

FCC PART 15C TEST REPORT FOR CERTIFICATION
On Behalf of

Beautiful Enterprise Co., Ltd.

Soundbar Home Theater Speaker

Model Number: NS-SB314

FCC ID: UZZNSSB314

Prepared for : Beautiful Enterprise Co., Ltd.
27th Floor, Beautiful Group Tower, 77 Connaught Road
Central, Hong Kong

Prepared By : Audix Technology (Shenzhen) Co., Ltd.
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Report Number : ACS-F14080
Date of Test : Jan.20~Mar.01, 2014
Date of Report : Mar.12, 2014

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TEST REPORT CERTIFICATION

Applicant : Beautiful Enterprise Co., Ltd.
Manufacturer : Beautiful Enterprise Co., Ltd.
Factory : Shenzhen Synchron Electronics Co., Ltd.
EUT Description : Soundbar Home Theater Speaker
FCC ID : UZZNSSB314
(A) MODEL NO. : NS-SB314
(B) SERIAL NO. : N/A
(C) POWER SUPPLY : AC 100-240V, 50/60Hz
(D) TEST VOLTAGE : DC 18V From Adapter Input AC 120V/60Hz

Tested for comply with:
FCC Rules and Regulations Part 15 Subpart C: 2012
Test procedure used:
ANSI C63.10:2012

The device described above is tested by AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. to confirm comply with all the FCC Part 15 Subpart C requirements. The test results are contained in this test report and AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. is assumed full responsibility for the accuracy and completeness of these tests. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC and IC requirements. This report contains data that are not covered by the NVLAP accreditation.

This Report is made under FCC Part 2.1075. No modifications were required during testing to bring this product into compliance.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Test : Jan.20~ Mar.01, 2014 Report of date: Mar.12, 2014

Prepared by : Julia Zhu Reviewed by : Sunny Lu
Julia Zhu / Assistant Sunny Lu / Assistant Manager



信華科技(深圳)有限公司
Audix Technology (Shenzhen) Co., Ltd.
EMC 部門報告專用章

Stamp only for EMC Dept. Report

Signature: David Jin 3.12

Approved & Authorized Signer :

David Jin / Manager

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION		
Description of Test Item	Standard	Results
Power Line Conducted Emission Test	FCC Part 15: 15.207 ANSI C63.10:2012	PASS
Radiated Emission Test	FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.10:2012	PASS
Conducted Spurious Emissions	FCC Part 15: 15.247(a)(1) ANSI C63.10:2012	PASS
Carrier Frequency Separation Test	FCC Part 15: 15.247(a)(1) ANSI C63.10:2012	PASS
6dB Bandwidth Test	FCC Part 15: 15.215 ANSI C63.10:2012	PASS
Maximum Peak Output Power Test	FCC Part 15: 15.247(b)(1) ANSI C63.10:2012	PASS
Band Edge Compliance Test	FCC Part 15: 15.247(d) ANSI C63.10:2012	PASS
Power Spectral Density Test	FCC Part 15: 15.247(d) ANSI C63.10:2012	PASS

2. GENERAL INFORMATION

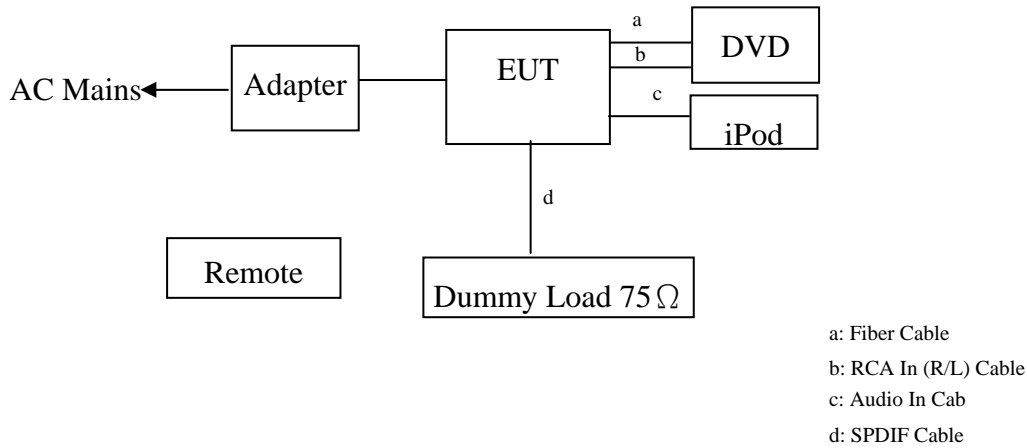
2.1. Description of Device (EUT)

Product Name	: Soundbar Home Theater Speaker
Model Number	: NS-SB314
FCC ID	: UZZNSSB314
Radio	: Bluetooth V3.0 +EDR; Bluetooth V4.0
Operation Frequency	: Bluetooth: 2402-2480MHz
Modulation Technology	: Bluetooth V3.0+EDR: GFSK, π /4DQPSK, 8DPSK Bluetooth V4.0: GFSK
Antenna Assembly Gain	: Integrated PCB Antenna, -1.72dBi PK gain
Applicant	: Beautiful Enterprise Co., Ltd. 27th Floor, Beautiful Group Tower, 77 Connaught Road Central, Hong Kong
Manufacturer	: Beautiful Enterprise Co., Ltd. 27th Floor, Beautiful Group Tower, 77 Connaught Road Central, Hong Kong
Factory	: Shenzhen Synchron Electronics Co., Ltd. No. 9 Mei Li Road, Xia Men Lin, Fu Tian Area, Shenzhen, Guangdong, China
Power Adapter #1	: Manufacture: SHENZHEN JING QUAN HUA ELECTRONICS CO., LTD. M/N: NSA45EU-180250 Cable: Unshielded, Detachable, 1.6m
Power Adapter #2	: Manufacture: Ten Pao Industrial Co Ltd. M/N: S048CU1800250 Cable: Unshielded, Detachable, 1.8m
Remote	: M/N: RMC-SB314
ACR IN (R/L)Cable	: Unshielded, Detachable, 1.8m
Audio Cable	: Unshielded, Detachable, 1.8m
Date of Test	: Jan.20~Mar.01, 2014
Date of Receipt	: Jan.18, 2014
Sample Type	: Prototype production

2.2. Tested Supporting System Details

No.	Description	ACS No.	Manufacturer	Model	Serial Number	Approved type
1.	iPod nano	ACS-EMC-IP01	APPLE	A1199	YM706MLDVQ5	<input checked="" type="checkbox"/> FCC DoC <input checked="" type="checkbox"/> BSMI ID: R33057
	Power Cord: Shielded, Detachable, 1.0m					
2.	DVD	--	VIEIO	VBR135	---	---
	Power Cord: Shielded, Detachable, 1.0m SPDIF Cable: Unshielded, Detachable, 1.8m Fiber Cable: Unshielded, Detachable, 1.0m					

2.3. Block Diagram of connection between EUT and simulators



(EUT: Soundbar Home Theater Speaker)

2.4. Test information

The test software “bluesuite.exe” was used to control EUT work in Continuous TX mode, and select test channel.

Tested mode, channel, and data rate information			
Mode	data rate (Mbps)	Channel	Frequency (MHz)
Tx Mode GFSK modulation	1	Low :CH 0	2402
	1	Middle: CH19	2440
	1	High: CH39	2480

2.5. Test Facility

Site Description

Name of Firm : Audix Technology (Shenzhen) Co., Ltd.
No. 6, Ke Feng Rd., 52 Block, Shenzhen
Science & Industrial Park, Nantou,
Shenzhen, Guangdong, China

3m Anechoic Chamber : Certificated by FCC, USA
Registration Number: 90454
Valid Date: Feb.22, 2015

3m & 10m Anechoic Chamber : Certificated by FCC, USA
Registration Number: 794232
Valid Date: Oct.31, 2015

EMC Lab. : Certificated by Industry Canada
Registration Number: IC 5183A-1
Valid Date: Jun.13, 2014

: Certificated by DAkkS, Germany
Registration No: D-PL-12151-01-00
Valid Date: Dec.15, 2016

: Accredited by NVLAP, USA
NVLAP Code: 200372-0
Valid Date: Mar.31, 2014

2.6. Measurement Uncertainty (95% confidence levels, k=2)

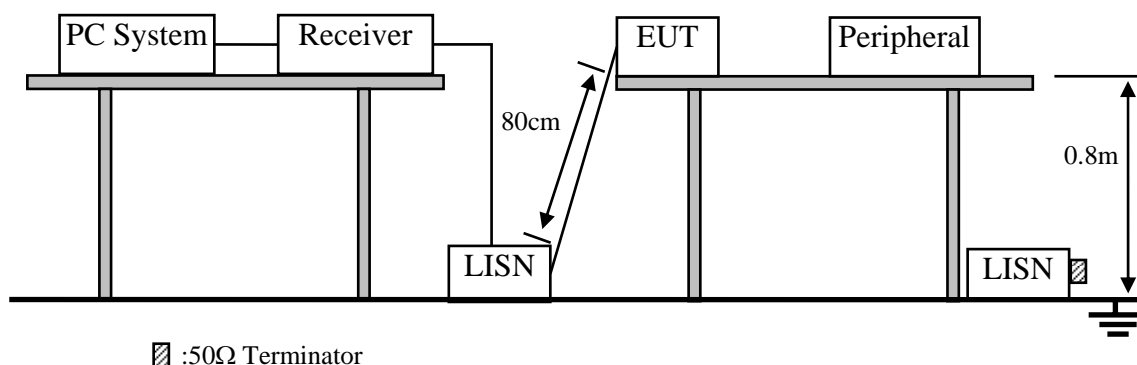
Test Item	Uncertainty
Uncertainty for Conduction emission test in No. 1 Conduction	3.08dB(9KHz to 150KHz)
	3.1dB(150KHz to 30MHz)
Uncertainty for Radiation Emission test in 3m chamber	3.22 dB(30~200MHz, Polarize: H)
	3.23 dB(30~200MHz, Polarize: V)
	3.49 dB(200M~1GHz, Polarize: H)
	3.39 dB(200M~1GHz, Polarize: V)
Uncertainty for Radiation Emission test in 3m chamber (1GHz-18GHz)	4.97 dB(1~6GHz, Distance: 3m)
	4.99 dB(6~18GHz, Distance: 3m)
Uncertainty for Radiated Spurious Emission test in RF chamber	3.57 dB
Uncertainty for Conduction Spurious emission test	2.00 dB
Uncertainty for Output power test	0.73 dB
Uncertainty for Bandwidth test	83 kHz
Uncertainty for DC power test	0.038 %
Uncertainty for test site temperature and humidity	0.6°C
	3%

3. POWER LINE CONDUCTED EMISSION MEASUREMENT

3.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	1# Shielding Room	AUDIX	N/A	N/A	Apr.18, 13	1 Year
2.	Test Receiver	Rohde & Schwarz	ESHS10	838693/001	Oct.31, 13	1 Year
3.	L.I.S.N.#1	Rohde & Schwarz	ESH2-Z5	834066/011	Oct.31, 13	1 Year
4.	L.I.S.N.#3	Kyoritsu	KNW-242C	8-1920-1	May.08, 13	1 Year
5.	Terminator	Hubersuhner	50Ω	No. 1	May.08, 13	1 Year
6.	Terminator	Hubersuhner	50Ω	No. 2	May.08, 13	1 Year
7.	RF Cable	Fujikura	3D-2W	No.1	May.08, 13	1 Year
8.	Coaxial Switch	Anritsu	MP59B	M50564	May.08, 13	1 Year
9.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100341	May.08, 13	1 Year
10.	MPEG2 Measurement Generator	ROHDE&SCHW ARZ	DVG	100319	Dec.11, 13	1 Year
11.	TV Transmitter	ROHDE&SCHW ARZ	SFQ	100521	May.08, 13	1 Year
12.	Signal Generator	HP	8648A	3625U00573	May.08, 13	1 Year
13.	Pattern Generator	Philips	PM5418	LO625020	May.08, 13	1 Year

3.2. Block Diagram of Test Setup



3.3. Power Line Conducted Emission Test Limits

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

3.4. Configuration of EUT on Test

The following equipment are installed on Power Line Conducted Emission Test to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

3.4.1. Soundbar Home Theater Speaker (EUT)

Model Number : NS-SB314
Serial Number : N/A

3.5. Operating Condition of EUT

3.5.1. Setup the EUT and simulator as shown as Section 3.2.

3.5.2. Turn on the power of all equipment.

3.5.3. Let the EUT work in test mode (TX Mode) and measure it.

3.6. Test Procedure

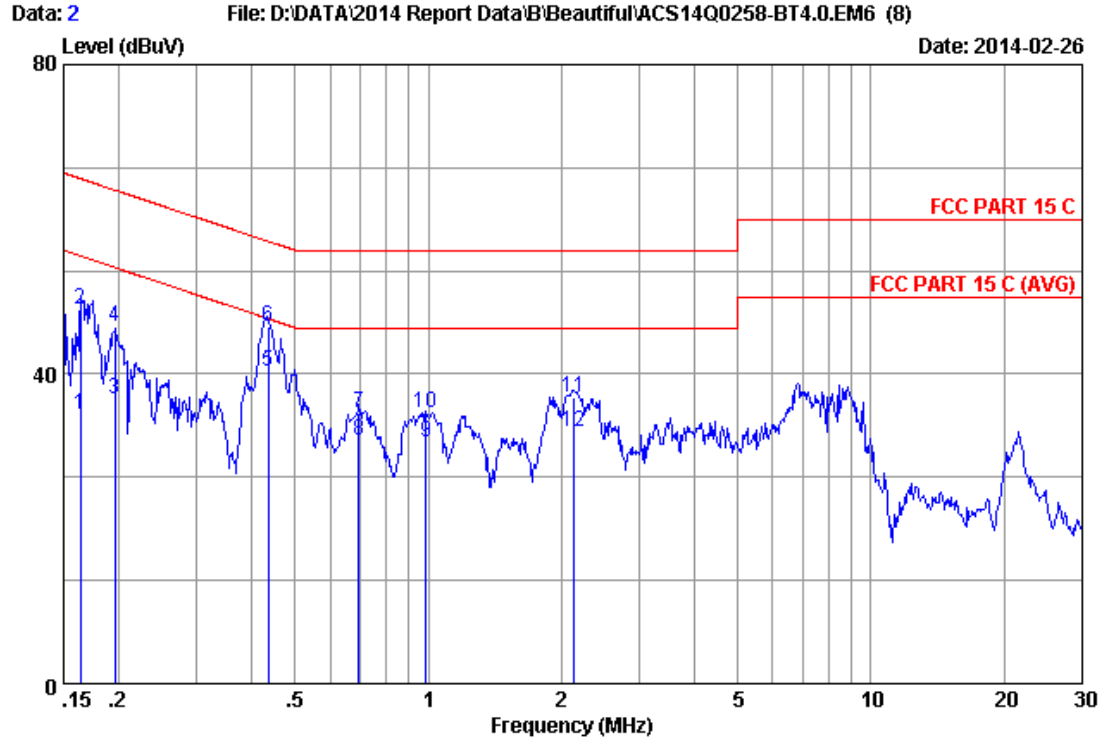
The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#). this provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10-2012 on conducted Emission test.

The bandwidth of test receiver (R&S TEST RECEIVER ESHS10) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked. The test result are reported on Section 3.7.

3.7. Conducted Emission at Mains Terminals Test Results

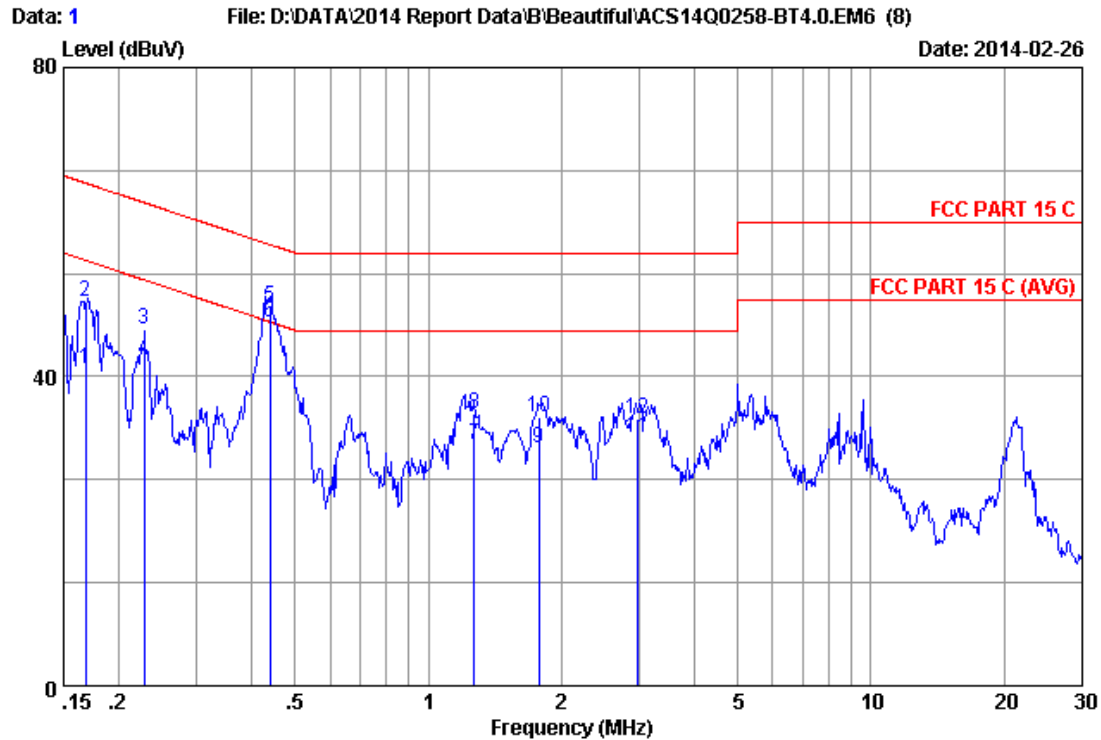
PASS. (All emissions not reported below are too low against the prescribed limits.)



Site no : 1#conduction Data No : 2
 Dis./Ant. : ** 2014 ESH2-Z5 LINE
 Limit : FCC PART 15 C
 Env./Ins. : 25.3°C/50% Engineer : Alan_Chen
 EUT : Soundbar Home Theater Speaker
 Power Rating : DC 18V Adapter Input AC 120V/60Hz
 Test Mode : Tx Mode
 M/N: NS-SB314
 Adapter M/N: S048CU1800250

No	Freq (MHz)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.16400	9.87	24.70	34.69	55.26	20.57	Average
2	0.16400	9.87	38.48	48.47	65.26	16.79	QP
3	0.19550	9.88	26.79	36.80	53.80	17.00	Average
4	0.19550	9.88	36.04	46.05	63.80	17.75	QP
5	0.43400	9.88	30.25	40.28	47.18	6.90	Average
6	0.43400	9.88	36.16	46.19	57.18	10.99	QP
7	0.69725	9.89	25.03	35.08	46.00	10.92	Average
8	0.69790	9.89	21.36	31.41	56.00	24.59	QP
9	0.98800	9.89	21.05	31.11	46.00	14.89	Average
10	0.98914	9.89	24.89	34.95	56.00	21.05	QP
11	2.133	9.91	26.80	36.90	46.00	9.10	Average
12	2.133	9.91	22.37	32.47	56.00	23.53	QP

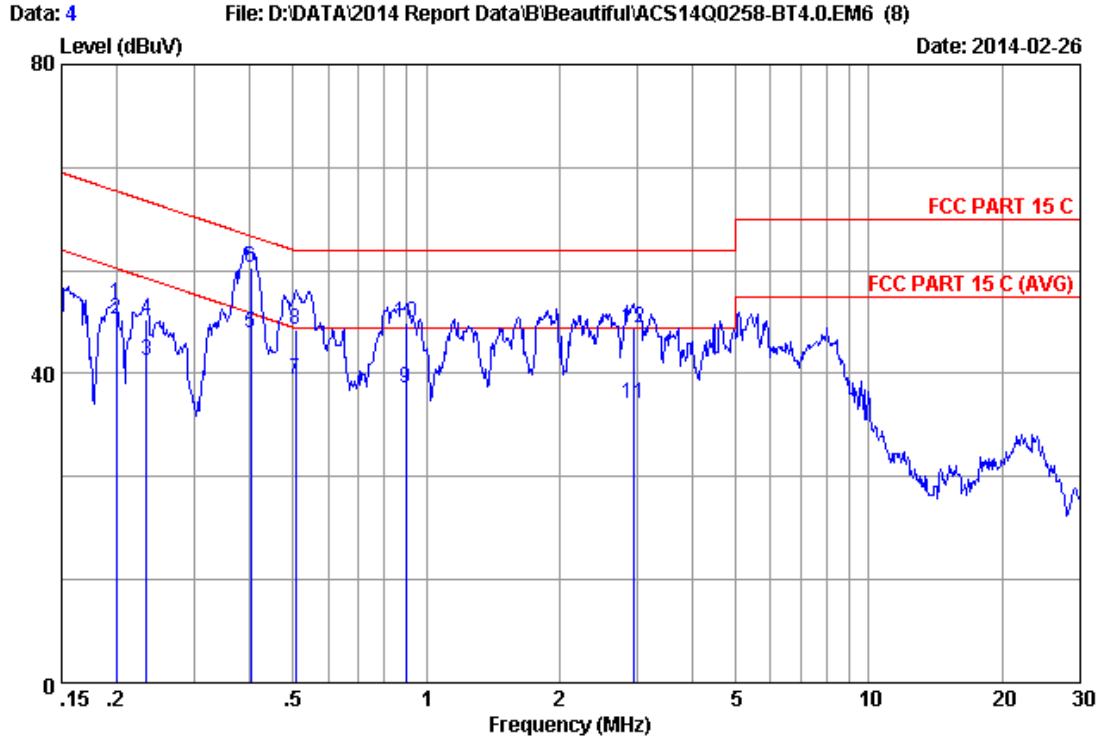
Remarks: 1. Emission Level = Cable Loss (Include 10dB pulse limit) + Reading.
 2. If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



Site no :1#conduction Data No :1
 Dis./Ant. **: 2014 ESH2-Z5 NEUTRAL
 Limit :FCC PART 15 C
 Env./Ins. :25.3°C/50% Engineer :Alan_Chen
 EUT :Soundbar Home Theater Speaker
 Power Rating :DC 18V Adapter Input AC 120V/60Hz
 Test Mode :Tx Mode
 M/N:NS-SB314
 Adapter M/N:S048CU1800250

No	Freq (MHz)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.16800	9.87	31.05	41.05	65.06	24.01	Average
2	0.16800	9.87	39.69	49.69	65.06	15.37	QP
3	0.22800	9.88	36.16	46.17	62.52	16.35	Average
4	0.22800	9.88	32.02	42.03	62.52	20.49	QP
5	0.43966	9.88	38.89	48.92	57.07	8.15	Average
6	0.43966	9.88	37.01	47.04	57.07	10.03	QP
7	1.268	9.90	21.01	31.09	56.00	24.91	Average
8	1.268	9.90	25.16	35.24	56.00	20.76	QP
9	1.773	9.91	20.58	30.68	56.00	25.32	Average
10	1.773	9.91	24.58	34.68	56.00	21.32	QP
11	2.980	9.92	22.03	32.19	56.00	23.81	Average
12	2.980	9.92	24.36	34.52	56.00	21.48	QP

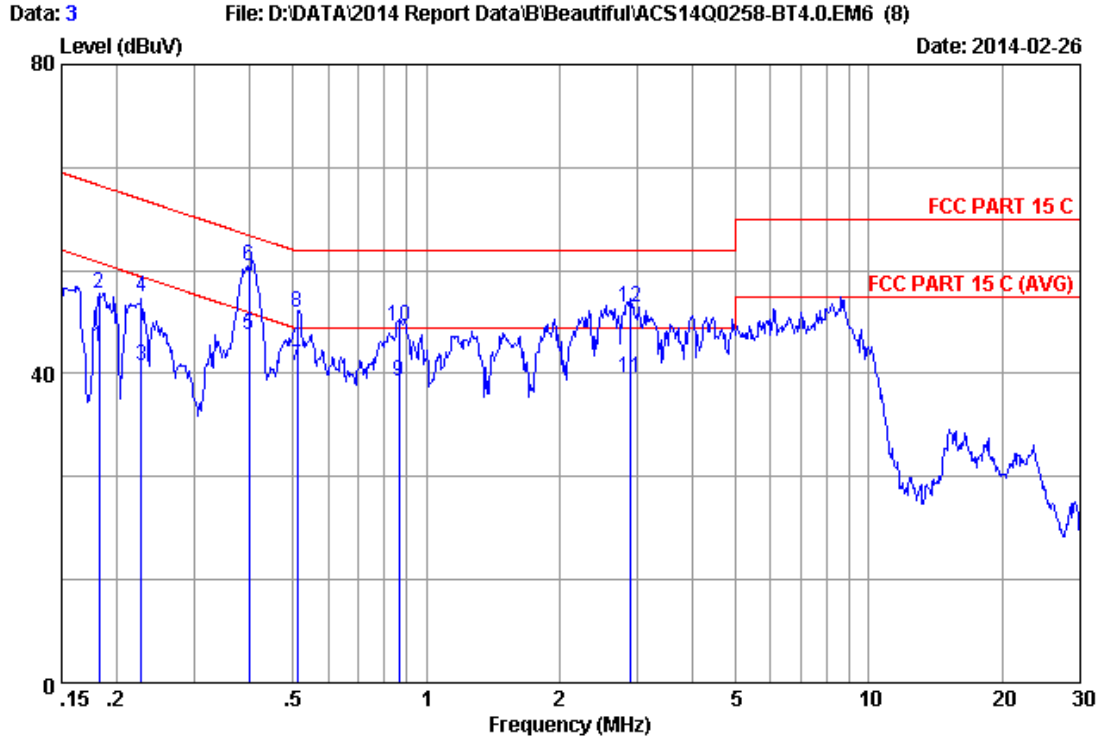
Remarks: 1.Emission Level=Cable Loss(Include 10dB pulse limit)+Reading.
 2.If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



Site no :1#conduction Data No :4
 Dis./Ant. :** 2014 ESH2-Z5 LINE
 Limit :FCC PART 15 C
 Env./Ins. :25.3°C/50% Engineer :Alan_Chen
 EUT :Soundbar Home Theater Speaker
 Power Rating :DC 18V Adapter Input AC 120V/60Hz
 Test Mode :Tx Mode
 M/N:NS-SB314
 Adapter M/N:NSA45EU-180250

No	Freq (MHz)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.19900	9.88	39.02	49.03	53.65	4.62	Average
2	0.19900	9.88	37.03	47.04	63.65	16.61	QP
3	0.23285	9.88	31.64	41.65	52.35	10.70	Average
4	0.23285	9.88	37.06	47.07	62.35	15.28	QP
5	0.40187	9.88	35.26	45.29	47.81	2.52	Average
6	0.40187	9.88	43.73	53.76	57.81	4.05	QP
7	0.50737	9.88	29.20	39.23	46.00	6.77	Average
8	0.50737	9.88	35.75	45.78	56.00	10.22	QP
9	0.89800	9.89	28.06	38.12	46.00	7.88	Average
10	0.89800	9.89	36.56	46.62	56.00	9.38	QP
11	2.931	9.92	26.01	36.15	46.00	9.85	Average
12	2.931	9.92	35.68	45.82	56.00	10.18	QP

Remarks: 1.Emission Level=Cable Loss(Include 10dB pulse limit)+Reading.
 2.If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



Site no :1#conduction Data No :3
 Dis./Ant. **: 2014 ESH2-Z5 NEUTRAL
 Limit :FCC PART 15 C
 Env./Ins. :25.3°C/50% Engineer :Alan_Chen
 EUT :Soundbar Home Theater Speaker
 Power Rating :DC 18V Adapter Input AC 120V/60Hz
 Test Mode :Tx Mode
 M/N:NS-SB314
 Adapter M/N:NSA45EU-180250

No	Freq (MHz)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.18249	9.88	33.36	43.37	54.37	11.00	Average
2	0.18249	9.88	40.25	50.26	64.37	14.11	QP
3	0.22700	9.88	31.05	41.06	52.56	11.50	Average
4	0.22700	9.88	39.97	49.98	62.56	12.58	QP
5	0.39800	9.88	35.02	45.05	47.90	2.85	Average
6	0.39800	9.88	43.88	53.91	57.90	3.99	QP
7	0.51226	9.88	31.03	41.06	46.00	4.94	Average
8	0.51226	9.88	37.88	47.91	56.00	8.09	QP
9	0.86643	9.89	29.01	39.06	46.00	6.94	Average
10	0.86643	9.89	36.14	46.19	56.00	9.81	QP
11	2.898	9.92	29.26	39.42	46.00	6.58	Average
12	2.898	9.92	38.43	48.59	56.00	7.41	QP

Remarks: 1.Emission Level=Cable Loss(Include 10dB pulse limit)+Reading.
 2.If the average limit is met when using a quasi-peak detector.
 the EUT shall be deemed to meet both limits and measurement
 with average detector is unnecessary.

4. RADIATED EMISSION MEASUREMENT

4.1. Test Equipment

Frequency rang: 30~1000MHz

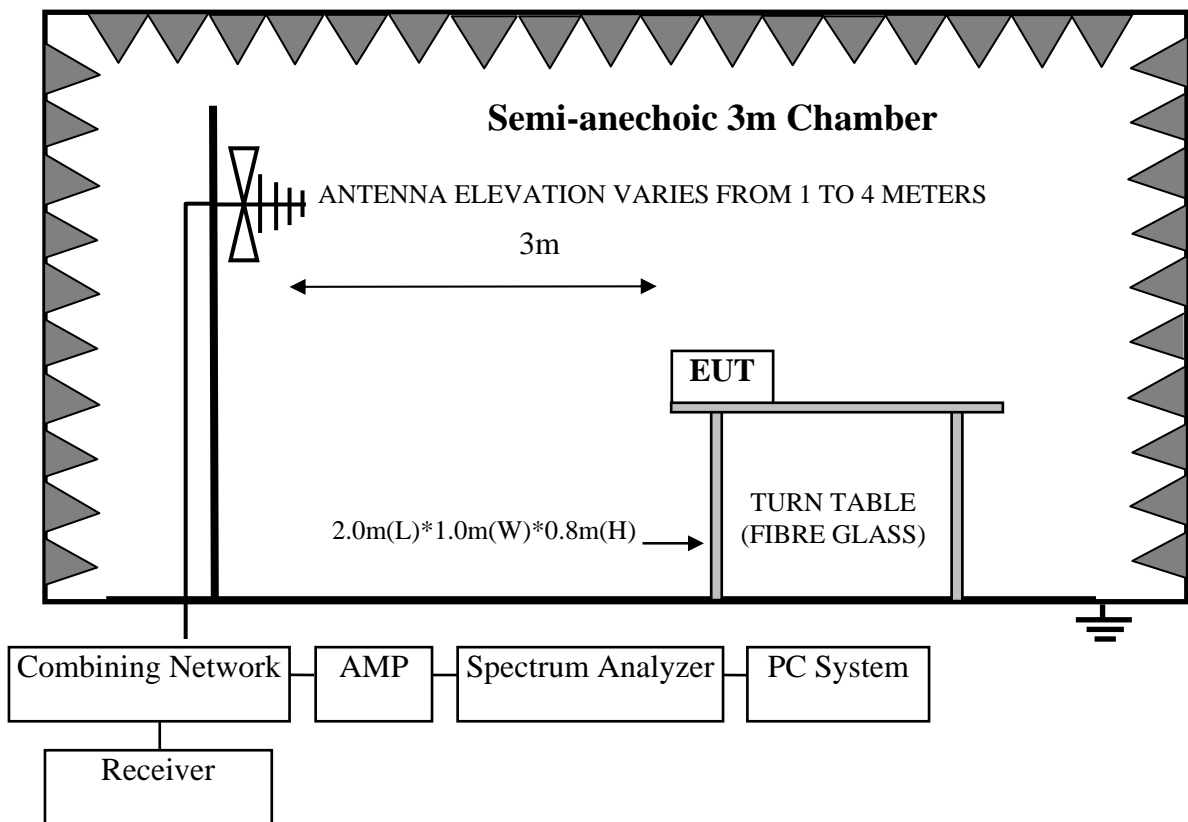
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	3#Chamber	AUDIX	N/A	N/A	Nov.24, 13	1 Year
2	EMI Spectrum	Agilent	E4407B	MY41440292	May.08, 13	1 Year
3	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	May.08, 13	1 Year
4	Amplifier	HP	8447D	2648A04738	May.08, 13	1 Year
5	Bilog Antenna	TESEQ	CBL6112D	35375	May.30, 13	1 Year
6	RF Cable	MIYAZAKI	CFD400-NL	3# Chamber No.1	May.08, 13	1 Year
7	Coaxial Switch	Anritsu	MP59B	M74389	May.08, 13	1 Year

Frequency rang: above 1000MHz

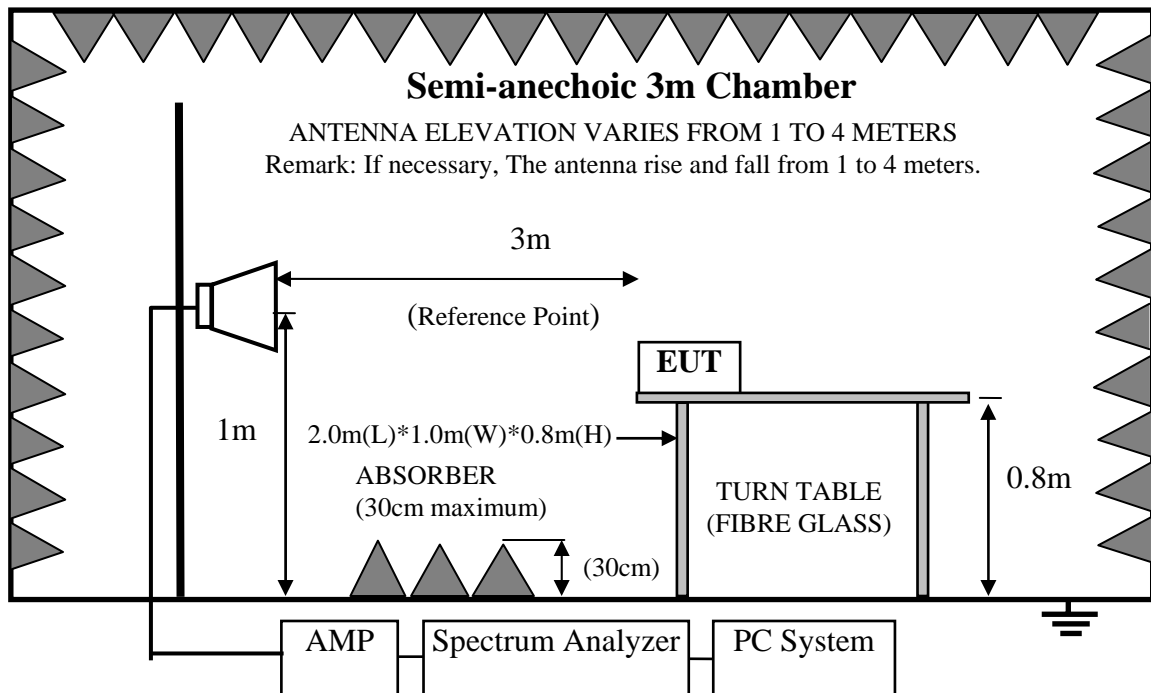
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	3#Chamber	AUDIX	N/A	N/A	Nov.24, 13	1 Year
2	Spectrum Analyzer	Agilent	E4407B	MY41440292	May.08, 13	1 Year
3	Horn Antenna	EMCO	3115	9607-4877	Aug.27, 13	1 Year
4	Amplifier	Agilent	8449B	3008A00863	May.08, 13	1 Year
5	RF Cable	Hubersuhner	SUCOFLEX106	77977/6	May.08, 13	1 Year
	RF Cable	Hubersuhner	SUCOFLEX106	28616/2	May.08, 13	1 Year
6	Horn Antenna	EMCO	3116	00060089	Aug.28, 13	1 Year

4.2. Block Diagram of Test Setup

For frequency range 30MHz-1000MHz



For frequency range 1GHz-25GHz



4.3.Radiated Emission Limit Standard: FCC 15.209

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000MHz	3	74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

- Remark :
- (1) Emission level $\text{dB}\mu\text{V} = 20 \log$ Emission level $\mu\text{V/m}$
 - (2) The smaller limit shall apply at the cross point between two frequency bands.
 - (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.
 - (4) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

4.3.1. 15.205 Restricted bands of operation

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

4.4.EUT Configuration on Test

The following equipment are installed on Radiated Emission Test to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.4.1. Soundbar Home Theater Speaker (EUT)

Model Number : NS-SB314
Serial Number : N/A

4.5. Operating Condition of EUT

- 4.5.1. Setup the EUT and simulator as shown as Section 3.2.
- 4.5.2. Turned on the power of all equipment.
- 4.5.3. Let EUT work in Tx mode.

4.6. Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.10-2012 on radiated emission Test.

This test was performed with EUT in X, Y, Z position, and the worse case was found when EUT in X position as the test photo indicated.

The bandwidth of the EMI test receiver (R&S ESVS10) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's RBW is set at 1MHz and VBW is set at 3MHz for peak emissions measurement above 1GHz

This device is pulse Modulated, a duty cycle factor was used to calculated average level based measured peak level.

The frequency range from 30MHz to 10th harmonic (25GHz) are checked. and no any emissions were found from 18GHz to 25 GHz, So the radiated emissions from 18GHz to 25GHz were not record.

4.7. Radiated Emission Test Results

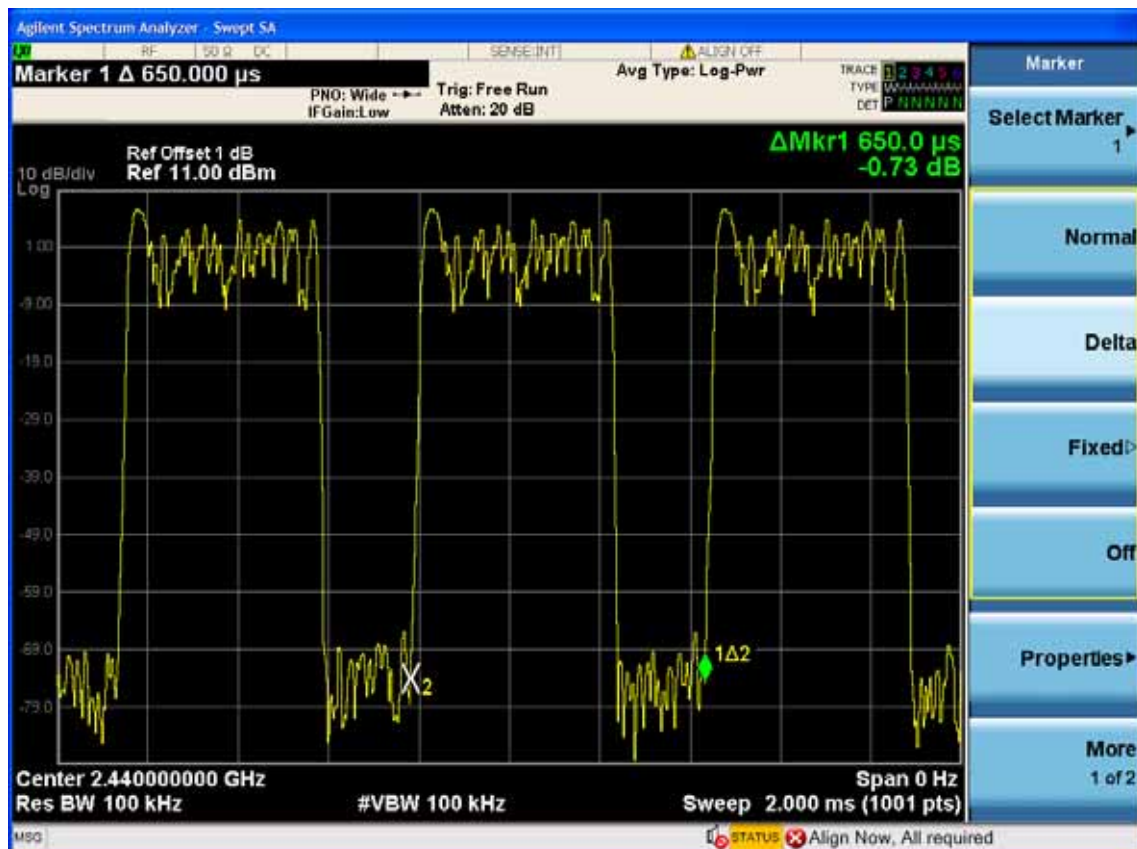
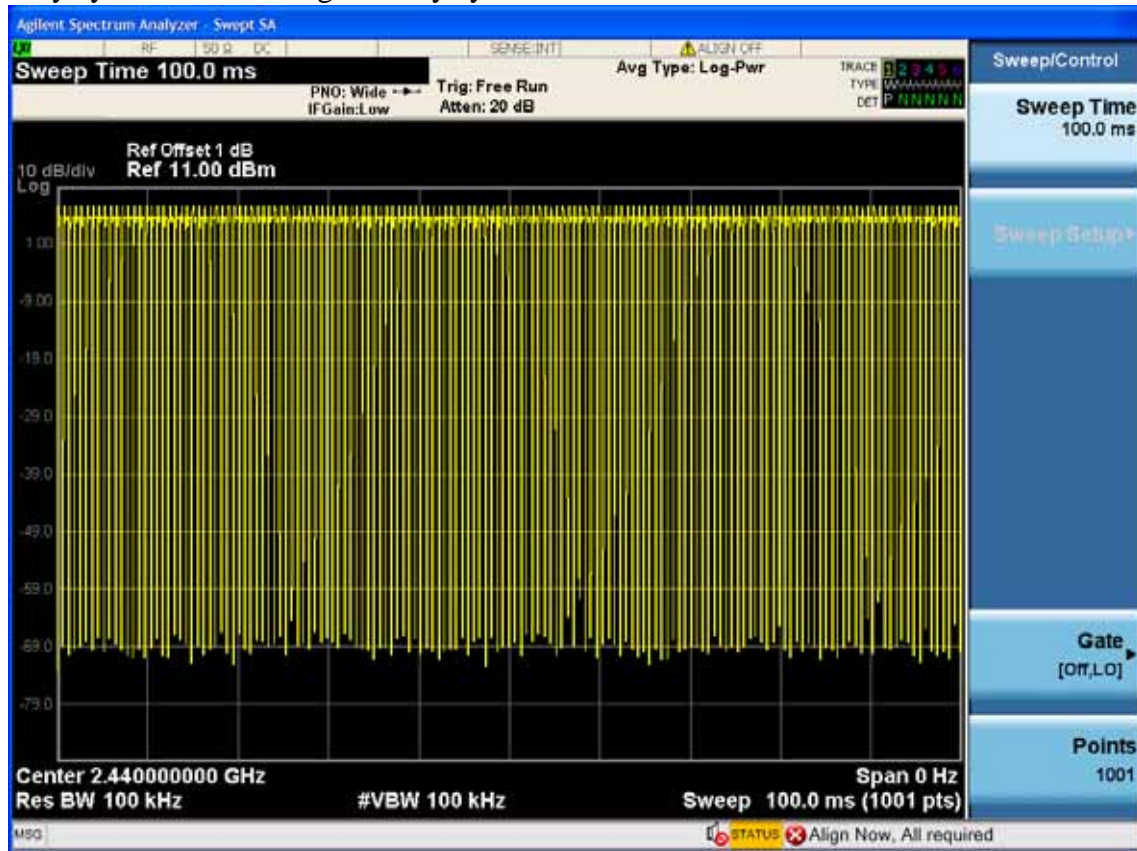
PASS.

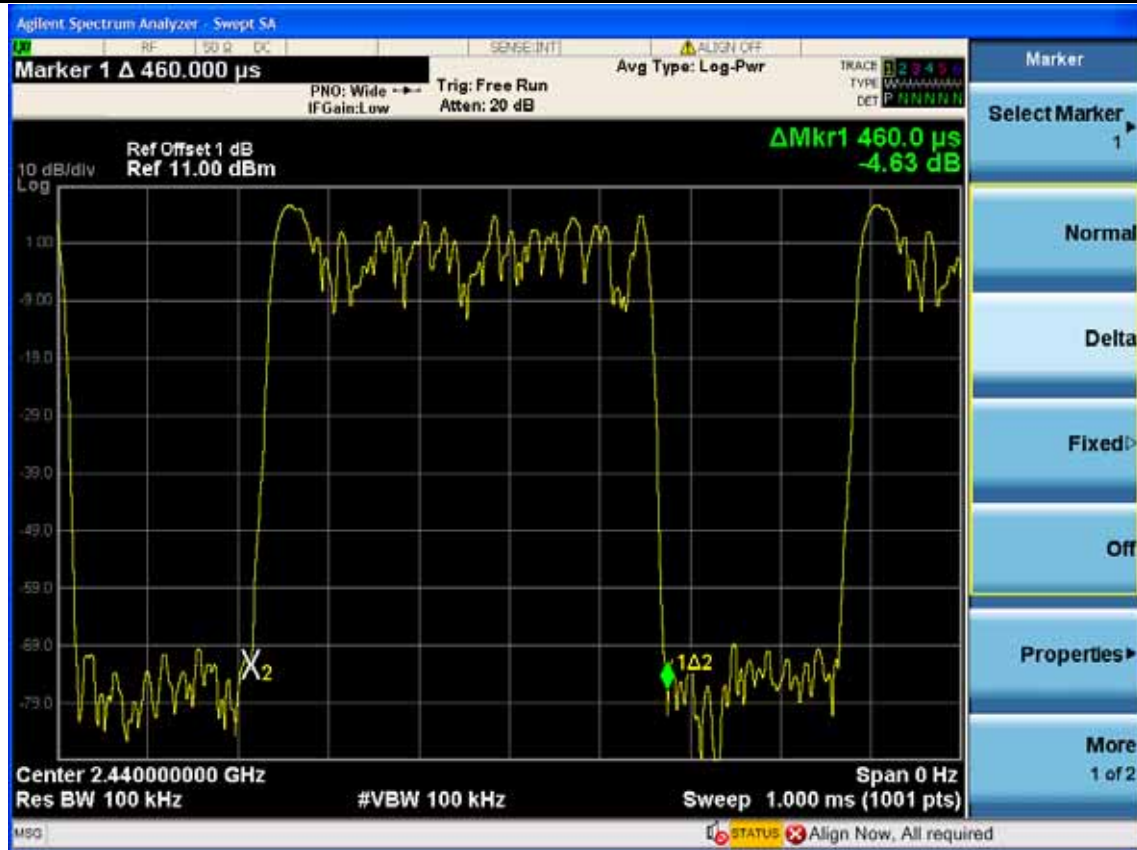
All the emissions from 30MHz to 25GHz were comply with the 15.209 Limit.

Note: The duty cycle factor for calculate average level is 3.00dB, and average limit is 20dB below peak limit, so if peak measured level comply with average limit, the average level was deemed to comply with average limit.

Duty cycle: $460\mu s / 650\mu s * 100\% = 70.77\%$

Duty cycle factor = $20\log (1/\text{duty cycle}) = 3.00$



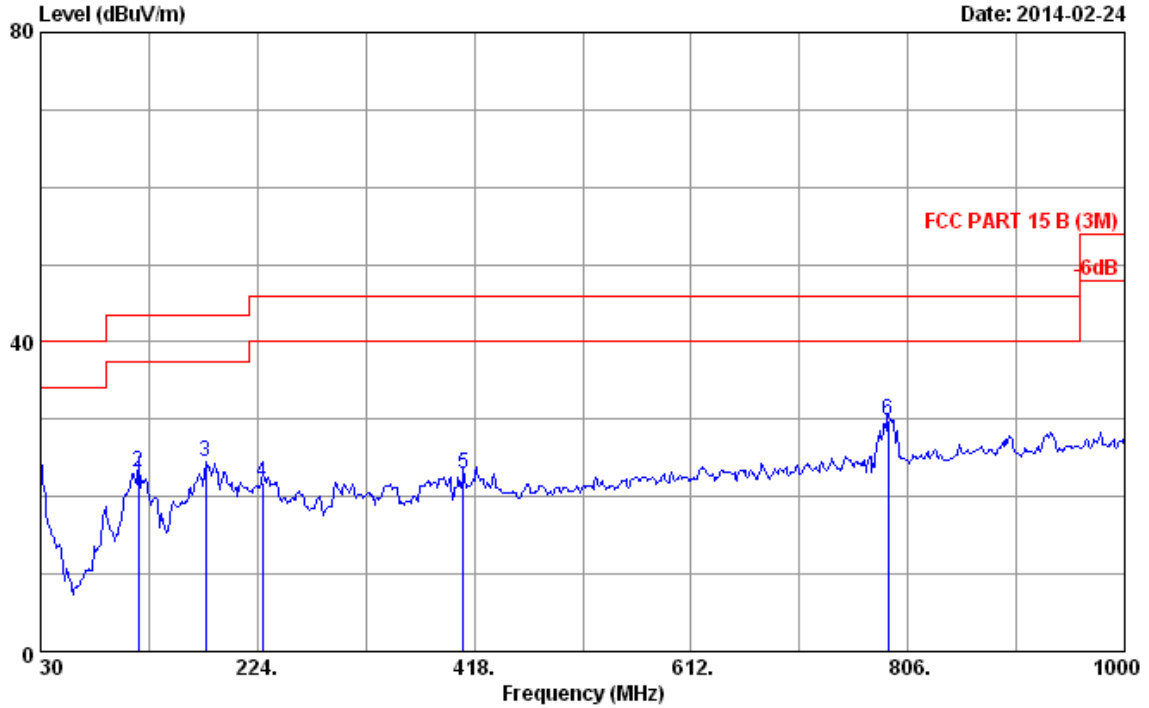


Frequency: 30MHz~1GHz

Data: 1

File: E:\2014 Report Data\B\Beautiful\ACS1400258-BT4.0.EM6 (12)

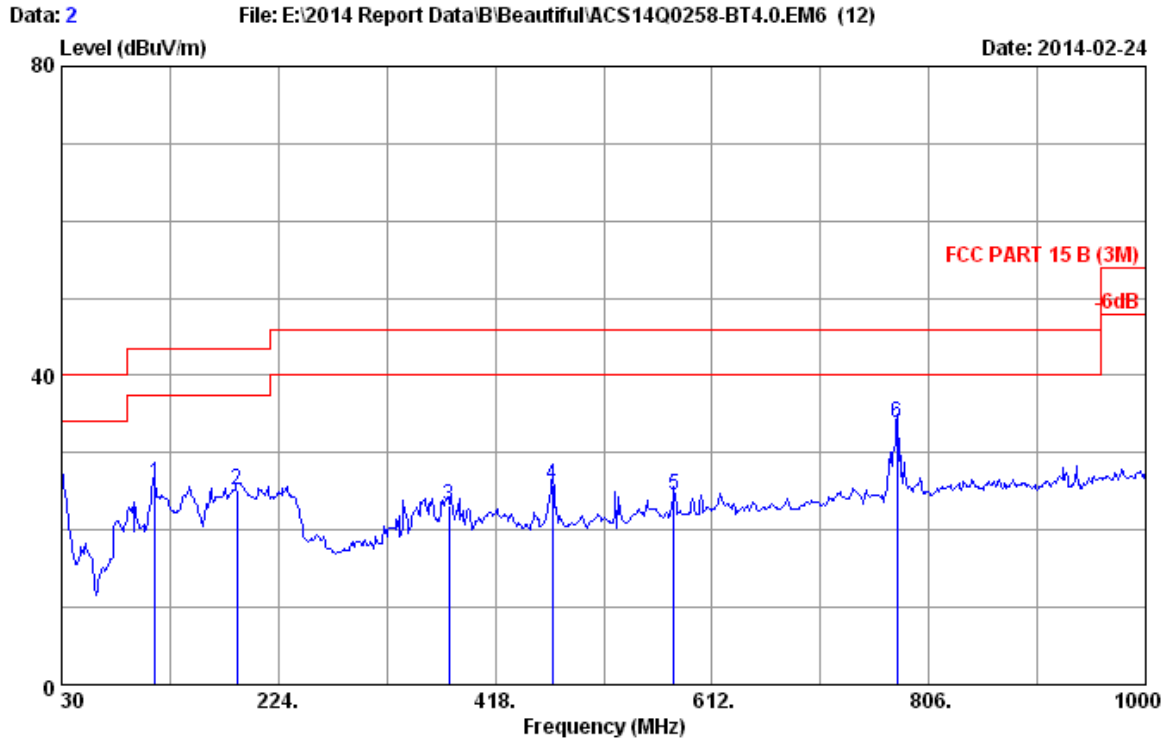
Date: 2014-02-24



Site no. : 3m Chamber Data no. : 1
Dis. / Ant. : 3m 2013 CBL6112D 35375 Ant. pol. : HORIZONTAL
Limit : FCC PART 15 B (3M)
Env. / Ins. : 24°C/56% Engineer : Donjon
EUT : Soundbar Home Theater Speaker
Power rating : DC 18V From Adapter Input AC 120V/60Hz
Test Mode : Tx Mode
M/N: NS-SB314
Adapter Model: S048CU1800250

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	20.10	0.83	2.32	23.25	40.00	16.75	QP
2	117.300	12.70	1.48	8.93	23.11	43.50	20.39	QP
3	177.440	9.83	1.70	12.90	24.43	43.50	19.07	QP
4	228.850	11.14	1.90	8.81	21.85	46.00	24.15	QP
5	408.300	17.03	2.48	3.37	22.88	46.00	23.12	QP
6	788.540	20.70	3.58	5.55	29.83	46.00	16.17	QP

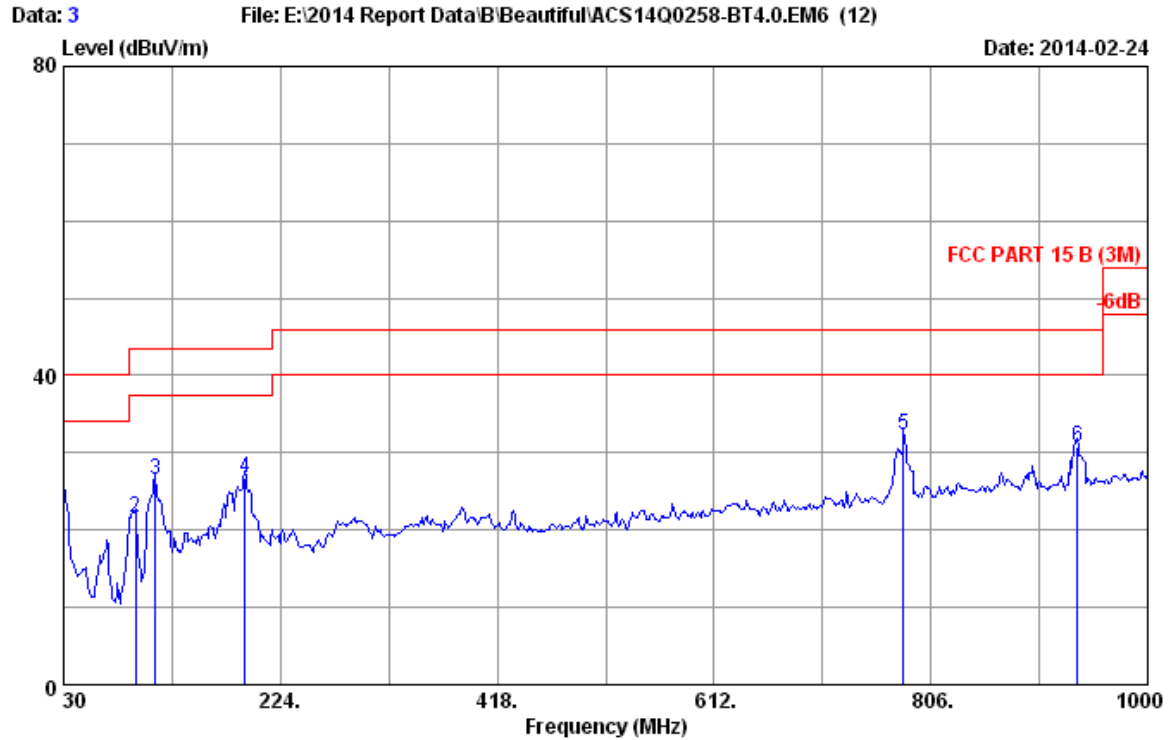
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 2
Dis. / Ant. : 3m 2013 CBL6112D 35375 Ant. pol. : VERTICAL
Limit : FCC PART 15 B (3M)
Env. / Ins. : 24°C/56% Engineer : Donjon
EUT : Soundbar Home Theater Speaker
Power rating : DC 18V From Adapter Input AC 120V/60Hz
Test Mode : Tx Mode
M/N: NS-SB314
Adapter Model: S048CU1800250

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	113.420	12.54	1.46	12.04	26.04	43.50	17.46	QP
2	187.140	9.60	1.74	13.76	25.10	43.50	18.40	QP
3	376.290	15.83	2.39	5.05	23.27	46.00	22.73	QP
4	469.410	17.59	2.66	5.55	25.80	46.00	20.20	QP
5	578.050	19.00	2.97	2.56	24.53	46.00	21.47	QP
6	777.870	20.60	3.55	9.80	33.95	46.00	12.05	QP

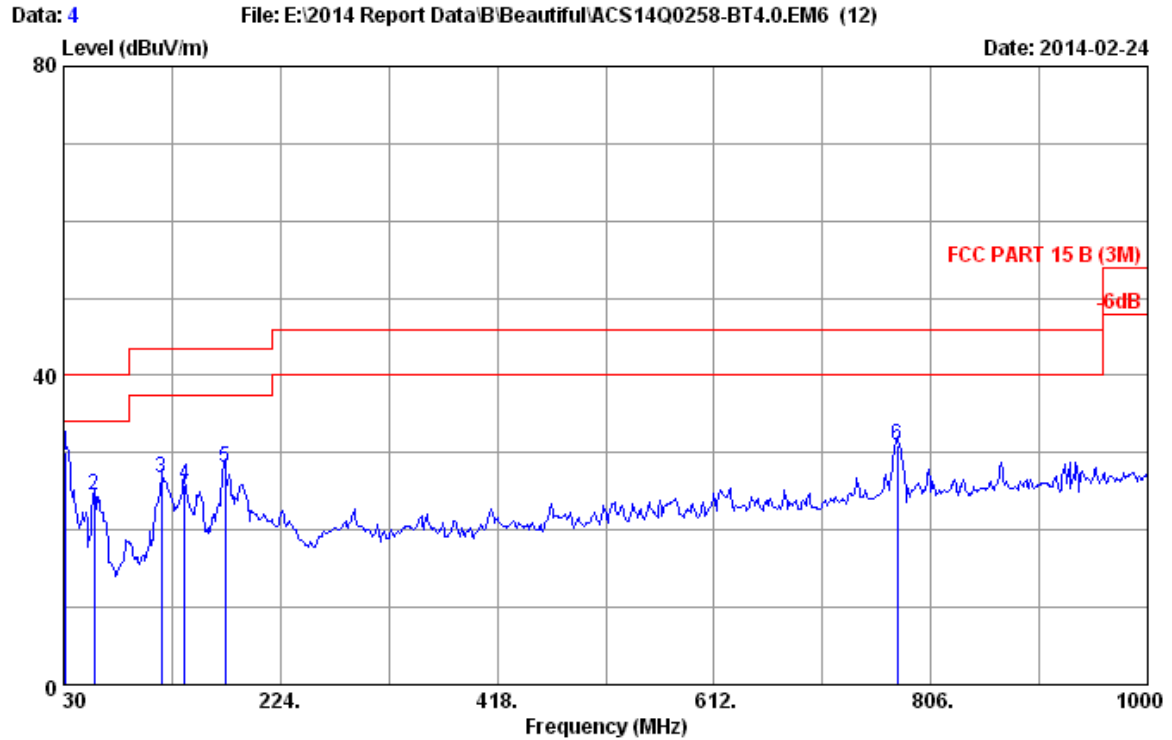
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 3
Dis. / Ant. : 3m 2013 CBL6112D 35375 Ant. pol. : HORIZONTAL
Limit : FCC PART 15 B (3M)
Env. / Ins. : 24°C/34% Engineer : Donjon
EUT : Soundbar Home Theater Speaker
Power rating : DC 18V From Adapter Input AC 120V/60Hz
Test Mode : Tx Mode
M/N: NS-SB314
Adapter Model: NSA45EU-180250

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	20.10	0.83	3.68	24.61	40.00	15.39	QP
2	94.020	10.20	1.38	10.14	21.72	43.50	21.78	QP
3	112.450	12.45	1.46	12.51	26.42	43.50	17.08	QP
4	191.990	9.70	1.76	15.25	26.71	43.50	16.79	QP
5	781.750	20.64	3.56	8.03	32.23	46.00	13.77	QP
6	936.950	21.84	4.04	4.91	30.79	46.00	15.21	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 4
Dis. / Ant. : 3m 2013 CBL6112D 35375 Ant. pol. : VERTICAL
Limit : FCC PART 15 B (3M)
Env. / Ins. : 24°C/34% Engineer : Donjon
EUT : Soundbar Home Theater Speaker
Power rating : DC 18V From Adapter Input AC 120V/60Hz
Test Mode : Tx Mode
M/N: NS-SB314
Adapter Model: NSA45EU-180250

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	31.940	18.84	0.86	10.34	30.04	40.00	9.96	QP
2	57.160	7.07	1.22	16.12	24.41	40.00	15.59	QP
3	117.300	12.70	1.48	12.62	26.80	43.50	16.70	QP
4	138.640	12.20	1.56	12.13	25.89	43.50	17.61	QP
5	174.530	9.97	1.69	16.47	28.13	43.50	15.37	QP
6	775.930	20.60	3.54	6.86	31.00	46.00	15.00	QP

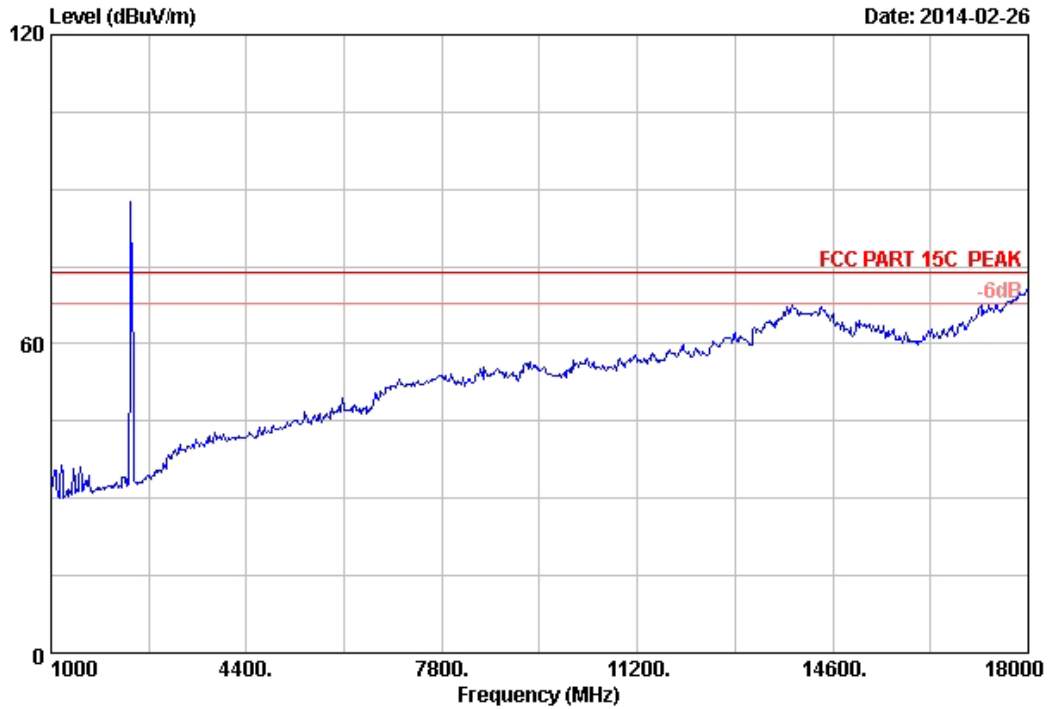
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Frequency: 1GHz~18GHz

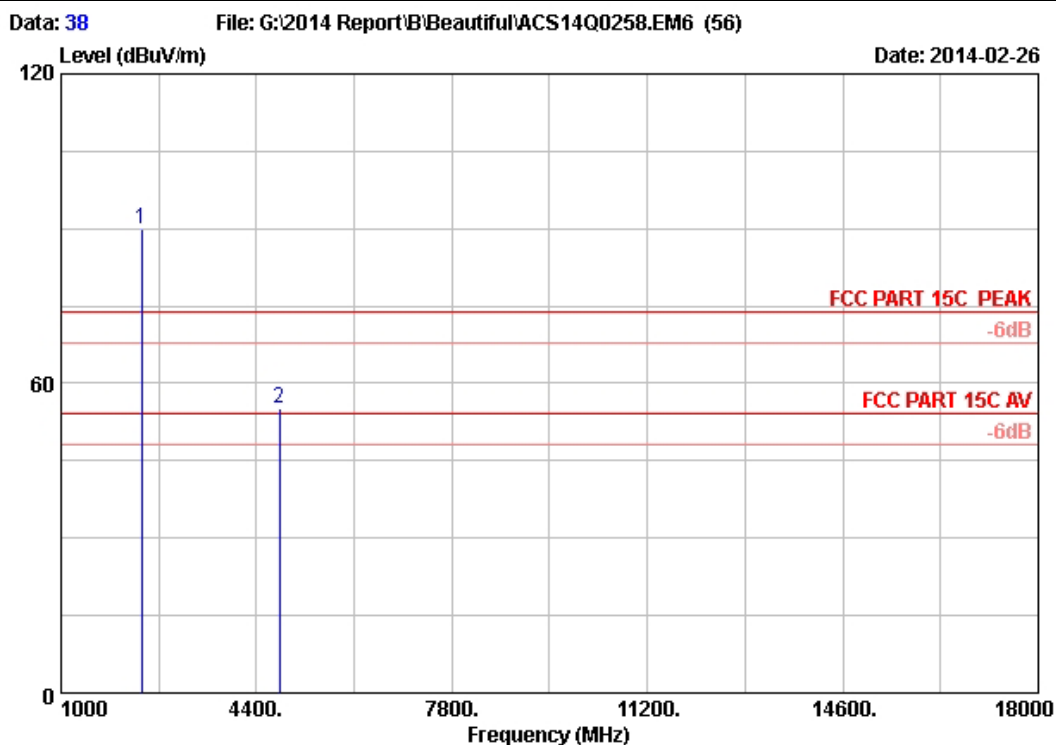
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Date: 2014-02-26



Site no.	: 3m Chamber	Data no.	: 37
Dis. / Ant.	: 3m 2012 3115 (4877)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 24°C/56%	Engineer	: Leo-Li
EUT	: Soundbar Home Theater Speaker		
Power Rating	: DC 18V From Adapter Input AC 120V/60Hz		
Test Mode	: 2402Hz Tx		
M/N	: NS-SB314		

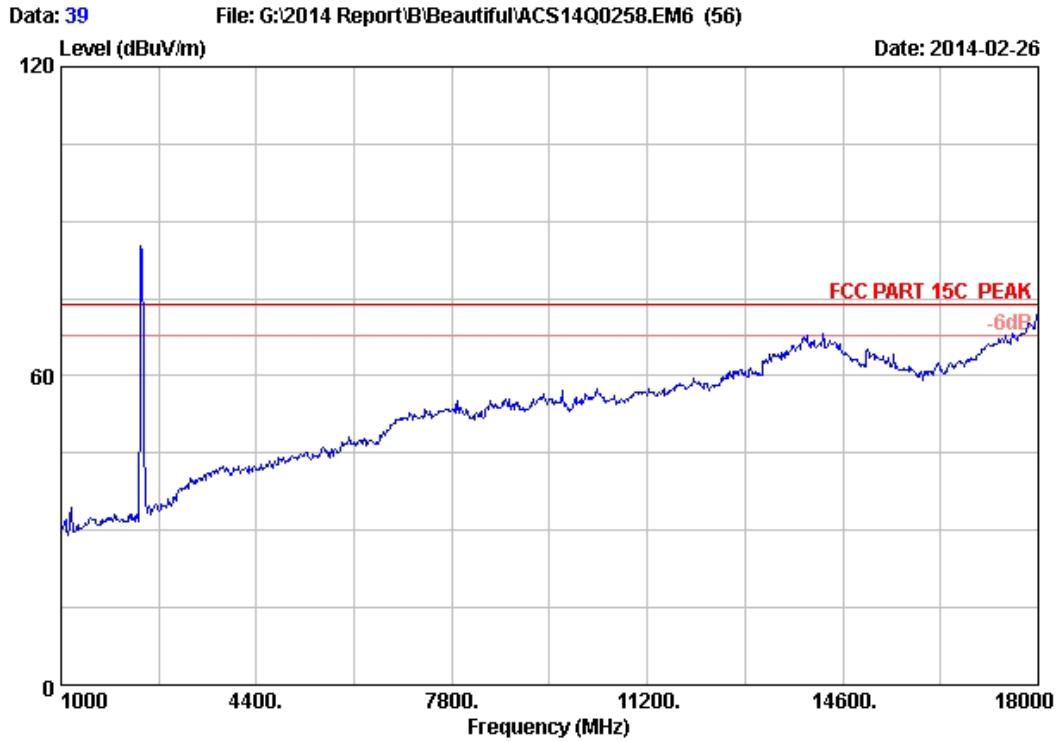


Site no. : 3m Chamber Data no. : 38
 Dis. / Ant. : 3m 2012 3115 (4877) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 24°C/56% Engineer : Leo-Li
 EUT : Soundbar Home Theater Speaker
 Power Rating : DC 18V From Adapter Input AC 120V/60Hz
 Test Mode : 2402Hz Tx
 M/N : NS-SB314

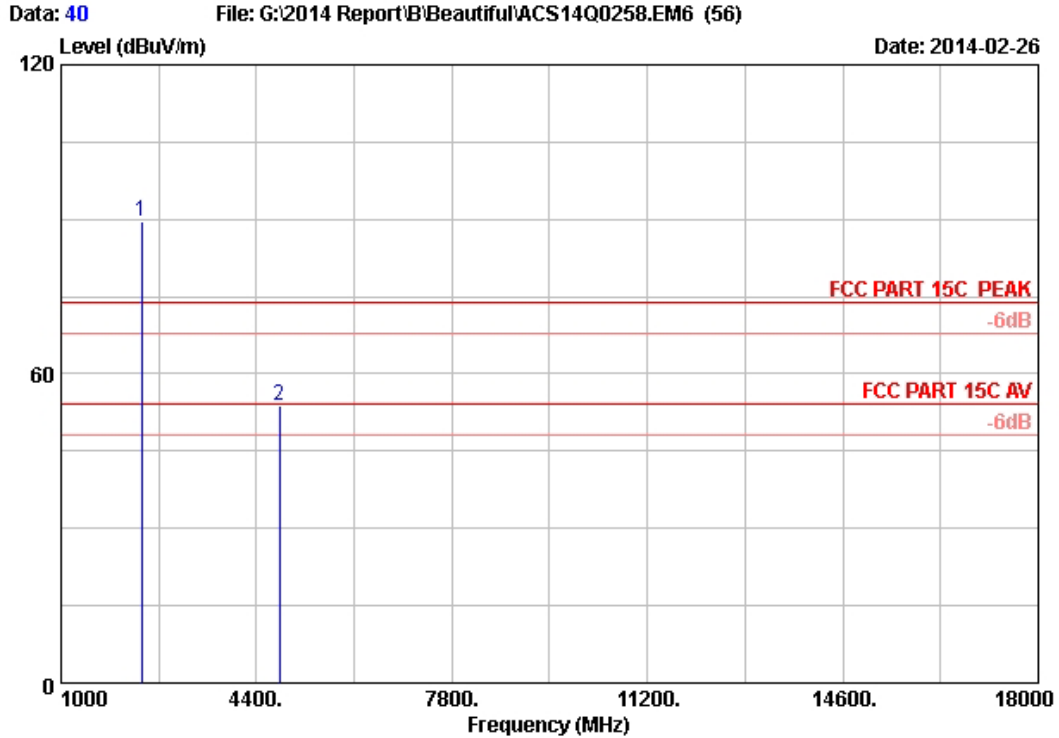
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.000	23.79	5.80	35.70	95.86	89.75	74.00	-15.75	Peak
2	4804.000	31.67	8.56	35.70	50.55	55.08	74.00	18.92	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp Factor
 2. The emission levels that are 20dB below the official
 limit are not reported.

Frequency (MHz)	Peak level (dBuV/m)	Duty cycle factor (dB)	AV level (dBuV/m)	Limit(dBuV/m)	Conclusion
4804.000	55.08	3.00	52.08	54	Pass



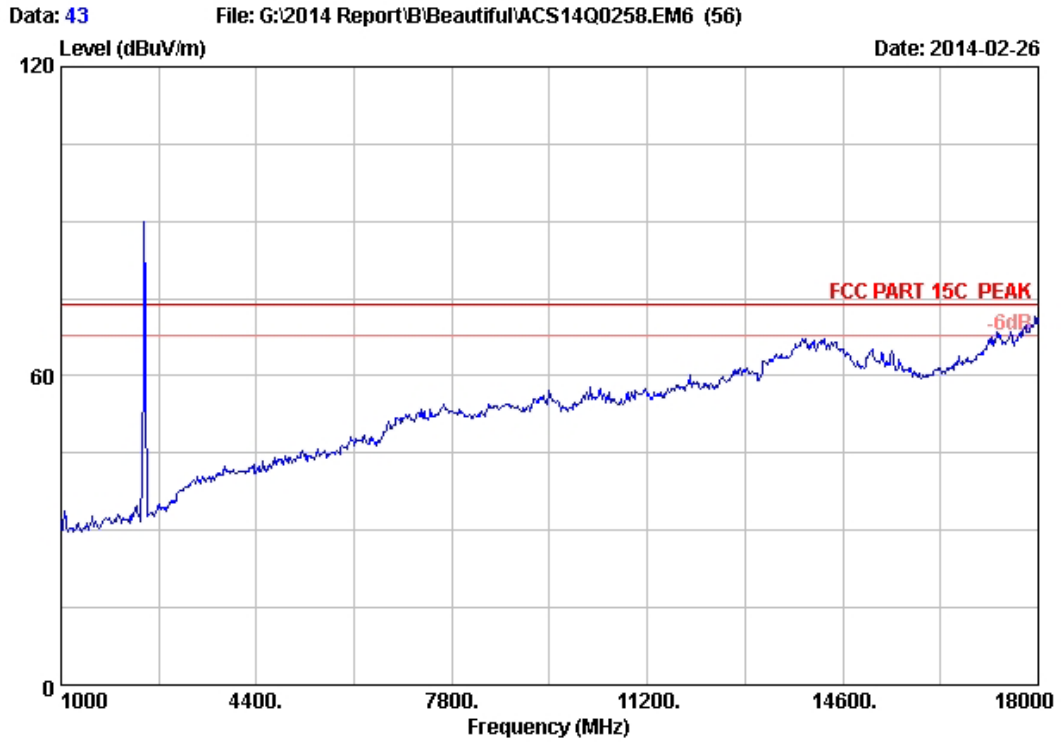
Site no. : 3m Chamber Data no. : 39
 Dis. / Ant. : 3m 2012 3115 (4877) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 24°C/56% Engineer : Leo-Li
 EUT : Soundbar Home Theater Speaker
 Power Rating : DC 18V From Adapter Input AC 120V/60Hz
 Test Mode : 2402Hz Tx
 M/N : NS-SB314



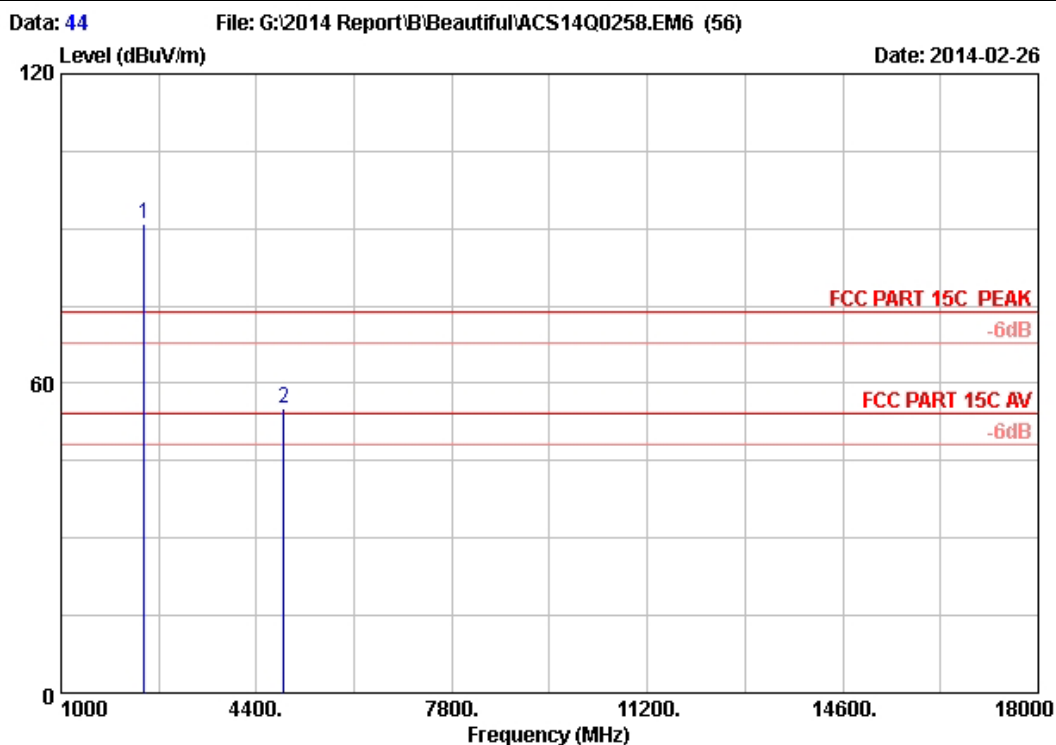
Site no. : 3m Chamber Data no. : 40
 Dis. / Ant. : 3m 2012 3115 (4877) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 24°C/56% Engineer : Leo-Li
 EUT : Soundbar Home Theater Speaker
 Power Rating : DC 18V From Adapter Input AC 120V/60Hz
 Test Mode : 2402Hz Tx
 M/N : NS-SB314

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.000	23.79	5.80	35.70	95.83	89.72	74.00	-15.72	Peak
2	4804.000	31.67	8.56	35.70	49.37	53.90	74.00	20.10	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp Factor
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no. : 3m Chamber Data no. : 43
 Dis. / Ant. : 3m 2012 3115 (4877) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 24°C/56% Engineer : Leo-Li
 EUT : Soundbar Home Theater Speaker
 Power Rating : DC 18V From Adapter Input AC 120V/60Hz
 Test Mode : 2440Hz Tx
 M/N : NS-SB314

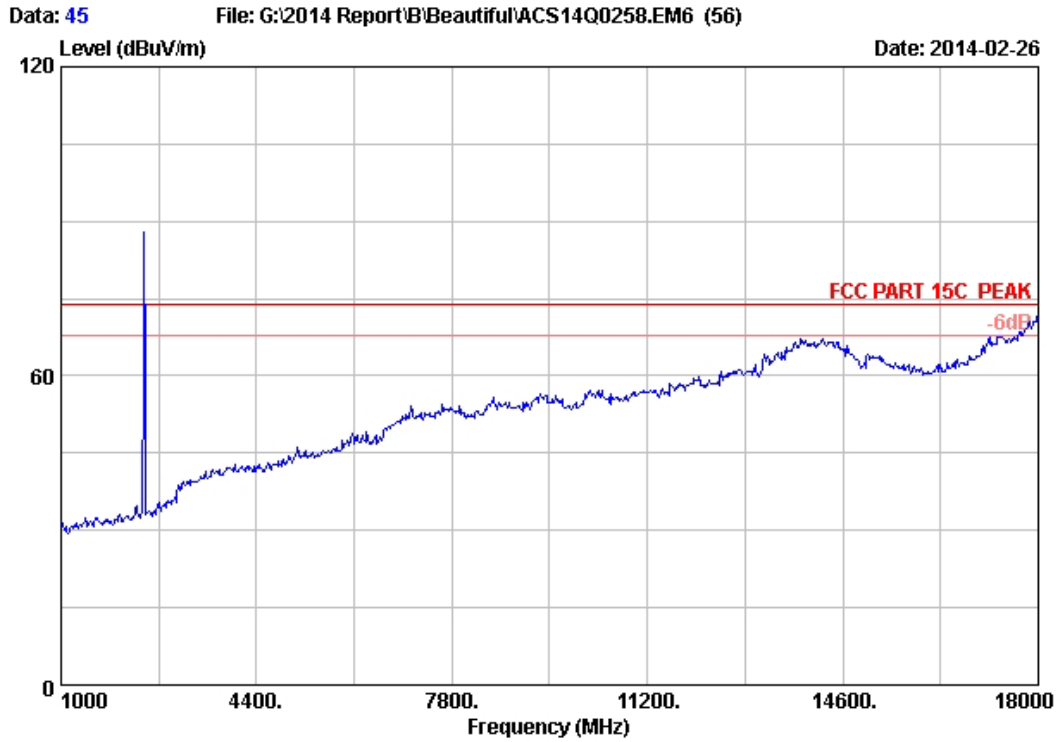


Site no. : 3m Chamber Data no. : 44
 Dis. / Ant. : 3m 2012 3115 (4877) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 24°C/56% Engineer : Leo-Li
 EUT : Soundbar Home Theater Speaker
 Power Rating : DC 18V From Adapter Input AC 120V/60Hz
 Test Mode : 2440Hz Tx
 M/N : NS-SB314

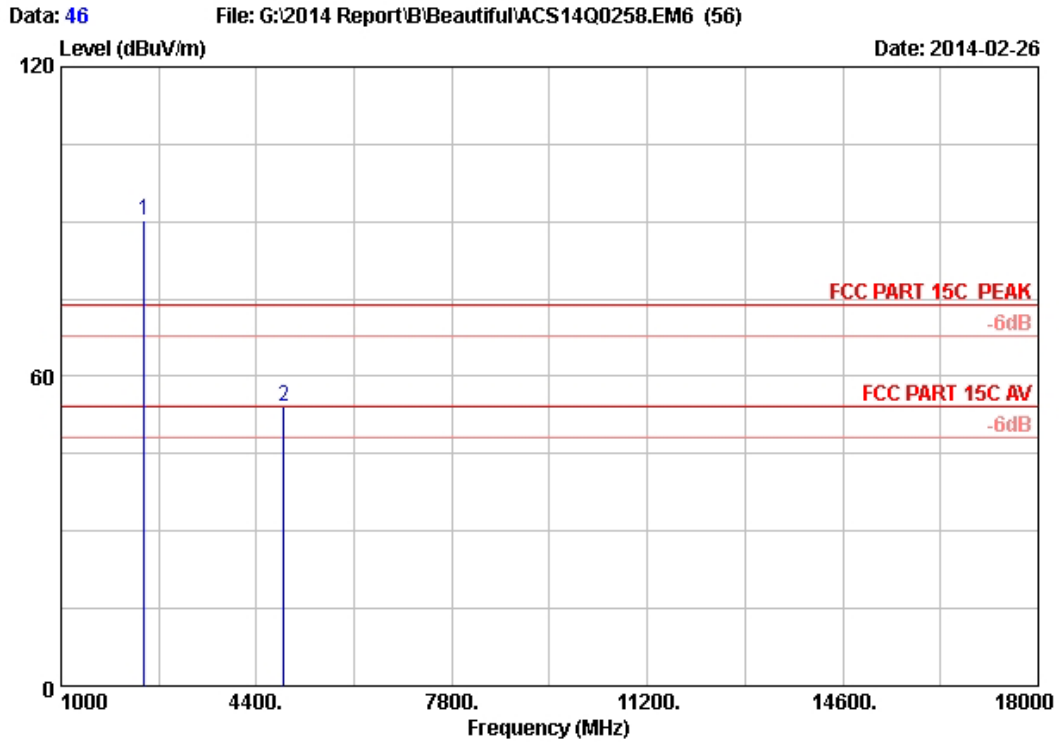
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2440.000	23.75	5.86	35.70	97.07	90.98	74.00	-16.98	Peak
2	4880.000	31.88	8.64	35.70	50.26	55.08	74.00	18.92	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp Factor
 2. The emission levels that are 20dB below the official
 limit are not reported.

Frequency (MHz)	Peak level (dBuV/m)	Duty cycle factor (dB)	AV level (dBuV/m)	Limit(dBuV/m)	Conclusion
4880.000	55.08	3.00	52.08	54	Pass



Site no. : 3m Chamber Data no. : 45
 Dis. / Ant. : 3m 2012 3115 (4877) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 24°C/56% Engineer : Leo-Li
 EUT : Soundbar Home Theater Speaker
 Power Rating : DC 18V From Adapter Input AC 120V/60Hz
 Test Mode : 2440Hz Tx
 M/N : NS-SB314



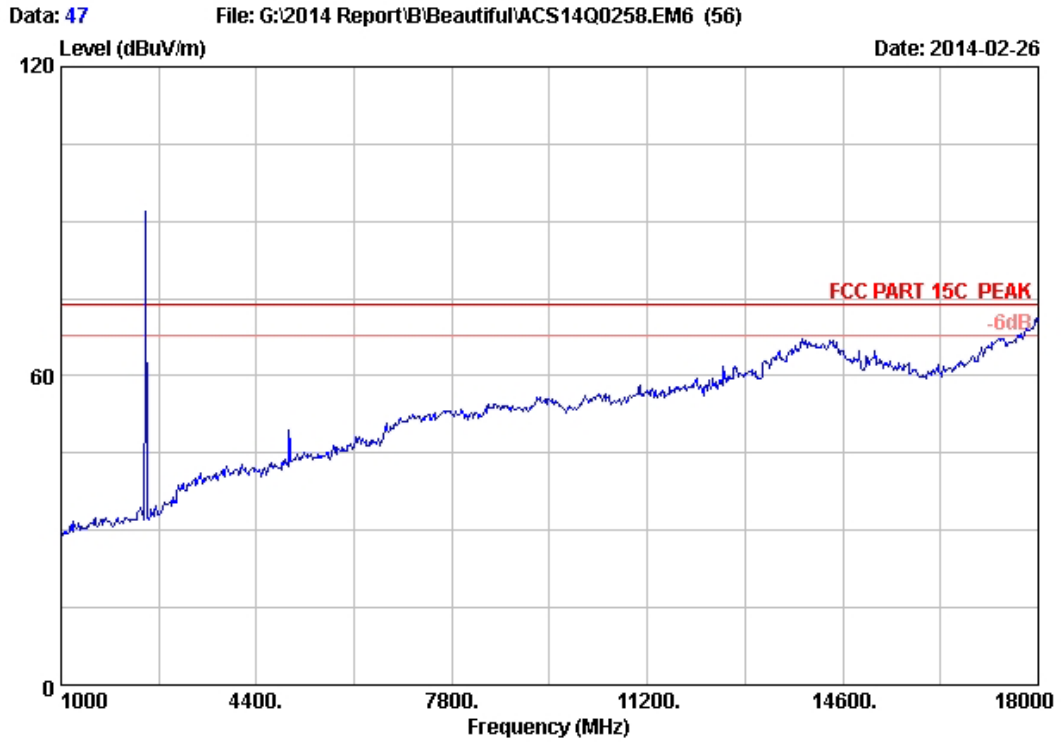
Site no. : 3m Chamber Data no. : 46
 Dis. / Ant. : 3m 2012 3115 (4877) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 24°C/56% Engineer : Leo-Li
 EUT : Soundbar Home Theater Speaker
 Power Rating : DC 18V From Adapter Input AC 120V/60Hz
 Test Mode : 2440Hz Tx
 M/N : NS-SB314

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2440.000	23.75	5.86	35.70	96.24	90.15	74.00	-16.15	Peak
2	4880.000	31.88	8.64	35.70	49.38	54.20	74.00	19.80	Peak

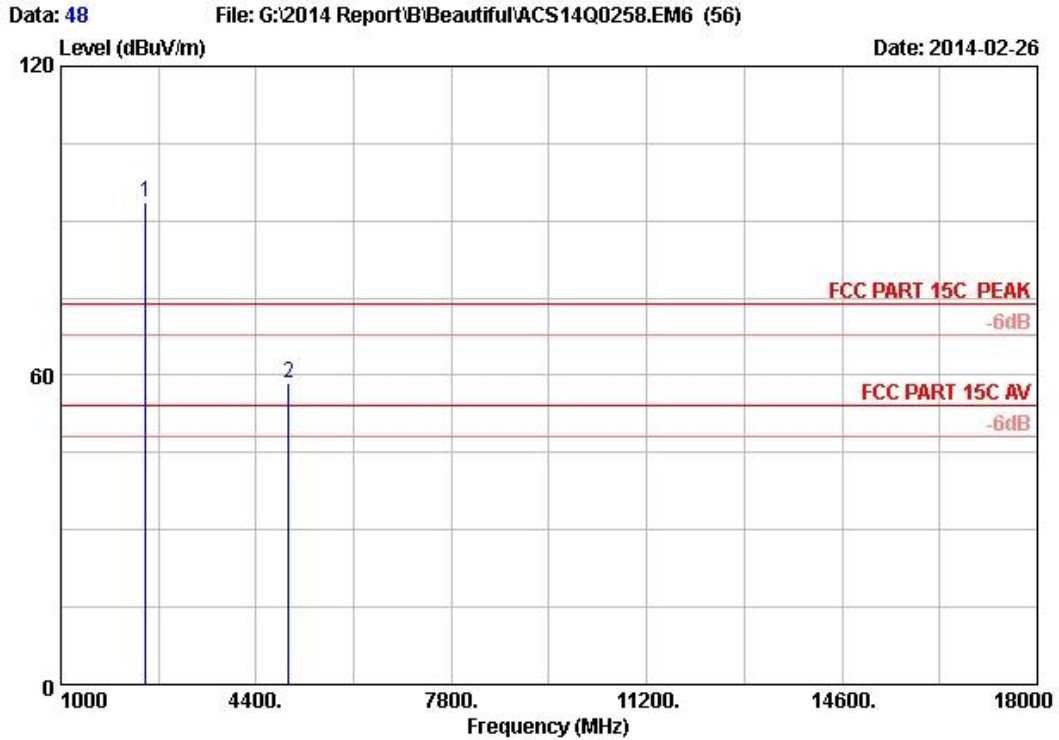
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp Factor

2. The emission levels that are 20dB below the official
 limit are not reported.

Frequency (MHz)	Peak level (dBuV/m)	Duty cycle factor (dB)	AV level (dBuV/m)	Limit(dBuV/m)	Conclusion
4880.000	54.20	3.00	51.2	54	Pass



Site no. : 3m Chamber Data no. : 47
 Dis. / Ant. : 3m 2012 3115 (4877) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 24°C/56% Engineer : Leo-Li
 EUT : Soundbar Home Theater Speaker
 Power Rating : DC 18V From Adapter Input AC 120V/60Hz
 Test Mode : 2480Hz Tx
 M/N : NS-SB314



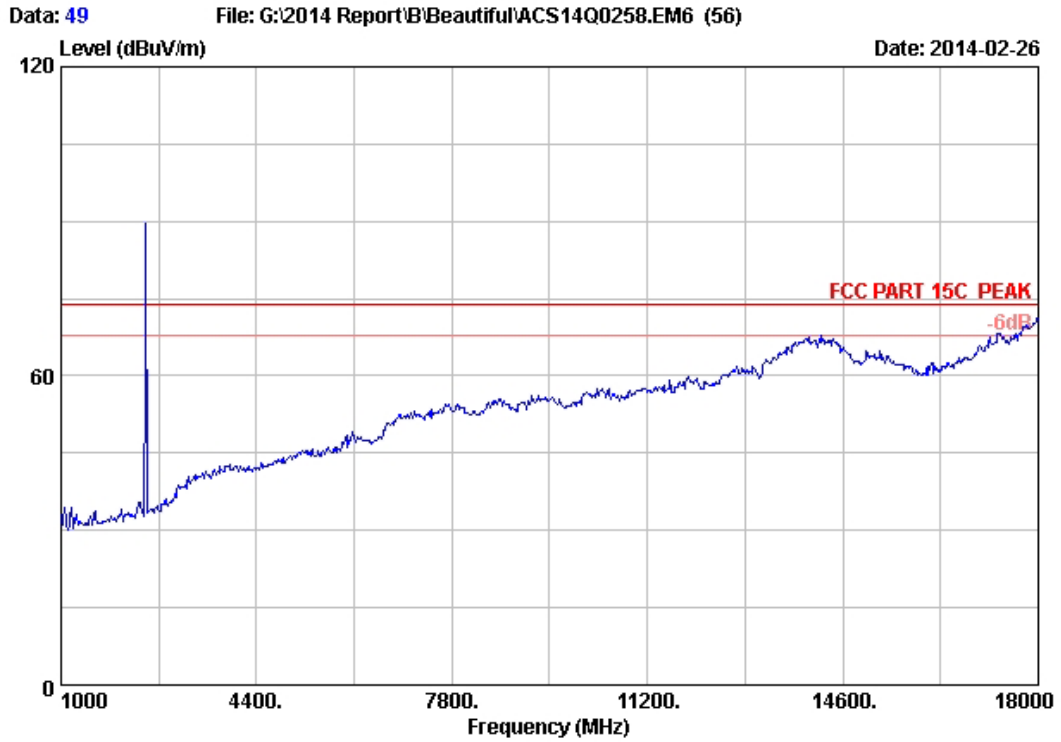
Site no. : 3m Chamber Data no. : 48
Dis. / Ant. : 3m 2012 3115 (4877) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 24°C/56% Engineer : Leo-Li
EUT : Soundbar Home Theater Speaker
Power Rating : DC 18V From Adapter Input AC 120V/60Hz
Test Mode : 2480Hz Tx
M/N : NS-SB314

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.000	23.72	5.91	35.70	99.69	93.62	74.00	-19.62	Peak
2	4960.000	32.09	8.72	35.70	53.39	54.50	74.00	13.50	Peak

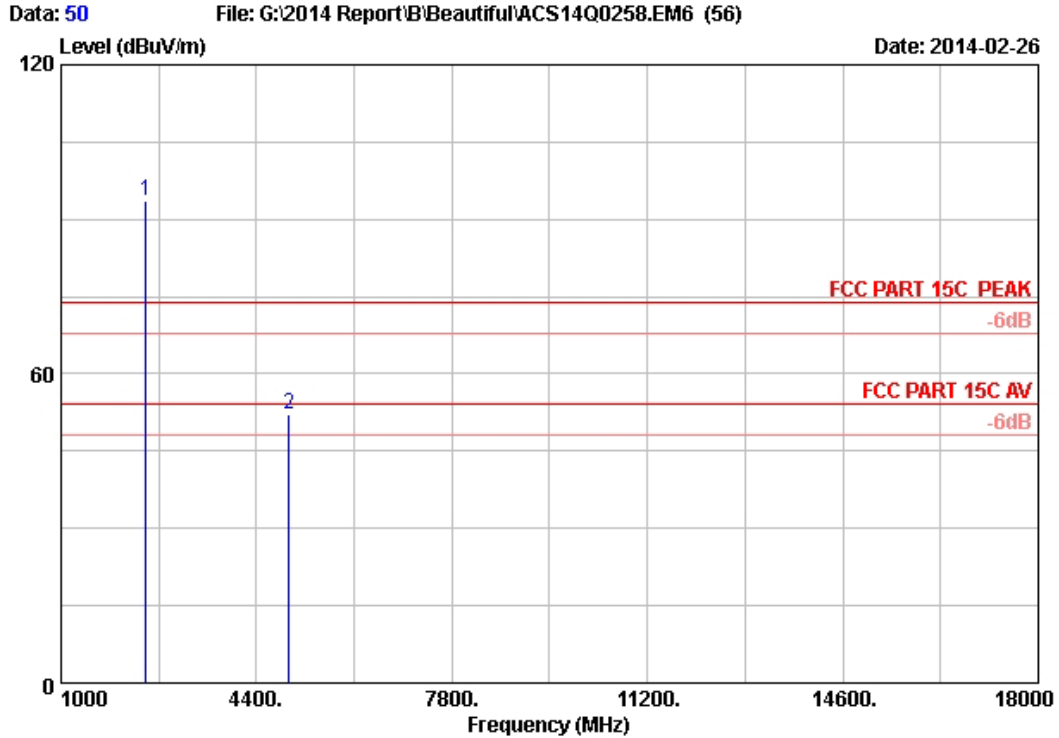
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
-Amp Factor

2. The emission levels that are 20dB below the official
limit are not reported.

Frequency (MHz)	Peak level (dBuV/m)	Duty cycle factor (dB)	AV level (dBuV/m)	Limit(dBuV/m)	Conclusion
4960.000	54.50	3.00	51.50	54	Pass



Site no. : 3m Chamber Data no. : 49
 Dis. / Ant. : 3m 2012 3115 (4877) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 24°C/56% Engineer : Leo-Li
 EUT : Soundbar Home Theater Speaker
 Power Rating : DC 18V From Adapter Input AC 120V/60Hz
 Test Mode : 2480Hz Tx
 M/N : NS-SB314



Site no. : 3m Chamber Data no. : 50
 Dis. / Ant. : 3m 2012 3115 (4877) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 24°C/56% Engineer : Leo-Li
 EUT : Soundbar Home Theater Speaker
 Power Rating : DC 18V From Adapter Input AC 120V/60Hz
 Test Mode : 2480Hz Tx
 M/N : NS-SB314

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	2480.000	23.72	5.91	35.70	99.56	93.49	74.00	-19.49	Peak
2	4960.000	32.09	8.72	35.70	47.04	52.15	74.00	21.85	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp Factor
 2. The emission levels that are 20dB below the official
 limit are not reported.

5. CONDUCTED SPURIOUS EMISSIONS

5.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9030A	MY51380221	Oct.31, 13	1Year
2.	Attenuator	Agilent	8491B	MY39262165	May.08,13	1 Year
3.	RF Cable	Hubersuhner	SUCOFLEX102	28618/2	May.08,13	1Year

5.2.Limit

In any 100kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.

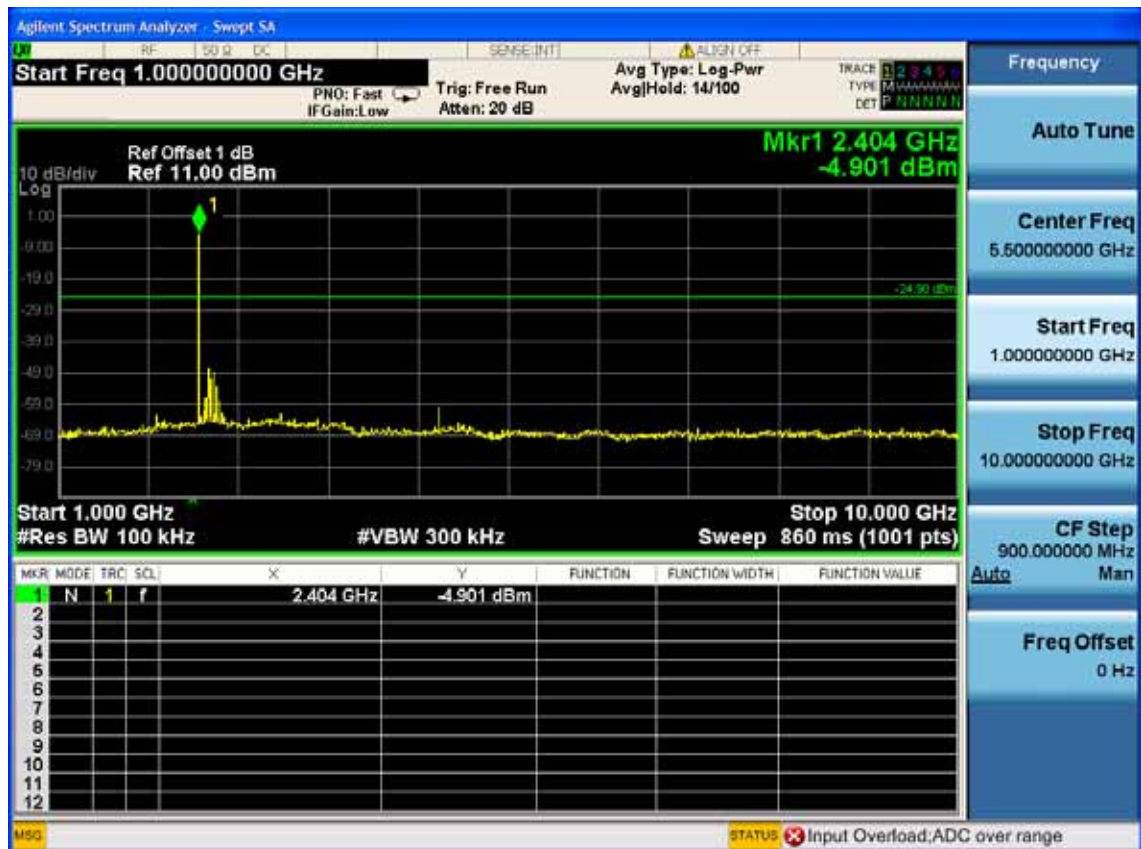
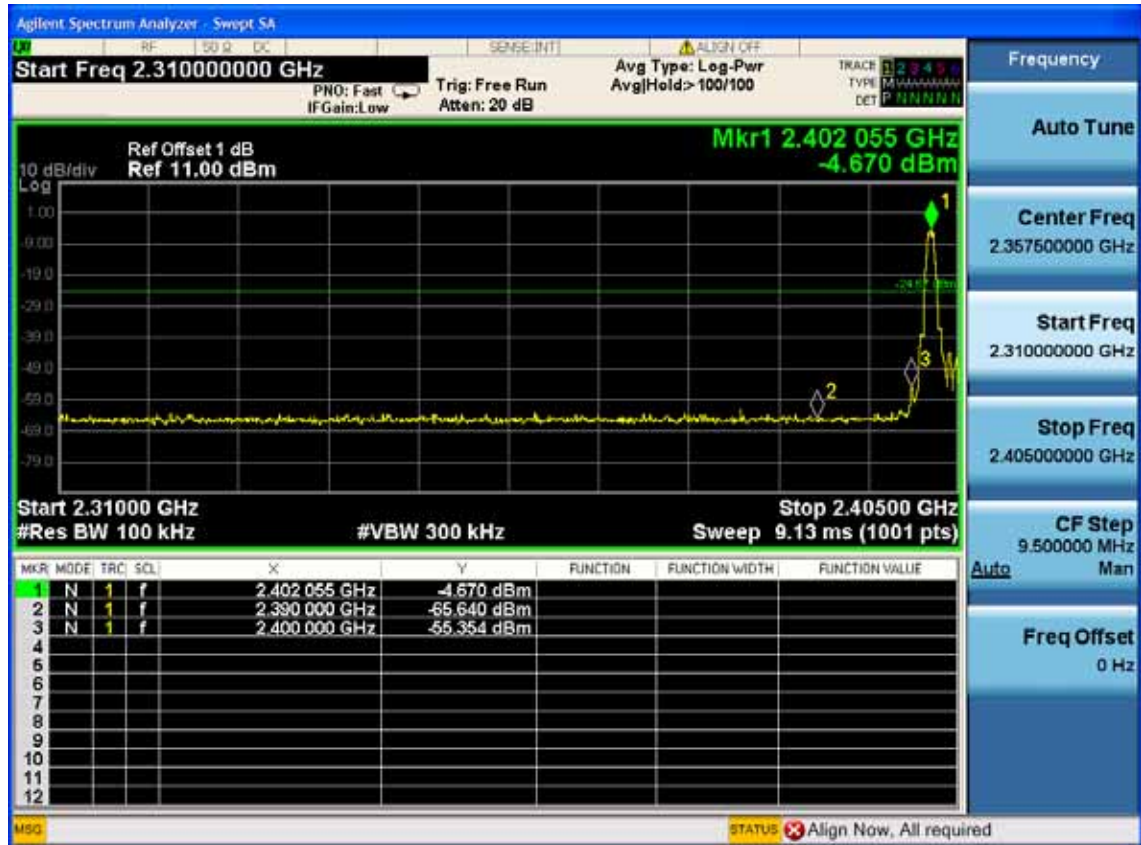
5.3.Test Procedure

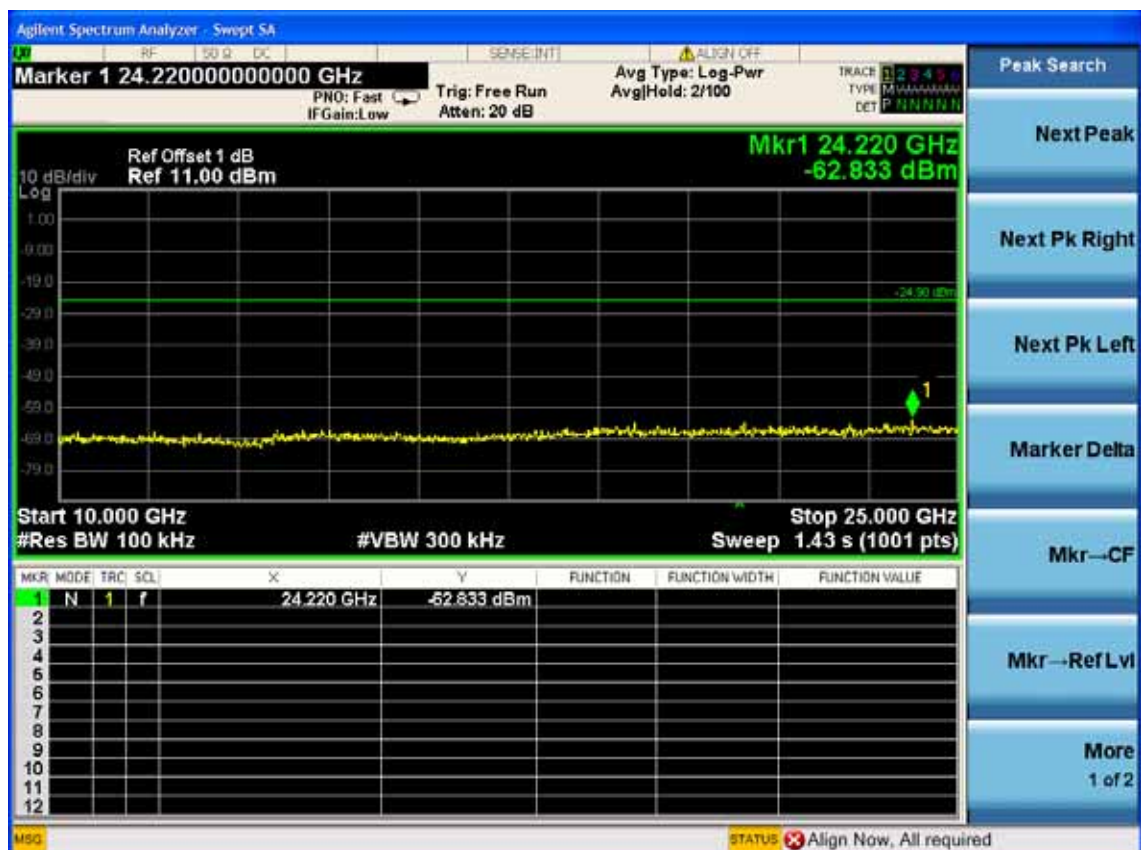
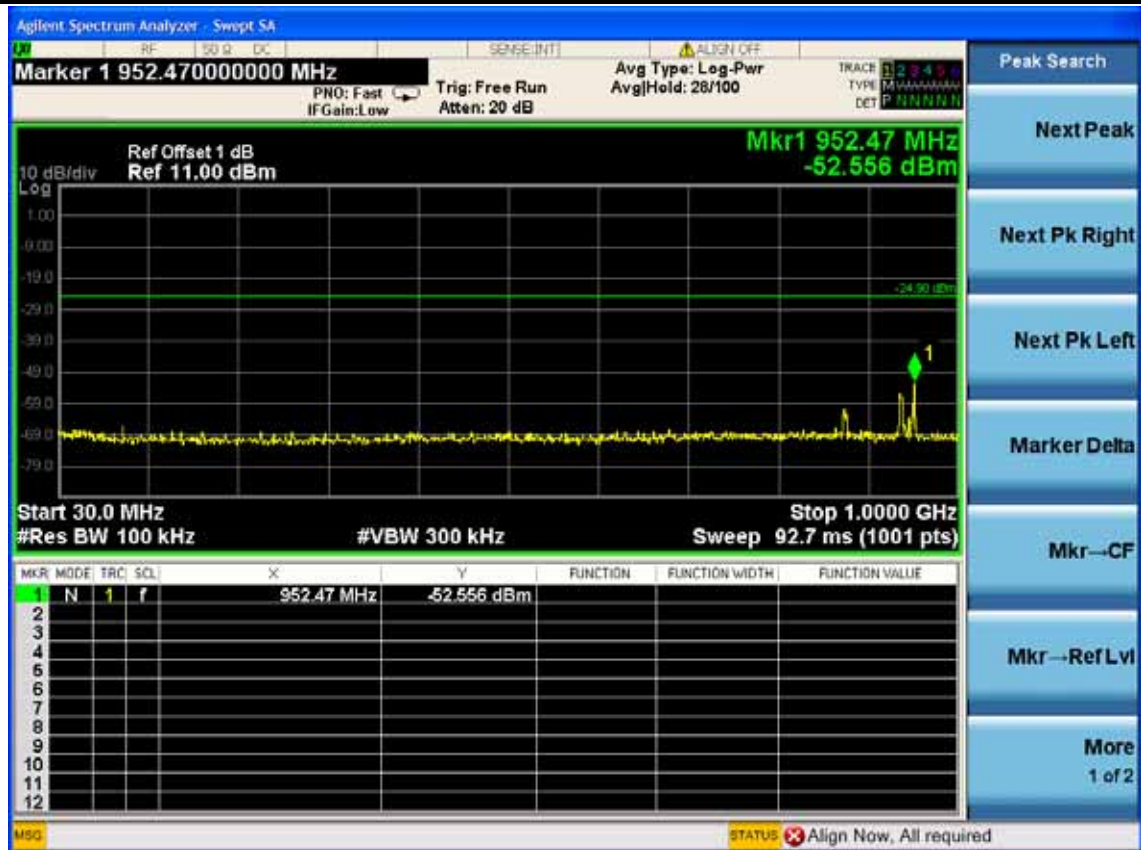
The transmitter output was connected to a spectrum analyzer, The resolution bandwidth is set to 100 kHz, The video bandwidth is set to 300 kHz and measure all the emissions detected.

5.4.Test result

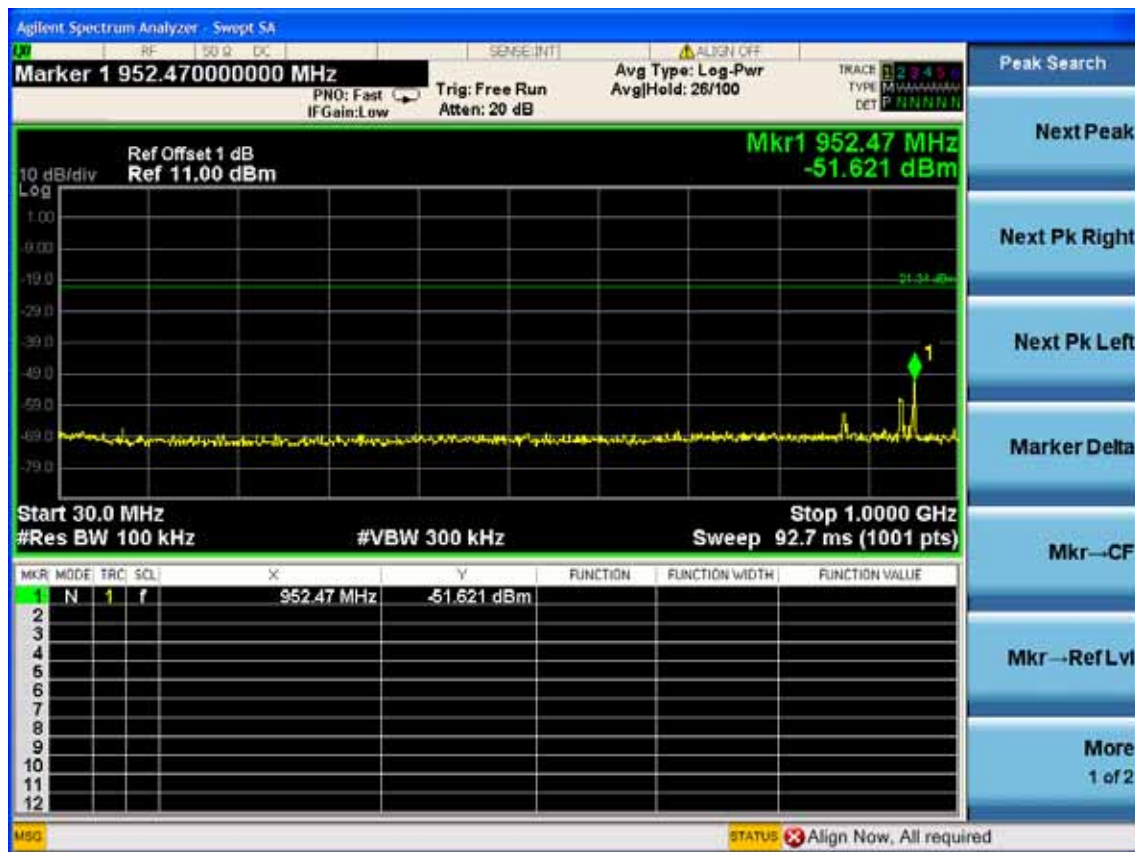
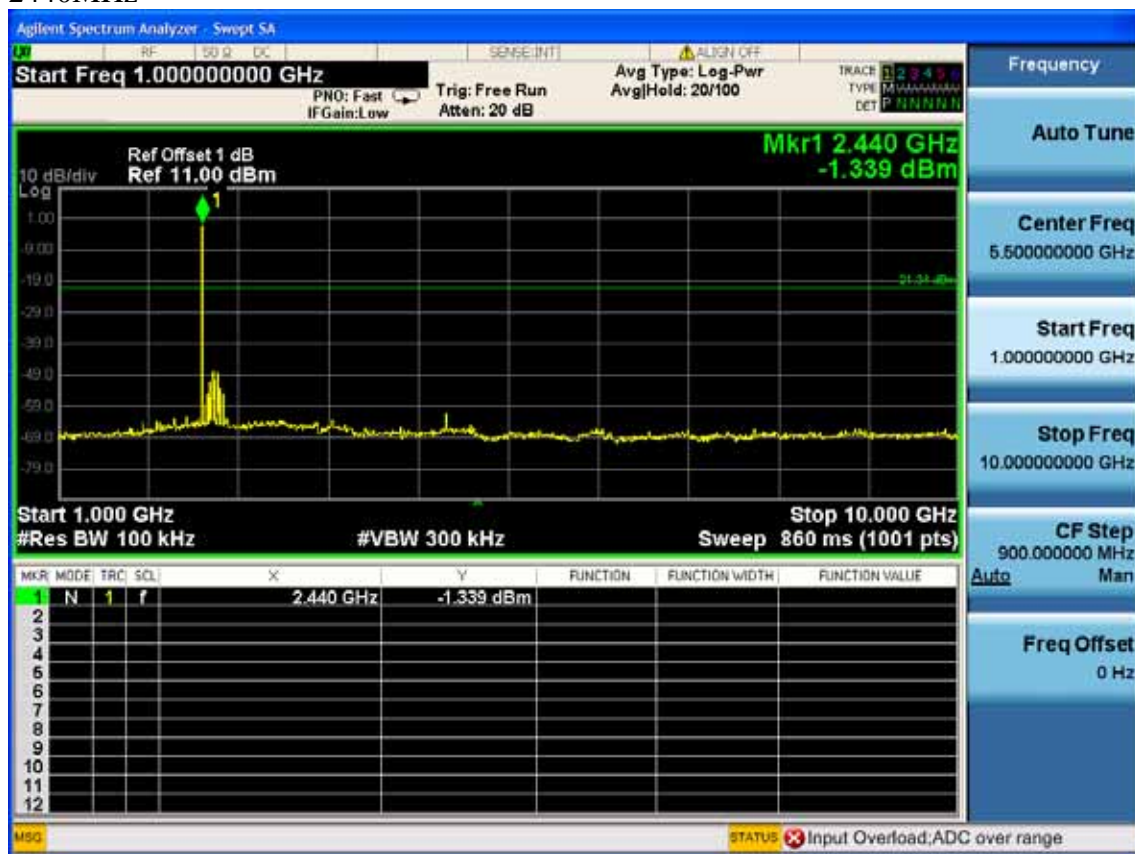
PASS (The testing data was attached in the next pages.)

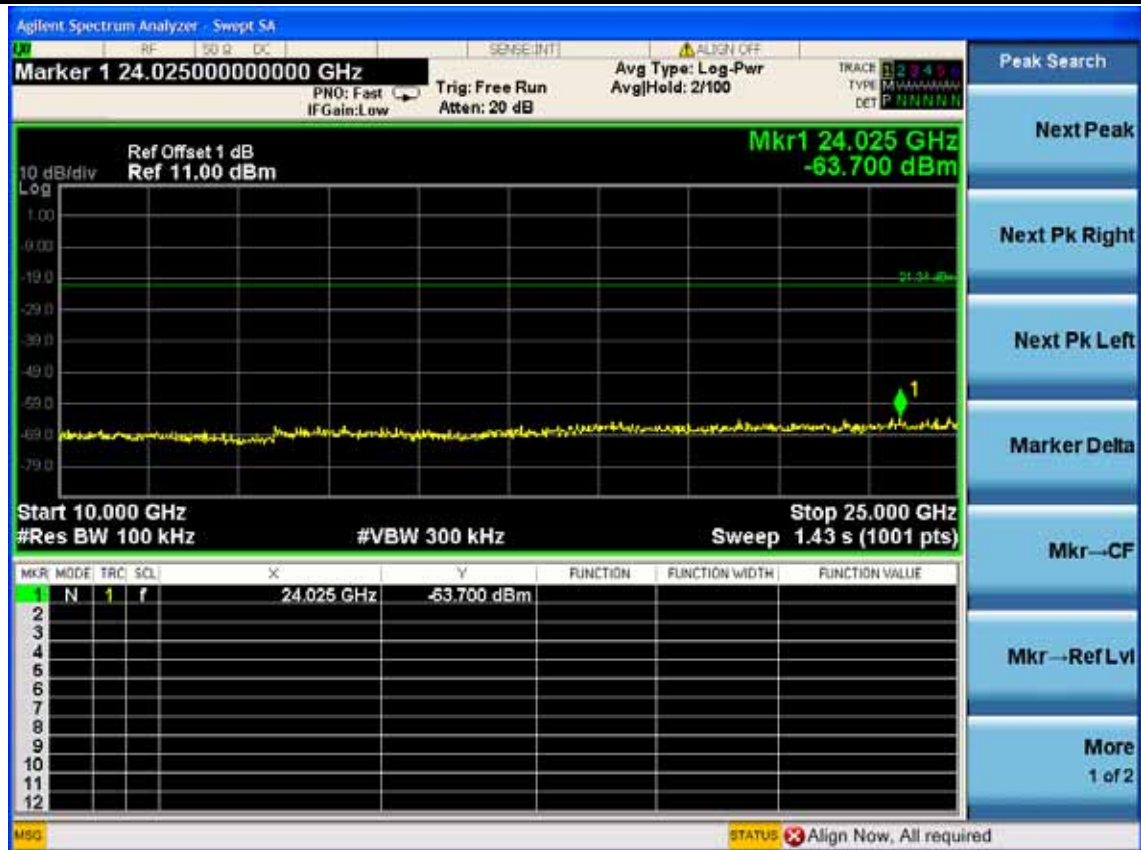
GFSK 2402MHz



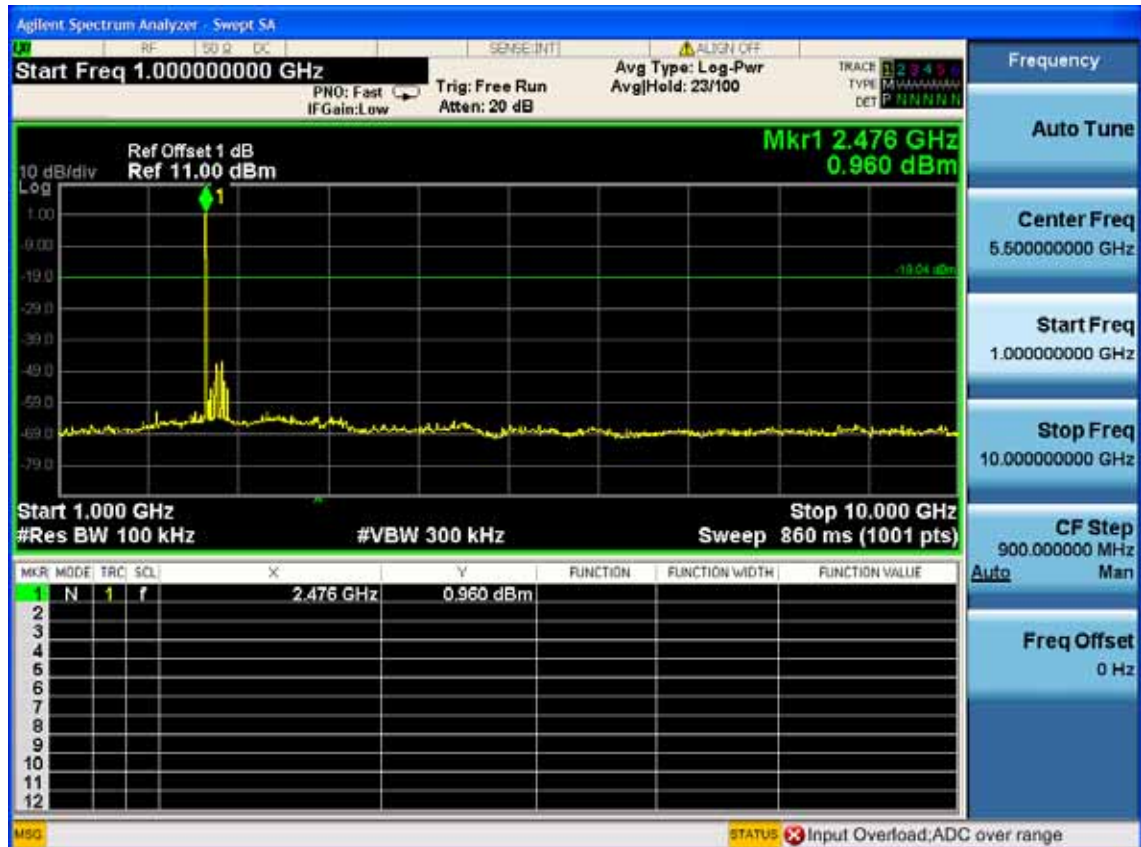


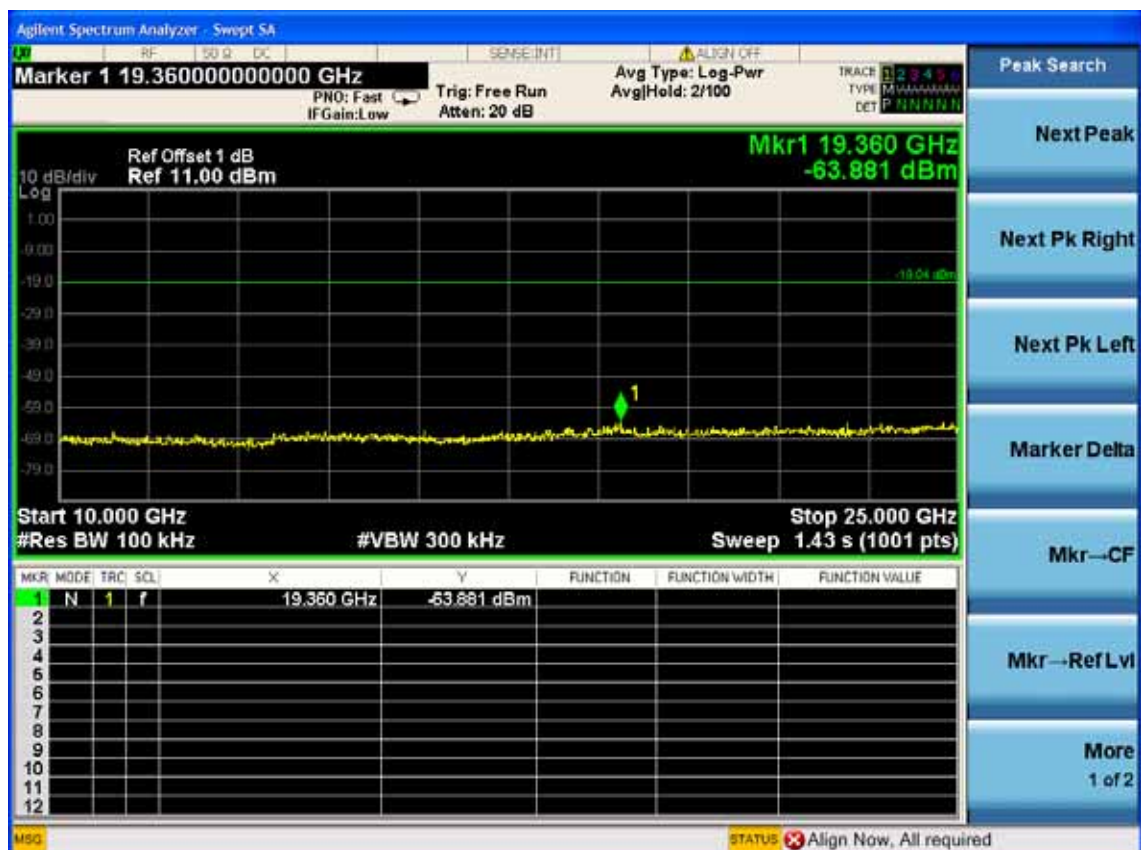
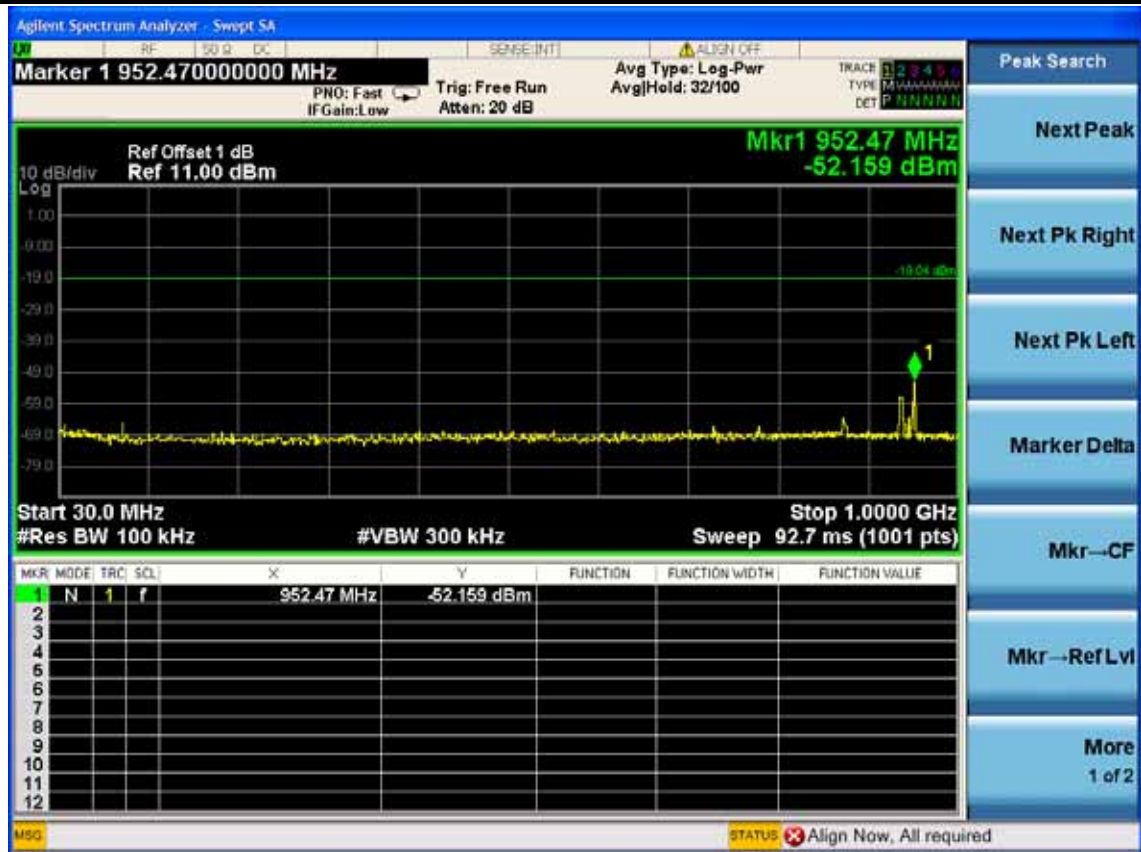
2440MHz

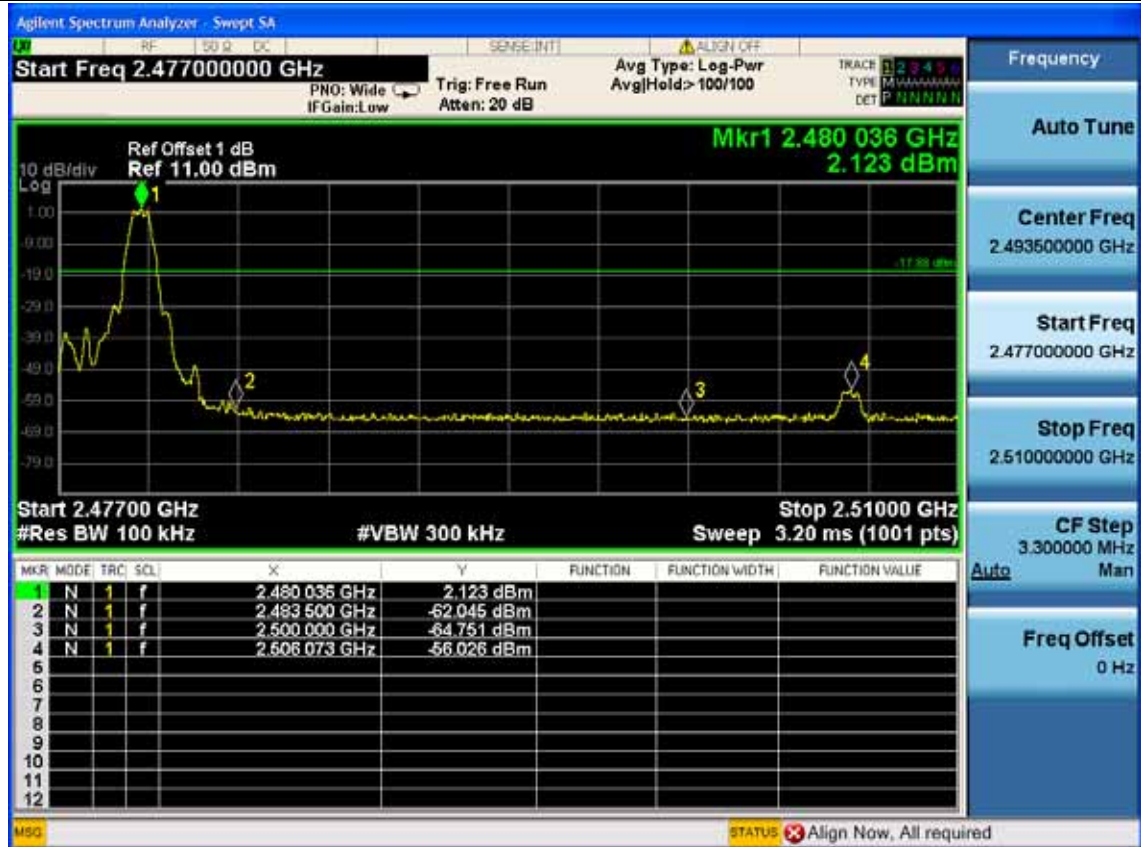




2480MHz







6. 6dB BANDWIDTH TEST

6.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9030A	MY51380221	Oct.31, 13	1 Year
1.	Antenna	EMCO	3115	9607-4877	May.08, 13	1 Year
2.	HF Cable	Hubersuhner	Sucoflex104	-	May.08, 13	1 Year

6.2. Limit

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz

6.3. Test Procedure

The transmitter output was connected to a spectrum analyzer, The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30kHz RBW and 100KHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

6.4. Test Results

EUT: Soundbar Home Theater Speaker		
M/N: NS-SB314		
Test date: 2014-03-01	Pressure: 102.1±1.0kpa	Humidity: 52.3 ±3.0%
Tested by: Eric	Test site: RF site	Temperature: 23.2±0.6℃

Cable loss: 1.0 dB		Attenuator loss: 20 dB	
Test Mode	CH (MHz)	6 dB bandwidth (kHz)	Limit (KHz)
GFSK	2402	606.9	>500
	2440	605.7	>500
	2480	606.0	>500
Conclusion : PASS			

GFSK

Test Frequency: 2402MHz



Test Frequency: 2440MHz



Test Frequency: 2480MHz



7. MAXIMUM PEAK OUTPUT POWER TEST

7.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9030A	MY51380221	Oct.31, 13	1 Year
2.	Amp	HP	8449B	3008A08495	May.08, 13	1 Year
3.	Antenna	EMCO	3115	9607-4877	May.08, 13	1 Year
4.	HF Cable	Hubersuhne	Sucoflex104	-	May.08, 13	1 Year
5.	Power Meter	Anritsu	ML2487A	6K00002472	May.08, 13	1 Year
6.	Power Sensor	Anritsu	MA2491A	033005	May.08, 13	1 Year

7.2. Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

7.3. Test Procedure

Connected the EUT's antenna port to Power Sensor, and use power meter to test peak output power.

7.4. Test Results

EUT: Soundbar Home Thertter Speaker			
M/N: NS-SB314			
Test date:2014-01-20		Pressure: 102.4±1.0kpa	Humidity: 52.6 ±3.0%
Tested by: Eric		Test site: RF site	Temperature: 23.4±0.6℃
Cable loss: 1.0 dB		Attenuator loss: 20 dB	
Test Mode	Frequency (MHz)	Peak output Power (dBm)	Limit (dBm)
GFSK	2402	7.612	30
	2440	8.041	30
	2480	8.663	30
Conclusion: PASS			

8. BAND EDGE COMPLIANCE TEST

8.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9030A	MY51380221	Oct.31, 13	1 Year
2.	Amp	HP	8449B	3008A08495	May.08, 13	1 Year
3.	Antenna	EMCO	3115	9607-4877	May.08, 13	1 Year
4.	HF Cable	Hubersuhne	Sucoflex104	-	May.08, 13	1 Year

8.2. Limit

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

8.3. Test Produce

For upper band emissions that are up to two bandwidths(2MHz) away (2483.5MHz to 2485.5MHz) from the band-edge use below produce:

1. Choose a spectrum analyzer span that encompasses both the peak of the fundamental emission and the band-edge emission under investigation. Set the analyzer RBW to 100KHz and with a video bandwidth 300KHz. Record the peak levels of the fundamental emission and the relevant band-edge emission, Observe the stored trace and measure the amplitude delta between the peak of the fundamental and the peak of the band-edge emission. This is not a field strength measurement, it is only a relative measurement to determine the amount by which the emission drops at the band edge relative to the highest fundamental emission level.
2. Subtract the delta measured in step (1) from the maximum field strengths measured in clause 4 .The resultant field strengths are then used to determine band-edge compliance as required by Section 15.205

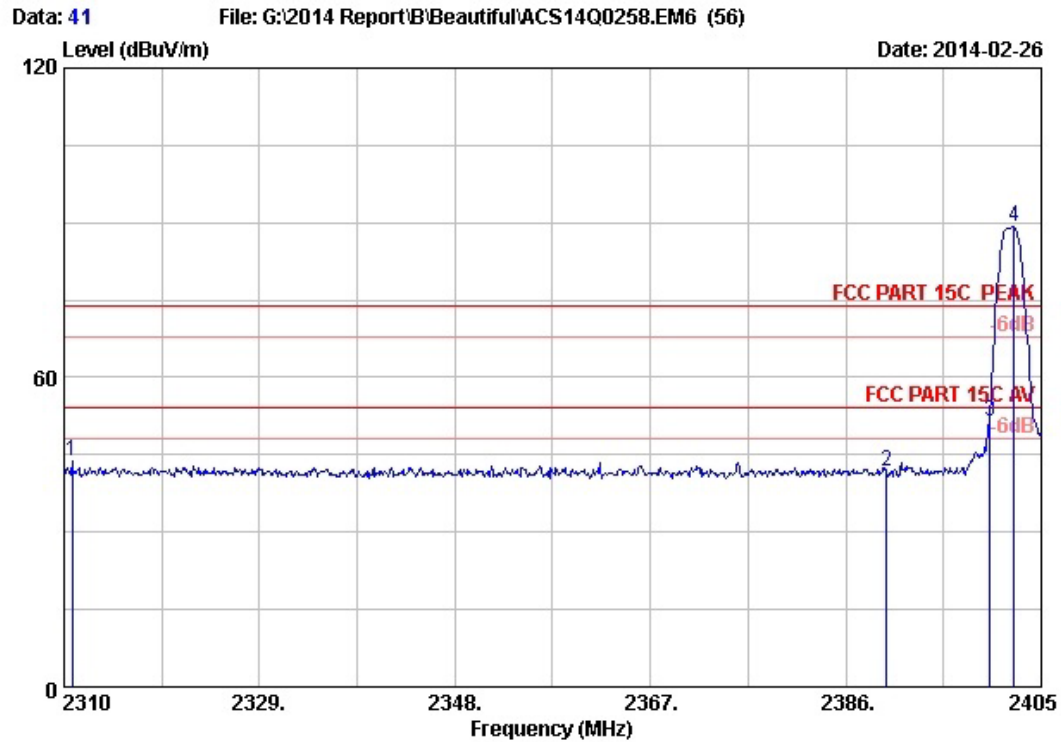
For emissions above two bandwidths away from the band-edge use below produce:

1. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.
2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upperband-edges of the emission:
 - (a) PEAK: RBW=1MHz ;VBW=3MHz, PK detector, Sweep=AUTO
 - (b) This is pulse Modulation device a duty cycle factor was used to calculate average level based measured peak level.

8.4. Test Results

Pass (The testing data was attached in the next pages.)

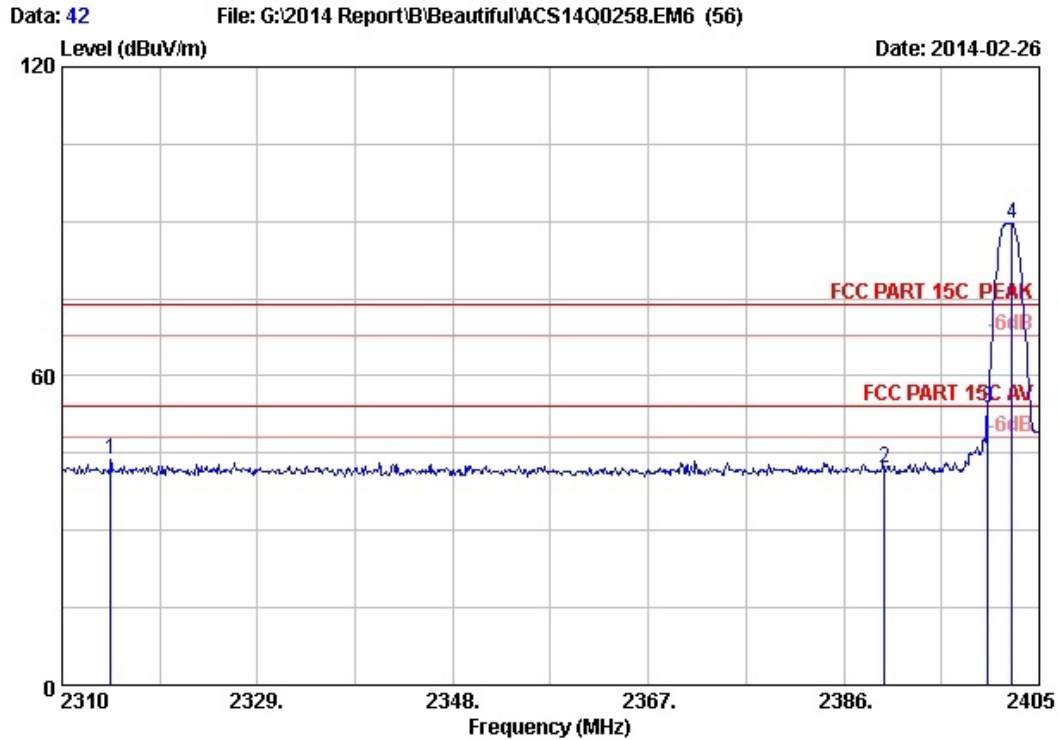
Note: If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.



Site no. : 3m Chamber Data no. : 41
Dis. / Ant. : 3m 2013 3115 (4877) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 24°C/56% Engineer : Leo-Li
EUT : Soundbar Home Theater Speaker
Power Rating : DC 12V From Adapter Input AC 120V/60Hz
Test Mode : 2402Hz Tx
M/N : NS-SB314

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2310.760	23.88	5.67	35.70	49.94	43.79	74.00	30.21	Peak
2	2390.000	23.80	5.78	35.70	47.91	41.79	74.00	32.21	Peak
3	2400.000	23.79	5.80	35.70	57.50	51.39	74.00	22.61	Peak
4	2402.340	23.79	5.80	35.70	95.27	89.16	74.00	-15.16	Peak

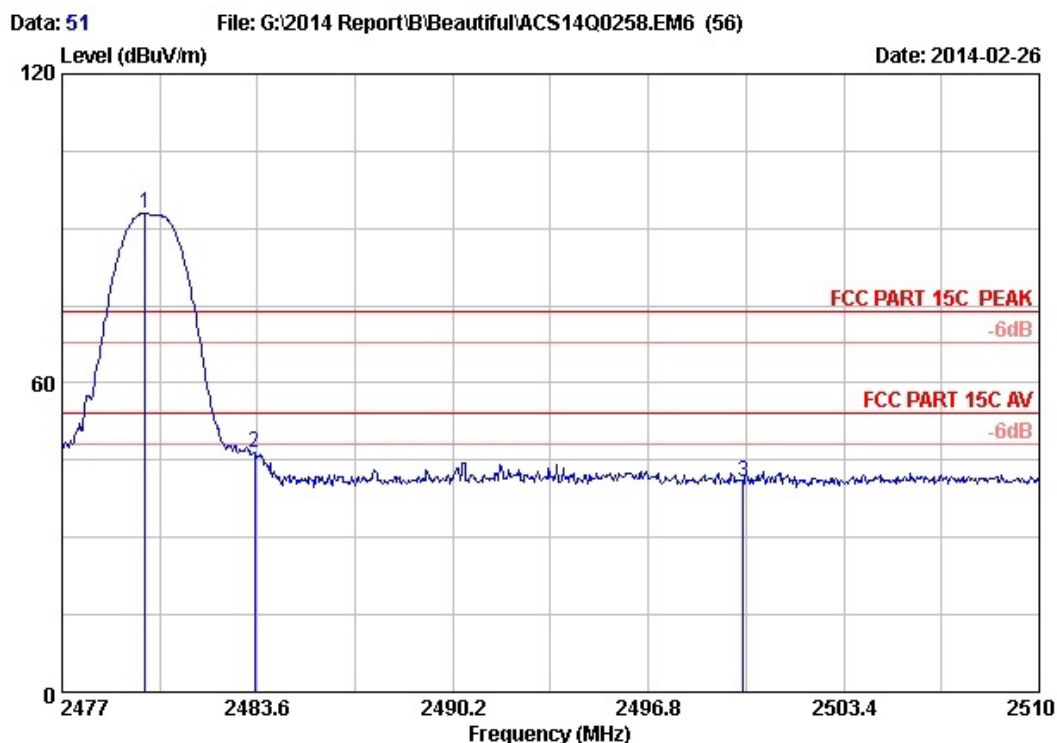
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
-Amp Factor
2. The emission levels that are 20dB below the official
limit are not reported.



Site no. : 3m Chamber Data no. : 42
Dis. / Ant. : 3m 2013 3115 (4877) Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 24°C/56% Engineer : Leo-Li
EUT : Soundbar Home Theater Speaker
Power Rating : DC 12V From Adapter Input AC 120V/60Hz
Test Mode : 2402Hz Tx
M/N : NS-SB314

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2314.750	23.87	5.67	35.70	49.89	43.73	74.00	30.27	Peak
2	2390.000	23.80	5.78	35.70	48.15	42.03	74.00	31.97	Peak
3	2400.000	23.79	5.80	35.70	60.05	53.94	74.00	20.06	Peak
4	2402.340	23.79	5.80	35.70	95.73	89.62	74.00	-15.62	Peak

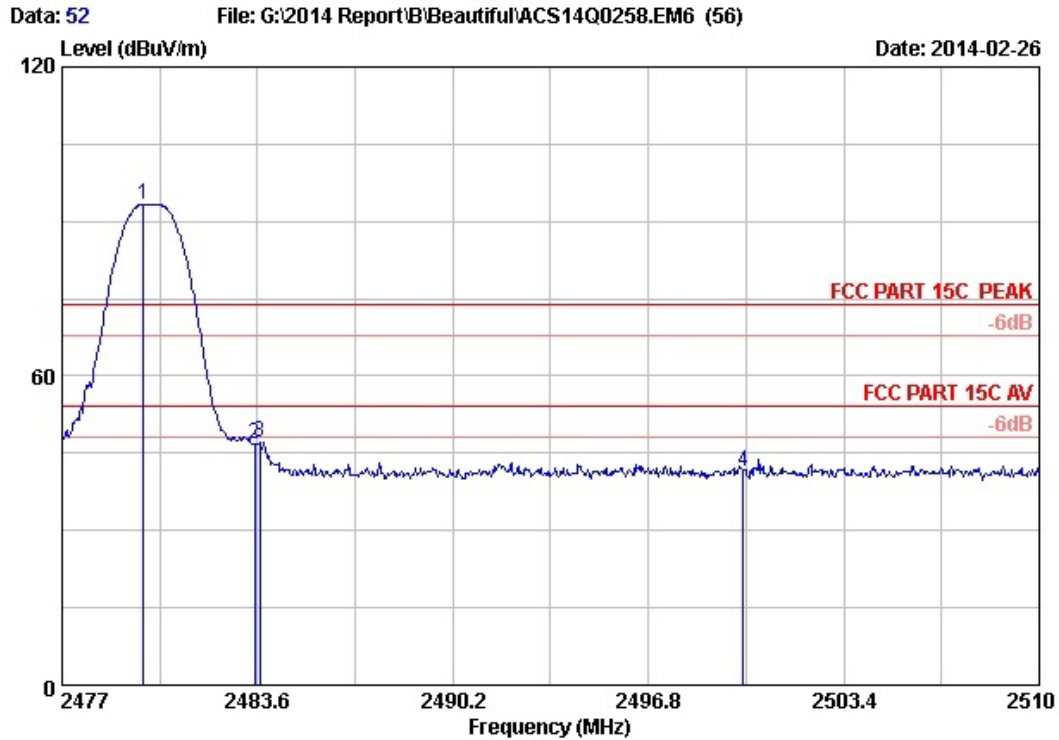
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
- Amp Factor
2. The emission levels that are 20dB below the official
limit are not reported.



Site no. : 3m Chamber Data no. : 51
 Dis. / Ant. : 3m 2013 3115 (4877) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 24°C/56% Engineer : Leo-Li
 EUT : Soundbar Home Theater Speaker
 Power Rating : DC 12V From Adapter Input AC 120V/60Hz
 Test Mode : 2480Hz Tx
 M/N : NS-SB314

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2479.805	23.72	5.91	35.70	98.94	92.87	74.00	-18.87	Peak
2	2483.500	23.71	5.92	35.70	52.68	46.61	74.00	27.39	Peak
3	2500.000	23.70	5.94	35.70	46.90	40.84	74.00	33.16	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 -Amp Factor
 2. The emission levels that are 20dB below the official
 limit are not reported.



Site no. : 3m Chamber Data no. : 52
 Dis. / Ant. : 3m 2013 3115 (4877) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 24°C/56% Engineer : Leo-Li
 EUT : Soundbar Home Theater Speaker
 Power Rating : DC 12V From Adapter Input AC 120V/60Hz
 Test Mode : 2480Hz Tx
 M/N : NS-SB314

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2479.739	23.72	5.91	35.70	99.48	93.41	74.00	-19.41	Peak
2	2483.500	23.71	5.92	35.70	52.79	46.72	74.00	27.28	Peak
3	2483.666	23.71	5.92	35.70	53.13	47.06	74.00	26.94	Peak
4	2500.000	23.70	5.94	35.70	47.67	41.61	74.00	32.39	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
 - Amp Factor
 2. The emission levels that are 20dB below the official
 limit are not reported.

9. POWER SPECTRAL DENSITY TEST

9.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9030A	MY51380221	Oct.31, 13	1 Year
2.	Amp	HP	8449B	3008A08495	May.08, 13	1 Year
3.	Antenna	EMCO	3115	9607-4877	May.08, 13	1 Year
4.	HF Cable	Hubersuhne	Sucoflex104	-	May.08, 13	1 Year

9.2. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

9.3. Test Procedure

1. Connected the EUT's antenna port to spectrum analyzer device by 20dB attenuator.
2. Set the test frequency as center frequency, Set RBW=3KHz, VBW=10KHz, Span large enough capture the entire frequency, Read out maximum peak level frequency
3. Set the frequency read from produce 2 as center frequency, then set the span=300KHz, Sweep time=Span/RBW, Then Max hold, read out each mode and each chain's Power density.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude

9.4. Test Results

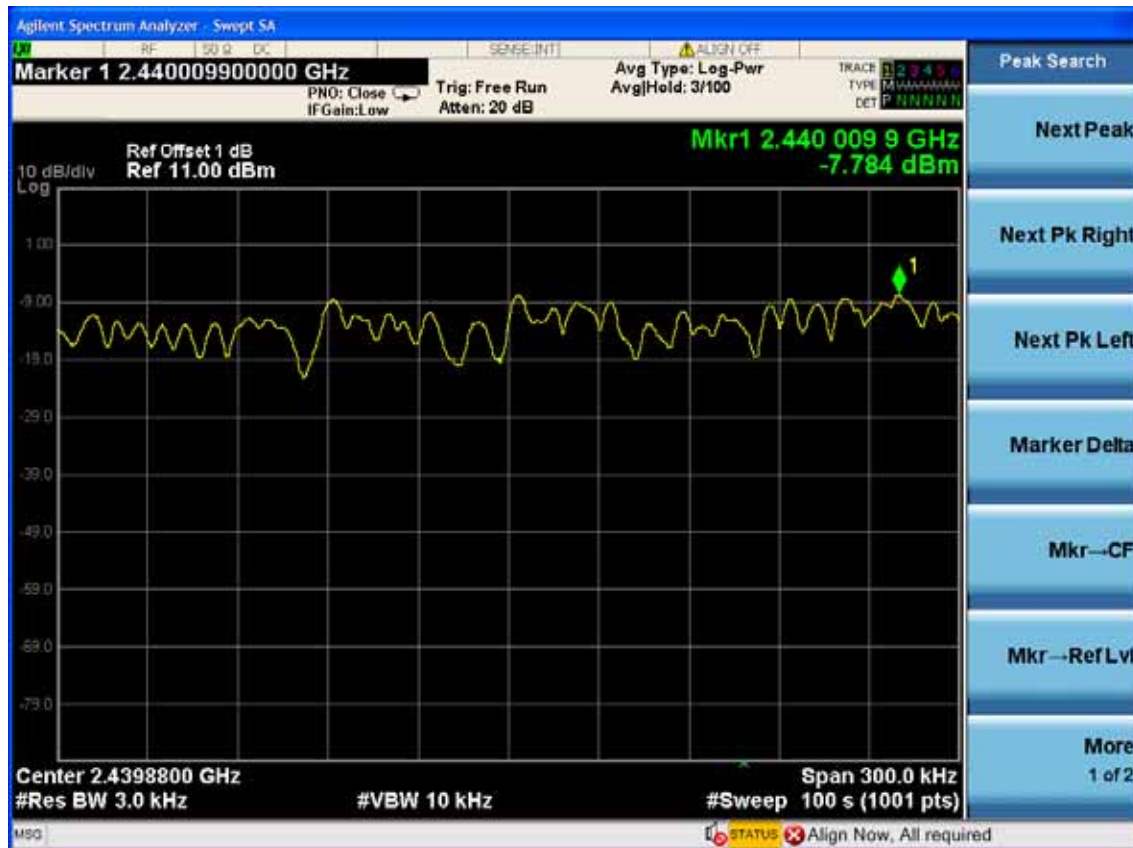
EUT: Soundbar Home theater Speaker		
M/N: NS-SB314		
Test date: 2014-03-01	Pressure: 101.4±1.0kpa	Humidity: 52.3 ±3.0%
Tested by: Eric	Test site: RF site	Temperature: 23.5±0.6℃

Cable loss: 1 dB		Attenuator loss: 20 dB	
Test Mode	CH (MHz)	Power density (dBm/3KHz)	Limit (dBm/3KHz)
GFSK	2402	-8.166	8
	2440	-7.784	8
	2480	-7.226	8
Conclusion : PASS			

2402MHz



2440MHz



2480MHz



10.DEVIATION TO TEST SPECIFICATIONS

[NONE]

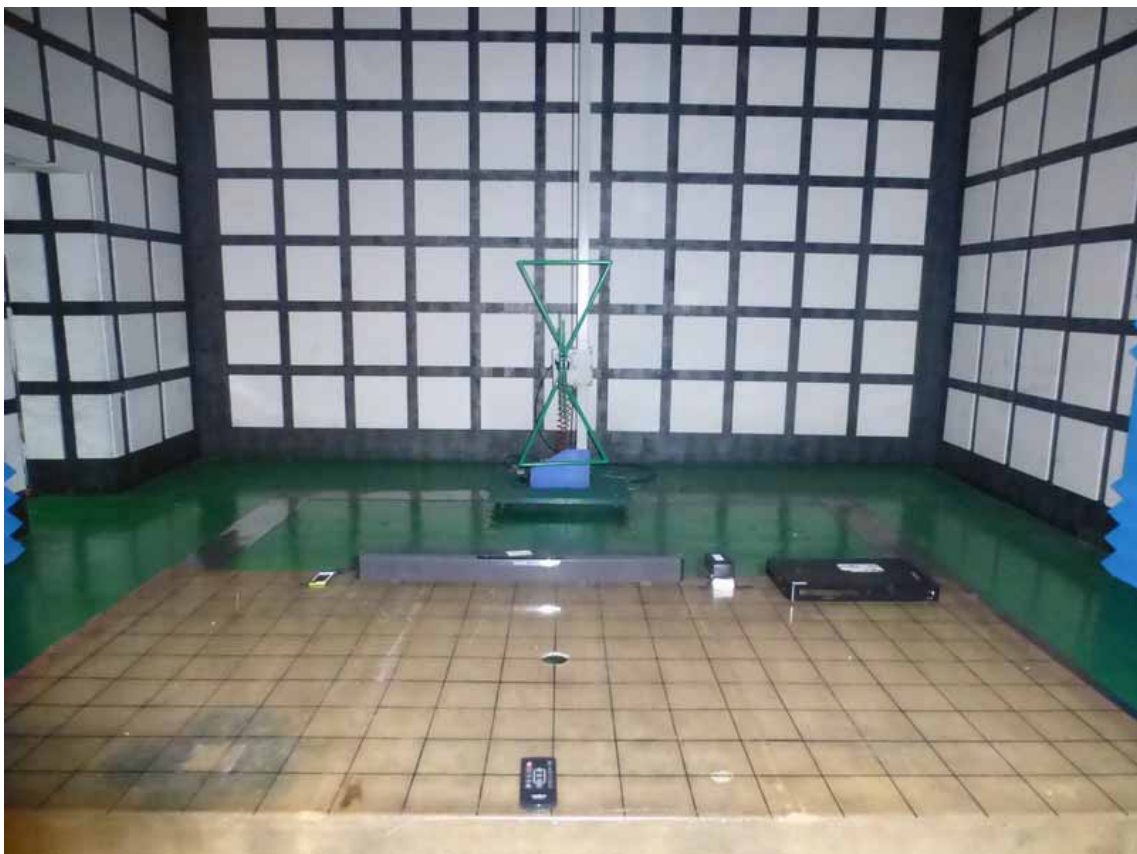
11. HOTOGRAPH OF TEST

11.1. Photos of Power Line Conducted Emission Test



11.2. Photos of Radiated Emission Test

30-1000MHz



(Above 1000MHz)



12. PHOTOGRAPH OF EUT

Figure 1
General Appearance of the EUT



Figure 2
General Appearance of the EUT



Figure 3
General Appearance of the EUT



Figure 4
General Appearance of the EUT



Figure 5
General Appearance of the EUT



Figure 6
Inside of the EUT



Figure 7
Label of the EUT



Figure 8
Component of the PCB Board

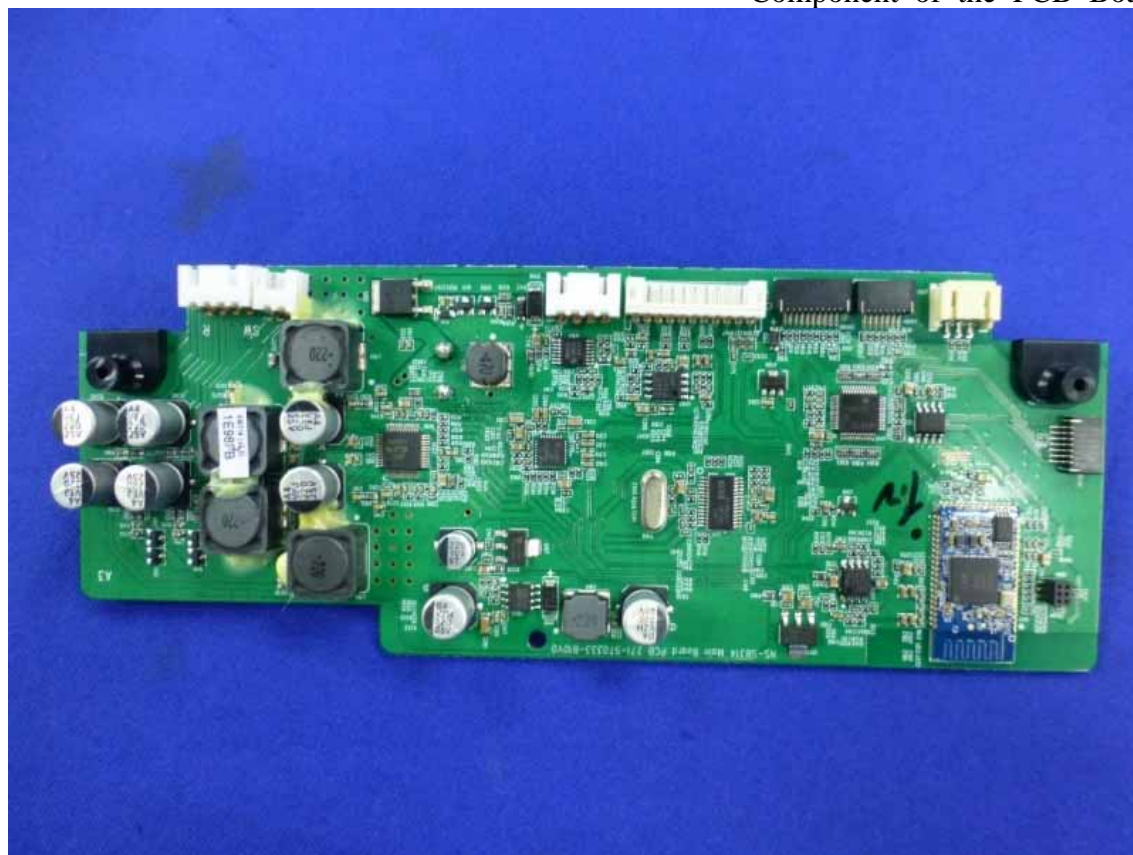


Figure 9
Component of the PCB Board

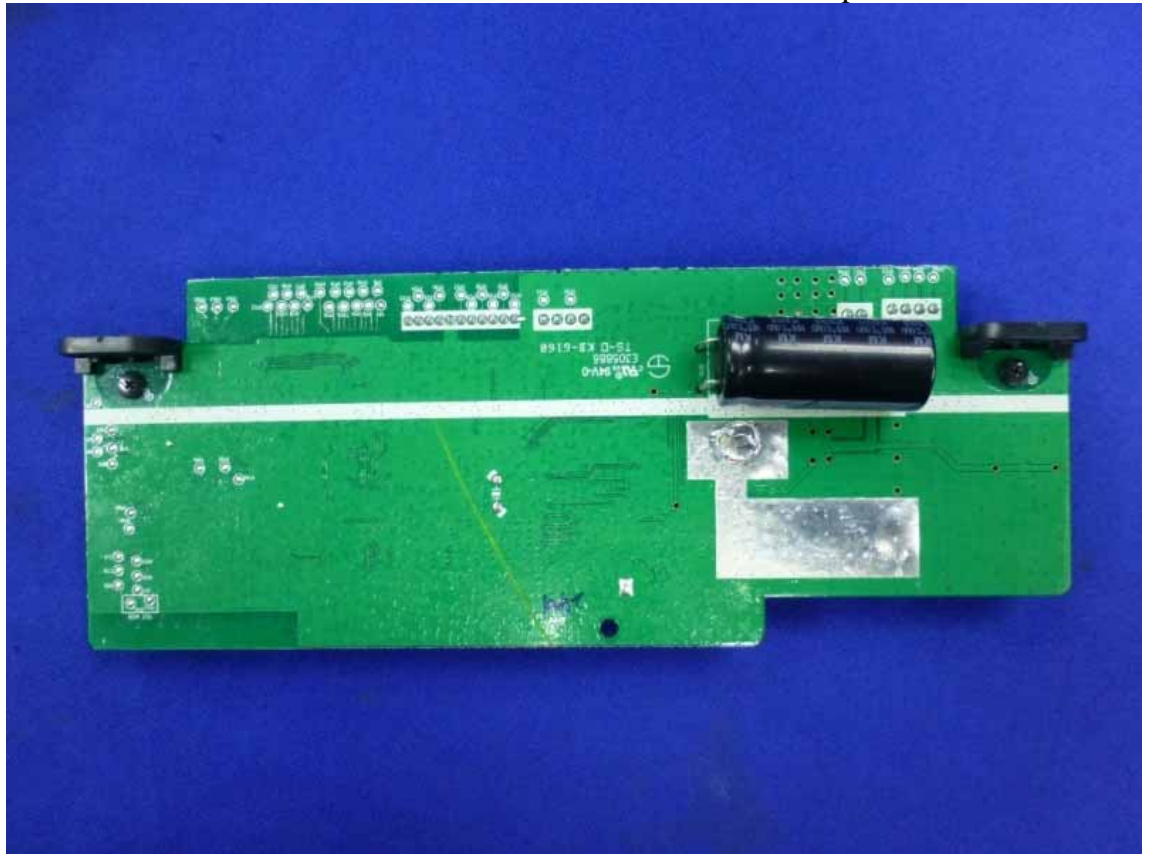


Figure 10
Component of the PCB Board

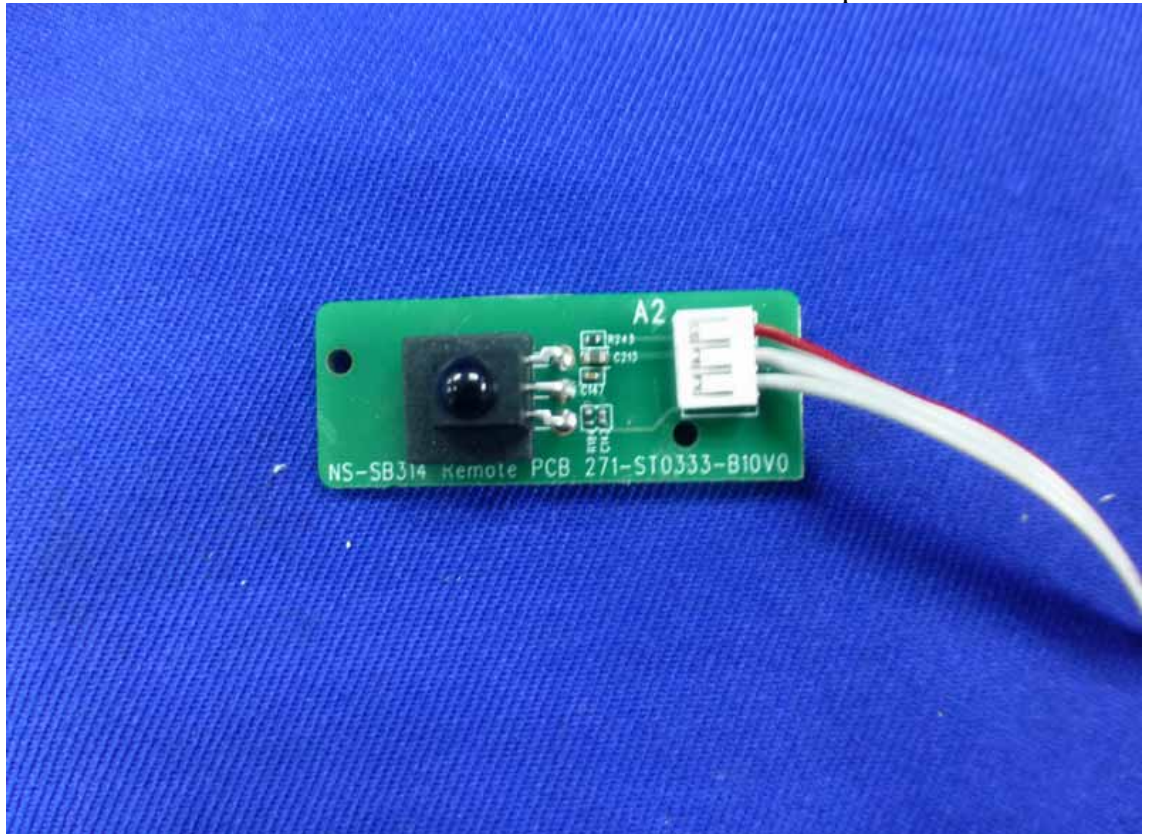


Figure 11
Component of the PCB Board

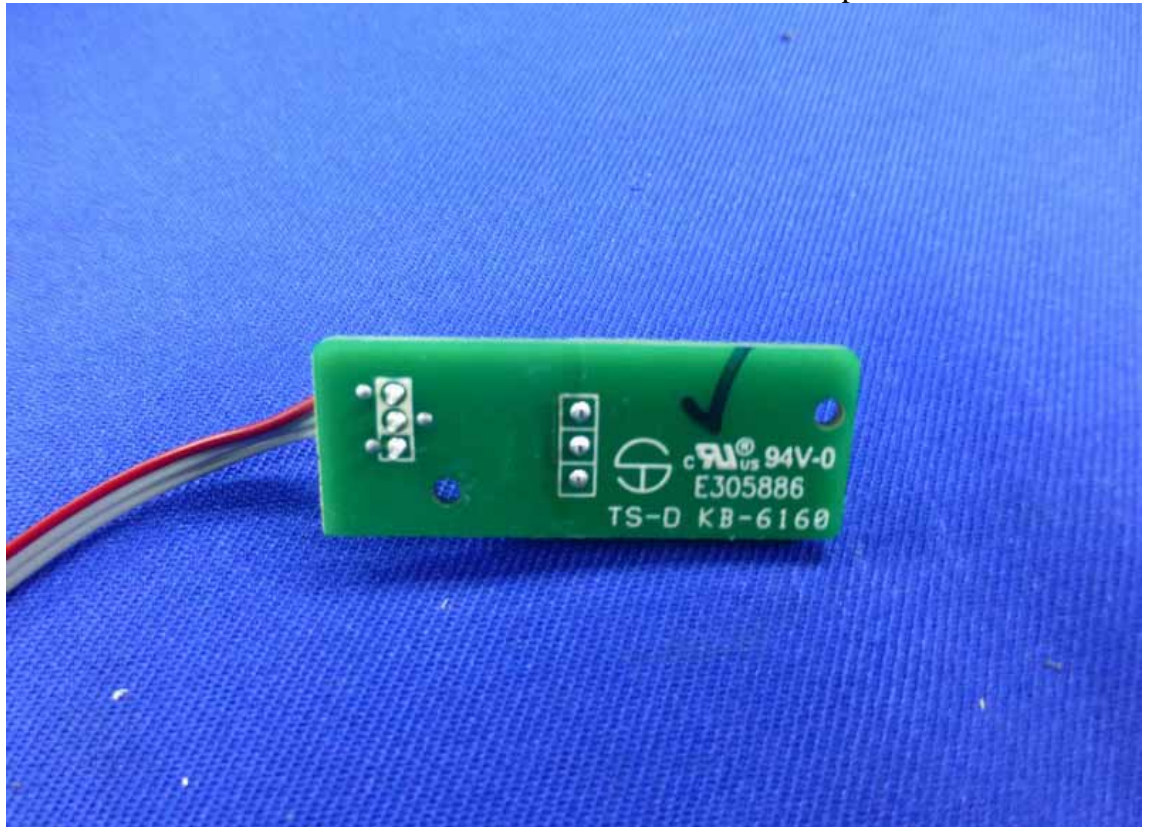


Figure 12
Component of the PCB Board

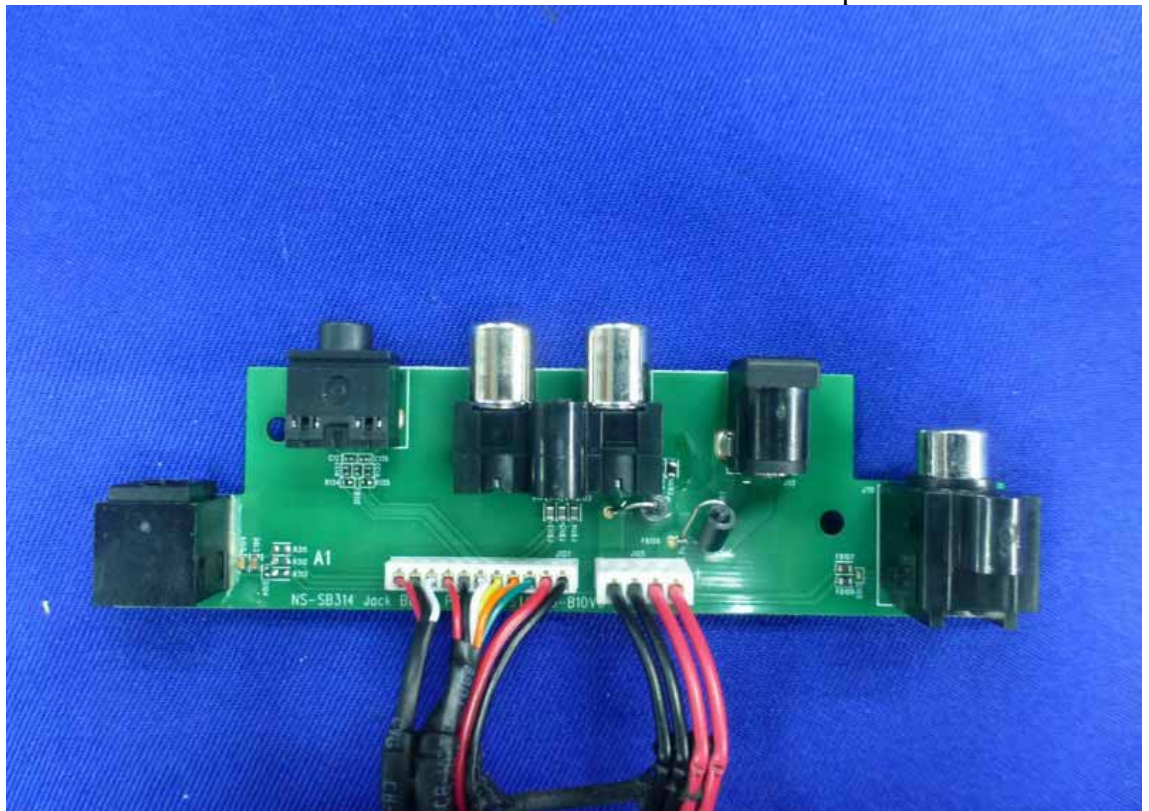


Figure 13
Component of the PCB Board

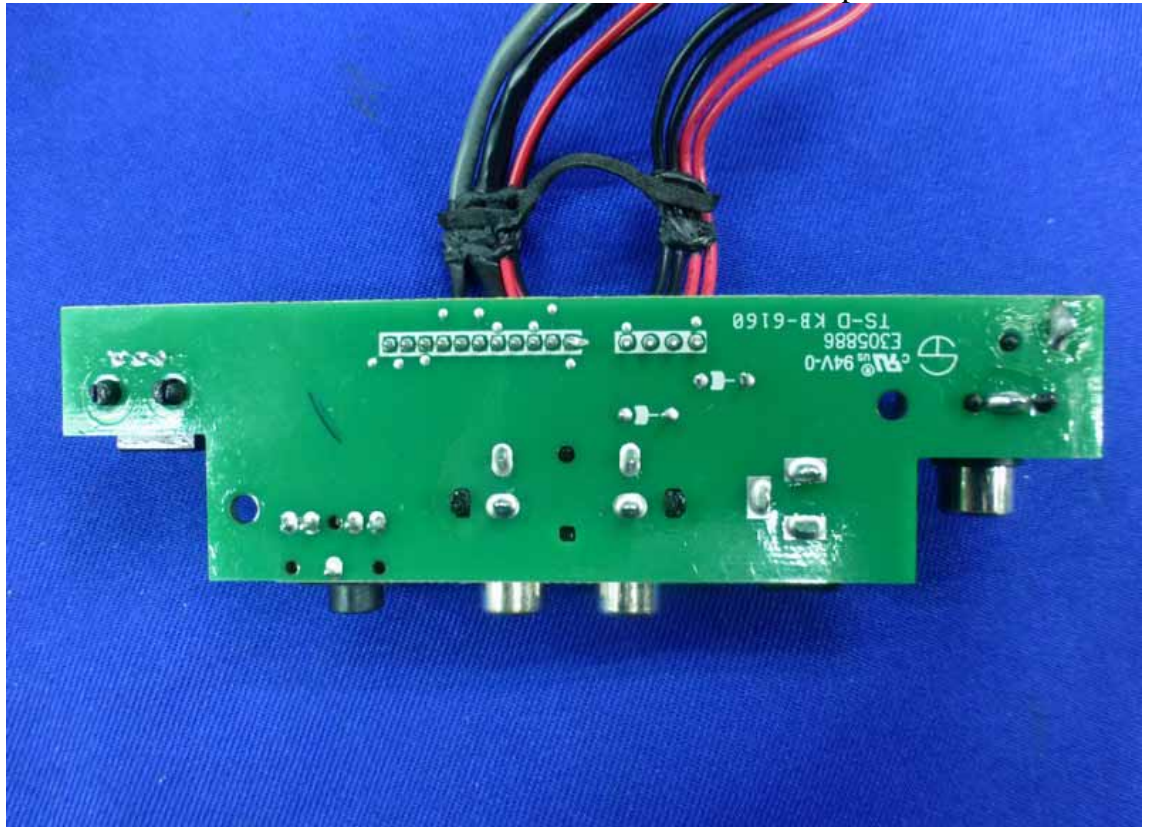


Figure 14
Component of the PCB Board

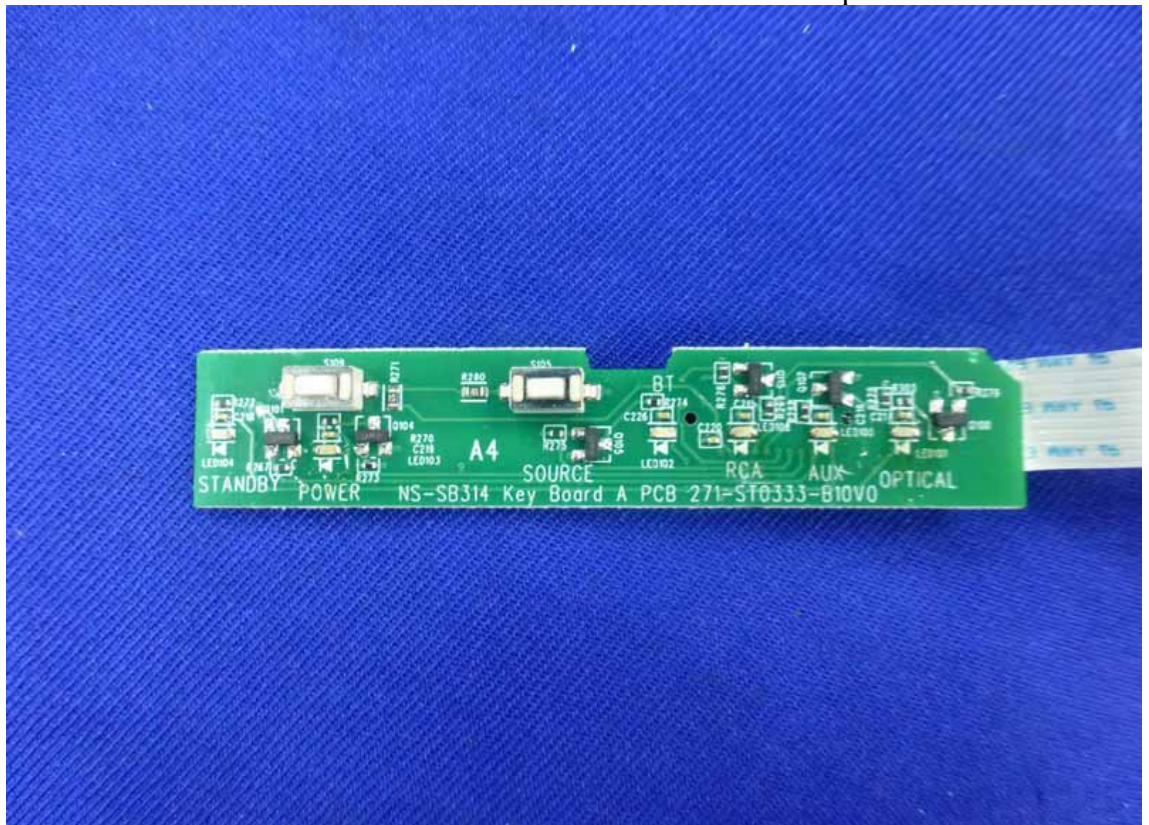


Figure 15
Component of the PCB Board

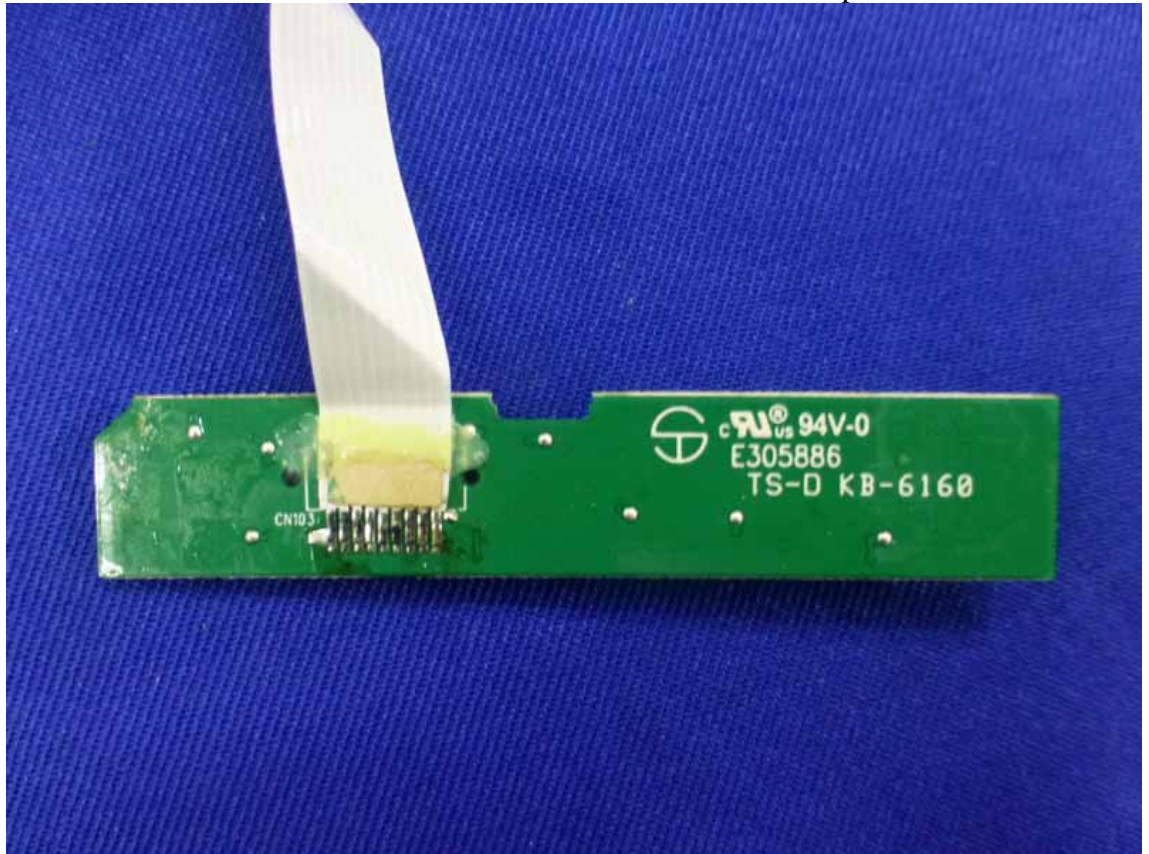


Figure 16
Component of the PCB Board

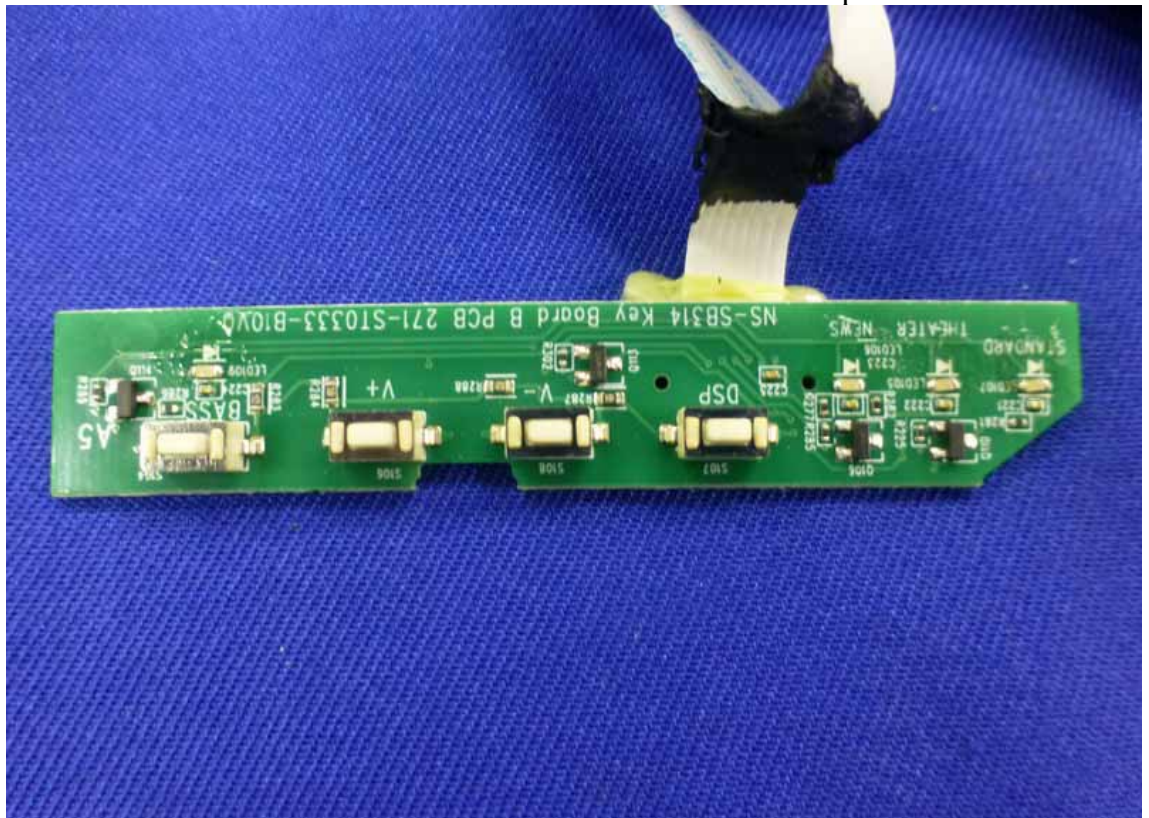


Figure 17
Component of the PCB Board

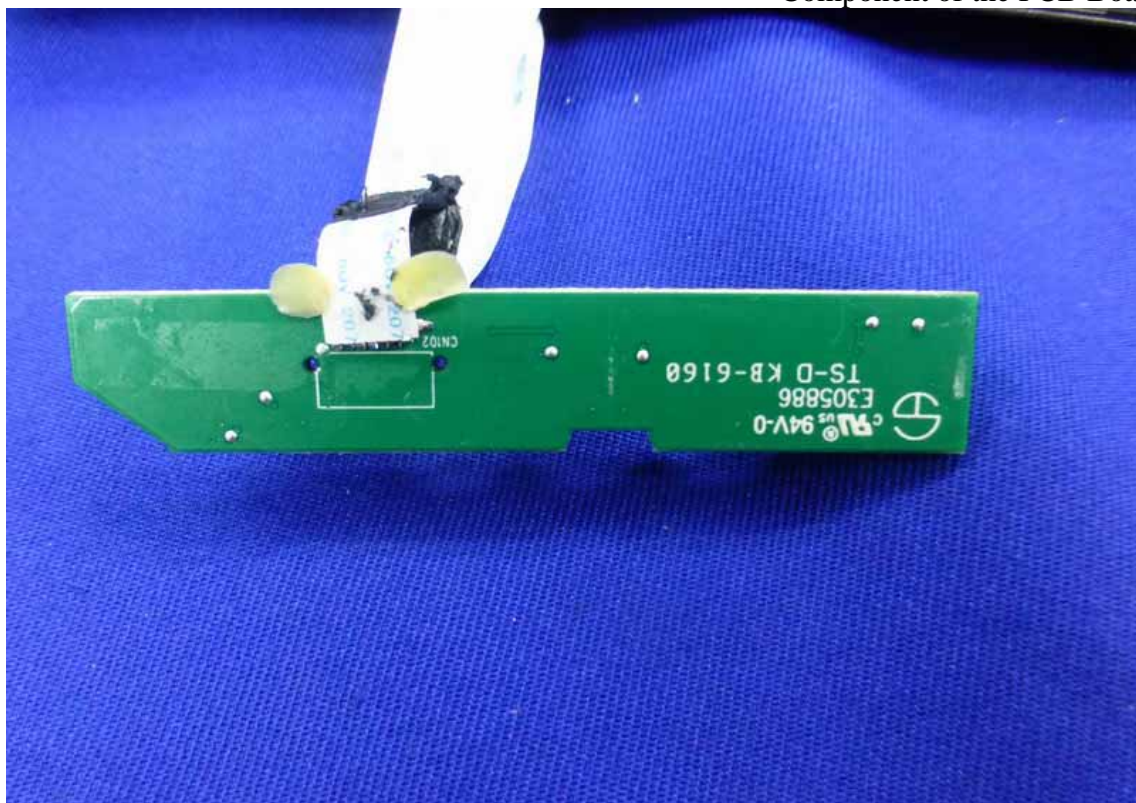


Figure 18
Remote



Figure 19
Remote



Figure 20
Speaker



Figure 21
Speaker



Figure 22
Speaker



Figure 23
Speaker



Figure 24
Power Adapter#1



Figure 25
Power Adapter#1



Figure 26
Power Adapter#2



Figure 27
Power Adapter#2



Figure 28
Power Adapter#2



Figure 29
Power Adapter#2



Figure 30
RAC In (R/L) Cable



Figure 31
Audio Cable

