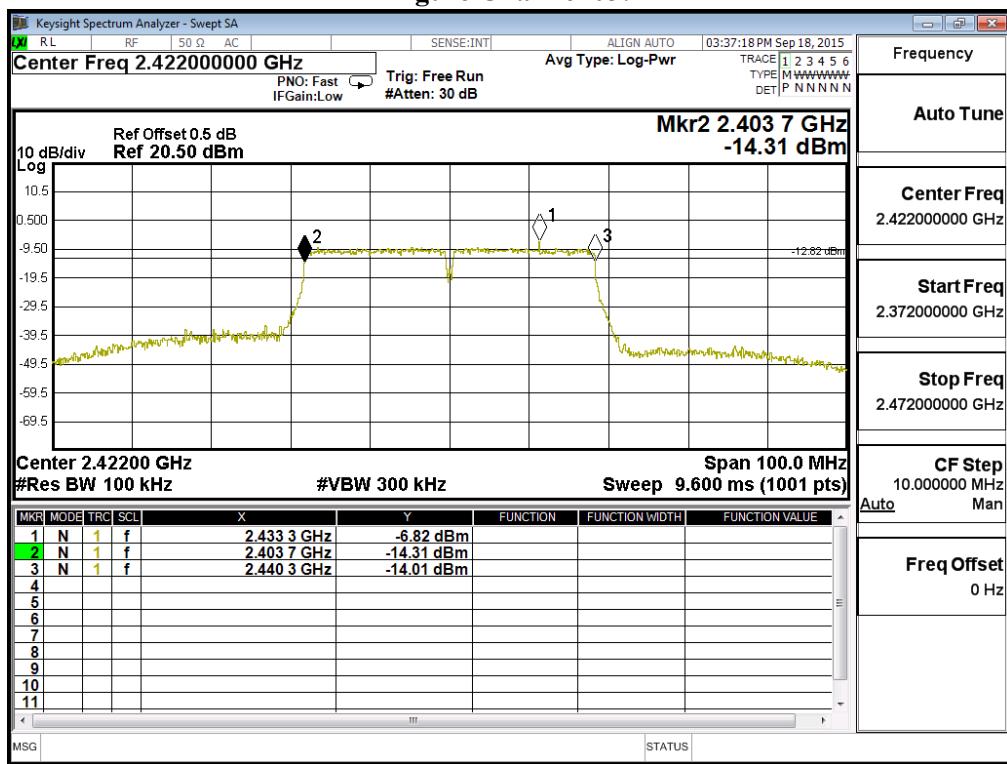


Figure Channel 06:

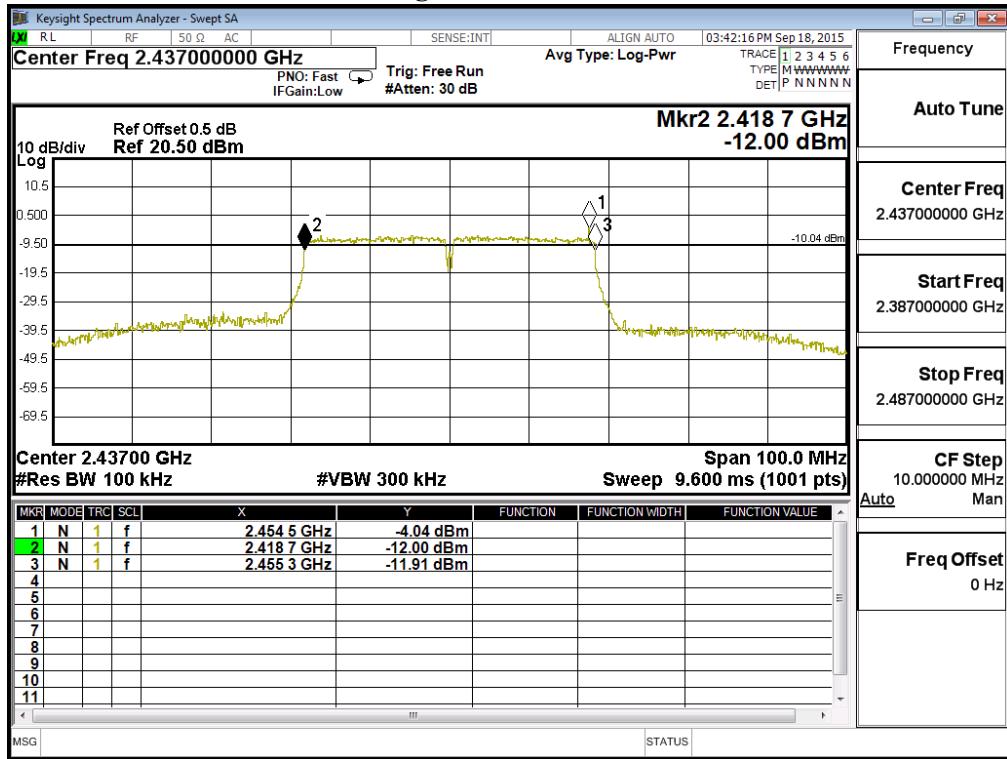
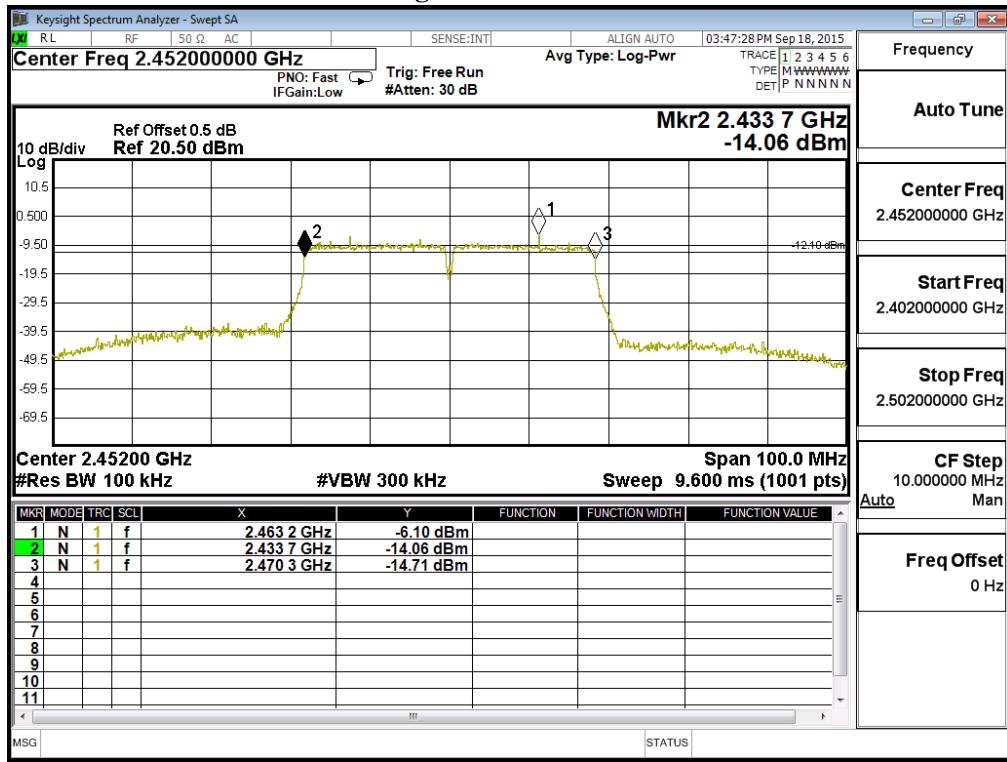


Figure Channel 09:



8. Power Density

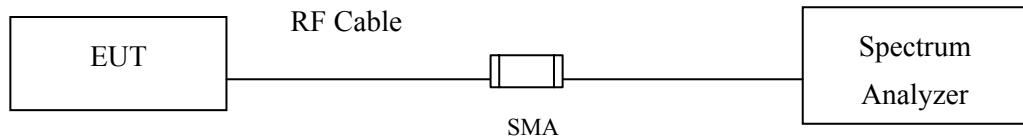
8.1. Test Equipment

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2015
Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2015
X Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

8.2. Test Setup



8.3. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

8.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2013; tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

The maximum power spectral density using KDB 558074 section 10.2 PKPSD (peak PSD) method.

8.5. Uncertainty

± 1.27 dB

8.6. Test Result of Power Density

Product : SoundBar Speaker
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	3.410	< 8dBm	Pass
06	2437	3.260	< 8dBm	Pass
11	2462	3.760	< 8dBm	Pass

Figure Channel 01:

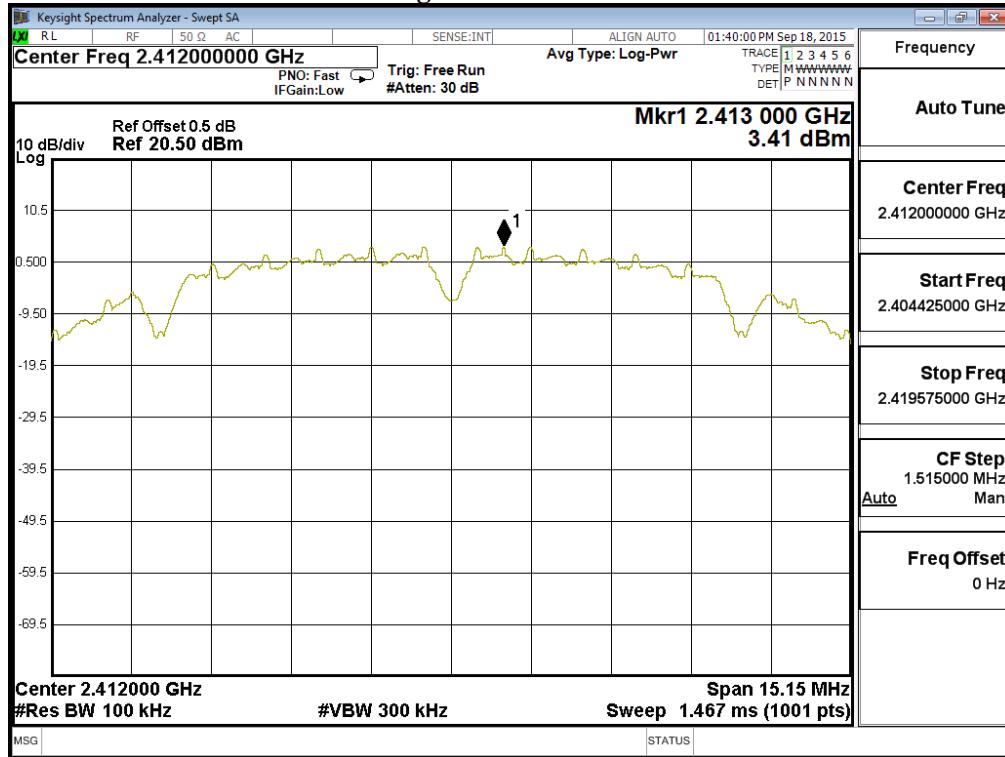


Figure Channel 06:

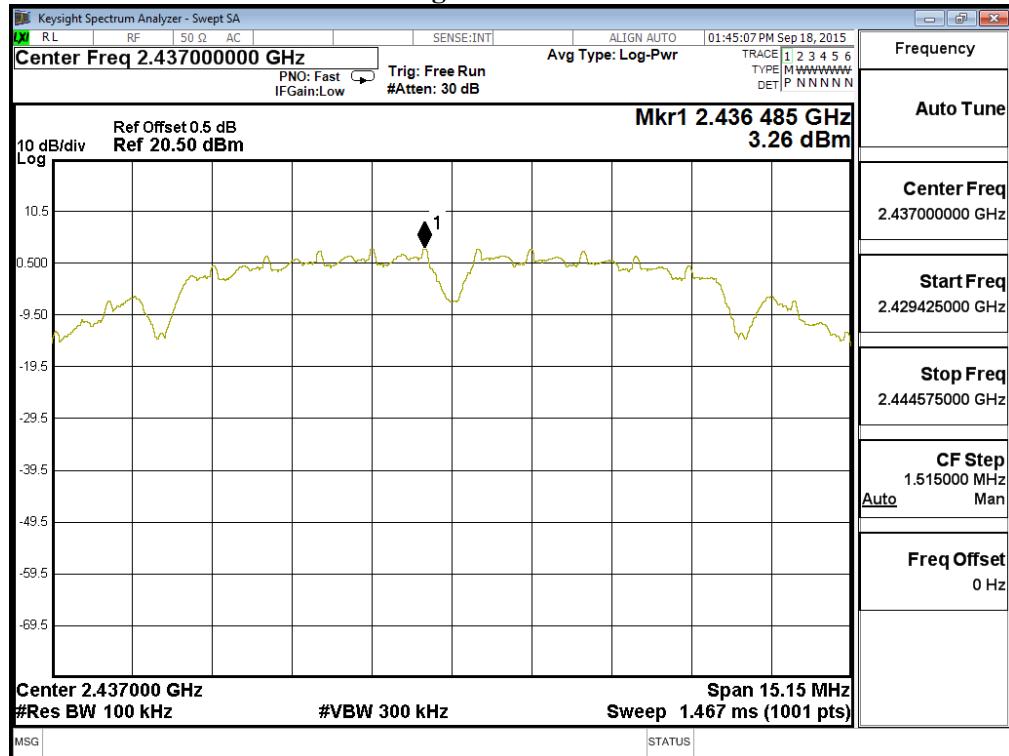
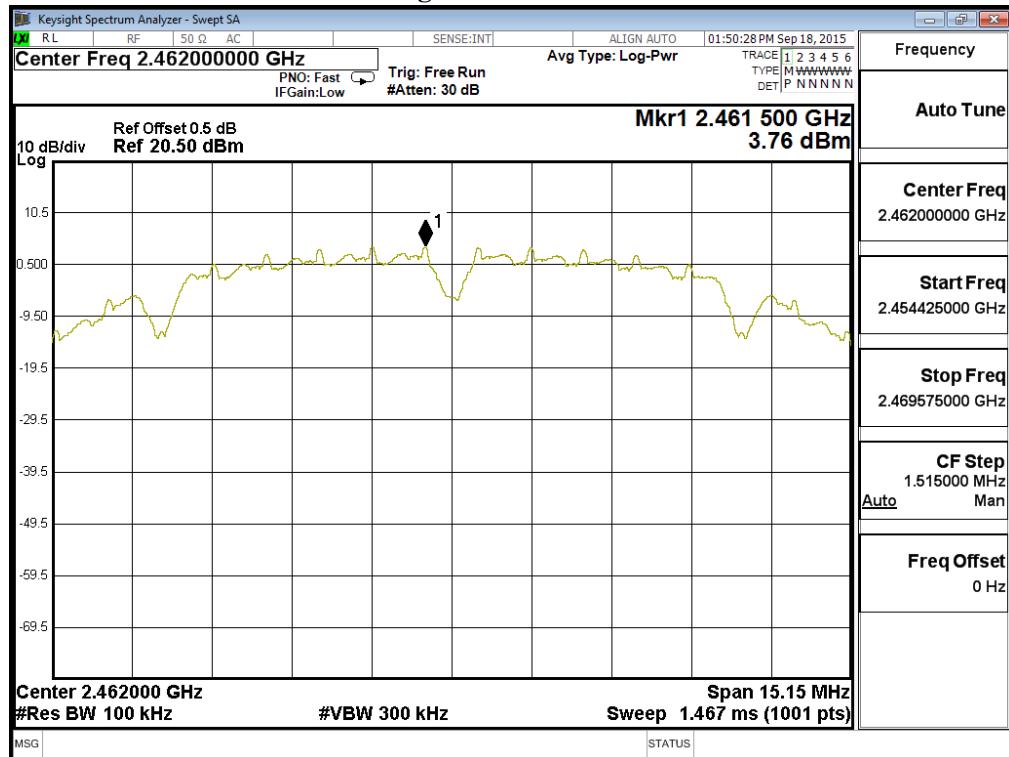


Figure Channel 11:



Product : SoundBar Speaker
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	-4.420	< 8dBm	Pass
06	2437	-0.850	< 8dBm	Pass
11	2462	1.280	< 8dBm	Pass

Figure Channel 01:

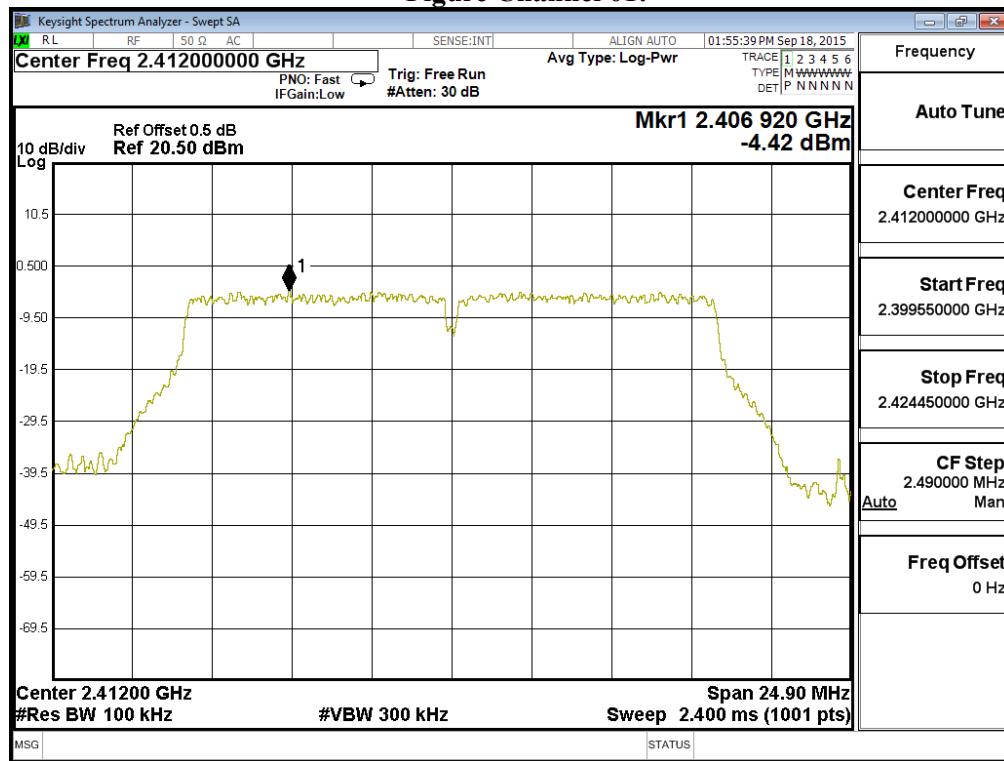


Figure Channel 06:

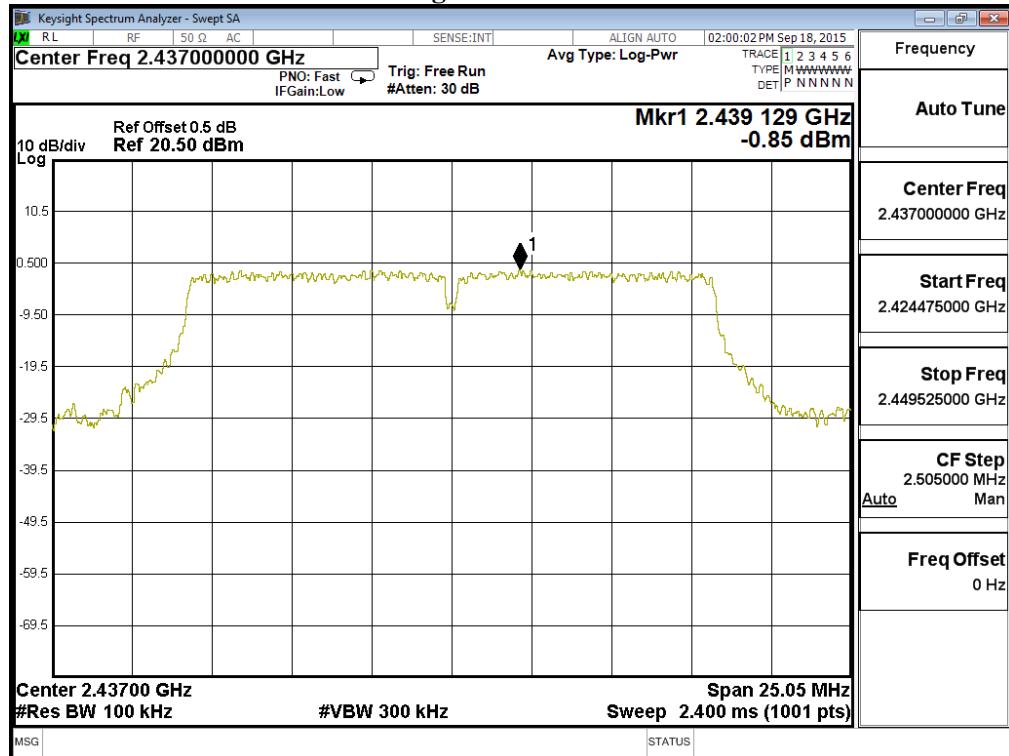
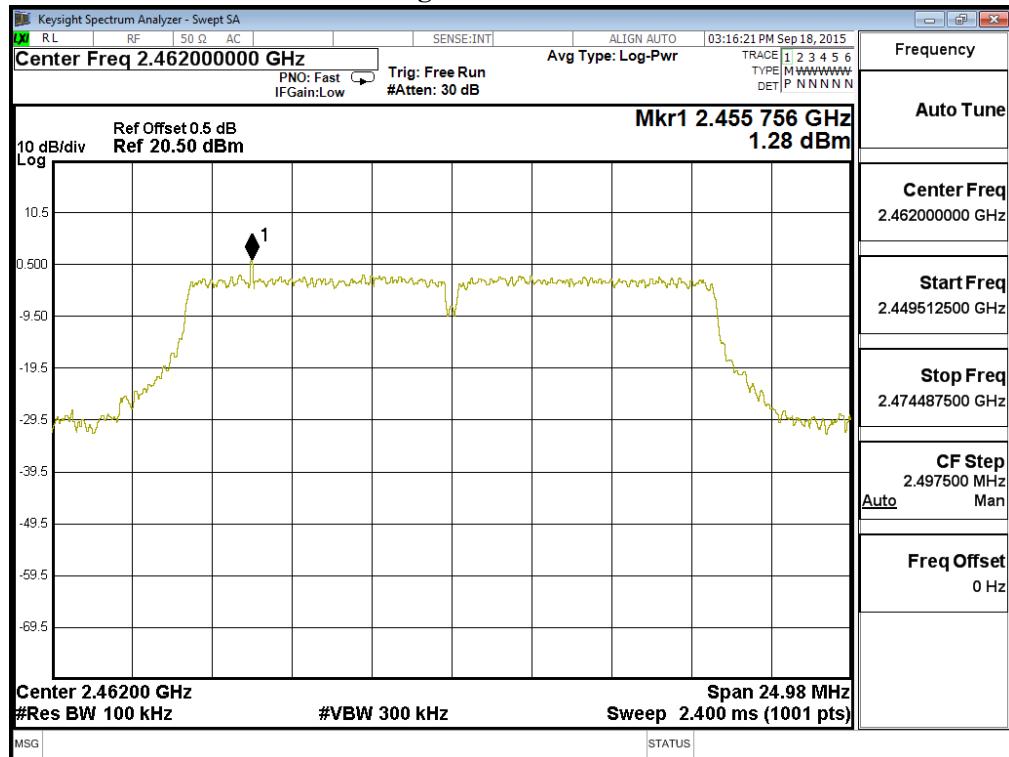


Figure Channel 11:



Product : SoundBar Speaker
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	-4.340	< 8dBm	Pass
06	2437	-1.370	< 8dBm	Pass
11	2462	-0.100	< 8dBm	Pass

Figure Channel 01:

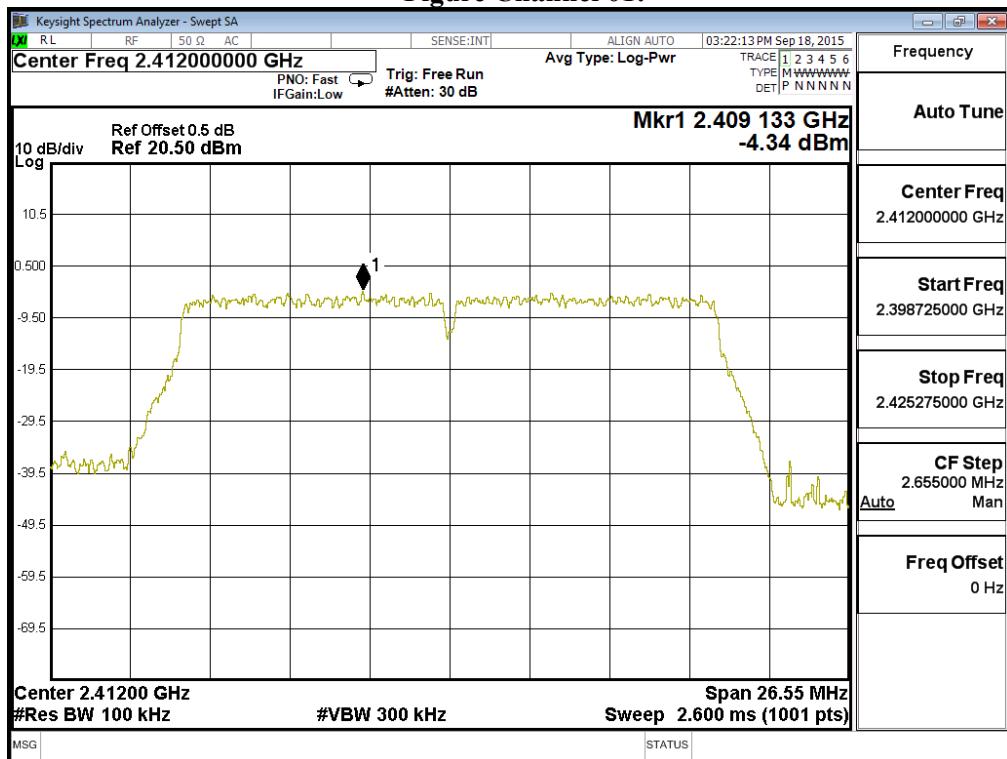


Figure Channel 06:

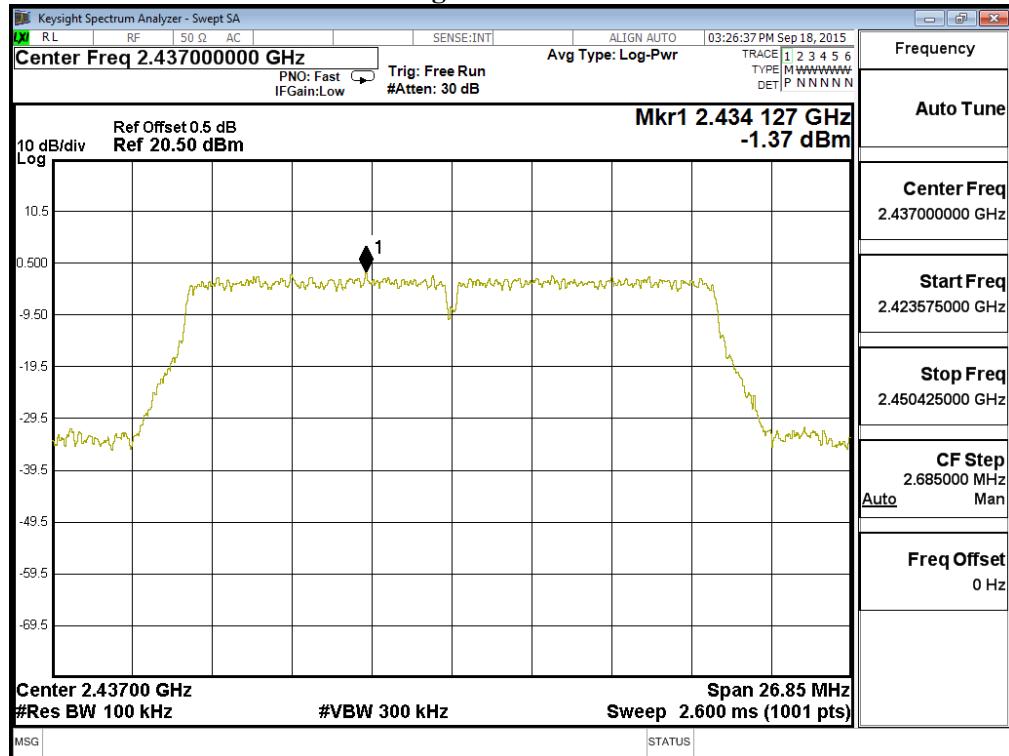
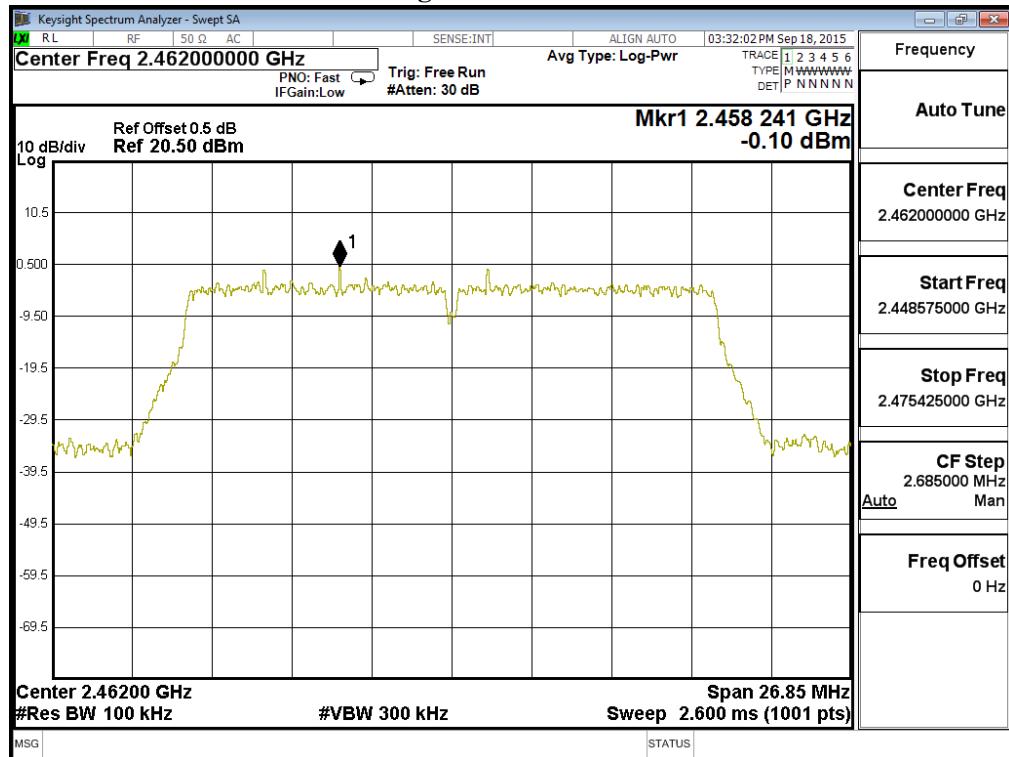


Figure Channel 11:



Product : SoundBar Speaker
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
03	2422	-6.720	< 8dBm	Pass
06	2437	-4.060	< 8dBm	Pass
09	2452	-6.670	< 8dBm	Pass

Figure Channel 03:

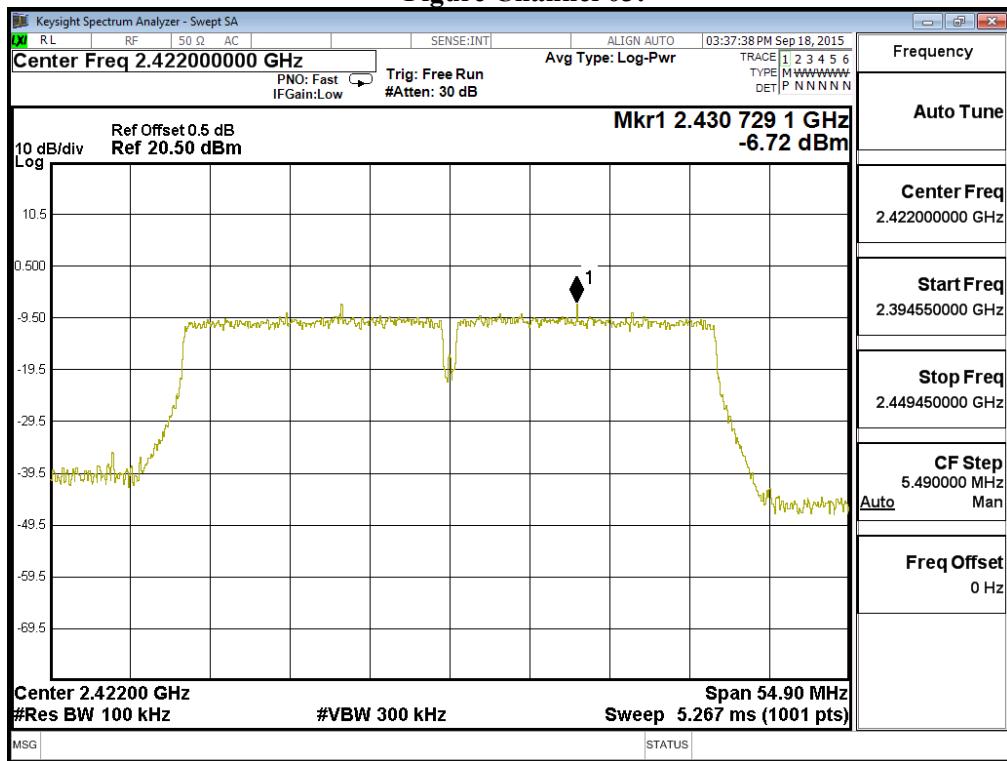


Figure Channel 06:

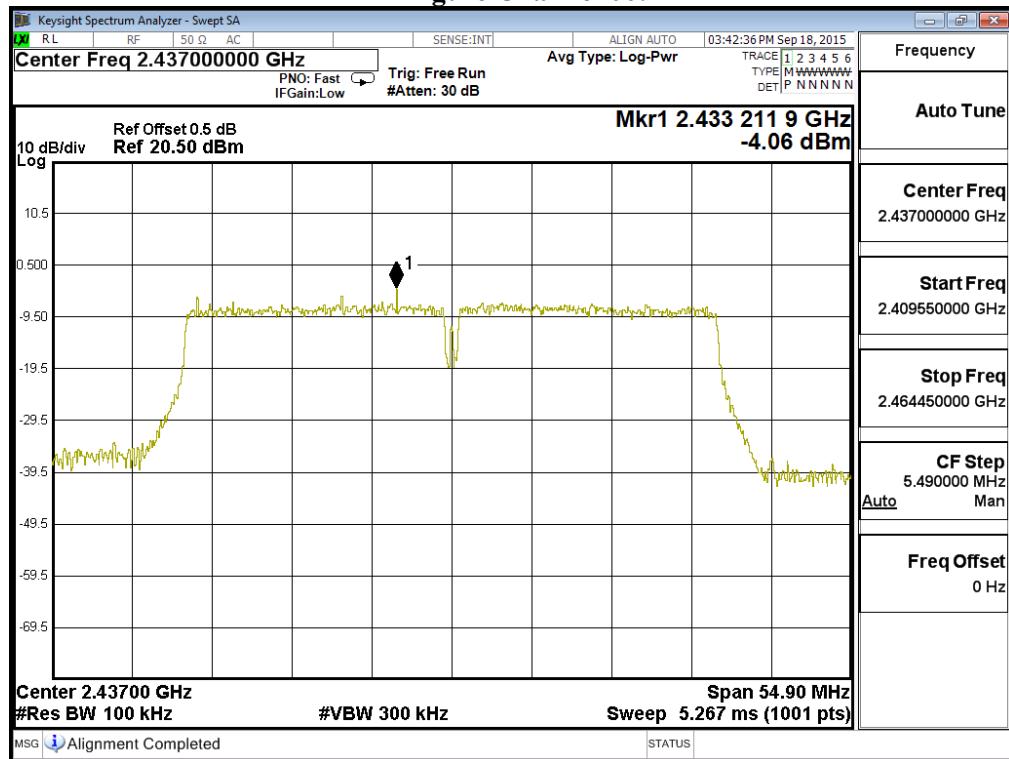
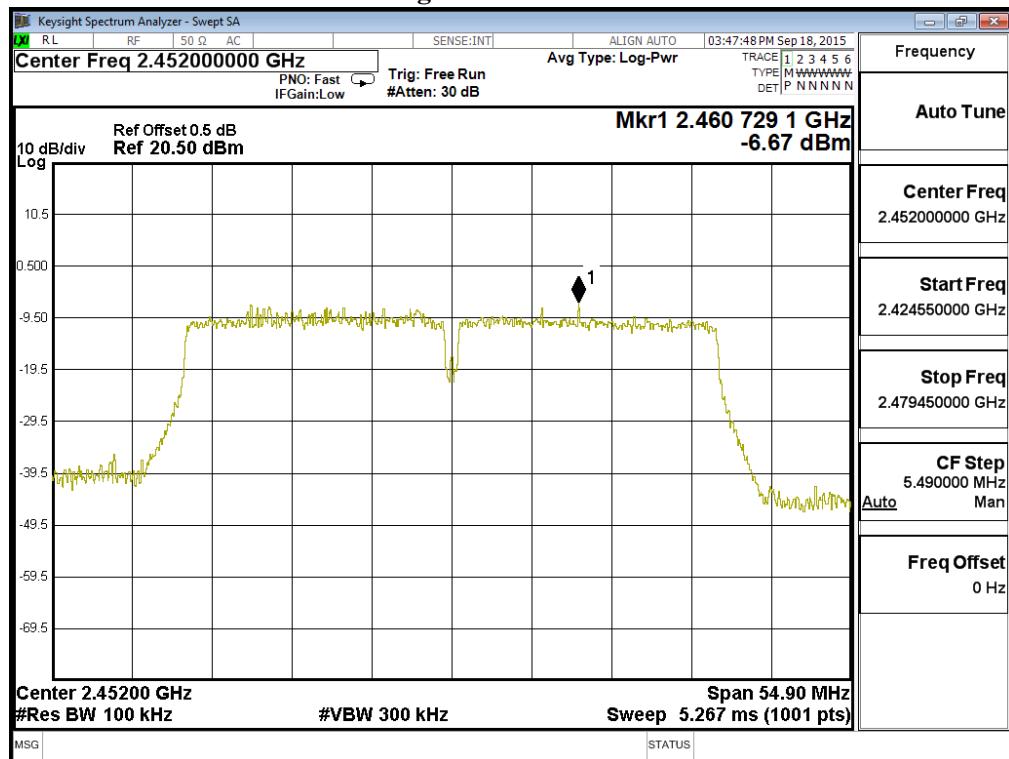


Figure Channel 09:



9. EMI Reduction Method During Compliance Testing

No modification was made during testing.

Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs