



MEASUREMENT REPORT

FCC ID : I4L-8ZC7
APPLICANT : Micro-Star Int'l Co.,Ltd.
Application Type : Certification
Product : Wireless Headset
Model No. : 8ZC7
Brand Name : msi
FCC Classification : (DTS) Digital Transmission System
FCC Rule Part(s) : Part 15.247
Test Procedure(s) : ANSI C63.10-2013
Received Date : January 04, 2023
Test Date : January 06~13, 2023

Tested By : *Fran Chen*
(Fran Chen)

Reviewed By : *Paddy Chen*
(Paddy Chen)

Approved By : *Chenz Ker*
(Chenz Ker)



The test results only relate to the tested sample.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Taiwan) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2301TWE902-U1	1.0	Original Report	2023-02-01	

CONTENTS

Description	Page
§2.1033 General Information	5
1. INTRODUCTION	6
1.1. Scope.....	6
1.2. MRT Test Location	6
2. PRODUCT INFORMATION	7
2.1. Equipment Description	7
2.2. Product Specification Subjective to this Standard.....	8
2.3. Test Mode	8
2.4. Operation Frequency / Channel List.....	9
2.5. Test Configuration	10
2.6. Test Software	10
2.7. EMI Suppression Device(s)/Modifications	10
2.8. Labeling Requirements	10
3. DESCRIPTION of TEST	11
3.1. Evaluation Procedure	11
3.2. AC Line Conducted Emissions	11
3.3. Radiated Emissions	12
4. ANTENNA REQUIREMENTS.....	13
5. TEST EQUIPMENT CALIBRATION DATE	14
6. MEASUREMENT UNCERTAINTY.....	15
7. TEST RESULT	16
7.1. Summary.....	16
7.2. 6dB Bandwidth Measurement	17
7.2.1. Test Limit.....	17
7.2.2. Test Procedure used	17
7.2.3. Test Setting	17
7.2.4. Test Setup	17
7.2.5. Test Result	18
7.3. Output Power Measurement.....	19
7.3.1. Test Limit.....	19
7.3.2. Test Procedure Used.....	19
7.3.3. Test Setting	19
7.3.4. Test Setup	19
7.3.5. Test Result of Output Power	20
7.4. Power Spectral Density Measurement	21
7.4.1. Test Limit.....	21
7.4.2. Test Procedure Used.....	21
7.4.3. Test Setting	21
7.4.4. Test Setup	21
7.4.5. Test Result	22

7.5.	Out-of-Band Spurious Emissions Emissions Measurement	23
7.5.1.	Test Limit	23
7.5.2.	Test Procedure Used	23
7.5.3.	Test Setting	23
7.5.4.	Test Setup	23
7.5.5.	Test Result	24
7.6.	Radiated Spurious Emission Measurement	27
7.6.1.	Test Limit	27
7.6.2.	Test Procedure Used	27
7.6.3.	Test Setting	27
7.6.4.	Test Setup	29
7.6.5.	Test Result	31
7.7.	Radiated Restricted Band Edge Measurement	47
7.7.1.	Test Limit	47
7.7.2.	Test Procedure Used	47
7.7.3.	Test Setting	47
7.7.4.	Test Setup	49
7.7.5.	Test Result	50
7.8.	AC Conducted Emissions Measurement	62
7.8.1.	Test Limit	62
7.8.2.	Test Setup	62
7.8.3.	Test Result	63
8.	CONCLUSION	67
	Appendix A : Test Setup Photograph	68
	Appendix B : External Photograph	68
	Appendix C : Internal Photograph	68

§2.1033 General Information

Applicant	Micro-Star Int'l Co.,Ltd.
Applicant Address	No.69, Lide St., Zhonghe Dist.,New Taipei City 235, Taiwan
Manufacturer	Micro-Star Int'l Co.,Ltd.
Manufacturer Address	No.69, Lide St., Zhonghe Dist.,New Taipei City 235, Taiwan
Test Site	MRT Technology (Taiwan) Co., Ltd
Test Site Address	No. 38, Fuxing Second Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C)
MRT FCC Registration No.	291082
FCC Rule Part(s)	Part 15.247
Test Device Serial No.	#1-1 ☐ Production ☒ Pre-Production ☐ Engineering

Test Facility / Accreditations

1. MRT facility is a FCC registered (Reg. No. 291082) test facility with the site description report on file and is designated by the FCC as an Accredited Test Firm.
2. MRT facility is an IC registered (MRT Reg. No. 21723) test laboratory with the site description on file at Industry Canada.
3. MRT Lab is accredited to ISO 17025 by the Taiwan Accreditation Foundation (TAF Cert. No. 3261) in EMC, Telecommunications and Radio testing for FCC (Designation Number: TW3261), Industry Taiwan, EU and TELEC Rules.

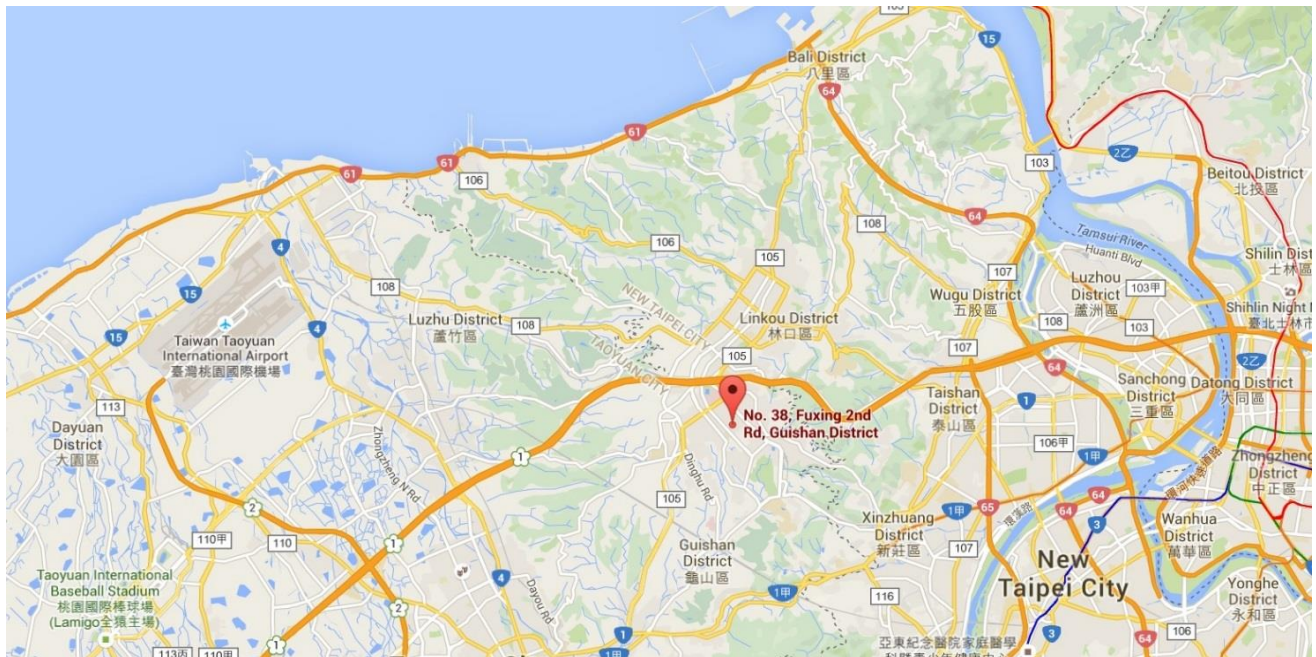
1. INTRODUCTION

1.1. Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Industry Canada Certification and Engineering Bureau.

1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taoyuan City. These measurement tests were conducted at the MRT Technology (Taiwan) Co., Ltd. Facility located at No.38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C).



2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name	Wireless Headset
Model No.	8ZC7
Brand Name	msi
Specification	SRD 2.4GHz
Maximum Power	3.30dBm

2.2. Product Specification Subjective to this Standard

Operating Frequency	2405.889~2477.569MHz
Type of modulation	GFSK
Data Rate FW Version	2Mbps

2.3. Test Mode

Test Mode	Mode 1: Transmit
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Note: Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.

2.4. Operation Frequency / Channel List

Channel	Frequency	Channel	Frequency	Channel	Frequency
14	2405.889	62	2430.465	110	2455.041
18	2407.937	66	2432.513	114	2457.089
22	2409.985	70	2434.561	118	2459.137
26	2412.033	74	2436.609	122	2461.185
30	2414.081	78	2438.657	126	2463.233
34	2416.129	82	2440.705	130	2465.281
38	2418.177	86	2442.753	134	2467.329
42	2420.225	90	2444.801	138	2469.377
46	2422.273	94	2446.849	142	2471.425
50	2424.321	98	2448.897	146	2473.473
54	2426.369	102	2450.945	150	2475.521
58	2428.417	106	2452.993	154	2477.569

2.5. Test Configuration

This device was tested per the guidance of ANSI C63.10-2013. ANSI C63.10-2013 was used to reference the appropriate EUT setup for radiated spurious emissions testing and AC line conducted testing.

2.6. Test Software

The test utility software used during testing was "A8102_FCC_CE".

2.7. EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

2.8. Labeling Requirements

Per 2.1074 & 15.19; Docket 95-19

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase.

However, when the device is so small wherein placement of the label with specified statement is not practical, only the FCC ID must be displayed on the device per Section 15.19(a)(5). Please see attachment for FCC ID label and label location.

3. DESCRIPTION of TEST

3.1. Evaluation Procedure

The measurement procedures described in the American National Standard for Testing Unlicensed Wireless Devices (ANSI C63.10-2013), and the guidance provided in KDB 558074 D01v05r02 were used in the measurement of the **Wireless Headset**.

Deviation from measurement procedure.....None

3.2. AC Line Conducted Emissions

The line-conducted facility is located inside an 9'x4'x3' shielded enclosure. A 1m x 2m wooden table 80cm high is placed 40cm away from the vertical wall and 80cm away from the sidewall of the shielded room. Two 10kHz-30MHz, 50Ω/50uH Line-Impedance Stabilization Networks (LISNs) are bonded to the shielded room floor. Power to the LISNs is filtered by external high-current high-insertion loss power line filters. These filters attenuate ambient signal noise from entering the measurement lines. These filters are also bonded to the shielded enclosure.

The EUT is powered from one LISN and the support equipment is powered from the second LISN. All interconnecting cables more than 1 meter were shortened to a 1 meter length by non-inductive bundling (serpentine fashion) and draped over the back edge of the test table. All cables were at least 40cm above the horizontal reference ground-plane. Power cables for support equipment were routed down to the second LISN while ensuring that that cables were not draped over the second LISN.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the receiver and exploratory measurements were made to determine the frequencies producing the maximum emission from the EUT. The receiver was scanned from 150kHz to 30MHz. The detector function was set to peak mode for exploratory measurements while the bandwidth of the analyzer was set to 9kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Each emission was also maximized by varying: power lines, the mode of operation or data exchange speed, or support equipment which determined the worst-case emission. Once the worst case emissions have been identified, the one EUT cable configuration/arrangement and mode of operation that produced these emissions are used for final measurements on the same test site. The analyzer is set to CISPR quasi-peak and average detectors with a 9kHz resolution bandwidth for final measurements.

An extension cord was used to connect to a single LISN which powered by EUT. The extension cord was calibrated with LISN, the impedance and insertion loss are compliance with the requirements as stated in ANSI C63.10-2013.

Line conducted emissions test results are shown in Section 7.8.

3.3. Radiated Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. For measurements above 1GHz absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1GHz, the absorbers are removed. A MF Model 210SS turntable is used for radiated measurement. It is a continuously rotatable, remote controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm high PVC support structure is placed on top of the turntable.

For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive antenna height using a broadband antenna from 30MHz up to the upper frequency shown in 15.33(b)(1) depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies above 1GHz, linearly polarized double ridge horn antennas were used. For frequencies below 30MHz, a calibrated loop antenna was used. When exploratory measurements were necessary, they were performed at 1 meter test distance inside the semi-anechoic chamber using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies and modes producing the maximum emissions. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The test set-up for frequencies below 1GHz was placed on top of the 0.8 meter high, 1 x 1.5 meter table; and test set-up for frequencies 1-40GHz was placed on top of the 1.5 meter high, 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, clock speed, mode of operation or video resolution, if applicable, turntable azimuth, and receive antenna height was noted for each frequency found.

Final measurements were made in the semi-anechoic chamber using calibrated, linearly polarized broadband and horn antennas. The test setup was configured to the setup that produced the worst case emissions. The spectrum analyzer was set to investigate all frequencies required for testing to compare the highest radiated disturbances with respect to the specified limits. The turntable containing the EUT was rotated through 360 degrees and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by changing the orientation of the EUT through three orthogonal planes and changing the polarity of the receive antenna, which produced the worst-case emissions. According to 3dB Beam-Width of horn antenna, the horn antenna should be always directed to the EUT when rising height.

Radiated emissions test results are shown in Section 7.6 & 7.7 .

4. ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can 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 antenna of the **Wireless Headset**, is permanently attached.
- There are no provisions for connection to an external antenna.

Conclusion:

The EUT unit complies with the requirement of §15.203.

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	somic	GH20W 2.4G	PCB	-1.2dBi

5. TEST EQUIPMENT CALIBRATION DATE

Conducted Emissions

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Two-Line V-Network	R&S	ENV216	MRTTWA00020	1 year	2023/4/20
Cable	Rosnol	N1C50-RG400-B 1C50-500CM	MRTTWE00013	1 year	2023/6/19
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2023/3/9

Radiated Emissions

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Broadband TRILOG Antenna	SCHWARZBECK	VULB 9162	MRTTWA00001	1 year	2023/12/21
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2023/3/9
Signal Analyzer	R&S	FSVA3044	MRTTWA00092	1 year	2023/6/23
Active Loop Antenna	Schwarzbeck	FMZB 1519B	MRTTWA00002	1 year	2023/5/24
Broadband Hornantenna	RFSPIN	DRH18-E	MRTTWA00087	1 year	2023/5/10
Breitband Hornantenna	Schwarzbeck	BBHA 9170	MRTTWA00004	1 year	2023/3/29
Broadband Preamplifier	EMC Instruments corporation	EMC118A45SE	MRTTWA00088	1 year	2023/5/9
Broadband Preamplifier	SCHWARZBECK	BBV 9718	MRTTWA00005	1 year	2023/3/30
Cable	HUBERSUHNER	SF106	MRTTWE00034	1 year	2023/6/27

Conducted Test Equipment

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EXA Signal Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2023/10/5
EXA Signal Analyzer	KEYSIGHT	N9010B	MRTTWA00074	1 year	2023/7/19
USB Wideband Power Sensor	KEYSIGHT	U2021XA	MRTTWA00015	1 year	2023/3/16

Test Software

Software	Version	Function
e3	9.160520a	EMI Test Software
EMI	V3	EMI Test Software

6. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Conducted Emission- Power Line
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 0.15MHz~30MHz: $\pm 2.53\text{dB}$
Radiated Spurious Emission
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 9kHz~30MHz: $\pm 3.92\text{dB}$ 30MHz~1GHz: $\pm 4.25\text{dB}$ 1GHz~18GHz: $\pm 4.40\text{dB}$ 18GHz~40GHz: $\pm 4.45\text{dB}$
Frequency Error
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 78.4\text{Hz}$
Conducted Power
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 0.84\text{dB}$
Conducted Spurious Emission
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 2.65\text{ dB}$
Occupied Bandwidth
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 3.3\%$
Temp. / Humidity
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 0.82^\circ\text{C}/ \pm 3\%$
DC Voltage
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 0.3\%$

7. TEST RESULT

7.1. Summary

Product Name: Wireless Headset

FCC Classification: (DTS) Digital Transmission System

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
15.247(a)(2)	6dB Bandwidth	$\geq 500\text{kHz}$	Conducted	Pass	Section 7.2
15.247(b)(3)	Output Power	$\leq 30.00\text{dBm}$		Pass	Section 7.3
15.247(e)	Power Spectral Density	$\leq 8.00\text{dBm}/3\text{kHz}$		Pass	Section 7.4
15.247(d)	Out-of-Band Emissions	Conducted $\geq 30\text{dBc}$		Pass	Section 7.5
15.205 15.209	Spurious Emission	< FCC 15.209 limits	Radiated	Pass	Section 7.6
15.205 15.209	Band Edge Measurement	$\leq 74\text{dBuV/m(Peak)}$ $\leq 54\text{dBuV/m(Average)}$		Pass	Section 7.7
15.207	AC Conducted Emissions 150kHz - 30MHz	< FCC 15.207 limits	Line Conducted	Pass	Section 7.8

Notes:

- Determining compliance is based on the test results met the regulation limits or requirements declared by clients, and the test results don't take into account the value of measurement uncertainty.
- All modes of operation and data rates were investigated. For radiated emission test, every axis (X, Y, Z) was also verified when applicable. The test results shown in the following sections represent the worst case emissions.
- The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
- All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables and attenuators.

7.2. 6dB Bandwidth Measurement

7.2.1. Test Limit

The minimum 6dB bandwidth shall be at least 500 kHz.

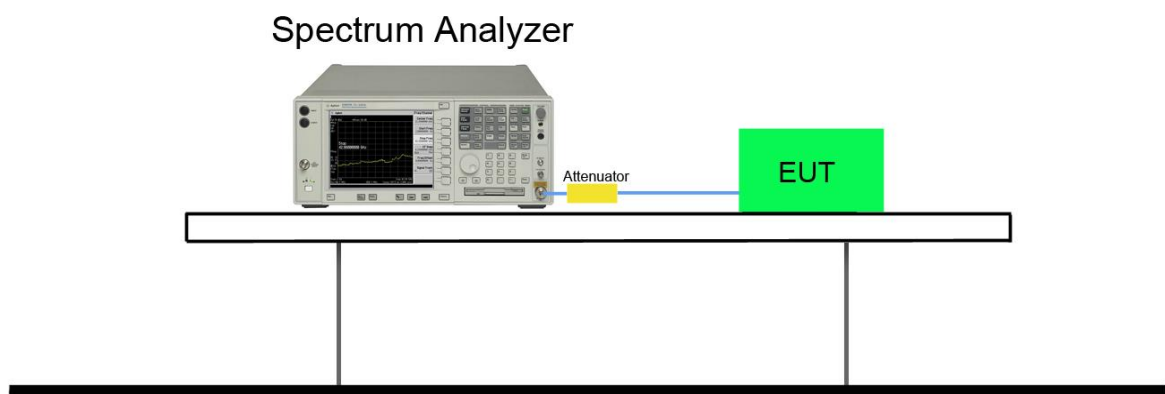
7.2.2. Test Procedure used

KDB 558074 D01v05r02- Section 8.2 Option 2

7.2.3. Test Setting

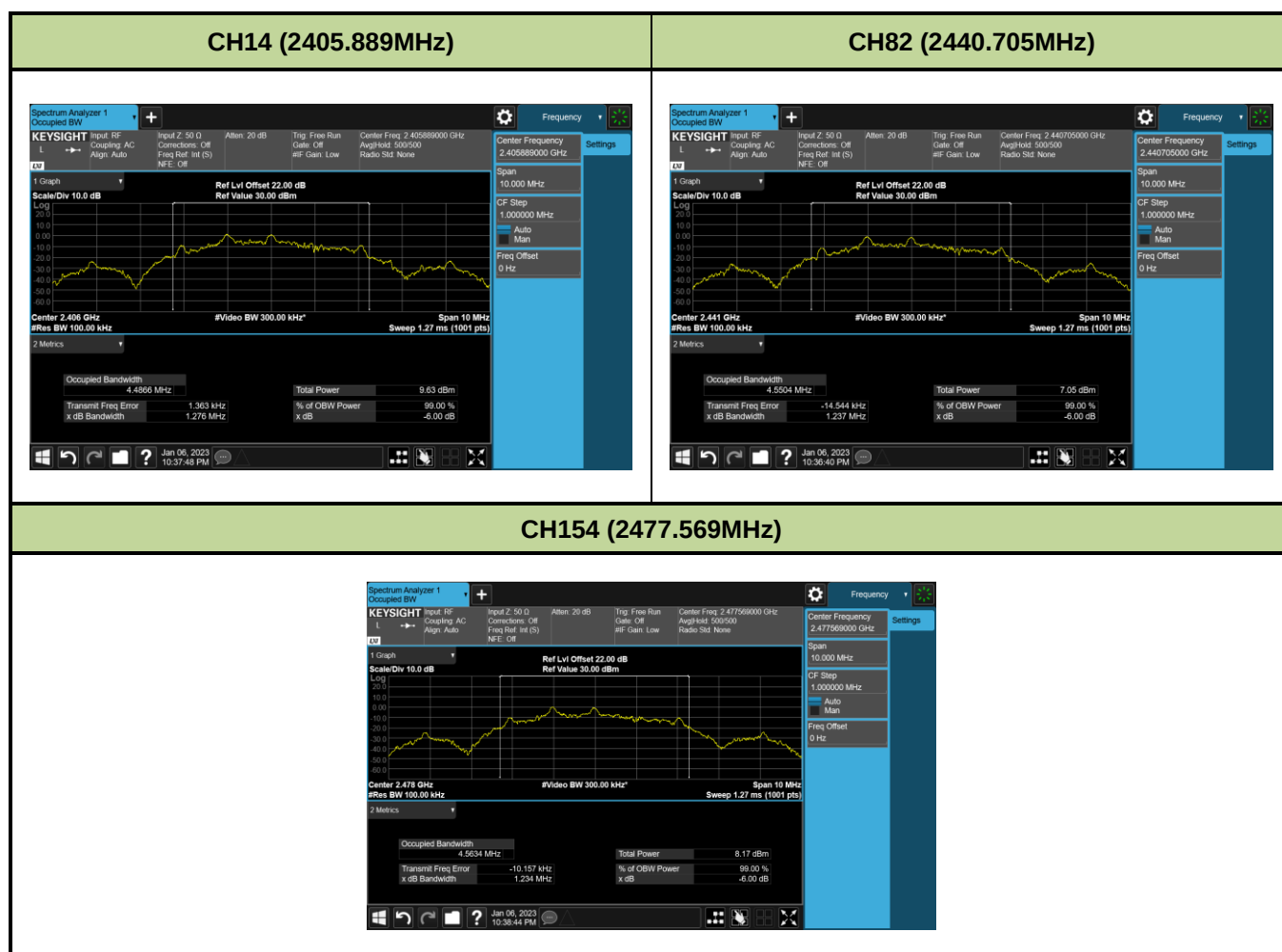
1. The Spectrum's automatic bandwidth measurement capability was used to perform the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to $X = 6$. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. Set RBW = 100 kHz
3. $VBW \geq 3 \times RBW$
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. Allow the trace was allowed to stabilize

7.2.4. Test Setup



7.2.5. Test Result

Test Mode	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)	Result
2.4GHz	CH14	2405.889	1.276	4.4866	≥ 0.5	Pass
	CH82	2440.705	1.237	4.5504	≥ 0.5	Pass
	CH154	2477.569	1.234	4.5634	≥ 0.5	Pass



7.3. Output Power Measurement

7.3.1. Test Limit

The maximum out power shall be less 1 Watt (30dBm).

7.3.2. Test Procedure Used

KDB 558074 D01v05r02 - Section 8.3

7.3.3. Test Setting

Peak Power Measurement

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.

Average Power Measurement

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

7.3.4. Test Setup



7.3.5. Test Result of Output Power

Test Mode	Channel No.	Frequency (MHz)	Average Power (dBm)	Power Limit (dBm)
2.4GHz_Ant 0	CH14	2405.889	0.60	< 30
	CH82	2440.705	-0.95	< 30
	CH154	2477.569	0.65	< 30
2.4GHz_Ant 1	CH14	2405.889	3.30	< 30
	CH82	2440.705	0.92	< 30
	CH154	2477.569	1.95	< 30

Note1: Output power =Reading value on power meter + cable loss.

7.4. Power Spectral Density Measurement

7.4.1. Test Limit

The maximum permissible power spectral density is 8dBm in any 3 kHz band.

7.4.2. Test Procedure Used

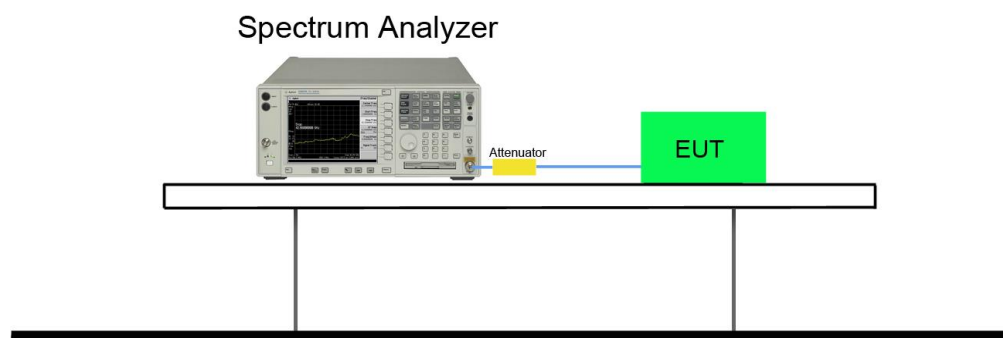
KDB 558074 D01v05r02 - Section 8.4 Method PKPSD

7.4.3. Test Setting

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance, and is optional if the maximum conducted (average) output power was used to demonstrate compliance.

- a) Set analyzer center frequency to DTS channel center frequency.
- b) Set the span to 1.5 times the DTS bandwidth.
- c) Set the RBW to: 3 kHz.
- d) Set the VBW $\geq 3 \times$ RBW.
- e) Detector = peak.
- f) Sweep time = auto couple.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the maximum amplitude level within the RBW.

7.4.4. Test Setup



7.4.5. Test Result

Test Mode	Channel No.	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Result
2.4GHz	CH14	2405.889	-14.04	≤ 8	Pass
	CH82	2440.705	-15.81	≤ 8	Pass
	CH154	2477.569	-14.89	≤ 8	Pass

CH14 (2405.889MHz)



CH82 (2440.705MHz)



CH154 (2477.569MHz)



7.5. Out-of-Band Spurious Emissions Emissions Measurement

7.5.1. Test Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on RF conducted measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

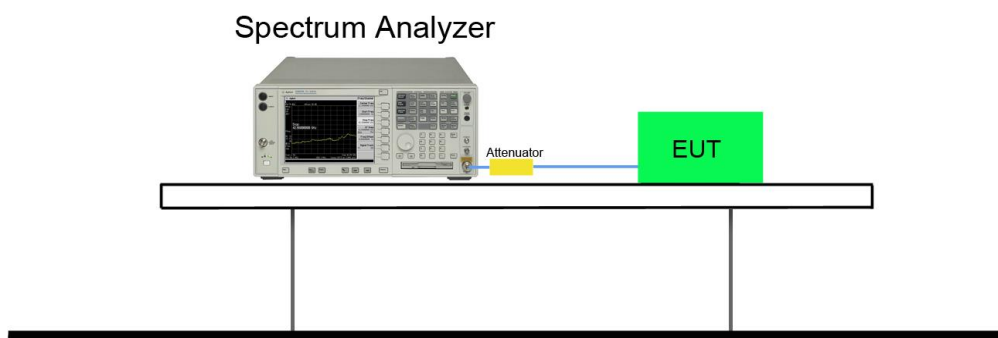
7.5.2. Test Procedure Used

ANSI C63.10-2013 Section 11.1 & 11.2

7.5.3. Test Setting

- (a) Set instrument center frequency to DTS channel center frequency
- (b) Set the span to ≥ 1.5 times the DTS bandwidth
- (c) Set the RBW = 100 kHz
- (d) Set the VBW $\geq 3 \times$ RBW
- (e) Detector = peak
- (f) Sweep time = auto couple
- (g) Trace mode = max hold
- (h) Allow trace to fully stabilize

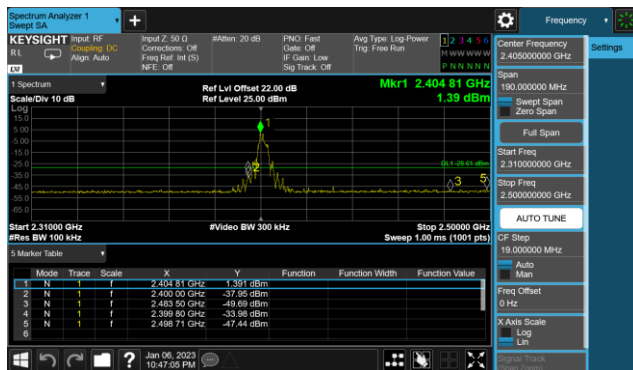
7.5.4. Test Setup



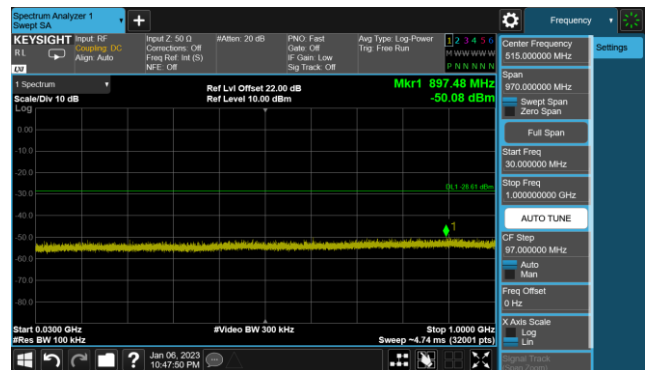
7.5.5. Test Result

Test Mode	Channel No.	Frequency (MHz)	Limit	Result
2.4GHz	CH14	2405.889	30dBc	Pass
	CH82	2440.705	30dBc	Pass
	CH154	2477.569	30dBc	Pass

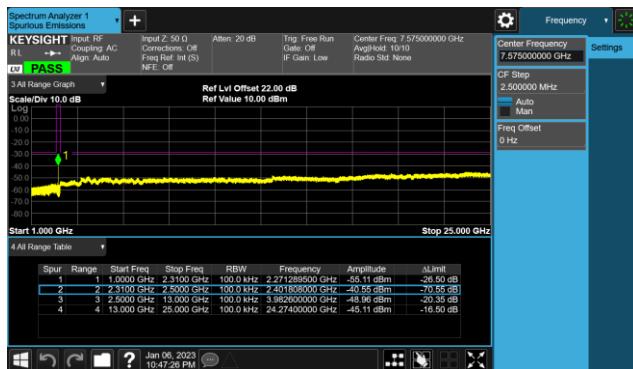
CH14 (2405.889MHz)



CH14 (2405.889MHz)



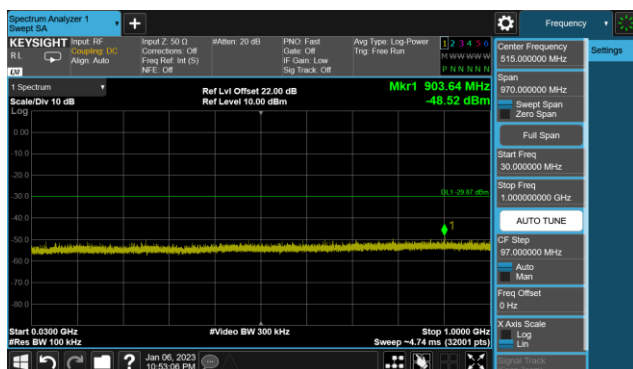
CH14 (2405.889MHz)



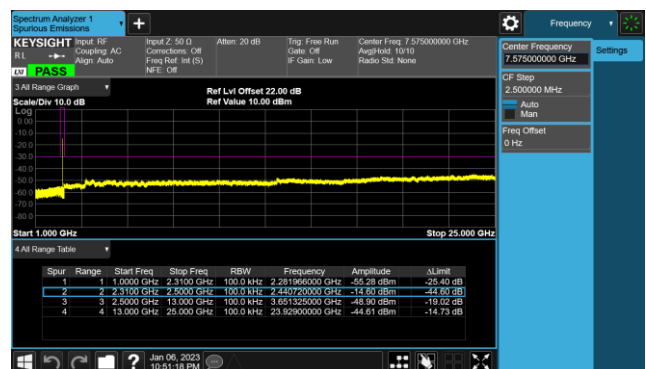
CH82 (2440.705MHz)



CH82 (2440.705MHz)



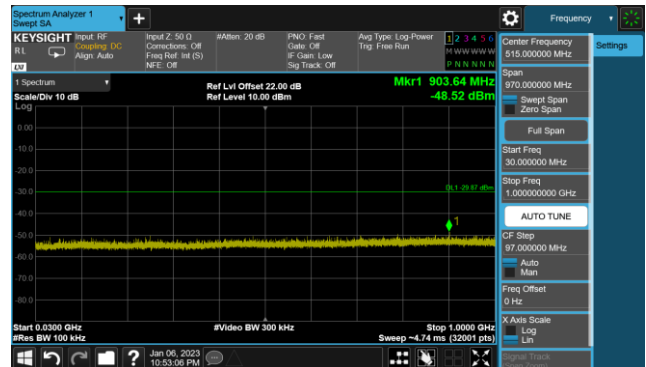
CH82 (2440.705MHz)



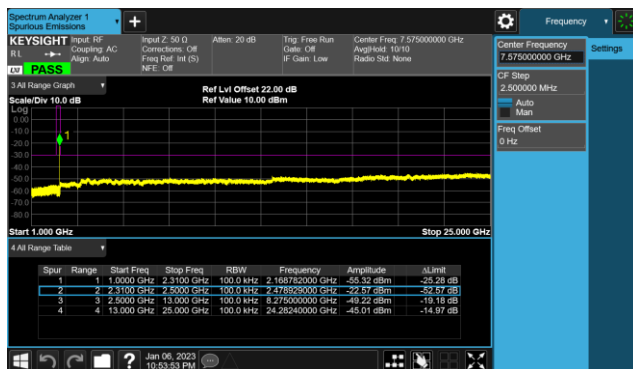
CH154 (2477.569MHz)



CH154 (2477.569MHz)



CH154 (2477.569MHz)



7.6. Radiated Spurious Emission Measurement

7.6.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [V/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

7.6.2. Test Procedure Used

ANSI C63.10 - Section 11.12.2.3 (quasi-peak measurements)

ANSI C63.10 - Section 11.12.2.4 (peak power measurements)

ANSI C63.10 - Section 11.12.2.5 (average power measurements)

7.6.3. Test Setting

Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = as specified in Table 1
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple

6.Trace mode = max hold

7.Trace was allowed to stabilize

Table 1 - RBW as a function of frequency

Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

Average Field Strength Measurements

1.Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

2.RBW = 1MHz

3.VBW $\geq$ 1/T

4.De As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to “Voltage” regardless of the display mode

5.Detector = Peak

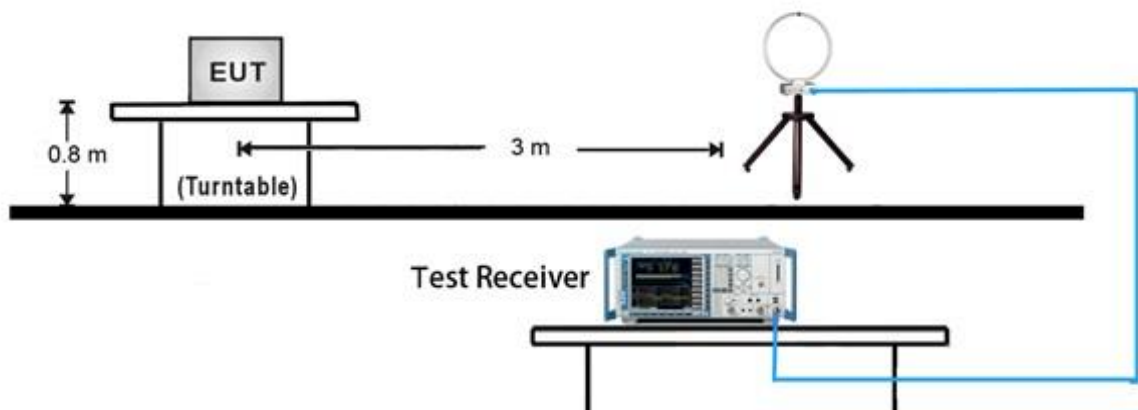
6.Sweep time = auto

7.Trace mode = max hold

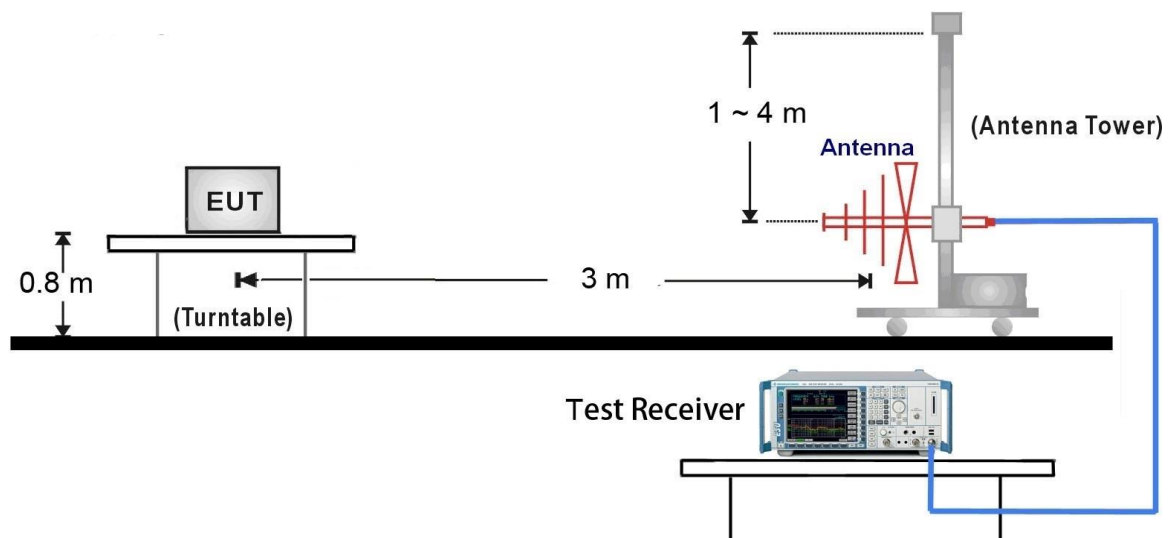
8.Allow max hold to run for at least 50 times (1/duty cycle) traces

7.6.4. Test Setup

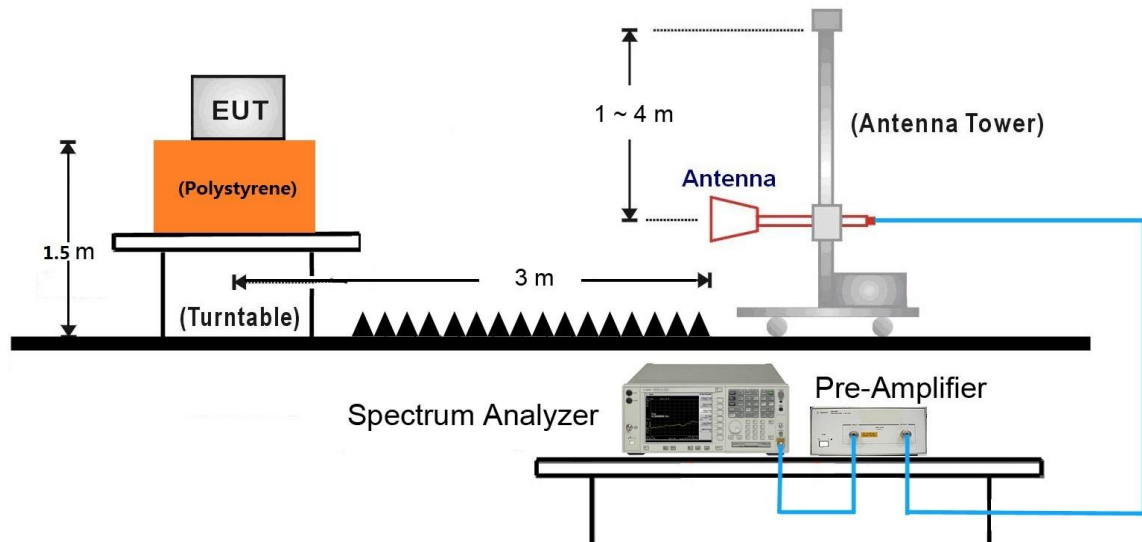
9kHz ~ 30MHz Test Setup:



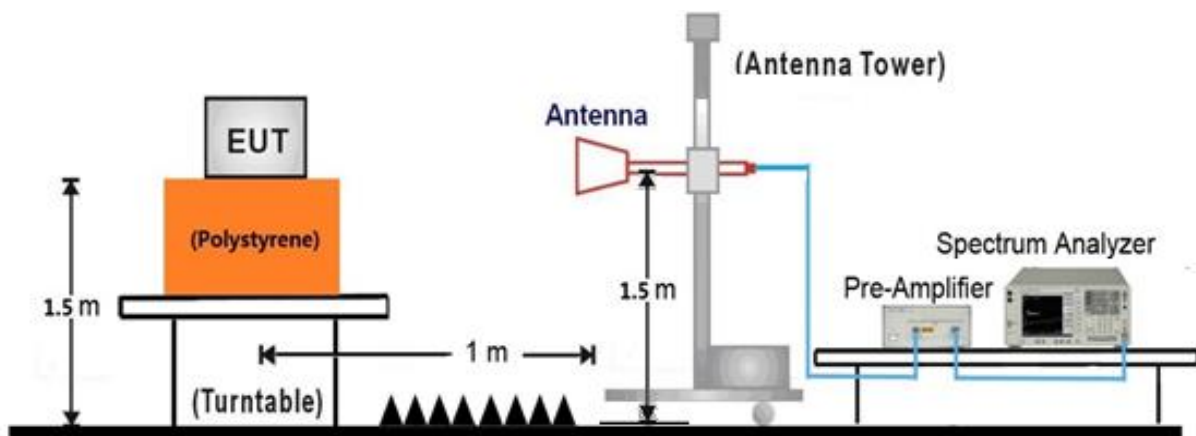
30MHz ~ 1GHz Test Setup:



1GHz ~ 18GHz Test Setup:

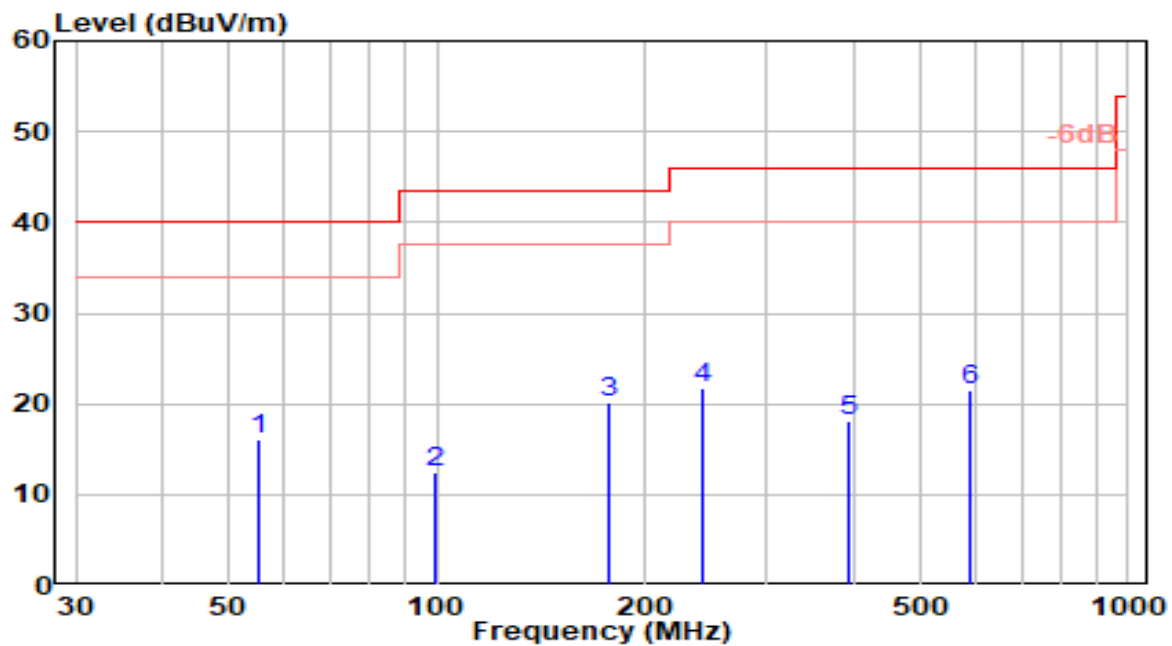


18GHz ~25GHz Test Setup:



7.6.5. Test Result

EUT	Wireless Headset	Date of Test	2023-01-10
Factor	VULB 9162	Temp. / Humidity	23°C /64%
Polarity	Horizontal	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 82_ANT 0	Test Voltage	By Notebook PC

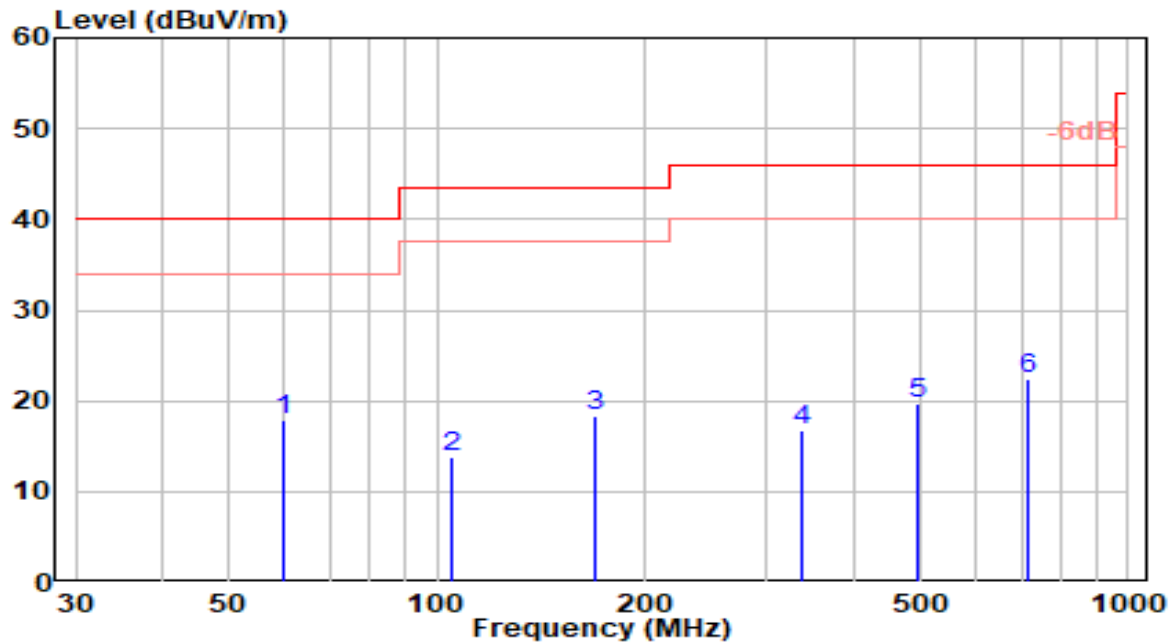


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	54.970	-3.72	19.90	16.19	-23.81	40.00	100	123	QP
2	99.760	-5.89	18.38	12.49	-31.01	43.50	100	204	QP
3	* 177.570	3.99	16.15	20.14	-23.36	43.50	100	81	QP
4	241.440	2.26	19.51	21.78	-24.22	46.00	100	41	QP
5	394.110	-4.97	22.99	18.02	-27.98	46.00	100	61	QP
6	588.350	-5.14	26.58	21.43	-24.57	46.00	100	208	QP

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-10
Factor	VULB 9162	Temp. / Humidity	23°C /64%
Polarity	Vertical	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 82_ANT 0	Test Voltage	By Notebook PC

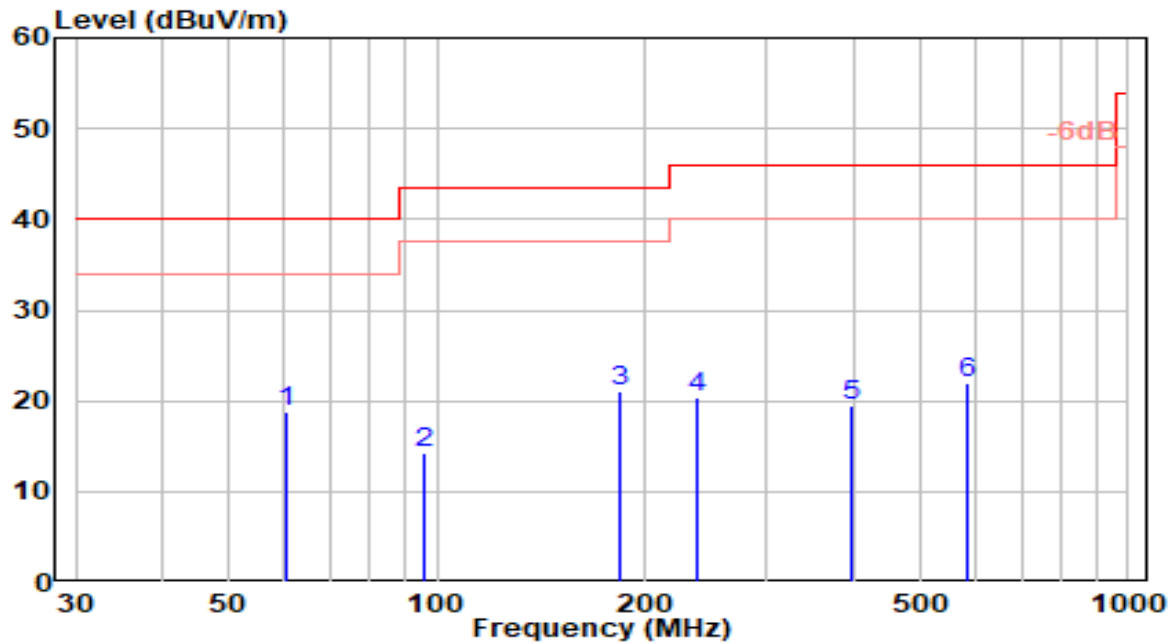


No		Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	*	59.820	-1.24	19.13	17.88	-22.12	40.00	100	333	QP
2		104.610	-4.53	18.26	13.72	-29.78	43.50	100	88	QP
3		169.810	2.57	15.73	18.30	-25.20	43.50	100	149	QP
4		336.500	-5.04	21.83	16.79	-29.21	46.00	100	201	QP
5		496.930	-5.24	24.83	19.59	-26.41	46.00	100	319	QP
6		714.450	-5.65	28.11	22.46	-23.54	46.00	100	128	QP

Note:

- "*", means this data is the worst emission level.
- C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
- Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-10
Factor	VULB 9162	Temp. / Humidity	23°C /64%
Polarity	Horizontal	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 82_ANT 1	Test Voltage	By Notebook PC

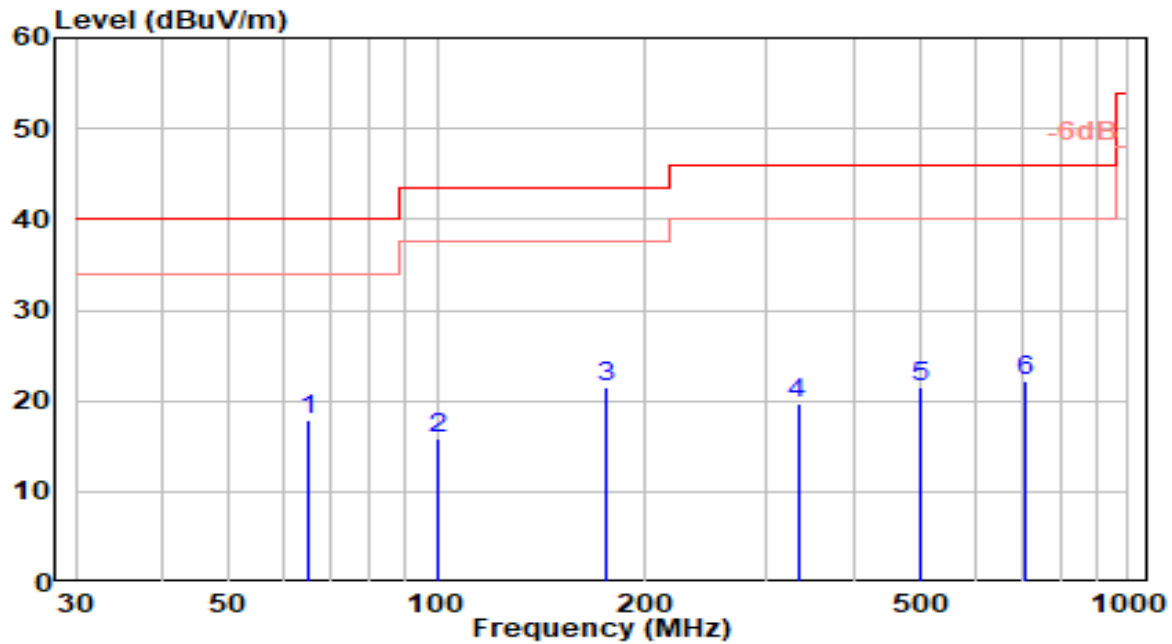


No		Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	*	60.290	-0.18	19.00	18.82	-21.18	40.00	100	182	QP
2		95.720	-3.38	17.68	14.30	-29.20	43.50	100	263	QP
3		183.650	4.26	16.76	21.02	-22.48	43.50	100	140	QP
4		237.520	0.99	19.33	20.32	-25.68	46.00	100	100	QP
5		398.710	-3.50	23.06	19.56	-26.44	46.00	100	120	QP
6		585.670	-4.53	26.51	21.97	-24.03	46.00	100	267	QP

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-10
Factor	VULB 9162	Temp. / Humidity	23°C /64%
Polarity	Vertical	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 82_ANT 1	Test Voltage	By Notebook PC

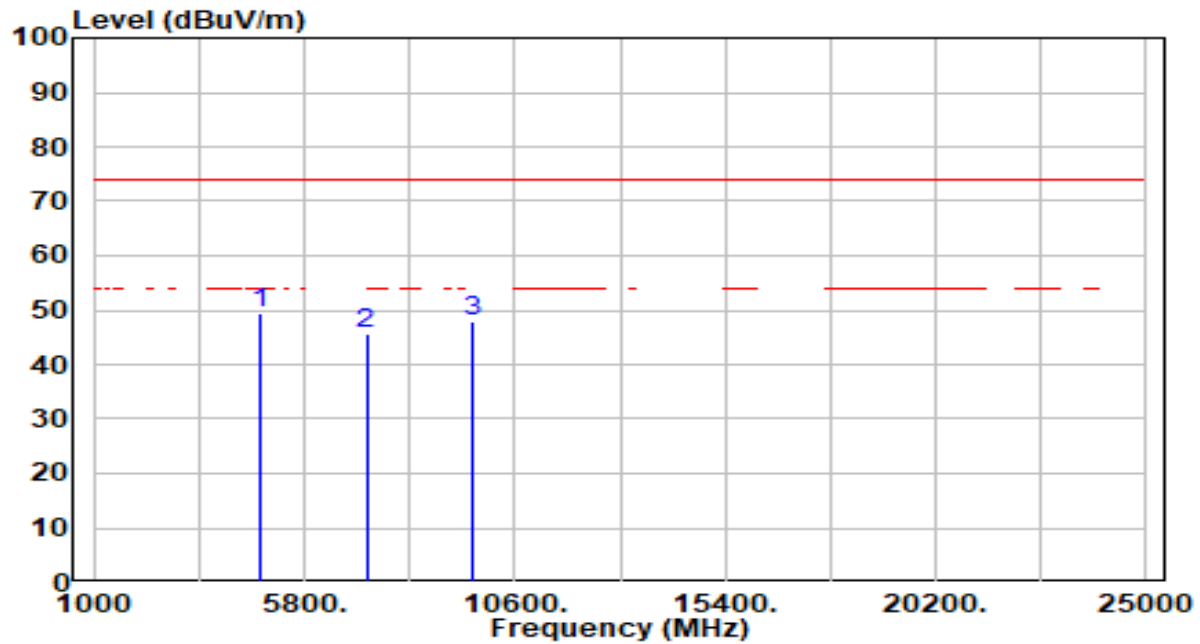


No		Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	*	65.140	0.68	17.27	17.95	-22.05	40.00	100	40	QP
2		100.570	-2.47	18.40	15.93	-27.57	43.50	100	155	QP
3		175.890	5.39	16.06	21.45	-22.05	43.50	100	216	QP
4		332.580	-2.09	21.69	19.60	-26.40	46.00	100	268	QP
5		501.530	-3.53	24.93	21.40	-24.60	46.00	100	26	QP
6		711.770	-5.78	28.06	22.27	-23.73	46.00	100	195	QP

Note:

- "*", means this data is the worst emission level.
- C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB).
- Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E & BBHA 9170	Temp. / Humidity	23°C /64%
Polarity	Horizontal	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 14_ANT 0	Test Voltage	By Notebook PC

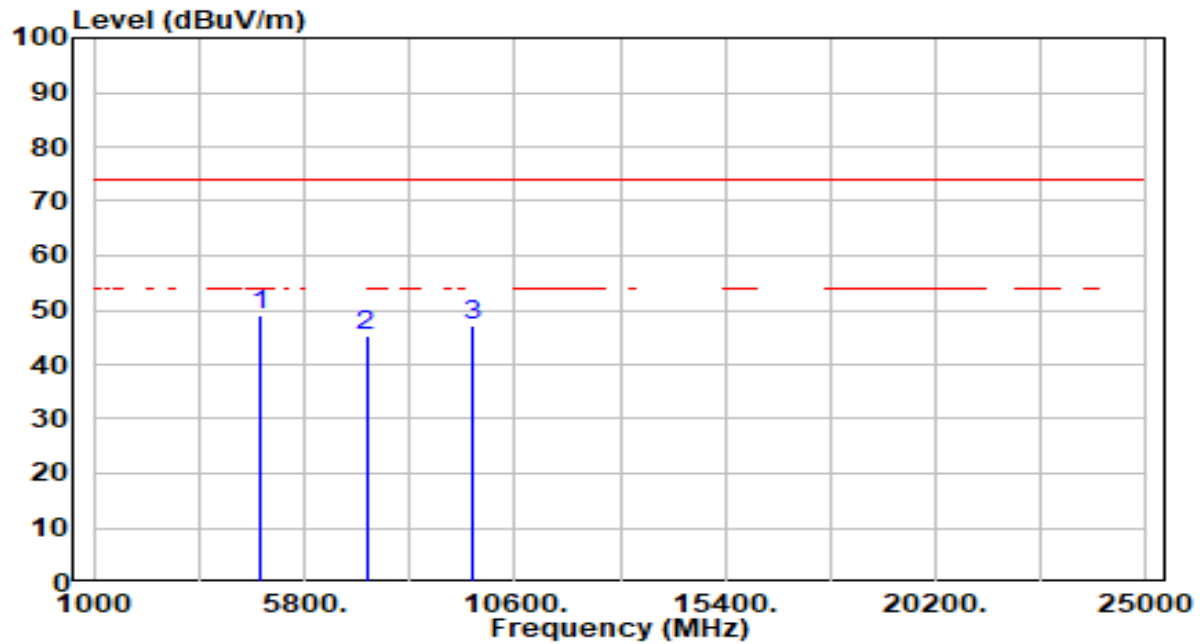


No		Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	*	4811.778	50.52	-1.25	49.27	-24.73	74.00	200	99	Peak
2		7217.667	41.43	4.16	45.60	-28.40	74.00	300	243	Peak
3		9623.556	44.59	3.28	47.87	-26.13	74.00	100	171	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E & BBHA 9170	Temp. / Humidity	23°C /64%
Polarity	Vertical	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 14_ANT 0	Test Voltage	By Notebook PC

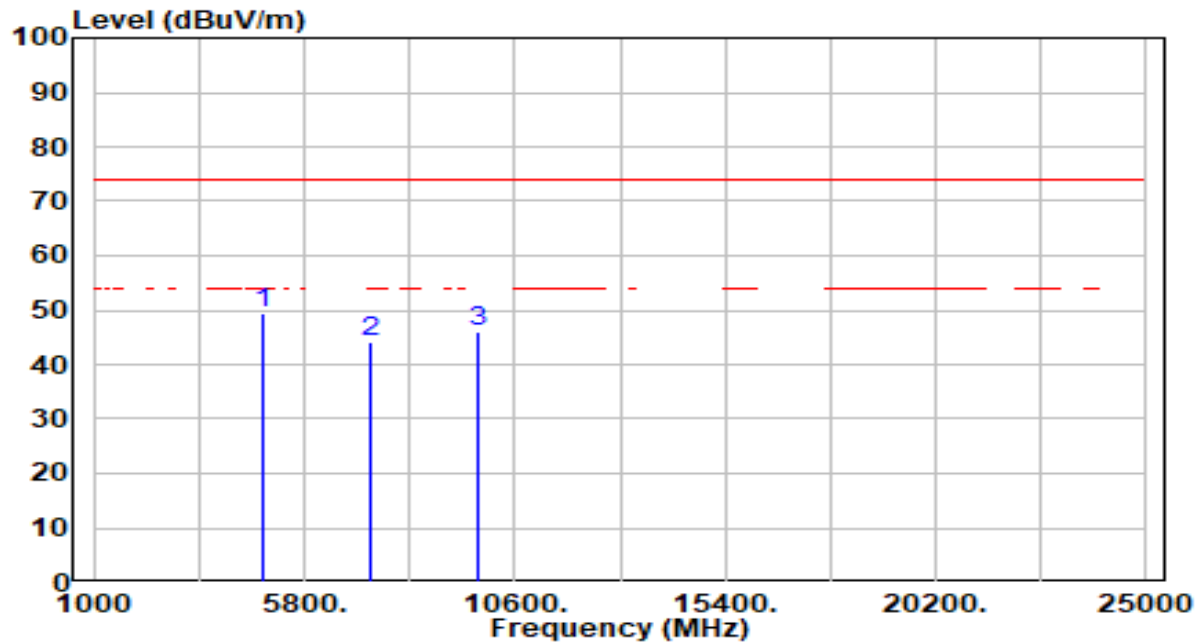


No		Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	*	4811.778	50.46	-1.25	49.21	-24.79	74.00	100	66	Peak
2		7217.667	41.08	4.16	45.24	-28.76	74.00	100	219	Peak
3		9623.556	44.04	3.28	47.32	-26.68	74.00	100	104	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E & BBHA 9170	Temp. / Humidity	23°C /64%
Polarity	Horizontal	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 82_ANT 0	Test Voltage	By Notebook PC

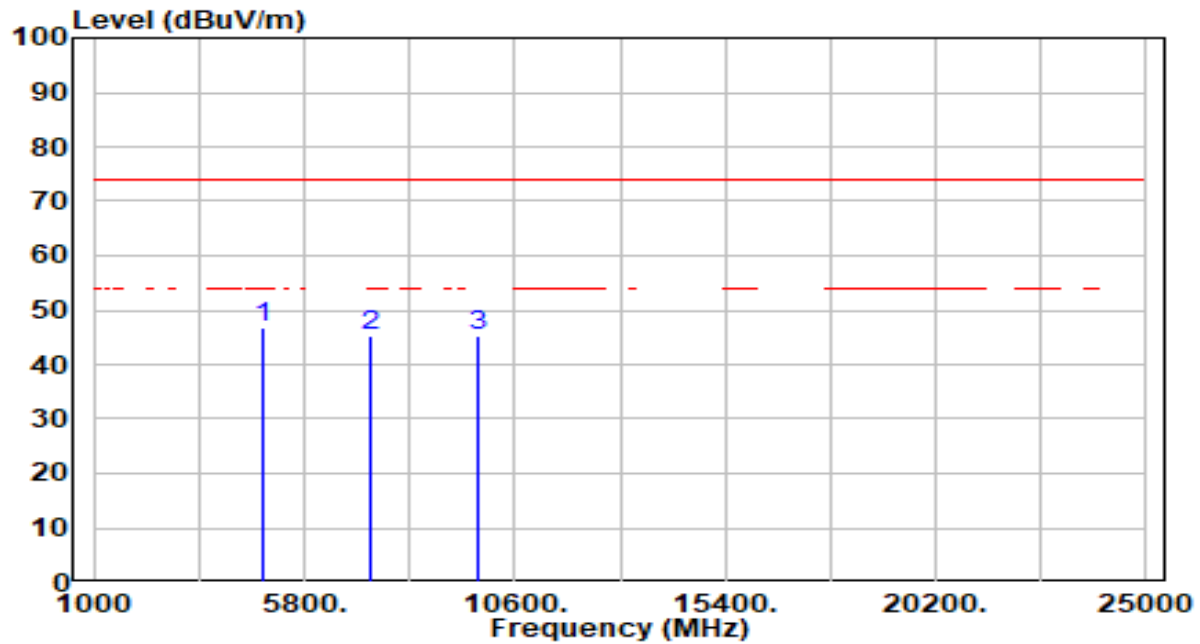


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	* 4881.410	50.64	-1.11	49.53	-24.47	74.00	200	93	Peak
2	7322.115	40.13	4.13	44.27	-29.73	74.00	200	145	Peak
3	9762.820	42.55	3.33	45.88	-28.12	74.00	200	236	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E & BBHA 9170	Temp. / Humidity	23°C /64%
Polarity	Vertical	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 82_ANT 0	Test Voltage	By Notebook PC

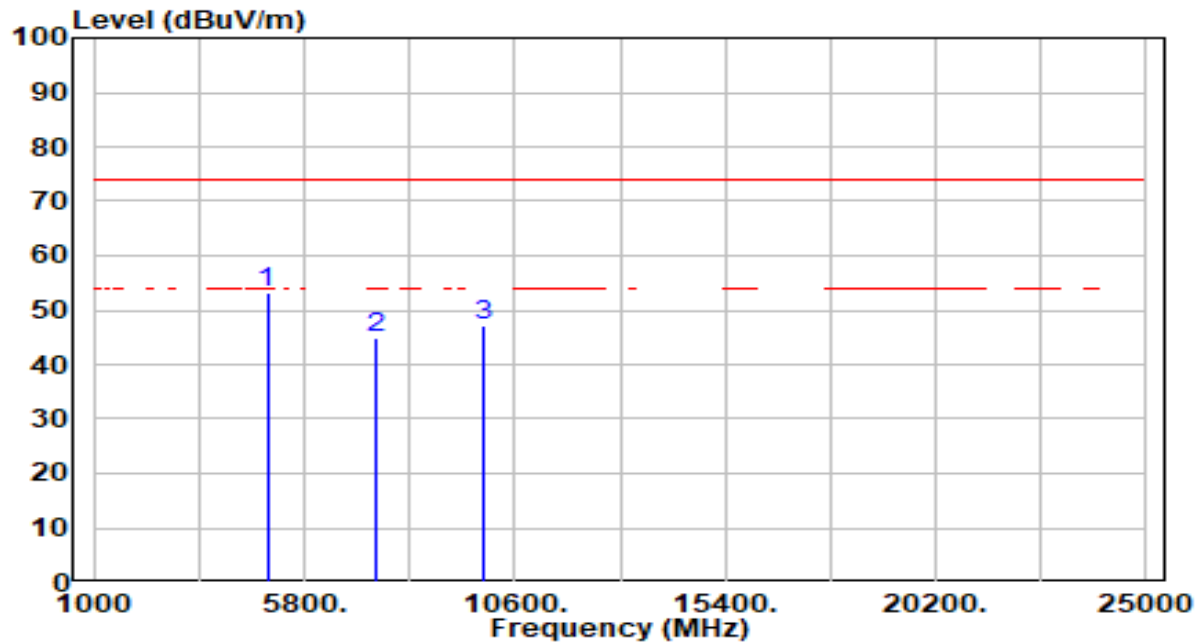


No		Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	*	4881.410	47.94	-1.11	46.83	-27.17	74.00	100	75	Peak
2		7322.115	41.01	4.13	45.14	-28.86	74.00	100	346	Peak
3		9762.820	42.13	3.33	45.46	-28.54	74.00	100	63	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E & BBHA 9170	Temp. / Humidity	23°C /64%
Polarity	Horizontal	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 154_ANT 0	Test Voltage	By Notebook PC

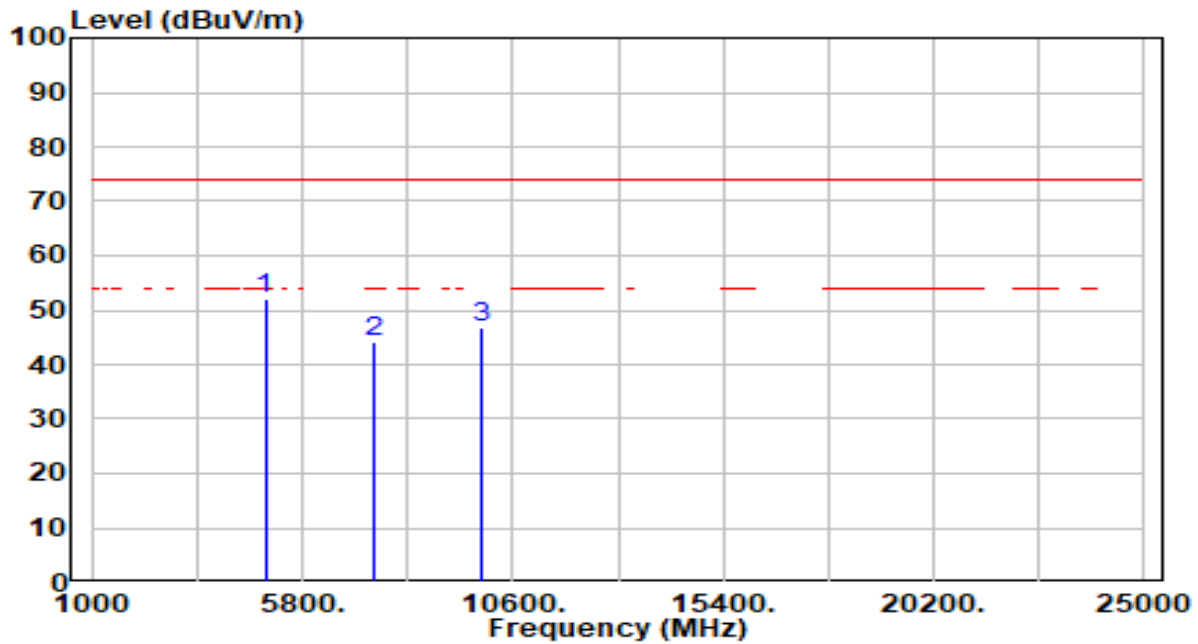


No		Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	*	4955.138	54.03	-0.96	53.07	-20.93	74.00	200	81	Peak
2		7432.707	40.73	4.08	44.81	-29.19	74.00	200	153	Peak
3		9910.276	43.56	3.44	47.00	-27.00	74.00	200	69	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E & BBHA 9170	Temp. / Humidity	23°C /64%
Polarity	Vertical	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 154_ANT 0	Test Voltage	By Notebook PC

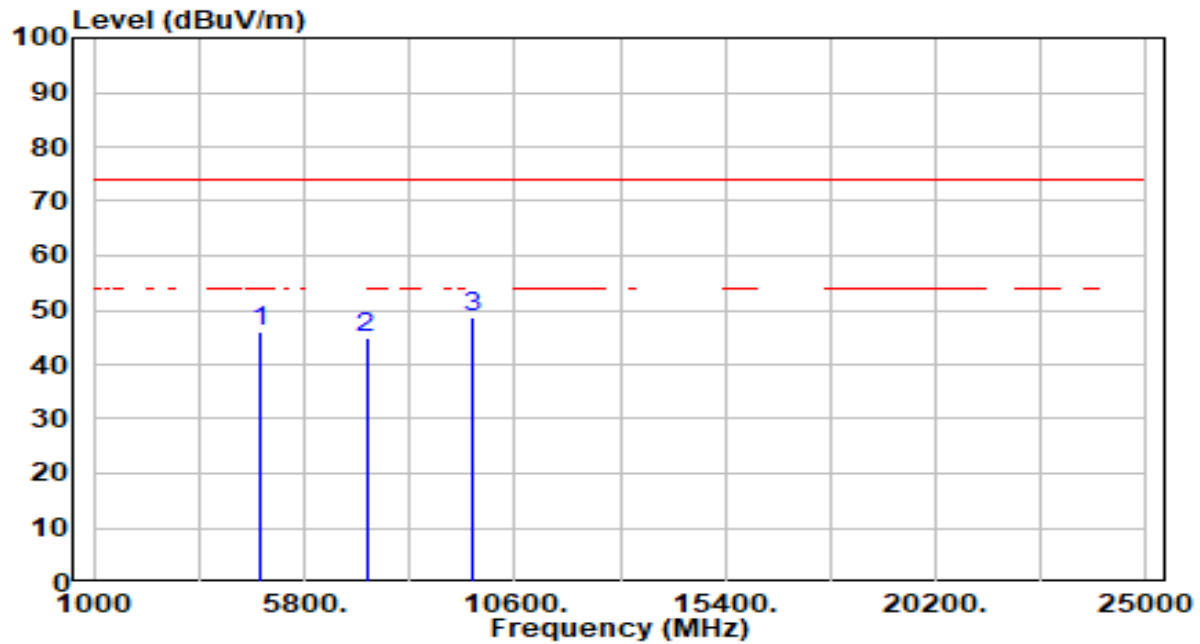


No		Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	*	4955.138	53.16	-0.96	52.20	-21.80	74.00	100	86	Peak
2		7432.707	40.18	4.08	44.26	-29.74	74.00	100	0	Peak
3		9910.276	43.43	3.44	46.87	-27.13	74.00	100	65	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E & BBHA 9170	Temp. / Humidity	23°C /64%
Polarity	Horizontal	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 14_ANT 1	Test Voltage	By Notebook PC

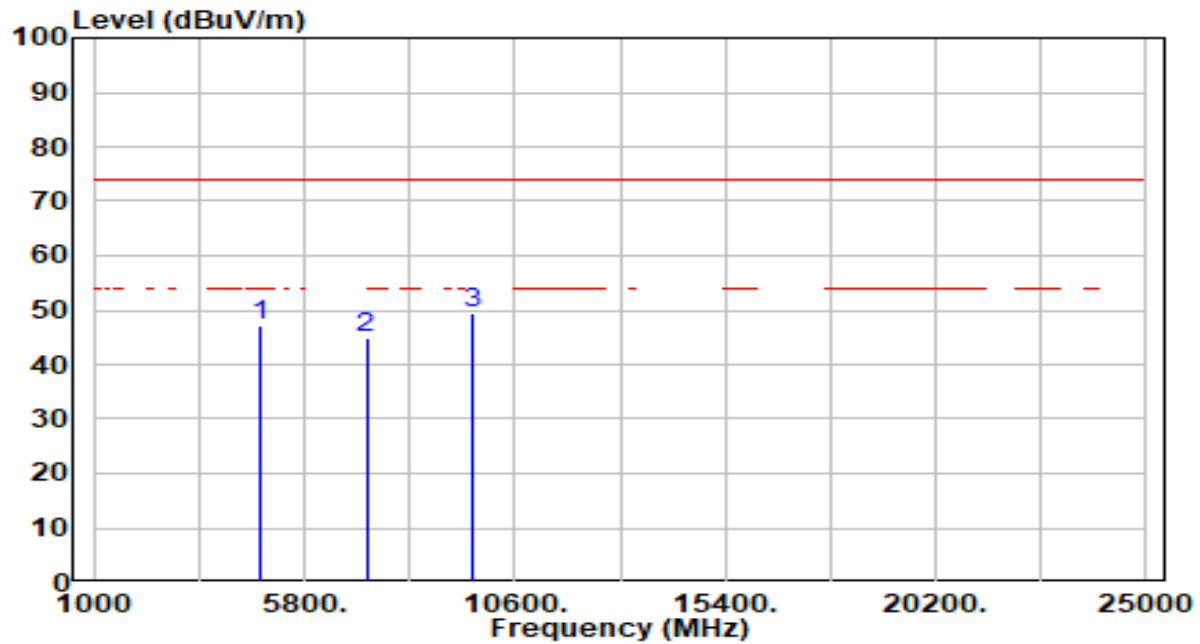


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4811.778	47.46	-1.25	46.20	-27.80	74.00	200	51	Peak
2	7217.667	40.75	4.16	44.91	-29.09	74.00	200	63	Peak
3	* 9623.556	45.54	3.28	48.82	-25.18	74.00	100	150	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E & BBHA 9170	Temp. / Humidity	23°C /64%
Polarity	Vertical	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 14_ANT 1	Test Voltage	By Notebook PC

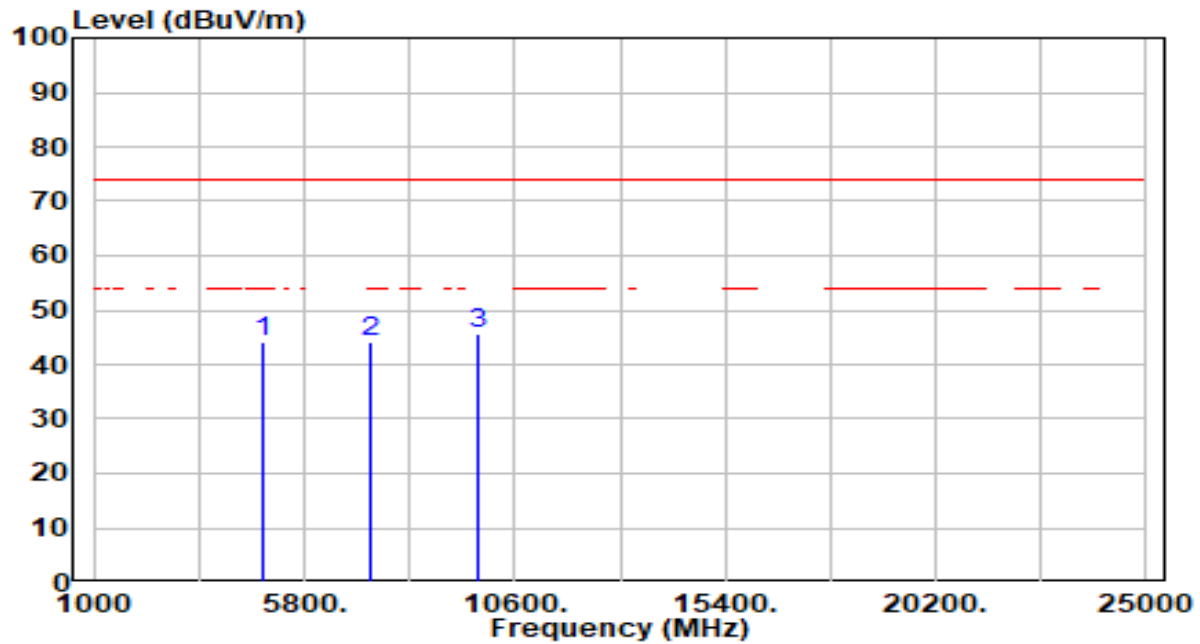


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4811.778	48.49	-1.25	47.24	-26.76	74.00	100	125	Peak
2	7217.667	40.59	4.16	44.75	-29.25	74.00	300	304	Peak
3	* 9623.556	46.22	3.28	49.50	-24.50	74.00	100	78	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E & BBHA 9170	Temp. / Humidity	23°C /64%
Polarity	Horizontal	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 82_ANT 1	Test Voltage	By Notebook PC

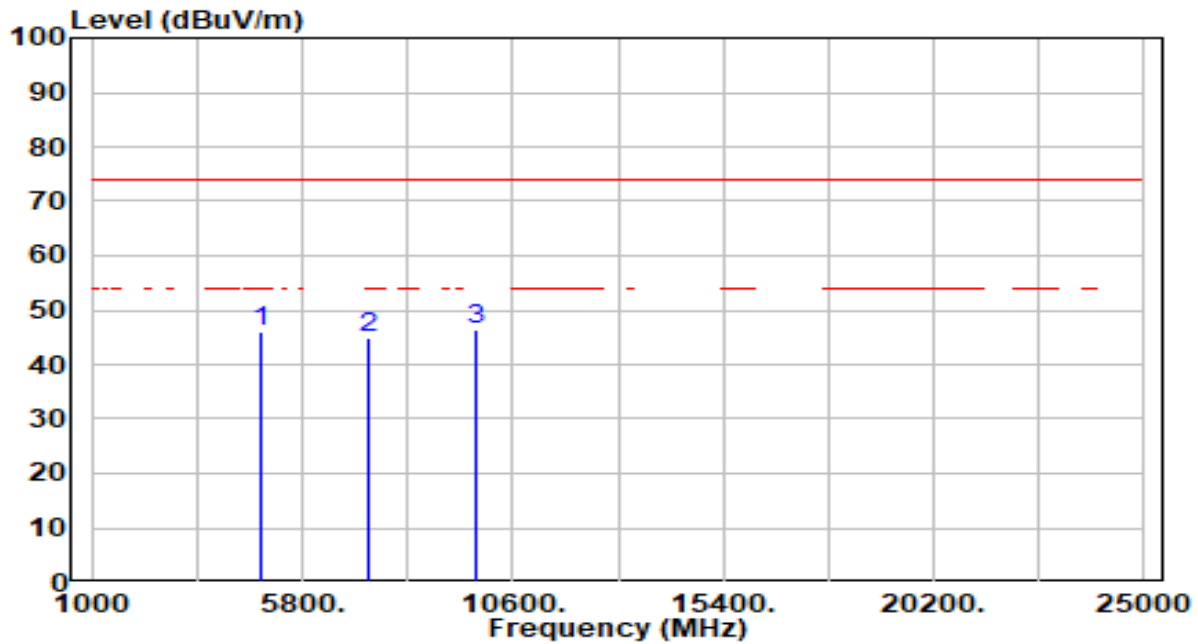


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4881.410	45.28	-1.11	44.16	-29.84	74.00	200	86	Peak
2	7322.115	40.11	4.13	44.24	-29.76	74.00	200	295	Peak
3	* 9762.820	42.41	3.33	45.74	-28.26	74.00	200	4	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E & BBHA 9170	Temp. / Humidity	23°C /64%
Polarity	Vertical	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 82_ANT 1	Test Voltage	By Notebook PC

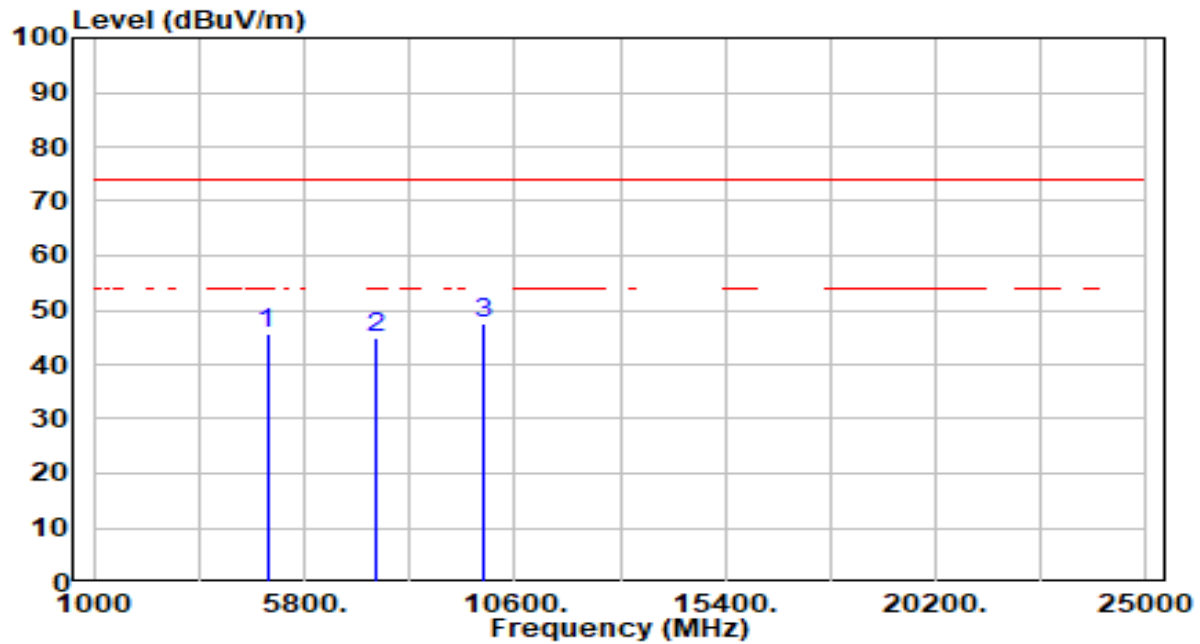


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4881.410	47.16	-1.11	46.04	-27.96	74.00	100	53	Peak
2	7322.115	40.86	4.13	44.99	-29.01	74.00	100	74	Peak
3	* 9762.820	43.11	3.33	46.44	-27.56	74.00	100	102	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E & BBHA 9170	Temp. / Humidity	23°C /64%
Polarity	Horizontal	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 154_ANT 1	Test Voltage	By Notebook PC

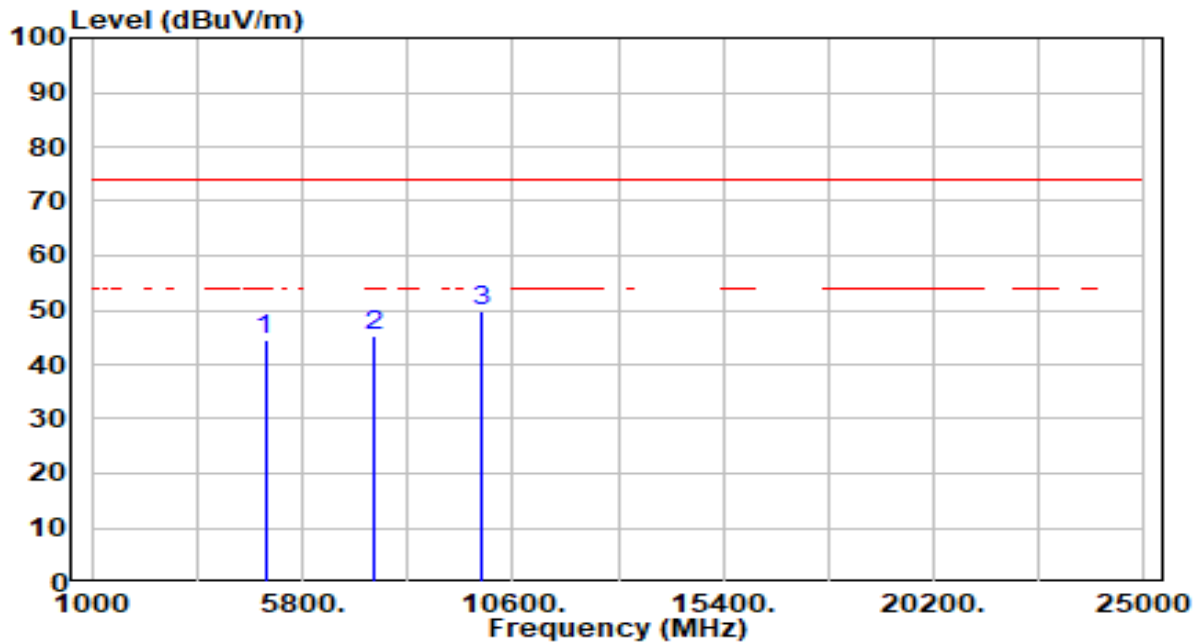


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4955.138	46.70	-0.96	45.74	-28.26	74.00	200	102	Peak
2	7432.707	40.94	4.08	45.02	-28.98	74.00	200	175	Peak
3	* 9910.276	44.10	3.44	47.54	-26.46	74.00	200	69	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E & BBHA 9170	Temp. / Humidity	23°C /64%
Polarity	Vertical	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 154_ANT 1	Test Voltage	By Notebook PC



No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	4955.138	45.55	-0.96	44.59	-29.41	74.00	100	105	Peak
2	7432.707	41.31	4.08	45.39	-28.61	74.00	100	250	Peak
3	* 9910.276	46.44	3.44	49.88	-24.12	74.00	100	98	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

7.7. Radiated Restricted Band Edge Measurement

7.7.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [V/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 – 30	30	30
30 – 88	100	3
88 – 216	150	3
216 – 960	200	3
Above 960	500	3

7.7.2. Test Procedure Used

ANSI C63.10-2013 - Section 11.13

7.7.3. Test Setting

Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = as specified in Table 1
3. VBW = 3 * RBW
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Table 1 - RBW as a function of frequency

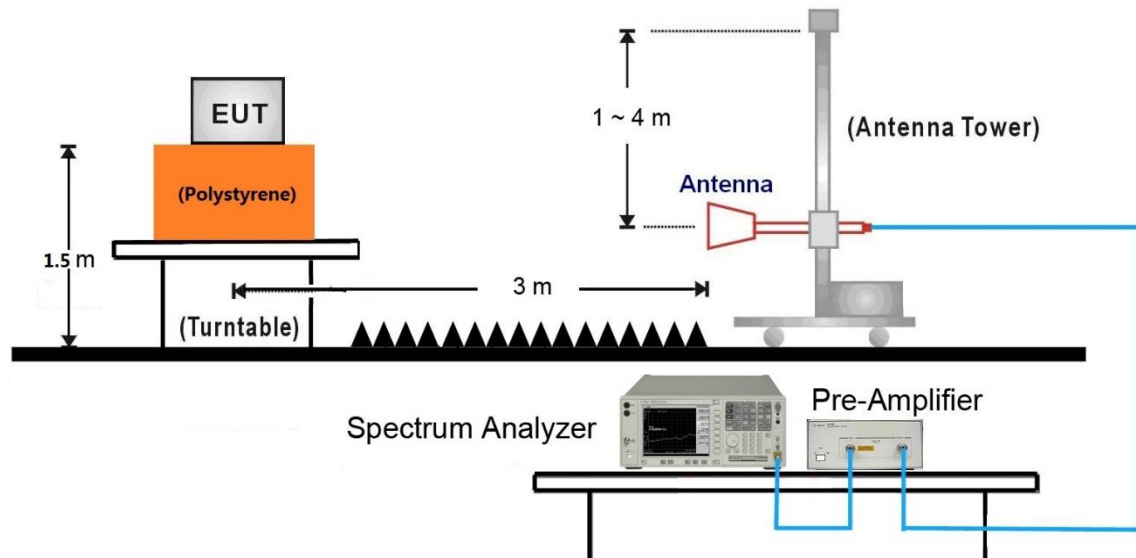
Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

Average Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW $\geq 1/T$
4. De As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode
5. Detector = Peak
6. Sweep time = auto
7. Trace mode = max hold
8. Allow max hold to run for at least 50 times (1/duty cycle) traces

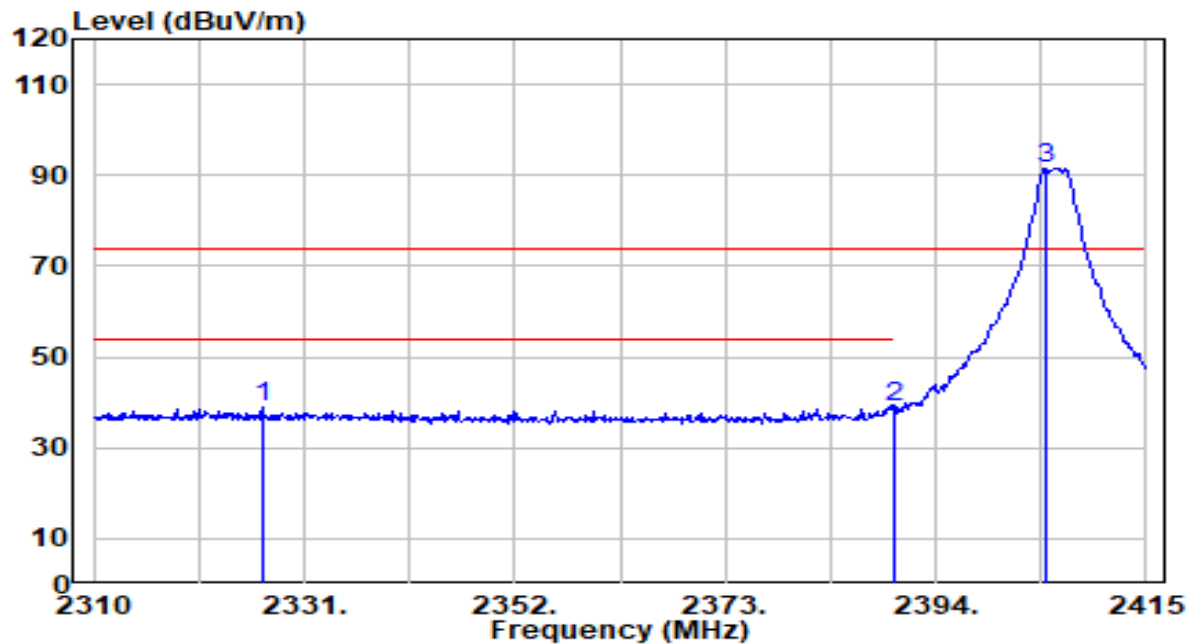
7.7.4. Test Setup

1GHz ~ 18GHz Test Setup:



7.7.5. Test Result

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E	Temp. / Humidity	23°C /64%
Polarity	Horizontal	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 14_ANT 0	Test Voltage	By Notebook PC

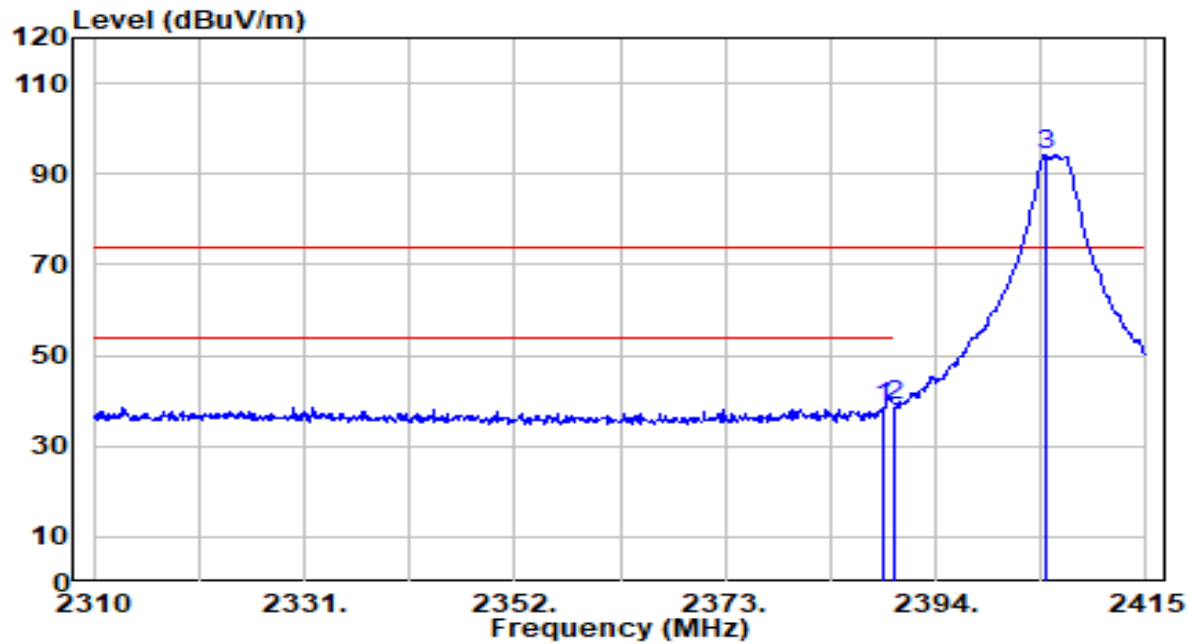


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2326.800	44.49	-5.64	38.86	-35.14	74.00	296	269	Peak
2	* 2390.000	44.68	-5.62	39.06	-34.94	74.00	296	269	Peak
3	2405.025	97.12	-5.60	91.52	N/A	N/A	296	269	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E	Temp. / Humidity	23°C /64%
Polarity	Vertical	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 14_ANT 0	Test Voltage	By Notebook PC

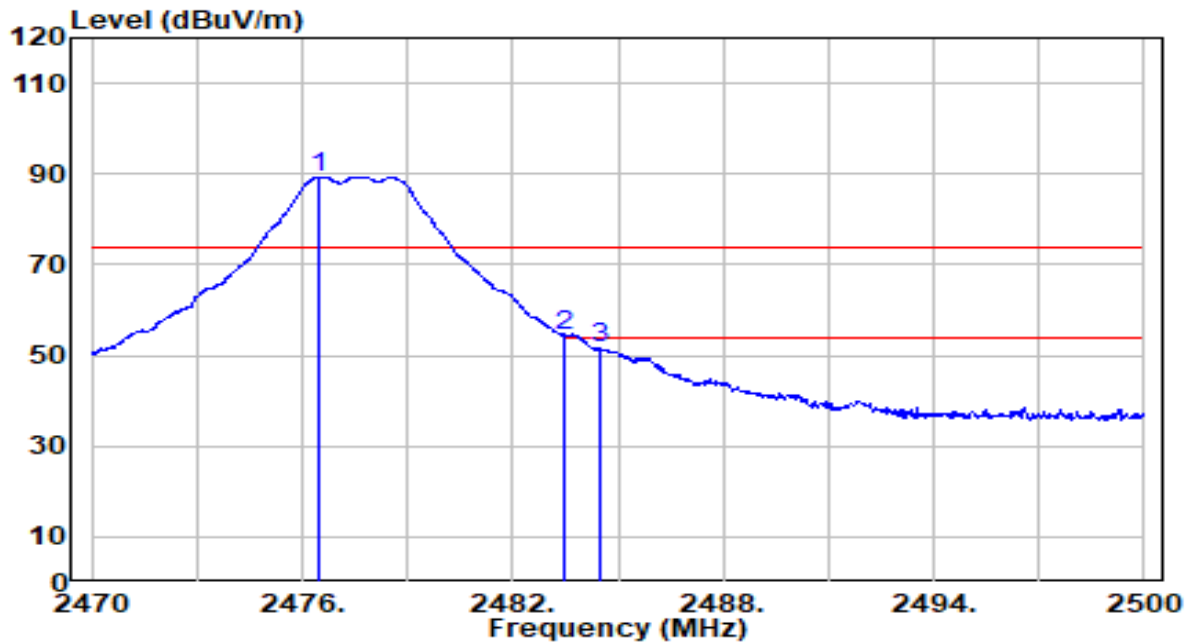


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2388.645	44.29	-5.62	38.68	-35.32	74.00	200	164	Peak
2	* 2390.000	44.64	-5.62	39.02	-34.98	74.00	200	164	Peak
3	2405.025	99.66	-5.60	94.05	N/A	N/A	200	164	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E	Temp. / Humidity	23°C /64%
Polarity	Horizontal	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 154_ANT 0	Test Voltage	By Notebook PC

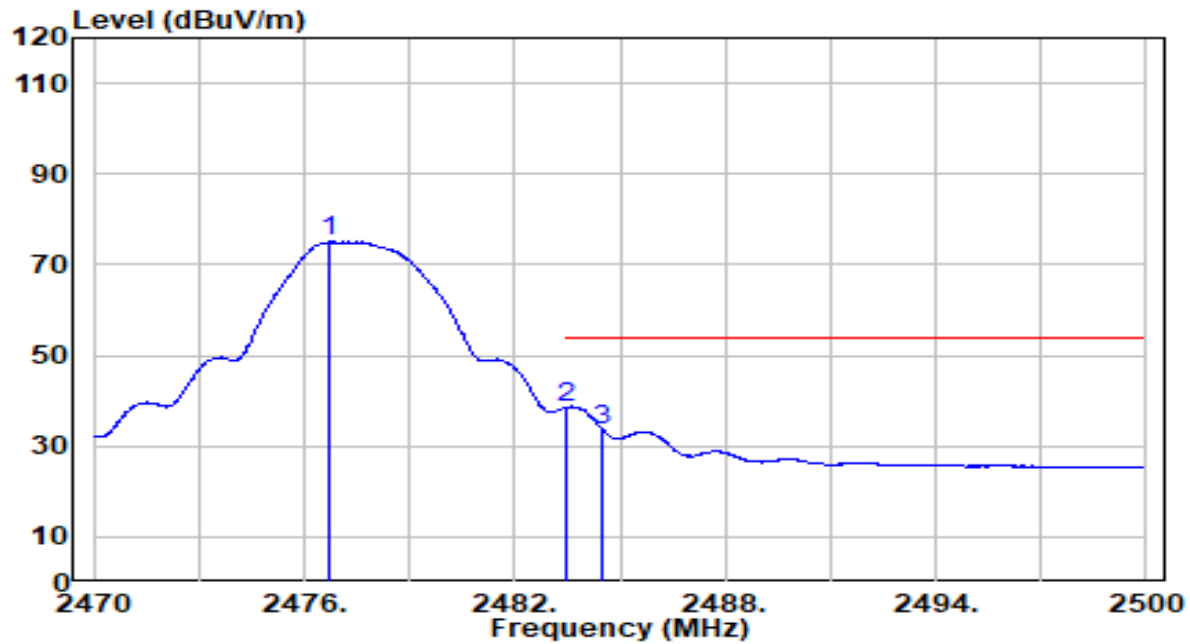


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2476.480	94.83	-5.43	89.39	N/A	N/A	304	265	Peak
2	* 2483.500	59.83	-5.42	54.41	-19.59	74.00	304	265	Peak
3	2484.520	56.91	-5.42	51.49	-22.51	74.00	304	265	Peak

Note:

- "*", means this data is the worst emission level.
- C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
- Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E	Temp. / Humidity	23°C /64%
Polarity	Horizontal	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 154_ANT 0	Test Voltage	By Notebook PC

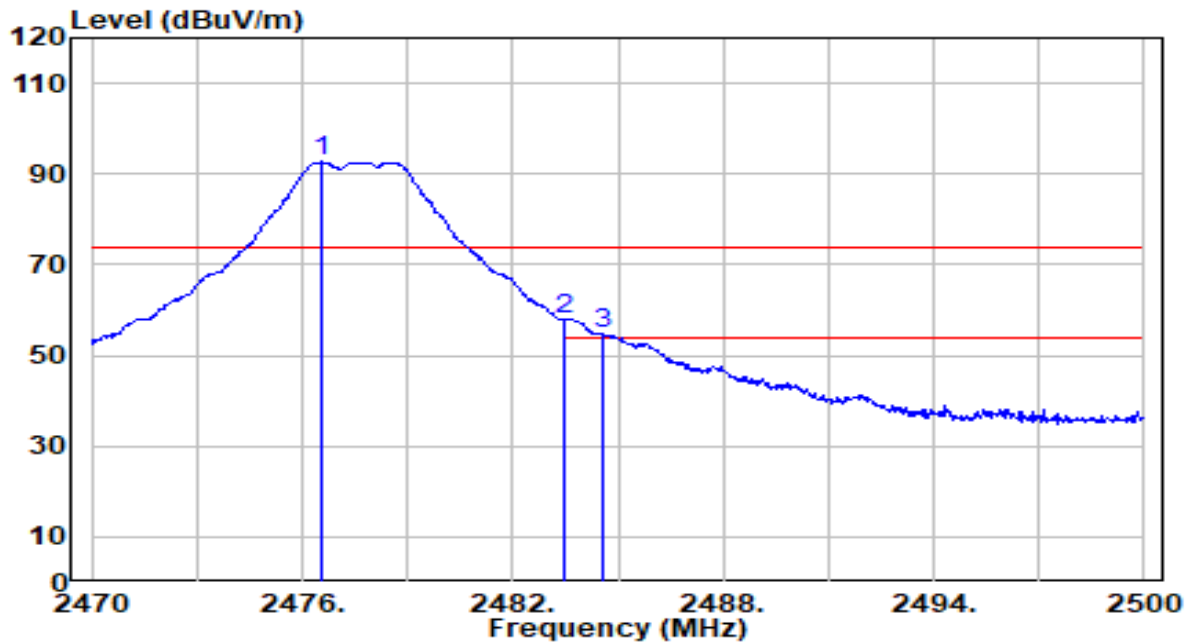


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2476.690	80.57	-5.43	75.14	N/A	N/A	304	265	Average
2	* 2483.500	44.03	-5.42	38.61	-15.39	54.00	304	265	Average
3	2484.520	38.96	-5.42	33.54	-20.46	54.00	304	265	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E	Temp. / Humidity	23°C /64%
Polarity	Vertical	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 154_ANT 0	Test Voltage	By Notebook PC

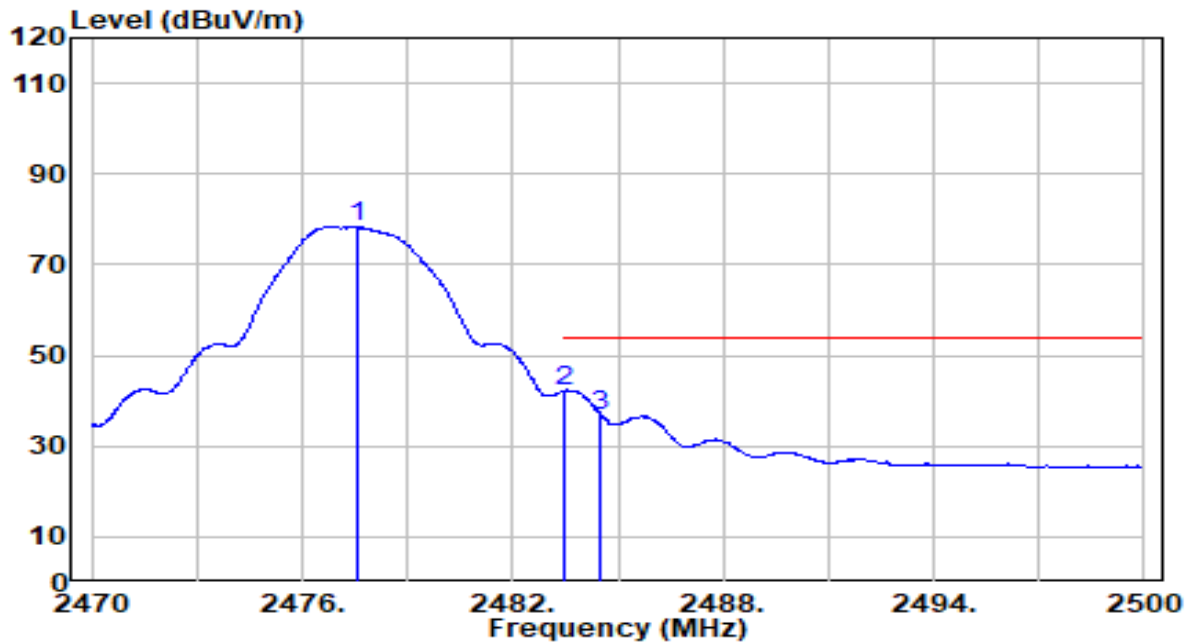


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2476.540	98.05	-5.43	92.61	N/A	N/A	200	164	Peak
2	* 2483.500	63.32	-5.42	57.90	-16.10	74.00	200	164	Peak
3	2484.580	60.08	-5.42	54.66	-19.34	74.00	200	164	Peak

Note:

- "*", means this data is the worst emission level.
- C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
- Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E	Temp. / Humidity	23°C /64%
Polarity	Vertical	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 154_ANT 0	Test Voltage	By Notebook PC

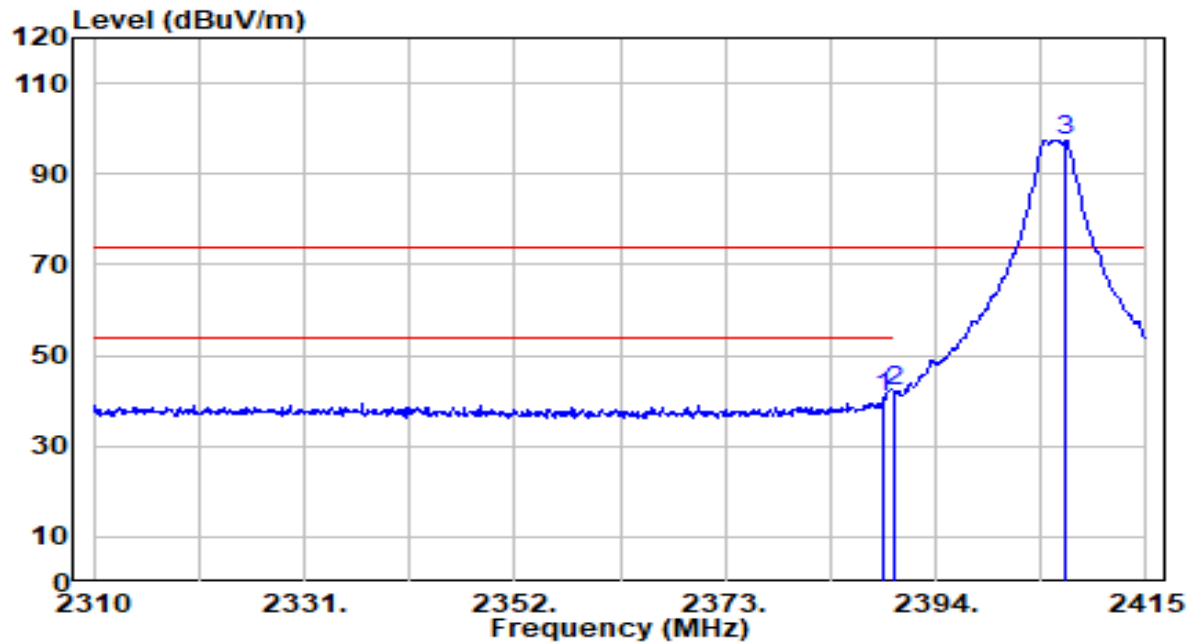


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2477.560	83.80	-5.43	78.37	N/A	N/A	200	164	Average
2	* 2483.500	47.61	-5.42	42.19	-11.81	54.00	200	164	Average
3	2484.520	42.24	-5.42	36.82	-17.18	54.00	200	164	Average

Note:

- "*" means this data is the worst emission level.
- C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
- Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E	Temp. / Humidity	23°C /64%
Polarity	Horizontal	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 14_ANT 1	Test Voltage	By Notebook PC

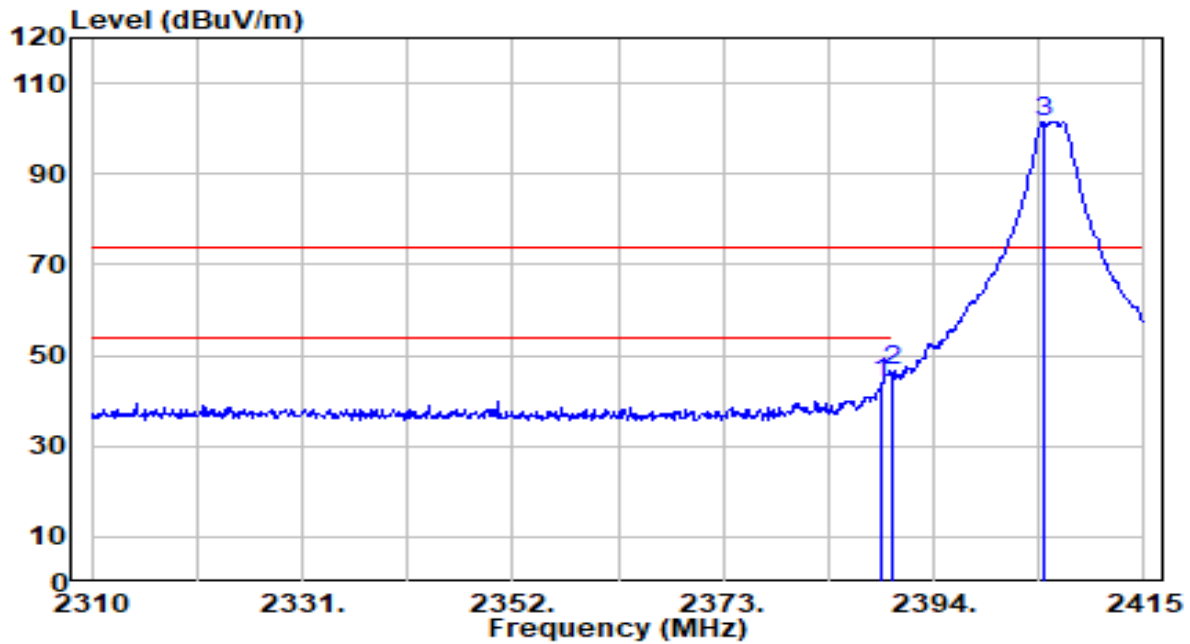


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2388.750	46.50	-5.62	40.88	-33.12	74.00	300	119	Peak
2	* 2390.000	47.57	-5.62	41.96	-32.04	74.00	300	119	Peak
3	2406.915	102.92	-5.60	97.33	N/A	N/A	300	119	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E	Temp. / Humidity	23°C /64%
Polarity	Vertical	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 14_ANT 1	Test Voltage	By Notebook PC

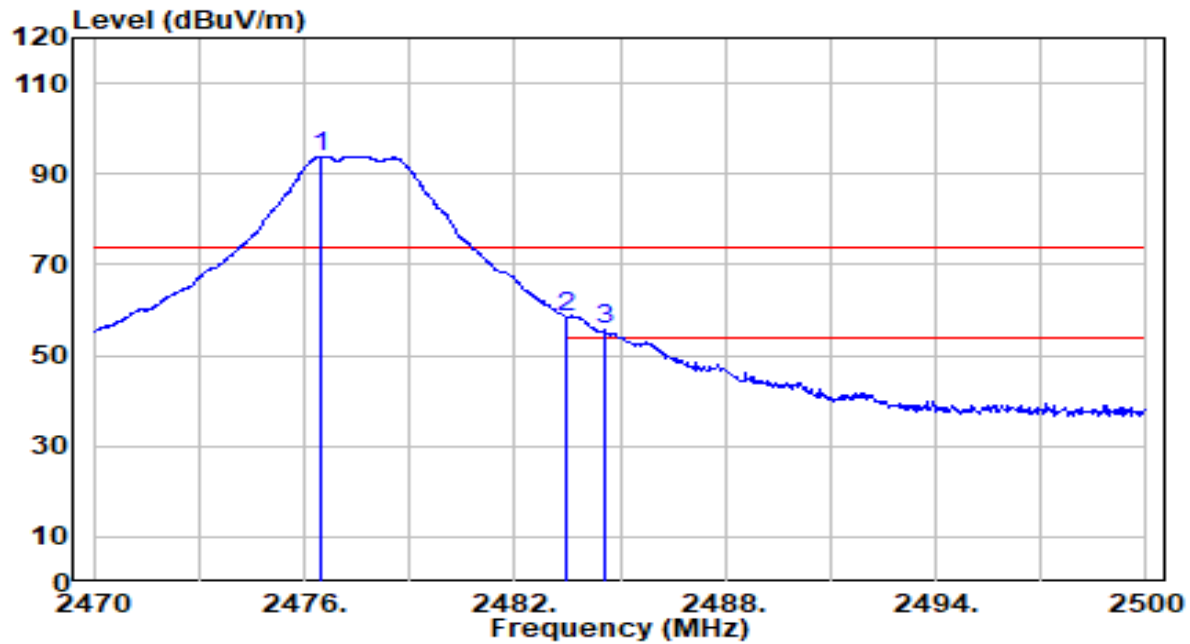


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2388.750	49.75	-5.62	44.14	-29.86	74.00	130	282	Peak
2	* 2390.000	52.18	-5.62	46.57	-27.43	74.00	130	282	Peak
3	2404.920	107.14	-5.60	101.54	N/A	N/A	130	282	Peak

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E	Temp. / Humidity	23°C /64%
Polarity	Horizontal	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 154_ANT 1	Test Voltage	By Notebook PC

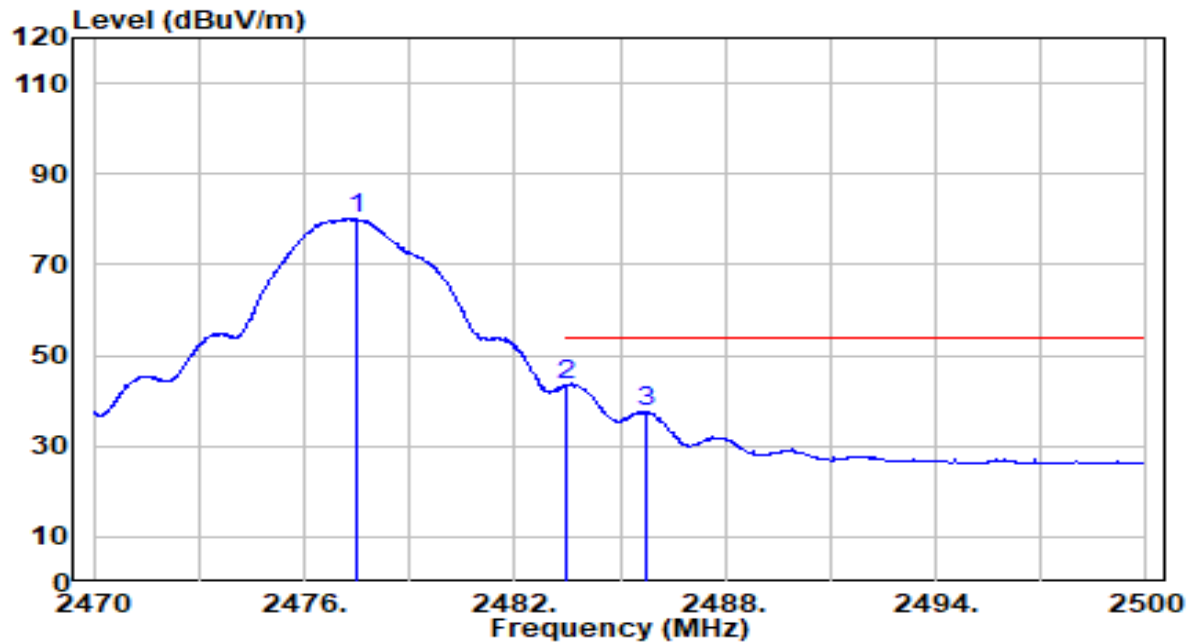


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2476.510	99.31	-5.43	93.88	N/A	N/A	328	103	Peak
2	* 2483.500	63.87	-5.42	58.45	-15.55	74.00	328	103	Peak
3	2484.550	60.90	-5.42	55.48	-18.52	74.00	328	103	Peak

Note:

- "*", means this data is the worst emission level.
- C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
- Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E	Temp. / Humidity	23°C /64%
Polarity	Horizontal	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 154_ANT 1	Test Voltage	By Notebook PC

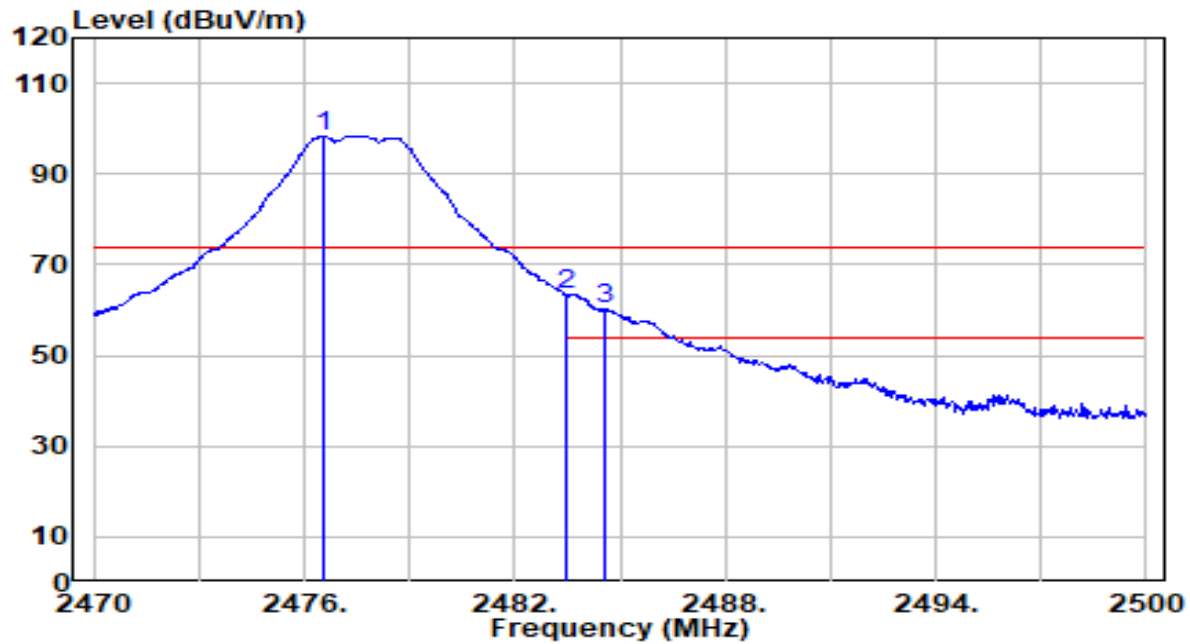


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2477.470	85.60	-5.43	80.16	N/A	N/A	328	103	Average
2	* 2483.500	48.94	-5.42	43.52	-10.48	54.00	328	103	Average
3	2485.720	43.17	-5.41	37.76	-16.24	54.00	328	103	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E	Temp. / Humidity	23°C /64%
Polarity	Vertical	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 154_ANT 1	Test Voltage	By Notebook PC

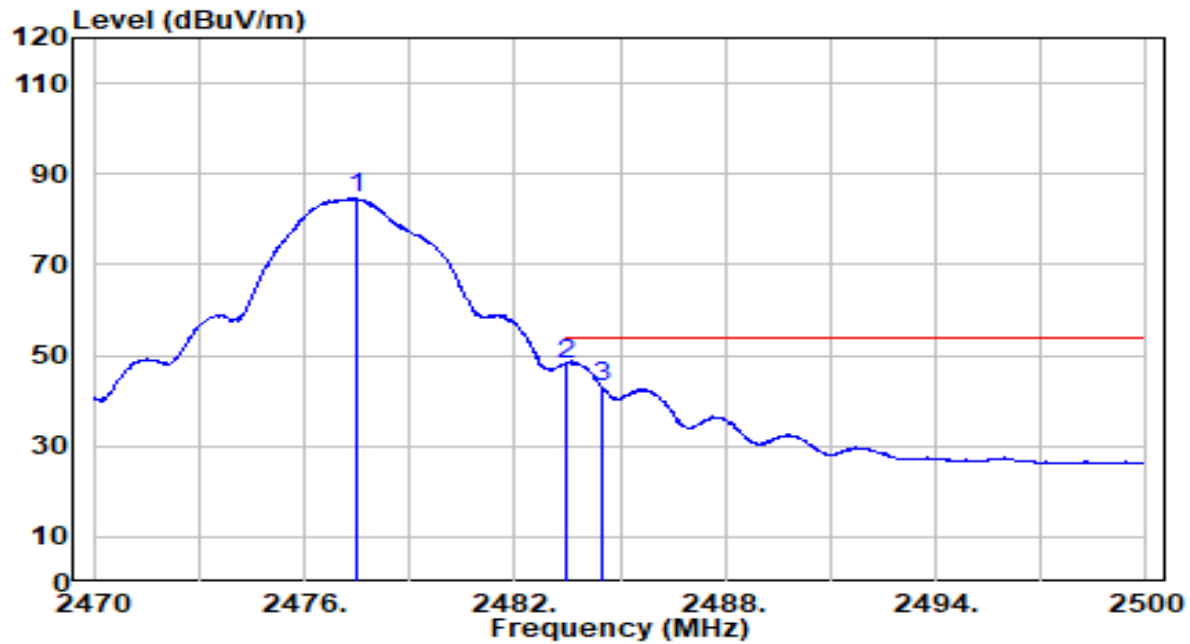


No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2476.540	103.62	-5.43	98.18	N/A	N/A	130	283	Peak
2	* 2483.500	68.85	-5.42	63.43	-10.57	74.00	130	283	Peak
3	2484.580	65.61	-5.42	60.19	-13.81	74.00	130	283	Peak

Note:

- "*" means this data is the worst emission level.
- C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
- Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
- The emission levels of other frequencies are very lower than the limit and not show in test report.

EUT	Wireless Headset	Date of Test	2023-01-09
Factor	DRH18-E	Temp. / Humidity	23°C /64%
Polarity	Vertical	Site / Test Engineer	AC2 / Ares
Test Mode	SRD_2.4G_TX_CH 154_ANT 1	Test Voltage	By Notebook PC



No	Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	2477.530	89.96	-5.43	84.52	N/A	N/A	130	283	Average
2	* 2483.500	53.53	-5.42	48.11	-5.89	54.00	130	283	Average
3	2484.520	48.33	-5.42	42.91	-11.09	54.00	130	283	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = Antenna Factor (dB/m) + Cable Loss (dB) – Preamplifier(dB).
3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

7.8. AC Conducted Emissions Measurement

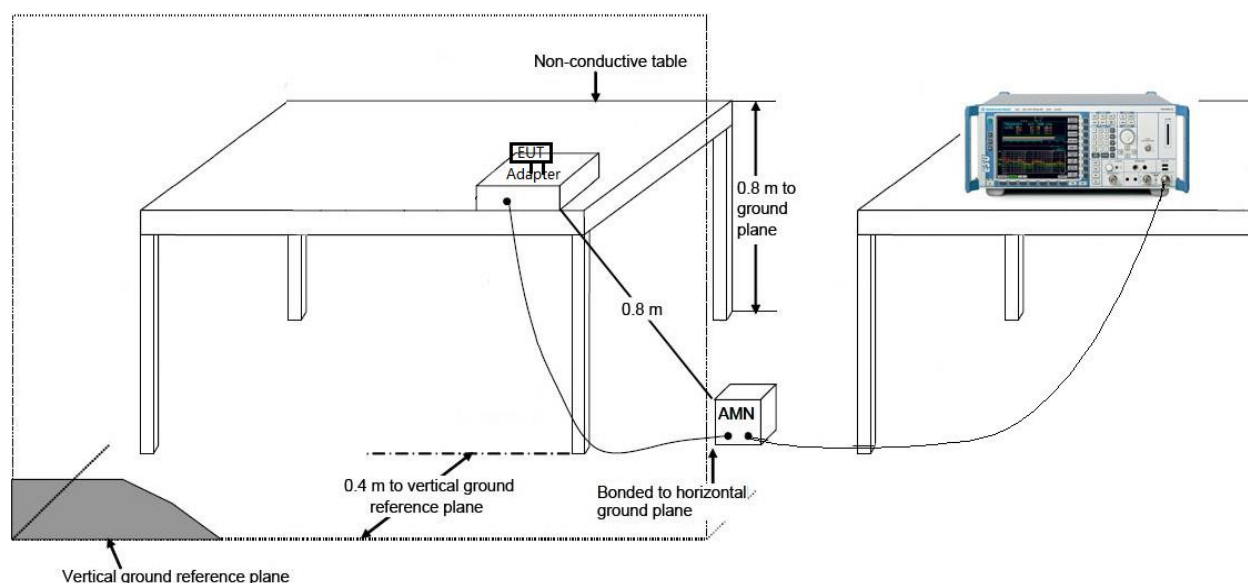
7.8.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207 / RSS-Gen Limits		
Frequency (MHz)	QP (dB μ V)	Average (dB μ V)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

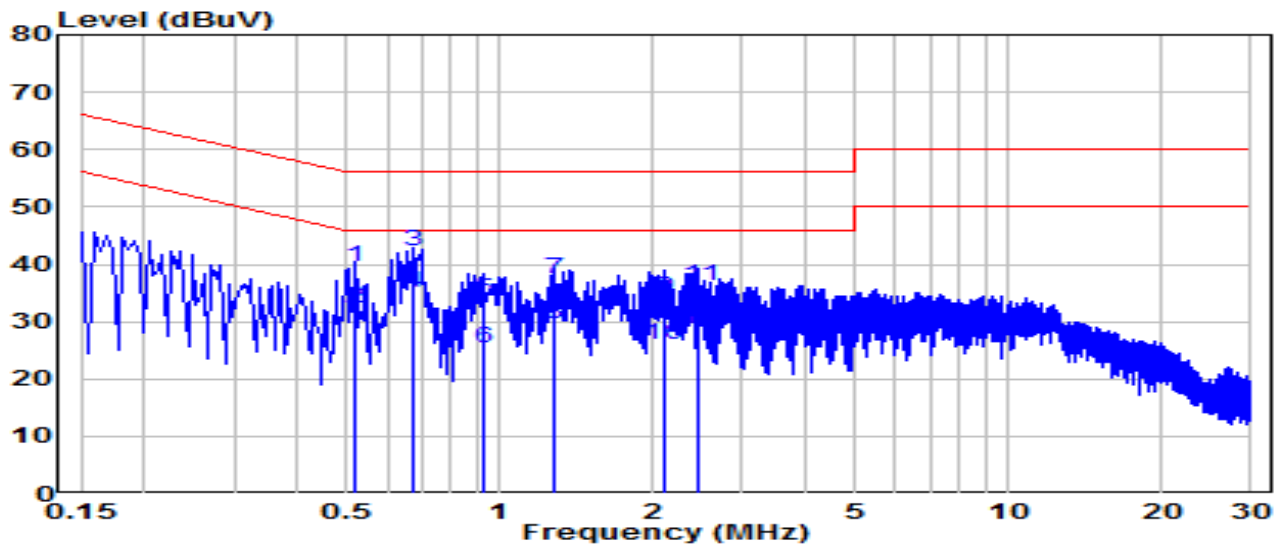
Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

7.8.2. Test Setup



7.8.3. Test Result

EUT	Wireless Headset	Date of Test	2023-01-13
Factor	CE_ENV216-L1 (Filter ON)	Temp. / Humidity	22.1°C /61%
Polarity	Line1	Site / Test Engineer	SR2 / Amber
Test Mode	SRD_2.4G_TX_CH 82_ANT 1	Test Voltage	AC 120V/60Hz

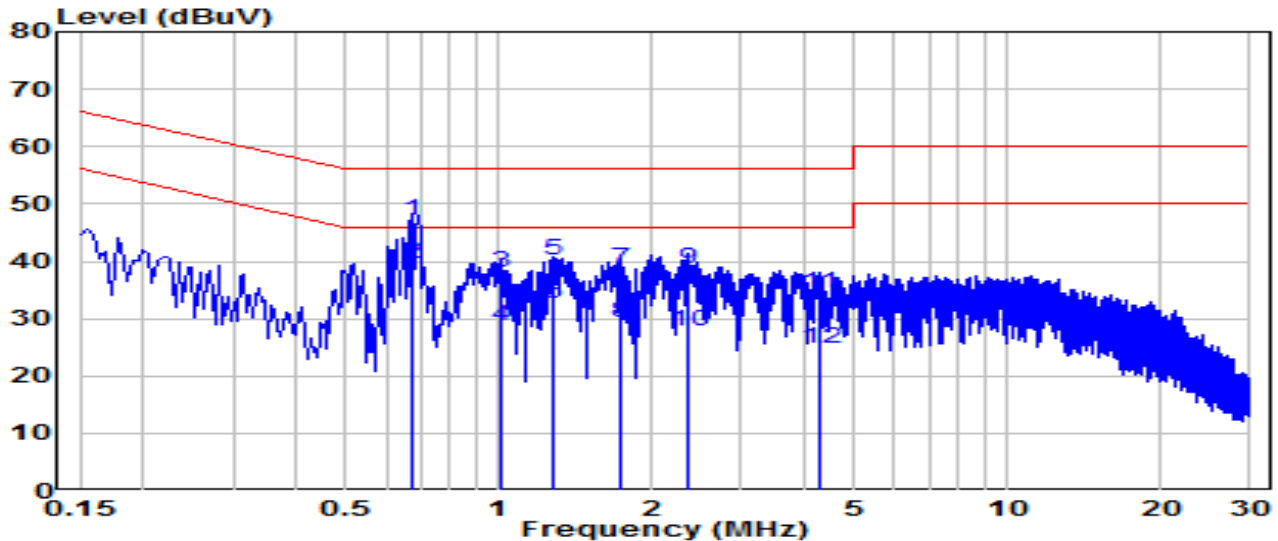


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV)	Margin (dB)	Limit (dBuV)	Remark (QP/PK/AV)
1		0.519	29.87	9.64	39.51	-16.49	56.00	QP
2		0.519	22.52	9.64	32.17	-13.83	46.00	Average
3	*	0.676	32.71	9.65	42.36	-13.64	56.00	QP
4	*	0.676	25.33	9.65	34.98	-11.02	46.00	Average
5		0.924	24.16	9.67	33.83	-22.17	56.00	QP
6		0.924	15.79	9.67	25.45	-20.55	46.00	Average
7		1.275	27.66	9.68	37.33	-18.67	56.00	QP
8		1.275	19.97	9.68	29.64	-16.36	46.00	Average
9		2.094	24.45	9.69	34.14	-21.86	56.00	QP
10		2.094	16.13	9.69	25.82	-20.18	46.00	Average
11		2.467	26.54	9.70	36.24	-19.76	56.00	QP
12		2.467	18.92	9.70	28.62	-17.38	46.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = LISN Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV) = Reading(dBuV) + C.F (Correction Factor).

EUT	Wireless Headset	Date of Test	2023-01-13
Factor	CE_ENV216-N (Filter ON)	Temp. / Humidity	22.1°C /61%
Polarity	Neutral	Site / Test Engineer	SR2 / Amber
Test Mode	SRD_2.4G_TX_CH 82_ANT 1	Test Voltage	AC 120V/60Hz

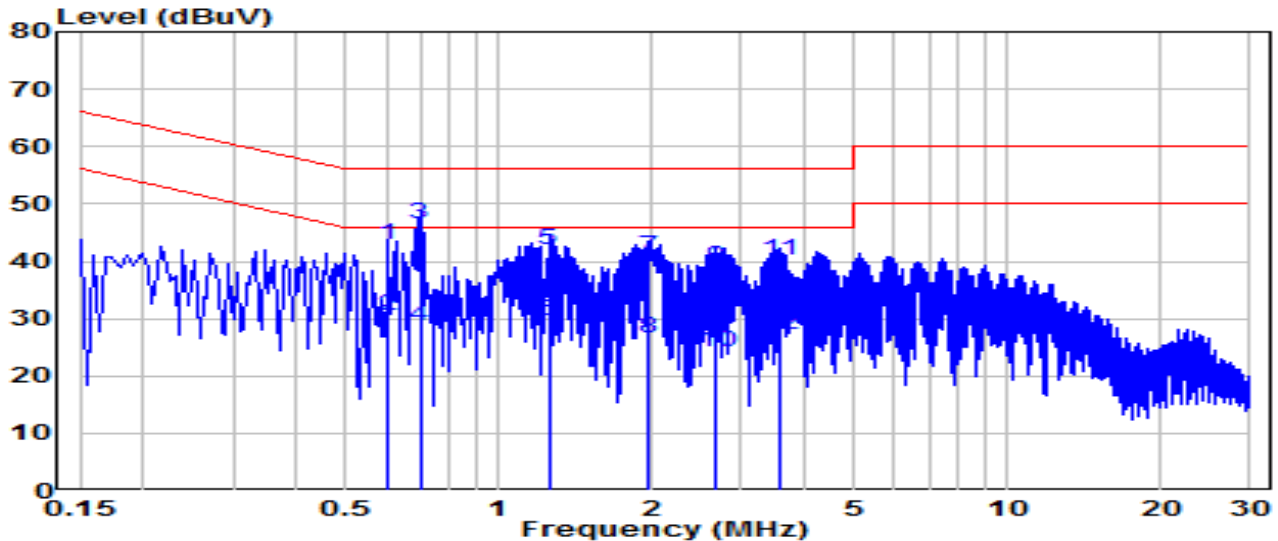


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV)	Margin (dB)	Limit (dBuV)	Remark (QP/PK/AV)
1	*	0.672	37.44	9.65	47.10	-8.90	56.00	QP
2	*	0.672	30.02	9.65	39.67	-6.33	46.00	Average
3		1.009	28.43	9.67	38.10	-17.90	56.00	QP
4		1.009	19.03	9.67	28.70	-17.30	46.00	Average
5		1.275	30.37	9.68	40.04	-15.96	56.00	QP
6		1.275	22.80	9.68	32.48	-13.52	46.00	Average
7		1.725	28.81	9.68	38.50	-17.50	56.00	QP
8		1.725	19.72	9.68	29.40	-16.60	46.00	Average
9		2.350	29.04	9.70	38.73	-17.27	56.00	QP
10		2.350	18.18	9.70	27.88	-18.12	46.00	Average
11		4.272	24.63	9.73	34.37	-21.63	56.00	QP
12		4.272	14.89	9.73	24.63	-21.37	46.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = LISN Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV) = Reading(dBuV) + C.F (Correction Factor).

EUT	Wireless Headset	Date of Test	2023-01-13
Factor	CE_ENV216-L1 (Filter ON)	Temp. / Humidity	22.1°C /61%
Polarity	Line1	Site / Test Engineer	SR2 / Amber
Test Mode	SRD_2.4G_TX_CH 82_ANT 1	Test Voltage	AC 240V/60Hz

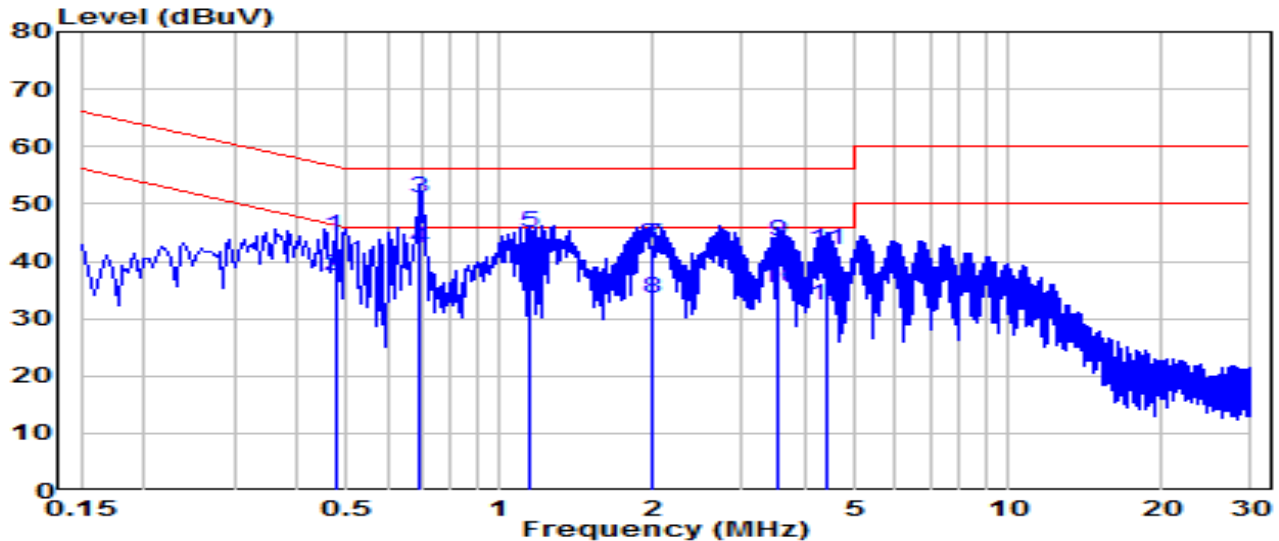


No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV)	Margin (dB)	Limit (dBuV)	Remark (QP/PK/AV)
1		0.604	33.09	9.65	42.74	-13.26	56.00	QP
2		0.604	20.69	9.65	30.34	-15.66	46.00	Average
3	*	0.699	36.95	9.65	46.60	-9.40	56.00	QP
4	*	0.699	18.98	9.65	28.63	-17.37	46.00	Average
5		1.252	32.23	9.68	41.90	-14.10	56.00	QP
6		1.252	20.05	9.68	29.72	-16.28	46.00	Average
7		1.968	31.08	9.69	40.77	-15.23	56.00	QP
8		1.968	16.88	9.69	26.57	-19.43	46.00	Average
9		2.674	29.16	9.70	38.87	-17.13	56.00	QP
10		2.674	14.47	9.70	24.18	-21.82	46.00	Average
11		3.547	30.57	9.72	40.29	-15.71	56.00	QP
12		3.547	17.43	9.72	27.15	-18.85	46.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = LISN Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV) = Reading(dBuV) + C.F (Correction Factor).

EUT	Wireless Headset	Date of Test	2023-01-13
Factor	CE_ENV216-N (Filter ON)	Temp. / Humidity	22.1°C /61%
Polarity	Neutral	Site / Test Engineer	SR2 / Amber
Test Mode	SRD_2.4G_TX_CH 82_ANT 1	Test Voltage	AC 240V/60Hz



No		Frequency (MHz)	Reading (dBuV)	C.F (dB)	Measurement (dBuV)	Margin (dB)	Limit (dBuV)	Remark (QP/PK/AV)
1		0.474	34.83	9.64	44.47	-11.98	56.44	QP
2		0.474	27.81	9.64	37.45	-8.99	46.44	Average
3	*	0.694	41.35	9.65	51.00	-5.00	56.00	QP
4	*	0.694	32.66	9.65	42.32	-3.68	46.00	Average
5		1.144	35.19	9.67	44.86	-11.14	56.00	QP
6		1.144	28.41	9.67	38.08	-7.92	46.00	Average
7		2.004	33.14	9.69	42.83	-13.17	56.00	QP
8		2.004	23.92	9.69	33.61	-12.39	46.00	Average
9		3.529	33.63	9.72	43.35	-12.65	56.00	QP
10		3.529	25.53	9.72	35.25	-10.75	46.00	Average
11		4.384	32.29	9.74	42.03	-13.97	56.00	QP
12		4.384	22.65	9.74	32.38	-13.62	46.00	Average

Note:

1. " *", means this data is the worst emission level.
2. C.F (Correction Factor) = LISN Factor (dB)+ Cable Loss (dB).
3. Measurement (dBuV) = Reading(dBuV) + C.F (Correction Factor).

8. CONCLUSION

The data collected relate only the item(s) tested and show that the **Wireless Headset** is in compliance with Part 15C of the FCC Rules.

Appendix A : Test Setup Photograph

Refer to “2301TWE902-UT” file.

Appendix B : External Photograph

Refer to “2301TWE902-UE” file.

Appendix C : Internal Photograph

Refer to “2301TWE902-UI” file.

_____ The End _____