

FCC PART 15.249
EMI MEASUREMENT AND TEST REPORT
For

Shenzhen Juneed Technology Co., Ltd.
Rm 20C, Guang Hao International Center, Mei Long Rd., Longhua New Dist. Shenzhen, China

FCC ID:2ACOVMAIN

Trade: N/A

This Report Concerns: Original Report	Equipment Type: 2.1CH Wireless subwoofer soundbar
Test Engineer:	Lisa Chen <i>Lisa Chen</i>
Report No.:	BSL20150919-1
Receive EUT Date/Test Date:	September 01, 2015/ September 01- September 19, 2015
Reviewed By:	Mike moo <i>Mike moo</i>
Prepared By:	BSL Testing Co.,LTD. NO. 24, ZH Park, Nantou, Shenzhen, 518000 China Tel: 86- 755-26508703 Fax: 86- 755-26508703

TABLE OF CONTENTS

1.	GENERAL INFORMATION	3
1.1.	Report information	3
1.2.	Measurement Uncertainty	3
2.	PRODUCT DESCRIPTION	4
2.1.	EUT Description	4
2.2.	Block Diagram of EUT Configuration.....	5
2.3.	Support Equipment List	5
2.4.	Test Conditions	5
3.	TEST RESULTS SUMMARY	6
	Modifications	6
4.	TEST EQUIPMENT USED	7
5.	ANTENNA REQUIREMENT	8
5.1.	Standard Applicable.....	8
5.2.	Antenna Connected Construction	8
5.3.	Result	8
6.	CONDUCTED POWER LINE TEST	9
6.1.	Test Equipment	9
6.2.	Test Procedure	9
6.3.	Test Setup.....	9
6.4.	Conducted Power line Emission Limits.....	9
6.5.	Conducted Power Line Test Result.....	10
7.	RADIATED EMISSION TEST	12
7.1.	Test Equipment	12
7.2.	Test Procedure	12
7.3.	Radiated Test Setup	12
7.4.	Radiated Emission Limit.....	14
7.5.	Radiated Emission Test Result	15
8.	BAND EDGE	20
8.1.	Test Equipment	20
8.2.	Test Procedure	20
8.3.	Band Edge FCC 15.249(d) Limit.....	20
8.4.	Band Edge Test Result.....	21
9.	20-DB BANDWIDTH	22
9.1.	Test Equipment	22
9.2.	Test Procedure	22
9.3.	Limit.....	22
9.4.	Test Result /Plots	22

1. GENERAL INFORMATION

1.1. Report information

- 1.1.1.This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that BSL approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that BSL in any way guarantees the later performance of the product/equipment.
- 1.1.2.The sample/s mentioned in this report is/are supplied by Applicant, BSL therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.
- 1.1.3.Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through BSL, unless the applicant has authorized BSL in writing to do so.

Test Facility -

The test site used to collect the radiated data is located on the address of BSL Testing Co.,LTD.

(FCC Registered Test Site Number: 191509) on

NO. 24, ZH Park, Nantou, Shenzhen, 518000 China

The Test Site is constructed and calibrated to meet the FCC requirements.

1.2. Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Emission Test	+/-1.25dB
2	RF Power, Conducted	+/-0.20dB
3	Spurious emissions, conducted	+/-0.33dB
4	All emissions, radiated (<1G)	+/-3.47dB
5	All emissions, radiated (>1G)	+/-3.82dB
6	Temperature	+/-0.5°CdB
7	Humidity	+/-2%

2. PRODUCT DESCRIPTION

2.1. EUT Description

Description	:	2.1CH Wireless subwoofer soundbar
Applicant	:	Shenzhen Juneed Technology Co., Ltd. Rm 20C,Guang Hao International Center,Mei Long Rd.,Longhua New Dist. Shenzhen,China
Manufacturer	:	Dongguan Juneed Technology Co., Ltd 4th Flr,Bldg A6,Tai He Mei Industrial Park,Chun Feng Road 128,Long Bei Ling,Tangxia,Dongguan,China
Model Number	:	JN-1032,Bauhn SB-1
Modulation type	:	GFSK
Antenna gain	:	0dBi
Antenna type	:	PCB Antenna
Frequency	:	2403-2479MHz
Number of Channels	:	39 Channels
data rate	:	2M only
Power Supply	:	DC 21V adapter
Hardware version	:	POWER PCB V0.1, 2.4G RF PCB V4.0, BT PCB V1.1,OTHER PCB V0.2
Software version	:	V1.1
Serial Number	:	20150919

Channel List					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2403	14	2429	28	2457
2	2405	15	2431	29	2459
3	2407	16	2433	30	2461
4	2409	17	2435	31	2463
5	2411	18	2437	32	2465
6	2413	19	2439	33	2467
7	2415	20	2441	34	2469
8	2417	21	2443	35	2471
9	2419	22	2445	36	2473
10	2421	23	2447	37	2475
11	2423	24	2449	38	2477
12	2425	25	2451	39	2479
13	2427	26	2453	-	-
		27	2455		

The series products, model name: JN-1032,Bauhn SB-1 have the same circuit diagram,PCB layout, software, RF Module, Features and functionality. The differences are the model name, so, we select JN-1032 to test.

2.2. Block Diagram of EUT Configuration

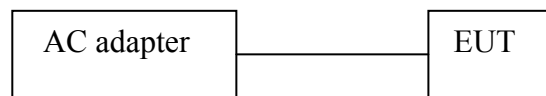


Figure 1 EUT Setup

2.3. Support Equipment List

Name	Model No	S/N	Manufacturer	Used (Y/N)
AC/DC adapter	ZF120A-2103000	-	Juneed	Y
-	-	-	-	-

2.4. Test Conditions

It must provide an operational voltage (21V DC by adapter) to turn on the 2.1CH Wireless subwoofer soundbar and on one certain channel in service mode by means of company proprietary software.

the test software name: A7125 test Software.

After the preliminary test, we found to emit the worst emissions and therefore had been tested under operating condition.

The EUT Themselves can enter the test mode.

Power setting parameters For mode:

GFSK (**PK Power:0dbm**).

For the EUT was tested with Channel Frequency 2403MHz, 2441MHz and 2479MHz.

3. TEST RESULTS SUMMARY

FCC 15 Subpart C, Paragraph 15.249:2013

FCC Rules	Description of Test	Result
Section 15.207	Conducted Emission	Compliant
Section 15.249(a)	The fundamental field strength and the harmonics	Compliant
Section 15.209 Section 15.249(d)	Radiated Emission	Compliant
Section 15.249(d)	Band Edge	Compliant
Section 15.203	Antenna Requirement	Compliant
Section 15.249	20dB Bandwidth	Compliant

Remark: "N/A" means "Not applicable".

Statement: All testing was performed using the test procedures found in ANSI C63.4-2003.

Modifications

No modification was made.

4. TEST EQUIPMENT USED

EQUIPMENT/FACILITIES	MANUFACTURER	MODEL	SERIAL NO.	DATE OF CAL.	CAL. INTERVAL
3m Semi-Anechoic Chamber	Chengyu Electron	9 (L)*6 (W)* 6 (H)	BSL086	Aug. 23 2015	1 Year
EMI Test Receiver	Rohde & Schwarz	ESCI3	BSL001	Sep. 28 2014	1 Year
BiConiLog Antenna	Rohde & Schwarz	HL562 (30MHz—3GHz)	BSL009	Sep. 28 2014	1 Year
Double -ridged waveguide horn	Rohde & Schwarz	BBHA9120D (1—18GHz)	BSL008	Aug. 27 2015	1 Year
Horn Antenna	AHS	SAS-574 (18GHz—40GHz)	BSL072	Dec. 28 2014	1 Year
Cable	PUTIANLE	BSL045 (9 kHz-40GHz)	BSL045	Aug. 27 2015	1 Year
Cable	PUTIANLE	BSL046 (9 kHz-40GHz)	BSL046	Aug. 27 2015	1 Year
Cable	PUTIANLE	BSL047 (9 kHz-40GHz)	BSL047	Aug. 27 2015	1 Year
Amplifier(100kHz-40GHz)	R&S	SMR40	BSL007	Sep. 28 2014	1 Year
Band filter	Amindeon	82346	BSL049	Aug. 27 2015	1 Year
Active Loop Antenna	Schwarzbeck	FMZB1519 (9 kHz - 30 MHz)	BSL011	Sep. 28 2014	1 Year
Coaxial Switch	YUANFANG	TA218B	BSL004	Aug. 27 2015	1 Year
Spectrum analyzer	Rohde & Schwarz	FSP40	BSL049	Sep. 28 2014	1 Year
Shielding Room	zhongyu Electron	7.0(L)x3.0(W)x3.0(H)	BSL085	Sep. 28 2014	1 Year
EMI Test Receiver	R&S	ESPI	BSL002	Sep. 28 2014	1 Year
10dB Pulse Limita	R&S	BSL003	BSL003	Sep. 28 2014	1 Year
Coaxial Switch	PUTIANLE	TA218B	BSL004	Aug. 27 2015	1 Year
LISN	Rohde & Schwarz	ESH3-Y5	BSL005	Sep. 28 2014	1 Year
Coaxial Cable	PUTIANLE	BSL048 (9 kHz-40GHz)	BSL048	Aug. 27 2015	1 Year
EMI TEST SOFTWARE	AUDIX	E3	N/A	N/A	N/A

5. ANTENNA REQUIREMENT

5.1. Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

5.2. Antenna Connected Construction

According to § 15.203, An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

The antenna used for this product is a PCB ANT .The antenna is permanently attached. Refer to the product photo.

5.3. Result

Compliance

6. CONDUCTED POWER LINE TEST

6.1. Test Equipment

Please refer to section 4 this report.

6.2. 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 50ohm/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.

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 ASIN C63.4:2003 on conducted measurement. Conducted emissions were measured over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

6.3. Test Setup



For the actual test configuration, Please refer to the related items-Photos of testing

6.4. Conducted Power line Emission Limits

FCC Part 15 Paragraph 15.207 (dBuV)		
Frequency Range (MHZ)	Class A QP/AV	Class B QP/AV
0.15-0.5	79/66	65-56/56-46
0.5-5.0	73/60	56-46
5.0-3.0	73/60	60-50

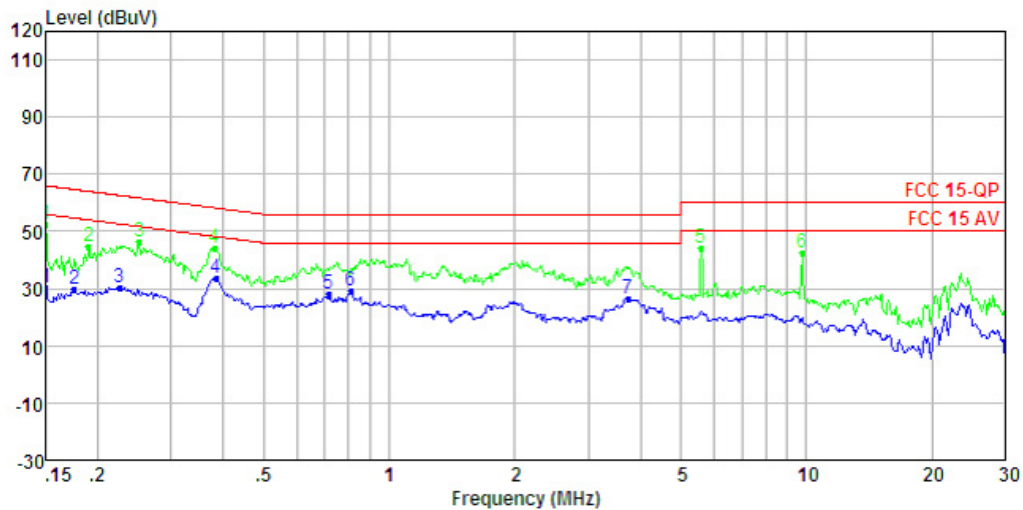
Note: In the above table, the tighter limit applies at the band edges.

6.5. Conducted Power Line Test Result

Pass

2403MHz Transmitting(Worst case mode)

power test voltage:AC 120V/60Hz



Condition:

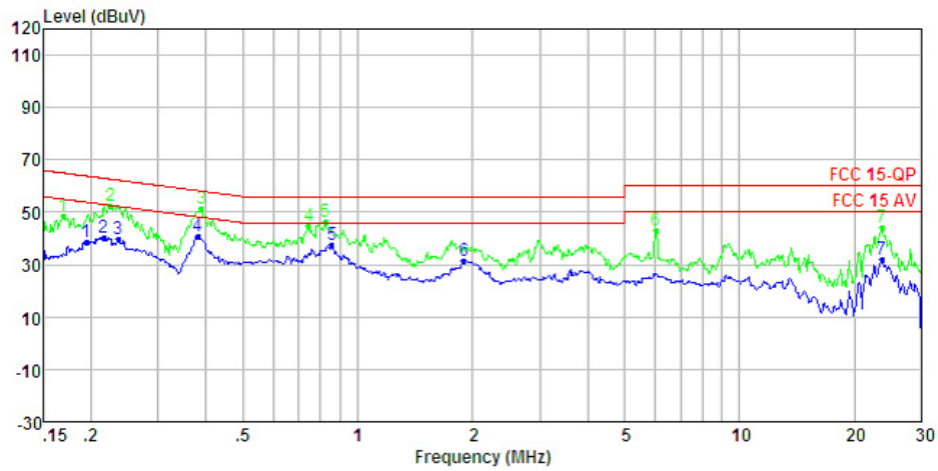
: RBW:9.000KHz VBW:30.000KHz

	Freq	Level	Limit	Over	Remark	Pol/Phase
	MHz	dBuV	dBuV	dB		
1 Max	0.150	30.1	56.0	-25.9	Average	LINE
2	0.176	29.8	54.7	-24.9	Average	LINE
3	0.226	30.4	52.6	-22.2	Average	LINE
4	0.385	33.6	48.2	-14.6	Average	LINE
5	0.716	28.0	46.0	-18.0	Average	LINE
6	0.809	29.0	46.0	-17.0	Average	LINE
7	3.740	26.7	46.0	-19.3	Average	LINE

Condition:

: RBW:9.000KHz VBW:30.000KHz

	Freq	Level	Limit	Over	Remark	Pol/Phase
	MHz	dBuV	dBuV	dB		
1 Max	0.150	52.7	66.0	-13.3	QP	LINE
2	0.190	44.6	64.0	-19.4	QP	LINE
3	0.252	46.1	61.7	-15.6	QP	LINE
4	0.381	44.0	58.3	-14.3	QP	LINE
5	5.594	43.9	60.0	-16.1	QP	LINE
6	9.757	42.3	60.0	-17.7	QP	LINE



Condition:

: RBW:9.000KHz VBW:30.000KHz

	Freq	Level	Limit	Over		
	MHz	dBuV	Line	Limit	Remark	Pol/Phase
1	0.194	38.9	53.8	-14.9	Average	NEUTRAL
2	0.216	40.5	53.0	-12.5	Average	NEUTRAL
3 Max	0.235	39.9	52.3	-12.4	Average	NEUTRAL
4	0.381	41.0	48.3	-7.3	Average	NEUTRAL
5	0.857	37.4	46.0	-8.6	Average	NEUTRAL
6	1.898	31.5	46.0	-14.5	Average	NEUTRAL
7	23.636	32.1	50.0	-17.9	Average	NEUTRAL

Condition:

: RBW:9.000KHz VBW:30.000KHz

	Freq	Level	Limit	Over		
	MHz	dBuV	Line	Limit	Remark	Pol/Phase
1	0.169	48.4	65.0	-16.6	QP	NEUTRAL
2	0.224	52.7	62.7	-10.0	QP	NEUTRAL
3 Max	0.389	51.2	58.1	-6.9	QP	NEUTRAL
4	0.743	44.5	56.0	-11.5	QP	NEUTRAL
5	0.822	46.4	56.0	-9.6	QP	NEUTRAL
6	6.056	43.0	60.0	-17.0	QP	NEUTRAL
7	23.636	44.2	60.0	-15.8	QP	NEUTRAL

7. RADIATED EMISSION TEST

7.1. Test Equipment

Please refer to section 4 this report.

7.2. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level.

Calibrated Loop antenna is used as receiving antenna for frequencies below 30MHz, Calibrated Bilog antenna is used as receiving antenna for frequencies between 30 MHz and 1 GHz, Calibrated Horn antenna is used as receiving antenna for frequencies above 1000MHz. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated emission measurement.

The bandwidth of test receiver is set at 9kHz in below 30MHz. and set at 120kHz in 30-1000MHz, and 1MHz in above 1000MHz.

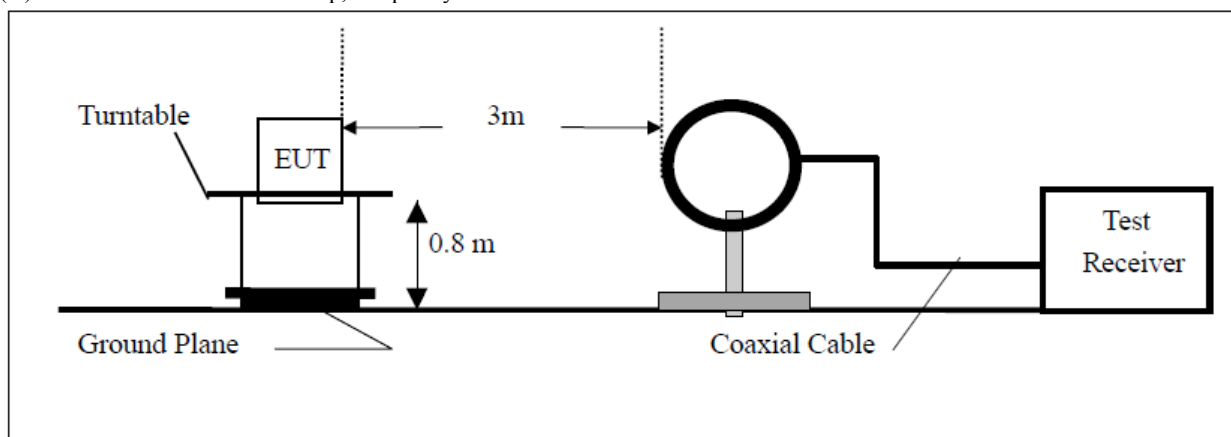
The frequency range from 9kHz to 25GHz is checked.

The final measurement in band 9-90kHz, 110-490kHz and above 1000MHz is performed with Peak detector and Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

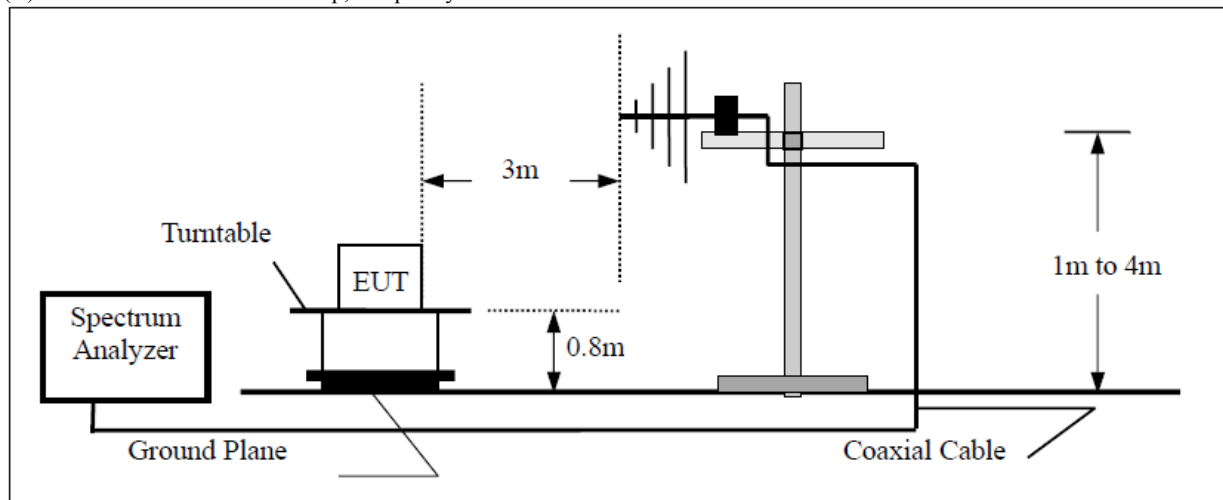
Through three orthogonal axes to determine which attitude and equipment arrangement produces the highest emission relative to the limit. And X direction is worst mode.

7.3. Radiated Test Setup

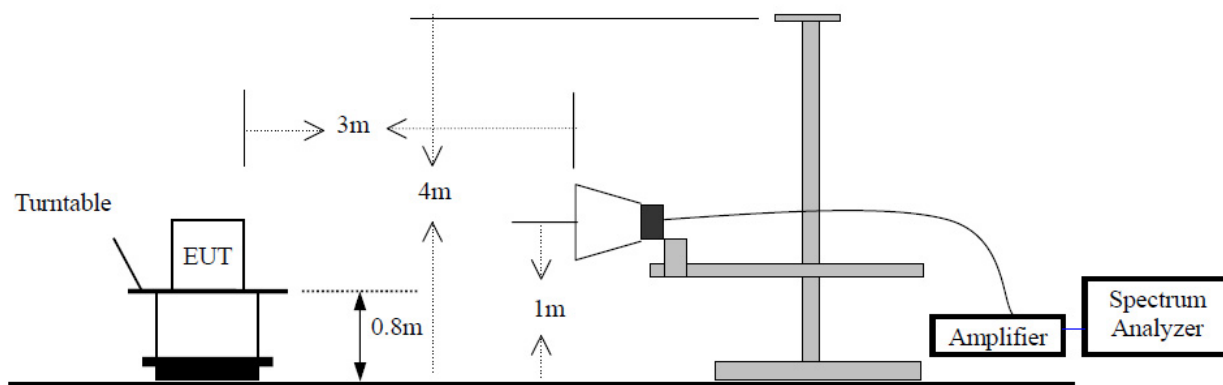
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz



7.4. Radiated Emission Limit

All emission from a digital device,including any network of conductors and apparatus connected thereto,shall not exceed the level of field strength specified below :

A. Fundamental and Harmonics Radiated Emissions 15.249(a) Limit

Fundamental Frequency (MHZ)	Field as trength of Fundamental(3m)			Field as trength of Harmonics(3m)		
	mV/m	dBuV/m		uV/m	dBuV/m	
902-928	50	94(QP)	114(Peak)	500	54(AV)	74(Peak)
2400-2483.5	50	94(AV)	114(Peak)	500	54(AV)	74(Peak)

Note: (1) RF Voltage (dBuV)=20 log Voltage(uV)

(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

(3) The emission limit in this paragraph os based on measurement instrumentation employing an average detector.Measurement using instrumentation with a peak detector function,corresponding to 20dB above the maximum permitted average limit.

B. Spurious Radiated Emissions.

Frequency (MHz)	Limit			
	Field Strength of Quasi-peak Value (microvolts/m)	Field Strength of Quasi-peak Value (dBμV/m)	Measurement distance (m)	The final measurement in band 9-90kHz, 110-490kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.
0.009 - 0.490	2400/F(kHz)	/	300	
0.490 - 1.705	24000/F(kHz)	/	30	
1.705-30	30	29.5	30	
30 - 88	100	40	3	
88 - 216	150	43.5	3	
216 - 960	200	46	3	
Above 960	500	54	3	

Note: (1) RF Voltage (dBuV)=20 log Voltage(uV)

(2) In the Above Table,the tighter limit applies at the band edges.

(3) Distaqnce refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

7.5. Radiated Emission Test Result

Pass

A. Fundamental Radiated Emissions Data

CH Low

Freq. (MHz)	Read Level (dBuV) AV/PK	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission (dBuV/m) AV/PK	HORIZ/ VERT	Limits (dBuV/m) AV/PK	Margin (dB)
2403	78.28/88.35	27.47	5.42	30.17	81/91.07	VERT	94/114	-13/-22.93
2403	80.39/90.24	27.47	5.42	30.17	83.11/92.96	HORIZ	94/114	-10.89/-21.04

CH Middle

Freq. (MHz)	Read Level (dBuV) AV/PK	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission (dBuV/m) AV/PK	HORIZ/ VERT	Limits (dBuV/m) AV/PK	Margin (dB)
2441	79.44/88.85	27.40	5.40	30.15	82.09/91.5	VERT	94/114	-11.91/-22.5
2441	80.62/90.46	27.40	5.40	30.15	83.27/93.11	HORIZ	94/114	-10.73/-20.89

CH High

Freq. (MHz)	Read Level (dBuV) AV/PK	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission (dBuV/m) AV/PK	HORIZ/ VERT	Limits (dBuV/m) AV/PK	Margin (dB)
2479	78.14/87.58	27.50	5.46	29.98	81.12/89.45	VERT	94/114	-12.88/-23.44
2479	80.08/89.53	27.50	5.46	29.98	83.06/92.51	HORIZ	94/114	-10.94/-21.49

Remark:

Final Emission = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

B. General Radiated Emissions Data

For below 9kHz-30MHz Spurious

Freq. (MHz)	Emission(dBuV/m) PK / AV	Limits(dBuV/m) PK / AV	Margin (dB)
-	-	-	-
-	-	-	-

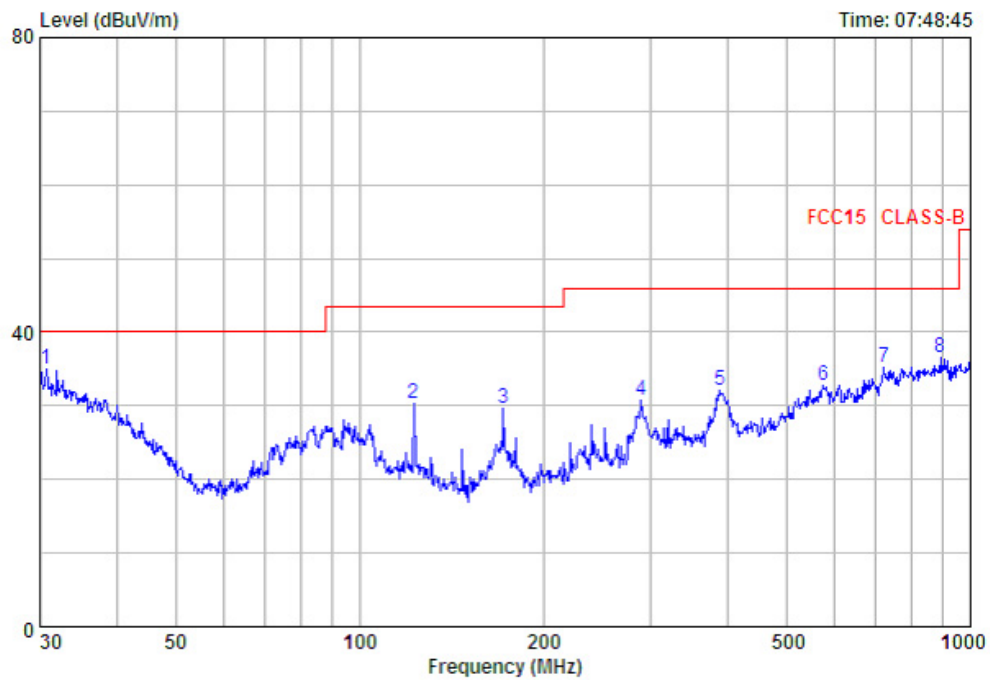
Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.

For 30M-1000MHz Spurious

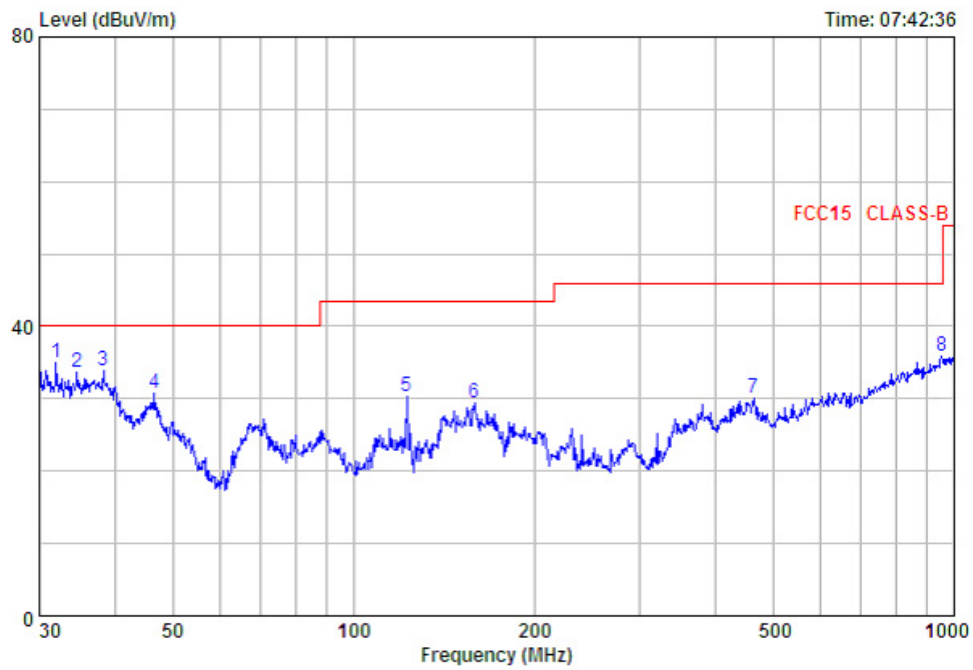
Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

2403MHz Transmitting(Worst case mode)



Condition : FCC15 CLASS-B 3m HORIZONTAL
: RBW:120.000KHz VBW:300.000KHz SWT:Auto

	Limit	Over			
Line	Level	Limit	Remark	Pol/Phase	
Freq	Line	Level	Limit	Remark	Pol/Phase
MHz	dBuV/m	dBuV/m	dB		
1 max	30.745	40.0	35.0	-5.0 QP	HORIZONTAL
2	122.834	43.5	30.3	-13.2 QP	HORIZONTAL
3	171.995	43.5	29.7	-13.8 QP	HORIZONTAL
4	289.002	46.0	30.7	-15.3 QP	HORIZONTAL
5	389.355	46.0	32.0	-14.0 QP	HORIZONTAL
6	574.626	46.0	32.8	-13.2 QP	HORIZONTAL
7	721.726	46.0	35.3	-10.7 QP	HORIZONTAL
8	893.857	46.0	36.6	-9.4 QP	HORIZONTAL



Condition : FCC15 CLASS-B 3m VERTICAL
 : RBW:120.000KHz VBW:300.000KHz SWT:Auto

	Freq	Limit	Level	Over	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB		
1 max	31.955	40.0	35.0	-5.0	QP	VERTICAL
2	34.639	40.0	33.7	-6.3	QP	VERTICAL
3	38.346	40.0	34.0	-6.0	QP	VERTICAL
4	46.666	40.0	30.8	-9.2	QP	VERTICAL
5	122.834	43.5	30.2	-13.3	QP	VERTICAL
6	159.225	43.5	29.4	-14.1	QP	VERTICAL
7	463.970	46.0	30.1	-15.9	QP	VERTICAL
8	952.094	46.0	35.8	-10.2	QP	VERTICAL

For 1000MHz-25000MHz Spurious**CH Low**

Freq. (MHz)	Emission(dBuV/m) AV/PK	HORIZ/ VERT	Limits(dBuV/m) AV/PK	Margin (dB)
4806	35.49/45.42	VERT	54.0/74.0	-18.51/-28.58
7209	39.45/49.42		54.0/74.0	-14.55/-24.58
9612	37.44/47.44		54.0/74.0	-16.56/-26.56
4806	34.36/46.03	HORIZ	54.0/74.0	-19.64/-27.97
7209	41.9/51.9		54.0/74.0	-12.1/-22.1
9612	43.39/53.39		54.0/74.0	-10.61/-20.61

CH Middle

Freq. (MHz)	Emission(dBuV/m) AV/PK	HORIZ/ VERT	Limits(dBuV/m) AV/PK	Margin (dB)
4882	30.69/40.77	VERT	54.0/74.0	-23.31/-33.23
7323	36.58/46.53		54.0/74.0	-17.42/-27.47
9764	35.51/45.54		54.0/74.0	-18.49/-28.46
4882	30.77/40.8	HORIZ	54.0/74.0	-23.23/-33.2
7323	38.84/48.84		54.0/74.0	-15.16/-25.16
9764	43.58/53.57		54.0/74.0	-10.42/-20.43

CH High

Freq. (MHz)	Emission(dBuV/m) AV/PK	HORIZ/ VERT	Limits(dBuV/m) AV/PK	Margin (dB)
4958	33.62/43.66	VERT	54.0/74.0	-20.38/-30.34
7437	37.49/47.49		54.0/74.0	-16.51/-26.51
9916	38.53/48.62		54.0/74.0	-15.47/-25.38
4958	32.89/42.89	HORIZ	54.0/74.0	-21.11/-31.11
7437	37.58/46.43		54.0/74.0	-16.42/-27.57
9916	39.58/48.51		54.0/74.0	-14.42/-25.49

Note:

1. The average measurement was not performed when the peak measured data under the limit of average detection.
2. Emissions attenuated more than 20 dB below the permissible value are not reported.

8. BAND EDGE

8.1. Test Equipment

Please refer to Section 4 this report.

8.2. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 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 can move up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated measurement. The bandwidth setting below 1GHz and above 1GHz on the field strength meter is 120 kHz and 1MHz respectively.

8.3. Band Edge FCC 15.249(d) Limit

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

8.4. Band Edge Test Result

Pass

ALL of the restriction bands were tested, and only the data of worst case was exhibited.

CH Low

Freq. (MHz)	Emission(dBuV/m) AV/PK	HORIZ/ VERT	Limits(dBuV/m) AV/PK	Margin (dB)
2390	41.79/49.58	VERT	54.0/74.0	-12.21/-24.42
2400	47.06/56.48		54.0/74.0	-6.94/-17.52
2390	42.52/51.59	HORIZ	54.0/74.0	-11.48/-22.41
2400	44.75/57.7		54.0/74.0	-9.25/-16.3

CH High

Freq. (MHz)	Emission(dBuV/m) AV/PK	HORIZ/ VERT	Limits(dBuV/m) AV/PK	Margin (dB)
2483.5	43.15/54.48	VERT	54.0/74.0	-10.85/-19.52
2500.00	40.18/50.07		54.0/74.0	-13.82/-23.93
2483.5	44.51/55.07	HORIZ	54.0/74.0	-9.49/-18.93
2500.00	41.07/49.22		54.0/74.0	-12.93/-24.78

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.

9. 20-DB BANDWIDTH

9.1. Test Equipment

Please refer to Section 4 this report.

9.2. Test Procedure

1. The EUT was positioned such that the distance from antenna to the EUT was 3 meters. all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated measurement.
2. Set center frequency of spectrum analyzer = operating frequency.
3. The spectrum analyzer as RBW=100 KHz, VBW=300 KHz, Sweep=2.5ms.
4. Mark the peak frequency and -20dB (upper and lower) frequency.

9.3. Limit

Please refer section15.249

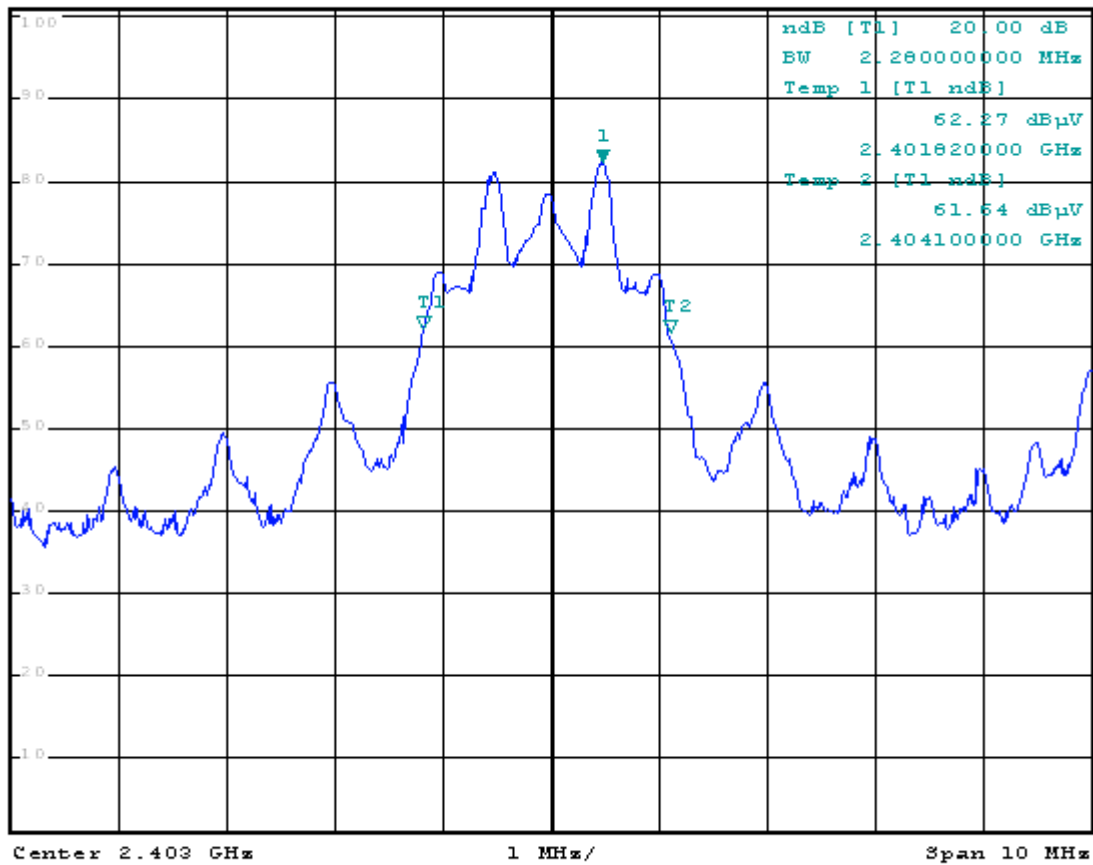
9.4. Test Result /Plots

Limit	Channel Frequency (MHz)	20dB Bandwidth (MHz)
/	2403	2.28
/	2441	2.26
/	2479	2.26



*RBW 100 kHz Marker 1 [T1]
VBW 300 kHz 62.37 dBμV
Ref 101 dBμV Att 20 dB SWT 2.5 ms 2.403480000 GHz

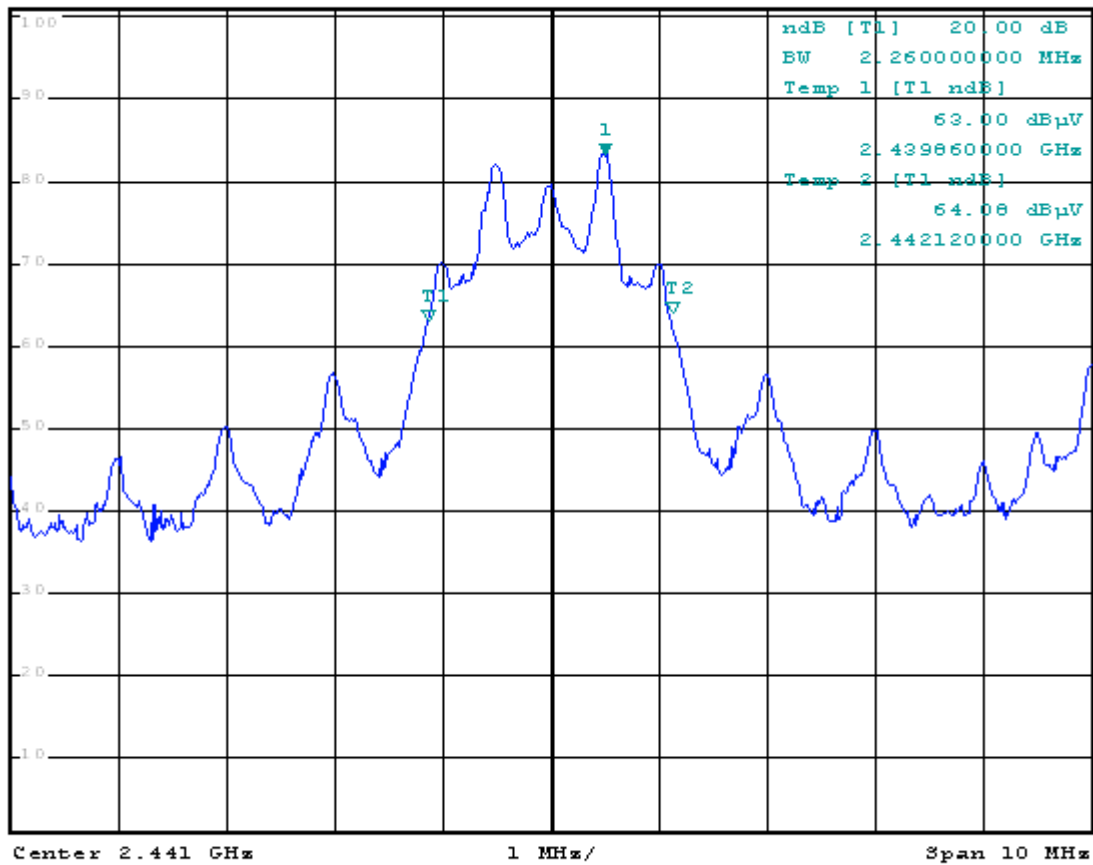
1 PK
VIEW

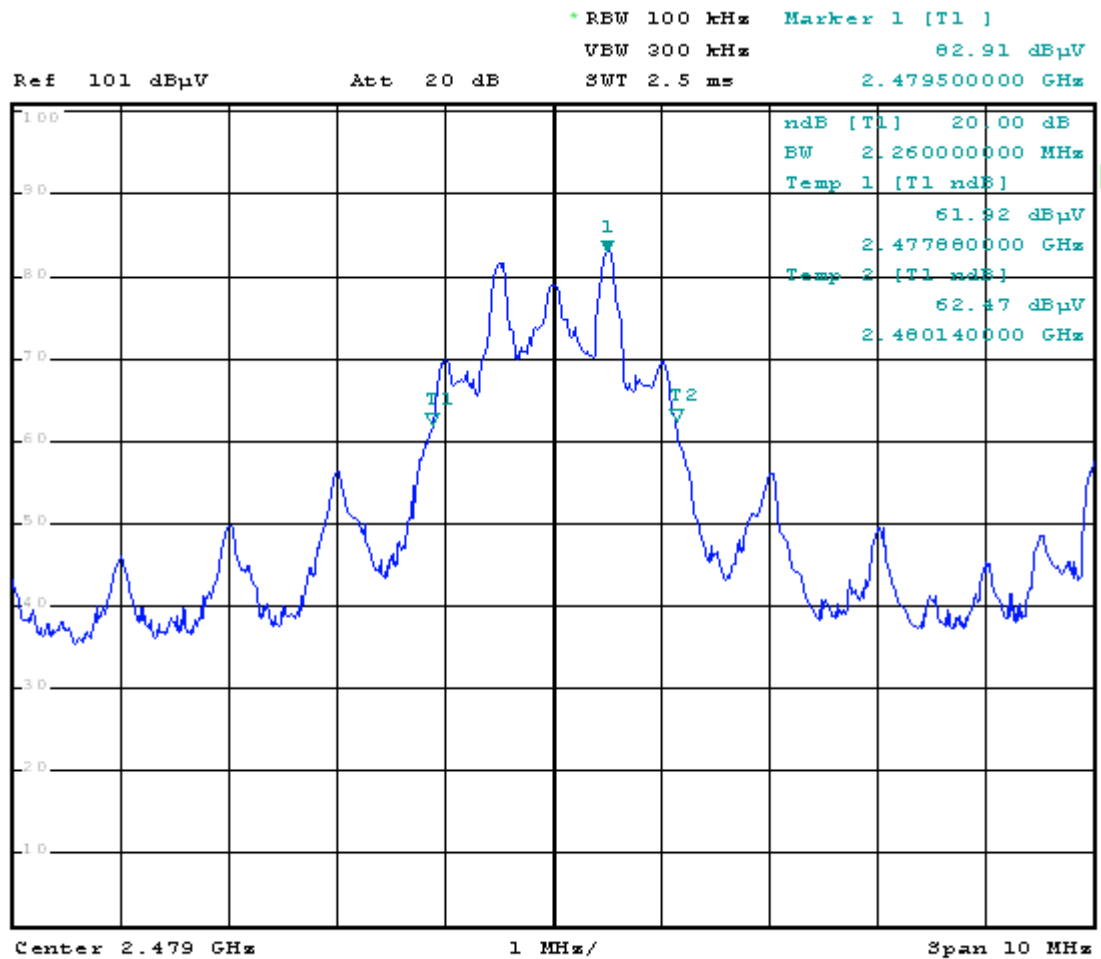




*RBW 100 kHz Marker 1 [T1]
VBW 300 kHz 63.25 dBμV
Ref 101 dBμV Att 20 dB SWT 2.5 ms 2.441500000 GHz

1 PK
VIEW



1 PK
VIEW**End Of The Report**