S T S LAB

FCC TESTREPORT

Report No: STS1503031F02

Issued for

My Music Group Limited

Room 7089, B East,Chengshitiandi PL., JiaBinRoad,LoWu District,Shenzhen,CN

Product Name:	Bluetooth Speaker
Brand Name:	My Music
Model No.:	B19
FCC ID:	QIFAF-B19
Test Standard:	FCC Part 15.247

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Shenzhen STS Test Services Co., Ltd.
1/F, Building B, Zhuoke Science Park, Chongqing Road, Fuyong, Baoan District, Shenzhen, China
TEL: +86-755 3688 6288FAX: +86-755 3688 6277E-mail:sts@stsapp.com

TEST RESULT CERTIFICATION

Applicant's name ..... My Music Group Limited

Address ..... Room 7089, B East,Chengshitiandi PL., JiaBinRoad,LoWu District,Shenzhen,CN

Manufacture's Name..... Dongguan Fulun Electronic Co.,Limited

Address ..... 4F,Building A,Huangjinye Industrial Park,No.216Shaxin Road,KeyuanCity,Tangxia, Dongguan, CN

Product description

Product name ..... Bluetooth Speaker

Band name..... My Music

Model and/or type reference B19

Ratings ..... DC 3.7V by Battery

Standards ..... FCC Part15.247

Test procedure..... ANSI C63.4-2009

This device described above has been tested by STS, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test .....

Date (s) of performance of tests .. Feb.11,2015 to Feb.12,2015

Date of Issue..... Feb.28,2015

Test Result..... **Pass**

Testing Engineer : _____
(Tony Liu)

Technical Manager : _____
(Vita Li)

Authorized Signatory : _____
(Bovey Yang)

TESTING CONSULTING SOLUTION CERTIFICATION STS APPROVAL

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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.247(a)(1)	Hopping Channel Separation	PASS	
15.247(b)(1)	Peak Output Power	PASS	
15.247(c)	Radiated Spurious Emission	PASS	
15.247(d)	Conducted Spurious Emission	PASS	
15.247(a)(iii)	Number of Hopping Frequency	PASS	
15.247(a)(iii)	Dwell Time	PASS	
15.247(a)(1)	Bandwidth	PASS	
15.205	Band Edge Emission	PASS	
15.203	Antenna Requirement	PASS	

1.1 TEST FACILITY

Shenzhen STS Test Services Co., Ltd.
Add. : 1/F, Building 2, Zhuoke Science Park, Chongqing Road, Fuyong, Baoan District, Shenzhen, China.
FCC Registration No.: 842334; IC Registration No.: 12108A-1

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y ±U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95** %。

No.	Item	Uncertainty
1	Conducted Emission Test	±3.18dB
2	RF power,conducted	±0.16dB
3	Spurious emissions,conducted	±0.21dB
4	All emissions,radiated(<1G)	±4.68dB
5	All emissions,radiated(>1G)	±4.71dB
6	Temperature	±0.5°C
7	Humidity	±2%

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Bluetooth Speaker
Trade Name	My Music
Model Name	B19
Channel Numbers	79 for tradiational BT,40 for BLE
Channel List	Please refer to the Note 2.
Bluetooth	Frequency:2402 – 2480 MHz GFSK(1Mbps),π/4-DQPSK(2Mbps),8-DPSK(3Mbps)
Battery	Rated Voltage: 3.7V Charge Limit: 4.2V
Hardware version number	V1.0
Software versioningnumber	V1.0
Connecting I/O Port(s)	Please refer to the User's Manual

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. The EUT support FHSS and DSSS, but this report is applicable for FHSS.

2.

Traditional Channel List					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	27	2429	54	2456
01	2403	28	2430	55	2457
02	2404	29	2431	56	2458
03	2405	30	2432	57	2459
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454		
26	2428	53	2455		

BLE Channel List					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2.402 MHZ	14	2.430MHZ	28	2.458 MHZ
1	2.404MHZ	15	2.432 MHZ	29	2.460 MHZ
2	2.406 MHZ	16	2.434 MHZ	30	2.462 MHZ
3	2.408 MHZ	17	2.436 MHZ	31	2.464 MHZ
4	2.410 MHZ	18	2.438 MHZ	32	2.466 MHZ
5	2.412 MHZ	19	2.440 MHZ	33	2.468 MHZ
6	2.414 MHZ	20	2.442MHZ	34	2.470 MHZ
7	2.416 MHZ	21	2.444 MHZ	35	2.472 MHZ
8	2.418 MHZ	22	2.446 MHZ	36	2.474 MHZ
9	2.420 MHZ	23	2.448 MHZ	37	2.476 MHZ
10	2.422 MHZ	24	2.450 MHZ	38	2.478 MHZ
11	2.424 MHZ	25	2.452 MHZ	39	2.480 MHZ
12	2.426 MHZ	26	2.454 MHZ		
13	2.428 MHZ	27	2.456 MHZ		

3. Table for Filed Antenna

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	N/A	N/A	PCB antenna	NA	0	BT Antenna

The EUT antenna is PCB antenna. no antenna other than that furnished by the responsible party shall be used with the device.

2.1 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	Low channel TX
Mode 2	Middle channel TX
Mode 3	High channel TX
Mode 4	Hopping on

For Conducted Emission	
Final Test Mode	Description
Mode 4	Keeping TX

For Radiated Emission	
Final Test Mode	Description
Mode 1	Low channel TX
Mode 2	Middle channel TX
Mode 3	High channel TX
Mode 4	Hopping on

Note:

(1)The measurements are performed at the highest, middle, lowest available channels.

2.2 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of FHSS

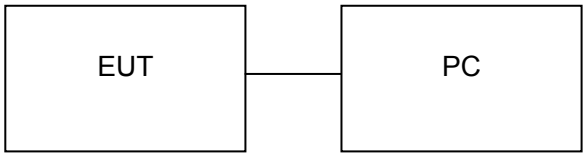
Test software Version	Test program: N/A		
Frequency	2402 MHz	2441 MHz	2480 MHz
Parameters(1Mbps)	DEF	DEF	DEF
Parameters(2Mbps)	DEF	DEF	DEF
Parameters(3Mbps)	DEF	DEF	DEF

2.3BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

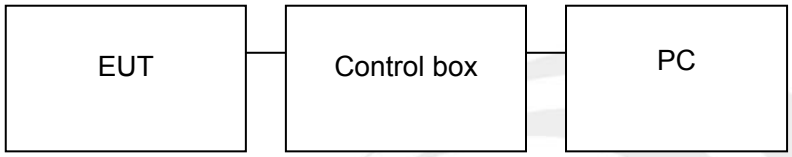
During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of FHSS

Radiated Spurious EmissionTest

Configure 1: (Normal hopping)



Configure 2: (Control continuous TX)



Conducted Emission Test

2.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
1	Bluetooth Speaker	My Music	B19	N/A	EUT
2	Battery	N/A	N/A	N/A	Accessory
3	PC	Dell	INSPIRON	N/A	FCC DOC approved
4	Control box	N/A	N/A	N/A	A.E

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	60	USB Cable

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.
(3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.
(4) N/A means not applicable.

2.5EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Spectrum Analyzer	Agilent	E4407B	MY50140340	2014.10.25	2015.10.24
Test Receiver	R&S	ESCI	101427	2014.10.25	2015.10.24
Bilog Antenna	TESEQ	CBL6111D	34678	2014.10.27	2015.10.26
50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2014.06.06	2015.06.06
Horn Antenna	R&S	9120D	152265	2014.10.27	2015.10.26
Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2014.07.06	2015.07.05
Amplifier	EM	EM-30180	060538	2014.12.22	2015.12.21
Loop Antenna	ARA	PLA-1030/B	1029	2014.06.08	2015.06.07
Power Meter	Anritsu	ML2495A	1204003	2014.10.25	2015.10.24
Power Sensor	Anritsu	MA2411B	100309	2014.10.25	2015.10.24

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	102086	102086	2014.10.25	2015.10.24
LISN	R&S	ENV216	101242	2014.10.25	2015.10.24
LISN	EMCO	3810/2NM	000-23625	2014.10.25	2015.10.24
50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2014.06.06	2015.06.06
Passive Voltage Probe	R&S	ESH2-Z3	100196	2014.06.06	2015.06.06
Absorbing clamp	R&S	MDS-21	100668	2014.10.27	2015.10.26

3.EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

Operating frequency band. In case the emission fall within the restricted band specified on Part 15.247&207(a) limit in the table below has to be followed.

FREQUENCY (MHz)	Class B (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	56.00	46.00	CISPR
5.0 -30.0	60.00	50.00	CISPR

0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

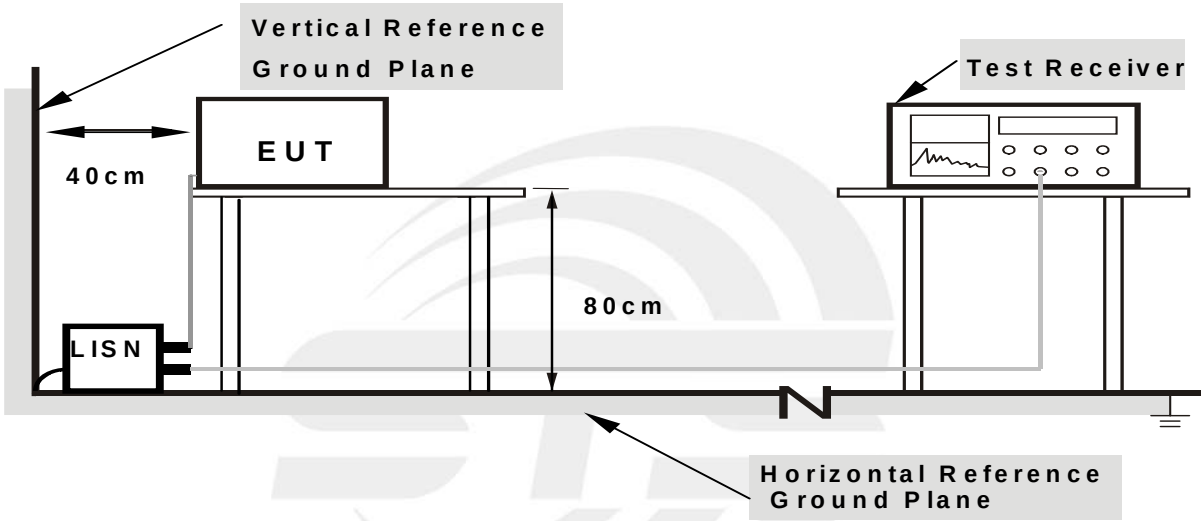
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2 TEST PROCEDURE

a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 TEST SETUP



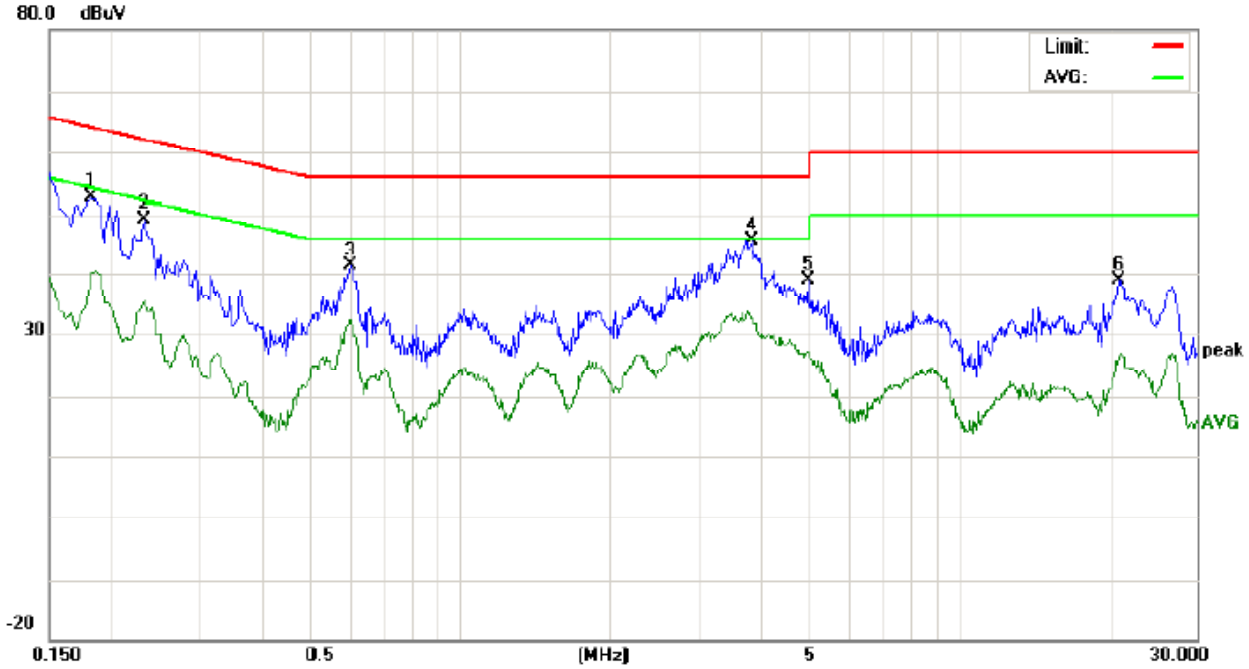
Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.4EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.5TEST RESULTS

EUT：	Bluetooth Speaker	Model Name. ：	B19
Temperature：	23℃	Relative Humidity：	50%
Pressure：	1010hPa	Phase：	L
Test Voltage：	DC3.7V	Test Mode：	keeping TX



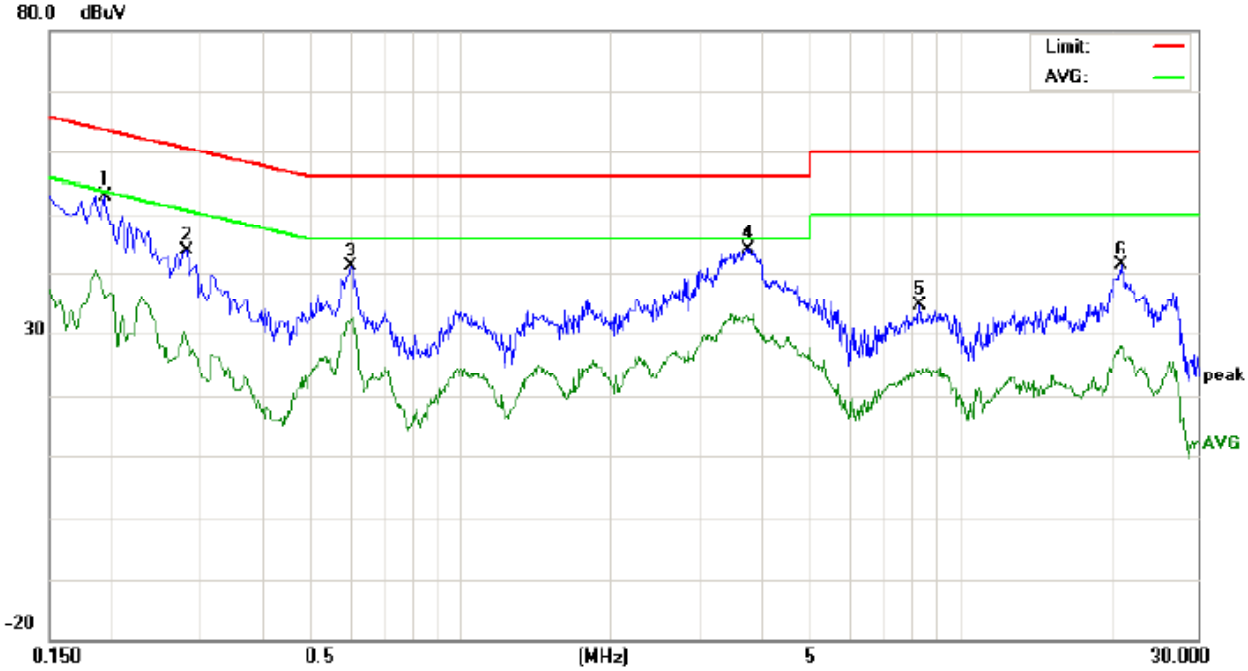
Site: Conduction
Limit: FCC Class B Conduction(QP)
EUT: Bluetooth Speaker
M/N: B19
Mode: keeping TX
Note:

Phase: *L1*
Power:

Temperature: 26
Humidity: 60 %

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1819	42.50		29.90	10.20	52.70		40.10	64.39	54.39	-11.69	-14.29	P	
2	0.2340	38.92		25.05	10.25	49.17		35.30	62.30	52.30	-13.13	-17.00	P	
3	0.6020	31.05		22.02	10.31	41.36		32.33	56.00	46.00	-14.64	-13.67	P	
4	3.8580	35.27		21.79	10.45	45.72		32.24	56.00	46.00	-10.28	-13.76	P	
5	4.9660	28.56		16.92	10.24	38.80		27.16	56.00	46.00	-17.20	-18.84	P	
6	20.8900	28.84		16.07	10.13	38.97		26.20	60.00	50.00	-21.03	-23.80	P	

EUT：	Bluetooth Speaker	Model Name. ：	B19
Temperature：	23 ℃	Relative Humidity：	50%
Pressure：	1010hPa	Phase：	N
Test Voltage：	DC3.7V	Test Mode：	keeping TX



Site: Conduction
Phase: N
Temperature: 26
Limit: FCC Class B Conduction(QP)
Power:
Humidity: 60 %
EUT: Bluetooth Speaker
M/N: B19
Mode: keeping TX
Note:

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1940	42.74		25.74	10.21	52.95		35.95	63.86	53.86	-10.91	-17.91	P	
2	0.2819	33.55		18.70	10.28	43.83		28.98	60.76	50.76	-16.93	-21.78	P	
3	0.6020	30.74		21.91	10.31	41.05		32.22	56.00	46.00	-14.95	-13.78	P	
4	3.7860	33.70		21.70	10.46	44.16		32.16	56.00	46.00	-11.84	-13.84	P	
5	8.3420	24.36		13.85	10.34	34.70		24.19	60.00	50.00	-25.30	-25.81	P	
6	21.0740	31.23		18.13	10.13	41.36		28.26	60.00	50.00	-18.64	-21.74	P	

3.2 RADIATED EMISSION MEASUREMENT

3.2.1RADIATED EMISSION LIMITS

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on Part 15247&205(a), then the Part 15 247&209(a) limit in the table below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (30MHz - 1000MHz)

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak
Start Frequency	1000 MHz(Peak/AV)
Stop Frequency	10th carrier harmonic(Peak/AV)
RB / VB (emission in restricted band)	RBW 1MHz / VBW 1MHz Peak detector for Pk value RBW 1MHz / VBW 10Hz Peak detector for AV value

Receiver Parameter	**Setting**
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then QuasiPeak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

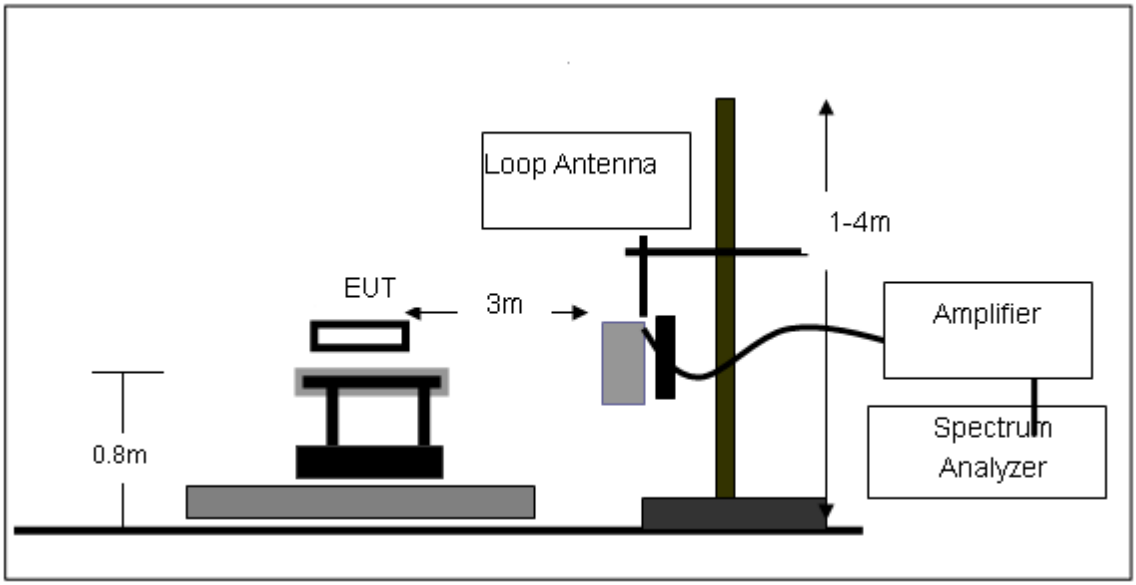
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD

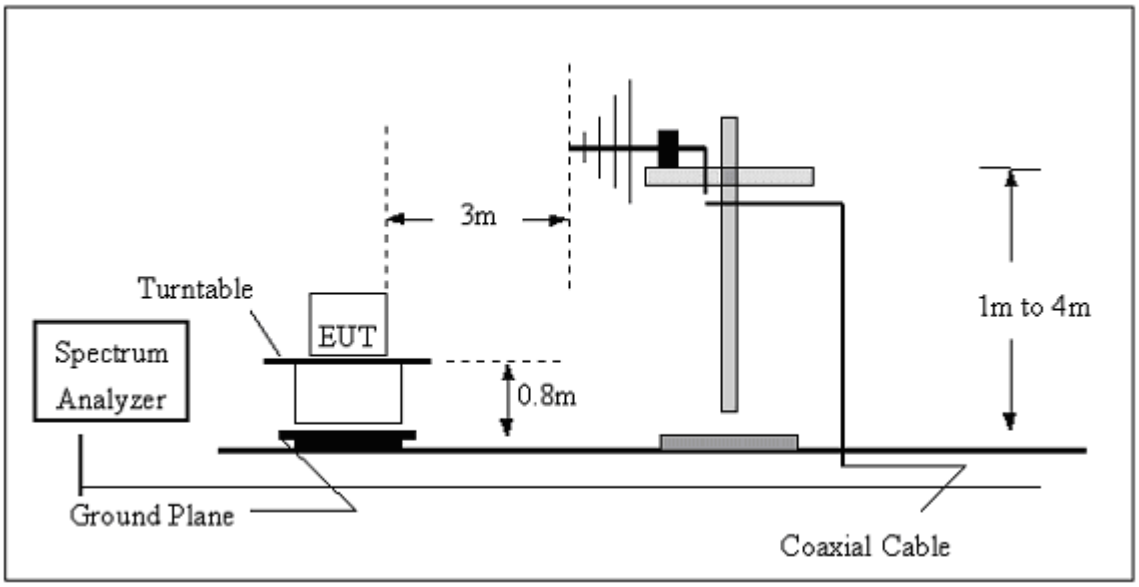
No deviation

3.2.4 TESTSETUP

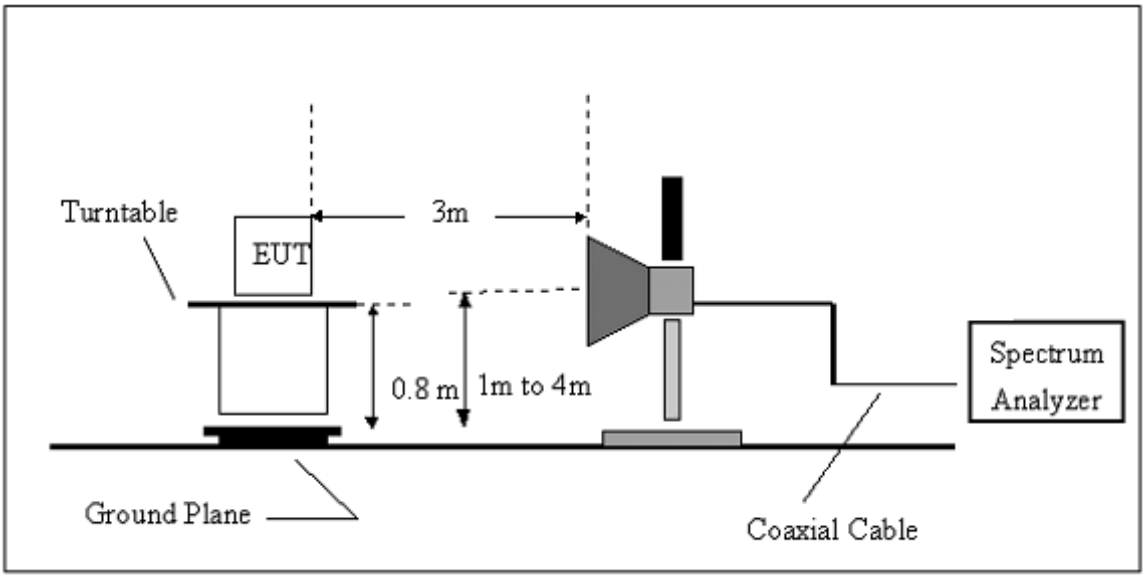
（A）Radiated Emission Test-Up Frequency Below 30MHz



（B）Radiated Emission Test-Up Frequency 30MHz~1GHz



（C）Radiated Emission Test-Up Frequency Above 1GHz



3.2.5EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

REMARK： GFSK(1Mbps), π/4-DQPSK(2Mbps),8-DPSK(3Mbps) all have been tested ,8-DPSK(3Mbps) is found as worst case and only reported

3.2.6 TEST RESULTS（WORST CASE : 8-DPSK）

Below 30 MHz

EUT：	Bluetooth Speaker	Model Name.：	B19
Temperature：	23 ℃	Relative Humidity：	50%
Pressure：	1010hPa	Polarization :	---
Test Voltage：	DC 3.7V		
Test Mode ：	TX Mode		

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

NOTE:

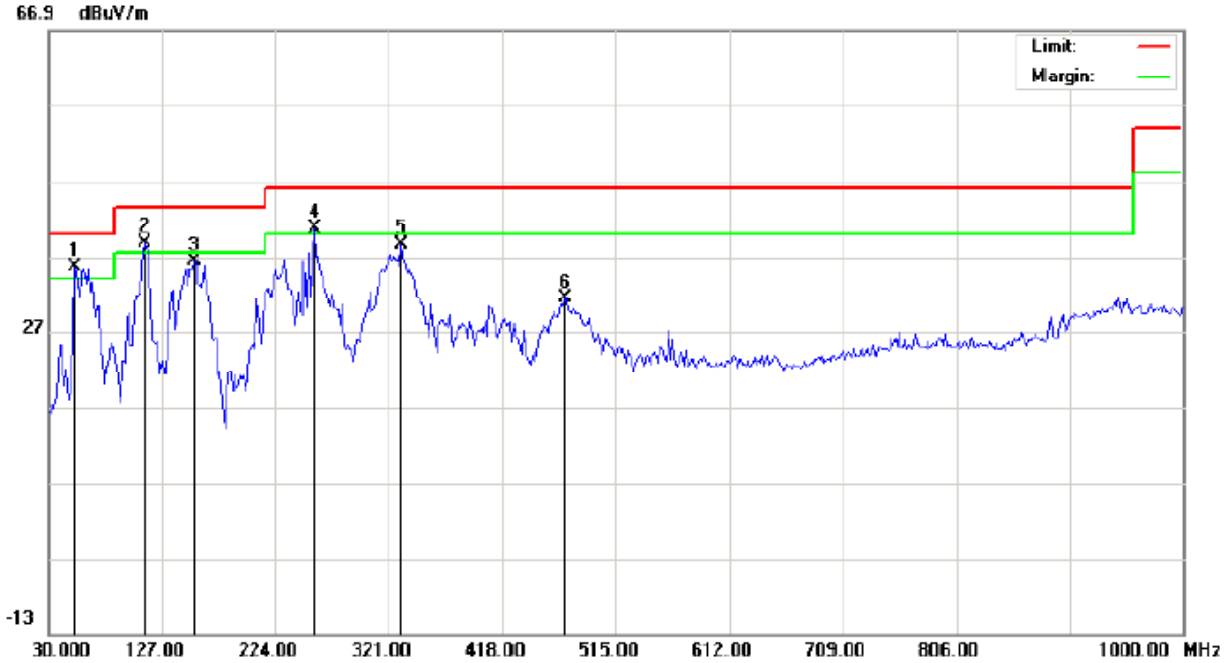
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =40 log (specific distance/test distance)(dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.

Between 30MHz – 1000 MHz

RADIATED EMISSION TEST- (30MHZ-1GHZ)-LOW CHANNEL-HORIZONTAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Bluetooth Speaker
M/N: B19
Mode: Low Channel TX
Note:

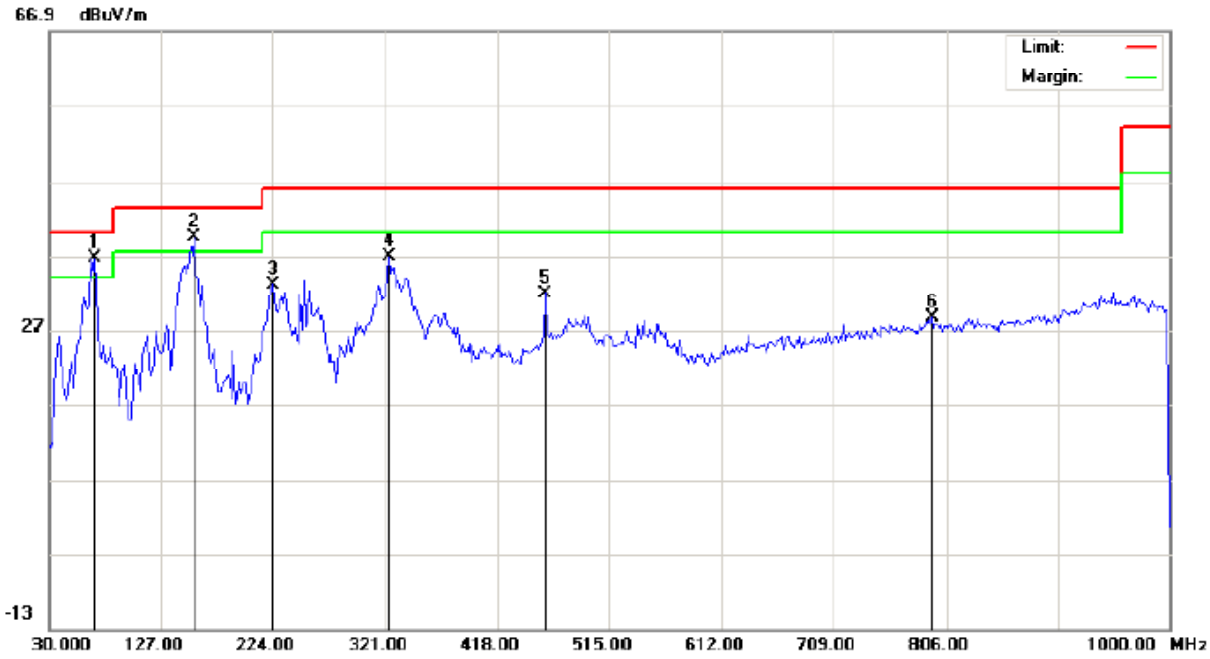
Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	.	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	52.6333	24.45	11.22	35.67	40.00	-4.33	peak			
2	!	112.4500	27.55	11.34	38.89	43.50	-4.61	peak			
3		154.4833	21.15	15.29	36.44	43.50	-7.06	peak			
4	!	256.3333	26.54	14.09	40.63	46.00	-5.37	peak			
5		332.3167	21.09	17.56	38.65	46.00	-7.35	peak			
6		471.3500	10.64	20.82	31.46	46.00	-14.54	peak			

RESULT: PASS

RADIATED EMISSION TEST- (30MHZ-1GHZ)-LOW CHANNEL -VERTICAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Bluetooth Speaker
M/N: B19
Mode: Low Channel TX
Note:

Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

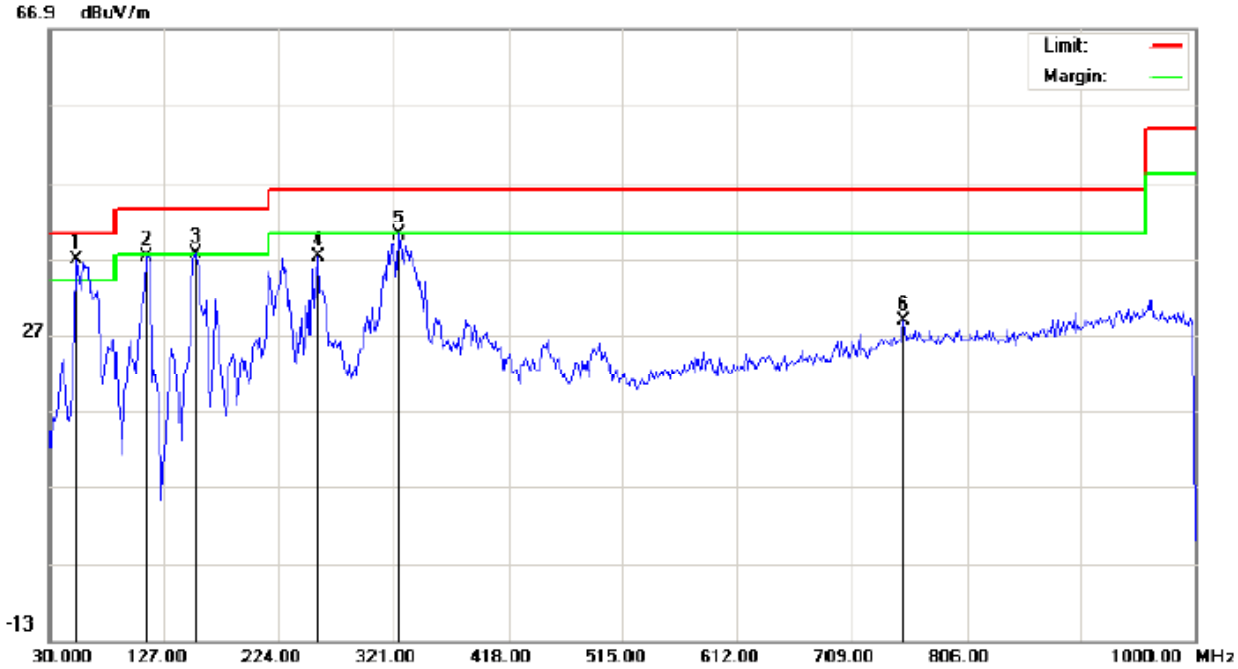
No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	68.8000	31.89	4.73	36.62	40.00	-3.38	peak			
2	!	156.1000	24.19	15.30	39.49	43.50	-4.01	peak			
3		224.0000	21.75	11.35	33.10	46.00	-12.90	peak			
4		324.2333	19.69	17.02	36.71	46.00	-9.29	peak			
5		460.0333	11.20	20.70	31.90	46.00	-14.10	peak			
6		793.0667	1.44	27.22	28.66	46.00	-17.34	peak			

RESULT: PASS

Note: 1. Factor=Antenna Factor+ Cable loss, Margin=Measurement-Limit.

2. The “Factor”valuecan be calculated automatically by software of measurement system.

RADIATED EMISSION TEST- (30MHZ-1GHZ)-MIDDLE CHANNEL-HORIZONTAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Bluetooth Speaker
M/N: B19
Mode: Middle Channel TX
Note:

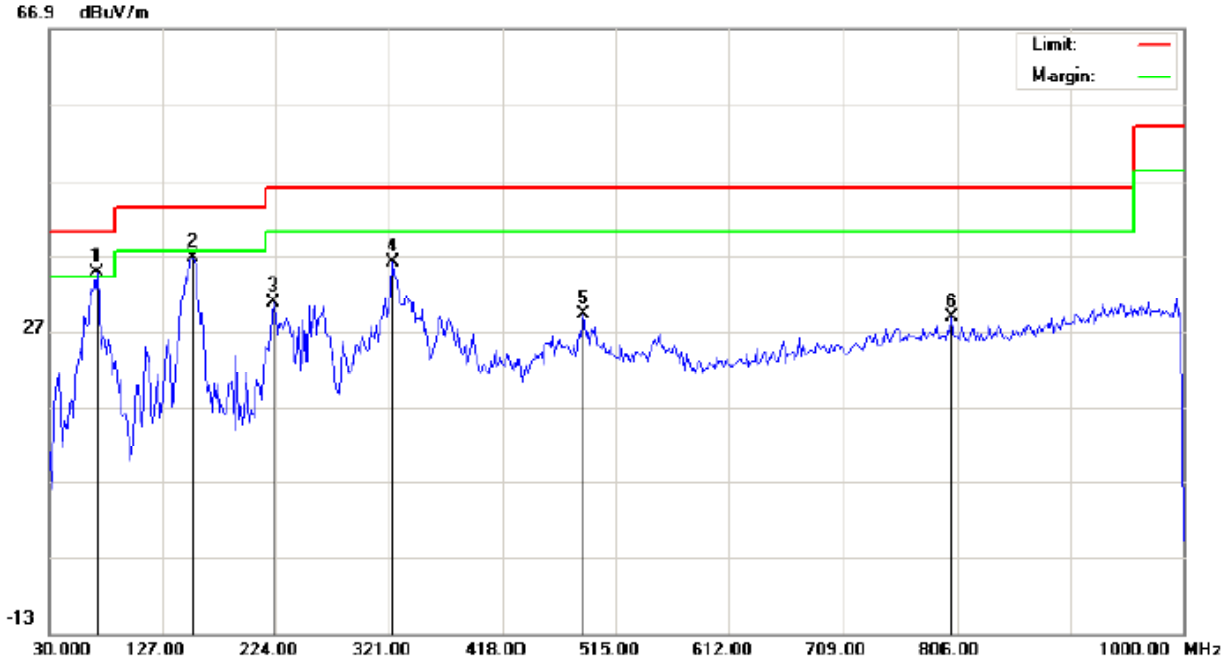
Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	52.6333	25.55	11.22	36.77	40.00	-3.23	peak			
2		112.4500	25.81	11.34	37.15	43.50	-6.35	peak			
3	!	152.8667	22.30	15.28	37.58	43.50	-5.92	peak			
4		256.3333	23.05	14.09	37.14	46.00	-8.86	peak			
5		325.8500	22.82	17.13	39.95	46.00	-6.05	peak			
6		752.6500	2.20	26.67	28.87	46.00	-17.13	peak			

RESULT: PASS

RADIATED EMISSION TEST- (30MHZ-1GHZ)- MIDDLE CHANNEL -VERTICAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Bluetooth Speaker
M/N: B19
Mode: Middle Channel TX
Note:

Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

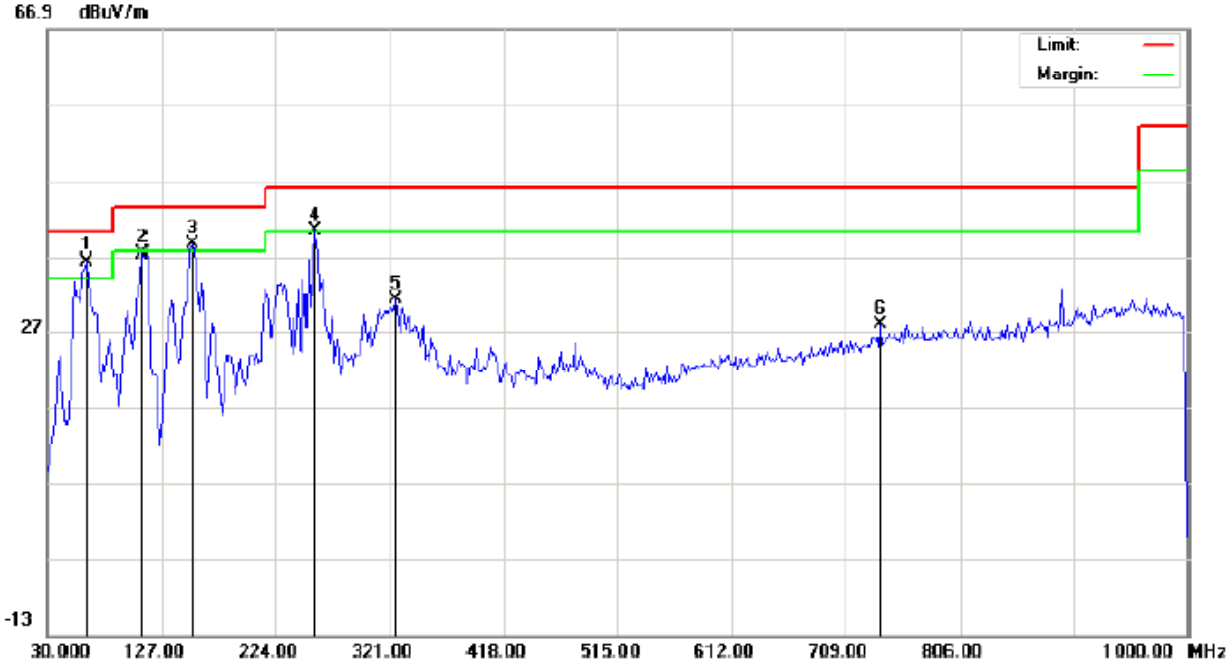
No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	70.4167	30.37	4.16	34.53	40.00	-5.47	peak			
2		152.8667	21.32	15.28	36.60	43.50	-6.90	peak			
3		222.3833	19.63	11.19	30.82	46.00	-15.18	peak			
4		324.2333	18.91	17.02	35.93	46.00	-10.07	peak			
5		487.5167	8.25	21.00	29.25	46.00	-16.75	peak			
6		801.1500	1.53	27.32	28.85	46.00	-17.15	peak			

RESULT: PASS

Note: 1. Factor=Antenna Factor+ Cable loss, Margin=Measurement-Limit.

2. The “Factor”valuecan be calculated automatically by software of measurement system.

RADIATED EMISSION TEST- (30MHZ-1GHZ)-HIGH CHANNEL-HORIZONTAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Bluetooth Speaker
M/N: B19
Mode: High Channel TX
Note:

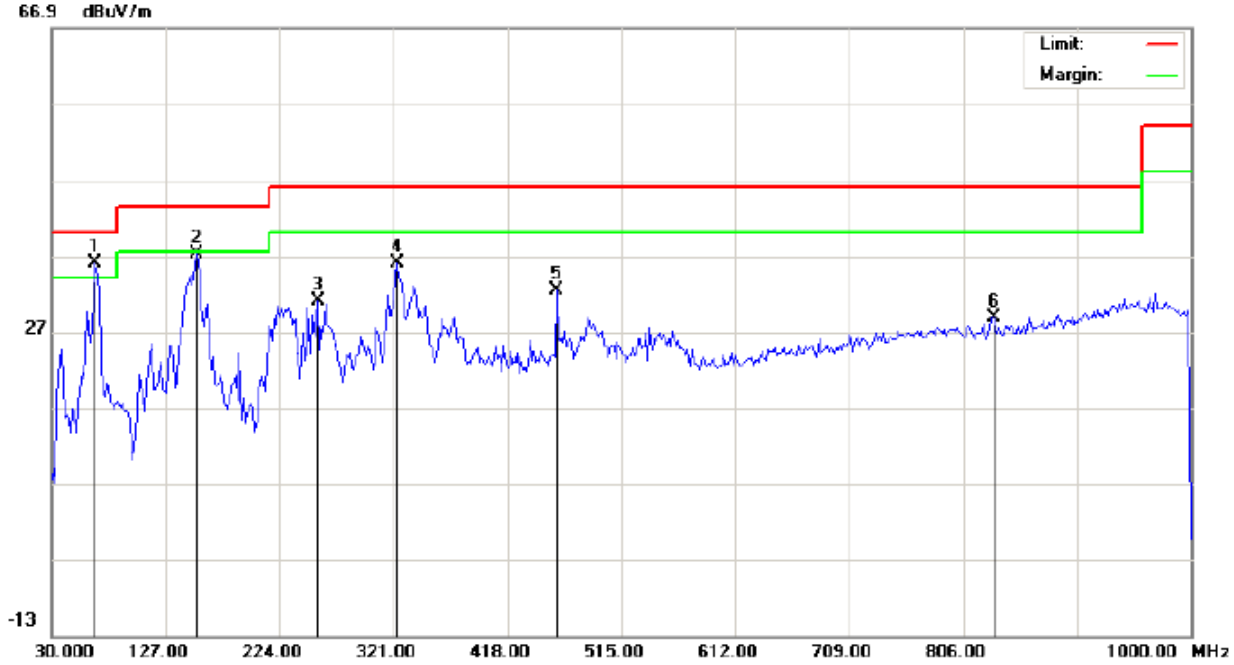
Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	62.3333	25.30	10.94	36.24	40.00	-3.76	peak			
2		110.8333	25.88	11.23	37.11	43.50	-6.39	peak			
3	!	152.8667	23.10	15.28	38.38	43.50	-5.12	peak			
4	!	256.3333	26.15	14.09	40.24	46.00	-5.76	peak			
5		325.8500	14.01	17.13	31.14	46.00	-14.86	peak			
6		738.1000	1.57	26.29	27.86	46.00	-18.14	peak			

RESULT: PASS

RADIATED EMISSION TEST- (30MHZ-1GHZ)-HIGH CHANNEL -VERTICAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Bluetooth Speaker
M/N: B19
Mode: High Channel TX
Note:

Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	67.1833	30.68	5.36	36.04	40.00	-3.96	peak			
2		152.8667	21.93	15.28	37.21	43.50	-6.29	peak			
3		256.3333	16.91	14.09	31.00	46.00	-15.00	peak			
4		324.2333	19.07	17.02	36.09	46.00	-9.91	peak			
5		460.0333	11.61	20.70	32.31	46.00	-13.69	peak			
6		831.8667	1.47	27.31	28.78	46.00	-17.22	peak			

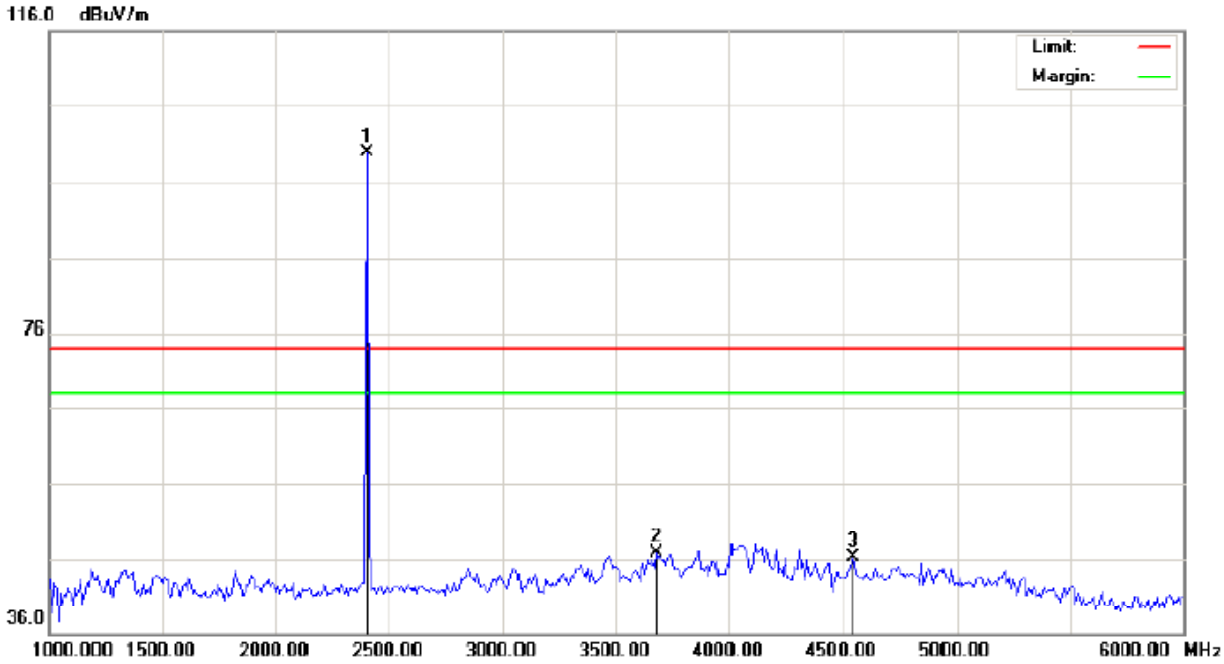
RESULT: PASS

Note: 1. Factor=Antenna Factor+ Cable loss, Margin=Measurement-Limit.

2. The “Factor”valuecan be calculated automatically by software of measurement system.

Above 1000 MHz

RADIATED EMISSION ABOVE 1GHZ (1-10th Harmonics)-LOW CHANNEL-HORIZONTAL



Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: Bluetooth Speaker
M/N: B19
Mode: Low Channel TX
Note:

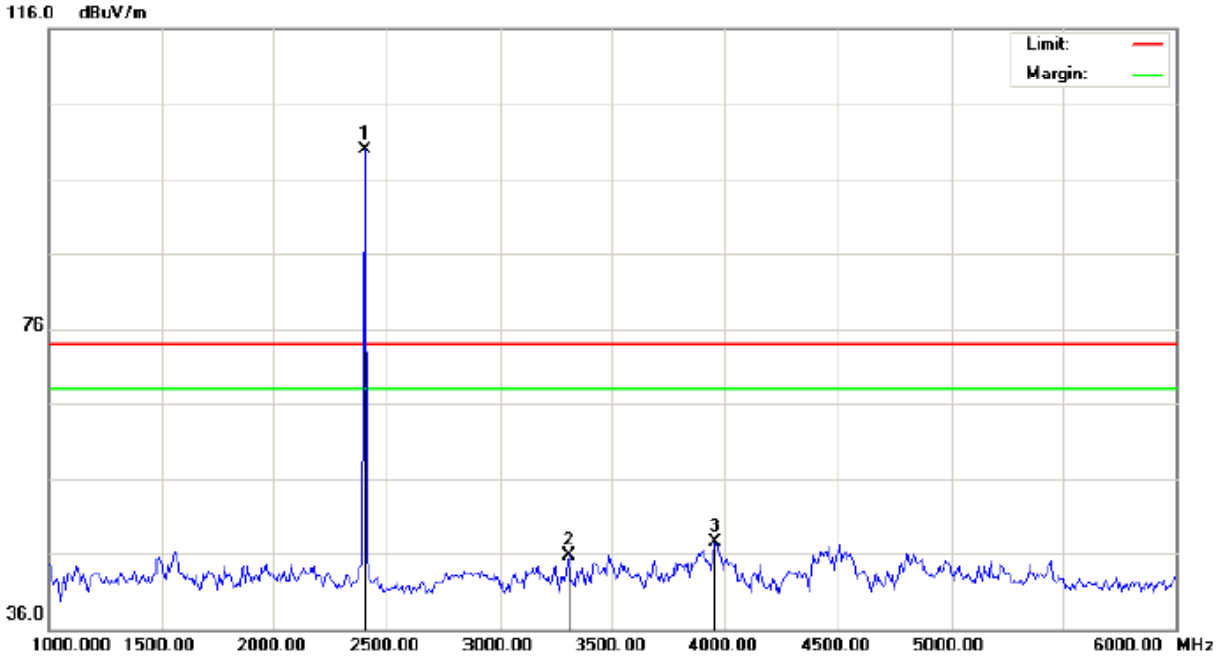
Polarization: *Horizontal*
Power:
Distance:

Temperature: 26
Humidity: 60 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	.	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2402.000	89.57	10.32	99.89	74.00	25.89	peak			
2		3675.000	33.72	13.19	46.91	74.00	-27.09	peak			
3		4541.667	39.30	7.00	46.30	74.00	-27.70	peak			

RESULT: PASS

RADIATED EMISSION ABOVE 1GHZ (1-10th Harmonics)-LOW CHANNEL –VERTICAL

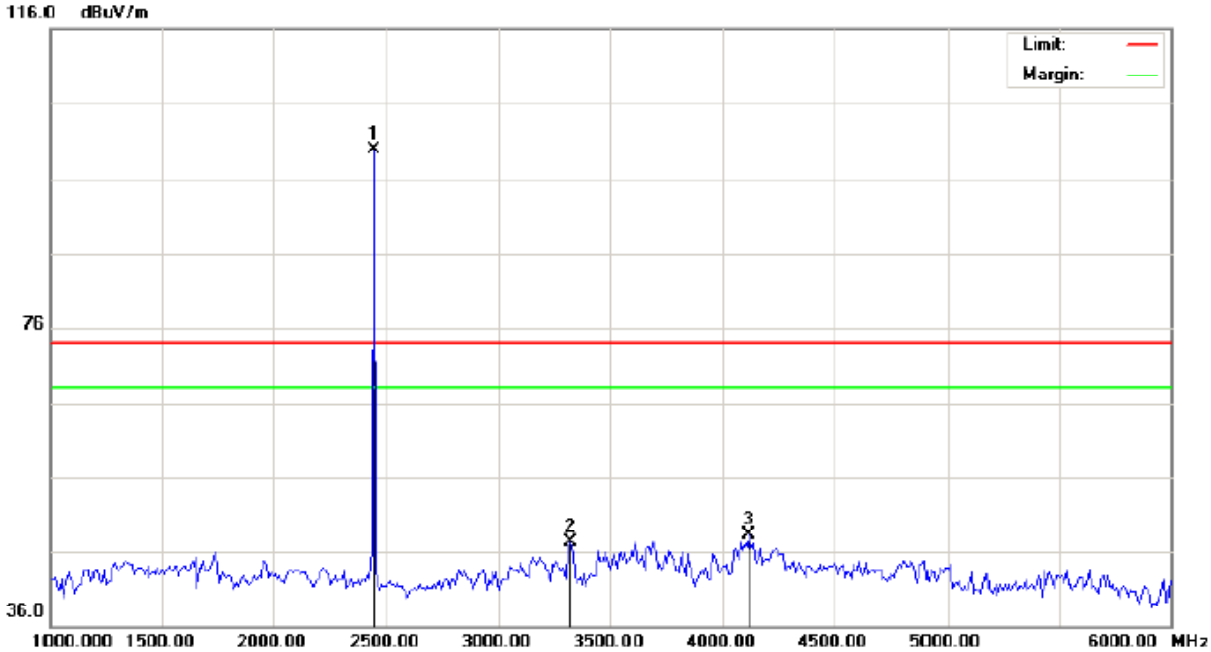


Site: site #1 Polarization: *Vertical* Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %
EUT: Bluetooth Speaker Distance:
M/N: B19
Mode: Low Channel TX
Note:

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2402.000	89.54	10.32	99.86	74.00	25.86	peak			
2		3308.333	33.87	11.93	45.80	74.00	-28.20	peak			
3		3958.333	32.60	14.93	47.53	74.00	-26.47	peak			

RESULT: PASS

RADIATED EMISSION ABOVE 1GHZ (1-10th Harmonics)-MIDDLE CHANNEL-HORIZONTAL



Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: Bluetooth Speaker
M/N: B19
Mode: Middle Channel TX
Note:

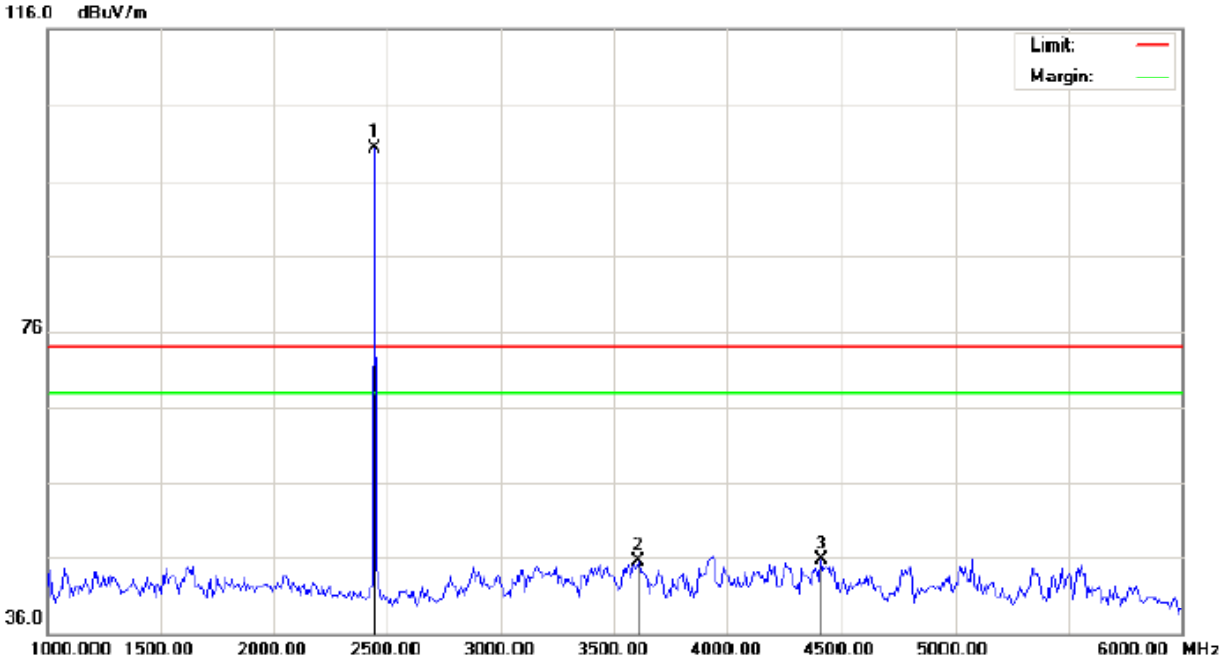
Polarization: *Horizontal*
Power:
Distance:

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2441.000	89.60	10.37	99.97	74.00	25.97	peak			
2		3325.000	35.29	11.95	47.24	74.00	-26.76	peak			
3		4116.667	35.02	13.25	48.27	74.00	-25.73	peak			

RESULT: PASS

RADIATED EMISSION ABOVE 1GHZ (1-10th Harmonics)- MIDDLE CHANNEL –VERTICAL



Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: Bluetooth Speaker
M/N: B19
Mode: Middle Channel TX
Note:

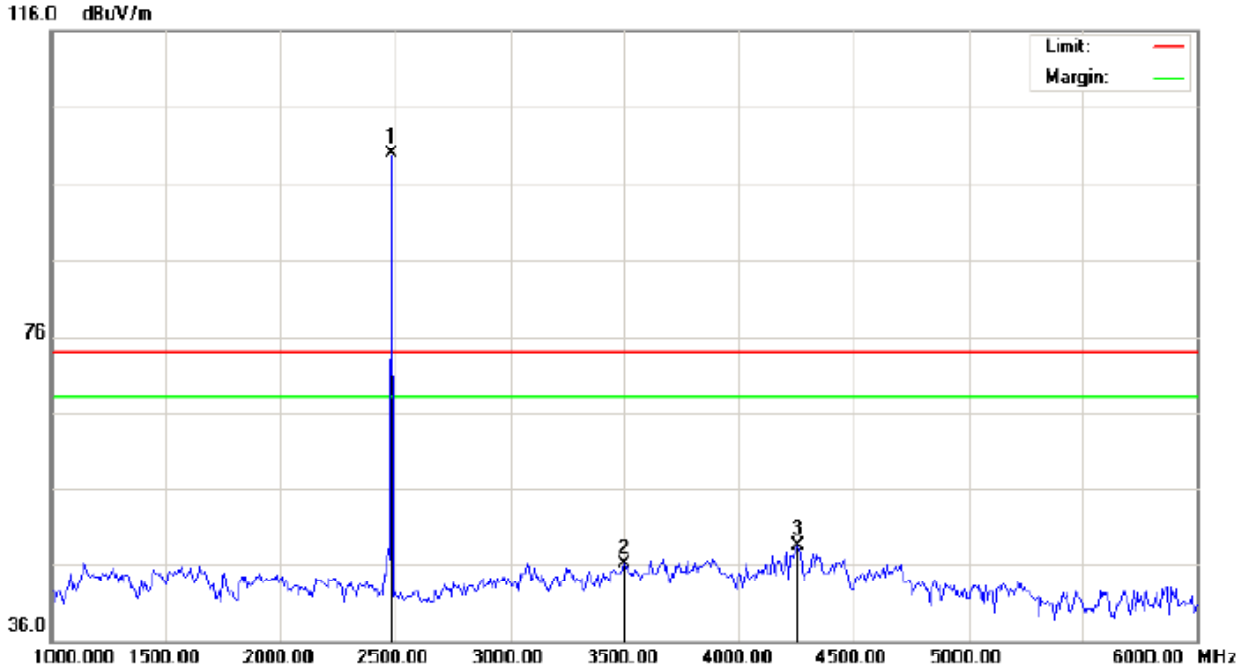
Polarization: *Vertical*
Power:
Distance:

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2441.000	89.90	10.37	100.27	74.00	26.27	peak			
2		3600.000	32.80	12.73	45.53	74.00	-28.47	peak			
3		4416.667	37.38	8.27	45.65	74.00	-28.35	peak			

RESULT: PASS

RADIATED EMISSION ABOVE 1GHZ (1-10th Harmonics)-HIGH CHANNEL-HORIZONTAL



Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: Bluetooth Speaker
M/N: B19
Mode: High Channel TX
Note:

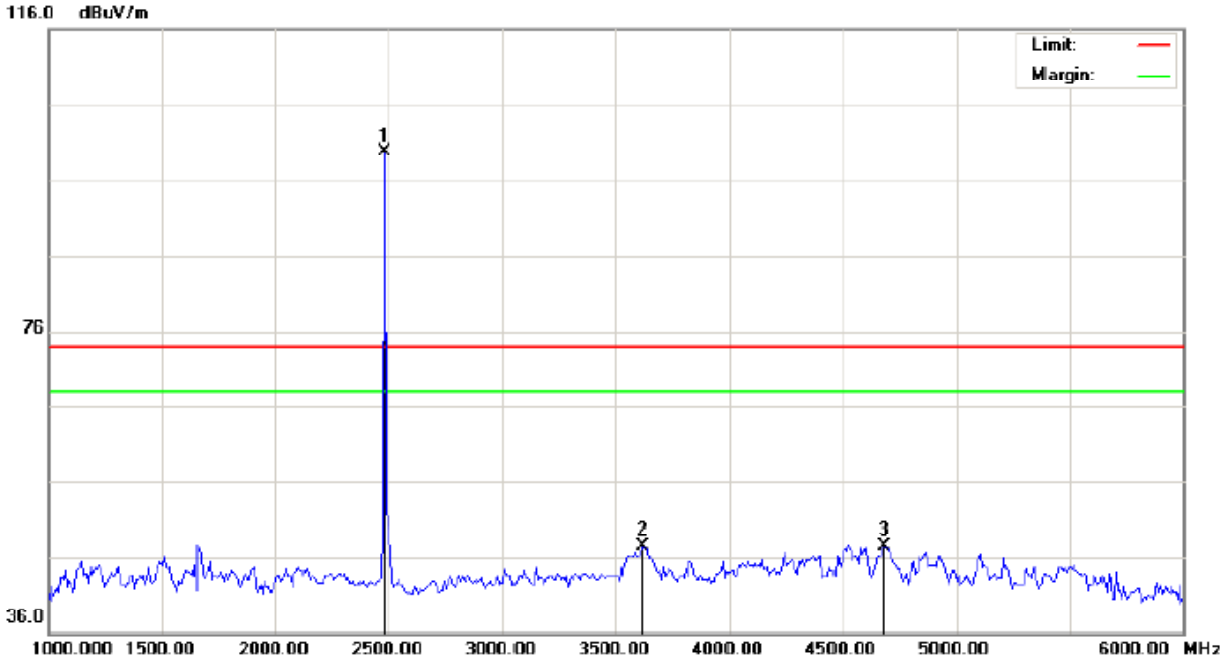
Polarization: *Horizontal*
Power:
Distance:

Temperature: 26
Humidity: 60 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2480.000	89.41	10.41	99.82	74.00	25.82	peak			
2		3500.000	33.99	12.11	46.10	74.00	-27.90	peak			
3		4258.333	37.65	10.90	48.55	74.00	-25.45	peak			

RESULT: PASS

RADIATED EMISSION ABOVE 1GHZ (1-10th Harmonics)-HIGH CHANNEL –VERTICAL



Site: site #1 Polarization: *Vertical* Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %
EUT: Bluetooth Speaker Distance:
M/N: B19
Mode: High Channel TX
Note:

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2480.000	89.26	10.41	99.67	74.00	25.67	peak			
2		3616.667	34.69	12.83	47.52	74.00	-26.48	peak			
3		4683.333	40.15	7.37	47.52	74.00	-26.48	peak			

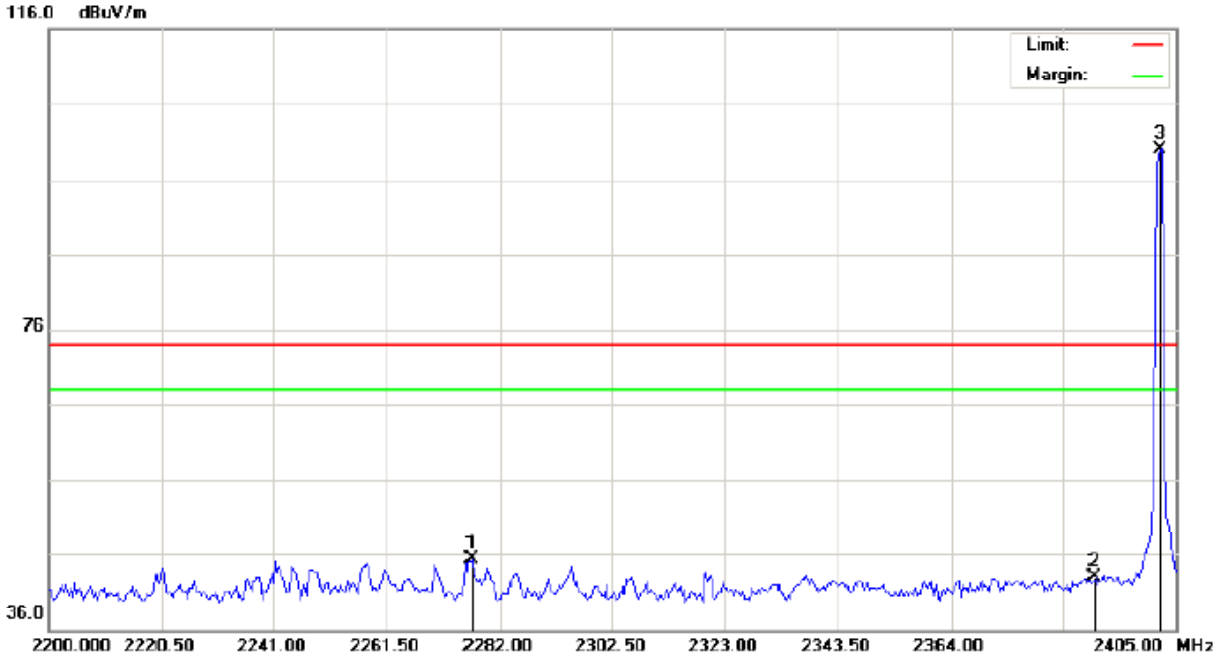
RESULT: PASS

Note: 6~25GHz at least have 20dB margin. No recording in the test report.
Factor=Antenna Factor+ Cable loss-Amplifier gain, Margin=Measurement-Limit.
The “Factor”valuecan be calculated automatically by software of measurement system.

BAND EDGE TEST

(Worst Modulation: 8-DPSK)

TEST PLOT OF BAND EDGE FOR LOW CHANNEL -Horizontal



Site: site #1 | Polarization: *Horizontal* | Temperature: 26

Limit: FCC Class B 3M Radiation above 1GHZ(PK) | Power: | Humidity: 60 %

EUT: Bluetooth Speaker | Distance:

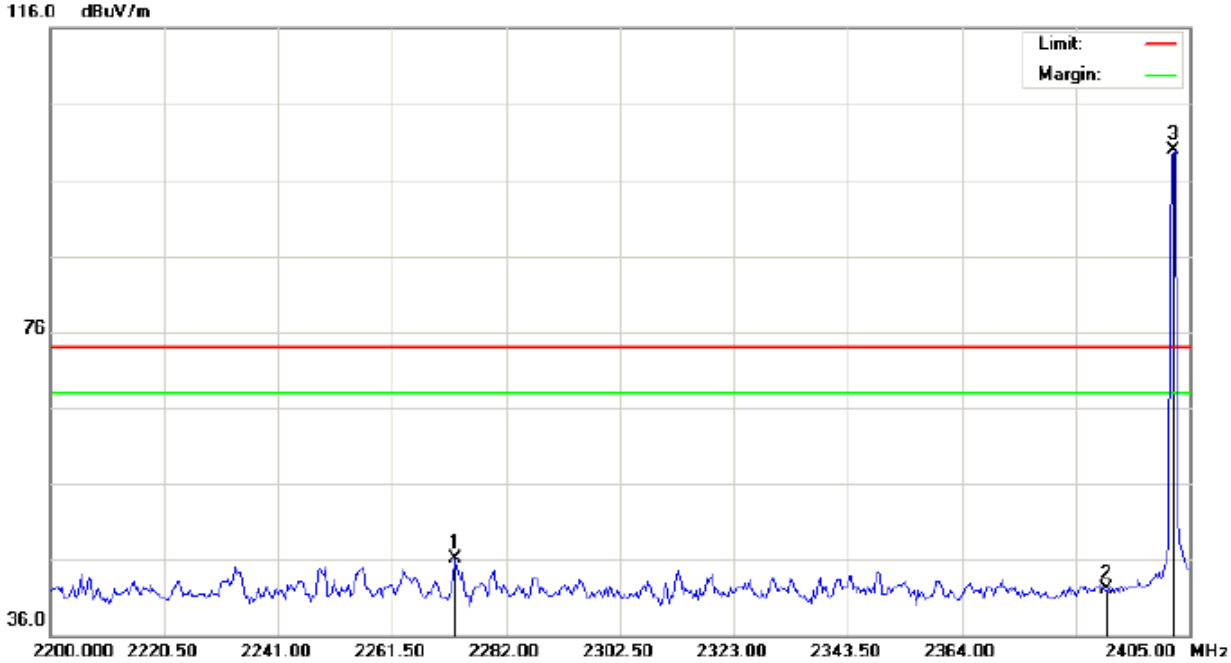
M/N: B19

Mode: Low Channel TX

Note:

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2276.875	35.04	10.18	45.22	74.00	-28.78	peak			
2		2390.000	32.50	10.31	42.81	74.00	-31.19	peak			
3	*	2402.000	89.64	10.32	99.96	74.00	25.96	peak			

TEST PLOT OF BAND EDGE FOR LOW CHANNEL -Vertical



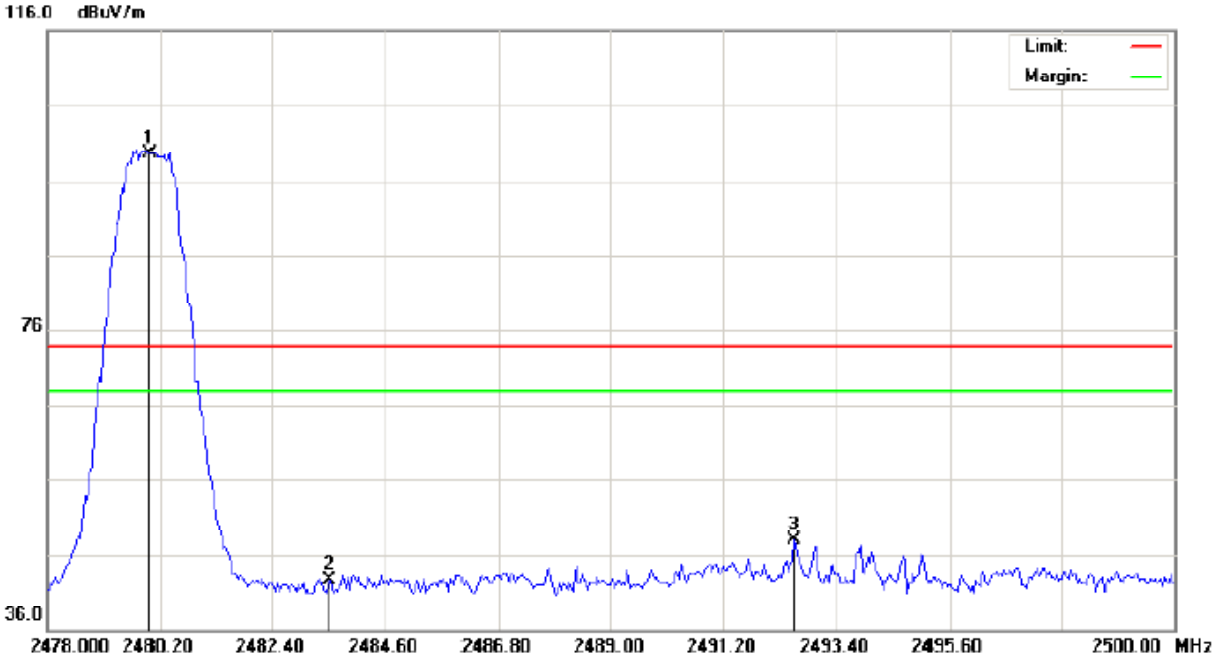
Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: Bluetooth Speaker
M/N: B19
Mode: Low Channel TX
Note:

Polarization: *Vertical*
Power:
Distance:

Temperature: 26
Humidity: 60 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	.	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2272.775	35.85	10.18	46.03	74.00	-27.97	peak			
2		2390.000	31.71	10.31	42.02	74.00	-31.98	peak			
3	*	2402.000	89.59	10.32	99.91	74.00	25.91	peak			

TEST PLOT OF BAND EDGE FOR HIGH CHANNEL -Horizontal



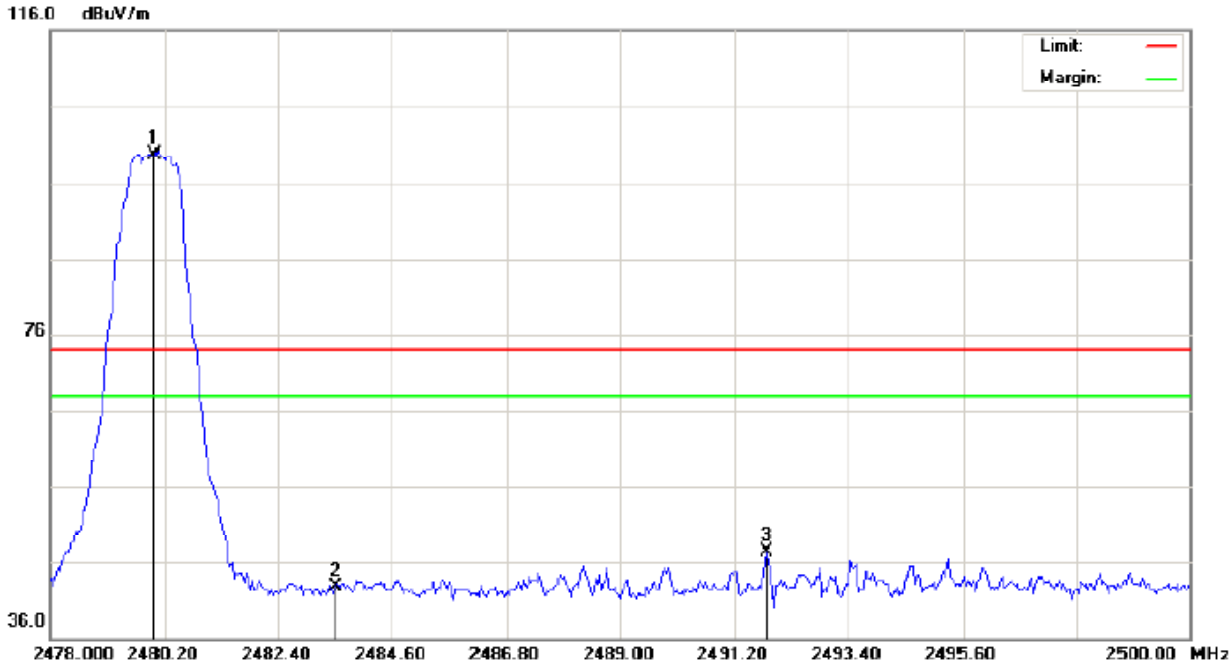
Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: Bluetooth Speaker
M/N: B19
Mode: High Channel TX
Note:

Polarization: *Horizontal*
Power:
Distance:

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2480.000	89.05	10.41	99.46	74.00	25.46	peak			
2		2483.500	32.19	10.41	42.60	74.00	-31.40	peak			
3		2492.557	37.70	10.42	48.12	74.00	-25.88	peak			

TEST PLOT OF BAND EDGE FOR HIGH CHANNEL -Vertical



Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: Bluetooth Speaker
M/N: B19
Mode: High Channel TX
Note:

Polarization: *Vertical*
Power:
Distance:

Temperature: 26
Humidity: 60 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	.	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2480.000	89.32	10.41	99.73	74.00	25.73	peak			
2		2483.500	32.26	10.41	42.67	74.00	-31.33	peak			
3		2491.823	36.84	10.42	47.26	74.00	-26.74	peak			

RESULT: PASS

Note: 1. Factor=Antenna Factor+ Cable loss, Margin=Measurement-Limit.

2. The “Factor”valuecan be calculated automatically by software of measurement system.

4. CONDUCTED SPURIOUS EMISSIONS

4.1 REQUIREMENT

According to FCC section 15.247(d), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

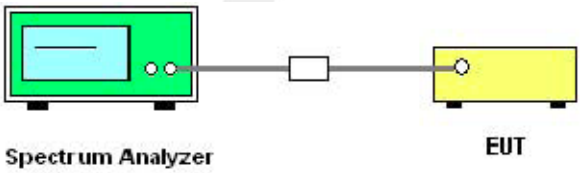
4.2TEST PROCEDURE

According to FCC section 15.247(d), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	30 MHz to 10th carrier harmonic
RB / VB (emission in restricted band)	100 KHz/100 KHz
Trace-Mode:	Max hold

.

4.3 TEST SETUP



The EUT which is powered by the Battery, is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. Make the measurement with the spectrum analyzer's resolution bandwidth(RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

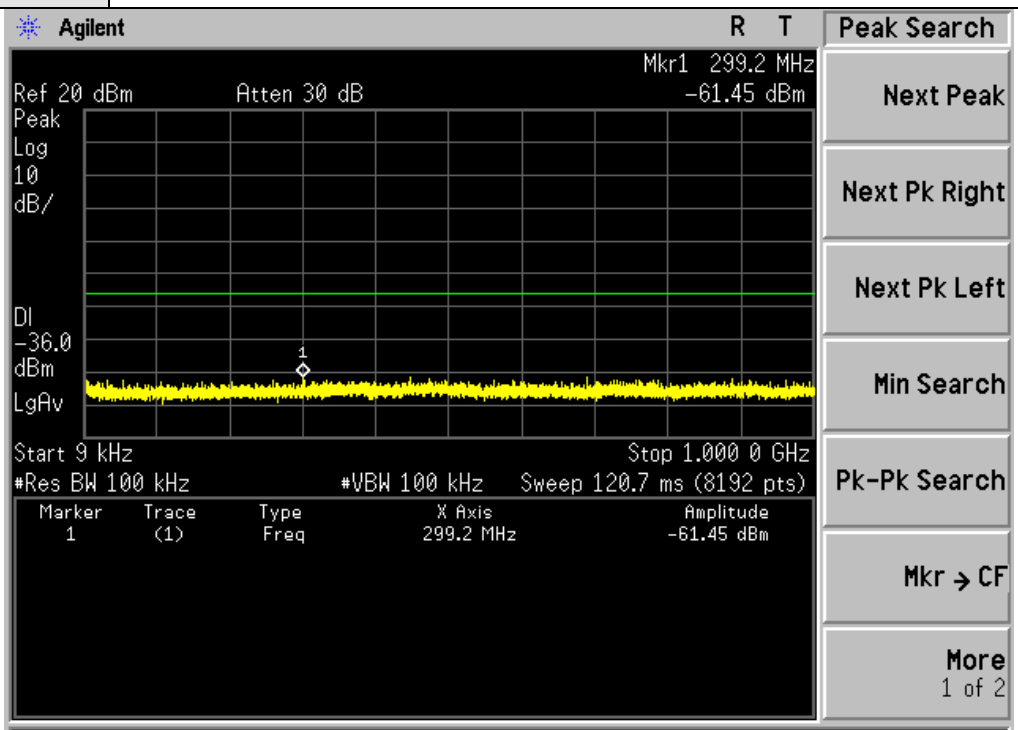
4.4 EUT OPERATION CONDITIONS

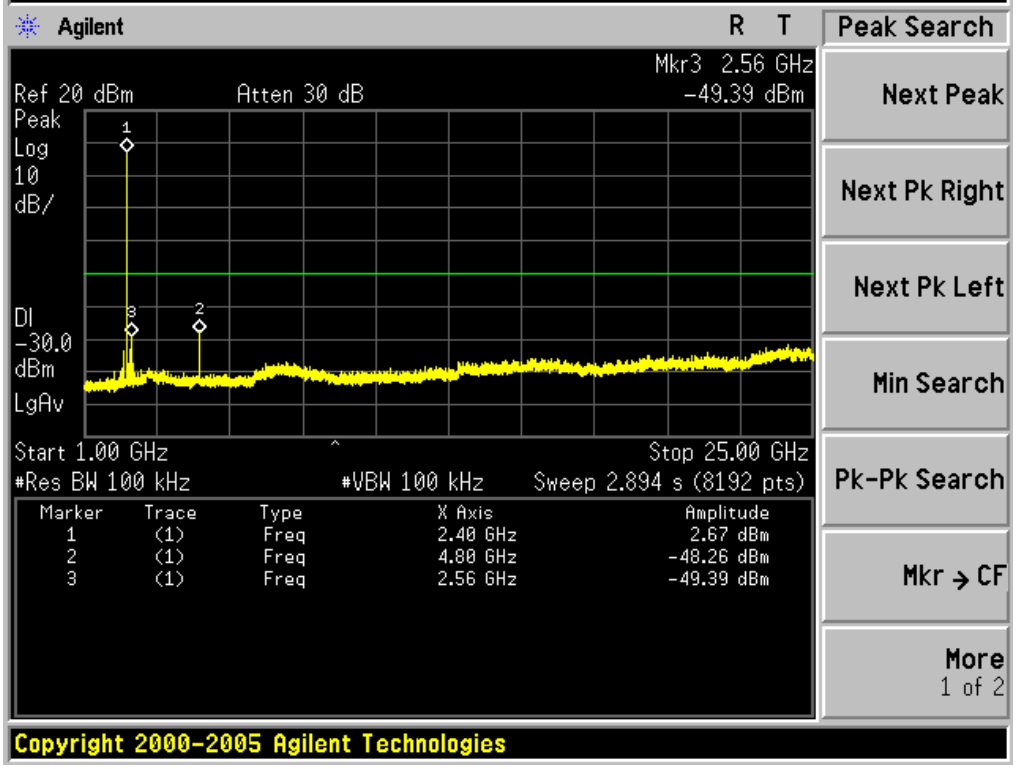
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

REMARK： GFSK(1Mbps), π/4-DQPSK(2Mbps),8-DPSK(3Mbps) all have been tested ,8-DPSK(3Mbps) is found as worst case and only reported

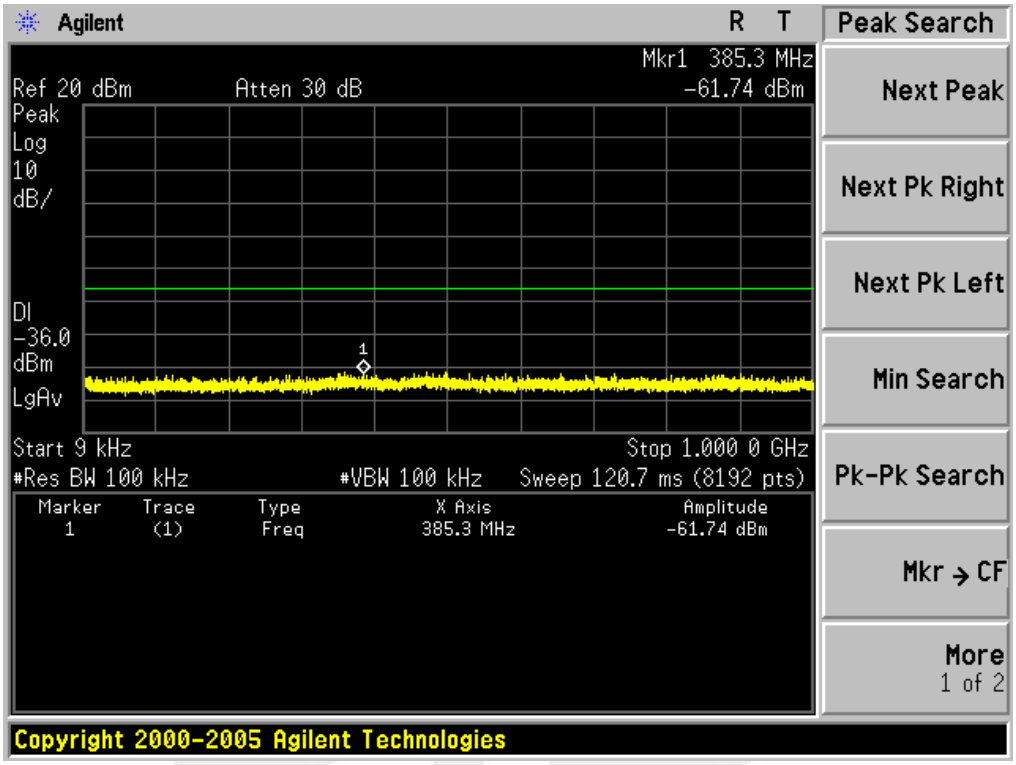
4.5 TEST RESULTS

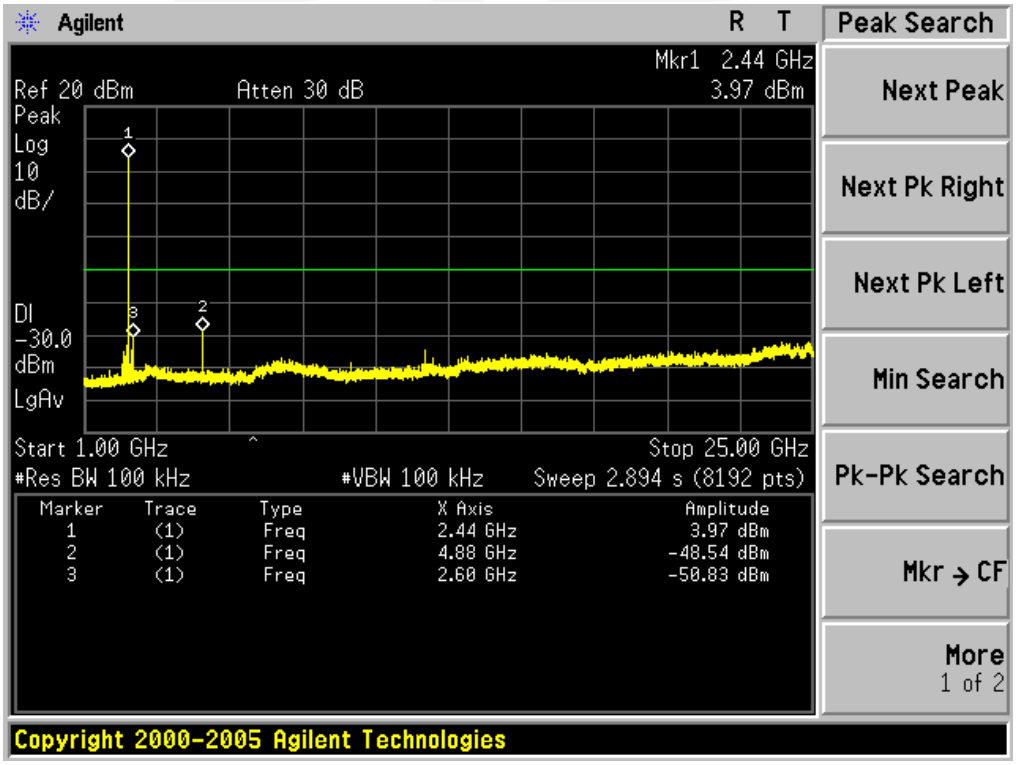
EUT：	Bluetooth Speaker	Model Name ：	B19
Temperature：	25℃	Relative Humidity：	50%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	Low Channel		



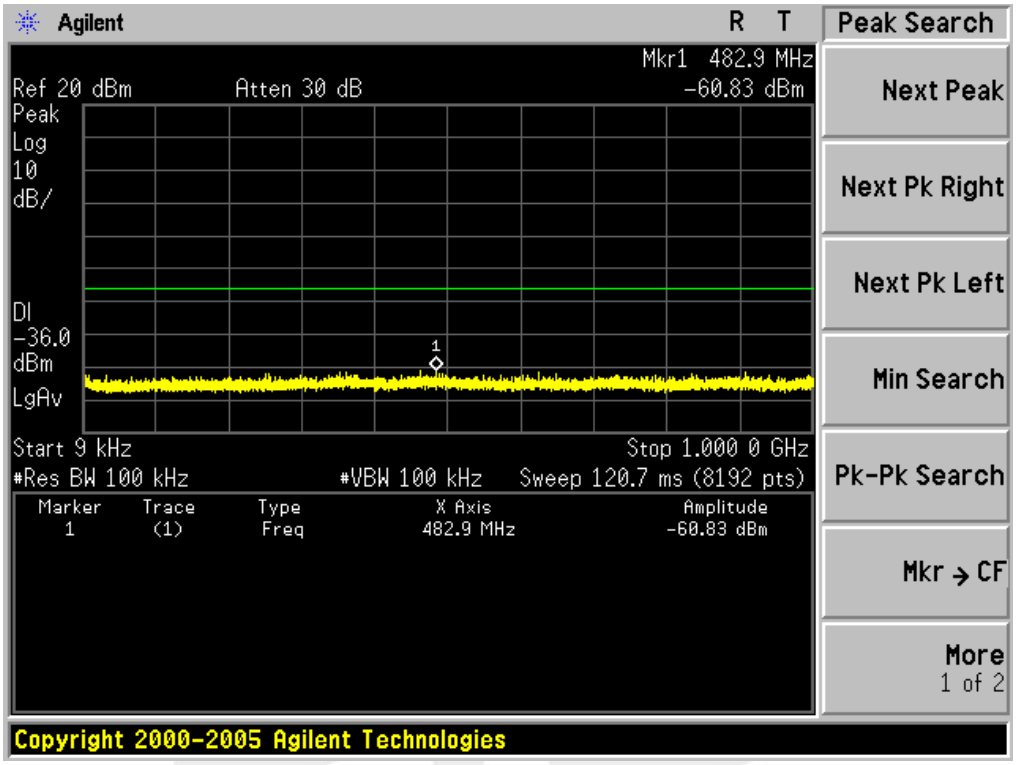


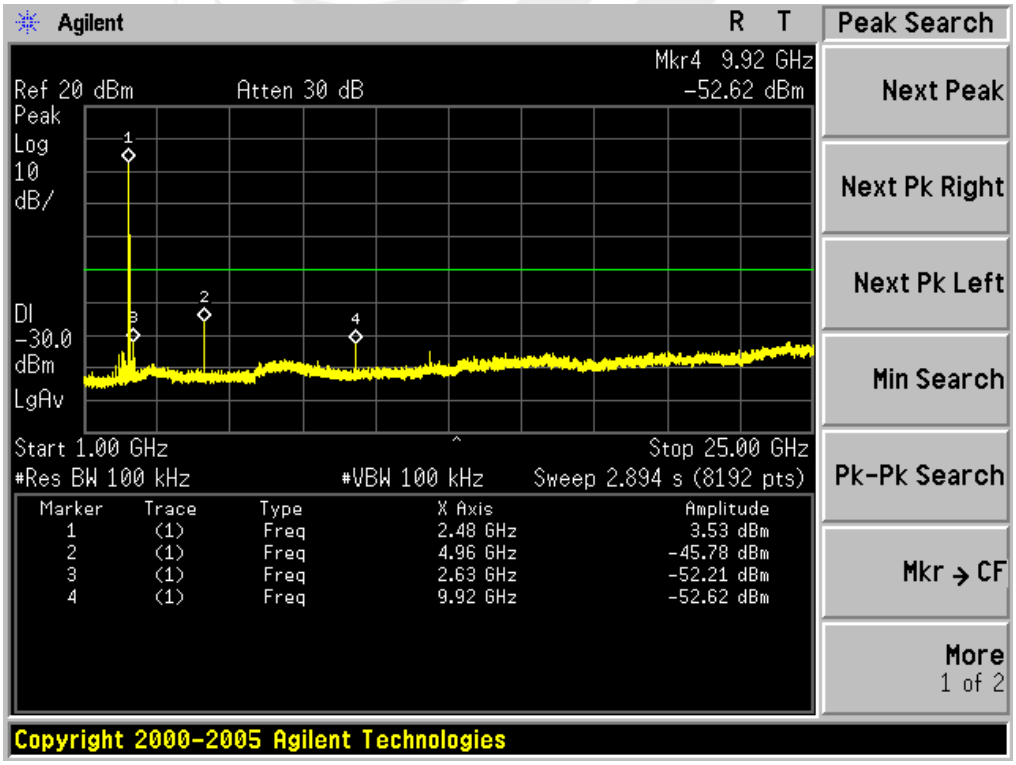
EUT：	Bluetooth Speaker	Model Name ：	B19
Temperature：	25℃	Relative Humidity：	50%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	Middle Channel		





EUT：	Bluetooth Speaker	Model Name ：	B19
Temperature：	25℃	Relative Humidity：	50%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	High Channel		

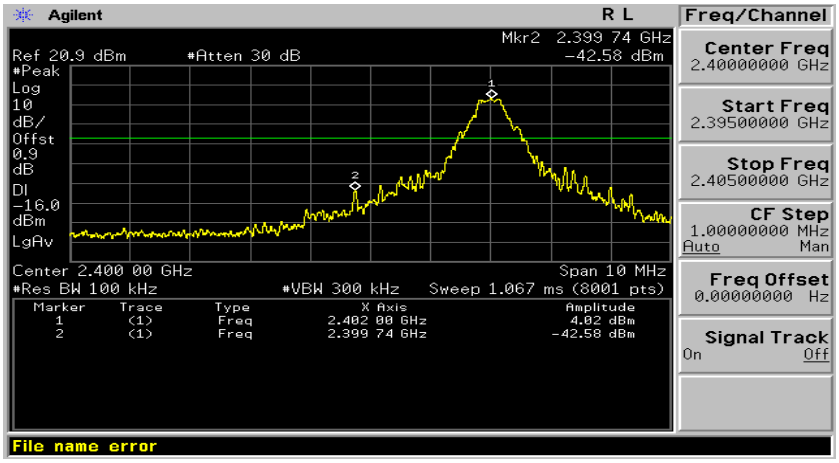
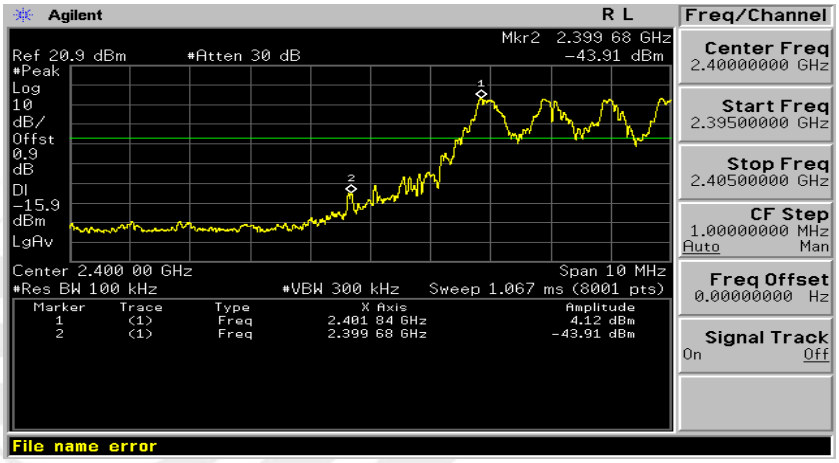
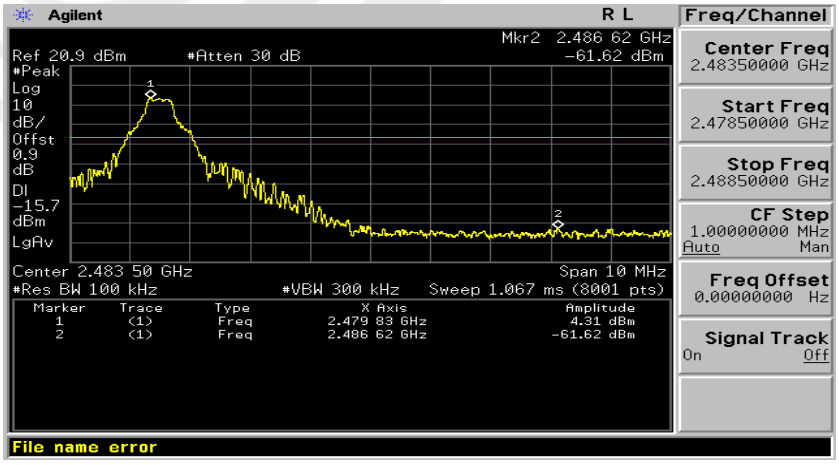


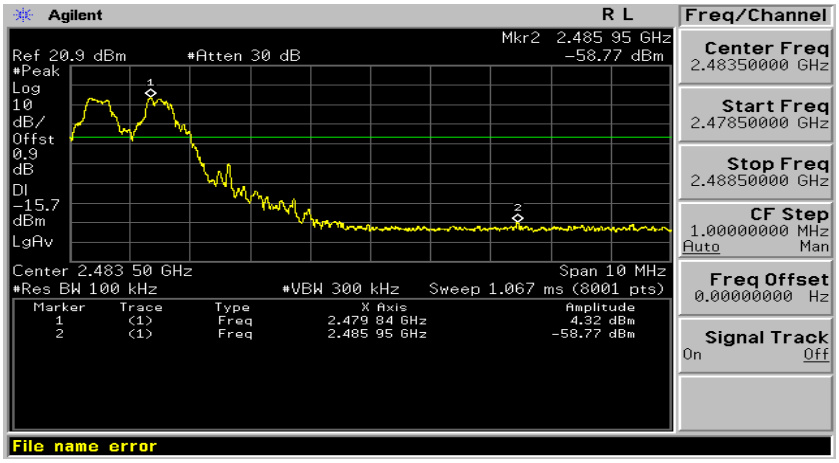
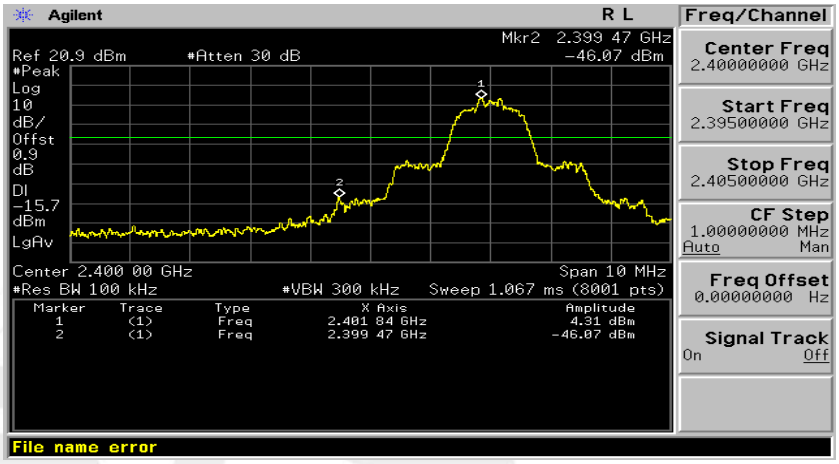
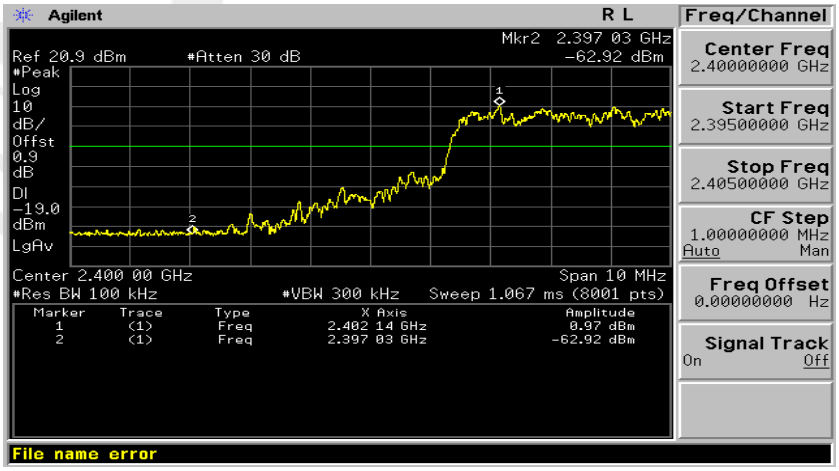
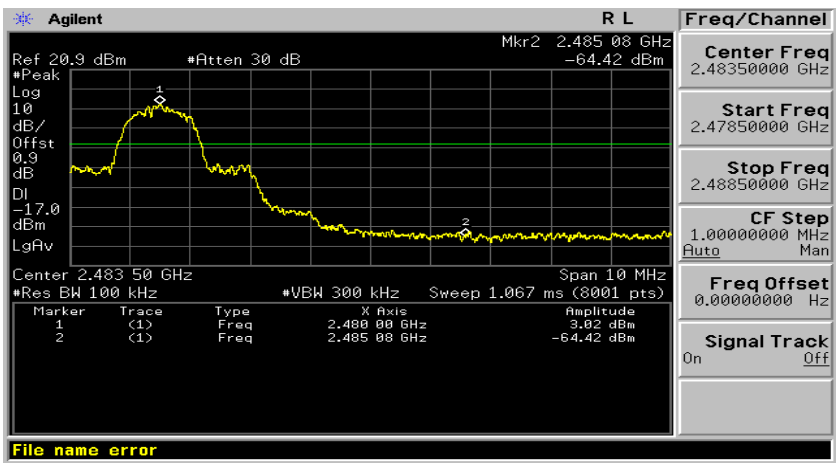


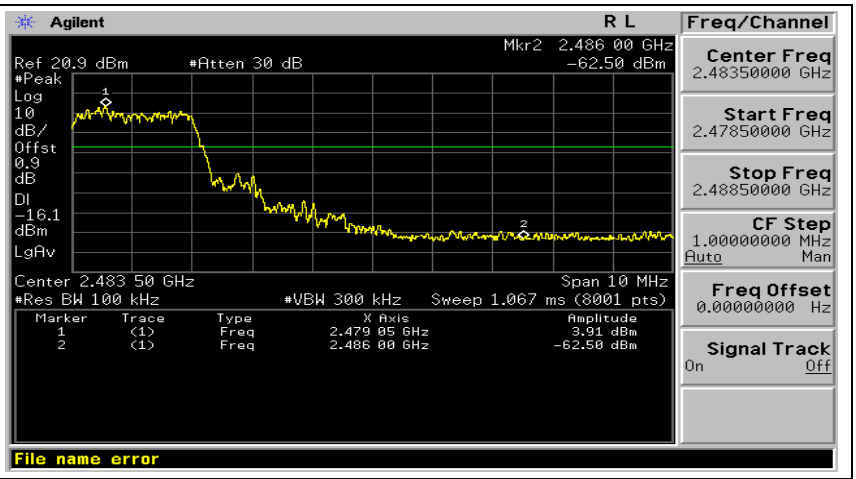
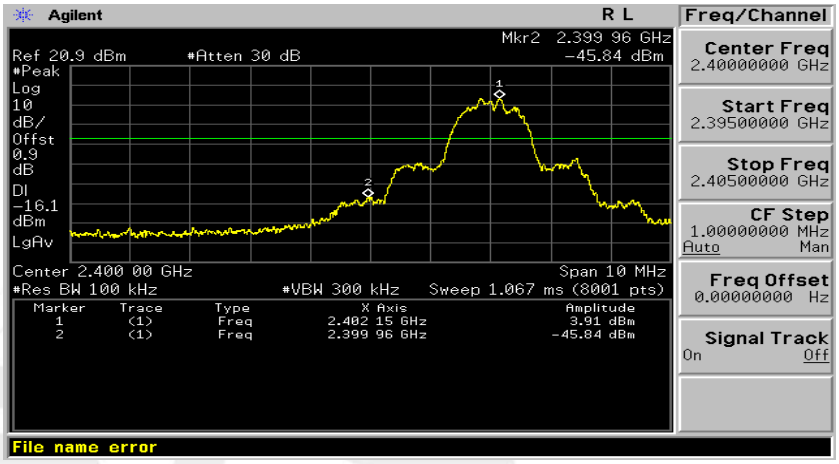
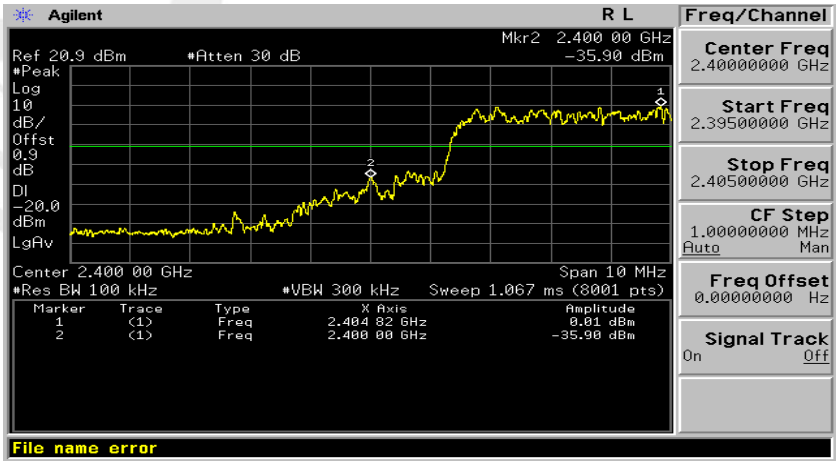
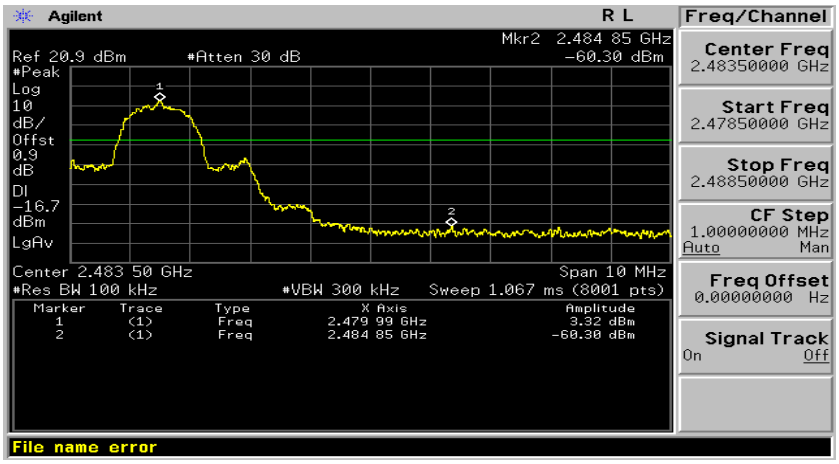
CONDUCTED TEST RESULT FOR BANDEDGE

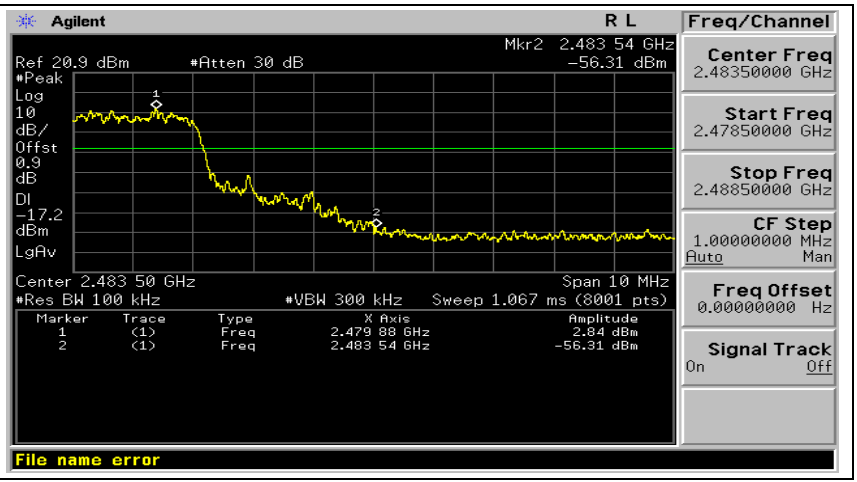
Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBm]	Verdict
GFSK	LCH	2402	Off	-42.58	PASS
			On	-43.91	PASS
GFSK	HCH	2480	Off	-61.62	PASS
			On	-58.77	PASS
π/4DQPSK	LCH	2402	Off	-46.07	PASS
			On	-62.92	PASS
π/4DQPSK	HCH	2480	Off	-64.42	PASS
			On	-62.50	PASS
8DPSK	LCH	2402	Off	-45.84	PASS
			On	-35.90	PASS
8DPSK	HCH	2480	Off	-60.30	PASS
			On	-56.31	PASS

Test Graph

Graphs	
GFSK/LCH/No Hop	
GFSK/LCH/Hop	
GFSK/HCH/No Hop	

GFSK/HCH/Hop	
π /4DQPSK/LCH/No Hop	
π /4DQPSK/LCH/ Hop	
π /4DQPSK/HCH/No Hop	

π /4DQPSK/HCH/ Hop	
8DPSK/LCH/No Hop	
8DPSK/LCH/Hop	
8DPSK/HCH/No Hop	

8DPSK/HCH/ Hop	

5. NUMBER OF HOPPING CHANNEL

5.1APPLIED PROCEDURES / LIMIT

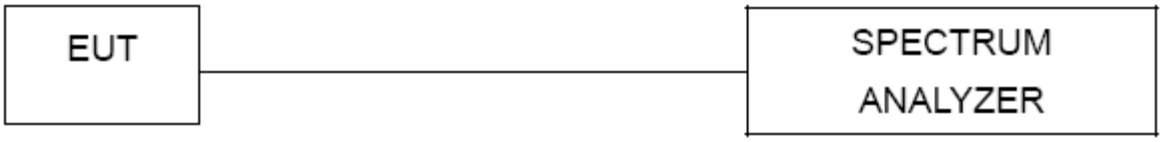
FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	FrequencyRange (MHz)	Result
15.247 (a)(1)(iii)	Number of Hopping Channel	≥15	2400-2483.5	PASS

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> Operating FrequencyRange
RB	100KHz
VB	300KHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting : RBW= 100K, VBW=300K, Sweep time = Auto.

5.3 TEST SETUP



5.4 EUT OPERATION CONDITIONS

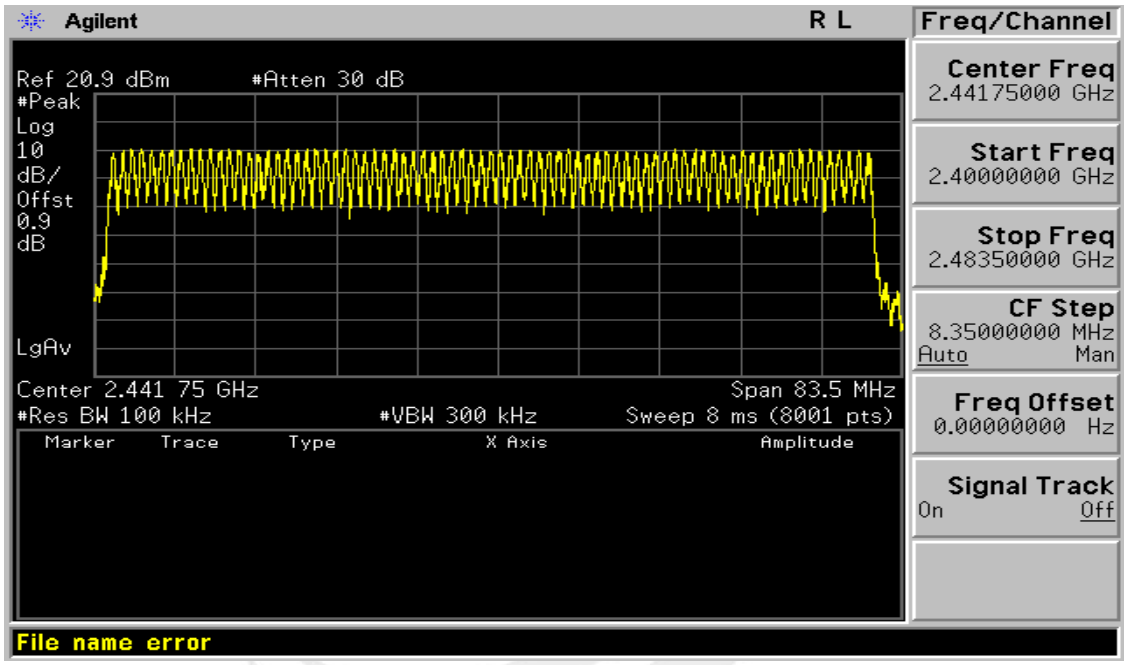
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.5TEST RESULTS

EUT：	Bluetooth Speaker	Model Name ：	B19
Temperature：	25℃	Relative Humidity：	60%
Pressure：	1015 hPa	Test Voltage：	DC 3.7V
Test Mode ：	Hopping Mode		

Number of Hopping Channel	79

Hopping channel



Note: All modes (GFSK, π/4DQPSK, 8DPSK) were tested, test result passed.

6. AVERAGE TIME OF OCCUPANCY

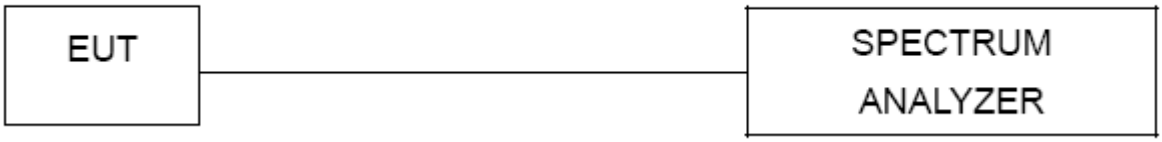
6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	FrequencyRange (MHz)	Result
15.247 (a)(1)(iii)	Average Time of Occupancy	0.4sec	2400-2483.5	PASS

6.2 TEST PROCEDURE

a. The transmitter output (antenna port) was connected to the spectrum analyzer
b. Set RBW of spectrum analyzer to 1MHz and VBW to 1MHz.
c. Use a video trigger with the trigger level set to enable triggering only on full pulses.
d. Sweep Time is more than once pulse time.
e. Set the center frequency on any frequency would be measure and set the frequency span to zero span.

6.3 TEST SETUP



6.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

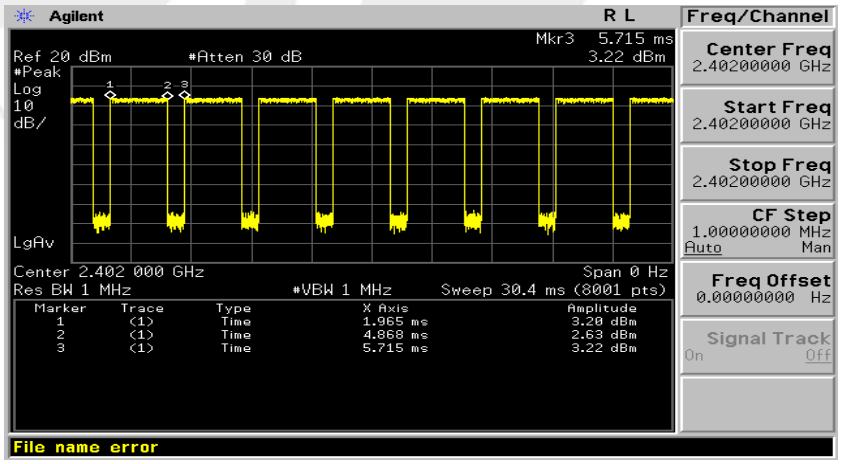
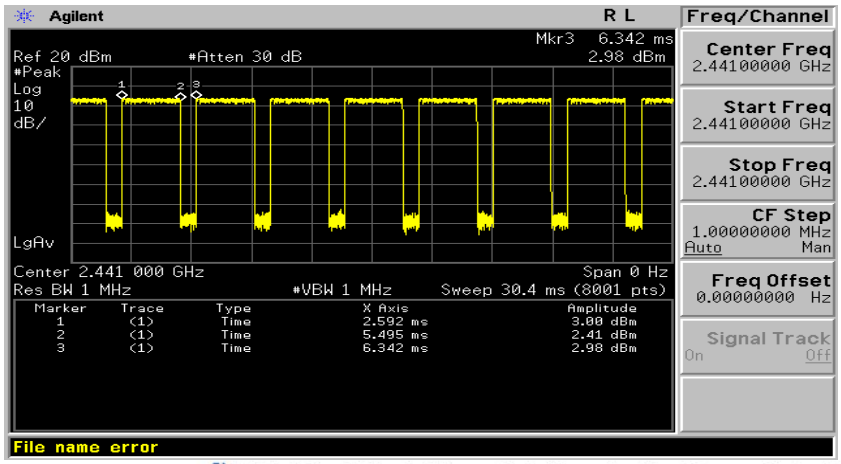
6.5TEST RESULTS

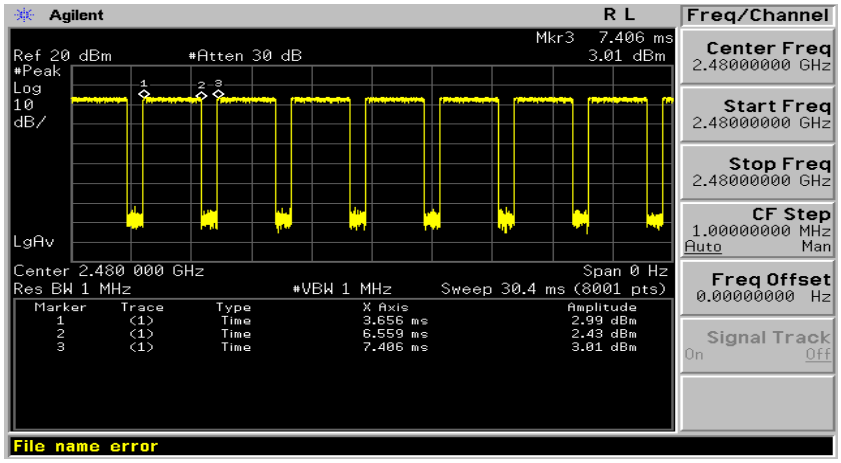
EUT：	Bluetooth Speaker	Model Name ：	B19
Temperature：	25℃	Relative Humidity：	50%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	8DPSK(3Mbps)DH5 (Worst case)		

Channel	Spectrum Reading (ms)DH5	Period Time (s)	Sweep Time (ms)	Limit (ms)
Low	2.903	31.6	309.65	400
Middle	2.903	31.6	309.65	400
High	2.903	31.6	309.65	400

Low Channel Time
2.903*(1600/6)/79*31.6=309.65ms
Middle Channel Time
2.903*(1600/6)/79*31.6=309.65ms
High Channel Time
2.903*(1600/6)/79*31.6=309.65ms

Test Graph

Graphs	
8DPSK /LCH	
8DPSK /MCH	

8DPSK /HCH	 Agilent R L Freq/Channel Mkr3 7.406 ms Ref 20 dBm #Atten 30 dB 3.01 dBm #Peak Log 10 dB/ LgAv Center 2.480 000 GHz Span 0 Hz Res BW 1 MHz #VBW 1 MHz Sweep 30.4 ms (8001 pts) Marker Trace Type X Axis Amplitude 1 (1) Time 3.656 ms 2.99 dBm 2 (1) Time 6.559 ms 2.43 dBm 3 (1) Time 7.406 ms 3.01 dBm Center Freq 2.48000000 GHz Start Freq 2.48000000 GHz Stop Freq 2.48000000 GHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off File name error

7. HOPPING CHANNEL SEPARATION MEASUREMENT

7.1 APPLIED PROCEDURES / LIMIT

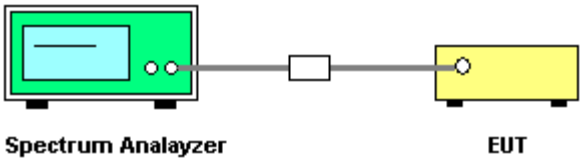
(1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hoppingchannel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of thehopping channel, whichever is greater, provided the systems operate with an output power no greater than125 mW.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth or Channel Separation
RB	30 kHz
VB	30 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

7.2 TEST PROCEDURE

a. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
b. The resolution bandwidth of 30 kHz and the video bandwidth of 30 kHz were utilised for 20 dB bandwidth measurement.
c. The resolution bandwidth of 30 kHz and the video bandwidth of 30 kHz were utilised for channel separation measurement.

7.3 TEST SETUP

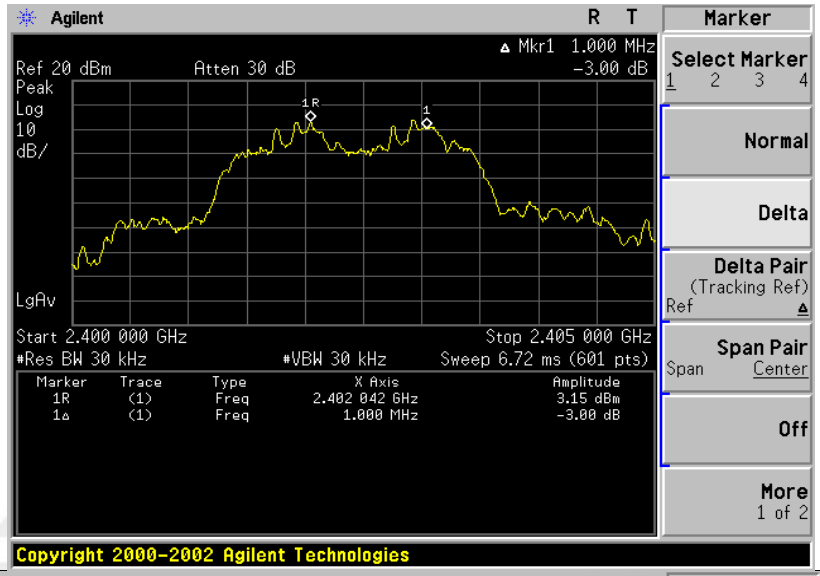
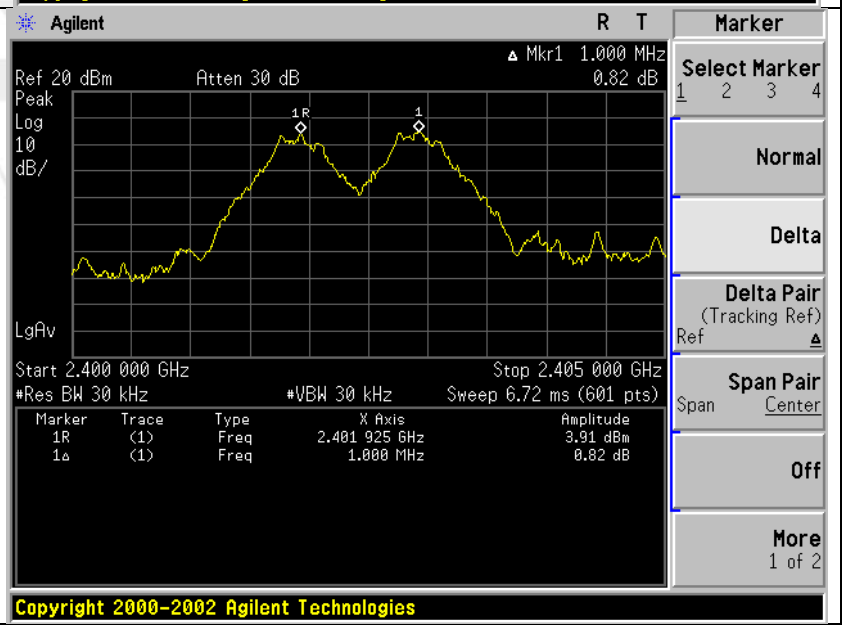


7.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.5TEST RESULTS

Mode	Channel.	Carrier Frequency Separation [MHz]	Verdict
GFSK	Hop	1.000	PASS
8DPSK	Hop	1.000	PASS

Graphs	
8DPSK/Hop	
GFSK	

NOTE:

1. All modes were tested,only the worst case record in the report.

8. BANDWIDTH TEST

8.1APPLIED PROCEDURES / LIMIT

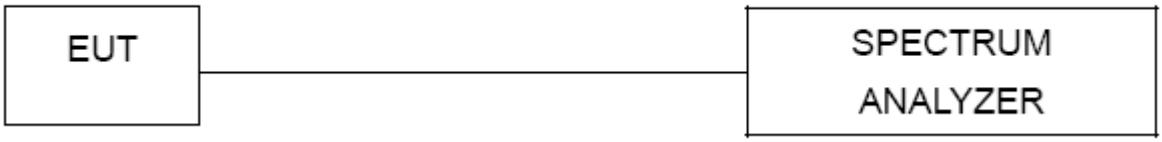
FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	FrequencyRange (MHz)	Result
15.247 (a)(1)	Bandwidth	(20dB bandwidth)	2400-2483.5	PASS

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth or Channel Separation
RB	30 kHz
VB	30 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

8.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting : RBW= 30KHz, VBW ≥ RBW, Sweep time = Auto.

8.3 TEST SETUP



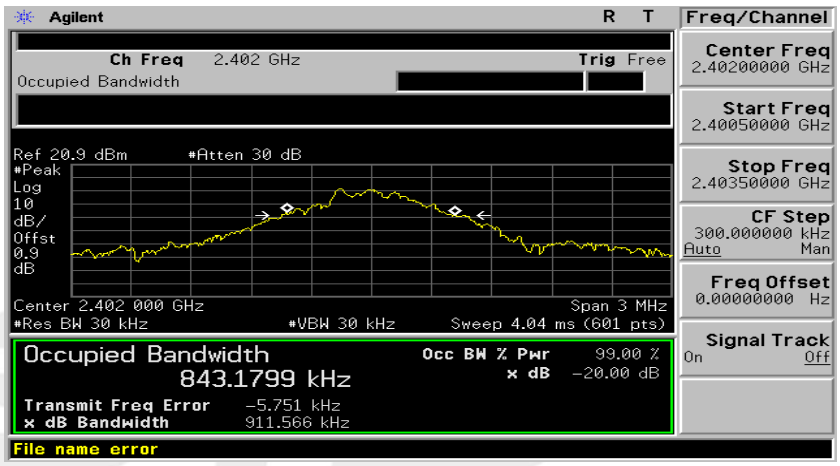
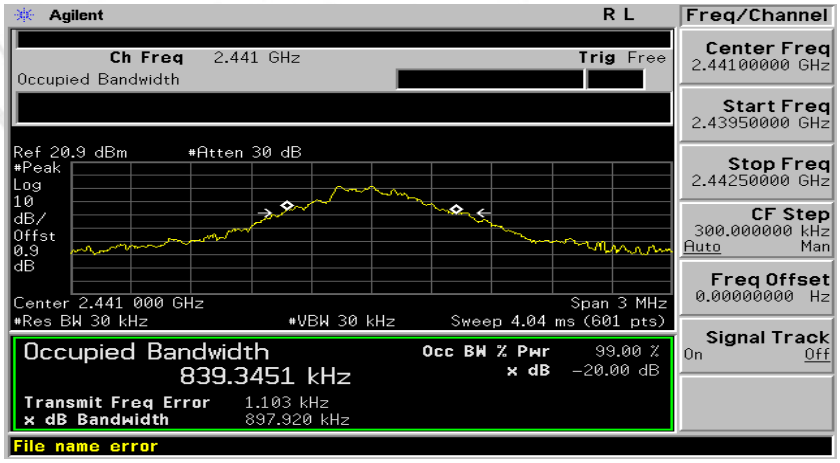
8.4 EUT OPERATION CONDITIONS

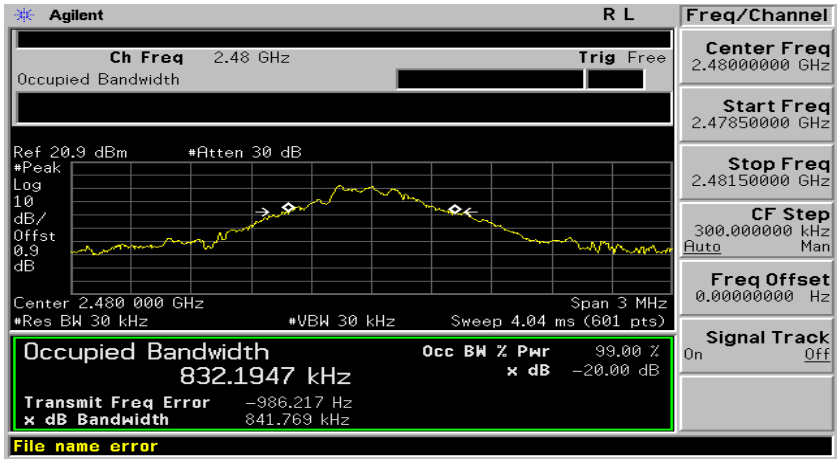
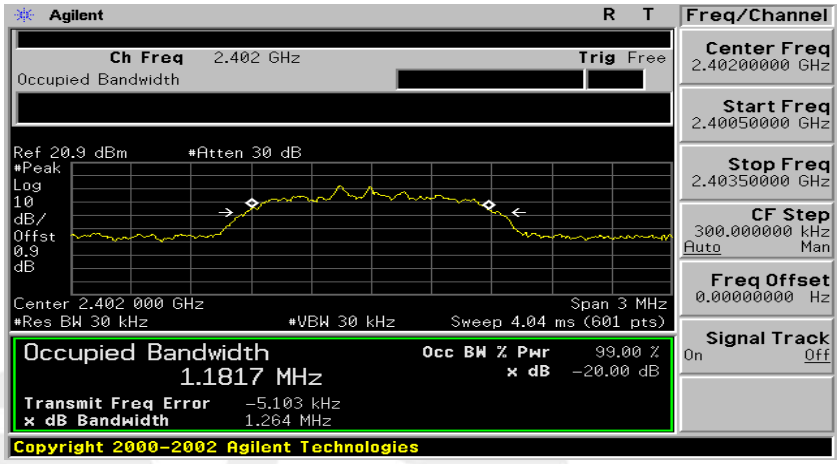
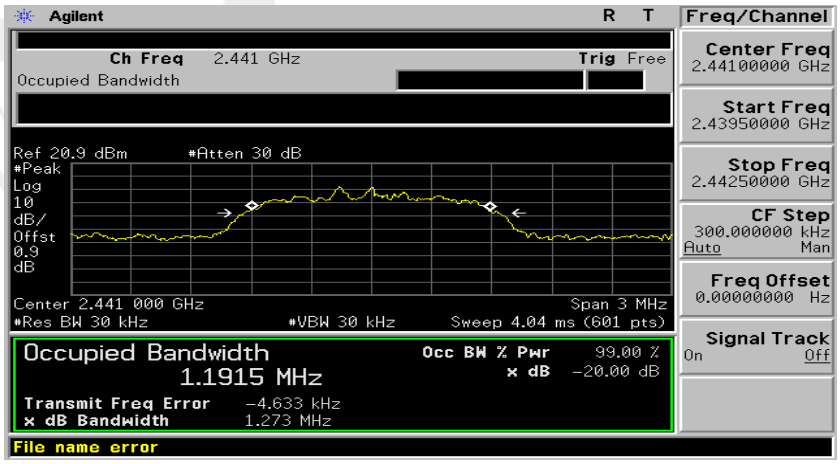
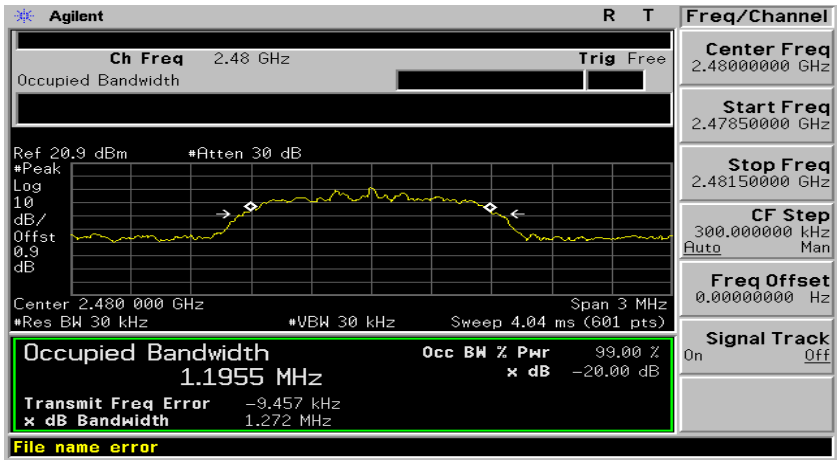
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

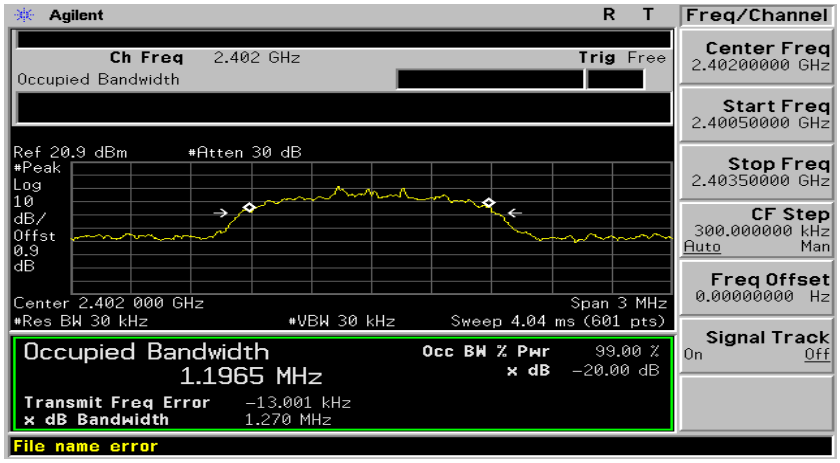
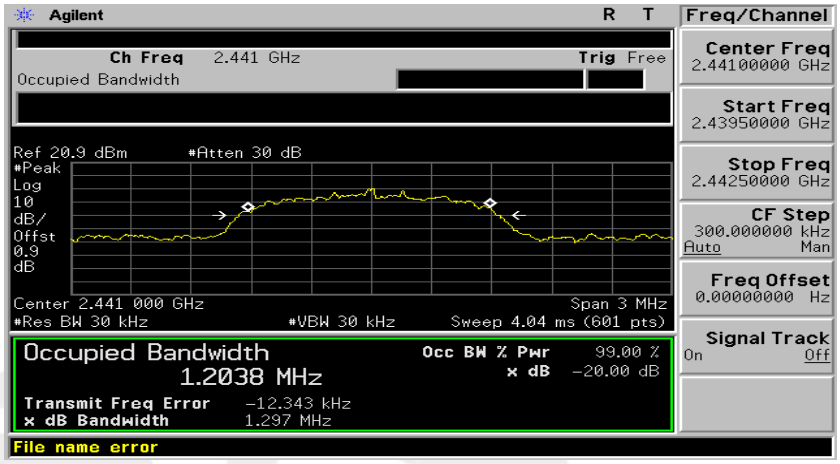
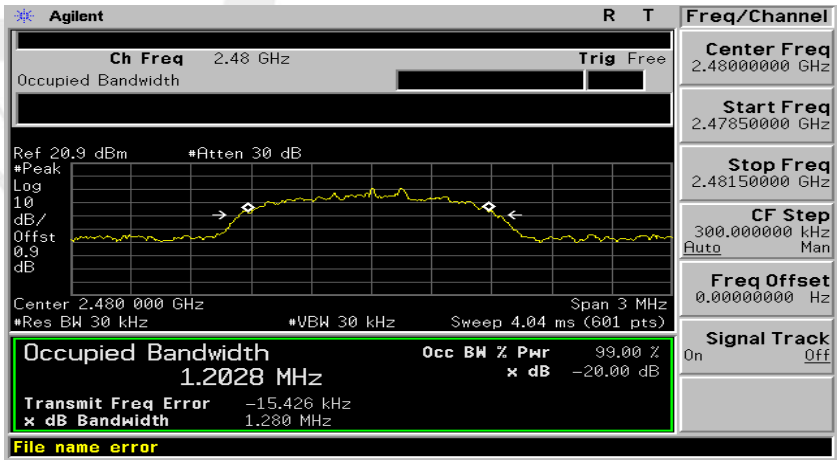
8.5TEST RESULTS

Mode	Channel.	EBW [MHz]	OBW [MHz]	Verdict
GFSK	LCH	0.912	0.843	PASS
GFSK	MCH	0.898	0.839	PASS
GFSK	HCH	0.842	0.832	PASS
π/4DQPSK	LCH	1.264	1.182	PASS
π/4DQPSK	MCH	1.273	1.192	PASS
π/4DQPSK	HCH	1.272	1.196	PASS
8DPSK	LCH	1.271	1.197	PASS
8DPSK	MCH	1.297	1.204	PASS
8DPSK	HCH	1.280	1.203	PASS

Test Graph

Graphs	
GFSK/LCH	
GFSK/MCH	

GFSK/HCH	
π /4DQPSK/LCH	
π /4DQPSK/MCH	
π /4DQPSK/HCH	

8DPSK/LCH	
8DPSK/MCH	
8DPSK/HCH	

9. OUTPUT POWER TEST

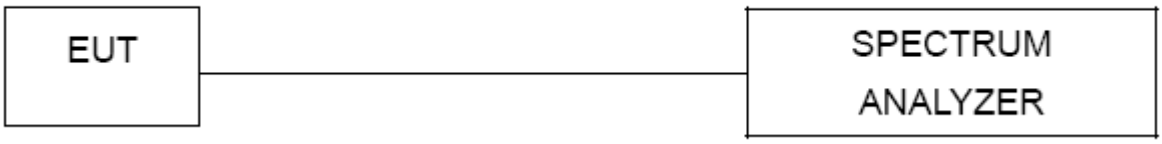
9.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	FrequencyRange (MHz)	Result
15.247 (b)(i)	Peak Output Power	1 W or 0.125W	2400-2483.5	PASS
		Or if channel separation > 2/3 bandwidthprovidedthesystem soperatewith an output power no greater than125 mW(20.96dBm)		

9.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting :GFSK(1Mbps):RBW= 1.5MHz, VBW= 1.5MHz, Sweep time = Auto.
c. Spectrum Setting :π/4-DQPSK(2Mbps):RBW= 1.5MHz, VBW= 1.5MHz, Sweep time = Auto.
d. Spectrum Setting :8-DPSK(3Mbps):RBW= 1.5MHz, VBW= 1.5MHz, Sweep time = Auto.

9.3 TEST SETUP



9.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

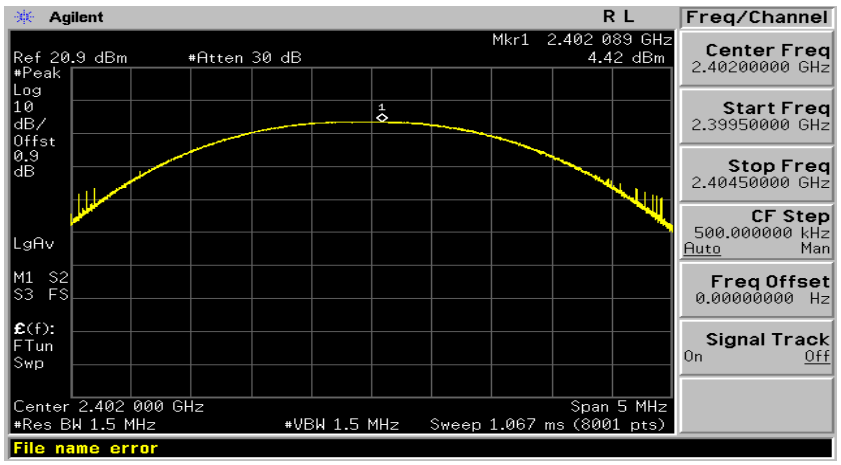
9.5TEST RESULTS

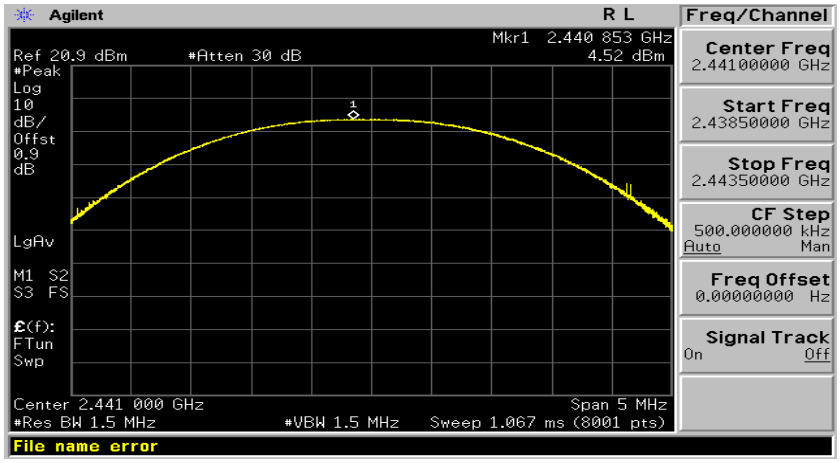
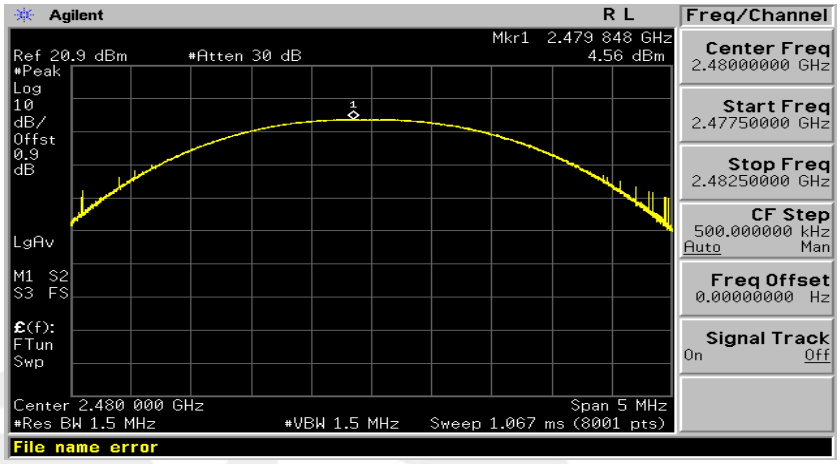
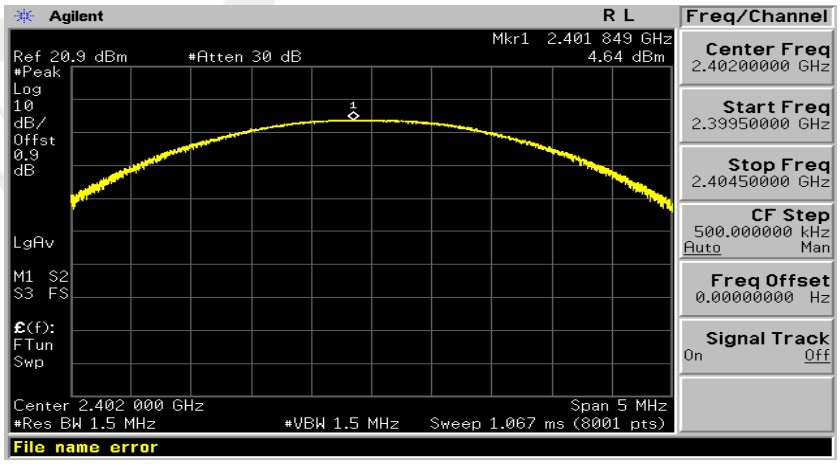
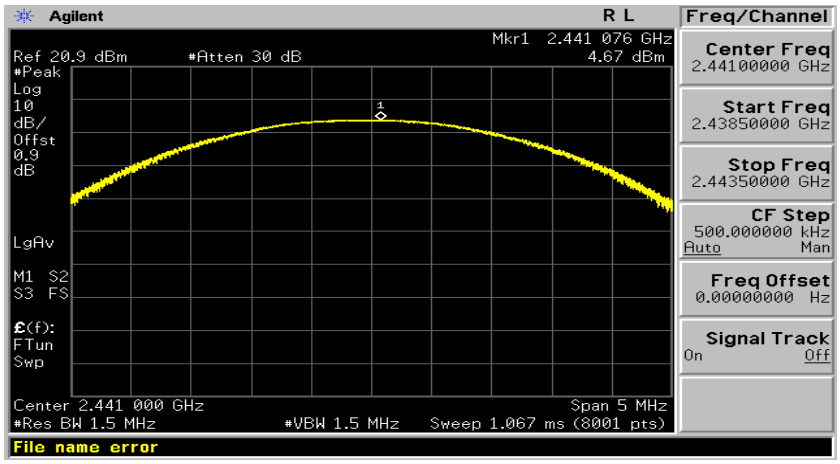
PEAK OUTPUT POWER MEASUREMENT RESULT FOR GFSK MOUDULATION			
Frequency (GHz)	**Peak Power (dBm)**	**Applicable Limits (dBm)**	**Pass or Fail**
2.402	4.42	30	Pass
2.441	4.52	30	Pass
2.480	4.56	30	Pass

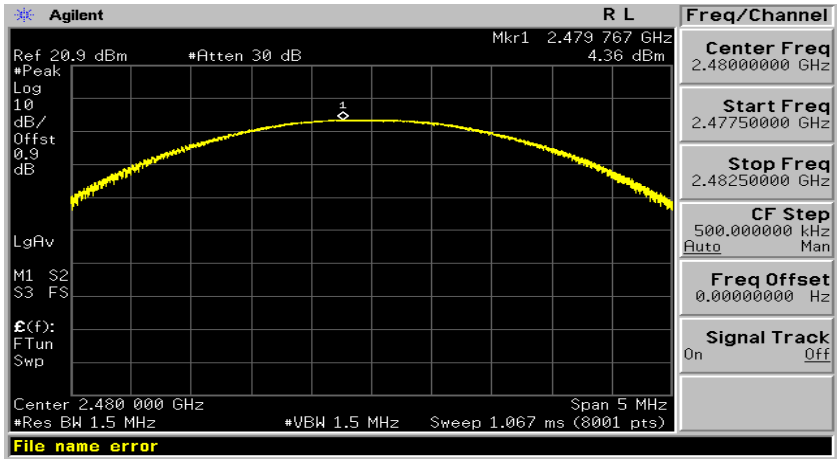
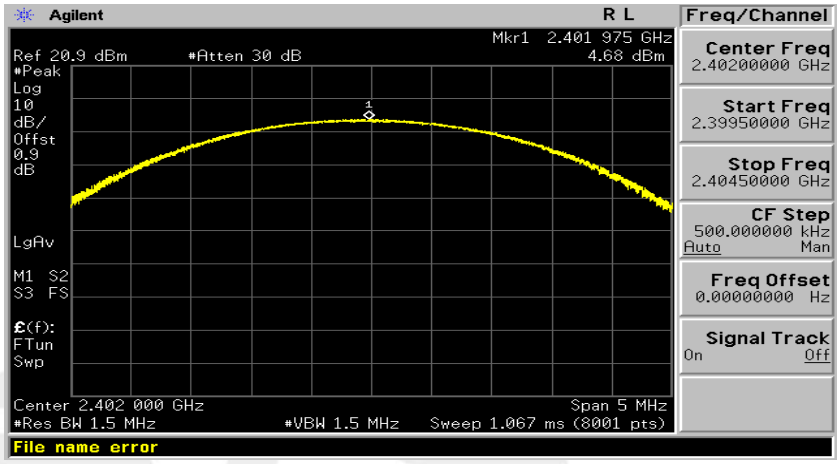
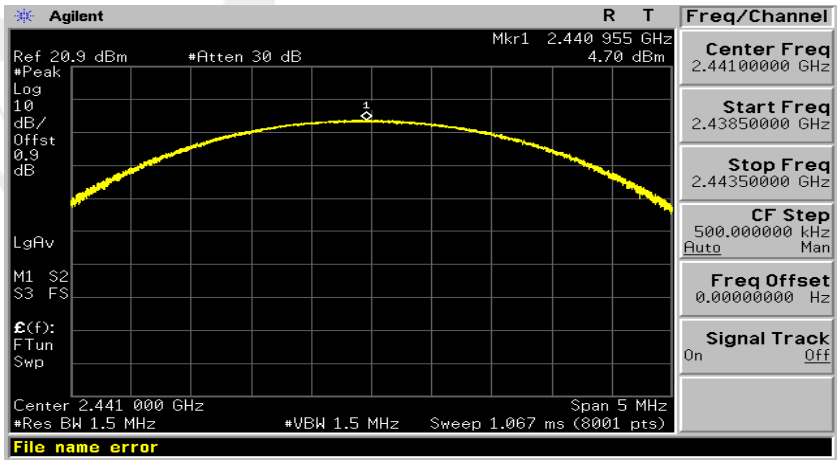
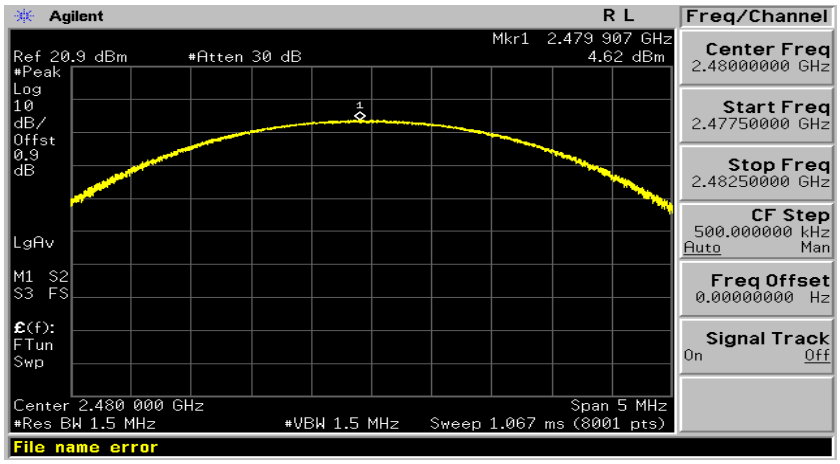
PEAK OUTPUT POWER MEASUREMENT RESULT FOR Π /4-DQPSK MODULATION			
Frequency (GHz)	**Peak Power (dBm)**	**Applicable Limits (dBm)**	**Pass or Fail**
2.402	4.64	21	Pass
2.441	4.67	21	Pass
2.480	4.36	21	Pass

PEAK OUTPUT POWER MEASUREMENT RESULT FOR 8-DPSK MODULATION			
Frequency (GHz)	**Peak Power (dBm)**	**Applicable Limits (dBm)**	**Pass or Fail**
2.402	4.68	21	Pass
2.441	4.7	21	Pass
2.480	4.62	21	Pass

Test Graph

Graphs	
GFSK/LCH	

GFSK/MCH	
GFSK/HCH	
π /4DQPSK/LCH	
π /4DQPSK/MCH	

π /4DQPSK/HCH	
8DPSK/LCH	
8DPSK/MCH	
8DPSK/HCH	

10. ANTENNA REQUIREMENT

10.1 STANDARD REQUIREMENT

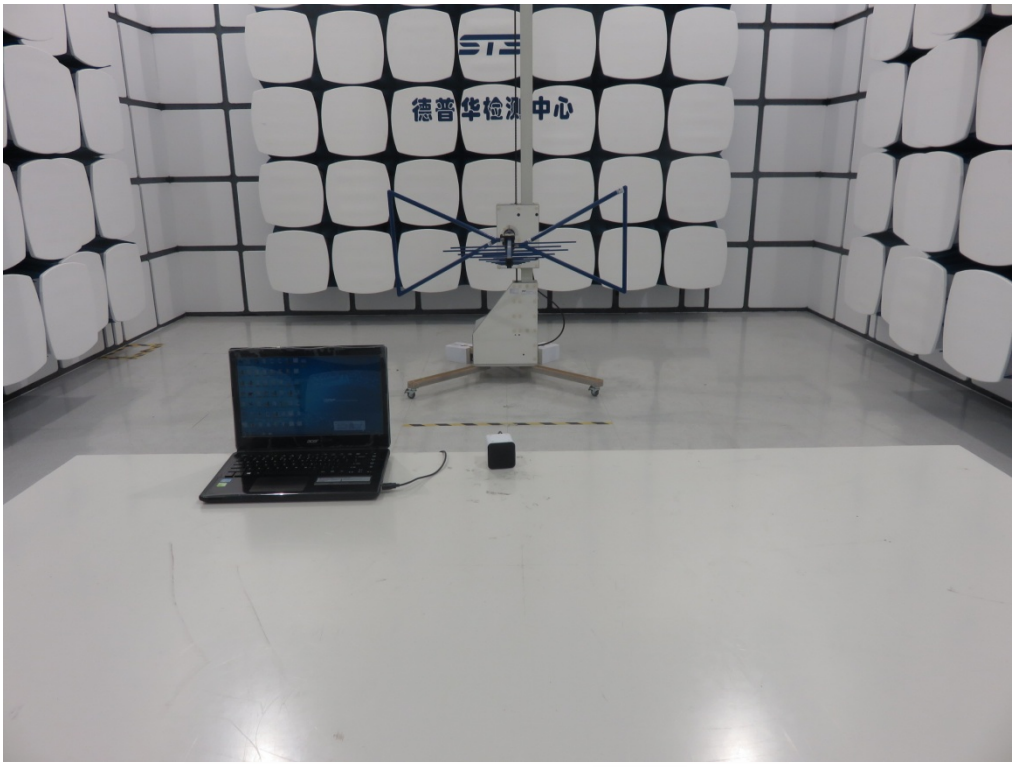
15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

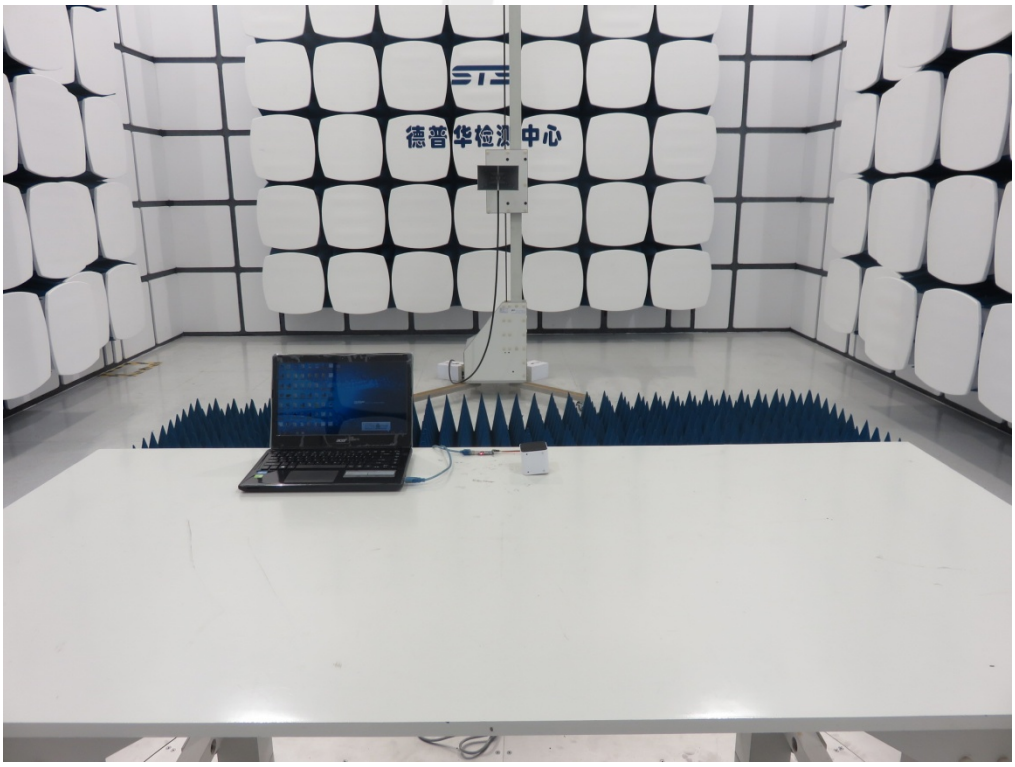
10.2 EUT ANTENNA

The EUT antenna is permanent attached antenna. It comply with the standard requirement.

APPENDIX-PHOTOS OF TEST SETUP

Radiated Measurement Photos





Conducted Measurement Photos