Test Report

FCC Part15 Subpart C& RSS-247 Issue 2

Product Name	:	BLUETOOTH EARPHONE
Model No.	:	LTI600
FCC ID	:	Y2SLTI600
IC	:	9452A-LTI600

Applicant	:	Libratone A/S
Address	:	Sundkaj 9,DK-2150 Nordhavn,Denmark

Date of Receipt	:	Jan. 18, 2018
Test Date	:	Jan. 19, 2018~ Mar. 13, 2018
Issued Date	:	Mar. 15, 2018
Report No.	:	1812113R-RF-US-P06V03
Report Version	:	V 2.2

Test Report Certification

Issued Date : Mar. 15, 2018
Report No. : 1812113R-RF-US-P06V03

Product Name	:	BLUETOOTH EARPHONE
Applicant	:	Libratone A/S
Address	:	Sundkaj 9,DK-2150 Nordhavn,Denmark
Manufacturer	:	Libratone A/S
Address	:	Sundkaj 9,DK-2150 Nordhavn,Denmark
Model No.	:	LTI600
FCC ID	:	Y2SLTI600
IC	:	9452A-LTI600
EUT Voltage	:	DC 5V
Test Voltage	:	AC120V/60Hz
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart C KDB DA 00-705 Released March 30, 2000 ANSI C63.10: 2013 RSS-Gen Issue 4/RSS-247 Issue 2
Test Result	:	Complied
Performed Location	:	DEKRA Testing & Certification (Suzhou) Co., Ltd. No.99 Hongye Rd., Suzhou Industrial Park, Suzhou, 215006, Jiangsu, China TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098 FCC Designation Number: CN1199; ISED Lab Code: 4075B

Documented By : Kitty Li

(Project Assistant: Kitty Li)

Reviewed By : Frank He

(Senior Engineer: Frank He)

Approved By : Harry Zhao

(Engineering Manager: Harry Zhao)

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
1812113R-RF-US-P06V03	V1.0	Initial Issued Report	Feb. 11, 2018
1812113R-RF-US-P06V03	V2.0	Modified EUT Voltage	Feb. 27, 2018
1812113R-RF-US-P06V03	V2.1	Modified test time and some data.	Mar. 13, 2018
1812113R-RF-US-P06V03	V2.2	Modified test time.	Mar. 15, 2018

1. General Information

1.1. EUT Description

Product Name	BLUETOOTH EARPHONE
Model No.	LTI600
Working Voltage	DC 5V
Test Voltage	AC120V/60Hz
Bluetooth Specification	V3.0
Frequency Range	2402- 2480 MHz
Channel Number	V3.0: 79
Channel Separation	V3.0: 1MHz
Type of Modulation	V3.0: GFSK, Pi/4 DQPSK, 8DPSK
Data Rate	V3.0: 1Mbps(GFSK), 2Mbps(Pi/4 DQPSK), 3Mbps(8DPSK)
Antenna Type	Reference to Antenna List
Peak Antenna Gain	Reference to Antenna List

Bluetooth Working Frequency of Each Channel: (For V3.0)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
00	2402 MHz	01	2403 MHz	02	2404 MHz	03	2405 MHz
04	2406 MHz	05	2407 MHz	06	2408 MHz	07	2409 MHz
08	2410 MHz	09	2411 MHz	10	2412 MHz	11	2413 MHz
12	2414 MHz	13	2415 MHz	14	2416 MHz	15	2417 MHz
16	2418 MHz	17	2419 MHz	18	2420 MHz	19	2421 MHz
20	2422 MHz	21	2423 MHz	22	2424 MHz	23	2425 MHz
24	2426 MHz	25	2427 MHz	26	2428 MHz	27	2429 MHz
28	2430 MHz	29	2431 MHz	30	2432 MHz	31	2433 MHz
32	2434 MHz	33	2435 MHz	34	2436 MHz	35	2437 MHz
36	2438 MHz	37	2439 MHz	38	2440 MHz	39	2441 MHz
40	2442 MHz	41	2443 MHz	42	2444 MHz	43	2445 MHz
44	2446 MHz	45	2447 MHz	46	2448 MHz	47	2449 MHz
48	2450 MHz	49	2451 MHz	50	2452 MHz	51	2453 MHz
52	2454 MHz	53	2455 MHz	54	2456 MHz	55	2457 MHz
56	2458 MHz	57	2459 MHz	58	2460 MHz	59	2461 MHz
60	2462 MHz	61	2463 MHz	62	2464 MHz	63	2465 MHz
64	2466 MHz	65	2467 MHz	66	2468 MHz	67	2469 MHz
68	2470 MHz	69	2471 MHz	70	2472 MHz	71	2473 MHz
72	2474 MHz	73	2475 MHz	74	2476 MHz	75	2477 MHz
76	2478 MHz	77	2479 MHz	78	2480 MHz	N/A	N/A

1.2 Antenna information

Model No.	N/A					
Antenna manufacturer	N/A					
Antenna Delivery	☒	1*TX+1*RX	☐	2*TX+2*RX	☐	3*TX+3*RX
Antenna technology	☒	SISO				
	☐	MIMO	☐	Basic		
			☐	CDD		
			☐	Sectorized		
			☐	Beam-forming		
Antenna Type	☐	External	☐	Dipole		
			☐	Sectorized		
	☒	Internal	☐	PIFA		
			☒	SMD		
			☐	PCB		
			☐	Ceramic Chip Antenna		
			☐	Monopole Antenna		

Antenna Technology	Ant Gain (dBi)
☒ SISO	Ant1:2

1.3 Mode of Operation

DEKRA has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: Transmitter-1Mbps(GFSK_DH5)
Mode 2: Transmitter-2Mbps(Pi/4 DQPSK_DH5)
Mode 3: Transmitter-3Mbps(8DPSK_DH5)
Mode 4: Transmitter-Hopping

Note:

1. For portable device, radiated spurious emission was verified over X, Y, Z Axis, and shown the worst case on this report.
2. Regards to the frequency band operation for systems using FHSS modulation: normal operation (hopping) was selected to test for conducted spurious test.
3. The extreme test condition for voltage and temperature were declared by the manufacturer.
4. The reading values of all the test items contain cable loss.

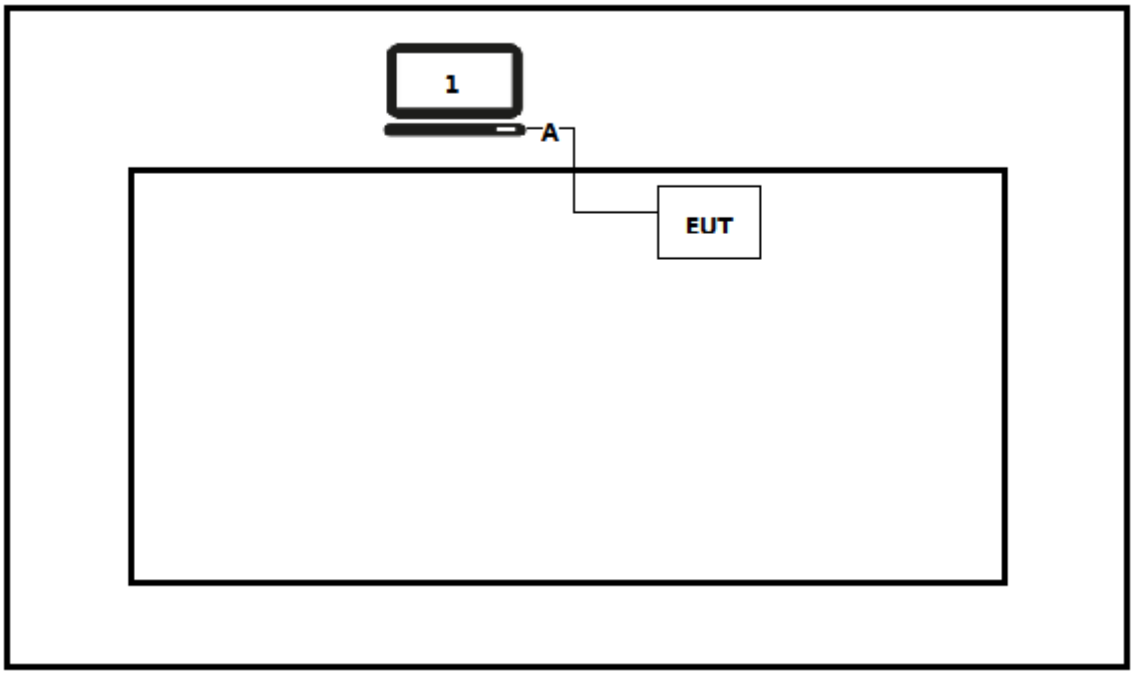
1.4 Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

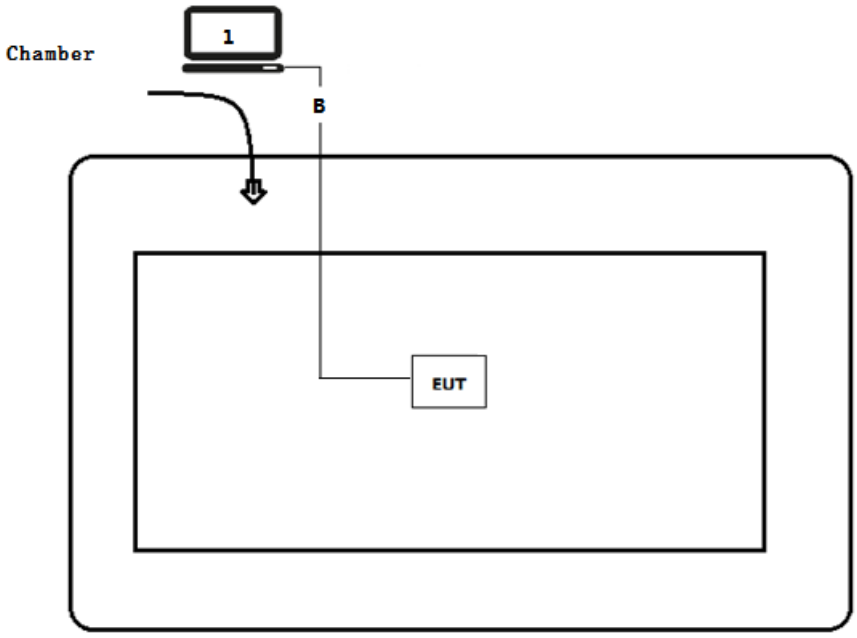
Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook	Think Pad	2526	LV-A3285	Power by adapter
A	USB Cable	N/A	N/A	N/A	Shield, 0.75m
B	USB Cable	N/A	N/A	N/A	Shield, 10m

1.5 Configuration of Tested System

Test setup Diagram- AC Line Conducted Emission Test



Test setup Diagram- Radiated Emission



1.6 EUT Exercise Software

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of all equipment.
3	Run RF software [BlueTest 3], and set the test mode and channel, then press OK to start to continue transmit.

2. Technical Test

2.1. Summary of Test Result

☒ No deviations from the test standards

☐ Deviations from the test standards as below description:

For FCC

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.207	Yes	No
Emissions in restricted frequency bands	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.209	Yes	No
20dB Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(a)(1)	Yes	No
Carrier Frequency Separation	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(a)(1)	Yes	No
Number of Hopping Frequencies	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(a)(1)(iii)	Yes	No
Time of Occupancy (Dwell Time)	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(a)(1)(iii)	Yes	No
Peak Output Power	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(b)(1)	Yes	No
Emissions in non-restricted frequency bands	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.215(c), 15.247(d)	Yes	No
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2015 15.247(d)	Yes	No
Antenna Requirement	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.203	Yes	No

For ISED

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	RSS-Gen Issue 4 Section 8.8	Yes	No
Radiated Emission	RSS-Gen Issue 4 Section 8.9	Yes	No
20dB Bandwidth	RSS-247 Issue 2 Section 5.1	Yes	No
Carrier Frequency Separation	RSS-247 Issue 2 Section 5.1	Yes	No
Number of Hopping Frequencies	RSS-247 Issue 2 Section 5.1	Yes	No
Time of Occupancy (Dwell Time)	RSS-247 Issue 2 Section 5.1	Yes	No
Peak Output Power	RSS-247 Issue 2 Section 5.4	Yes	No
Emissions in non-restricted frequency bands	RSS-247 Issue 2 Section 5.5	Yes	No
Radiated Emission Band Edge	RSS-Gen Issue 4 Section 8.10	Yes	No
Antenna Requirement	RSS-Gen Issue 4 Section 8.3	Yes	No

2.2. Test Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

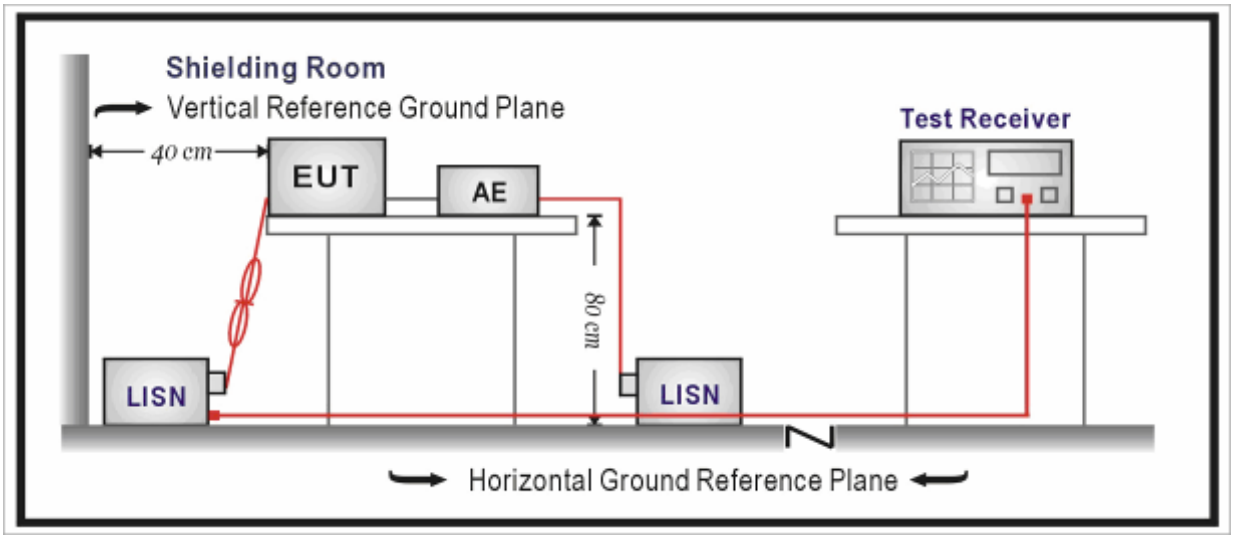
3. Conducted Emission

3.1. Test Equipment

AC Power Line Conducted Emission / TR-1					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100906	2017.03.05	2018.03.04
Two-Line V-Network	R&S	ENV 216	101189	2017.07.16	2018.07.15
Two-Line V-Network	R&S	ENV 216	101044	2017.09.15	2018.09.15
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	N/A	N/A
50ohm Termination	SHX	TF2	07081402	2017.09.15	2018.09.15
Temperature/Humidity Meter	Zhichen	ZC1-2	TR1-TH	2018.01.05	2019.01.04
Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

3.2. Test Setup

AC Power Line Conducted Emission test setup



3.3. Limit

Frequency of Emission (MHz)	Conducted Limit	
	Quasi-peak (dB μ V)	Average(dB μ V)
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50
Note 1: The lower limit shall apply at the transition frequencies. Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.		

3.4. Test Procedure

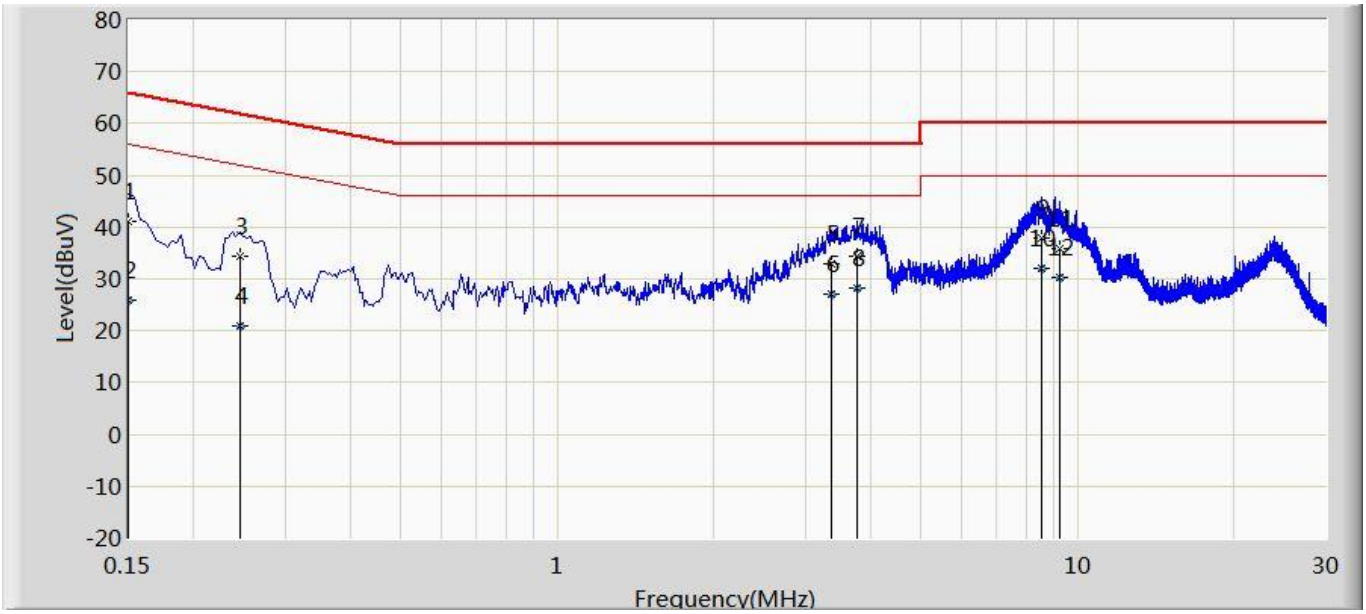
Test Method			
	References Rule	Chapter	Item
☒	ANSI C63.10-2013	6.2	Standard test method for ac power-line conducted emissions from unlicensed wireless devices

3.5. Uncertainty

The measurement uncertainty is defined as ± 2.02 dB

3.6. Test Result

Engineer: Nino	
Site: TR1	Time: 2018/01/22
Limit: FCC_Part15.207_CE	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Line
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 1	

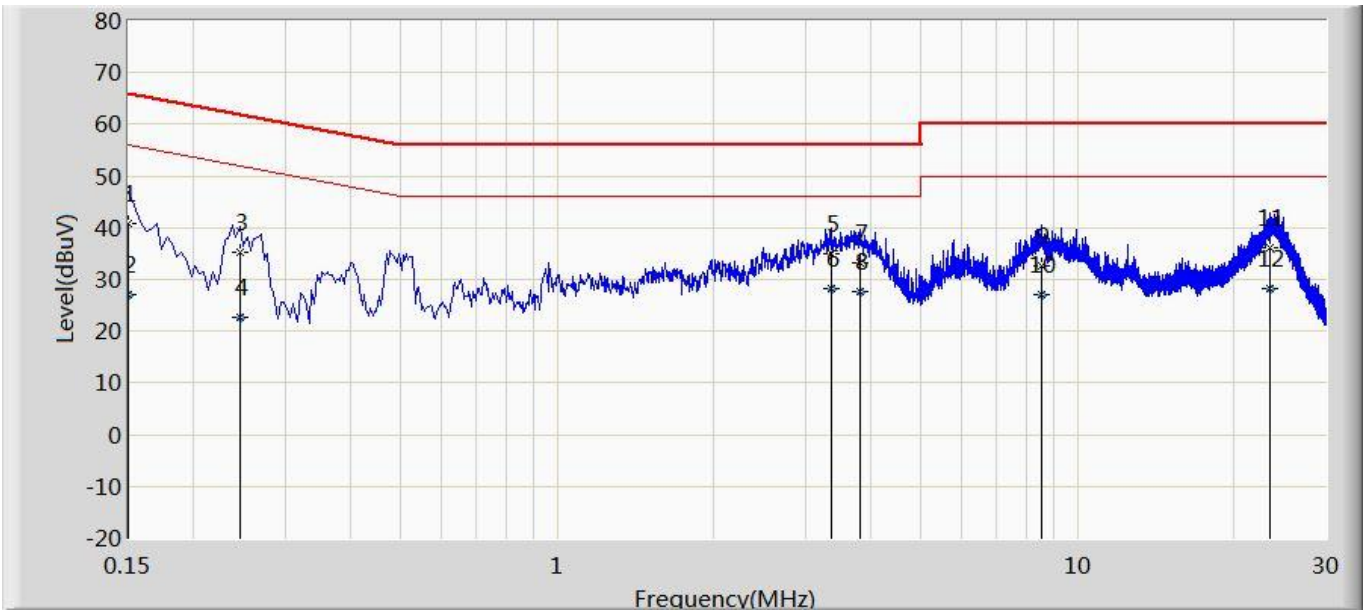


No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.150	41.025	31.390	-24.975	66.000	9.610	0.025	0.000	QP
2		0.150	25.953	16.318	-30.047	56.000	9.610	0.025	0.000	AV
3		0.246	34.265	24.634	-27.626	61.891	9.600	0.031	0.000	QP
4		0.246	20.915	11.284	-30.976	51.891	9.600	0.031	0.000	AV
5		3.370	32.907	23.159	-23.093	56.000	9.633	0.115	0.000	QP
6		3.370	27.103	17.355	-18.897	46.000	9.633	0.115	0.000	AV
7		3.770	34.255	24.492	-21.745	56.000	9.639	0.123	0.000	QP
8	*	3.770	28.345	18.583	-17.655	46.000	9.639	0.123	0.000	AV
9		8.514	37.806	27.884	-22.194	60.000	9.736	0.186	0.000	QP
10		8.514	32.013	22.091	-17.987	50.000	9.736	0.186	0.000	AV
11		9.246	35.870	25.925	-24.130	60.000	9.752	0.193	0.000	QP
12		9.246	30.377	20.432	-19.623	50.000	9.752	0.193	0.000	AV

Note:

1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

Engineer: Nino	
Site: TR1	Time: 2018/01/22
Limit: FCC_Part15.207_CE	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Neutral
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.150	40.746	31.128	-25.254	66.000	9.594	0.025	0.000	QP
2		0.150	27.037	17.418	-28.963	56.000	9.594	0.025	0.000	AV
3		0.246	35.281	25.652	-26.611	61.891	9.598	0.031	0.000	QP
4		0.246	22.696	13.068	-29.195	51.891	9.598	0.031	0.000	AV
5		3.358	35.020	25.277	-20.980	56.000	9.628	0.115	0.000	QP
6	*	3.358	28.389	18.646	-17.611	46.000	9.628	0.115	0.000	AV
7		3.814	33.299	23.541	-22.701	56.000	9.634	0.124	0.000	QP
8		3.814	27.515	17.757	-18.485	46.000	9.634	0.124	0.000	AV
9		8.546	32.769	22.836	-27.231	60.000	9.747	0.187	0.000	QP
10		8.546	27.146	17.212	-22.854	50.000	9.747	0.187	0.000	AV
11		23.482	36.034	25.206	-23.966	60.000	10.514	0.314	0.000	QP
12		23.482	28.384	17.556	-21.616	50.000	10.514	0.314	0.000	AV

Note:

1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

4. Emissions in restricted frequency bands

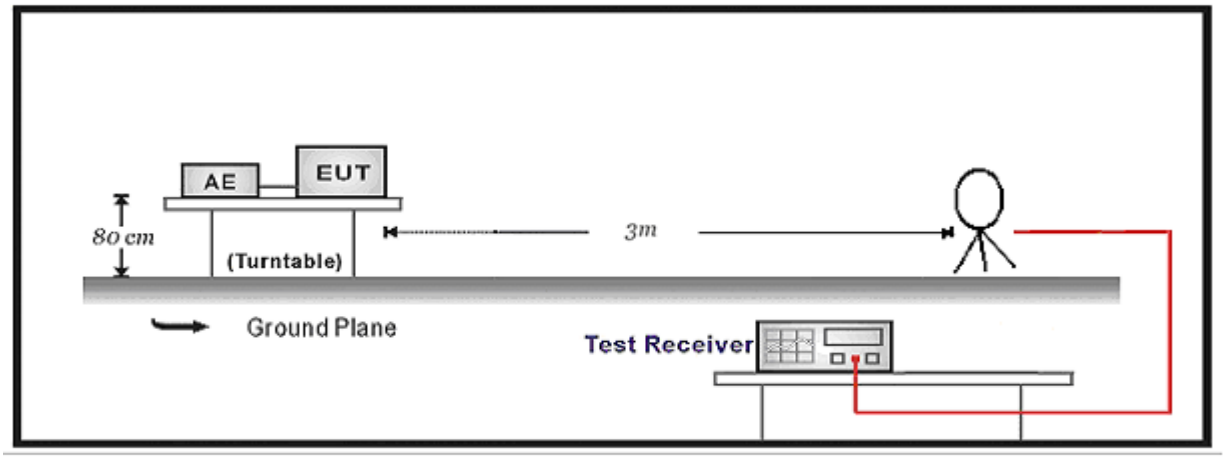
4.1. Test Equipment

Radiated Emission(Below 1GHz) / AC-2					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100573	2017.03.29	2018.03.28
Loop Antenna	R&S	HFH2-Z2	833799/003	2017.11.16	2018.11.15
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2017.10.16	2018.10.15
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2017.03.02	2018.03.01
Temperature/Humidity Meter	Zhichen	ZC1-2	AC2-TH	2018.01.04	2019.01.03
Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

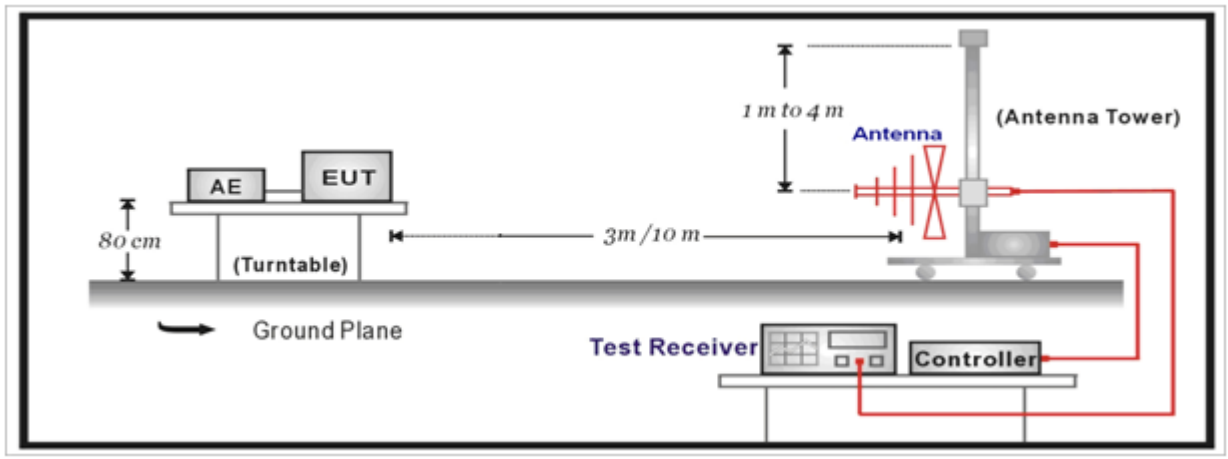
Radiated Emission(Above 1GHz) / AC-5					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2018.01.04	2019.01.03
Preamplifier	Miteq	NSP1800-25	1364185	2017.05.06	2018.05.05
Preamplifier	QuieTek	AP-040G	CHM-0906001	2017.05.06	2018.05.05
DRG Horn	ETS-Lindgren	3117	00123988	2018.01.22	2019.01.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2017.11.25	2018.11.24
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2017.03.02	2018.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2017.03.02	2018.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2017.03.02	2018.03.01
EMI Receiver	Agilent	N9038A	MY51210196	2017.06.10	2018.06.09
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2018.01.04	2019.01.03
Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

4.2. Test Setup

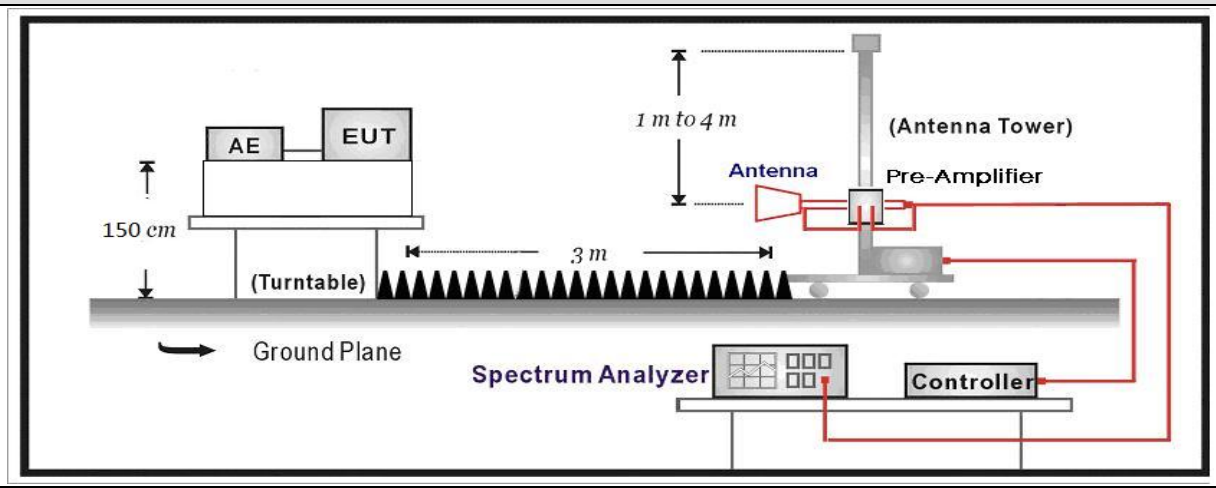
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

For FCC:

Restricted Bands of operation			
Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15
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
8.81425 – 8.81475	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	
13.36 – 13.41			

For ISED:

Restricted Bands of operation			
Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090-0.110	13.36-13.41	1645.5-1646.5	13.25-13.4
2.1735-2.1905	16.42-16.423	1660-1710	14.47-14.5
3.020-3.026	16.69475-16.69525	1718.8-1722.2	15.35-16.2
4.125-4.128	16.80425-16.80475	2200-2300	17.7-21.4
4.17725-4.17775	25.5-25.67	2310-2390	22.01-23.12
4.20725-4.20775	37.5-38.25	2655-2900	23.6-24.0
5.677-5.683	73-74.6	3260-3267	31.2-31.8
6.215-6.218	74.8-75.2	3332-3339	36.43-36.5
6.26775-6.26825	108-138	3345.8-3358	Above 38.6
6.31175-6.31225	156.52475-156.52525	3500-4400	
8.291-8.294	156.7-156.9	4500-5150	
8.362-8.366	240-285	5350-5460	
8.37625-8.38675	322-335.4	7250-7750	
8.41425-8.41475	399.9-410	8025-8500	
12.29-12.293	608-614	9.0-9.2	
12.51975-12.52025	960-1427	9.3-9.5	
12.57675-12.57725	1435-1626.5	10.6-12.7	

Restricted Band Emissions Limit			
Frequency (MHz)	Field strength (μ V/m)	Field strength (dB μ V/m)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300(Note 1)
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30(Note 1)
1.705 - 30	30	29.5	30(Note 1)
30 - 88	100	40	3(Note 2)
88 - 216	150	43.5	3(Note 2)
216 - 960	200	46	3(Note 2)
Above 960	500	54	3(Note 2)

Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

4.4. Test Procedure

Test Method			
	References Rule	Chapter	Description
☒	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
☒	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
☒	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz

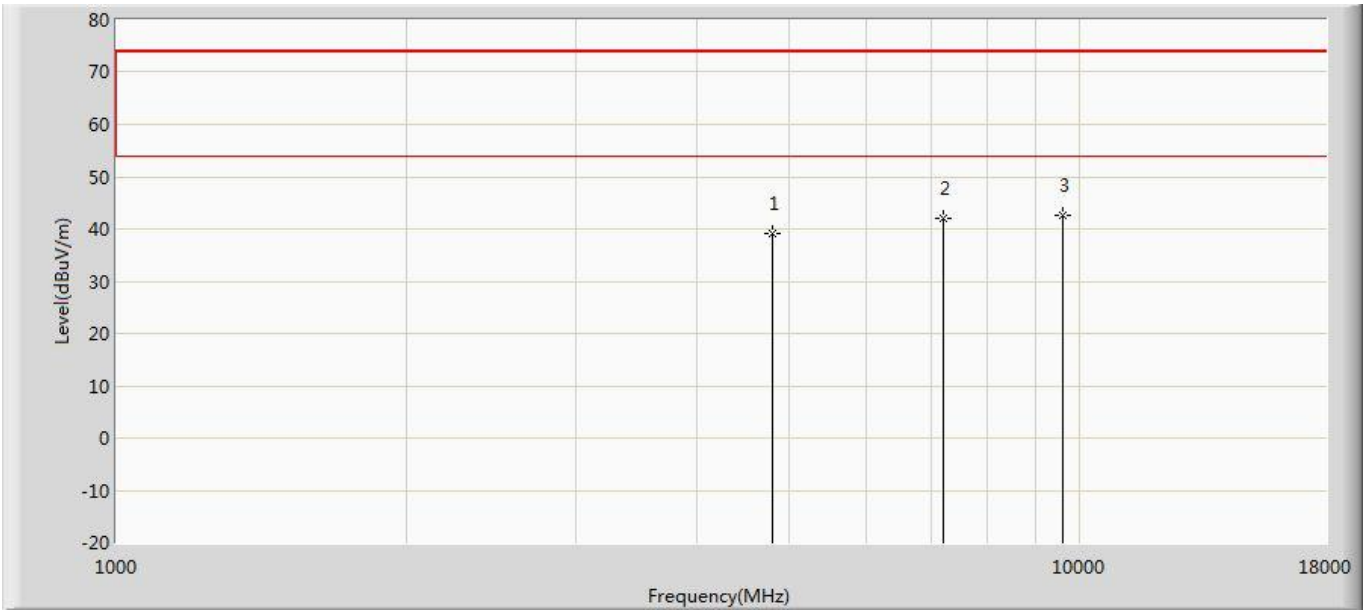
4.5. Uncertainty

The measurement uncertainty above 1G is defined as ± 3.9 dB

below 1G is defined as ± 3.8 dB

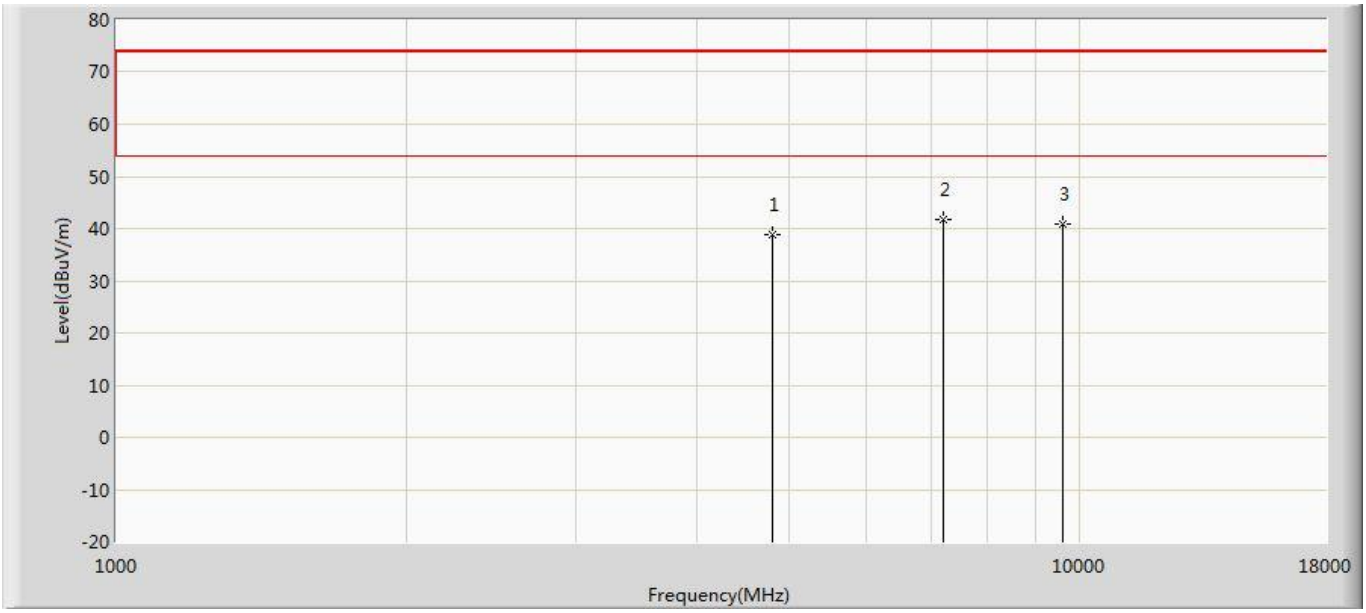
4.6. Test Result

Site: AC5	Time: 2018/01/22 - 13:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 1:Transmit at channel 2402MHz by DH5	



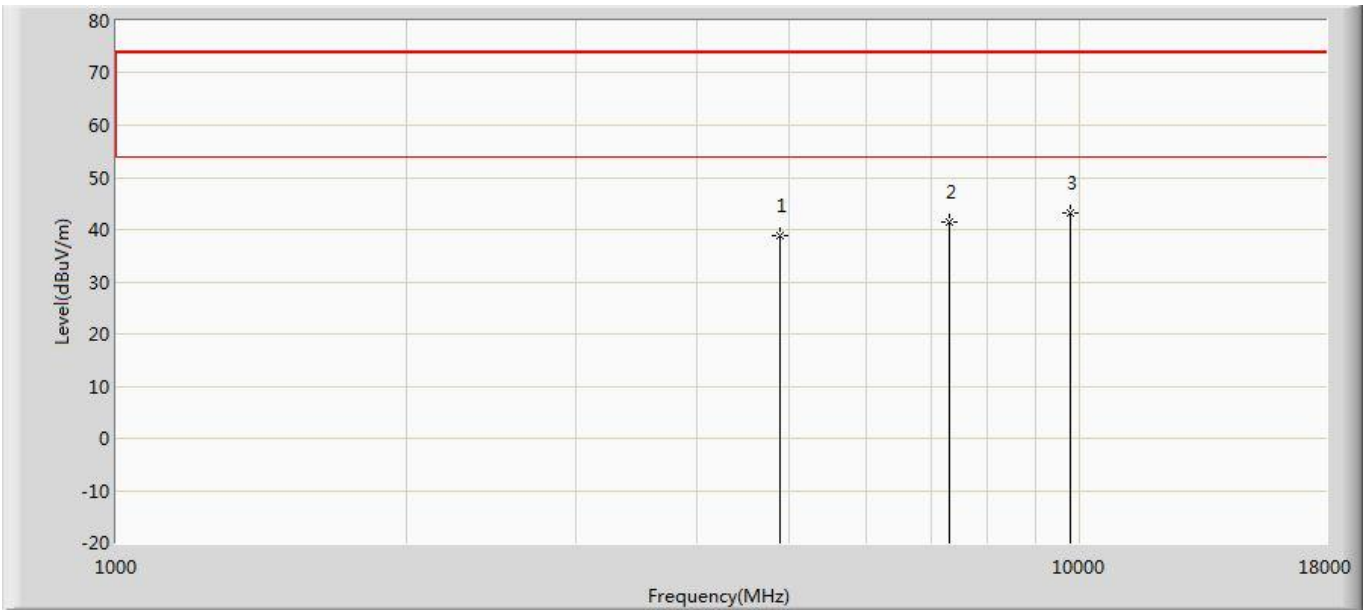
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	39.244	40.896	-34.756	74.000	-1.652	PK
2		7206.000	42.136	39.256	-31.864	74.000	2.880	PK
3	*	9608.000	42.713	37.886	-31.287	74.000	4.827	PK

Site: AC5	Time: 2018/01/22 - 13:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 1:Transmit at channel 2402MHz by DH5	



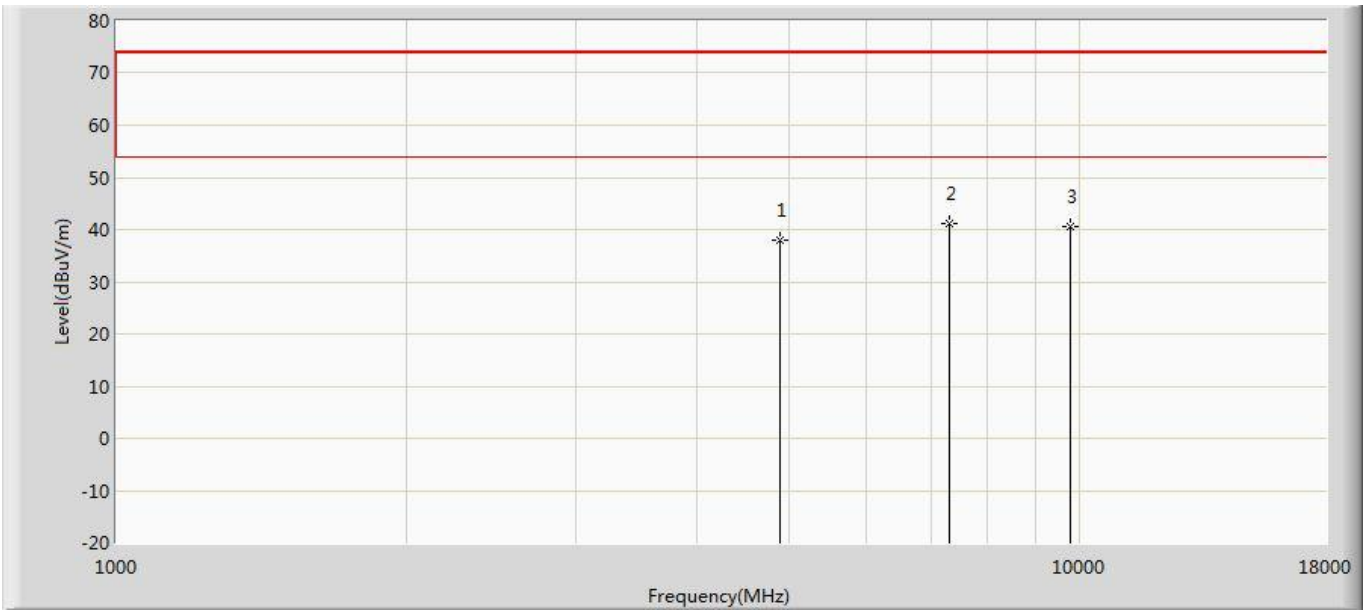
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	38.923	40.575	-35.077	74.000	-1.652	PK
2	*	7206.000	41.605	38.725	-32.395	74.000	2.880	PK
3		9608.000	40.902	36.075	-33.098	74.000	4.827	PK

Site: AC5	Time: 2018/01/22 - 13:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 1:Transmit at channel 2441MHz by DH5	



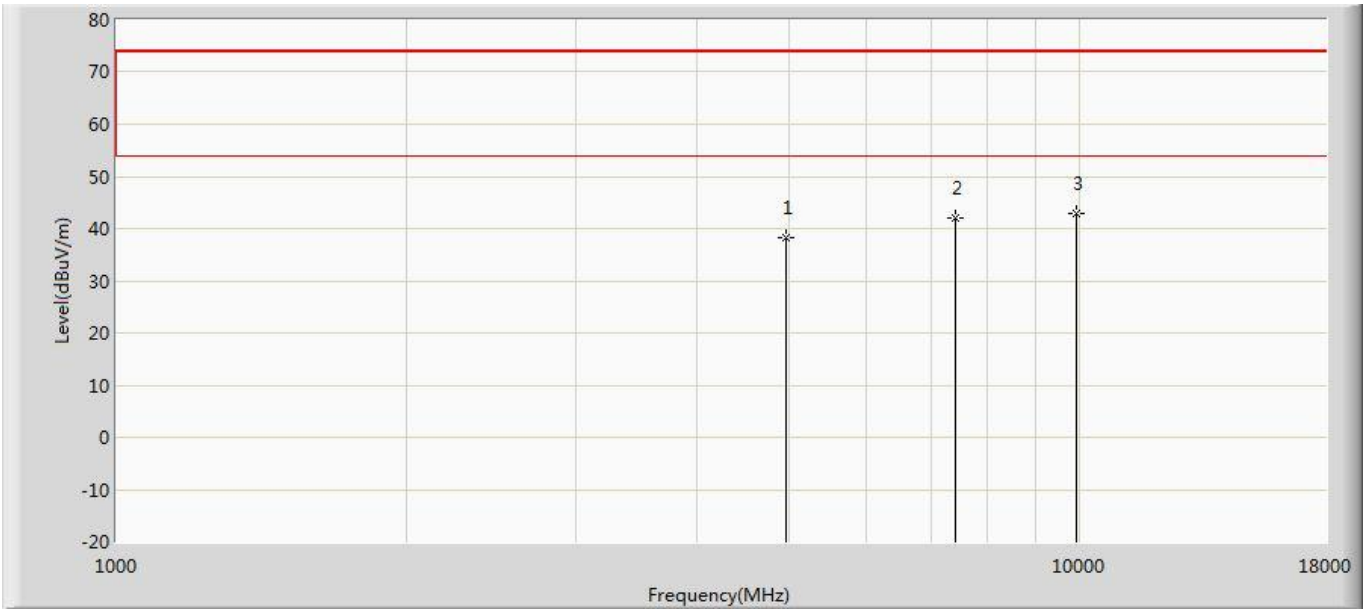
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	38.937	40.600	-35.063	74.000	-1.663	PK
2		7323.000	41.578	38.777	-32.422	74.000	2.801	PK
3	*	9764.000	43.267	38.998	-30.733	74.000	4.270	PK

Site: AC5	Time: 2018/01/22 - 13:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 1:Transmit at channel 2441MHz by DH5	



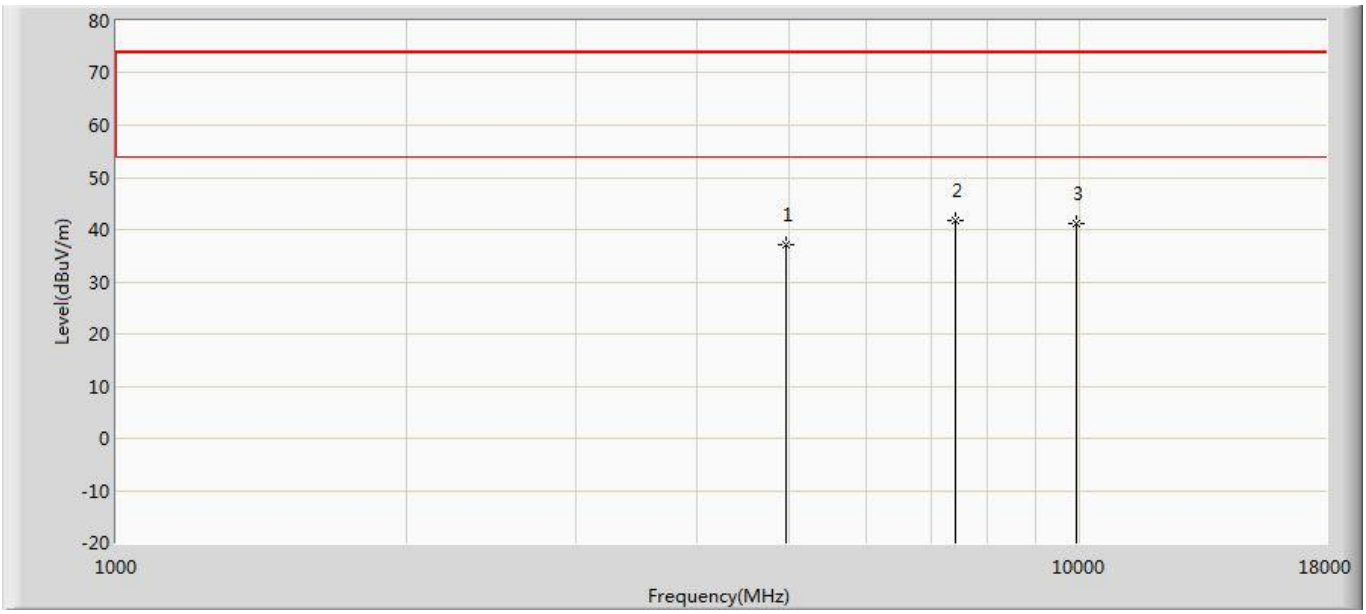
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	38.114	39.777	-35.886	74.000	-1.663	PK
2	*	7323.000	41.281	38.480	-32.719	74.000	2.801	PK
3		9764.000	40.474	36.205	-33.526	74.000	4.270	PK

Site: AC5	Time: 2018/01/22 - 13:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 1:Transmit at channel 2480MHz by DH5	



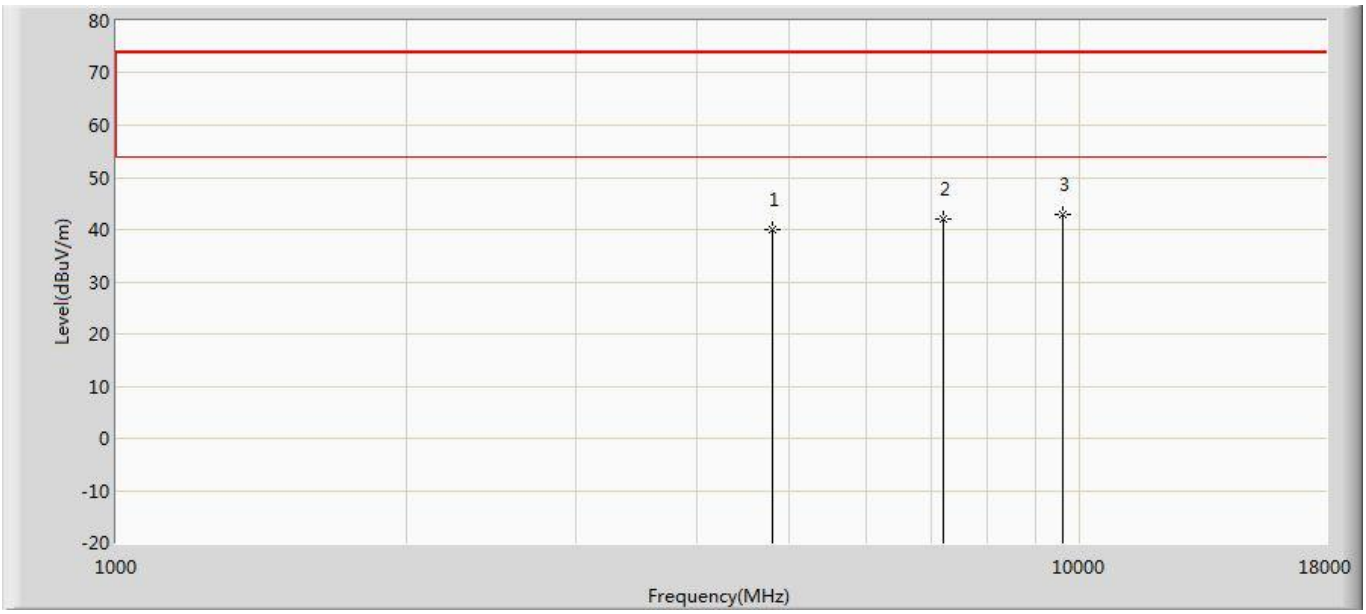
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	38.398	40.324	-35.602	74.000	-1.926	PK
2		7440.000	41.919	39.206	-32.081	74.000	2.713	PK
3	*	9920.000	42.783	37.652	-31.217	74.000	5.130	PK

Site: AC5	Time: 2018/01/22 - 13:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 1:Transmit at channel 2480MHz by DH5	



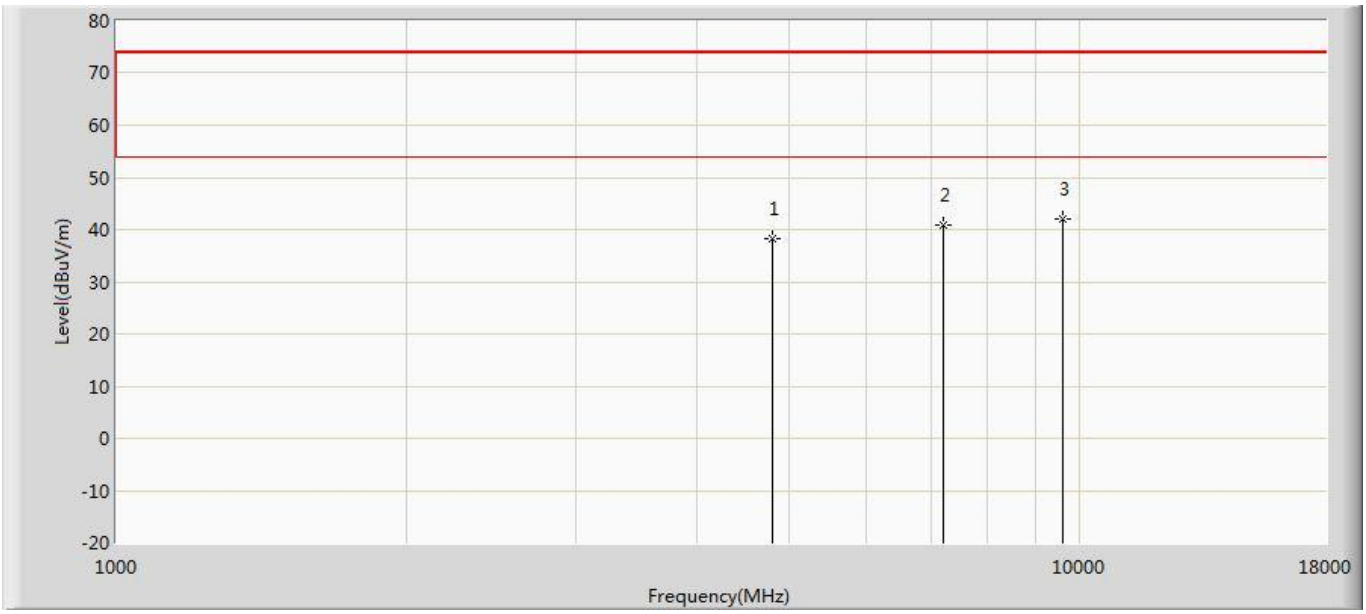
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	36.957	38.883	-37.043	74.000	-1.926	PK
2	*	7440.000	41.777	39.064	-32.223	74.000	2.713	PK
3		9920.000	41.181	36.050	-32.819	74.000	5.130	PK

Site: AC5	Time: 2018/01/22 - 13:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 2:Transmit at channel 2402MHz by 2DH5	



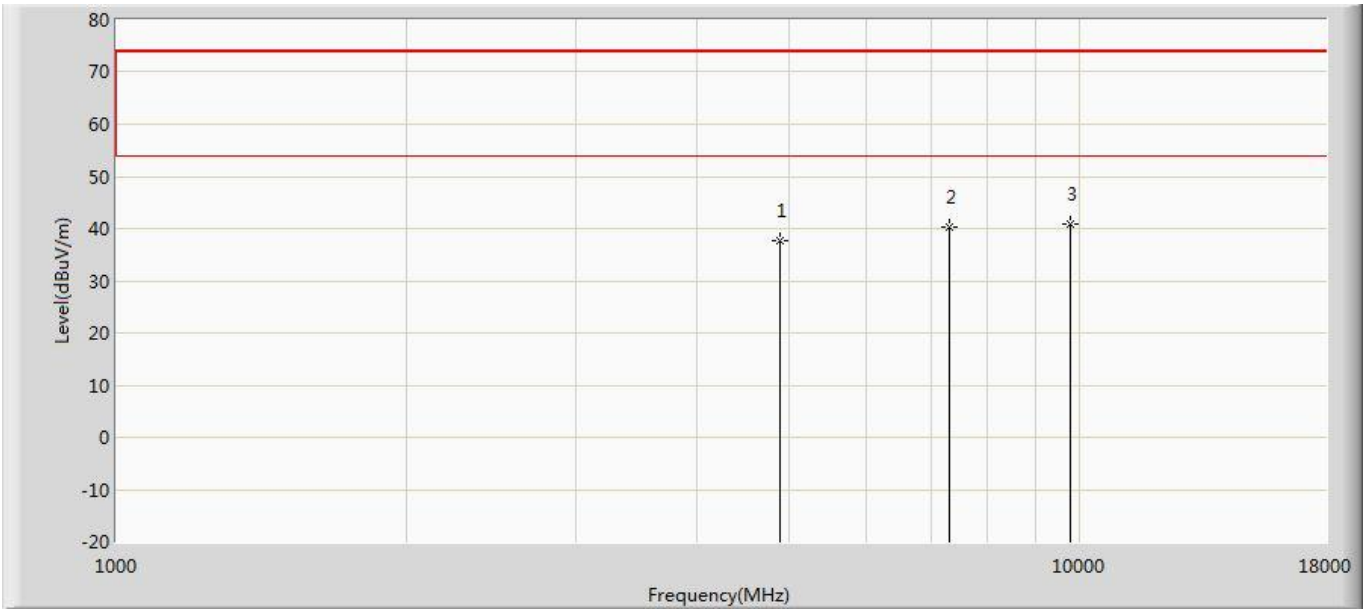
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	39.858	41.510	-34.142	74.000	-1.652	PK
2		7206.000	42.081	39.201	-31.919	74.000	2.880	PK
3	*	9608.000	42.818	37.991	-31.182	74.000	4.827	PK

Site: AC5	Time: 2018/01/22 - 13:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 2:Transmit at channel 2402MHz by 2DH5	



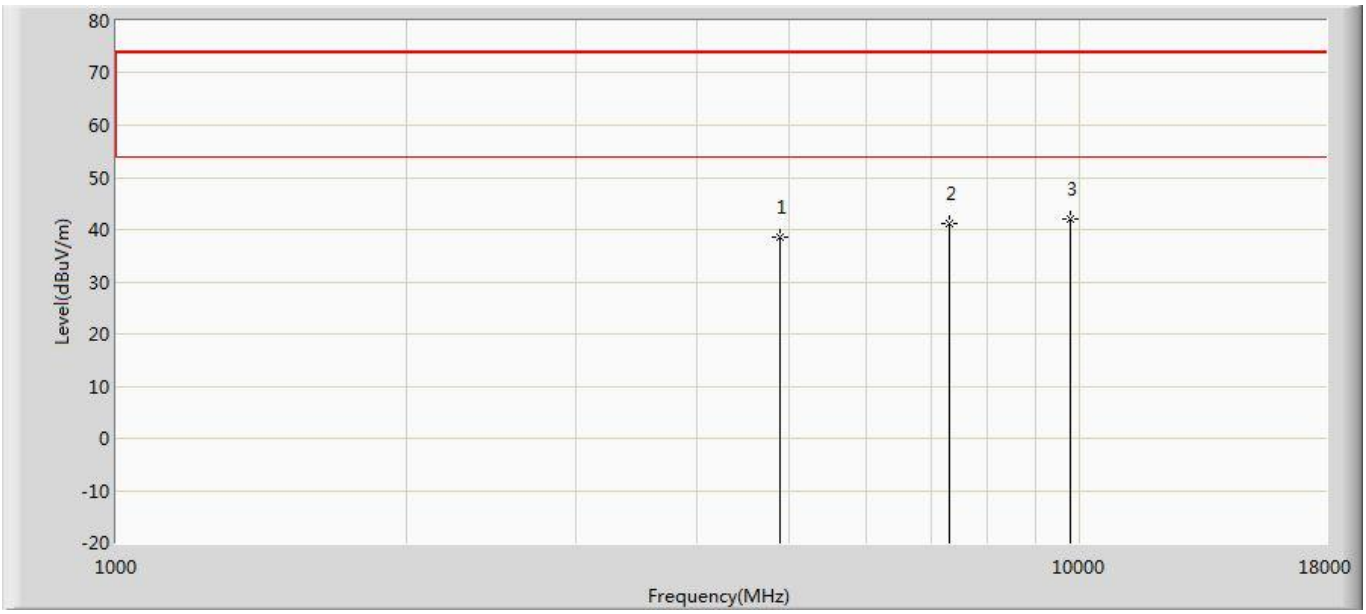
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	38.365	40.017	-35.635	74.000	-1.652	PK
2		7206.000	40.902	38.022	-33.098	74.000	2.880	PK
3	*	9608.000	41.894	37.067	-32.106	74.000	4.827	PK

Site: AC5	Time: 2018/01/22 - 13:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 2:Transmit at channel 2441MHz by 2DH5	



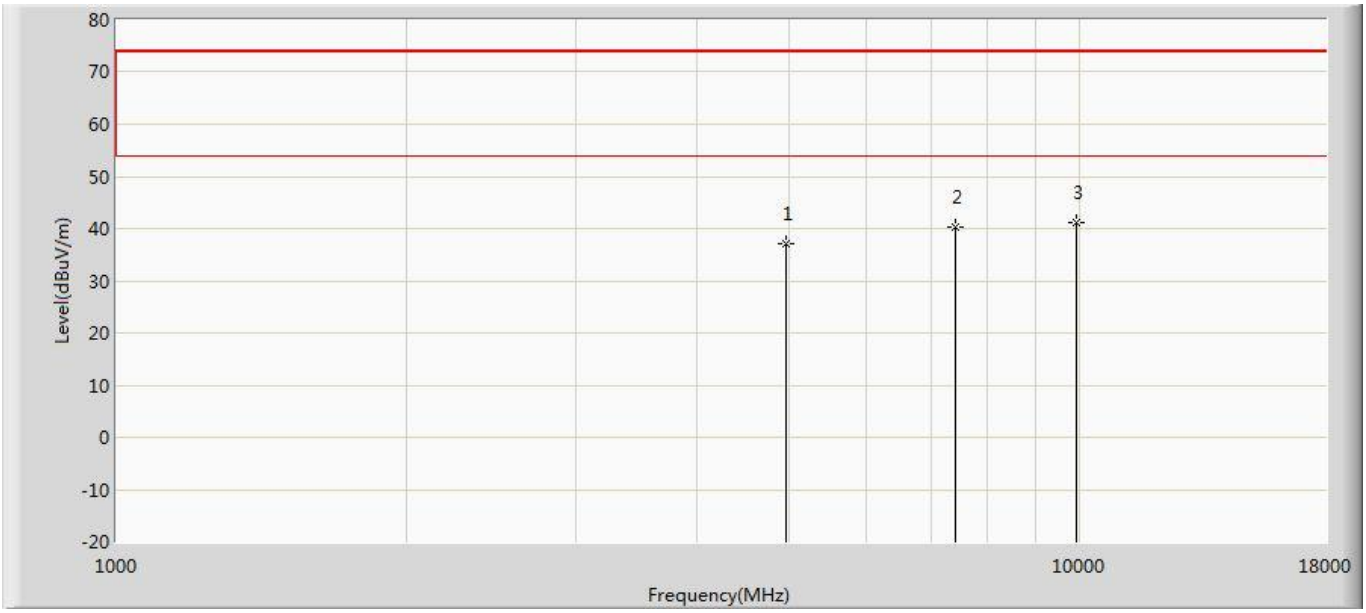
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	37.666	39.329	-36.334	74.000	-1.663	PK
2		7323.000	40.183	37.382	-33.817	74.000	2.801	PK
3	*	9764.000	40.771	36.502	-33.229	74.000	4.270	PK

Site: AC5	Time: 2018/01/22 - 13:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 2:Transmit at channel 2441MHz by 2DH5	



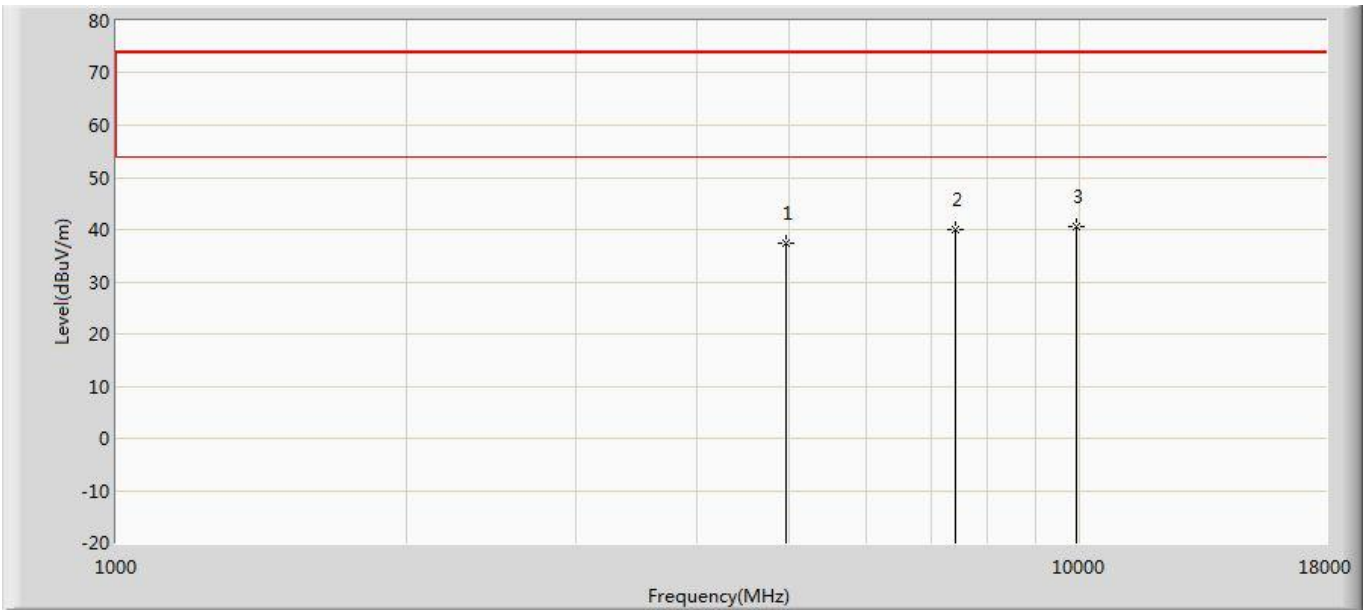
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	38.618	40.281	-35.382	74.000	-1.663	PK
2		7323.000	41.138	38.337	-32.862	74.000	2.801	PK
3	*	9764.000	42.106	37.837	-31.894	74.000	4.270	PK

Site: AC5	Time: 2018/01/22 - 13:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 2:Transmit at channel 2480MHz by 2DH5	



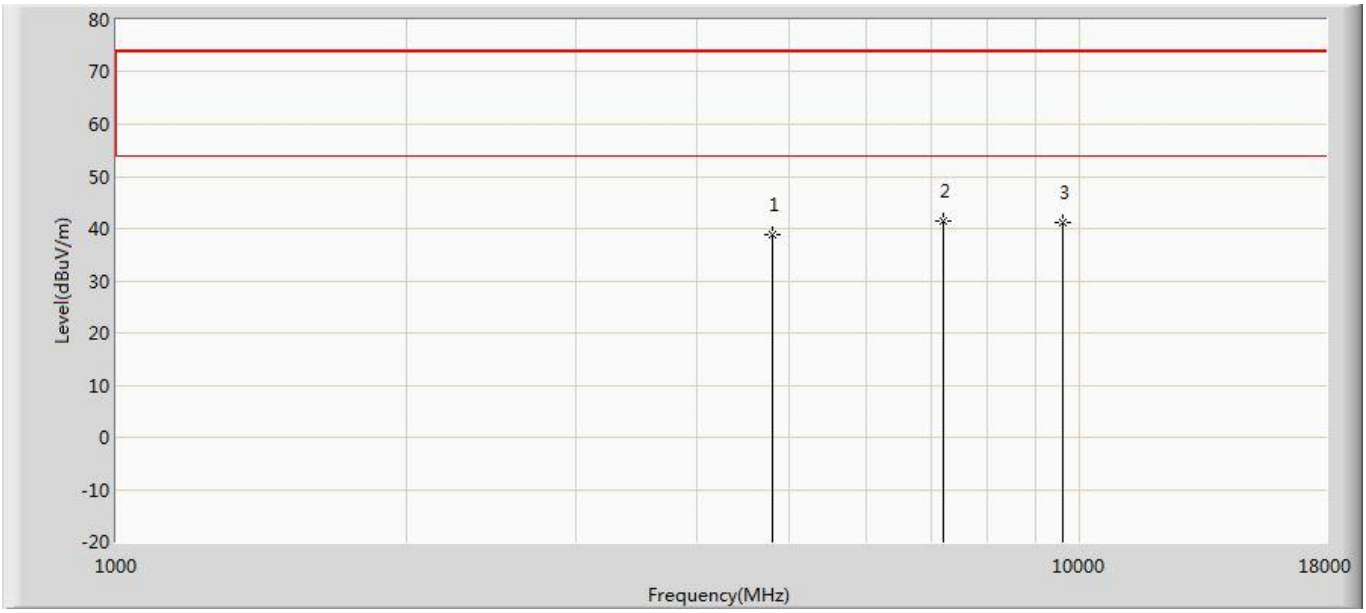
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	37.042	38.968	-36.958	74.000	-1.926	PK
2		7440.000	40.260	37.547	-33.740	74.000	2.713	PK
3	*	9920.000	41.137	36.006	-32.863	74.000	5.130	PK

Site: AC5	Time: 2018/01/22 - 13:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 2:Transmit at channel 2480MHz by 2DH5	



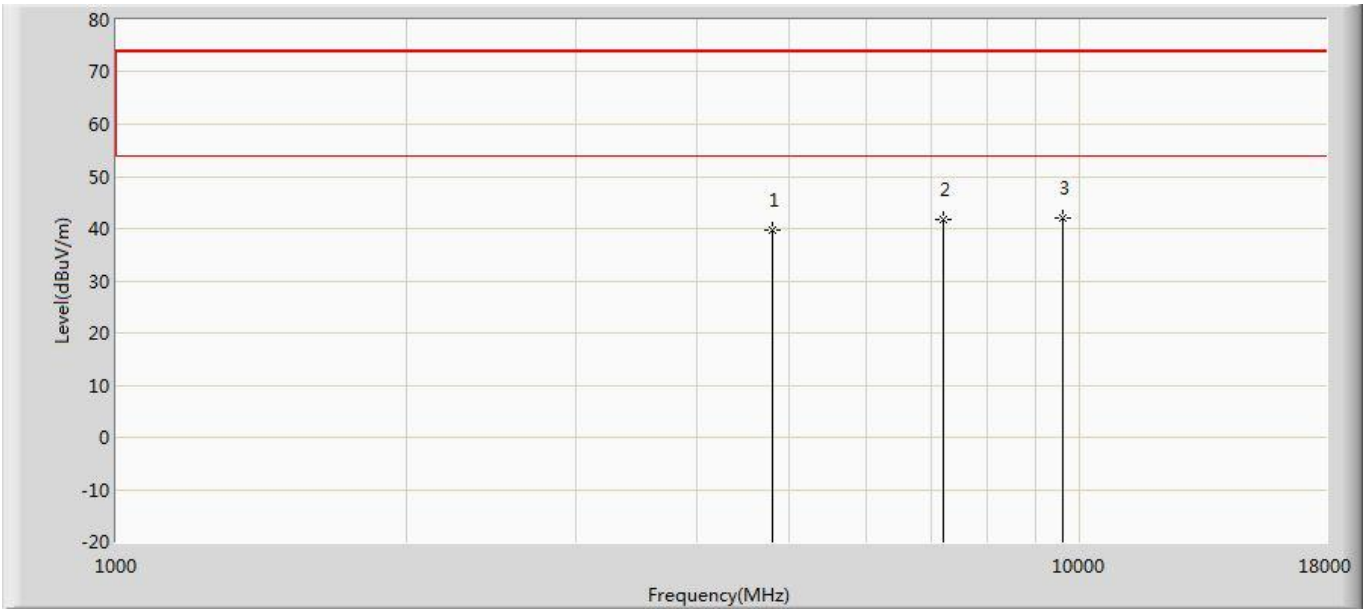
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	37.513	39.439	-36.487	74.000	-1.926	PK
2		7440.000	39.981	37.268	-34.019	74.000	2.713	PK
3	*	9920.000	40.485	35.354	-33.515	74.000	5.130	PK

Site: AC5	Time: 2018/01/22 - 13:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 3:Transmit at channel 2402MHz by 3DH5	



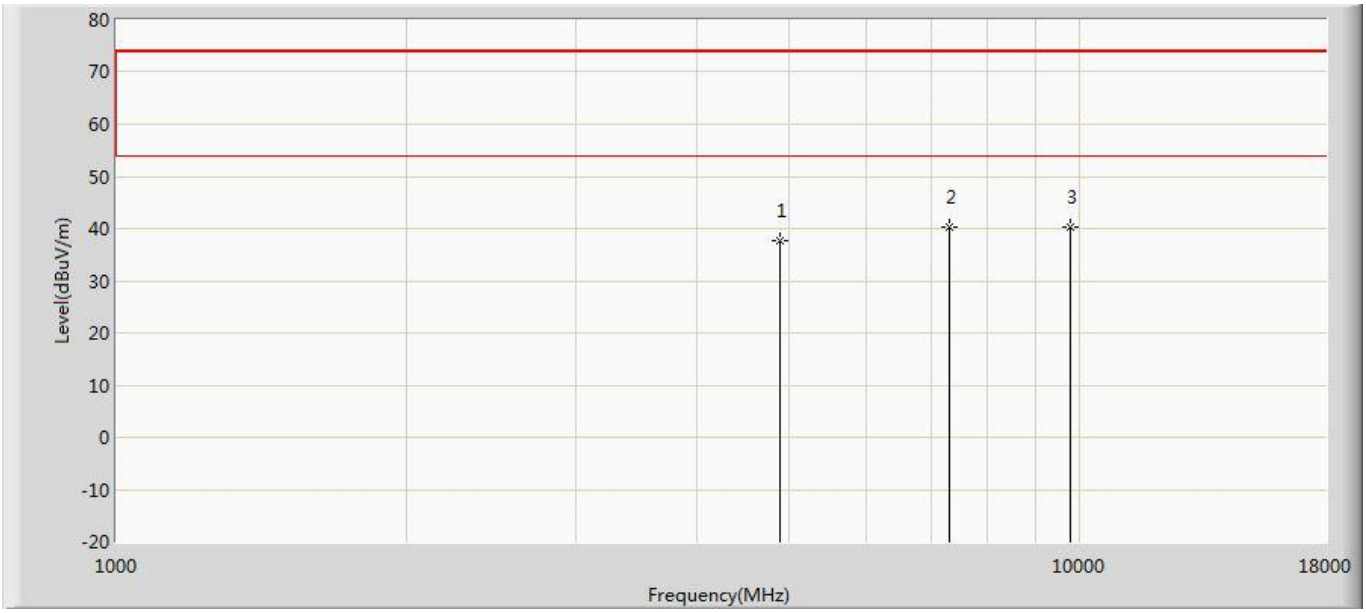
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	38.911	40.563	-35.089	74.000	-1.652	PK
2	*	7206.000	41.528	38.648	-32.472	74.000	2.880	PK
3		9608.000	41.059	36.232	-32.941	74.000	4.827	PK

Site: AC5	Time: 2018/01/22 - 13:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 3:Transmit at channel 2402MHz by 3DH5	



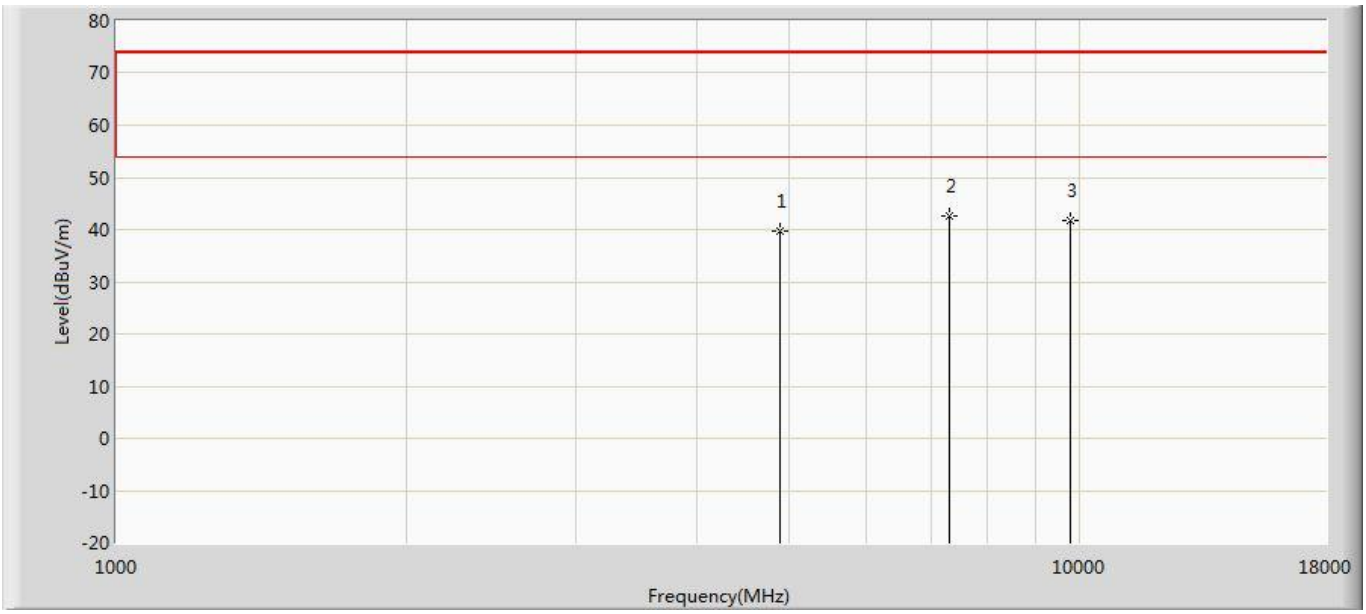
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	39.639	41.291	-34.361	74.000	-1.652	PK
2		7206.000	41.742	38.862	-32.258	74.000	2.880	PK
3	*	9608.000	42.088	37.261	-31.912	74.000	4.827	PK

Site: AC5	Time: 2018/01/22 - 13:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 3:Transmit at channel 2441MHz by 3DH5	



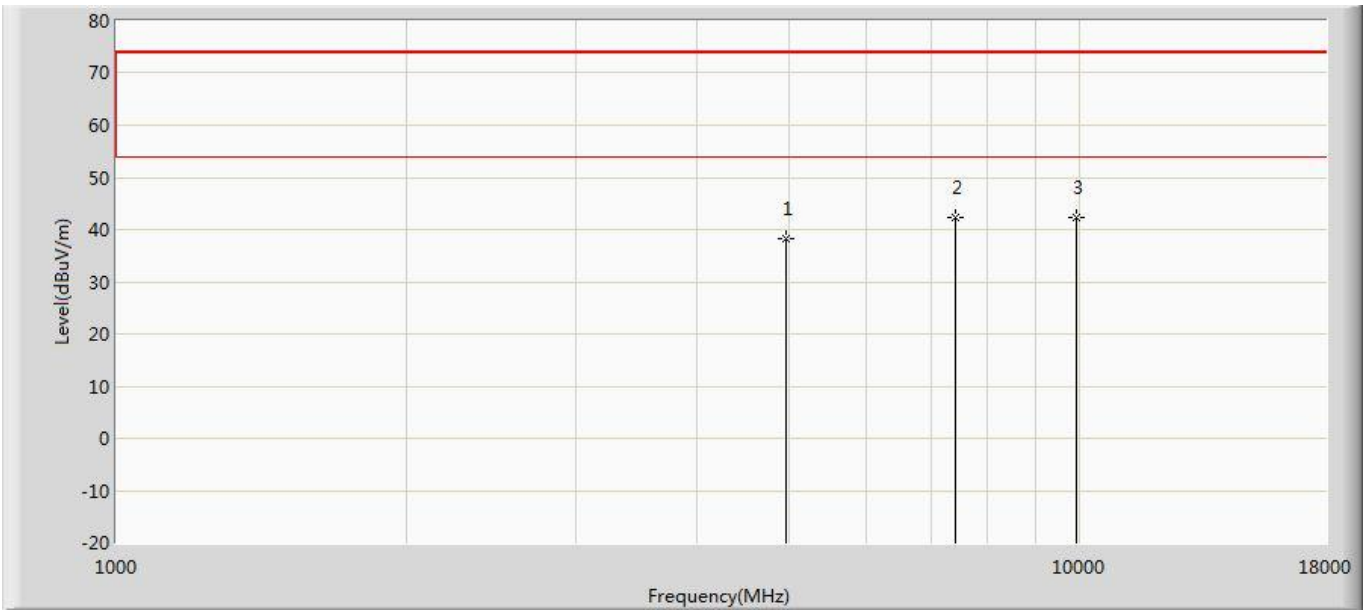
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	37.652	39.315	-36.348	74.000	-1.663	PK
2		7323.000	40.188	37.387	-33.812	74.000	2.801	PK
3	*	9764.000	40.402	36.133	-33.598	74.000	4.270	PK

Site: AC5	Time: 2018/01/22 - 13:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 3:Transmit at channel 2441MHz by 3DH5	



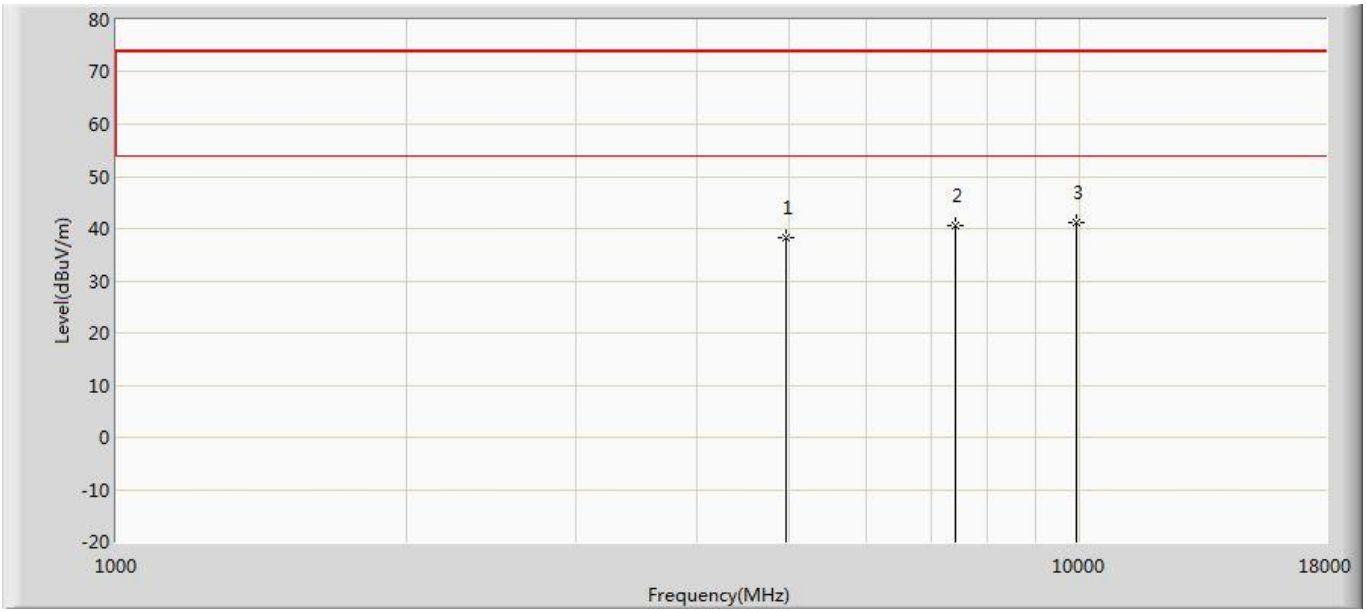
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	39.572	41.235	-34.428	74.000	-1.663	PK
2	*	7323.000	42.648	39.847	-31.352	74.000	2.801	PK
3		9764.000	41.830	37.561	-32.170	74.000	4.270	PK

Site: AC5	Time: 2018/01/22 - 13:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 3:Transmit at channel 2480MHz by 3DH5	



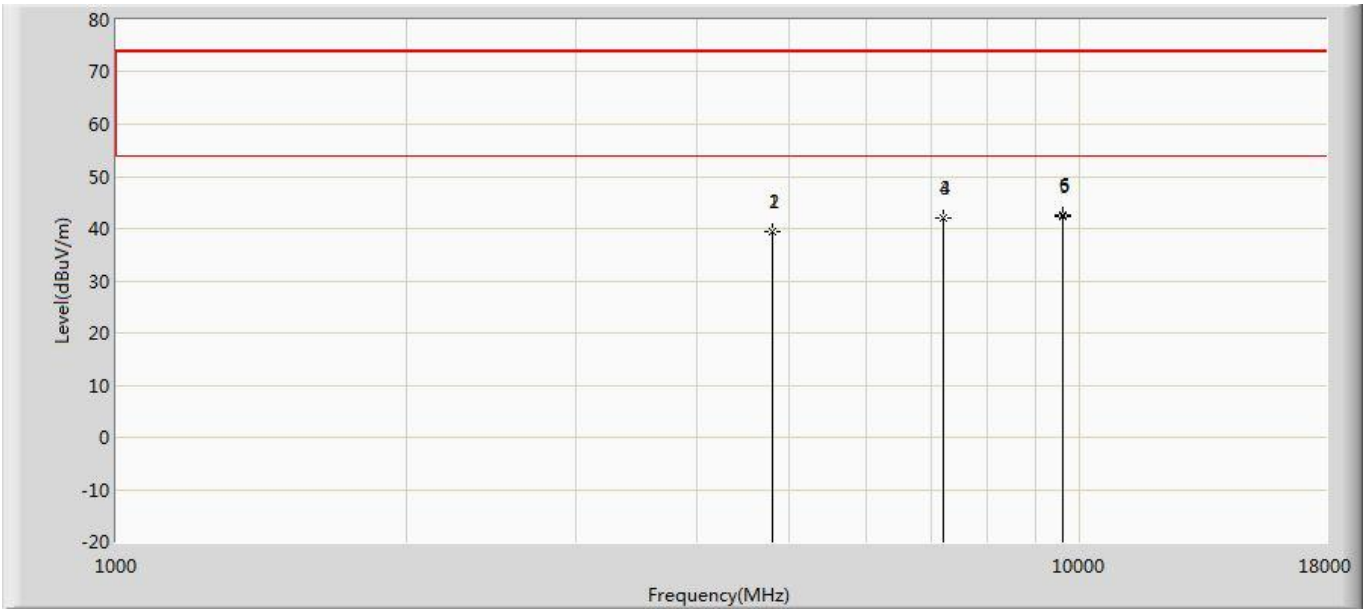
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	38.190	40.116	-35.810	74.000	-1.926	PK
2		7440.000	42.244	39.531	-31.756	74.000	2.713	PK
3	*	9920.000	42.383	37.252	-31.617	74.000	5.130	PK

Site: AC5	Time: 2018/01/22 - 13:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 3:Transmit at channel 2480MHz by 3DH5	



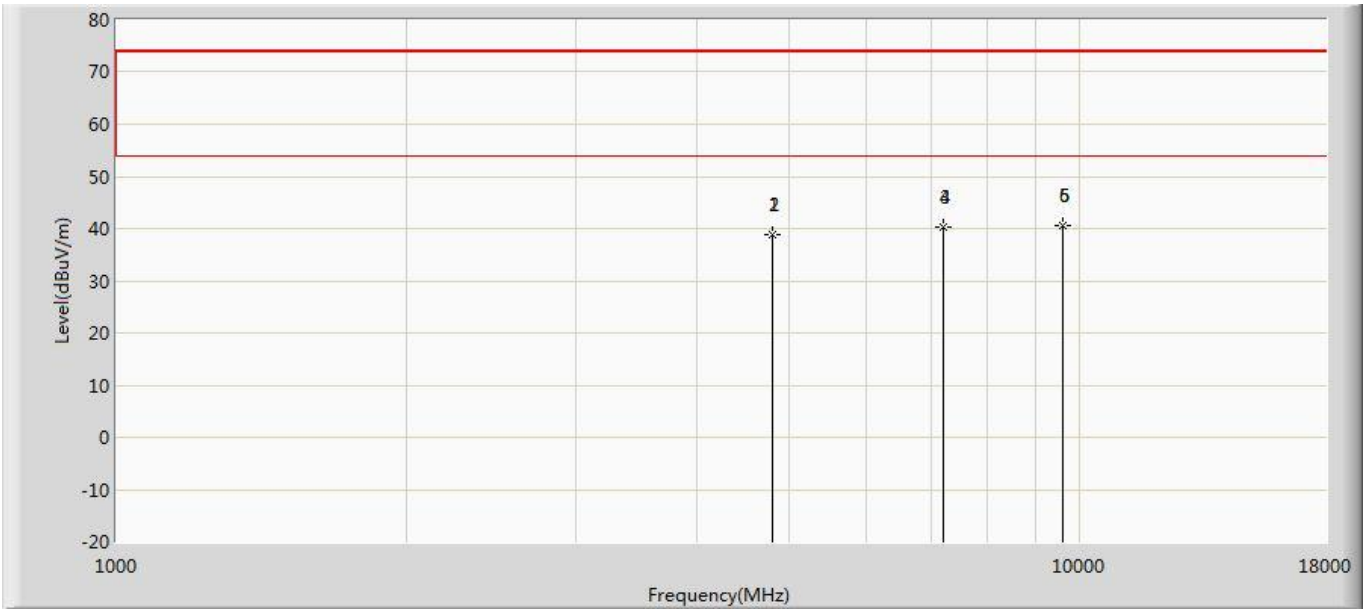
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	38.124	40.050	-35.876	74.000	-1.926	PK
2		7440.000	40.675	37.962	-33.325	74.000	2.713	PK
3	*	9920.000	41.128	35.997	-32.872	74.000	5.130	PK

Site: AC5	Time: 2018/01/22 - 13:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Transmit at channel 2402MHz by BLE+DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	39.366	41.018	-34.634	74.000	-1.652	PK
2		4804.120	39.369	41.022	-34.631	74.000	-1.653	PK
3		7206.000	42.119	39.239	-31.881	74.000	2.880	PK
4		7206.320	42.127	39.254	-31.873	74.000	2.872	PK
5		9607.985	42.391	37.564	-31.609	74.000	4.826	PK
6	*	9608.000	42.584	37.757	-31.416	74.000	4.827	PK

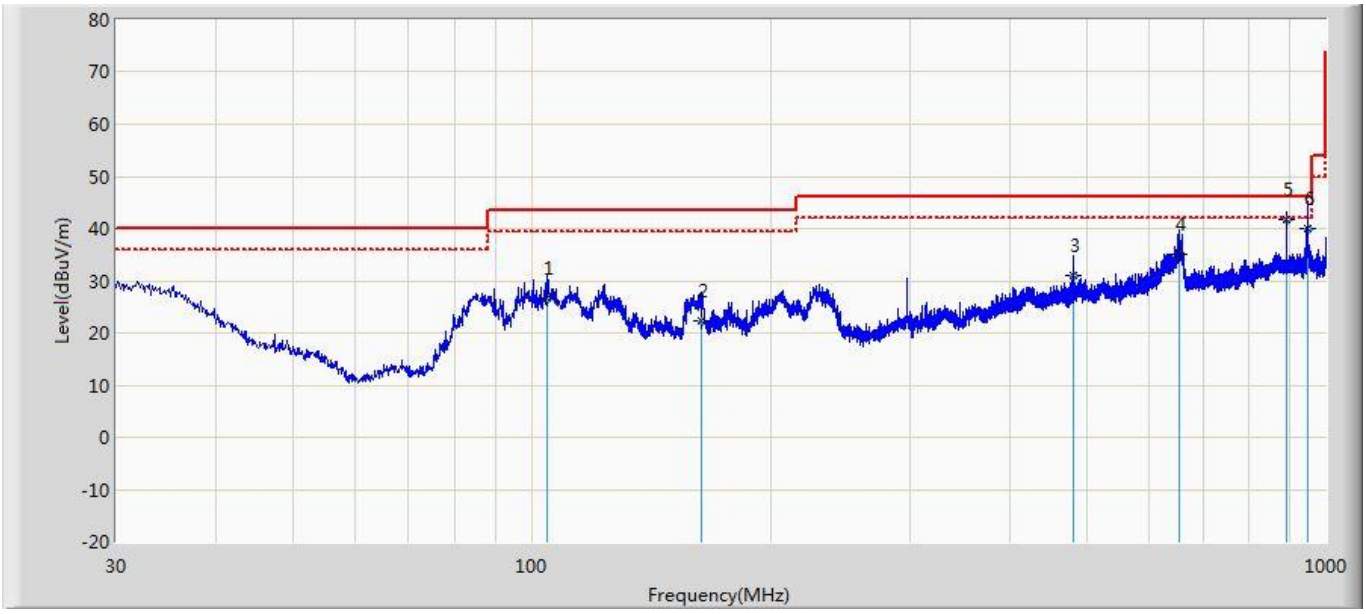
Site: AC5	Time: 2018/01/22 - 13:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Transmit at channel 2402MHz by BLE+DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	38.842	40.494	-35.158	74.000	-1.652	PK
2		4804.120	38.868	40.521	-35.132	74.000	-1.653	PK
3		7206.000	40.368	37.488	-33.632	74.000	2.880	PK
4		7206.250	40.397	37.523	-33.603	74.000	2.874	PK
5	*	9608.000	40.602	35.775	-33.398	74.000	4.827	PK
6		9608.210	40.506	35.674	-33.494	74.000	4.833	PK

The worst case of Radiated Emission below 1GHz:

Site: AC2	Time: 2018/1/29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: AC2_3M(30-1000M)	Polarity: Horizontal
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 1	

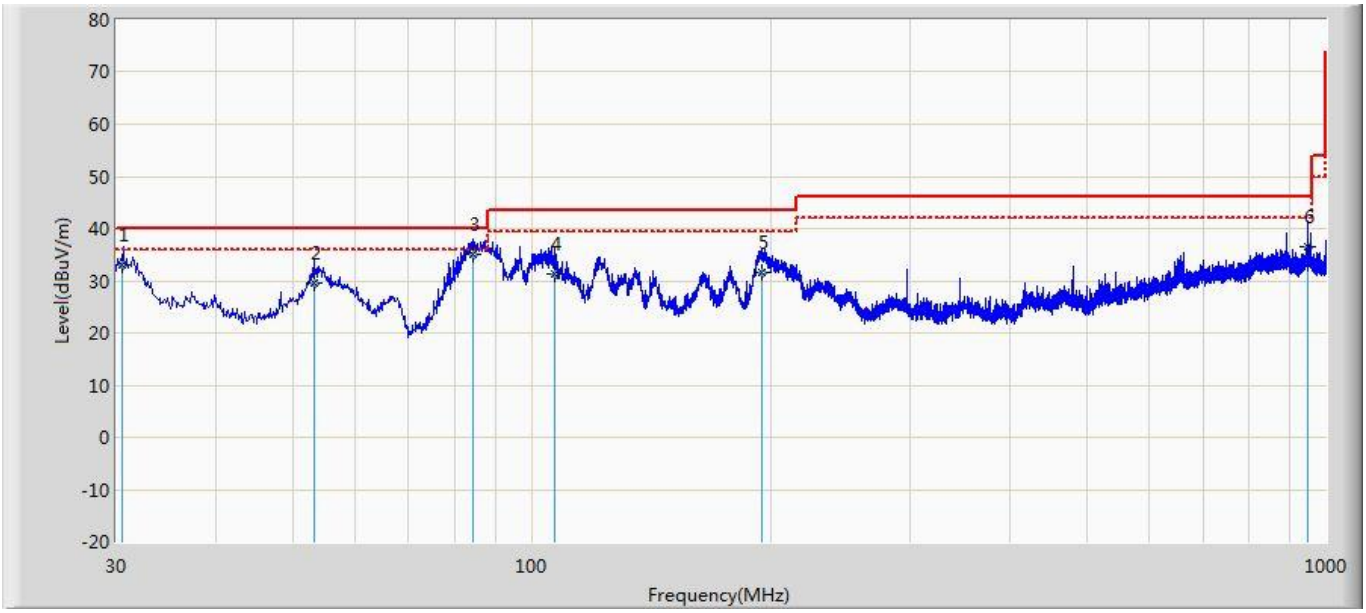


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		104.811	26.786	9.900	-16.714	43.500	9.980	6.907	0.000	200	206	QP
2		163.254	22.288	4.800	-21.212	43.500	10.230	7.258	0.000	300	346	QP
3		480.080	31.113	4.100	-14.887	46.000	18.991	8.022	0.000	200	180	QP
4		652.255	35.162	6.700	-10.838	46.000	19.827	8.634	0.000	100	260	QP
5	*	890.826	41.713	9.500	-4.287	46.000	22.985	9.228	0.000	100	235	QP
6		948.827	40.103	6.900	-5.897	46.000	23.856	9.347	0.000	100	359	QP

Note:

1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

Site: AC2	Time: 2018/1/29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: AC2_3M(30-1000M)	Polarity: Vertical
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz AC 120V/60Hz
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		30.524	33.090	8.900	-6.910	40.000	17.564	6.625	0.000	100	245	QP
2		53.159	29.429	11.100	-10.571	40.000	11.730	6.599	0.000	100	103	QP
3	*	84.287	34.943	18.800	-5.057	40.000	9.454	6.690	0.000	100	210	QP
4		106.751	31.356	9.400	-12.144	43.500	15.037	6.920	0.000	200	62	QP
5		195.385	31.617	9.200	-11.883	43.500	15.086	7.331	0.000	100	204	QP
6		950.045	36.479	3.100	-9.521	46.000	24.029	9.350	0.000	100	204	QP

Note:

1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

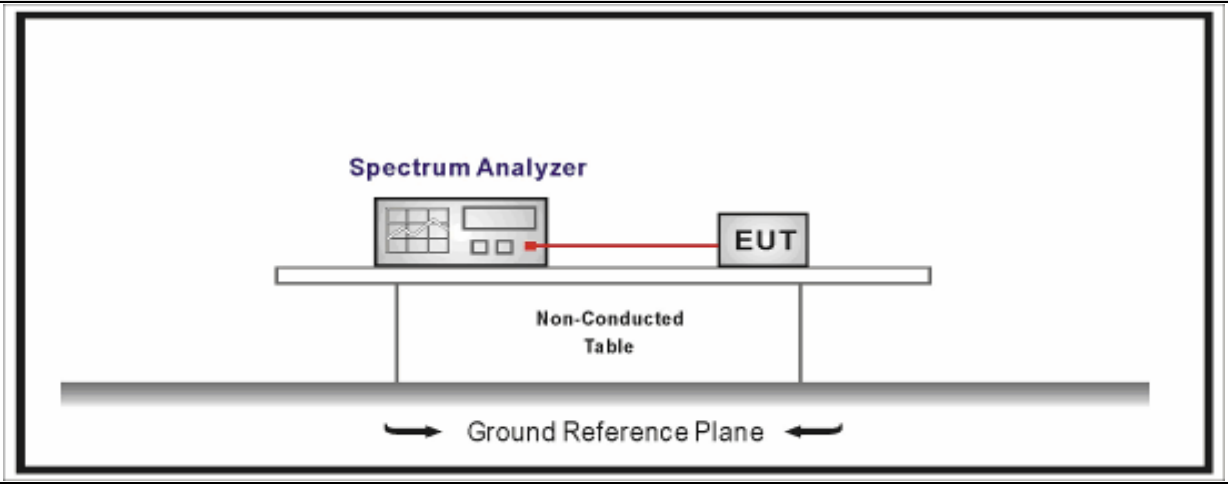
5. 20dB Bandwidth

5.1 Test Equipment

20dB Occupied Bandwidth / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2017.02.04	2018.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2017.04.09	2018.04.08
MXA Signal Anlyzer	Keysight	N9020A	MY56060147	2017.04.09	2018.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2017.04.10	2018.04.09
Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

5.2 Test Setup

20dB Occupied Bandwidth test setup:



5.3 Limit

Carrier Frequency Separation	
☒	For frequency hopping systems operating in 2400-2483.5 MHz band, within frequency range.
☐	For frequency hopping systems operating in 902-928 MHz band, the maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.
☐	For frequency hopping systems operating in 5725-5850 MHz band, the maximum 20 dB bandwidth of the hopping channel is 1 MHz.

5.4 Test Procedure

Test Method			
	References Rule	Chapter	Description
☒	DA 00-705	N/A	20 dB Bandwidth

5.5 Uncertainty

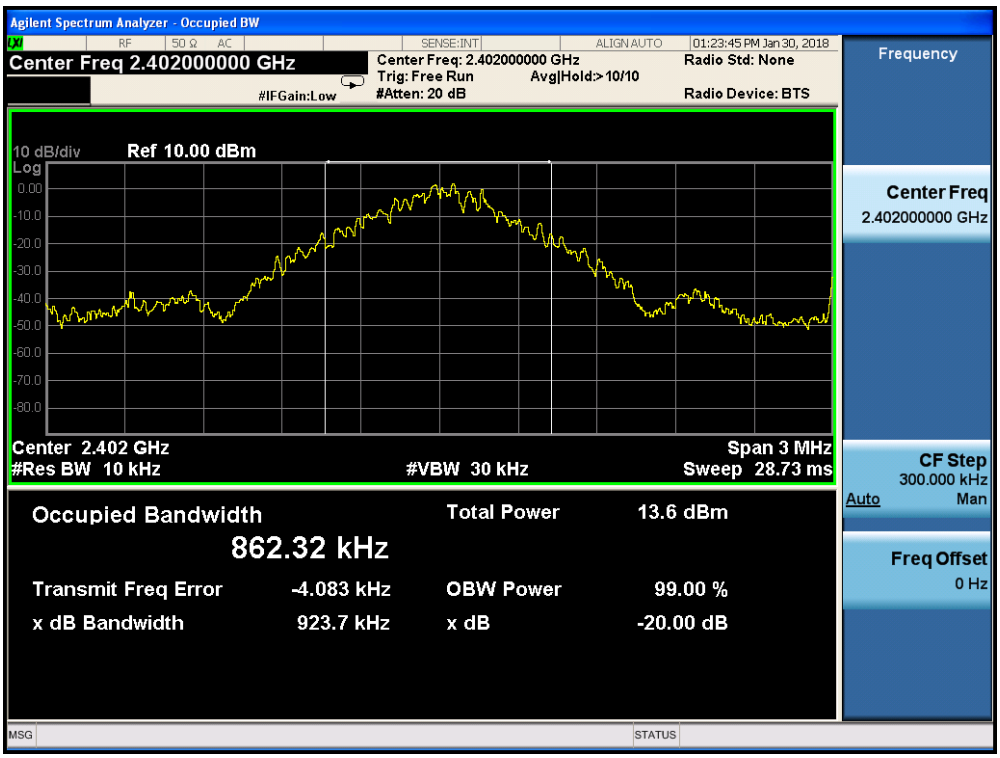
The measurement uncertainty is defined as ± 1 kHz

5.6 Test Result

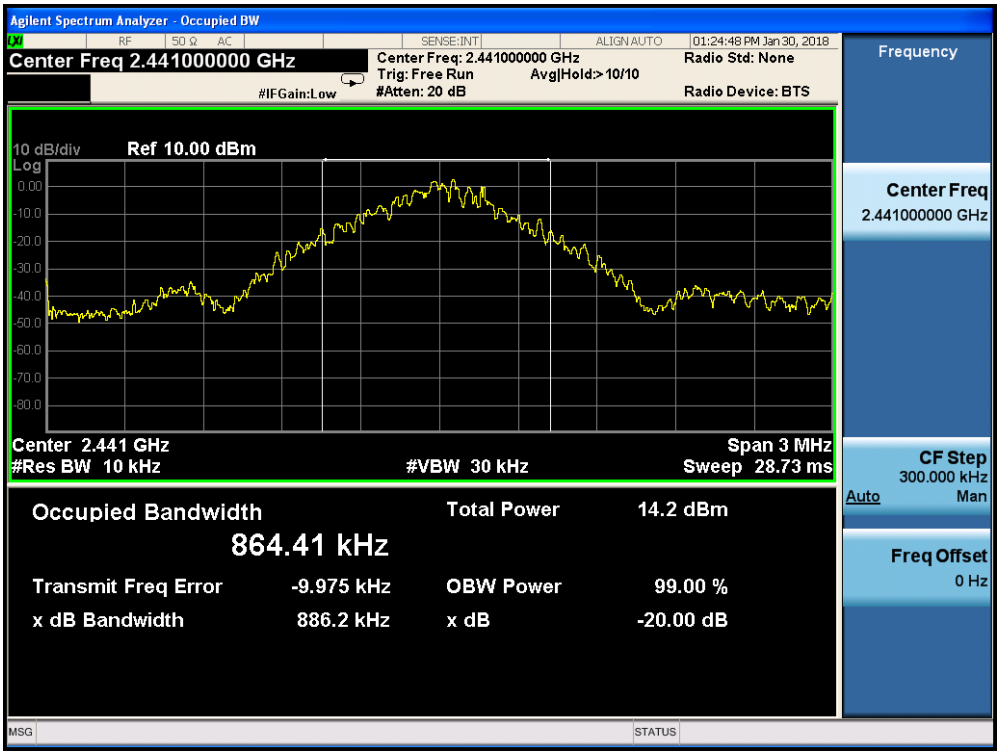
Product Name	:	BLUETOOTH EARPHONE	Power	:	AC 120V/60Hz
Test Mode	:	Mode 1	Test Site	:	TR-8
Test Date	:	2018.01.22	Test Engineer	:	Damon

Channel No.	Frequency (MHz)	20dB Bandwidth (kHz)	99% Bandwidth (kHz)
00	2402	923.7	862.32
39	2441	886.2	864.41
78	2480	925.2	868.22

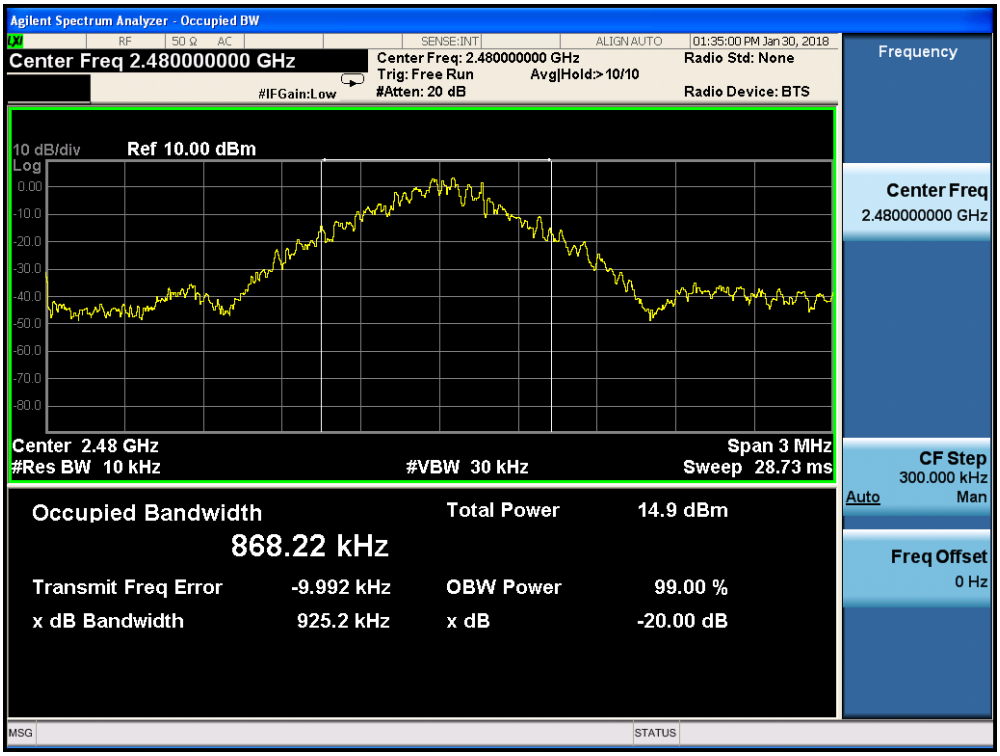
Channel 00 (2402MHz)



Channel 39 (2441MHz)



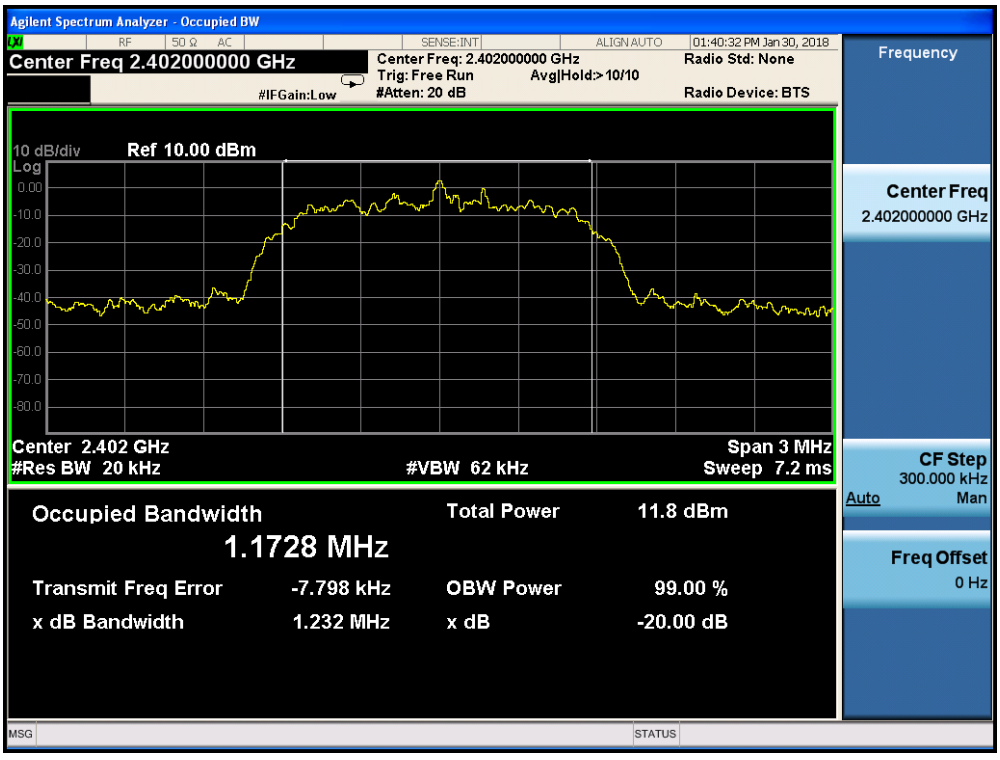
Channel 78 (2480MHz)



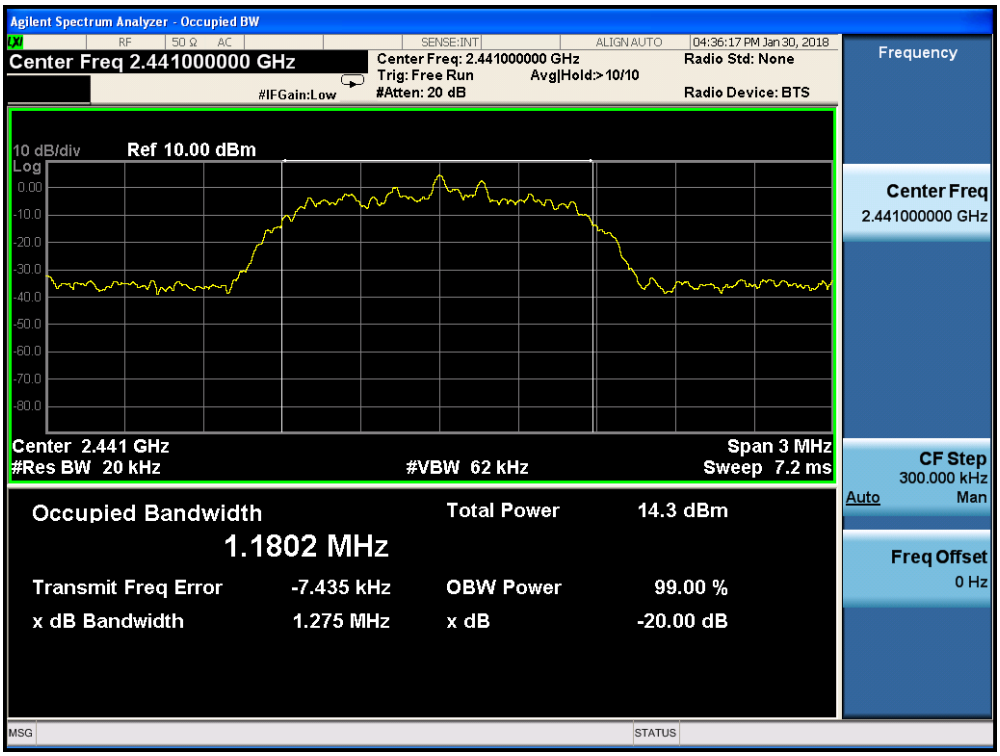
Product Name	:	BLUETOOTH EARPHONE	Power	:	AC 120V/60Hz
Test Mode	:	Mode 2	Test Site	:	TR-8
Test Date	:	2018.01.22	Test Engineer	:	Damon

Channel No.	Frequency (MHz)	20dB Bandwidth (kHz)	99% Bandwidth (kHz)
00	2402	1232	1172.8
39	2441	1275	1180.2
78	2480	1238	1204.4

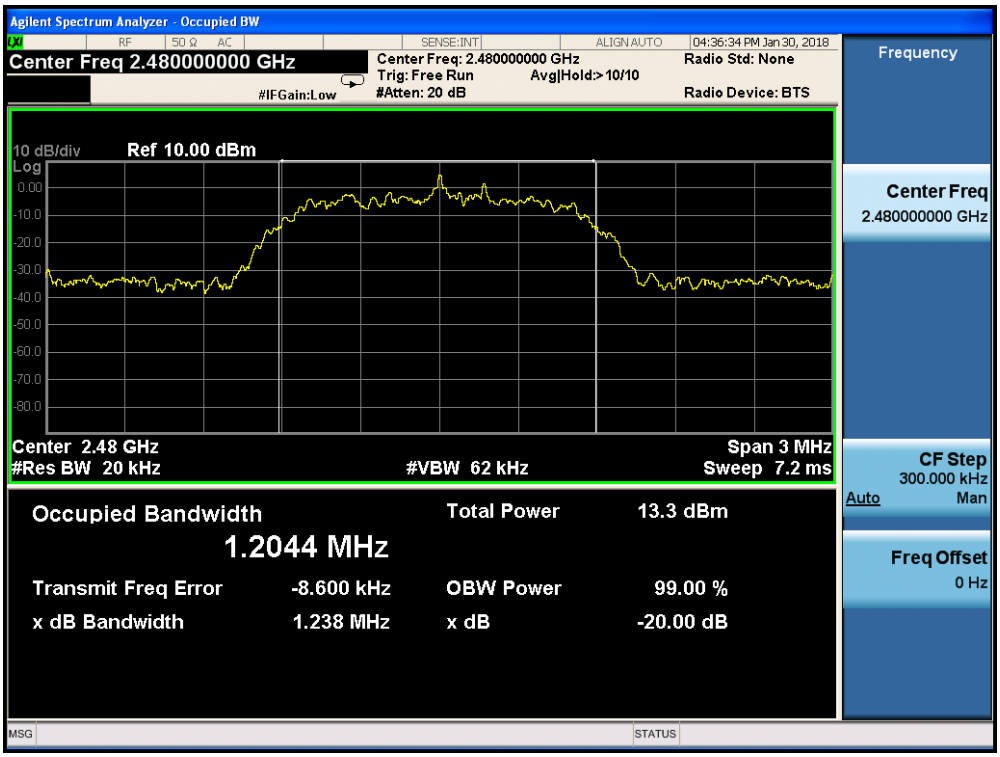
Channel 00 (2402MHz)



Channel 39 (2441MHz)



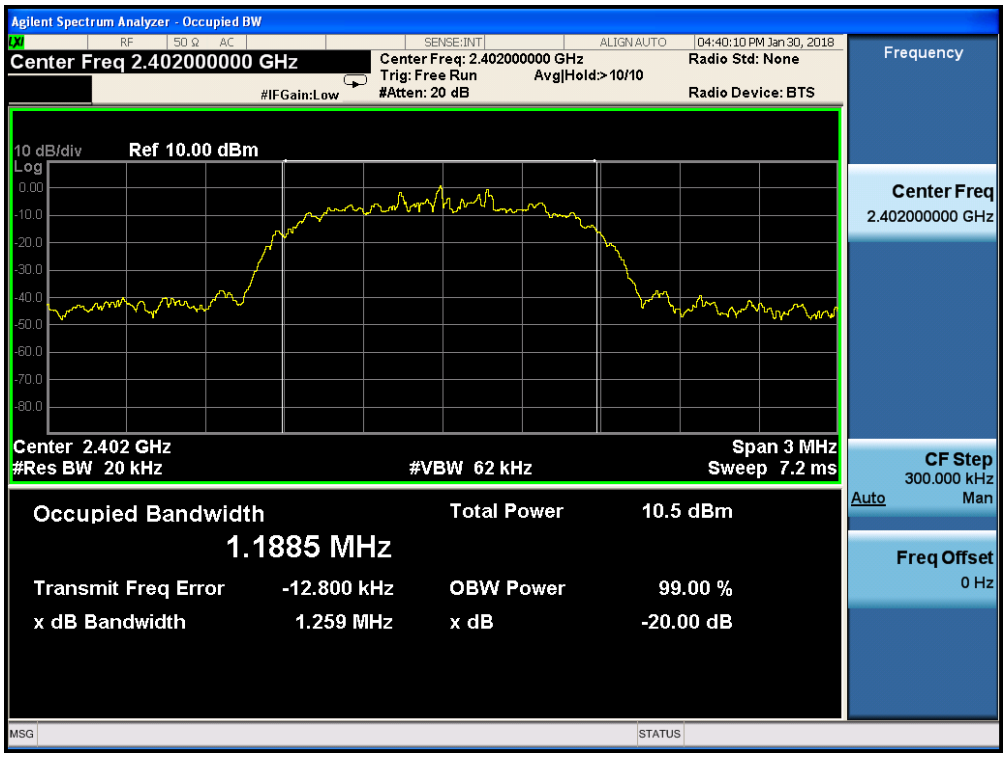
Channel 78 (2480MHz)



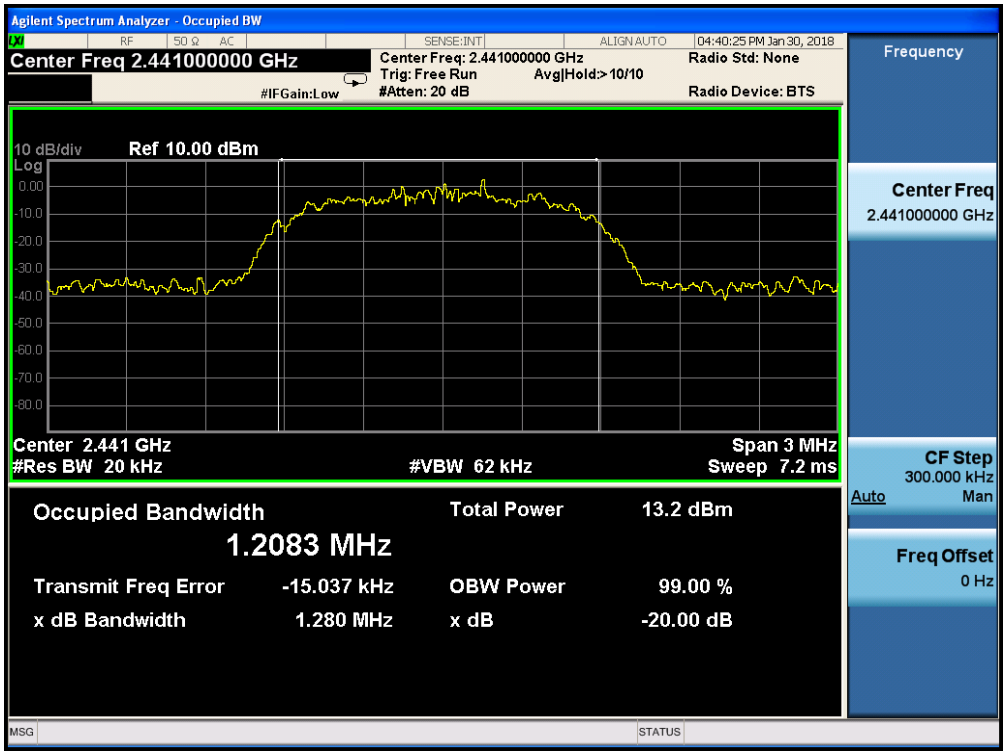
Product Name	:	BLUETOOTH EARPHONE	Power	:	AC 120V/60Hz
Test Mode	:	Mode 3	Test Site	:	TR-8
Test Date	:	2018.01.22	Test Engineer	:	Damon

Channel No.	Frequency (MHz)	20dB Bandwidth (kHz)	99% Bandwidth (kHz)
00	2402	1259	1188.5
39	2441	1280	1208.3
78	2480	1262	1217.7

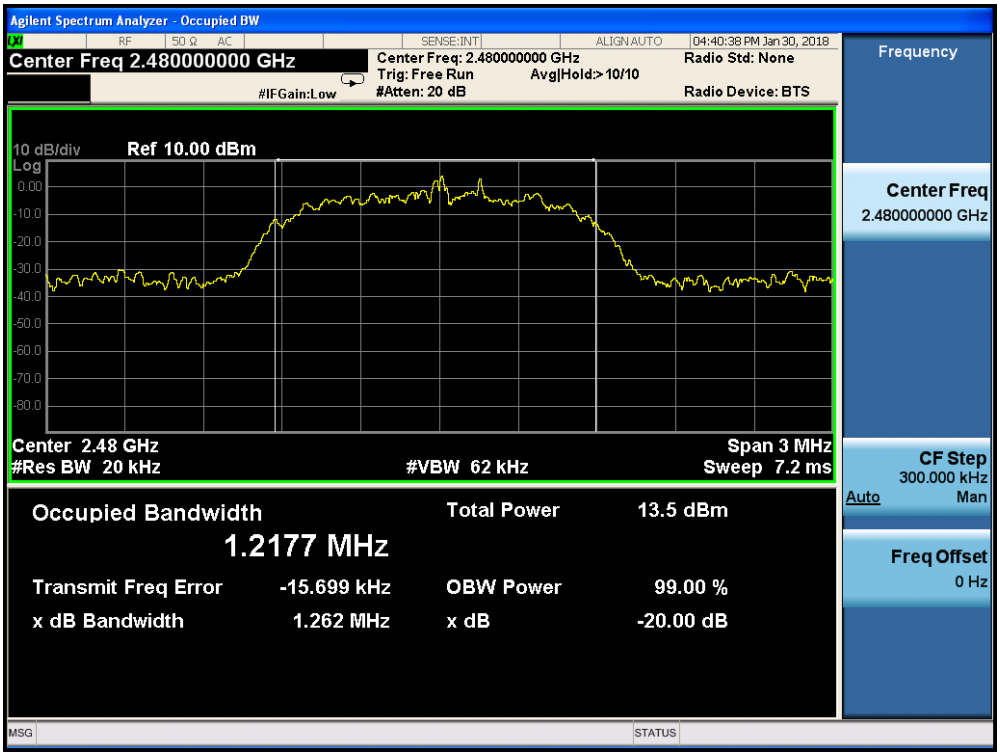
Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)



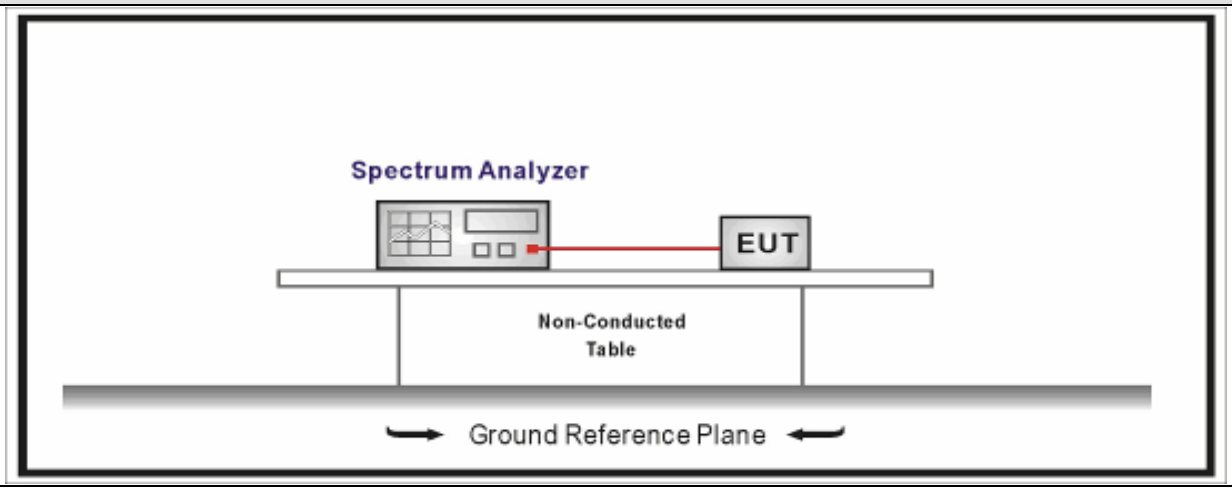
6. Carrier Frequency Separation

6.1. Test Equipment

Carrier Frequency Separation / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2018.02.04	2019.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2017.04.09	2018.04.08
MXA Signal Anlyzer	Keysight	N9020A	MY56060147	2017.04.09	2018.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2017.04.10	2018.04.09
Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

6.2. Test Setup

Carrier Frequency Separation test setup:



6.3. Limit

Carrier Frequency Separation	
☐	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.
☒	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.
☐	The 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period;
☐	The 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.
☐	Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz.

6.4. Test Procedure

Test Method			
	References Rule	Chapter	Description
☒	ANSI C63.10	7.8.2	Carrier frequency separation

6.5. Uncertainty

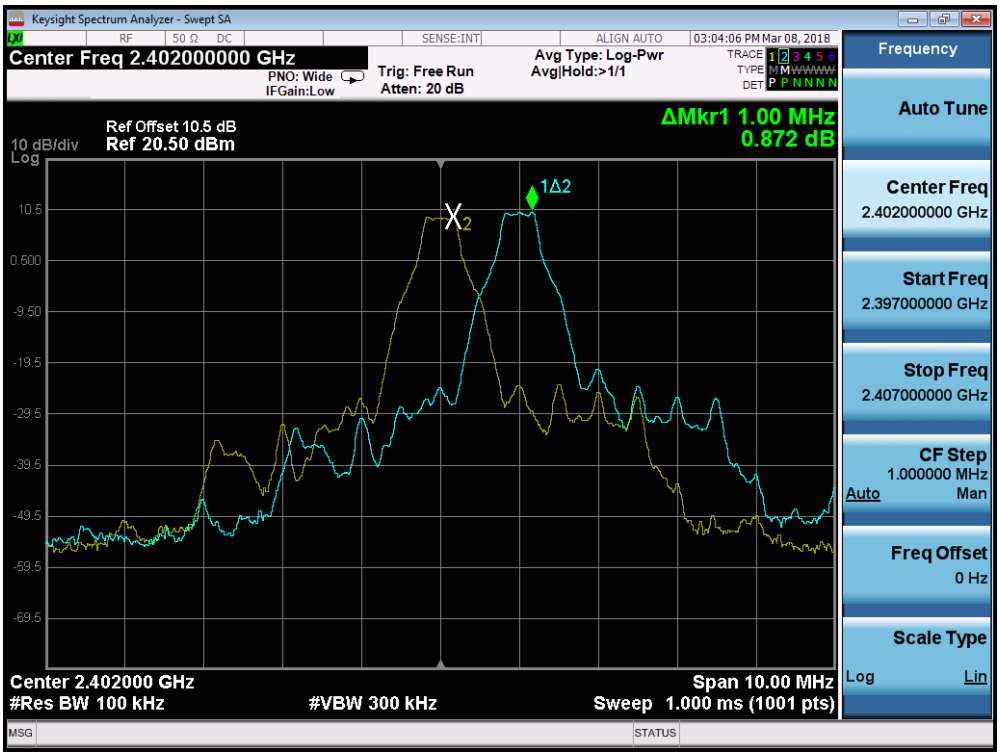
The measurement uncertainty is defined as ± 1 kHz

6.6. Test Result

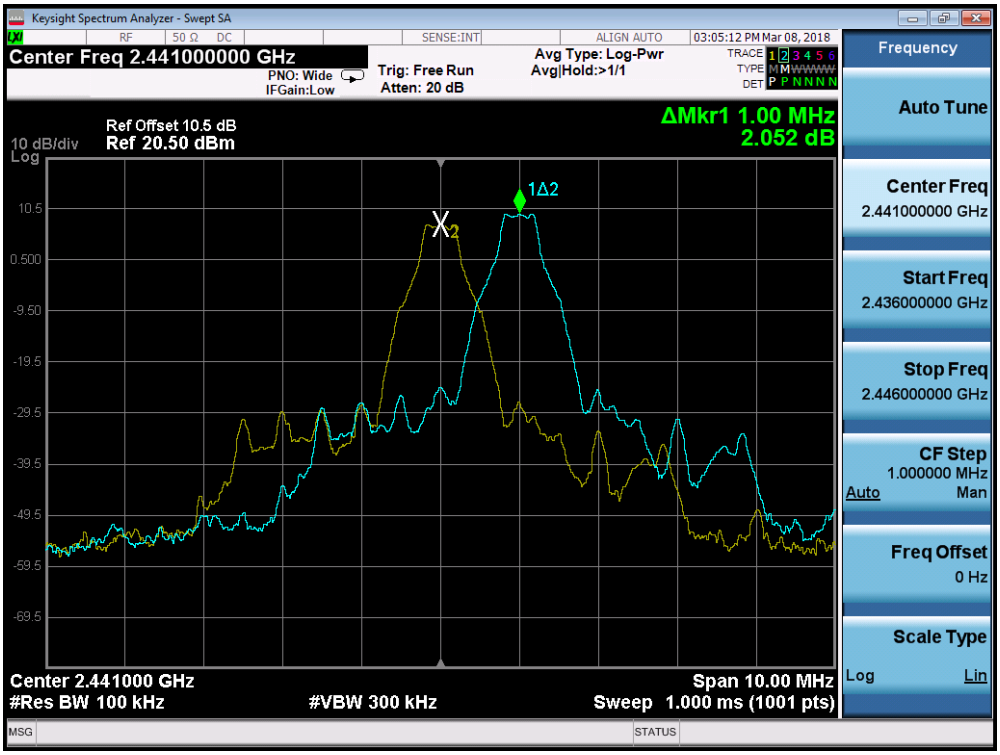
Product Name	:	BLUETOOTH EARPHONE	Power	:	AC 120V/60Hz
Test Mode	:	Mode 1	Test Site	:	TR-8
Test Date	:	2018.03.08	Test Engineer	:	Damon

Channel No.	Frequency (MHz)	Carrier Frequency Separation (kHz)	Limit (kHz)	Result
00	2402	1000	615.8	Pass
39	2441	1000	590.8	Pass
78	2480	1000	616.8	Pass

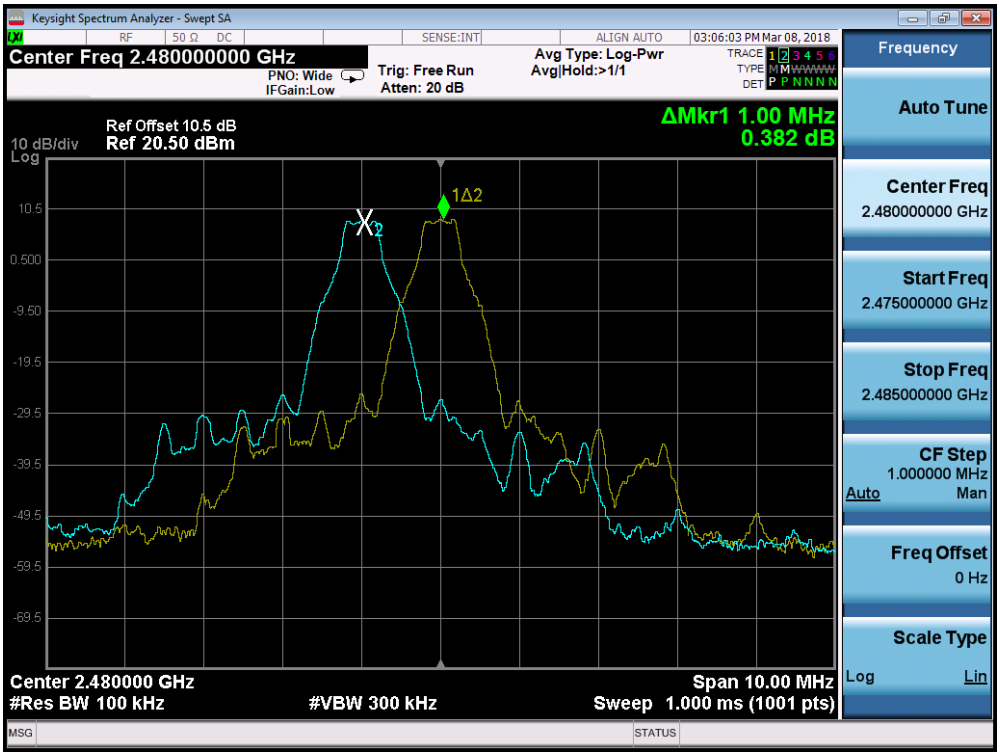
Channel 00 (2402MHz)



Channel 39 (2441MHz)



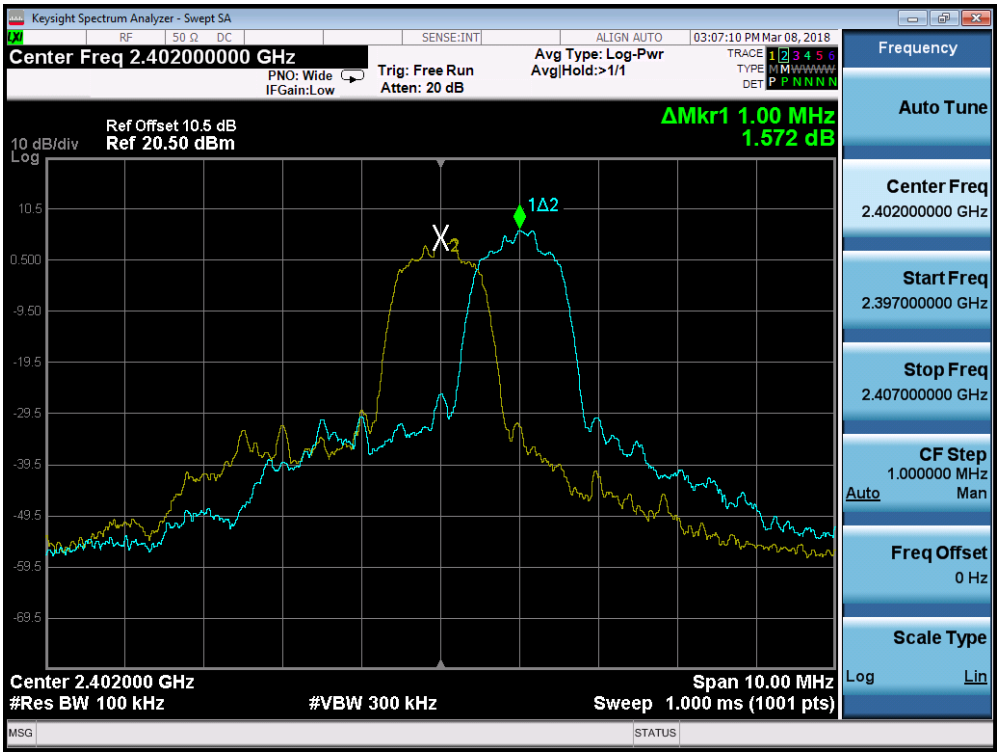
Channel 78 (2480MHz)



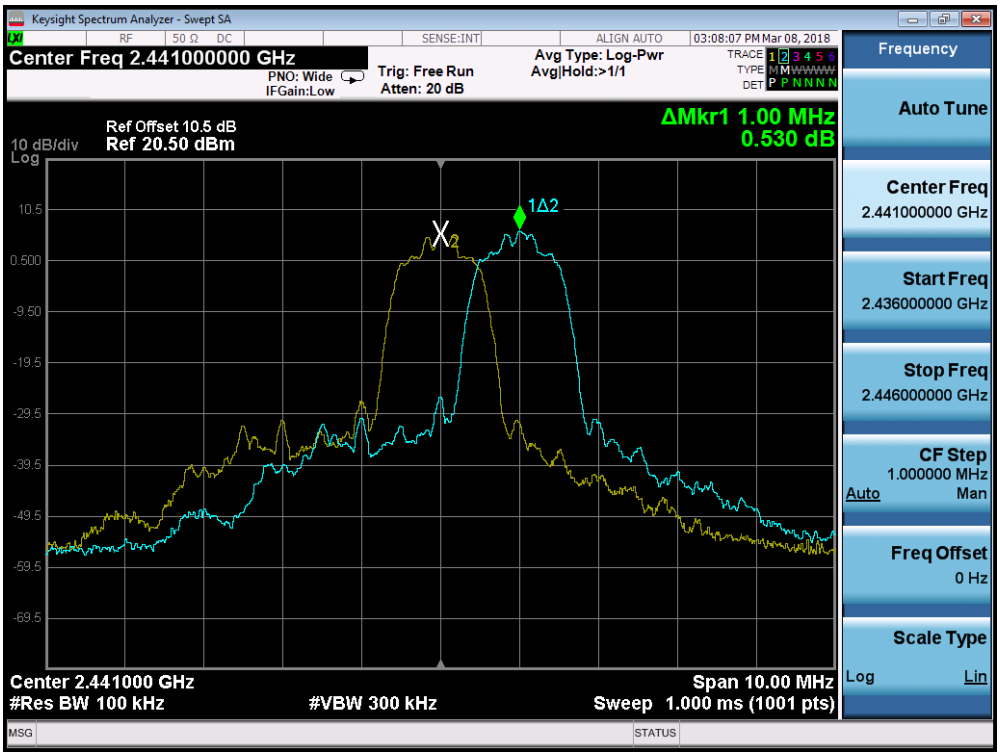
Product Name	:	BLUETOOTH EARPHONE	Power	:	AC 120V/60Hz
Test Mode	:	Mode 2	Test Site	:	TR-8
Test Date	:	2018.03.08	Test Engineer	:	Damon

Channel No.	Frequency (MHz)	Carrier Frequency Separation (kHz)	Limit (kHz)	Result
00	2402	1000	821.3	Pass
39	2441	1000	850.0	Pass
78	2480	1000	825.3	Pass

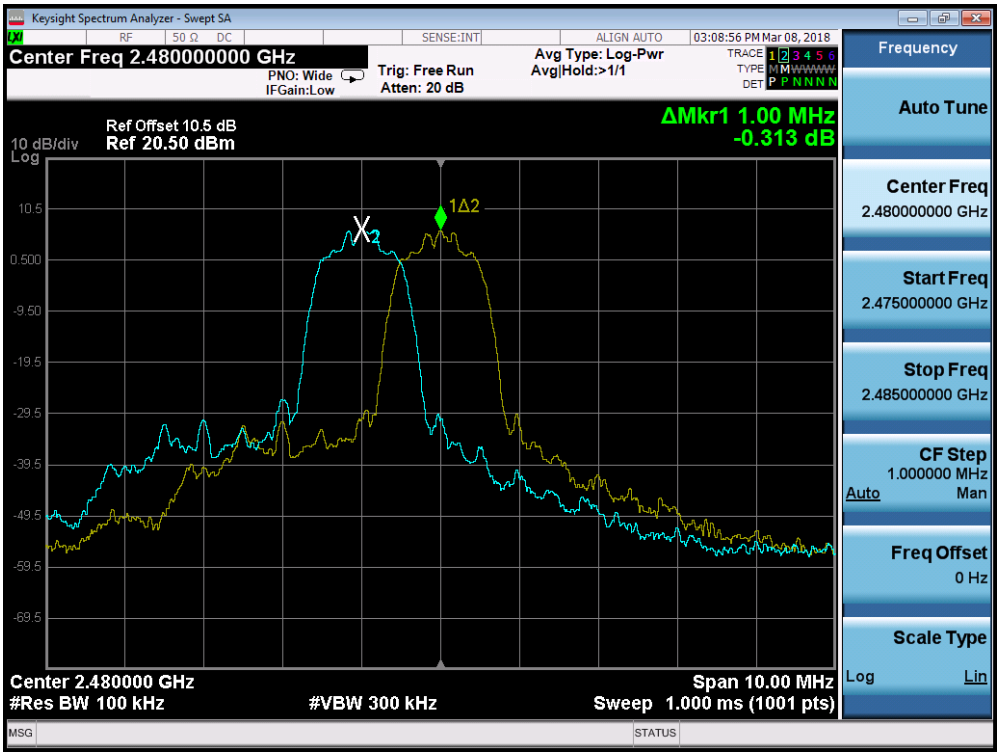
Channel 00 (2402MHz)



Channel 39 (2441MHz)



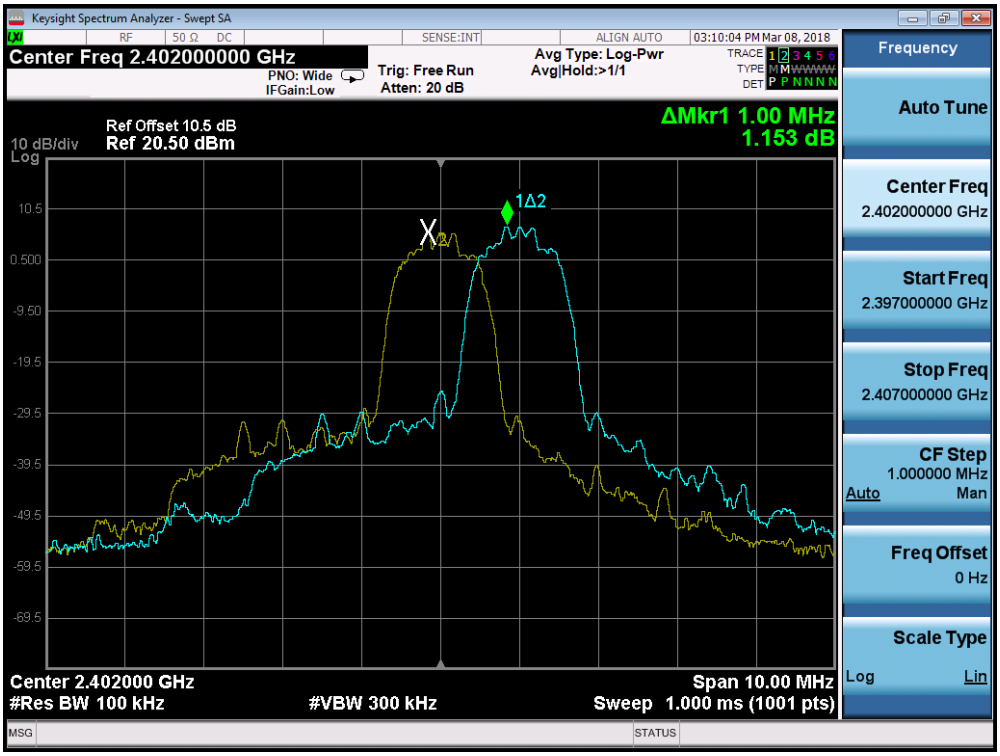
Channel 78 (2480MHz)



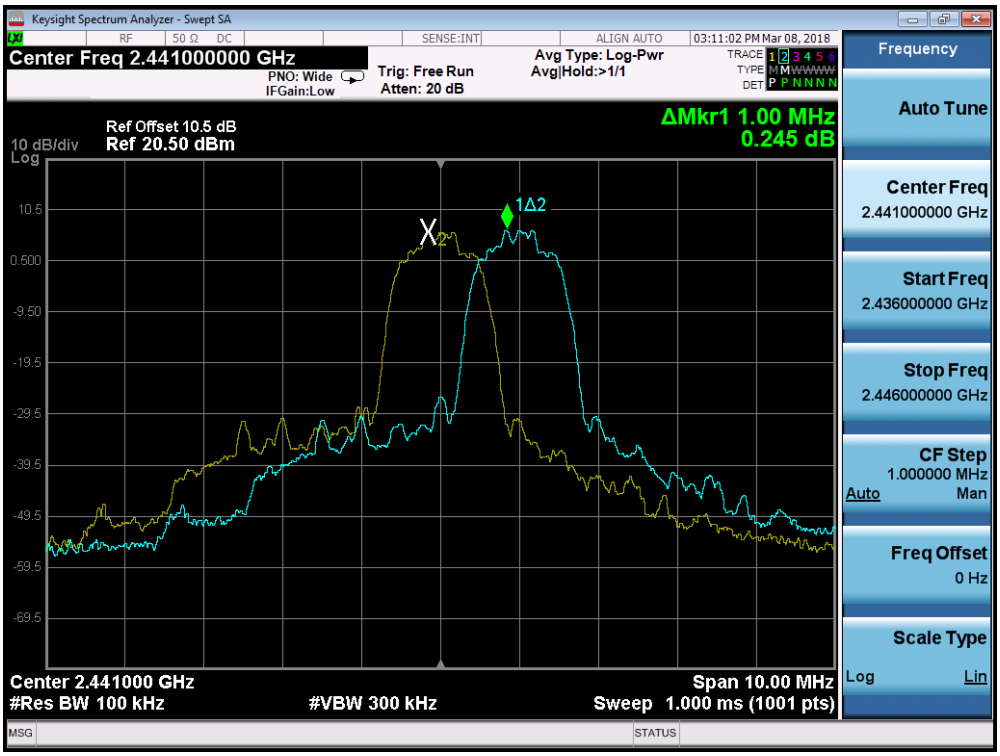
Product Name	:	BLUETOOTH EARPHONE	Power	:	AC 120V/60Hz
Test Mode	:	Mode 3	Test Site	:	TR-8
Test Date	:	2018.03.08	Test Engineer	:	Damon

Channel No.	Frequency (MHz)	Carrier Frequency Separation (kHz)	Limit (kHz)	Result
00	2402	1000	839.3	Pass
39	2441	1000	853.3	Pass
78	2480	1000	841.3	Pass

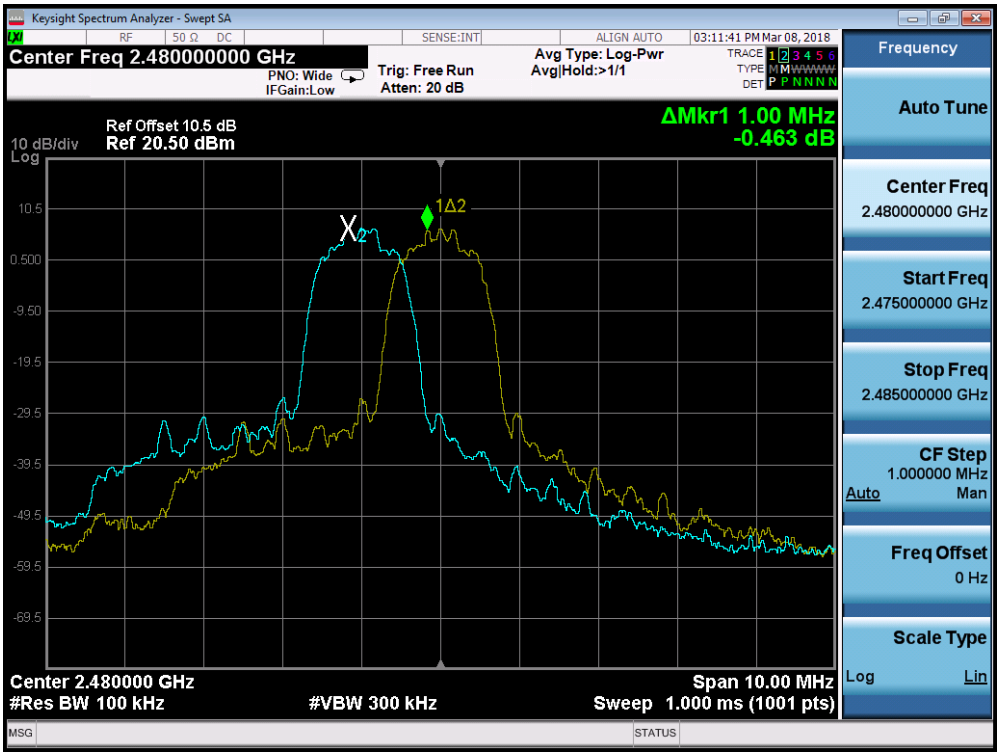
Channel 00 (2402MHz)



Channel 39 (2441MHz)



Channel 78 (2480MHz)



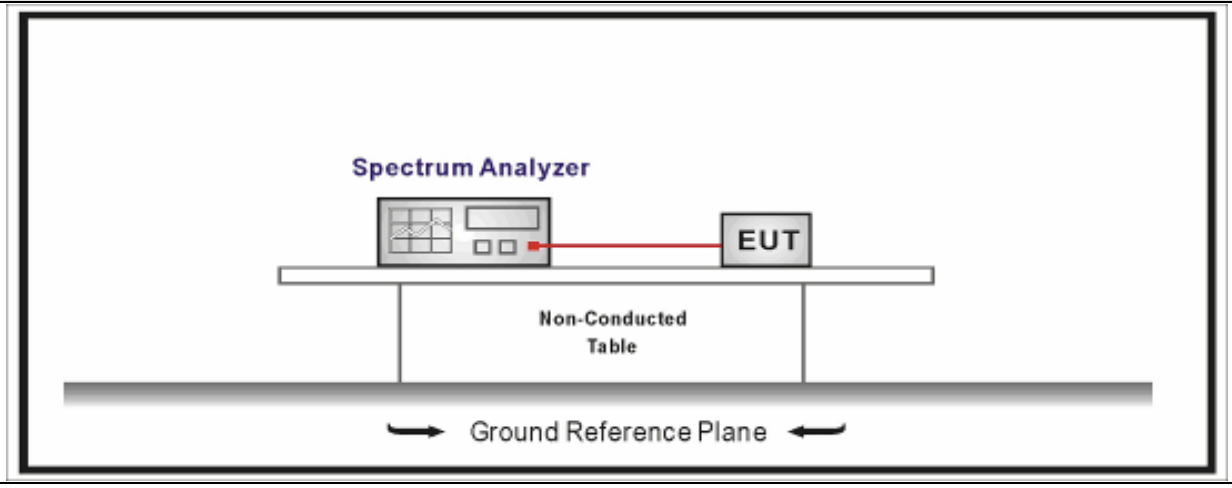
7. Number of Hopping Frequencies

7.1. Test Equipment

Number of Hopping Frequencies / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2017.02.04	2018.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2017.04.09	2018.04.08
MXA Signal Anlyzer	Keysight	N9020A	MY56060147	2017.04.09	2018.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2017.04.10	2018.04.09
Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

7.2. Test Setup

Number of Hopping Frequencies test setup:



7.3. Limit

Carrier Frequency Separation	
☒	For frequency hopping systems operating in the 2400-2483.5 MHz band shall use at least 15 hopping frequencies.
☐	For frequency hopping systems operating in 902-928 MHz band, if the 20 dB bandwidth of the hopping channel is less than 250 kHz, shall use at least 50 hopping frequencies.
☐	For frequency hopping systems operating in 902-928 MHz band, if the 20 dB bandwidth of the hopping channel is higher than 250 kHz, shall use at least 25 hopping frequencies.
☐	For frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies.

7.4. Test Procedure

Test Method			
	References Rule	Chapter	Description
☒	ANSI C63.10	7.8.3	Number of Hopping Frequencies

7.5. Uncertainty

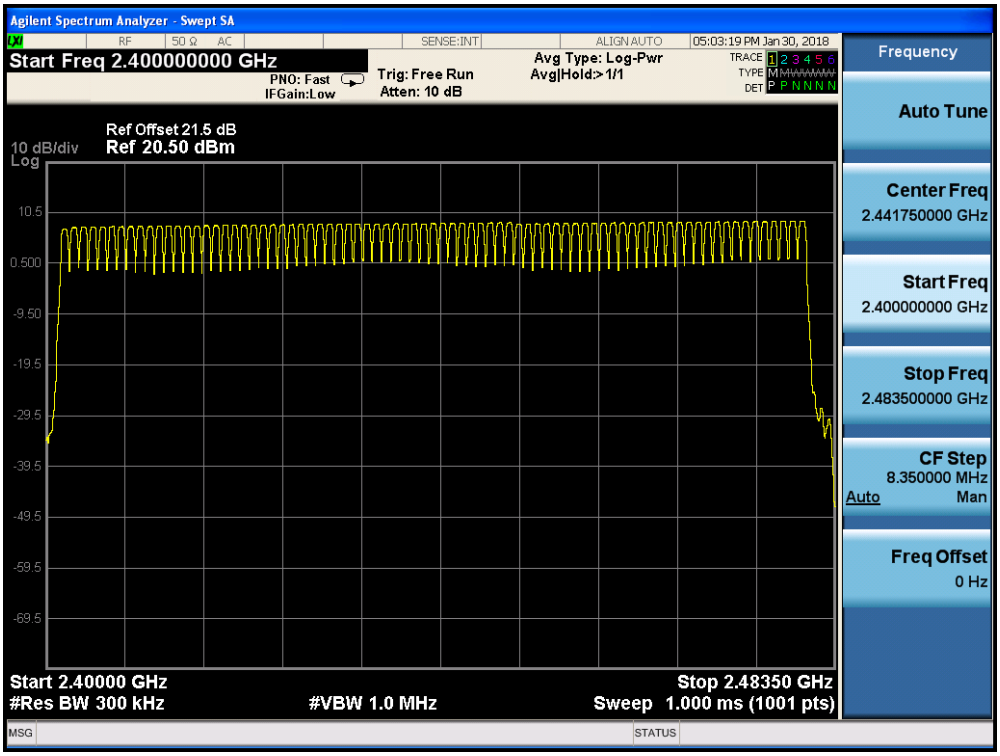
The measurement uncertainty is defined as ± 1 kHz

7.6. Test Result

Product Name	:	BLUETOOTH EARPHONE	Power	:	AC 120V/60Hz
Test Mode	:	Mode 1	Test Site	:	TR-8
Test Date	:	2018.01.22	Test Engineer	:	Damon

Frequency Band (MHz)	Number of Hopping Frequencies	Limit	Result
2400 - 2483.5	79	>15	Pass

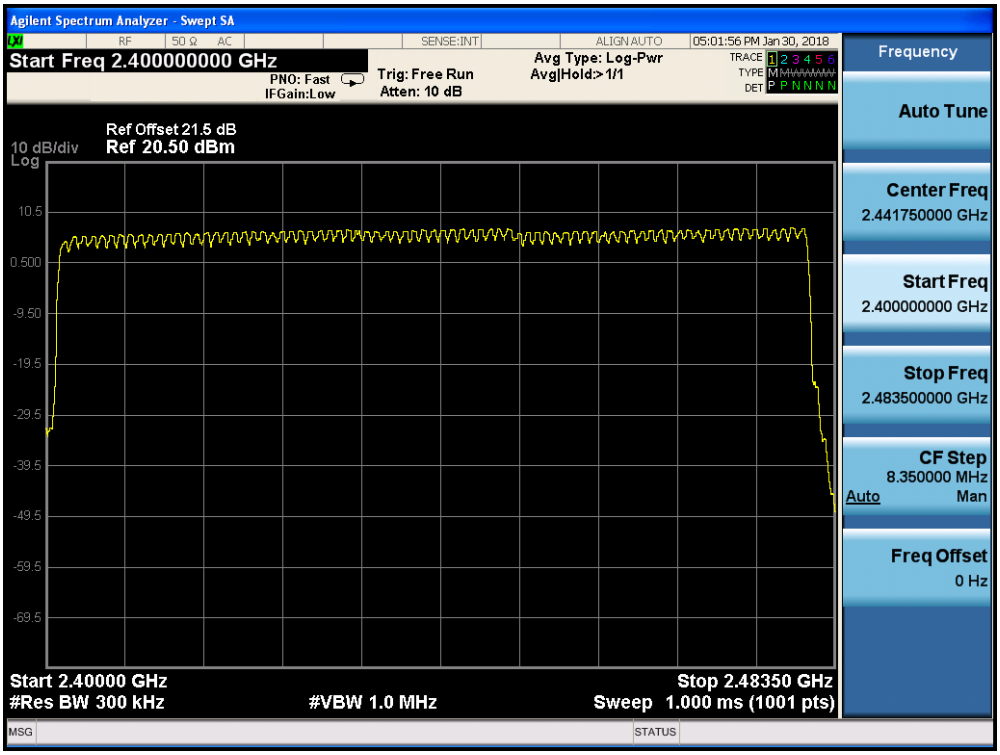
2402 - 2480MHz



Product Name	:	BLUETOOTH EARPHONE	Power	:	AC 120V/60Hz
Test Mode	:	Mode 2	Test Site	:	TR-8
Test Date	:	2018.01.22	Test Engineer	:	Damon

Frequency Band (MHz)	Number of Hopping Frequencies	Limit	Result
2400 - 2483.5	79	>15	Pass

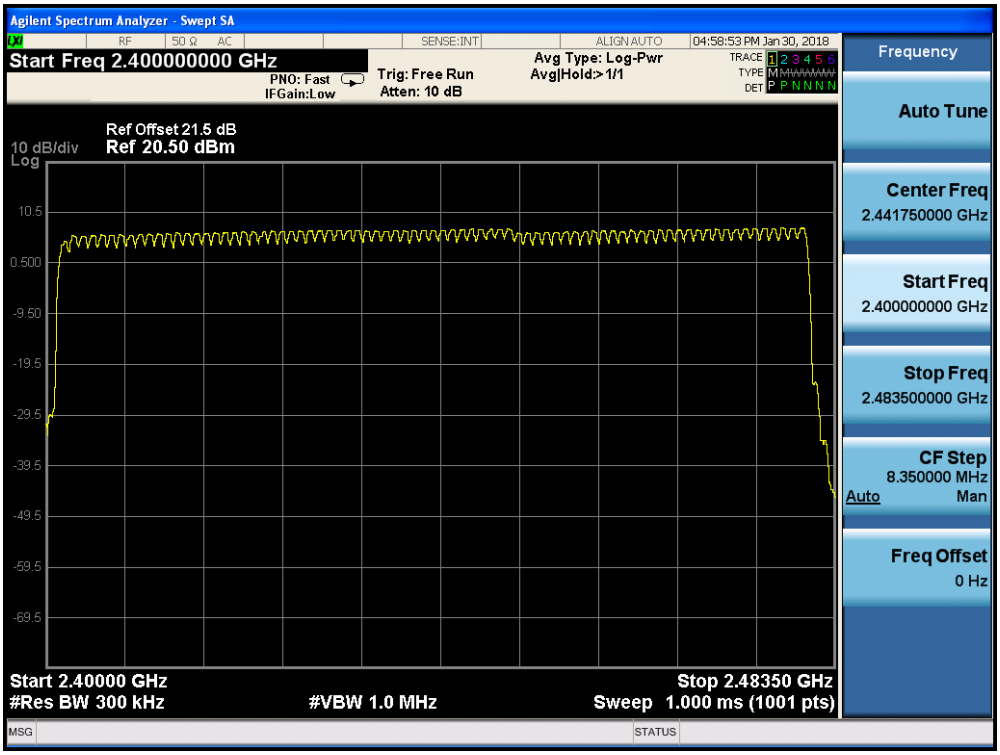
2402 - 2480 MHz



Product Name	:	BLUETOOTH EARPHONE	Power	:	AC 120V/60Hz
Test Mode	:	Mode 3	Test Site	:	TR-8
Test Date	:	2018.01.22	Test Engineer	:	Damon

Frequency Band (MHz)	Number of Hopping Frequencies	Limit	Result
2400 - 2483.5	79	>15	Pass

2402 - 2480 MHz



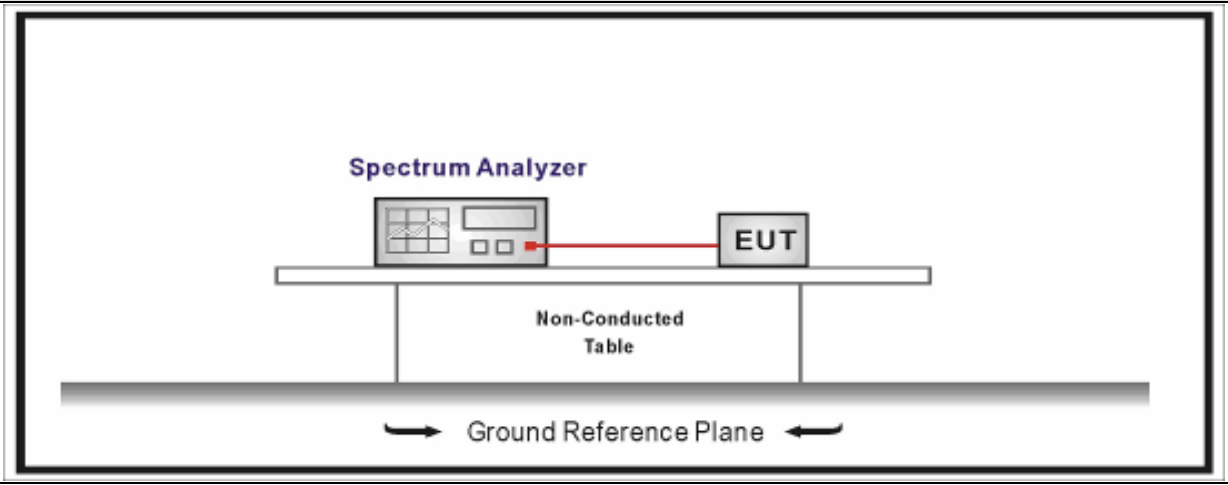
8. Time of Occupancy (Dwell Time)

8.1. Test Equipment

Time of Occupancy (Dwell Time) / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2017.02.04	2018.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2017.04.09	2018.04.08
MXA Signal Anlyzer	Keysight	N9020A	MY56060147	2017.04.09	2018.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2017.04.10	2018.04.09
Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

8.2. Test Setup

Time of Occupancy (Dwell Time) test setup:



8.3. Limit

Time of Occupancy (Dwell Time)	
☒	Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. 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.
☐	For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period
☐	For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping

	frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period.
☐	Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

8.4. Test Procedure

Test Method			
	References Rule	Chapter	Description
☒	ANSI C63.10	7.8.4	Time of Occupancy (Dwell Time)

8.5. Uncertainty

The measurement uncertainty is defined as ± 0.1 us

8.6. Test Result

Product Name	:	BLUETOOTH EARPHONE	Power	:	AC 120V/60Hz
Test Mode	:	Mode 1(GFSK_DH1)	Test Site	:	TR-8
Test Date	:	2018.01.22	Test Engineer	:	Damon

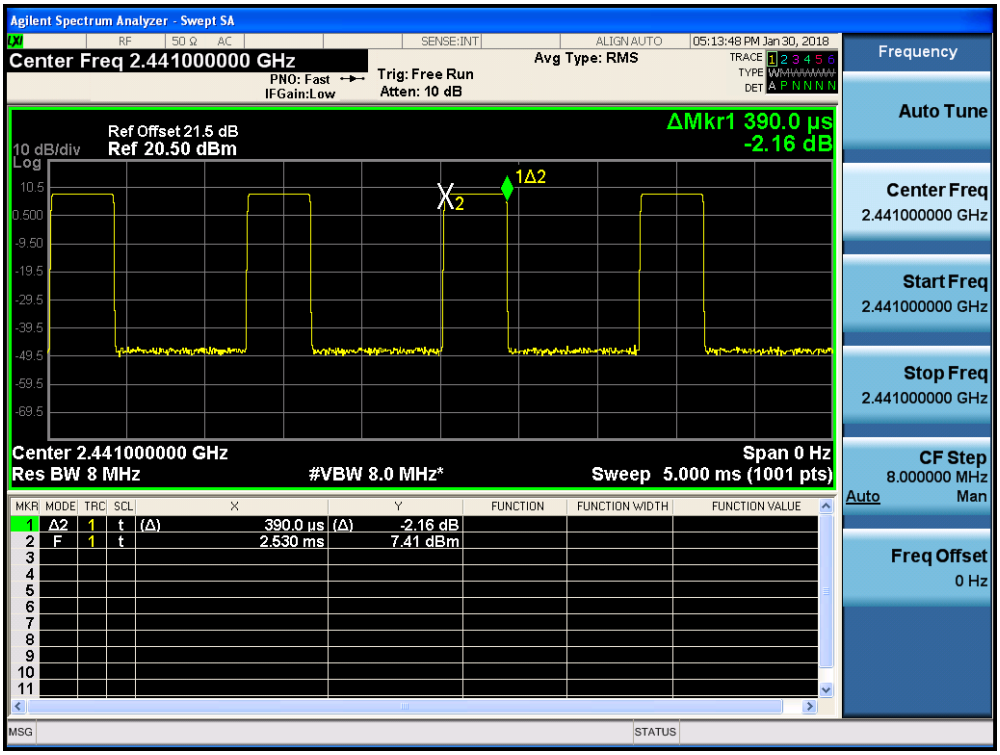
Channel No.	Frequency (MHz)	Time of Occupancy (ms)	Limit (ms)	Result
39	2441	124.8	< 400	Pass

Note1: Test Time Period: 0.4*79=31.6sec

Note2: Time of Occupancy= pulse time*(1600/(2*79))*31.6

Note3: We have evaluated different packet type, shown in the report is the worst data.

Channel 39 (2441MHz)-(DH1)



Product Name	:	BLUETOOTH EARPHONE	Power	:	AC 120V/60Hz
Test Mode	:	Mode 1(GFSK_DH3)	Test Site	:	TR-8
Test Date	:	2018.01.22	Test Engineer	:	Damon

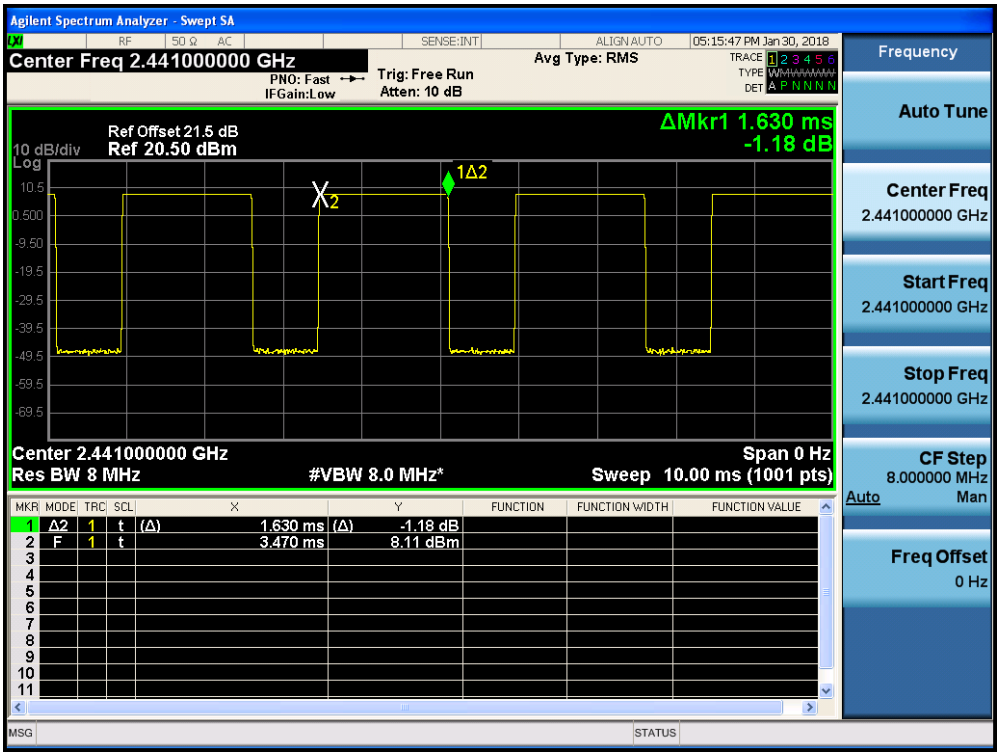
Channel No.	Frequency (MHz)	Time of Occupancy (ms)	Limit (ms)	Result
39	2441	260.8	< 400	Pass

Note1: Test Time Period: 0.4*79=31.6sec

Note2: Time of Occupancy= pulse time∗(1600/(4*79))*31.6

Note3: We have evaluated different packet type, shown in the report is the worst data.

Channel 39 (2441MHz) - (DH3)



Product Name	:	BLUETOOTH EARPHONE	Power	:	AC 120V/60Hz
Test Mode	:	Mode 1(GFSK_DH5)	Test Site	:	TR-8
Test Date	:	2018.01.22	Test Engineer	:	Damon

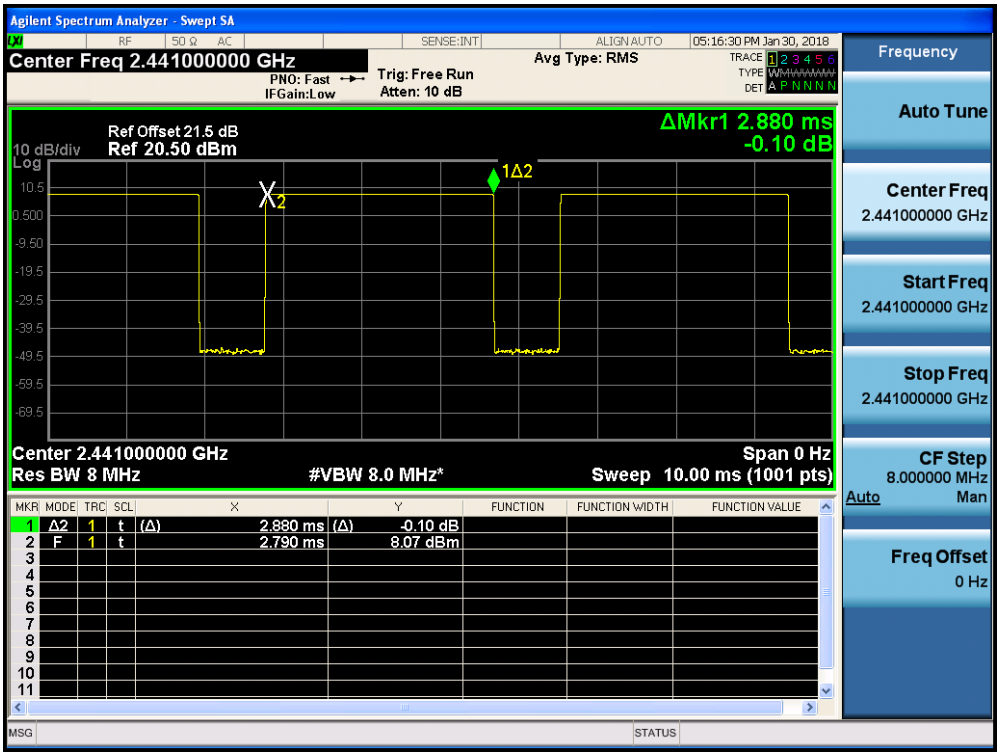
Channel No.	Frequency (MHz)	Time of Occupancy (ms)	Limit (ms)	Result
39	2441	307.2	< 400	Pass

Note1: Test Time Period: 0.4*79=31.6sec

Note2: Time of Occupancy= pulse time*(1600/(6*79))*31.6

Note3: We have evaluated different packet type, shown in the report is the worst data.

Channel 39 (2441MHz) - (DH5)



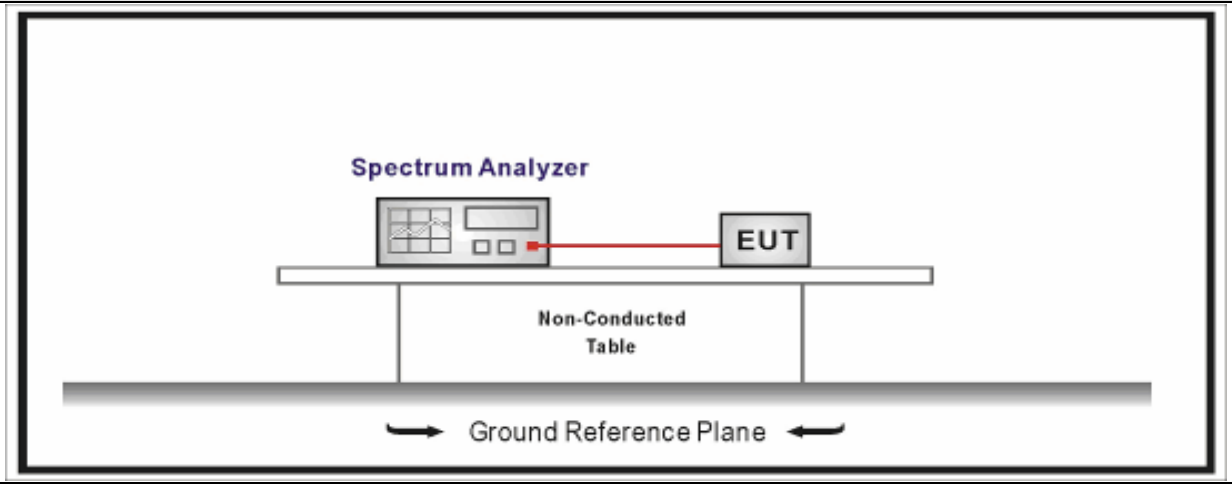
9. Peak Output Power

9.1. Test Equipment

Peak Output Power / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2017.02.04	2018.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2017.04.09	2018.04.08
MXA Signal Anlyzer	Keysight	N9020A	MY56060147	2017.04.09	2018.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2017.04.10	2018.04.09
Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

9.2. Test Setup

Peak Output Power test setup:



9.3. Limit

Peak Output Power	
☐	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.
☒	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.
☐	For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels

9.4. Test Procedure

Test Method			
	References Rule	Chapter	Description
☒	ANSI C63.10	7.8.5	Output power test procedure for frequency-hopping spread-spectrum (FHSS) devices

9.5. Uncertainty

The measurement uncertainty is defined as ± 1.0 dB

9.6. Test Result

Product Name	:	BLUETOOTH EARPHONE	Power	:	AC 120V/60Hz
Test Mode	:	Mode 1	Test Site	:	TR-8
Test Date	:	2018.01.22	Test Engineer	:	Damon

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result
00	2402	7.73	21.00	Pass
39	2441	7.85	21.00	Pass
78	2480	7.91	21.00	Pass

Product Name	:	BLUETOOTH EARPHONE	Power	:	AC 120V/60Hz
Test Mode	:	Mode 2	Test Site	:	TR-8
Test Date	:	2018.01.22	Test Engineer	:	Damon

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result
00	2402	5.56	21.00	Pass
39	2441	6.86	21.00	Pass
78	2480	7.75	21.00	Pass

Product Name	:	BLUETOOTH EARPHONE	Power	:	AC 120V/60Hz
Test Mode	:	Mode 3	Test Site	:	TR-8
Test Date	:	2018.01.22	Test Engineer	:	Damon

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result
00	2402	5.54	21.00	Pass
39	2441	6.87	21.00	Pass
78	2480	7.86	21.00	Pass

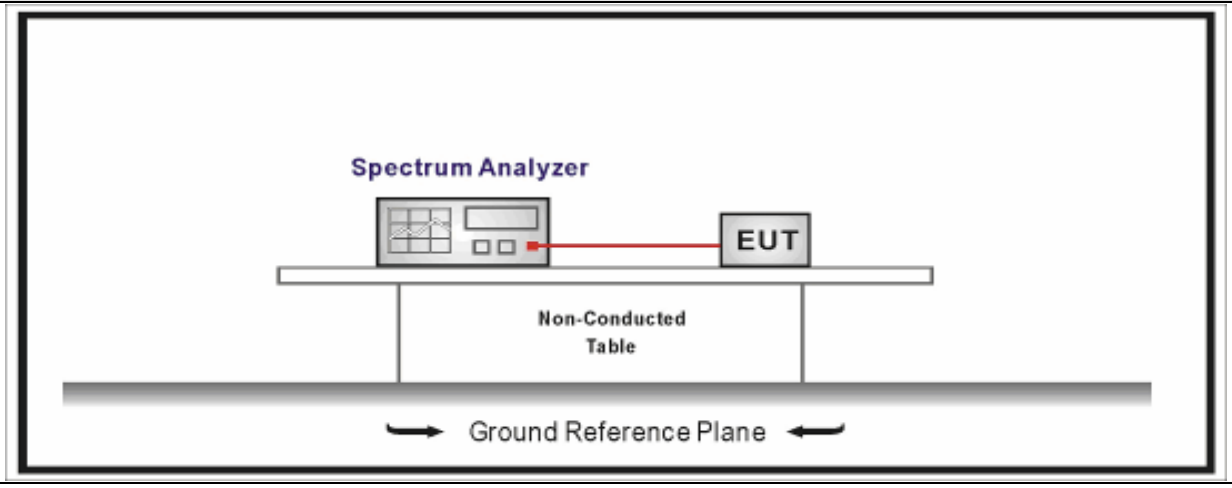
10. Emissions in non-restricted frequency bands

10.1. Test Equipment

Emissions in non-restricted frequency bands / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2017.02.04	2018.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2017.04.09	2018.04.08
MXA Signal Anlyzer	Keysight	N9020A	MY56060147	2017.04.09	2018.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2017.04.10	2018.04.09
Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

10.2. Test Setup

Emissions in non-restricted frequency bands test setup:



10.3. Limit

Un-Restricted Band Emissions Limit	
RF Output power (Detection methods)	Limit(dB)
RF Output power(Average detector)	30c(Note1)
RF Output power(PK detector)	20c(Note2)

Note 1: If maximum conducted (average) output power was used to demonstrate compliance as described in 9.2, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 30 dBc).

Note 2: If the maximum peak conducted output power procedure was used, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).

10.4. Test Procedure

Test Method			
	References Rule	Chapter	Description
☒	ANSI C63.10	7.8.6	Band-edge Compliance of RF Conducted Emissions

10.5. Uncertainty

The measurement uncertainty is defined as ± 1.0 dB

10.6. Test Result

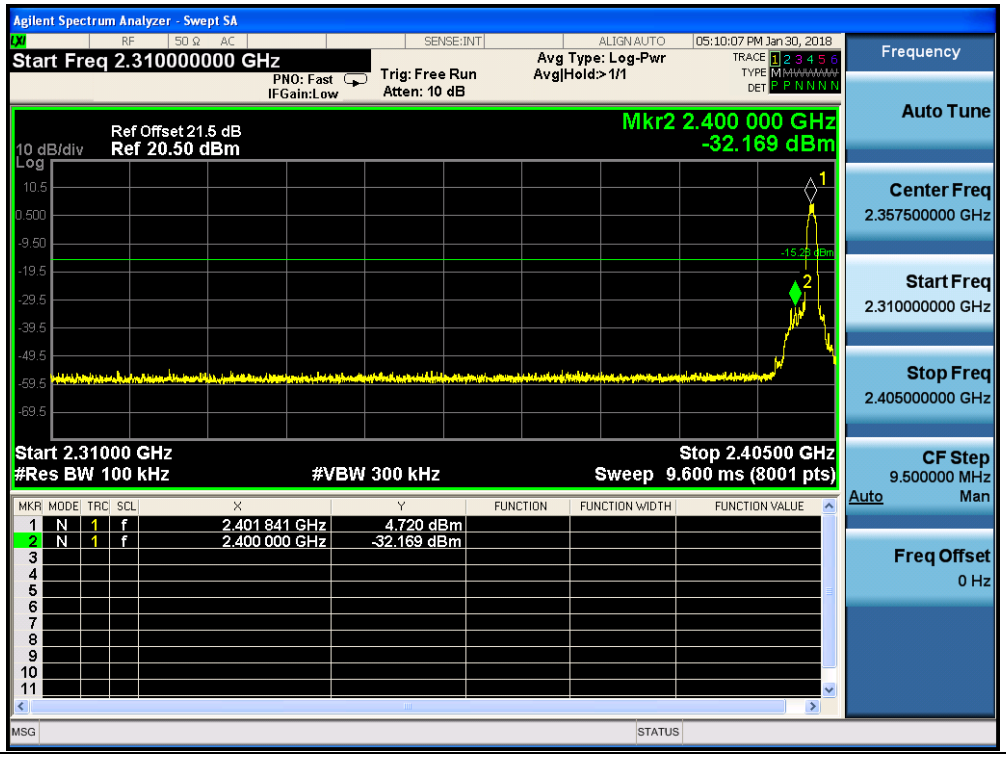
Product Name	:	BLUETOOTH EARPHONE	Power	:	AC 120V/60Hz
Test Mode	:	Mode 1~4	Test Site	:	TR-8
Test Date	:	2018.01.22	Test Engineer	:	Damon

Mode	Channel	Test Frequency (MHz)	In-Band PSD[a] (dBm/100kHz)	Frequency (MHz)	Out-Band PSD[b] (dBm/100kHz)	[a]-[b] (dB)	Limit (dB)	Result
1	00	2402	7.139	2400.00	-33.767	40.906	>20	Pass
1	78	2480	8.643	2500.00	-57.089	65.732	>20	Pass
2	00	2402	4.679	2400.00	-32.332	37.011	>20	Pass
2	78	2480	7.165	2500.00	-56.423	63.588	>20	Pass
3	00	2402	4.720	2400.00	-32.169	36.889	>20	Pass
3	78	2480	6.558	2500.00	-57.303	63.861	>20	Pass
4	00~78	00~78	6.402	2400.00	-56.321	62.723	>20	Pass

Note1: The worst case of Emissions in non-restricted frequency bands as below:

2: Mode 1-3, The In-Band PSD is the highest PSD of All channels.

Mode 3 CH00(2402MHz)



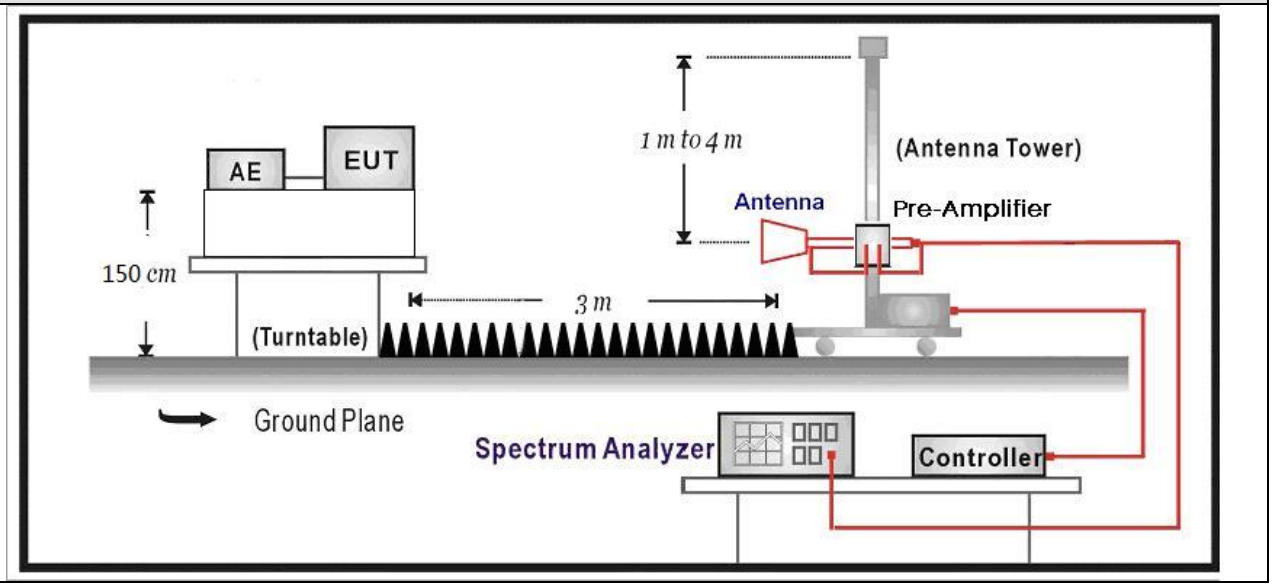
11. Radiated Emission Band Edge

11.1. Test Equipment

Radiated Emission(Above 1GHz) / AC-5					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Receiver	Agilent	N9038A	MY51210196	2017.07.16	2018.07.15
Pre-Amplifier	Miteq	NSP1800-25	1364185	2017.05.03	2018.05.02
DRG Horn Antenna	ETS-Lindgren	3117	00167055	2017.07.12	2018.07.11
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2017.09.18	2018.09.17
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2018.02.28	2019.02.27
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2018.02.28	2019.02.27
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2018.01.05	2019.01.04

11.2. Test Setup

Above 1GHz Test Setup:



11.3. Limit

Band edge Limit				
Frequency bands (MHz)	Detector	Limit (dB μ V/m)	RBW (MHz)	Distance (m)
2310-2390 2483.5-2500	PK	74	1	3
	AV	54	1	3
Note: The field strength of emissions appearing within these frequency bands shall not exceed the limits.				

11.4. Test Procedure

Test Method			
	References Rule	Chapter	Description
☒	DA 00-705	N/A	duty cycle correction factor
☒	ANSI C63.10	6.10	Band-edge testing
	☒ ANSI C63.10	6.10.5	Restricted-band band-edge measurements
	☐ ANSI C63.10	6.10.6	Marker-delta method
☐	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
☐	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
☒	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz

11.5. Uncertainty

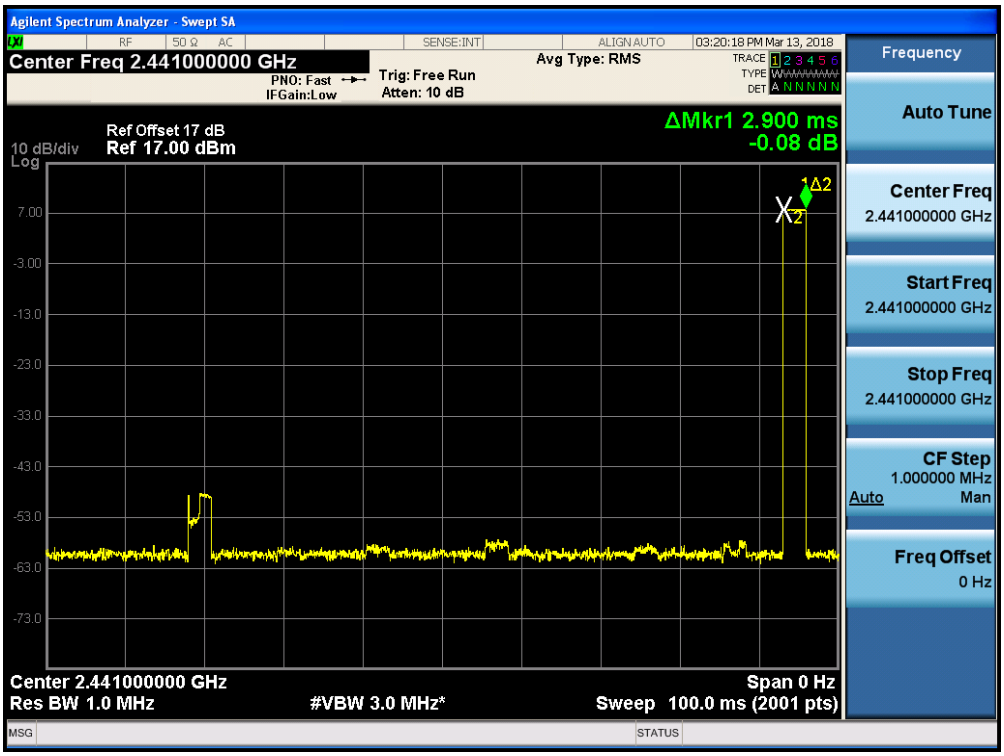
The measurement uncertainty above 1G is defined as ± 3.9 dB

below 1G is defined as ± 3.8 dB

11.6. Duty Factor

Test Mode	Pluse Time (ms)	Pluse Number	Accumulated Transmit Time (ms)	Duty Factor (dB)
Mode 4	2.9	1	2.9	-30.75

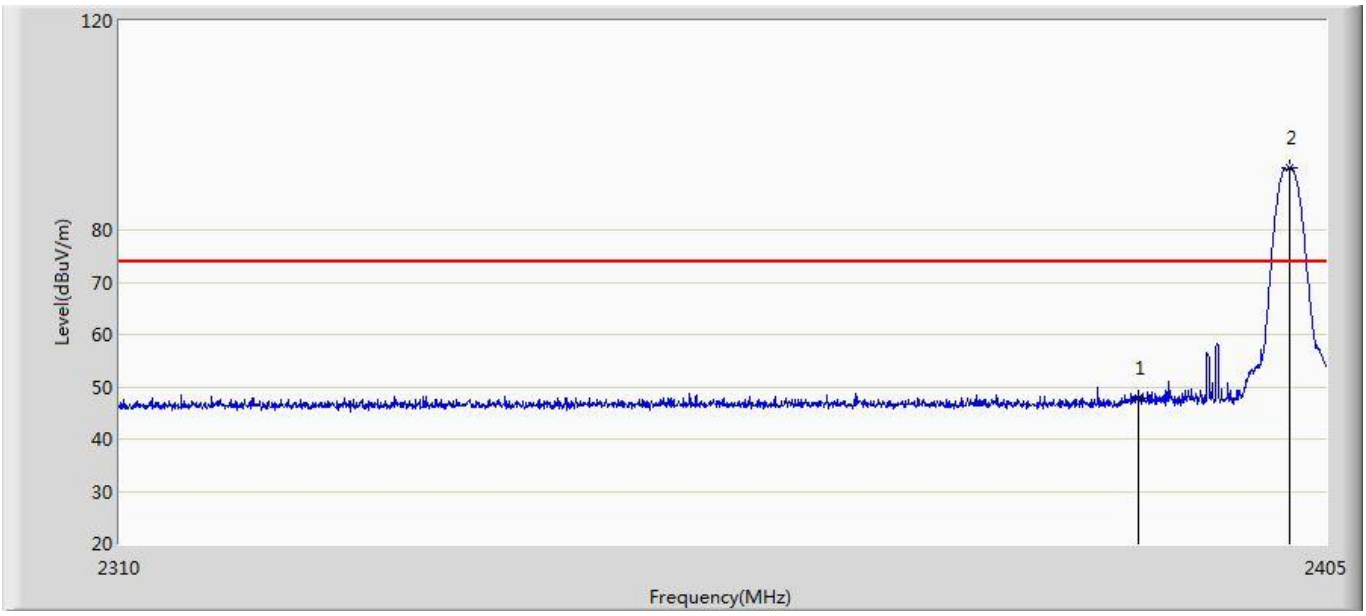
Pulse Number



Note: Duty Fcator = 20Log(Accumulated Transmit Time/ 100ms)

11.7. Test Result

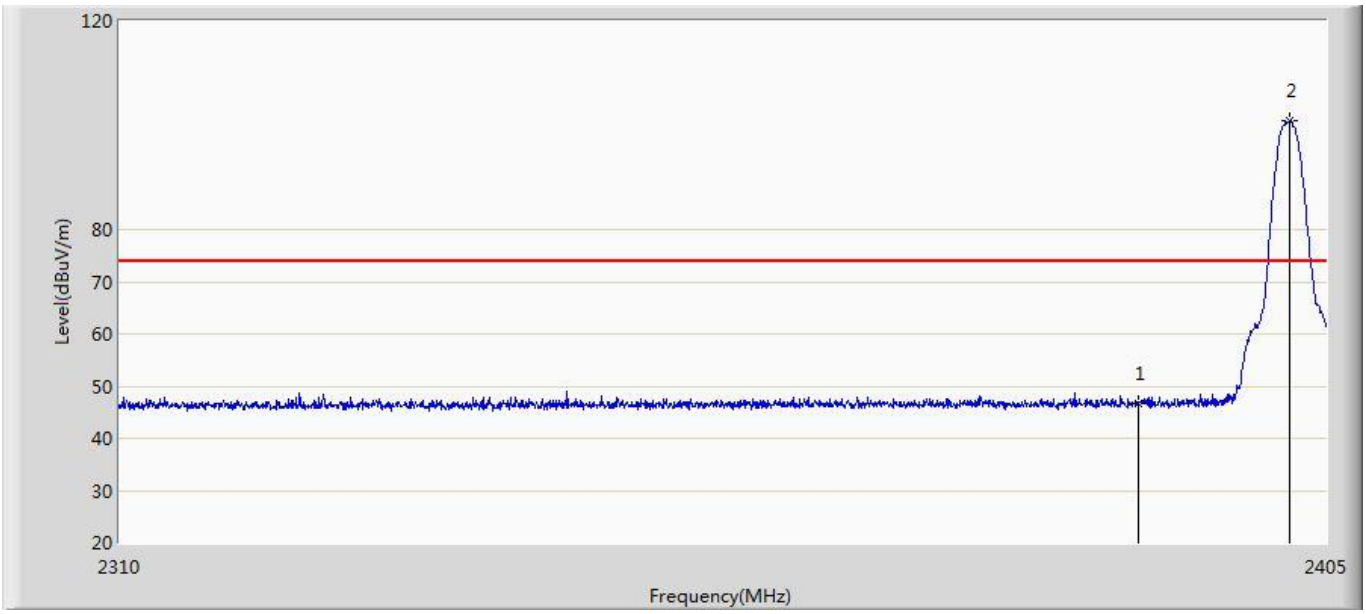
Profile: Geer	Page No.: 73
Site: AC5	Time: 2018/03/11 - 14:49
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz
Note: Mode 1:Transmit at channel 2402MHz by DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	47.925	15.757	-26.075	74.000	32.168	PK
2	*	2402.055	91.908	59.726	N/A	N/A	32.182	PK

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	47.925	17.175	-36.825	54.000	-30.750	AV
2	*	2402.055	91.908	61.158	N/A	N/A	-30.750	AV

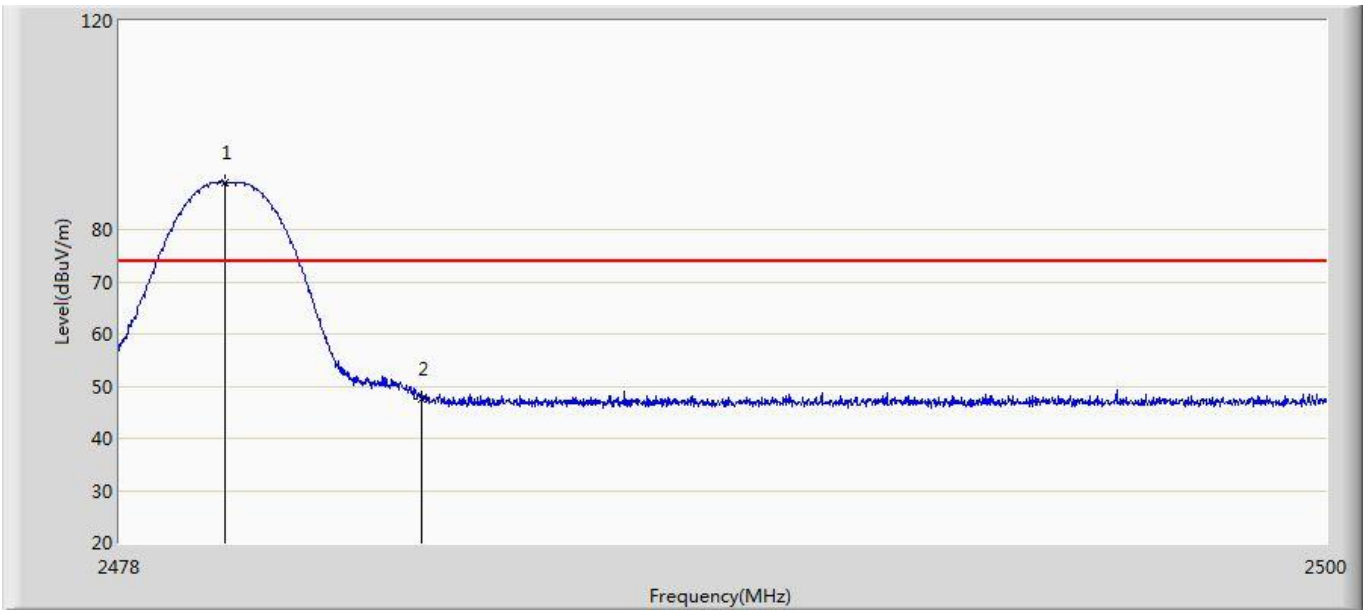
Profile: Geer	Page No.: 74
Site: AC5	Time: 2018/03/11 - 14:53
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz
Note: Mode 1:Transmit at channel 2402MHz by DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	46.571	14.403	-27.429	74.000	32.168	PK
2	*	2402.055	100.762	68.580	N/A	N/A	32.182	PK

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	46.571	15.821	-38.179	54.000	-30.750	AV
2	*	2402.055	100.762	70.012	N/A	N/A	-30.750	AV

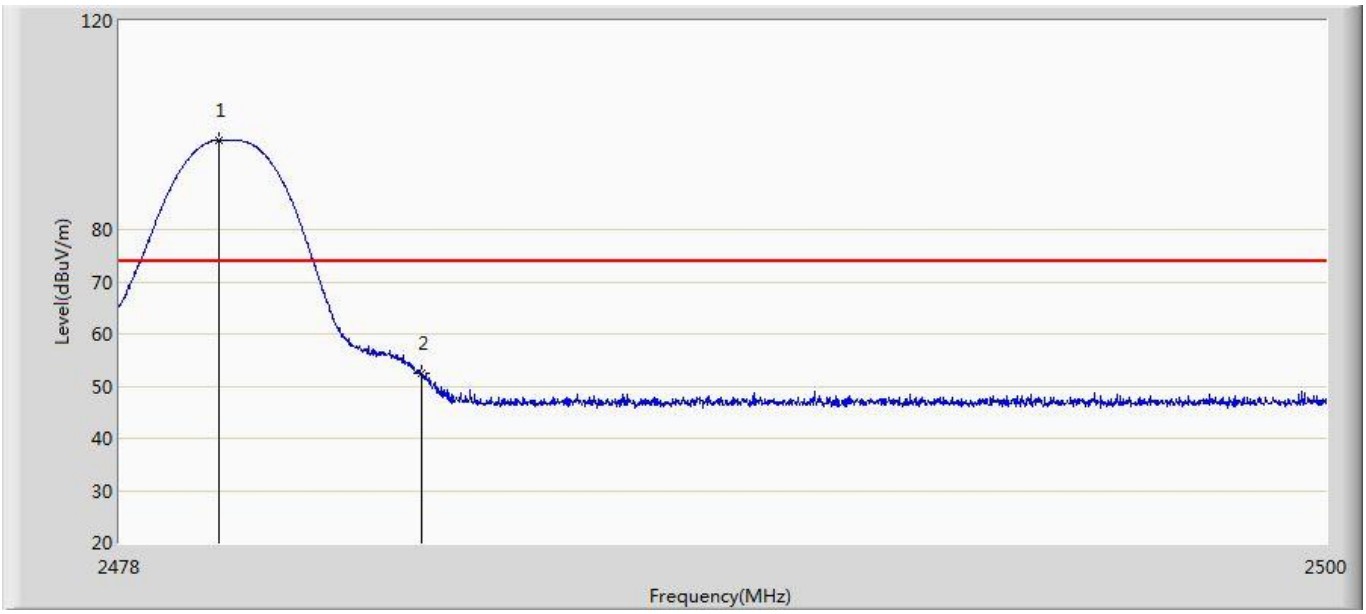
Profile: Geer	Page No.: 75
Site: AC5	Time: 2018/03/11 - 14:56
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz
Note: Mode 1:Transmit at channel 2480MHz by DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.914	89.114	56.838	N/A	N/A	32.276	PK
2		2483.500	47.603	15.323	-26.397	74.000	32.280	PK

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2479.914	89.114	58.364	N/A	N/A	-30.750	AV
2	*	2483.500	47.603	16.853	-37.147	54.000	-30.750	AV

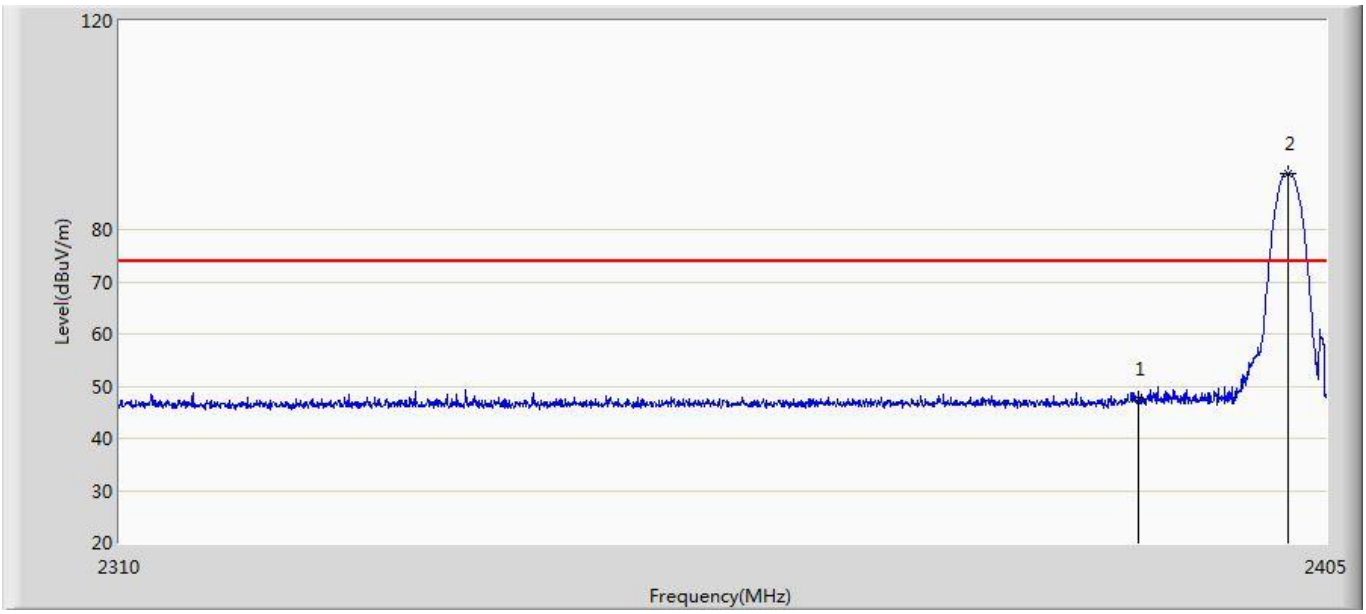
Profile: Geer	Page No.: 76
Site: AC5	Time: 2018/03/11 - 14:58
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz
Note: Mode 1:Transmit at channel 2480MHz by DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.804	97.176	64.900	N/A	N/A	32.276	PK
2		2483.500	52.560	20.280	-21.440	74.000	32.280	PK

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2479.804	97.176	66.426	N/A	N/A	-30.750	AV
2	*	2483.500	52.56	21.810	-32.190	54.000	-30.750	AV

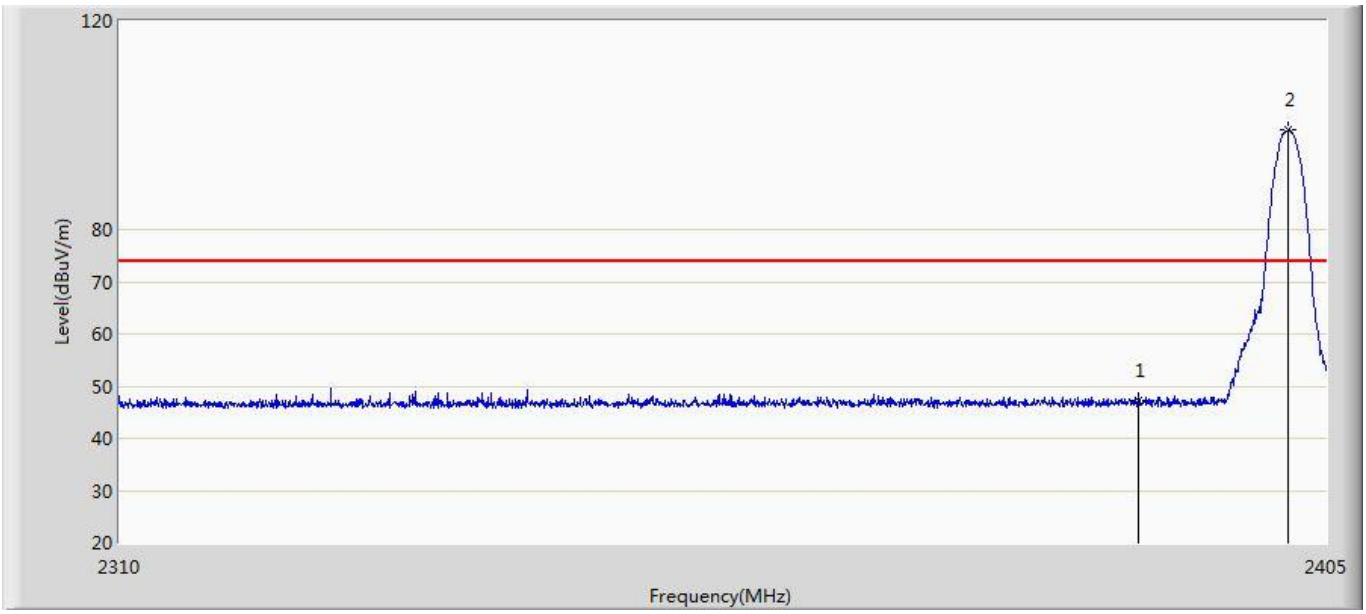
Profile: Geer	Page No.: 77
Site: AC5	Time: 2018/03/11 - 15:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz
Note: Mode 2:Transmit at channel 2402MHz by 2DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	47.645	15.477	-26.355	74.000	32.168	PK
2	*	2401.913	90.805	58.623	N/A	N/A	32.182	PK

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	47.645	16.895	-37.105	54.000	-30.750	AV
2	*	2401.913	90.805	60.055	N/A	N/A	-30.750	AV

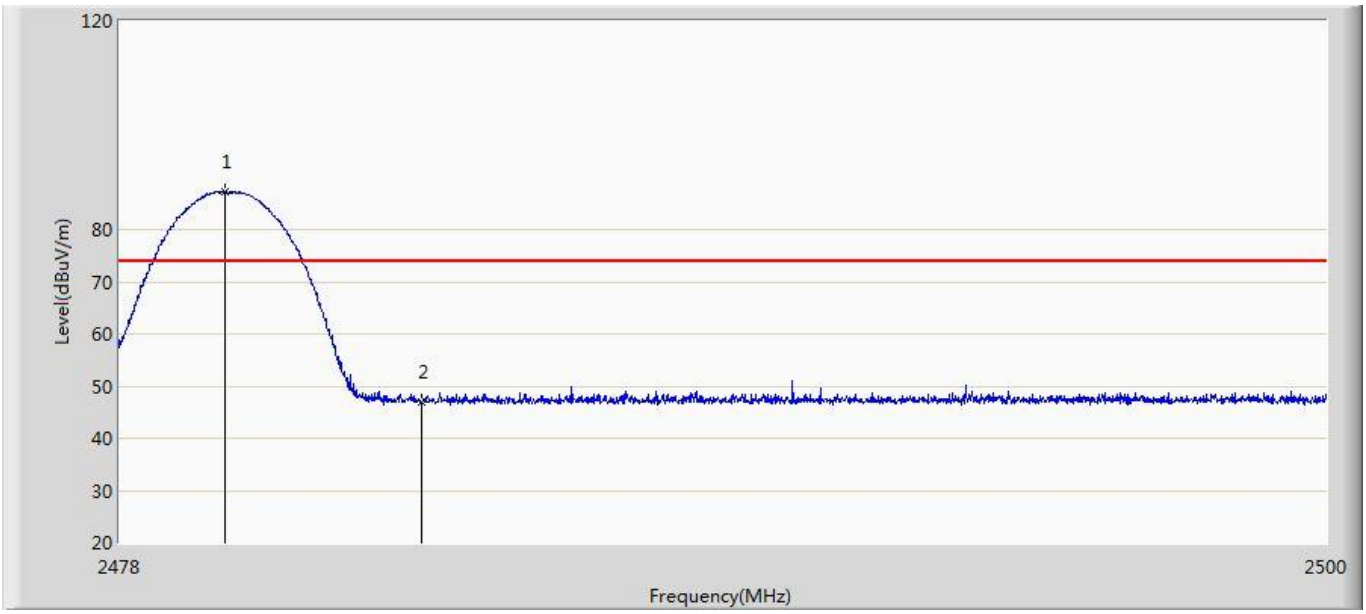
Profile: Geer	Page No.: 78
Site: AC5	Time: 2018/03/11 - 15:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz
Note: Mode 2:Transmit at channel 2402MHz by 2DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	47.268	15.100	-26.732	74.000	32.168	PK
2	*	2401.960	99.041	66.859	N/A	N/A	32.182	PK

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	47.268	16.518	-37.482	54.000	-30.750	AV
2	*	2401.960	99.041	68.291	N/A	N/A	-30.750	AV

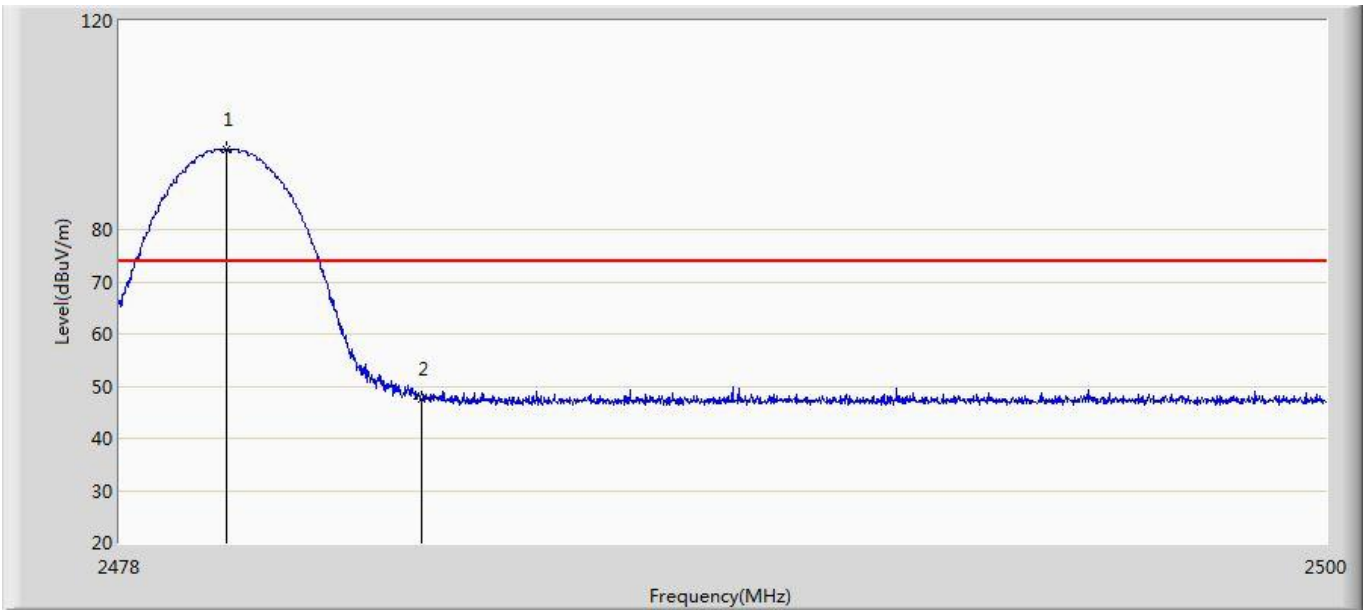
Profile: Geer	Page No.: 79
Site: AC5	Time: 2018/03/11 - 15:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz
Note: Mode 2:Transmit at channel 2480MHz by 2DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.925	87.265	54.989	N/A	N/A	32.276	PK
2		2483.500	46.845	14.565	-27.155	74.000	32.280	PK

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.925	87.265	56.515	N/A	N/A	-30.750	AV
2		2483.500	46.845	16.095	-37.905	54.000	-30.750	AV

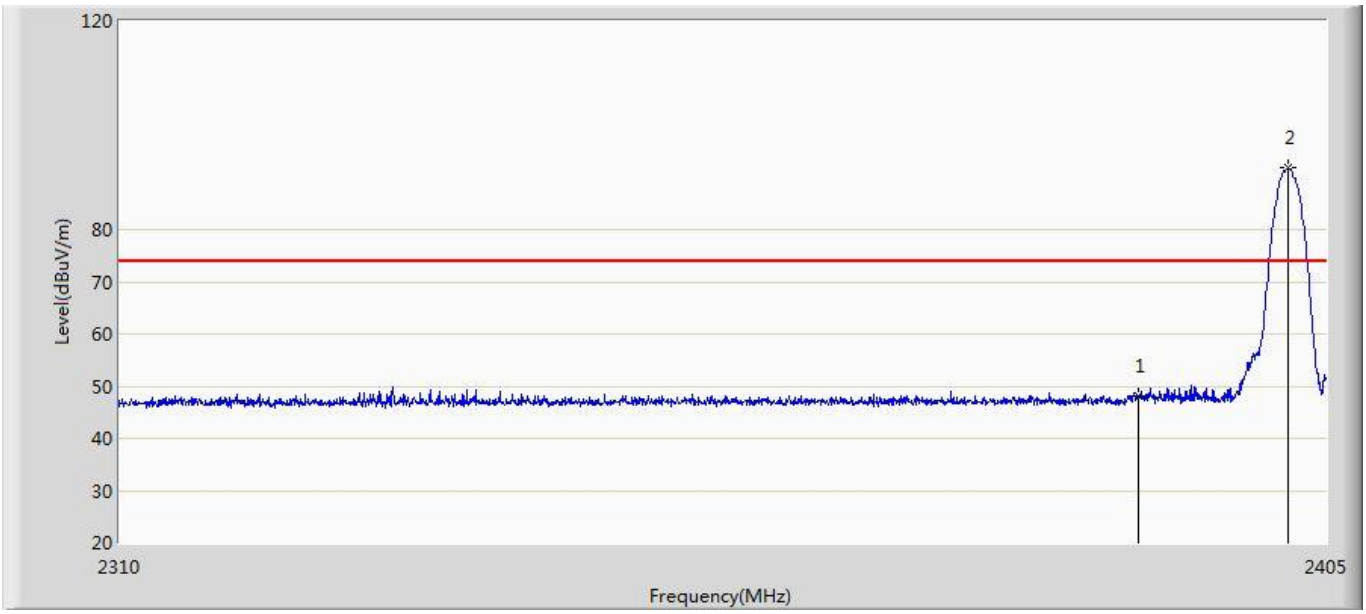
Profile: Geer	Page No.: 80
Site: AC5	Time: 2018/03/11 - 15:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz
Note: Mode 2:Transmit at channel 2480MHz by 2DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.958	95.379	63.103	N/A	N/A	32.276	PK
2		2483.500	47.579	15.299	-26.421	74.000	32.280	PK

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.958	95.379	64.629	N/A	N/A	-30.750	AV
2		2483.500	47.579	16.829	-37.171	54.000	-30.750	AV

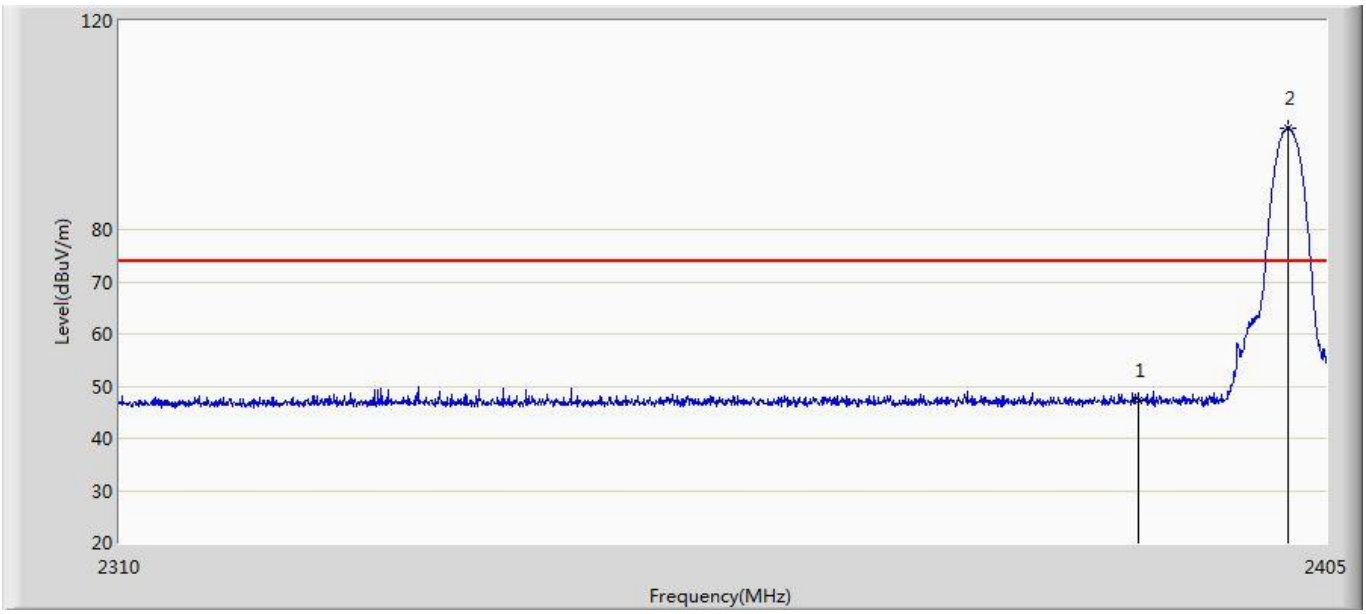
Profile: Geer	Page No.: 81
Site: AC5	Time: 2018/03/11 - 15:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz
Note: Mode 3:Transmit at channel 2402MHz by 3DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	47.987	15.819	-26.013	74.000	32.168	PK
2	*	2402.008	91.906	59.724	N/A	N/A	32.182	PK

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	47.987	17.237	-36.763	54.000	-30.750	AV
2	*	2402.008	91.906	61.156	N/A	N/A	-30.750	AV

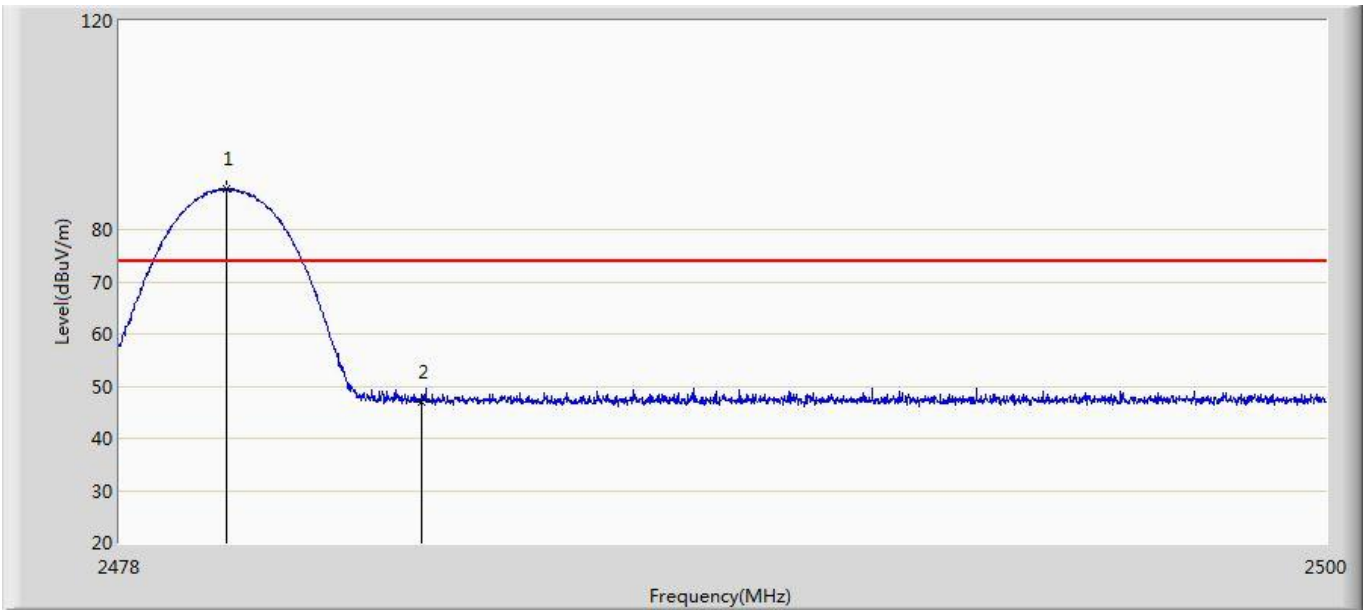
Profile: Geer	Page No.: 82
Site: AC5	Time: 2018/03/11 - 15:49
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz
Note: Mode 3:Transmit at channel 2402MHz by 3DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	47.239	15.071	-26.761	74.000	32.168	PK
2	*	2401.960	99.455	67.273	N/A	N/A	32.182	PK

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	47.239	16.489	-37.511	54.000	-30.750	AV
2	*	2401.96	99.455	68.705	N/A	N/A	-30.750	AV

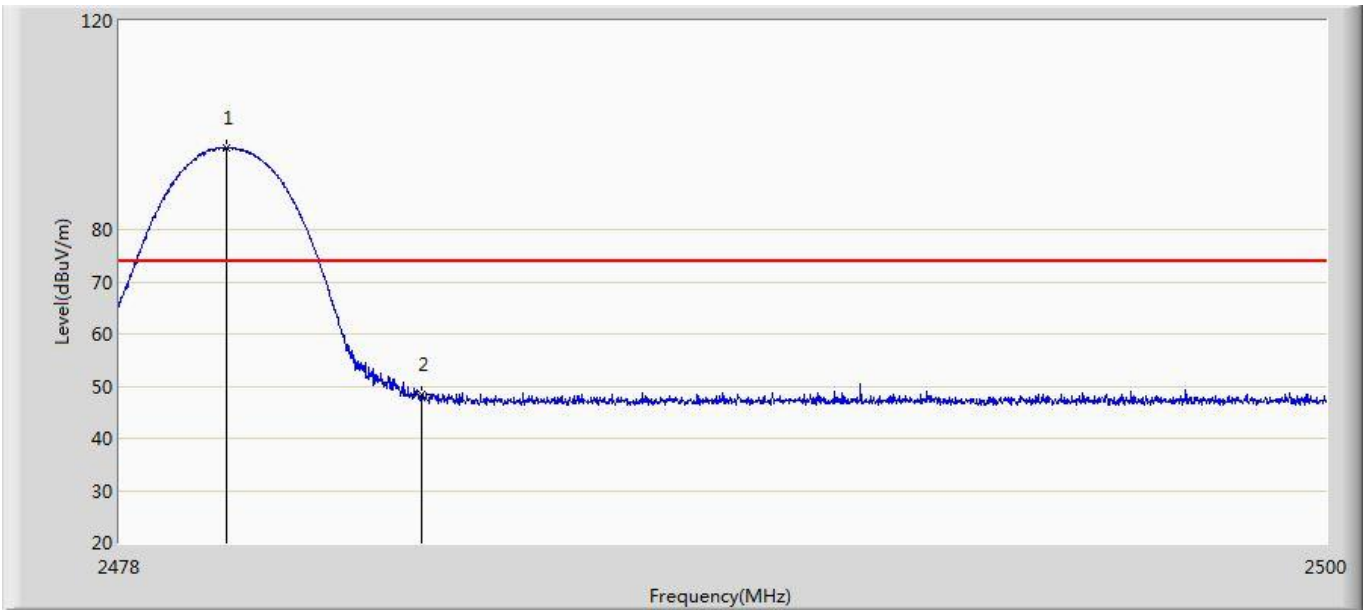
Profile: Geer	Page No.: 83
Site: AC5	Time: 2018/03/11 - 15:53
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz
Note: Mode 3:Transmit at channel 2480MHz by 3DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.947	87.745	55.469	N/A	N/A	32.276	PK
2		2483.500	47.023	14.743	-26.977	74.000	32.280	PK

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.947	87.745	56.995	N/A	N/A	-30.750	AV
2		2483.500	47.023	16.273	-37.727	54.000	-30.750	AV

Profile: Geer	Page No.: 84
Site: AC5	Time: 2018/03/11 - 15:53
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: BLUETOOTH EARPHONE	Power: AC 120V/60Hz
Note: Mode 3:Transmit at channel 2480MHz by 3DH5	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.947	95.725	63.449	N/A	N/A	32.276	PK
2		2483.500	48.359	16.079	-25.641	74.000	32.280	PK

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	AV Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.947	95.725	64.975	N/A	N/A	-30.750	AV
2		2483.500	48.359	17.609	-36.391	54.000	-30.750	AV

Antenna Requirement

12.1. Limit

Antenna Requirement Limit
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

12.2. Antenna Connector Construction

Antenna Connector Construction	
☐	The use of a permanently attached antenna
☐	The antenna use of a unique coupling to the intentional radiator
☒	The use of a nonstandard antenna jack or electrical connector
Please refer to the attached document “Internal Photograph” to show the antenna connector.	

The End