

FCC PART 15C TEST REPORT FOR CERTIFICATION
On Behalf of

Guangzhou Panyu Juda Car Audio Equipment CO.,Ltd

Bluetooth Speaker

Model Number: CSBT22

FCC ID: ESXCSBT22

Prepared for : Guangzhou Panyu Juda Car Audio Equipment CO.,Ltd
Vtrek Dewei Industrial Garden, Shibe Industrial Road,
Dashi Town, Panyu Borough, Guangzhou City,
Guangdong Province,China.

Prepared By : EST Technology Co., Ltd.
Santun(guantai Road), Houjie Town, DongGuan City,GuangDong, China.
Tel: 86-769-83081888-808


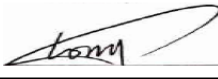
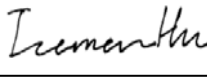
Report Number: ESTE-R1303004
Date of Test : Feb 1, 2013 ~ Feb 27, 2013
Date of Report : Mar 1, 2013

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Test Report Verification

Applicant:	Guangzhou Panyu Juda Car Audio Equipment CO.,Ltd		
Address:	Vtrek Dewei Industrial Garden, Shibe Industrial Road, Dashi Town, Panyu Borough, Guangzhou City, Guangdong Province, China.		
Manufacturer:	Guangzhou Panyu Juda Car Audio Equipment CO.,Ltd		
Address:	Vtrek Dewei Industrial Garden, Shibe Industrial Road, Dashi Town, Panyu Borough, Guangzhou City, Guangdong Province, China.		
E.U.T:	Bluetooth Speaker		
Model Number:	CSBT22		
Power Supply:	DC 5V For Changer DC 3.7V From Internal Battery		
Test Voltage:	DC 3.7V		
Trade Name:	COBY	Serial No.:	-----
Date of Receipt:	Jan 29,2013	Date of Test:	Feb 1 ~ Feb 27,2013
Test Specification:	FCC Rules and Regulations Part 15 Subpart C:2011 ANSI C63.4:2003		
Test Result:	<p>The device described above is tested by EST Technology Co., Ltd.. The measurement results were contained in this test report and EST Technology Co., Ltd. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the ETSI EN FCC Rules and Regulations Part 15 Subpart C requirements.</p> <p style="text-align: right;">This report applies to above tested sample only and shall not be reproduced in part without written approval of EST Technology Co., Ltd. Date: Mar 1,2013</p>		
Prepared by:	Tested by:	Approved by:	
			
_____ Ada / Assistant	_____ Tony.Tang/ Engineer	_____ IcemanHu / Manager	
Other Aspects:	None.		
<i>Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested</i>			
<i>This test report is based on a single evaluation of one sample of above mentioned products ,It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd.</i>			

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Product Name	: Bluetooth Speaker
Model Number	: CSBT22
FCC ID	: ESXCSBT22
Operation frequency	: 2402MHz~2480MHz
Number of channel	: 79
Antenna	: Internal antenna, 0 dBi gain
Modulation	: FHSS (GFSK, $\pi/4$ -DQPSK, 8-DPSK)
Power Supply	: DC 3.7V
Applicant	: Guangzhou Panyu Juda Car Audio Equipment CO.,Ltd Vtrek Dewei Industrial Garden, Shibeil Industrial Road, Dashi Town, Panyu Borough, Guangzhou City, Guangdong Province, China.
Manufacturer	: Guangzhou Panyu Juda Car Audio Equipment CO.,Ltd Vtrek Dewei Industrial Garden, Shibeil Industrial Road, Dashi Town, Panyu Borough, Guangzhou City, Guangdong Province, China.
Sample Type	: Prototype production

2. SUMMARY OF TEST

2.1. Summary of test result

Description of Test Item	Standard	Results
Maximum Peak Output Power	FCC Part 15: 15.247(b)(1) DA 00-705	PASS
20dB Bandwidth	FCC Part 15: 15.215 DA 00-705	PASS
Carrier Frequency Separation	FCC Part 15: 15.247(a)(1) DA 00-705	PASS
Number Of Hopping Channel	FCC Part 15: 15.247(a)(1)(iii) DA 00-705	PASS
Dwell Time	FCC Part 15: 15.247(a)(1)(iii) DA 00-705	PASS
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.4: 2003 DA 00-705	PASS
Band Edge Compliance	FCC Part 15: 15.247(d) DA 00-705	PASS
Power Line Conducted Emissions	FCC Part 15: 15.207 ANSI C63.4: 2003 DA 00-705	N/A
Antenna requirement	FCC Part 15: 15.203	PASS

2.2. Test Facilities

EMC Lab	:	Certificated by CNAL, CHINA Registration No.: L5288 Date of registration: October 28, 2011
		Certificated by FCC, USA Registration No.: 989591 Date of registration: December 07, 2010
		Certificated by Industry Canada Registration No.: 46405-9405 Date of registration: December 16, 2010
		Certificated by VCCI, Japan Registration No.: R-3663 & C-4103 Date of registration: July 25, 2011
		Certificated by TUV Rheinland, Germany Registration No.: UA 50195514 0001 Date of registration: January 07, 2011
		Certificated by TUV/PS, Shenzhen Registration No.: SCN1017 Date of registration: January 27, 2011
		Certificated by Intertek ETL SEMKO Registration No.: 2011-RTL-L1-18 Date of registration: April 28, 2011
		Certificated by Siemic, Inc. Registration No.: SLCN021 Date of registration: November 8, 2011
		Certificated by Nemko, Hong Kong Registration No.: 175193 Date of registration: May 4, 2011
Name of Firm	:	EST Technology Co., Ltd.
Site Location	:	San Tun Management Zone, Houjie Town, Dongguan, Guangdong, China

2.3. Assistant equipment used for test

N/A

2.4. Block Diagram

For radiated emissions test: EUT was placed on a turn table, which is 0.8 meter high above ground. EUT was set into BT test mode by software before test.



2.5. Test mode

The test software was used to control EUT work in Continuous TX mode, and select test channel, wireless mode

Mode	Channel	Frequency
GFSK	Low	2402MHz
	Middle	2441MHz
	High	2480MHz
8-DPSK	Low	2402MHz
	Middle	2441MHz
	High	2480MHz

2.6. Test Equipment

2.6.1. For radiated emission test(30-1000MHz)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESVS10	100004	Mar,19,12	1 Year
Spectrum Analyzer	Agilent	E4411B	MY50140697	Mar,19,12	1 Year
Bilog Antenna	Teseq	CBL 6111D	25872	Nov.01,12	1 .5Year
Signal Amplifier	Agilent	310N	187037	Aug,24,12	1 Year

2.6.2. For radiated emission test(above 1GHz)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Temperature controller	Terchy	MHQ	120	May.08,12	1 Year
Spectrum Analyzer	Agilent	E4408B	MY44211139	May.08,12	1 Year
Vector Signal Generator	R&S	SMBV100A	1407.6004K02	May.08,12	1 Year
Double Ridged Horn Antenna	R&S	HF907	100276	Jan.16.13	2 Year
Double Ridged Horn Antenna	R&S	HF907	100268	Jan.16.13	2 Year
Log-periodic Dipole Antenna	R&S	HL223	100435	Jan.16.13	2 Year
Biconical Antenna	R&S	HK116	100431	Jan.16.13	2 Year
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	9163-462	Jan.16.13	2 Year
Pre-amplifer	AH	PAM-0118	10008	May.08,12	1 Year
Pre-amplifer	R&S	SCU-01	10049	May.08,12	1 Year
High Pass filter	Micro	HPM50111	324455	May.08,12	1 Year
RF Cable	Hubersuhner	W10.02	534096	May.08,12	1 Year
RF Cable	Hubersuhner	W10.02	534123	May.08,12	1 Year
RF Cable	Hubersuhner	RG 214/U	513423	May.08,12	1 Year
RF Cable	Hubersuhner	RG 214/U	523455	May.08,12	1 Year

3. MAXIMUM PEAK OUTPUT POWER

3.1. Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts, the e.i.r.p shall not exceed 4W

3.2. Test Procedure

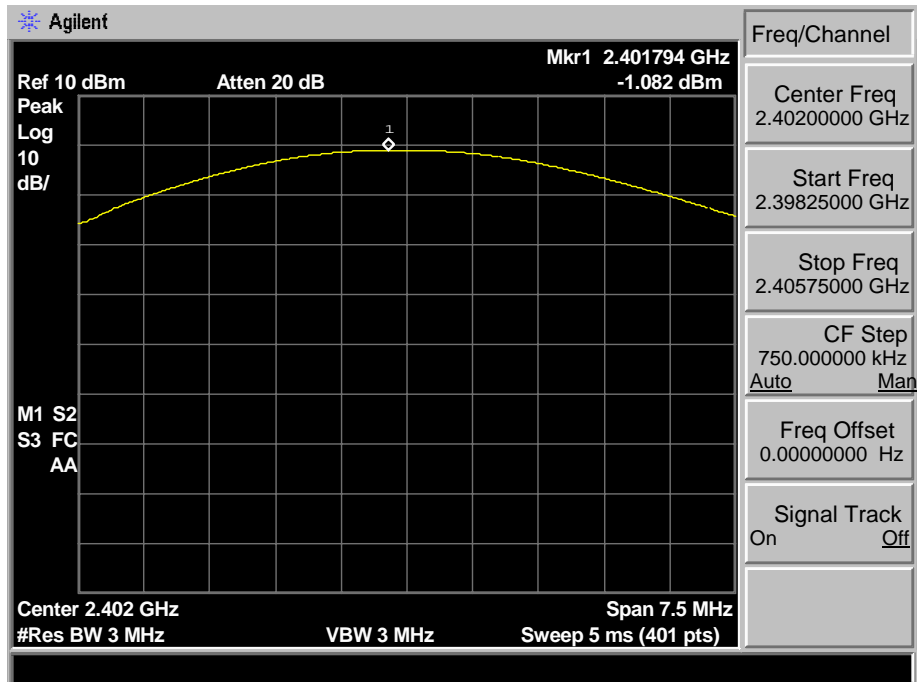
The transmitter output (antenna port) was connected to the spectrum analyzer

3.3. Test Result

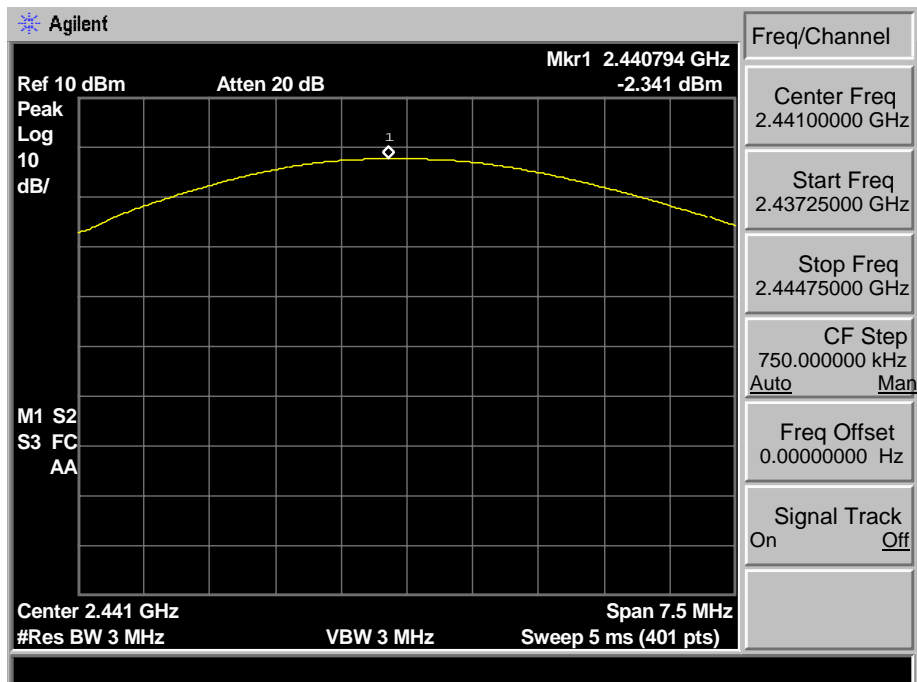
EUT: Bluetooth Speaker M/N:CSBT22					
Test date: 2013-02-25		Test site: RF site		Tested by: Tony Tang	
Mode	Freq (MHz)	Result (dBm)	Limit		Margin (dB)
			dBm	W	
GFSK	2402	-1.082	30.00	1	31.082
	2441	-2.341	30.00	1	32.341
	2480	-2.390	30.00	1	32.390
8-DPSK	2402	-0.047	21.00	0.125	21.047
	2441	-1.082	21.00	0.125	22.082
	2480	-2.344	21.00	0.125	23.344
Conclusion: PASS					

3.4. Test Data

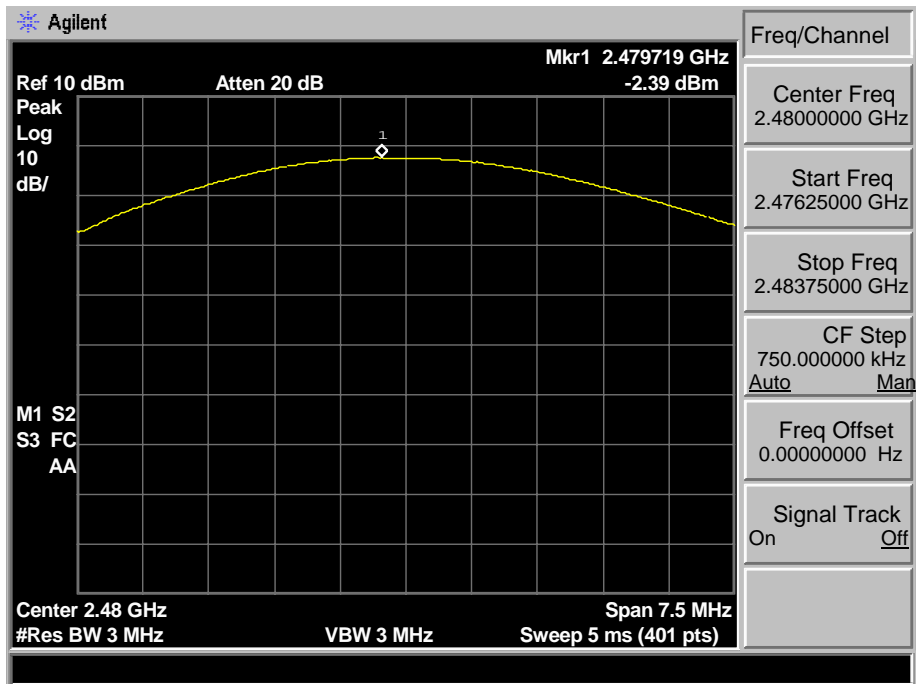
GFSK 2402 MHz



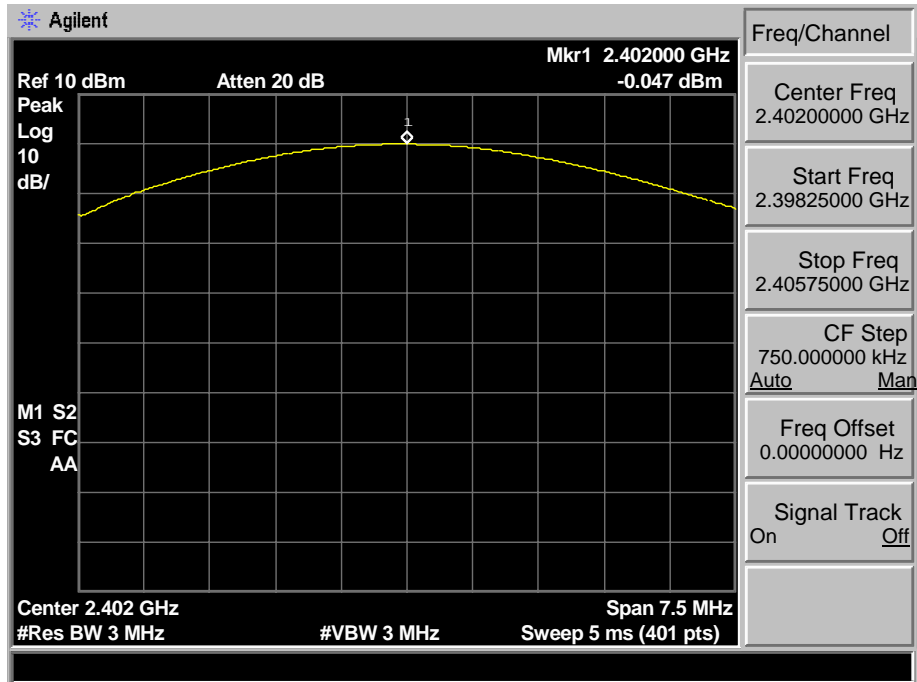
GFSK 2441 MHz



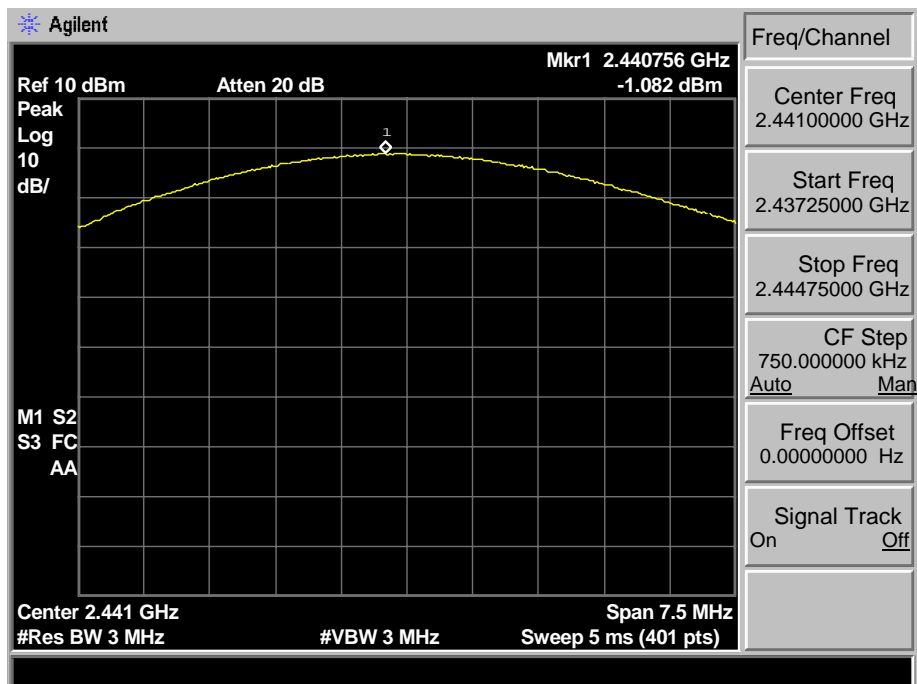
GFSK 2480 MHz



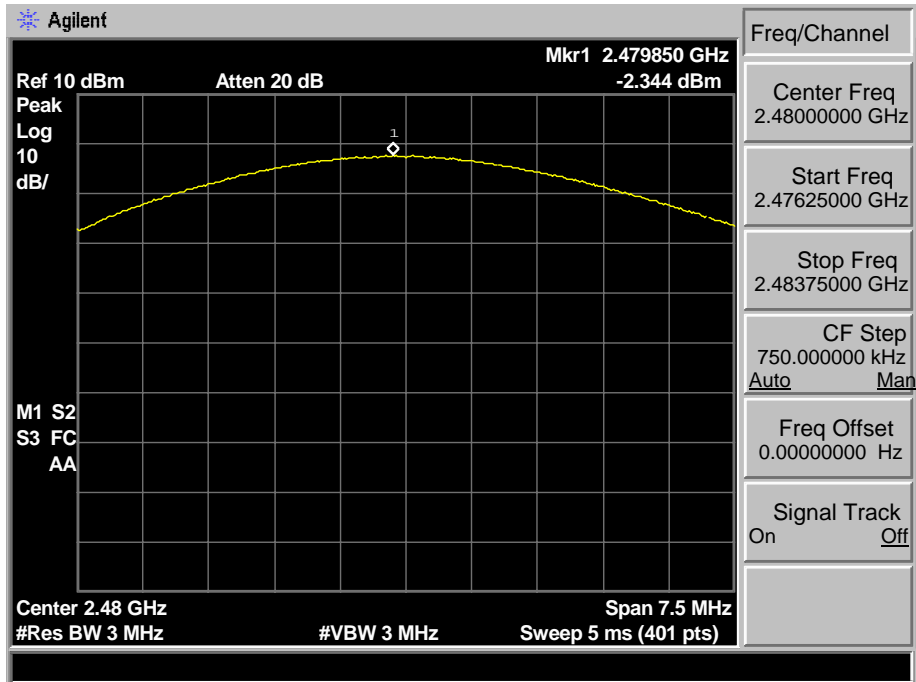
8-DPSK 2402MHz



8-DPSK 2441MHz



8-DPSK 2480MHz



4. 20 DB BANDWIDTH

4.1. Limit

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 the frequency band designated in the rule section under which the equipment is operated.

4.2. Test Procedure

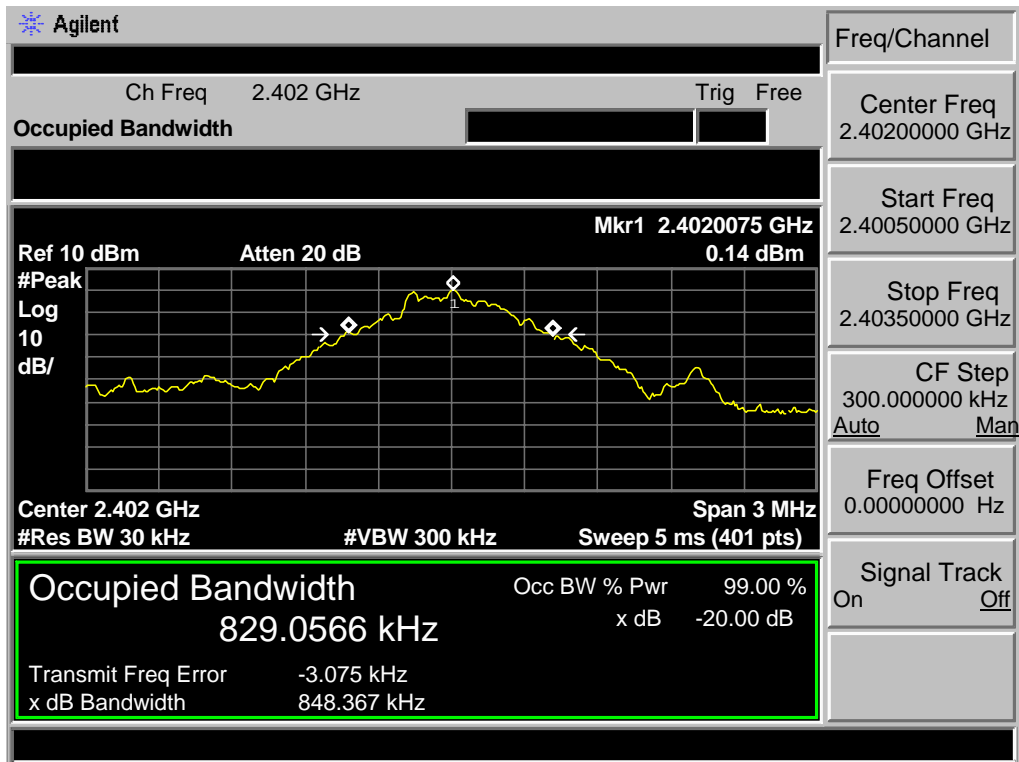
The transmitter output was coupled to a spectrum analyzer via a antenna. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30kHz RBW and 300kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

4.3. Test Result

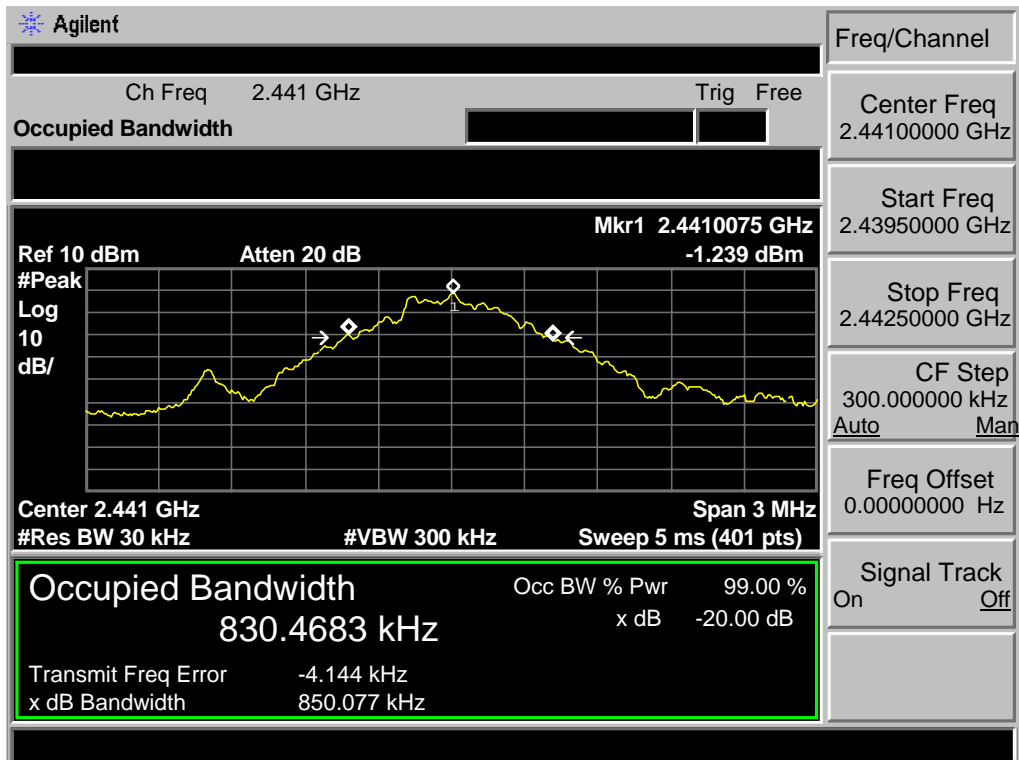
EUT: Bluetooth Speaker		M/N:CSBT22		
Test date: 2013-02-25		Test site: RF site		Tested by: Tony Tang
Mode	Freq (MHz)	20dB Bandwidth (MHz)	Limit (kHz)	Conclusion
GFSK	2402	0.848	/	PASS
	2441	0.850	/	PASS
	2480	0.850	/	PASS
8-DPSK	2402	1.213	/	PASS
	2441	1.213	/	PASS
	2480	1.206	/	PASS

4.4. Test Data

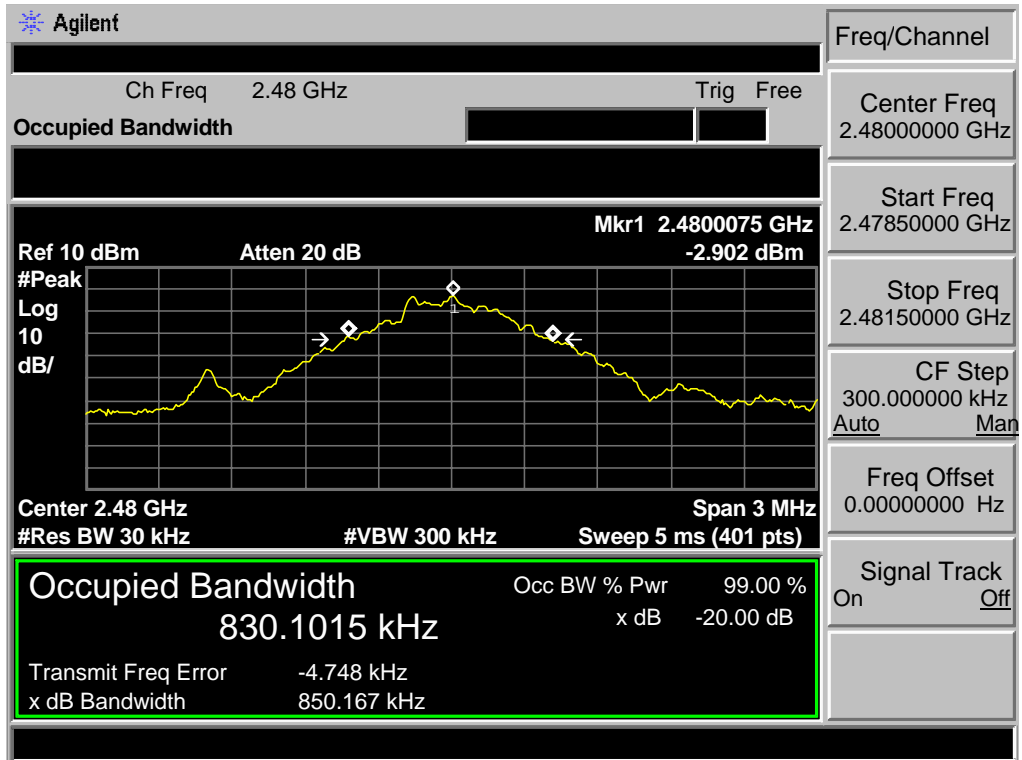
GFSK 2402MHz



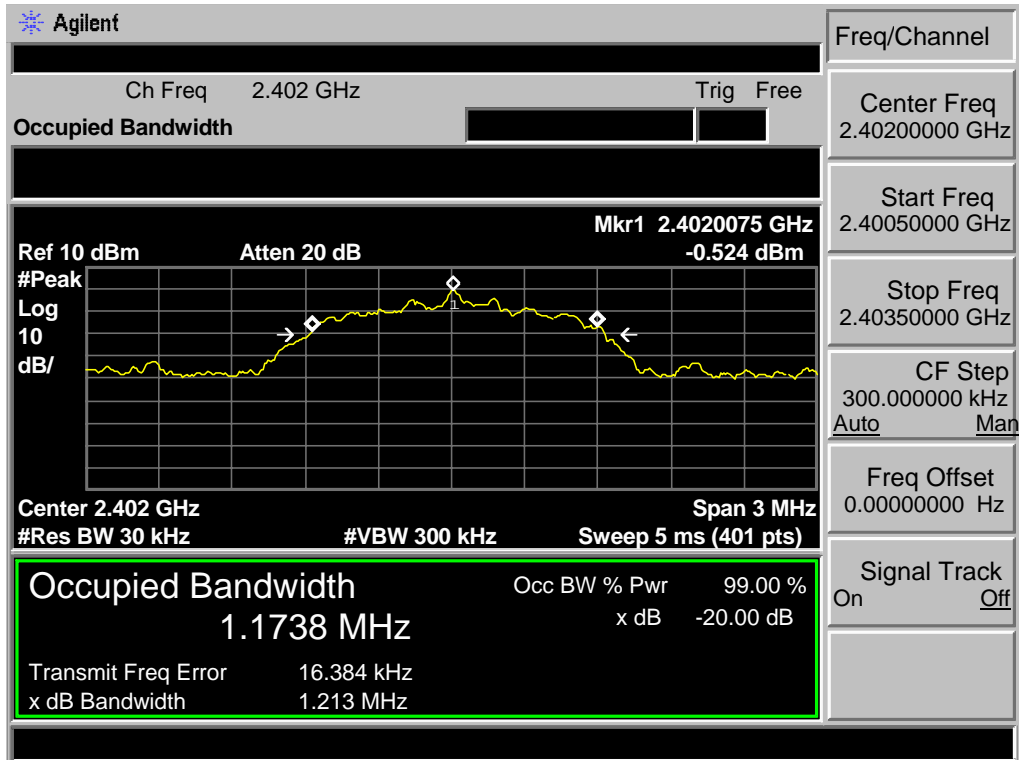
GFSK 2441MHz



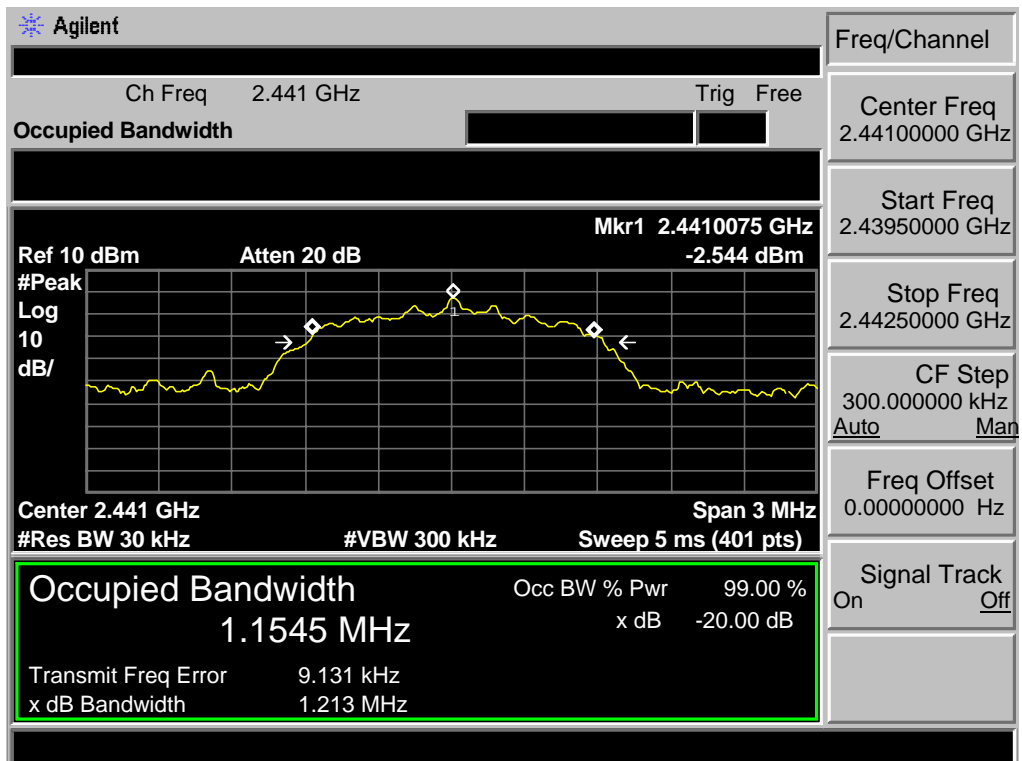
GFSK 2480MHz



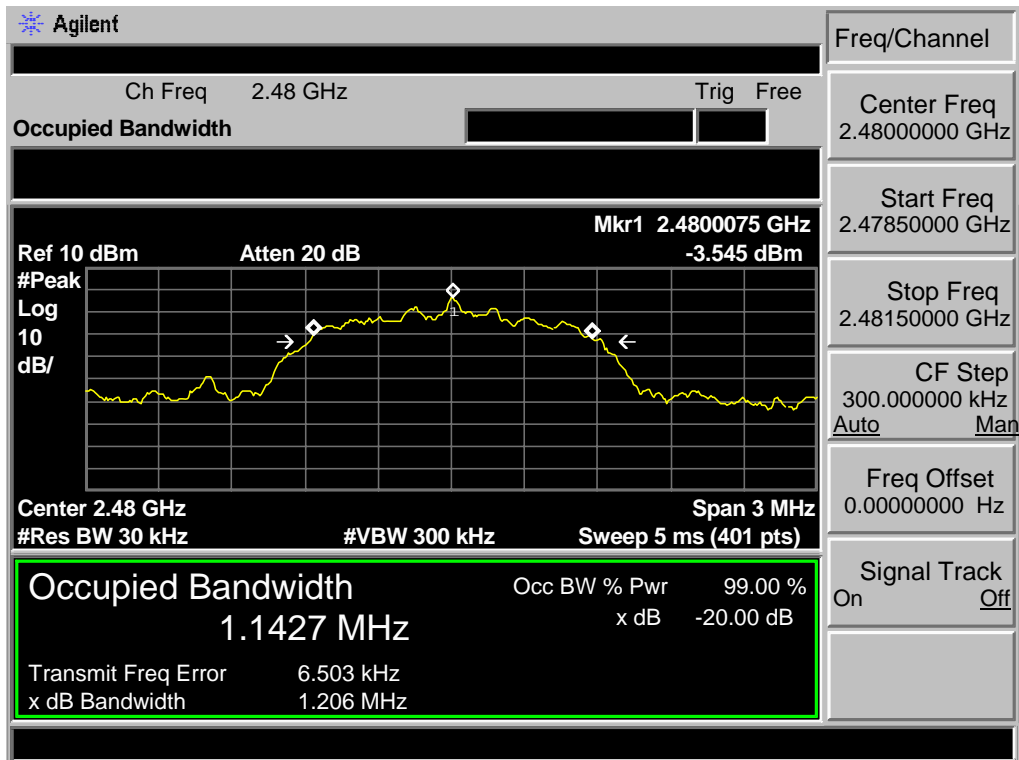
8-DPSK 2402MHz



8-DPSK 2441MHz



8-DPSK 2480MHz



5. CARRIER FREQUENCY SEPARATION

5.1. Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 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

5.2. Test Procedure

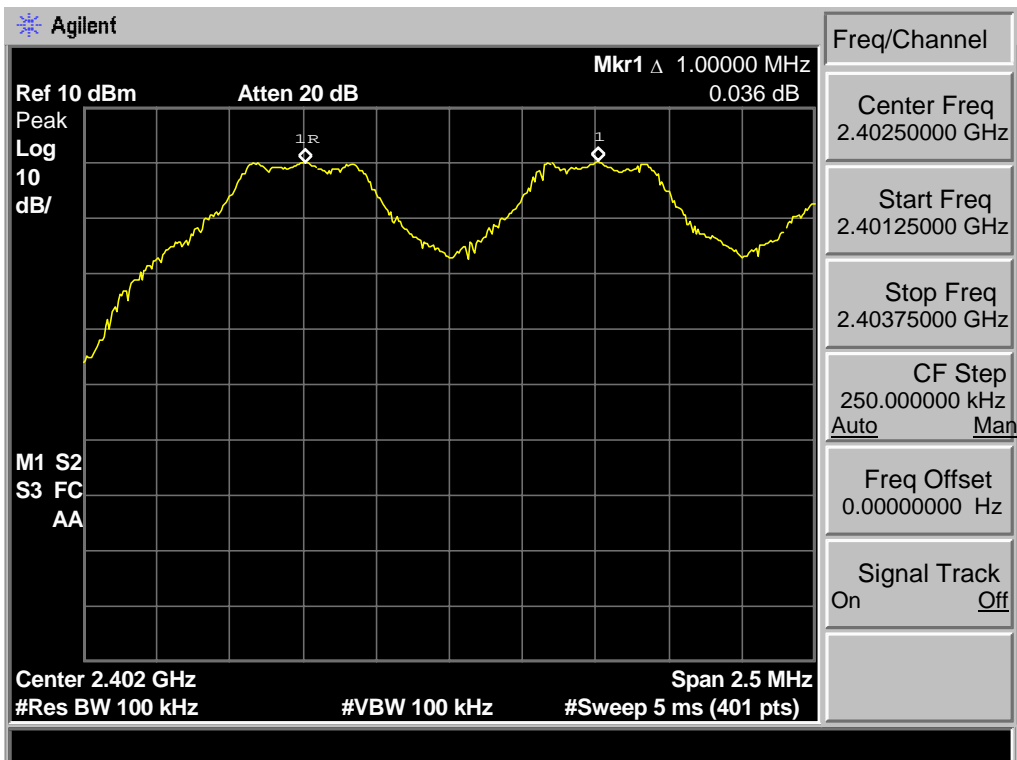
The transmitter output was coupled to a spectrum analyzer via a antenna. The carrier frequency was measured by spectrum analyzer with 100kHz RBW and 100kHz VBW.

5.3. Test Result

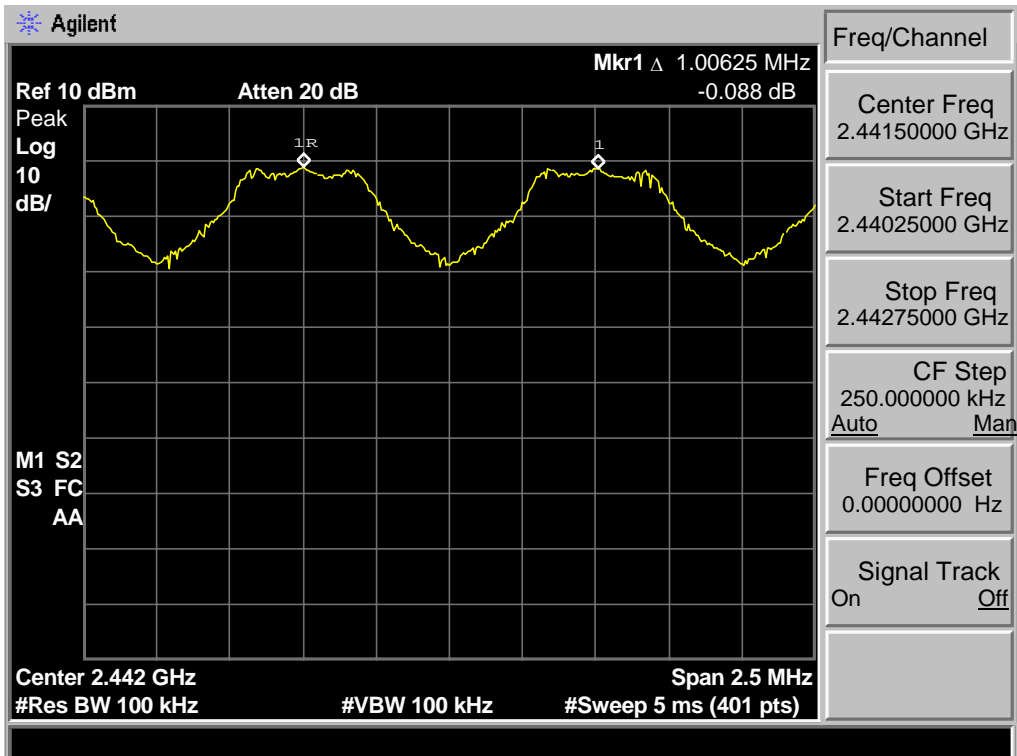
EUT: Bluetooth Speaker M/N:CSBT22				
Test date: 2013-02-25			Test site: RF site	Tested by: Tony Tang
Mode	Channel	Channel separation (MHz)	Limit	Conclusion
GFSK	Low CH	1.000	0.848 MHz	PASS
	Mid CH	1.006	0.850 MHz	PASS
	High CH	1.000	0.850 MHz	PASS
8-DPSK	Low CH	1.006	> 2/3 of the 20dB Bandwidth or 25[kHz](whichever is greater)	PASS
	Mid CH	1.000		PASS
	High CH	1.000		PASS

5.4. Test Data

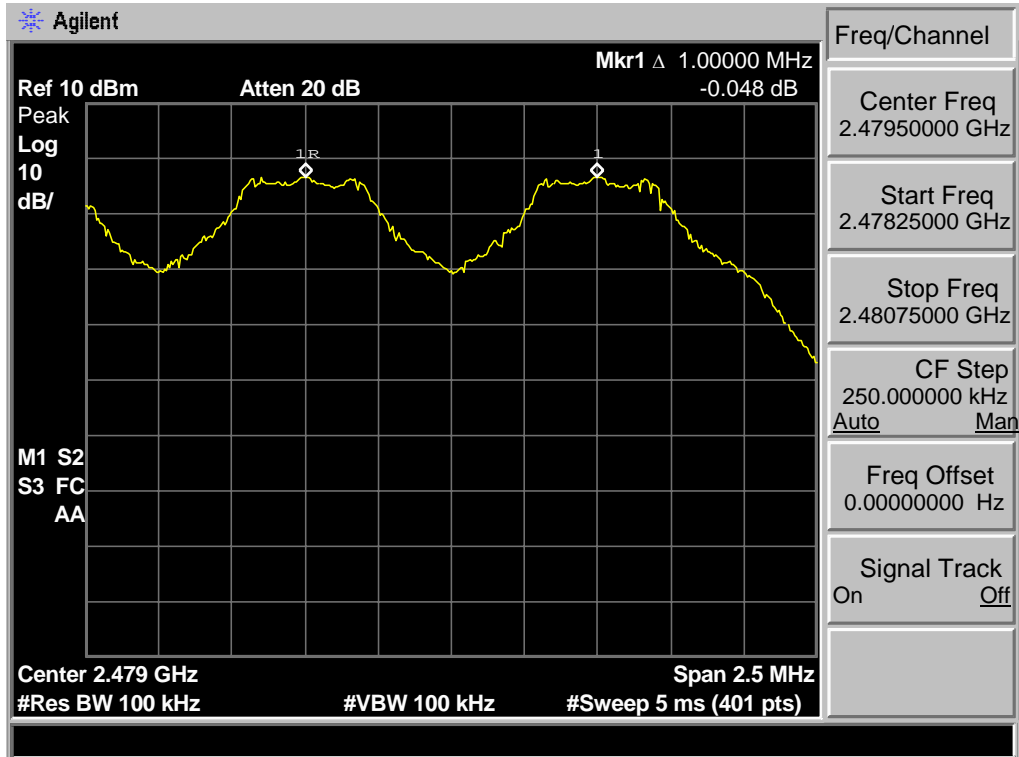
GFSK Low Channel



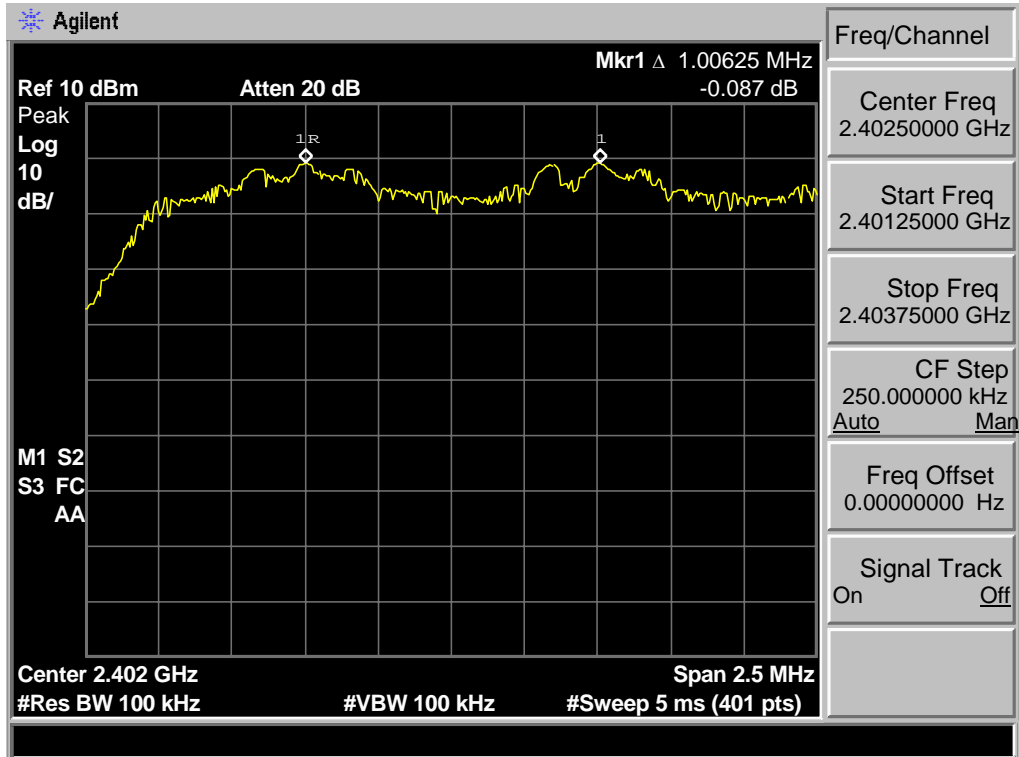
Mid Channel



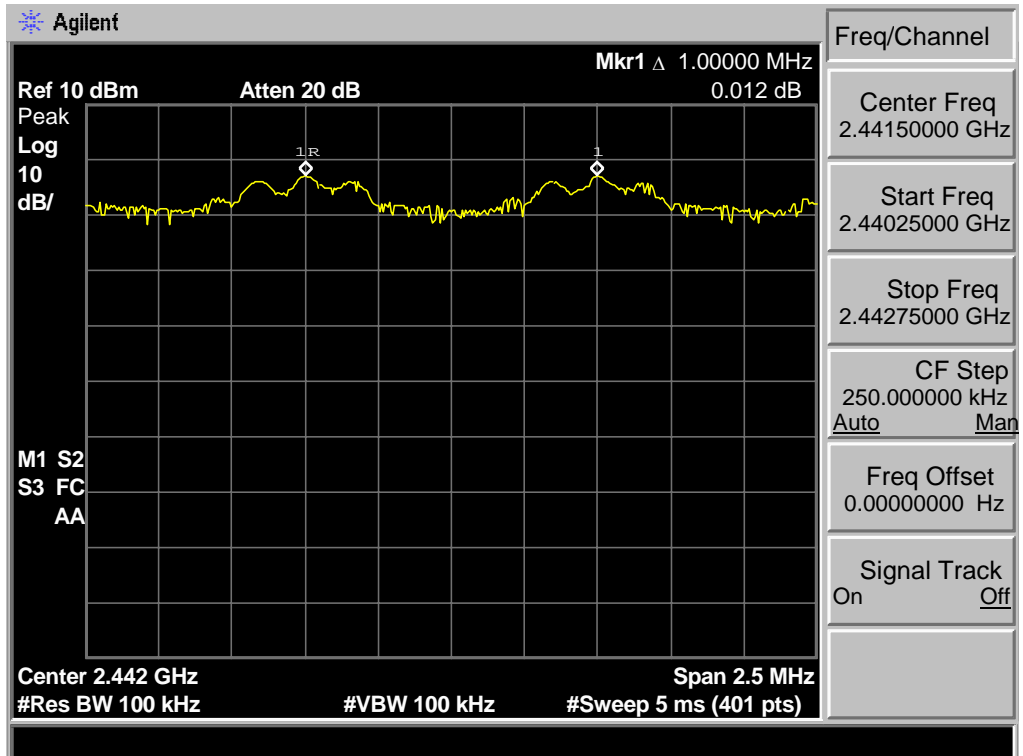
High Channel



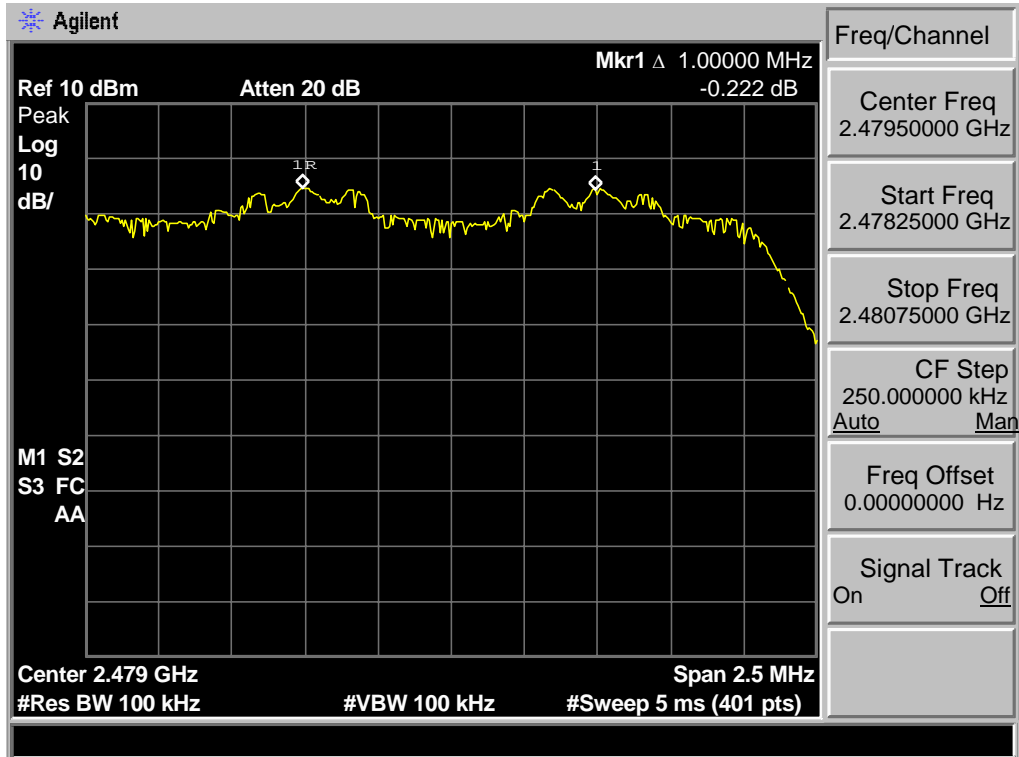
8-DPSK Low Channel



Mid Channel



High Channel



6. NUMBER OF HOPPING CHANNEL

6.1. Limit

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

6.2. Test Procedure

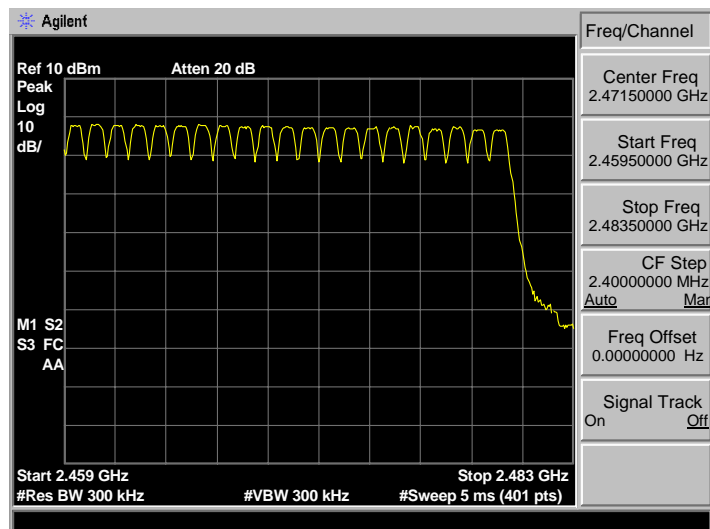
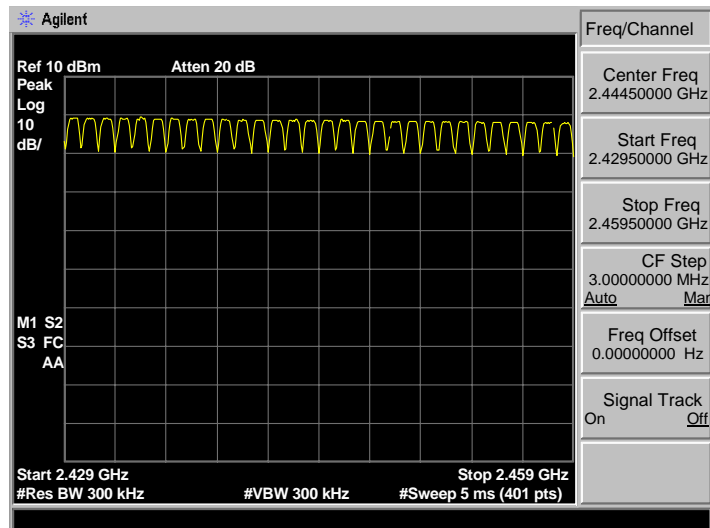
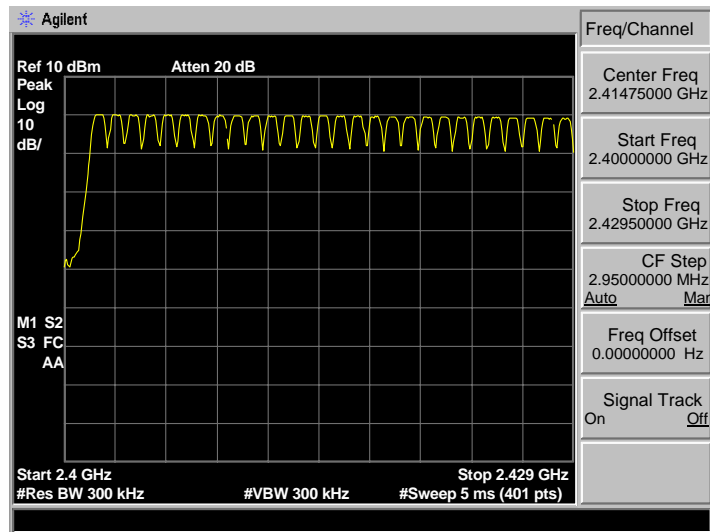
The transmitter output was coupled to a spectrum analyzer via a antenna. The number of hopping channel was measured by spectrum analyzer with 300kHz RBW and 300kHz VBW.

6.3. Test Result

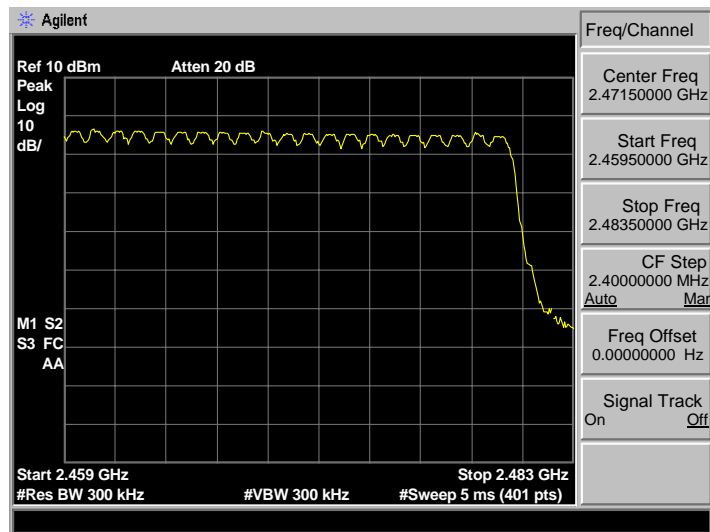
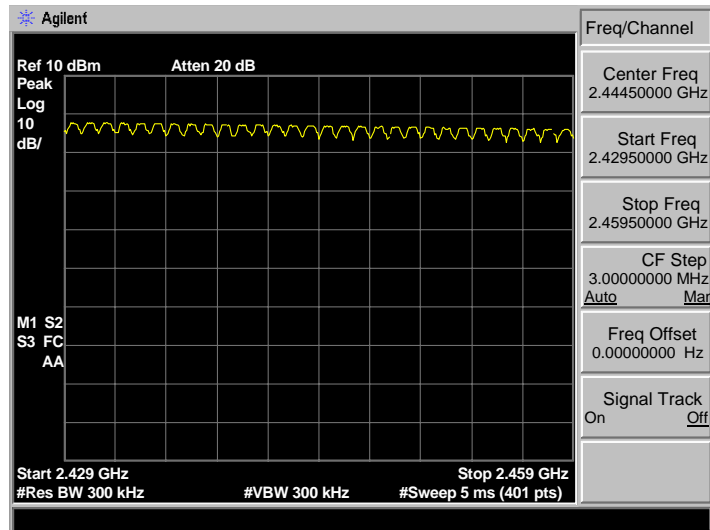
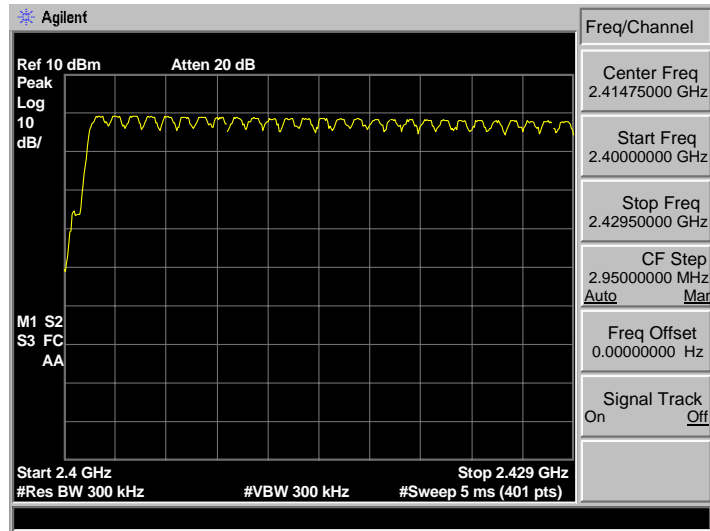
EUT: Bluetooth Speaker		M/N:CSBT22	
Test date: 2013-02-25		Test site: RF site	Tested by: Tony.Tang
Mode	Number of hopping channel		Conclusion
GFSK	79	>15	PASS
8-DPSK	79	>15	PASS

6.4. Test Data

GFSK



8-DPSK



7. DWELL TIME

7.1. Limit

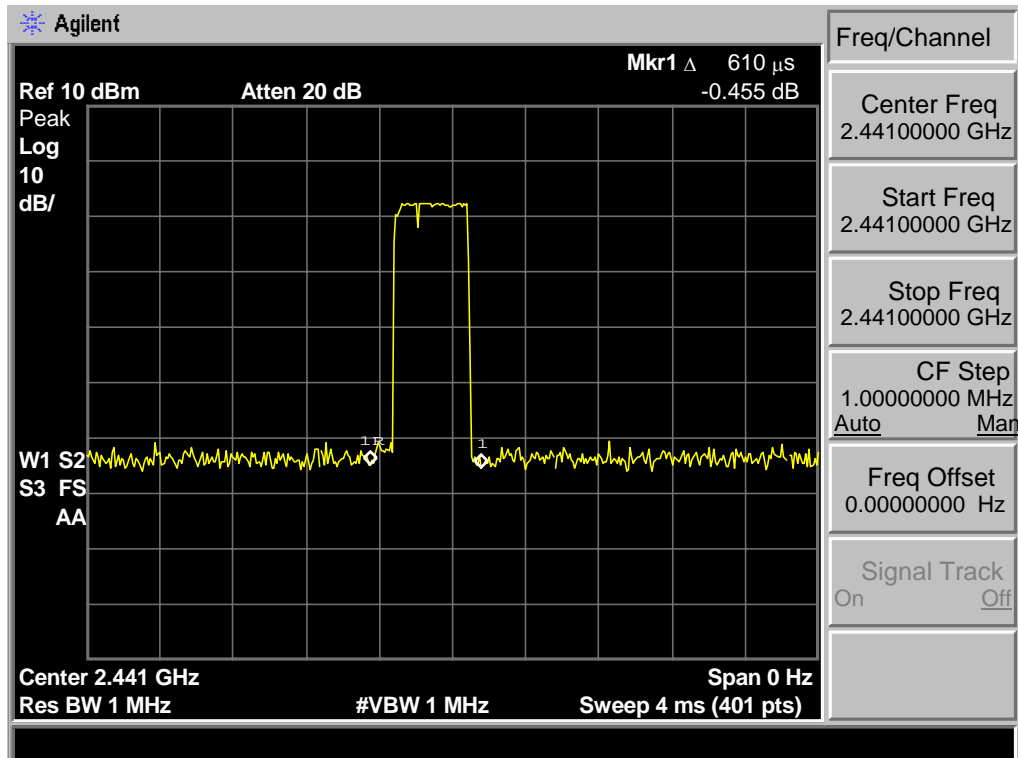
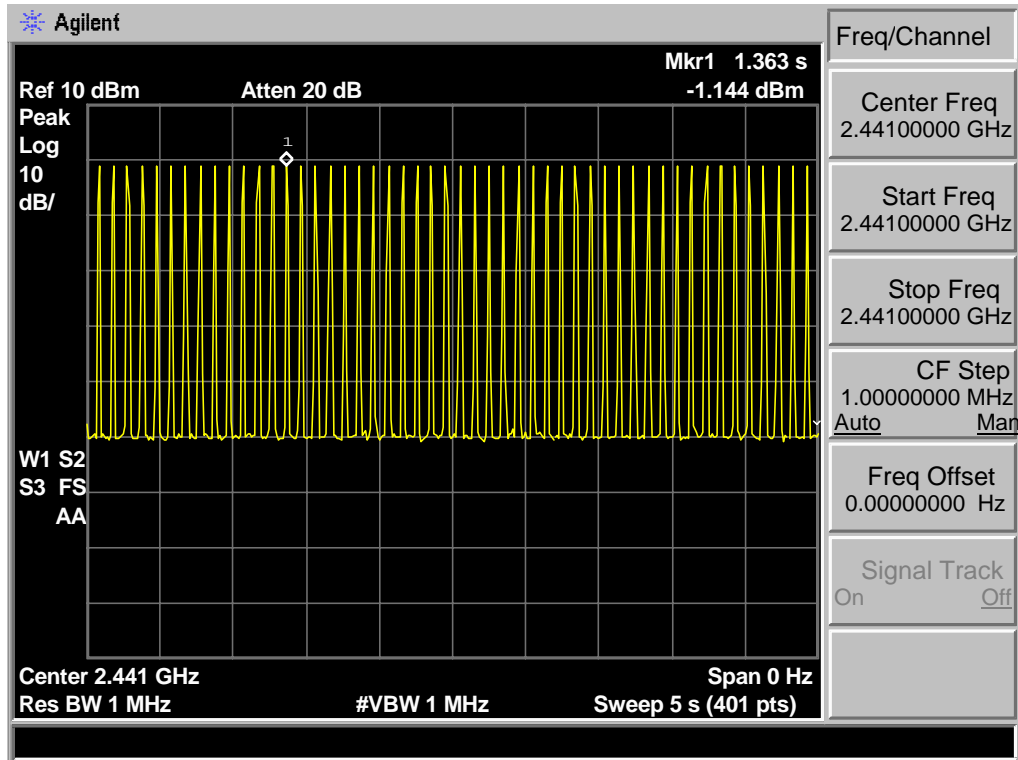
The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

7.2. Test Result

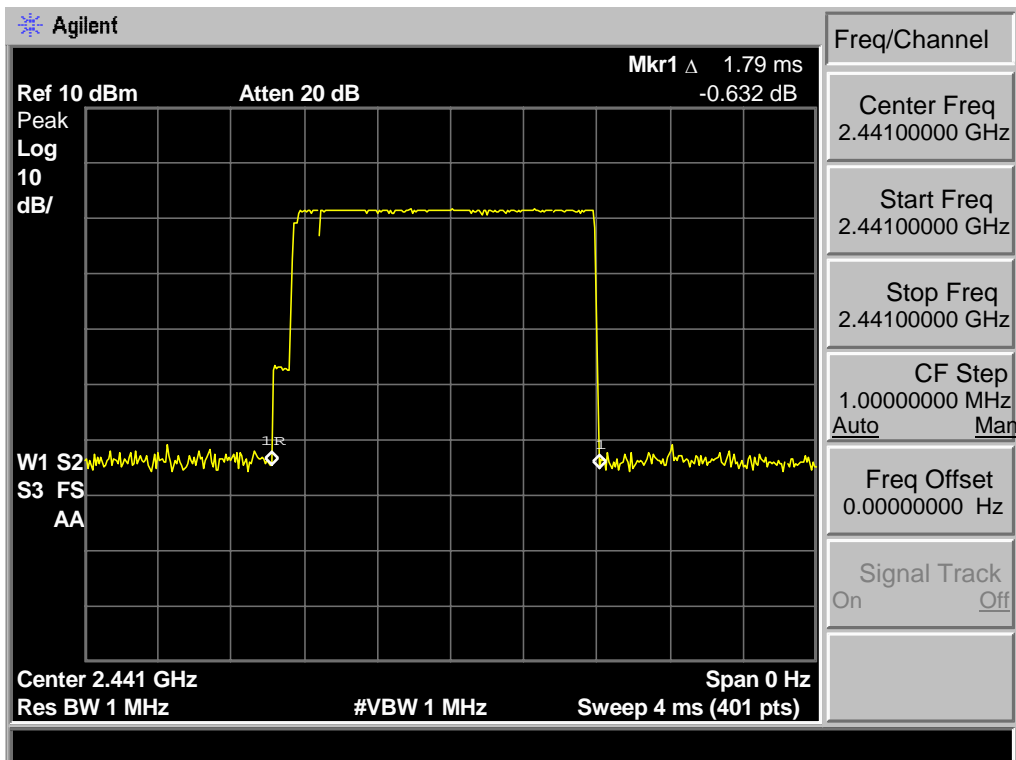
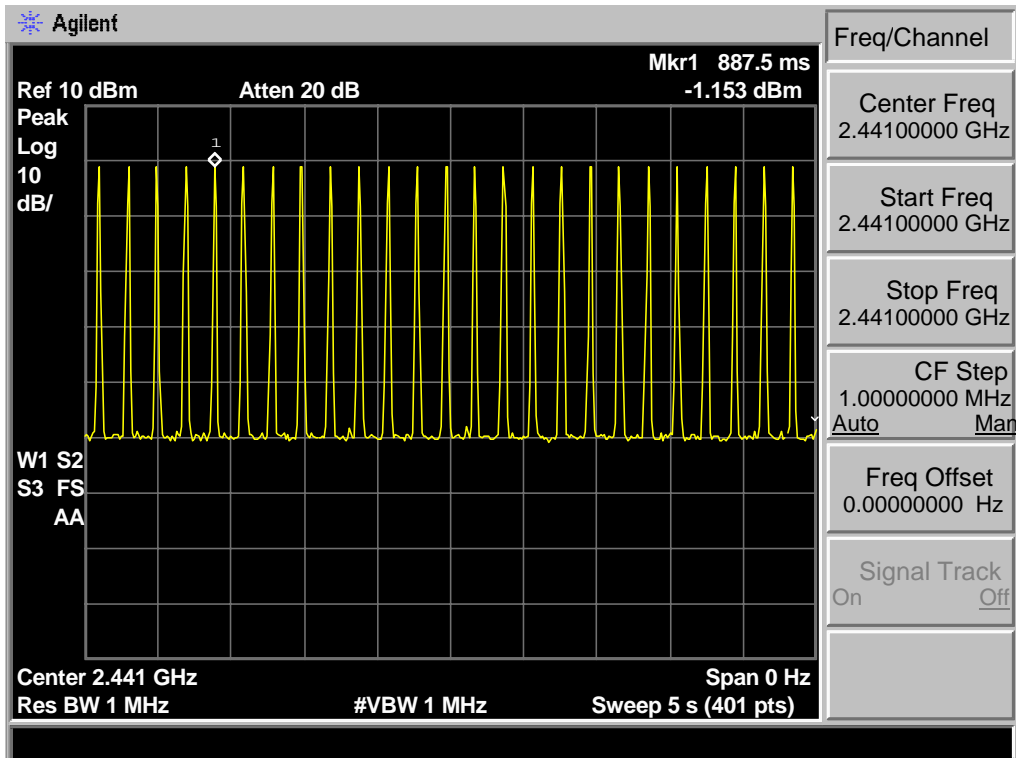
EUT: Bluetooth Speaker		M/N:CSBT22	
Test date: 2013-02-25		Test site: RF site	Tested by: Tony Tang
Mode	Dwell time	Limit	Conclusion
GFSK DH1	192.76	<400ms	PASS
GFSK DH3	282.82	<400ms	PASS
GFSK DH5	326.62	<400ms	PASS
8-DPSK DH1	176.96	<400ms	PASS
8-DPSK DH3	300.20	<400ms	PASS
8-DPSK DH5	323.39	<400ms	PASS

7.3. Test Data

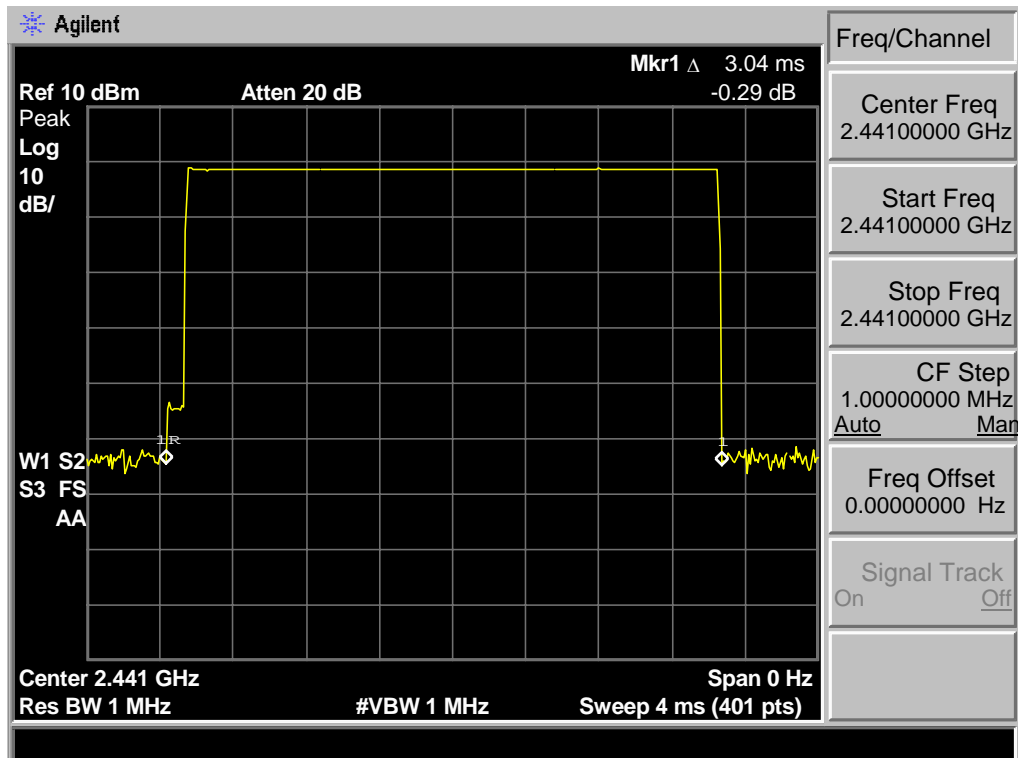
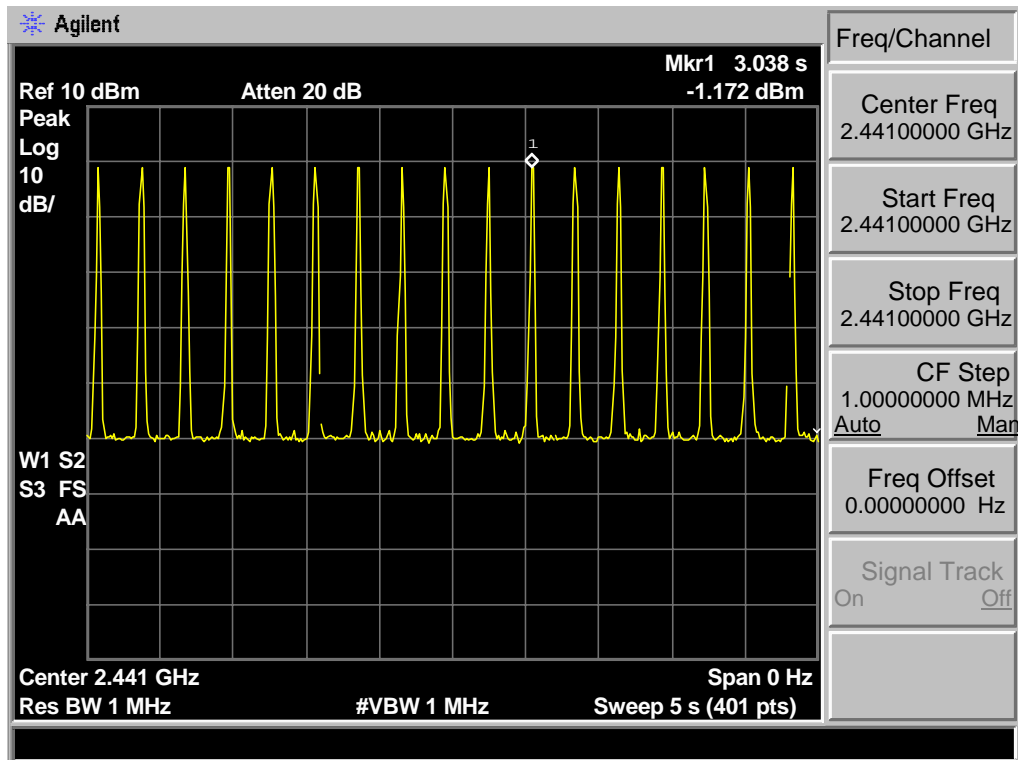
GFSK DH1 : $50\text{hop}/5\text{s} * 0.4 * 79 * 0.610\text{ms} = 192.76$



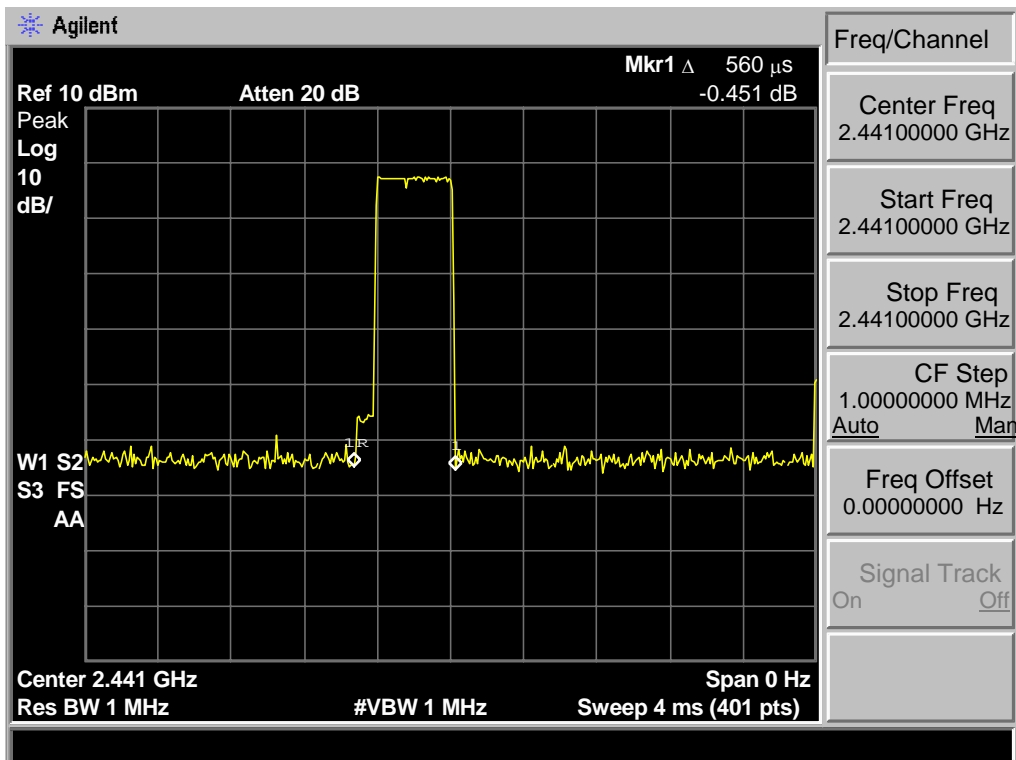
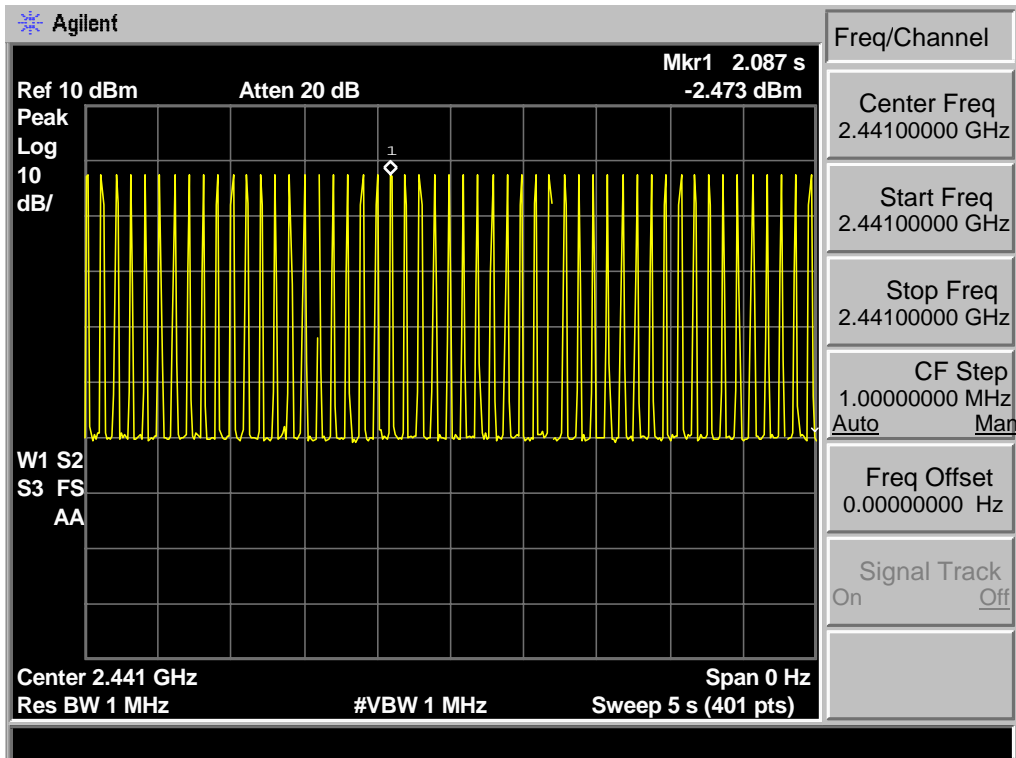
GFSK DH3 : 25hop/5s * 0.4 * 79 * 1.79ms= 282.82



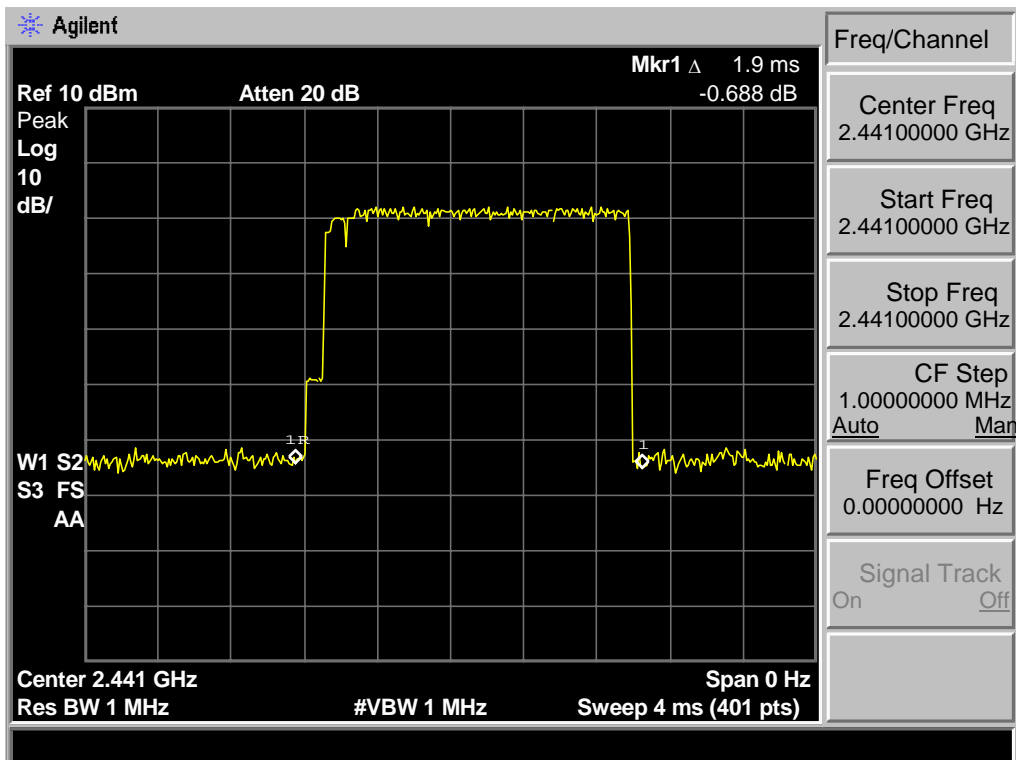
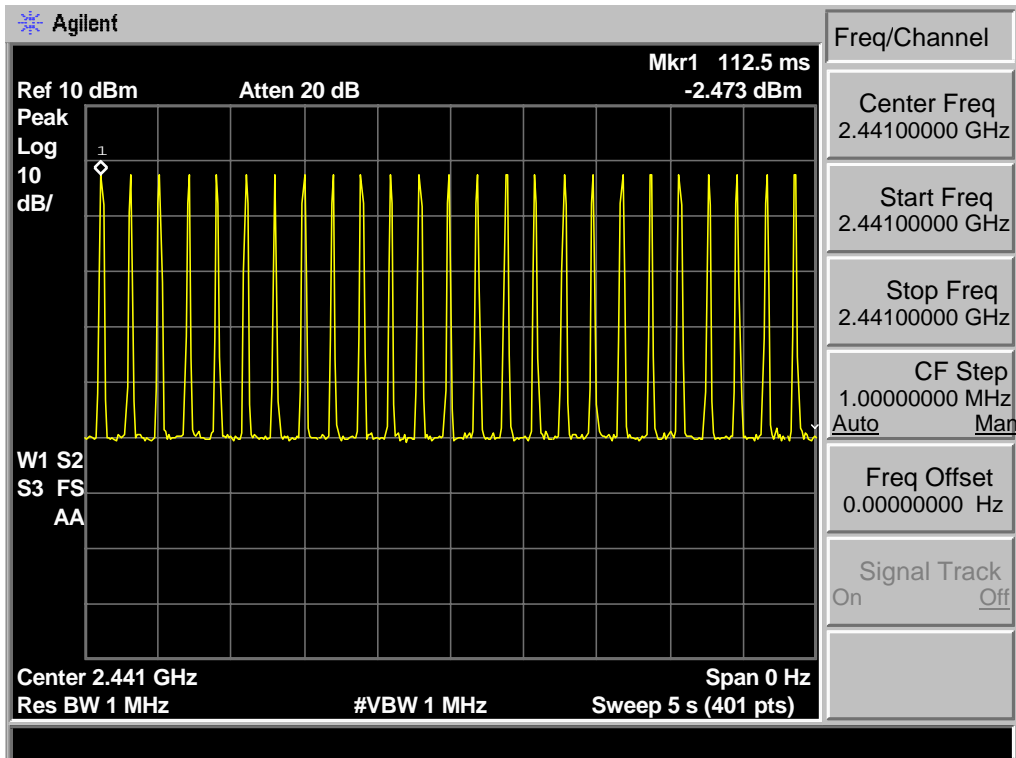
GSFK DH5 : 17hop/5s * 0.4 * 79 * 3.04ms = 326.62



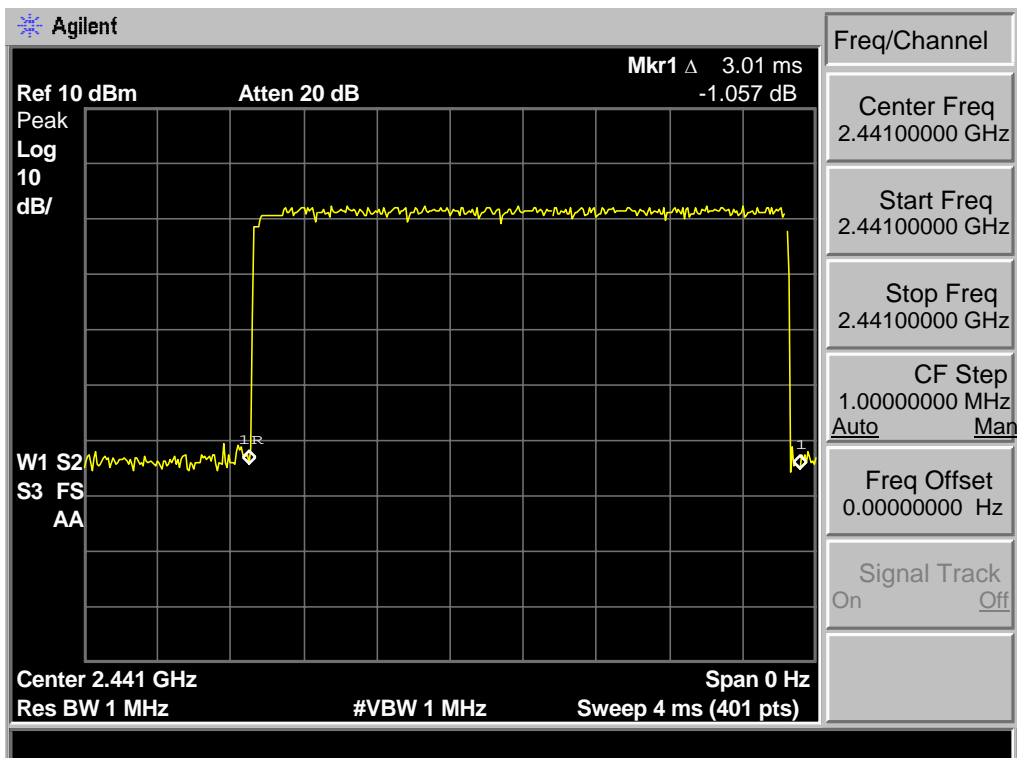
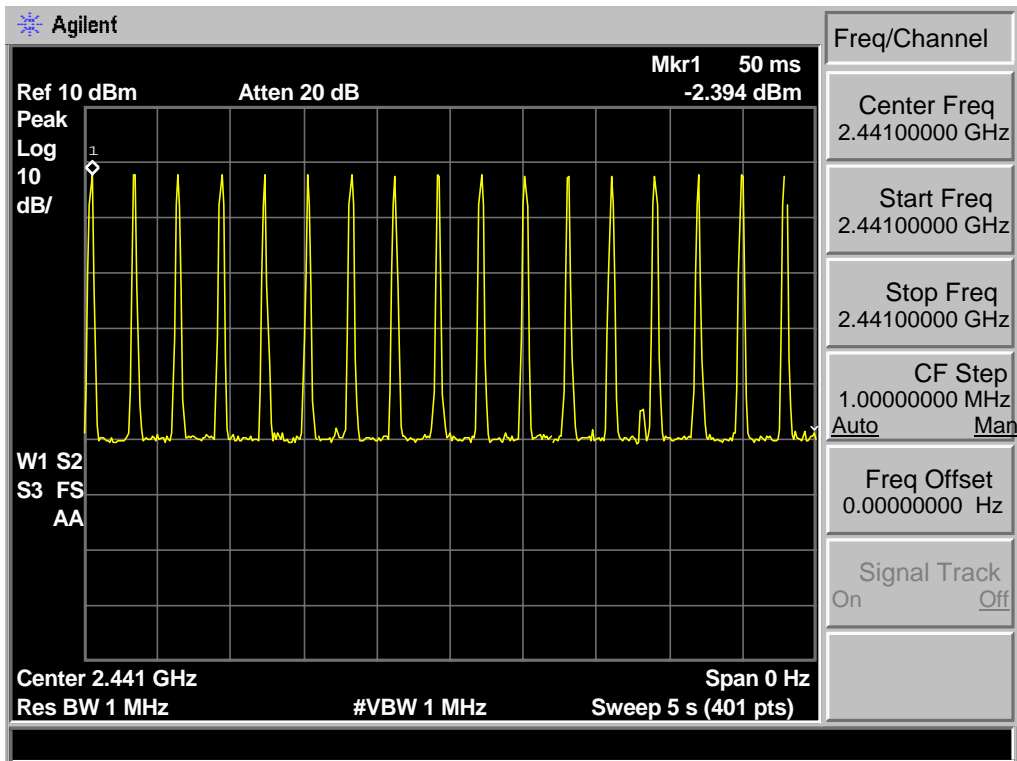
8-DPSK DH1: 50hop/5 * 0.4 * 79 * 0.56ms=176.96



8-DPSK DH3: $25/5 * 0.4 * 79 * 1.90\text{ms} = 300.20$



8-DPSK DH5: 17/5 * 0.4 * 79 * 3.01ms=323.39



8. RADIATED EMISSIONS

8.1. Limit

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

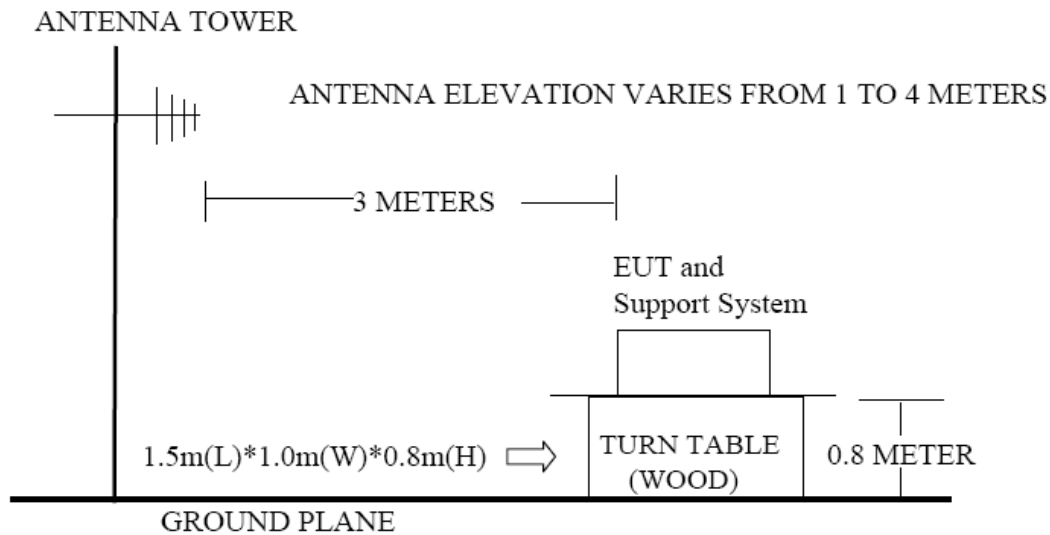
15.205 Restricted frequency band

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)

15.209 Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/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(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

8.2. Block Diagram of Test setup



8.3. Test Procedure

EUT was placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

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

The bandwidth of the Spectrum's VBW is set at 1MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz

The frequency range from 30MHz to 10th harmonic (25GHz) are checked.

8.4. Test Result

30MHz—25GHz Radiated emissison Test result	
EUT: Bluetooth Speaker	M/N:CSBT22
Power:DC 3.7V	
Test date: 2013-02-24	Test site: 3m Chamber Tested by: Tony Tang
Test mode: Tx Mode	
Pass	

Note: 1、 For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.

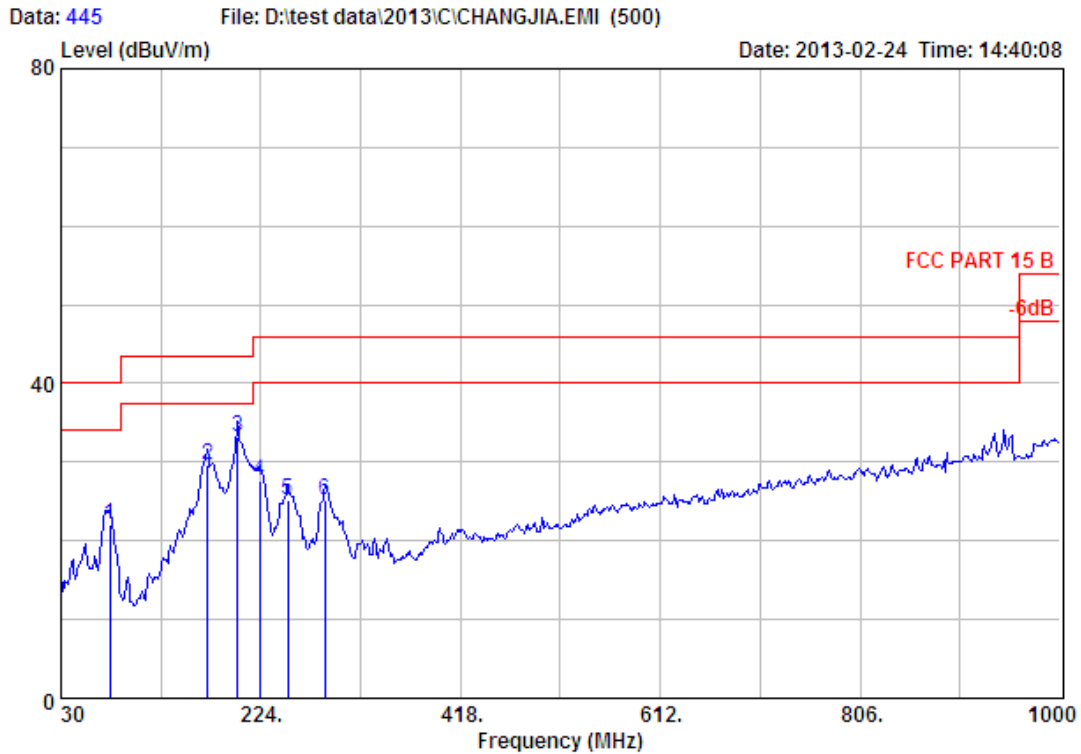
2、 The frequency 2402MHz 、 2441MHz and 2480MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

8.5. Test Data

30 MHz – 1000 MHz

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Site no. : 3m Chamber Data no. : 445
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : GFSK TX 2402MHz

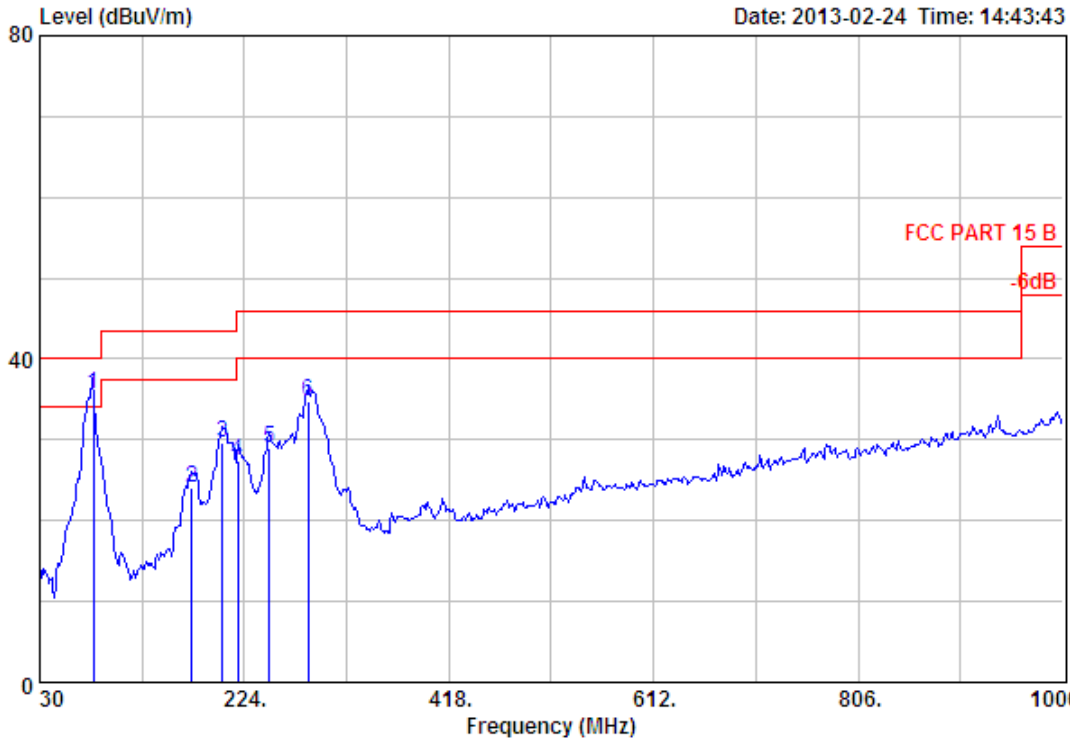
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBUV)	Emission		Margin (dB)	Remark
					Level (dBUV/m)	Limits (dBUV/m)		
1	77.53	6.80	2.83	12.39	22.02	40.00	17.98	QP
2	172.59	9.07	4.05	16.56	29.68	43.50	13.82	QP
3	201.69	7.79	4.30	21.17	33.26	43.50	10.24	QP
4	223.03	9.37	4.47	13.80	27.64	46.00	18.36	QP
5	250.19	11.82	4.84	8.55	25.21	46.00	20.79	QP
6	286.08	12.59	5.14	7.47	25.20	46.00	20.80	QP

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Data: 446 File: D:\test data\2013\C\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 14:43:43

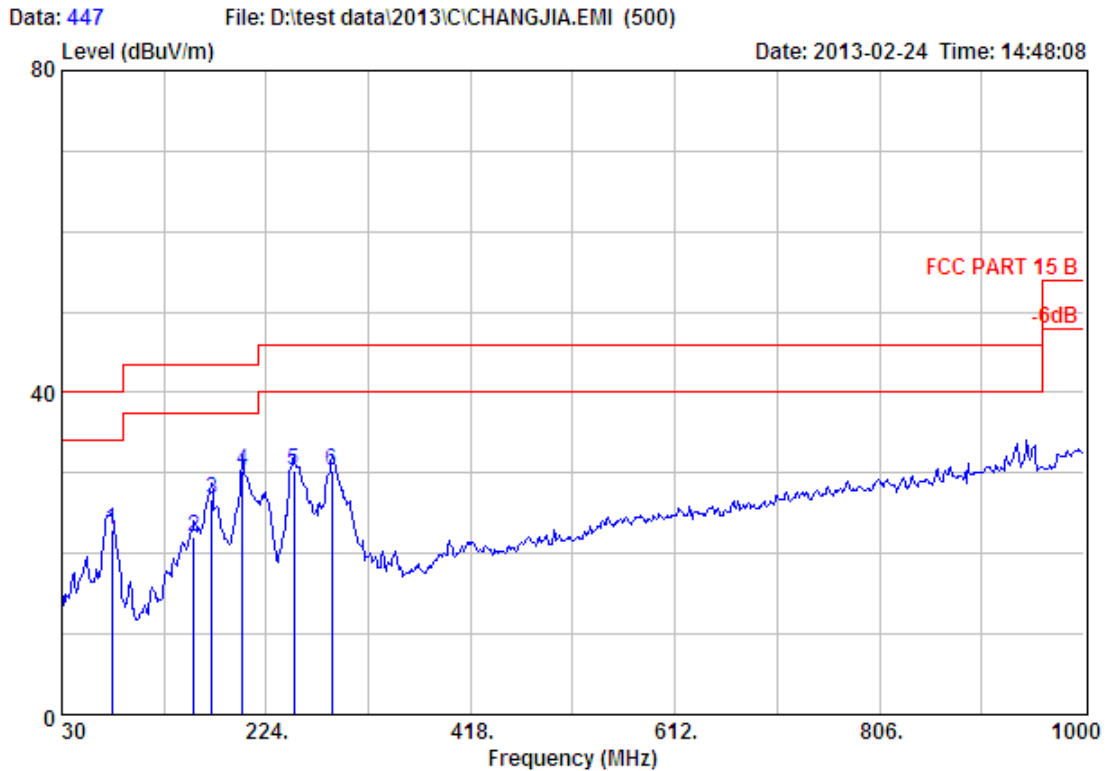


Site no. : 3m Chamber Data no. : 446
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : GFSK TX 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reamark (dB)
1	80.56	7.07	2.84	25.70	35.61	40.00	4.39	QP
2	174.53	8.99	4.08	10.93	24.00	43.50	19.50	QP
3	203.63	7.87	4.29	17.55	29.71	43.50	13.79	QP
4	218.18	9.00	4.41	14.00	27.41	46.00	18.59	QP
5	247.28	11.36	4.78	12.80	28.94	46.00	17.06	QP
6	284.14	12.52	5.12	17.01	34.65	46.00	11.35	QP

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```

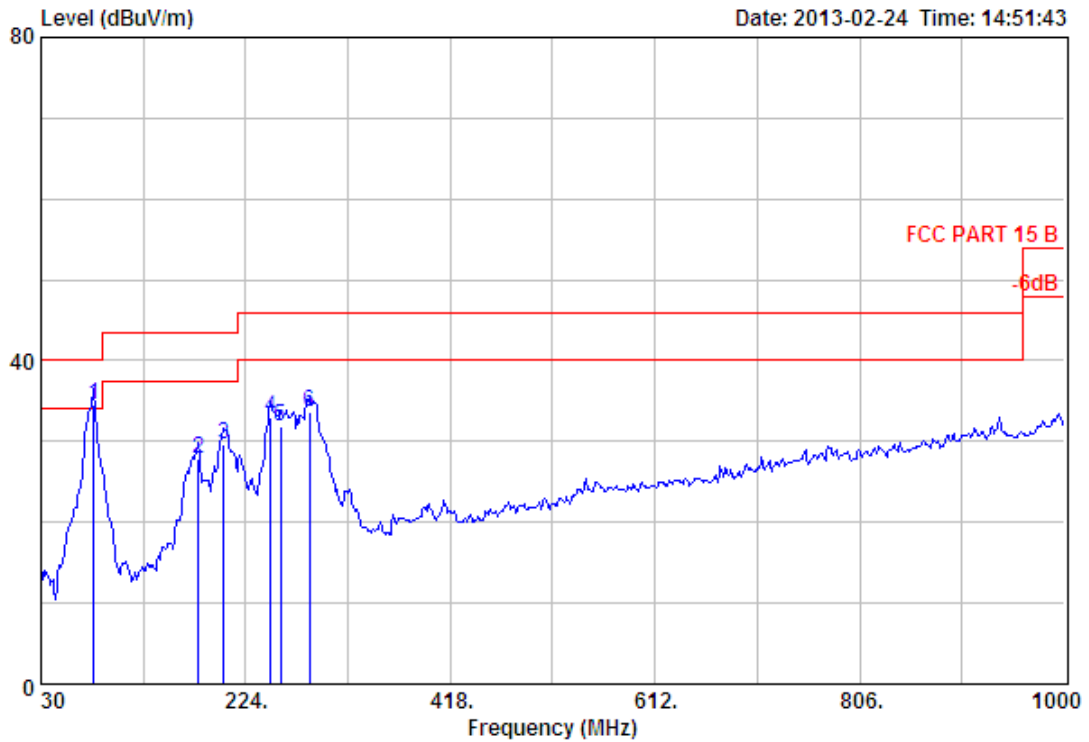
Site no.       : 3m Chamber                Data no. : 447
Dis. / Ant.   : 3m 27137                  Ant. pol. : VERTICAL
Limit        : FCC PART 15 B
Env. / Ins.   : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer     : Tony
EUT          : Bluetooth Speaker
Power        : DC 3.7V
M/N         : CSBT22
Test Mode    : GFSK TX 2441MHz
    
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark (dB)
1	77.53	6.80	2.83	13.39	23.02	40.00	16.98	QP
2	155.13	10.67	3.82	7.63	22.12	43.50	21.38	QP
3	172.59	9.07	4.05	13.56	26.68	43.50	16.82	QP
4	201.69	7.79	4.30	18.17	30.26	43.50	13.24	QP
5	250.19	11.82	4.84	13.55	30.21	46.00	15.79	QP
6	286.08	12.59	5.14	12.47	30.20	46.00	15.80	QP

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Data: 448 File: D:\test data\2013\C\CHANGJIA.EMI (500)



Site no. : 3m Chamber Data no. : 448
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : GFSK TX 2441MHz

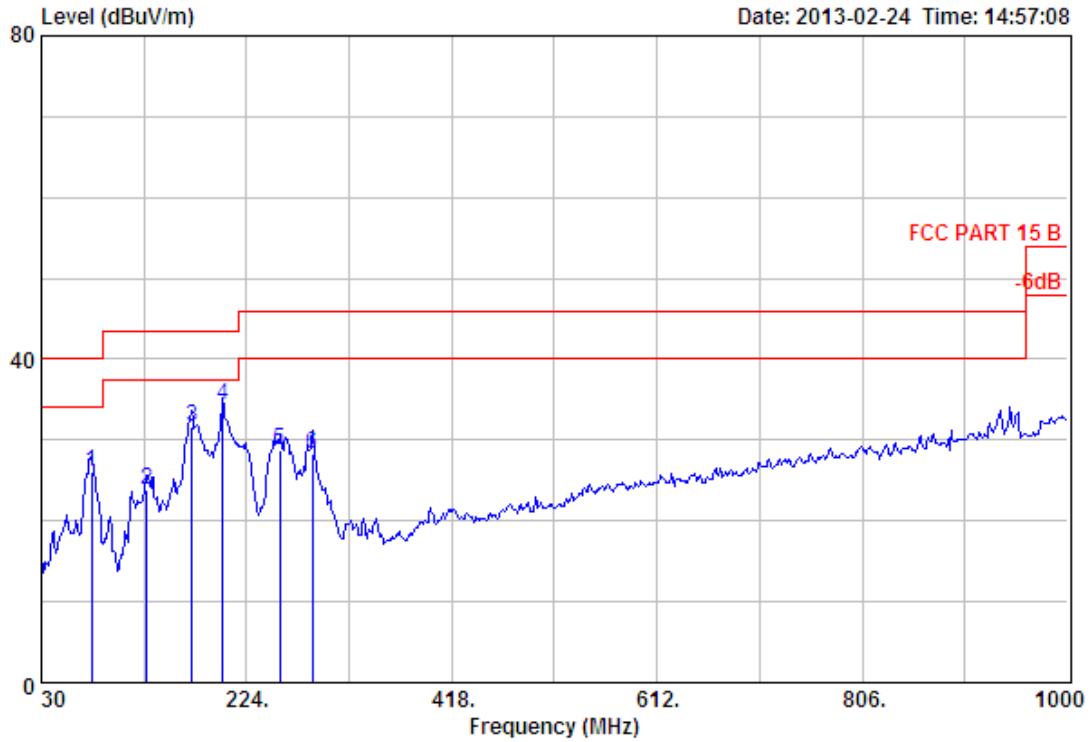
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Emission Reading (dBUV)	Emission			Reamark (dB)
					Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	
1	80.44	7.07	2.84	24.67	34.58	40.00	5.42	QP
2	179.38	8.96	4.11	14.76	27.83	43.50	15.67	QP
3	203.63	7.87	4.29	17.55	29.71	43.50	13.79	QP
4	247.28	11.36	4.78	16.80	32.94	46.00	13.06	QP
5	256.98	12.63	4.91	14.42	31.96	46.00	14.04	QP
6	284.14	12.52	5.12	16.01	33.65	46.00	12.35	QP

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Data: 449 File: D:\test data\2013\IC\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 14:57:08



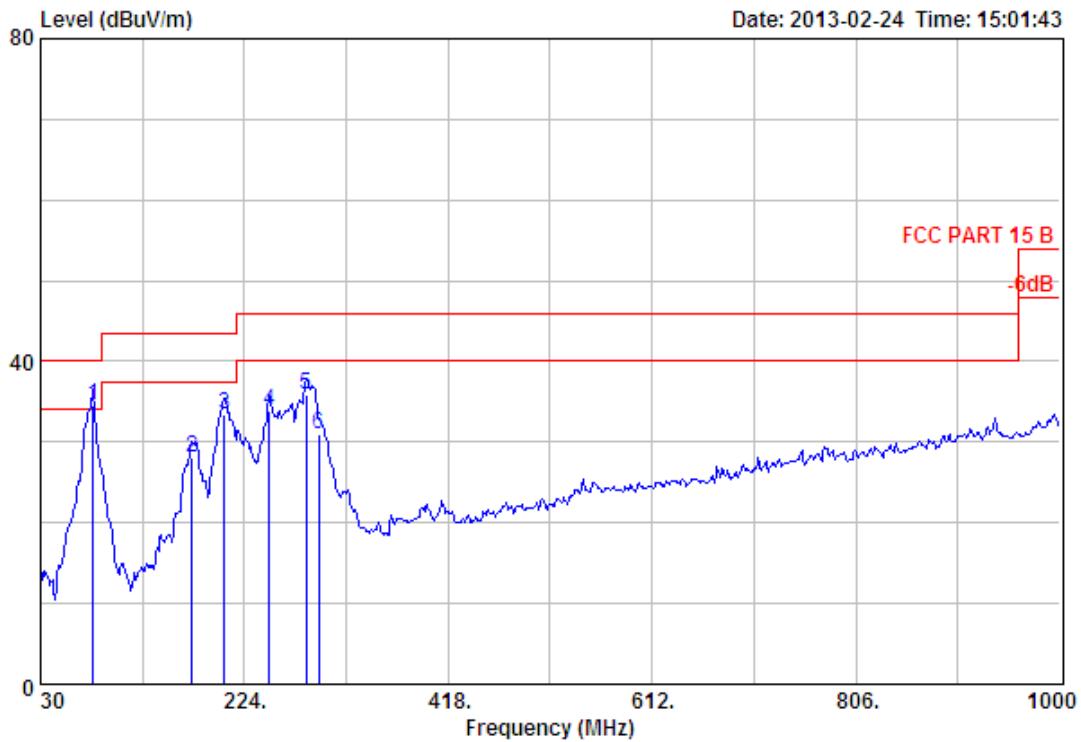
Site no. : 3m Chamber Data no. : 449
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : GFSK TX 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission		Margin (dB)	Remark (dB)
					Level (dBuV/m)	Limits (dBuV/m)		
1	77.53	6.80	2.83	16.39	26.02	40.00	13.98	QP
2	129.91	11.32	3.49	8.92	23.73	43.50	19.77	QP
3	172.59	9.07	4.05	18.56	31.68	43.50	11.82	QP
4	201.69	7.79	4.30	22.17	34.26	43.50	9.24	QP
5	255.04	12.41	4.87	11.41	28.69	46.00	17.31	QP
6	286.08	12.59	5.14	10.47	28.20	46.00	17.80	QP

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Data: 450 File: D:\test data\2013\C\CHANGJIA.EMI (500)



```

Site no.       : 3m Chamber                Data no. : 450
Dis. / Ant.   : 3m 27137                  Ant. pol. : HORIZONTAL
Limit         : FCC PART 15 B
Env. / Ins.   : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer      : Tony
EUT           : Bluetooth Speaker
Power         : DC 3.7V
M/N           : CSBT22
Test Mode     : GFSK TX 2480MHz
    
```

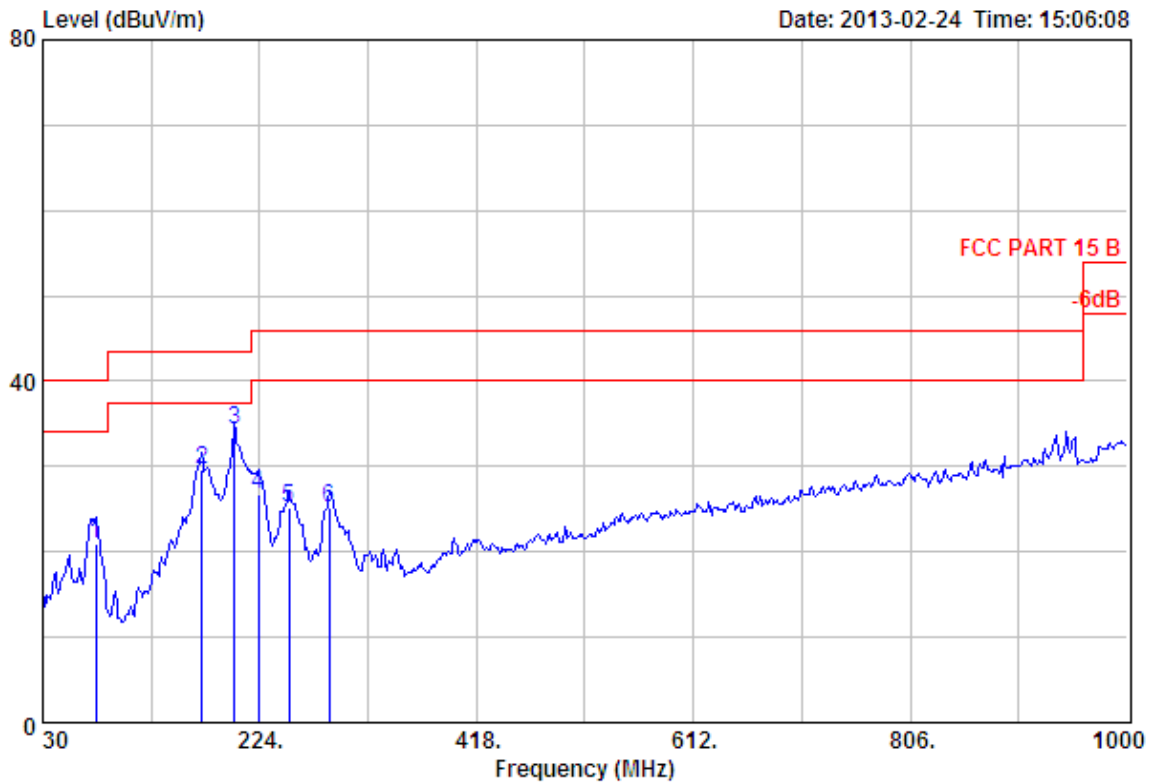
	Ant.		Cable		Emission			
	Freq. (MHz)	Factor (dB/m)	Loss (dB)	Reading (dBuV)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark (dB)
1	80.44	7.07	2.84	24.67	34.58	40.00	5.42	QP
2	174.53	8.99	4.08	14.93	28.00	43.50	15.50	QP
3	204.60	7.91	4.30	21.29	33.50	43.50	10.00	QP
4	247.28	11.36	4.78	17.80	33.94	46.00	12.06	QP
5	283.17	12.48	5.12	18.35	35.95	46.00	10.05	QP
6	294.81	12.97	5.21	12.83	31.01	46.00	14.99	QP

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Data: 451 File: D:\test data\2013\C\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 15:06:08



Site no. : 3m Chamber Data no. : 451
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : 8-DPSK TX 2402MHz

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBUV)	Emission		Margin (dB)	Remark (dB)
					Level (dBUV/m)	Limits (dBUV/m)		
1	77.53	6.80	2.83	11.39	21.02	40.00	18.98	QP
2	172.59	9.07	4.05	16.56	29.68	43.50	13.82	QP
3	201.69	7.79	4.30	22.17	34.26	43.50	9.24	QP
4	223.03	9.37	4.47	12.80	26.64	46.00	19.36	QP
5	250.19	11.82	4.84	8.55	25.21	46.00	20.79	QP
6	286.08	12.59	5.14	7.47	25.20	46.00	20.80	QP

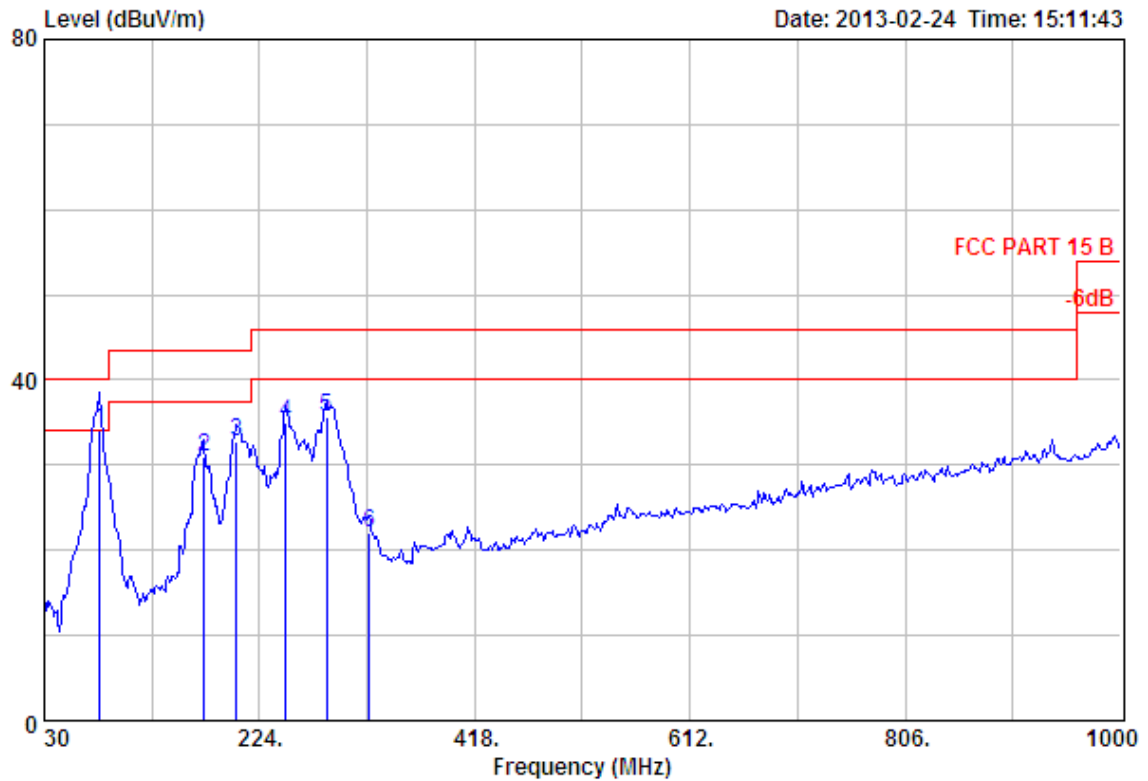
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Data: 452

File: D:\test data\2013\IC\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 15:11:43



```

Site no.       : 3m Chamber                Data no. : 452
Dis. / Ant.   : 3m 27137                 Ant. pol.: HORIZONTAL
Limit         : FCC PART 15 B
Env. / Ins.   : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer      : Tony
EUT           : Bluetooth Speaker
Power         : DC 3.7V
M/N           : CSBT22
Test Mode     : 8-DPSK TX 2402MHz
    
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Emission Reading (dBUV)	Emission			Remark
					Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	
1	80.44	7.07	2.84	24.12	34.03	40.00	5.97	QP
2	174.53	8.99	4.08	17.93	31.00	43.50	12.50	QP
3	203.63	7.87	4.29	20.55	32.71	43.50	10.79	QP
4	247.28	11.36	4.78	18.80	34.94	46.00	11.06	QP
5	284.14	12.52	5.12	18.01	35.65	46.00	10.35	QP
6	322.94	13.65	5.41	3.07	22.13	46.00	23.87	QP

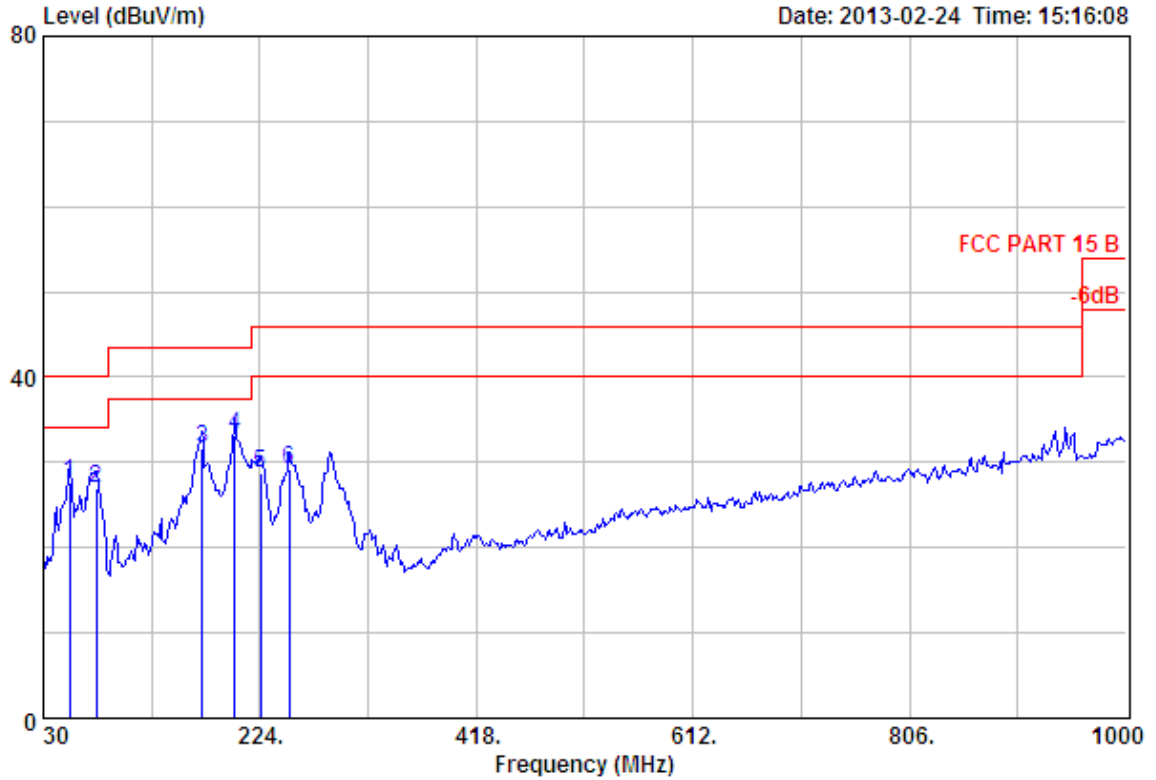
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Data: 453

File: D:\test data\2013\1\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 15:16:08



```

Site no.       : 3m Chamber                Data no. : 453
Dis. / Ant.   : 3m 27137                 Ant. pol. : VERTICAL
Limit         : FCC PART 15 B
Env. / Ins.   : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer      : Tony
EUT           : Bluetooth Speaker
Power         : DC 3.7V
M/N           : CSBT22
Test Mode     : 8-DPSK TX 2441MHz
    
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark (dB)
1	53.28	6.11	2.43	19.17	27.71	40.00	12.29	QP
2	77.53	6.80	2.83	17.39	27.02	40.00	12.98	QP
3	172.59	9.07	4.05	18.56	31.68	43.50	11.82	QP
4	201.69	7.79	4.30	21.17	33.26	43.50	10.24	QP
5	224.97	9.48	4.51	14.65	28.64	46.00	17.36	QP
6	250.19	11.82	4.84	12.55	29.21	46.00	16.79	QP

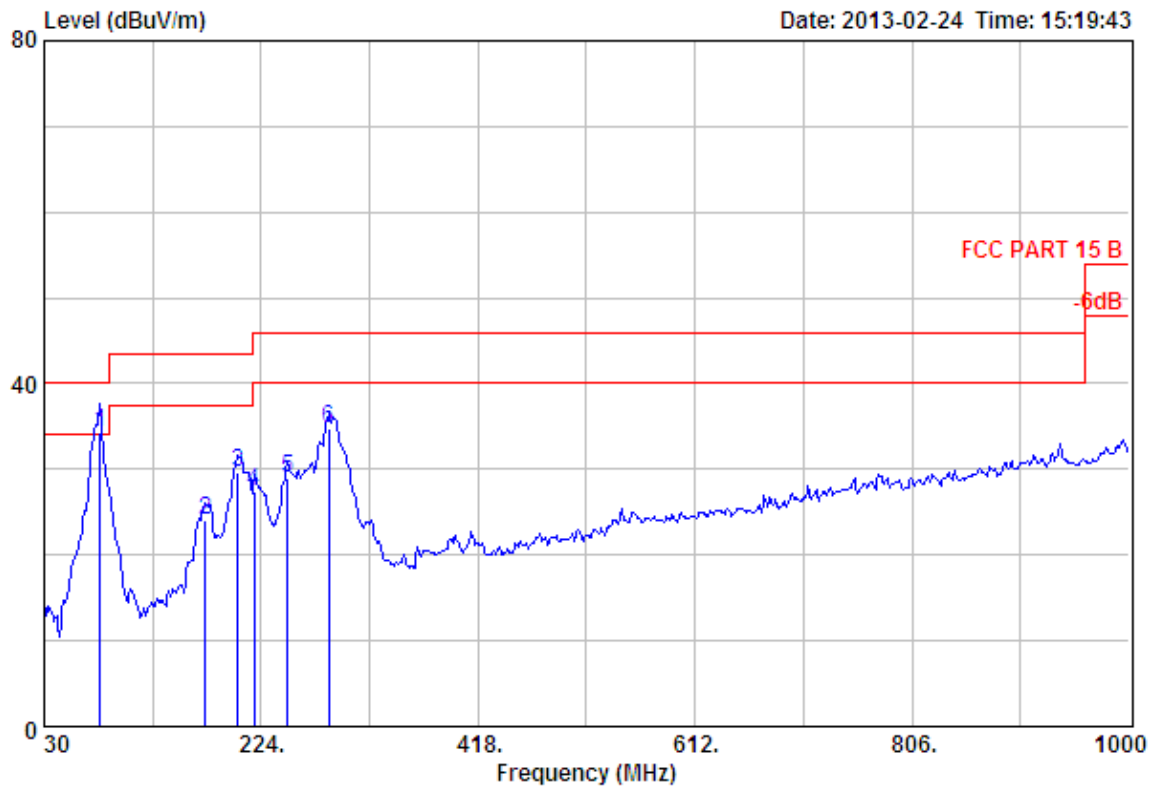
EST Technology

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Data: 454

File: D:\test data\2013\IC\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 15:19:43



```

Site no.       : 3m Chamber                Data no. : 454
Dis. / Ant.    : 3m 27137                 Ant. pol. : HORIZONTAL
Limit          : FCC PART 15 B
Env. / Ins.    : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer       : Tony
EUT            : Bluetooth Speaker
Power          : DC 3.7V
M/N            : CSBT22
Test Mode      : 8-DPSK TX 2441MHz
    
```

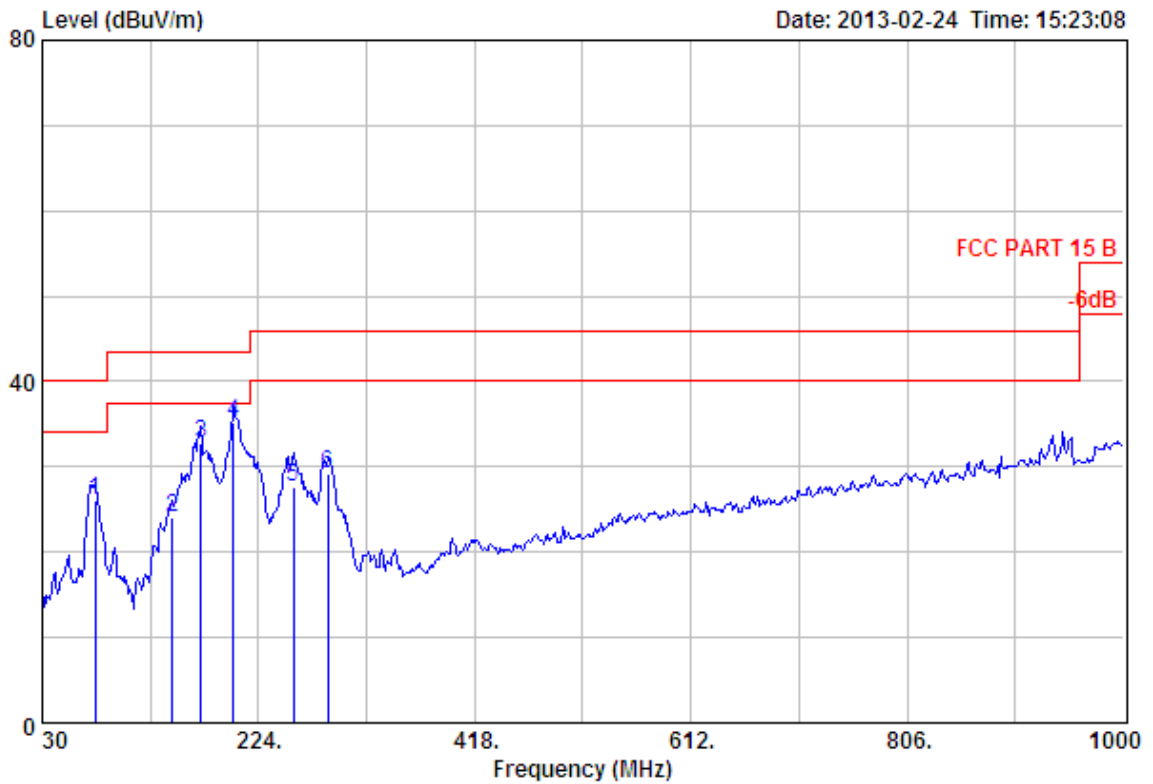
	Ant.		Cable		Emission			
	Freq. (MHz)	Factor (dB/m)	Loss (dB)	Reading (dBuV)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark (dB)
1	80.44	7.07	2.84	24.32	34.23	40.00	5.77	QP
2	174.53	8.99	4.08	10.93	24.00	43.50	19.50	QP
3	203.63	7.87	4.29	17.55	29.71	43.50	13.79	QP
4	218.18	9.00	4.41	14.00	27.41	46.00	18.59	QP
5	247.28	11.36	4.78	12.80	28.94	46.00	17.06	QP
6	284.14	12.52	5.12	17.01	34.65	46.00	11.35	QP

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Data: 455 File: D:\test data\2013\C\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 15:23:08



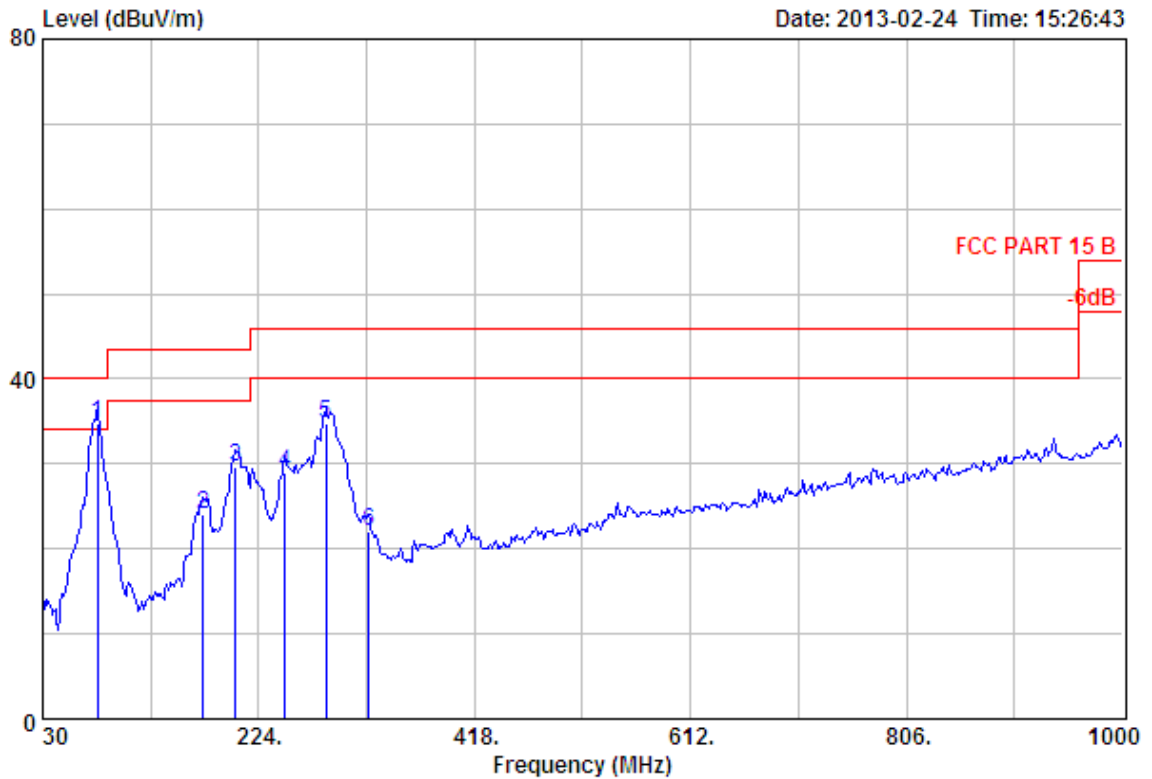
Site no. : 3m Chamber Data no. : 455
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : 8-DPSK TX 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark (dB)
1	77.53	6.80	2.83	16.39	26.02	40.00	13.98	QP
2	146.40	11.15	3.74	9.19	24.08	43.50	19.42	QP
3	172.59	9.07	4.05	19.56	32.68	43.50	10.82	QP
4	201.69	7.79	4.30	23.17	35.26	43.50	8.24	QP
5	255.04	12.41	4.87	10.41	27.69	46.00	18.31	QP
6	286.08	12.59	5.14	11.47	29.20	46.00	16.80	QP

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Data: 456 File: D:\test data\2013\C\CHANGJIA.EMI (500)



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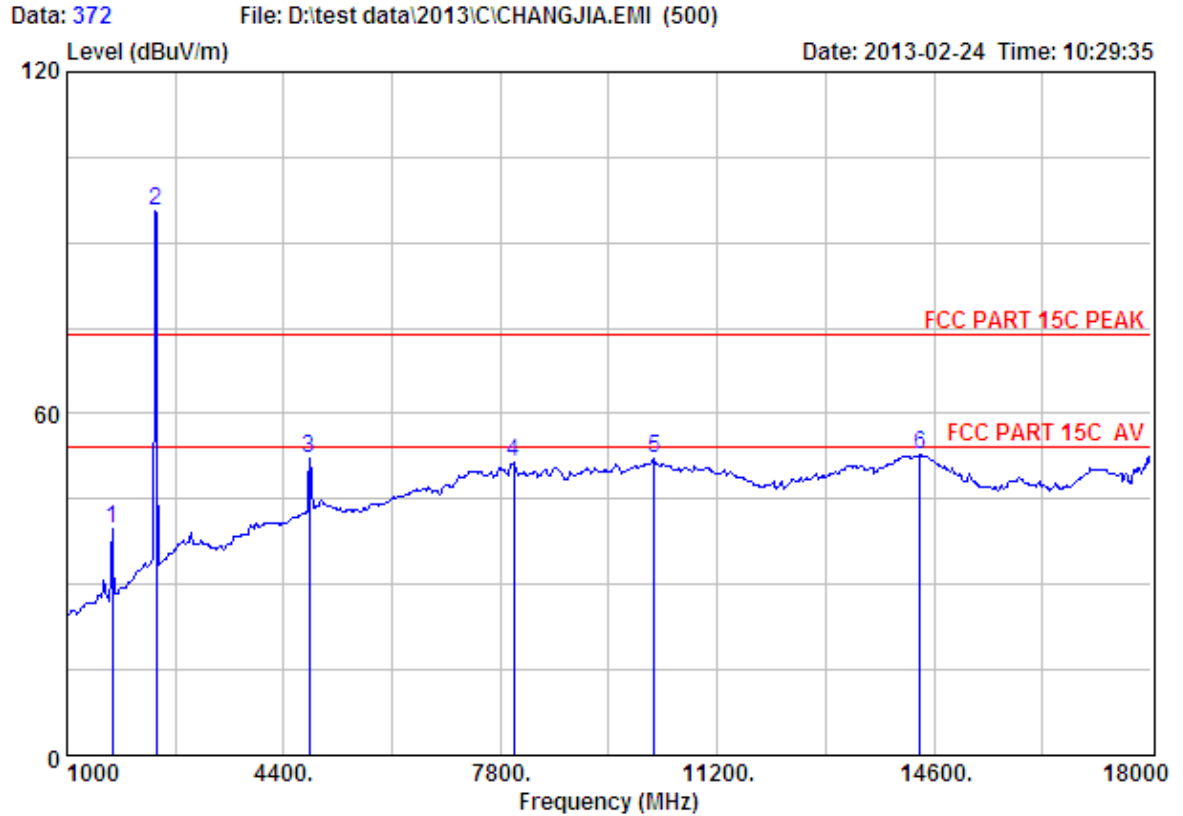
Site no.      : 3m Chamber                Data no. : 456
Dis. / Ant.   : 3m 27137                 Ant. pol. : HORIZONTAL
Limit        : FCC PART 15 B
Env. / Ins.   : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer     : Tony
EUT          : Bluetooth Speaker
Power        : DC 3.7V
M/N          : CSBT22
Test Mode    : 8-DPSK TX 2480MHz
    
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Emission Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark (dB)
1	79.47	6.98	2.84	24.98	34.80	40.00	5.20	QP
2	174.53	8.99	4.08	10.93	24.00	43.50	19.50	QP
3	203.63	7.87	4.29	17.55	29.71	43.50	13.79	QP
4	247.28	11.36	4.78	12.80	28.94	46.00	17.06	QP
5	284.14	12.52	5.12	17.01	34.65	46.00	11.35	QP
6	322.94	13.65	5.41	3.07	22.13	46.00	23.87	QP

1000 MHz – 18000MHz

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Site no. : 3m Chamber Data no. : 372
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : GFSK TX 2402MHz

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBUV/m)	Margin (dB)	Remark
				Reading (dBUV)	Level (dBUV/m)			
1	24.73	5.13	34.47	44.46	39.85	74.00	34.15	Peak
2	27.61	6.62	34.18	95.48	95.53	74.00	-21.53	Peak
3	31.25	11.77	31.81	40.97	52.18	74.00	21.82	Peak
4	37.01	11.40	31.22	34.16	51.35	74.00	22.65	Peak
5	38.48	11.47	32.17	34.25	52.03	74.00	21.97	Peak
6	41.77	10.92	32.88	32.91	52.72	74.00	21.28	Peak

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

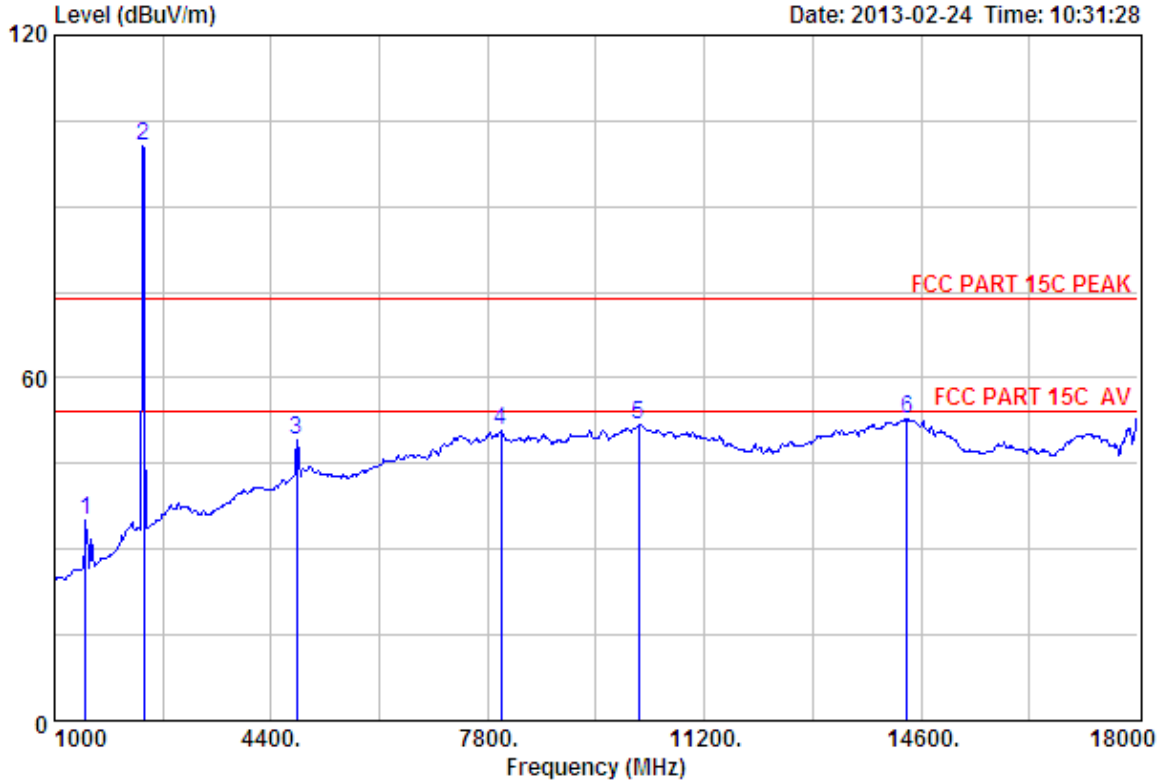
EST Technology

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Data: 373

File: D:\test data\2013\C\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 10:31:28



Site no. : 3m Chamber Data no. : 373
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : GFSK TX 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1493.00	24.93	4.32	34.45	40.37	35.17	74.00	38.83	Peak
2	2402.00	27.61	6.62	34.18	100.70	100.75	74.00	-26.75	Peak
3	4804.00	31.25	11.77	31.81	38.02	49.23	74.00	24.77	Peak
4	8004.00	37.01	11.40	31.22	33.66	50.85	74.00	23.15	Peak
5	10163.00	38.39	11.50	32.08	33.91	51.72	74.00	22.28	Peak
6	14379.00	41.77	10.92	32.88	32.95	52.76	74.00	21.24	Peak

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

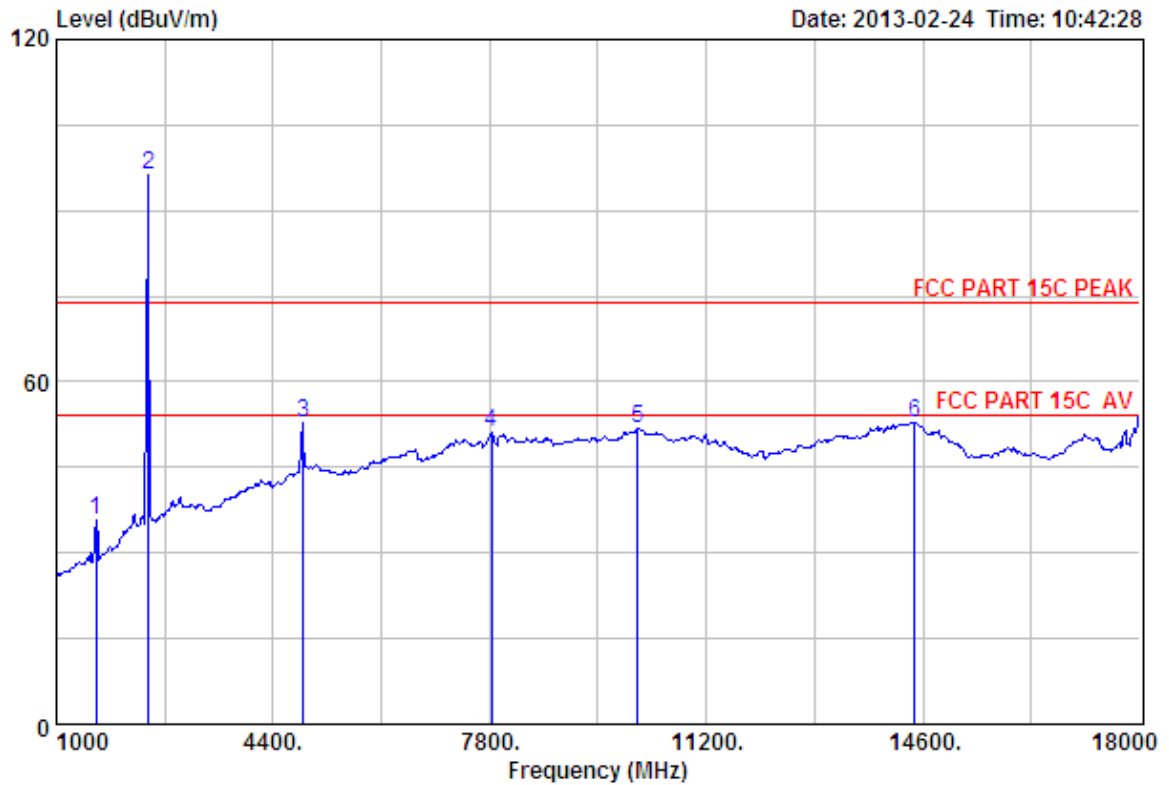
EST Technology

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Data: 376

File: D:\test data\2013\C\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 10:42:28



```

Site no.       : 3m Chamber                Data no. : 376
Dis. / Ant.   : 3m ANT 1-18G              Ant. pol.: HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer      : Tony
EUT           : Bluetooth Speaker
Power         : DC 3.7V
M/N           : CSBT22
Test Mode     : GFSK TX 2441MHz
    
```

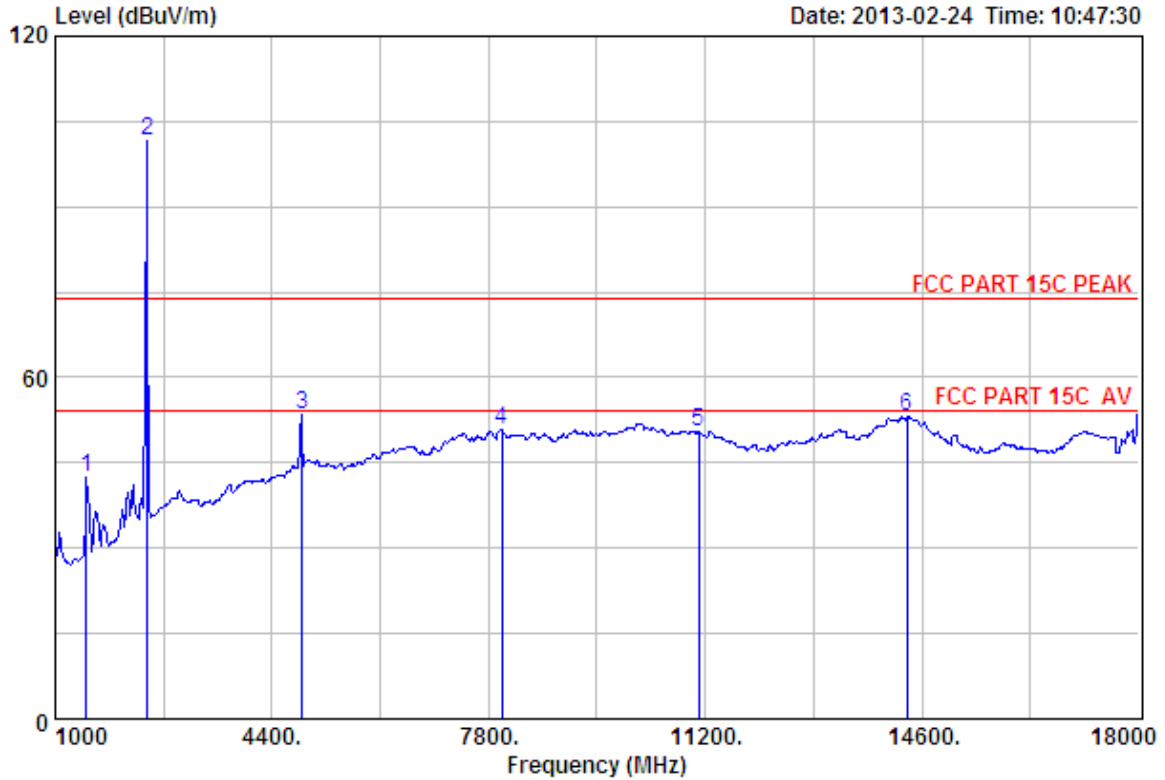
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1629.00	24.82	4.82	34.46	40.68	35.86	74.00	38.14	Peak
2	2441.00	27.60	6.67	34.12	96.27	96.42	74.00	-22.42	Peak
3	4882.00	31.37	12.07	31.90	41.40	52.94	74.00	21.06	Peak
4	7834.00	36.68	11.47	31.40	34.36	51.11	74.00	22.89	Peak
5	10129.00	38.33	11.52	32.01	34.08	51.92	74.00	22.08	Peak
6	14464.00	41.85	10.93	32.96	33.09	52.91	74.00	21.09	Peak

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

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Data: 377 File: D:\test data\2013\CI\CHANGJIA.EMI (500)



Site no. : 3m Chamber Data no. : 377
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : GFSK TX 2441MHz

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark	
				Reading (dBuV)	Level (dBuV/m)				
1	1493.00	24.93	4.32	34.45	47.62	42.42	74.00	31.58	Peak
2	2441.00	27.60	6.67	34.12	101.57	101.72	74.00	-27.72	Peak
3	4882.00	31.37	12.07	31.90	41.84	53.38	74.00	20.62	Peak
4	8004.00	37.01	11.40	31.22	33.64	50.83	74.00	23.17	Peak
5	11098.00	39.45	11.22	33.84	33.79	50.62	74.00	23.38	Peak
6	14362.00	41.76	10.92	32.93	33.25	53.00	74.00	21.00	Peak

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

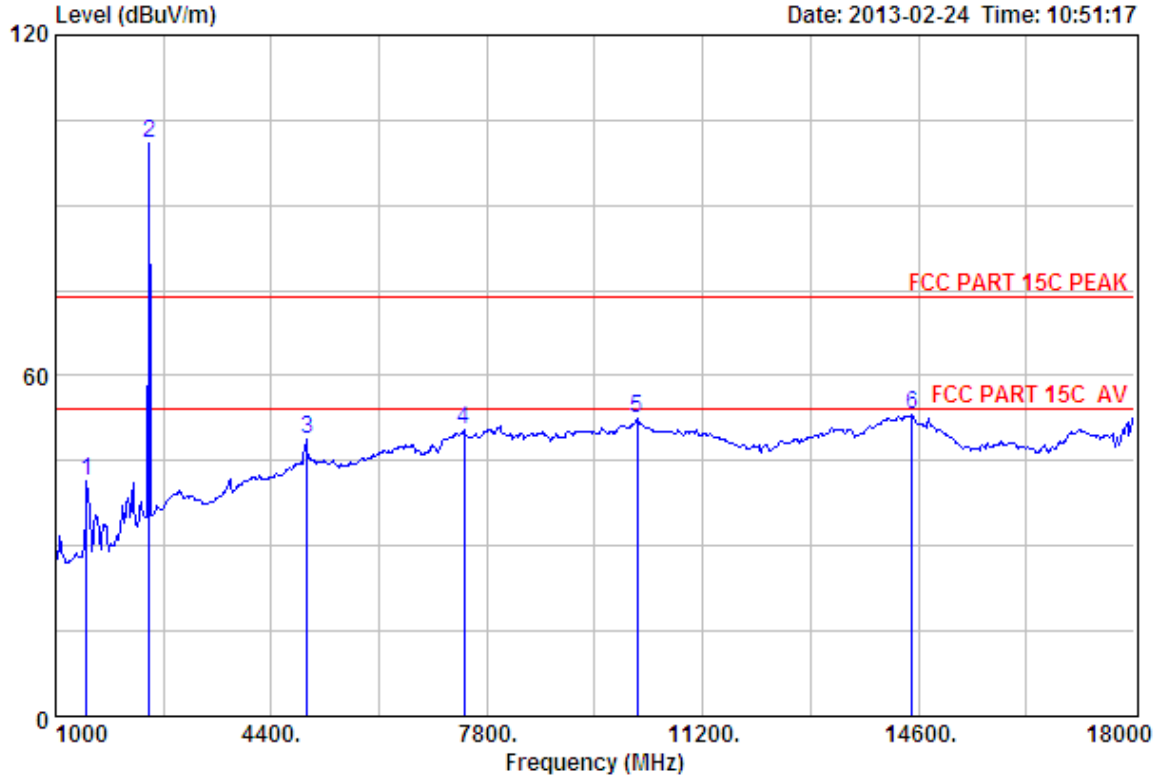
EST Technology

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Data: 378

File: D:\test data\2013\1\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 10:51:17



```

Site no.       : 3m Chamber                Data no.  : 378
Dis. / Ant.   : 3m ANT 1-18G             Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer      : Tony
EUT           : Bluetooth Speaker
Power         : DC 3.7V
M/N           : CSBT22
Test Mode     : GFSK TX 2480MHz
    
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	1493.00	24.93	4.32	34.45	46.72	41.52	74.00	32.48	Peak
2	2480.00	27.58	6.71	34.03	100.54	100.80	74.00	-26.80	Peak
3	4960.00	31.49	12.44	31.97	36.70	48.66	74.00	25.34	Peak
4	7443.00	36.54	11.61	31.93	34.16	50.38	74.00	23.62	Peak
5	10163.00	38.39	11.50	32.08	34.53	52.34	74.00	21.66	Peak
6	14498.00	41.88	10.93	33.08	33.47	53.20	74.00	20.80	Peak

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

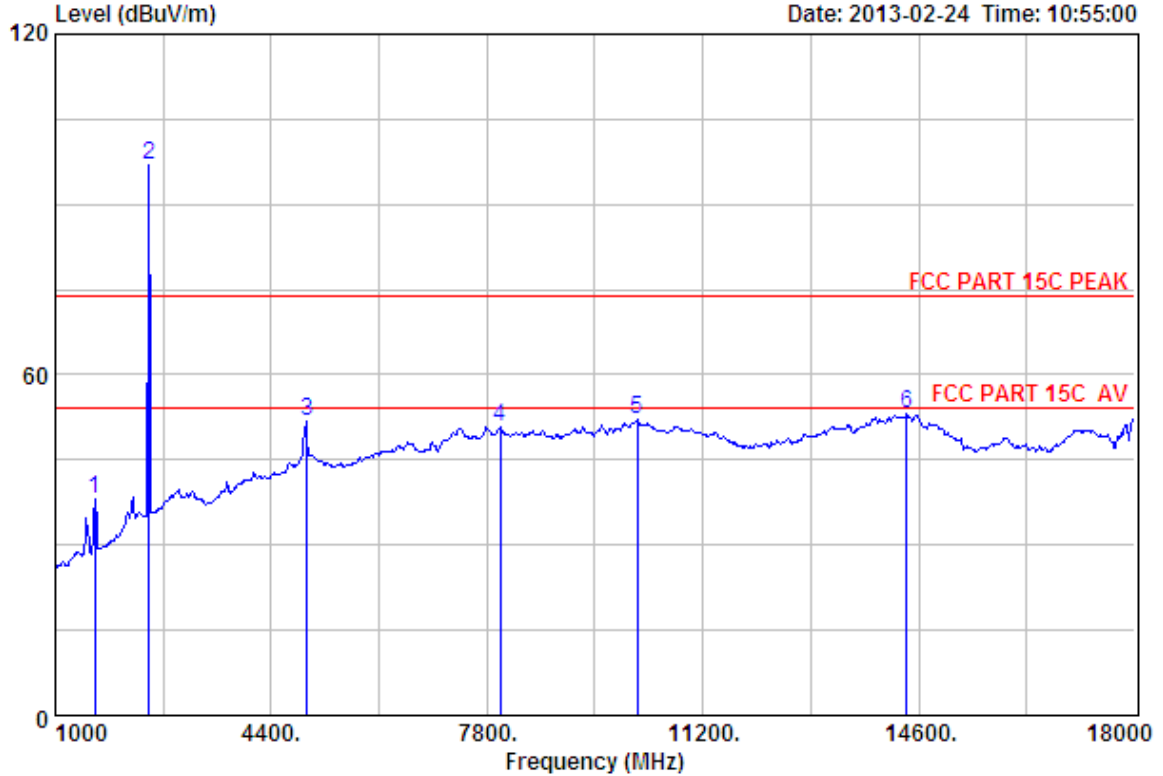
EST Technology

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Data: 379

File: D:\test data\2013\C\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 10:55:00



Site no. : 3m Chamber Data no. : 379
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : GFSK TX 2480MHz

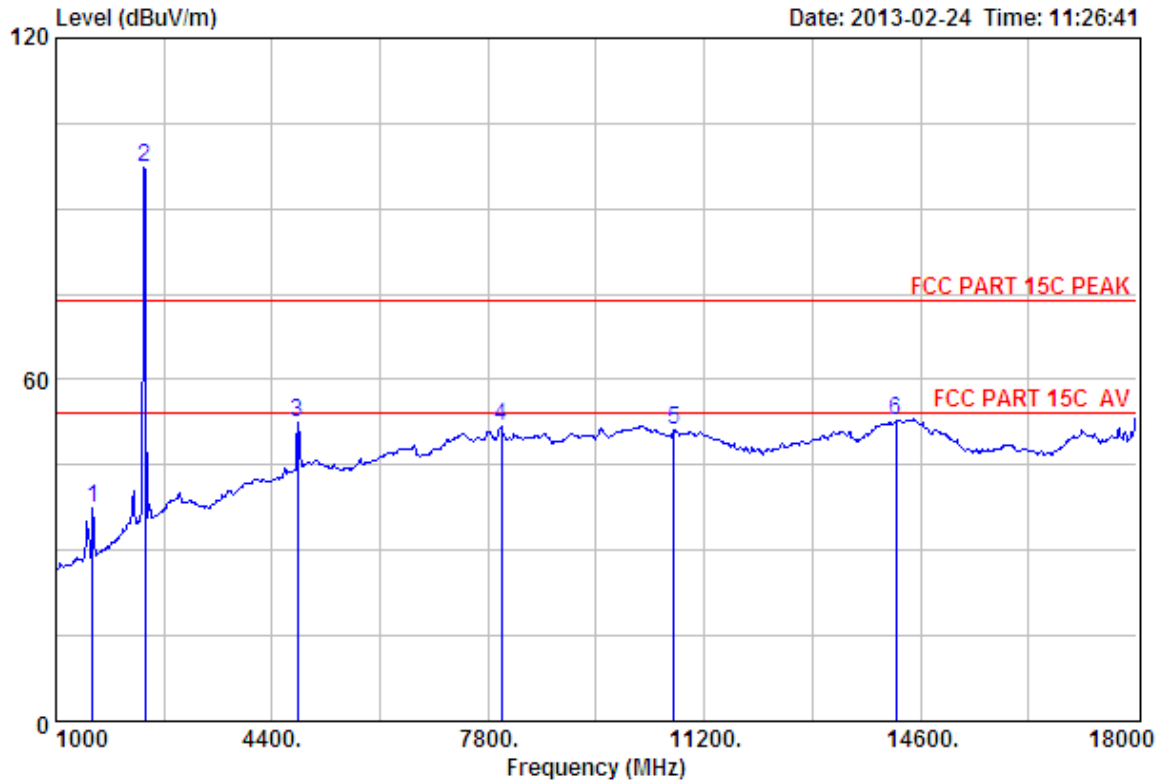
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	1629.00	24.82	4.82	34.46	42.78	37.96	74.00	36.04	Peak
2	2480.00	27.58	6.71	34.03	96.53	96.79	74.00	-22.79	Peak
3	4960.00	31.49	12.44	31.97	39.78	51.74	74.00	22.26	Peak
4	8004.00	37.01	11.40	31.22	33.61	50.80	74.00	23.20	Peak
5	10163.00	38.39	11.50	32.08	34.47	52.28	74.00	21.72	Peak
6	14413.00	41.80	10.92	32.78	33.07	53.01	74.00	20.99	Peak

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

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Data: 388 File: D:\test data\2013\C\CHANGJIA.EMI (500)



```

Site no.       : 3m Chamber                Data no. : 388
Dis. / Ant.   : 3m ANT 1-18G             Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer      : Tony
EUT           : Bluetooth Speaker
Power         : DC 3.7V
M/N           : CSBT22
Test Mode     : 8-DPSK TX 2402MHz
    
```

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission			Margin (dB)	Remark
				Reading (dBUV)	Level (dBUV/m)	Limits (dBUV/m)		
1	24.86	4.63	34.46	42.54	37.57	74.00	36.43	Peak
2	27.61	6.62	34.18	97.31	97.36	74.00	-23.36	Peak
3	31.25	11.77	31.81	41.32	52.53	74.00	21.47	Peak
4	37.01	11.40	31.22	34.67	51.86	74.00	22.14	Peak
5	39.22	11.30	33.14	33.65	51.03	74.00	22.97	Peak
6	41.64	10.91	33.34	33.73	52.94	74.00	21.06	Peak

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

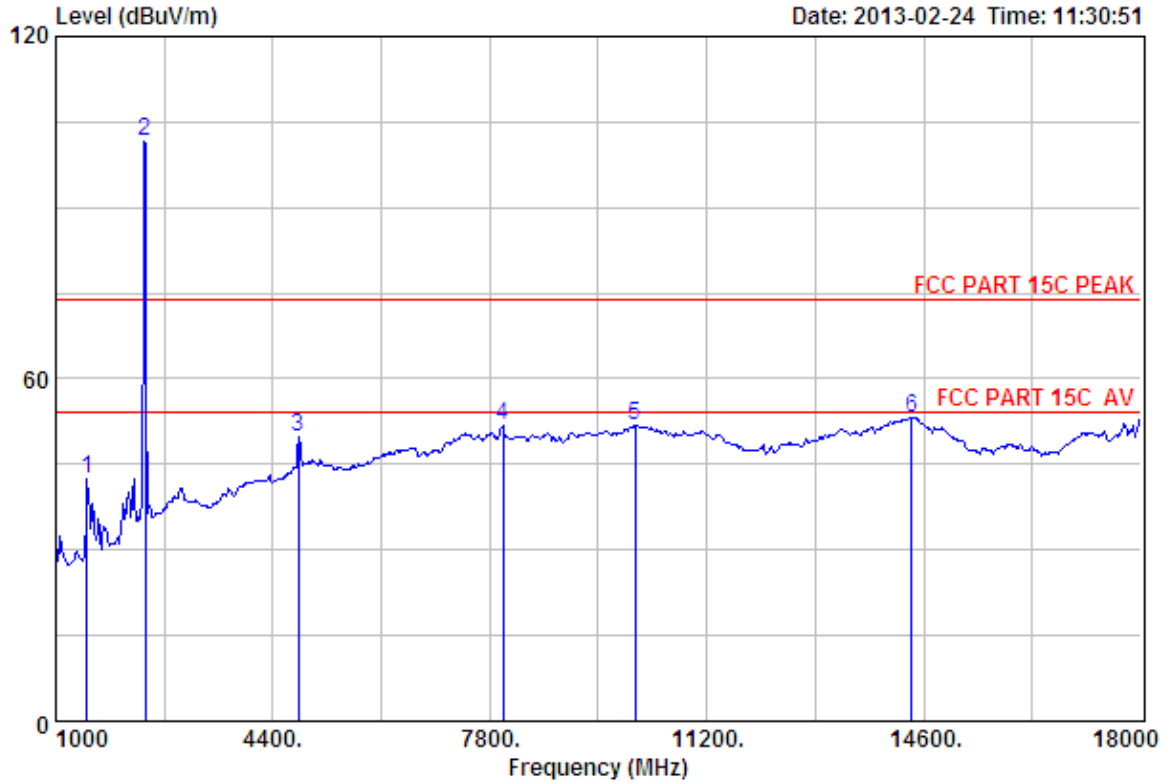
EST Technology

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Data: 389

File: D:\test data\2013\IC\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 11:30:51



```

Site no.       : 3m Chamber                Data no. : 389
Dis. / Ant.    : 3m ANT 1-18G             Ant. pol. : VERTICAL
Limit          : FCC PART 15C PEAK
Env. / Ins.    : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer       : Tony
EUT            : Bluetooth Speaker
Power          : DC 3.7V
M/N            : CSBT22
Test Mode      : 8-DPSK TX 2402MHz
    
```

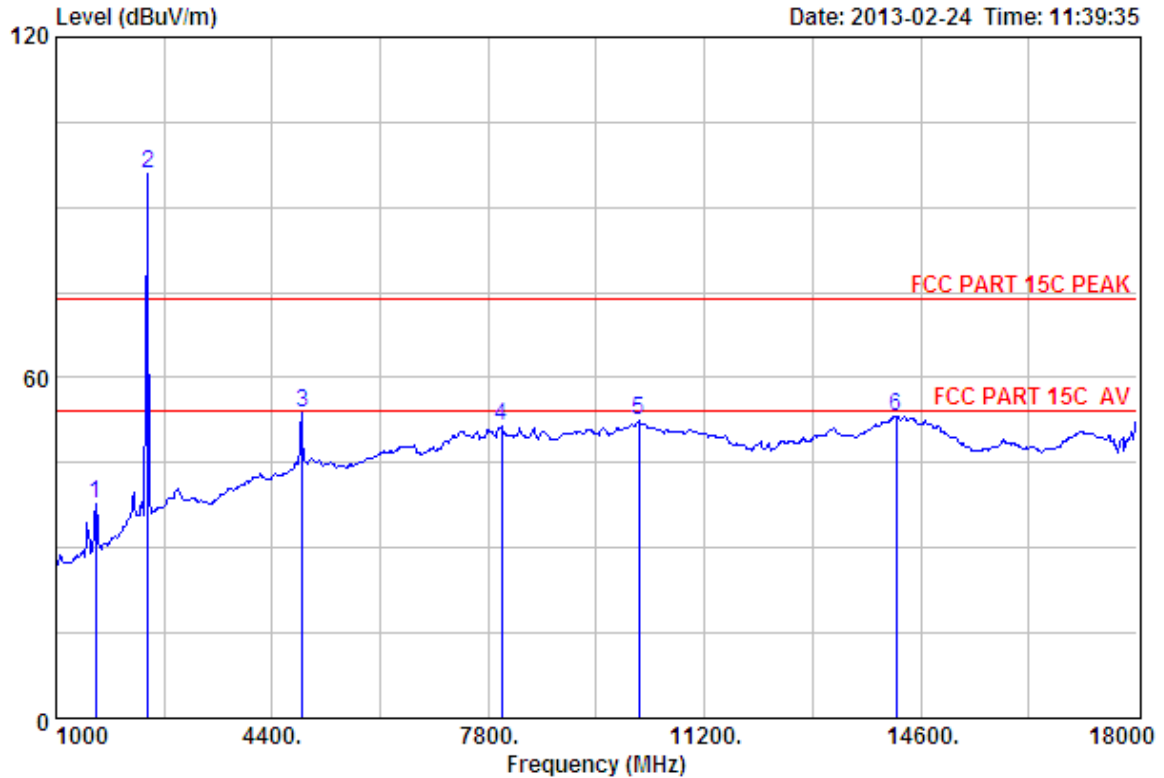
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	1493.00	24.93	4.32	34.45	47.73	42.53	74.00	31.47	Peak
2	2402.00	27.61	6.62	34.18	101.59	101.64	74.00	-27.64	Peak
3	4804.00	31.25	11.77	31.81	38.74	49.95	74.00	24.05	Peak
4	8004.00	37.01	11.40	31.22	34.67	51.86	74.00	22.14	Peak
5	10078.00	38.24	11.54	31.92	33.96	51.82	74.00	22.18	Peak
6	14413.00	41.80	10.92	32.78	33.26	53.20	74.00	20.80	Peak

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

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Data: 392 File: D:\test data\2013\1\CHANGJIA.EMI (500) Date: 2013-02-24 Time: 11:39:35



Site no. : 3m Chamber Data no. : 392
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : 8-DPSK TX 2441MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1629.00	24.82	4.82	34.46	42.61	37.79	74.00	36.21	Peak
2	2441.00	27.60	6.67	34.12	95.64	95.79	74.00	-21.79	Peak
3	4882.00	31.37	12.07	31.90	42.32	53.86	74.00	20.14	Peak
4	8004.00	37.01	11.40	31.22	34.38	51.57	74.00	22.43	Peak
5	10163.00	38.39	11.50	32.08	34.55	52.36	74.00	21.64	Peak
6	14209.00	41.64	10.91	33.34	33.95	53.16	74.00	20.84	Peak

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

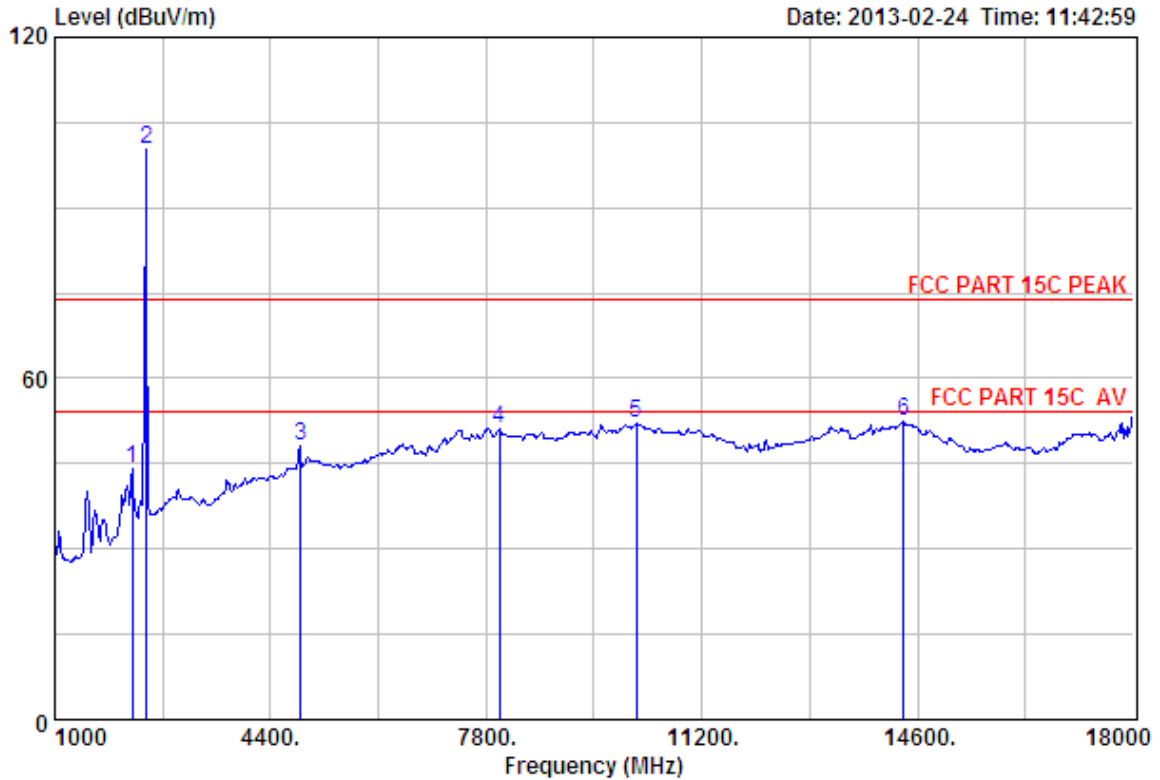
EST Technology

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Data: 393

File: D:\test data\2013\CI\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 11:42:59



Site no. : 3m Chamber Data no. : 393
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : 8-DPSK TX 2441MHz

	Ant.	Cable	Amp	Emission					
Freq. (MHz)	Factor (dB/m)	Loss (dB)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark	
1	27.81	6.43	34.30	44.32	44.26	74.00	29.74	Peak	
2	27.60	6.67	34.12	100.03	100.18	74.00	-26.18	Peak	
3	31.37	12.07	31.90	36.60	48.14	74.00	25.86	Peak	
4	37.01	11.40	31.22	34.10	51.29	74.00	22.71	Peak	
5	38.39	11.50	32.08	34.24	52.05	74.00	21.95	Peak	
6	41.77	10.92	32.88	32.63	52.44	74.00	21.56	Peak	

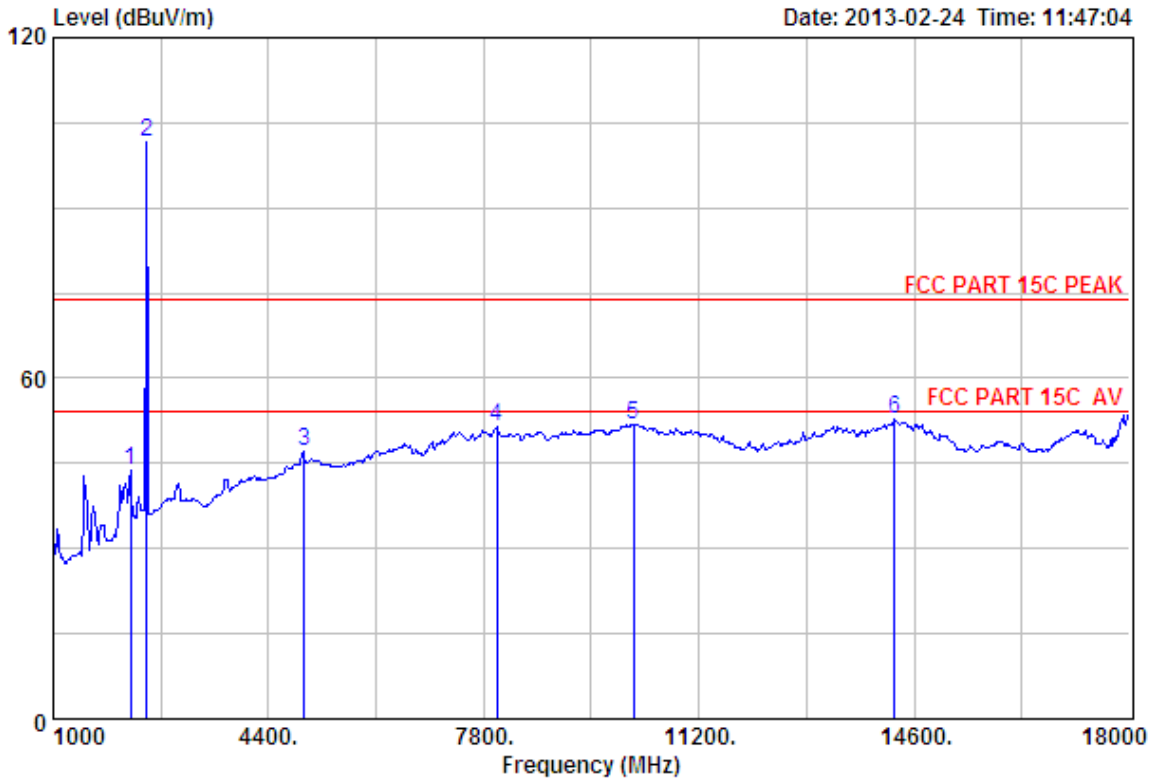
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

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Data: 394 File: D:\test data\2013\C\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 11:47:04



Site no. : 3m Chamber Data no. : 394
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : 8-DPSK TX 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2224.00	27.81	6.43	34.30	43.69	43.63	74.00	30.37	Peak
2	2480.00	27.58	6.71	34.03	101.33	101.59	74.00	-27.59	Peak
3	4960.00	31.49	12.44	31.97	35.25	47.21	74.00	26.79	Peak
4	8004.00	37.01	11.40	31.22	34.19	51.38	74.00	22.62	Peak
5	10163.00	38.39	11.50	32.08	34.09	51.90	74.00	22.10	Peak
6	14294.00	41.71	10.92	33.08	33.13	52.68	74.00	21.32	Peak

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

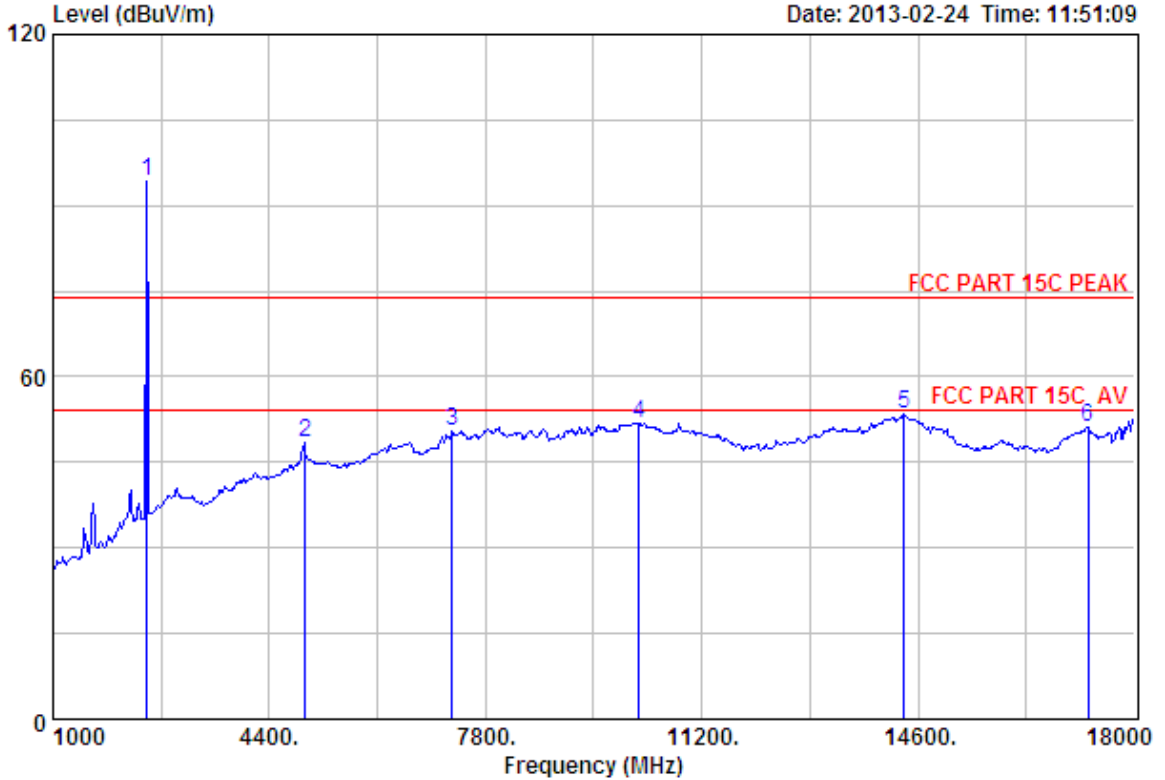
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Data: 395

File: D:\test data\2013\C\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 11:51:09



```

Site no.       : 3m Chamber                      Data no. : 395
Dis. / Ant.   : 3m ANT 1-18G                   Ant. pol. : HORIZONTAL
Limit        : FCC PART 15C PEAK
Env. / Ins.   : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer     : Tony
EUT          : Bluetooth Speaker
Power        : DC 3.7V
M/N          : CSBT22
Test Mode    : 8-DPSK TX 2480MHz
    
```

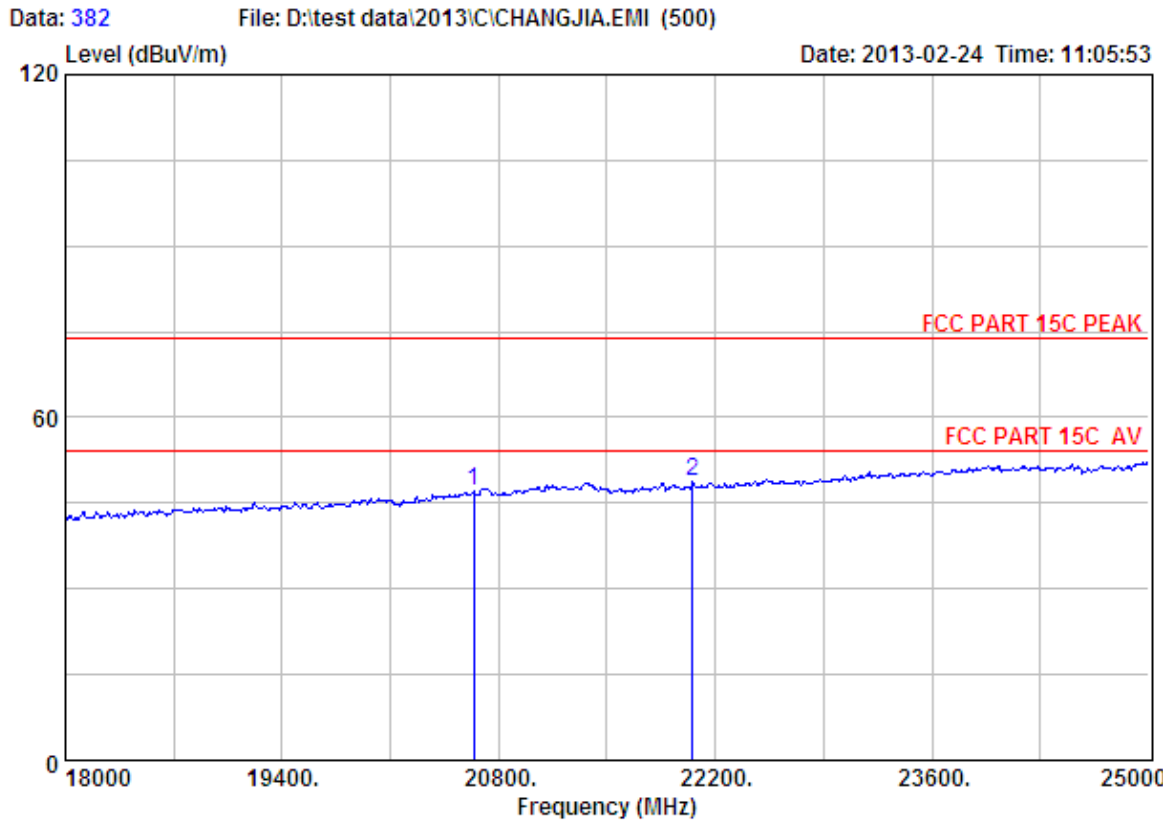
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark
					Reading (dBuV)	Level (dBuV/m)			
1	2480.00	27.58	6.71	34.03	94.16	94.42	74.00	-20.42	Peak
2	4960.00	31.49	12.44	31.97	36.65	48.61	74.00	25.39	Peak
3	7273.00	36.54	11.56	32.04	34.35	50.41	74.00	23.59	Peak
4	10214.00	38.48	11.47	32.17	34.16	51.94	74.00	22.06	Peak
5	14379.00	41.77	10.92	32.88	33.52	53.33	74.00	20.67	Peak
6	17269.00	40.78	10.89	33.87	33.51	51.31	74.00	22.69	Peak

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

18000MHz – 250000MHz

EST Technology

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```

Site no.       : 3m Chamber                               Data no. : 382
Dis. / Ant.   : 3m ANT ABOVE 18G                       Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer      : Tony
EUT           : Bluetooth Speaker
Power         : DC 3.7V
M/N           : CSBT22
Test Mode     : GFSK TX 2402MHz
    
```

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBUV/m)	Margin (dB)	Remark	
				Reading (dBUV)	Level (dBUV/m)				
1	20639.00	46.08	19.97	36.12	17.14	47.07	74.00	26.93	Peak
2	22053.00	45.71	20.59	34.85	17.21	48.66	74.00	25.34	Peak

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

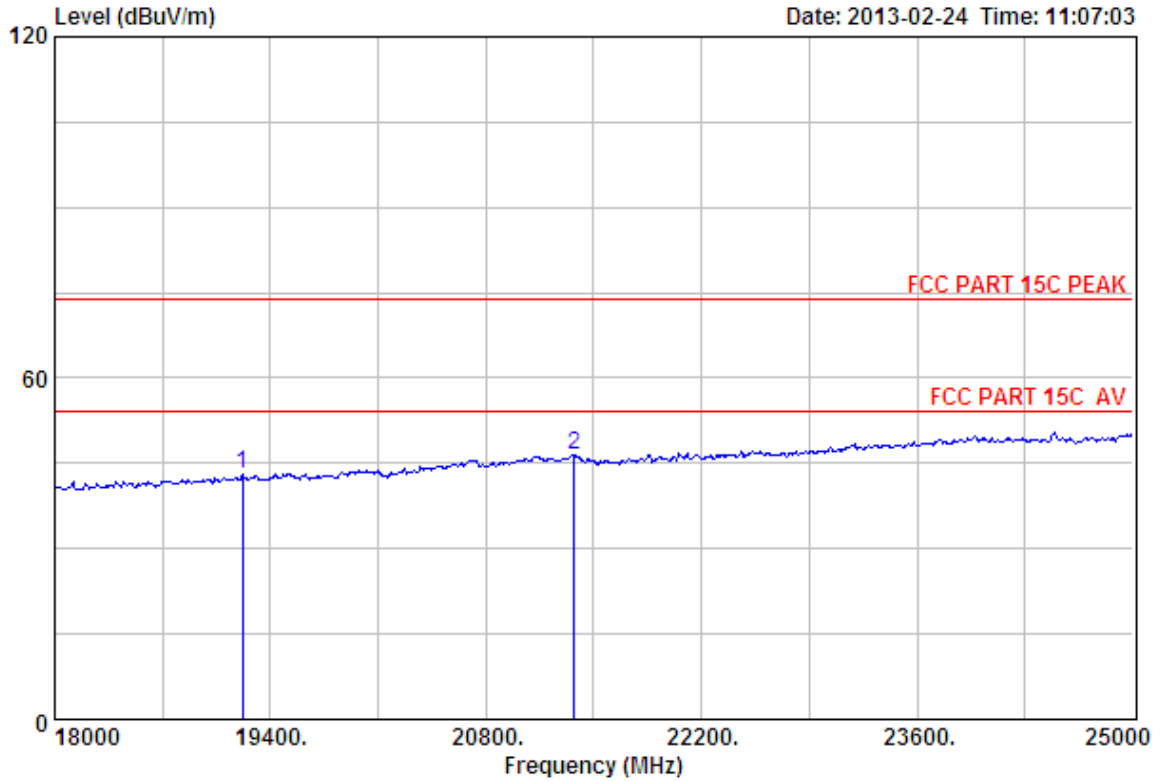
EST Technology

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Data: 383

File: D:\test data\2013\CI\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 11:07:03



```

Site no.       : 3m Chamber                               Data no. : 383
Dis. / Ant.   : 3m ANT ABVOE 18G                       Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer      : Tony
EUT           : Bluetooth Speaker
Power         : DC 3.7V
M/N           : CSBT22
Test Mode     : GFSK TX 2402MHz
    
```

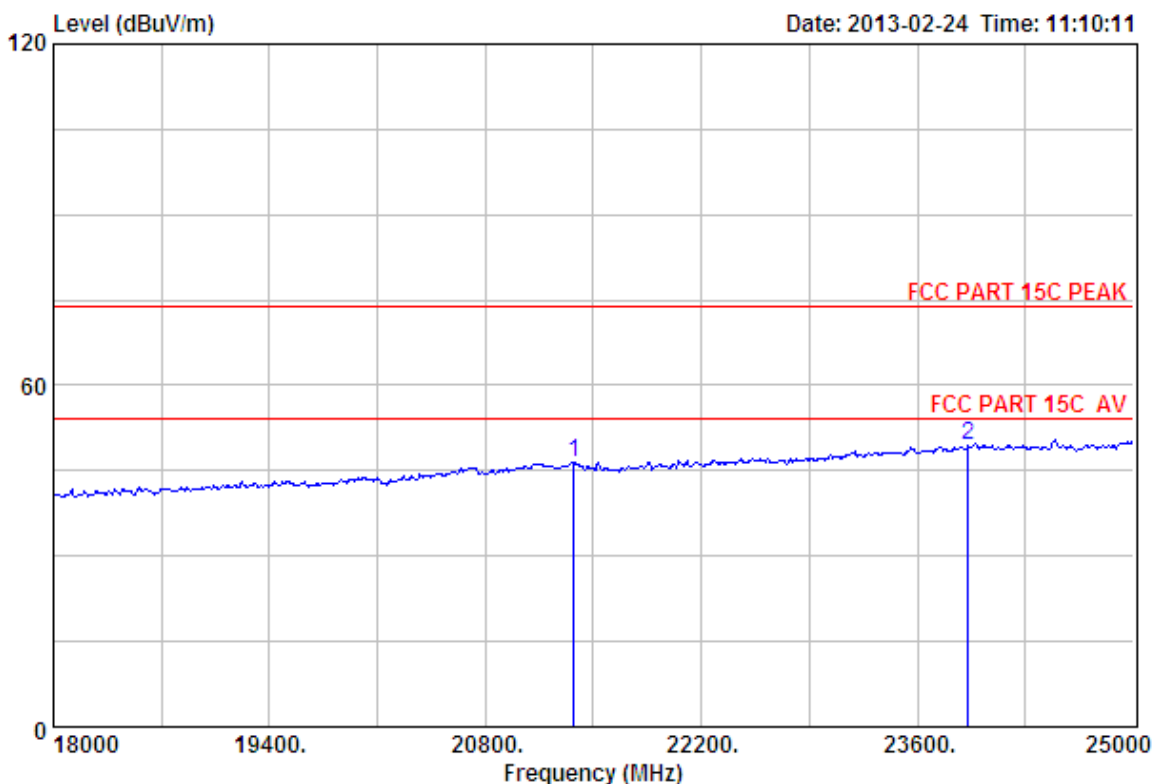
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark	
				Reading (dBuV)	Level (dBuV/m)				
1	19218.00	45.62	18.79	36.04	14.67	43.04	74.00	30.96	Peak
2	21374.00	46.08	20.29	35.46	15.67	46.58	74.00	27.42	Peak

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

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Data: 384 File: D:\test data\2013\C\CHANGJIA.EMI (500)



Site no. : 3m Chamber Data no. : 384
 Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : GFSK TX 2441MHz

	Ant.	Cable	Amp	Emission					
Freq. (MHz)	Factor (dB/m)	Loss (dB)	Factor (dB)	Reading (dBUV)	Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark	
1 21374.00	46.08	20.29	35.46	15.67	46.58	74.00	27.42	Peak	
2 23929.00	45.61	21.99	32.88	14.59	49.31	74.00	24.69	Peak	

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

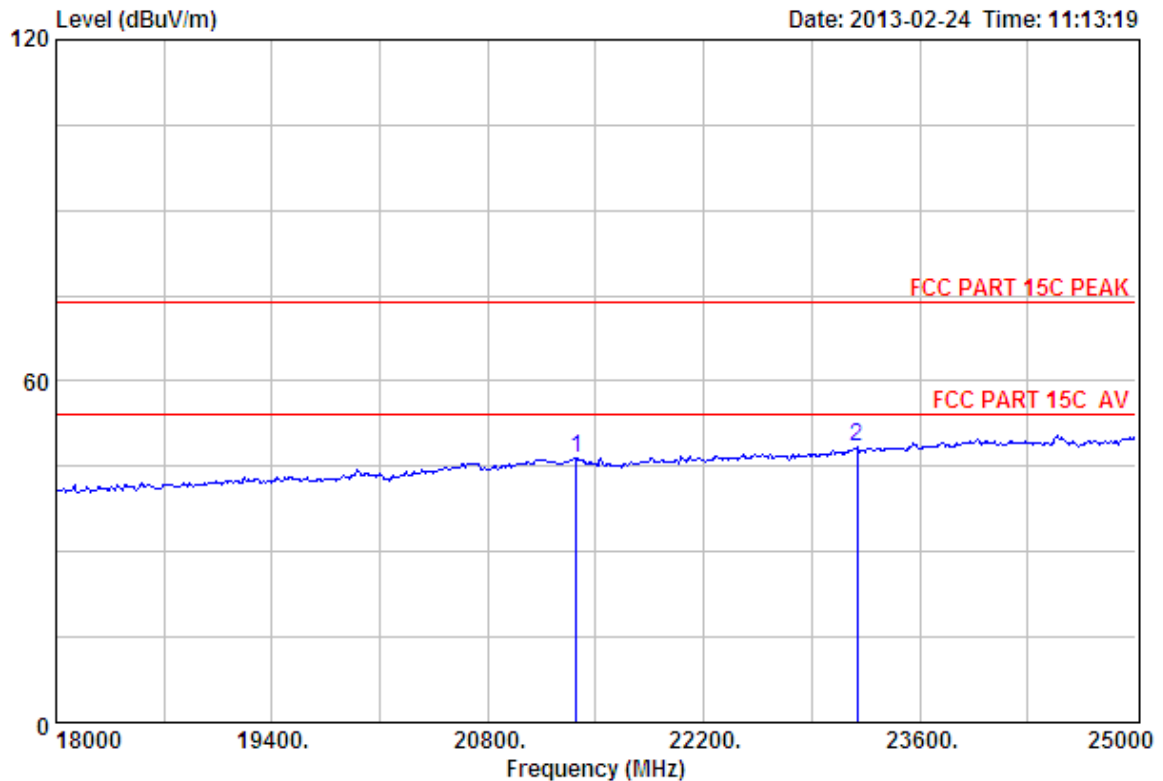
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Data: 385

File: D:\test data\2013\1\C\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 11:13:19



```

Site no.      : 3m Chamber                Data no. : 385
Dis. / Ant.  : 3m ANT ABOVE 18G          Ant. pol. : VERTICAL
Limit        : FCC PART 15C PEAK
Env. / Ins.  : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer     : Tony
EUT          : Bluetooth Speaker
Power        : DC 3.7V
M/N          : CSBT22
Test Mode    : GFSK TX 2441MHz
    
```

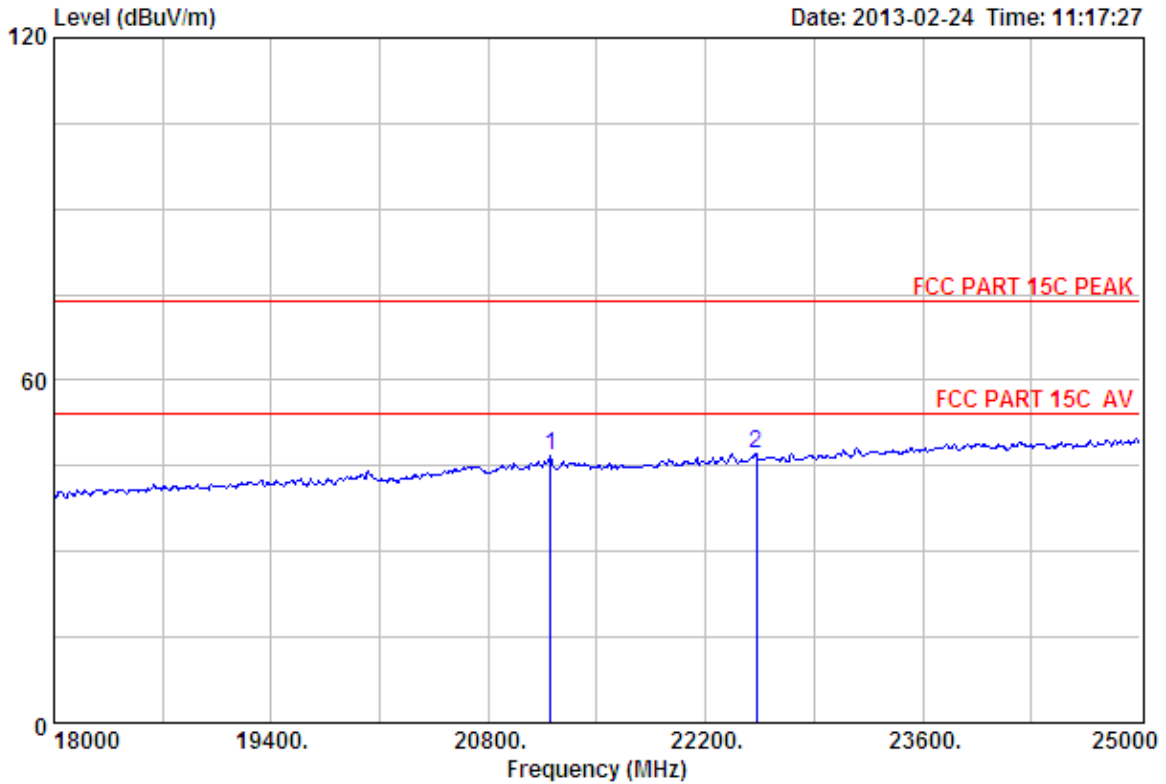
	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	46.08	20.29	35.46	15.67	46.58	74.00	27.42	Peak
2	45.64	21.32	33.64	15.03	48.35	74.00	25.65	Peak

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

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Data: 386 File: D:\test data\2013\1\CHANGJIA.EMI (500) Date: 2013-02-24 Time: 11:17:27



```

Site no.       : 3m Chamber                               Data no. : 386
Dis. / Ant.   : 3m ANT ABOVE 18G                       Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer      : Tony
EUT           : Bluetooth Speaker
Power         : DC 3.7V
M/N           : CSBT22
Test Mode     : GFSK TX 2480MHz
    
```

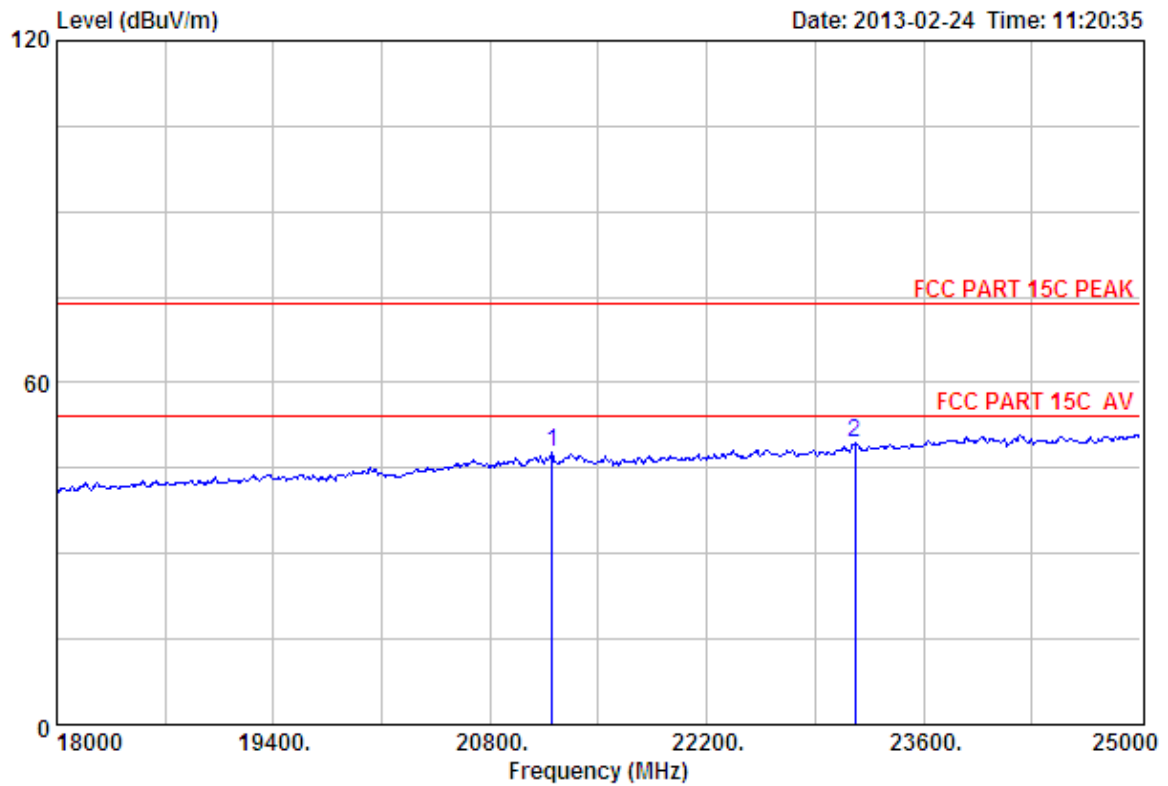
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBUV/m)	Margin (dB)	Remark	
				Reading (dBUV)	Level (dBUV/m)				
1	21199.00	46.18	20.22	35.62	16.03	46.81	74.00	27.19	Peak
2	22529.00	45.79	20.87	34.35	14.79	47.10	74.00	26.90	Peak

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

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Data: 387 File: D:\test data\2013\IC\CHANGJIA.EMI (500)



Site no. : 3m Chamber Data no. : 387
 Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : GFSK TX 2480MHz

	Ant.	Cable	Amp	Emission					
Freq. (MHz)	Factor (dB/m)	Loss (dB)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark	
1	21199.00	46.18	20.22	35.62	17.03	47.81	74.00	26.19	Peak
2	23159.00	45.63	21.29	33.69	16.13	49.36	74.00	24.64	Peak

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

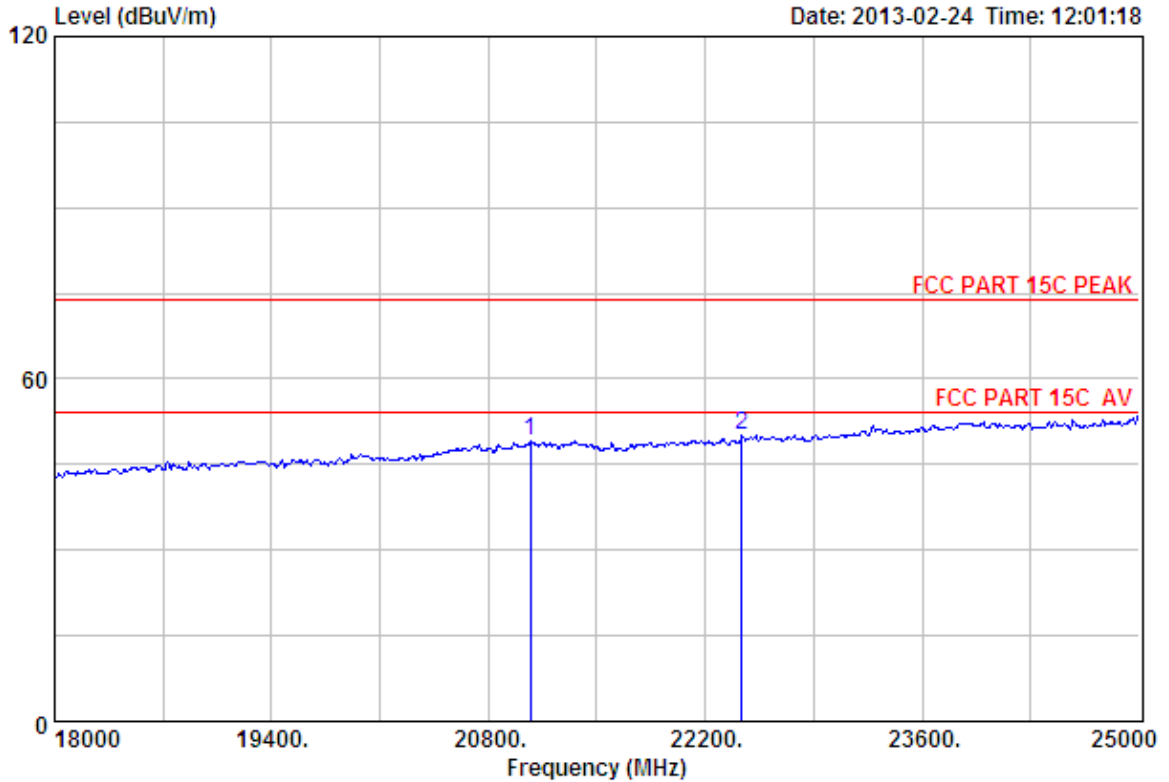
EST Technology

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Data: 398

File: D:\test data\2013\C\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 12:01:18



```

Site no.       : 3m Chamber                Data no. : 398
Dis. / Ant.   : 3m ANT ABOVE 18G         Ant. pol.: VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer      : Tony
EUT           : Bluetooth Speaker
Power         : DC 3.7V
M/N           : CSBT22
Test Mode     : 8-DPSK TX 2402MHz
    
```

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark	
				Reading (dBuV)	Level (dBuV/m)				
1	21073.00	46.25	20.16	35.73	18.42	49.10	74.00	24.90	Peak
2	22438.00	45.79	20.82	34.43	18.00	50.18	74.00	23.82	Peak

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

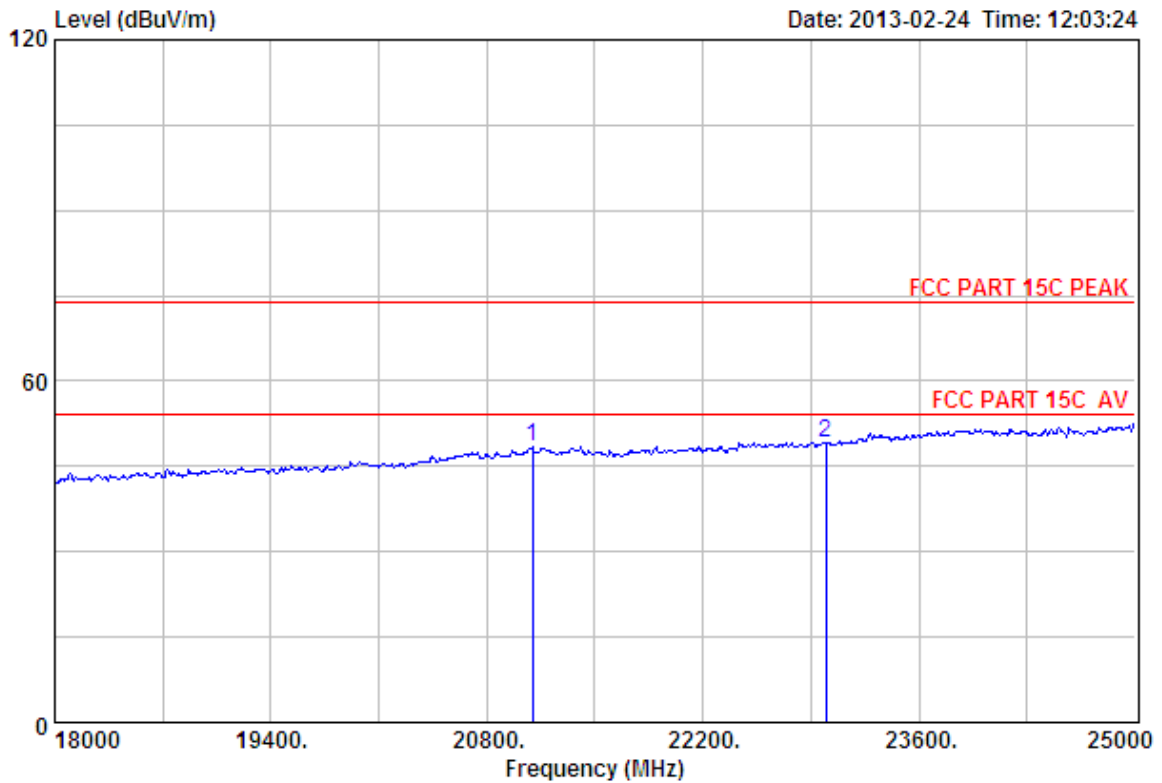
EST Technology

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Data: 399

File: D:\test data\2013\C\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 12:03:24



```

Site no.       : 3m Chamber                Data no. : 399
Dis. / Ant.   : 3m ANT ABOVE 18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer      : Tony
EUT           : Bluetooth Speaker
Power         : DC 3.7V
M/N           : CSBT22
Test Mode     : 8-DPSK TX 2402MHz
    
```

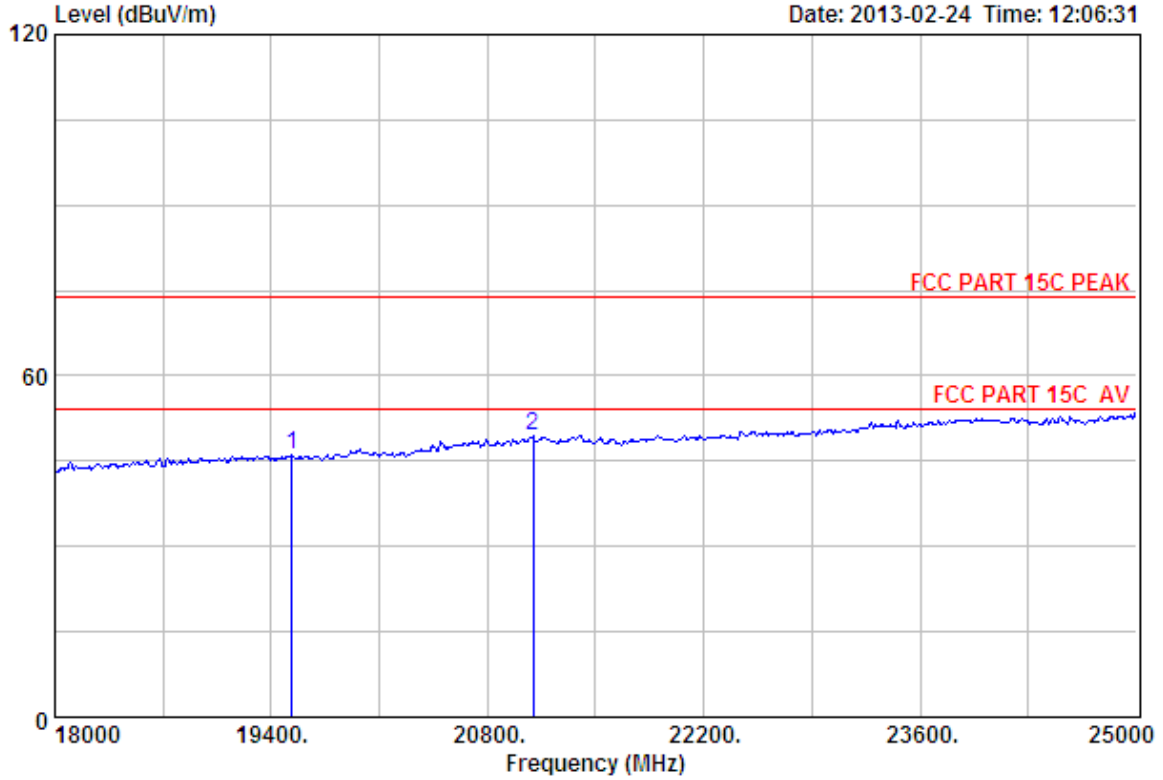
	Ant.	Cable	Amp	Emission					
Freq. (MHz)	Factor (dB/m)	Loss (dB)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark	
1	21094.00	46.23	20.17	35.71	17.71	48.40	74.00	25.60	Peak
2	22998.00	45.60	21.14	33.85	16.39	49.28	74.00	24.72	Peak

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

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Data: 400 File: D:\test data\2013\C\CHANGJIA.EMI (500) Date: 2013-02-24 Time: 12:06:31



Site no. : 3m Chamber Data no. : 400
 Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : 8-DPSK TX 2441MHz

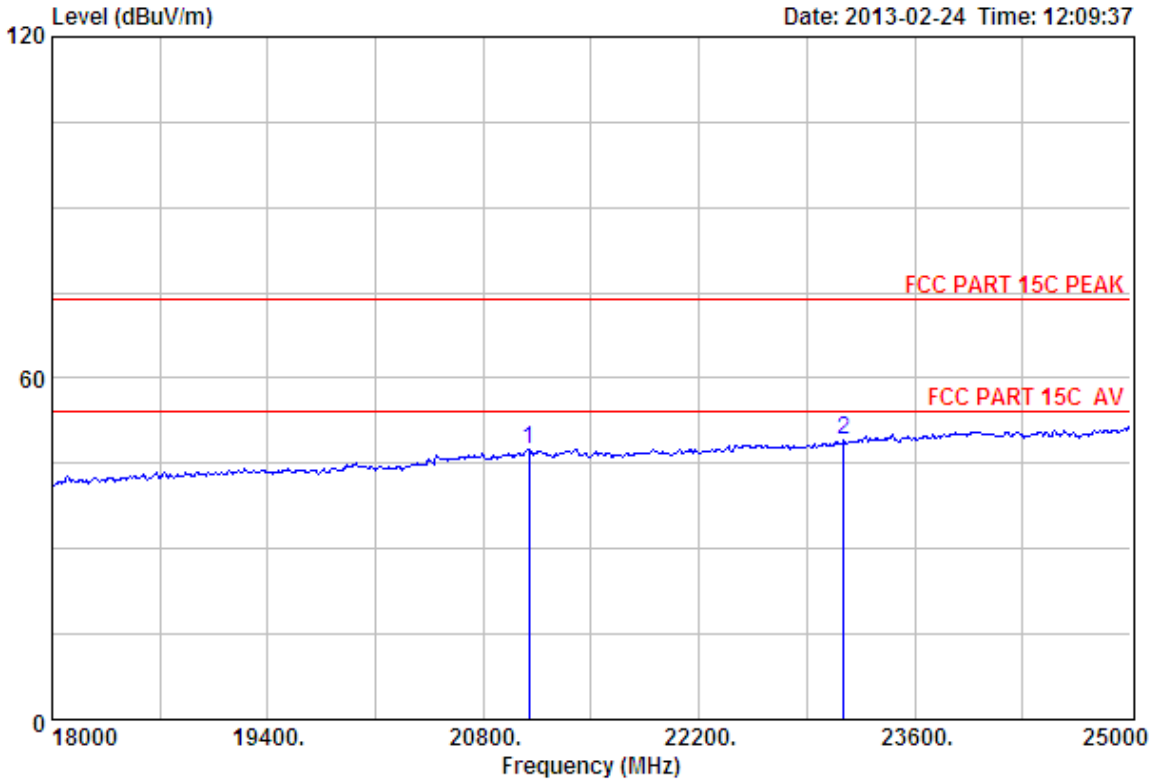
	Freq.	Ant.	Cable	Amp	Emission		Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	Reading	Level	(dBuV/m)	(dB)	
					(dBuV)	(dBuV/m)			
1	19533.00	45.92	19.15	36.30	17.42	46.19	74.00	27.81	Peak
2	21094.00	46.23	20.17	35.71	18.71	49.40	74.00	24.60	Peak

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

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Data: 401 File: D:\test data\2013\C\CHANGJIA.EMI (500) Date: 2013-02-24 Time: 12:09:37



Site no. : 3m Chamber Data no. : 401
 Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : 8-DPSK TX 2441MHz

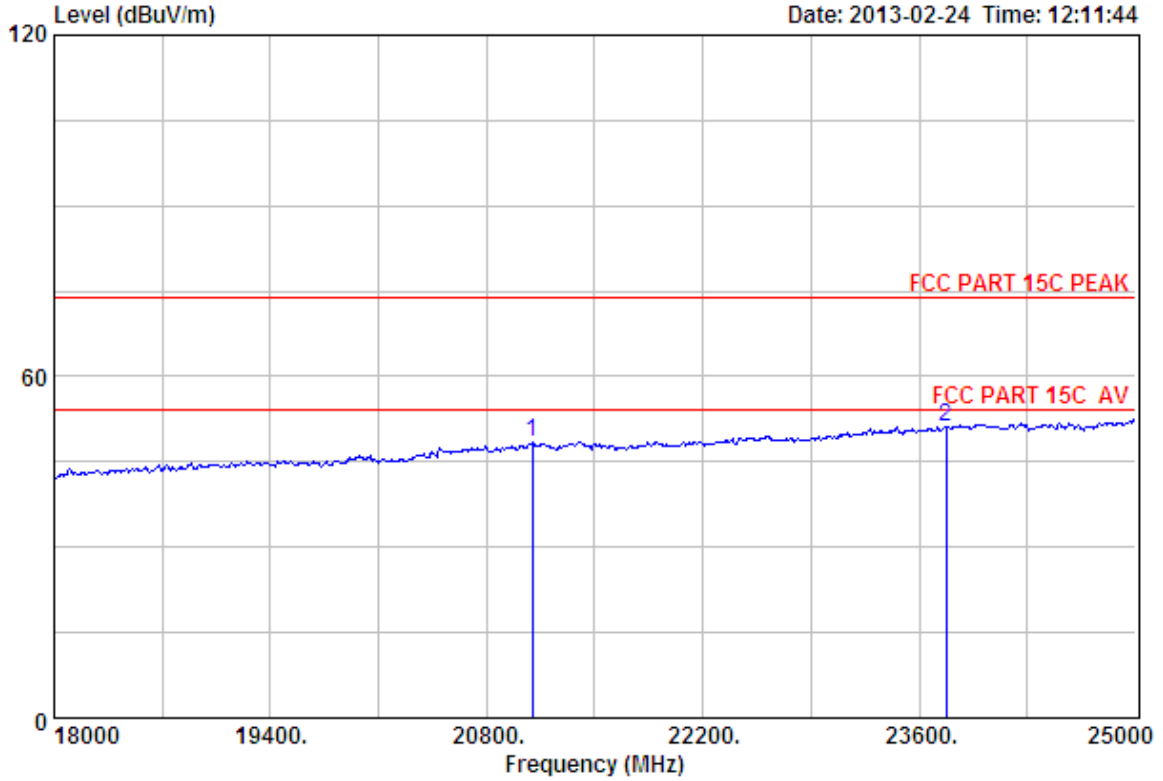
	Ant.	Cable	Amp	Emission					
Freq.	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	21094.00	46.23	20.17	35.71	16.71	47.40	74.00	26.60	Peak
2	23138.00	45.63	21.27	33.69	15.91	49.12	74.00	24.88	Peak

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

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Data: 402 File: D:\test data\2013\1\CHANGJIA.EMI (500) Date: 2013-02-24 Time: 12:11:44



Site no. : 3m Chamber Data no. : 402
 Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : 8-DPSK TX 2480MHz

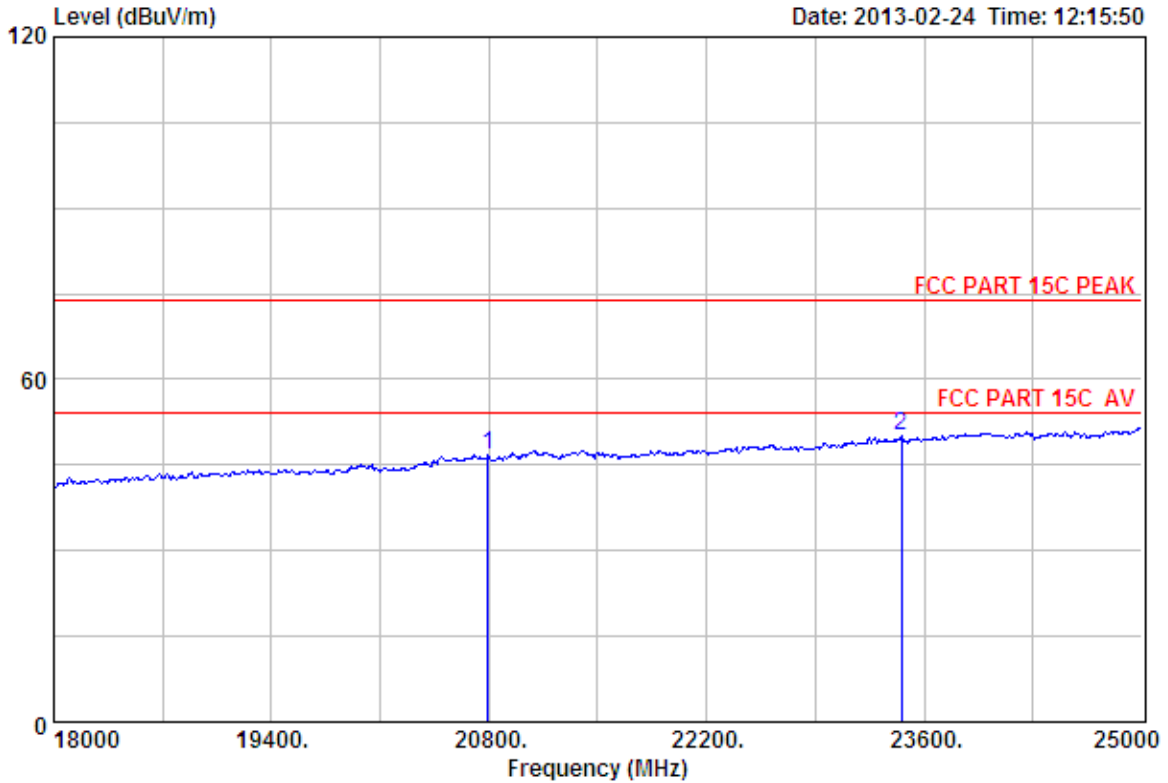
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	21094.00	46.23	20.17	35.71	17.71	48.40	74.00	25.60	Peak
2	23775.00	45.65	21.85	33.04	16.72	51.18	74.00	22.82	Peak

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

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Data: 403 File: D:\test data\2013\C\CHANGJIA.EMI (500) Date: 2013-02-24 Time: 12:15:50



Site no. : 3m Chamber Data no. : 403
 Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : 8-DPSK TX 2480MHz

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission				Remark
					Reading (dBuV)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	20793.00	46.18	20.04	35.98	16.46	46.70	74.00	27.30	Peak
2	23453.00	45.69	21.56	33.38	16.21	50.08	74.00	23.92	Peak

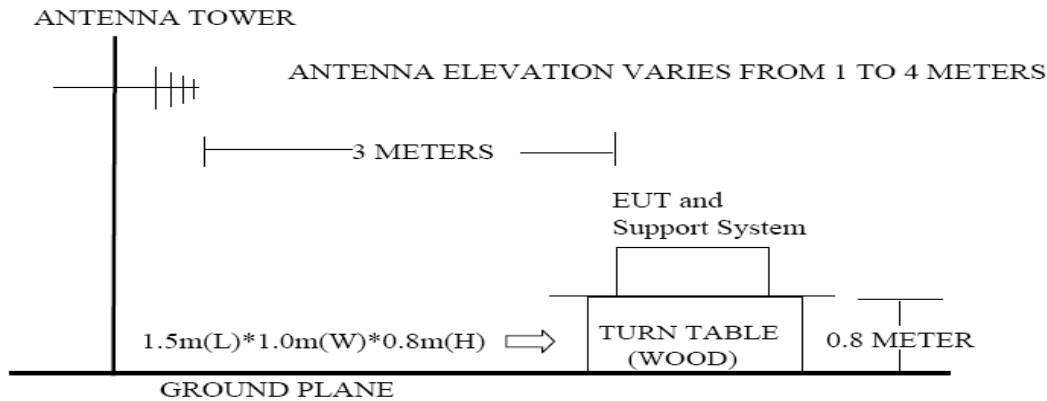
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

9. BAND EDGE COMPLIANCE

9.1. Limit

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

9.2. Block Diagram of Test setup



9.3. Test Procedure

EUT was placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of emissions

- (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
- (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

9.4. Test Result

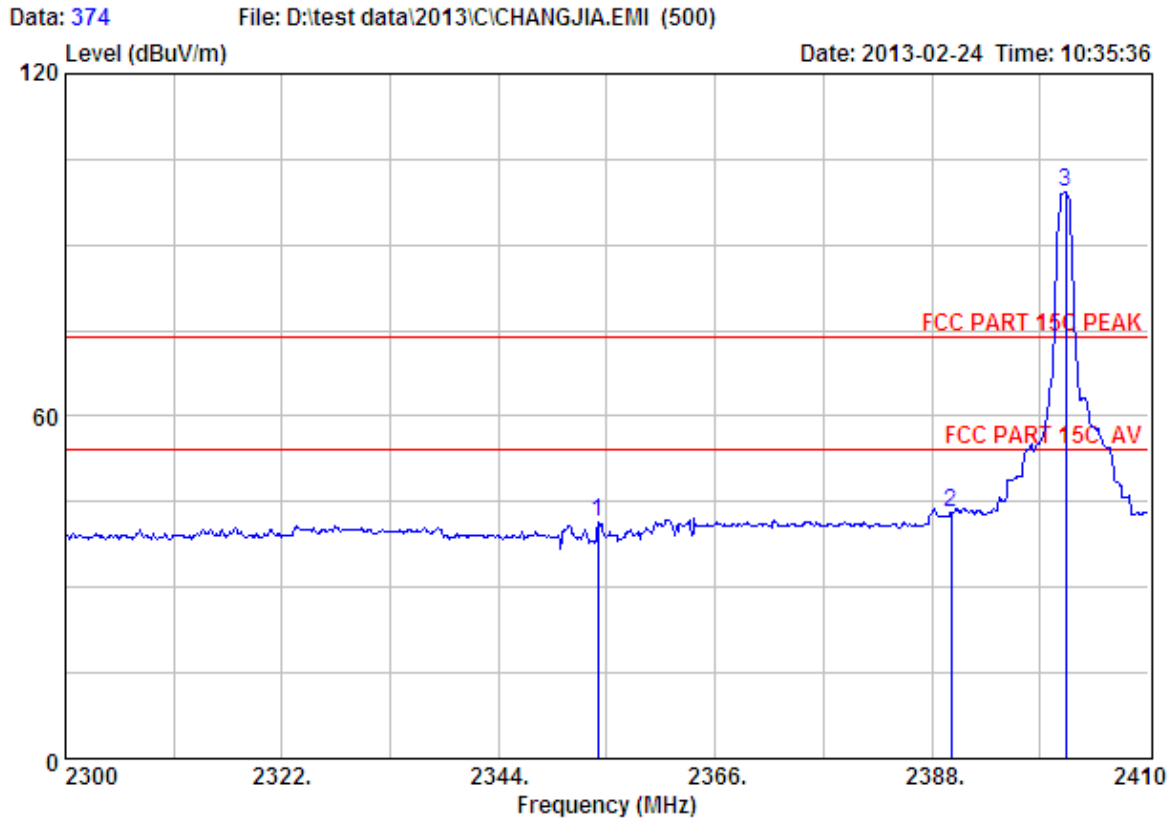
EUT: Bluetooth Speaker	M/N:CSBT22	
Power:DC 3.7V		
Test date: 2013-02-25	Test site: 3m Chamber	Tested by: Tony Tang
Test mode: Tx Mode		
Pass		

- Note: 1、 For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.
- 2、 The frequency 2402MHz 、2441MHz and 2480MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

9.5. Test Data

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Site no. : 3m Chamber Data no. : 374
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : GFSK TX 2402MHz

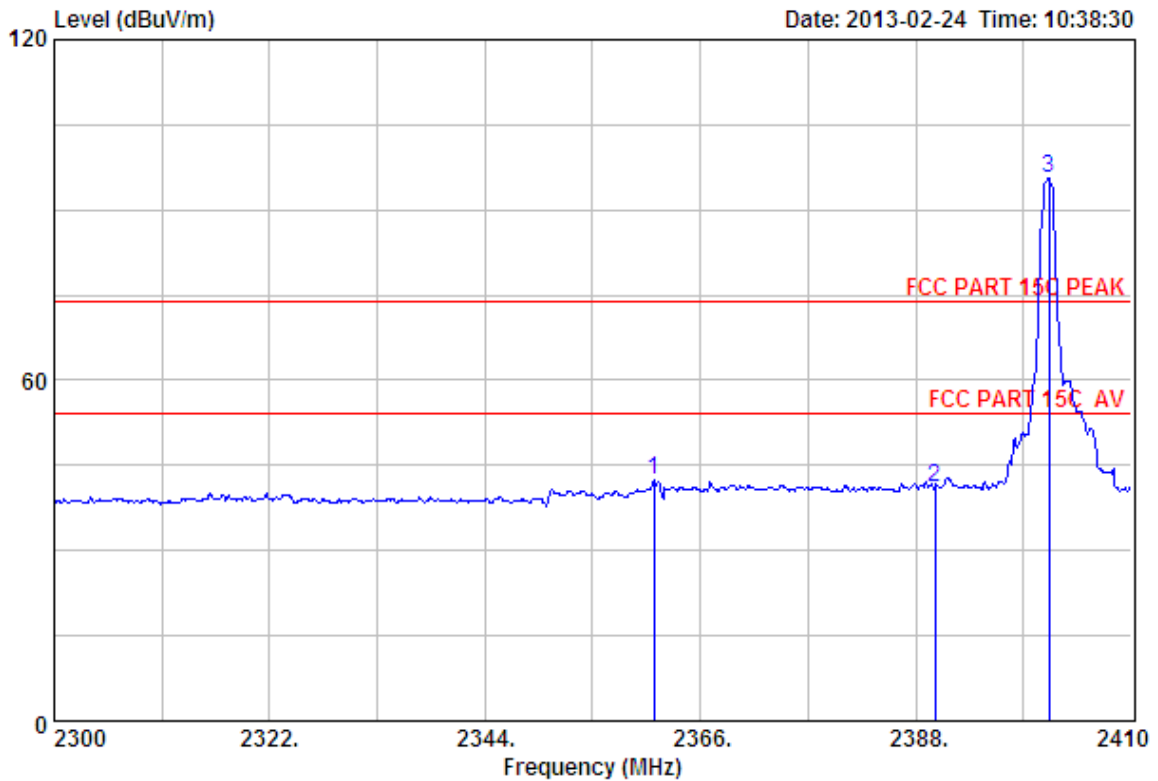
Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBUV/m)	Margin (dB)	Remark	
				Reading (dBUV)	Level (dBUV/m)				
1	2354.12	27.70	6.58	34.22	41.54	41.60	74.00	32.40	Peak
2	2390.00	27.64	6.62	34.19	42.95	43.02	74.00	30.98	Peak
3	2401.64	27.61	6.62	34.18	99.32	99.37	74.00	-25.37	Peak

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

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Data: 375 File: D:\test data\2013\C\CHANGJIA.EMI (500)



Site no. : 3m Chamber Data no. : 375
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : GFSK TX 2402MHz

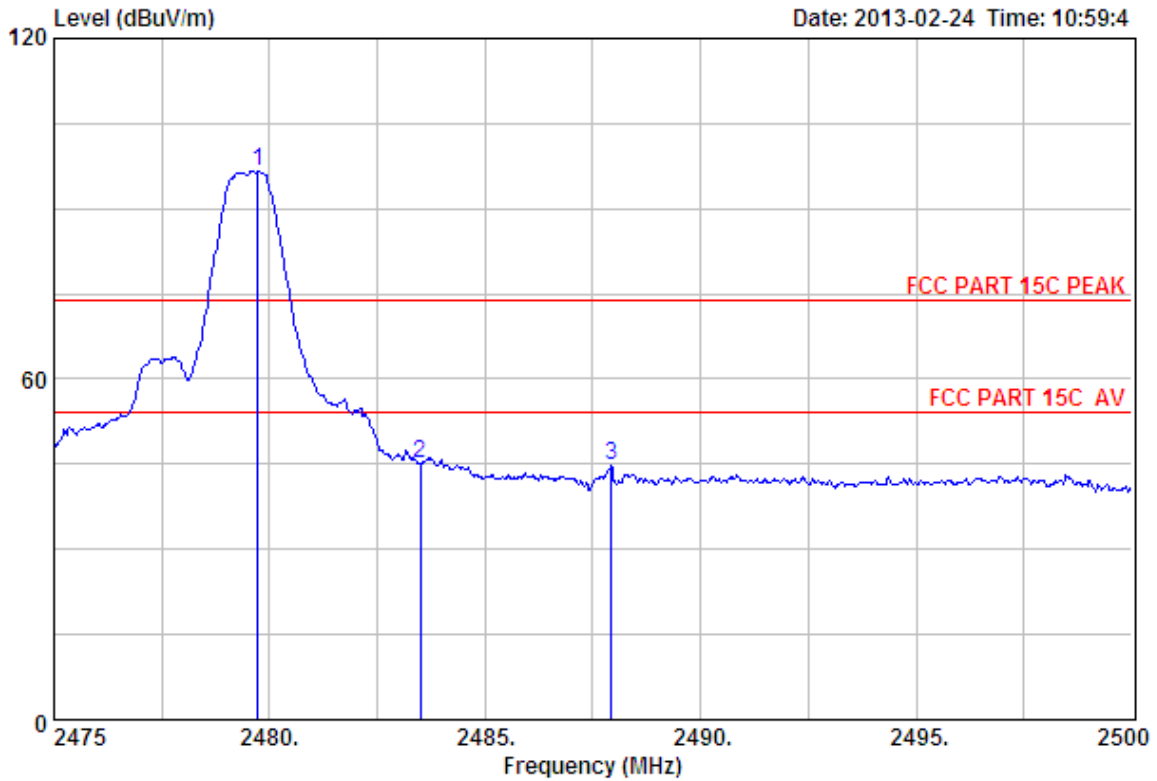
	Ant.	Cable	Amp	Emission					
Freq.	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	27.67	6.58	34.20	42.27	42.32	74.00	31.68	Peak	
2	27.64	6.62	34.19	41.20	41.27	74.00	32.73	Peak	
3	27.61	6.62	34.18	95.60	95.65	74.00	-21.65	Peak	

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

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Data: 380 File: D:\test data\2013\C\CHANGJIA.EMI (500)



Site no. : 3m Chamber Data no. : 380
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : GFSK TX 2480MHz

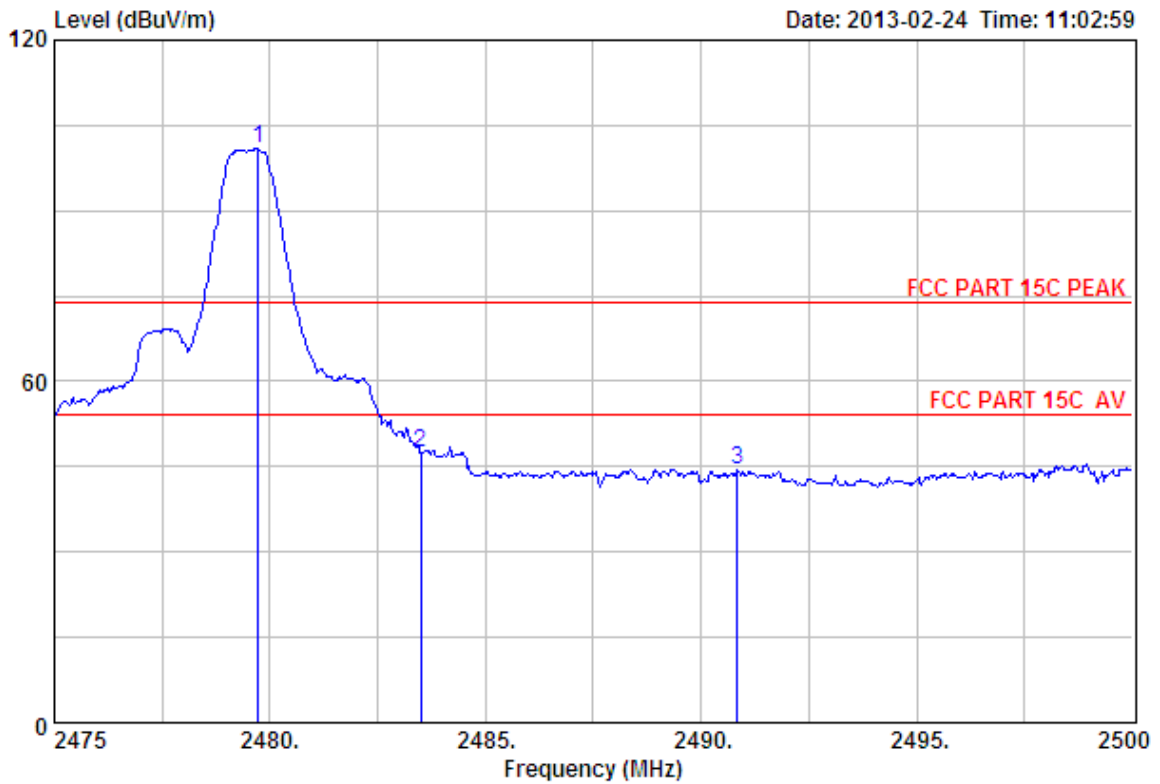
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	2479.73	27.58	6.71	34.03	96.36	96.62	74.00	-22.62	Peak
2	2483.50	27.58	6.71	34.03	44.98	45.24	74.00	28.76	Peak
3	2487.93	27.58	6.73	34.03	44.55	44.83	74.00	29.17	Peak

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

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Data: 381 File: D:\test data\2013\IC\CHANGJIA.EMI (500)



Site no. : 3m Chamber Data no. : 381
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : GFSK TX 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	2479.73	27.58	6.71	34.03	100.59	100.85	74.00	-26.85	Peak
2	2483.50	27.58	6.71	34.03	47.28	47.54	74.00	26.46	Peak
3	2490.85	27.58	6.73	34.03	44.21	44.49	74.00	29.51	Peak

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

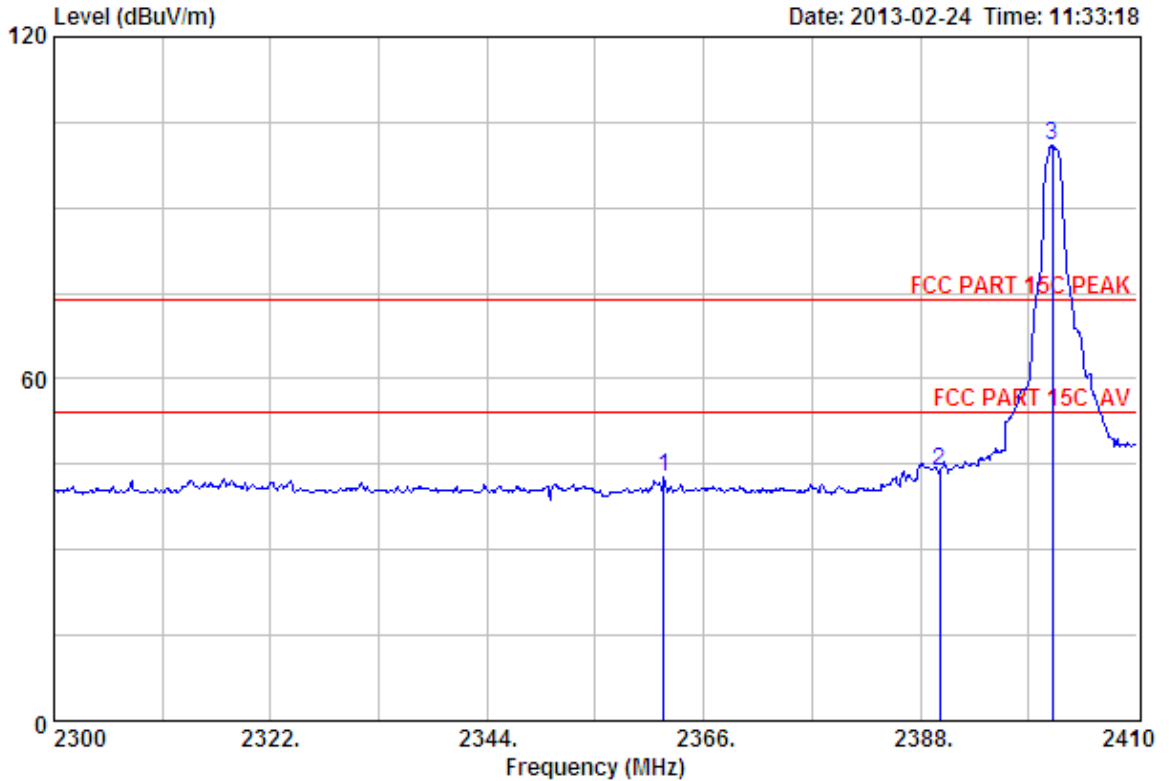
EST Technology

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Houjie, Dongguan, Guangdong, Chin
Tel:+86-769-83081888
Fax:+86-769-83081878

Data: 390

File: D:\test data\2013\IC\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 11:33:18



```

Site no.       : 3m Chamber                      Data no. : 390
Dis. / Ant.   : 3m ANT 1-18G                   Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer      : Tony
EUT           : Bluetooth Speaker
Power         : DC 3.7V
M/N          : CSBT22
Test Mode     : 8-DPSK TX 2402MHz
    
```

	Ant.	Cable	Amp	Emission		Limits	Margin	Remark
Freq. (MHz)	Factor (dB/m)	Loss (dB)	Factor (dB)	Reading (dBUV)	Level (dBUV/m)	(dBUV/m)	(dB)	
1	27.67	6.58	34.20	42.90	42.95	74.00	31.05	Peak
2	27.64	6.62	34.19	43.65	43.72	74.00	30.28	Peak
3	27.61	6.62	34.18	100.82	100.87	74.00	-26.87	Peak

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

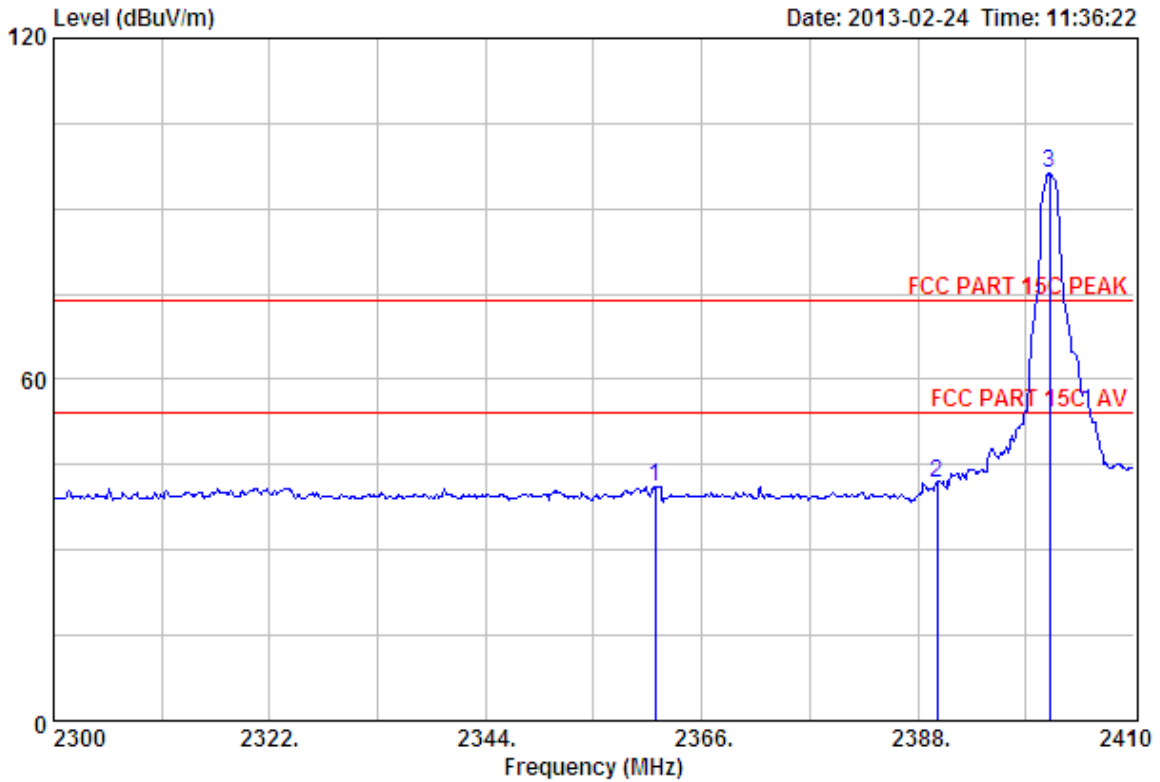
EST Technology

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Data: 391

File: D:\test data\2013\C\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 11:36:22



Site no. : 3m Chamber Data no. : 391
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : 8-DPSK TX 2402MHz

	Freq.	Ant.	Cable	Amp	Emission		Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	Reading	Level	(dBuV/m)	(dB)	
					(dBuV)	(dBuV/m)			
1	2361.27	27.67	6.58	34.20	41.16	41.21	74.00	32.79	Peak
2	2390.00	27.64	6.62	34.19	41.86	41.93	74.00	32.07	Peak
3	2401.42	27.61	6.62	34.18	96.13	96.18	74.00	-22.18	Peak

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

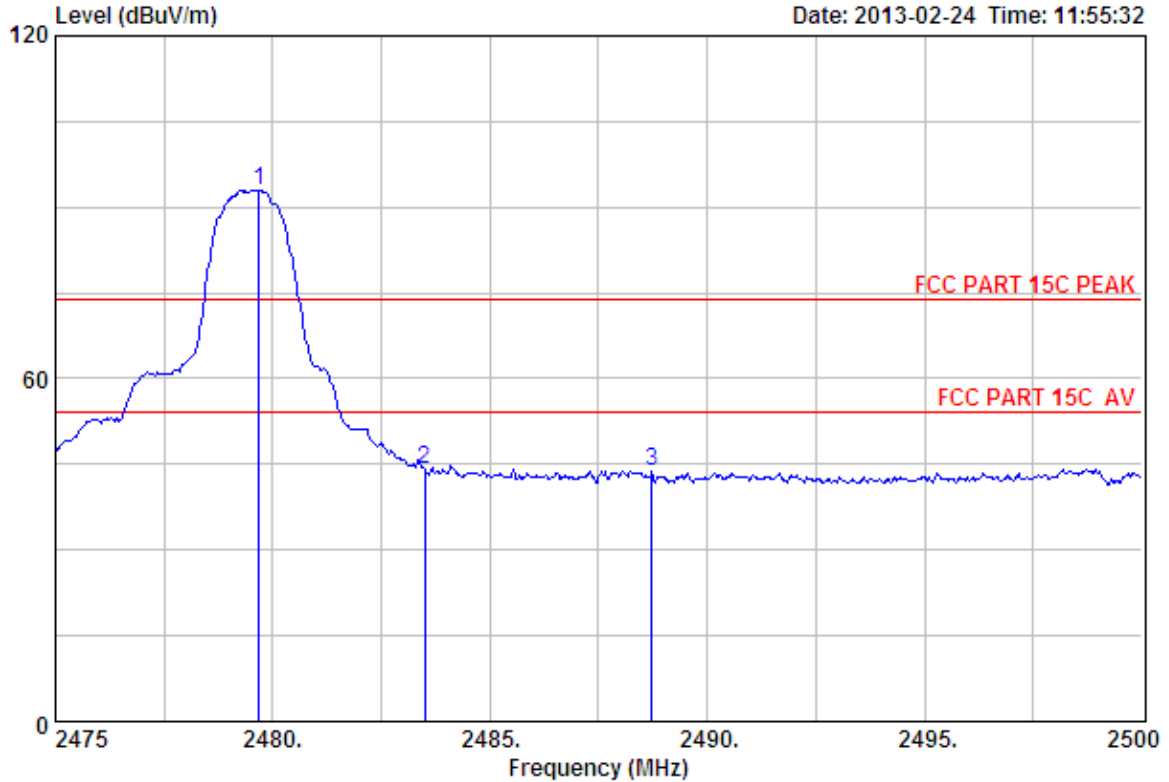
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Data: 396

File: D:\test data\2013\C\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 11:55:32



Site no. : 3m Chamber Data no. : 396
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 3.7V
 M/N : CSBT22
 Test Mode : 8-DPSK TX 2480MHz

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark	
				Reading (dBuV)	Level (dBuV/m)				
1	2479.68	27.58	6.71	34.03	92.78	93.04	74.00	-19.04	Peak
2	2483.50	27.58	6.71	34.03	43.83	44.09	74.00	29.91	Peak
3	2488.73	27.58	6.73	34.03	43.44	43.72	74.00	30.28	Peak

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

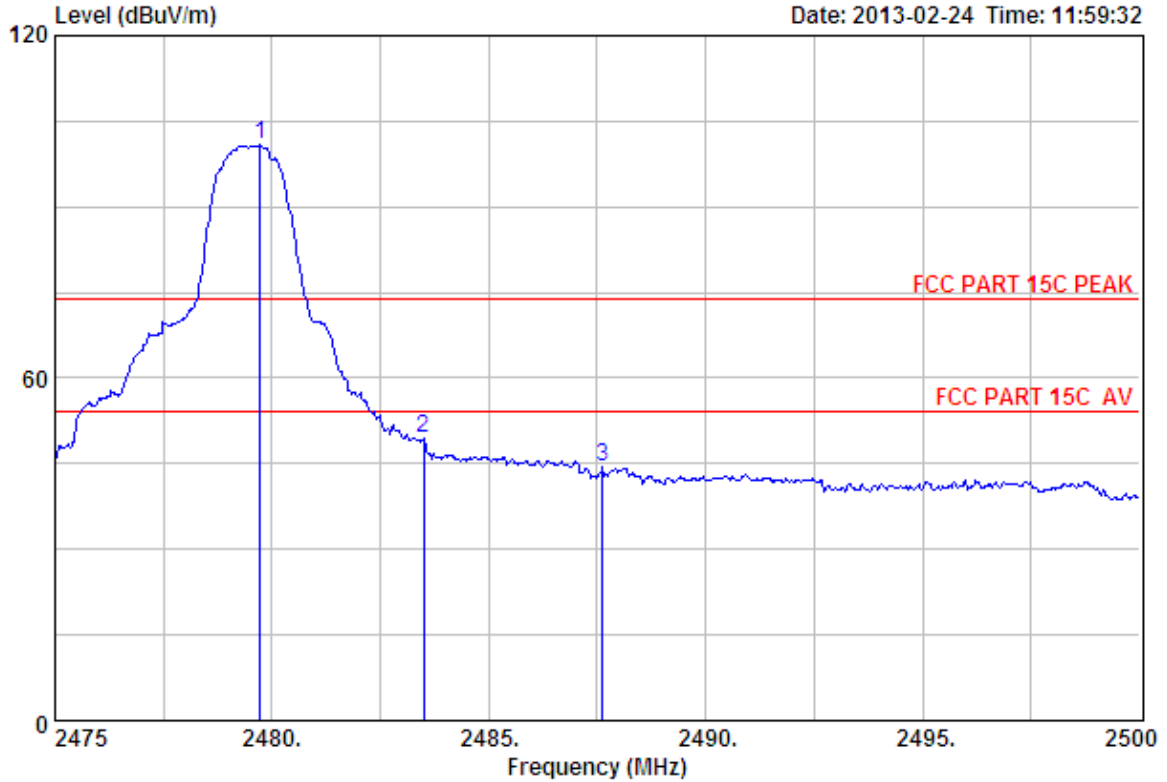
EST Technology

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Fax: +86-769-83081878

Data: 397

File: D:\test data\2013\1\C\CHANGJIA.EMI (500)

Date: 2013-02-24 Time: 11:59:32



```

Site no.      : 3m Chamber                      Data no. : 397
Dis. / Ant.  : 3m ANT 1-18G                    Ant. pol.: VERTICAL
Limit        : FCC PART 15C PEAK
Env. / Ins.  : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer     : Tony
EUT          : Bluetooth Speaker
Power        : DC 3.7V
M/N          : CSBT22
Test Mode    : 8-DPSK TX 2480MHz
    
```

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark	
				Reading (dBuV)	Level (dBuV/m)				
1	2479.73	27.58	6.71	34.03	100.59	100.85	74.00	-26.85	Peak
2	2483.50	27.58	6.71	34.03	49.07	49.33	74.00	24.67	Peak
3	2487.63	27.58	6.73	34.03	44.09	44.37	74.00	29.63	Peak

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

10. ANTENNA REQUIREMENTS

10.1. Limit

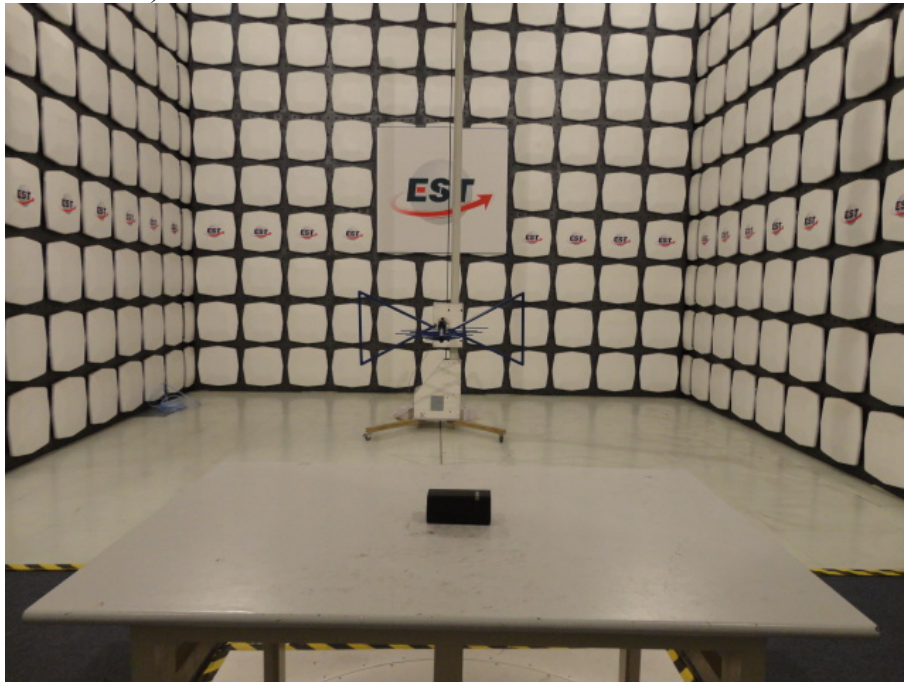
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

10.2. Result

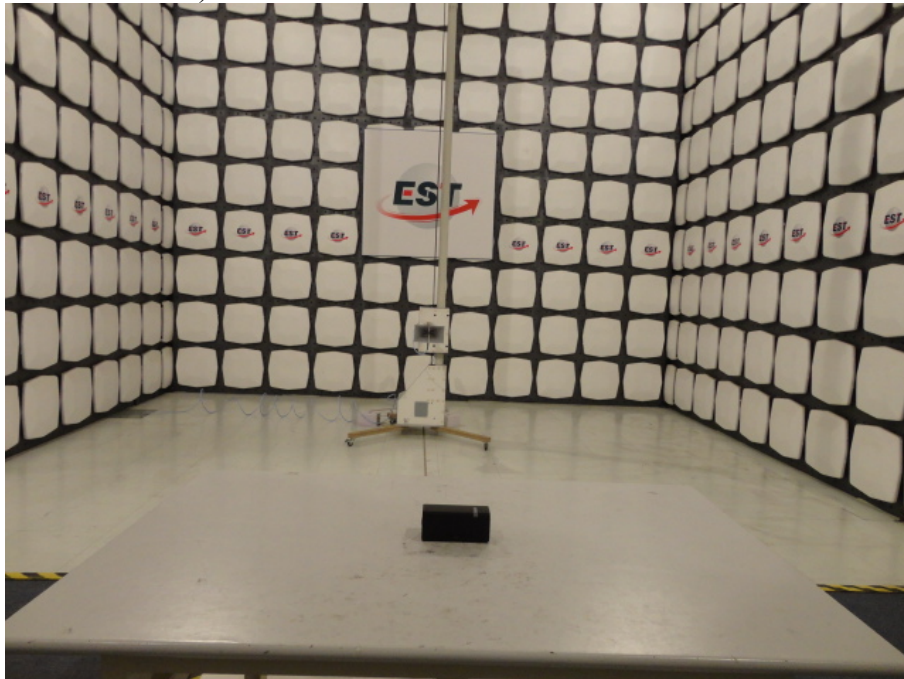
The antennas used for this product are integral Patch Antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 0dBi.

11. TEST SETUP PHOTO

Radiated Test (30-1000 MHz)



Radiated Test (1000-25000 MHz)



12. PHOTOS OF EUT

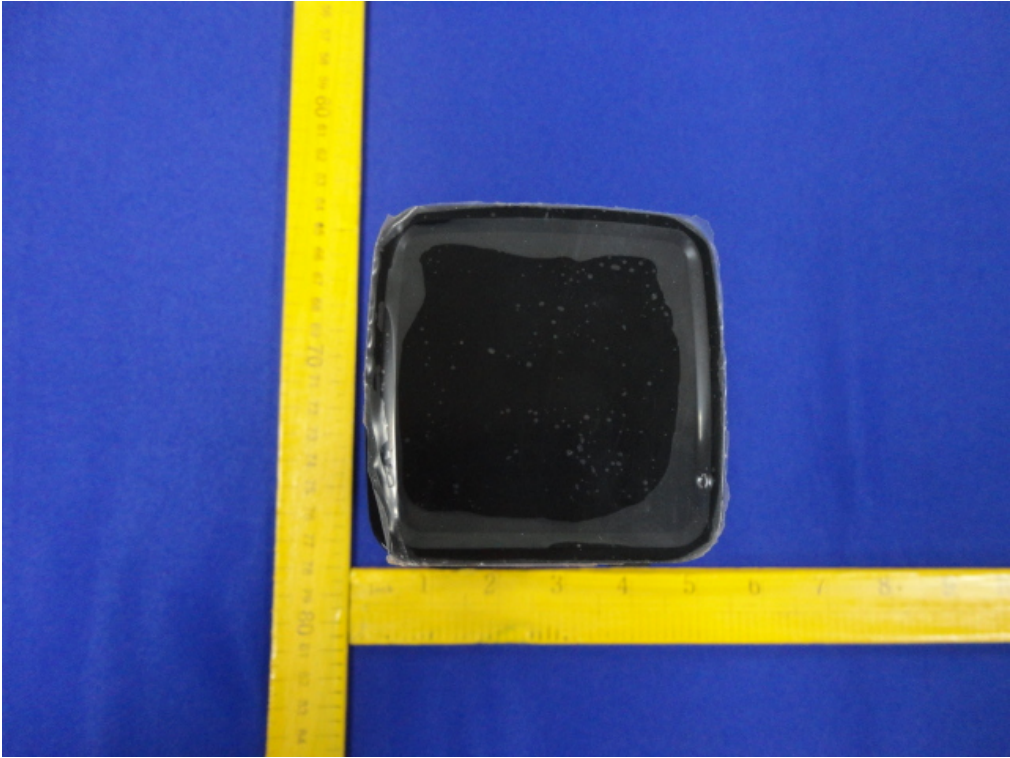
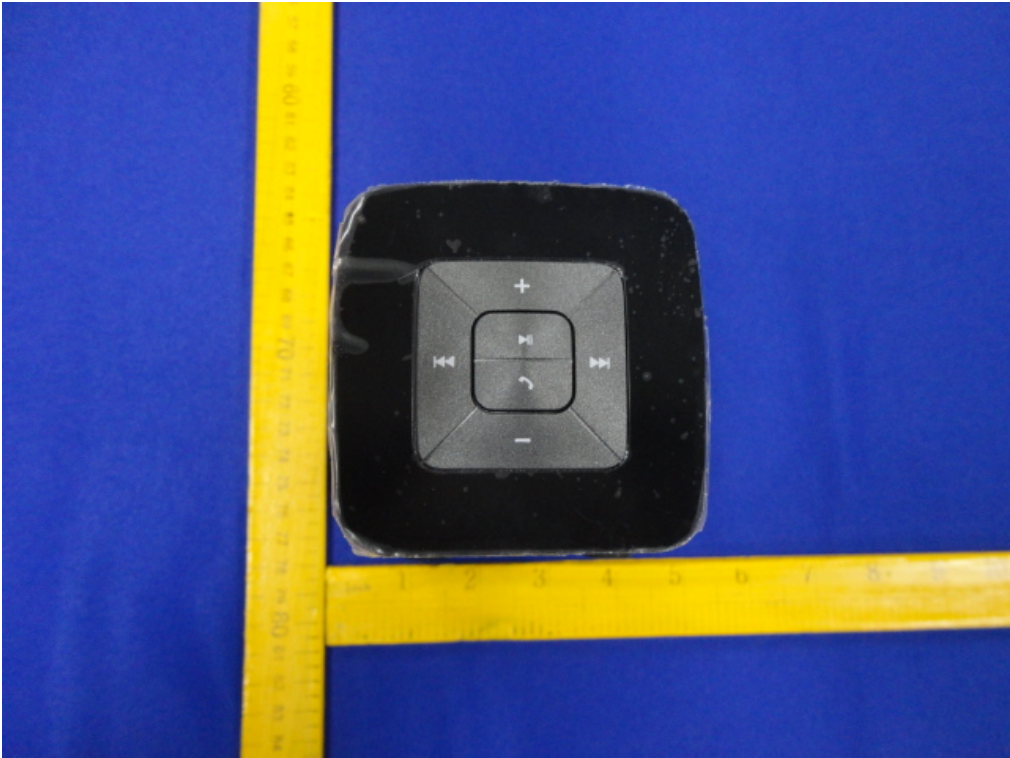
External Photos
M/N:CSBT22



External Photos
M/N: CSBT22



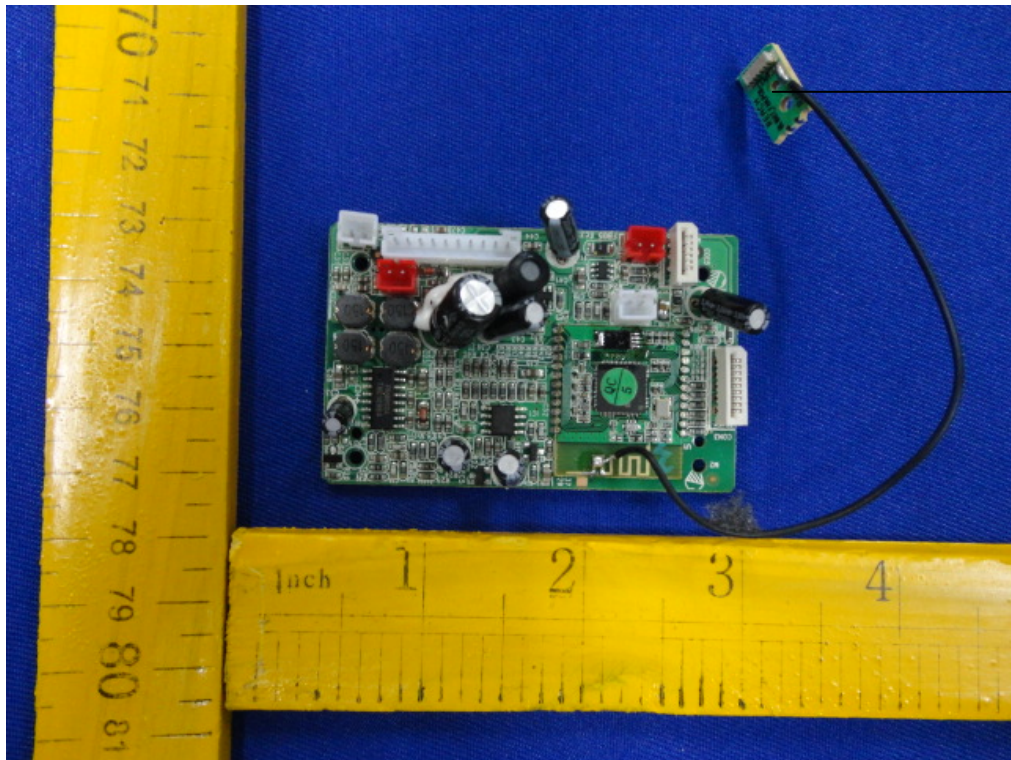
External Photos
M/N: CSBT22



External Photos
M/N: CSBT22



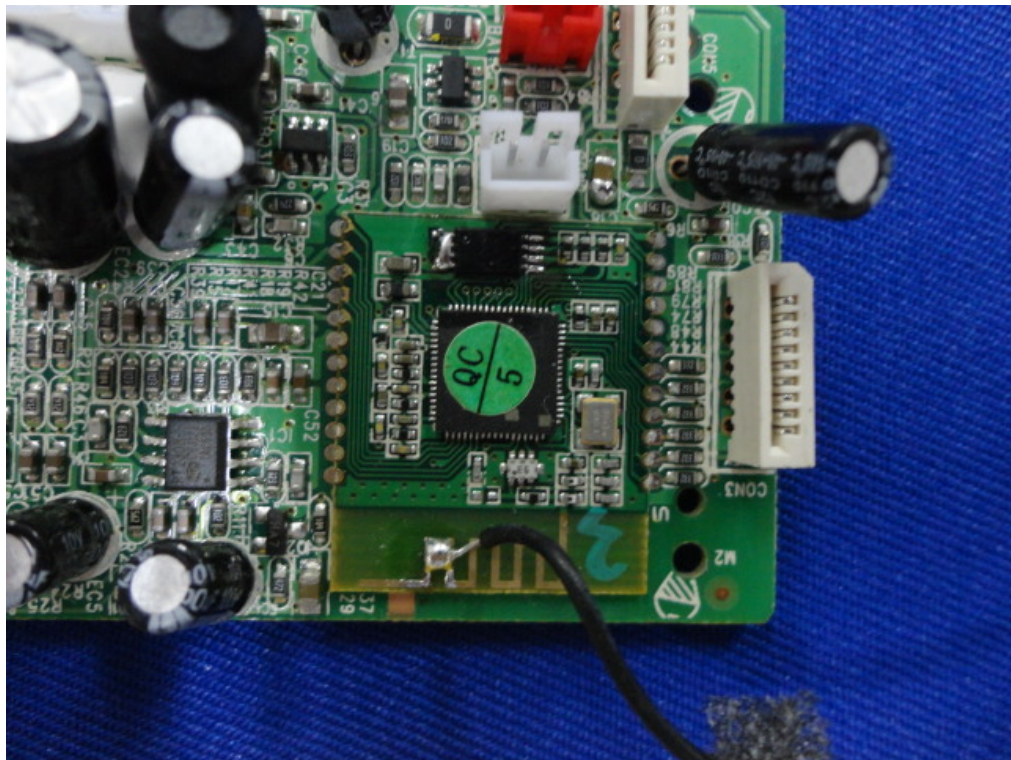
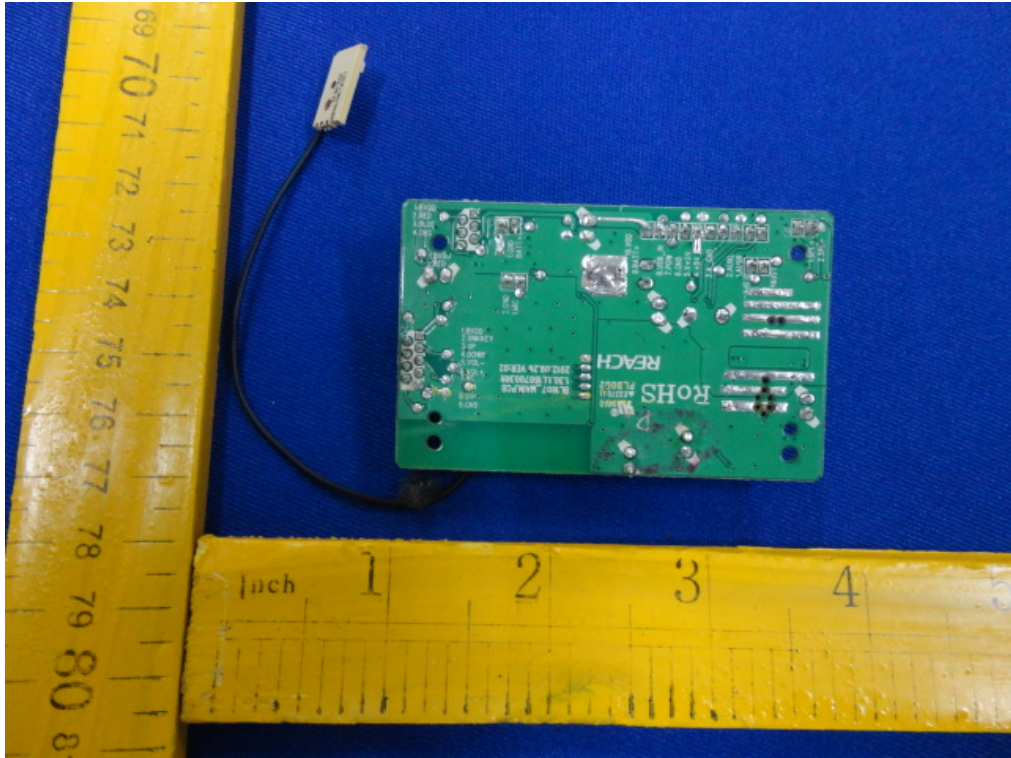
Internal Photos
M/N: CSBT22



Antenna

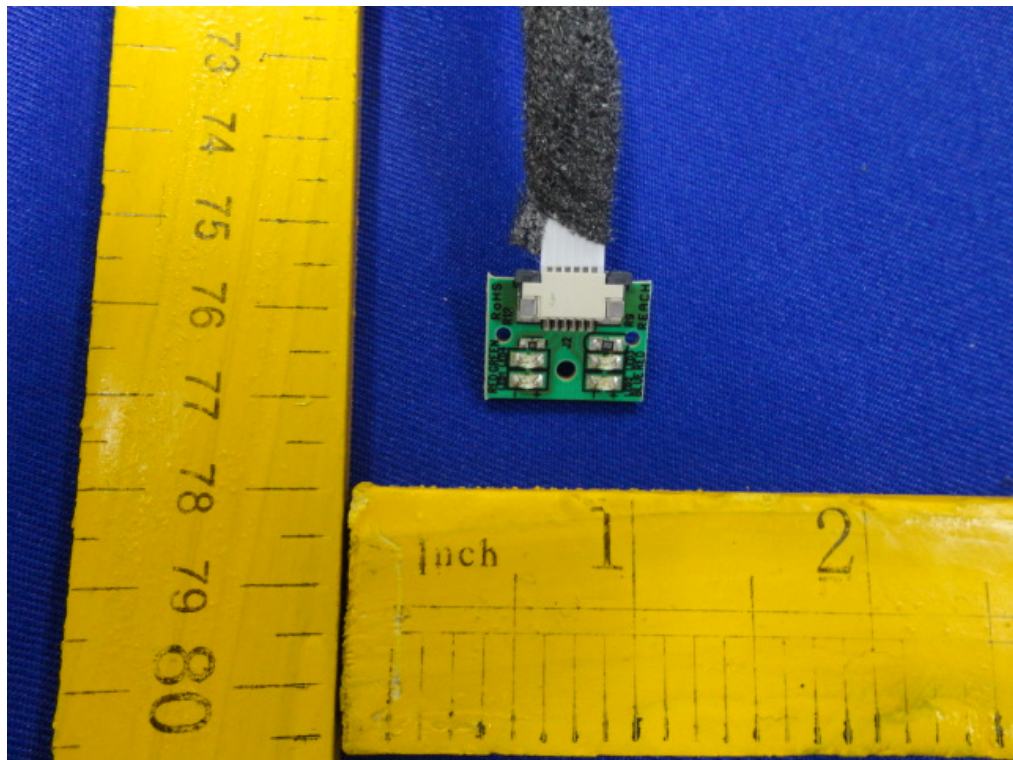
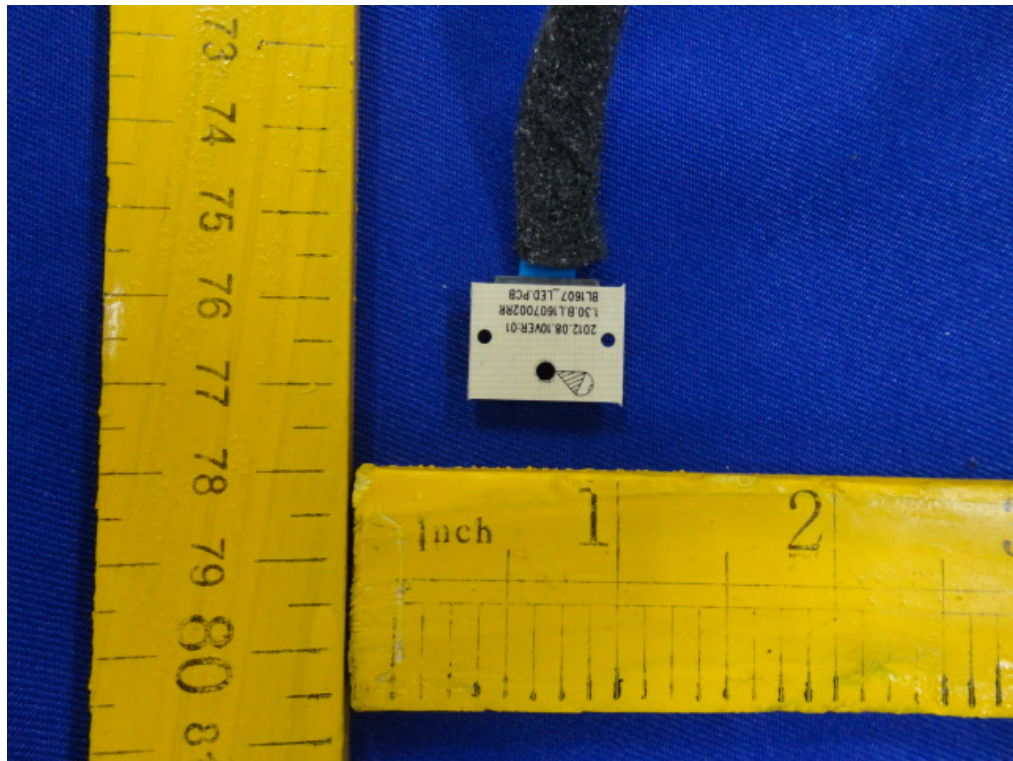
Internal Photos

M/N: CSBT22



Internal Photos

M/N: CSBT22



Internal Photos

M/N: CSBT22

