

4312519.50

**FCC Test report for Bluetooth Portable Speaker
Models SBT10BLK/37, SBT10ORG/37, SBT10WHI/37,
SBT10/37**

Guangzhou, date of issue: 2013-07-09

Author Tim Yan

By order of Philips Consumer Lifestyle at Hong Kong, China

Author : Tim Yan

Reviewed : Ryan Liang

Pages : 122 pages

Annex : Nil

CONTENTS

	page
1 Conclusion.....	5
2 Summary	6
2.1 Applied standards.....	6
2.2 Reference standards	6
2.3 Overview of results	6
3 General Information.....	7
3.1 Model description	7
3.4 Product labeling.....	10
3.5 User information	10
4 Test information.....	11
4.1 Test configuration	11
4.2 Special accessories of the EUT.....	11
4.3 Assistant equipment used on the test.....	12
4.4 Test laboratory.....	12
4.5 Environmental conditions	12
4.6 Measurement Uncertainty	13
5 Maximum Peak Output Power.....	14
5.1 Test equipment.....	14
5.2 Block diagram of test setup	14
5.3 Test Procedure	14
5.4 Limits	14
5.5 Test results	15
5.6 Original test data	15
6 20 dB Bandwidth	20
6.1 Test equipment.....	20
6.2 Block diagram of test setup	20
6.3 Test Procedure	20
6.4 Limits	20
6.5 Test results	21
6.6 Original test data	21
7 Carrier Frequency Separation	26
7.1 Test equipment.....	26
7.2 Block diagram of test setup	26
7.3 Test Procedure	26

7.4	Limits	26
7.5	Test results	26
7.6	Original test data	27
8	Number of Hopping Channel	28
8.1	Test equipment.....	28
8.2	Block diagram of test setup	28
8.3	Test Procedure	28
8.4	Limits	28
8.5	Test results	28
8.6	Original test data	29
9	Dwell time	31
9.1	Test equipment.....	31
9.2	Block diagram of test setup	31
9.3	Test Procedure	31
9.4	Limits	31
9.5	Test results	32
9.6	Original test data	33
10	Radiated Emission.....	42
10.1	Test equipment.....	42
10.2	Block diagram of test setup	43
10.3	Test Procedure	44
10.4	Limits	45
10.4.1	FCC 15.205 restricted frequency band.....	45
10.4.2	FCC 15.209 limit.....	45
10.5	Test results	45
11	Band Edge Compliance.....	84
11.1	Test equipment.....	84
11.2	Block diagram of test setup	84
11.3	Test Procedure	85
11.4	Limits	85
11.5	Test results	85
12	Power Line Conducted Emissions.....	110
12.1	Test equipment.....	110
12.2	Block diagram of test setup	110
12.3	Test Procedure	110
12.4	Limits	111
12.5	Test results	111

13	Antenna requirement.....	114
13.1	Limits	114
13.2	Test results	114
14	Test setup and arrangement	115
15	Photos of EUT	119

1 CONCLUSION

The device under test (DUT) as mentioned in this report complies with the stated requirements of the FCC Part 15, Subpart C.

FCC ID: BOUSBT10.

The conclusion and results stated in this test report are based on a non-recurrent examination of sample(s) provided by the applicant.

The tests described in this report do not result in the right to use any approval mark as conferred by DEKRA Testing and Certification (Shanghai) Ltd. Guangzhou Branch As far as the tests were based on certain specifications; these are mentioned in the report.

2 SUMMARY

This chapter presents an overview of standards and results. Refer to the next chapters for details of measured test results and applied test levels.

2.1 Applied standards

Standard	Year	Title
FCC part 15, Subpart C	2013	Federal Communications Commission (FCC) – Radio Frequency Devices

2.2 Reference standards

Standard	Year	Title
ANSI C63.10	2009	American National Standard for Testing Unlicensed Wireless Devices

2.3 Overview of results

Test Item	Standard	Result
Maximum Peak Output Power	FCC Part 15: 15.247(b)(1) ANSI C63.10: 2009	PASS
20 dB Bandwidth	FCC Part 15: 15.215 ANSI C63.10: 2009	PASS
Carrier Frequency Separation	FCC Part 15: 15.247(a)(1) ANSI C63.10: 2009	PASS
Number of Hopping Channel	FCC Part 15: 15.247(a)(1)(iii) ANSI C63.10: 2009	PASS
Dwell Time	FCC Part 15: 15.247(a)(1)(iii) ANSI C63.10: 2009	PASS
Radiated Emission	FCC Part 15: 15.247(d) FCC Part 15: 15.209 ANSI C63.10: 2009	PASS
Band Edge Compliance	FCC Part 15: 15.247(d) ANSI C63.10: 2009	PASS
Power Line Conducted Emission	FCC Part 15: 15.207 ANSI C63.10: 2009	PASS
Antenna requirement	FCC Part 15: 15.203	PASS

3 GENERAL INFORMATION

3.1 Model description

The apparatus as supplied for the test is Bluetooth portable speaker, model SBT10WHI/37 marketed for use in a residential environment notwithstanding use in commercial, business and industrial environment and the the product contains electronic control circuitry and powered by USB 5 Vdc or internal 3,7 Vdc/ 600mAh LI-ion battery.

According to customer's declaration,

1, All Models are identical in electrical, mechanical and physical construction except for the color of enclosure and the model name for marketing purpose.

2, the characteristics of Bluetooth module are:

Radio Specification	Bluetooth V2.1+EDR	
Operating Frequency	2400 MHz – 2483,5 MHz	
Operating Temperature Range	-10 – 55 °C	
Antenna Assembly	Type	Internal, PCB antenna
	Gain	Maximum 2,12 dBi
Modulation Type	GFSK, $\pi/4$ QPSK, 8-DPSK	
Data rate	1 Mbps, 2 Mbps, 3 Mbps	
Adaptivity	Adaptive	

Hence, model SBT10WHI/37 was chosen for full testing, and the corresponding data is representative the variations as well.

The provided ports are 5 Vdc (Mini USB) and Aux in.



Figure 1 Model SBT10WHI/37

The operating modes as stated in the user manual are On (Aux in or Bluetooth mode) and OFF mode.

3.2 Product Information

Equipment under test	Bluetooth Portable Speaker
Trade mark	PHILIPS
Tested Type	SBT10WHI/37
Rating	5,0 Vdc, 0,6 A, Speaker power: 2 W

Represented type(s)	SBT10BLK/37, SBT10ORG/37, SBT10/37
Rating	5,0 Vdc, 0,6 A, Speaker power: 2 W

3.3 Customer Information

Applicant/ Manufacturer	Philips Consumer Lifestyle
Contact person	Maria Lei
Telephone	+852 2418 6094
Telefax	+852 2821 1482
Address	5/F., Hong Kong Science Park, 5 Science Park East Avenue, Shatin, New Territories, Hong Kong

Factory	Yusan Technology (Shenzhen) Limited
Contact person	/
Telephone	/
Telefax	/
Address	A5, Haoyi Technology Park, Nan Huan Road, Shajing West, Baoan, Shenzhen, Guangdong, P.R. China

3.4 **Product labeling**

According to section 15.19, the DUT shall have the following statement labeled to its housing on a conspicuous location:

“This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation”.
--

3.5 **User information**

The user- or instruction manual shall:

Caution the user that changes or modifications not expressly approved by the responsible party for compliance could void the user’s authority to operate the equipment.

Inform the user about special RF emission protection measures, which are delivered with the product, for example shielded cables.

4 TEST INFORMATION

4.1 Test configuration

The Bluetooth module of the EUT was connected to a special test jig provided by manufacturer which has a USB connector to link with PC, and the PC will run a special test software “RF Control Kit V1.0” supplied by manufacturer to control the EUT work in test mode as below table.

Mode	Channel	Frequency (MHz)
GFSK hopping on Tx Mode	CH0 to CH78	2402 to 2480
8-DPSK hopping on Tx Mode	CH0 to CH78	2402 to 2480
GFSK hopping off Tx Mode	CH0	2402
	CH39	2441
	CH78	2480
π/4 QPSK hopping off Tx Mode	CH0	2402
	CH39	2441
	CH78	2480
8-DPSK hopping off Tx Mode	CH0	2402
	CH39	2441
	CH78	2480

Note 1: Some modes not apply for all the test items.

Note 2: For π/4 QPSK, it is same with 8-DPSK in modulation type, and based exploratory test, there is no significant difference of that two types test result, so except output power, all other items final test were performed with 8-DPSK and GFSK only.

4.2 Special accessories of the EUT

No.

4.3 Assistant equipment used on the test

Description	Manufacturer	Model	Other
HP Pro 3330 Small (PC)	HP	A6T13PA#AB2	AC line: 1,5 m, unshielded
LCD Color Display	HP	GV537A	AC line: 1,5 m, unshielded VGA line: 1,5 m, Shielded
Keyboard	HP	KB-0316	Signal line: 1,5 m, unshielded
Mouse	HP	M-SBF96	Signal line: 1,5 m, unshielded

4.4 Test laboratory

Location	Dongguan Dongdian Testing Service Co., Ltd.
Address	No.17, General Headquarter 2 nd Road, Songshan Lake National High-tech Industrial Development Zone, Dongguan, China
Date	2013-06-26 to 2013-07-01
Supervised by	Tim Yan

4.5 Environmental conditions

Tests have been performed in a controlled laboratory environment, where the environmental conditions are maintained within the applicable ranges.

Ambient temperature	15 °C – 25 °C
Relative Humidity air	30% - 60%

4.6 Measurement Uncertainty

Test Item	Uncertainty
Occupied Channel Bandwidth	$\pm 1\%$
RF Output power, conducted	$\pm 0,6\text{dB}$
Power Spectral Density, Conducted	$\pm 1,2\text{dB}$
Unwanted Emissions, Conducted	$\pm 0,6\text{dB}$
Temperature	$\pm 0,2^{\circ}\text{C}$
Humidity	$\pm 1\%$
DC and Low frequency voltage	$\pm 0,5\%$
Time	$\pm 1\%$
Duty Cycle	$\pm 1\%$
Uncertainty for Radiation Emission test (30MHz-1GHz)	3,14 dB (Polarize: V)
	3,16 dB (Polarize: H)
Uncertainty for Radiation Emission test (1GHz to 25GHz)	2,08dB(Polarize: V)
	2,56dB (Polarize: H)

Remark:

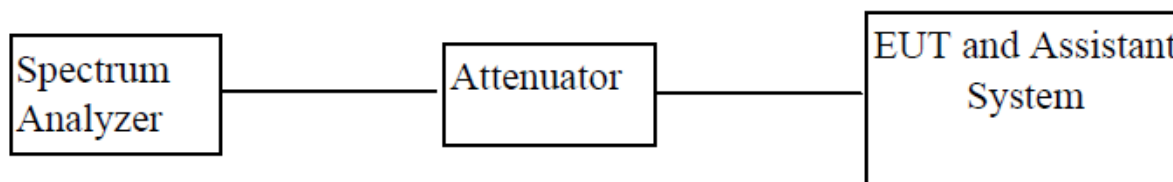
This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

5 MAXIMUM PEAK OUTPUT POWER

5.1 Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum analyzer	R&S	FSU	1166.1660.26	2012/11/26	1 Year
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2012/11/26	1 Year
3	RF Cable	Micable	C10-01-01-1	100309	2012/11/26	1 Year

5.2 Block diagram of test setup



5.3 Test Procedure

- (1) Configure EUT and Assistant system according to 4.1 and 5.2;
 - (2) Connect EUT's antenna output to spectrum analyzer by RF cable;
 - (3) Configure EUT working in test mode as state in 4.1;
 - (4) Measure the maximum output power of EUT by spectrum analyzer with PK detector and RBW=2 MHz (above 6 dB bandwidth of measured signal), VBW= 3 MHz;
- Note: The attenuator loss was inputted into spectrum analyzer as amplitude offset.

5.4 Limits

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.

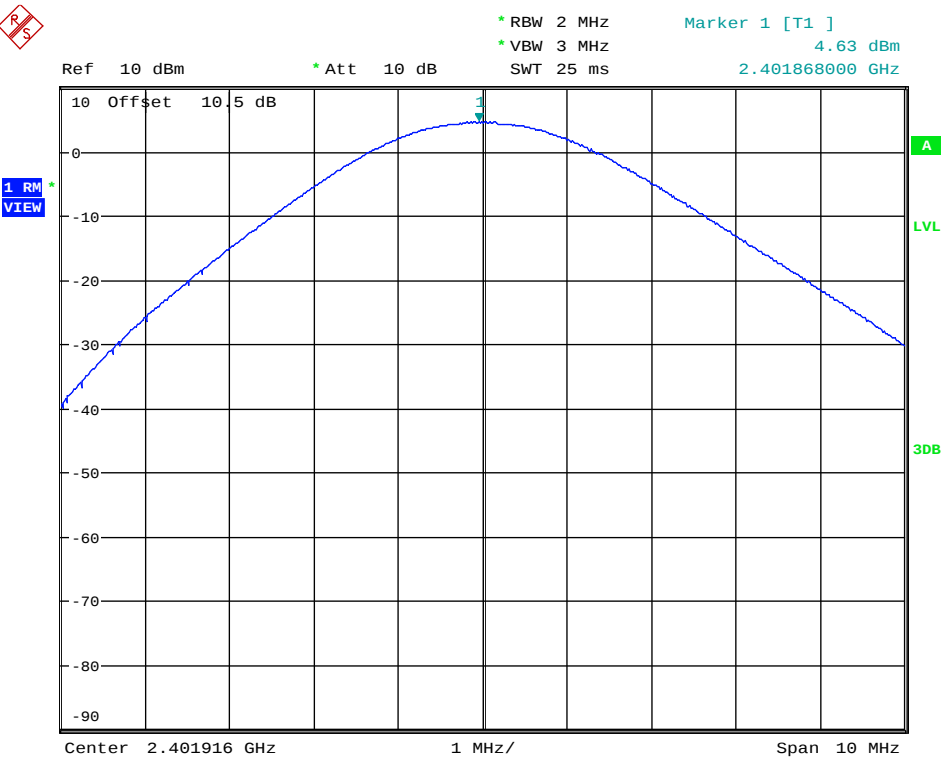
For all other frequency hopping systems in the 2400 – 2483,5 MHz band: 0,125 watts, the e.i.r.p shall not exceed 4 W.

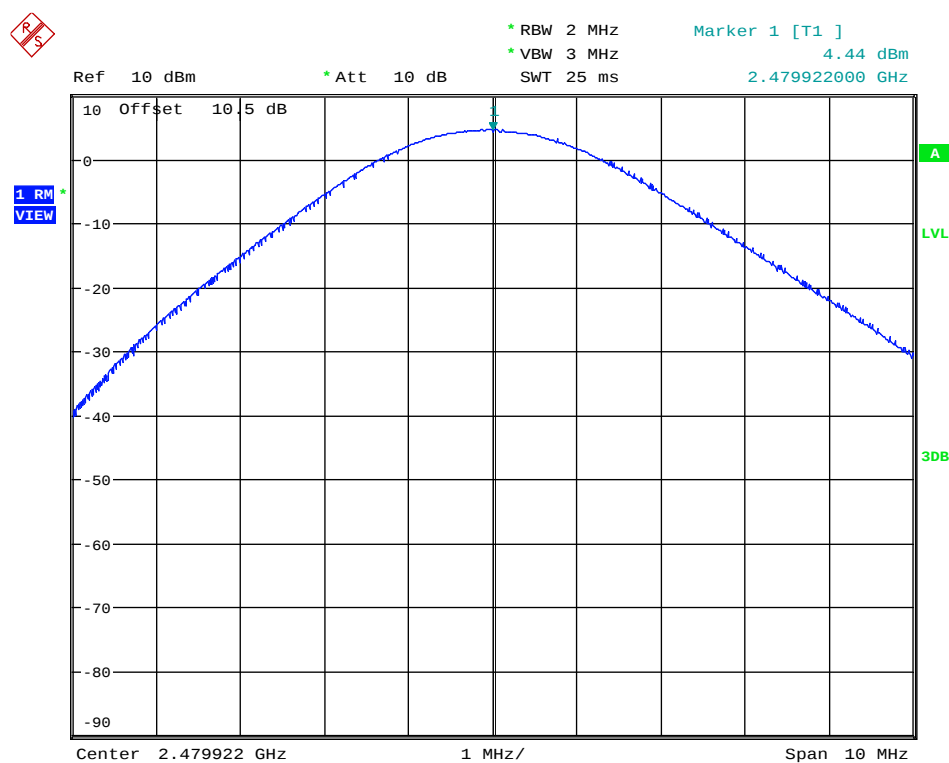
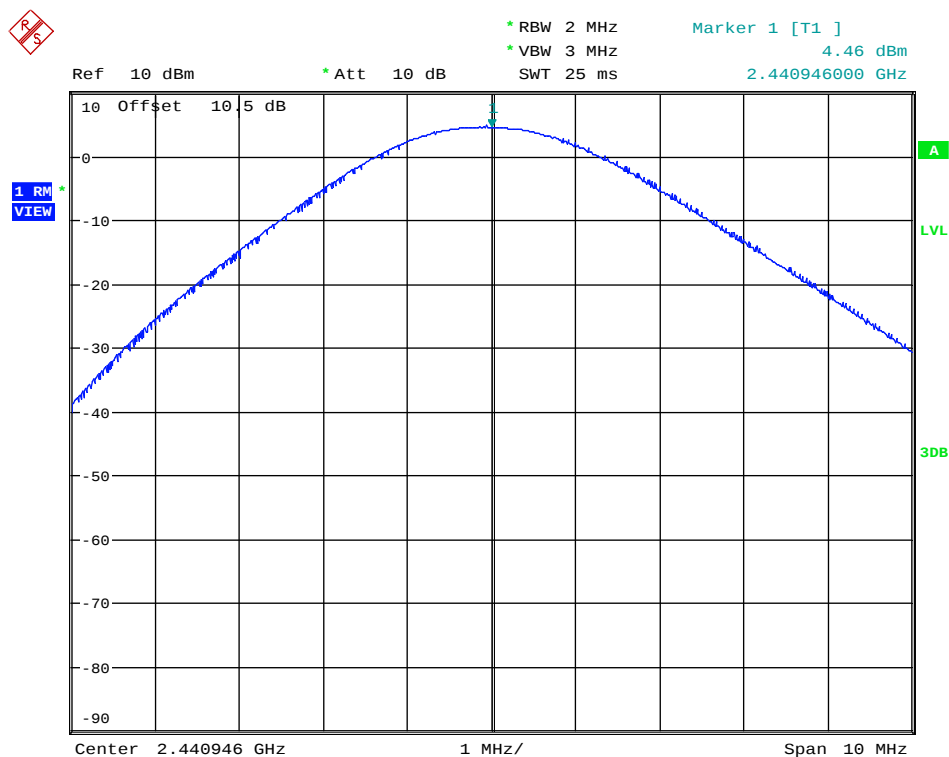
5.5 **Test results**

Mode	Frequency (MHz)	Results (dBm)	Limit (dBm)	Margin (dB)	Conclusion
GFSK	2402	4,63	30	-25,37	PASS
	2441	4,46	30	-25,54	PASS
	2480	4,44	30	-25,56	PASS
Π/4 QPSK	2402	3,49	30	-26,51	PASS
	2441	3,41	30	-26,59	PASS
	2480	3,47	30	-26,53	PASS
8-DPSK	2402	3,47	30	-26,53	PASS
	2441	3,79	30	-26,21	PASS
	2480	3,76	30	-26,24	PASS
Remark: Margin = Results – Limits.					

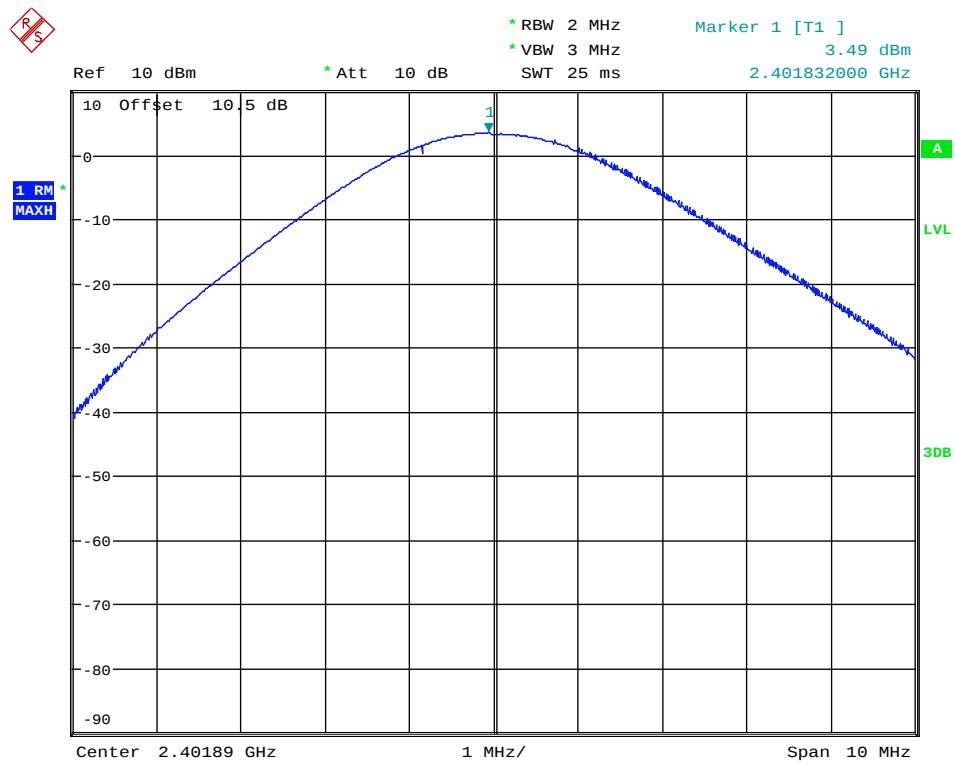
5.6 **Original test data**

GFSK CH0

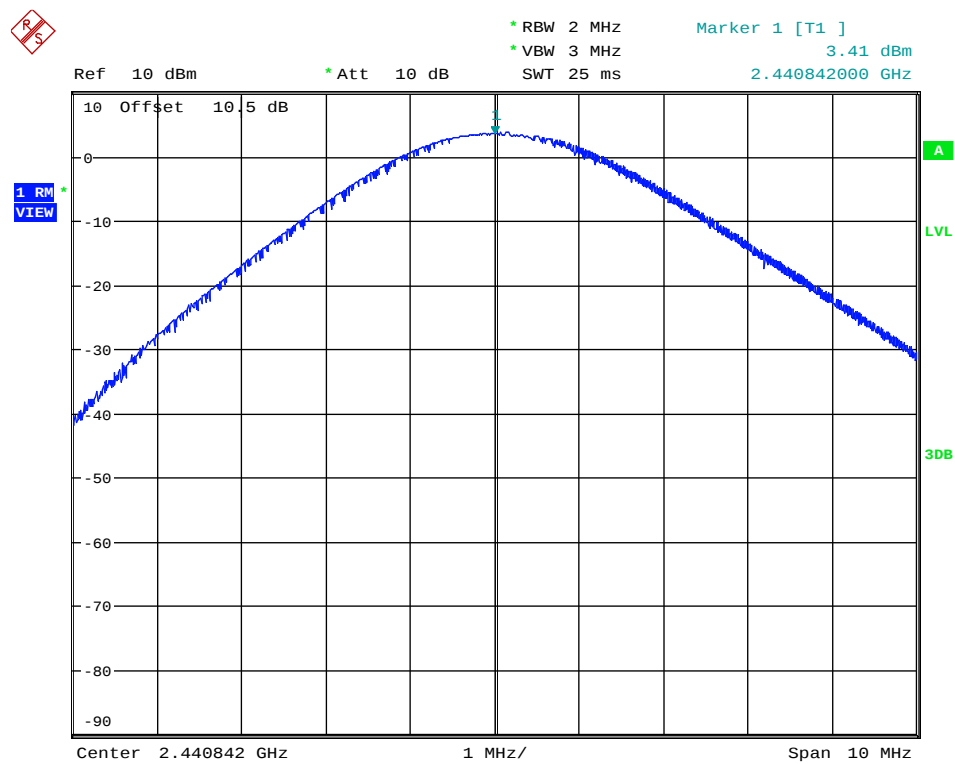




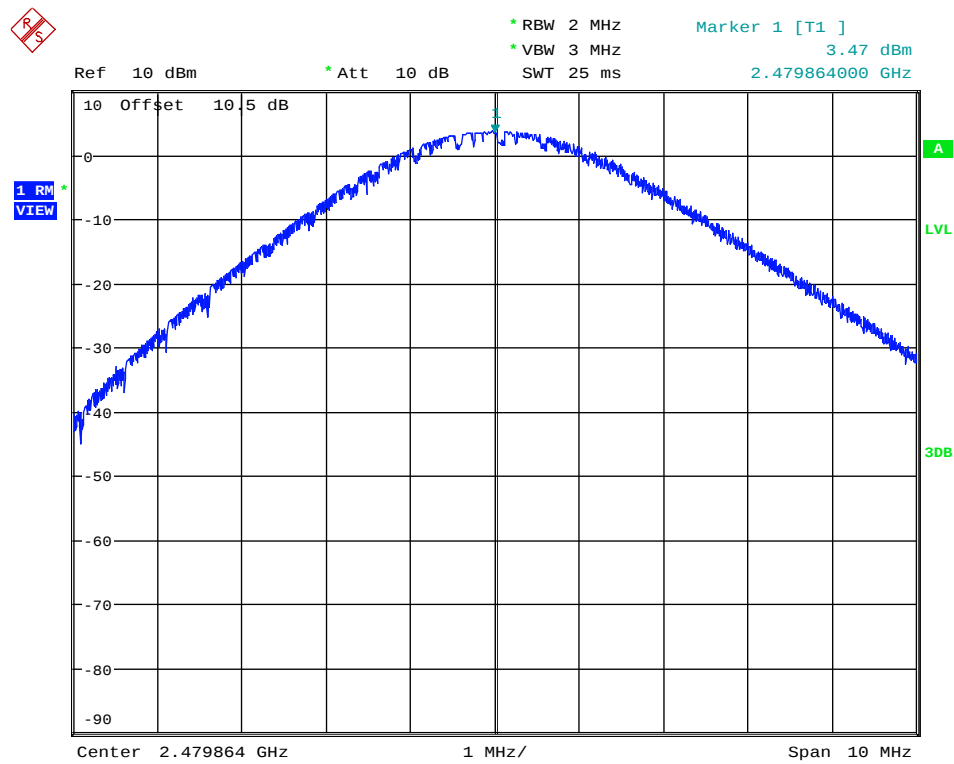
П/4 QPSK CH0



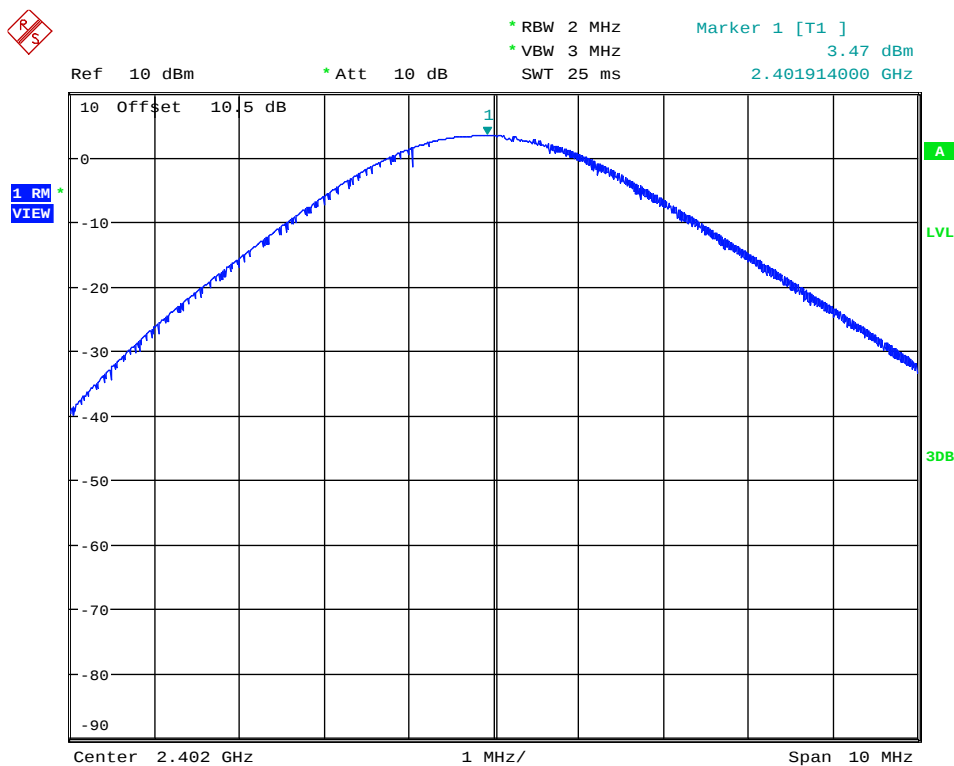
П/4 QPSK CH39

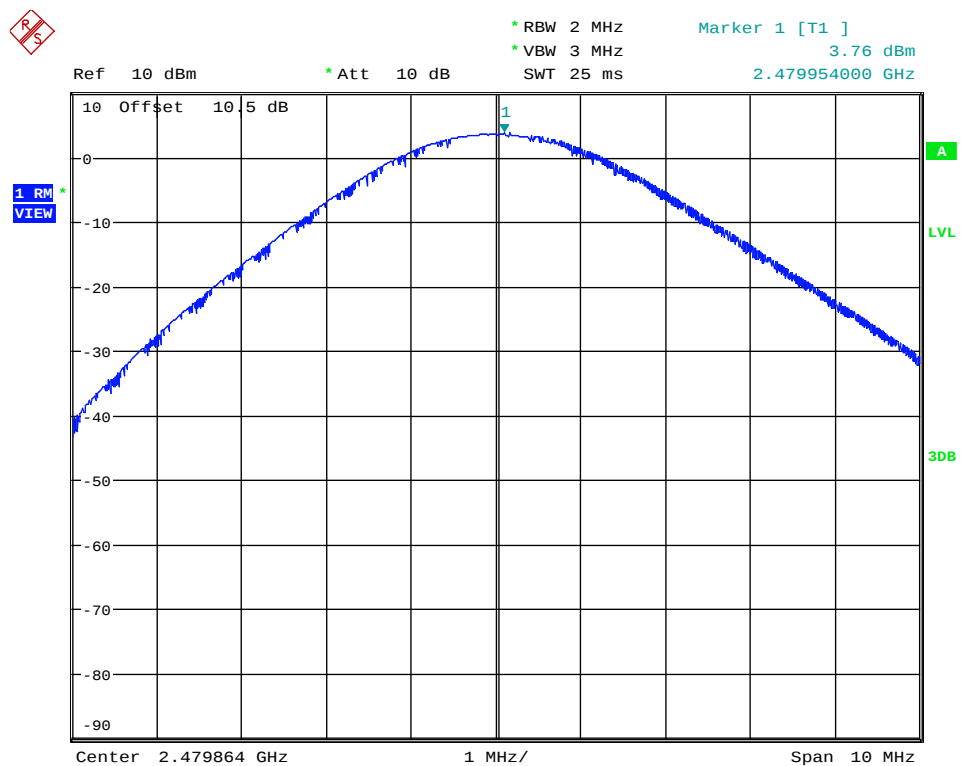
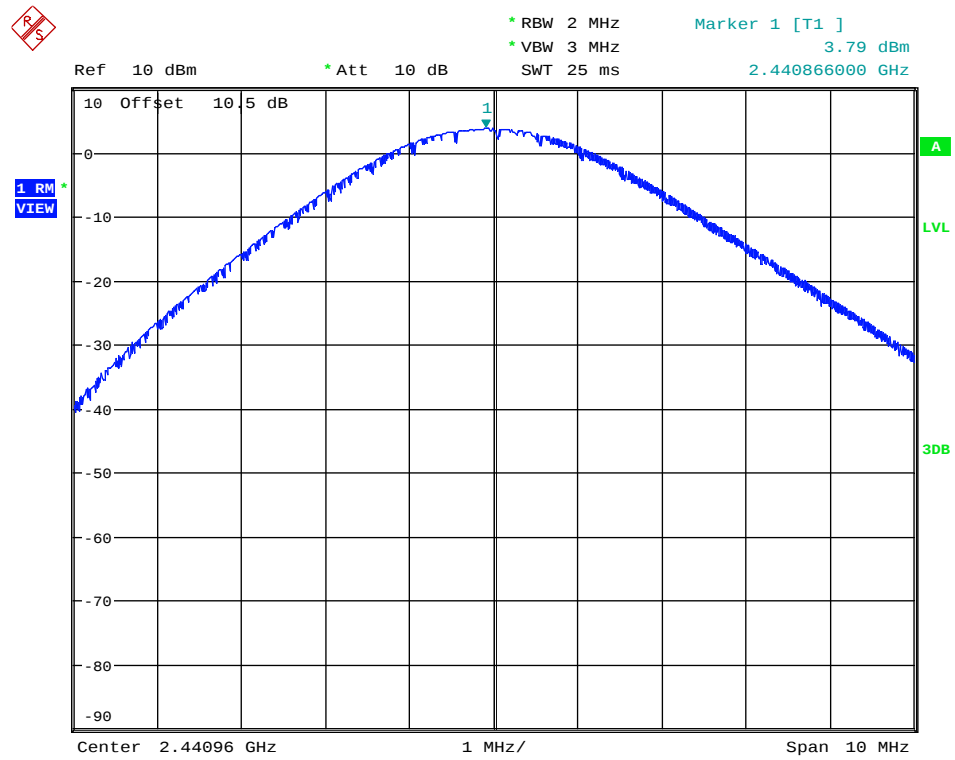


π/4 QPSK CH79



8-DPSK CH0



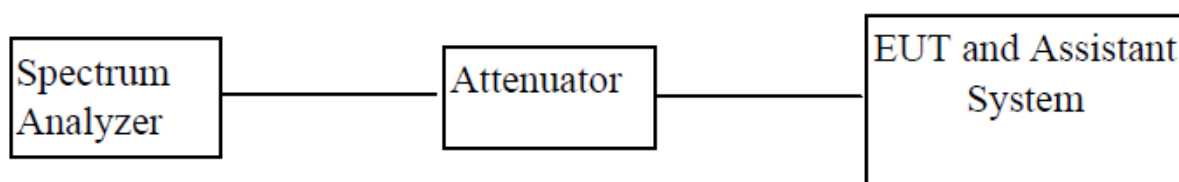


6 20 DB BANDWIDTH

6.1 Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum analyzer	R&S	FSU	1166.1660.26	2012/11/26	1 Year
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2012/11/26	1 Year
3	RF Cable	Micable	C10-01-01-1	100309	2012/11/26	1 Year

6.2 Block diagram of test setup



6.3 Test Procedure

- (1) Configure EUT and Assistant system according to 4.1 and 5.2;
- (2) Connect EUT's antenna output to spectrum analyzer by RF cable;
- (3) Configure EUT working in test mode as state in 4.1;
- (4) The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30 kHz RBW and 100 KHz VBW. The 20 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20 dB.

6.4 Limits

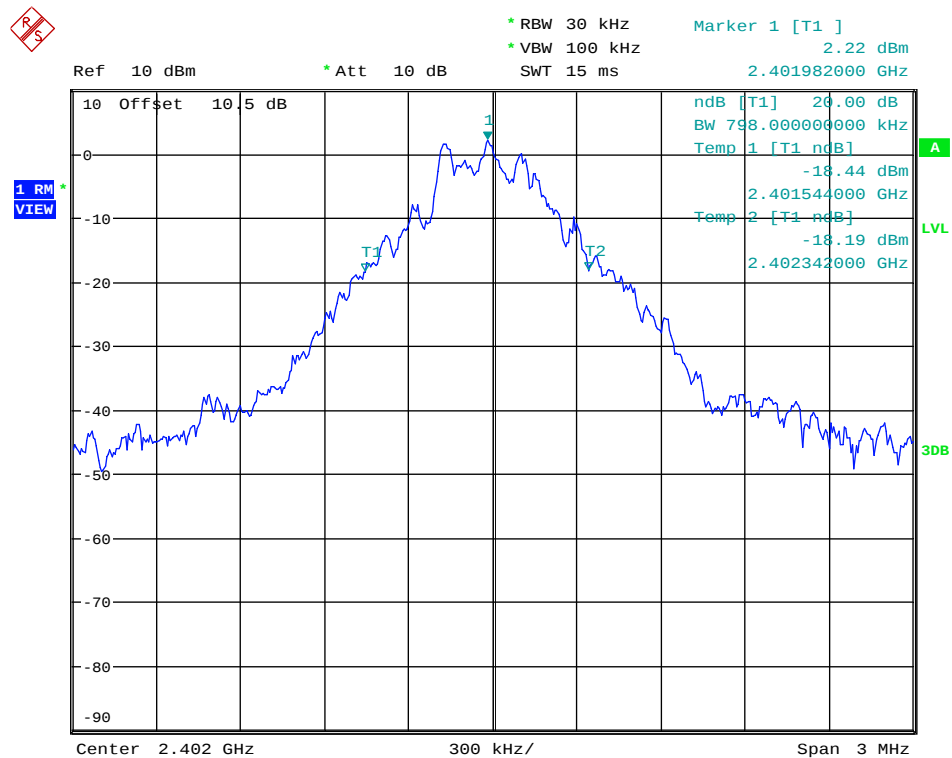
Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §15.217 through § 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within frequency band designated in the rule section under which the equipment is operated.

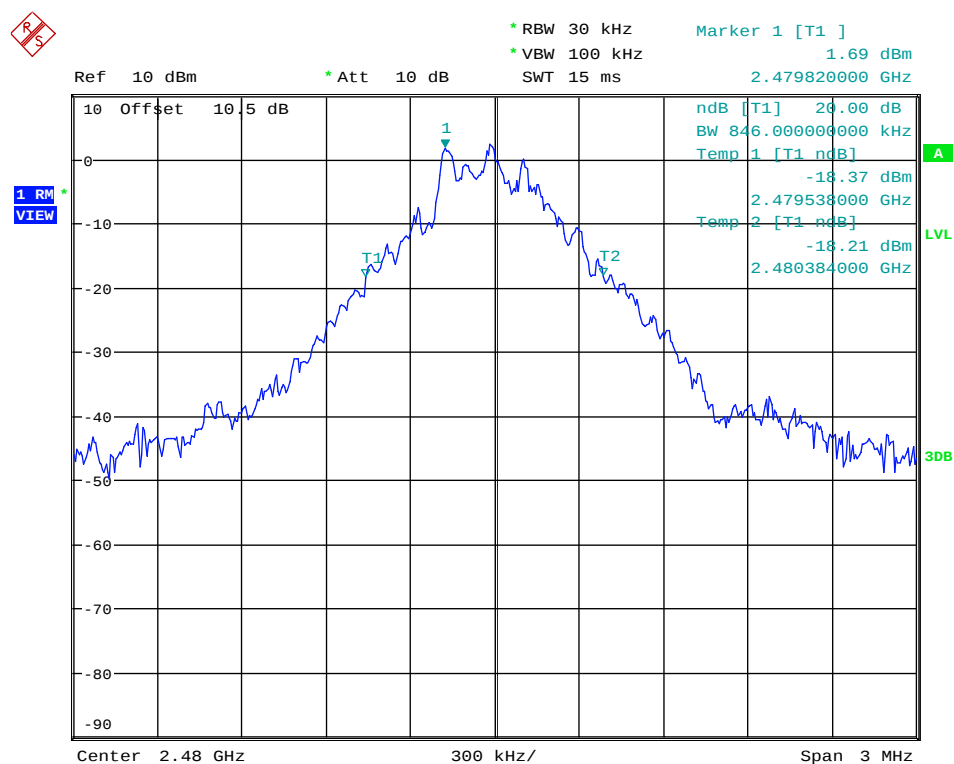
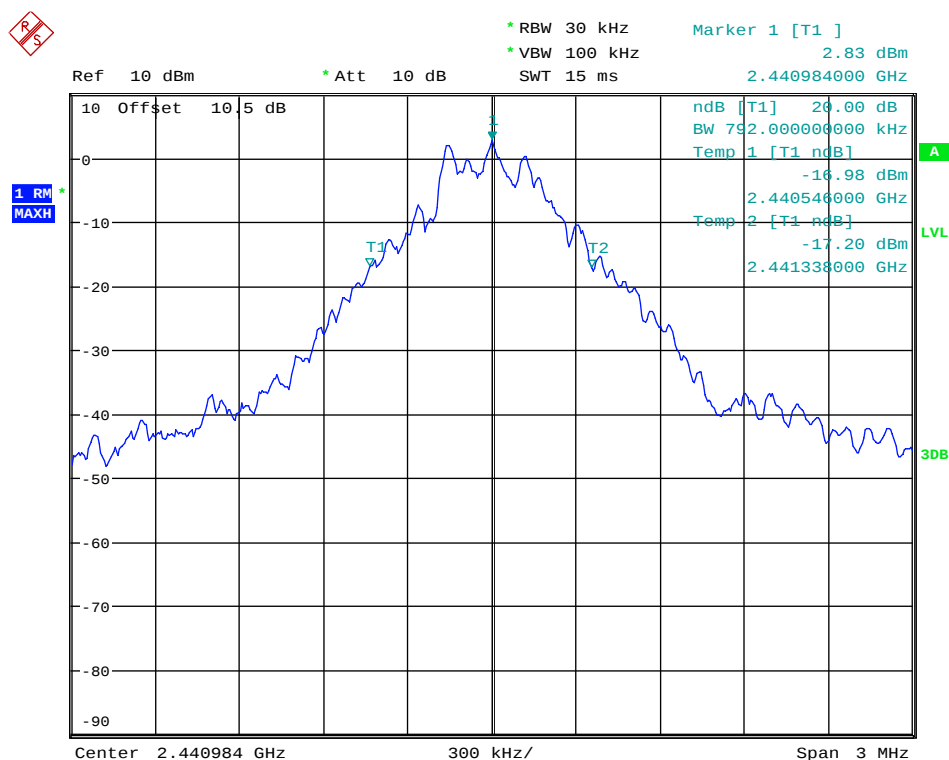
6.5 Test results

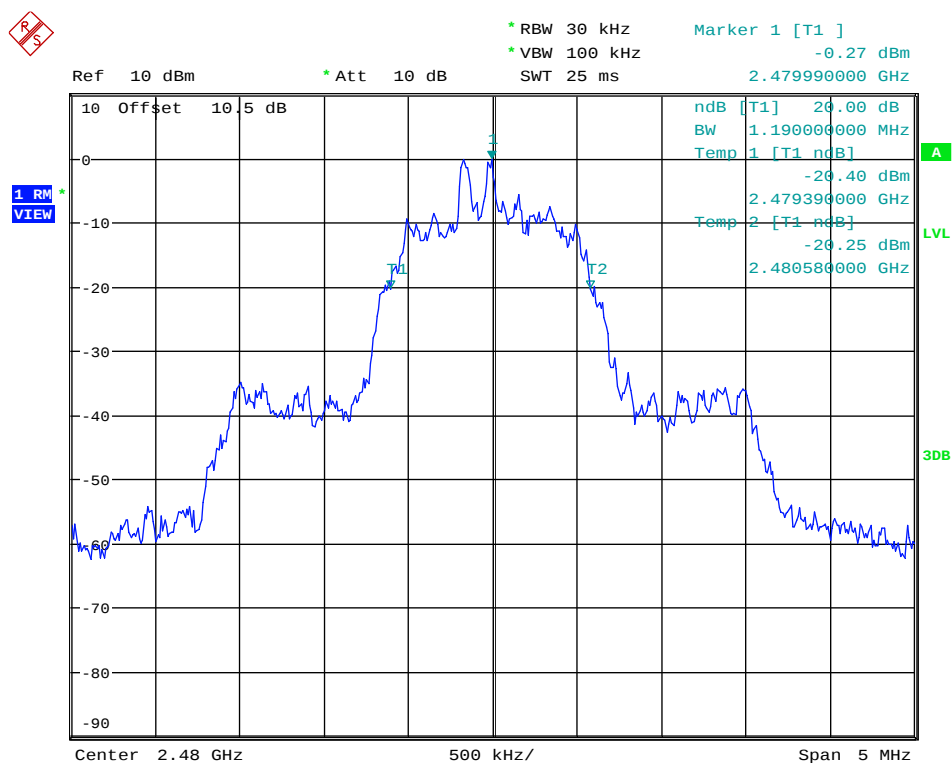
Mode	Frequency (MHz)	Results (MHz)	Limit (MHz)	Margin (MHz)	Conclusion
GFSK	2402	0,798	2400 -2483,5	/	PASS
	2441	0,792	2401 -2483,5	/	PASS
	2480	0,846	2402 -2483,5	/	PASS
П/4 QPSK	2402	1,200	2403 -2483,5	/	PASS
	2441	1,220	2404 -2483,5	/	PASS
	2480	1,190	2405 -2483,5	/	PASS
8-DPSK	2402	1,220	2406 -2483,5	/	PASS
	2441	1,210	2407 -2483,5	/	PASS
	2480	1,220	2408 -2483,5	/	PASS

6.6 Original test data

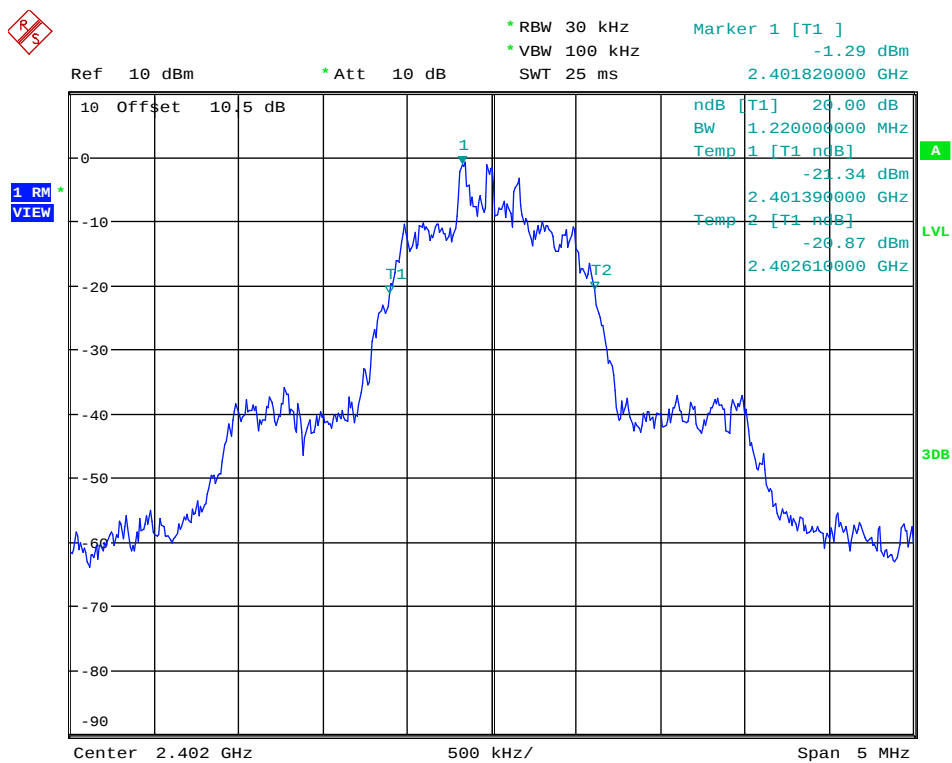
GFSK Mode

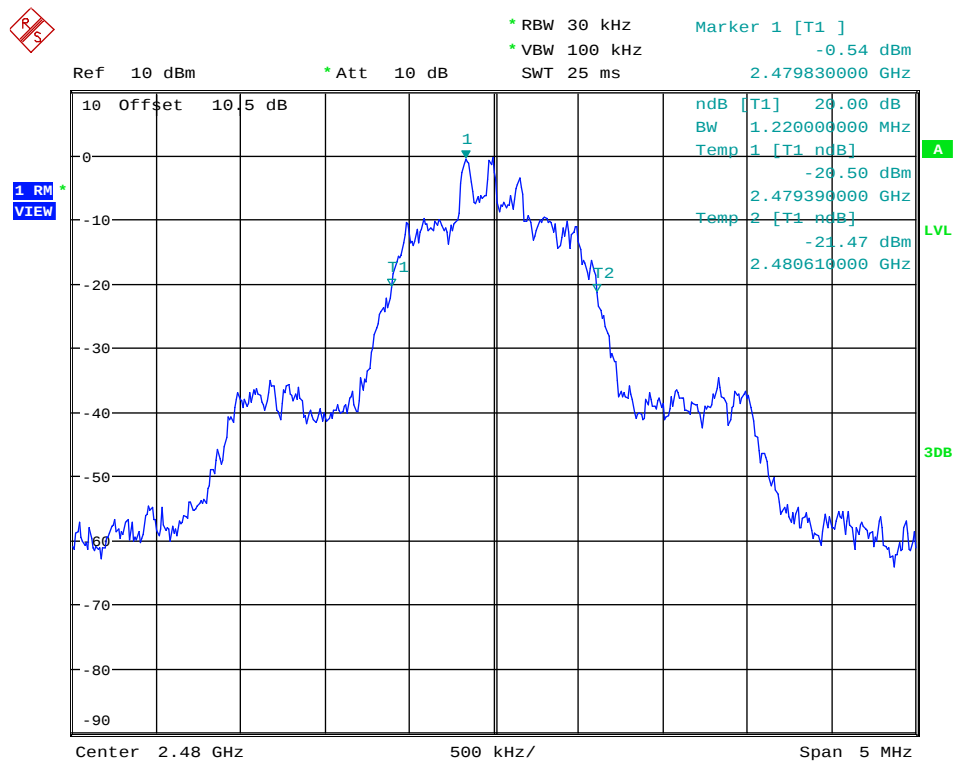
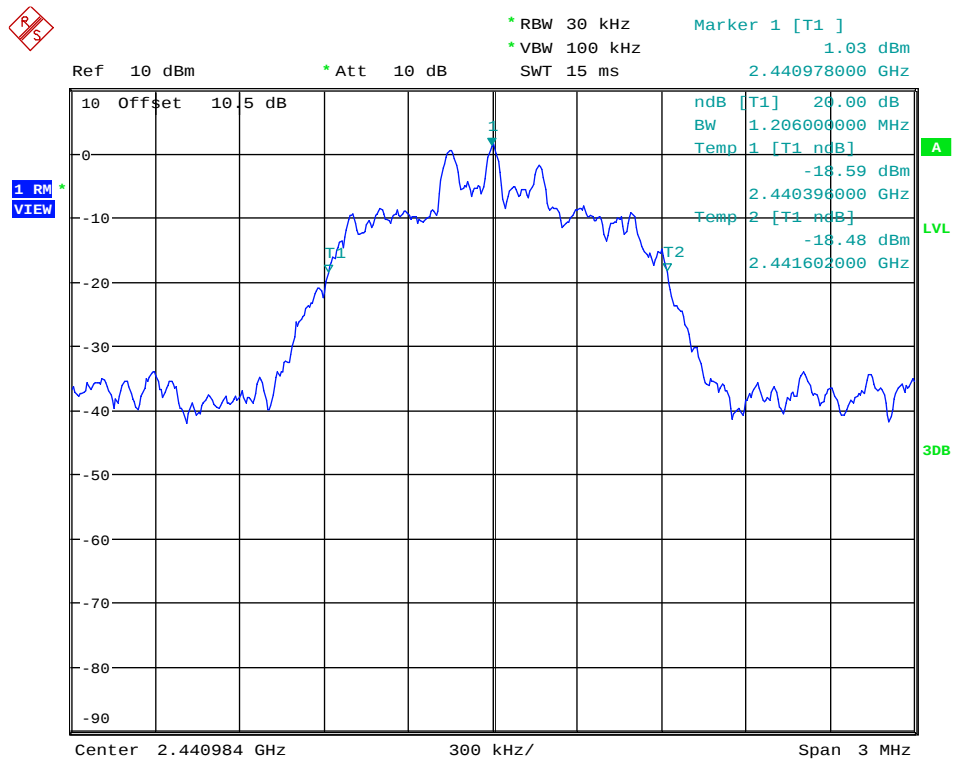






8-DPSK



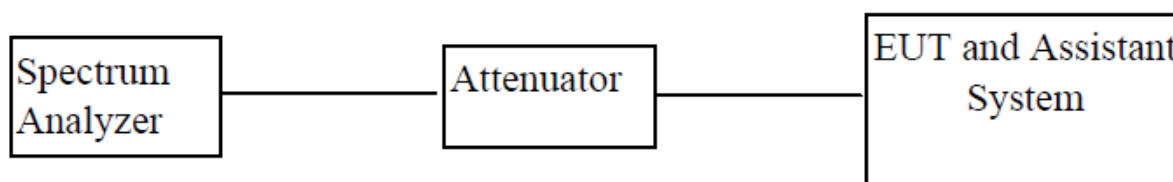


7 CARRIER FREQUENCY SEPARATION

7.1 Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum analyzer	R&S	FSU	1166.1660.26	2012/11/26	1 Year
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2012/11/26	1 Year
3	RF Cable	Micable	C10-01-01-1	100309	2012/11/26	1 Year

7.2 Block diagram of test setup



7.3 Test Procedure

- (1) Configure EUT and Assistant system according to 4.1 and 7.2;
- (2) Connect EUT's antenna output to spectrum analyzer by RF cable;
- (3) Configure EUT working in test mode as state in 4.1;
- (4) The carrier frequency was measured by spectrum analyzer with 100 kHz RBW and 300 KHz VBW.

7.4 Limits

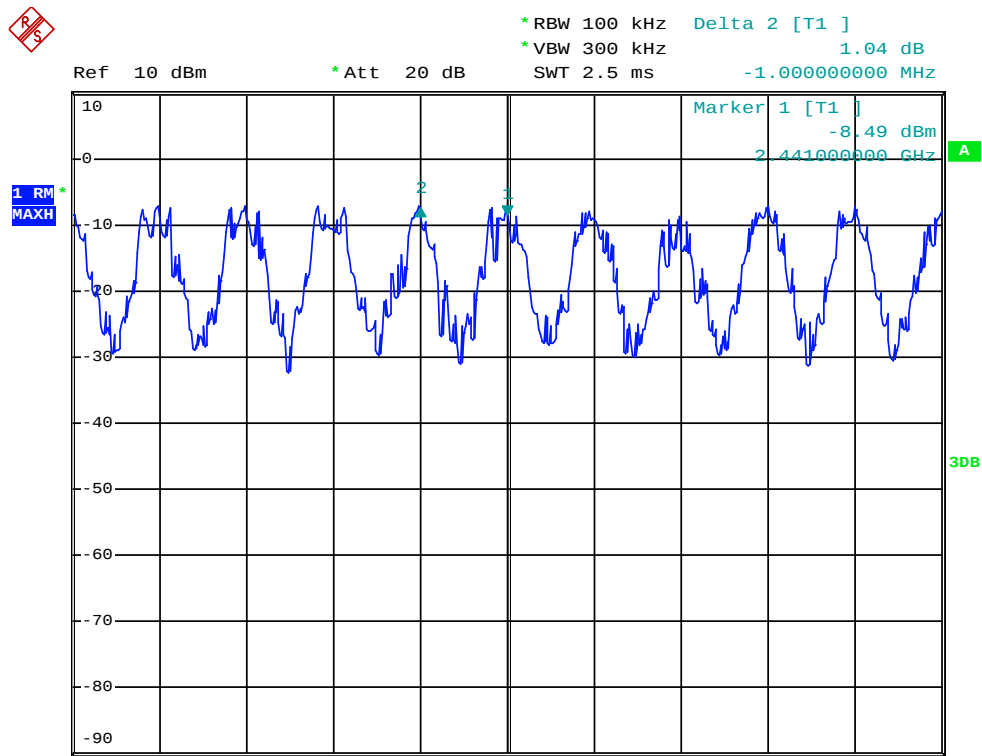
Frequency hopping systems shall have hopping channel frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400 – 2483,5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

7.5 Test results

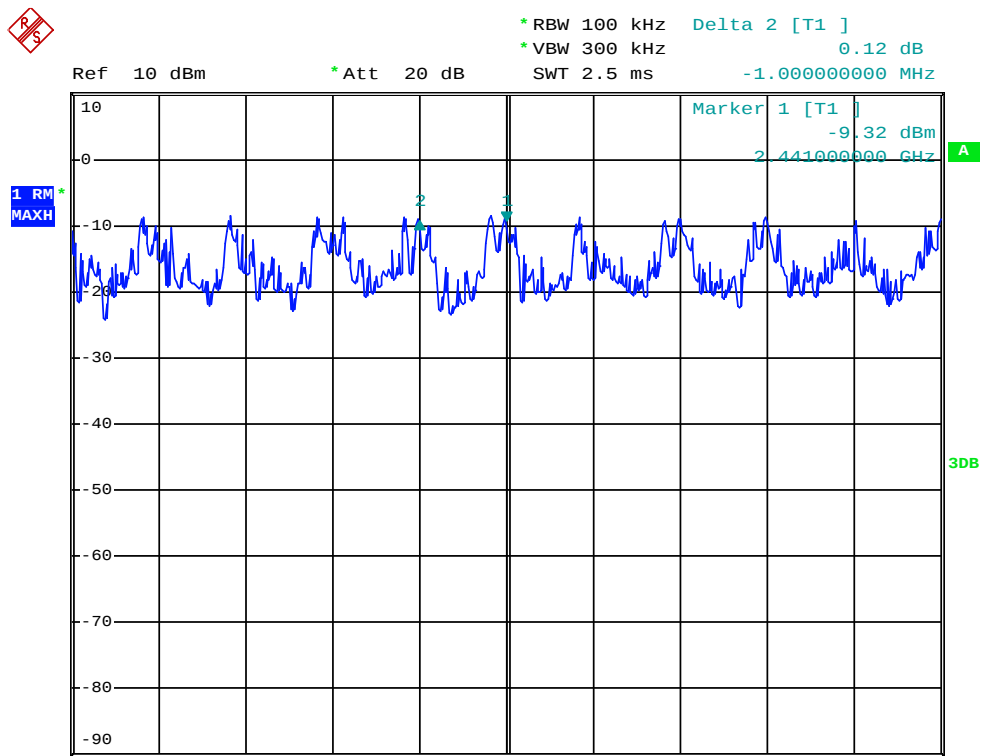
Mode	Channel separation (MHz)	20 dB Bandwidth	Limit (MHz) 2/3 of 20 dB Bandwidth	Conclusion
GFSK	1,0	0,846	0,564	PASS
8-DPSK	1,0	1,220	0,813	PASS

7.6 Original test data

For GFSK



For 8-DPSK

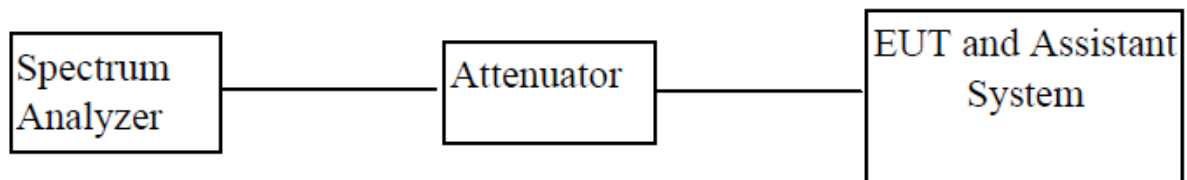


8 NUMBER OF HOPPING CHANNEL

8.1 Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum analyzer	R&S	FSU	1166.1660.26	2012/11/26	1 Year
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2012/11/26	1 Year
3	RF Cable	Micable	C10-01-01-1	100309	2012/11/26	1 Year

8.2 Block diagram of test setup



8.3 Test Procedure

- (1) Configure EUT and Assistant system according to 4.1 and 8.2;
- (2) Connect EUT's antenna output to spectrum analyzer by RF cable;
- (3) Configure EUT working in test mode as state in 4.1;
- (4) The carrier frequency was measured by spectrum analyzer with 100 kHz RBW and 300 KHz VBW.

8.4 Limits

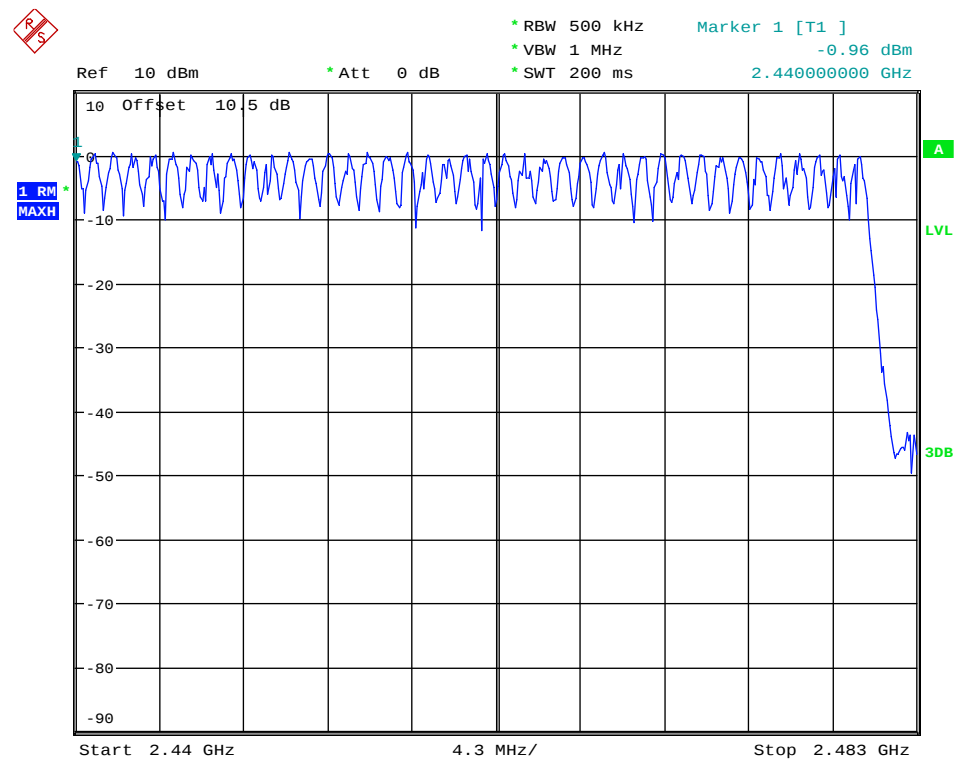
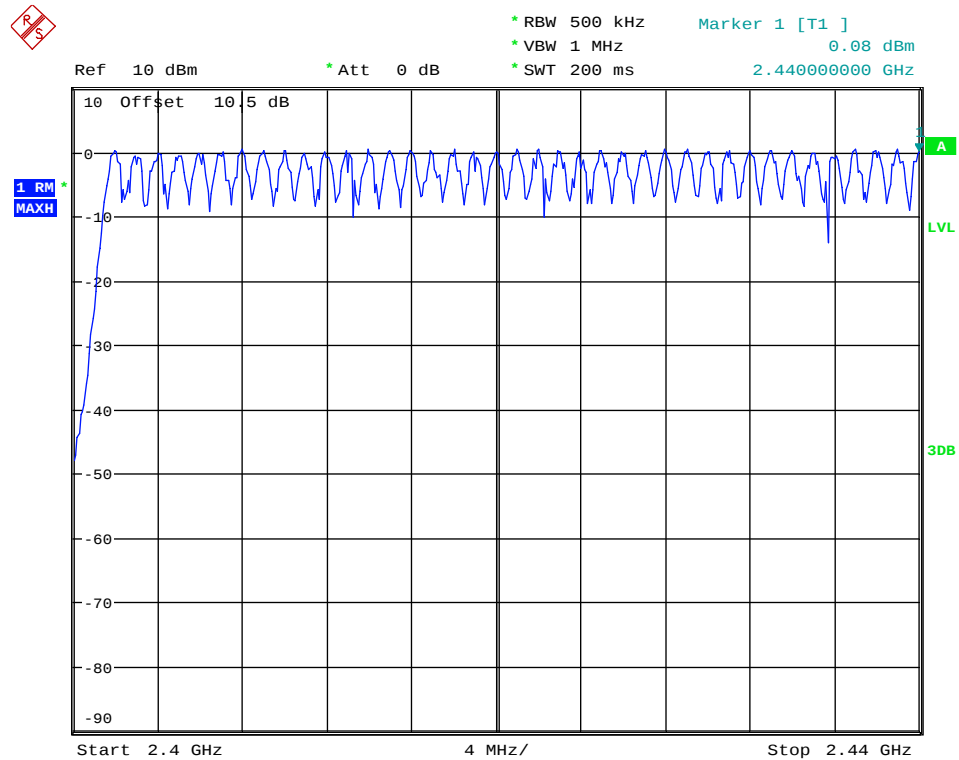
Frequency hopping systems in the 2400 – 2483,5 MHz band shall used at least 15 channels.

8.5 Test results

Mode	Number of hopping channel	Limit	Conclusion
GFSK	79	>15	PASS
8-DPSK	79	>15	PASS

8.6 Original test data

For GFSK



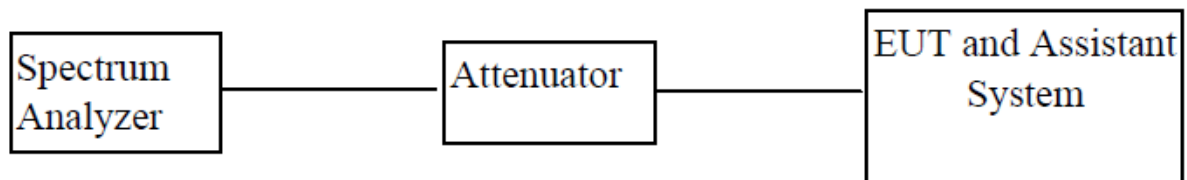


9 DWELL TIME

9.1 Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum analyzer	R&S	FSU	1166.1660.26	2012/11/26	1 Year
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2012/11/26	1 Year
3	RF Cable	Micable	C10-01-01-1	100309	2012/11/26	1 Year

9.2 Block diagram of test setup



9.3 Test Procedure

- (1) Configure EUT and Assistant system according to 4.1 and 9.2;
- (2) Connect EUT's antenna output to spectrum analyzer by RF cable;
- (3) Configure EUT working in test mode as state in 4.1;
- (4) Measure the hopping number and on time of each pulse with spectrum analyzer in zero span set, and calculate dwell time with formula $\text{Dwell time} = \text{Hopping number} / \text{measure time} \times 0,4 \times 79 \times \text{pulse's on time}$.

9.4 Limits

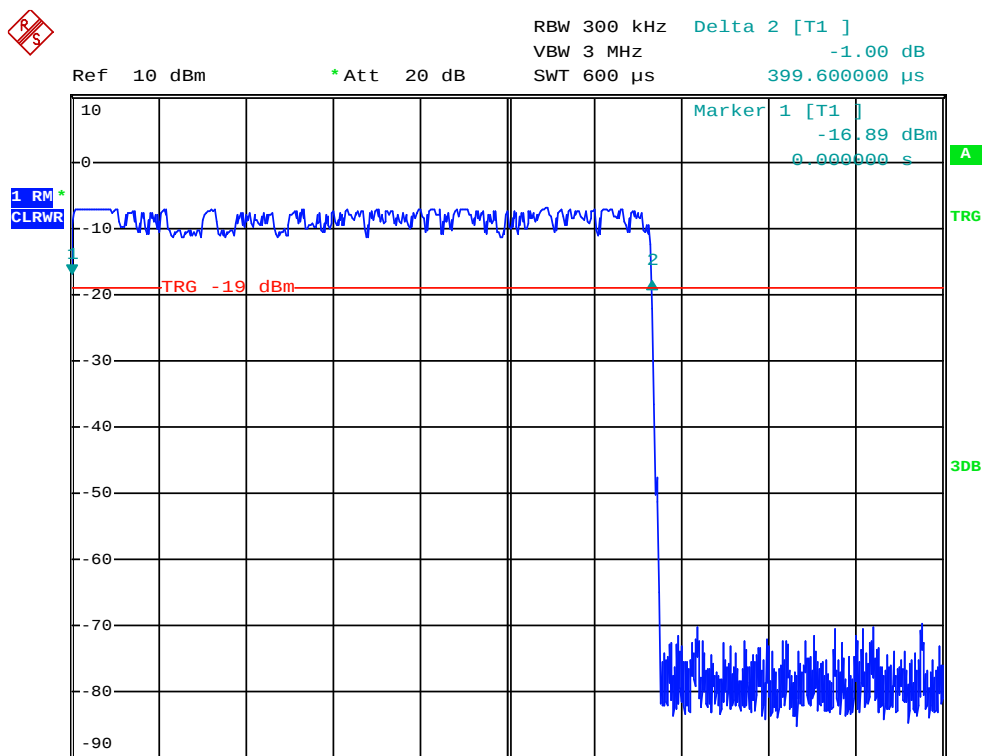
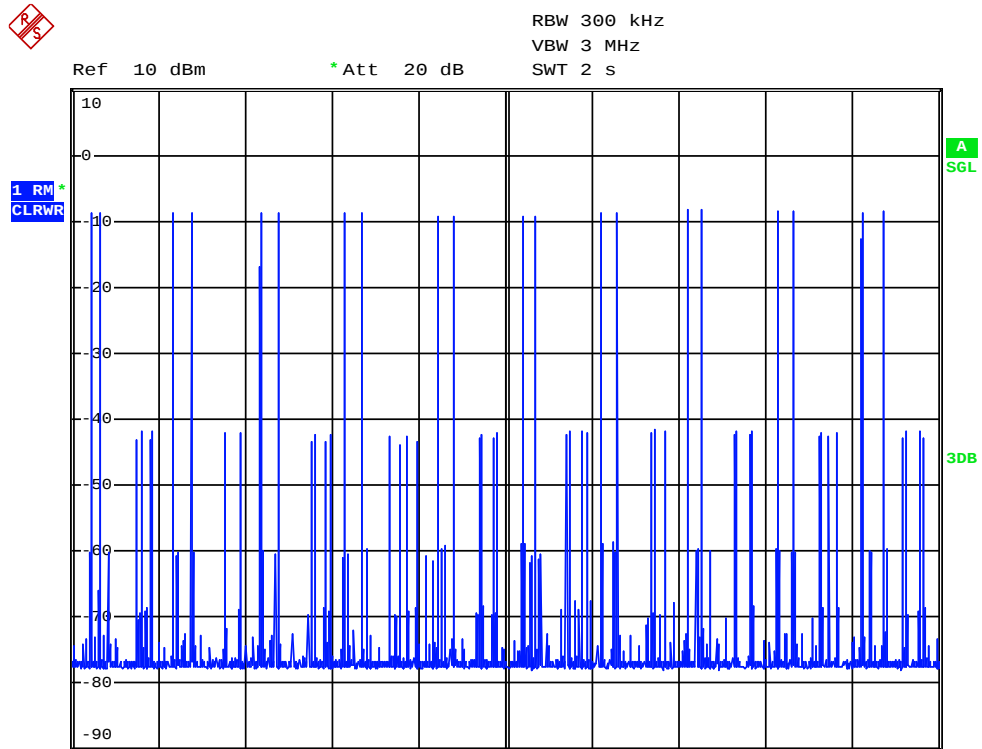
The average time of occupancy on any channel shall not be greater than 0,4 seconds within a period of 0,4 seconds multiplied by the number of hopping channels employed.

9.5 Test results

EUT Mode	Results			Limit
	Number of hops/ 2s	Occupied time of each hop (ms)	Dwell time (ms)	
DH1	20	0,4	126,40	≤ 400 ms
DH3	12	1,655	313,79	
DH5	8	2,903	366,94	
2DH1	20	0,409	129,24	
2DH3	12	1,661	314,93	
2DH5	8	2,908	367,57	
3DH1	20	0,410	129,56	
3DH3	10	1,664	262,91	
3DH5	8	2,918	368,84	
Remark: Dwell time= Number of hops/s * 0.4 s * N * Occupied time of each hop. Where, N = 79 is the minimum number of hopping frequencies that have to be used.				

9.6 Original test data

For DH1

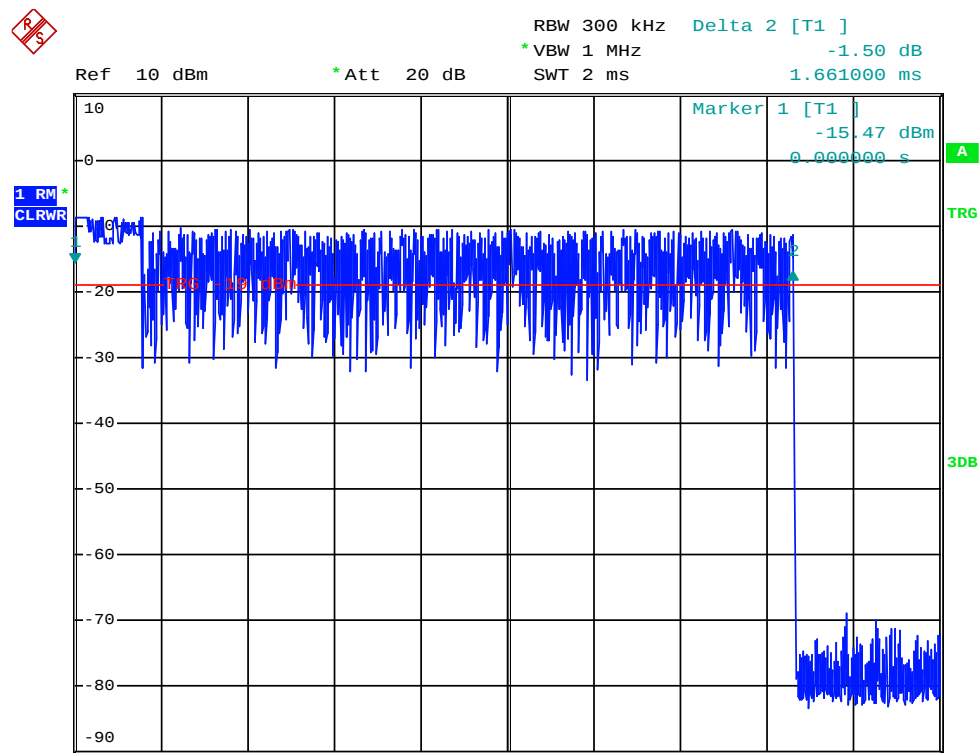
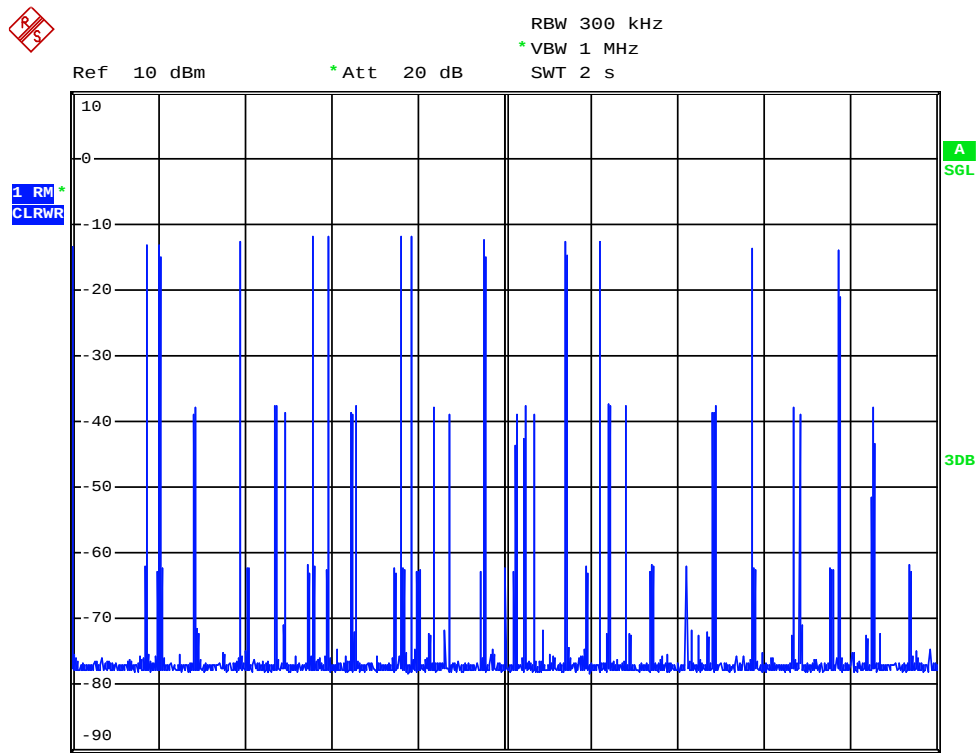








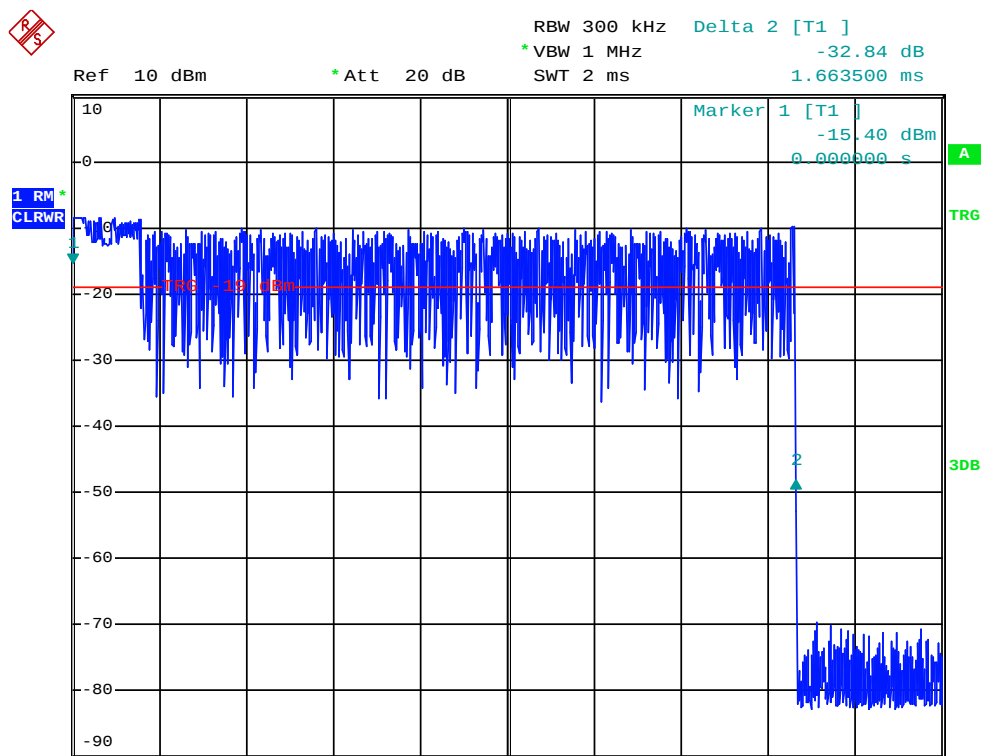
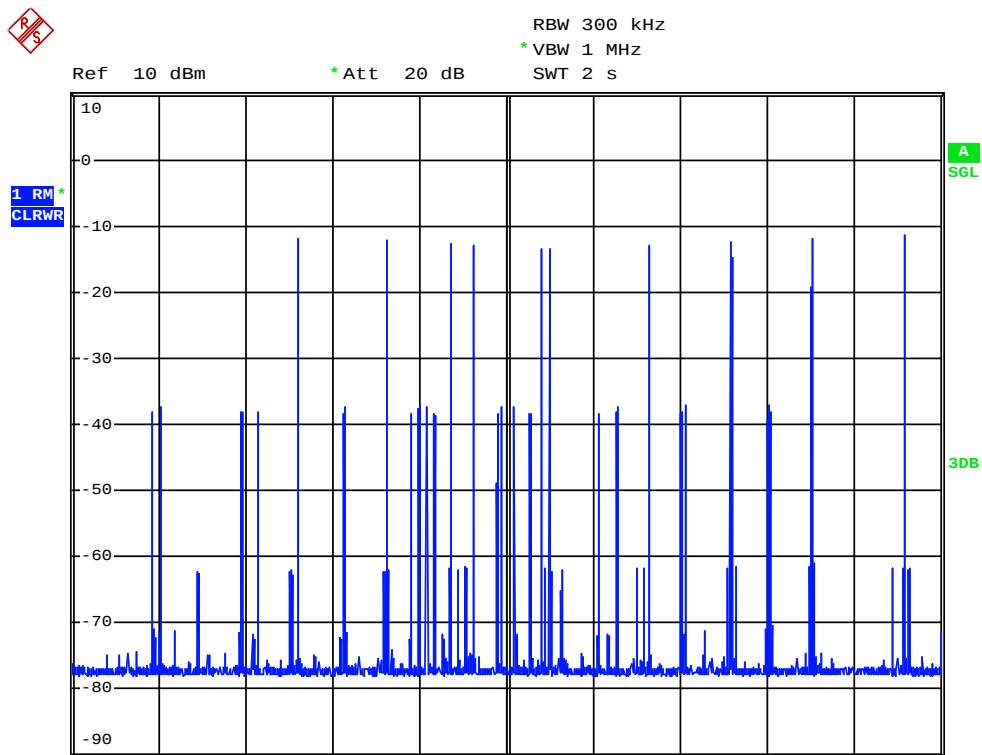
For 2DH3







For 3DH3





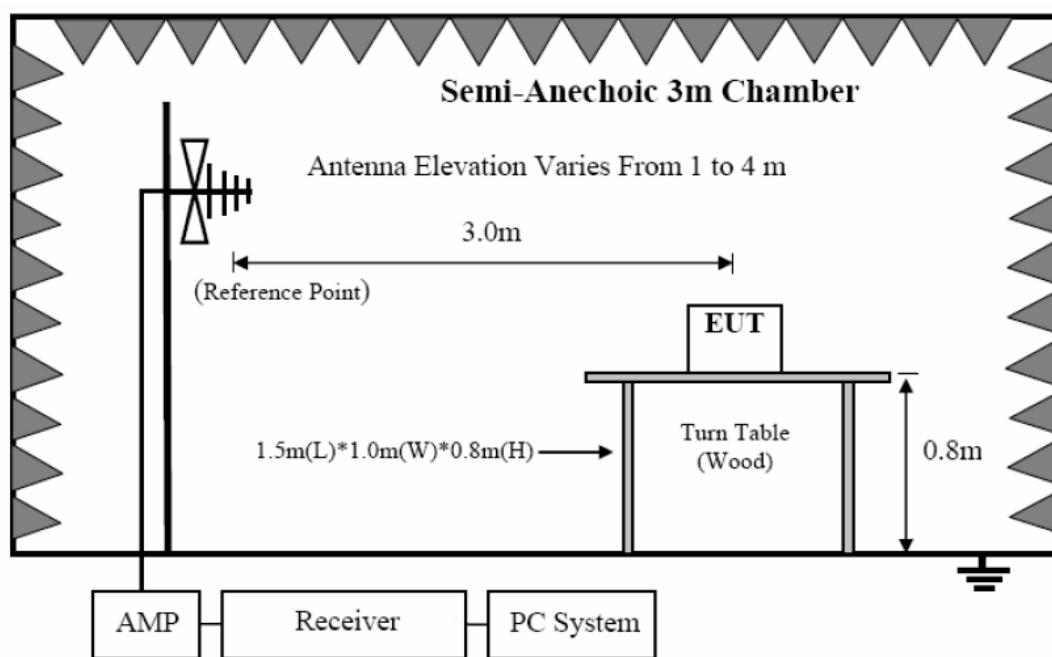
10 RADIATED EMISSION

10.1 Test equipment

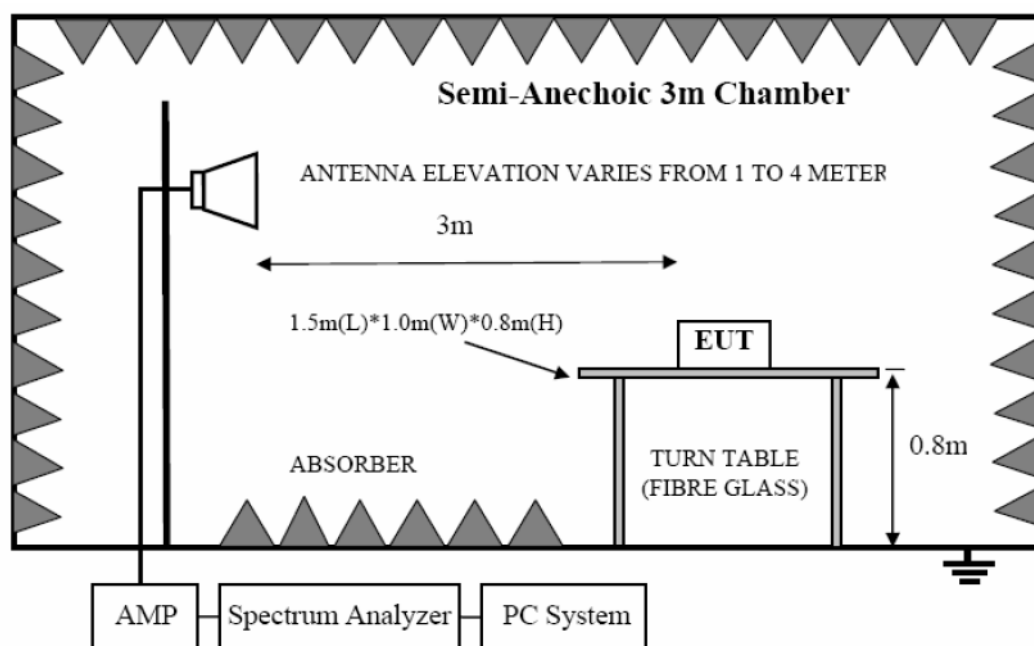
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	EMI Receiver	R&S	ESU8	100316	2012/11/26	1 Year
2	Spectrum Analyzer	R&S	FSU	1166.1660.26	2012/11/26	1 Year
3	Loop Antenna	TESEQ	HLA6120	20129	2012/11/26	1 Year
4	Trilog Broadband Antenna	Schwarzbeck	VULB9163	9163-462	2012/11/26	1 Year
5	Double Ridged Horn Antenna	R&S	HF907	100276	2012/11/26	1 Year
6	Horn Antenna	EMCO	3116	00060095	2012/11/26	1 Year
7	Pre-Amplifier	R&S	SCU-01	10049	2012/11/26	1 Year
8	Pre-Amplifier	A.H.	PAM0-0118	360	2012/11/26	1 Year
9	Pre-Amplifier	A.H.	PAM-1840VH	562	2012/11/26	1 Year
10	RF Cable	R&S	R01	10403	2012/11/26	1 Year
11	RF Cable	R&S	R02	10512	2012/11/26	1 Year

10.2 Block diagram of test setup

In 3m Anechoic Chamber Test Setup Diagram for below 1GHz



In 3m Anechoic Chamber Test Setup Diagram for frequency above 1GHz



Note: For harmonic emissions test a appropriate high pass filter was inserted in the input port of AMP.

10.3 Test Procedure

- (1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber;
- (2) Setup EUT and assistant according to 4.1 and 10.2;
- (3) Test antenna was located 3 m from the EUT on an adjustable mast. Below pre-scan procedure was first performed in order to find prominent radiated emissions;
 - (a) Changed work frequency or channel of device if practicable.
 - (b) Change modulation type of device if practicable.
 - (c) Change power supply range from 85% to 115% of the rated supply voltage for AC mains.
 - (d) Rotated EUT through three orthogonal axes to determine the attitude of EUT arrangement produces highest emission.
- (4) Spectrum frequency from 9 kHz to 25 GHz (tenth harmonic of fundamental frequency) was investigated, and no any obvious emission were detected from 9 kHz to 30 MHz and 18 GHz to 25 GHz, so below final test was performed with frequency range from 30 MHz to 18 GHz;
- (5) For final emission measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1 m and 4 m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. 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 on Radiated Emission test;
- (6) For emission from 30 MHz to 1 GHz, Quasi-Peak values were measured with EMI Receiver and the bandwidth of Receiver is 120 kHz;
- (7) For emission above 1 GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1 MHz, VBW is set at 3 MHz for Peak measure; RBW is set at 1 MHz, VBW is set at 10 Hz for Average measure.
- (8) For emission below 1 GHz, according explorer test, when change Tx mode and channel, have no distinct influence on emissions level, so for emissions below 1 GHz, the final test was only performed with EUT working in GFSK, Tx 2441 MHz mode.

10.4 Limits

10.4.1 FCC 15.205 restricted frequency band

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)

10.4.2 FCC 15.209 limit

Frequency (MHz)	Distance (m)	Field Strength Limit	
		uV/m	dB(uV)/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 1000	3	74,0 dB(uV)/m for Peak 54,0 dB(uV)/m for Average	

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 20 dB below the fundamental emissions, or comply with 15.209 limits.

10.5 Test results

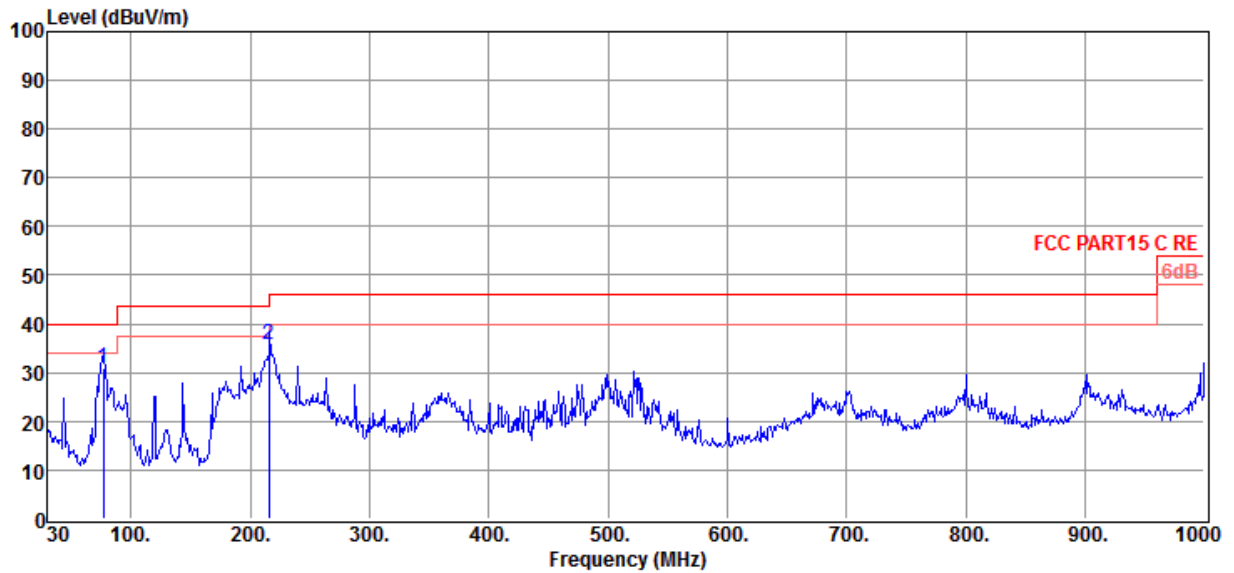
PASS. (See below detailed test result)

All the emissions except fundamental emission from 9 kHz to 25 GHz were comply with 15.209 limit.

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-28 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode
Condition : Temp:24.5'C,Humi:55%,Press:100 **Antenna/Distance** : 2013 VULB9163/3m/HORIZONTAL
 : .1kPa
Memo :

Data: 61



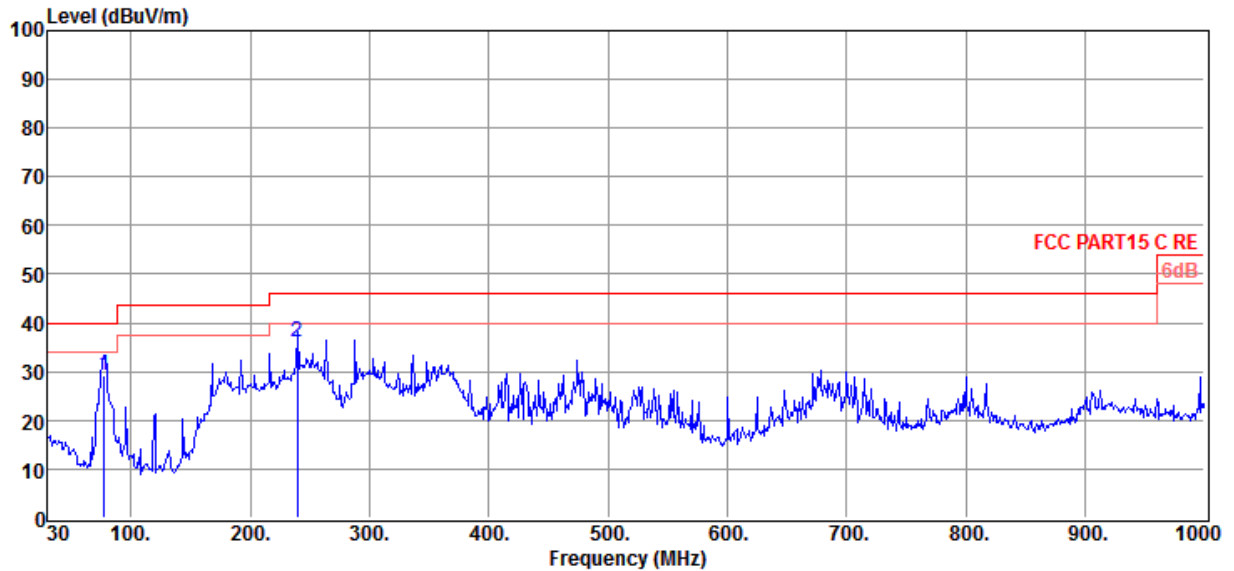
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	76.56	61.20	8.20	39.80	1.24	30.84	40.00	-9.16	QP	Horizontal
2	215.89	67.78	8.45	42.55	2.20	35.88	43.50	-7.62	QP	Horizontal

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with QP limit, QP Result is deemed to comply with QP limit
 3. Test setup: RBW: 120kHz, VBW: 300kHz, Sweep time: auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-28 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode
Condition : Temp:24.5'C,Humi:55%,Press:100 **Antenna/Distance** : 2013 VULB9163/3m/VERTICAL
 : .1kPa
Memo :

Data: 62



Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	77.53	59.68	8.20	39.80	1.25	29.33	40.00	-10.67	QP	VERTICAL
2	239.52	65.03	11.30	42.61	2.34	36.06	46.00	-9.94	QP	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with QP limit, QP Result is deemed to comply with QP limit
 3. Test setup: RBW: 120kHz, VBW: 300kHz, Sweep time: auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**

Test Date : 2013-06-24 **Tested By** : Damon

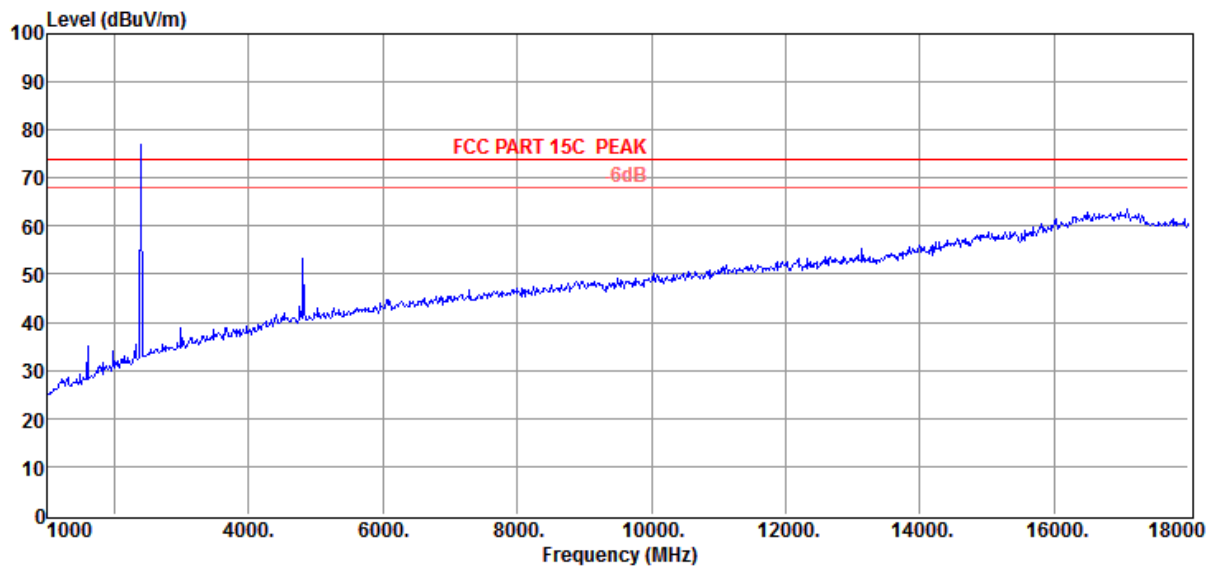
EUT : Buletooth Speaker **Model Number** :

Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK 2402MHz

Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL

Memo :

Data: 1



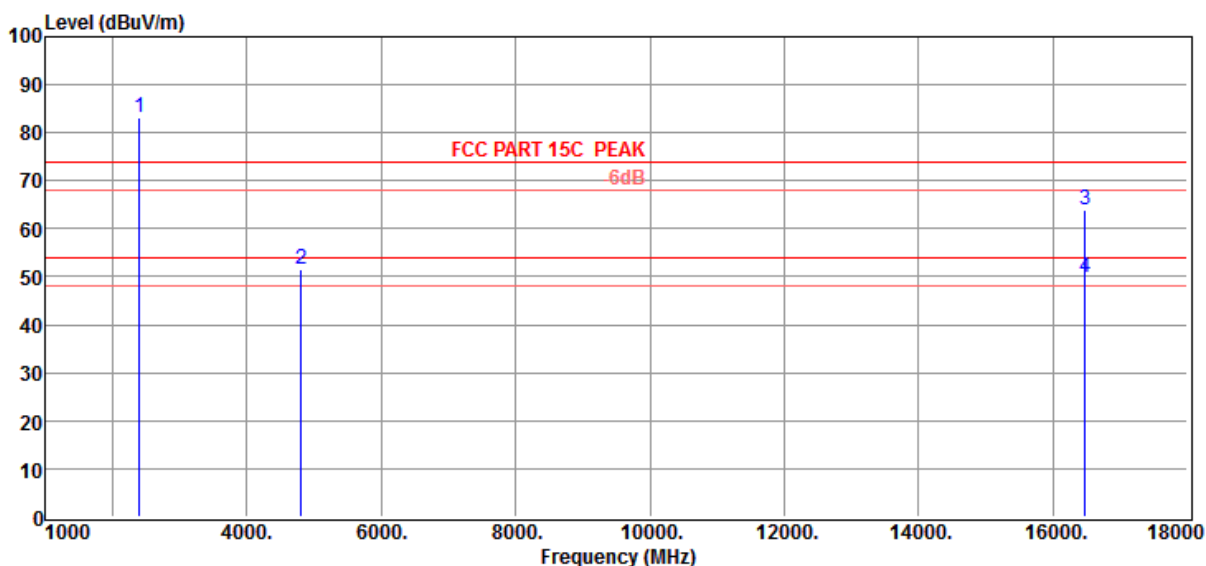
Item	Freq	Read Level	Antenna Factor	PRM Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector	Polarization
(Mark)	(MHz)	(dBμV)	(dB/m)	dB	dB	(dBμV/m)	(dBμV/m)	(dB)		

- Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK 2402MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 2



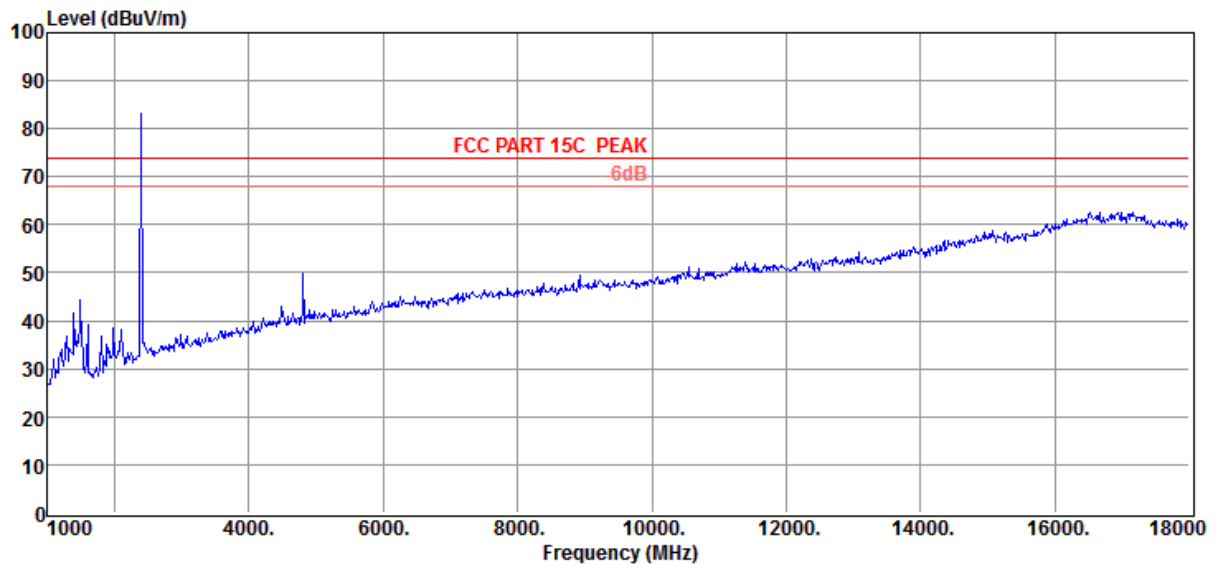
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2402.00	88.80	29.99	43.84	8.35	83.30	74.00	9.30	QP	HORIZONTAL
2	4804.00	48.63	35.40	44.38	12.07	51.72	74.00	-22.28	Peak	HORIZONTAL
3	16470.00	36.23	43.66	40.22	24.40	64.07	74.00	-9.93	Peak	HORIZONTAL
4	16470.00	22.00	43.66	40.22	24.40	49.84	54.00	-4.16	Average	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK 2402MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 3



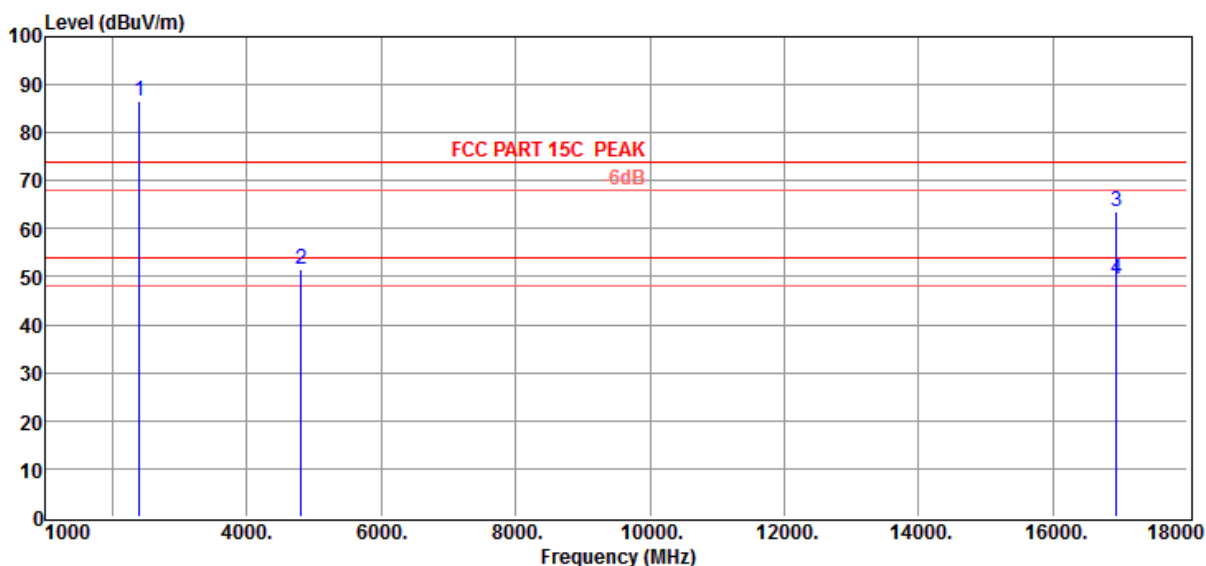
Item	Freq	Read Level	Antenna Factor	PRM Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector	Polarization
(Mark)	(MHz)	(dBμV)	(dB/m)	dB	dB	(dBμV/m)	(dBμV/m)	(dB)		

- Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK 2402MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 4



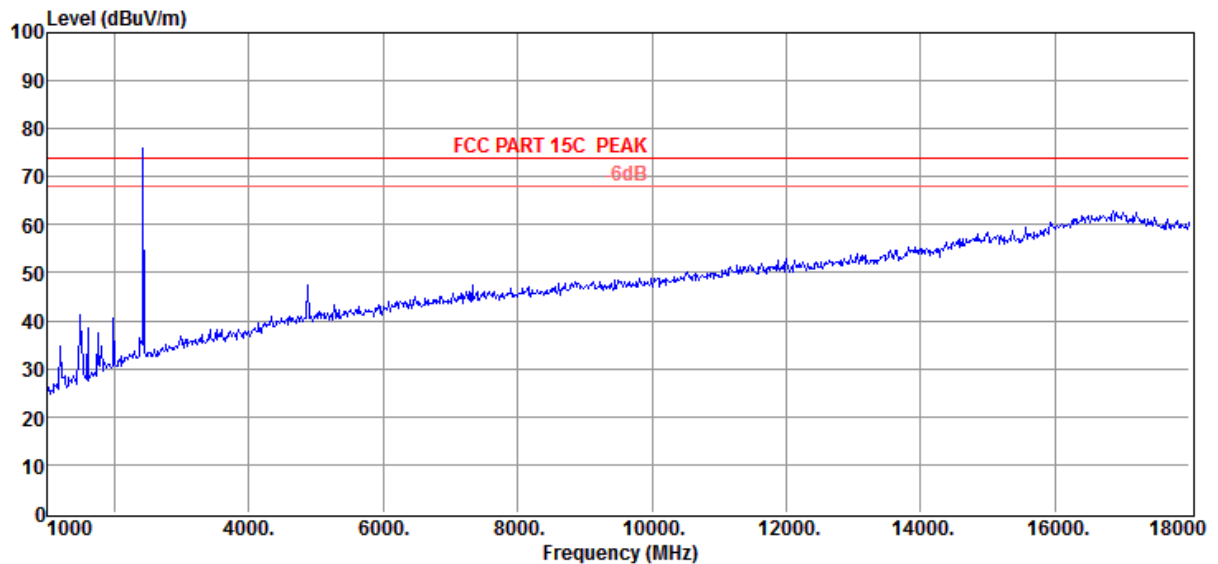
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2402.00	92.09	29.99	43.84	8.35	86.59	74.00	12.59	Peak	VERTICAL
2	4804.00	48.59	35.40	44.38	12.07	51.68	74.00	-22.32	Peak	VERTICAL
3	16946.00	34.71	43.61	40.38	25.60	63.54	74.00	-10.46	Peak	VERTICAL
4	16946.00	20.80	43.61	40.38	25.60	49.63	54.00	-4.37	Average	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK 2440MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 5



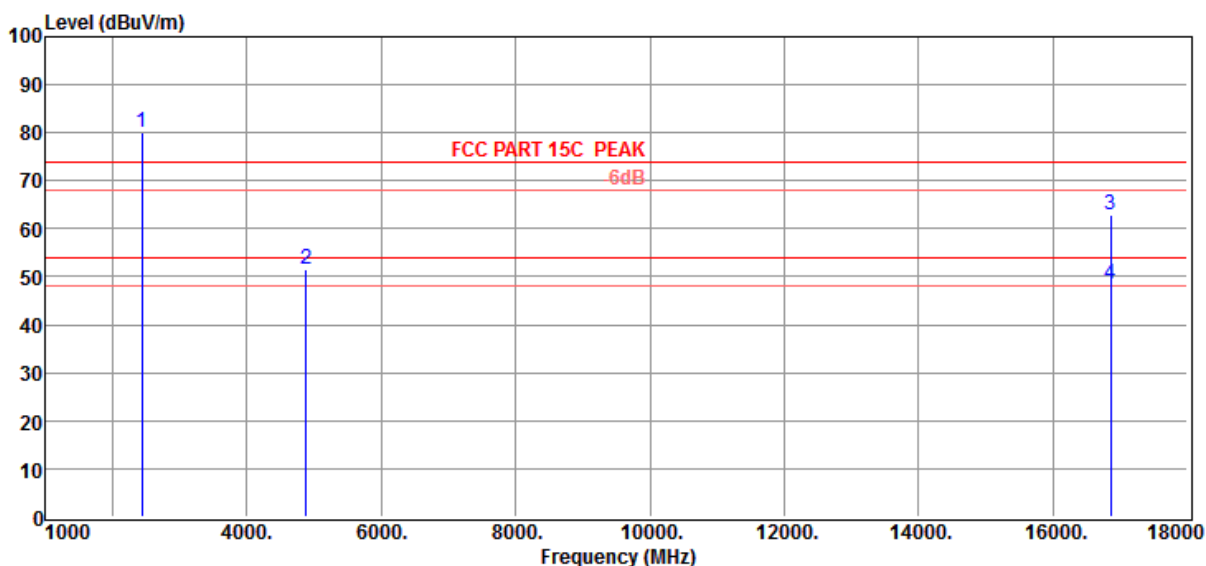
Item	Freq	Read Level	Antenna Factor	PRM Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector	Polarization
(Mark)	(MHz)	(dBμV)	(dB/m)	dB	dB	(dBμV/m)	(dBμV/m)	(dB)		

- Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK 2440MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 6



Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2440.00	85.30	30.14	43.87	8.40	79.97	74.00	5.97	Peak	VERTICAL
2	4880.00	48.37	35.51	44.35	12.04	51.57	74.00	-22.43	Peak	VERTICAL
3	16861.00	34.15	43.63	40.35	25.60	63.03	74.00	-10.97	Peak	VERTICAL
4	16861.00	19.70	43.63	40.35	25.60	48.58	54.00	-5.42	Average	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**

Test Date : 2013-06-24 **Tested By** : Damon

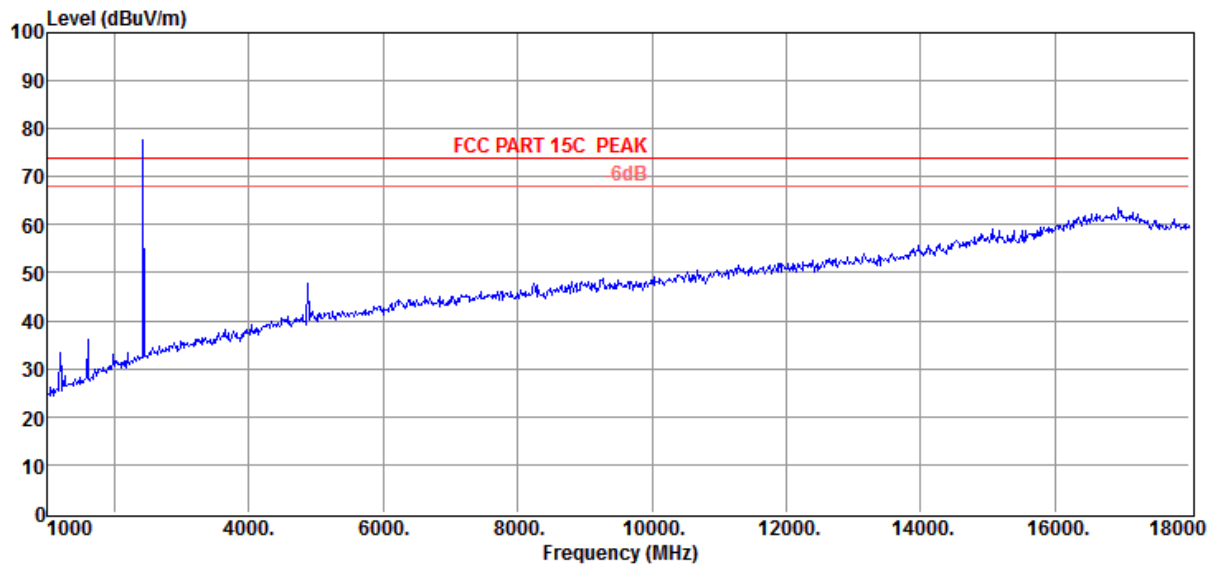
EUT : Buletooth Speaker **Model Number** :

Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK 2440MHz

Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL

Memo :

Data: 7



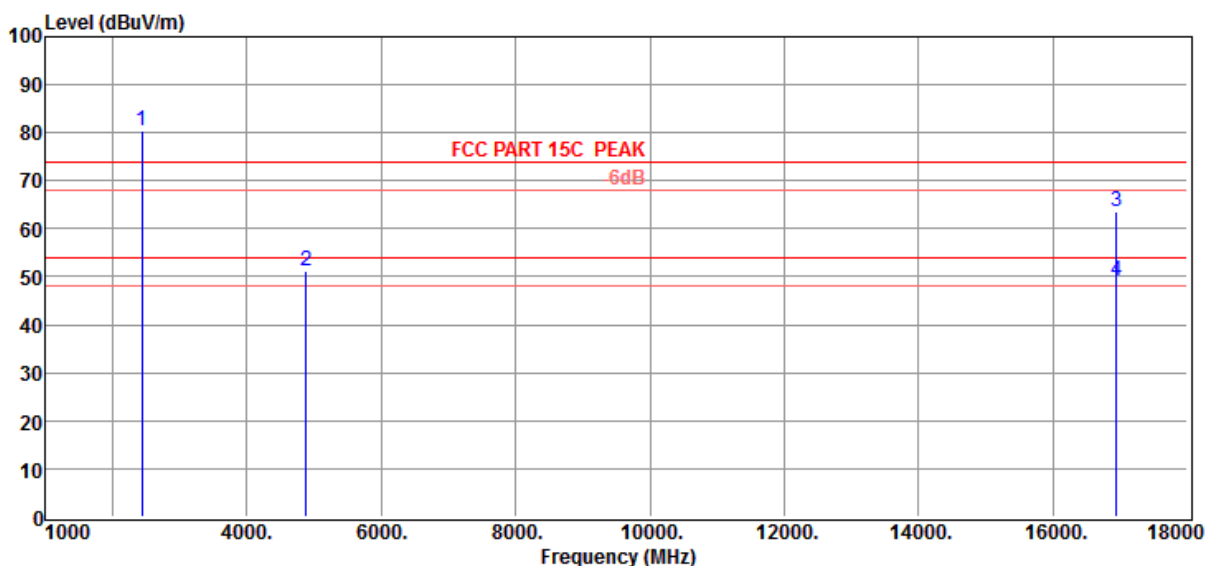
Item	Freq	Read	Antenna	PRM	Cable	Result	Limit	Over	Detector	Polarization
(Mark)	(MHz)	Level	Factor	Factor	Loss	Level	Line	Limit		
		(dBμV)	(dB/m)	dB	dB	(dBμV/m)	(dBμV/m)	(dB)		

- Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK 2440MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 8



Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2440.00	85.68	30.14	43.87	8.40	80.35	74.00	6.35	Peak	HORIZONTAL
2	4880.00	47.85	35.51	44.35	12.04	51.05	74.00	-22.95	Peak	HORIZONTAL
3	16946.00	34.67	43.61	40.38	25.60	63.50	74.00	-10.50	Peak	HORIZONTAL
4	16946.00	20.34	43.61	40.38	25.60	49.17	54.00	-4.83	Average	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**

Test Date : 2013-06-24 **Tested By** : Damon

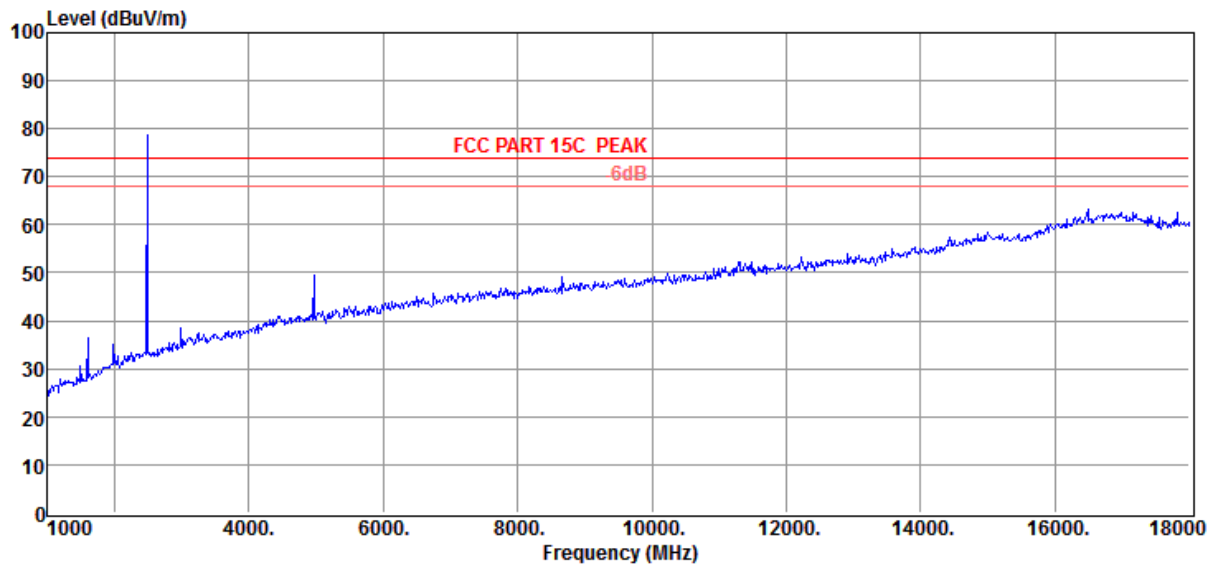
EUT : Buletooth Speaker **Model Number** :

Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK 2480MHz

Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL

Memo :

Data: 9



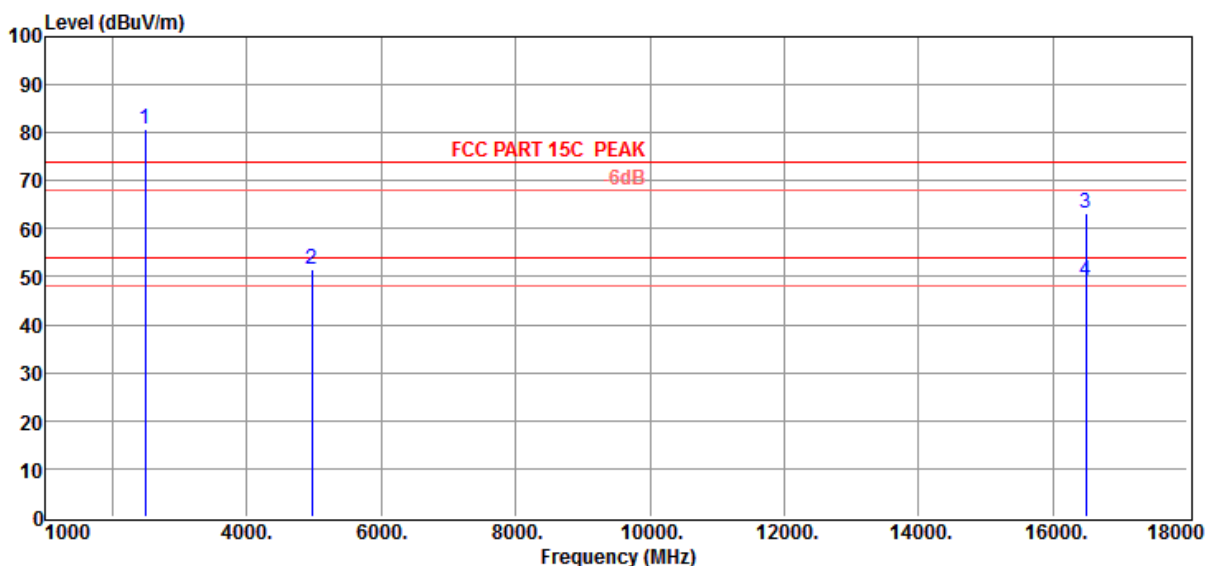
Item	Freq	Read Level	Antenna Factor	PRM Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector	Polarization
(Mark)	(MHz)	(dBμV)	(dB/m)	dB	dB	(dBμV/m)	(dBμV/m)	(dB)		

- Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK 2480MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 10



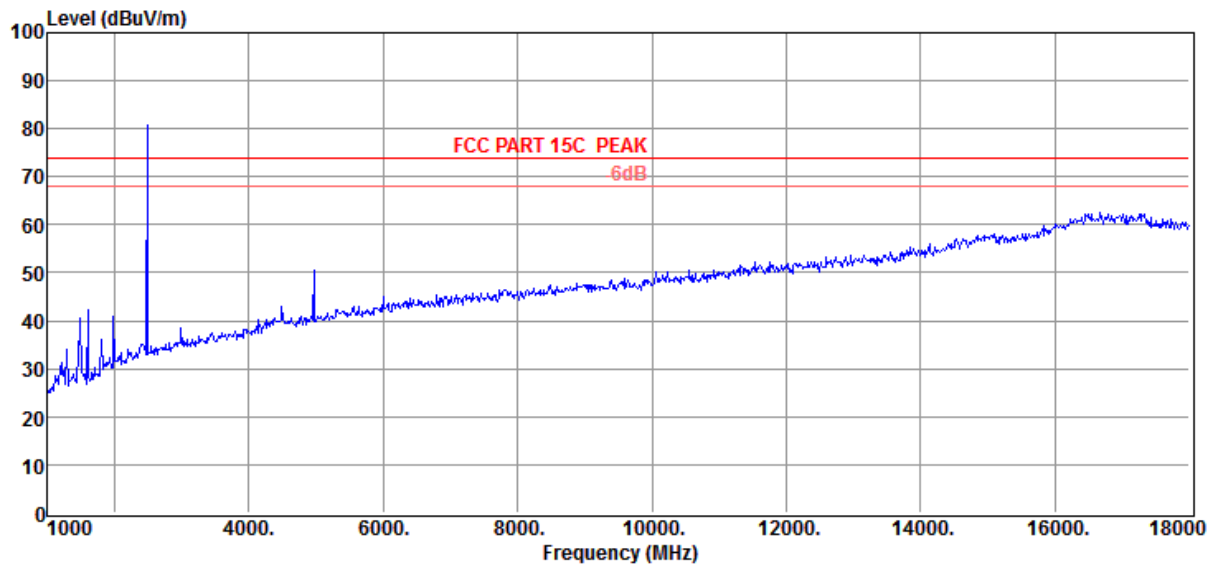
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2480.00	85.73	30.25	43.89	8.50	80.59	74.00	6.59	Peak	HORIZONTAL
2	4960.00	48.03	35.64	44.31	12.02	51.38	74.00	-22.62	Peak	HORIZONTAL
3	16487.00	35.23	43.68	40.21	24.40	63.10	74.00	-10.90	Peak	HORIZONTAL
4	16487.00	21.40	43.68	40.21	24.40	49.27	54.00	-4.73	Average	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK 2480MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 11



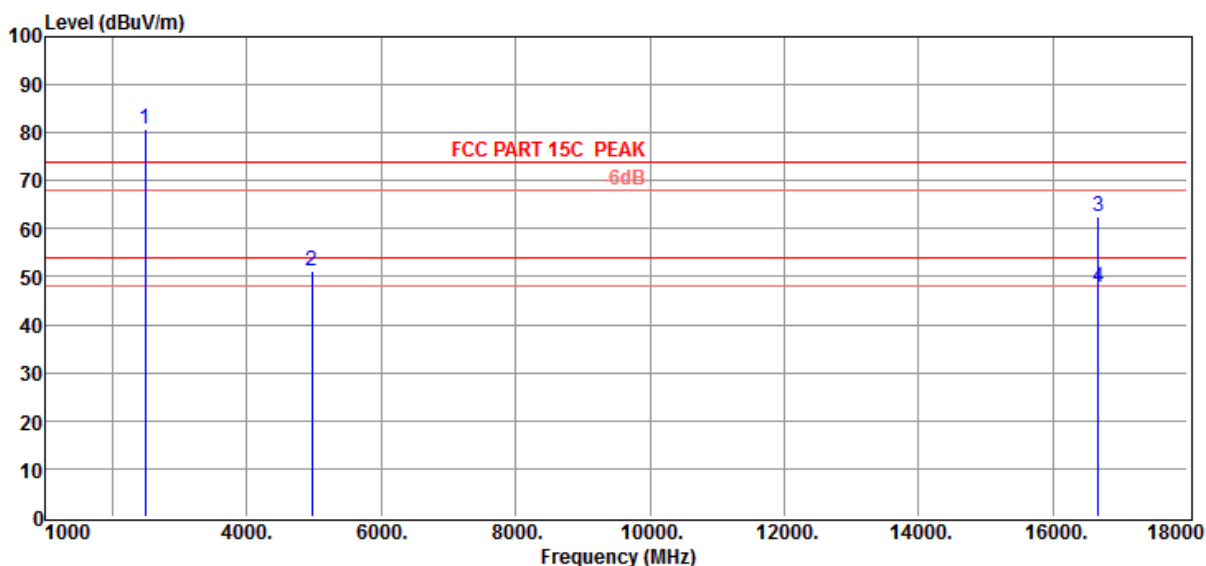
Item	Freq	Read	Antenna	PRM	Cable	Result	Limit	Over	Detector	Polarization
(Mark)	(MHz)	Level	Factor	Factor	Loss	Level	Line	Limit		
		(dBμV)	(dB/m)	dB	dB	(dBμV/m)	(dBμV/m)	(dB)		

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK 2480MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 12



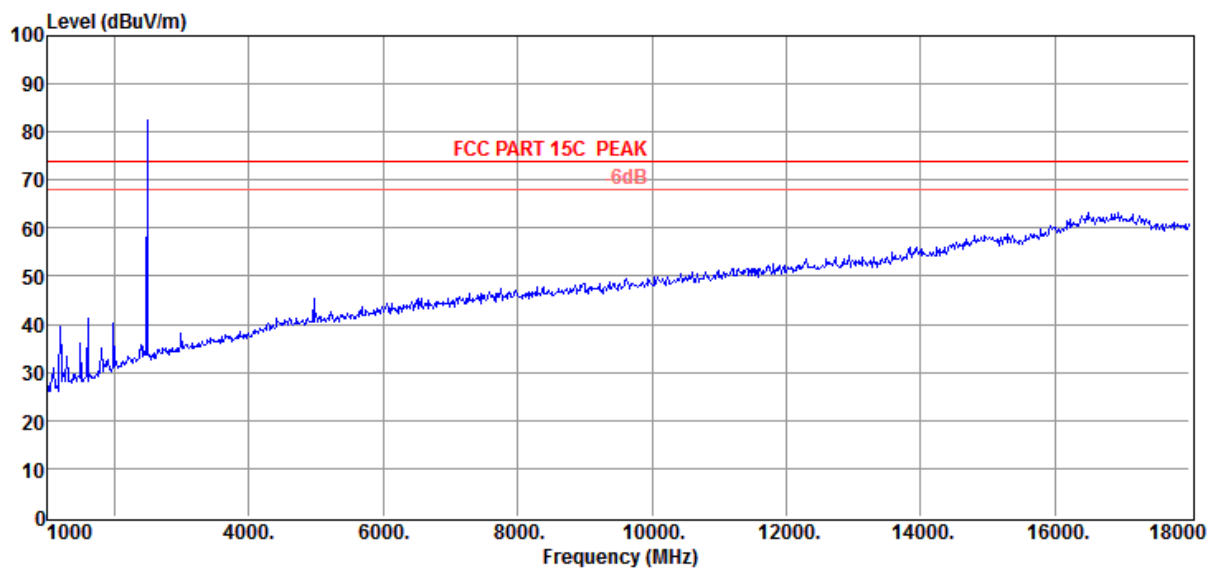
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2480.00	85.82	30.25	43.89	8.50	80.68	74.00	6.68	Peak	VERTICAL
2	4960.00	48.00	35.64	44.31	12.02	51.35	74.00	-22.65	Peak	VERTICAL
3	16674.00	34.20	43.67	40.27	25.00	62.60	74.00	-11.40	QP	VERTICAL
4	16674.00	19.48	43.67	40.27	25.00	47.88	54.00	-6.12	Average	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 4-QPSK 2480MHz
Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 29



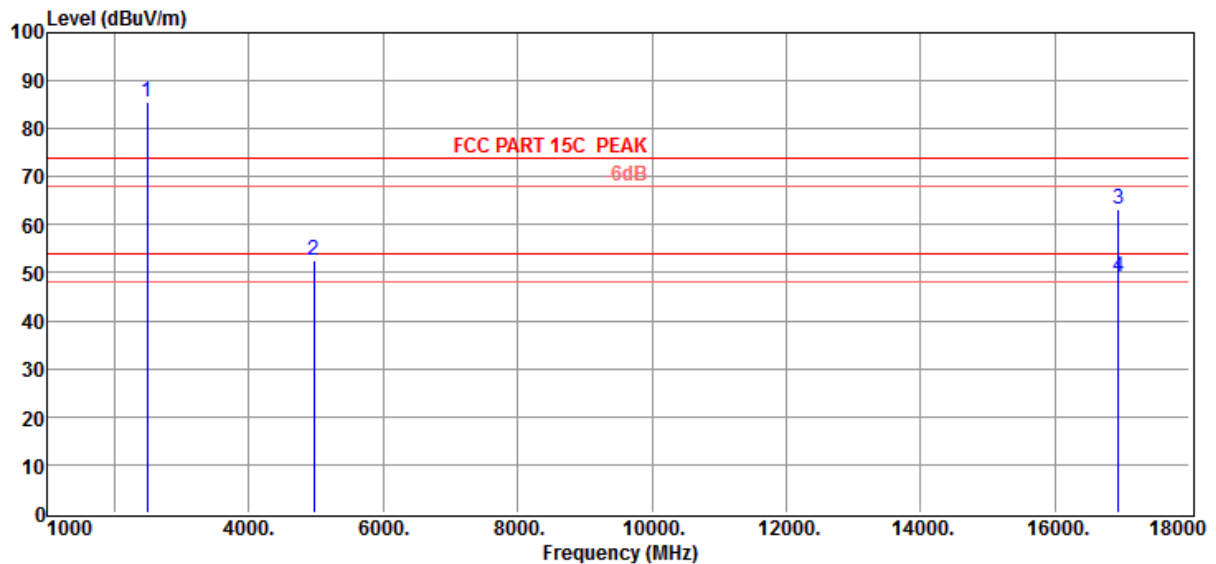
Item	Freq	Read	Antenna	PRM	Cable	Result	Limit	Over	Detector	Polarization
(Mark)	(MHz)	Level	Factor	Factor	Loss	Level	Line	Limit		
		(dBuV)	(dB/m)	dB	dB	(dBuV/m)	(dBuV/m)	(dB)		

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 4pi-QPSK 2480MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 30



Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2480.00	90.61	30.25	43.89	8.50	85.47	74.00	11.47	Peak	VERTICAL
2	4960.00	49.18	35.64	44.31	12.02	52.53	74.00	-21.47	Peak	VERTICAL
3	16946.00	34.43	43.61	40.38	25.60	63.26	74.00	-10.74	Peak	VERTICAL
4	16946.00	20.34	43.61	40.38	25.60	49.17	54.00	-4.83	Average	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**

Test Date : 2013-06-24 **Tested By** : Damon

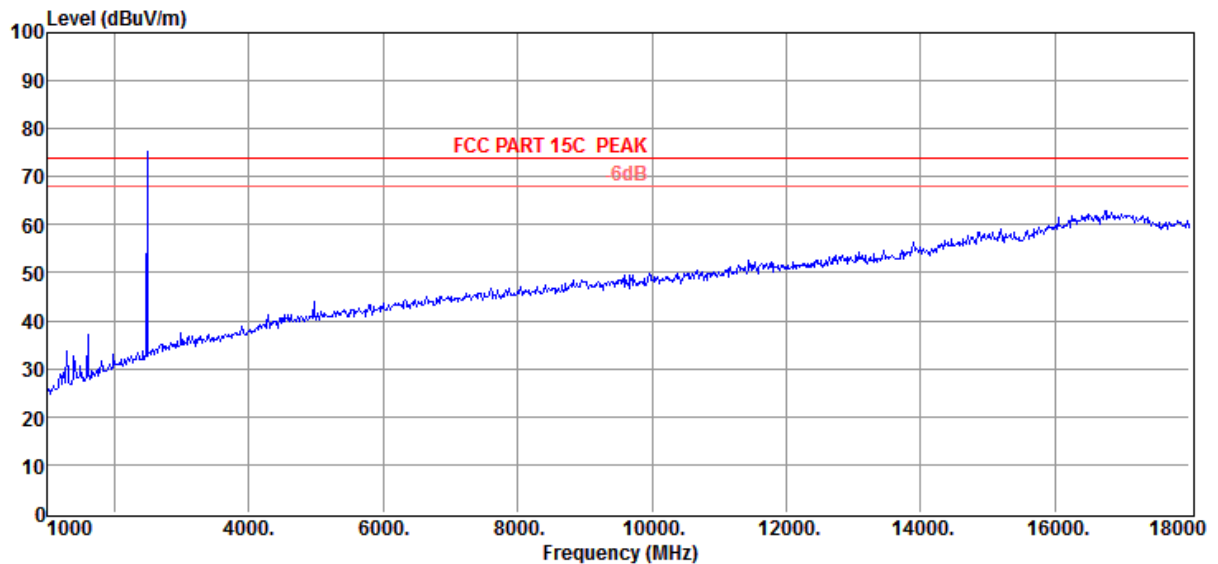
EUT : Buletooth Speaker **Model Number** :

Power Supply : DC 5V from PC **Test Mode** : TX mode 4pi-QPSK 2480MHz

Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL

Memo :

Data: 31



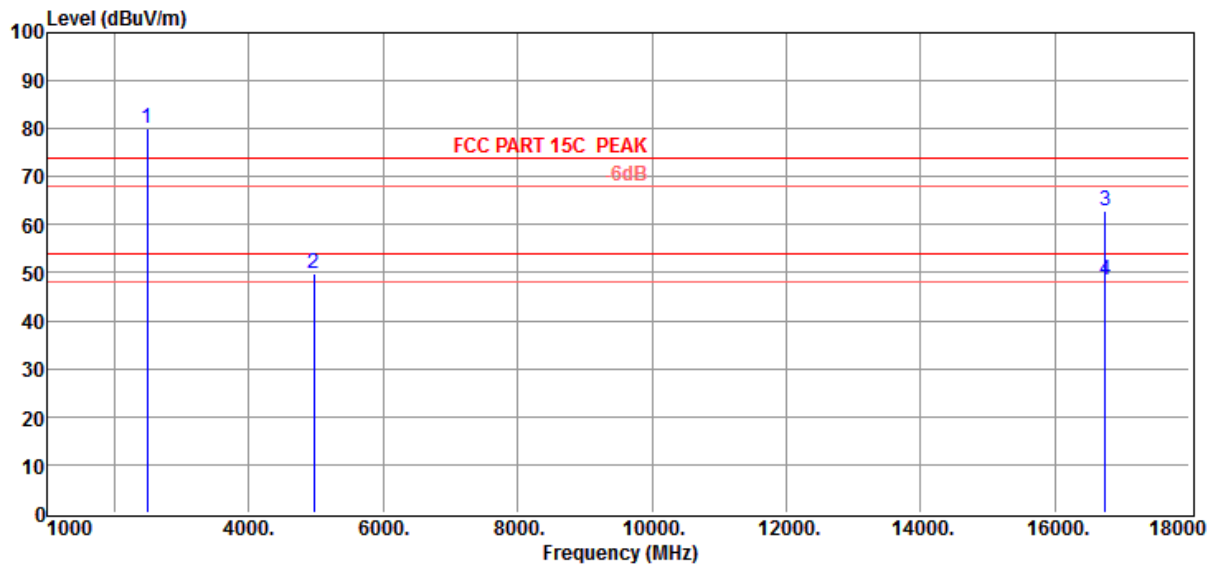
Item	Freq	Read Level	Antenna Factor	PRM Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector	Polarization
(Mark)	(MHz)	(dBμV)	(dB/m)	dB	dB	(dBμV/m)	(dBμV/m)	(dB)		

- Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 4pi-QPSK 2480MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 32



Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2480.00	85.29	30.25	43.89	8.50	80.15	74.00	6.15	Peak	HORIZONTAL
2	4960.00	46.57	35.64	44.31	12.02	49.92	74.00	-24.08	Peak	HORIZONTAL
3	16742.00	34.65	43.65	40.30	25.00	63.00	74.00	-11.00	Peak	HORIZONTAL
4	16742.00	20.11	43.65	40.30	25.00	48.46	54.00	-5.54	Average	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**

Test Date : 2013-06-24 **Tested By** : Damon

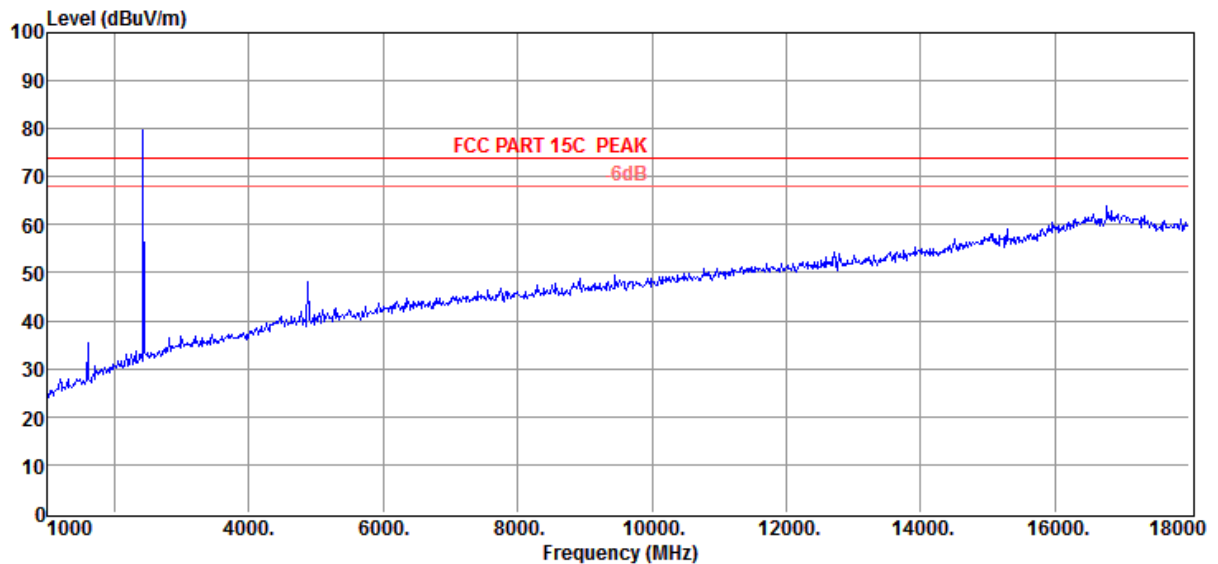
EUT : Buletooth Speaker **Model Number** :

Power Supply : DC 5V from PC **Test Mode** : TX mode 4pi-QPSK 2440MHz

Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL

Memo :

Data: 33



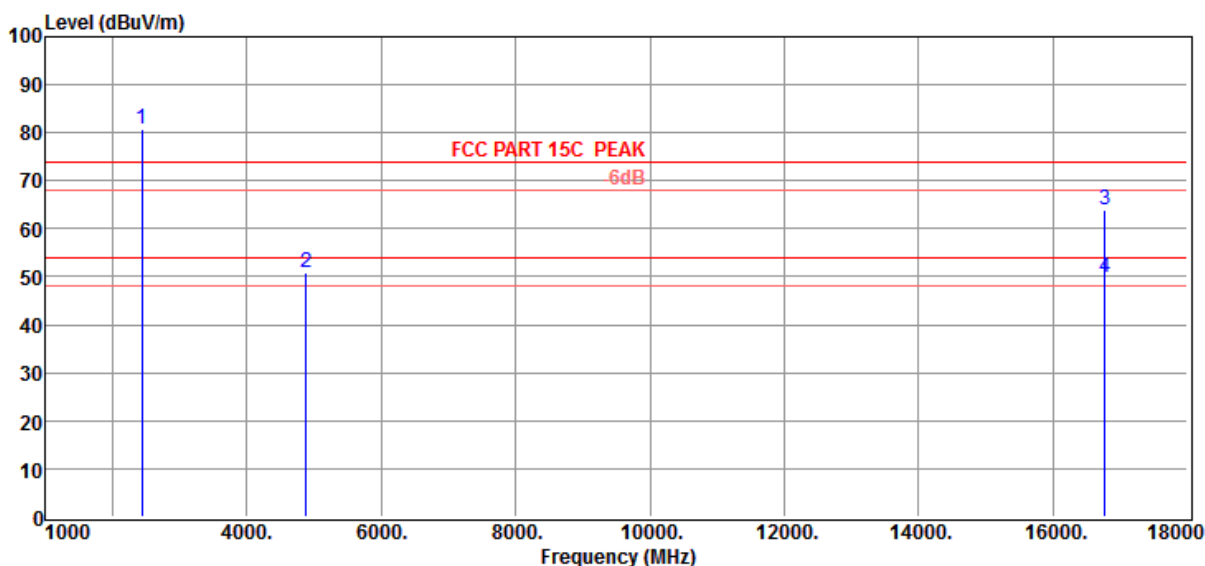
Item	Freq	Read	Antenna	PRM	Cable	Result	Limit	Over	Detector	Polarization
(Mark)	(MHz)	Level	Factor	Factor	Loss	Level	Line	Limit		
		(dBμV)	(dB/m)	dB	dB	(dBμV/m)	(dBμV/m)	(dB)		

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 4pi-QPSK 2440MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 34



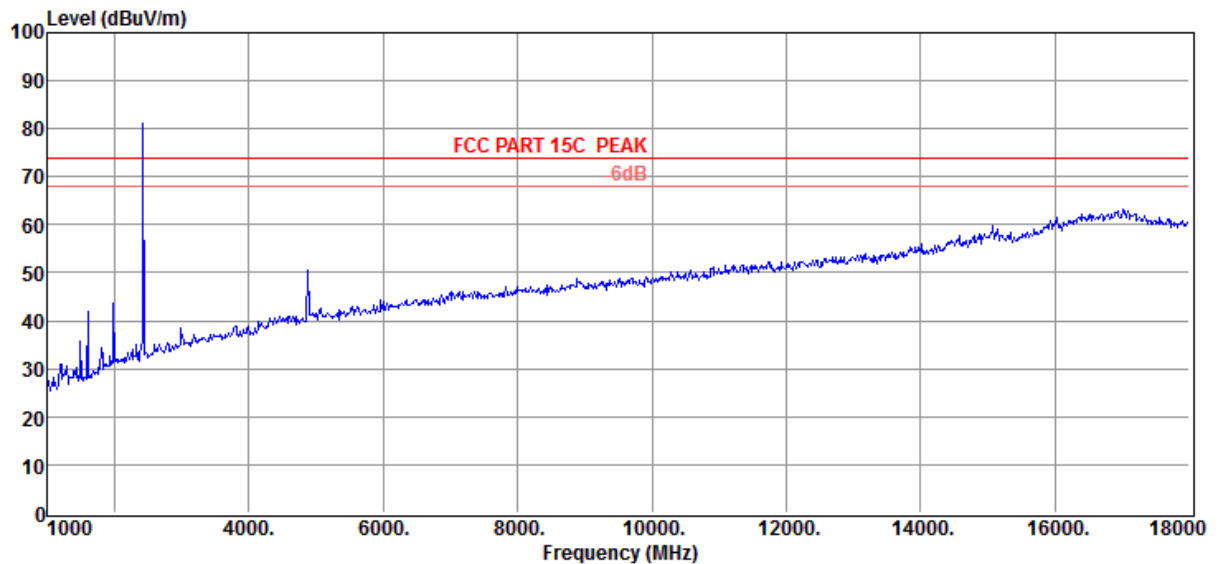
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2440.00	85.92	30.14	43.87	8.40	80.59	74.00	6.59	Peak	HORIZONTAL
2	4880.00	47.76	35.51	44.35	12.04	50.96	74.00	-23.04	Peak	HORIZONTAL
3	16776.00	35.68	43.64	40.31	25.00	64.01	74.00	-9.99	Peak	HORIZONTAL
4	16776.00	21.41	43.64	40.31	25.00	49.74	54.00	-4.26	Average	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 4pi-QPSK 2440MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 35



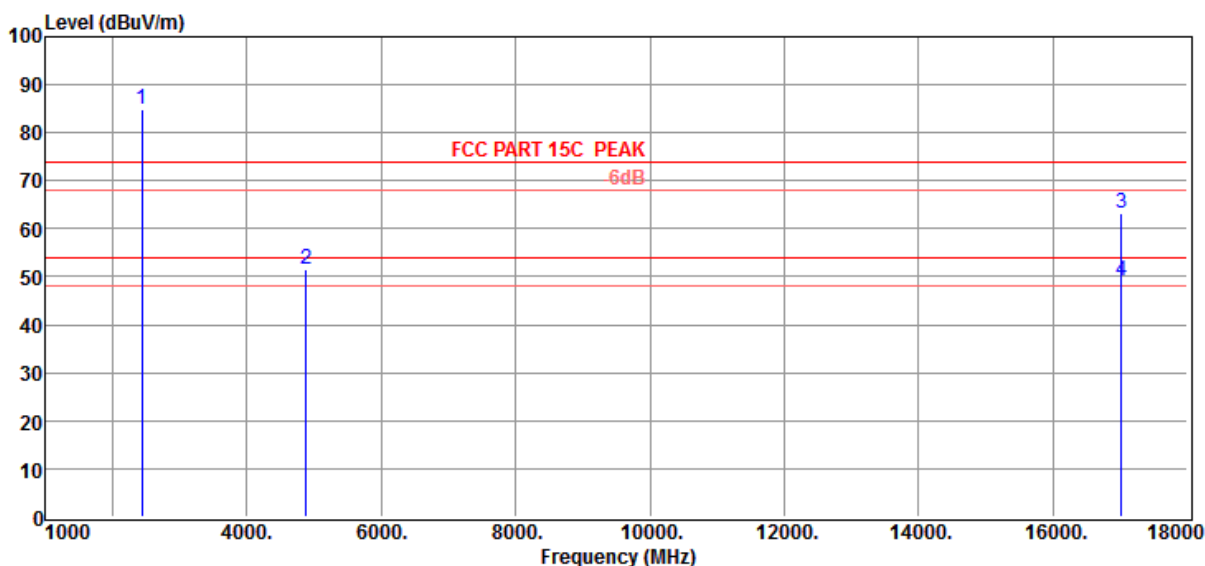
Item	Freq	Read Level	Antenna Factor	PRM Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector	Polarization
(Mark)	(MHz)	(dBμV)	(dB/m)	dB	dB	(dBμV/m)	(dBμV/m)	(dB)		

- Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 4pi-QPSK 2440MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 36



Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2440.00	90.38	30.14	43.87	8.40	85.05	74.00	11.05	Peak	VERTICAL
2	4880.00	48.36	35.51	44.35	12.04	51.56	74.00	-22.44	Peak	VERTICAL
3	17014.00	34.44	43.57	40.41	25.60	63.20	74.00	-10.80	Peak	VERTICAL
4	17014.00	20.25	43.57	40.41	25.60	49.01	54.00	-4.99	Average	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**

Test Date : 2013-06-24 **Tested By** : Damon

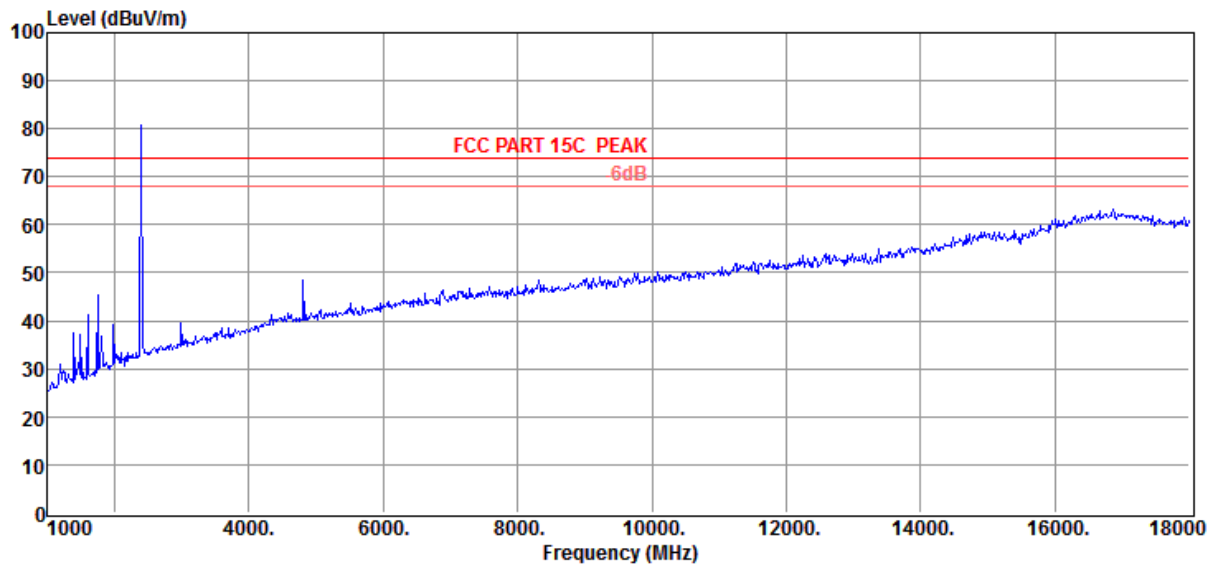
EUT : Buletooth Speaker **Model Number** :

Power Supply : DC 5V from PC **Test Mode** : TX mode 4pi-QPSK 2402MHz

Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL

Memo :

Data: 37



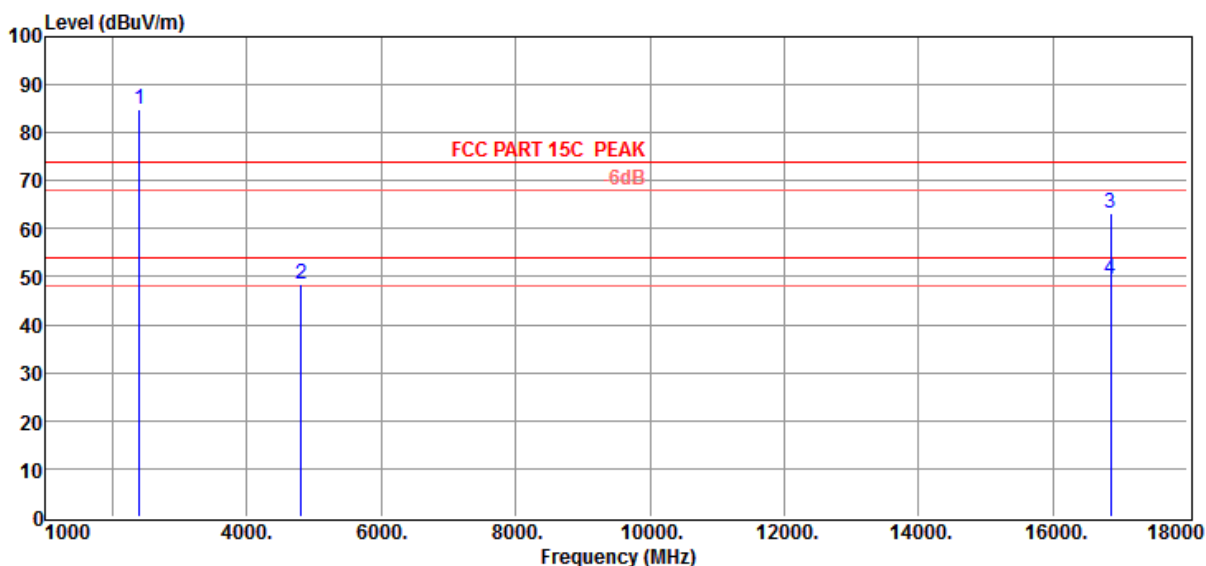
Item	Freq	Read Level	Antenna Factor	PRM Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector	Polarization
(Mark)	(MHz)	(dBμV)	(dB/m)	dB	dB	(dBμV/m)	(dBμV/m)	(dB)		

- Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 4pi-QPSK 2402MHz
Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 38



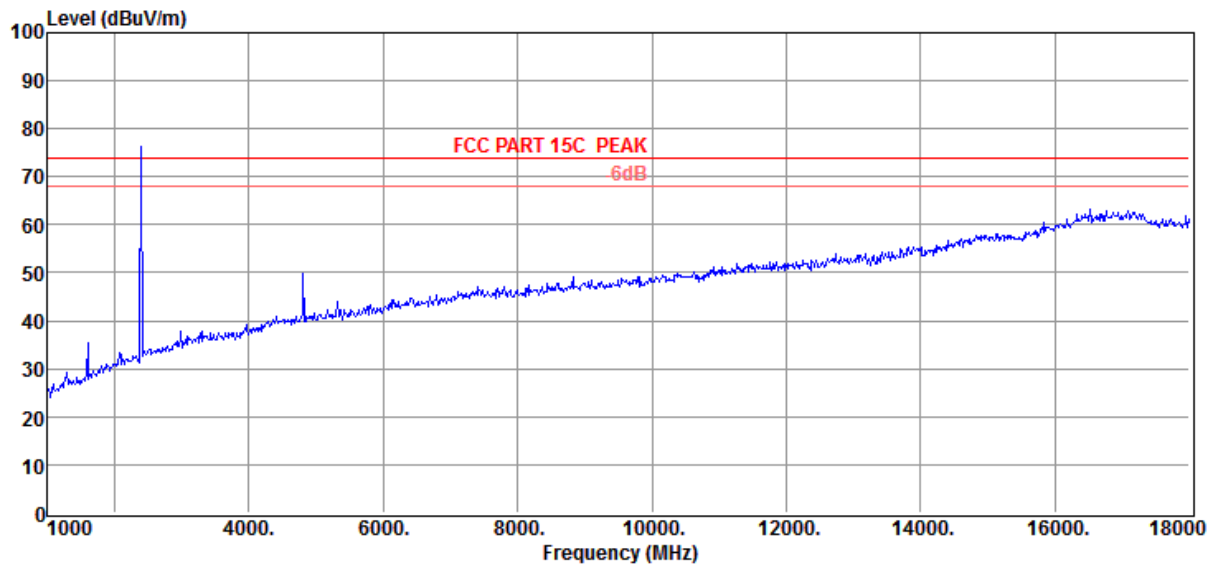
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2402.00	90.41	29.99	43.84	8.35	84.91	74.00	10.91	Peak	VERTICAL
2	4804.00	45.38	35.40	44.38	12.07	48.47	74.00	-25.53	Peak	VERTICAL
3	16861.00	34.22	43.63	40.35	25.60	63.10	74.00	-10.90	Peak	VERTICAL
4	16861.00	20.47	43.63	40.35	25.60	49.35	54.00	-4.65	Average	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 4pi-QPSK 2402MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 39



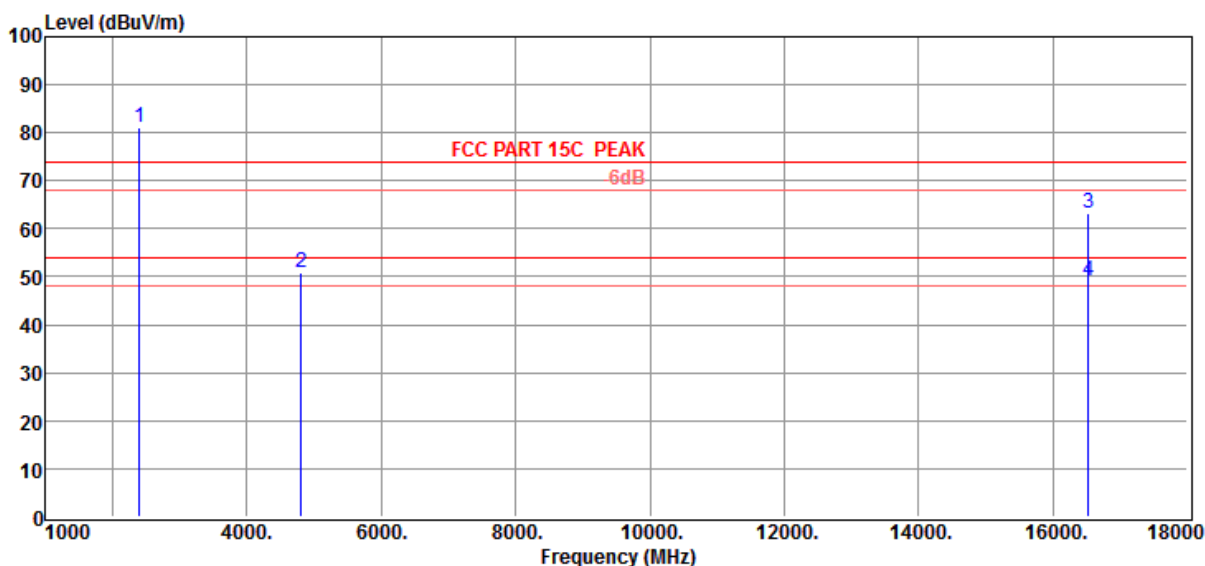
Item	Freq	Read Level	Antenna Factor	PRM Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector	Polarization
(Mark)	(MHz)	(dBμV)	(dB/m)	dB	dB	(dBμV/m)	(dBμV/m)	(dB)		

- Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 4pi-QPSK 2402MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 40



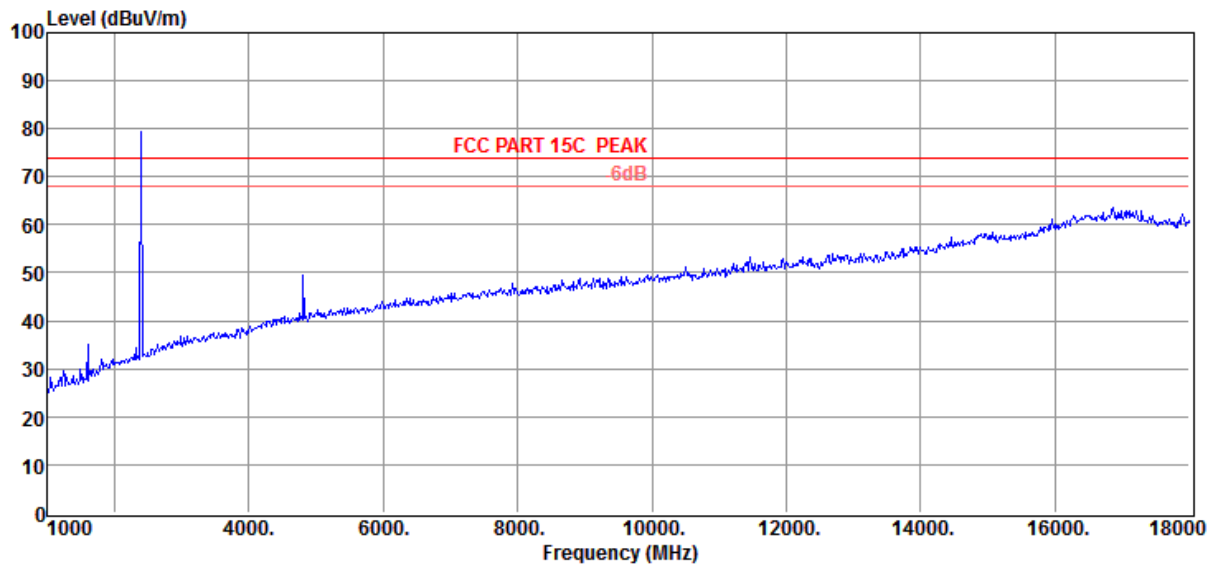
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2402.00	86.75	29.99	43.84	8.35	81.25	74.00	7.25	Peak	HORIZONTAL
2	4804.00	47.62	35.40	44.38	12.07	50.71	74.00	-23.29	Peak	HORIZONTAL
3	16521.00	35.34	43.70	40.21	24.40	63.23	74.00	-10.77	Peak	HORIZONTAL
4	16521.00	21.34	43.70	40.21	24.40	49.23	54.00	-4.77	Average	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK 2402MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 41



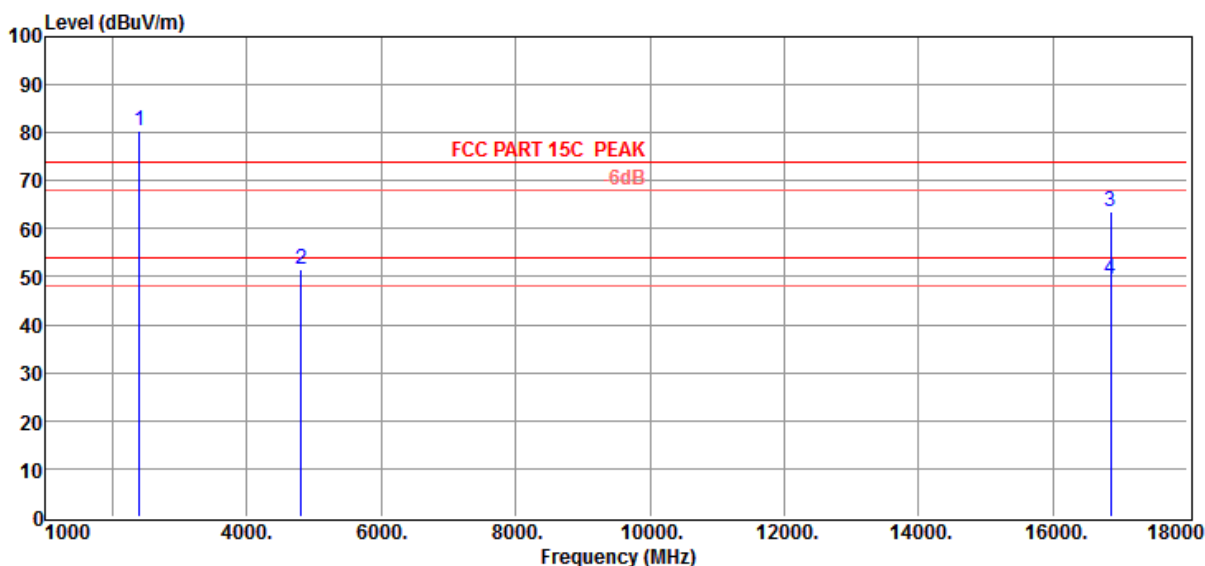
Item	Freq	Read Level	Antenna Factor	PRM Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector	Polarization
(Mark)	(MHz)	(dBμV)	(dB/m)	dB	dB	(dBμV/m)	(dBμV/m)	(dB)		

- Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK 2402MHz
Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 42



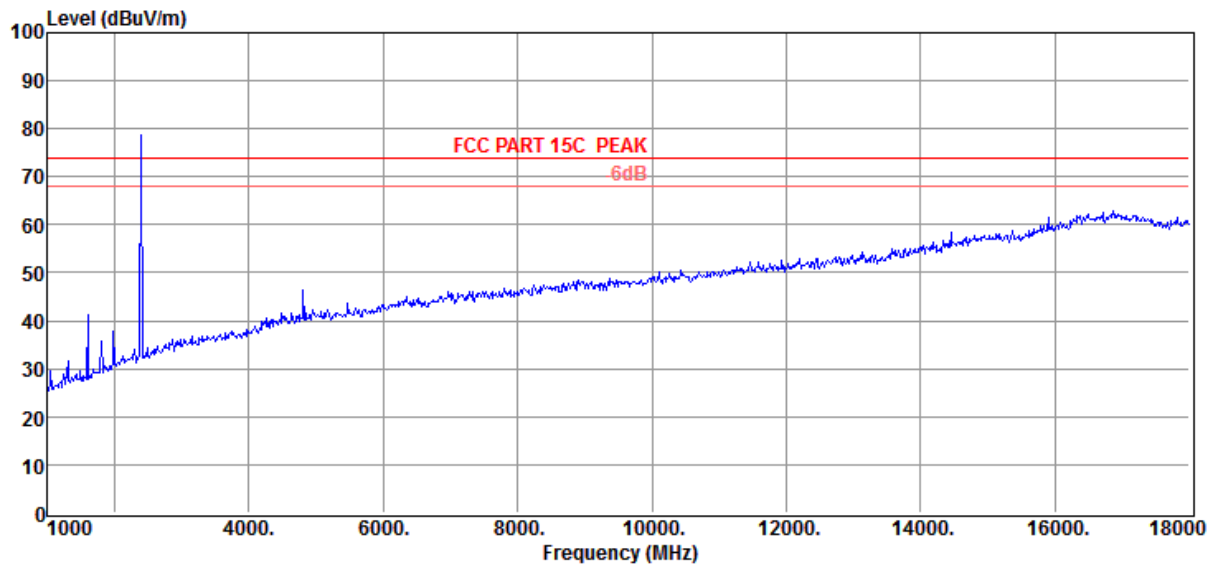
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2402.00	86.02	29.99	43.84	8.35	80.52	74.00	6.52	Peak	HORIZONTAL
2	4804.00	48.47	35.40	44.38	12.07	51.56	74.00	-22.44	Peak	HORIZONTAL
3	16861.00	34.62	43.63	40.35	25.60	63.50	74.00	-10.50	Peak	HORIZONTAL
4	16861.00	20.74	43.63	40.35	25.60	49.62	54.00	-4.38	Average	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK 2402MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 43



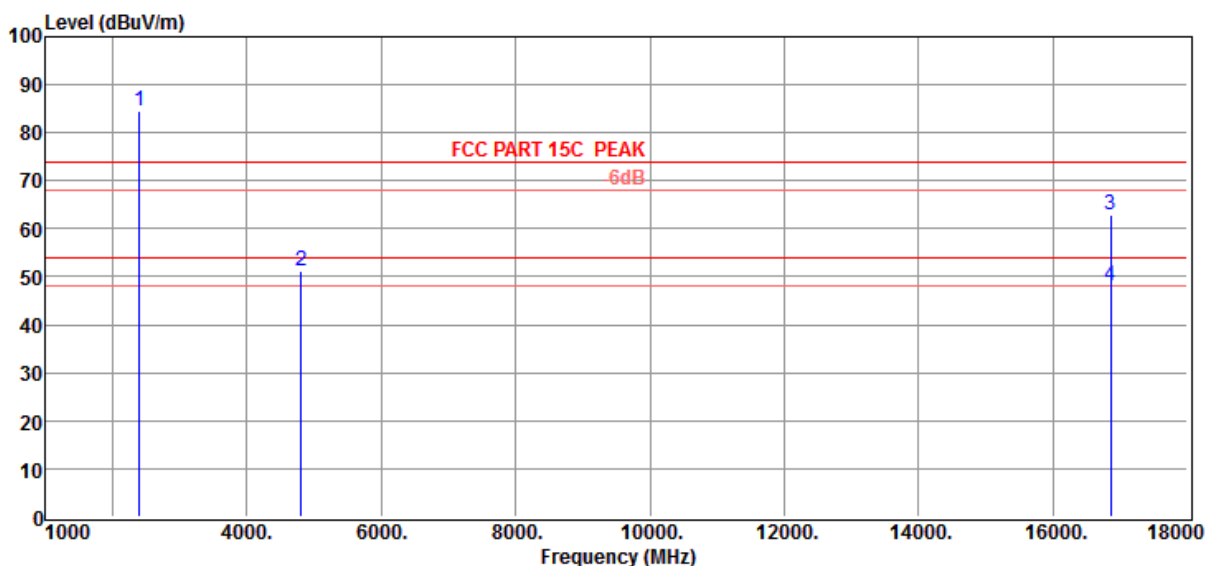
Item	Freq	Read Level	Antenna Factor	PRM Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector	Polarization
(Mark)	(MHz)	(dBμV)	(dB/m)	dB	dB	(dBμV/m)	(dBμV/m)	(dB)		

- Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK 2402MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 44



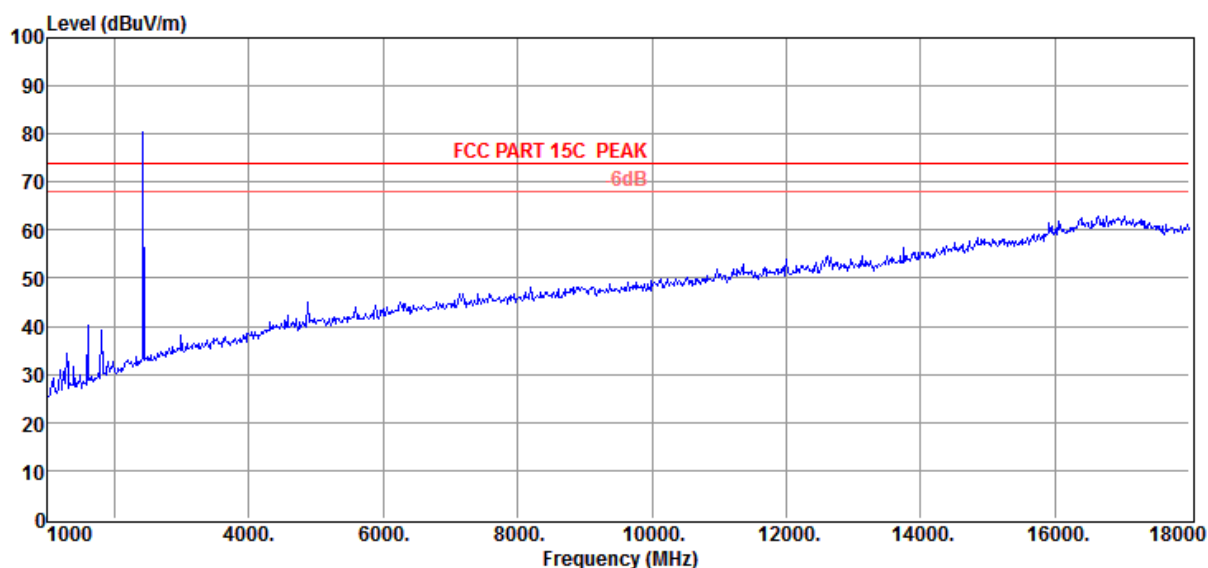
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2402.00	90.12	29.99	43.84	8.35	84.62	74.00	10.62	Peak	VERTICAL
2	4804.00	48.25	35.40	44.38	12.07	51.34	74.00	-22.66	Peak	VERTICAL
3	16861.00	33.87	43.63	40.35	25.60	62.75	74.00	-11.25	Peak	VERTICAL
4	16861.00	19.30	43.63	40.35	25.60	48.18	54.00	-5.82	Average	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK 2440MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 49



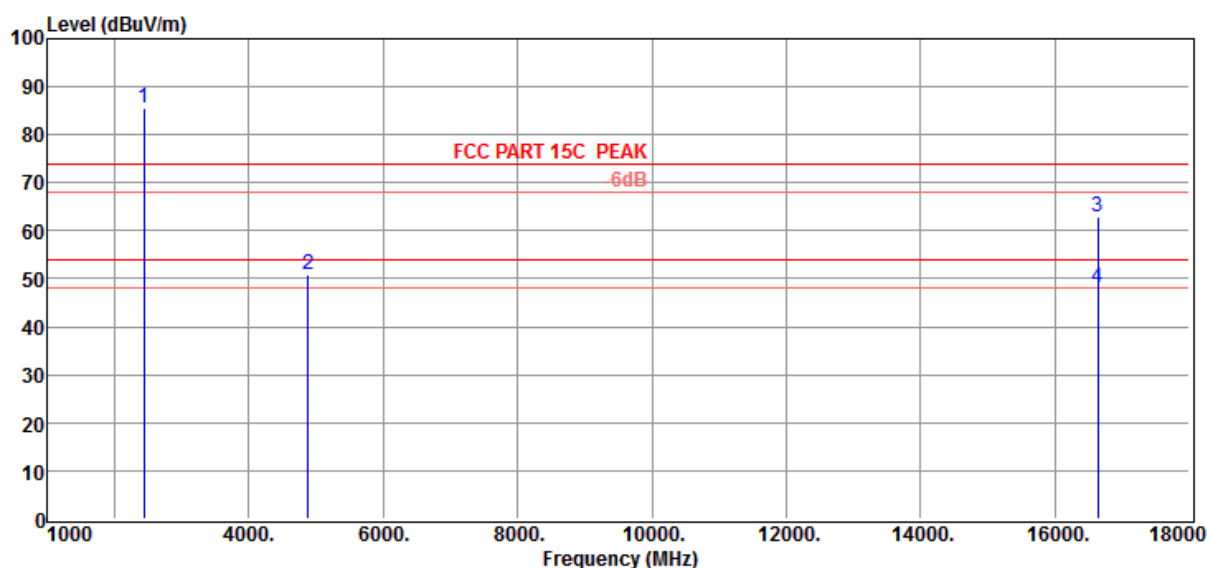
Item	Freq	Read	Antenna	PRM	Cable	Result	Limit	Over	Detector	Polarization
(Mark)	(MHz)	Level	Factor	Factor	Loss	Level	Line	Limit		
		(dBuV)	(dB/m)	dB	dB	(dBuV/m)	(dBuV/m)	(dB)		

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK 2440MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 50



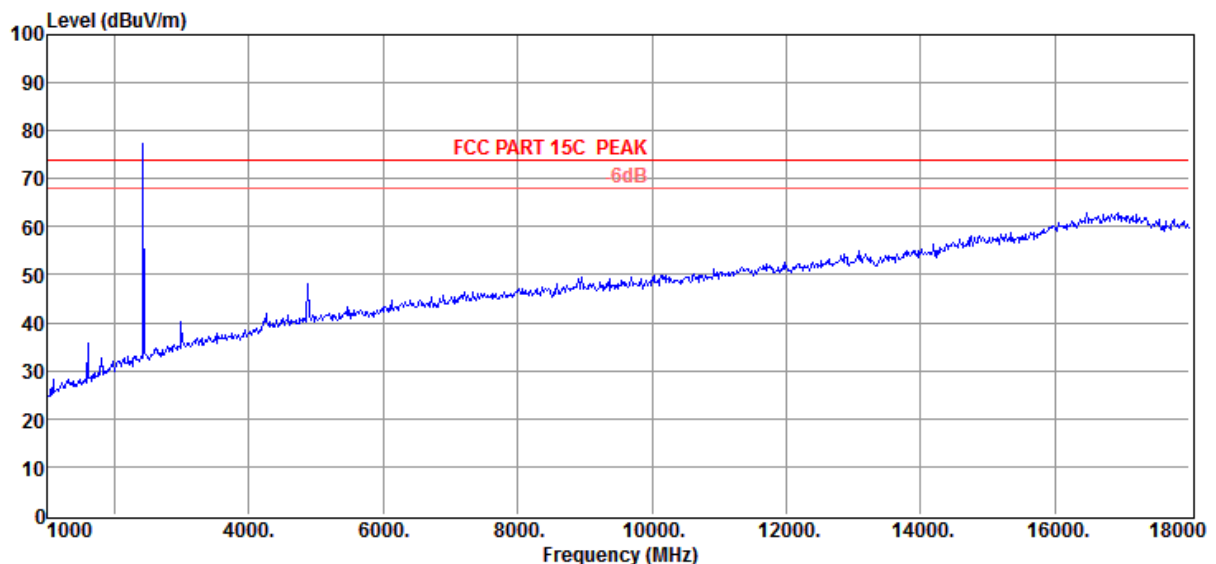
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2440.00	90.83	30.14	43.87	8.40	85.50	74.00	11.50	Peak	VERTICAL
2	4880.00	47.67	35.51	44.35	12.04	50.87	74.00	-23.13	Peak	VERTICAL
3	16640.00	34.40	43.67	40.25	25.00	62.82	74.00	-11.18	Peak	VERTICAL
4	16640.00	19.57	43.67	40.25	25.00	47.99	54.00	-6.01	Average	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK 2440MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 51



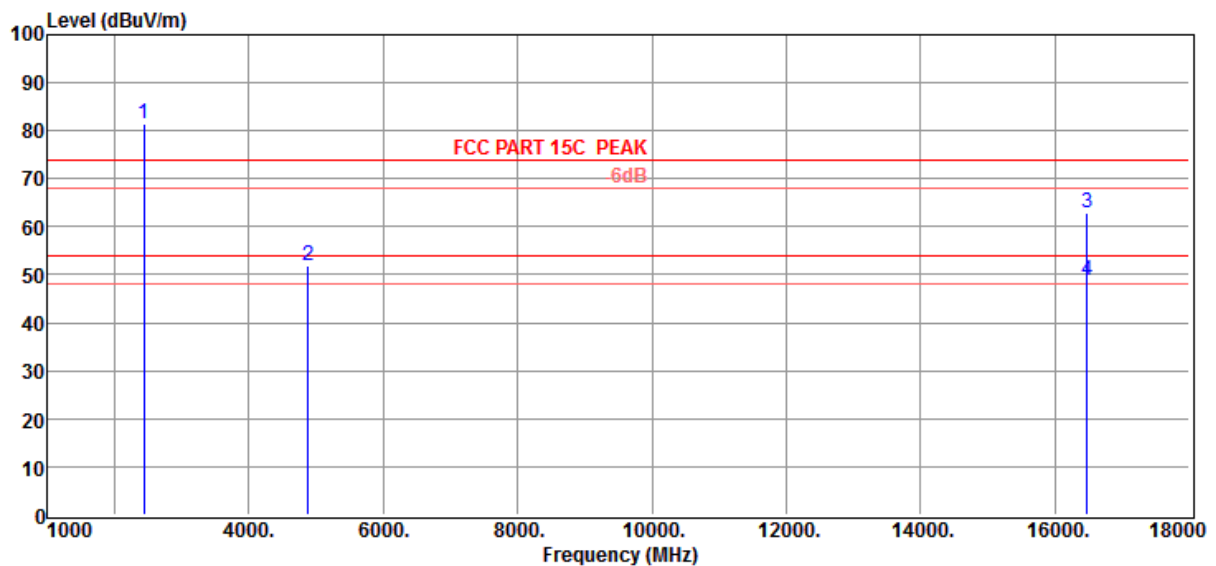
Item	Freq	Read Level	Antenna Factor	PRM Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector	Polarization
(Mark)	(MHz)	(dBμV)	(dB/m)	dB	dB	(dBμV/m)	(dBμV/m)	(dB)		

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK 2440MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 52



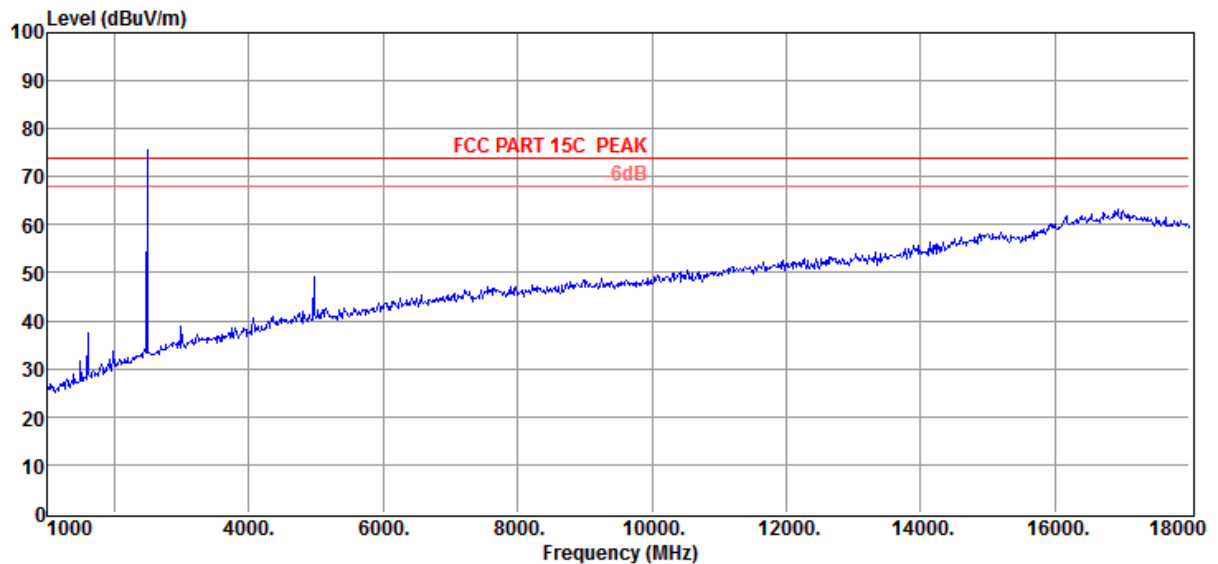
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2440.00	86.68	30.14	43.87	8.40	81.35	74.00	7.35	Peak	HORIZONTAL
2	4880.00	48.75	35.51	44.35	12.04	51.95	74.00	-22.05	Peak	HORIZONTAL
3	16470.00	35.11	43.66	40.22	24.40	62.95	74.00	-11.05	Peak	HORIZONTAL
4	16470.00	20.80	43.66	40.22	24.40	48.64	54.00	-5.36	Average	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK 2480MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 53



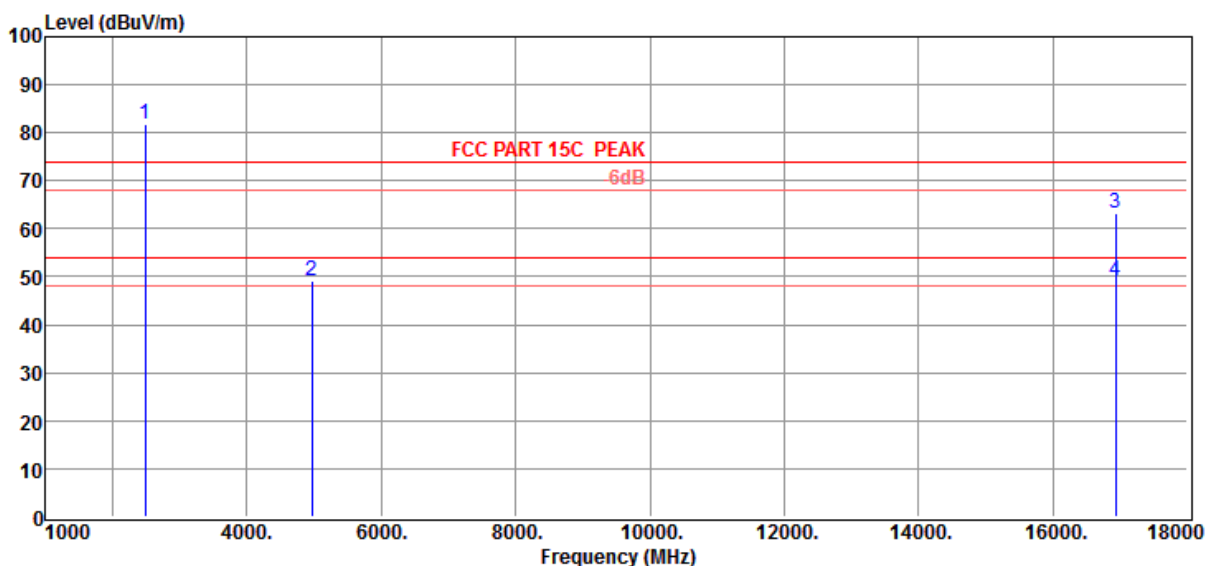
Item	Freq	Read Level	Antenna Factor	PRM Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector	Polarization
(Mark)	(MHz)	(dBμV)	(dB/m)	dB	dB	(dBμV/m)	(dBμV/m)	(dB)		

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK 2480MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 54



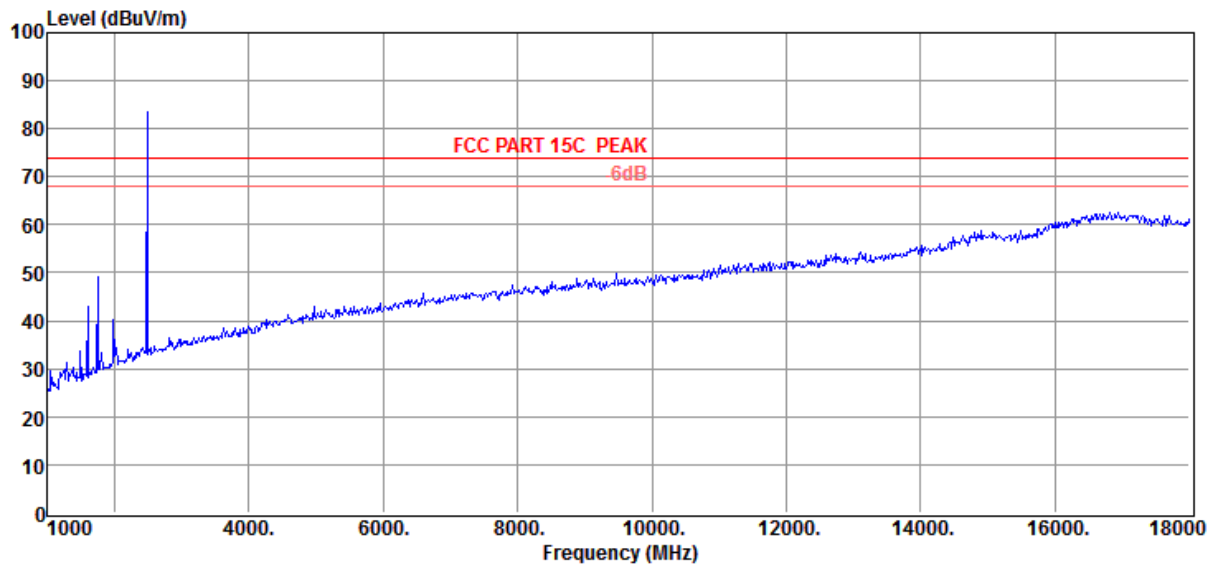
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2480.00	86.77	30.25	43.89	8.50	81.63	74.00	7.63	Peak	HORIZONTAL
2	4960.00	45.77	35.64	44.31	12.02	49.12	74.00	-24.88	Peak	HORIZONTAL
3	16929.00	34.38	43.61	40.37	25.60	63.22	74.00	-10.78	Peak	HORIZONTAL
4	16929.00	20.30	43.61	40.37	25.60	49.14	54.00	-4.86	Average	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK 2480MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 55



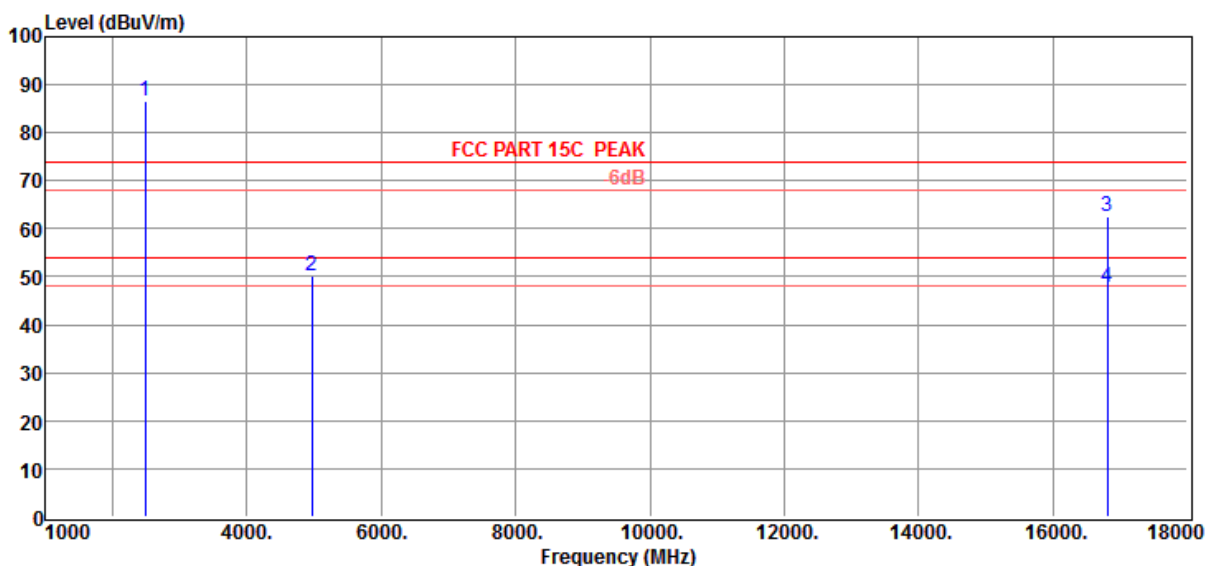
Item	Freq	Read Level	Antenna Factor	PRM Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector	Polarization
(Mark)	(MHz)	(dBμV)	(dB/m)	dB	dB	(dBμV/m)	(dBμV/m)	(dB)		

- Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK 2480MHz
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 56



Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2480.00	91.78	30.25	43.89	8.50	86.64	74.00	12.64	Peak	VERTICAL
2	4960.00	46.78	35.64	44.31	12.02	50.13	74.00	-23.87	Peak	VERTICAL
3	16810.00	34.09	43.64	40.33	25.00	62.40	74.00	-11.60	Peak	VERTICAL
4	16810.00	19.60	43.64	40.33	25.00	47.91	54.00	-6.09	Average	VERTICAL

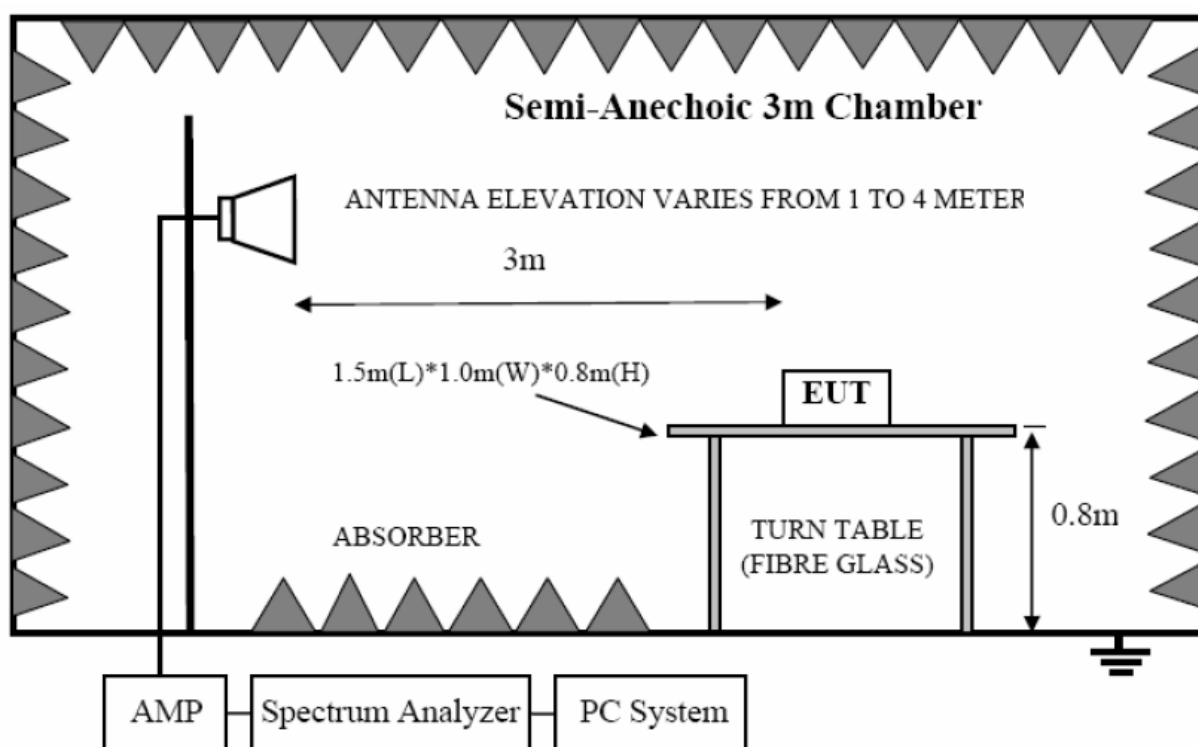
Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

11 BAND EDGE COMPLIANCE

11.1 Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	EMI Receiver	R&S	ESU8	100316	2012/11/26	1 Year
2	Spectrum Analyzer	R&S	FSU	1166.1660.26	2012/11/26	1 Year
3	Trilog Broadband Antenna	Schwarzbeck	VULB9163	9163-462	2012/11/26	1 Year
4	Double Ridged Horn Antenna	R&S	HF907	100276	2012/11/26	1 Year
5	Pre-Amplifier	R&S	SCU-01	10049	2012/11/26	1 Year
6	Pre-Amplifier	A.H.	PAM0-0118	360	2012/11/26	1 Year
7	RF Cable	R&S	R01	10403	2012/11/26	1 Year
8	RF Cable	R&S	R02	10512	2012/11/26	1 Year

11.2 Block diagram of test setup



11.3 **Test Procedure**

Same as 10.3 except changed the investigated frequency range from 2310 MHz to 2415 MHz and 2475 MHz to 2500 MHz.

11.4 **Limits**

All the lower and upper band-edges emissions appearing within 2310 MHz to 2390 MHz and 2483,5 MHz to 2500 MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400 MHz to 2483,5 MHz and 5725 MHz to 5850 MHz shall be at least 20 dB below the fundamental emissions, or comply with 15.209 limits.

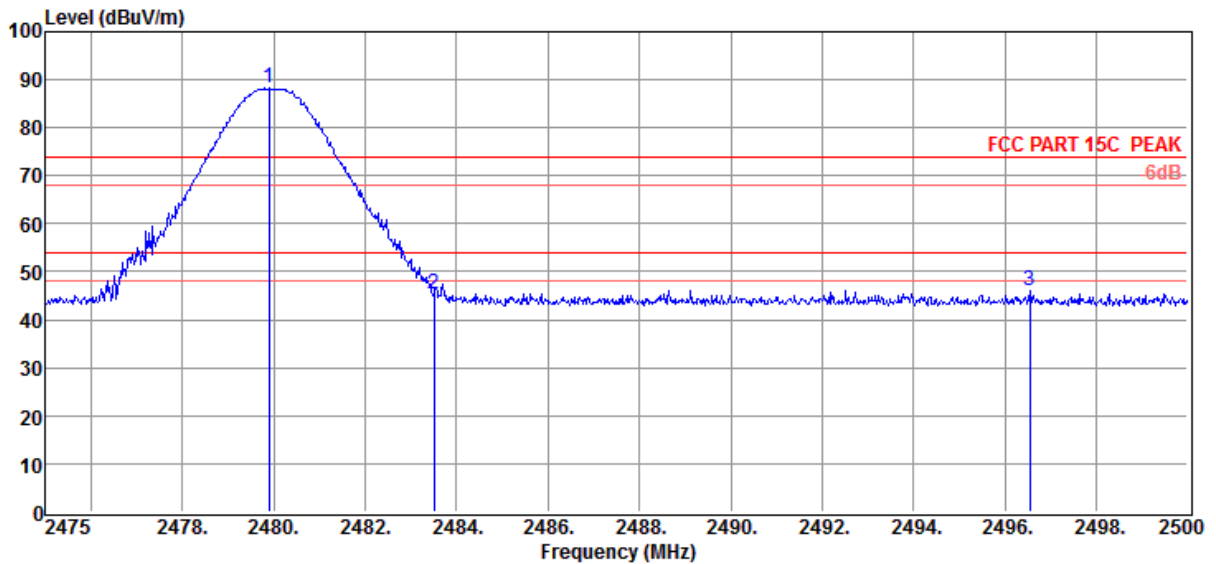
11.5 **Test results**

PASS. (See below detailed test result)

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK 2480MHz
Hopping off
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 13



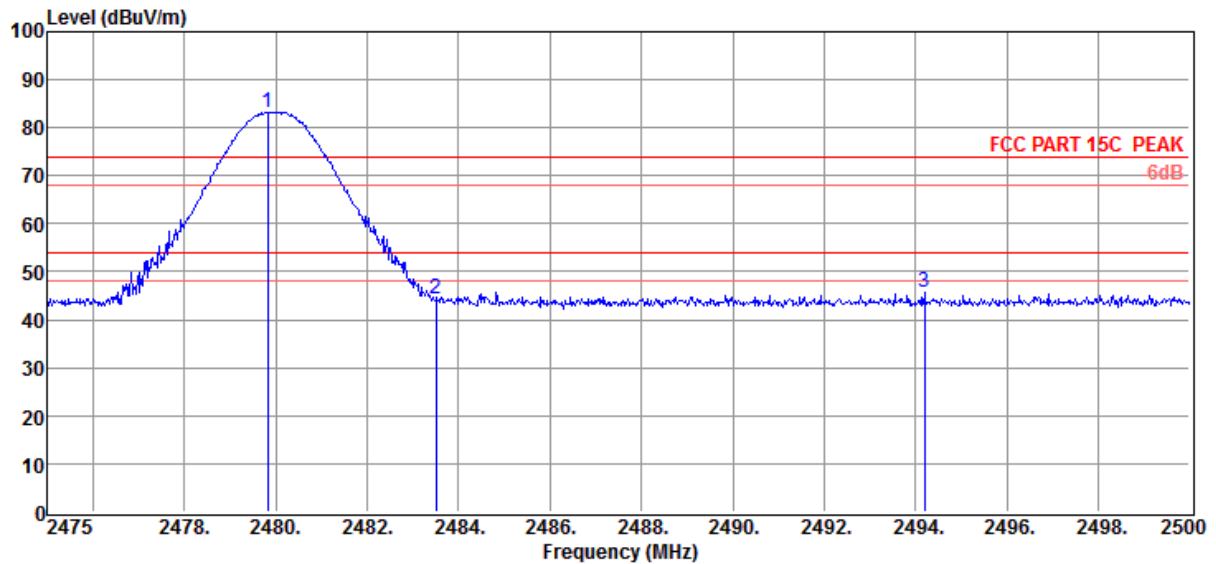
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2479.90	93.34	30.25	43.89	8.50	88.20	74.00	14.20	Peak	VERTICAL
2	2483.50	50.58	30.25	43.89	8.50	45.44	74.00	-28.56	Peak	VERTICAL
3	2496.55	51.16	30.30	43.90	8.50	46.06	74.00	-27.94	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK 2480MHz
Hopping off
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 14



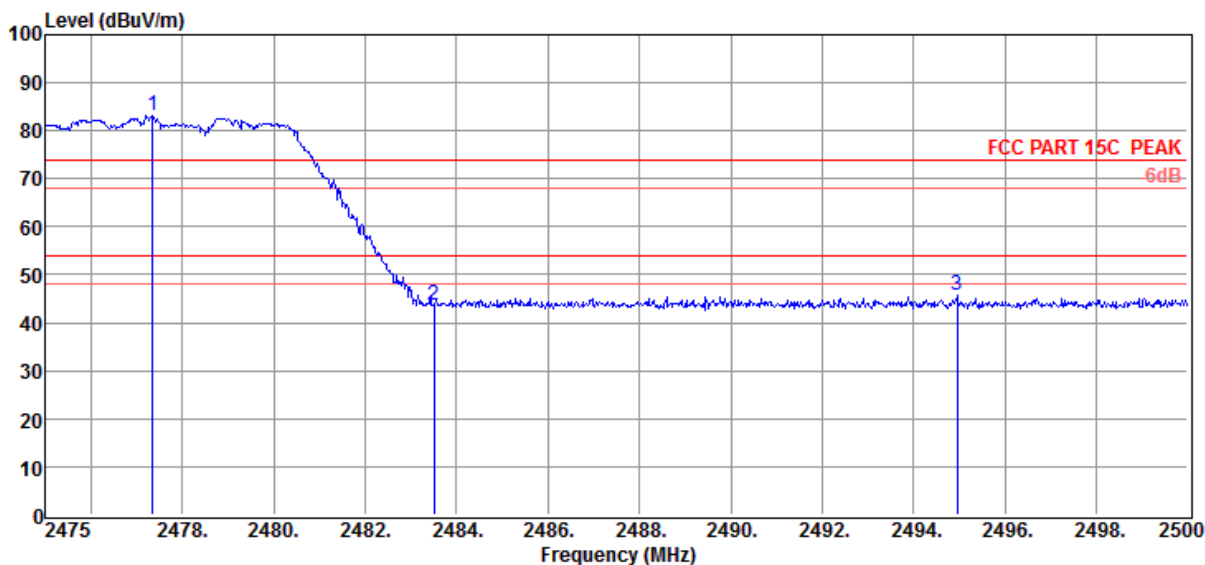
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2479.83	88.42	30.25	43.89	8.50	83.28	74.00	9.28	Peak	HORIZONTAL
2	2483.50	49.50	30.25	43.89	8.50	44.36	74.00	-29.64	Peak	HORIZONTAL
3	2494.20	50.69	30.30	43.90	8.50	45.59	74.00	-28.41	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK Hopping on
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 15



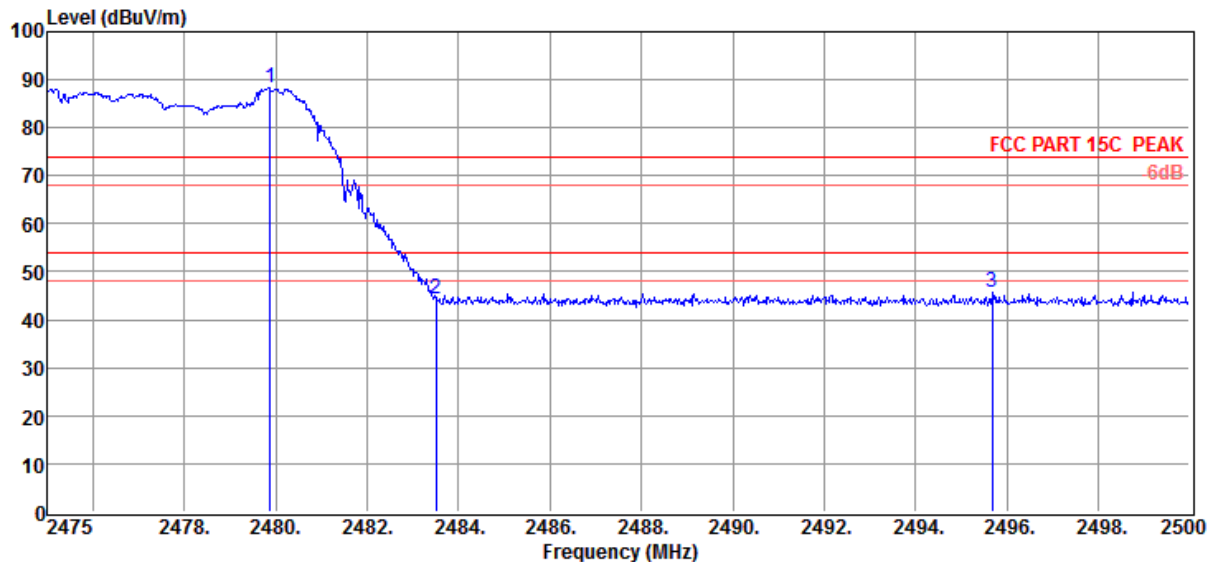
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2477.35	88.37	30.25	43.89	8.50	83.23	74.00	9.23	Peak	HORIZONTAL
2	2483.50	48.78	30.25	43.89	8.50	43.64	74.00	-30.36	Peak	HORIZONTAL
3	2494.95	50.79	30.30	43.90	8.50	45.69	74.00	-28.31	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK Hopping on
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 16



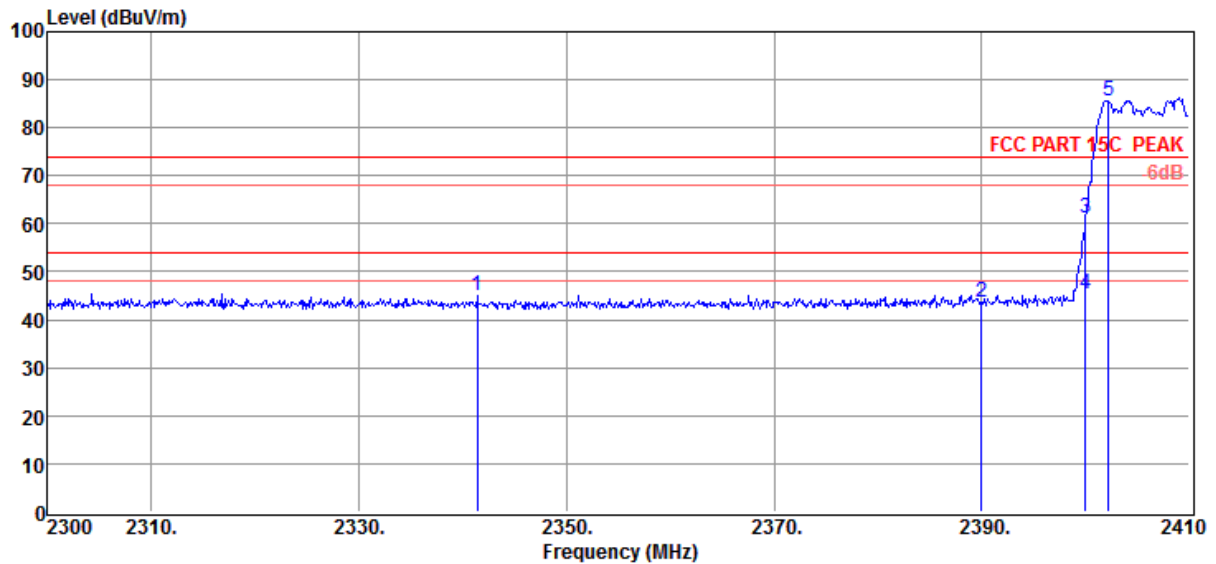
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2479.88	93.36	30.25	43.89	8.50	88.22	74.00	14.22	Peak	VERTICAL
2	2483.50	49.57	30.25	43.89	8.50	44.43	74.00	-29.57	Peak	VERTICAL
3	2495.68	50.64	30.30	43.90	8.50	45.54	74.00	-28.46	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK Hopping on
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 17



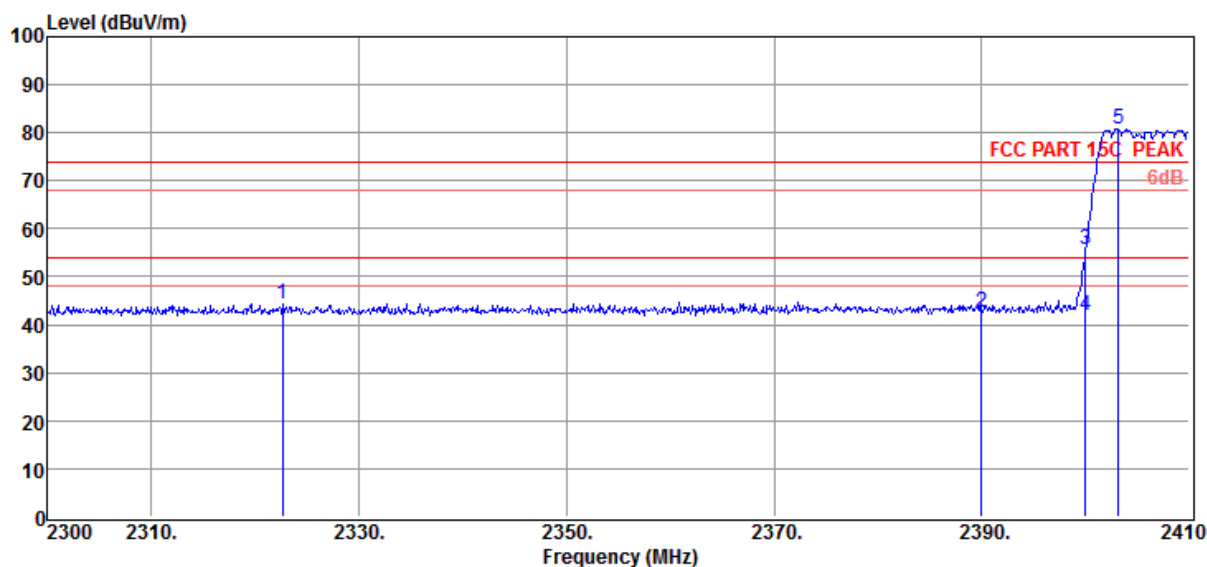
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2341.36	50.72	29.83	43.80	8.25	45.00	74.00	-29.00	Peak	VERTICAL
2	2389.98	49.06	29.99	43.84	8.35	43.56	74.00	-30.44	Peak	VERTICAL
3	2399.99	66.75	29.99	43.84	8.35	61.25	74.00	-12.75	Peak	VERTICAL
4	2399.99	51.00	29.99	43.84	8.35	45.50	54.00	-8.50	Average	VERTICAL
5	2402.19	91.20	29.99	43.84	8.35	85.70	74.00	11.70	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK Hopping on
Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 18



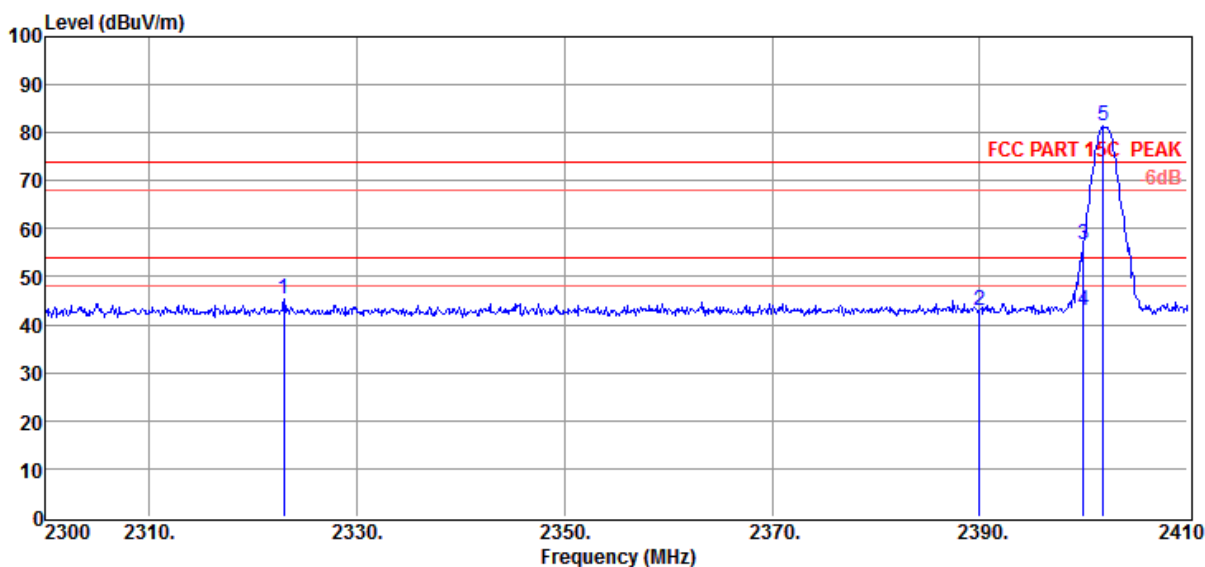
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2322.66	50.27	29.78	43.79	8.20	44.46	74.00	-29.54	Peak	HORIZONTAL
2	2389.98	48.20	29.99	43.84	8.35	42.70	74.00	-31.30	Peak	HORIZONTAL
3	2399.99	61.12	29.99	43.84	8.35	55.62	74.00	-18.38	Peak	HORIZONTAL
4	2399.99	47.58	29.99	43.84	8.35	42.08	54.00	-11.92	Average	HORIZONTAL
5	2403.18	86.21	30.04	43.85	8.35	80.75	74.00	6.75	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK 2402MHz
Hopping off
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 19



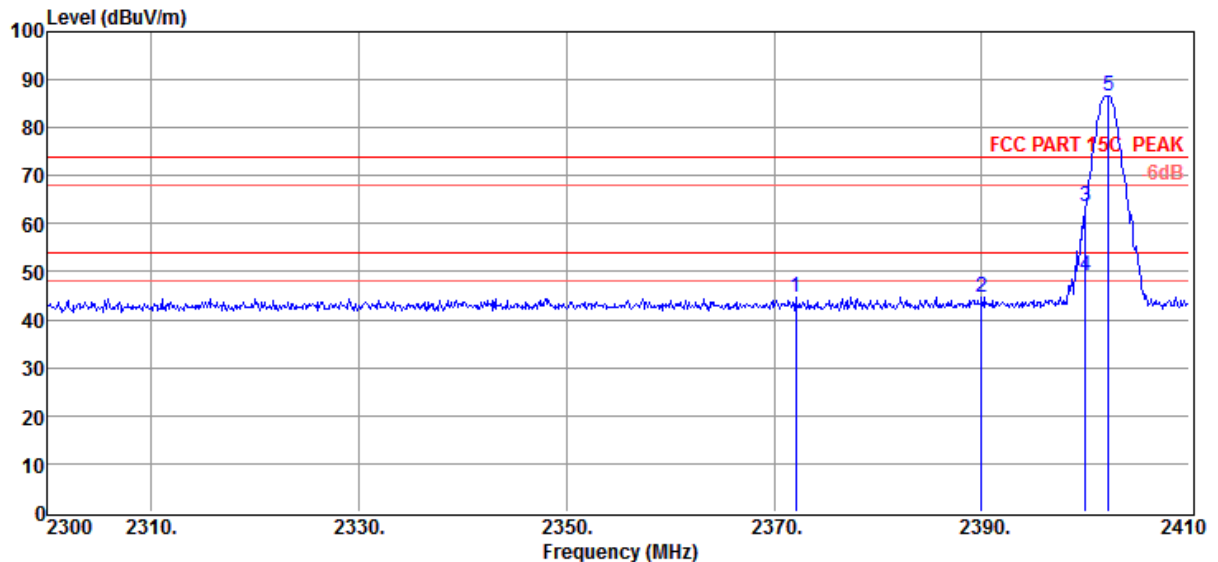
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2322.99	51.27	29.78	43.79	8.20	45.46	74.00	-28.54	Peak	HORIZONTAL
2	2389.98	48.39	29.99	43.84	8.35	42.89	74.00	-31.11	Peak	HORIZONTAL
3	2399.99	62.13	29.99	43.84	8.35	56.63	74.00	-17.37	Peak	HORIZONTAL
4	2399.99	48.47	29.99	43.84	8.35	42.97	54.00	-11.03	Average	HORIZONTAL
5	2401.86	86.78	29.99	43.84	8.35	81.28	74.00	7.28	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:** \2013 Test Data\D\DEKAI\20130624.EM6
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode GFSK 2402MHz
Hopping off
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 20



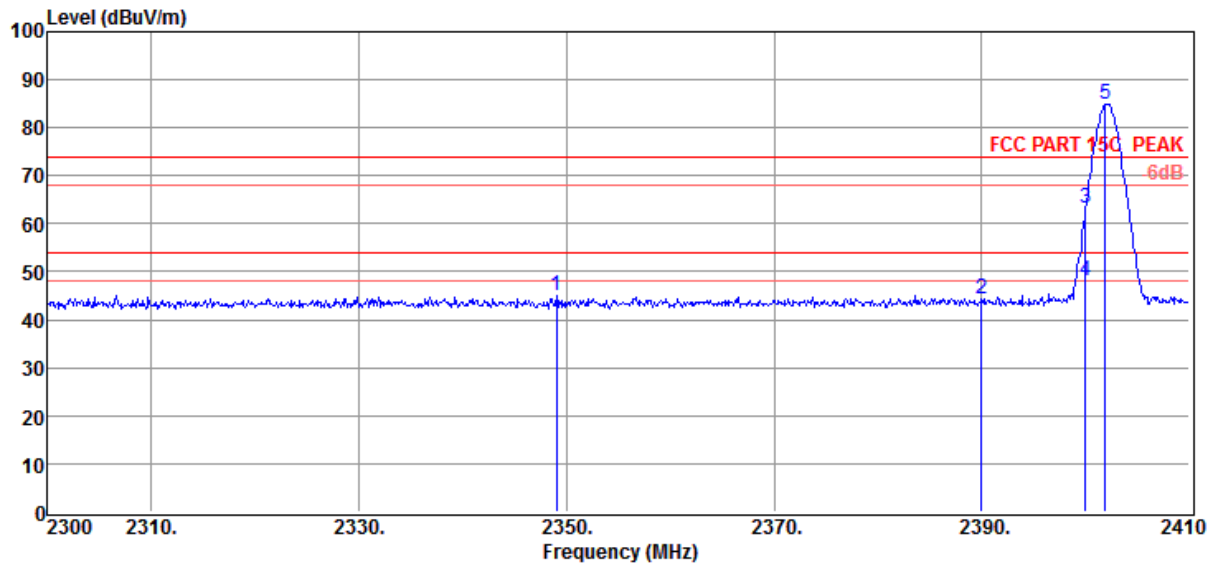
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2372.05	50.20	29.94	43.83	8.30	44.61	74.00	-29.39	Peak	VERTICAL
2	2389.98	50.04	29.99	43.84	8.35	44.54	74.00	-29.46	Peak	VERTICAL
3	2399.99	69.04	29.99	43.84	8.35	63.54	74.00	-10.46	Peak	VERTICAL
4	2399.99	54.60	29.99	43.84	8.35	49.10	54.00	-4.90	Average	VERTICAL
5	2402.19	92.15	29.99	43.84	8.35	86.65	74.00	12.65	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 4pi-QPSK 2402MHz
Hopping off
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 21



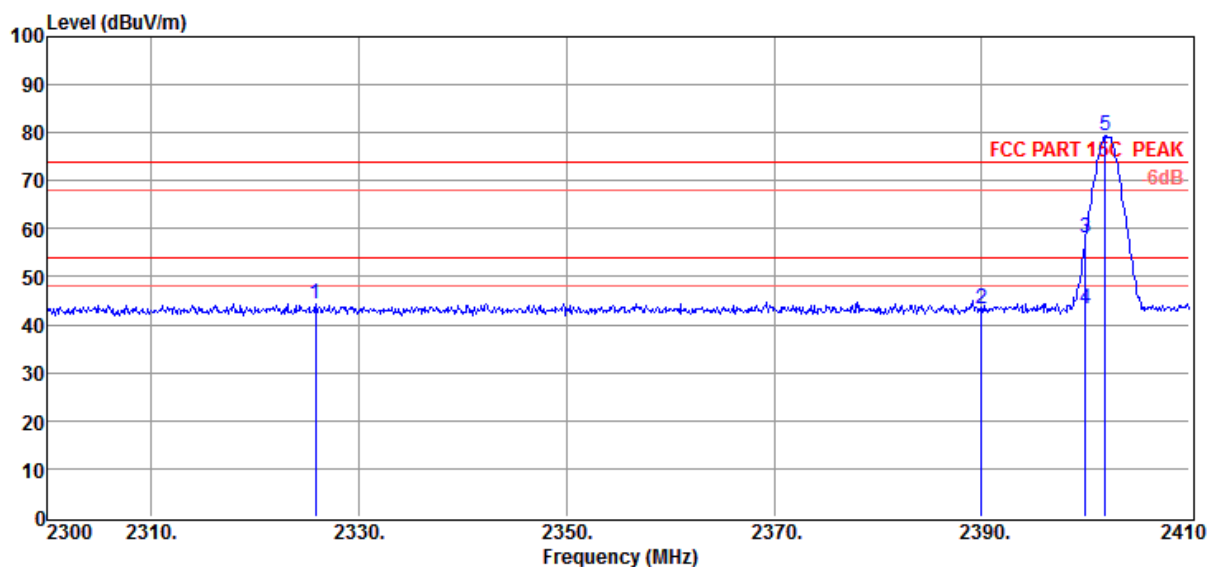
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2349.06	50.69	29.83	43.81	8.25	44.96	74.00	-29.04	Peak	VERTICAL
2	2389.98	49.66	29.99	43.84	8.35	44.16	74.00	-29.84	Peak	VERTICAL
3	2399.99	68.85	29.99	43.84	8.35	63.35	74.00	-10.65	Peak	VERTICAL
4	2399.99	53.72	29.99	43.84	8.35	48.22	54.00	-5.78	Average	VERTICAL
5	2401.86	90.51	29.99	43.84	8.35	85.01	74.00	11.01	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 4pi-QPSK 2402MHz
Hopping off
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 22



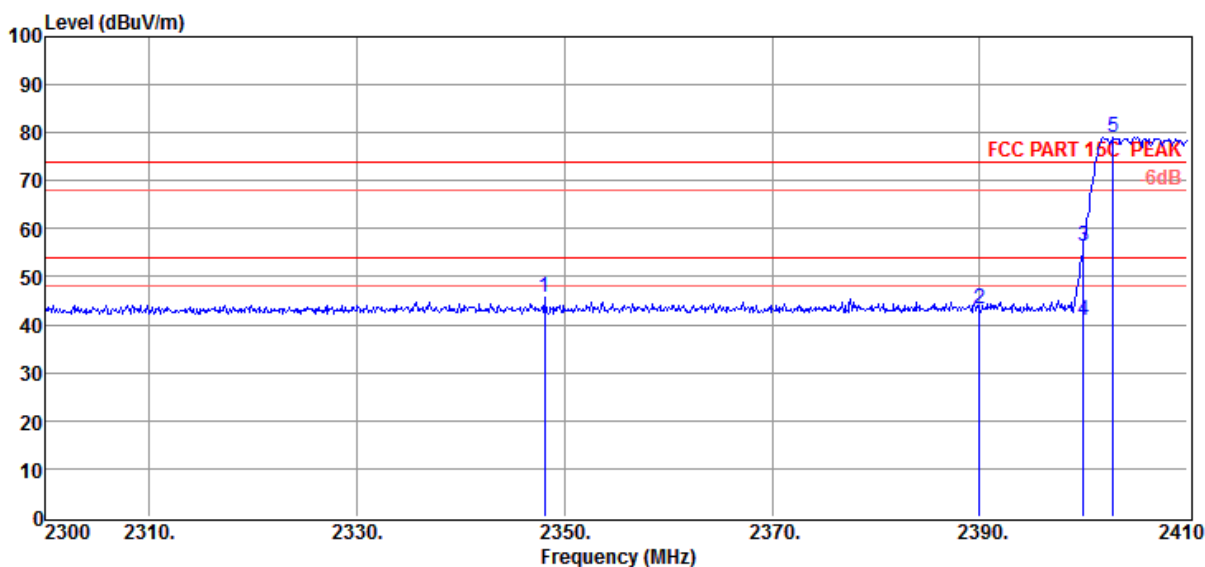
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2325.85	50.29	29.78	43.79	8.20	44.48	74.00	-29.52	Peak	HORIZONTAL
2	2389.98	48.93	29.99	43.84	8.35	43.43	74.00	-30.57	Peak	HORIZONTAL
3	2399.99	63.41	29.99	43.84	8.35	57.91	74.00	-16.09	Peak	HORIZONTAL
4	2399.99	48.95	29.99	43.84	8.35	43.45	54.00	-10.55	Average	HORIZONTAL
5	2401.86	84.86	29.99	43.84	8.35	79.36	74.00	5.36	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 4pi-QPSK Hopping on
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 23



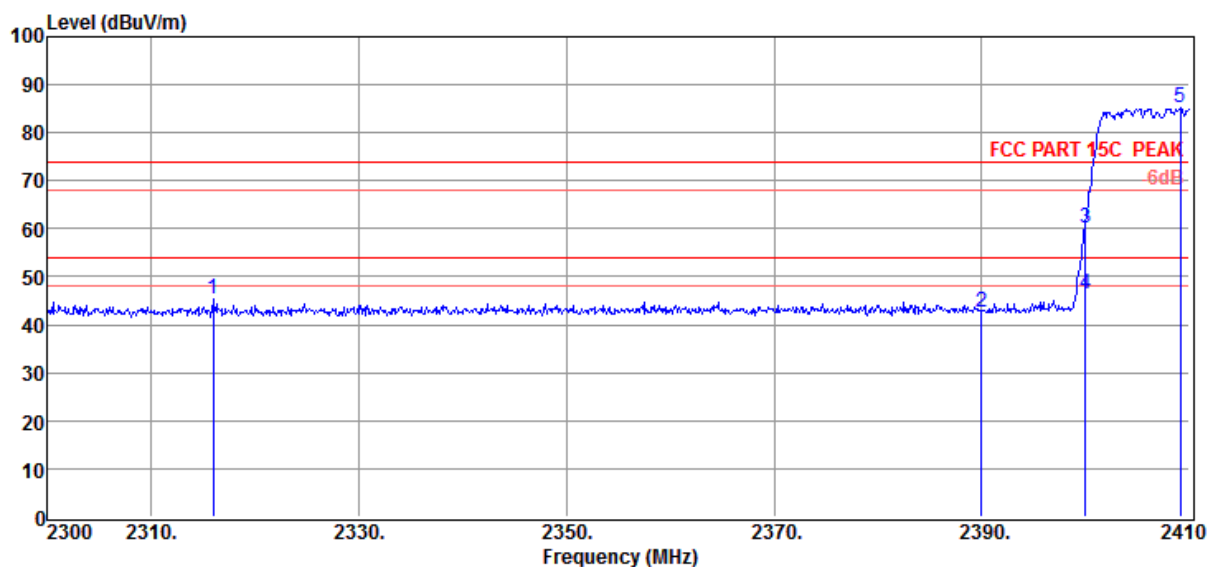
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2348.07	51.31	29.83	43.80	8.25	45.59	74.00	-28.41	Peak	HORIZONTAL
2	2389.98	48.90	29.99	43.84	8.35	43.40	74.00	-30.60	Peak	HORIZONTAL
3	2399.99	61.95	29.99	43.84	8.35	56.45	74.00	-17.55	Peak	HORIZONTAL
4	2399.99	46.25	29.99	43.84	8.35	40.75	54.00	-13.25	Average	HORIZONTAL
5	2402.85	84.45	30.04	43.85	8.35	78.99	74.00	4.99	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time:auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 4pi-QPSK Hopping on
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 24



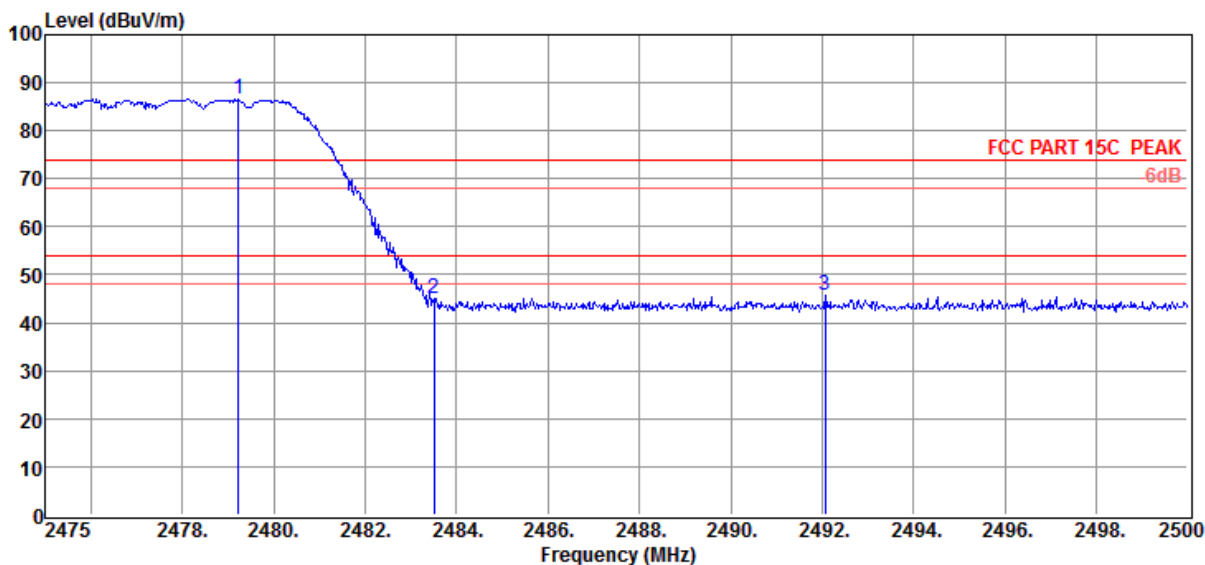
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2315.95	51.21	29.73	43.79	8.20	45.35	74.00	-28.65	Peak	VERTICAL
2	2389.98	48.26	29.99	43.84	8.35	42.76	74.00	-31.24	Peak	VERTICAL
3	2399.99	65.59	29.99	43.84	8.35	60.09	74.00	-13.91	Peak	VERTICAL
4	2399.99	51.86	29.99	43.84	8.35	46.36	54.00	-7.64	Average	VERTICAL
5	2409.12	90.63	30.04	43.85	8.35	85.17	74.00	11.17	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time: auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 4pi-QPSK Hopping on
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 25



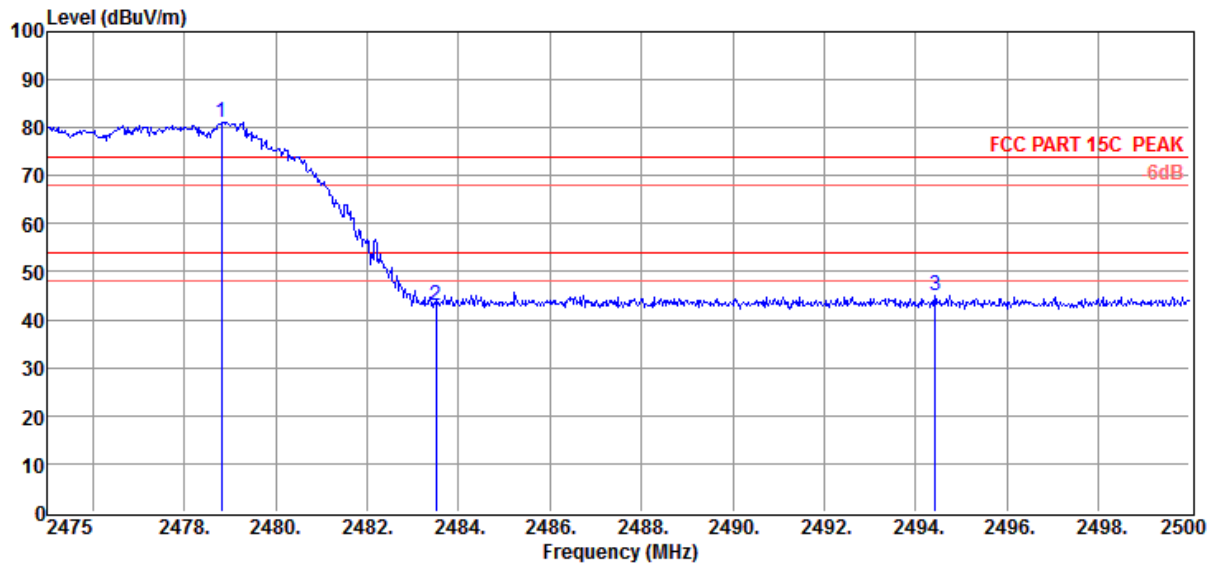
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2479.23	91.66	30.25	43.89	8.50	86.52	74.00	12.52	Peak	VERTICAL
2	2483.50	50.08	30.25	43.89	8.50	44.94	74.00	-29.06	Peak	VERTICAL
3	2492.08	50.70	30.30	43.89	8.50	45.61	74.00	-28.39	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time: auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 4pi-QPSK Hopping on
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 26



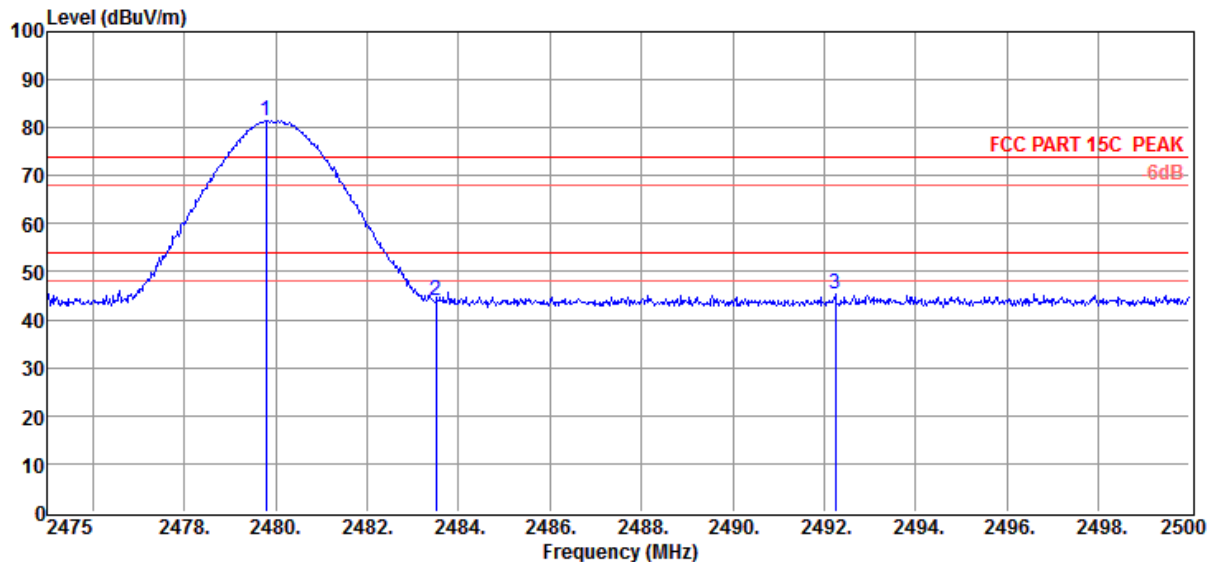
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBUV/m)	Limit Line (dBUV/m)	Over Limit (dB)	Detector	Polarization
1	2478.80	86.30	30.25	43.89	8.50	81.16	74.00	7.16	Peak	HORIZONTAL
2	2483.50	48.16	30.25	43.89	8.50	43.02	74.00	-30.98	Peak	HORIZONTAL
3	2494.43	50.26	30.30	43.90	8.50	45.16	74.00	-28.84	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time: auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 4pi-QPSK 2480MHz
Hopping off
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 27



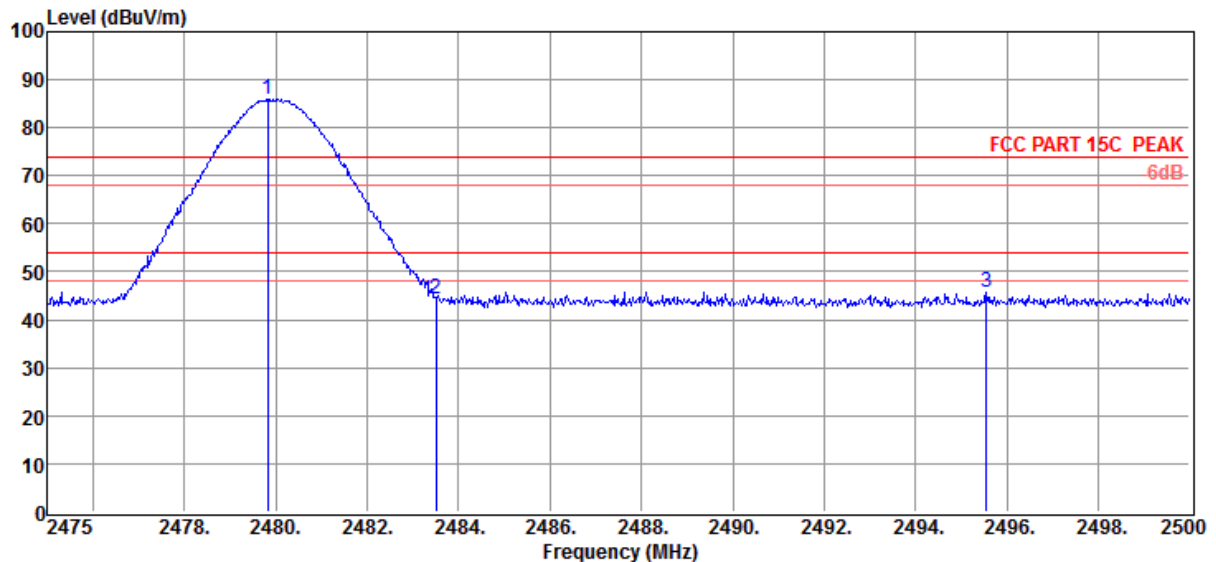
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2479.78	86.59	30.25	43.89	8.50	81.45	74.00	7.45	Peak	HORIZONTAL
2	2483.50	49.18	30.25	43.89	8.50	44.04	74.00	-29.96	Peak	HORIZONTAL
3	2492.25	50.57	30.30	43.90	8.50	45.47	74.00	-28.53	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time: auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 4pi-QPSK 2480MHz
Hopping off
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 28



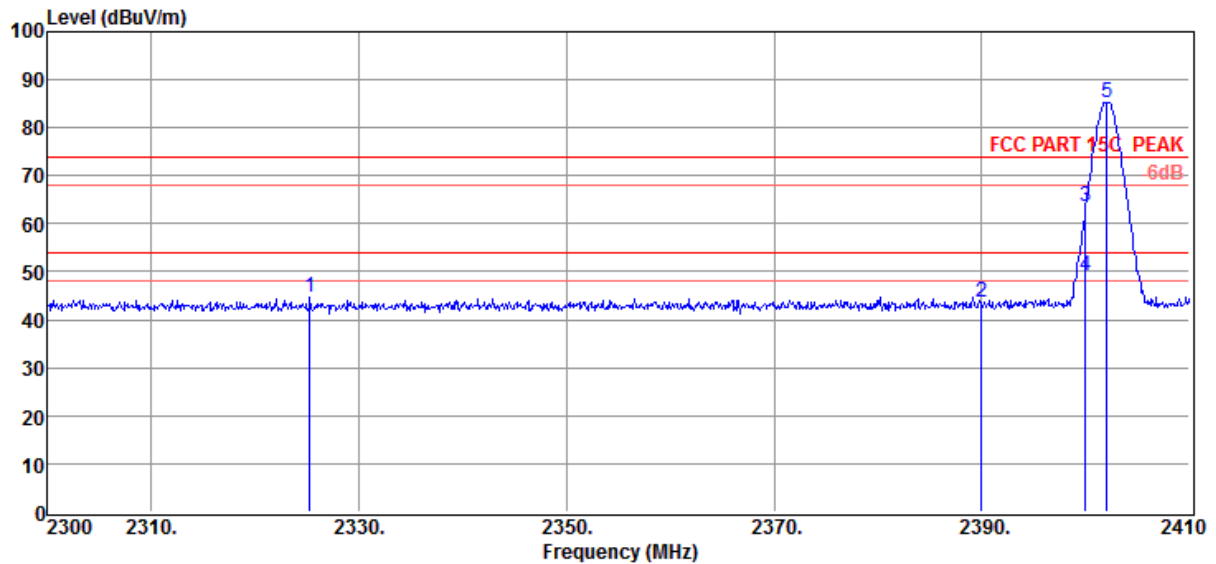
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2479.83	91.06	30.25	43.89	8.50	85.92	74.00	11.92	Peak	VERTICAL
2	2483.50	49.61	30.25	43.89	8.50	44.47	74.00	-29.53	Peak	VERTICAL
3	2495.55	50.97	30.30	43.90	8.50	45.87	74.00	-28.13	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time: auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:** \2013 Test Data\D\DEKAI\20130624.EM6
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK 2402MHz
Hopping off
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 45



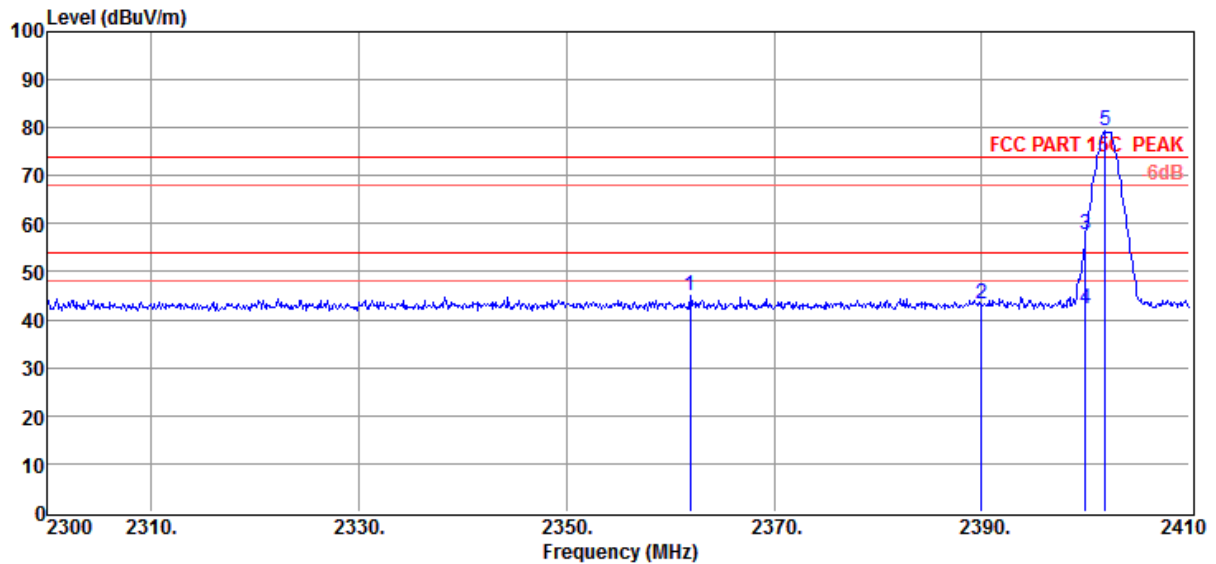
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2325.30	50.34	29.78	43.79	8.20	44.53	74.00	-29.47	Peak	VERTICAL
2	2389.98	49.07	29.99	43.84	8.35	43.57	74.00	-30.43	Peak	VERTICAL
3	2399.99	68.94	29.99	43.84	8.35	63.44	74.00	-10.56	Peak	VERTICAL
4	2399.99	54.78	29.99	43.84	8.35	49.28	54.00	-4.72	Average	VERTICAL
5	2402.08	90.86	29.99	43.84	8.35	85.36	74.00	11.36	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time: auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:** \2013 Test Data\D\DEKAI\20130624.EM6
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK 2402MHz
Hopping off
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 46



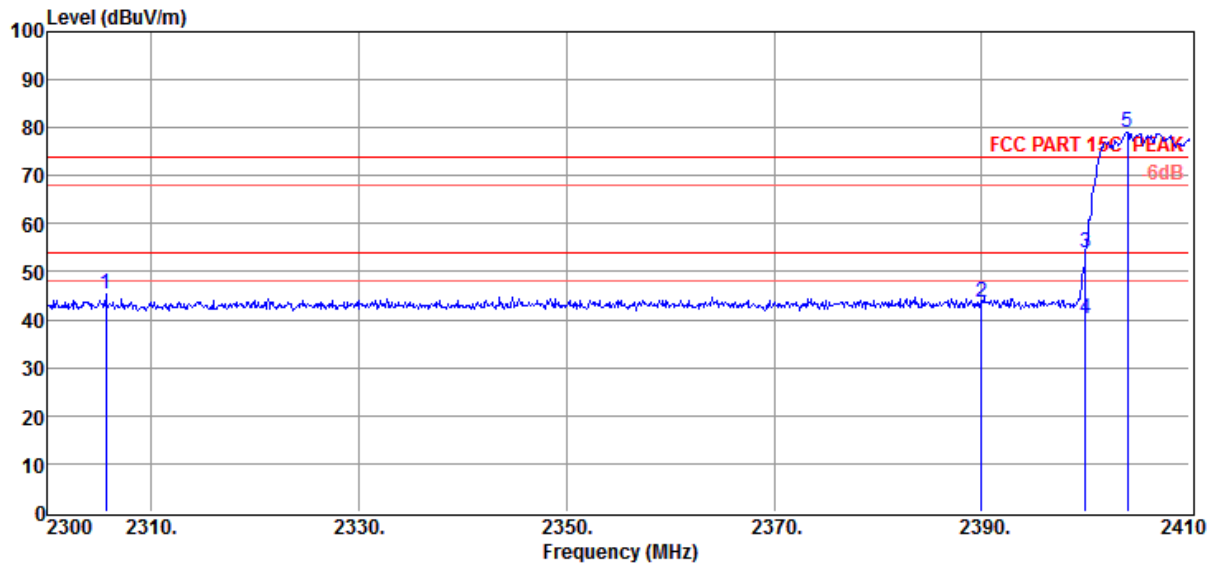
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2361.93	50.62	29.89	43.81	8.30	45.00	74.00	-29.00	Peak	HORIZONTAL
2	2389.98	48.85	29.99	43.84	8.35	43.35	74.00	-30.65	Peak	HORIZONTAL
3	2399.99	63.10	29.99	43.84	8.35	57.60	74.00	-16.40	Peak	HORIZONTAL
4	2399.99	47.85	29.99	43.84	8.35	42.35	54.00	-11.65	Average	HORIZONTAL
5	2401.86	84.71	29.99	43.84	8.35	79.21	74.00	5.21	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time: auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK Hopping on
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 47



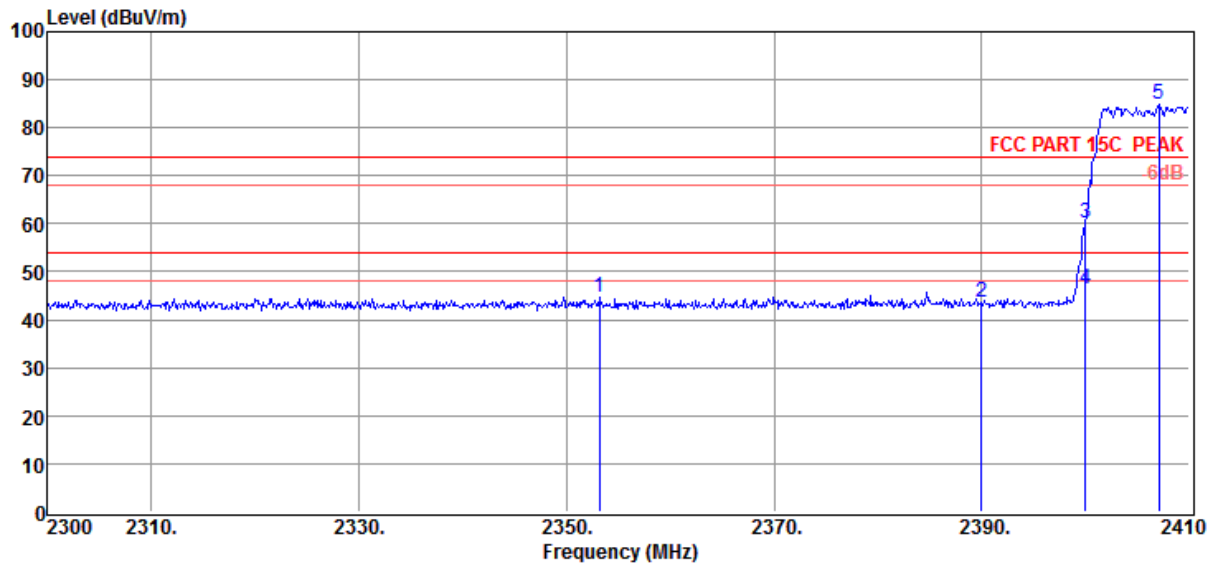
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2305.61	51.33	29.73	43.78	8.20	45.48	74.00	-28.52	Peak	HORIZONTAL
2	2389.98	49.05	29.99	43.84	8.35	43.55	74.00	-30.45	Peak	HORIZONTAL
3	2399.99	59.52	29.99	43.84	8.35	54.02	74.00	-19.98	Peak	HORIZONTAL
4	2399.99	45.78	29.99	43.84	8.35	40.28	54.00	-13.72	Average	HORIZONTAL
5	2404.06	84.56	30.04	43.85	8.35	79.10	74.00	5.10	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time: auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK Hopping on
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 48



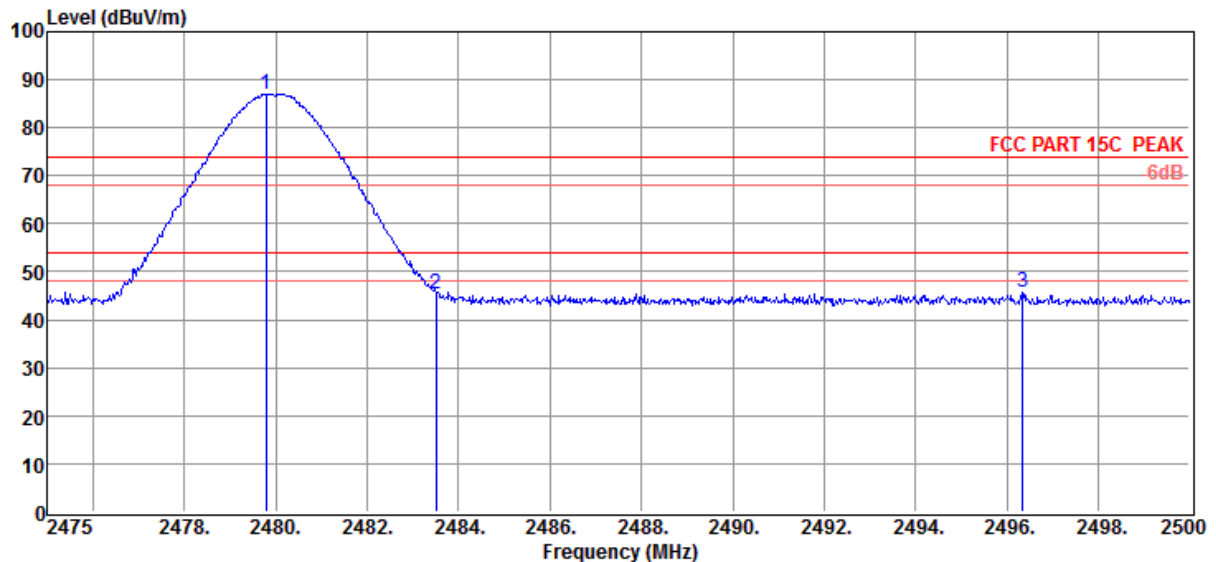
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2353.13	50.40	29.89	43.81	8.25	44.73	74.00	-29.27	Peak	VERTICAL
2	2389.98	49.27	29.99	43.84	8.35	43.77	74.00	-30.23	Peak	VERTICAL
3	2399.99	65.50	29.99	43.84	8.35	60.00	74.00	-14.00	Peak	VERTICAL
4	2399.99	51.87	29.99	43.84	8.35	46.37	54.00	-7.63	Average	VERTICAL
5	2407.03	90.22	30.04	43.85	8.35	84.76	74.00	10.76	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time: auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK 2480MHz
Hopping off
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 57



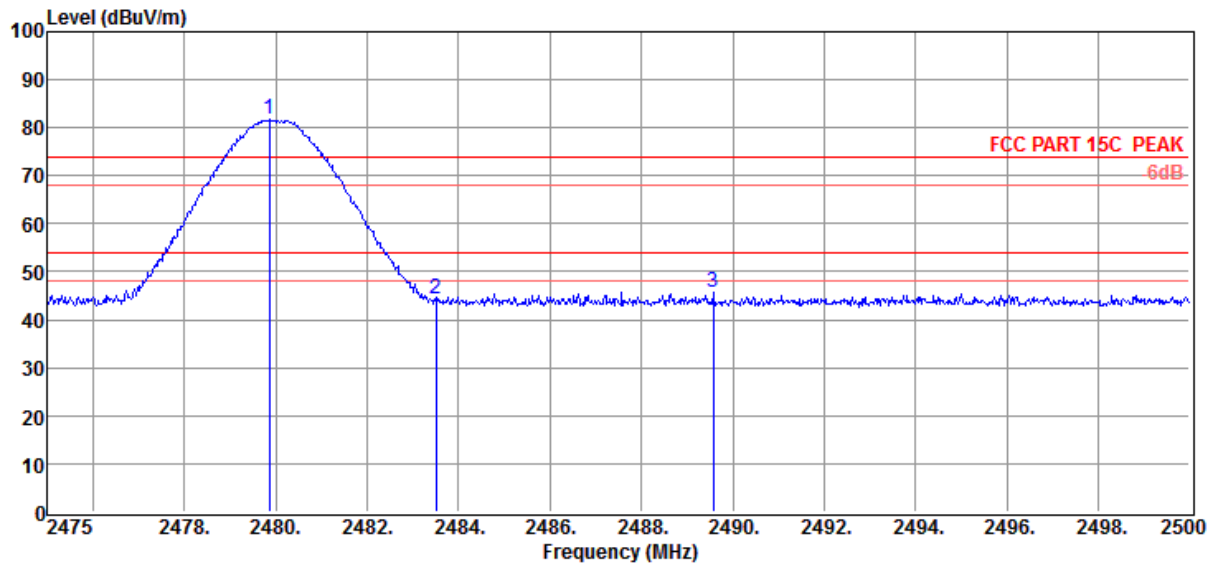
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBUV/m)	Limit Line (dBUV/m)	Over Limit (dB)	Detector	Polarization
1	2479.78	92.24	30.25	43.89	8.50	87.10	74.00	13.10	Peak	VERTICAL
2	2483.50	50.37	30.25	43.89	8.50	45.23	74.00	-28.77	Peak	VERTICAL
3	2496.35	50.84	30.30	43.90	8.50	45.74	74.00	-28.26	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time: auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK 2480MHz
Hopping off
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 58



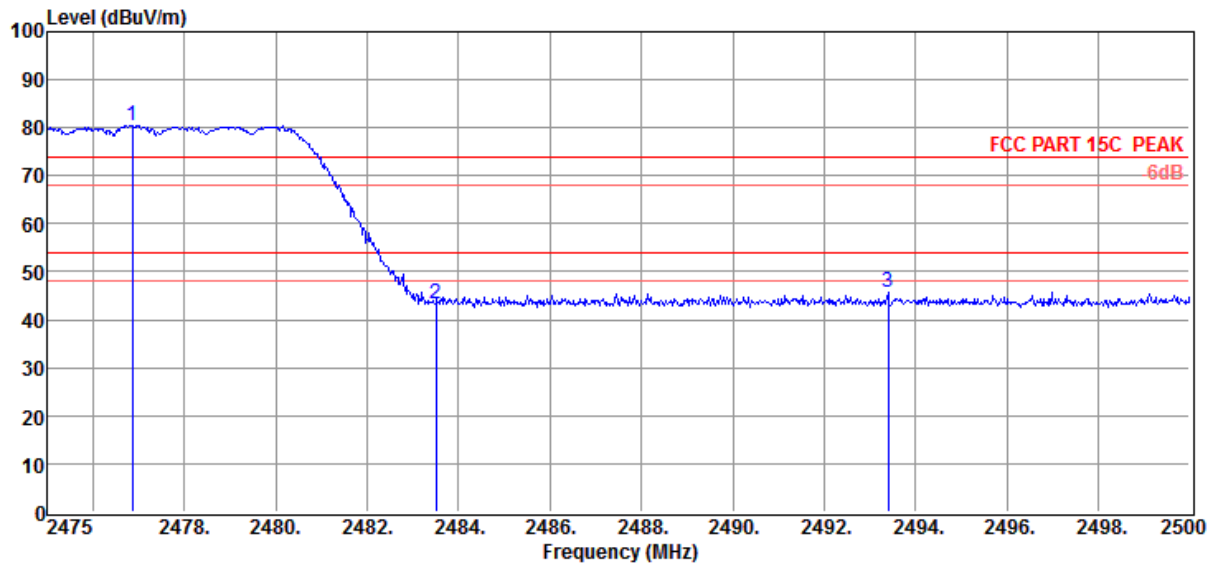
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2479.85	86.89	30.25	43.89	8.50	81.75	74.00	7.75	Peak	HORIZONTAL
2	2483.50	49.44	30.25	43.89	8.50	44.30	74.00	-29.70	Peak	HORIZONTAL
3	2489.58	50.79	30.30	43.89	8.50	45.70	74.00	-28.30	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time: auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK Hopping on
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/HORIZONTAL
Memo :

Data: 59



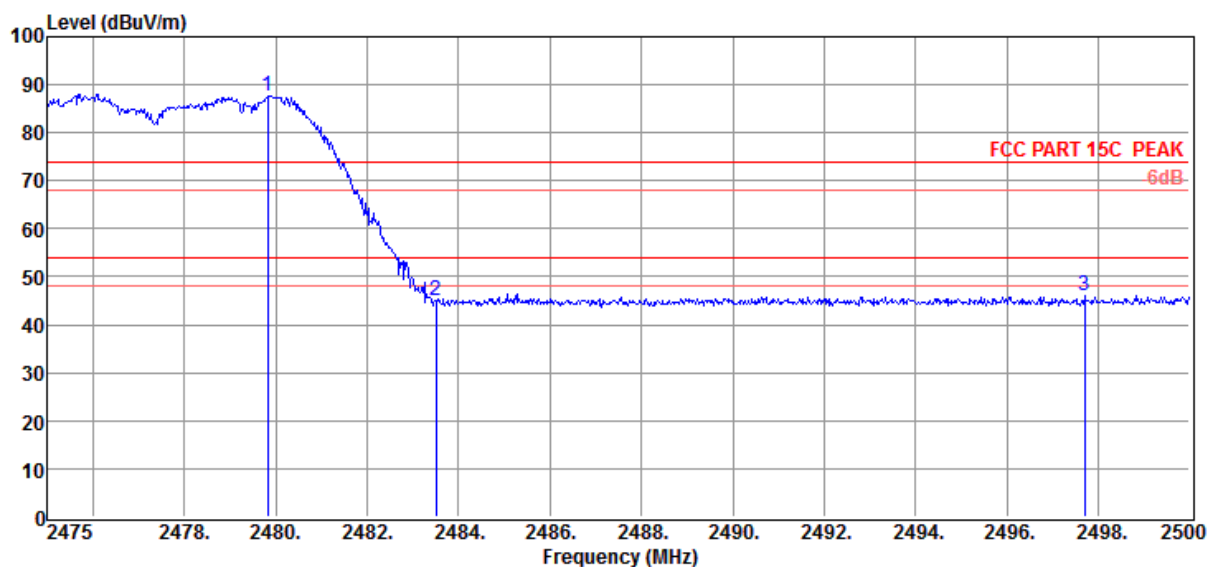
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBUV/m)	Limit Line (dBUV/m)	Over Limit (dB)	Detector	Polarization
1	2476.85	85.64	30.25	43.89	8.50	80.50	74.00	6.50	Peak	HORIZONTAL
2	2483.50	48.51	30.25	43.89	8.50	43.37	74.00	-30.63	Peak	HORIZONTAL
3	2493.40	50.83	30.30	43.90	8.50	45.73	74.00	-28.27	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time: auto

Radiated Emission Test Result

Test Site : DDT 3m Chamber **E:\2013 Test Data\D\DEKAI\20130624.EM6**
Test Date : 2013-06-24 **Tested By** : Damon
EUT : Buletooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode 8-DPSK Hopping on
Condition : Temp:24.5'C,Humi:55%,Press:100.1kPa **Antenna/Distance** : 2013 HF907/3m/VERTICAL
Memo :

Data: 60



Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2479.83	92.72	30.25	43.89	8.50	87.58	74.00	13.58	Peak	VERTICAL
2	2483.50	50.06	30.25	43.89	8.50	44.92	74.00	-29.08	Peak	VERTICAL
3	2497.70	51.12	30.30	43.90	8.50	46.02	74.00	-27.98	Peak	VERTICAL

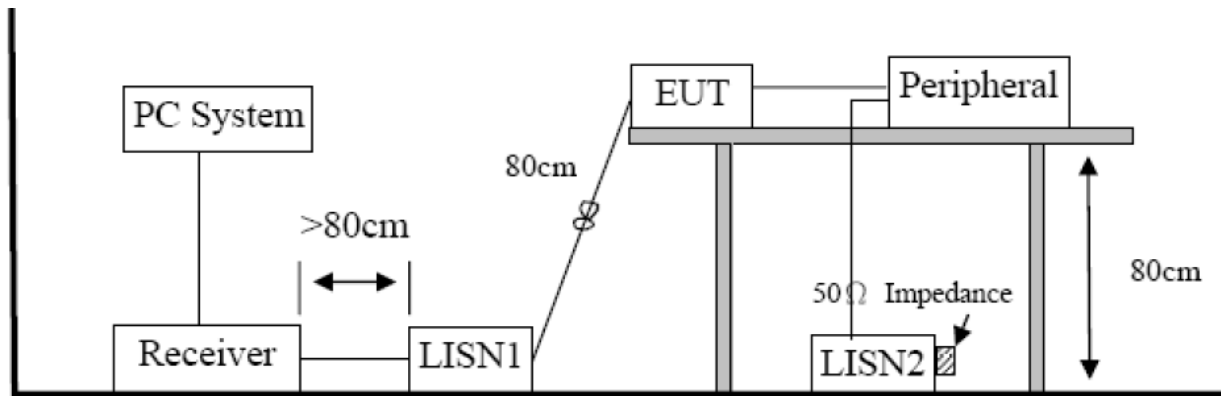
Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor
 2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 1MHz, VBW: 3MHz, Sweep time: auto

12 POWER LINE CONDUCTED EMISSIONS

12.1 Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	EMI Receiver	R&S	ESU8	100316	2012/11/26	1 Year
2	LISN 1	R&S	ENV216	101109	2012/11/26	1 Year
3	LISN 1	R&S	ESH2-Z5	100309	2012/11/26	1 Year
4	Pulse Limiter	R&S	ESH3-Z2	101242	2012/11/26	1 Year

12.2 Block diagram of test setup



12.3 Test Procedure

- (1) The EUT and support equipment, if needed, were placed on a non-metallic table, 80 cm above the reference ground plane inside a shielding room;
- (2) Setup EUT and assistant according to 4.1 and 12.2;
- (3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4;
- (4) All support equipment power received from a second LISN;
- (5) Emissions were measured on each current carrying line of the EUT using an EMI Receiver connected to the LISN powering the EUT;
- (6) The receiver scanned from 150 kHz to 30 MHz for emissions in each of the test modes;
- (7) During the above scans, the emissions were maxiized by cable manipulation;
- (8) The test mode(s) described in 4.1 were scanned during the preliminary test;
- (9) After the preliminary scan, we found the test mode producing the highest emmission level;
- (10) The EUT configuration and worse cable configuation of the above highest emission levels were recorded for reference of the final test;

- (11) EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test;
- (12) A scan was taken on both power lines, Neutral and Line, recording at least six highest emission;
- (13) Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit;
- (14) The test data of the worst-case condition(s) was recorded;
- (15) The bandwidth of test receiver is set to 9 kHz.

12.4 Limits

Frequency [MHz]	Limit - QP [dB(μV)]	Limit - AV [dB(μV)]
0,15 – 0,50	66 to 56 *	56 to 46 *
0,50 – 5	56	46
5 – 30	60	50

Note 1: * Limits decreasing linearly with the logarithm of the frequency

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

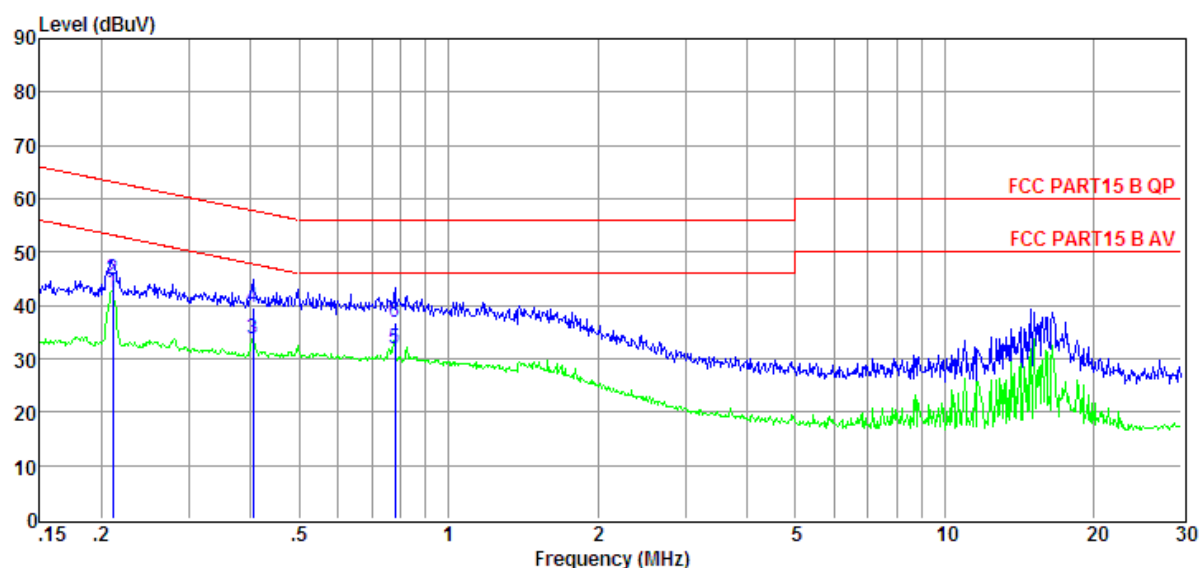
12.5 Test results

PASS. (See below detailed test result)

Conducted Emission Test Result

Test Site : DDT 1# Shield Room **E:\2013 test data\D\Dekai\20130628CE.EM6**
Test Date : 2013-06-28 **Tested By** : Jerry
EUT : Bluetooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode
Condition : Temp:24.5'C,Humi:55%,
 Press:100.1kPa **LISN** : 2013 ENV216/LINE
Memo :

Data : 2



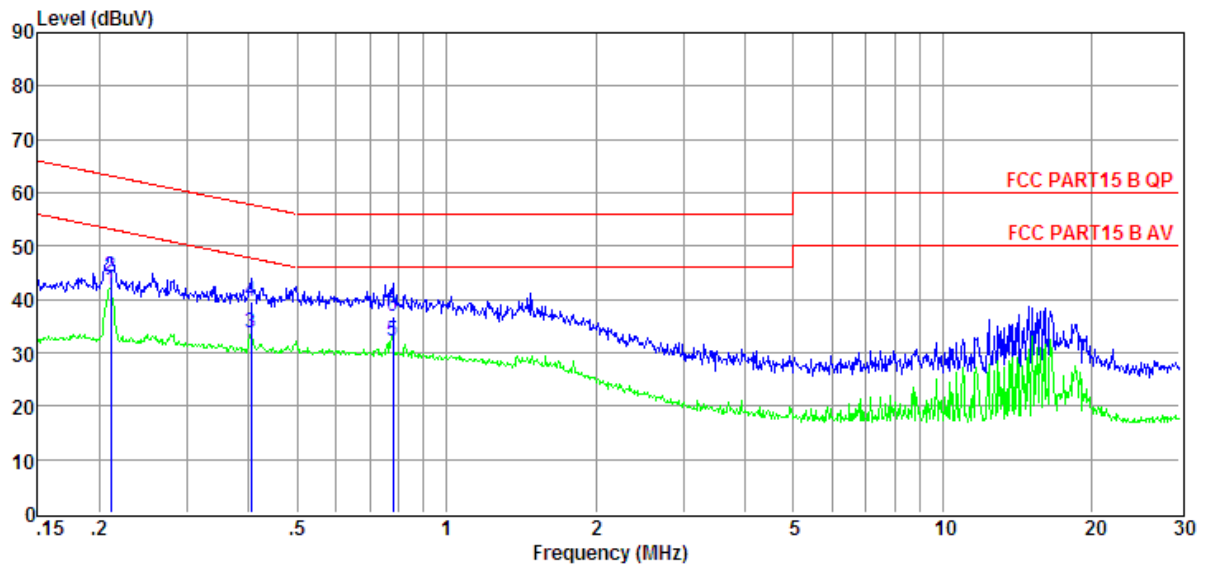
Item	Freq	Read Level	LISN Factor	Cable Loss	Pulse Limiter Factor	Result Level	Limit Line	Over Limit	Detector	Phase
(Mark)	(MHz)	(dBμV)	(dB)	(dB)	(dB)	(dBμV)	(dBμV)	(dB)		
1	0.21	22.81	9.62	0.02	9.85	42.30	53.18	-10.88	Average	LINE
2	0.21	25.27	9.62	0.02	9.85	44.76	63.18	-18.42	QP	LINE
3	0.40	14.10	9.63	0.03	9.86	33.62	47.77	-14.15	Average	LINE
4	0.40	20.17	9.63	0.03	9.86	39.69	57.77	-18.08	QP	LINE
5	0.78	12.43	9.62	0.08	9.86	31.99	46.00	-14.01	Average	LINE
6	0.78	17.18	9.62	0.08	9.86	36.74	56.00	-19.26	QP	LINE

Note: 1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss
 2. If QP Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 200Hz(9kHz—150kHz) , 9kHz(150kHz—30MHz), Step size:4kHz, Scan time: auto

Conducted Emission Test Result

Test Site : DDT 1# Shield Room **E:\2013 test data\D\Dekai\20130628CE.EM6**
Test Date : 2013-06-28 **Tested By** : Jerry
EUT : Bluetooth Speaker **Model Number** :
Power Supply : DC 5V from PC **Test Mode** : TX mode
Condition : Temp:24.5'C,Humi:55%,
Press:100.1kPa **LISN** : 2013 ENV216/NEUTRAL
Memo :

Data : 4



Item	Freq	Read Level	LISN Factor	Cable Loss	Pulse Limiter Factor	Result Level	Limit Line	Over Limit	Detector	Phase
(Mark)	(MHz)	(dBμV)	(dB)	(dB)	(dB)	(dBμV)	(dBμV)	(dB)		
1	0.21	22.25	9.59	0.02	9.85	41.71	53.18	-11.47	Average	NEUTRAL
2	0.21	24.85	9.59	0.02	9.85	44.31	63.18	-18.87	QP	NEUTRAL
3	0.40	14.13	9.61	0.03	9.86	33.63	47.77	-14.14	Average	NEUTRAL
4	0.40	20.14	9.61	0.03	9.86	39.64	57.77	-18.13	QP	NEUTRAL
5	0.78	12.74	9.61	0.08	9.86	32.29	46.00	-13.71	Average	NEUTRAL
6	0.78	17.18	9.61	0.08	9.86	36.73	56.00	-19.27	QP	NEUTRAL

Note: 1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss
 2. If QP Result comply with AV limit, AV Result is deemed to comply with AV limit
 3. Test setup: RBW: 200Hz(9kHz—150kHz) , 9kHz(150kHz—30MHz), Step size:4kHz, Scan time: auto

13 ANTENNA REQUIREMENT

13.1 Limits

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.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

13.2 Test results

The antenna used for this product is built-in PCB trace antenna, and no antenna other than that furnished by the responsible part shall be used, the maximum peak gain of the transmit antenna is only 2,12 dBi.

14 TEST SETUP AND ARRANGEMENT

The photograph shows the tested device.



Figure 2 Conducted measurement Test setup



Figure 3 Conducted Emission test setup

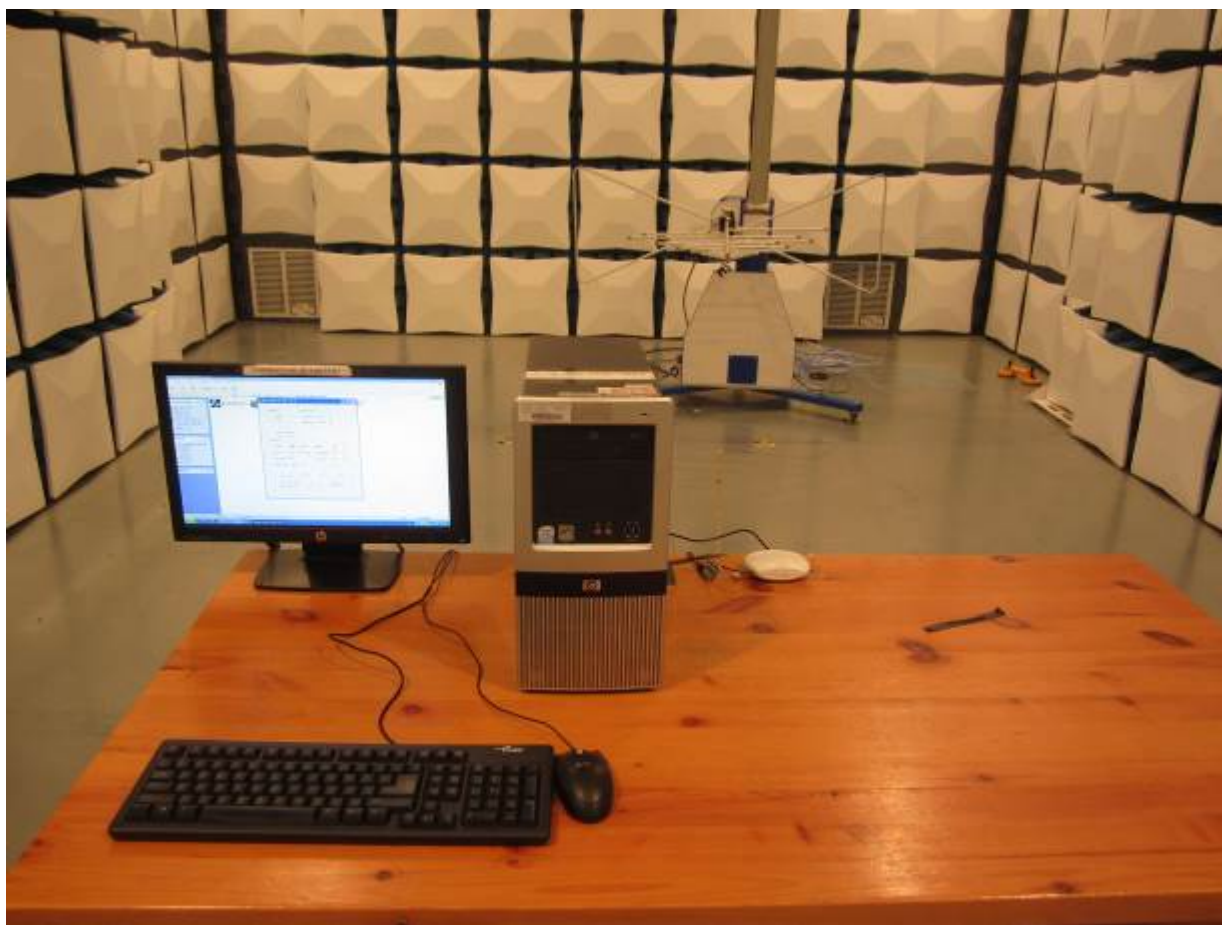


Figure 4 Radiated emission test setup (below 1 GHz)



Figure 5 Radiated emission test setup (above 1 GHz)

15 **PHOTOS OF EUT**



Enclosure



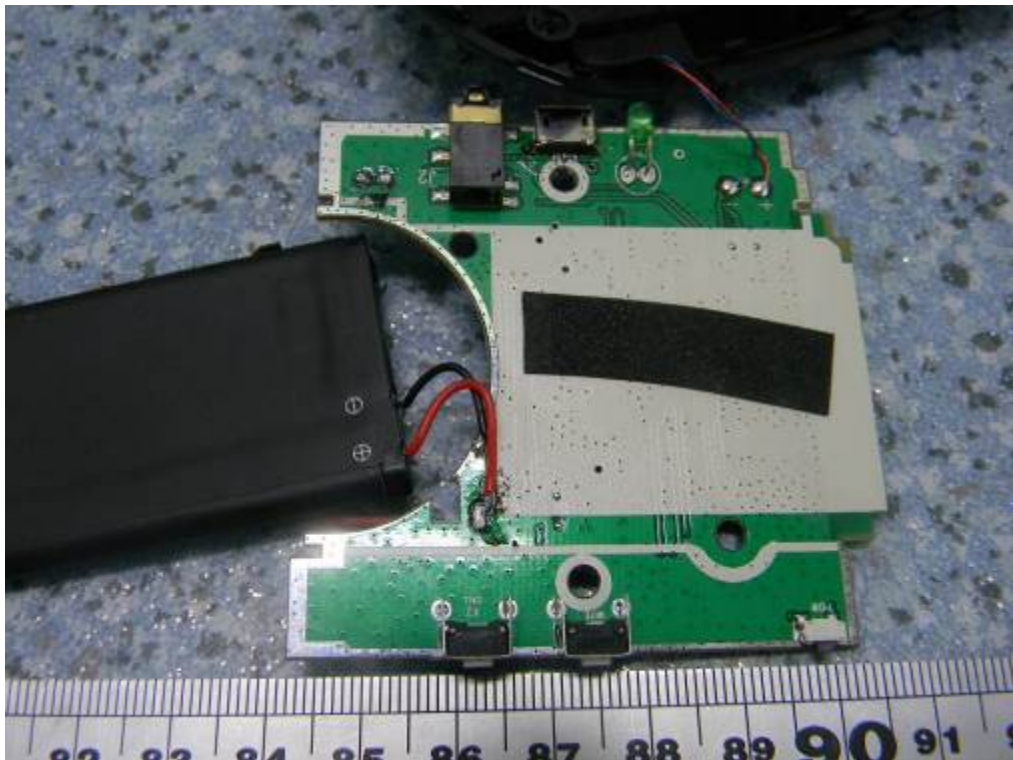
Internal structure



Li-ion Battery



Speaker



PCB