FCC PART 15C TEST REPORT FOR CERTIFICATION
On Behalf of

DONGGUAN ALLLIKE ELECTRONIC CO.,LTD

Bluetooth speaker

Model Number: ST-69BTS

Additional Mode: B005; BCN-Phx-001
BCN-Phx-002; BCN-Phx-003

FCC ID: BUQB005

Prepared for : DONGGUAN ALLLIKE ELECTRONIC CO.,LTD
CHUANCHA DEVELOPMENT DISTRICT,
MAYONG TOWN, DONGGUAN CITY,
GUANDONG PROVINCE, CHINA

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Report Number: ESTE-R1203004
Date of Test : March.4~11, 2012
Date of Report : March.11, 2012

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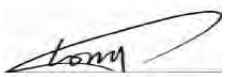
Test Report Verification

Applicant: **Address:**	DONGGUAN ALLLIKE ELECTRONIC CO.,LTD CHUANCHA DEVELOPMENT DISTRICT, MAYONG TOWN, DONGGUAN CITY, GUANDONG PROVINCE, CHINA		
Manufacturer: **Address:**	DONGGUAN ALLLIKE ELECTRONIC CO.,LTD CHUANCHA DEVELOPMENT DISTRICT, MAYONG TOWN, DONGGUAN CITY, GUANDONG PROVINCE, CHINA		
Factory: **Address:**	DONGGUAN ALLLIKE ELECTRONIC CO.,LTD CHUANCHA DEVELOPMENT DISTRICT, MAYONG TOWN, DONGGUAN CITY, GUANDONG PROVINCE, CHINA		
E.U.T:	Bluetooth speaker		
Model Number:	ST-69BTS Additional Mode:B005;BCN-Phx-001;BCN-Phx-002;BCN-Phx-003 Note: The products are difference in model number and appearance only.		
Power Supply:	DC 4.2V-5.5V		
Test Voltage:	DC 4.2V From Battery		
Trade Name:	ALLLIKE; SATECHI; BEACON	Serial No.:	------
Date of Receipt:	Feb.16.2012	Date of Test:	March.4~11, 2012
Test Specification:	FCC Rules and Regulations Part 15 Subpart C:2008 ANSI C63.4:2003		
Test Result:	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. This report applies to above tested sample only and shall not be reproduced in part without written approval of EST Technology Co., Ltd. Date:March.11.2011		

Prepared by:	Tested by:	Approved by:
		
Ada / Assistant	Tony.Tang/ Engineer	IcemanHu / Manager

Other Aspects:

None.

Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested

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.

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Product Name	:	Bluetooth speaker
Model Number	:	ST-69BTS
FCC ID	:	BUQB005
Operation frequency	:	2402MHz~2480MHz
Number of channel	:	79
Antenna	:	Integrated PCB antenna, 0 dBi gain
Modulation	:	FHSS (GFSK, π/4-DQPSK, 8-DPSK)
Power Supply	:	DC 4.2-5.5V
Applicant	:	DONGGUAN ALLLIKE ELECTRONIC CO.,LTD CHUANCHA DEVELOPMENT DISTRICT, MAYONG TOWN, DONGGUAN CITY, GUANDONG PROVINCE, CHINA
Manufacturer	:	DONGGUAN ALLLIKE ELECTRONIC CO.,LTD CHUANCHA DEVELOPMENT DISTRICT, MAYONG TOWN, DONGGUAN CITY, GUANDONG PROVINCE, CHINA
Sample Type	:	Prototype production

2. SUMMARY OF TEST

2.1. Summary of test result

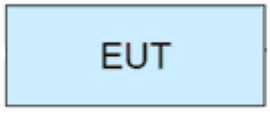
Description of Test Item	Standard	Results
Maximum Peak Output Power	FCC Part 15: 15.247(b)(1) DA 00-705	PASS
20dB Bandwidth	FCC Part 15: 15.215 DA 00-705	PASS
Carrier Frequency Separation	FCC Part 15: 15.247(a)(1) DA 00-705	PASS
Number Of Hopping Channel	FCC Part 15: 15.247(a)(1)(iii) DA 00-705	PASS
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	PASS
Antenna requirement	FCC Part 15: 15.203	PASS

2.2. Assistant equipment used for test

N/A

2.3. Block Diagram

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



2.4. Test mode

The test software "Bluesuite" 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
π/4-DQPSK	Low	2402MHz
	Middle	2441MHz
	High	2480MHz
8-DPSK	Low	2402MHz
	Middle	2441MHz
	High	2480MHz

2.5. Test Equipment

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

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESVS10	100004	Mar,19,11	1 Year
Spectrum Analyzer	Agilent	E4411B	MY50140697	Mar,19,11	1 Year
Bilog Antenna	Teseq	CBL 6111D	25872	June.08,11	1 .5Year
Signal Amplifier	Agilent	310N	187037	Aug,25,11	1 Year

2.5.2. For radiated emission test(above 1GHz)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Temperature controller	Terchy	MHQ	120	May.08,11	1 Y
Spectrum Analyzer	R&S	FSU	1166.1660.26	May.08,11	1Y
Vector Signal Generator	R&S	SMBV100A	1407.6004K02	May.08,11	1Y
Double Ridged Horn Antenna	R&S	HF907	100276	Jan.16.11	2Y
Double Ridged Horn Antenna	R&S	HF907	100268	Jan.16.11	2Y
Log-periodic Dipole Antenna	R&S	HL223	100435	Jan.16.11	2Y
Biconical Antenna	R&S	HK116	100431	Jan.16.11	2Y
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	9163-462	Jan.16.11	2Y
Pre-amplifer	AH	PAM-0118	10008	May.08,11	1Y
Pre-amplifer	R&S	SCU-01	10049	May.08,11	1Y
High Pass filter	Micro	HPM50111	324455	May.08,11	1Y
RF Cable	Hubersuhner	W10.02	534096	May.08,11	1 Year
RF Cable	Hubersuhner	W10.02	534123	May.08,11	1 Year
RF Cable	Hubersuhner	RG 214/U	513423	May.08,11	1 Year
RF Cable	Hubersuhner	RG 214/U	523455	May.08,11	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

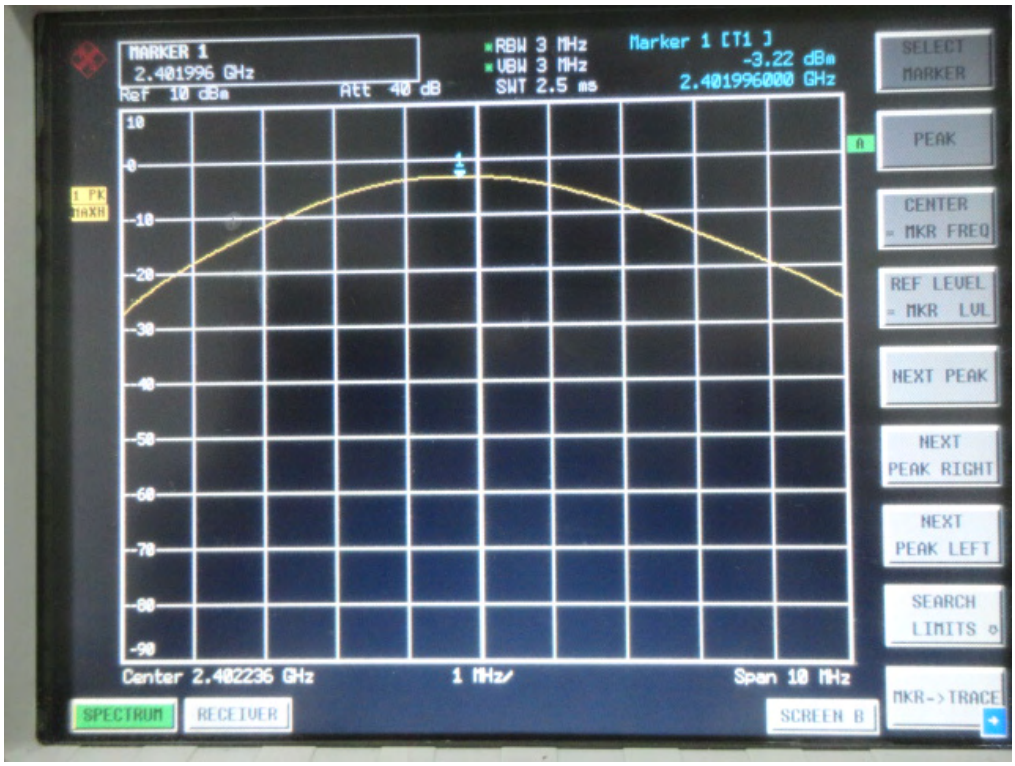
The transmitter output (antenna port) was connected to the spectrum analyzer

3.3. Test Result

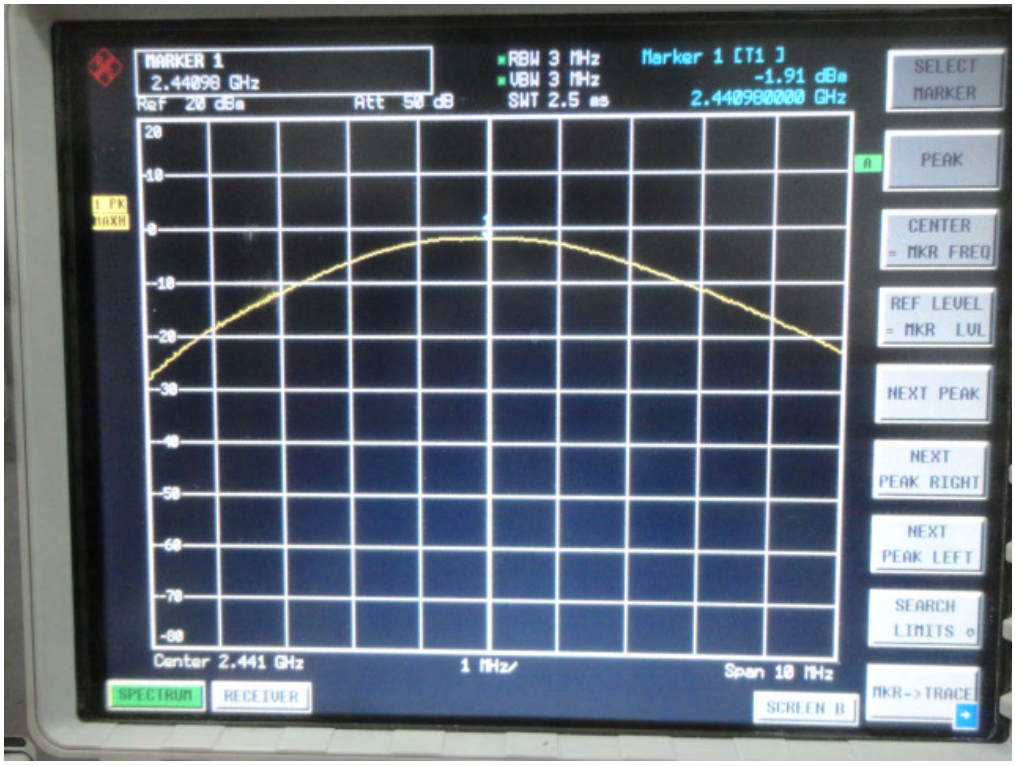
EUT: Bluetooth spaeker M/N:ST-69BTS					
Test date: 2012-3-10		Test site: RF site	Tested by: Tony Tang		
Mode	Freq (MHz)	Result (dBm)	Limit		Margin (dB)
			dBm	W	
GFSK	2402	-3.22	30.00	1	33.22
	2441	-1.91	30.00	1	31.91
	2480	-2.28	30.00	1	32.28
π/4-DQPSK	2402	-1.66	30.00	1	31.66
	2441	-1.53	30.00	1	31.53
	2480	-1.60	30.00	1	31.60
8-DPSK	2402	-0.82	30.00	1	30.82
	2441	-1.32	30.00	1	31.32
	2480	-1.20	30.00	1	31.20
Conclusion: PASS					

3.4. Test Data

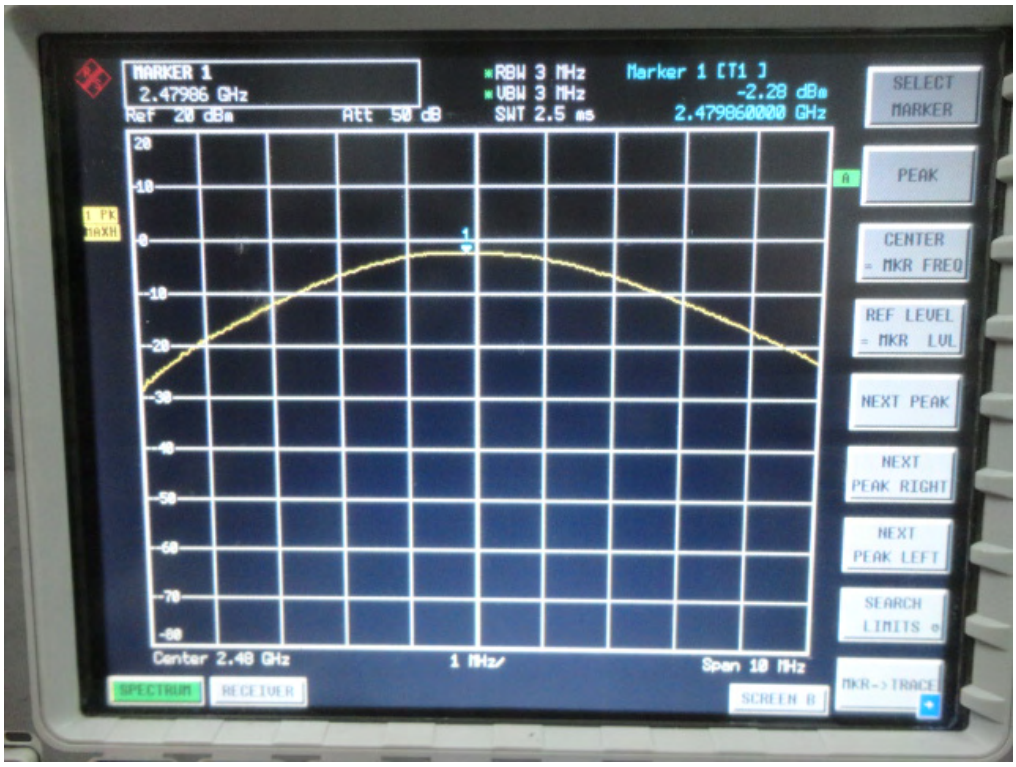
GFSK 2402 MHz



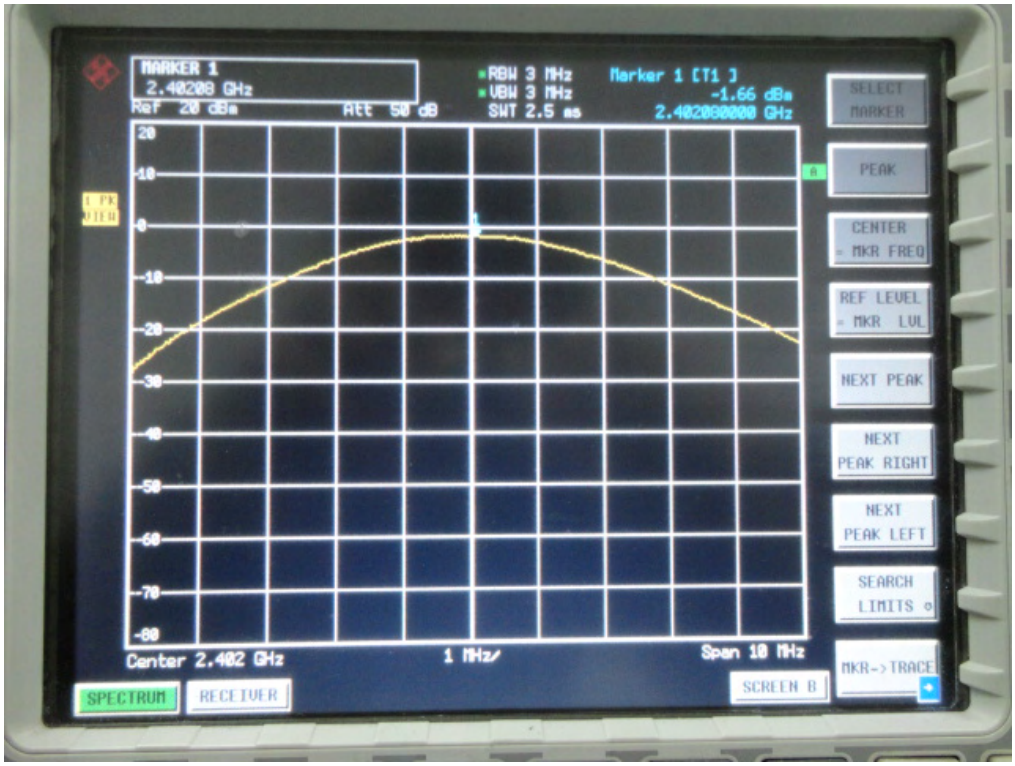
GFSK 2441 MHz



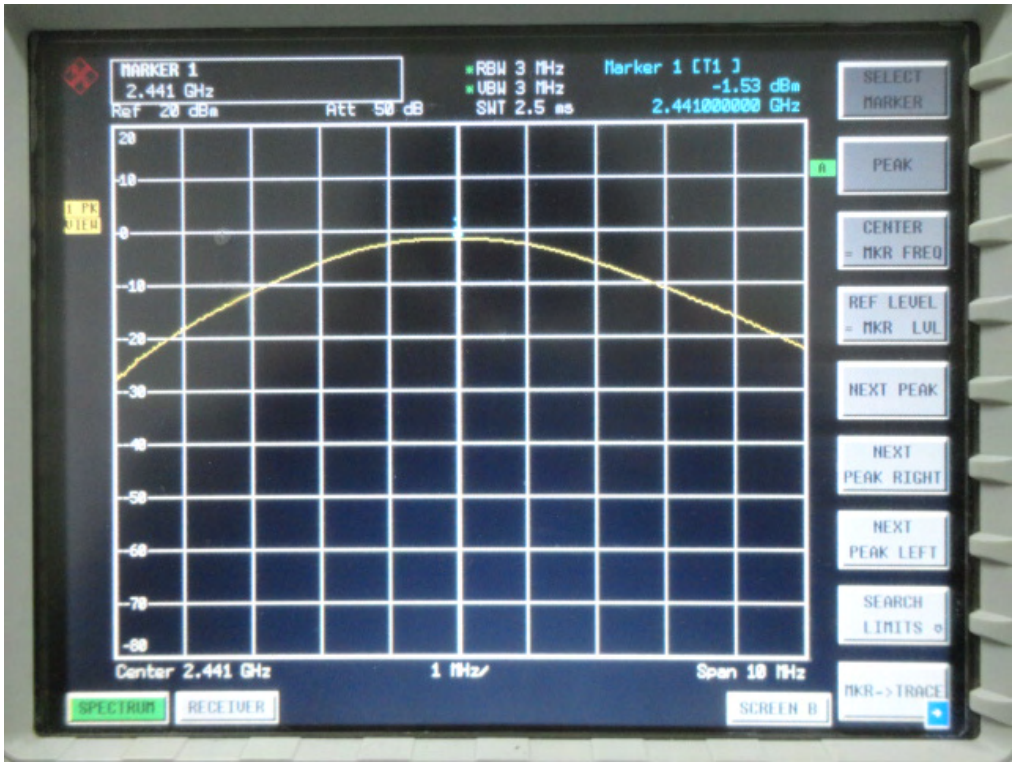
GFSK 2480 MHz



π/4-DQPSK 2402MHz

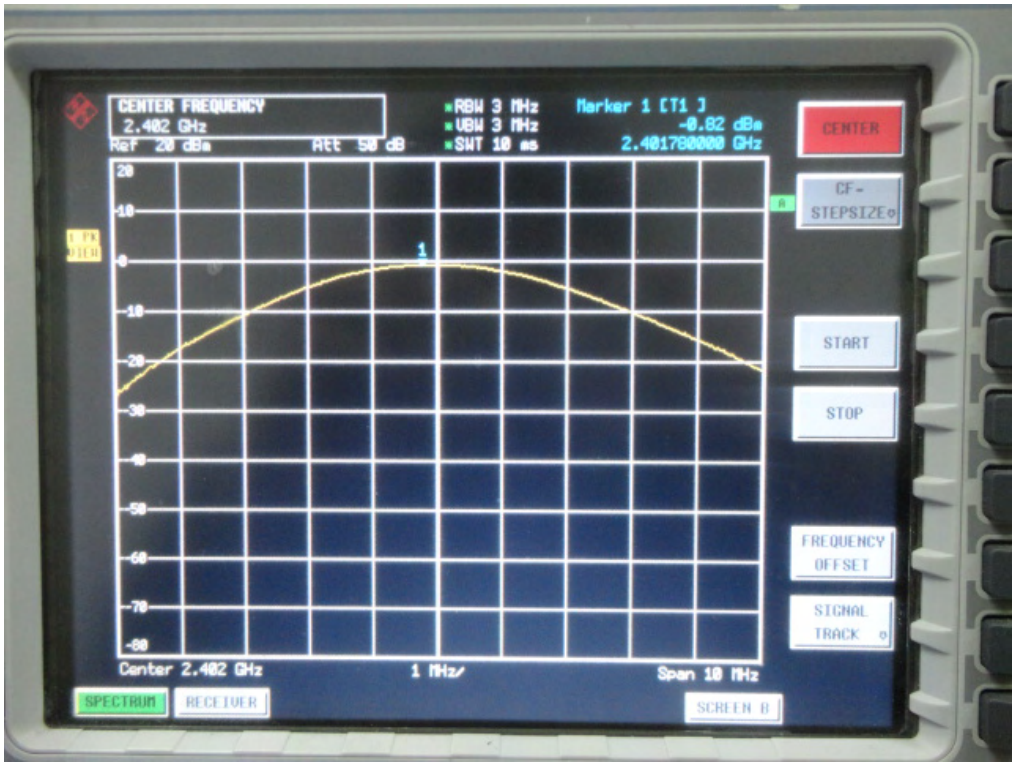


π/4-DQPSK 2441MHz

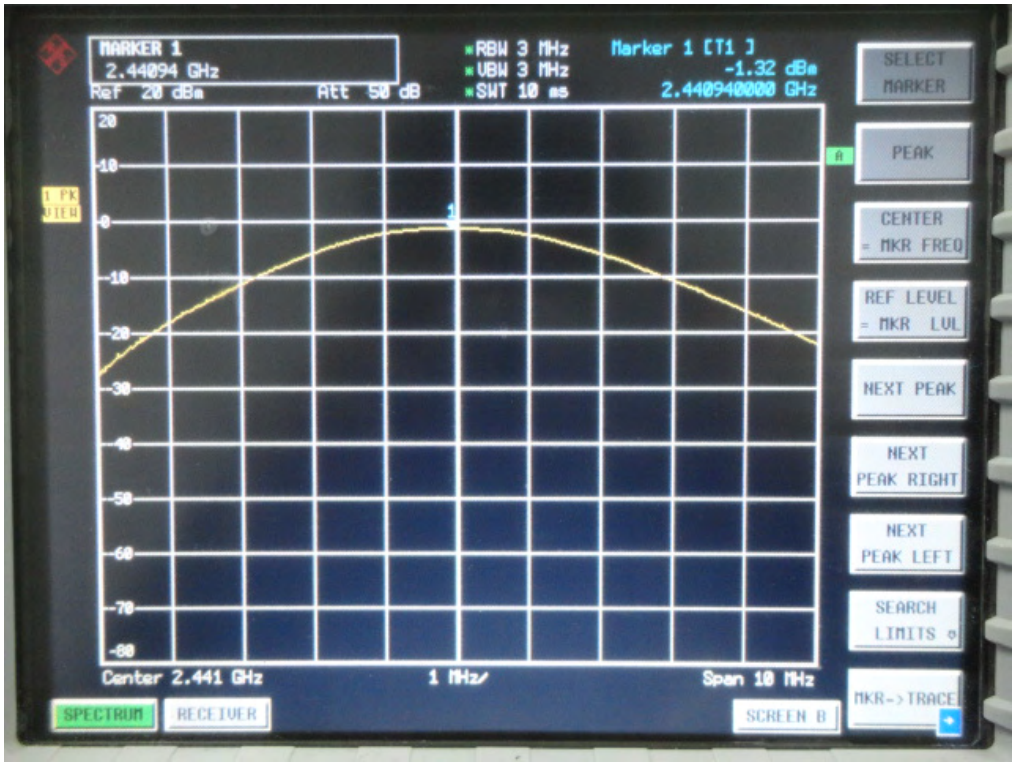


π/4-DQPSK 2480MHz

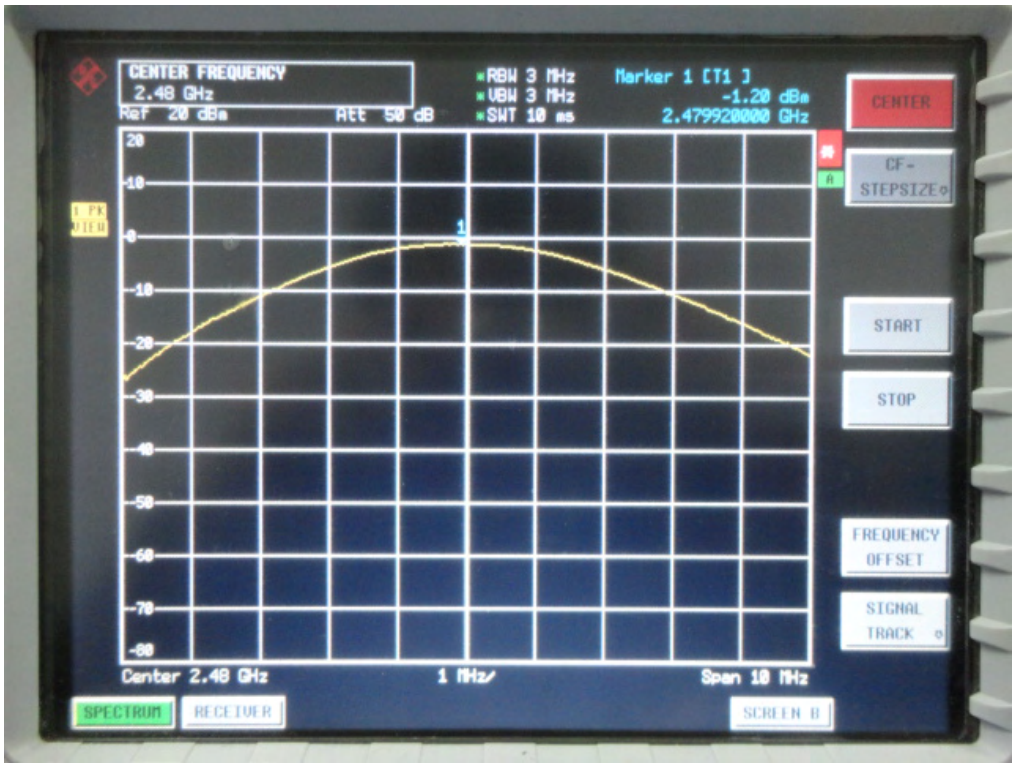
8-DPSK 2402MHz



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

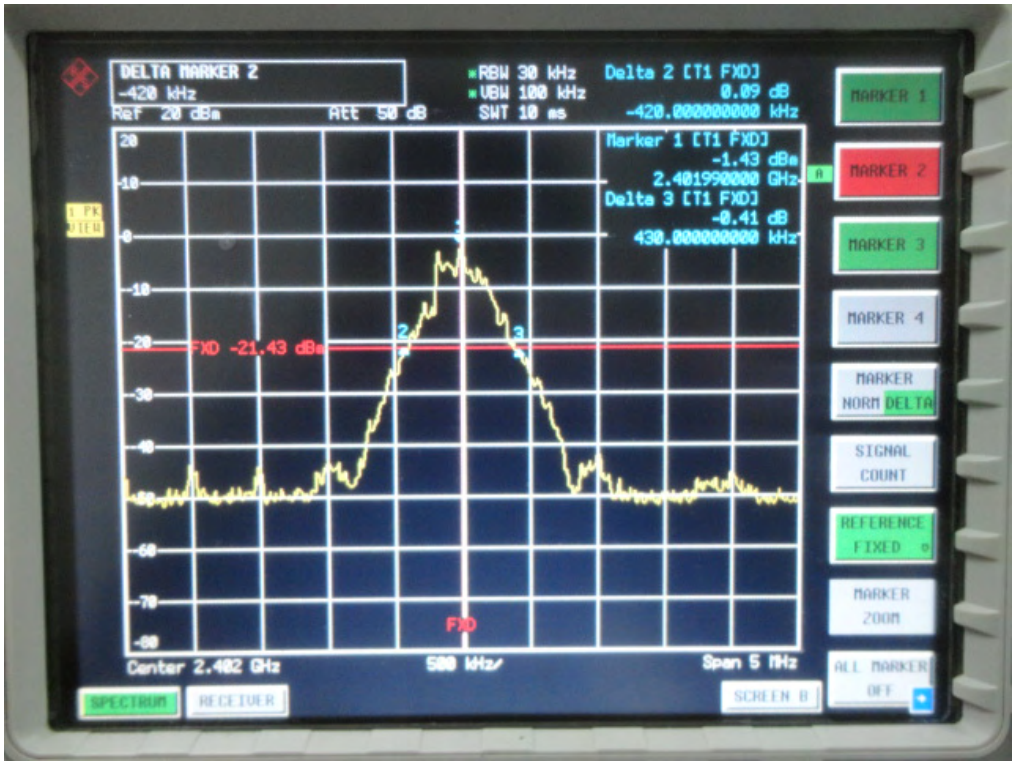
The transmitter output was coupled to a spectrum analyzer via a antenna. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30kHz RBW and 100kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

4.3. Test Result

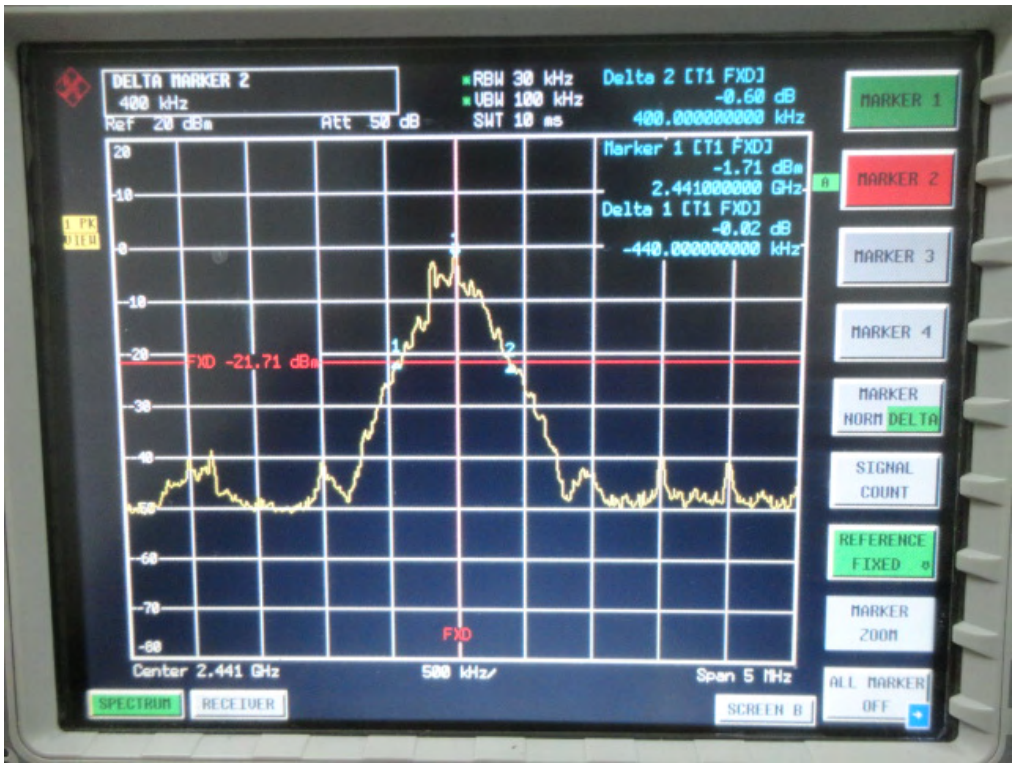
EUT: Bluetooth spaeker M/N:ST-69BTS				
Test date: 2012-3-10		Test site: RF site		Tested by: Tony Tang
Mode	Freq (MHz)	20dB Bandwidth (MHz)	Limit (kHz)	Conclusion
GFSK	2402	0.84	/	PASS
	2441	0.85	/	PASS
	2480	0.85	/	PASS
π/4-DQPSK	2402	0.84	/	PASS
	2441	0.87	/	PASS
	2480	0.85	/	PASS
8-DPSK	2402	0.85	/	PASS
	2441	0.86	/	PASS
	2480	0.85	/	PASS

4.4. Test Data

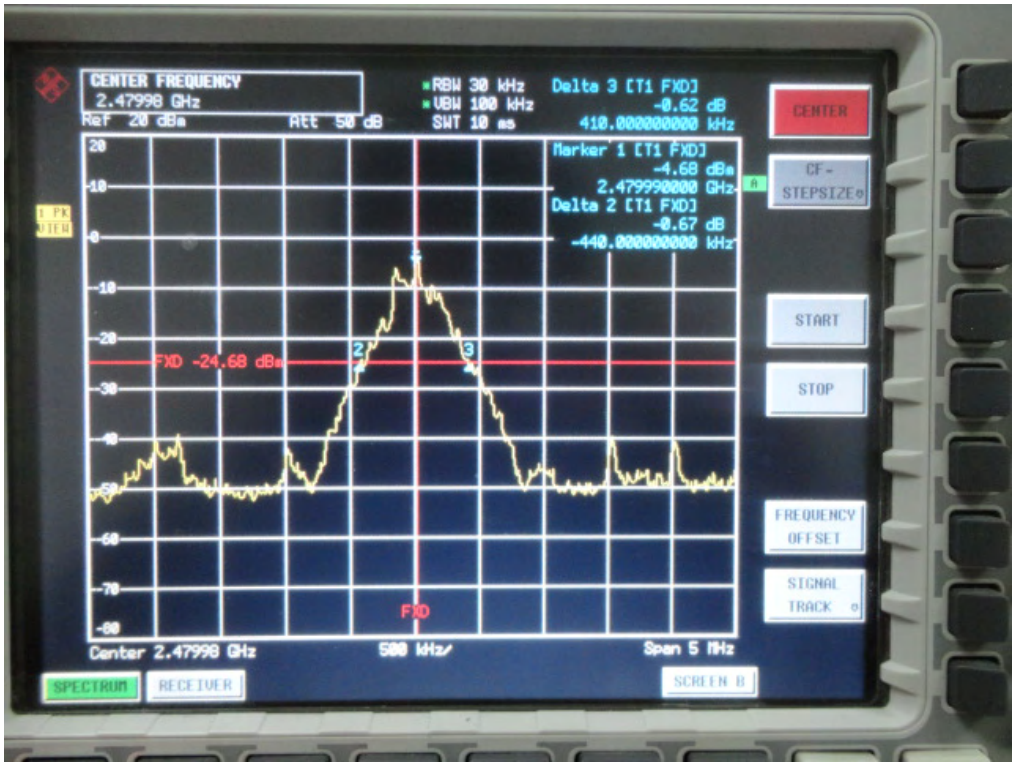
GFSK 2402MHz



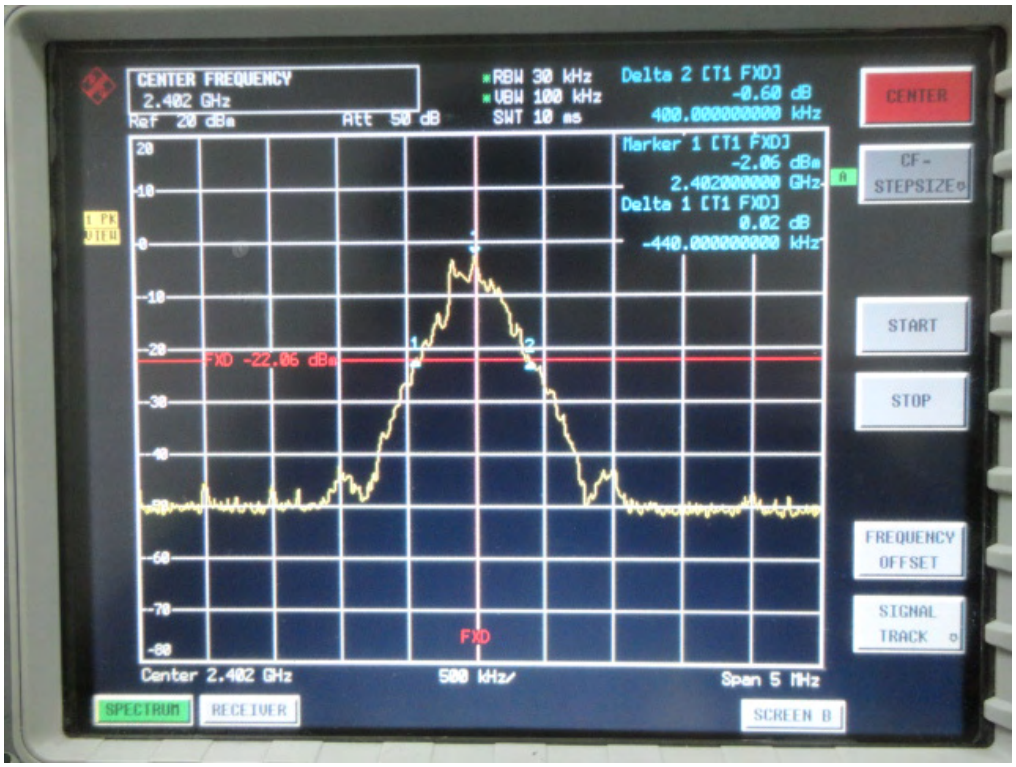
GFSK 2441MHz



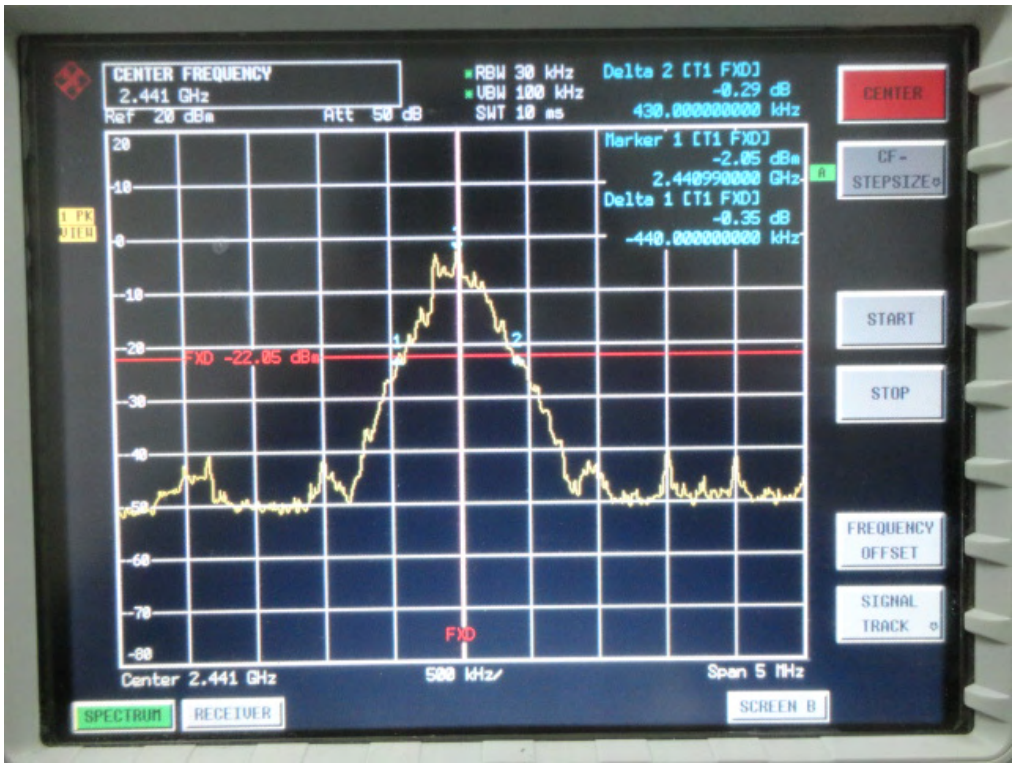
GFSK 2480MHz



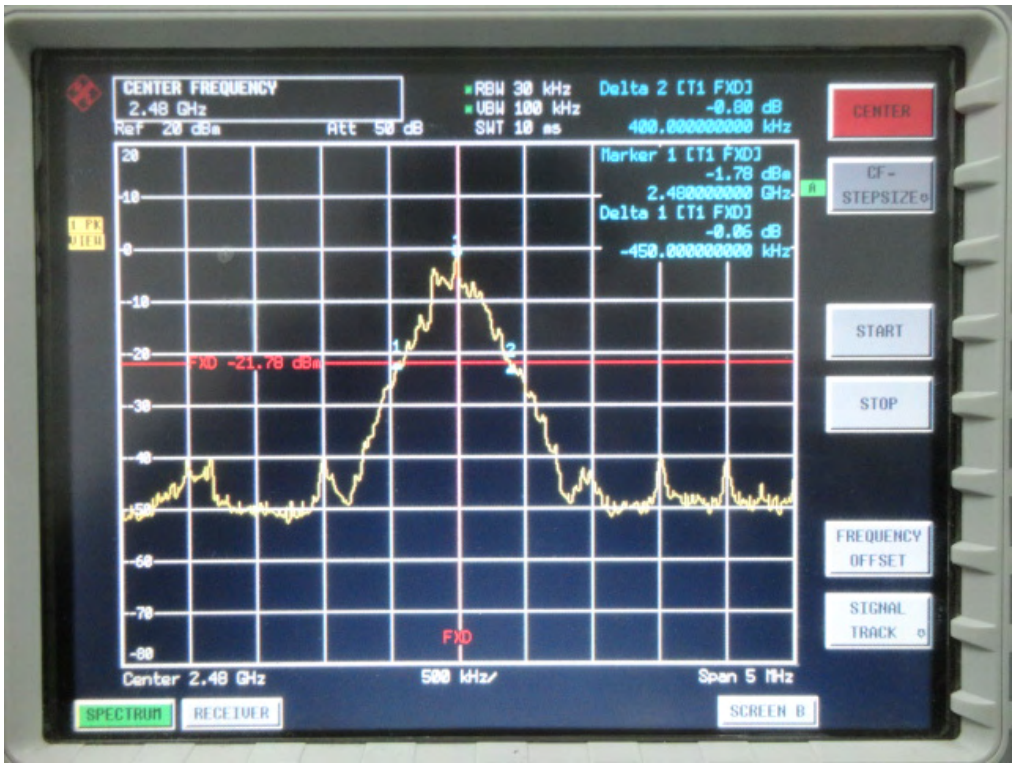
π/4-DQPSK 2402MHz



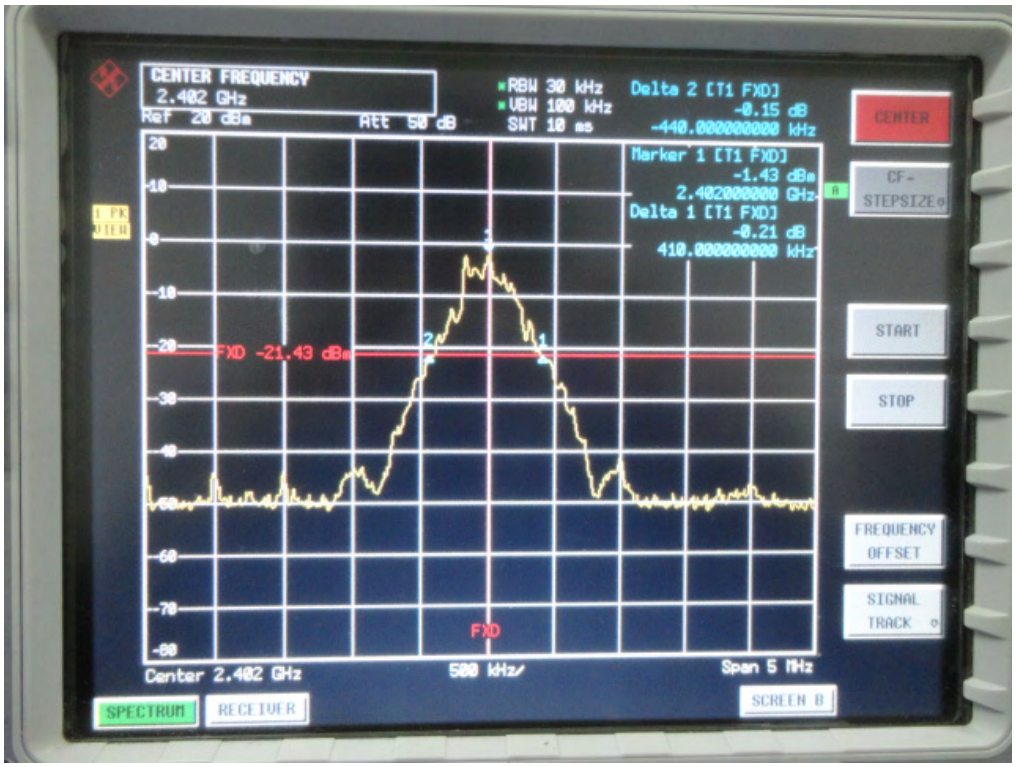
π/4-DQPSK 2441MHz



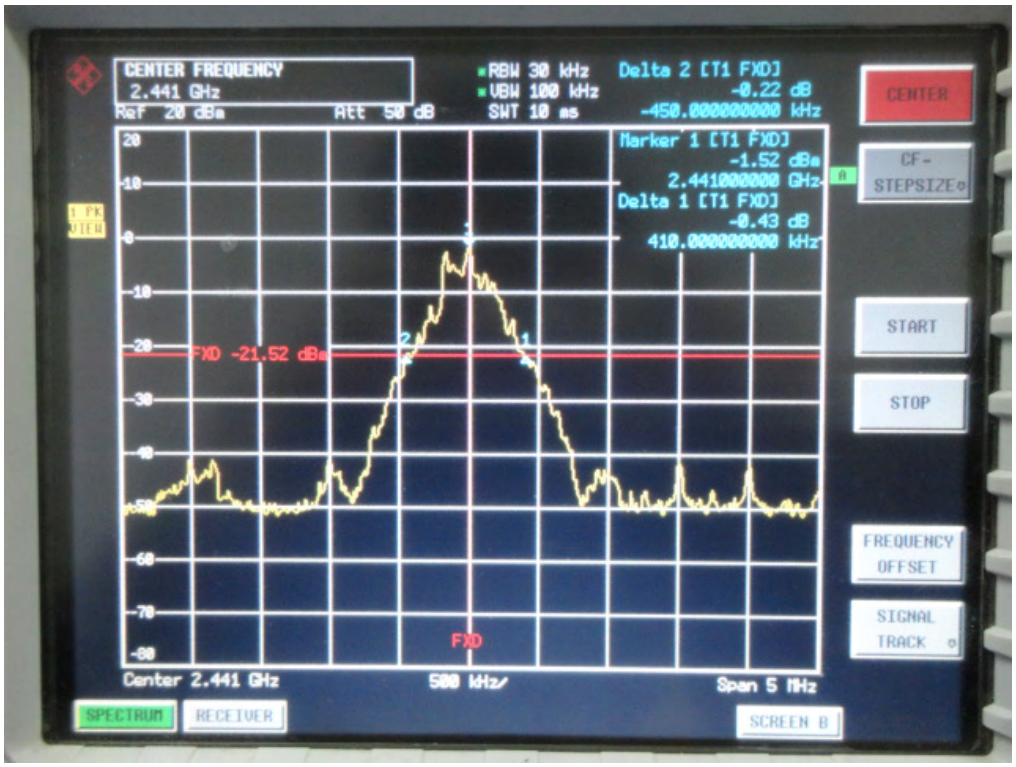
π/4-DQPSK 2480MHz



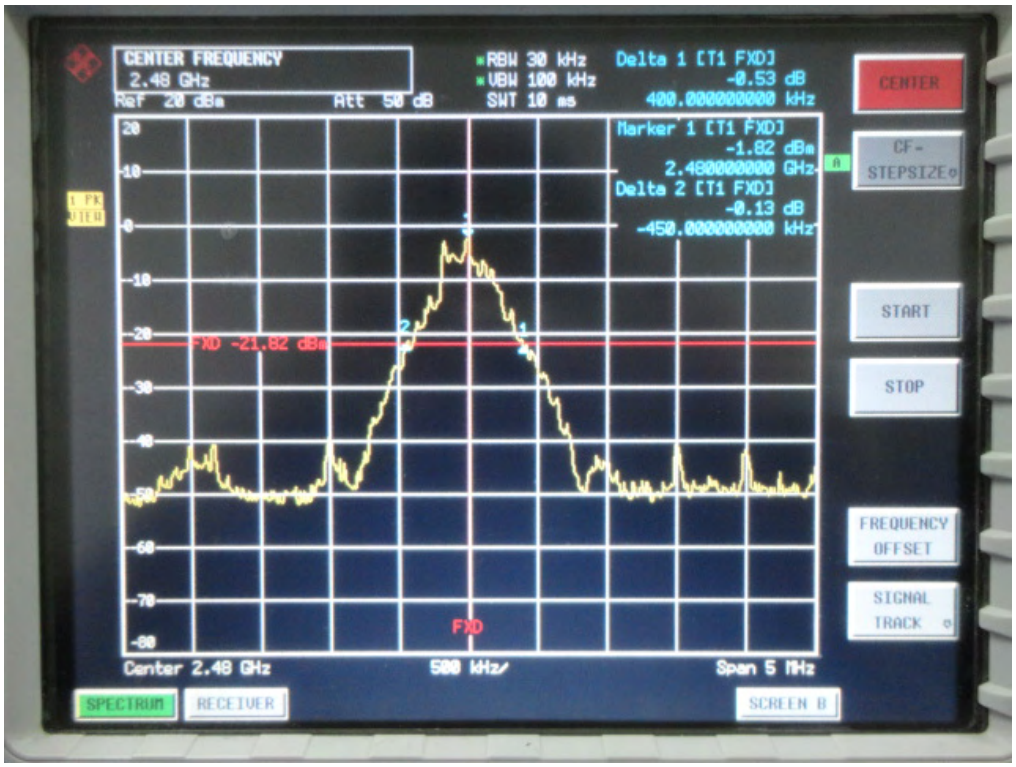
8-DPSK 2402MHz



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

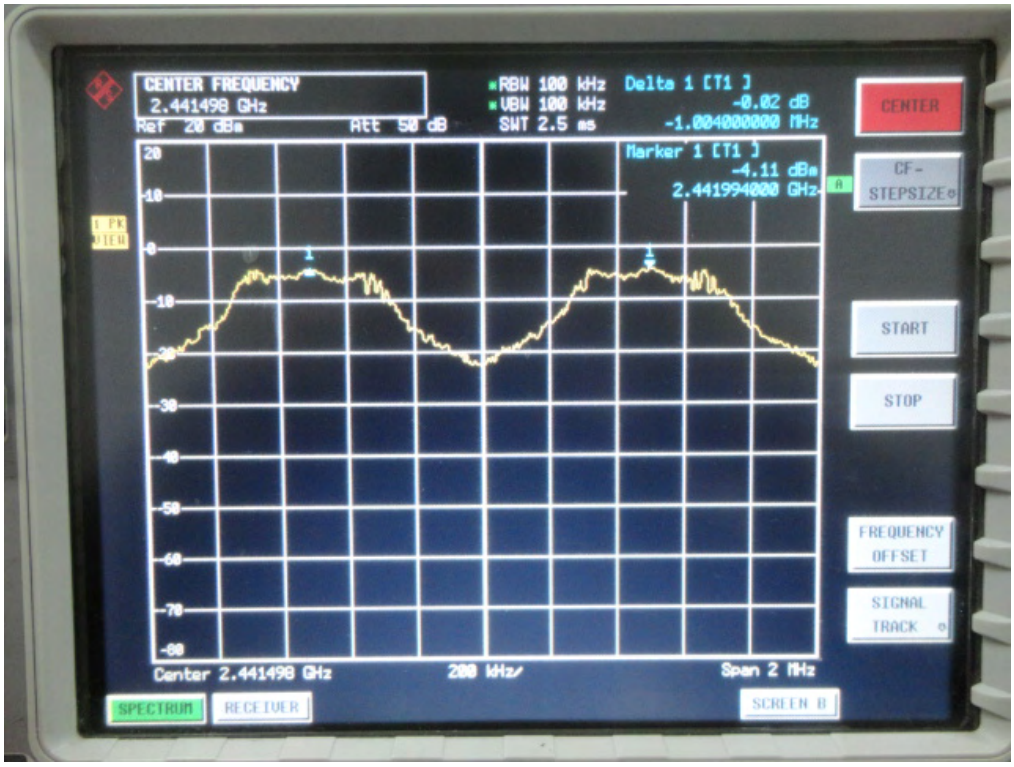
The transmitter output was coupled to a spectrum analyzer via a antenna. The carrier frequency was measured by spectrum analyzer with 100kHz RBW and 100kHz VBW.

5.3. Test Result

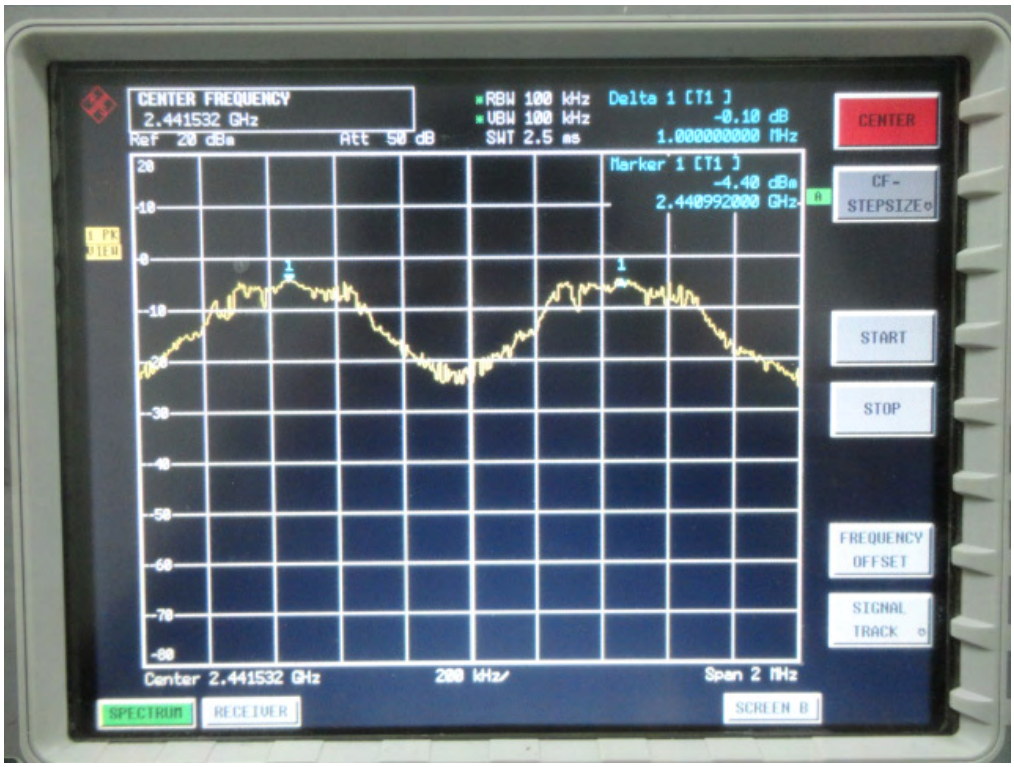
EUT: Bluetooth spaeker M/N:ST-69BTS			
Test date: 2012-3-10		Test site: RF site Tested by: Tony Tang	
Mode	Channel separation (MHz)	Limit	Conclusion
GFSK	1.004	>the 20dB Bandwidth or 25[kHz](whichever is greater)	PASS
π/4-DQPSK	1.000	>the 20dB Bandwidth or 25[kHz](whichever is greater)	PASS
8-DPSK	0.996	>the 20dB Bandwidth or 25[kHz](whichever is greater)	PASS

5.4. Test Data

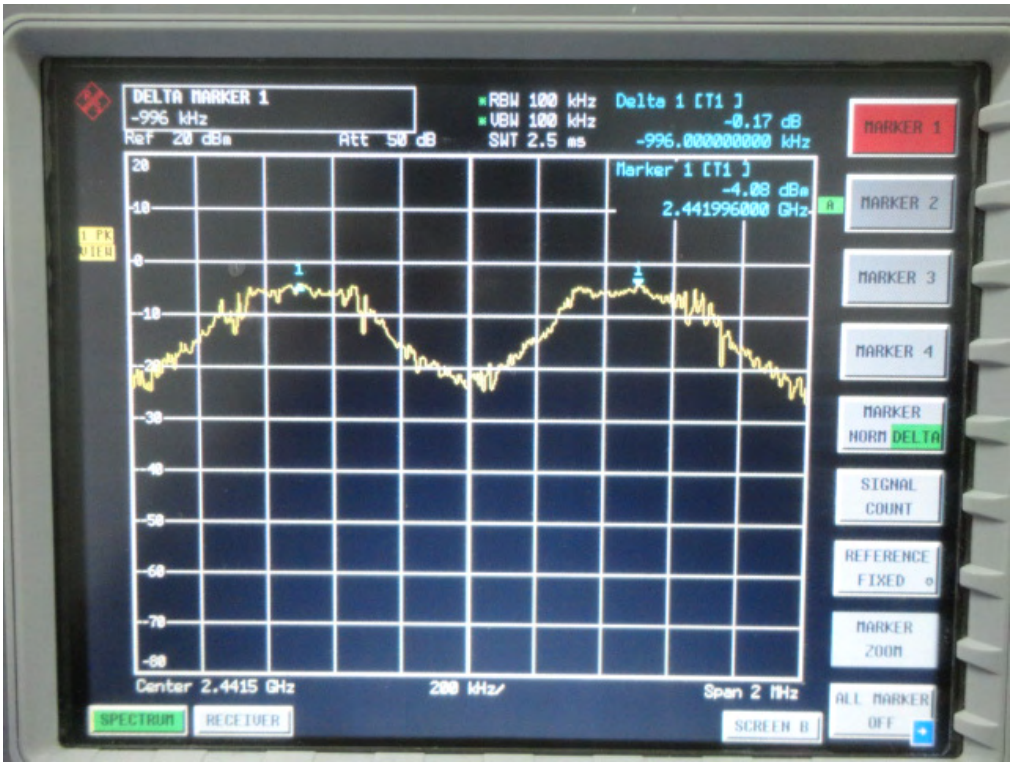
GFSK



π/4-DQPSK



8-DPSK


DELTA MARKER 1
-996 kHz
Ref 20 dBm
Att 50 dB
RBW 100 kHz
VBW 100 kHz
SWT 2.5 ms
Delta 1 [T1]
-0.17 dB
-996.000000000 kHz
Marker 1 [T1]
-4.08 dBm
2.441996000 GHz
1 PK VIEW
Center 2.4415 GHz
200 kHz/
Span 2 MHz
SPECTRUM
RECEIVER
SCREEN B
MARKER 1
MARKER 2
MARKER 3
MARKER 4
MARKER NORM DELTA
SIGNAL COUNT
REFERENCE FIXED
MARKER ZOOM
ALL MARKER OFF

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

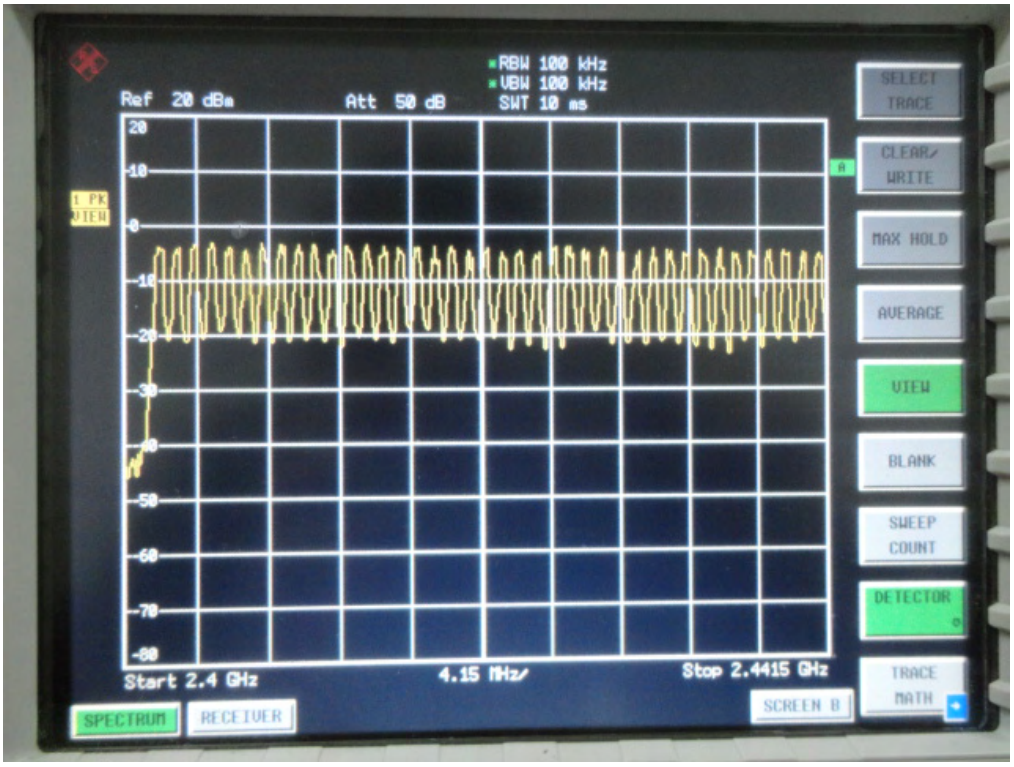
The transmitter output was coupled to a spectrum analyzer via a antenna. The number of hopping channel was measured by spectrum analyzer with 100kHz RBW and 100kHz VBW.

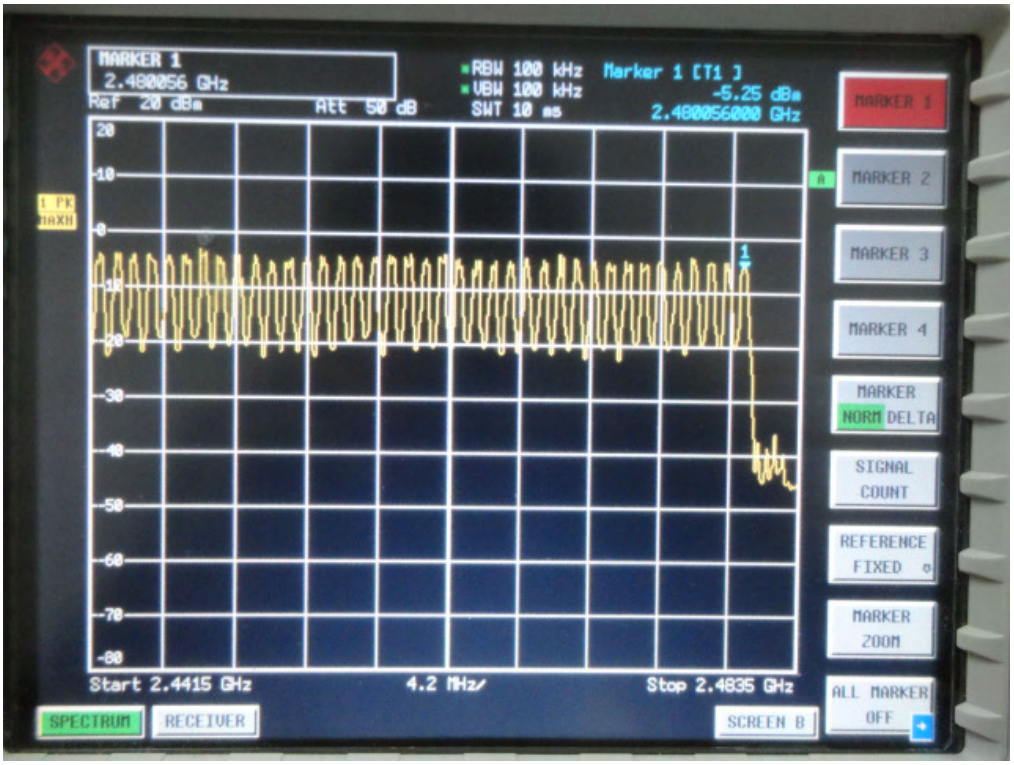
6.3. Test Result

EUT: Penscanner M/N:ST-69BTS			
Test date: 2012-3-10	Test site: RF site	Tested by: TaTa jiang	
Mode	Number of hopping channel	I	Conclusion
GFSK	79	>15	PASS
π/4-DQPSK	79	>15	PASS
8-DPSK	79	>15	PASS

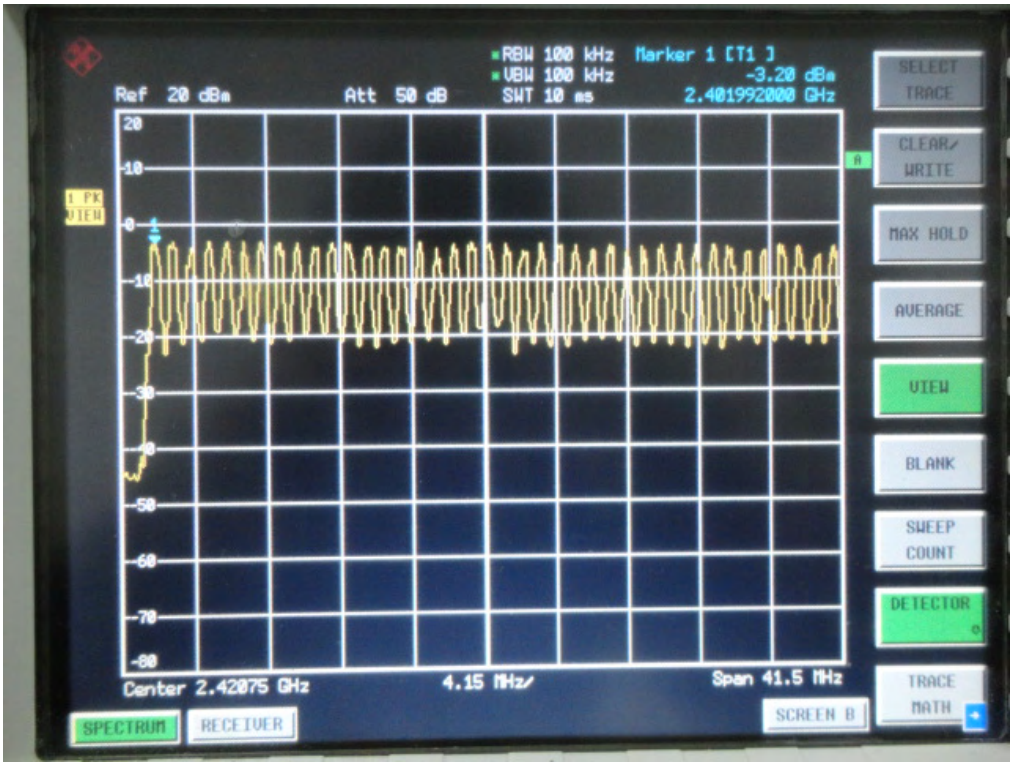
6.4. Test Data

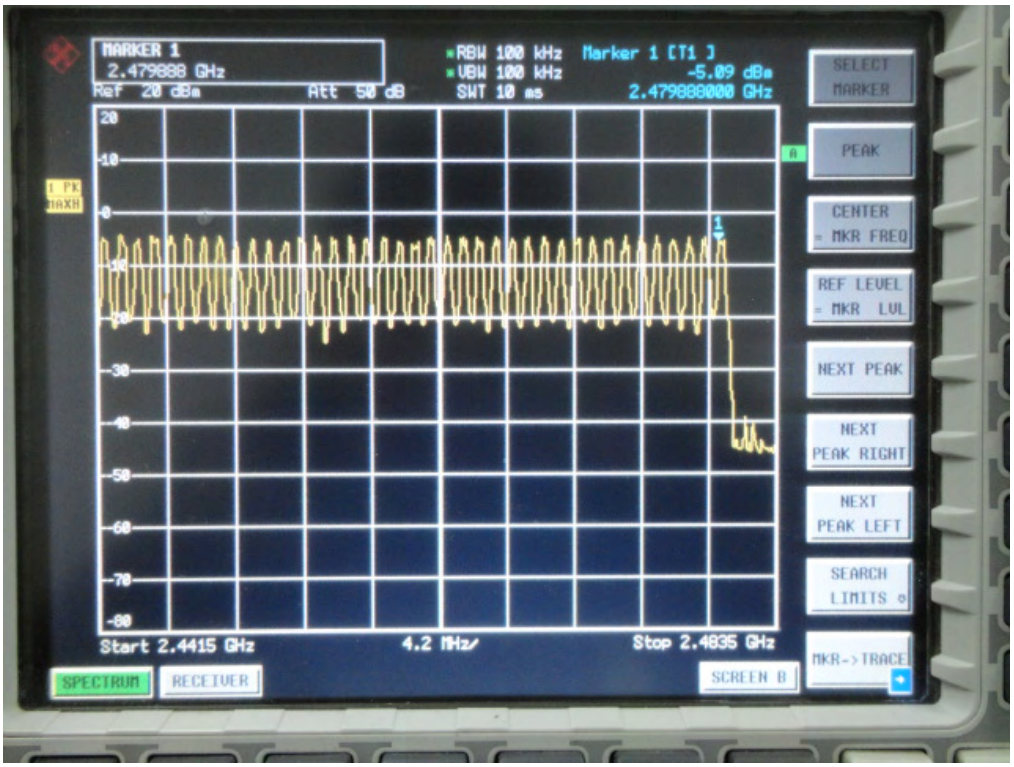
GFSK



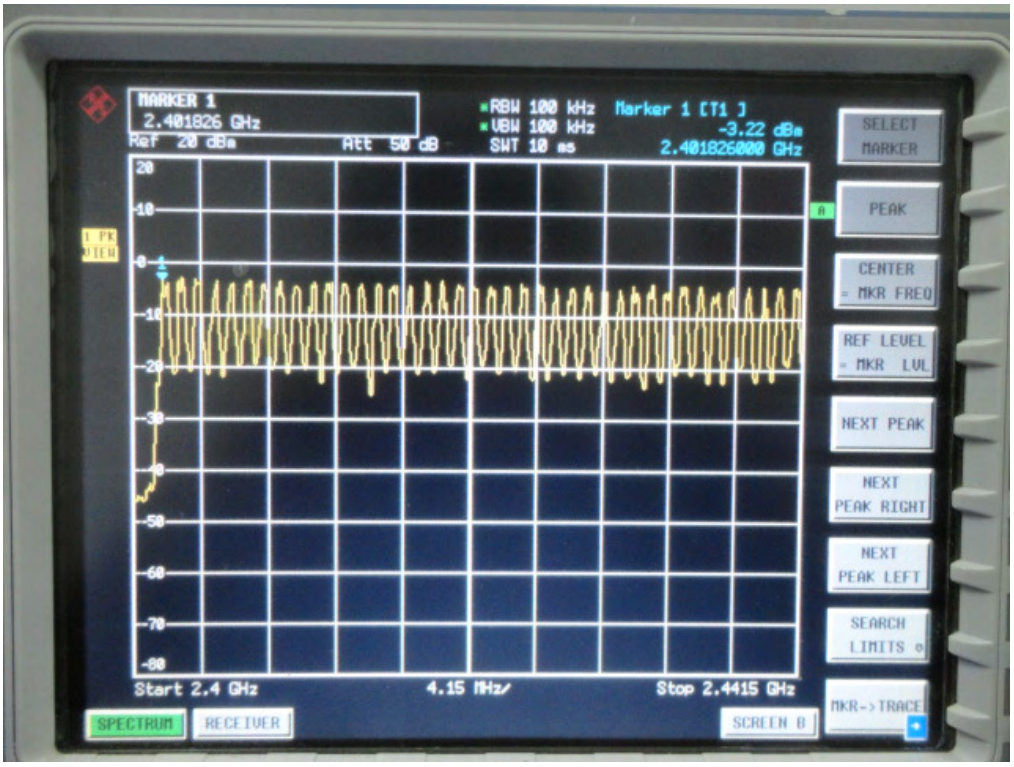


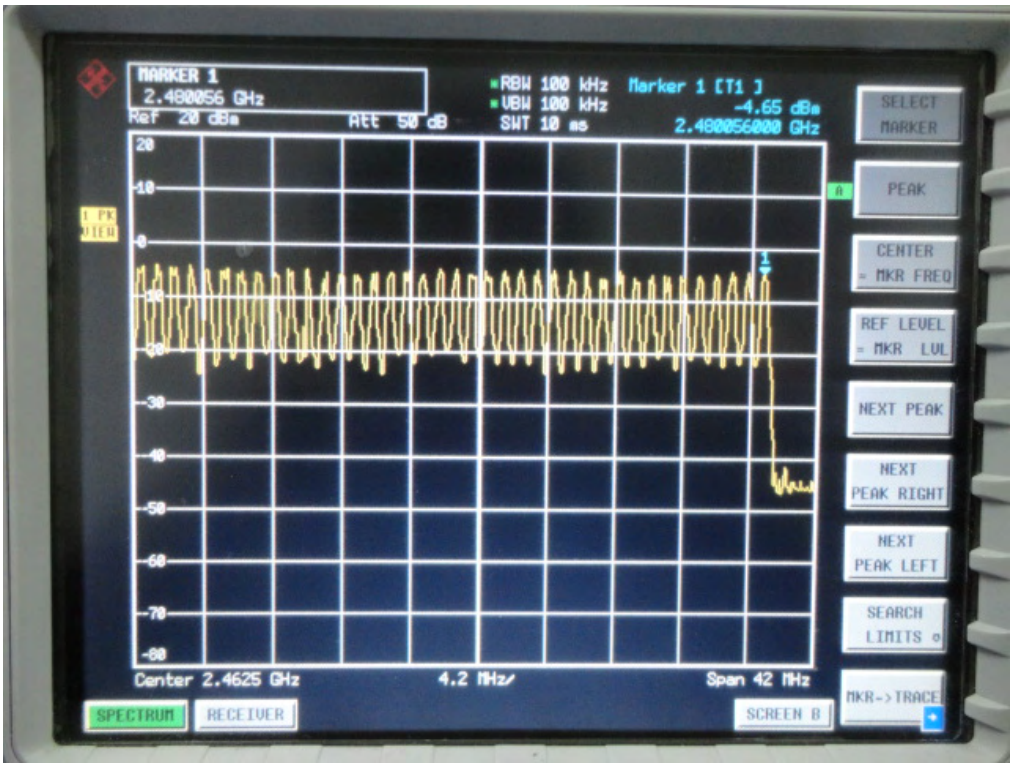
π/4 DQPSK


RBW 100 kHz
VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
-3.20 dBm
2.401992000 GHz
Ref 20 dBm
Att 50 dB
SELECT TRACE
CLEAR/ WRITE
MAX HOLD
AVERAGE
VIEW
BLANK
SWEEP COUNT
DETECTOR
TRACE MATH
Center 2.42075 GHz
4.15 MHz/
Span 41.5 MHz
SCREEN B
SPECTRUM
RECEIVER


MARKER 1
2.479688 GHz
RBW 100 kHz
VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
-5.09 dBm
2.479888000 GHz
Ref 20 dBm
Att 50 dB
SELECT MARKER
PEAK
CENTER = MKR FREQ
REF LEVEL = MKR LVL
NEXT PEAK
NEXT PEAK RIGHT
NEXT PEAK LEFT
SEARCH LIMITS
MKR->TRACE
Start 2.4415 GHz
4.2 MHz/
Stop 2.4835 GHz
SCREEN B
SPECTRUM
RECEIVER

8-DPSK


MARKER 1
2.401826 GHz
Ref 20 dBm
Att 50 dB
RBW 100 kHz
VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
-3.22 dBm
2.401826000 GHz
SELECT MARKER
PEAK
CENTER = MKR FREQ
REF LEVEL = MKR LVL
NEXT PEAK
NEXT PEAK RIGHT
NEXT PEAK LEFT
SEARCH LIMITS
MKR->TRACE
Start 2.4 GHz
4.15 MHz/
Stop 2.4415 GHz
SPECTRUM
RECEIVER
SCREEN B


MARKER 1
2.480056 GHz
Ref 20 dBm
Att 50 dB
RBW 100 kHz
VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
-4.65 dBm
2.480056000 GHz
SELECT MARKER
PEAK
CENTER = MKR FREQ
REF LEVEL = MKR LVL
NEXT PEAK
NEXT PEAK RIGHT
NEXT PEAK LEFT
SEARCH LIMITS
MKR->TRACE
Center 2.4625 GHz
4.2 MHz/
Span 42 MHz
SPECTRUM
RECEIVER
SCREEN B

7. DWELL TIME

7.1. Limit

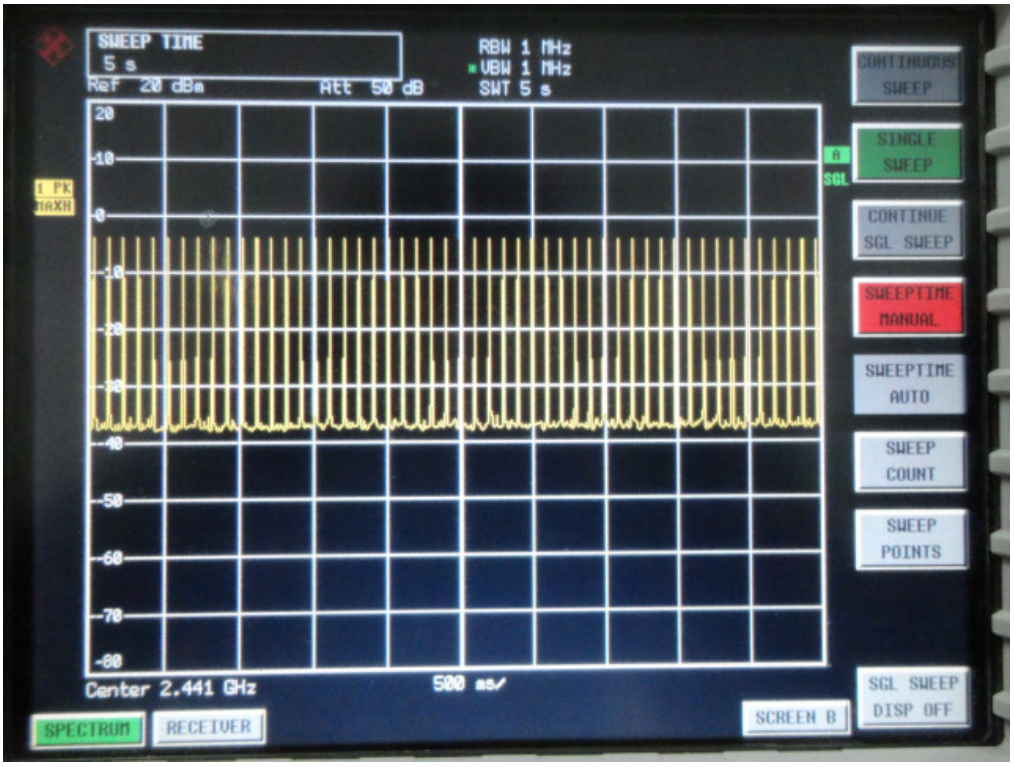
The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

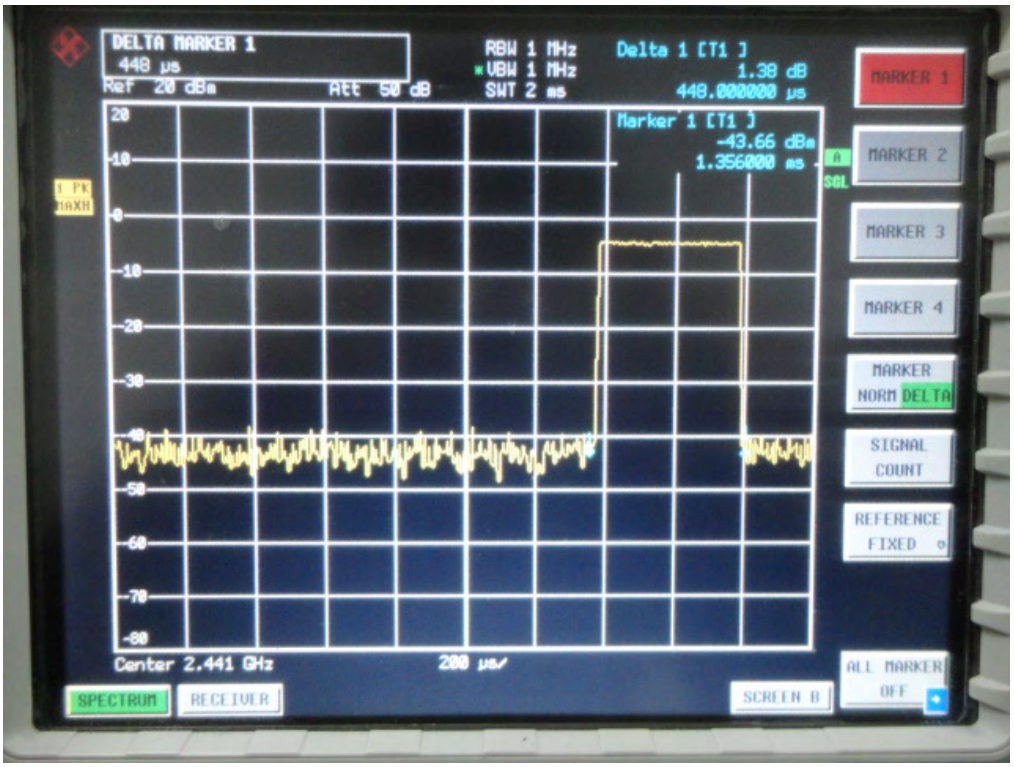
7.2. Test Result

EUT: Bluetooth spaeker M/N:ST-69BTS			
Test date: 2012-3-10	Test site: RF site	Tested by: Tony Tang	
Mode	Dwell time	Limit	Conclusion
GFSK DH1	144.40	<400ms	PASS
GFSK DH3	300.20	<400ms	PASS
GFSK DH5	324.47	<400ms	PASS
π/4 DQPSK DH1	138.75	<400ms	PASS
π/4 DQPSK DH3	268.60	<400ms	PASS
π/4 DQPSK DH5	320.17	<400ms	PASS
8-DPSK DH1	143.11	<400ms	PASS
8-DPSK DH3	276.50	<400ms	PASS
8-DPSK DH5	328.76	<400ms	PASS

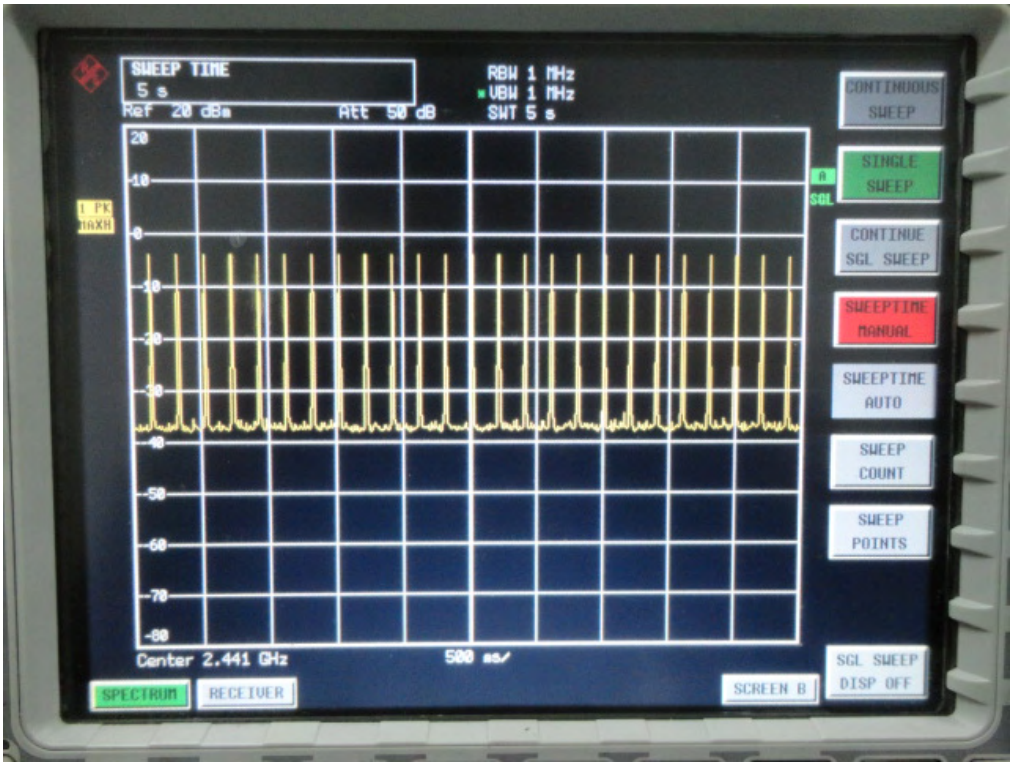
7.3. Test Data

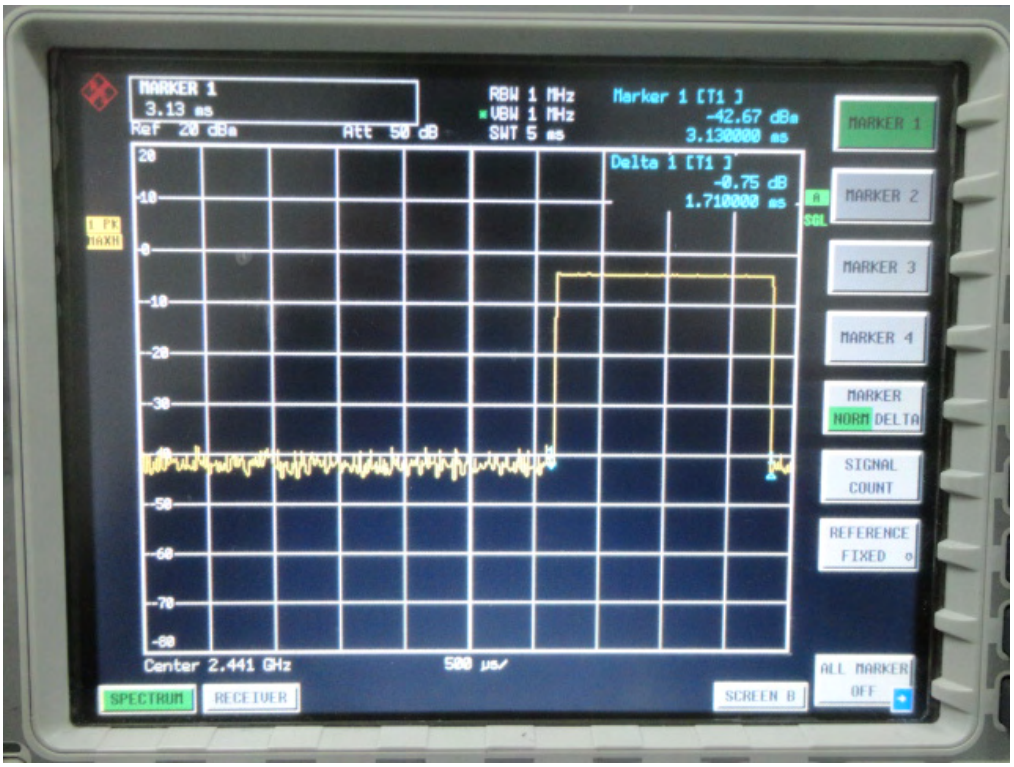
GFSK DH1 : 51hop/5s * 0.4 * 79 * 0.448ms = 144.40



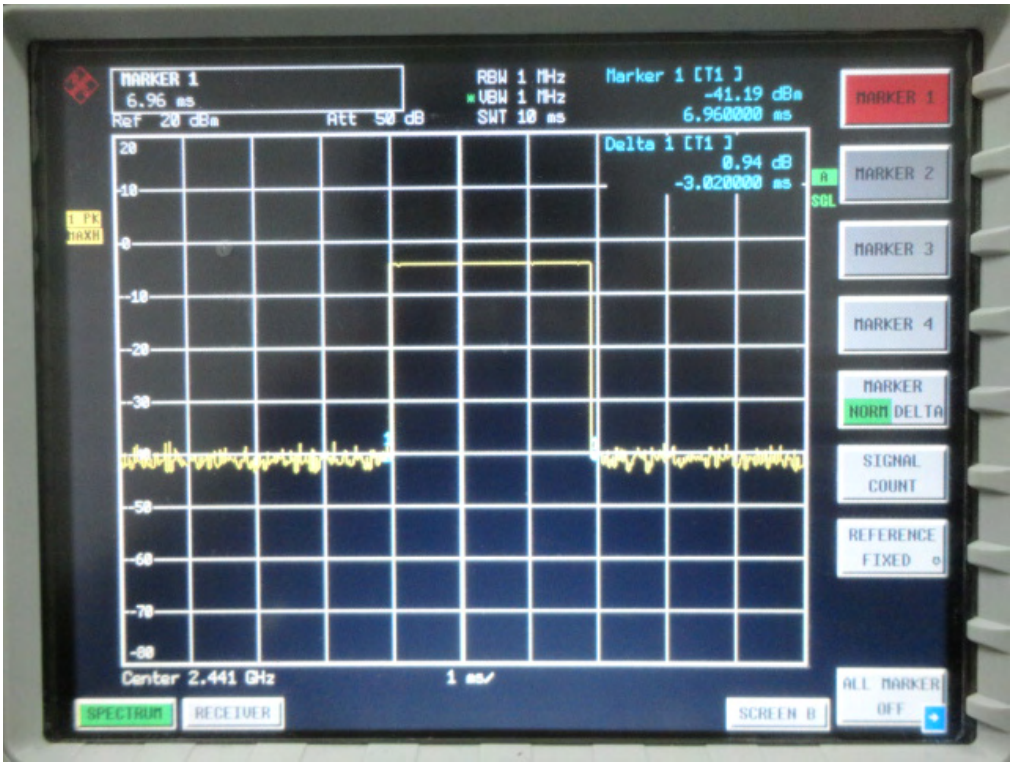


GFSK DH3 : 25hop/5s * 0.4 * 79 * 1.71= 270.18

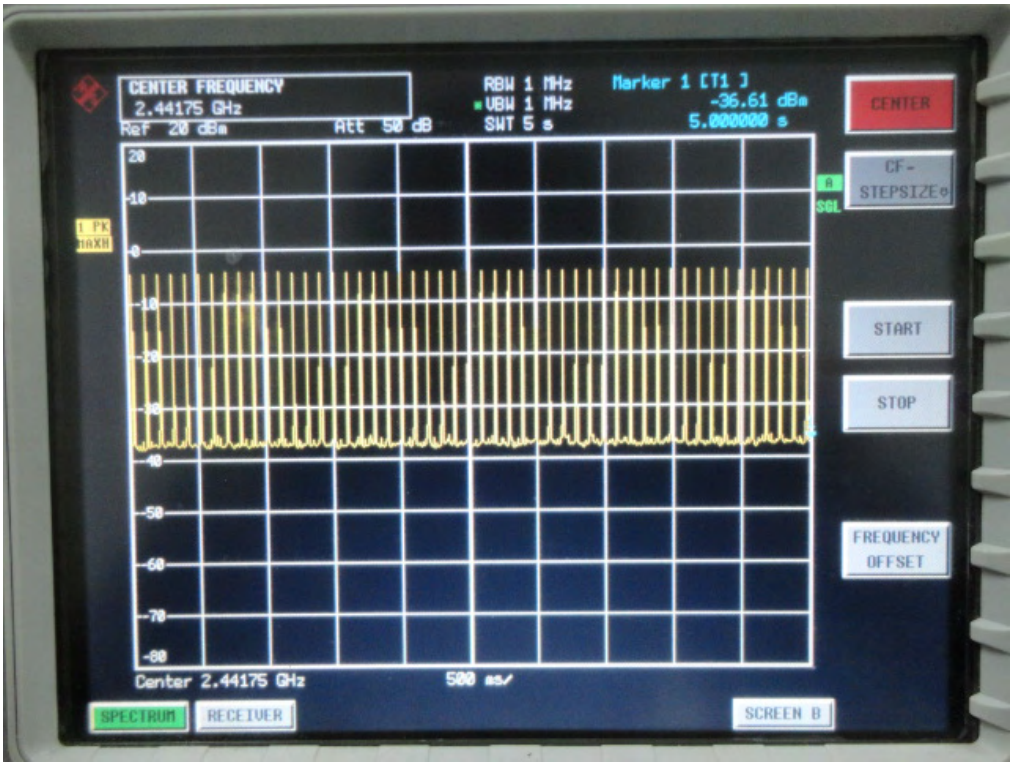


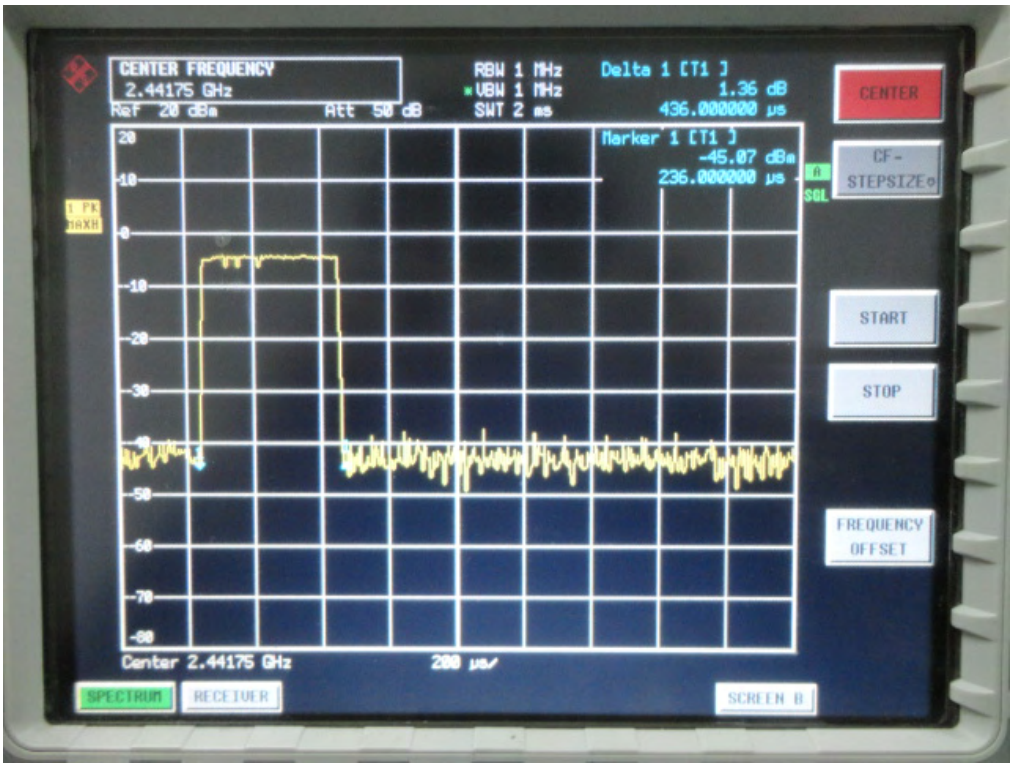


GSFK DH5 : 17hop/5s * 0.4 * 79 *3.02ms = 324.47

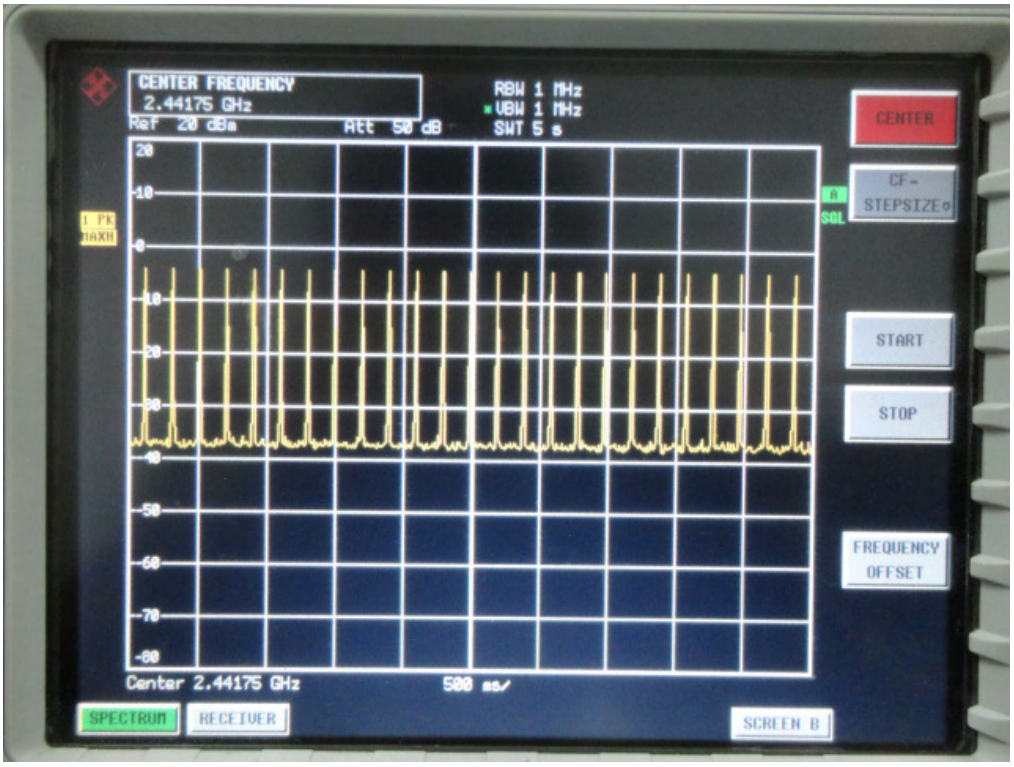


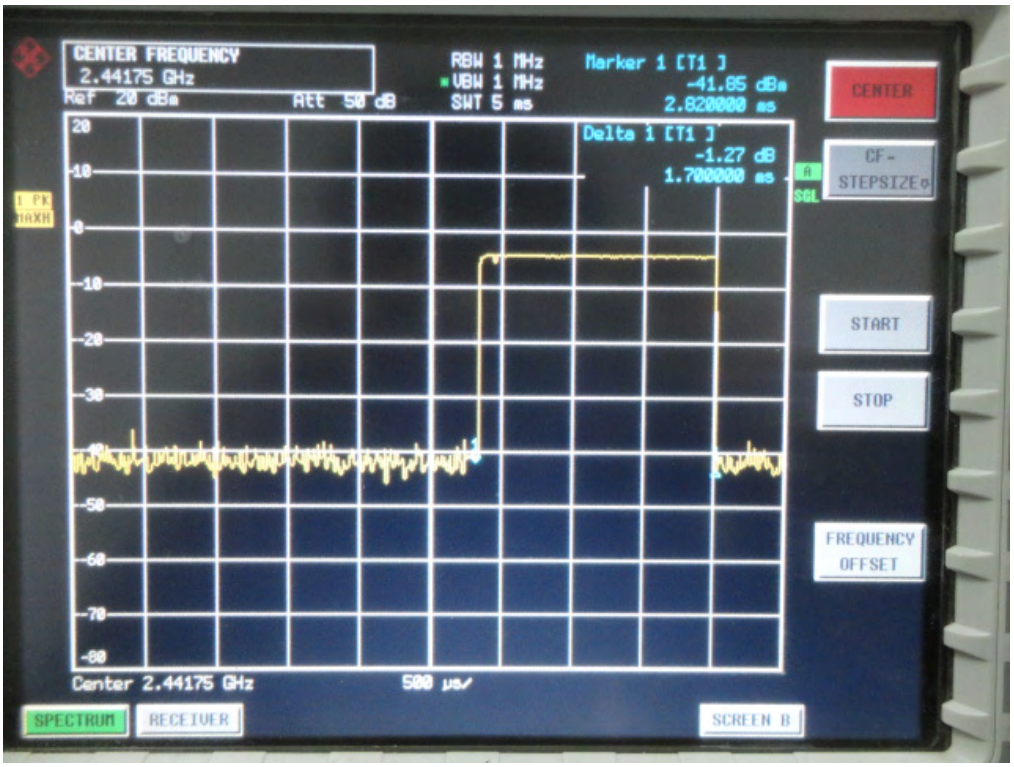
π/4-DQPSK DH1: 51hop/5 * 0.4 * 79 *0.436ms=138.75



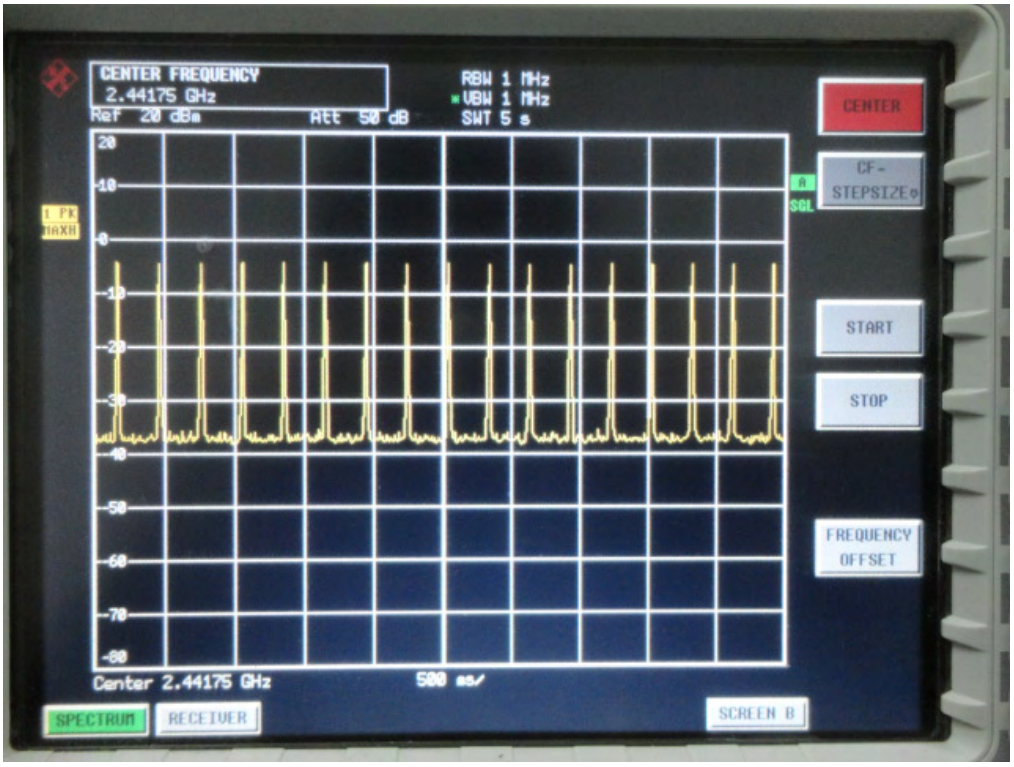


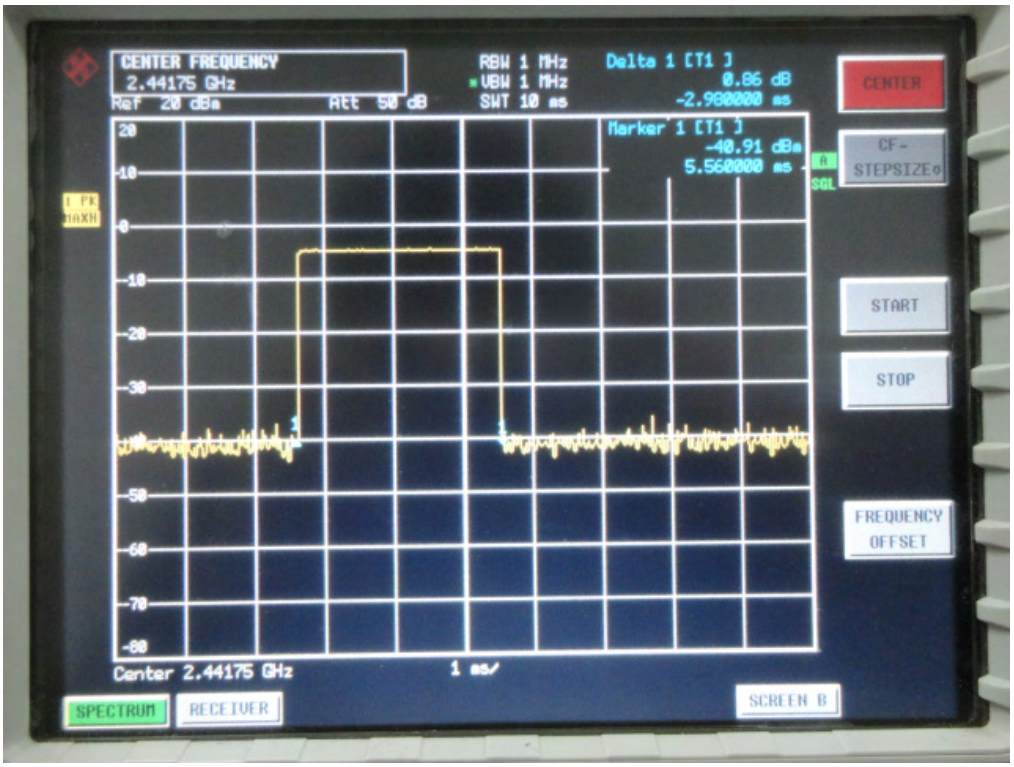
π/4-DQPSK DH3: 25hop/5 * 0.4 * 79 *1.70ms = 286.60



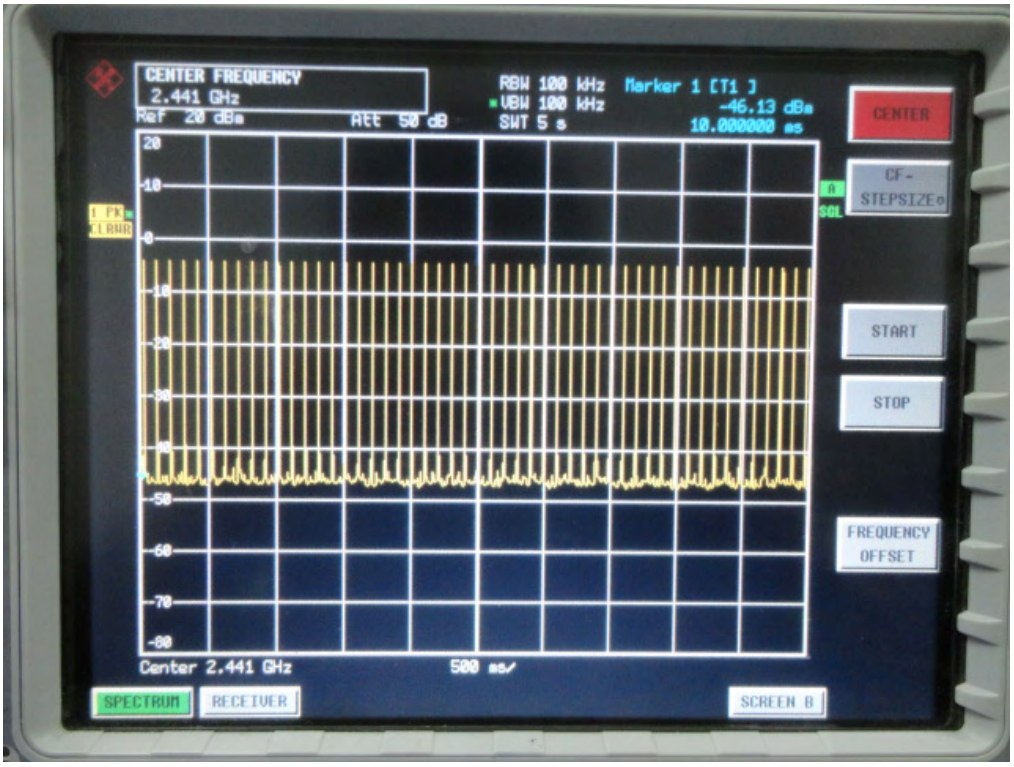


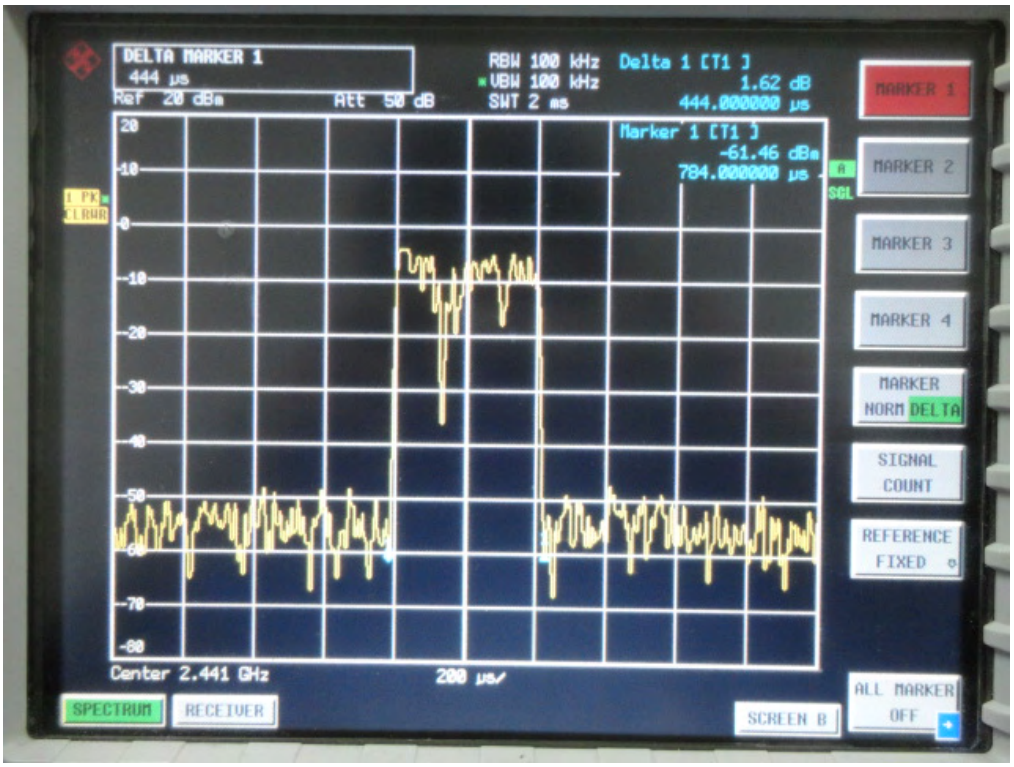
π/4-DQPSK DH5: 17hop/5 * 0.4 * 79 *2.98ms = 320.17



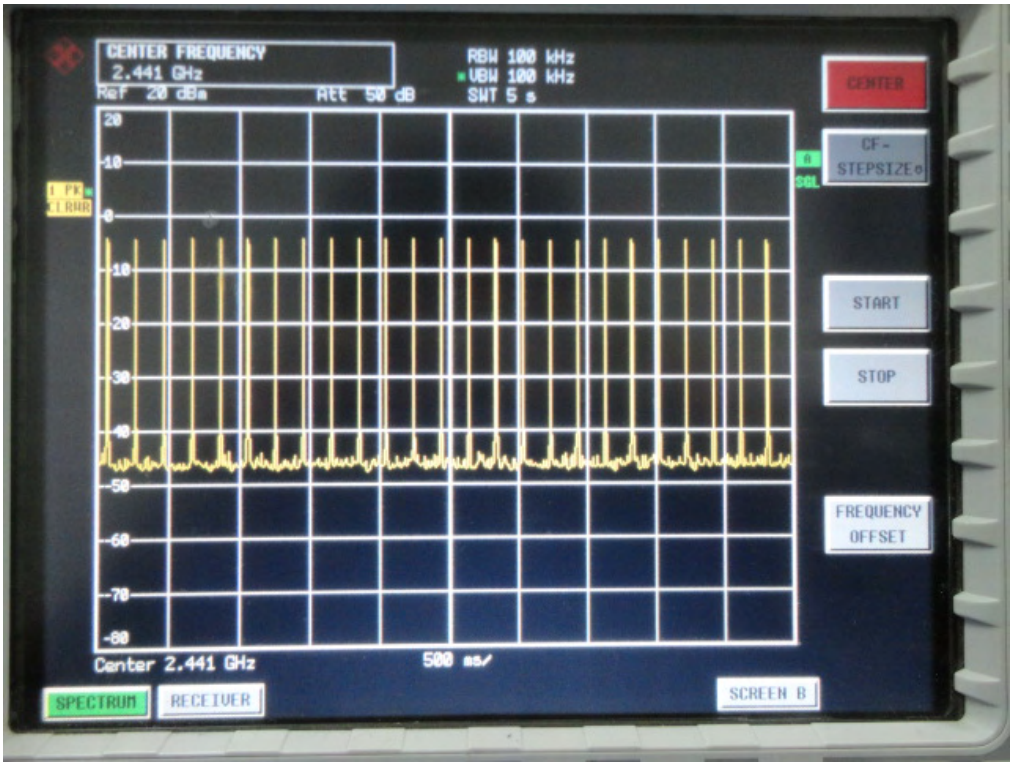


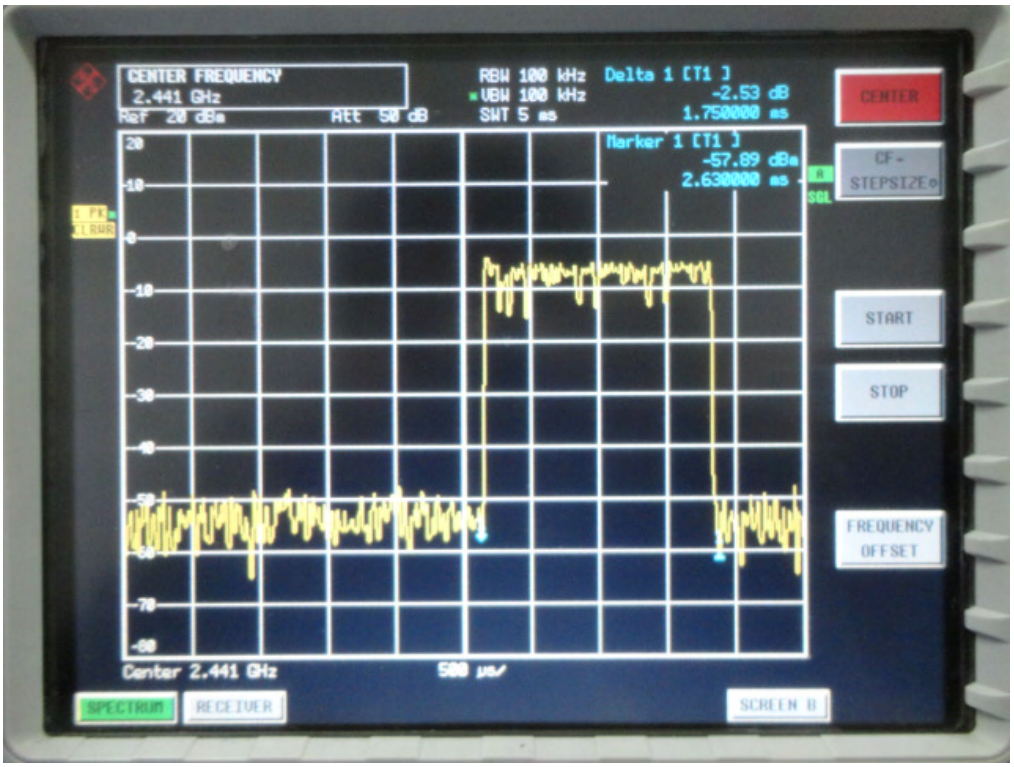
8-DPSK DH1: 51hop/5 * 0.4 * 79 * 0.444ms=143.11



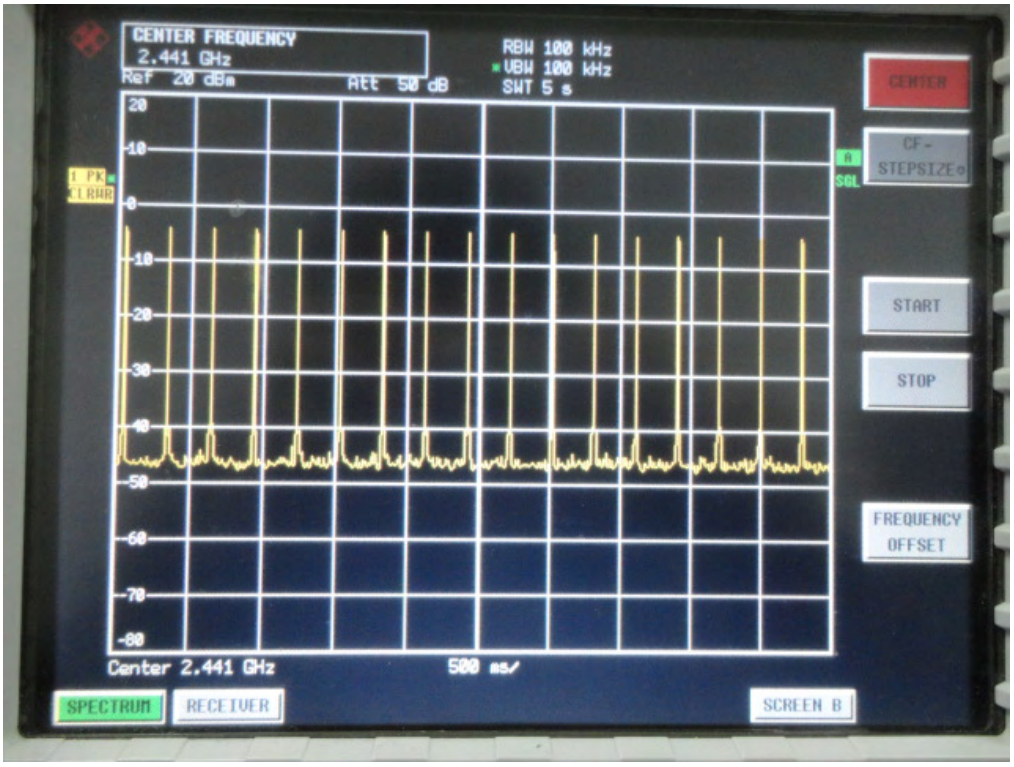


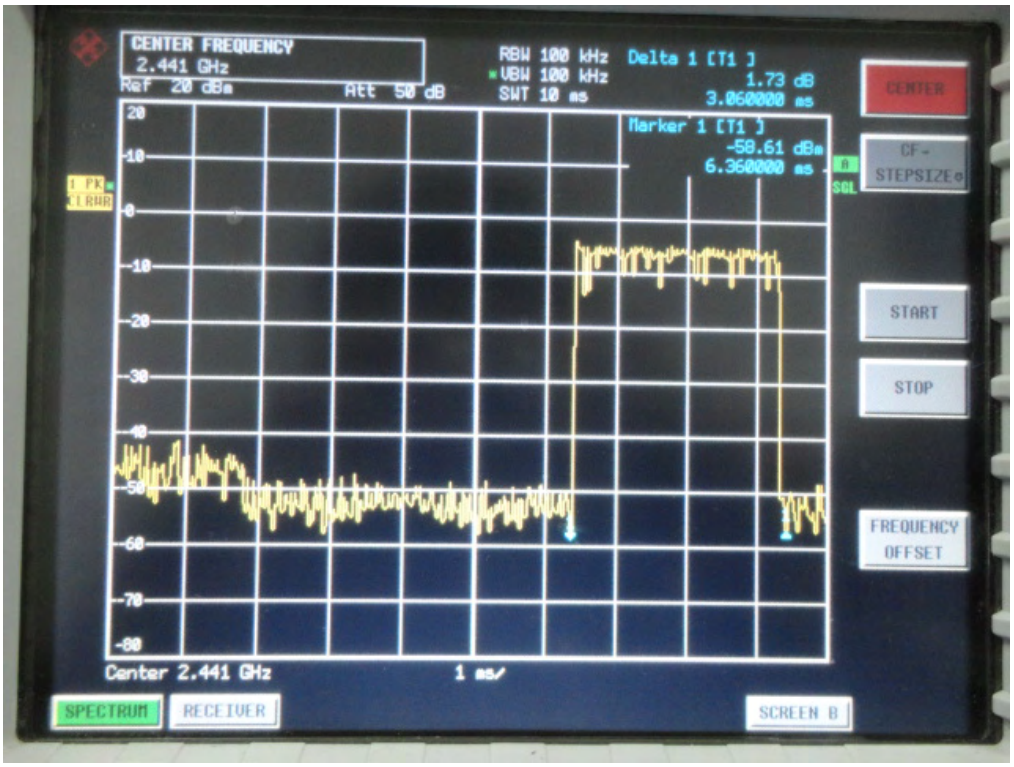
8-DPSK DH3: 25/5 * 0.4 *79 *1.75ms=276.50





8-DPSK DH5: 17/5 * 0.4 *79 *3.06ms=328.76





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.

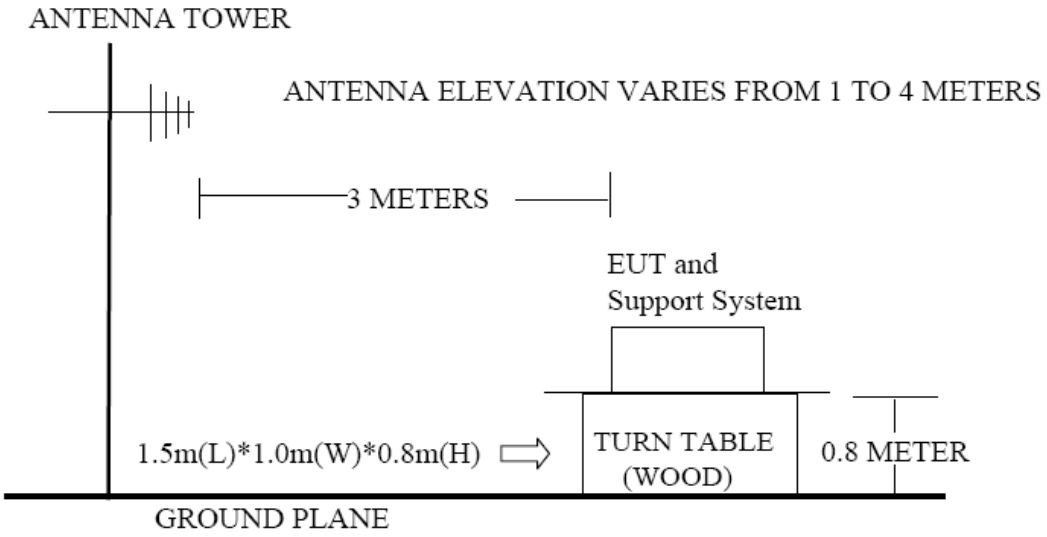
15.205 Restricted frequency band

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 (26GHz) are checked.

8.4. Test Result

30MHz—26GHz Radiated emissison Test result
EUT: Bluetooth spaeker M/N:ST-69BTS
Power:DC 4.2V From Battery
Test date: 2012-3-08~2012-03-11 Test site: 3m Chamber Tested by: Tony Tang
Test mode: Tx Mode
Pass

8.5. Test Data

30 MHz – 1000 MHz

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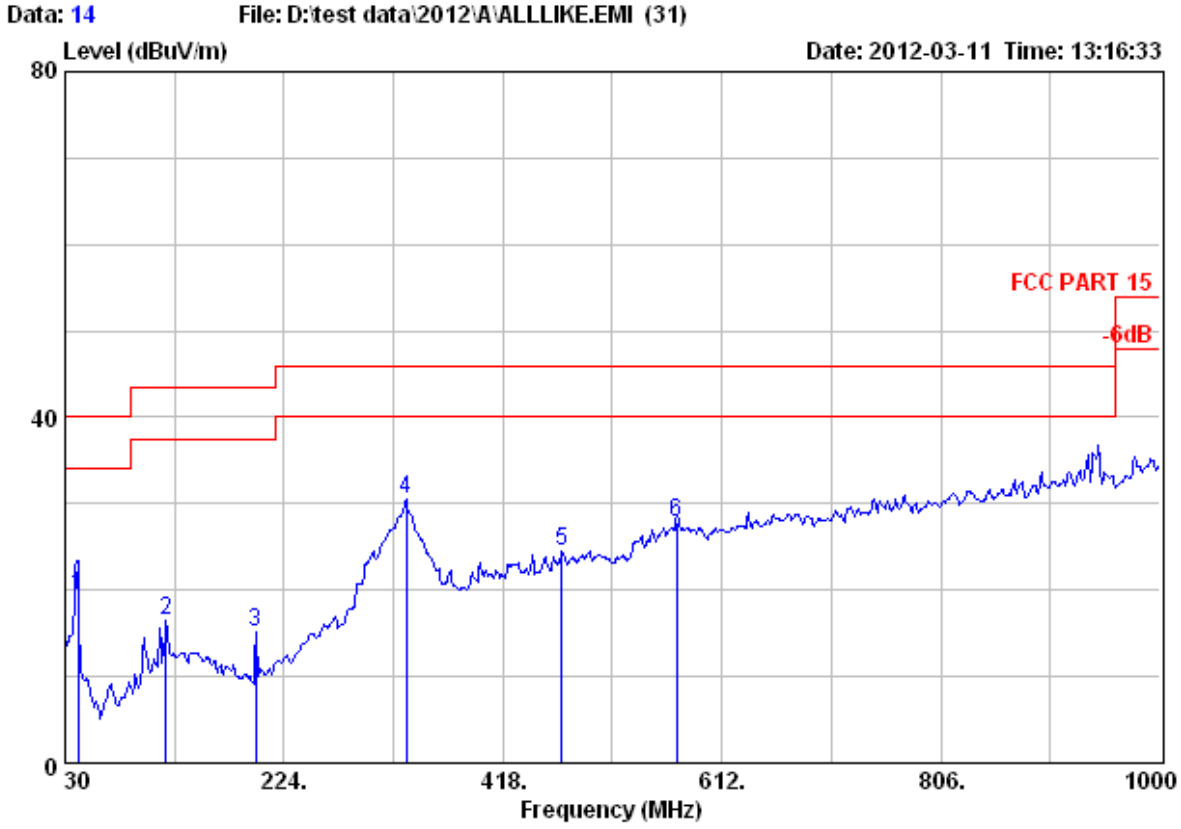


```
Site no.      : 3m Chamber                    Data no. : 14
Dis. / Ant.   : 3m   27137                    Ant. pol. : VERTICAL
Limit         : FCC PART 15
Env. / Ins.   : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer      : Tony
EUT           : Bluetooth speaker
Power         : DC 4.2V From Battery
M/N           : ST-69 BTS
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	41.64	11.75	2.17	5.42	19.34	40.00	20.66	QP
2	119.24	11.11	3.34	2.02	16.47	43.50	27.03	QP
3	198.78	7.71	4.24	3.10	15.05	43.50	28.45	QP
4	332.64	13.93	5.52	10.98	30.43	46.00	15.57	QP
5	470.38	17.21	6.57	0.83	24.61	46.00	21.39	QP
6	572.23	19.58	7.18	1.07	27.83	46.00	18.17	QP

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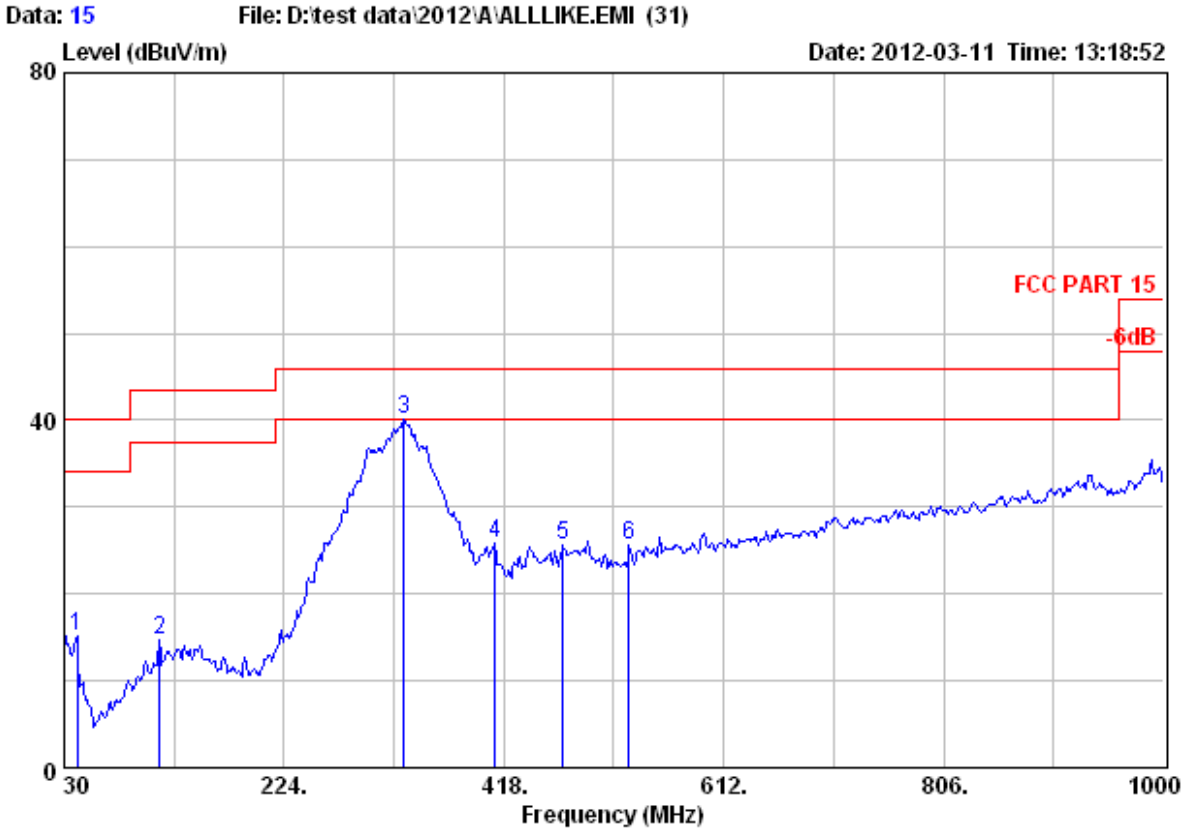

Site no. : 3m Chamber Data no. : 15
Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
Limit : FCC PART 15
Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth speaker
Power : DC 4.2V From Battery
M/N : ST-69 BTS
Test Mode : GFSK TX 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reamark (dB)
1	41.64	11.75	2.17	1.34	15.26	40.00	24.74	QP
2	114.39	10.85	3.26	0.66	14.77	43.50	28.73	QP
3	329.73	13.85	5.47	20.84	40.16	46.00	5.84	QP
4	410.24	16.29	6.10	3.35	25.74	46.00	20.26	QP
5	470.38	17.21	6.57	1.89	25.67	46.00	20.33	QP
6	528.58	18.20	6.91	0.43	25.54	46.00	20.46	QP

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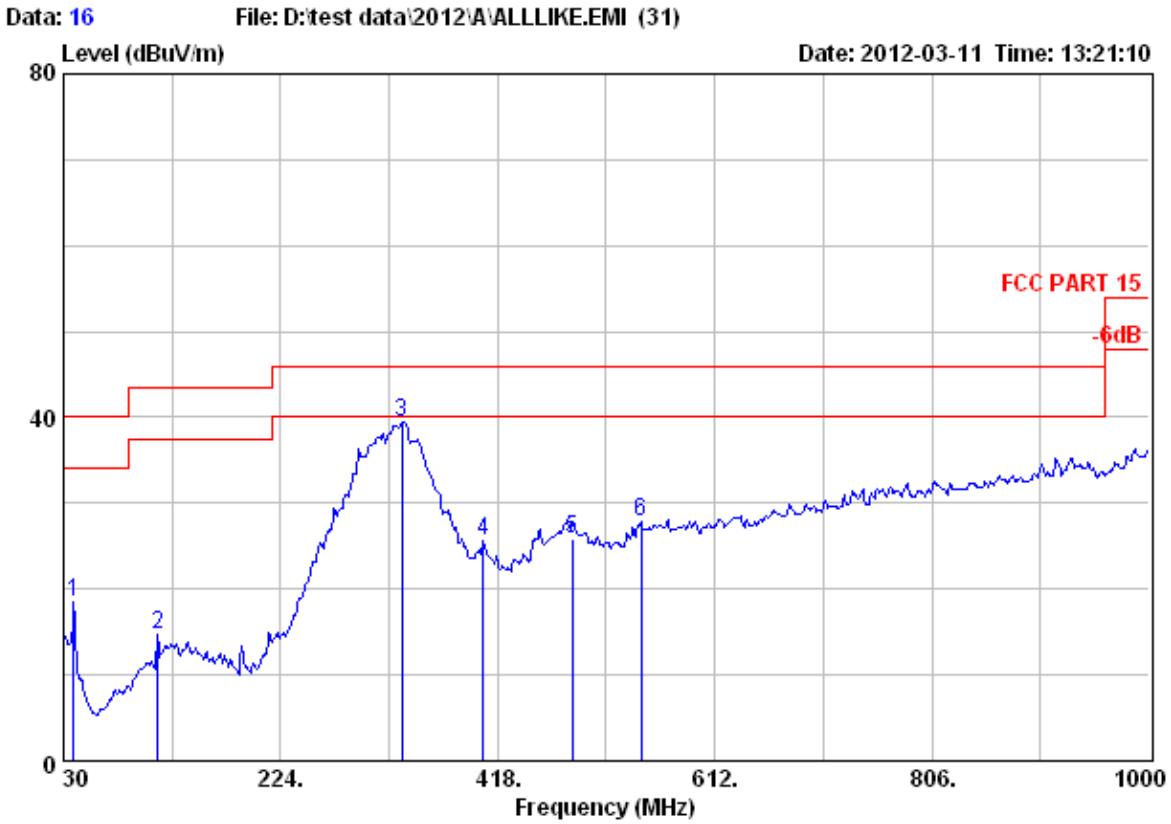

Site no. : 3m Chamber Data no. : 16
Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
Limit : FCC PART 15
Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth speaker
Power : DC 4.2V From Battery
M/N : ST-69 BTS
Test Mode : GFSK TX 2441MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reamark (dB)
1	38.73	13.48	2.10	2.98	18.56	40.00	21.44	QP
2	114.39	10.85	3.26	0.57	14.68	43.50	28.82	QP
3	332.64	13.93	5.52	20.01	39.46	46.00	6.54	QP
4	405.39	16.18	6.05	3.29	25.52	46.00	20.48	QP
5	484.93	17.63	6.67	1.63	25.93	46.00	20.07	QP
6	546.04	19.45	7.05	1.32	27.82	46.00	18.18	QP

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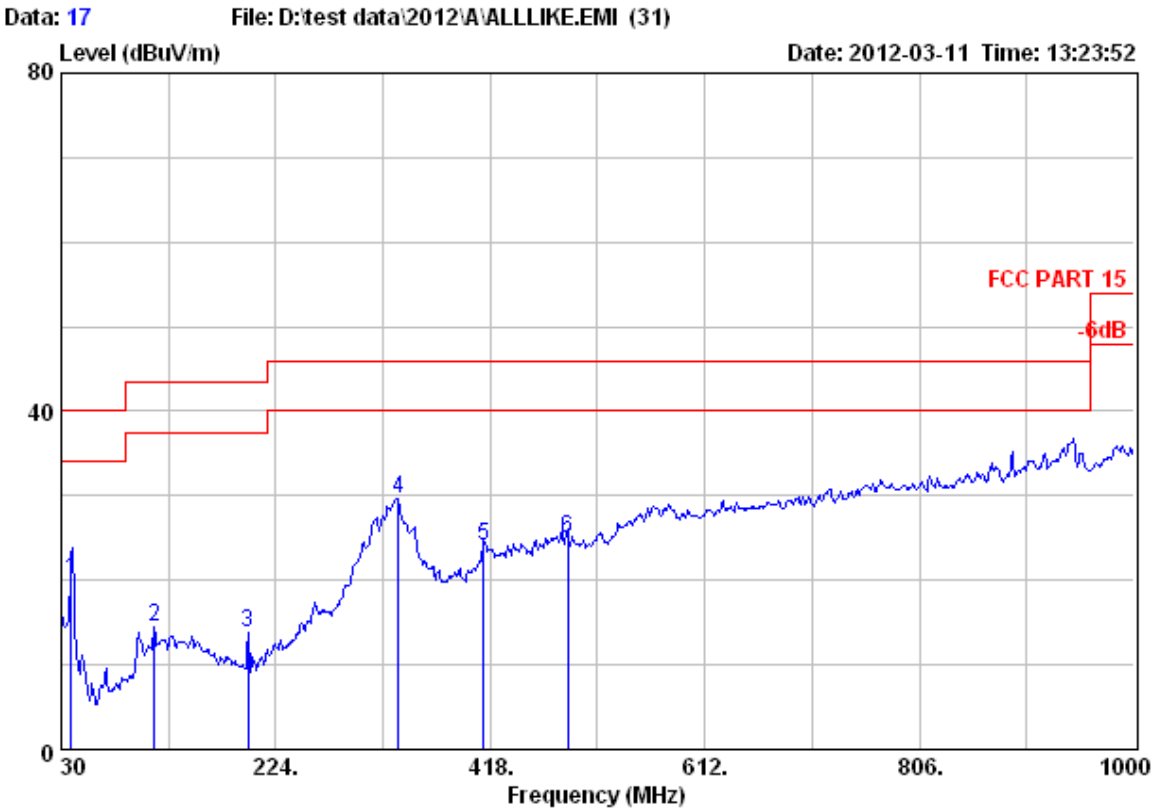

Site no. : 3m Chamber Data no. : 17
Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
Limit : FCC PART 15
Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth speaker
Power : DC 4.2V From Battery
M/N : ST-69 BTS
Test Mode : GFSK TX 2441MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reamark (dB)
1	38.73	13.48	2.10	4.57	20.15	40.00	19.85	QP
2	114.39	10.85	3.26	0.47	14.58	43.50	28.92	QP
3	198.78	7.71	4.24	1.88	13.83	43.50	29.67	QP
4	334.58	13.99	5.52	10.04	29.55	46.00	16.45	QP
5	412.18	16.29	6.13	1.64	24.06	46.00	21.94	QP
6	487.84	17.74	6.69	0.60	25.03	46.00	20.97	QP

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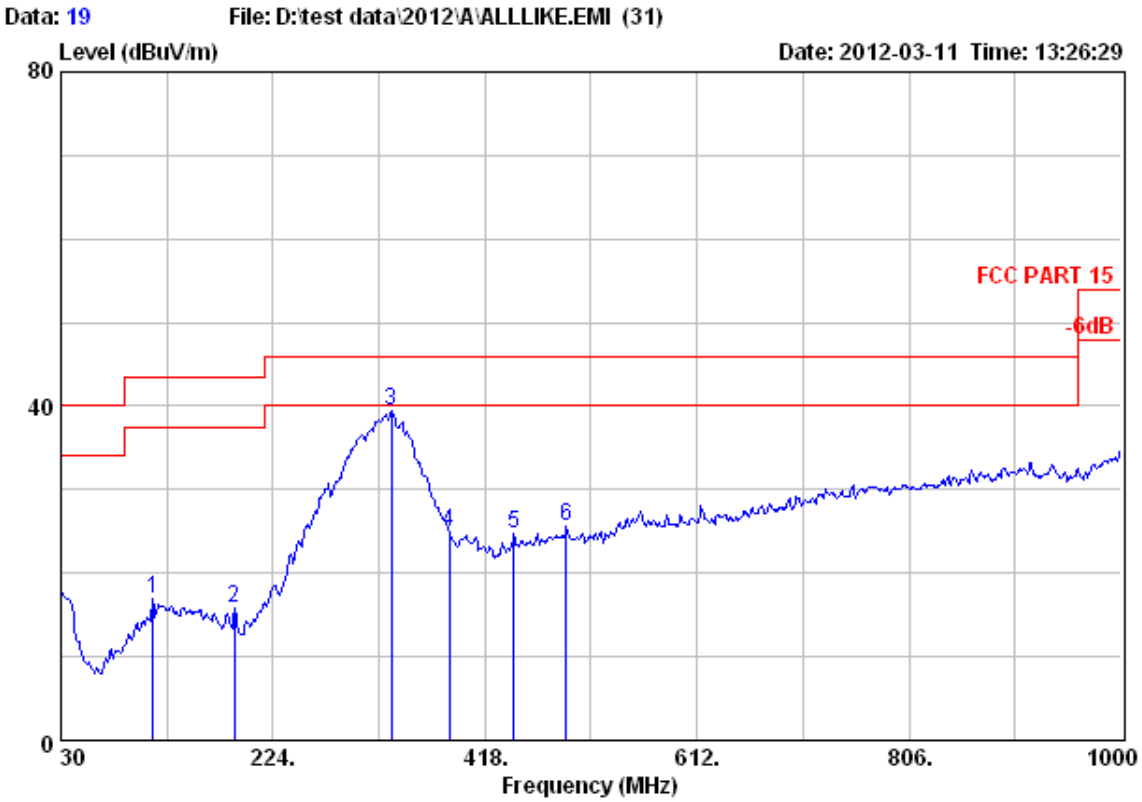

Site no. : 3m Chamber Data no. : 19
Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
Limit : FCC PART 15
Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth speaker
Power : DC 4.2V From Battery
M/N : ST-69 BTS
Test Mode : GFSK TX 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reamark (dB)
1	114.39	10.85	3.26	2.73	16.84	43.50	26.66	QP
2	189.08	8.05	4.20	3.50	15.75	43.50	27.75	QP
3	332.64	13.93	5.52	19.99	39.44	46.00	6.56	QP
4	385.02	15.30	5.81	3.85	24.96	46.00	21.04	QP
5	444.19	16.34	6.32	2.17	24.83	46.00	21.17	QP
6	492.69	17.83	6.69	1.06	25.58	46.00	20.42	QP

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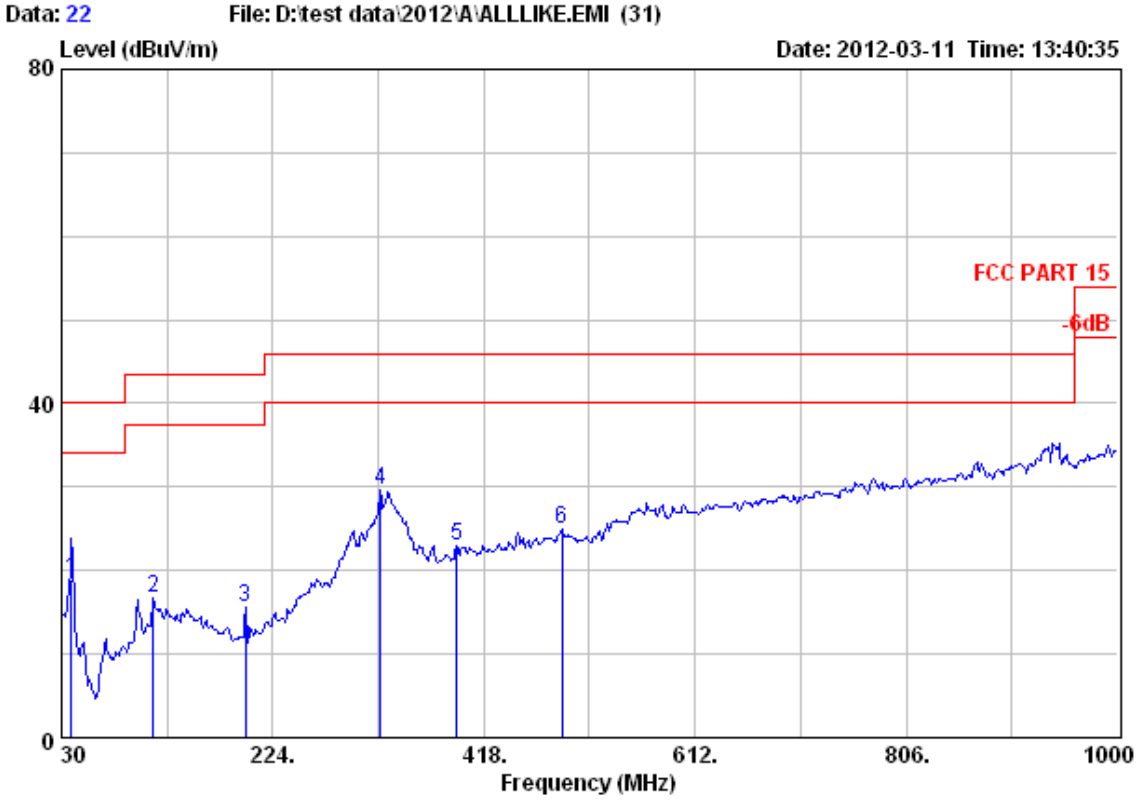


```
Site no.      : 3m Chamber                    Data no. : 22
Dis. / Ant.   : 3m   27137                    Ant. pol. : VERTICAL
Limit         : FCC PART 15
Env. / Ins.   : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer      : Tony
EUT           : Bluetooth speaker
Power         : DC 4.2V From Battery
M/N           : ST-69 BTS
Test Mode     : π/4-DQPSK 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	38.73	13.48	2.10	3.33	18.91	40.00	21.09	QP
2	114.39	10.85	3.26	2.66	16.77	43.50	26.73	QP
3	198.78	7.71	4.24	3.68	15.63	43.50	27.87	QP
4	322.94	13.65	5.41	10.52	29.58	46.00	16.42	QP
5	392.78	15.73	5.90	1.41	23.04	46.00	22.96	QP
6	489.78	17.81	6.70	0.37	24.88	46.00	21.12	QP

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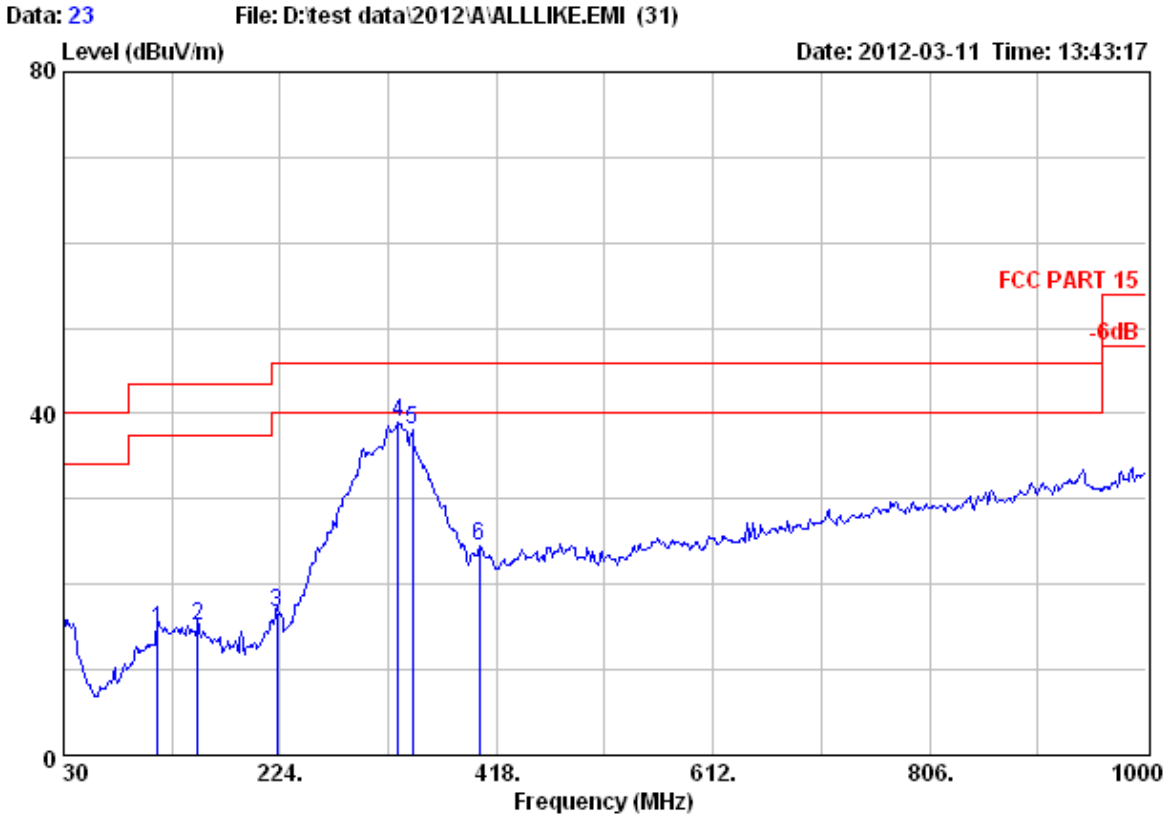

Site no. : 3m Chamber Data no. : 23
Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
Limit : FCC PART 15
Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth speaker
Power : DC 4.2V From Battery
M/N : ST-69 BTS
Test Mode : π/4-DQPSK TX 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reamark (dB)
1	114.39	10.85	3.26	0.70	14.81	43.50	28.69	QP
2	150.28	10.86	3.78	0.50	15.14	43.50	28.36	QP
3	221.09	9.26	4.45	2.90	16.61	46.00	29.39	QP
4	329.73	13.85	5.47	19.60	38.92	46.00	7.08	QP
5	342.34	14.22	5.62	18.21	38.05	46.00	7.95	QP
6	402.48	16.12	6.01	2.41	24.54	46.00	21.46	QP

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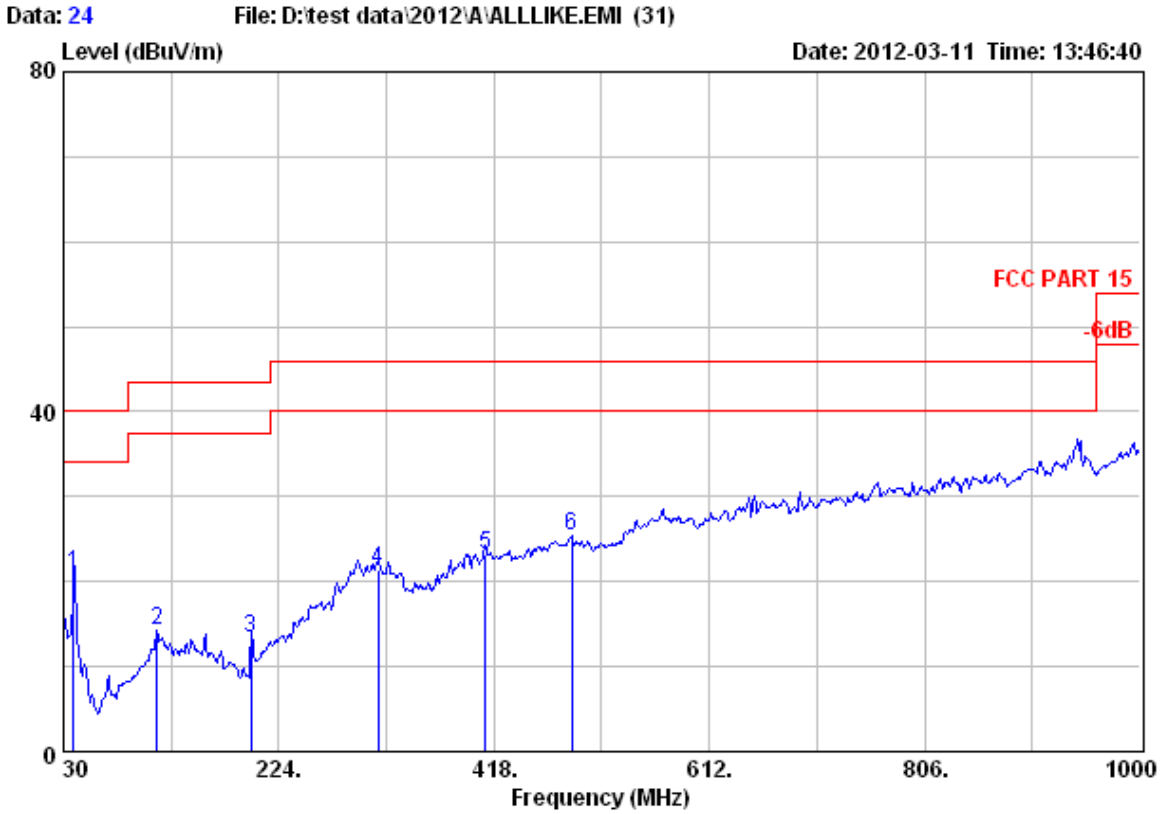

Site no. : 3m Chamber Data no. : 24
Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
Limit : FCC PART 15
Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth speaker
Power : DC 4.2V From Battery
M/N : ST-69 BTS
Test Mode : π/4-DQPSK TX 2441MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reamark (dB)
1	38.73	13.48	2.10	5.36	20.94	40.00	19.06	QP
2	114.39	10.85	3.26	0.21	14.32	43.50	29.18	QP
3	198.78	7.71	4.24	1.50	13.45	43.50	30.05	QP
4	313.24	13.31	5.34	2.75	21.40	46.00	24.60	QP
5	410.24	16.29	6.10	0.89	23.28	46.00	22.72	QP
6	487.84	17.74	6.69	0.88	25.31	46.00	20.69	QP

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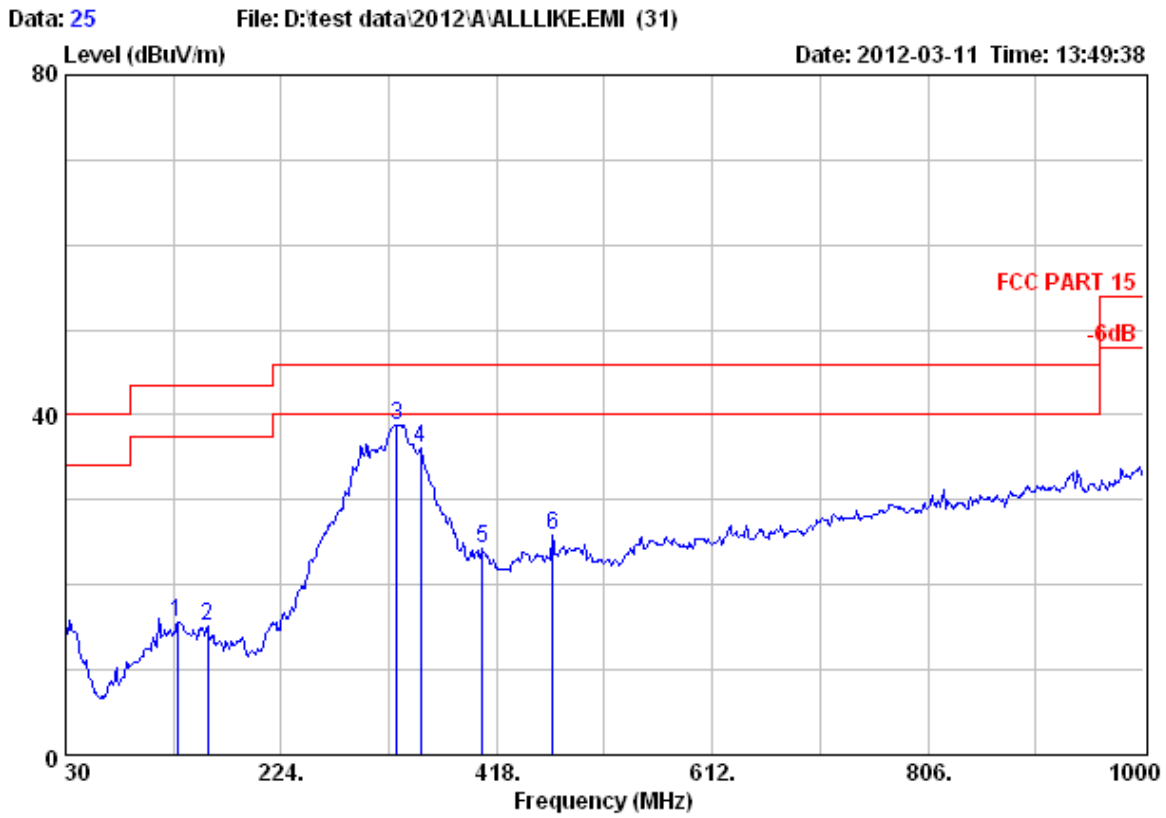


```
Site no.      : 3m Chamber                    Data no. : 25
Dis. / Ant.   : 3m   27137                    Ant. pol. : HORIZONTAL
Limit         : FCC PART 15
Env. / Ins.   : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer      : Tony
EUT           : Bluetooth speaker
Power         : DC 4.2V From Battery
M/N           : ST-69 BTS
Test Mode     : π/4-DQPSK TX 2441MHz
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reamark (dB)
1	130.88	11.33	3.52	0.75	15.60	43.50	27.90	QP
2	158.04	10.48	3.87	0.71	15.06	43.50	28.44	QP
3	327.79	13.79	5.45	19.61	38.85	46.00	7.15	QP
4	349.13	14.44	5.67	16.05	36.16	46.00	9.84	QP
5	405.39	16.18	6.05	1.97	24.20	46.00	21.80	QP
6	468.44	17.14	6.54	2.17	25.85	46.00	20.15	QP