



MEASUREMENT REPORT

FCC PART 15.247 / BLE

FCC ID: Z9G-EDF144

Applicant: Edifier International Limited

Application Type: Certification

Product: True Wireless Gaming Earbuds with Active Noise Cancellation

Model No.: EDF700012

Brand Name: EDIFIER, HECATE

FCC Classification: Digital Transmission System (DTS)

FCC Rule Part(s): Part 15 Subpart C (Section 15.247)

Test Procedure(s): ANSI C63.10-2013

Test Date: April 20 ~ 30, 2021

Reviewed By:

Vincent Yu

Vincent Yu

Approved By:

Robin Wu

Robin Wu



The test results relate only to the samples tested.

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 C63.10-2013. 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 (Shenzhen) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2104RSU061-U2	Rev. 01	Initial Report	05-12-2021	Valid

CONTENTS

Description	Page
1. GENERAL INFORMATION	5
1.1. Applicant.....	5
1.2. Manufacturer	5
1.3. Test Facility.....	5
2. PRODUCT INFORMATION	6
2.1. Equipment Description.....	6
2.2. Product Specification Subjective to this Report.....	6
2.3. Working Frequencies.....	7
2.4. Test Mode	7
2.5. Test Software	7
2.6. Test Environment Condition.....	7
2.7. Description of Test Configuration.....	8
2.8. Test System Details.....	8
2.9. Duty Cycle	9
3. ANTENNA REQUIREMENTS.....	10
4. TEST EQUIPMENT CALIBRATION DATE	11
5. MEASUREMENT UNCERTAINTY.....	12
6. TEST RESULT	13
6.1. Summary	13
6.2. Occupied Bandwidth Measurement	14
6.2.1. Test Limit	14
6.2.2. Test Procedure used	14
6.2.3. Test Setting.....	14
6.2.4. Test Setup.....	14
6.2.5. Test Result.....	15
6.3. Output Power Measurement.....	18
6.3.1. Test Limit	18
6.3.2. Test Procedure Used	18
6.3.3. Test Setting.....	18
6.3.4. Test Setup.....	19
6.3.5. Test Result.....	20
6.4. Power Spectral Density Measurement.....	21
6.4.1. Test Limit	21
6.4.2. Test Procedure Used	21

6.4.3.	Test Setting.....	21
6.4.4.	Test Setup.....	21
6.4.5.	Test Result.....	22
6.5.	Conducted Band Edge and Out-of-Band Emissions.....	25
6.5.1.	Test Limit	25
6.5.2.	Test Procedure Used	25
6.5.3.	Test Settintg.....	25
6.5.4.	Test Setup.....	26
6.5.5.	Test Result.....	27
6.6.	Radiated Spurious Emission Measurement	32
6.6.1.	Test Limit	32
6.6.2.	Test Procedure Used	32
6.6.3.	Test Setting.....	32
6.6.4.	Test Setup.....	34
6.6.5.	Test Result.....	35
6.7.	Radiated Restricted Band Edge Measurement	43
6.7.1.	Test Limit	43
6.7.2.	Test Procedure Used	44
6.7.3.	Test Setting.....	44
6.7.4.	Test Setup.....	45
6.7.5.	Test Result.....	46
6.8.	AC Conducted Emissions Measurement.....	62
6.8.1.	Test Limit	62
6.8.2.	Test Setup.....	62
6.8.3.	Test Result.....	63
7.	CONCLUSION.....	65
	Appendix A - Test Setup Photograph	66
	Appendix B - EUT Photograph.....	67

1.1. Applicant

P.O. Box 6264 General Post Office Hong Kong

Dongguan Edifier Esports Technology Co., Ltd

5th floor, Office Building in the 1st district, No. 2, East Industry Road, Songshan Lake Science & Technology Industrial Park, Dongguan, 523808, CHINA

☐	Test Site – MRT Suzhou Laboratory
	Laboratory Location (Suzhou - Wuzhong) D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China
	Laboratory Location (Suzhou - SIP) 4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China
	Laboratory Accreditations
	A2LA: 3628.01 FCC: CN1166 VCCI: R-20025, G-20034, C-20020, T-20020
	CNAS: L10551 ISED: CN0001
☒	Test Site – MRT Shenzhen Laboratory
	Laboratory Location (Shenzhen) 1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China
	Laboratory Accreditations
	A2LA: 3628.02 FCC: CN1284
	CNAS: L10551 ISED: CN0105
☐	Test Site – MRT Taiwan Laboratory
	Laboratory Location (Taiwan) No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)
	Laboratory Accreditations
	TAF: L3261-190725 FCC: 291082, TW3261
	ISED: TW3261

2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name	True Wireless Gaming Earbuds with Active Noise Cancellation
Model No.	EDF700012
Test Device No.	Conducted Sample: 2021EDF144Sample#1 Radiated Sample: 2021EDF144Sample#2
Bluetooth Version	v5.0 Dual mode
Rated Input	5VDC 200mA (Earbuds) 5VDC 1A (Charging Case)
Operating Temperature	0 ~ 45°C

2.2. Product Specification Subjective to this Report

Bluetooth Frequency	2402~2480MHz
Channel Number	40
Type of modulation	GFSK
Data Rate	1Mbps
Antenna Type	FPC Antenna
Antenna Gain	Left Earbud: -1.2dBi Right Earbud: -2.8dBi

Note 1: All information is provided by the manufacturer.

Note 2: For other features of this EUT, test report will be issued separately.

2.3. Working Frequencies

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

2.4. Test Mode

Test Mode
Mode 1: Transmit by BLE

2.5. Test Software

The test utility software used during testing was “BQB”, and RF power setting values of the software refer to operation description.

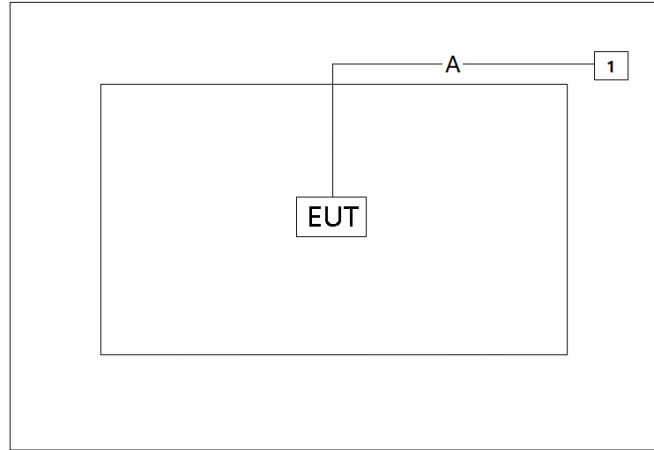
2.6. Test Environment Condition

Ambient Temperature	15 ~ 35 °C
Relative Humidity	20 ~ 75 %RH

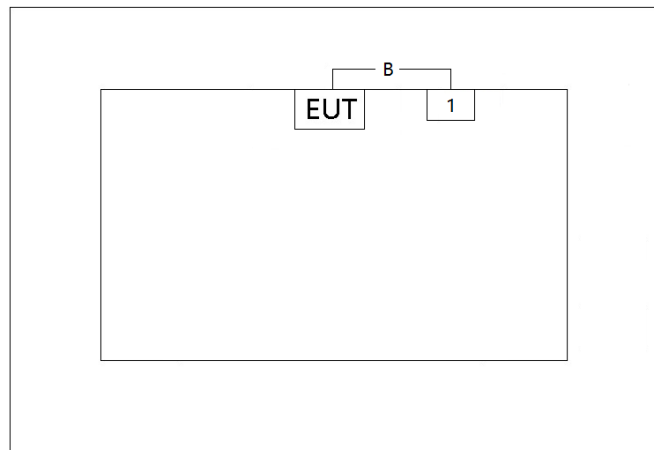
2.7. Description of Test Configuration

The ANSI C63.10: 2013 was used to reference the appropriate EUT setup for testing.

Radiated Emission Measurement



AC Conducted Emission Measurement



Cable Type		Cable Description
A	USB Cable	Non-Shielded, > 5 m
B	USB Cable	Non-Shielded, 1.8 m

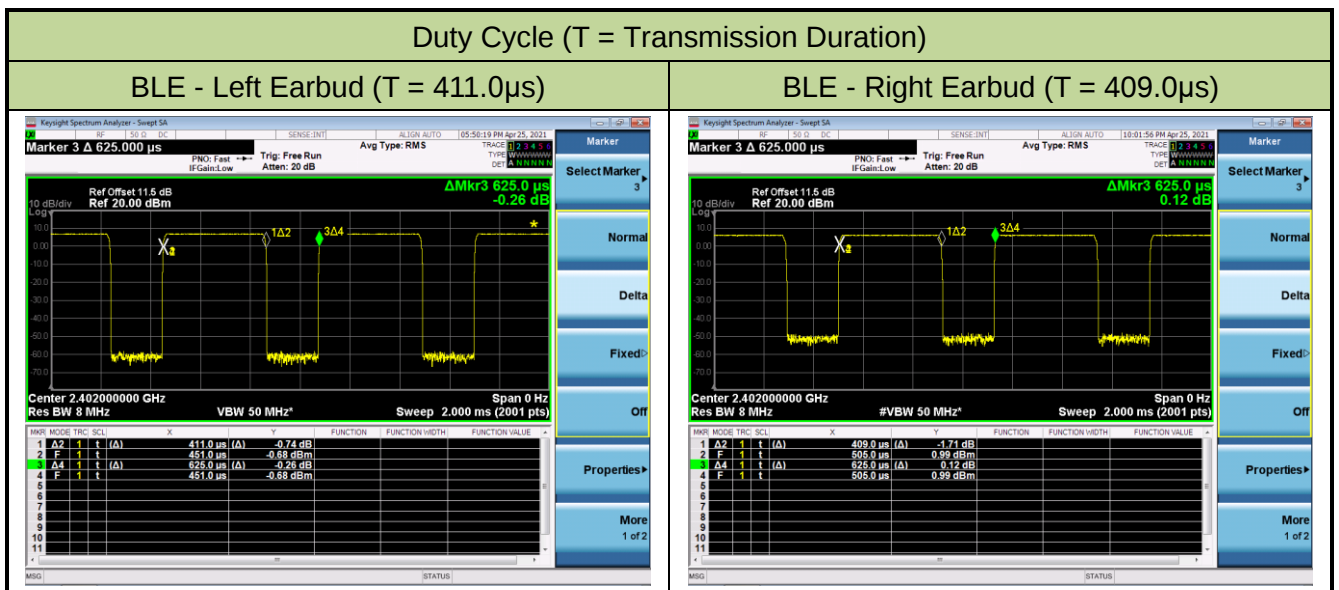
2.8. Test System Details

Product		Manufacturer	Model No.
1	Notebook	HP	EliteBook 735G5

2.9. Duty Cycle

The maximum achievable duty cycles were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100. The duty cycles are as follows:

Test Mode	Duty Cycle
BLE - Left Earbud	65.76%
BLE - Right Earbud	65.44%



3. 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 device is **permanently attached**.
- There are no provisions for connection to an external antenna.

Conclusion:

The device unit complies with the requirement of §15.203.

4. TEST EQUIPMENT CALIBRATION DATE

Conducted Emission (NS-SR2)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESL3	MRTSUE06576	1 year	2021/07/09
ENV216-LV-NETZNACHB	R&S	ENV216	MRTSUE06577	1 year	2021/07/09
ENV216-LV-NETZNACHB	R&S	ENV216	MRTSUE06578	1 year	2021/07/09
Temperature/Humidity Meter	deli	NO.8813	MRTSUE06587	1 year	2021/07/08
Shielding Anechoic Chamber	BOOMWAVE	SR2	MRTSUE06551	5 year	2024/06/04

Radiated Emission (NS-AC1)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cal. Due Date
EMI Test Receiver	R&S	ESR3	MRTSUE06575	1 year	2021/07/09
EXA Signal Analyzer	Keysight	N9010A	MRTSUE06195	1 year	2022/03/17
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2021/11/08
Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06292	1 year	2021/10/24
Broad-Band Horn Antenna	Schwarzbeck	9120D	MRTSUE06572	1 year	2021/07/03
Bilog Period Antenna	Schwarzbeck	VULB 9162	MRTSUE06573	1 year	2021/07/03
Preamplifier	Schwarzbeck	BBV 9721	MRTSUE06121	1 year	2021/06/11
Broadband Coaxial Preamplifier	Schwarzbeck	BBV 9718	MRTSUE06574	1 year	2021/07/13
Anechoic Chamber	BOOMWAVE	AC1	MRTSUE06496	1 year	2021/07/25
Temperature/Humidity Meter	deli	NO.8813	MRTSUE06588	1 year	2021/07/08

Conducted Test Equipment (NS-TR2)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
electronic hygrothermograph	deli	No.8813	MRTSUE06783	1 year	2021/05/13
USB wideband power sensor	Keysight	U2021XA	MRTSUE06581	1 year	2021/08/20
10dB Attenuator	MVE	10dB	N/A	1 year	2021/08/20
EXA Signal Analyzer	Keysight	N9010A	MRTSUE06195	1 year	2022/03/17
EXA Signal Analyzer	Keysight	N9020A	MRTSUE10065	1 year	2022/03/17

Software	Version	Function
EMI Software	V3	EMI Test Software

5. 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 $k = 2$.

AC Conducted Emission Measurement
Measurement Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 9kHz~150kHz: 3.74dB 150kHz~30MHz: 3.44dB
Radiated Emission Measurement
Measurement Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): Horizontal: 30MHz~300MHz: 5.04dB 300MHz~1GHz: 4.95dB 1GHz~25GHz: 6.40dB Vertical: 30MHz~300MHz: 5.24dB 300MHz~1GHz: 6.03dB 1GHz~25GHz: 6.40dB
Spurious Emissions, Conducted
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 0.78dB
Output Power
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 1.13dB
Power Spectrum Density
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 1.15dB
Occupied Bandwidth
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 0.28%

6. TEST RESULT

6.1. Summary

FCC Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
15.247(a)(2)	6dB Bandwidth	$\geq 500\text{kHz}$	Conducted	Pass	Section 6.2
15.247(b)(3)	Output Power	$\leq 1\text{Watt}$		Pass	Section 6.3
15.247(e)	Power Spectral Density	$\leq 8\text{dBm}/3\text{kHz}$		Pass	Section 6.4
15.247(d)	Band Edge / Out-of-Band Emissions	20dBc		Pass	Section 6.5
15.205 15.209	General Field Strength (Restricted Bands and Radiated Emission Limits)	Emissions in restricted bands must meet the radiated limits detailed in 15.209	Radiated	Pass	Section 6.6 & 6.7
15.207	AC Conducted Emissions 150kHz - 30MHz	< FCC 15.207 limits	Line Conducted	Pass	Section 6.8

Notes: 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.

6.2. Occupied Bandwidth Measurement

6.2.1. Test Limit

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

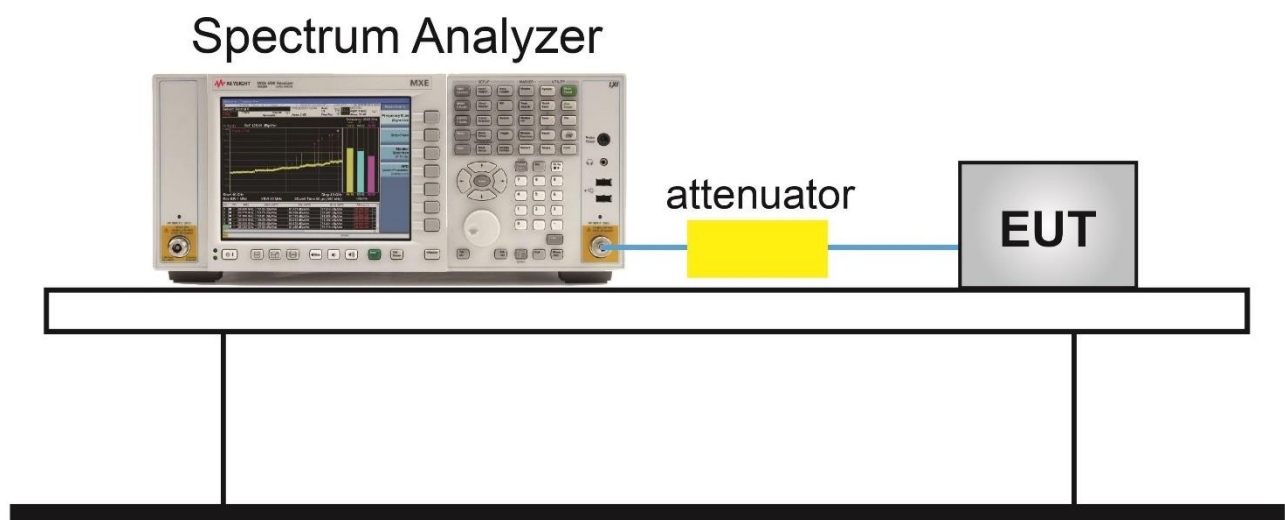
6.2.2. Test Procedure used

ANSI C63.10-2013 - Section 11.8 (6dB bandwidth)

6.2.3. 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 to stabilize

6.2.4. Test Setup



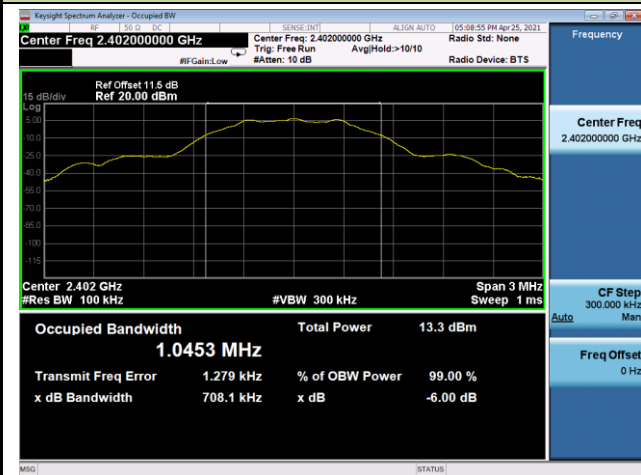
6.2.5. Test Result

Test Site	NS-TR2	Test Engineer	Flay Yang
Test Date	2021/04/25		

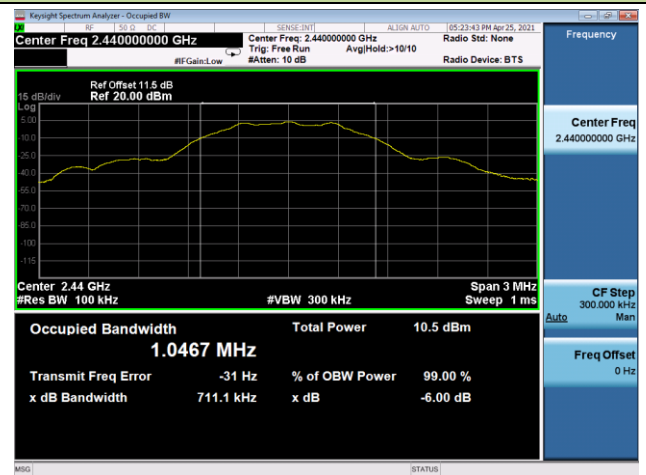
Test Mode	Data Rate (Mbps)	Channel No.	Frequency (MHz)	6dB Bandwidth (kHz)	Limit (MHz)	Result
Left Earbud						
BLE	1	00	2402	708.1	≥ 0.5	Pass
BLE	1	19	2440	711.1	≥ 0.5	Pass
BLE	1	39	2480	710.1	≥ 0.5	Pass
Right Earbud						
BLE	1	00	2402	696.9	≥ 0.5	Pass
BLE	1	19	2440	699.1	≥ 0.5	Pass
BLE	1	39	2480	701.0	≥ 0.5	Pass

BLE - Left Earbud

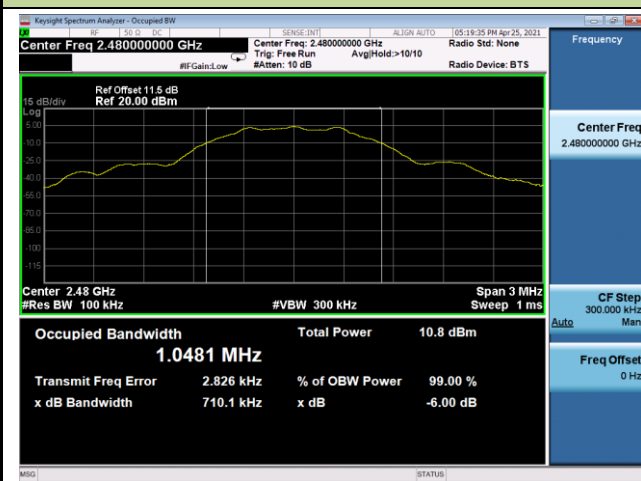
Channel 00 (2402MHz)



Channel 19 (2440MHz)

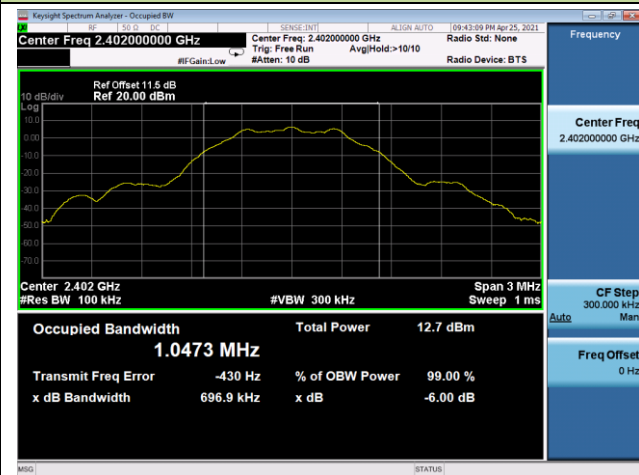


Channel 39 (2480MHz)



BLE - Right Earbud

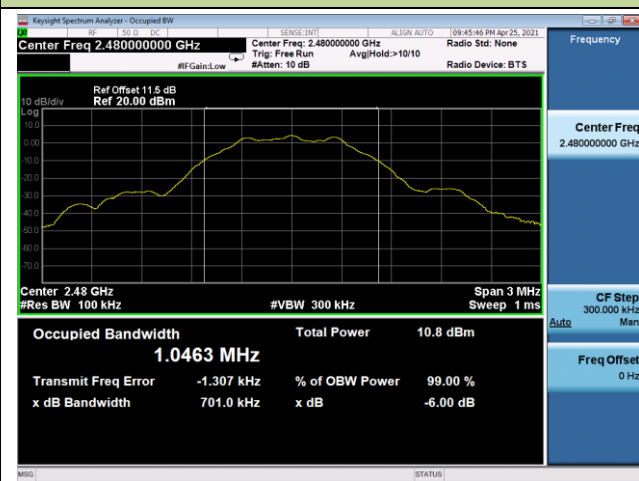
Channel 00 (2402MHz)



Channel 19 (2440MHz)



Channel 39 (2480MHz)



6.3. Output Power Measurement

6.3.1. Test Limit

The conducted output power limit specified in paragraph FCC Part 15.247(b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs FCC Part 15.247(b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

6.3.2. Test Procedure Used

ANSI C63.10-2013 - Section 11.9.1.3

ANSI C63.10-2013 - Section 11.9.2.3.2

6.3.3. Test Setting

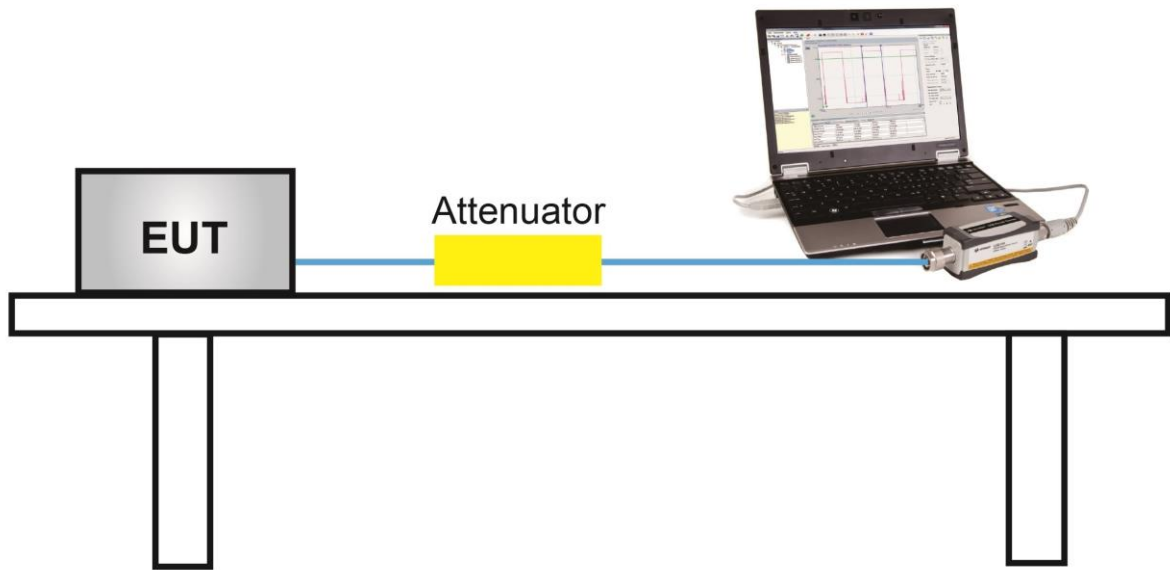
PKPM1 Peak-reading power meter method

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.

Method AVGPM-G (Measurement using a gated RF average-reading power meter)

Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since this measurement is made only during the ON time of the transmitter, no duty cycle correction is required.

6.3.4. Test Setup



6.3.5. Test Result

Test Site	NS-TR2	Test Engineer	Flay Yang
Test Date	2021/04/20		

Test Result of Peak Output Power

Test Mode	Data Rate (Mbps)	Channel No.	Frequency (MHz)	Peak Power (dBm)	Limit (dBm)	Result
Left Earbud						
BLE	1	00	2402	6.81	≤ 30.00	Pass
BLE	1	19	2440	4.91	≤ 30.00	Pass
BLE	1	39	2480	5.15	≤ 30.00	Pass
Right Earbud						
BLE	1	00	2402	6.44	≤ 30.00	Pass
BLE	1	19	2440	3.02	≤ 30.00	Pass
BLE	1	39	2480	4.59	≤ 30.00	Pass

Test Result of Average Output Power (Reporting Only)

Test Mode	Data Rate (Mbps)	Channel No.	Frequency (MHz)	Average Power (dBm)	Limit (dBm)	Result
Left Earbud						
BLE	1	00	2402	6.46	≤ 30.00	Pass
BLE	1	19	2440	3.96	≤ 30.00	Pass
BLE	1	39	2480	4.66	≤ 30.00	Pass
Right Earbud						
BLE	1	00	2402	5.91	≤ 30.00	Pass
BLE	1	19	2440	2.42	≤ 30.00	Pass
BLE	1	39	2480	4.03	≤ 30.00	Pass

6.4. Power Spectral Density Measurement

6.4.1. Test Limit

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

The same method of determining the conducted output power shall be used to determine the power spectral density.

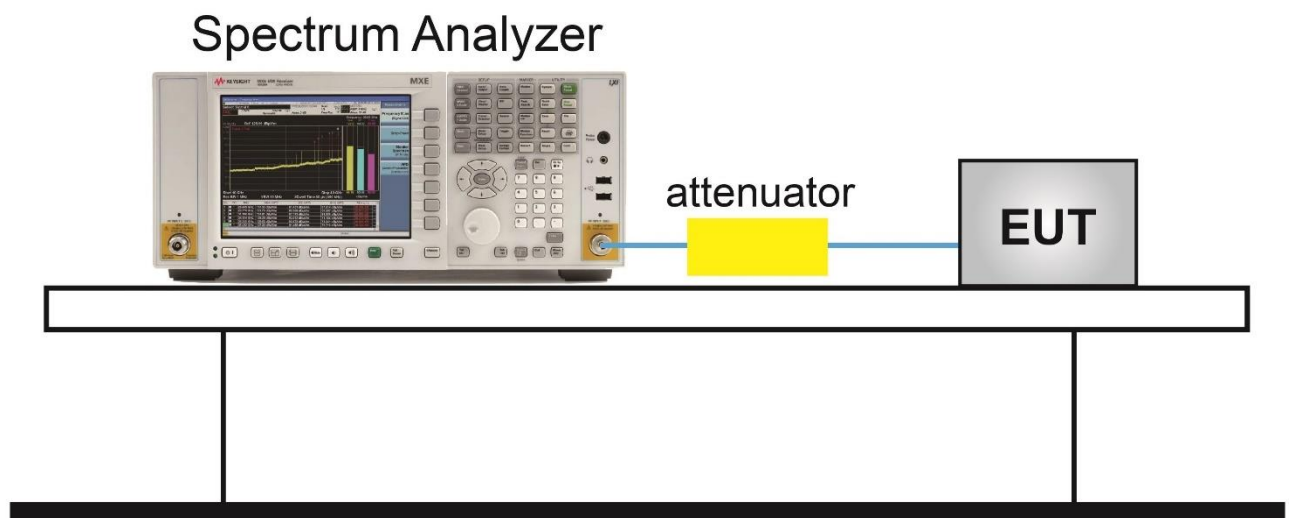
6.4.2. Test Procedure Used

ANSI C63.10-2013 - Section 11.10.2

6.4.3. Test Setting

1. Analyzer was set to the center frequency of the DTS channel under investigation
2. Span = 1.5 times the DTS channel bandwidth
3. RBW = 3kHz
4. VBW = 10kHz
5. Detector = peak
6. Sweep time = auto couple
7. Trace mode = max hold
8. Trace was allowed to stabilize

6.4.4. Test Setup



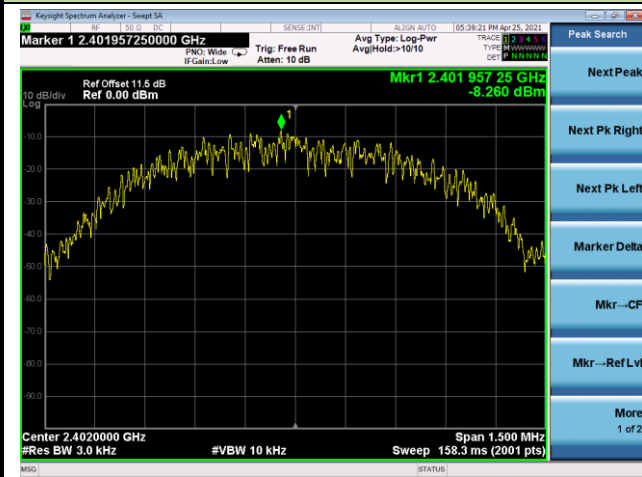
6.4.5. Test Result

Test Site	NS-TR2	Test Engineer	Flay Yang
Test Date	2021/04/25~2021/04/27		

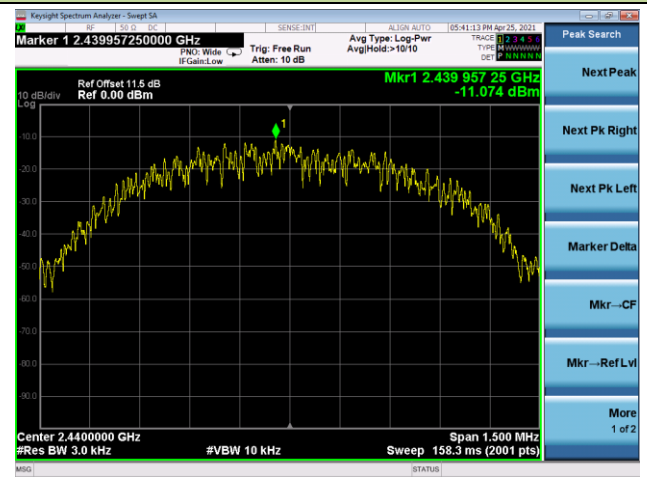
Test Mode	Data Rate (Mbps)	Channel No.	Frequency (MHz)	PSD Result (dBm / 3kHz)	Limit (dBm / 3kHz)	Result
Left Earbud						
BLE	1	00	2402	-8.26	≤ 8.00	Pass
BLE	1	19	2440	-11.07	≤ 8.00	Pass
BLE	1	39	2480	-10.68	≤ 8.00	Pass
Right Earbud						
BLE	1	00	2402	-9.28	≤ 8.00	Pass
BLE	1	19	2440	-12.20	≤ 8.00	Pass
BLE	1	39	2480	-11.07	≤ 8.00	Pass

BLE PSD - Left Earbud

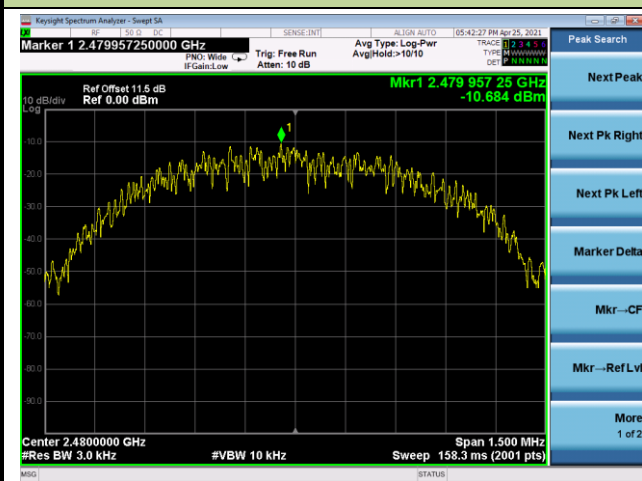
Channel 00 (2402MHz)



Channel 19 (2440MHz)

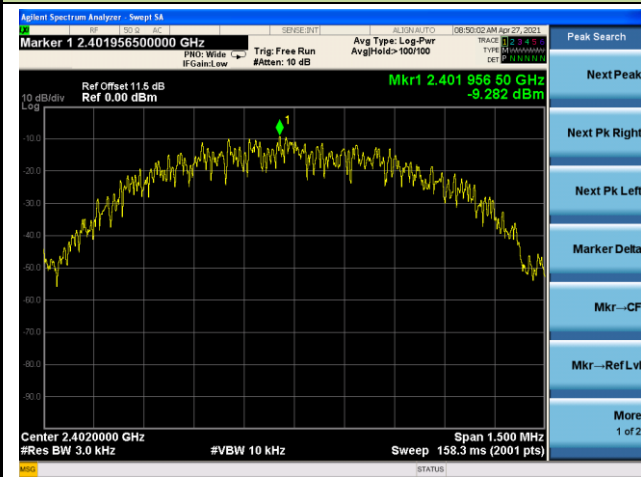


Channel 39 (2480MHz)

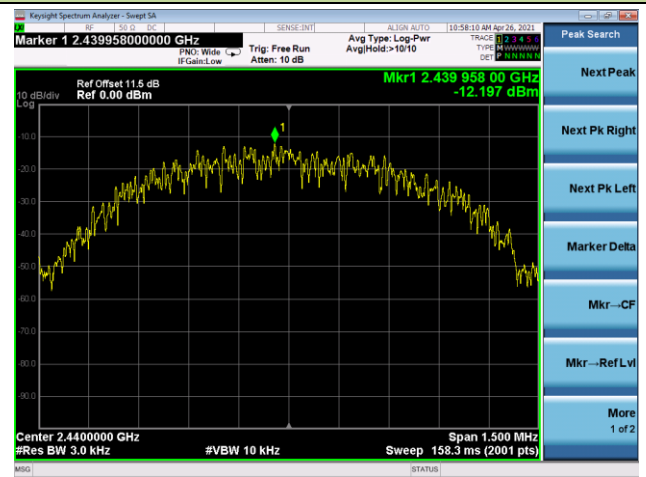


BLE PSD - Right Earbud

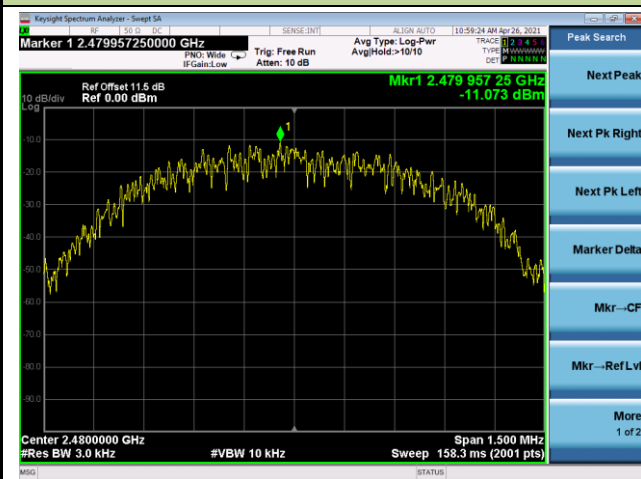
Channel 00 (2402MHz)



Channel 19 (2440MHz)



Channel 39 (2480MHz)



6.5. Conducted Band Edge and Out-of-Band Emissions

6.5.1. Test Limit

The limit for out-of-band spurious emissions at the band edge is 20dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100kHz bandwidth per the PSD procedure.

6.5.2. Test Procedure Used

ANSI C63.10-2013 - Section 11.11

6.5.3. Test Setting

Reference level measurement

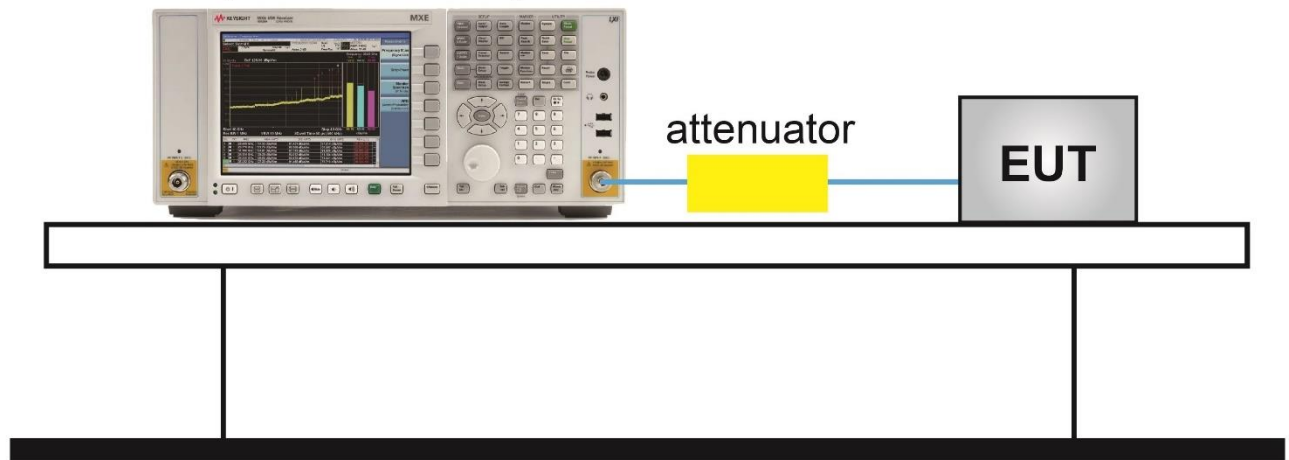
1. Set instrument center frequency to DTS channel center frequency
2. Set the span to ≥ 1.5 times the DTS bandwidth
3. Set the RBW = 100 kHz
4. Set the VBW $\geq 3 \times$ RBW
5. Detector = peak
6. Sweep time = auto couple
7. Trace mode = max hold
8. Allow trace to fully stabilize

Emission level measurement

1. Set the center frequency and span to encompass frequency range to be measured
2. RBW = 100kHz
3. VBW = 300kHz
4. Detector = Peak
5. Trace mode = max hold
6. Sweep time = auto couple
7. The trace was allowed to stabilize

6.5.4.Test Setup

Spectrum Analyzer



6.5.5. Test Result

Test Site	NS-TR2	Test Engineer	Flay Yang
Test Date	2021/04/26~2021/04/27		

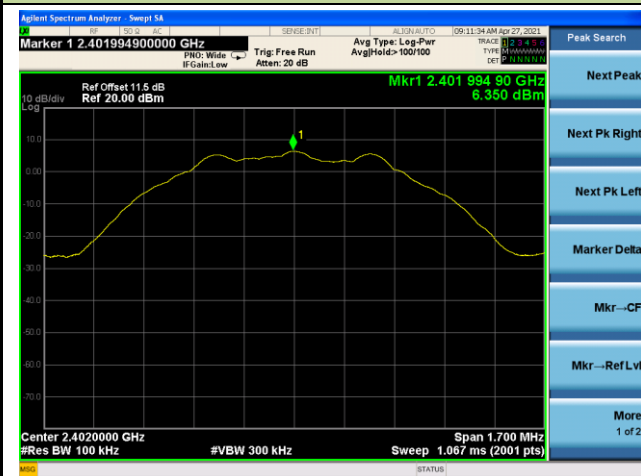
Test Mode	Data Rate (Mbps)	Channel No.	Frequency (MHz)	Limit (dBm)	Result
Left Earbud					
BLE	1	00	2402	-13.65	Pass
BLE	1	19	2440	-16.37	Pass
BLE	1	39	2480	-16.02	Pass
Right Earbud					
BLE	2	00	2402	-14.12	Pass
BLE	2	19	2440	-17.42	Pass
BLE	2	39	2480	-16.07	Pass

Note: The limit is 20dB below the fundamental emission level.

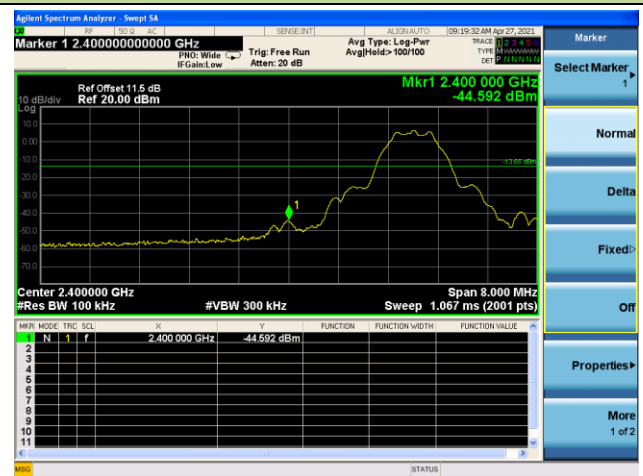
BLE Out-of-Band Emissions - Left Earbud

Channel 00 (2402MHz)

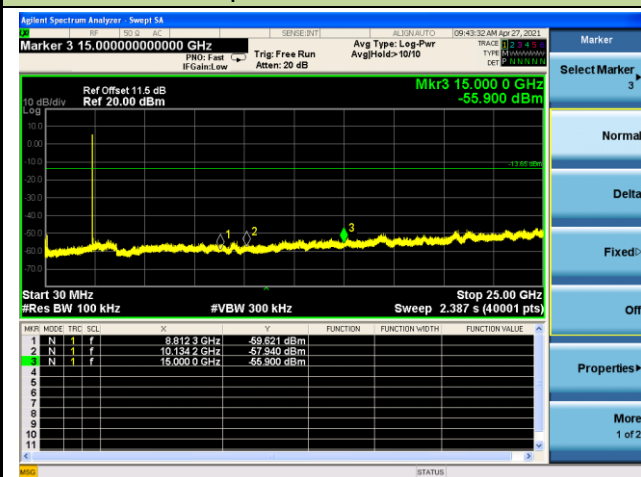
100kHz PSD reference Level



Low Band Edge

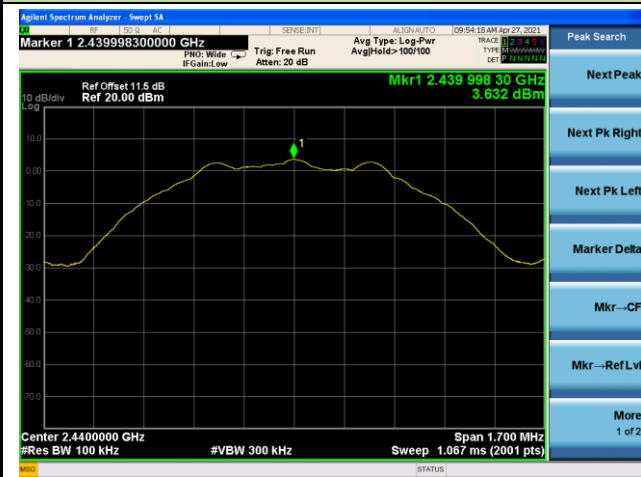


Spurious Emission

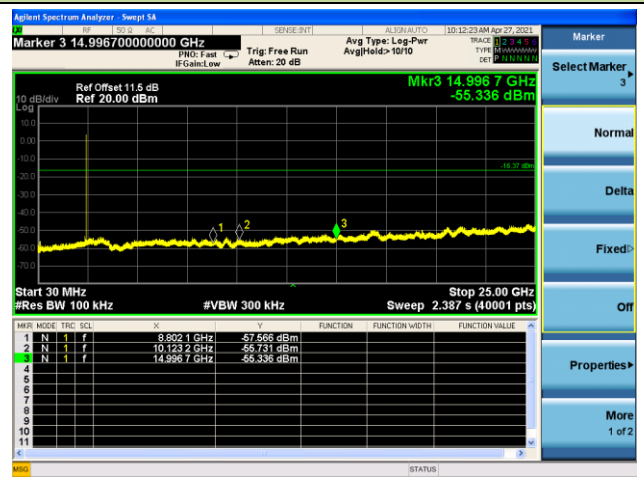


Channel 19 (2440MHz)

100kHz PSD reference Level

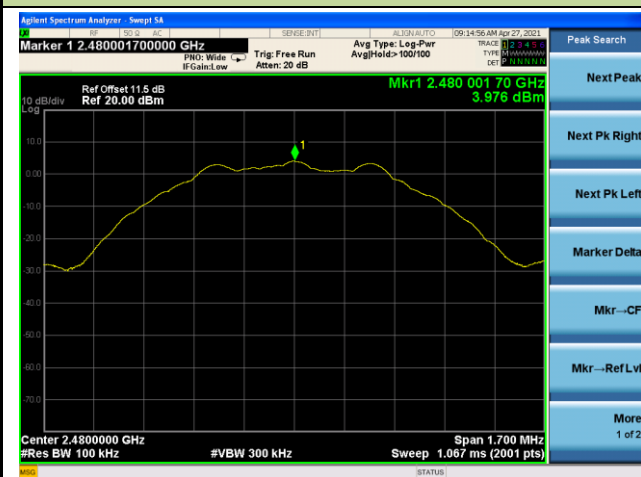


Spurious Emission

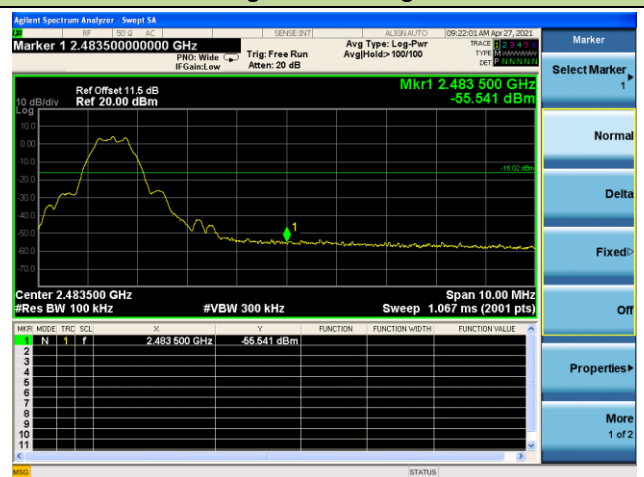


Channel 39 (2480MHz)

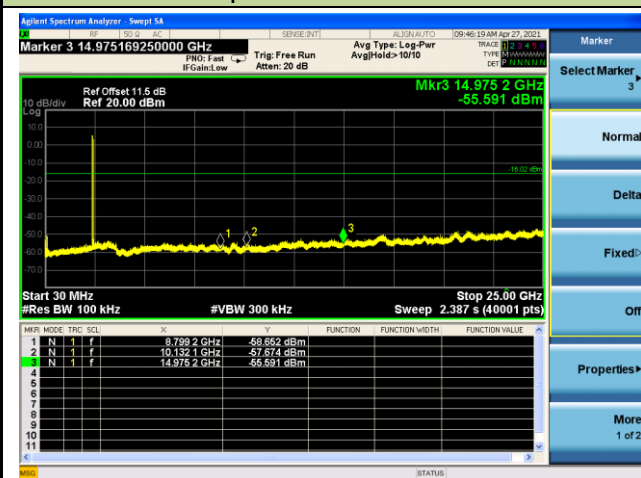
100kHz PSD reference Level



High Band Edge

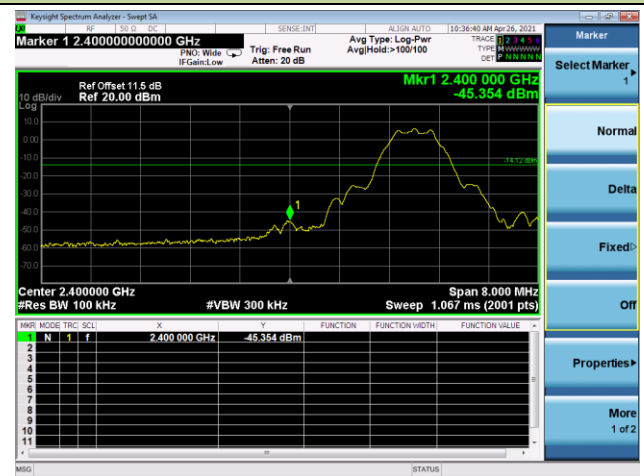


Spurious Emission



Channel 00 (2402MHz)

Low Band Edge



The screenshot displays the Keysight Spectrum Analyzer interface. At the top, the title bar reads "Keysight Spectrum Analyzer - Swept 500 MHz". The main display area shows a spectrum plot with a yellow trace. The plot has a logarithmic scale on the y-axis (dBm) ranging from -70.0 to 10.0. The x-axis represents frequency in GHz, with markers at 10.9995 GHz and 11.0005 GHz. A green horizontal line is drawn at -20.0 dBm. A yellow trace shows a signal with three peaks labeled 1, 2, and 3. Peak 1 is at 10.9995 GHz, peak 2 is at 10.9995 GHz, and peak 3 is at 11.0005 GHz. The plot is titled "Mkr3 14.999 5 GHz -58.918 dBm".

Below the plot, the following parameters are displayed:

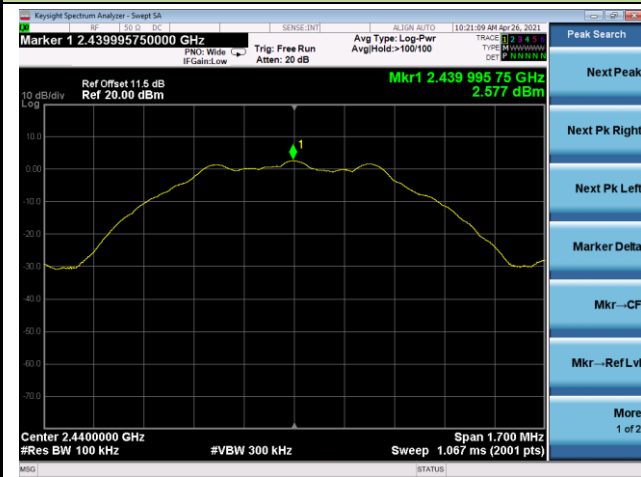
- Start 0.03 GHz
- #Res BW 100 kHz
- #VBW 300 kHz
- Sweep 2.387 s (40001 pts)
- Stop 25.00 GHz

At the bottom, a table shows the measurement results:

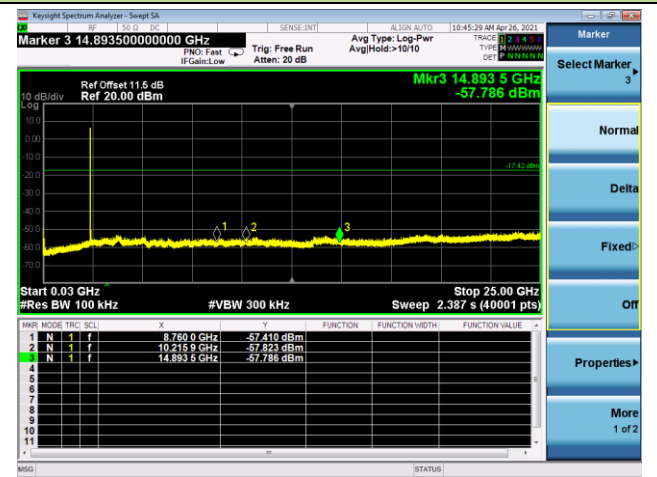
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	8.760 8 GHz	-58.142 dBm			
2	N	1	f	10.215 3 GHz	-58.507 dBm			
3	N	1	f	14.999 5 GHz	-58.918 dBm			

Channel 19 (2440MHz)

100kHz PSD reference Level

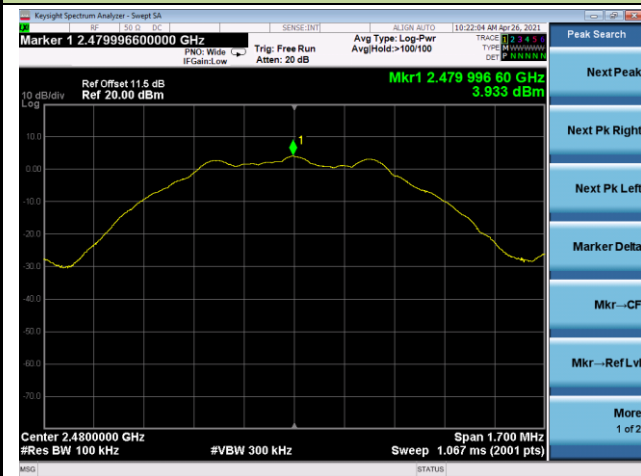


Spurious Emission

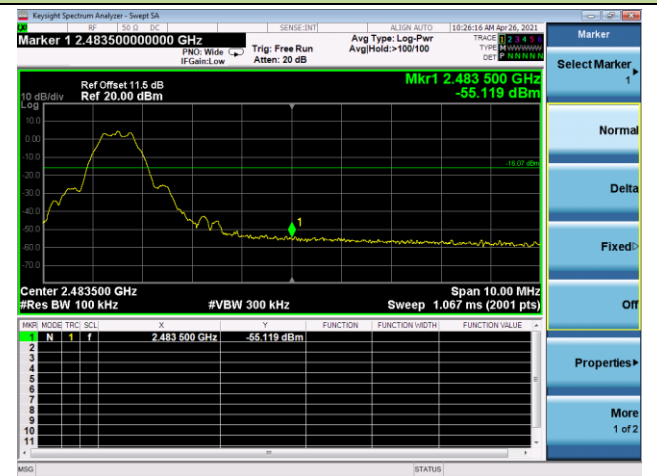


Channel 39 (2480MHz)

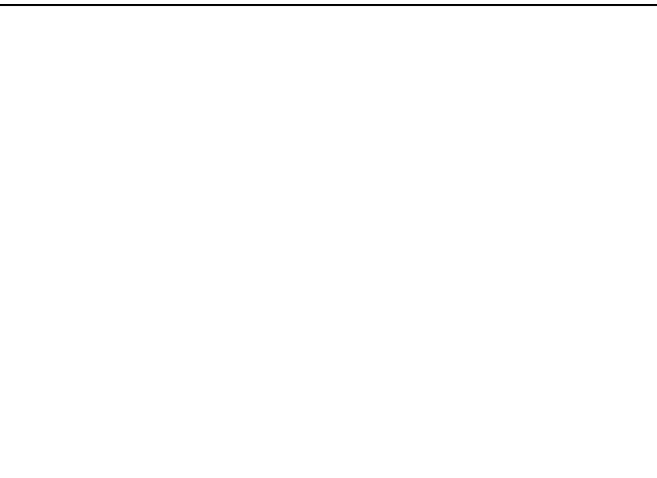
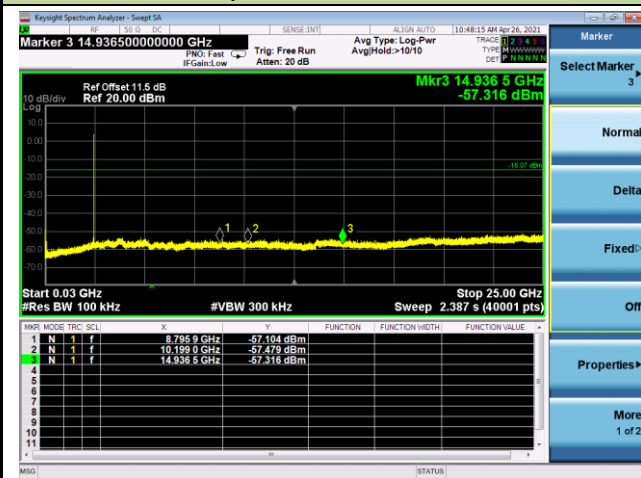
100kHz PSD reference Level



High Band Edge



Spurious Emission



6.6. Radiated Spurious Emission Measurement

6.6.1. 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 below table.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/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

6.6.2. Test Procedure Used

ANSI C63.10-2013 - Section 6.3 & 6.4 & 6.5 & 6.6

6.6.3. Test Setting

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

Quasi-Peak Measurements below 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = as specified in Table 1
4. Detector = CISPR quasi-peak
5. Sweep time = auto couple
6. Trace was allowed to stabilize

Peak Measurements above 1GHz

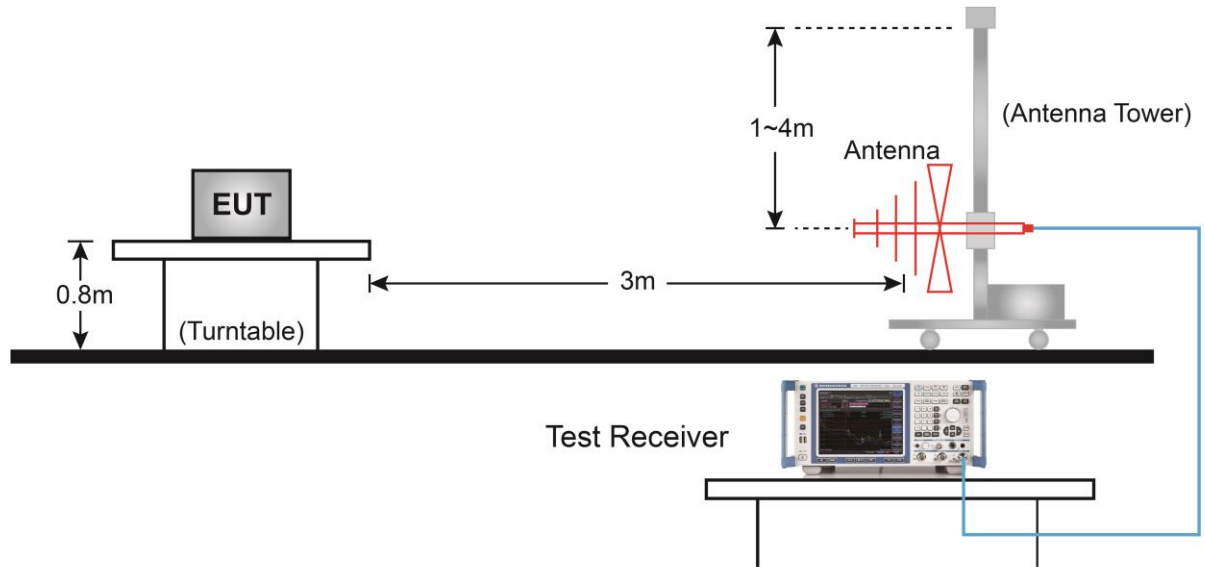
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Measurements above 1GHz

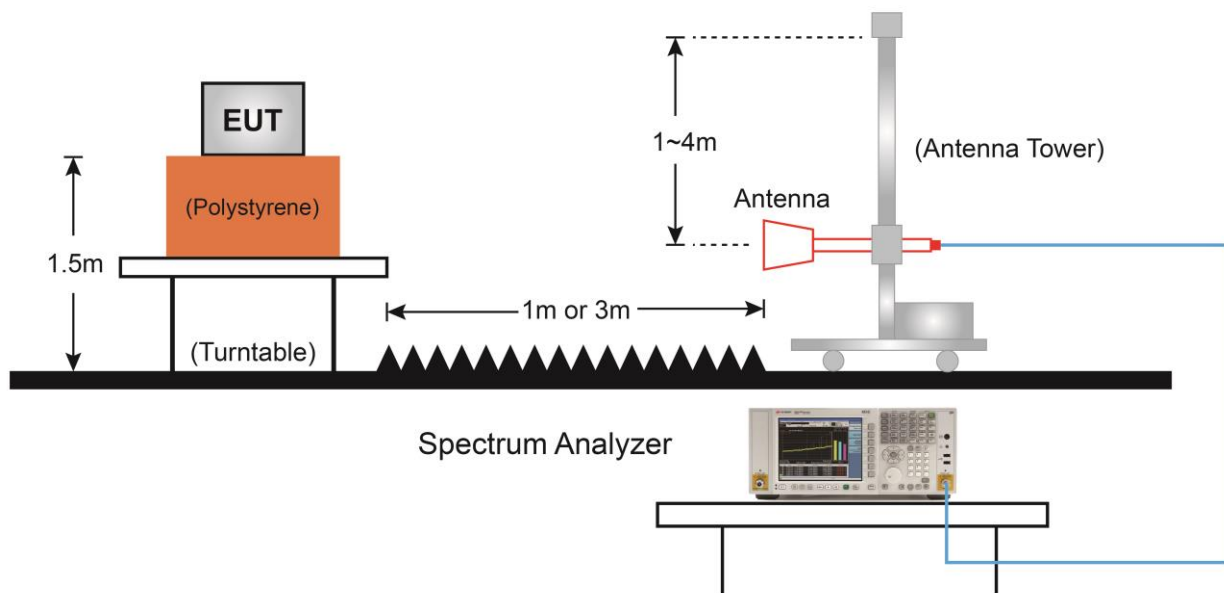
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle $\geq 98\%$, set VBW = 10 Hz.
If the EUT duty cycle is $< 98\%$, set VBW $\geq 1/T$. T is the minimum transmission duration.
4. Detector = Peak
5. Sweep time = auto
6. Trace mode = max hold
7. Trace was allowed to stabilize

6.6.4. Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



6.6.5. Test Result

Test Site	NS-AC1	Test Engineer	Dillon Diao
Test Date	2021/04/30	Test Mode	BLE - Left Earbud
Test Channel:	00		
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
4808.0	39.1	3.0	42.1	74.0	-31.9	Peak	Horizontal
7409.0	35.6	10.5	46.1	74.0	-27.9	Peak	Horizontal
10741.0	34.4	15.8	50.2	74.0	-23.8	Peak	Horizontal
4799.5	42.0	2.9	44.9	74.0	-29.1	Peak	Vertical
8497.0	36.4	11.5	47.9	74.0	-26.1	Peak	Vertical
10783.5	33.3	15.4	48.7	74.0	-25.3	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	NS-AC1	Test Engineer	Dillon Diao
Test Date	2021/04/30	Test Mode	BLE - Left Earbud
Test Channel:	19		
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
4876.0	41.0	2.9	43.9	74.0	-30.1	Peak	Horizontal
7366.5	35.3	10.5	45.8	74.0	-28.2	Peak	Horizontal
11200.0	34.6	16.5	51.1	74.0	-22.9	Peak	Horizontal
4876.0	39.2	2.9	42.1	74.0	-31.9	Peak	Vertical
7715.0	36.5	10.0	46.5	74.0	-27.5	Peak	Vertical
10741.0	34.5	15.8	50.3	74.0	-23.7	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	NS-AC1	Test Engineer	Dillon Diao
Test Date	2021/04/30	Test Mode	BLE - Left Earbud
Test Channel:	39		
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
5080.0	38.7	4.0	42.7	74.0	-31.3	Peak	Horizontal
7672.5	36.2	10.5	46.7	74.0	-27.3	Peak	Horizontal
11047.0	35.3	16.1	51.4	74.0	-22.6	Peak	Horizontal
5088.5	38.8	4.0	42.8	74.0	-31.2	Peak	Vertical
7655.5	35.5	10.2	45.7	74.0	-28.3	Peak	Vertical
11489.0	34.8	16.4	51.2	74.0	-22.8	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	NS-AC1	Test Engineer	Dillon Diao
Test Date	2021/04/30	Test Mode	BLE - Right Earbud
Test Channel:	00		
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
5071.5	39.0	3.9	42.9	74.0	-31.1	Peak	Horizontal
7604.5	37.0	10.4	47.4	74.0	-26.6	Peak	Horizontal
10843.0	35.1	15.8	50.9	74.0	-23.1	Peak	Horizontal
5054.5	38.5	3.7	42.2	74.0	-31.8	Peak	Vertical
7375.0	35.2	10.5	45.7	74.0	-28.3	Peak	Vertical
12016.0	36.1	15.7	51.8	74.0	-22.2	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	NS-AC1	Test Engineer	Dillon Diao
Test Date	2021/04/30	Test Mode	BLE - Right Earbud
Test Channel:	19		
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
5088.5	38.9	4.0	42.9	74.0	-31.1	Peak	Horizontal
7681.0	36.3	10.6	46.9	74.0	-27.1	Peak	Horizontal
8403.5	37.0	11.1	48.1	74.0	-25.9	Peak	Horizontal
4884.5	42.9	2.9	45.8	74.0	-28.2	Peak	Vertical
8403.5	36.8	11.1	47.9	74.0	-26.1	Peak	Vertical
11149.0	35.9	16.0	51.9	74.0	-22.1	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	NS-AC1	Test Engineer	Dillon Diao
Test Date	2021/04/30	Test Mode	BLE - Right Earbud
Test Channel:	39		
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

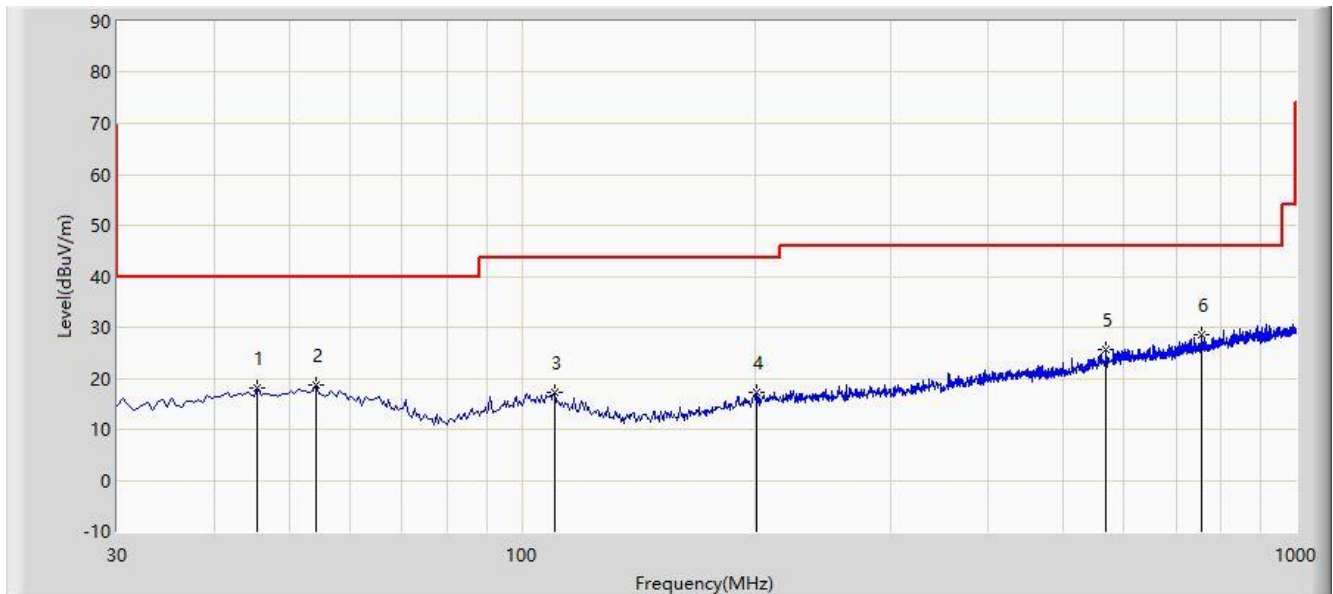
Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
4884.5	41.5	2.9	44.4	74.0	-29.6	Peak	Horizontal
7443.0	35.6	10.5	46.1	74.0	-27.9	Peak	Horizontal
8378.0	36.2	11.1	47.3	74.0	-26.7	Peak	Horizontal
5131.0	38.5	3.9	42.4	74.0	-31.6	Peak	Vertical
7570.5	34.8	10.4	45.2	74.0	-28.8	Peak	Vertical
11914.0	37.1	15.4	52.5	74.0	-21.5	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

The worst case of Radiated Emission below 1GHz:

Site: NS-AC1	Test Date: 2021/04/22
Limit: FCC_Part15.209_RE(3m)	Engineer: Flay Yang
Probe: NS-AC1_VULB9162	Polarity: Horizontal
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: DC 5V
Test Mode: Transmitter by BLE at channel 2440MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			45.520	18.023	-0.945	-21.977	40.000	18.968	PK
2			54.250	18.729	-0.977	-21.271	40.000	19.706	PK
3			110.510	17.204	-0.697	-26.296	43.500	17.901	PK
4			200.720	17.298	-0.187	-26.202	43.500	17.485	PK
5			567.865	25.708	1.553	-20.292	46.000	24.155	PK
6		*	754.590	28.492	1.625	-17.508	46.000	26.867	PK

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

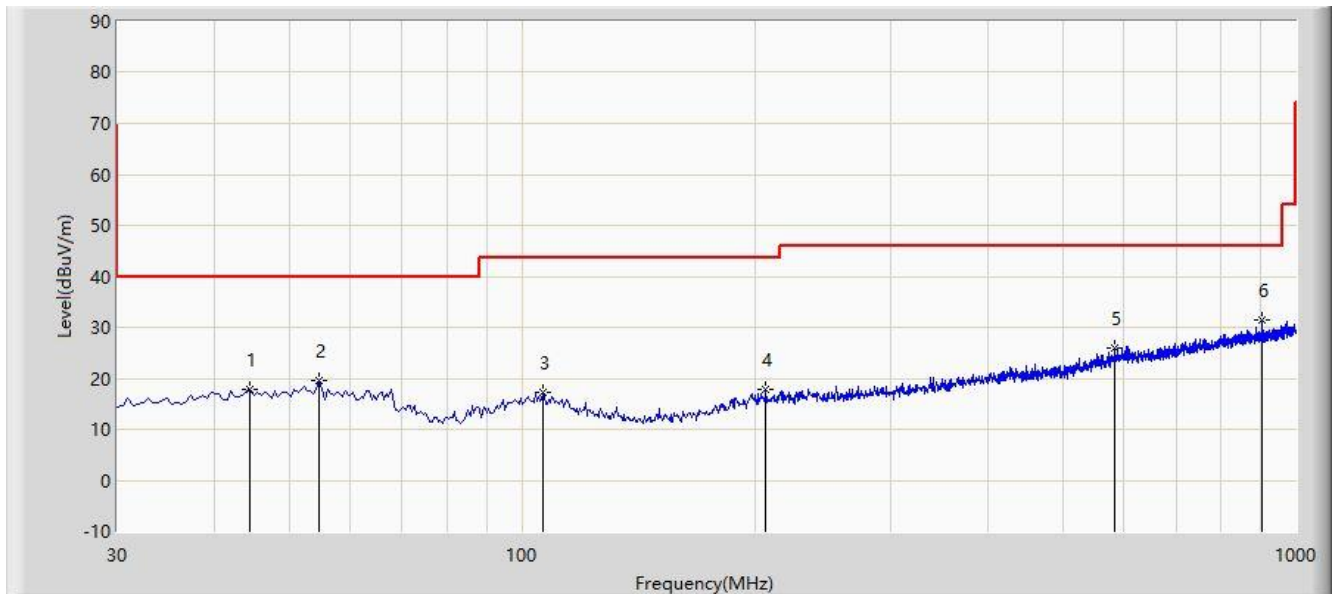
Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Note 2: QP measurement was not performed when peak measure level was lower than the QP limit.

Note 3: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz and 18GHz to 25GHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value.

Therefore, the data is not presented in the report.

Site: NS-AC1	Test Date: 2021/04/22
Limit: FCC_Part15.209_RE(3m)	Engineer: Flay Yang
Probe: NS-AC1_VULB9162	Polarity: Vertical
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: DC 5V
Test Mode: Transmitter by BLE at channel 2440MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			44.550	17.878	-0.986	-22.122	40.000	18.864	PK
2			54.735	19.639	-0.062	-20.361	40.000	19.701	PK
3			106.630	17.160	-0.945	-26.340	43.500	18.105	PK
4			206.540	17.935	0.388	-25.565	43.500	17.547	PK
5			584.355	25.948	1.443	-20.052	46.000	24.505	PK
6		*	903.970	31.545	2.912	-14.455	46.000	28.633	PK

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Note 2: QP measurement was not performed when peak measure level was lower than the QP limit.

Note 3: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz and 18GHz to 25GHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value.

Therefore, the data is not presented in the report.

6.7. Radiated Restricted Band Edge Measurement

6.7.1. Test Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41	--	--	--

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

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency [MHz]	Field Strength [uV/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

6.7.2.Test Procedure Used

ANSI C63.10-2013 - Section 6.3 & 6.6 & 6.10

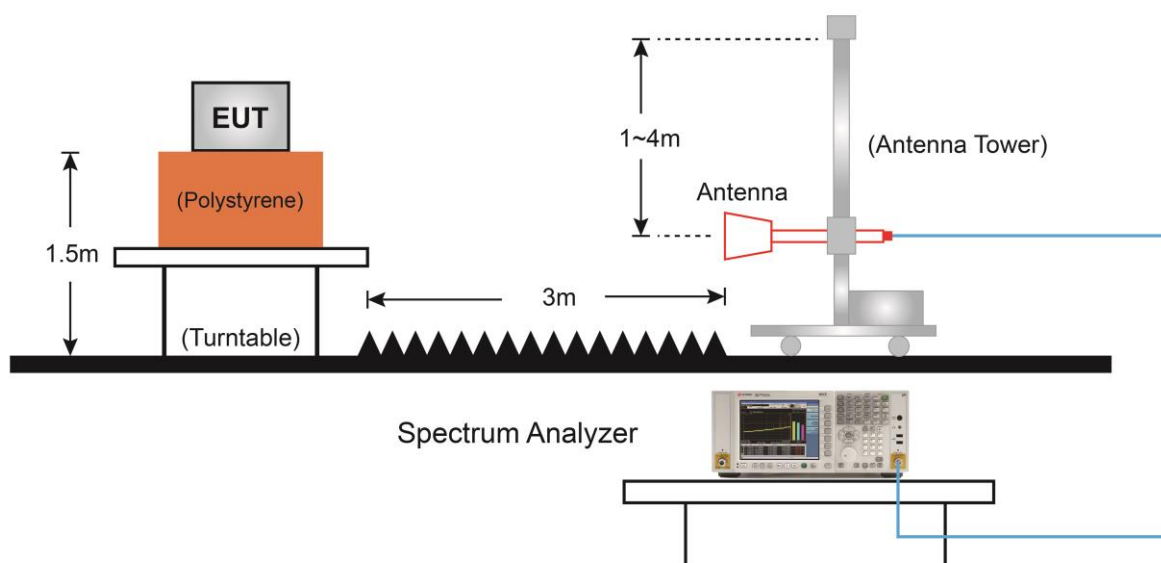
6.7.3.Test Setting

Peak Field Strength Measurements

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

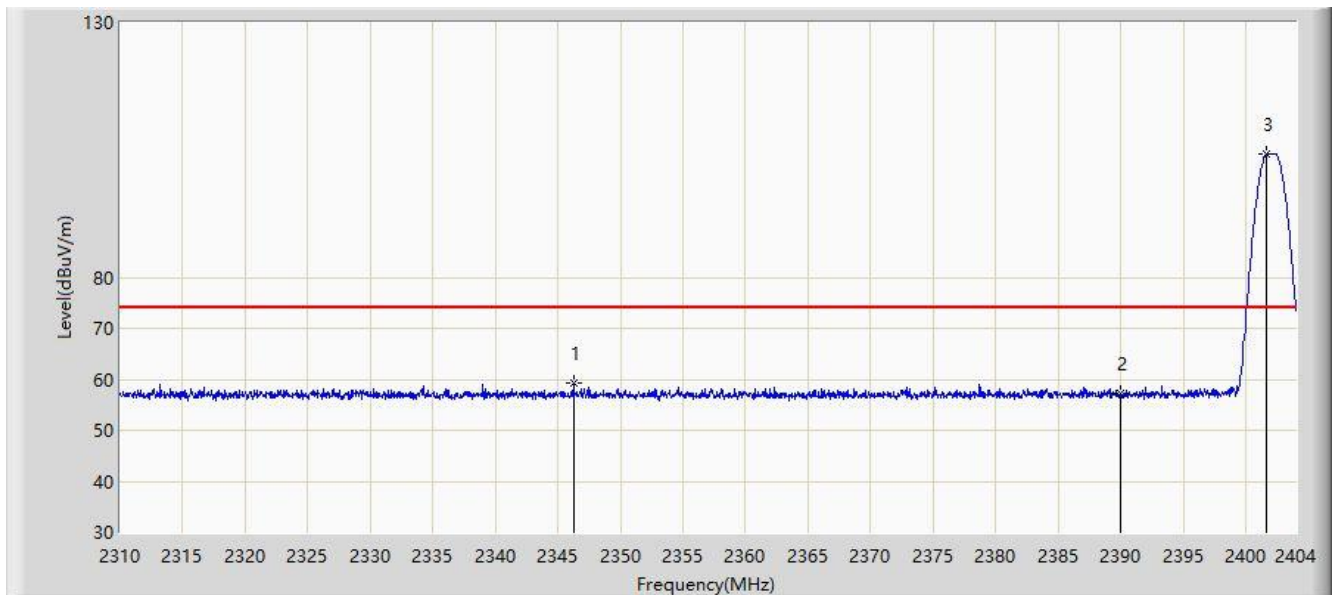
Average Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle $\geq 98\%$, set VBW = 10Hz
4. If the EUT duty cycle is $< 98\%$, set VBW $\geq 1/T$. T is the minimum transmission duration
5. Detector = Peak
6. Sweep time = Auto
7. Trace mode = Max hold
8. Trace was allowed to stabilize

6.7.4. Test Setup

6.7.5.Test Result

Site: NS-AC1	Test Date: 2021/04/23
Limit: FCC_Part15_15.209_RE(3m)	Engineer: Antony Yang
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: DC 5V
Test Mode: Left Earbud, Transmit by BLE at Channel 2402MHz	

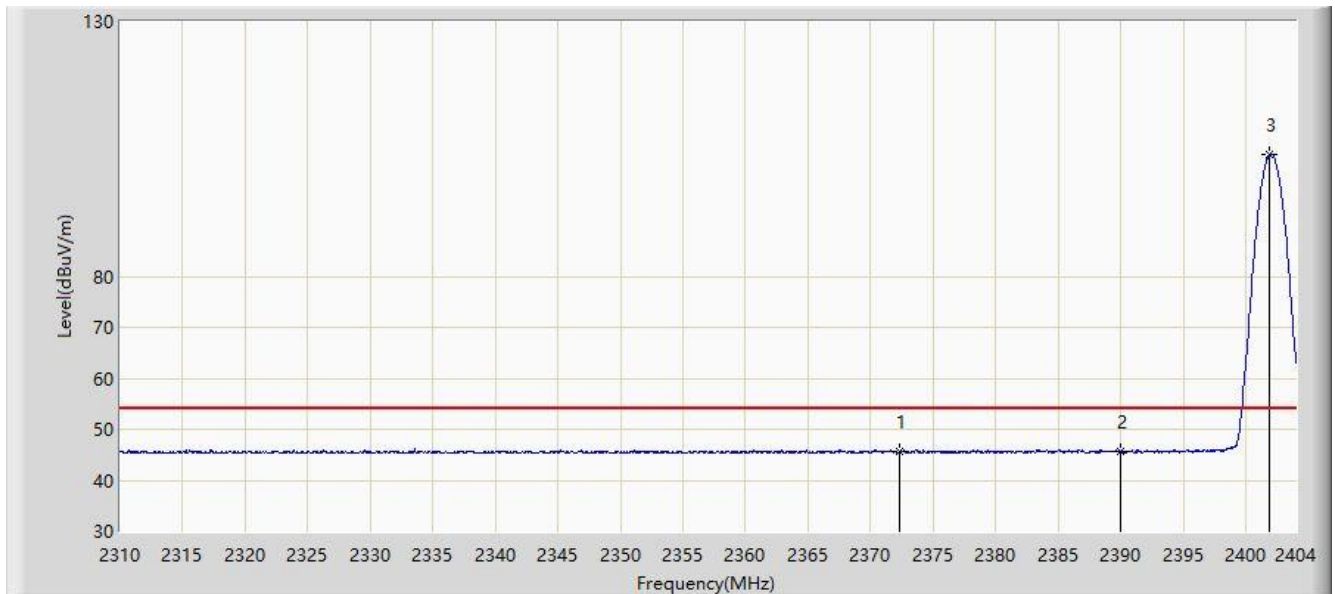


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			2346.237	59.395	28.385	-14.605	74.000	31.010	PK
2			2390.000	57.261	26.355	-16.739	74.000	30.906	PK
3		*	2401.697	104.115	73.219	N/A	N/A	30.897	PK

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: NS-AC1	Test Date: 2021/04/23
Limit: FCC_Part15_15.209_RE(3m)	Engineer: Antony Yang
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: DC 5V
Test Mode: Left Earbud, Transmit by BLE at Channel 2402MHz	

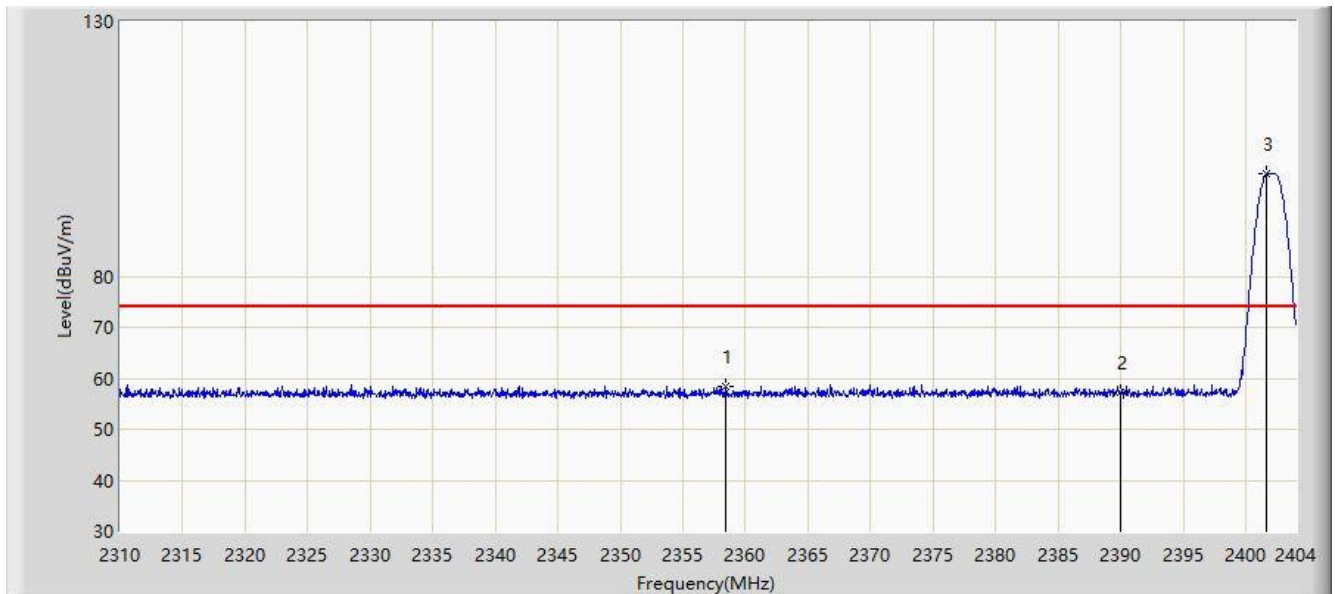


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			2372.369	45.715	14.768	-8.285	54.000	30.948	AV
2			2390.000	45.654	14.748	-8.346	54.000	30.906	AV
3		*	2401.932	103.774	72.878	N/A	N/A	30.896	AV

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: NS-AC1	Test Date: 2021/04/23
Limit: FCC_Part15_15.209_RE(3m)	Engineer: Antony Yang
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: DC 5V
Test Mode: Left Earbud, Transmit by BLE at Channel 2402MHz	

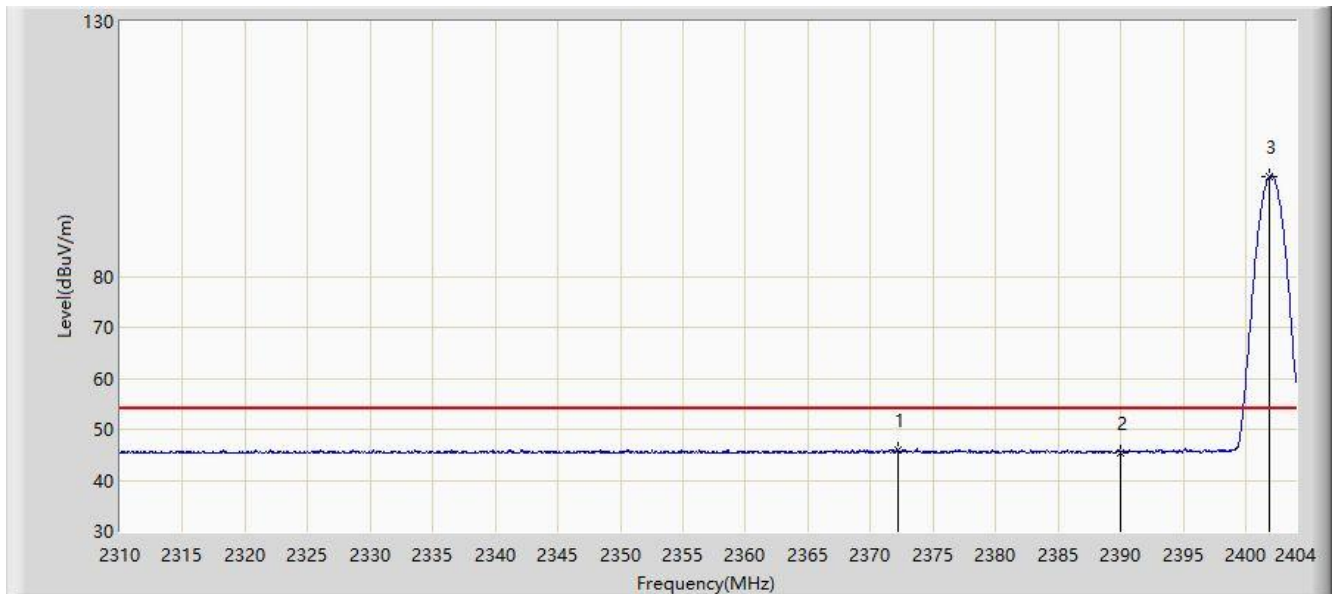


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			2358.457	58.492	27.512	-15.508	74.000	30.980	PK
2			2390.000	57.141	26.235	-16.859	74.000	30.906	PK
3		*	2401.650	100.039	69.143	N/A	N/A	30.897	PK

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: NS-AC1	Test Date: 2021/04/23
Limit: FCC_Part15_15.209_RE(3m)	Engineer: Antony Yang
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: DC 5V
Test Mode: Left Earbud, Transmit by BLE at Channel 2402MHz	

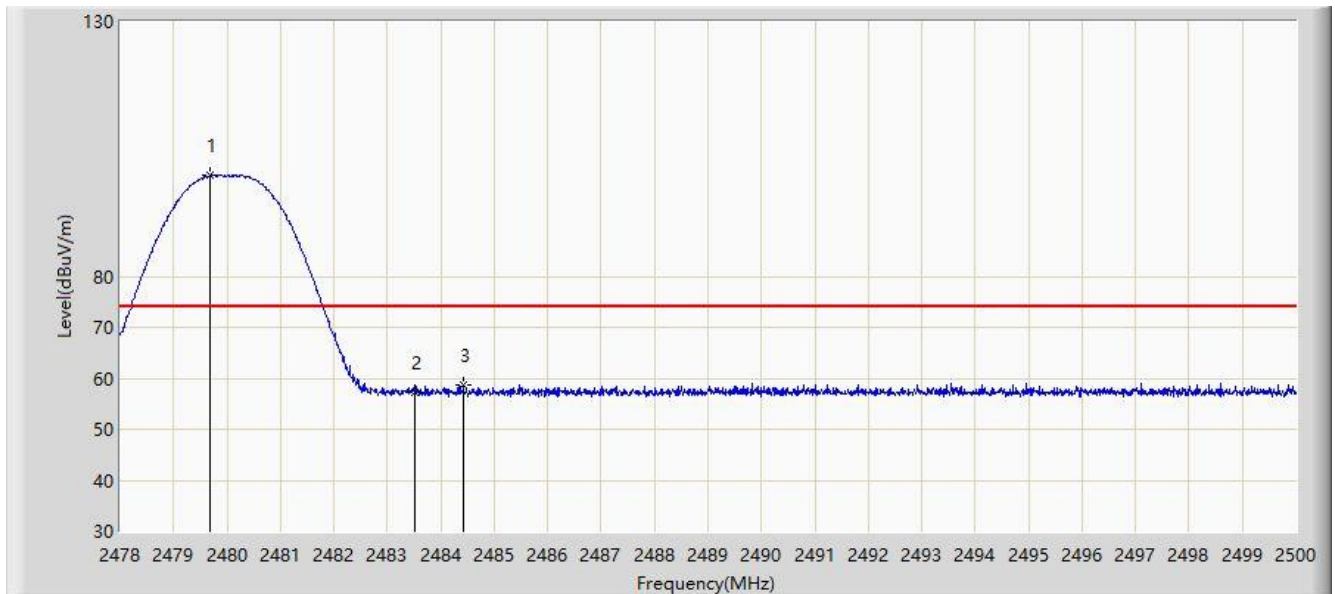


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			2372.228	46.061	15.113	-7.939	54.000	30.947	AV
2			2390.000	45.439	14.533	-8.561	54.000	30.906	AV
3		*	2401.885	99.540	68.644	N/A	N/A	30.896	AV

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: NS-AC1	Test Date: 2021/04/23
Limit: FCC_Part15_15.209_RE(3m)	Engineer: Antony Yang
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: DC 5V
Test Mode: Left Earbud, Transmit by BLE at Channel 2480MHz	

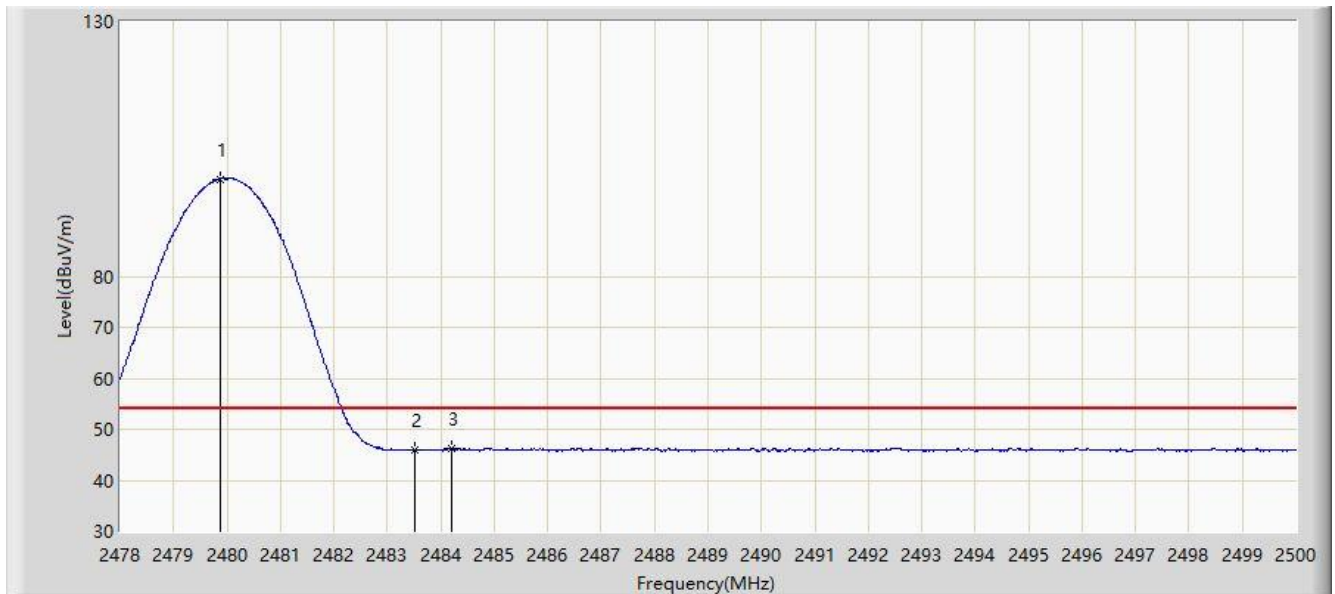


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2479.694	99.745	68.854	N/A	N/A	30.891	PK
2			2483.500	57.183	26.295	-16.817	74.000	30.888	PK
3			2484.424	58.775	27.888	-15.225	74.000	30.887	PK

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: NS-AC1	Test Date: 2021/04/23
Limit: FCC_Part15_15.209_RE(3m)	Engineer: Antony Yang
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: DC 5V
Test Mode: Left Earbud, Transmit by BLE at Channel 2480MHz	

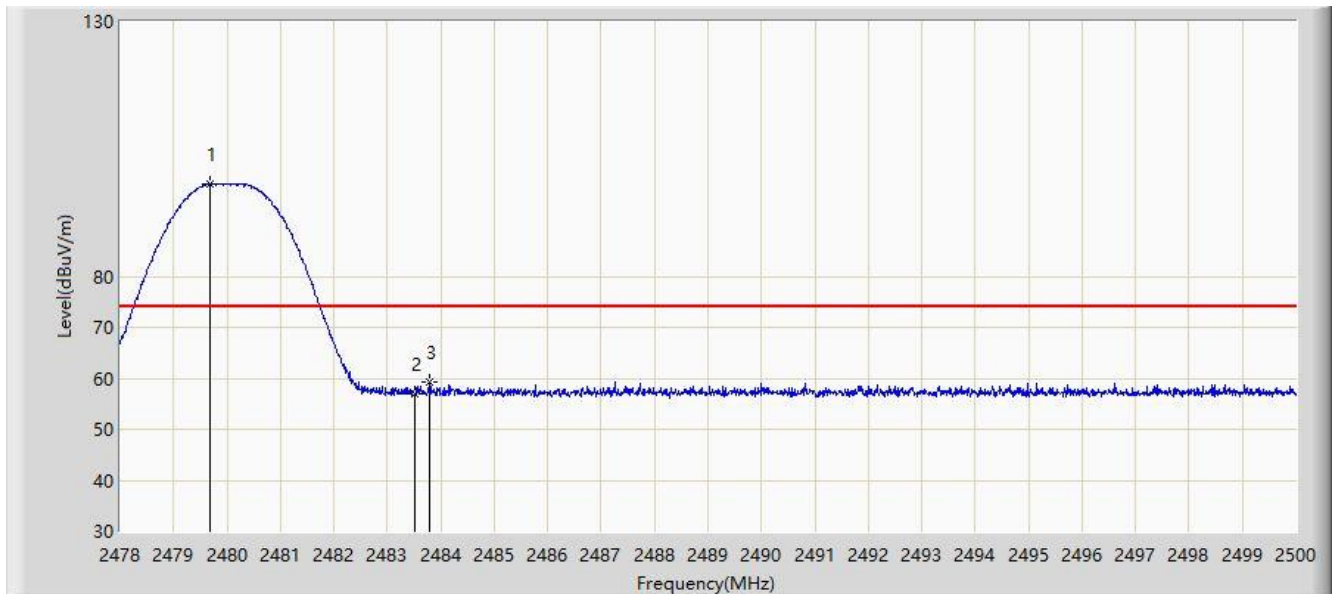


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	2479.870	99.115	68.224	N/A	N/A	30.891	AV
2			2483.500	46.043	15.155	-7.957	54.000	30.888	AV
3			2484.193	46.325	15.437	-7.675	54.000	30.888	AV

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: NS-AC1	Test Date: 2021/04/23
Limit: FCC_Part15_15.209_RE(3m)	Engineer: Antony Yang
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: DC 5V
Test Mode: Left Earbud, Transmit by BLE at Channel 2480MHz	

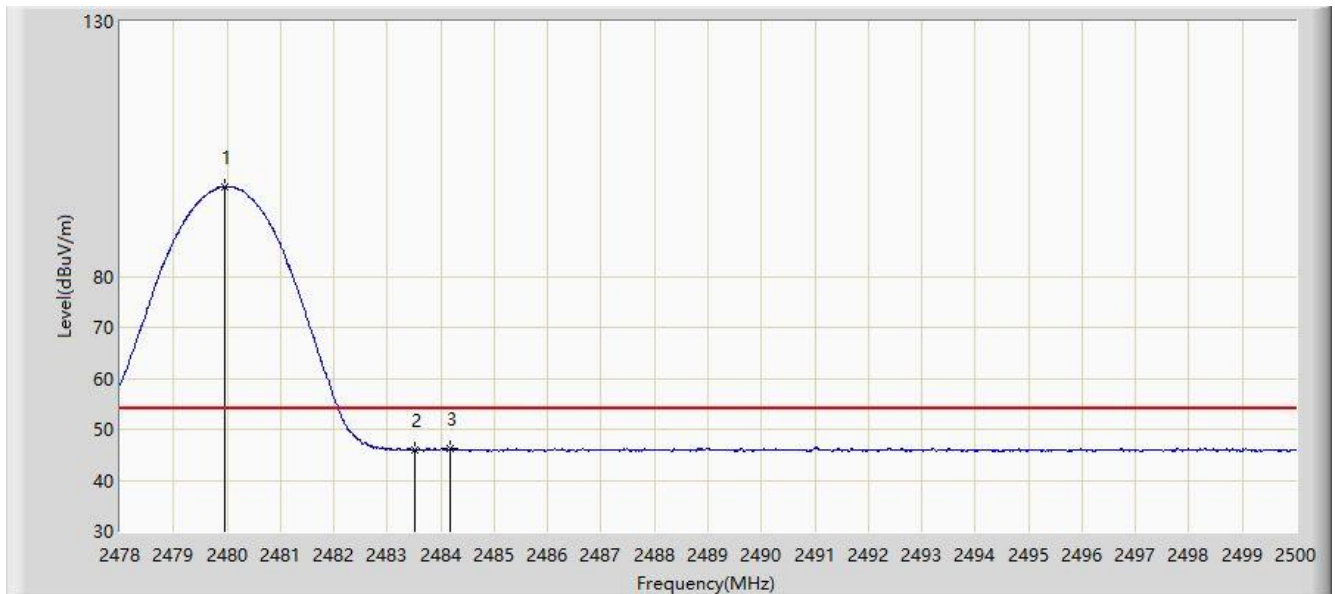


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	2479.694	98.173	67.282	N/A	N/A	30.891	PK
2			2483.500	56.965	26.077	-17.035	74.000	30.888	PK
3			2483.786	59.362	28.474	-14.638	74.000	30.888	PK

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: NS-AC1	Test Date: 2021/04/23
Limit: FCC_Part15_15.209_RE(3m)	Engineer: Antony Yang
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: DC 5V
Test Mode: Left Earbud, Transmit by BLE at Channel 2480MHz	

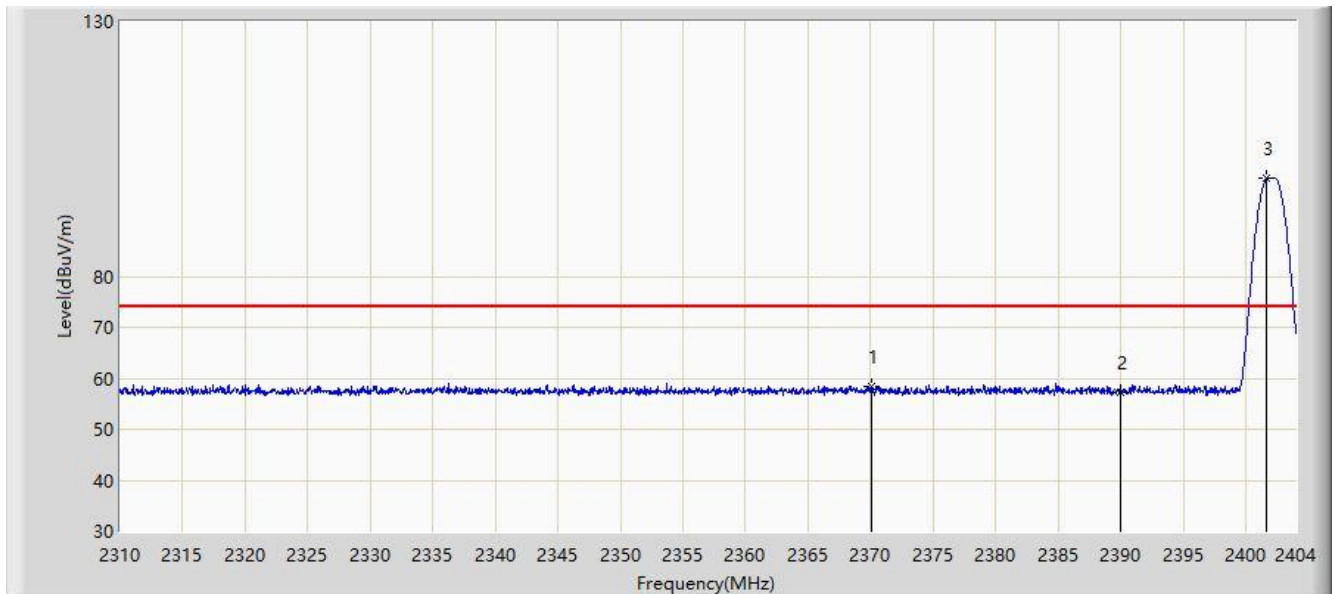


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	2479.958	97.550	66.659	N/A	N/A	30.891	AV
2			2483.500	45.968	15.080	-8.032	54.000	30.888	AV
3			2484.182	46.180	15.292	-7.820	54.000	30.888	AV

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: NS-AC1	Test Date: 2021/04/23
Limit: FCC_Part15_15.209_RE(3m)	Engineer: Antony Yang
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: DC 5V
Test Mode: Right Earbud, Transmit by BLE at Channel 2402MHz	

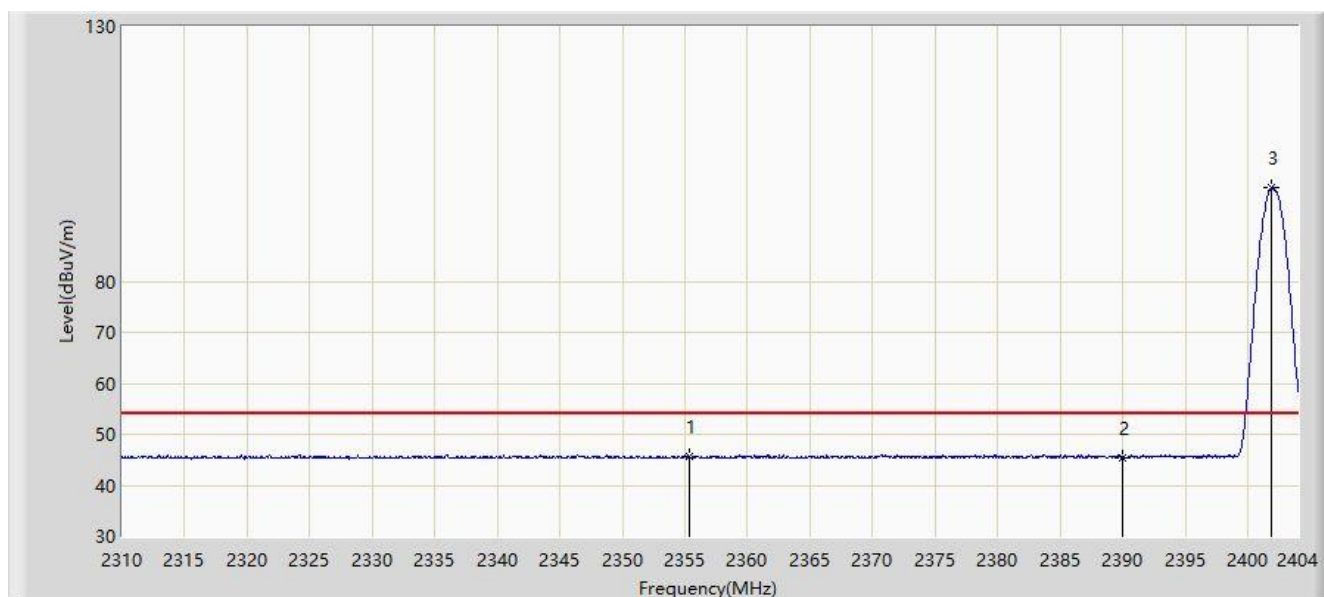


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			2370.113	58.432	27.479	-15.568	74.000	30.952	PK
2			2390.000	57.163	26.257	-16.837	74.000	30.906	PK
3		*	2401.697	99.159	68.263	N/A	N/A	30.897	PK

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: NS-AC1	Test Date: 2021/04/23
Limit: FCC_Part15_15.209_RE(3m)	Engineer: Antony Yang
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: DC 5V
Test Mode: Right Earbud, Transmit by BLE at Channel 2402MHz	

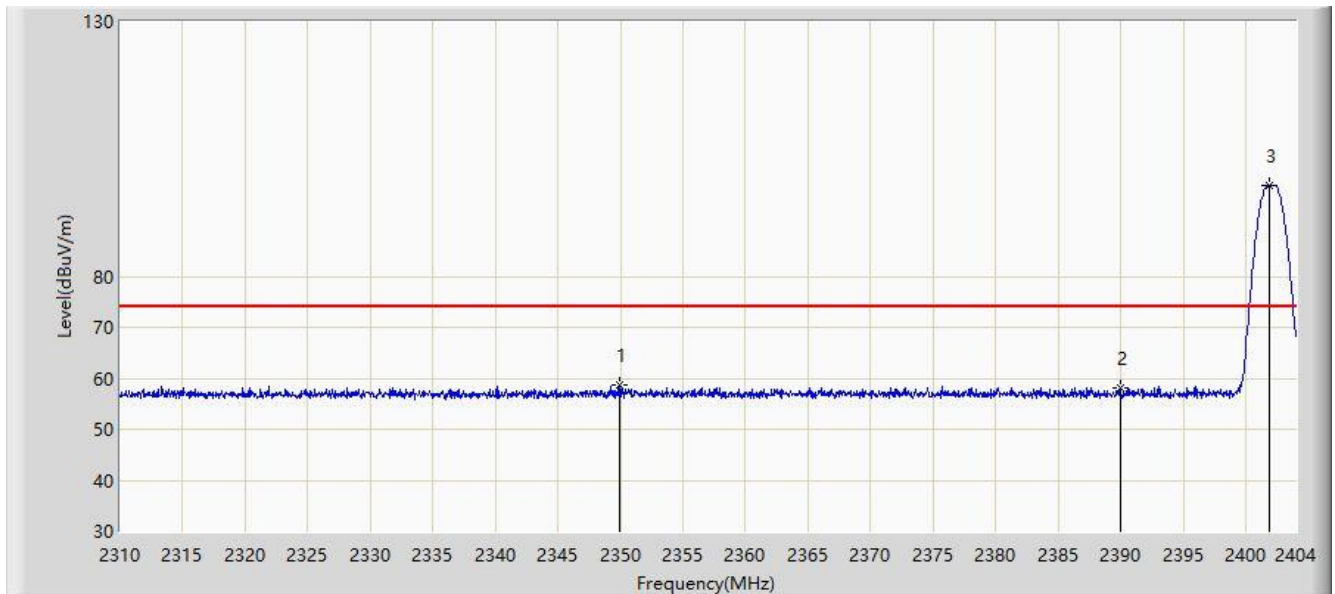


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2355.402	45.757	14.770	-8.243	54.000	30.988	AV
2			2390.000	45.454	14.548	-8.546	54.000	30.906	AV
3		*	2401.932	98.507	67.611	N/A	N/A	30.896	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: NS-AC1	Test Date: 2021/04/23
Limit: FCC_Part15_15.209_RE(3m)	Engineer: Antony Yang
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: DC 5V
Test Mode: Right Earbud, Transmit by BLE at Channel 2402MHz	

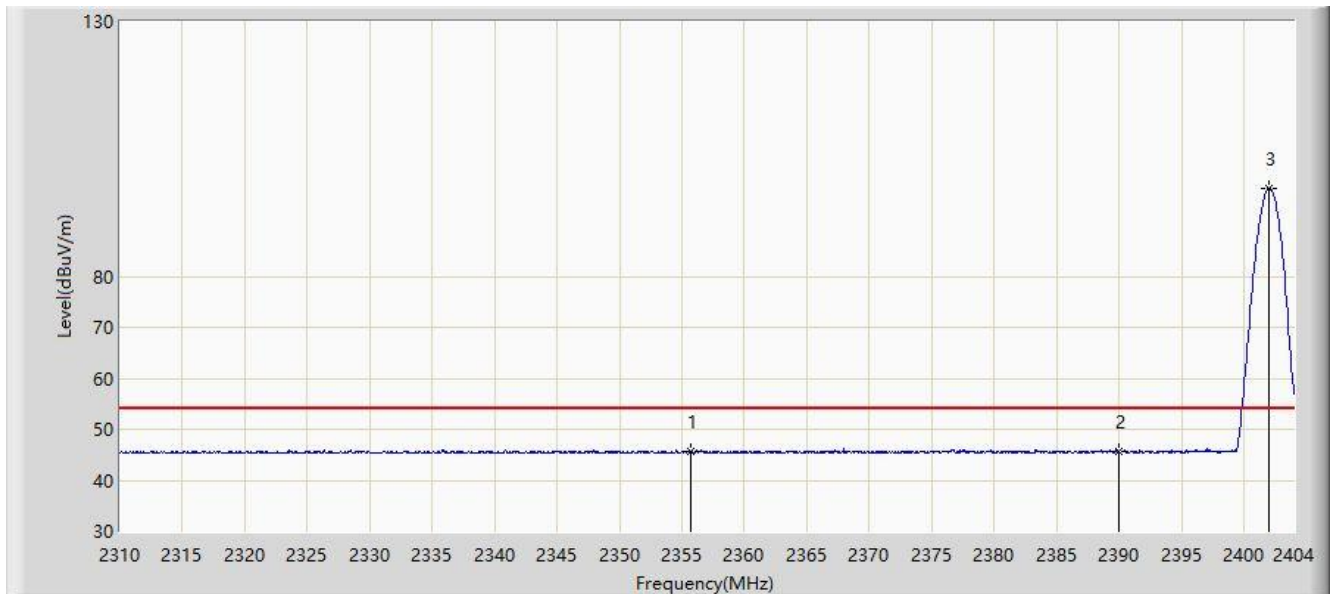


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			2349.950	58.720	27.719	-15.280	74.000	31.001	PK
2			2390.000	57.983	27.077	-16.017	74.000	30.906	PK
3		*	2401.885	97.867	66.971	N/A	N/A	30.896	PK

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: NS-AC1	Test Date: 2021/04/23
Limit: FCC_Part15_15.209_RE(3m)	Engineer: Antony Yang
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: DC 5V
Test Mode: Right Earbud, Transmit by BLE at Channel 2402MHz	

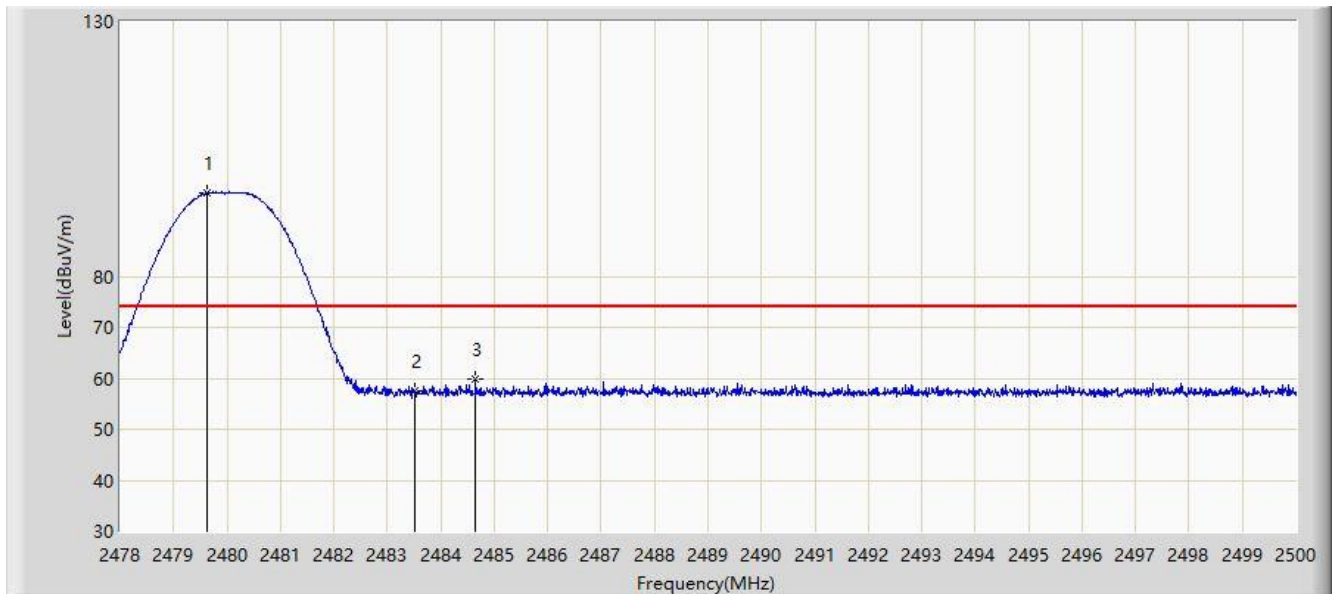


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			2355.731	45.738	14.751	-8.262	54.000	30.987	AV
2			2390.000	45.537	14.631	-8.463	54.000	30.906	AV
3		*	2401.979	97.279	66.383	N/A	N/A	30.896	AV

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: NS-AC1	Test Date: 2021/04/23
Limit: FCC_Part15_15.209_RE(3m)	Engineer: Antony Yang
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: DC 5V
Test Mode: Right Earbud, Transmit by BLE at Channel 2480MHz	

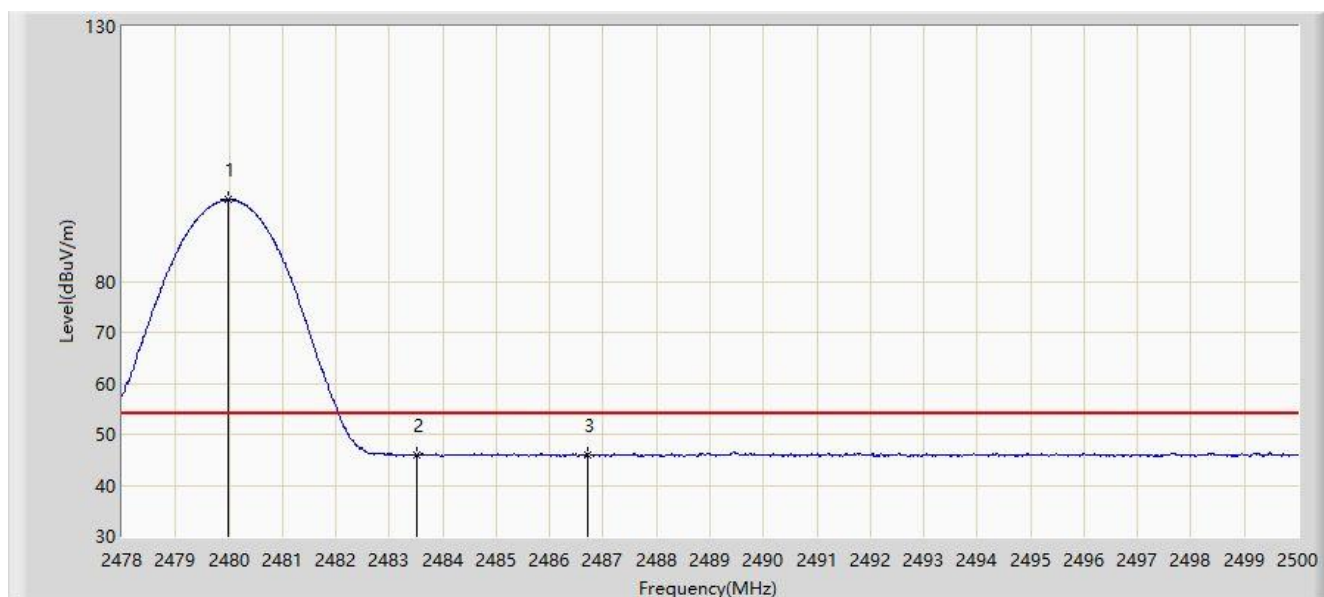


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	2479.628	96.330	65.439	N/A	N/A	30.891	PK
2			2483.500	57.414	26.526	-16.586	74.000	30.888	PK
3			2484.644	59.855	28.968	-14.145	74.000	30.887	PK

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: NS-AC1	Test Date: 2021/04/23
Limit: FCC_Part15_15.209_RE(3m)	Engineer: Antony Yang
Probe: NS-AC1_BBHA9120D_2111	Polarity: Horizontal
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: DC 5V
Test Mode: Right Earbud, Transmit by BLE at Channel 2480MHz	

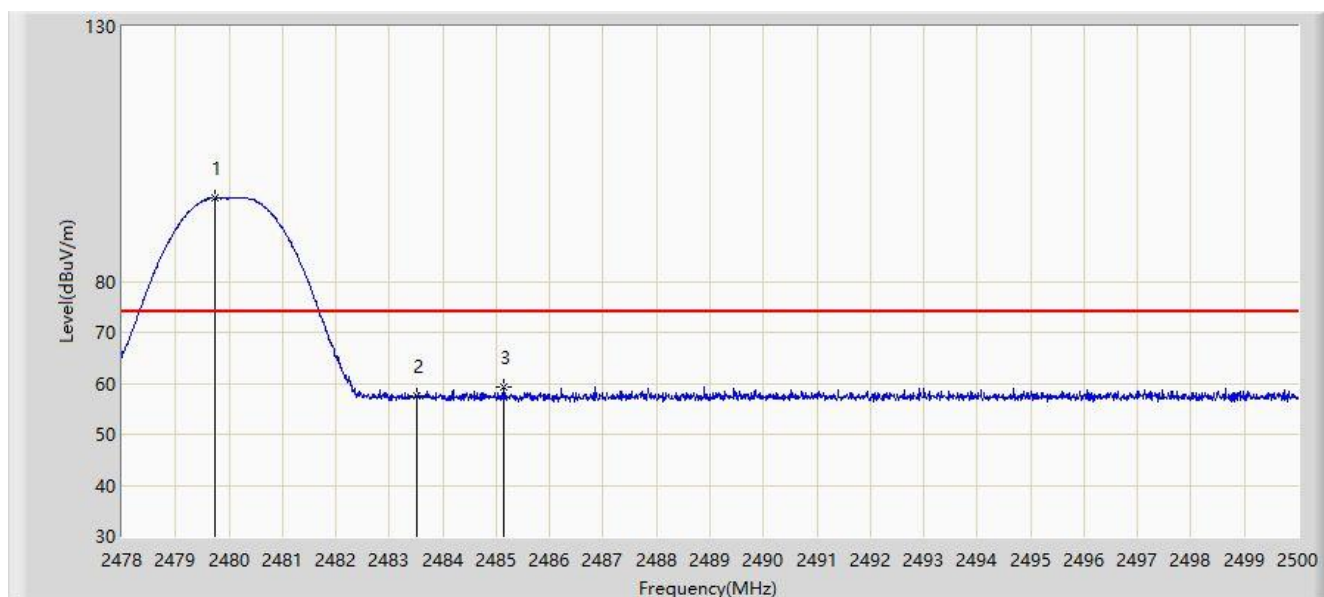


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	2479.980	95.996	65.105	N/A	N/A	30.891	AV
2			2483.500	46.058	15.170	-7.942	54.000	30.888	AV
3			2486.712	46.063	15.177	-7.937	54.000	30.886	AV

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: NS-AC1	Test Date: 2021/04/23
Limit: FCC_Part15_15.209_RE(3m)	Engineer: Antony Yang
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: DC 5V
Test Mode: Right Earbud, Transmit by BLE at Channel 2480MHz	

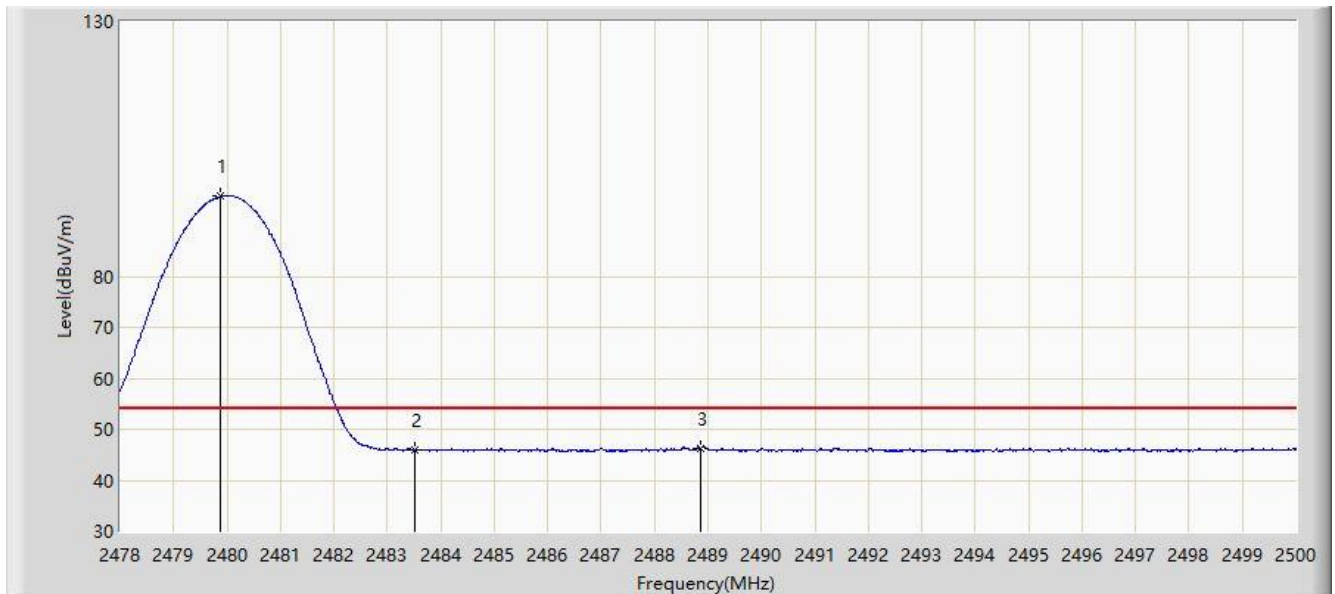


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	2479.738	96.326	65.435	N/A	N/A	30.891	PK
2			2483.500	57.487	26.599	-16.513	74.000	30.888	PK
3			2485.128	59.156	28.269	-14.844	74.000	30.887	PK

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: NS-AC1	Test Date: 2021/04/23
Limit: FCC_Part15_15.209_RE(3m)	Engineer: Antony Yang
Probe: NS-AC1_BBHA9120D_2111	Polarity: Vertical
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: DC 5V
Test Mode: Right Earbud, Transmit by BLE at Channel 2480MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	2479.881	95.699	64.808	N/A	N/A	30.891	AV
2			2483.500	45.917	15.029	-8.083	54.000	30.888	AV
3			2488.868	46.373	15.489	-7.627	54.000	30.884	AV

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

6.8. AC Conducted Emissions Measurement

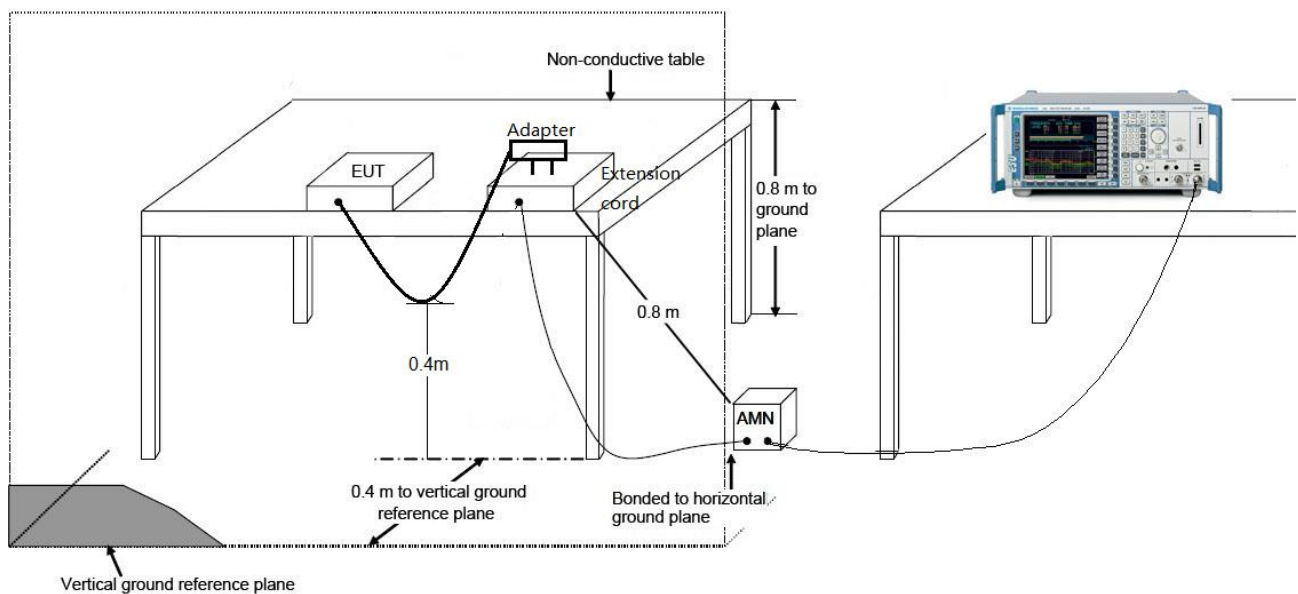
6.8.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207 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.

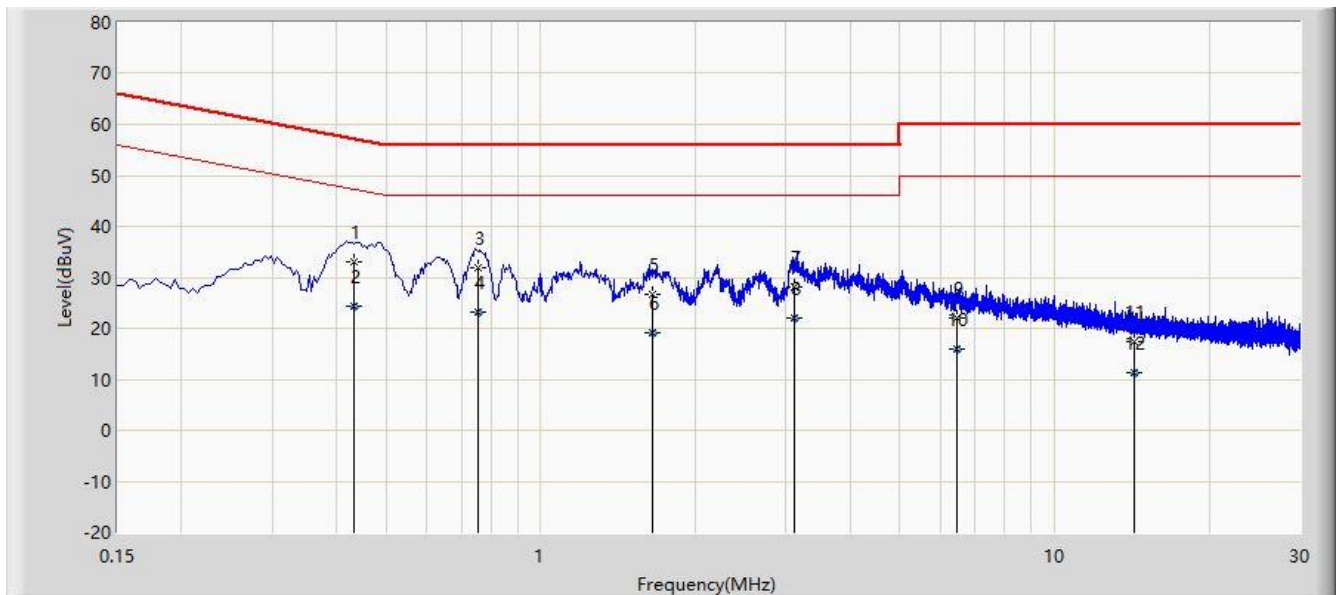
Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

6.8.2. Test Setup



6.8.3.Test Result

Site: NS-SR2	Test Date: 2021/04/29
Limit: FCC_Part15.207_CE_AC Power	Engineer: Flay Yang
Probe: ENV216_102493_Filter Off_0.15~30MHz	Polarity: Line
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: AC 120V/60Hz
Test Mode: Transmit by BLE at Channel 2440MHz	

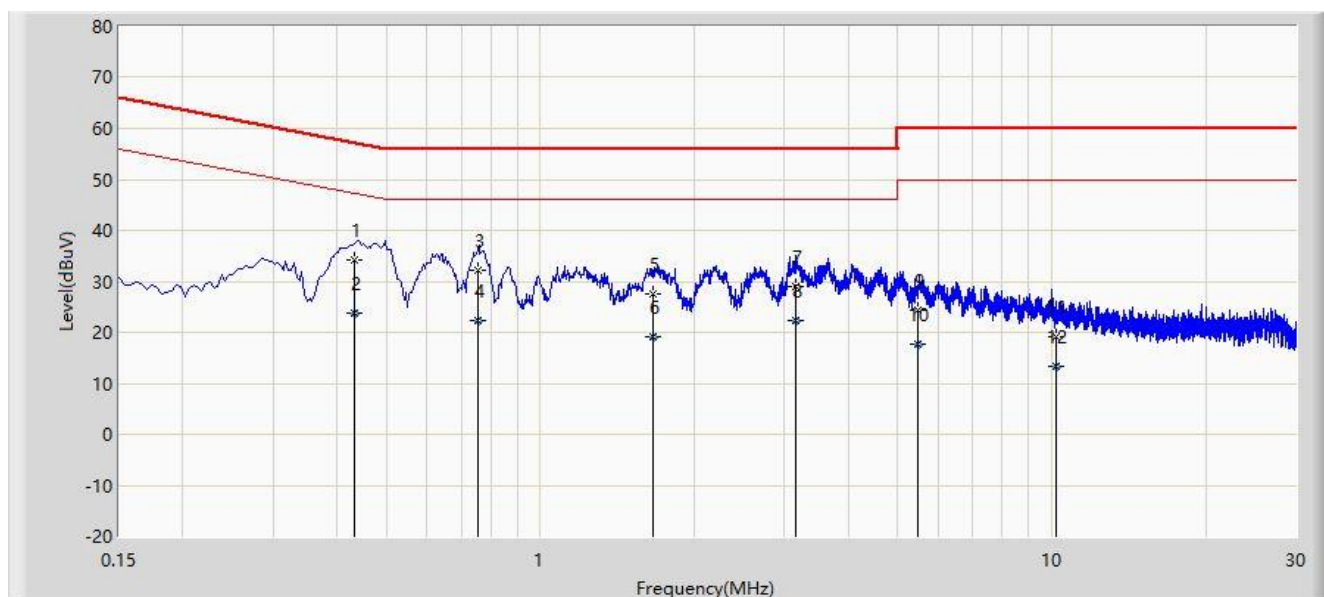


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV)	Factor (dB)	Type
1			0.434	33.153	23.598	-24.022	57.176	9.556	QP
2			0.434	24.323	14.768	-22.852	47.176	9.556	AV
3			0.754	31.756	22.178	-24.244	56.000	9.578	QP
4		*	0.754	23.249	13.671	-22.751	46.000	9.578	AV
5			1.646	26.601	16.983	-29.399	56.000	9.618	QP
6			1.646	19.186	9.567	-26.814	46.000	9.618	AV
7			3.122	28.132	18.473	-27.868	56.000	9.659	QP
8			3.122	22.145	12.487	-23.855	46.000	9.659	AV
9			6.442	22.017	12.290	-37.983	60.000	9.727	QP
10			6.442	15.989	6.262	-34.011	50.000	9.727	AV
11			14.266	17.281	7.434	-42.719	60.000	9.847	QP
12			14.266	11.400	1.553	-38.600	50.000	9.847	AV

Note: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

Site: NS-SR2	Test Date: 2021/04/29
Limit: FCC_Part15.207_CE_AC Power	Engineer: Flay Yang
Probe: ENV216_102493_Filter Off_0.15~30MHz	Polarity: Neutral
EUT: True Wireless Gaming Earbuds with Active Noise Cancellation	Power: AC 120V/60Hz
Test Mode: Transmit by BLE at Channel 2440MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV)	Factor (dB)	Type
1		*	0.434	34.142	24.577	-23.033	57.176	9.566	QP
2			0.434	23.907	14.341	-23.269	47.176	9.566	AV
3			0.754	32.310	22.726	-23.690	56.000	9.584	QP
4			0.754	22.241	12.657	-23.759	46.000	9.584	AV
5			1.658	27.630	18.007	-28.370	56.000	9.622	QP
6			1.658	19.127	9.504	-26.873	46.000	9.622	AV
7			3.154	28.964	19.303	-27.036	56.000	9.662	QP
8			3.154	22.459	12.798	-23.541	46.000	9.662	AV
9			5.462	24.348	14.636	-35.652	60.000	9.712	QP
10			5.462	17.582	7.870	-32.418	50.000	9.712	AV
11			10.190	19.243	9.432	-40.757	60.000	9.811	QP
12			10.190	13.229	3.418	-36.771	50.000	9.811	AV

Note: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

7. CONCLUSION

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

Appendix A - Test Setup Photograph

Refer to “2104RSU061-UT” file.

Appendix B - EUT Photograph

Refer to “2104RSU061-UE” file.