

FCC Test Report

Product Name	Bluetooth Headset
Model No.	HSC120W

Applicant	GN Audio A/S
Address	Lautrupbjerg 7, 2750 Ballerup, Denmark

Date of Receipt	Dec. 03, 2019
Issued Date	Dec. 24, 2019
Report No.	19C0025R-RFUSP01V00-B
Report Version	V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

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Test Report

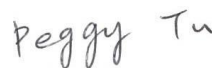
Issued Date: Dec. 24, 2019

Report No.: 19C0025R-RFUSP01V00-B



Product Name	Bluetooth Headset
Applicant	GN Audio A/S
Address	Lautrupbjerg 7, 2750 Ballerup, Denmark
Manufacturer	GN Audio A/S
Model No.	HSC120W
EUT Rated Voltage	DC 3.7V (By battery) or DC 5V (By USB)
EUT Test Voltage	DC 3.7V (By battery)
Trade Name	Jabra
Applicable Standard	FCC CFR Title 47 Part 15 Subpart B ANSI C63.4: 2014, ANSI C63.10: 2013
Test Result	Complied

Documented By :



(Adm. Assistant / Peggy Tu)

Tested By :



(Engineer / Yunche Chen)

Approved By :



(Director / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Bluetooth Headset
Trade Name	Jabra
Model No.	HSC120W
Frequency Range	BT: 2402 – 2480MHz
Number of Channels	Bluetooth: V2.1+EDR: 79CH, V5.0: 40CH
Type of Modulation	Bluetooth: V2.1+EDR: GFSK(1Mbps) / π /4DQPSK(2Mbps) / 8DPSK(3Mbps), V5.0:GFSK (1Mbps/2Mbps)
Antenna Type	PCB antenna
Channel Control	Auto
Antenna Gain	Refer to the table “Antenna List”
USB Cable	Brand: Jabra, Non-shielded, 1.2m
Audio Cable	Brand: Jabra, Non-shielded, 1.2m
Audio Adapter	Brand: Jabra

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	Jabra	HSC120W	PCB antenna	5.23dBi for 2.4GHz

Note: The antenna of EUT is conform to FCC 15.203.

Frequency of Each Channel (Bluetooth: For V2.1+EDR):

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

Frequency of Each Channel: (Bluetooth: For V5.0)

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 00:	2402 MHz	Channel 01:	2404 MHz	Channel 02:	2406 MHz	Channel 03:	2408 MHz
Channel 04:	2410 MHz	Channel 05:	2412 MHz	Channel 06:	2414 MHz	Channel 07:	2416 MHz
Channel 08:	2418 MHz	Channel 09:	2420 MHz	Channel 10:	2422 MHz	Channel 11:	2424 MHz
Channel 12:	2426 MHz	Channel 13:	2428 MHz	Channel 14:	2430 MHz	Channel 15:	2432 MHz
Channel 16:	2434 MHz	Channel 17:	2436 MHz	Channel 18:	2438 MHz	Channel 19:	2440 MHz
Channel 20:	2442 MHz	Channel 21:	2444 MHz	Channel 22:	2446 MHz	Channel 23:	2448 MHz
Channel 24:	2450 MHz	Channel 25:	2452 MHz	Channel 26:	2454 MHz	Channel 27:	2456 MHz
Channel 28:	2458 MHz	Channel 29:	2460 MHz	Channel 30:	2462 MHz	Channel 31:	2464 MHz
Channel 32:	2466 MHz	Channel 33:	2468 MHz	Channel 34:	2470 MHz	Channel 35:	2472 MHz
Channel 36:	2474 MHz	Channel 37:	2476 MHz	Channel 38:	2478 MHz	Channel 39:	2480 MHz

Note:

1. The EUT is a Bluetooth Headset with a built-in Bluetooth V5.0,V2.1+EDR transceiver.
2. Regarding to the operation frequency band, the lowest, middle, and highest frequency are selected to perform the test.
3. This device is a composite device in accordance with Part 15 regulations. The function for the 2.4GHz transmitting was measured and made a test report that the report number is 19C0025R-RFUSP01V00 、19C0025R-RFUSP01V00-A, certified under FCC ID: BCE-HSC120W.
4. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

Test Mode	Mode 1: Receive - Bluetooth-3Mbps Mode 2: Receive - BLE
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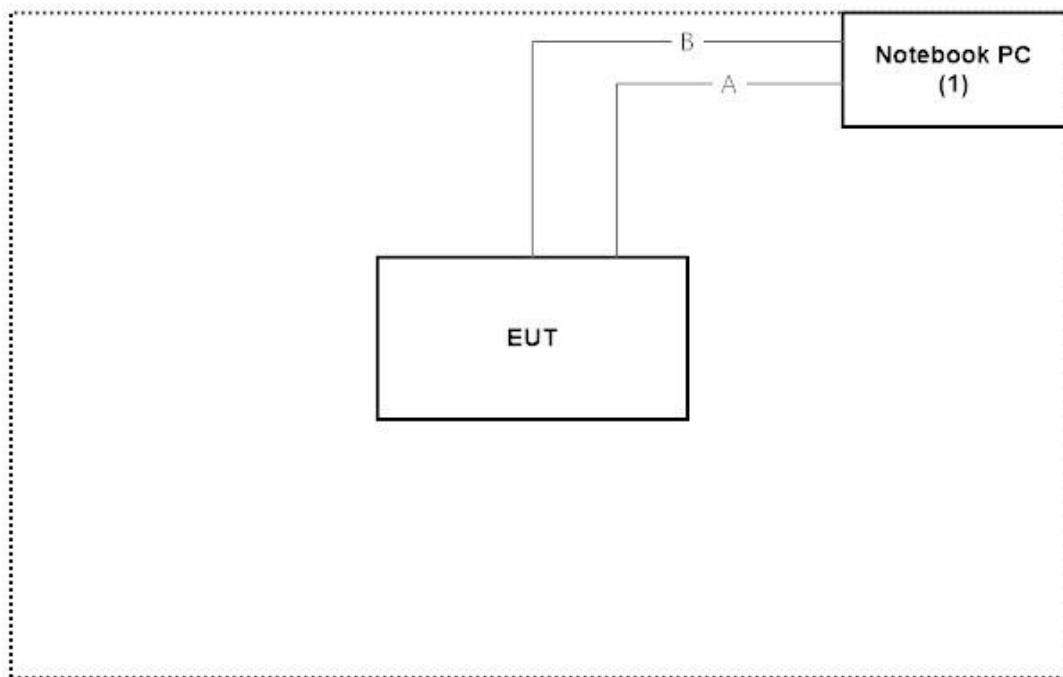
1.2. Test System Details

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 PC	DELL	Latitude 5580	GDZN7H2	Non-Shielded, 0.8m

Signal Cable Type		Signal cable Description
A	USB Cable	Non-shielded, 1.2m
B	Audio Cable	Non-shielded, 1.2m

1.3. Configuration of Tested System



1.4. EUT Exercise Software

1. Setup the EUT as shown in Section 1.3.
2. Execute software "Blue test3, Ver.3.2.0" on the EUT.
3. Configure the test mode, the test channel, and the data rate.
4. Press "OK" to start the continuous Transmit.
5. Verify that the EUT works properly.

1.5. Test Facility

Ambient conditions in the laboratory:

Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	10~40 °C	21.8 °C
	Humidity (%RH)	10~90 %	52 %
Radiated Emission	Temperature (°C)	10~40 °C	24 °C
	Humidity (%RH)	10~90 %	61 %

USA : FCC Registration Number: TW3023

Canada : IC Registration Number: 4075A

Site Description: Accredited by TAF
Accredited Number: 3023

Test Laboratory: DEKRA Testing and Certification Co., Ltd
Address: No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451,
Taiwan, R.O.C.
Phone number: 886-2-8601-3788
Fax number: 886-2-8601-3789
Email address: info.tw@dekra.com
Website: <http://www.dekra.com.tw>

1.6. List of Test Equipment

For Conducted measurements /CB3/SR8

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Date	Due. Date
	Temperature Chamber	WIT GROUP	TH-1S-B	EQ-201-00146	2019/02/26	2020/02/25
X	Spectrum Analyzer	Agilent	N9010A	MY53470892	2019/09/25	2020/09/24
X	Peak Power Analyzer	Keysight	8990B	MY51000410	2019/07/30	2020/07/29
X	Wideband Power Sensor	Keysight	N1923A	MY56080003	2019/07/30	2020/07/29
X	Wideband Power Sensor	Keysight	N1923A	MY56080004	2019/07/30	2020/07/29
X	EMI Test Receiver	R&S	ESCS 30	100369	2019/11/19	2020/11/18
X	LISN	R&S	ENV216	101105	2019/04/10	2020/04/09
X	LISN	R&S	ESH3-Z5	836679/014	2019/04/10	2020/04/09
X	Coaxial Cable	DEKRA	RG 400	LC018-RG	2019/06/20	2020/06/19

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with “X” are used to measure the final test results.
3. Test Software version : DEKRA Conduction Test SystemV9.0.5.

For Radiated measurements /Site3/CB8

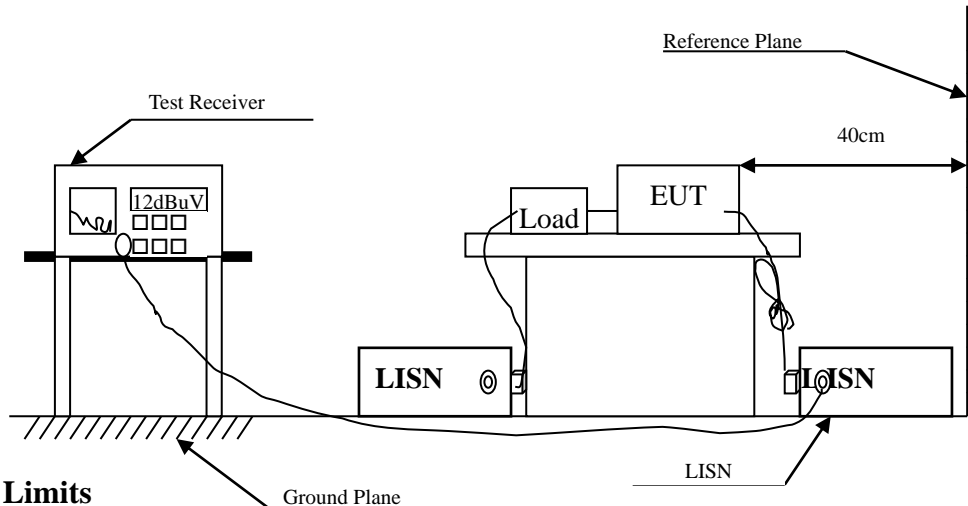
	Equipment	Manufacturer	Model No.	Serial No.	Cali. Date	Due. Date
X	Spectrum Analyzer	R&S	FSP40	100170	2019/03/11	2020/03/10
X	Loop Antenna	Teseq	HLA6121	37133	2019/10/15	2021/10/14
X	Bilog Antenna	Schaffner Chase	CBL6112B	2794	2019/06/23	2020/06/22
X	Coaxial Cable	DEKRA	L1907-001C	280280.F141.1 000D	2019/07/10	2020/07/09
X	Amplifier	EMCI	EMC001330	980254	2019/08/22	2020/08/21
X	Horn Antenna	ETS-LINDGREN	3117	00228113	2019/05/02	2020/05/01
X	Coaxial Cable	DEKRA	L1907-002C	280280.F141.1 000D	2019/07/10	2020/07/09
X	Amplifier	EMCI	EMC05820SE	980362	2019/06/26	2020/06/25
	Amplifier	EMCI	EMC051845SE	SN980632	2019/08/08	2020/08/07
	Horn Antenna	Com-Power	AH-1840	101101	2019/10/31	2020/10/30
	Amplifier + Cable	EMCI	EMC184045SE	980369	2019/04/16	2020/04/15
	Bilog Antenna	Schaffner Chase	CBL6112B	2916	2019/06/23	2020/06/22
	Coaxial Cable	DEKRA	L1907-003C	00100A1B3A 120M	2019/07/10	2020/07/09
	Amplifier	EMCI	EMC001330	980255	2019/06/28	2020/06/27
X	Filter	MICRO-TRONICS	BRM50702	G270	2019/08/08	2020/08/07
	Filter	MICRO-TRONICS	BRM50716	G196	2019/08/08	2020/08/07

Note:

1. Loop Antenna is calibrated every two years, the other equipments are calibrated every one year.
2. The test instruments marked with "X" are used to measure the final test results.
3. Test Software version : DEKRA Test SystemV1.1.

2. Conducted Emission

2.1. Test Setup



2.2. Limits

FCC Part 15 Subpart B Paragraph 15.107 (dBuV) Limit		
Frequency MHz	Limits	
	QP	AV
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the band edges.

2.3. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.

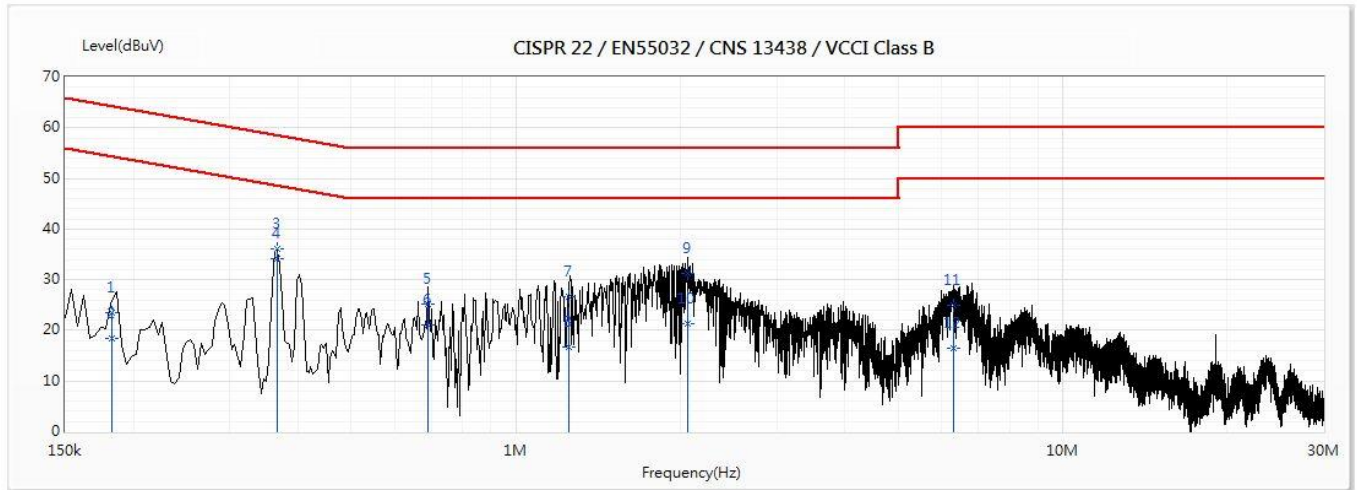
Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.4. Uncertainty

± 2.26 dB

2.5. Test Result of Conducted Emission

Product : Bluetooth Headset
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Date : 2019/12/19
 Test Mode : Mode 1: Receive - Bluetooth-3Mbps (2441MHz)

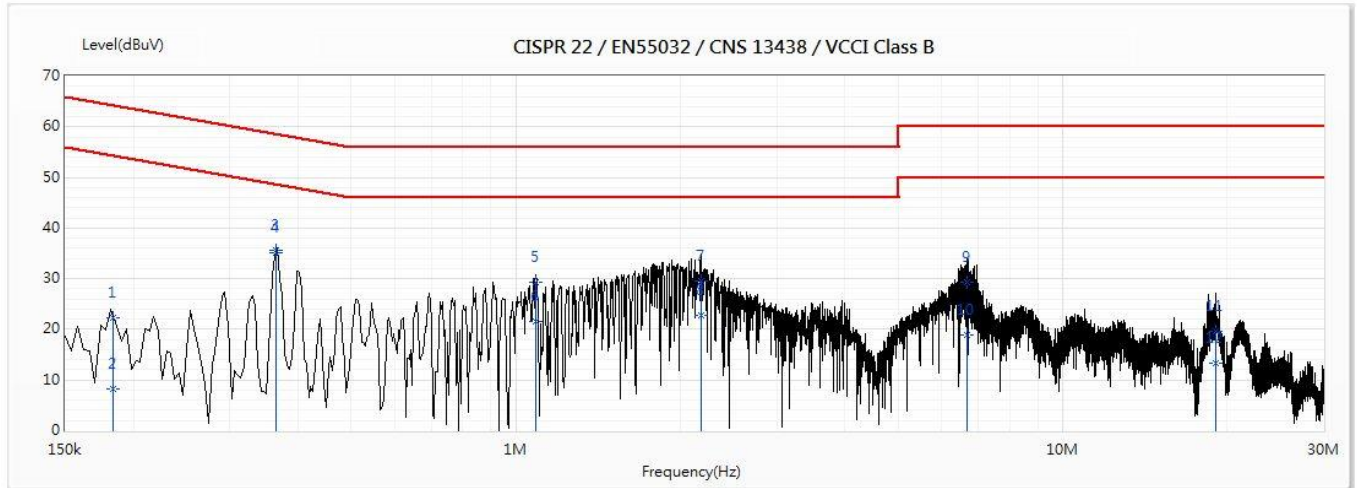


No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.183	23.58	64.36	-40.78	13.89	9.69	QP
2	0.183	18.47	54.36	-35.88	8.78	9.69	AV
3	0.367	36.15	58.57	-22.42	26.45	9.70	QP
*4	0.367	34.20	48.57	-14.36	24.51	9.70	AV
5	0.692	25.17	56.00	-30.83	15.46	9.71	QP
6	0.692	20.97	46.00	-25.03	11.25	9.71	AV
7	1.252	26.68	56.00	-29.32	16.94	9.74	QP
8	1.252	16.76	46.00	-29.24	7.02	9.74	AV
9	2.06	31.26	56.00	-24.74	21.48	9.78	QP
10	2.06	21.22	46.00	-24.78	11.44	9.78	AV
11	6.323	24.86	60.00	-35.14	14.94	9.92	QP
12	6.323	16.57	50.00	-33.43	6.66	9.92	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.

Product : Bluetooth Headset
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Date : 2019/12/19
 Test Mode : Mode 1: Receive - Bluetooth-3Mbps (2441MHz)

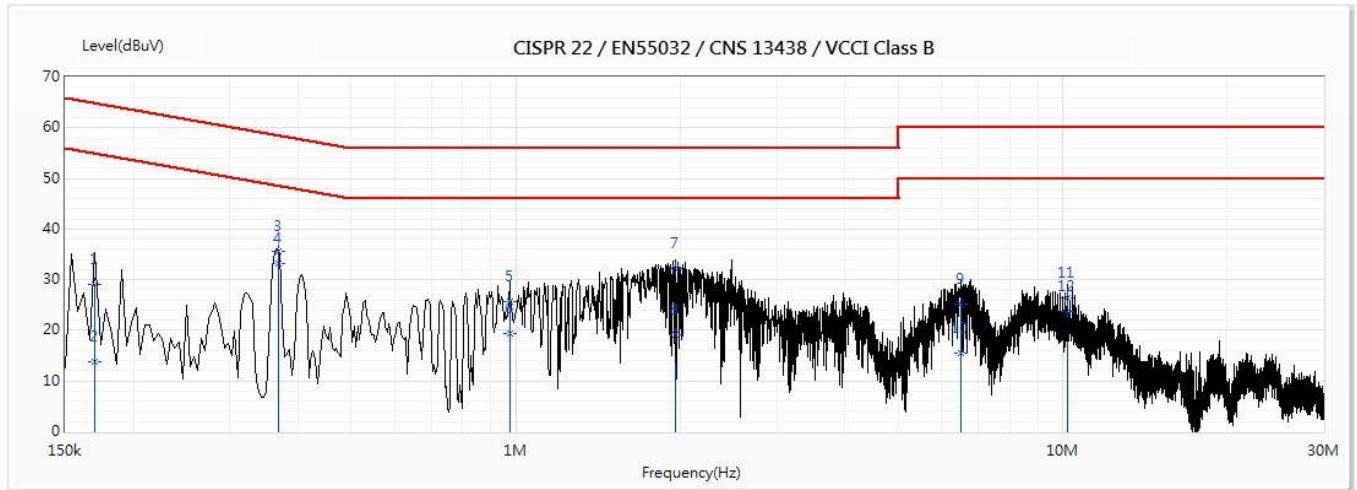


No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.183	22.40	64.35	-41.94	12.68	9.72	QP
2	0.183	8.29	54.35	-46.06	-1.44	9.72	AV
3	0.365	35.68	58.62	-22.94	25.96	9.73	QP
*4	0.365	35.07	48.62	-13.55	25.35	9.73	AV
5	1.086	29.24	56.00	-26.76	19.46	9.77	QP
6	1.086	21.61	46.00	-24.39	11.84	9.77	AV
7	2.187	29.49	56.00	-26.51	19.66	9.82	QP
8	2.187	22.69	46.00	-23.31	12.86	9.82	AV
9	6.688	29.32	60.00	-30.68	19.34	9.98	QP
10	6.688	18.80	50.00	-31.20	8.83	9.98	AV
11	19.024	19.50	60.00	-40.50	9.17	10.34	QP
12	19.024	13.38	50.00	-36.62	3.05	10.34	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.

Product : Bluetooth Headset
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Date : 2019/12/19
 Test Mode : Mode 2: Receive - BLE-2Mbps (2440MHz)

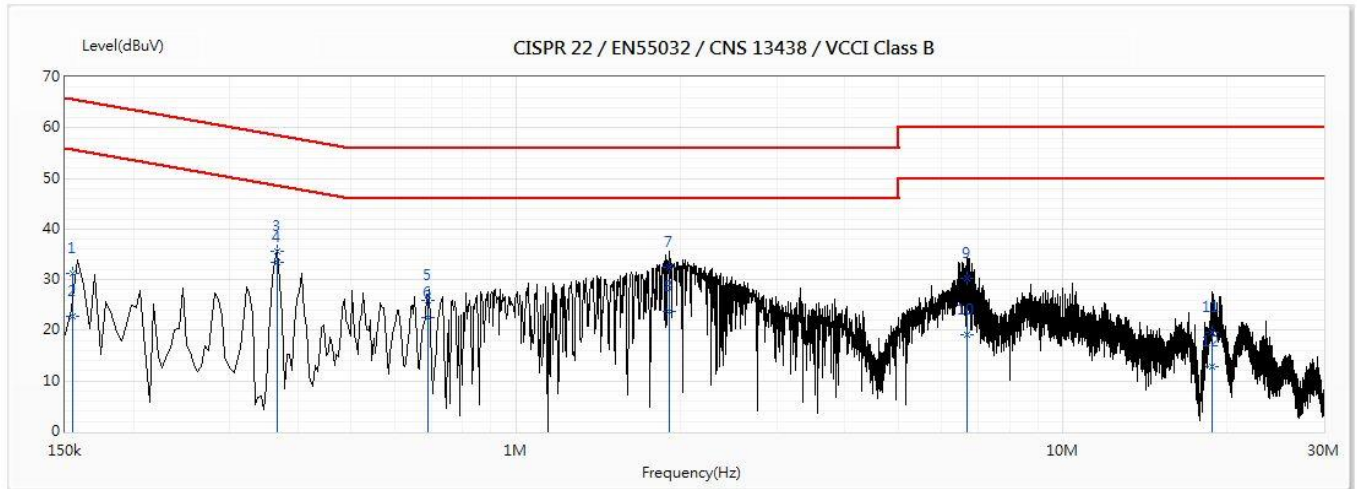


No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.169	29.10	64.99	-35.88	19.41	9.69	QP
2	0.169	13.75	54.99	-41.23	4.06	9.69	AV
3	0.368	35.70	58.55	-22.85	26.01	9.70	QP
*4	0.368	33.17	48.55	-15.38	23.47	9.70	AV
5	0.977	25.71	56.00	-30.29	15.98	9.73	QP
6	0.977	19.44	46.00	-26.56	9.71	9.73	AV
7	1.963	32.13	56.00	-23.87	22.35	9.78	QP
8	1.963	19.23	46.00	-26.77	9.46	9.78	AV
9	6.518	25.25	60.00	-34.75	15.33	9.92	QP
10	6.518	15.47	50.00	-34.53	5.55	9.92	AV
11	10.209	26.45	60.00	-33.55	16.43	10.02	QP
12	10.209	23.63	50.00	-26.37	13.61	10.02	AV

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.

Product : Bluetooth Headset
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Date : 2019/12/19
 Test Mode : Mode 2: Receive - BLE-2Mbps (2440MHz) _



No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.155	31.21	65.73	-34.53	21.48	9.73	QP
2	0.155	22.86	55.73	-32.88	13.13	9.73	AV
3	0.366	35.58	58.58	-23.00	25.86	9.73	QP
*4	0.366	33.49	48.58	-15.09	23.76	9.73	AV
5	0.689	25.92	56.00	-30.08	16.18	9.74	QP
6	0.689	22.62	46.00	-23.38	12.88	9.74	AV
7	1.91	32.57	56.00	-23.43	22.75	9.82	QP
8	1.91	23.72	46.00	-22.28	13.90	9.82	AV
9	6.688	30.27	60.00	-29.73	20.29	9.98	QP
10	6.688	19.02	50.00	-30.98	9.04	9.98	AV
11	18.761	19.57	60.00	-40.43	9.24	10.32	QP
12	18.761	12.90	50.00	-37.10	2.57	10.32	AV

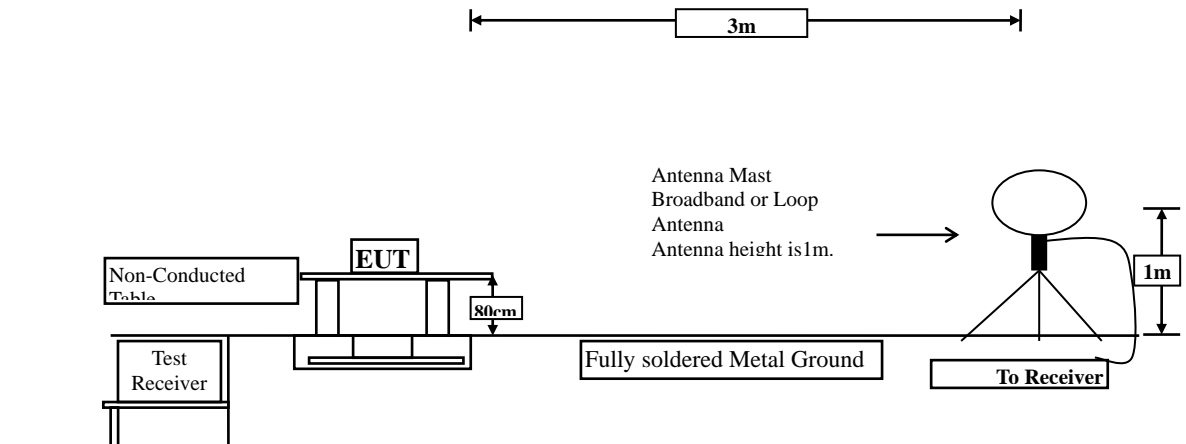
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.

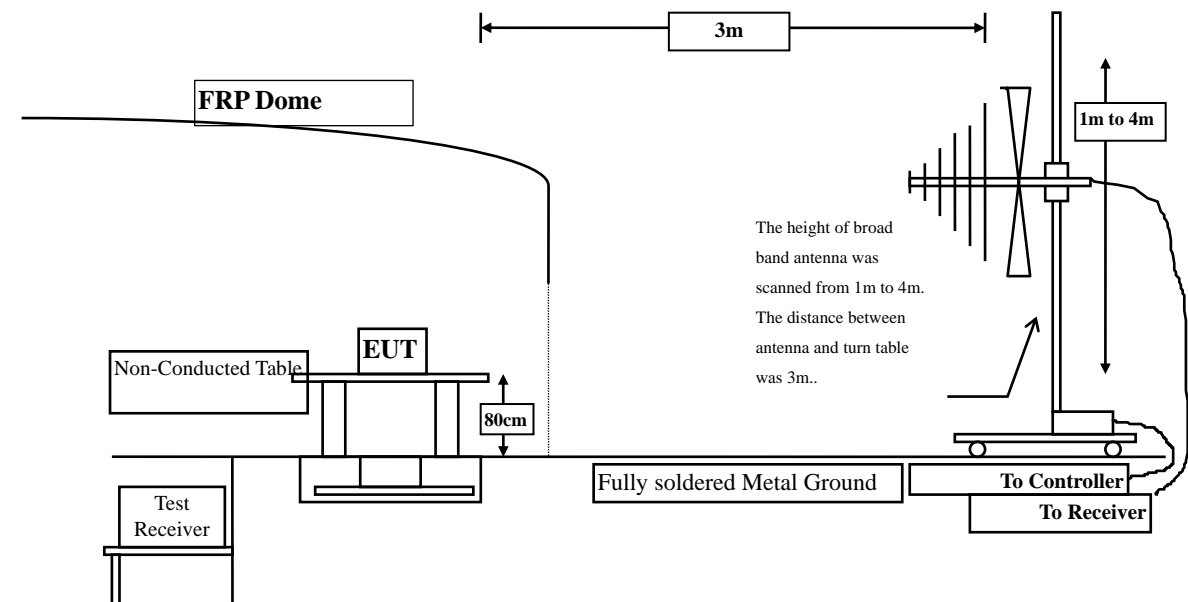
3. Radiated Emission

3.1. Test Setup

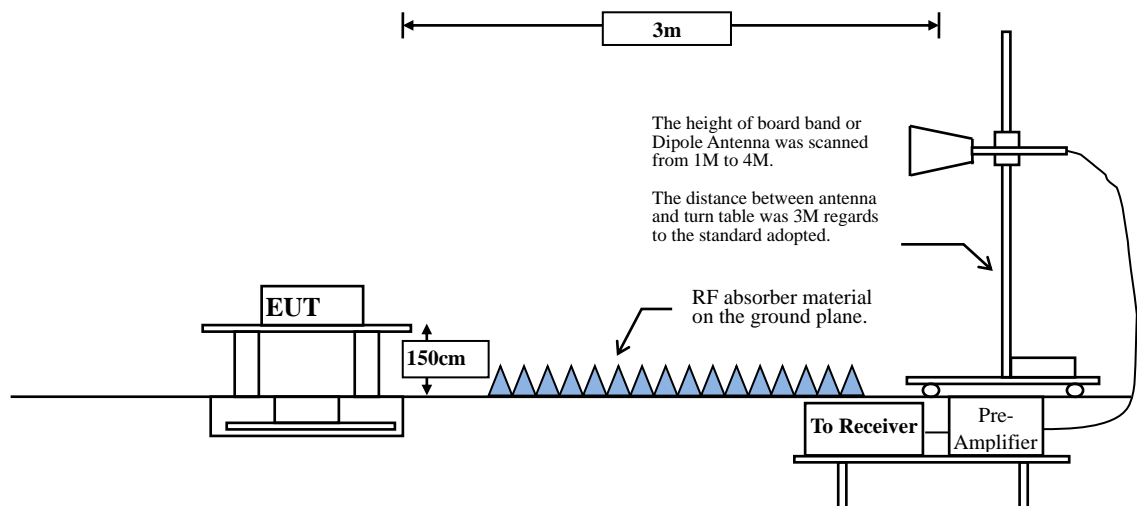
Radiated Emission Under 30MHz



Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



3.2. Limits

FCC Part 15 Subpart B Paragraph 15.109 Limits		
Frequency MHz	uV/m @ 3m	DBuV /m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

- Remarks :
1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
 2. In the Above Table, the tighter limit applies at the band edges.
 3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3.3. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz. Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured on the Final Measurement.

The measurement frequency range from 30MHz - 10th Harmonic of fundamental was investigated.

3.4. Uncertainty

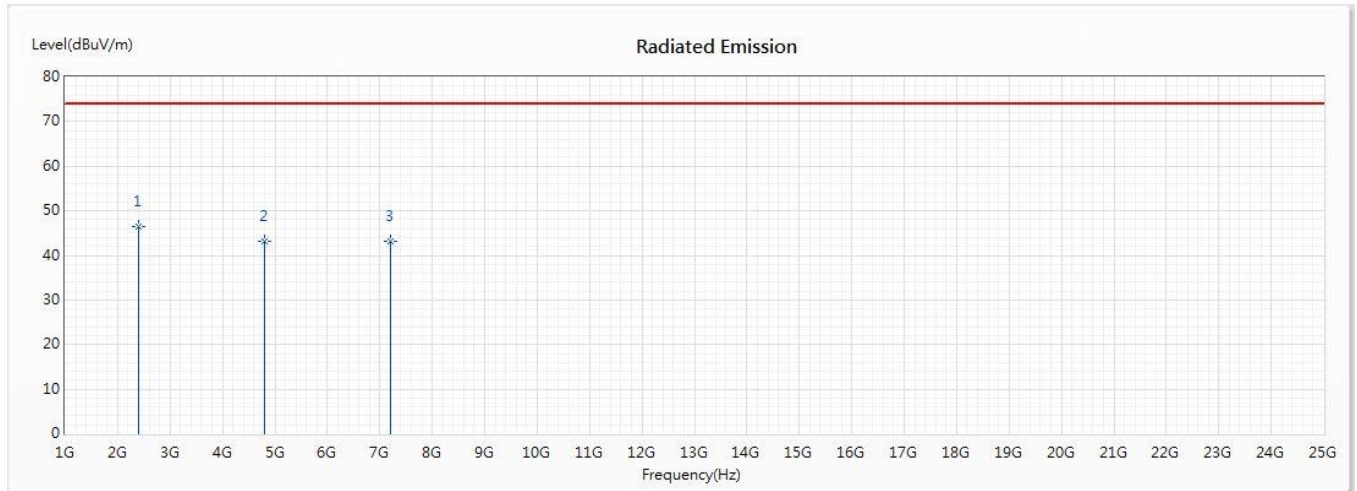
± 4.08 dB above 1GHz

± 4.22 dB below 1GHz

3.5. Test Result of Radiated Emission

Product : Bluetooth Headset
 Test Item : Harmonic Radiated Emission
 Test Date : 2019/12/20
 Test Mode : Mode 1: Receive - Bluetooth-3Mbps (2402MHz)

Horizontal



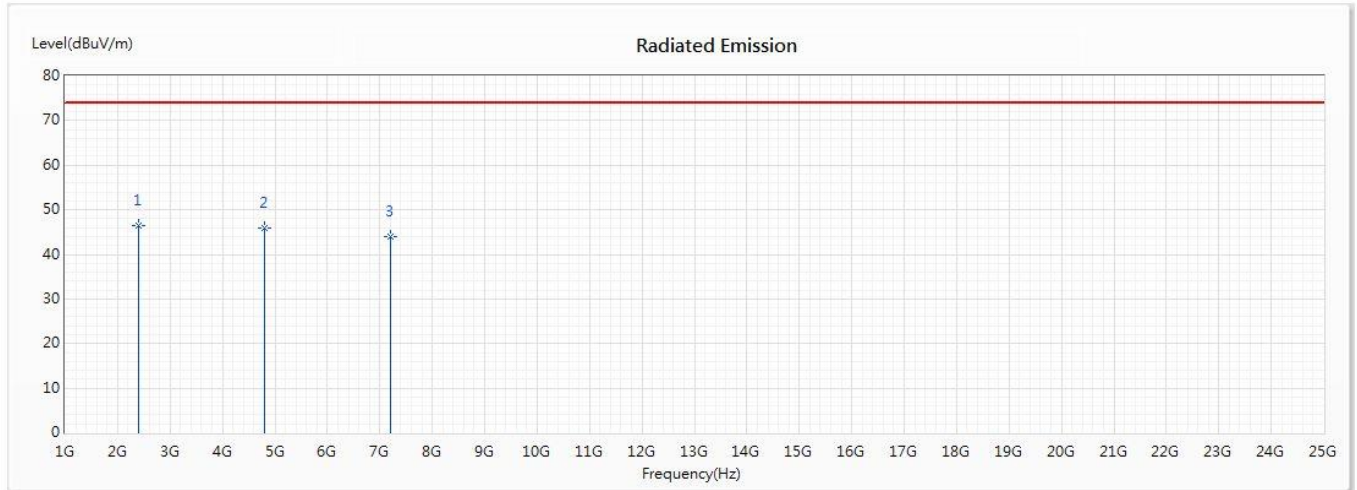
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	2402	46.49	74.00	-27.51	61.23	-14.74	PK
2	4804	43.17	74.00	-30.83	55.32	-12.15	PK
3	7206	43.13	74.00	-30.87	56.27	-13.14	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Bluetooth Headset
 Test Item : Harmonic Radiated Emission
 Test Date : 2019/12/20
 Test Mode : Mode 1: Receive - Bluetooth-3Mbps (2402MHz)

Vertical



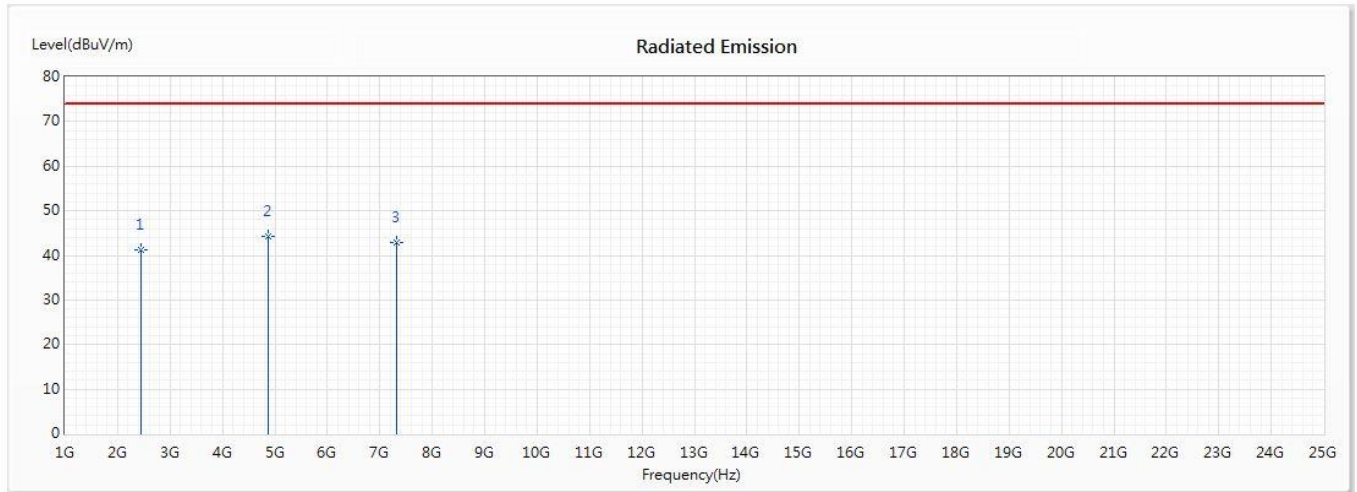
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	2402	46.35	74.00	-27.65	61.09	-14.74	PK
2	4804	45.86	74.00	-28.14	58.01	-12.15	PK
3	7206	43.88	74.00	-30.12	57.02	-13.14	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Bluetooth Headset
 Test Item : Harmonic Radiated Emission
 Test Date : 2019/12/20
 Test Mode : Mode 1: Receive - Bluetooth-3Mbps (2441MHz)

Horizontal



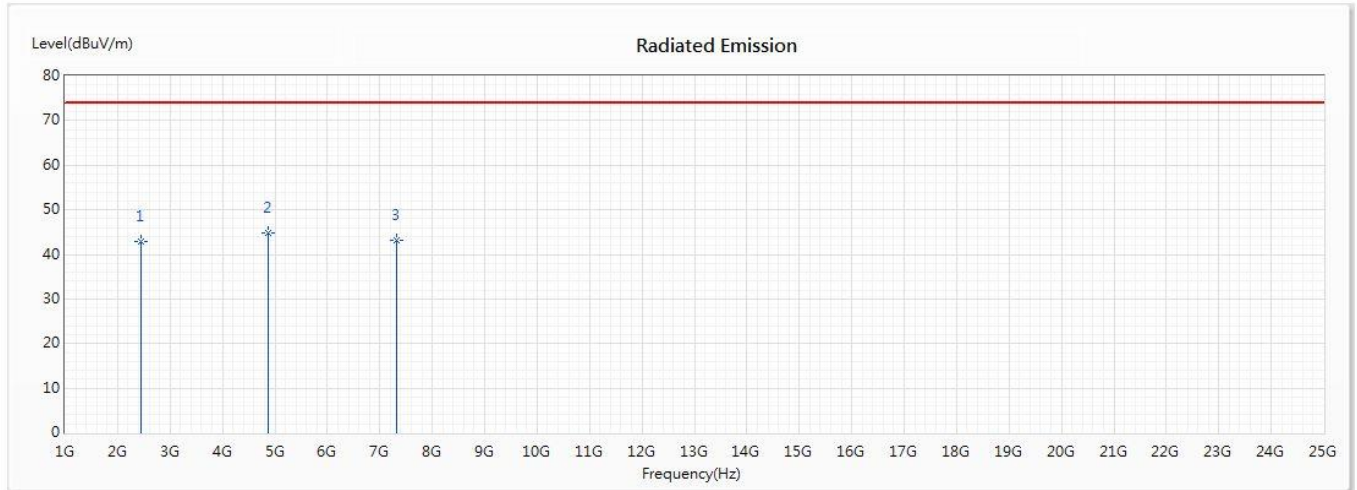
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2441	41.31	74.00	-32.69	55.78	-14.47	PK
* 2	4882	44.29	74.00	-29.71	55.88	-11.59	PK
3	7323	42.96	74.00	-31.04	56.53	-13.57	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Bluetooth Headset
 Test Item : Harmonic Radiated Emission
 Test Date : 2019/12/20
 Test Mode : Mode 1: Receive - Bluetooth-3Mbps (2441MHz)

Vertical

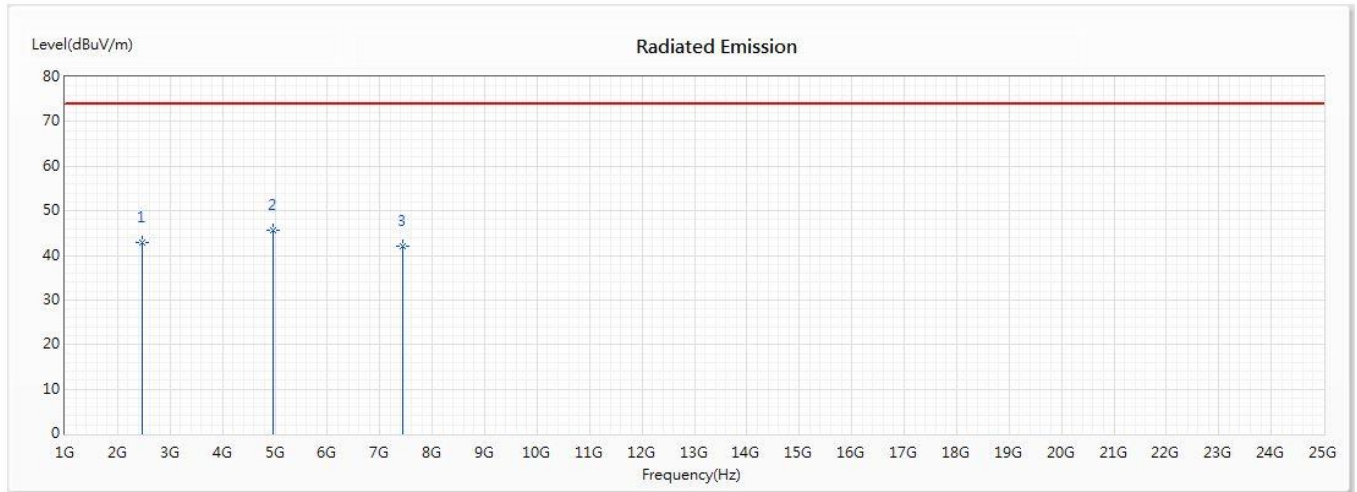


Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Bluetooth Headset
 Test Item : Harmonic Radiated Emission
 Test Date : 2019/12/20
 Test Mode : Mode 1: Receive - Bluetooth-3Mbps (2480MHz)

Horizontal



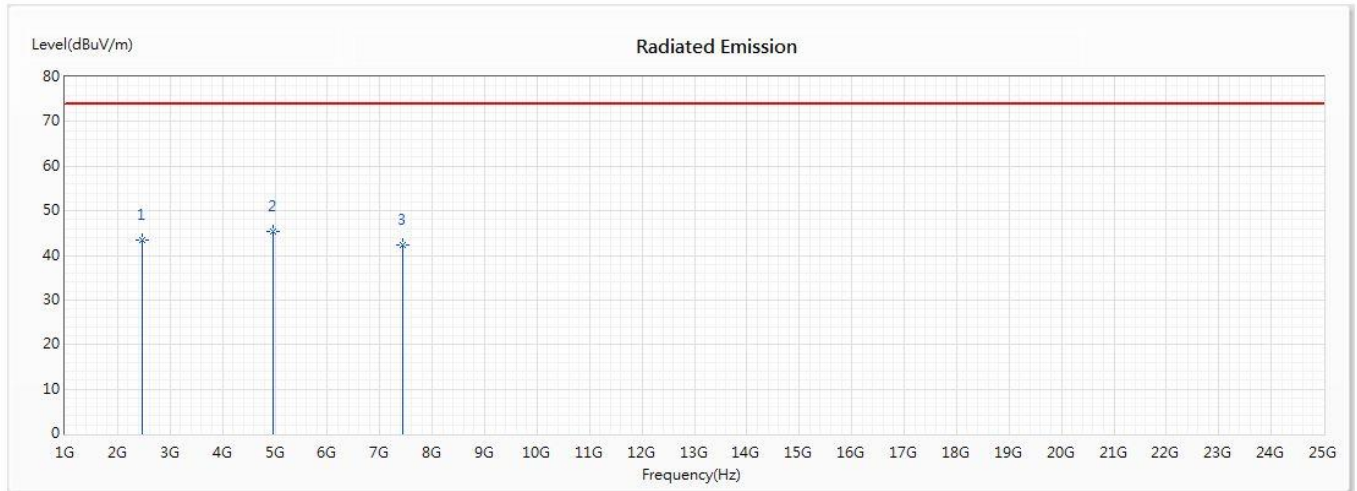
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2480	42.93	74.00	-31.07	57.31	-14.38	PK
* 2	4960	45.63	74.00	-28.37	56.52	-10.89	PK
3	7440	42.09	74.00	-31.91	56.71	-14.62	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Bluetooth Headset
 Test Item : Harmonic Radiated Emission
 Test Date : 2019/12/20
 Test Mode : Mode 1: Receive - Bluetooth-3Mbps (2480MHz)

Vertical



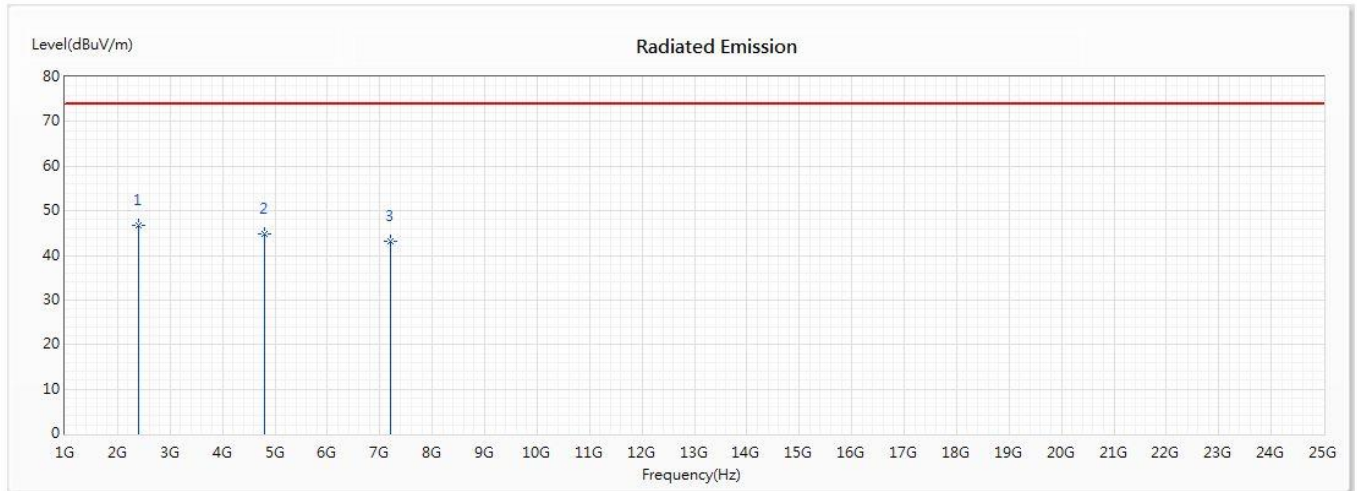
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2480	43.32	74.00	-30.68	57.70	-14.38	PK
* 2	4960	45.35	74.00	-28.65	56.24	-10.89	PK
3	7440	42.28	74.00	-31.72	56.90	-14.62	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Bluetooth Headset
 Test Item : Harmonic Radiated Emission
 Test Date : 2019/12/20
 Test Mode : Mode 2: Receive - BLE-2Mbps (2402MHz)

Horizontal



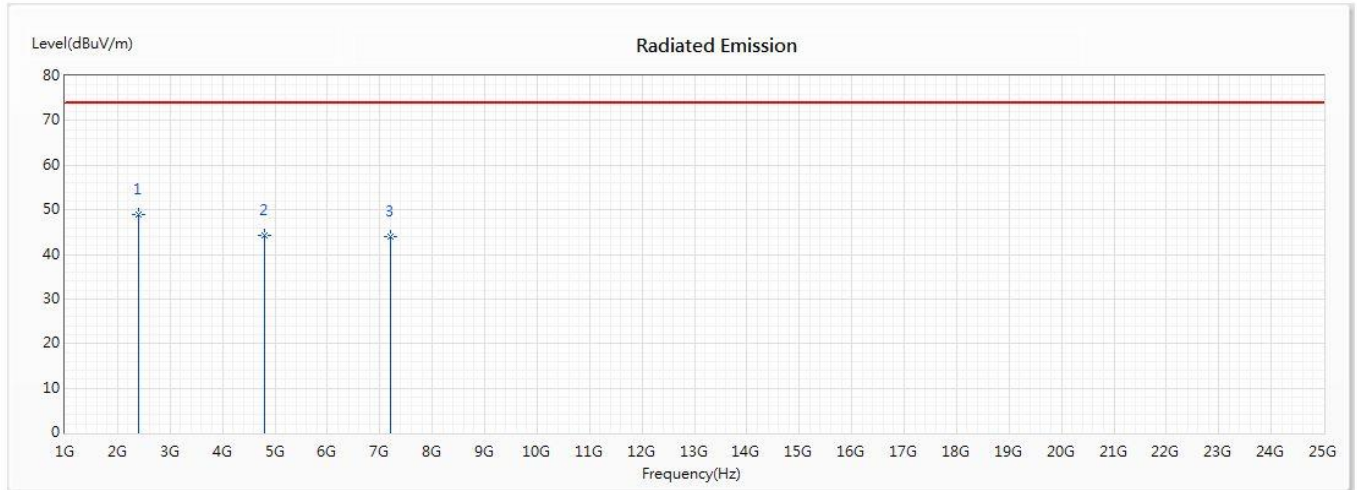
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	2402	46.79	74.00	-27.21	61.53	-14.74	PK
2	4804	44.85	74.00	-29.15	57.00	-12.15	PK
3	7206	43.29	74.00	-30.71	56.43	-13.14	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Bluetooth Headset
 Test Item : Harmonic Radiated Emission
 Test Date : 2019/12/20
 Test Mode : Mode 2: Receive - BLE-2Mbps (2402MHz)

Vertical

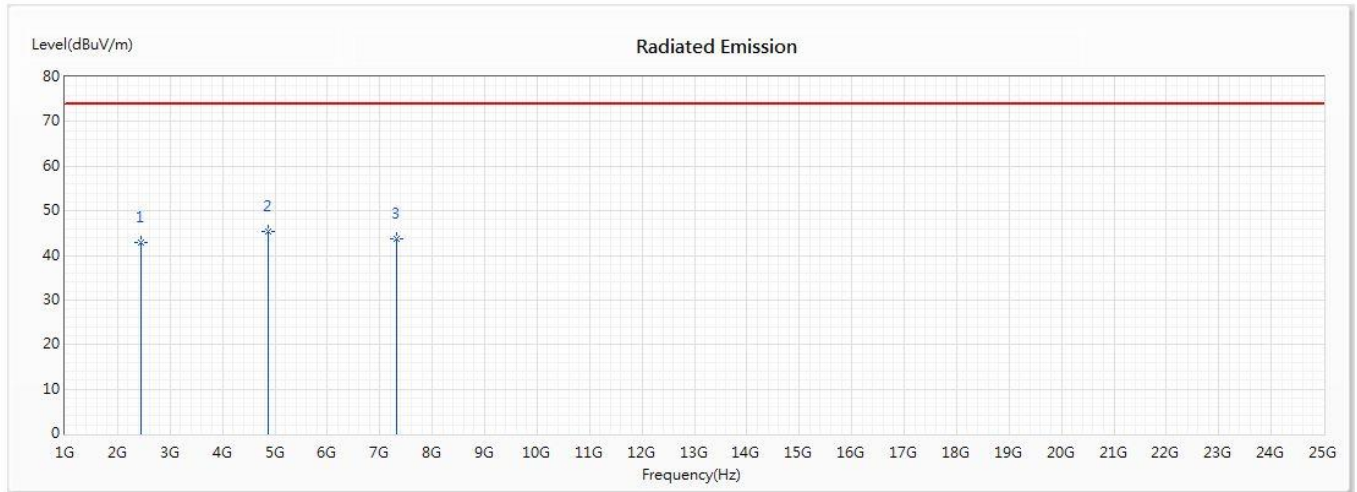


Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Bluetooth Headset
 Test Item : Harmonic Radiated Emission
 Test Date : 2019/12/20
 Test Mode : Mode 2: Receive - BLE-2Mbps (2440MHz)

Horizontal



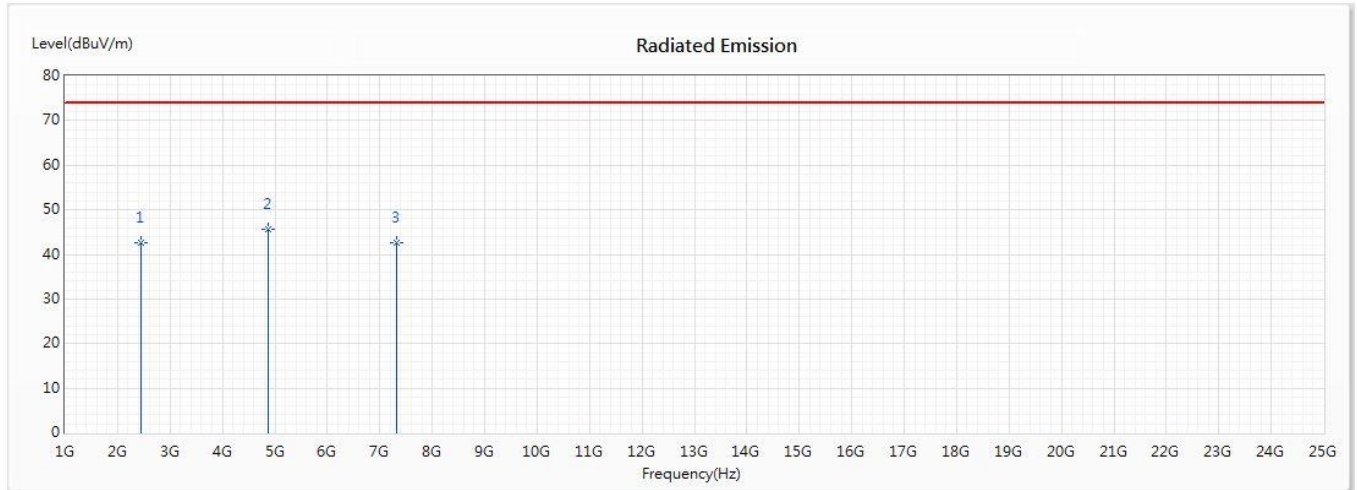
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2440	42.93	74.00	-31.07	57.40	-14.47	PK
* 2	4880	45.37	74.00	-28.63	56.97	-11.60	PK
3	7320	43.81	74.00	-30.19	57.36	-13.55	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Bluetooth Headset
 Test Item : Harmonic Radiated Emission
 Test Date : 2019/12/20
 Test Mode : Mode 2: Receive - BLE-2Mbps (2440MHz)

Vertical



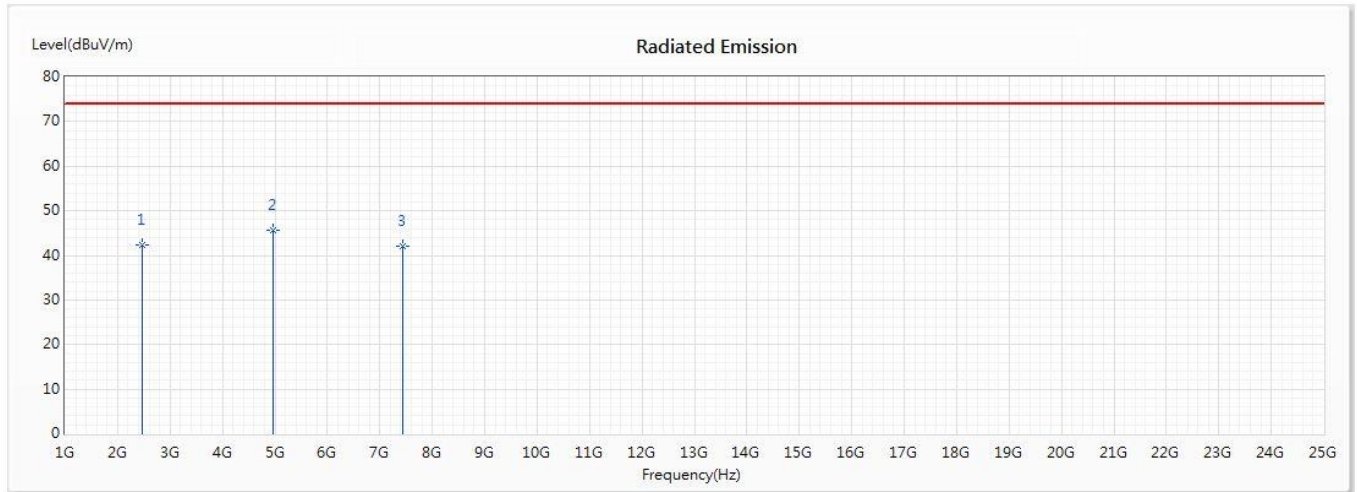
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2440	42.69	74.00	-31.31	57.16	-14.47	PK
* 2	4880	45.70	74.00	-28.30	57.30	-11.60	PK
3	7320	42.67	74.00	-31.33	56.22	-13.55	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Bluetooth Headset
 Test Item : Harmonic Radiated Emission
 Test Date : 2019/12/20
 Test Mode : Mode 2: Receive - BLE-2Mbps (2480MHz)

Horizontal



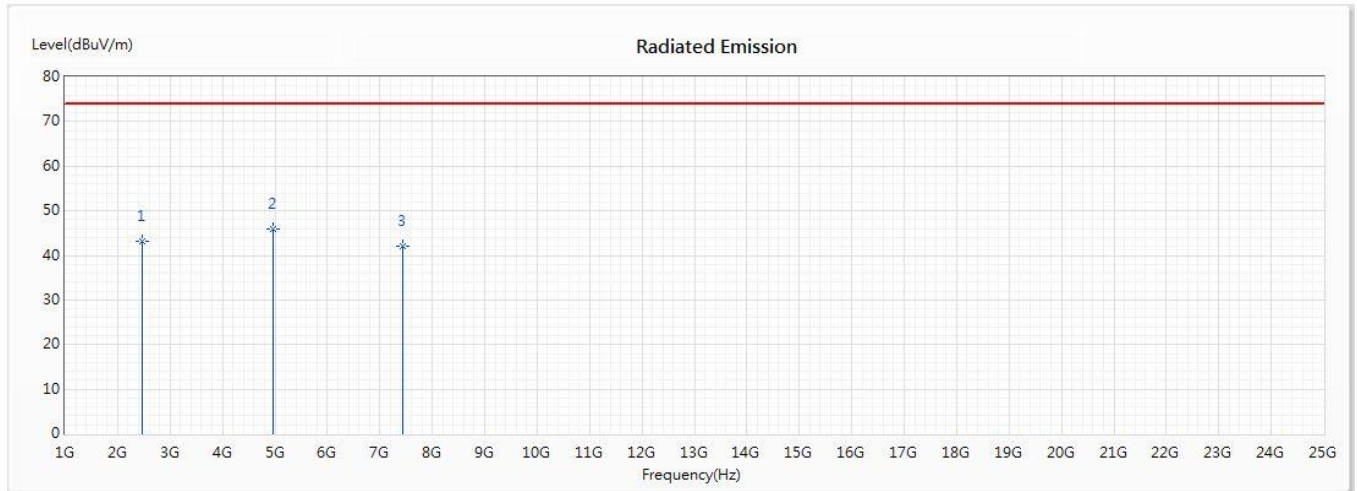
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2480	42.42	74.00	-31.58	56.80	-14.38	PK
* 2	4960	45.77	74.00	-28.23	56.66	-10.89	PK
3	7440	41.99	74.00	-32.01	56.61	-14.62	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Bluetooth Headset
 Test Item : Harmonic Radiated Emission
 Test Date : 2019/12/20
 Test Mode : Mode 2: Receive - BLE-2Mbps (2480MHz)

Vertical



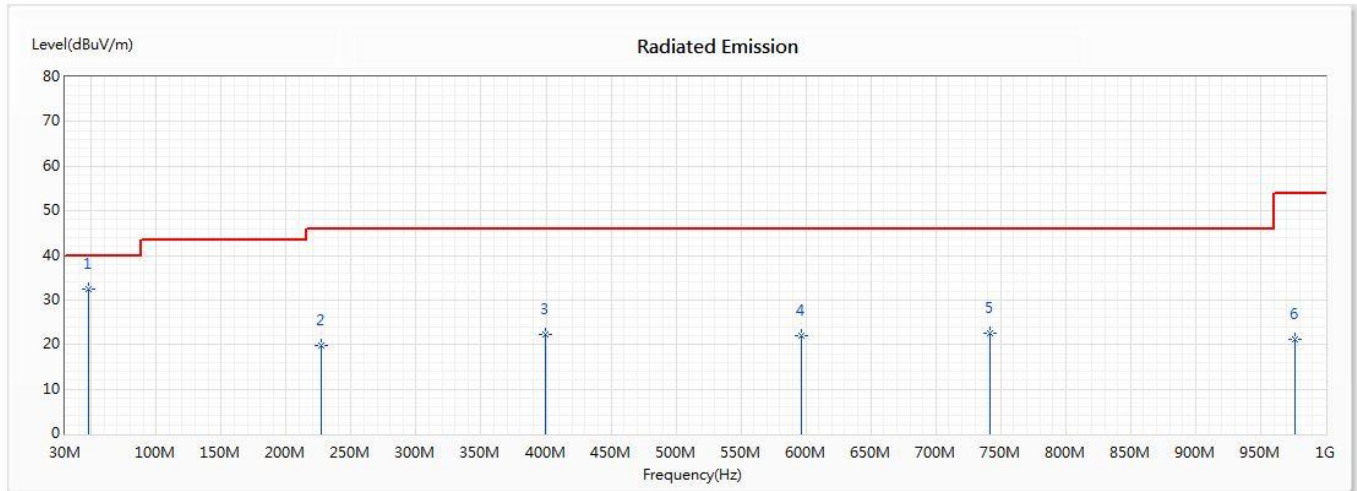
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
1	2480	43.19	74.00	-30.81	57.57	-14.38	PK
* 2	4960	45.85	74.00	-28.15	56.74	-10.89	PK
3	7440	42.11	74.00	-31.89	56.73	-14.62	PK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Bluetooth Headset
 Test Item : General Radiated Emission
 Test Date : 2019/12/20
 Test Mode : Mode 1: Receive - Bluetooth-3Mbps (2441MHz)

Horizontal



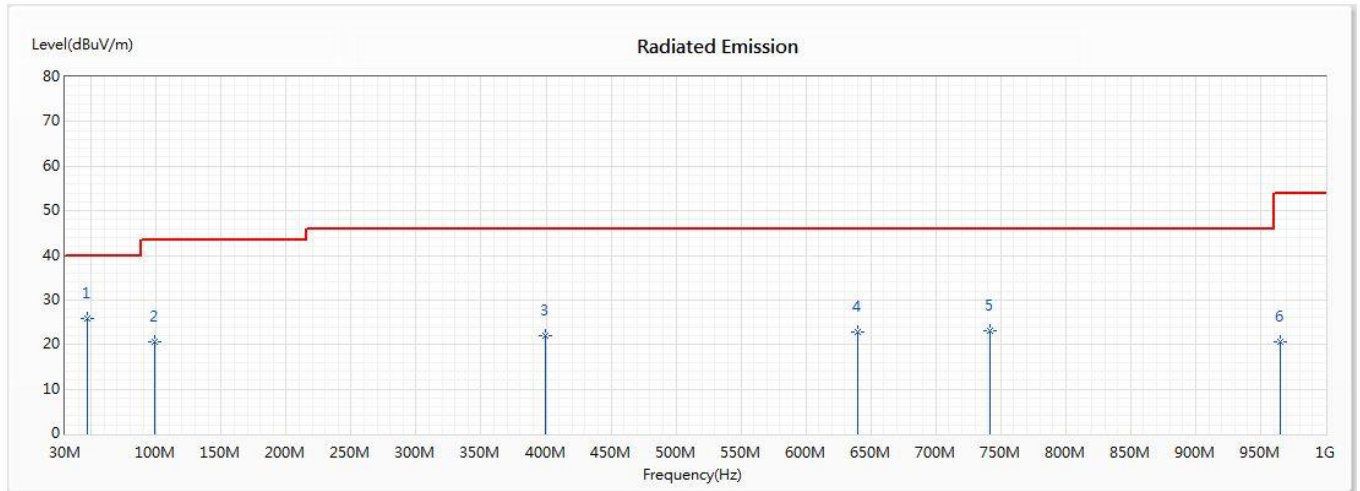
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	48.275	32.37	40.00	-7.63	50.43	-18.06	QP
2	226.812	19.66	46.00	-26.34	37.41	-17.75	QP
3	399.725	22.19	46.00	-23.81	35.86	-13.67	QP
4	596.536	22.08	46.00	-23.92	28.84	-6.76	QP
5	741.333	22.58	46.00	-23.42	28.25	-5.67	QP
6	976.101	21.28	54.00	-32.72	29.29	-8.01	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Bluetooth Headset
 Test Item : General Radiated Emission
 Test Date : 2019/12/20
 Test Mode : Mode 1: Receive - Bluetooth-3Mbps (2441MHz)

Vertical



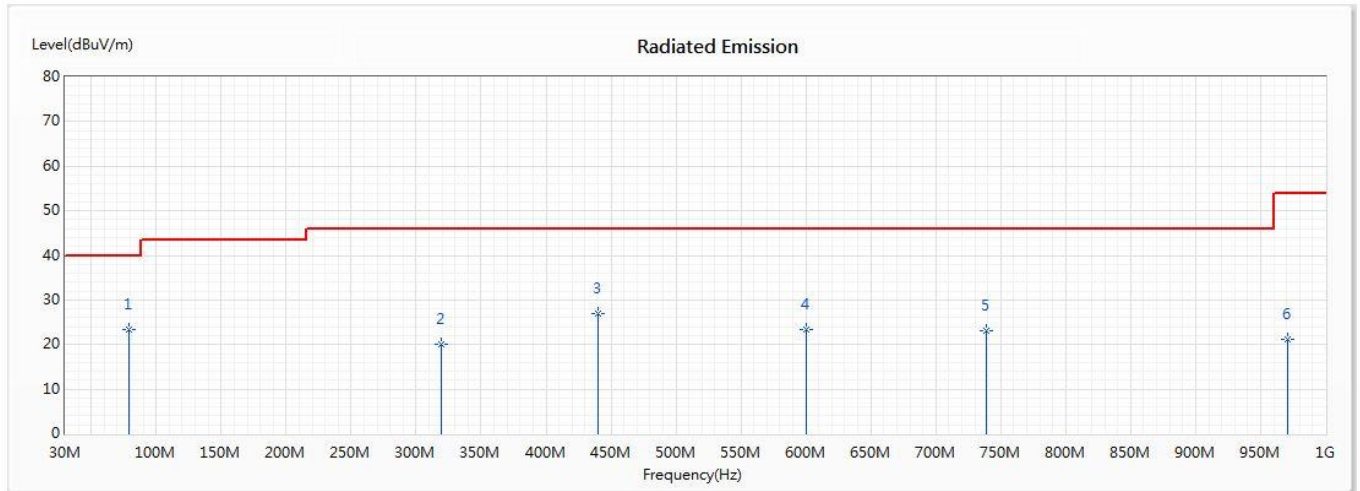
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	46.87	25.92	40.00	-14.08	44.05	-18.13	QP
2	98.884	20.62	43.50	-22.88	36.88	-16.26	QP
3	399.725	22.05	46.00	-23.95	35.72	-13.67	QP
4	640.116	22.94	46.00	-23.06	31.77	-8.83	QP
5	741.333	23.13	46.00	-22.87	28.80	-5.67	QP
6	964.855	20.75	54.00	-33.25	29.05	-8.30	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Bluetooth Headset
 Test Item : General Radiated Emission
 Test Date : 2019/12/20
 Test Mode : Mode 2: Receive - BLE-2Mbps (2440MHz)

Horizontal



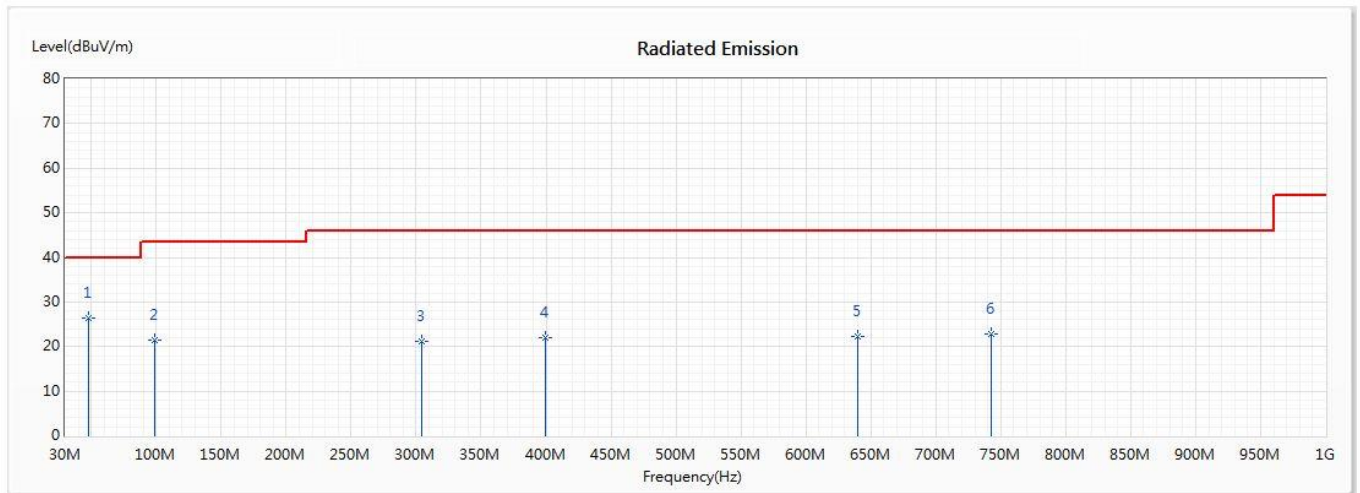
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	79.203	23.44	40.00	-16.56	42.88	-19.44	QP
2	319.594	20.16	46.00	-25.84	34.21	-14.05	QP
3	440.493	26.90	46.00	-19.10	36.67	-9.77	QP
4	600.754	23.37	46.00	-22.63	30.03	-6.66	QP
5	738.522	23.23	46.00	-22.77	28.98	-5.75	QP
6	970.478	21.14	54.00	-32.86	29.29	-8.15	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Bluetooth Headset
 Test Item : General Radiated Emission
 Test Date : 2019/12/20
 Test Mode : Mode 2: Receive - BLE-2Mbps (2440MHz)

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Detector Type
* 1	48.275	26.29	40.00	-13.71	44.35	-18.06	QP
2	98.884	21.32	43.50	-22.18	37.58	-16.26	QP
3	304.13	21.04	46.00	-24.96	35.60	-14.56	QP
4	399.725	22.12	46.00	-23.88	35.79	-13.67	QP
5	640.116	22.28	46.00	-23.72	31.11	-8.83	QP
6	742.739	22.89	46.00	-23.11	28.71	-5.82	QP

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Emission Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

4. EMI Reduction Method During Compliance Testing

No modification was made during testing.