

FCC Test Report

Product Name	ROG Strix Fusion 700 Gaming Headset
Model No.	ROGSTRIX F700/BLK/UBD/AS
FCC ID.	MSQ-ROGSTRIXF700

Applicant	ASUSTeK COMPUTER INC.
Address	4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan

Date of Receipt	Apr. 19, 2018
Issued Date	May 30, 2018
Report No.	1840232R-RFUSP01V00-B
Report Version	V1.0



The test results relate only to the samples tested.

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

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Test Report

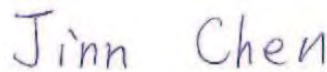
Issued Date: May 30, 2018

Report No.: 1840232R-RFUSP01V00-B



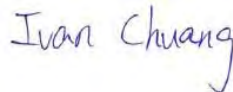
Product Name	ROG Strix Fusion 700 Gaming Headset
Applicant	ASUSTeK COMPUTER INC.
Address	4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan
Manufacturer	ASUSTeK COMPUTER INC.
Model No.	ROGSTRIX F700/BLK/UBD/AS
FCC ID.	MSQ-ROGSTRIXF700
EUT Rated Voltage	DC 3.7V by Battery or DC 5V by USB
EUT Test Voltage	DC 5V by USB
Trade Name	ASUS
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2017 ANSI C63.4: 2014, ANSI C63.10: 2013 KDB 558074 D01 DTS Meas Guidance v04
Test Result	Complied

Documented By :



(Senior Adm. Specialist / Jinn Chen)

Tested By :



(Senior Engineer / Ivan Chuang)

Approved By :



(Director / Vincent Lin)

TABLE OF CONTENTS

Description	Page
1. GENERAL INFORMATION	4
1.1. EUT Description.....	4
1.2. Operational Description.....	6
1.3. Tested System Details.....	7
1.4. Configuration of Tested System	7
1.5. EUT Exercise Software	7
1.6. Test Facility	8
1.7. List of Test Equipment.....	9
2. CONDUCTED EMISSION	10
2.1. Test Setup	10
2.2. Limits.....	10
2.3. Test Procedure	11
2.4. Uncertainty	11
2.5. Test Result of Conducted Emission.....	12
3. PEAK POWER OUTPUT	14
3.1. Test Setup	14
3.2. Limit	14
3.3. Test Procedure	14
3.4. Uncertainty	14
3.5. Test Result of Peak Power Output	15
4. RADIATED EMISSION	16
4.1. Test Setup	16
4.2. Limits.....	17
4.3. Test Procedure	18
4.4. Uncertainty	19
4.5. Test Result of Radiated Emission	20
5. RF ANTENNA CONDUCTED TEST	24
5.1. Test Setup	24
5.2. Limits.....	24
5.3. Test Procedure	24
5.4. Uncertainty	24
5.5. Test Result of RF Antenna Conducted Test	25
6. BAND EDGE	26
6.1. Test Setup	26
6.2. Limit	27
6.3. Test Procedure	27
6.4. Uncertainty	28
6.5. Test Result of Band Edge	29
7. 6DB BANDWIDTH	33
7.1. Test Setup	33
7.2. Limits.....	33
7.3. Test Procedure	33
7.4. Uncertainty	33
7.5. Test Result of 6dB Bandwidth.....	34
8. POWER DENSITY	37
8.1. Test Setup	37
8.2. Limits.....	37
8.3. Test Procedure	37
8.4. Uncertainty	37
8.5. Test Result of Power Density	38
9. DUTY CYCLE	41
9.1. Test Setup	41
9.2. Test Procedure	41
9.3. Uncertainty	41
9.4. Test Result of Duty Cycle.....	42
10. EMI REDUCTION METHOD DURING COMPLIANCE TESTING	43
Attachment 1: EUT Test Photographs	
Attachment 2: EUT Detailed Photographs	

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	ROG Strix Fusion 700 Gaming Headset
Trade Name	ASUS
Model No.	ROGSTRIX F700/BLK/UBD/AS
FCC ID.	MSQ-ROGSTRIXF700
Frequency Range	2402 – 2480MHz
Channel Number	V4.2: 40CH
Type of Modulation	V4.2: GFSK(1Mbps)
Antenna Type	PIFA Antenna
Channel Control	Auto
Antenna Gain	Refer to the table “Antenna List”

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	ASUS	N/A	PIFA Antenna	1.73dBi for 2.4 GHz

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

Center Frequency of Each Channel: (For V4.2)

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

Note:

1. The EUT is a ROG Strix Fusion 700 Gaming Headset with built-in Bluetooth V4.2 、 V2.1+EDR transceiver, this report for Bluetooth V4.2.
2. These tests were conducted on a sample for the purpose of demonstrating compliance of Bluetooth V4.2 transmitter with Part 15 Subpart C Paragraph 15.247 for spread spectrum devices.
3. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
4. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

Test Mode	Mode 1: Transmit - BLE
-----------	------------------------

1.2. Operational Description

The EUT is a ROG Strix Fusion 700 Gaming Headset with built-in Bluetooth V4.2 、 V2.1+EDR transceiver. The number of the channels is 40 in Bluetooth V4.2 mode. This device provides a kinds of transmitting speed and modulation, GFSK(1Mbps). The antenna is PIFA Antenna.

The system receivers have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. The transmitter is presented with a continuous data stream. In addition, a system employing short transmission bursts must comply with the definition of a frequency hopping system and must distribute its 40 channels.

The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hopsets to avoid hopping on occupied channels is permitted.

The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

The EUT is forward-compatible with the impending Bluetooth Low Energy operating mode, which provides a dramatic reduction in the power consumption of the Bluetooth radio and baseband.

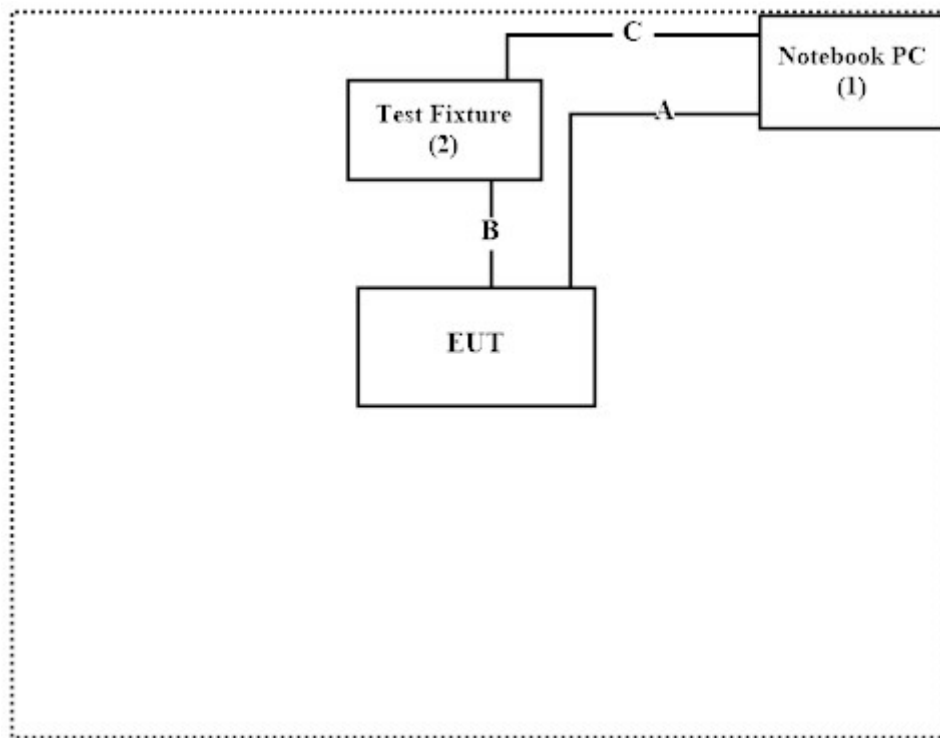
1.3. Tested System Details

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

Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	DELL	P62G	CY9FJC2
2	Test Fixture	CSR	N/A	N/A

Signal Cable Type	Signal cable Description
A	USB Cable
B	Signal Cable
C	USB Cable

1.4. Configuration of Tested System



1.5. EUT Exercise Software

- (1) Setup the EUT as shown in Section 1.4.
- (2) Execute software “CSR102x Tools v3.1.0” on the Notebook PC.
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Press “OK” to start the continuous Transmit.
- (5) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from DEKRA Testing and Certification Co., Ltd. Web Site:

<http://www.dekra.com.tw/english/about/certificates.aspx?bval=5>

The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site: http://www.dekra.com.tw/index_en

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Accredited Number: 3023

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E-Mail : info.tw@dekra.com

FCC Accreditation Number: TW0023

1.7. List of Test Equipment

For Conduction measurements /ASR1

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	EMI Test Receiver	R&S	ESR7	101601	2018.02.08	2019.02.07
X	Two-Line V-Network	R&S	ENV216	101306	2018.03.09	2019.03.08
X	Two-Line V-Network	R&S	ENV216	101307	2018.03.20	2019.03.19
X	Coaxial Cable	Quietek	RG400_BNC	RF001	2018.05.24	2019.05.23

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with "X" are used to measure the final test results.
3. Test Software version : QuieTek EMI 2.0 V2.1.113

For Conducted measurements /ASR4

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	Spectrum Analyzer	R&S	FSV30	103464	2018.01.23	2019.01.22
X	Power Meter	Anritsu	ML2496A	1548003	2017.12.11	2018.12.10
X	Power Sensor	Anritsu	MA2411B	1531024	2017.12.11	2018.12.10
X	Power Sensor	Anritsu	MA2411B	1531025	2017.12.11	2018.12.10
	Bluetooth Tester	R&S	CBT	101238	2018.01.18	2019.01.17

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with "X" are used to measure the final test results.
3. Test Software version : DEKRA Conduction Test System V9.0.1

For Radiated measurements /ACB1

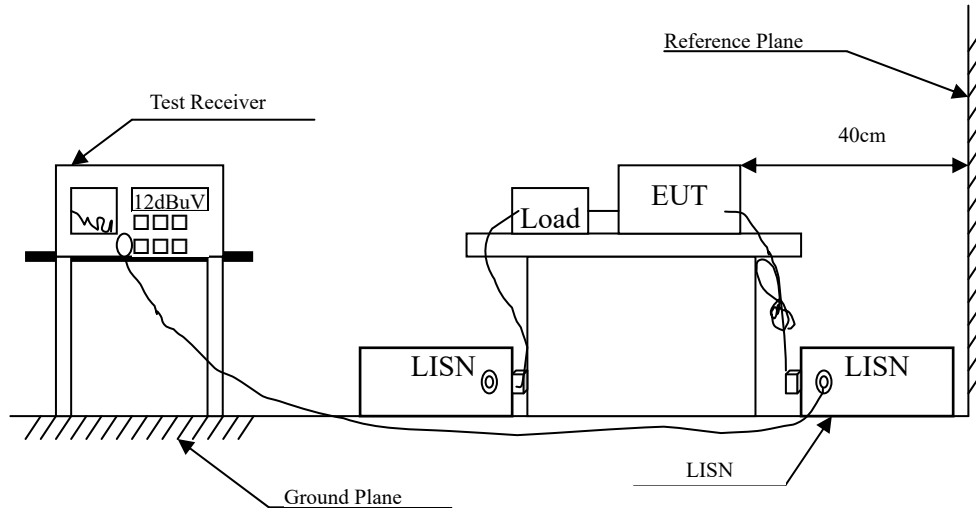
	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	Loop Antenna	AMETEK	HLA6121	49611	2018.01.26	2019.01.25
X	Bi-Log Antenna	SCHWARZBECK	VULB9168	9168-674	2018.04.02	2019.04.01
X	Horn Antenna	ETS-Lindgren	3117	00203800	2017.11.10	2018.11.09
X	Horn Antenna	Com-Power	AH-840	101088	2017.08.22	2018.08.21
X	Pre-Amplifier	EMCI	EMC001330	980301	2018.05.17	2019.05.16
X	Pre-Amplifier	EMCI	EMC051835SE	980312	2018.05.16	2019.05.15
X	Pre-Amplifier	EMCI	EMC05820SE	980308	2017.06.13	2018.06.12
X	Pre-Amplifier	EMCI	EMC184045SE	980314	2018.05.16	2019.05.15
X	Filter	MICRO TRONICS	BRM50702	G251	2017.08.30	2018.08.29
	Filter	MICRO TRONICS	BRM50716	G188	2017.08.30	2018.08.29
X	EMI Test Receiver	R&S	ESR7	101602	2017.12.11	2018.12.10
X	Spectrum Analyzer	R&S	FSV40	101148	2018.02.08	2019.02.07
X	Coaxial Cable	SUHNER	SUCOFLEX 106	RF002	2018.05.25	2019.05.24
X	Mircoflex Cable	HUBER SUHNER	SUCOFLEX 102	MY3381/2	2017.08.11	2018.08.10

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with "X" are used to measure the final test results.
3. Test Software version : QuieTek EMI 2.0 V2.1.113

2. Conducted Emission

2.1. Test Setup



2.2. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit		
Frequency MHz	Limits	
	QP	AV
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

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

2.3. Test Procedure

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

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

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

The EUT was setup to ANSI C63.4, 2014; tested to DTS test procedure of FCC KDB-558074 for compliance to FCC 47CFR Subpart C requirements.

2.4. Uncertainty

$\pm 2.35\text{dB}$

2.5. Test Result of Conducted Emission

Product : ROG Strix Fusion 700 Gaming Headset
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 1: Transmit - BLE (2440MHz)
 Test Date : 2018/05/16

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.166	9.647	32.802	42.449	-23.094	65.543
0.240	9.682	29.851	39.533	-23.896	63.429
0.460	9.697	30.164	39.861	-17.282	57.143
1.300	9.730	26.821	36.551	-19.449	56.000
3.100	9.781	18.650	28.431	-27.569	56.000
14.000	10.003	25.305	35.308	-24.692	60.000
Average					
0.166	9.647	20.224	29.871	-25.672	55.543
0.240	9.682	20.481	30.164	-23.265	53.429
0.460	9.697	18.938	28.635	-18.508	47.143
1.300	9.730	15.348	25.078	-20.922	46.000
3.100	9.781	9.985	19.766	-26.234	46.000
14.000	10.003	15.665	25.668	-24.332	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. "■" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : ROG Strix Fusion 700 Gaming Headset
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 1: Transmit - BLE (2440MHz)
 Test Date : 2018/05/16

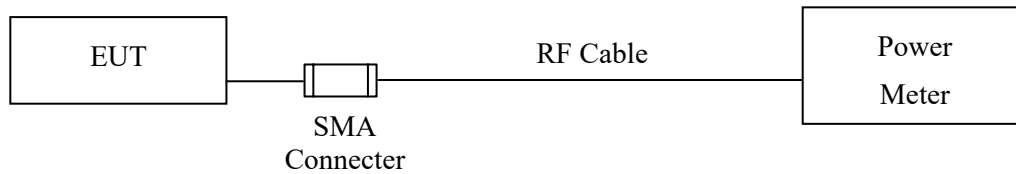
Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.168	9.646	35.244	44.890	-20.596	65.486
0.240	9.682	27.671	37.353	-26.076	63.429
0.420	9.688	28.349	38.037	-20.249	58.286
1.400	9.730	21.317	31.047	-24.953	56.000
5.400	9.844	16.950	26.794	-33.206	60.000
15.830	10.033	24.303	34.336	-25.664	60.000
Average					
0.168	9.646	18.949	28.595	-26.891	55.486
0.240	9.682	18.928	28.610	-24.819	53.429
0.420	9.688	18.365	28.053	-20.233	48.286
1.400	9.730	8.992	18.722	-27.278	46.000
5.400	9.844	11.265	21.109	-28.891	50.000
15.830	10.033	13.747	23.779	-26.221	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " " means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

3. Peak Power Output

3.1. Test Setup



3.2. Limit

The maximum peak power shall be less 1Watt.

3.3. Test Procedure

Tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements. The maximum peak conducted output power using KDB 558074 section 9.1.3 PKPM1 Peak power meter method.

3.4. Uncertainty

± 0.86 dB

3.5. Test Result of Peak Power Output

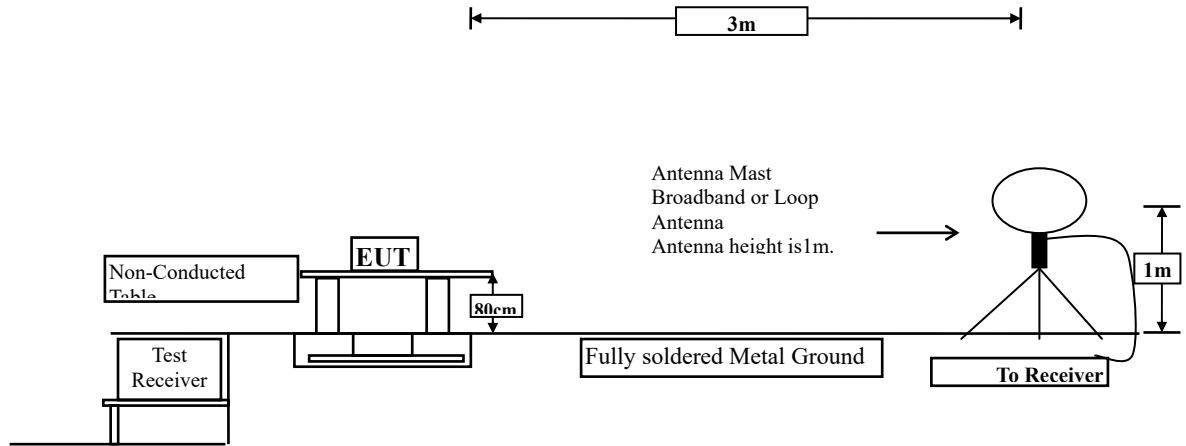
Product : ROG Strix Fusion 700 Gaming Headset
Test Item : Peak Power Output
Test Mode : Mode 1: Transmit - BLE
Test Date : 2018/04/27

Channel No.	Frequency (MHz)	Measurement (dBm)	Required Limit	Result
Channel 00	2402.00	2.41	1 Watt= 30 dBm	Pass
Channel 19	2440.00	2.78	1 Watt= 30 dBm	Pass
Channel 39	2480.00	2.77	1 Watt= 30 dBm	Pass

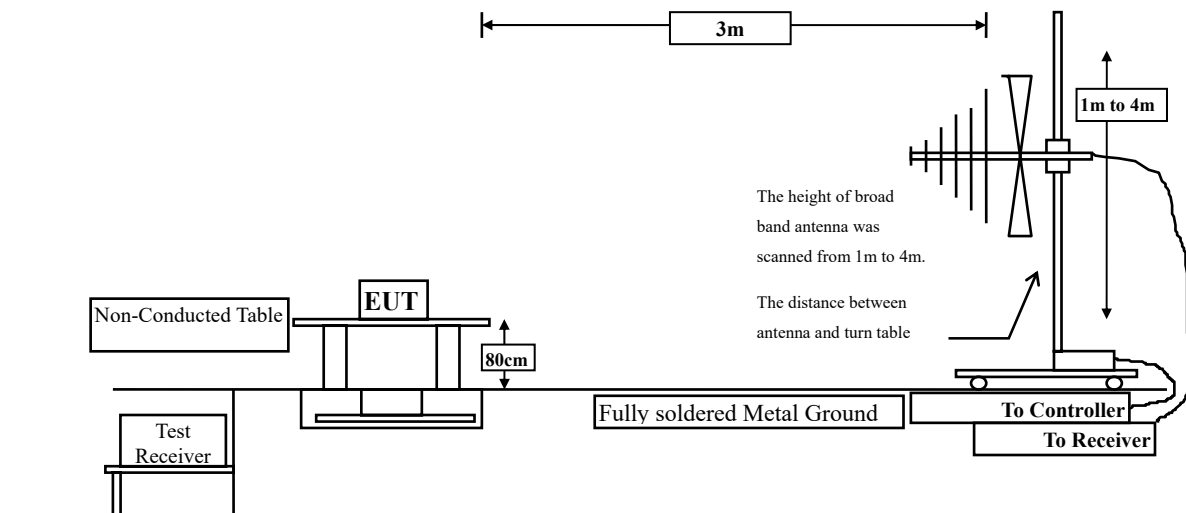
4. Radiated Emission

4.1. Test Setup

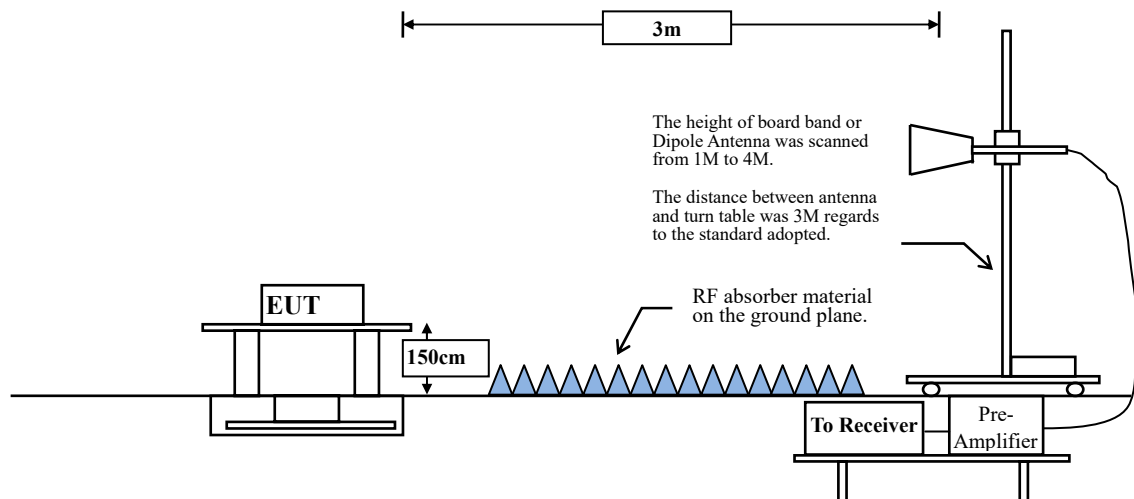
Radiated Emission Under 30MHz



Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.2. Limits

➤ General Radiated Emission Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
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

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

4.3. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Measuring the frequency range below 1GHz, the EUT is placed on a turn table which is 0.8 meter above ground, when measuring the frequency range above 1GHz, the EUT is placed on a turn table which is 1.5 meter above ground.

The turn table is rotated 360 degrees to determine the position of the maximum emission level.

The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

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

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

The measurement frequency range from 9kHz - 10th Harmonic of fundamental was investigated.

RBW and VBW Parameter setting:

According to KDB 558074 section 12.2.4. Peak power measurement procedure

RBW = as specified in Table 1.

$VBW \geq 3 \times RBW$.

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

According to KDB 558074 section 12.2.5. Average power measurement procedure

RBW = 1MHz.

VBW = 10Hz, when duty cycle $\geq 98\%$

$VBW \geq 1/T$, when duty cycle $< 98\%$

(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

2.4GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
BLE	66.35	0.4173	2396	3k

Note: Duty Cycle Refer to Section 9

4.4. Uncertainty

Horizontal polarization :

30-300MHz: $\pm 4.08\text{dB}$; 300M-1GHz: $\pm 3.86\text{dB}$; 1-18GHz: $\pm 3.77\text{dB}$; 18-40GHz: $\pm 3.98\text{dB}$

Vertical polarization :

30-300MHz: $\pm 4.81\text{dB}$; 300M-1GHz: $\pm 3.87\text{dB}$; 1-18GHz: $\pm 3.83\text{dB}$; 18-40GHz: $\pm 3.98\text{dB}$

4.5. Test Result of Radiated Emission

Product : ROG Strix Fusion 700 Gaming Headset
 Test Item : Harmonic Radiated Emission
 Test Mode : Mode 1: Transmit - BLE(2402MHz)
 Test Date : 2018/05/03

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4804.000	-6.114	49.000	42.886	-31.114	74.000
7206.000	-3.112	50.580	47.468	-26.532	74.000
9608.000	-0.801	46.860	46.060	-27.940	74.000
Average					
Detector:					
--					54.000
Vertical					
Peak Detector:					
4804.000	-6.114	48.880	42.766	-31.234	74.000
7206.000	-3.112	49.990	46.878	-27.122	74.000
9608.000	-0.801	49.660	48.860	-25.140	74.000
Average					
Detector:					
--					54.000

Note:

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

Product : ROG Strix Fusion 700 Gaming Headset
 Test Item : Harmonic Radiated Emission
 Test Mode : Mode 1: Transmit - BLE (2440MHz)
 Test Date : 2018/05/03

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4880.000	-6.069	48.310	42.241	-31.759	74.000
7320.000	-3.027	50.610	47.583	-26.417	74.000
9760.000	-0.527	46.750	46.222	-27.778	74.000
Average					
Detector:					
--					54.000
Vertical					
Peak Detector:					
4880.000	-6.069	49.140	43.071	-30.929	74.000
7320.000	-3.027	50.470	47.443	-26.557	74.000
9760.000	-0.527	46.830	46.302	-27.698	74.000
Average					
Detector:					
--					54.000

Note:

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

Product : ROG Strix Fusion 700 Gaming Headset
 Test Item : Harmonic Radiated Emission
 Test Mode : Mode 1: Transmit - BLE (2480MHz)
 Test Date : 2018/05/03

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4960.000	-6.055	53.990	47.935	-26.065	74.000
7440.000	-2.861	54.020	51.158	-22.842	74.000
9920.000	-0.306	47.510	47.204	-26.796	74.000
Average					
Detector:					
--					54.000
Vertical					
Peak Detector:					
4960.000	-6.055	59.780	53.725	-20.275	74.000
7440.000	-2.861	51.680	48.818	-25.182	74.000
9920.000	-0.306	49.760	49.454	-24.546	74.000
Average					
Detector:					
--					54.000

Note:

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

Product : ROG Strix Fusion 700 Gaming Headset
 Test Item : General Radiated Emission
 Test Mode : Mode 1: Transmit - BLE (2440MHz)
 Test Date : 2018/05/02

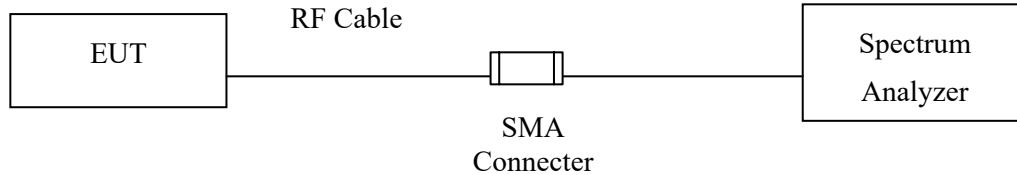
Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
224.000	-13.188	52.559	39.371	-6.629	46.000
387.072	-8.369	35.675	27.307	-18.693	46.000
529.058	-5.569	29.593	24.024	-21.976	46.000
651.362	-3.733	29.563	25.830	-20.170	46.000
793.348	-1.769	30.490	28.722	-17.278	46.000
907.217	-0.243	29.750	29.507	-16.493	46.000
Vertical					
157.928	-10.906	35.682	24.776	-18.724	43.500
222.594	-13.235	38.852	25.617	-20.383	46.000
343.493	-9.359	46.711	37.352	-8.648	46.000
517.812	-5.746	29.418	23.673	-22.327	46.000
683.696	-3.279	30.179	26.900	-19.100	46.000
825.681	-1.331	29.948	28.617	-17.383	46.000

Note:

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

5. RF Antenna Conducted Test

5.1. Test Setup



5.2. Limits

According to FCC Section 15.247(d). 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 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

5.3. Test Procedure

The EUT was tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

5.4. Uncertainty

±1.23dB

5.5. Test Result of RF Antenna Conducted Test

Product : ROG Strix Fusion 700 Gaming Headset
Test Item : RF Antenna Conducted Test
Test Mode : Mode 1: Transmit - BLE
Test Date : 2018/04/27

Figure Channel 00:

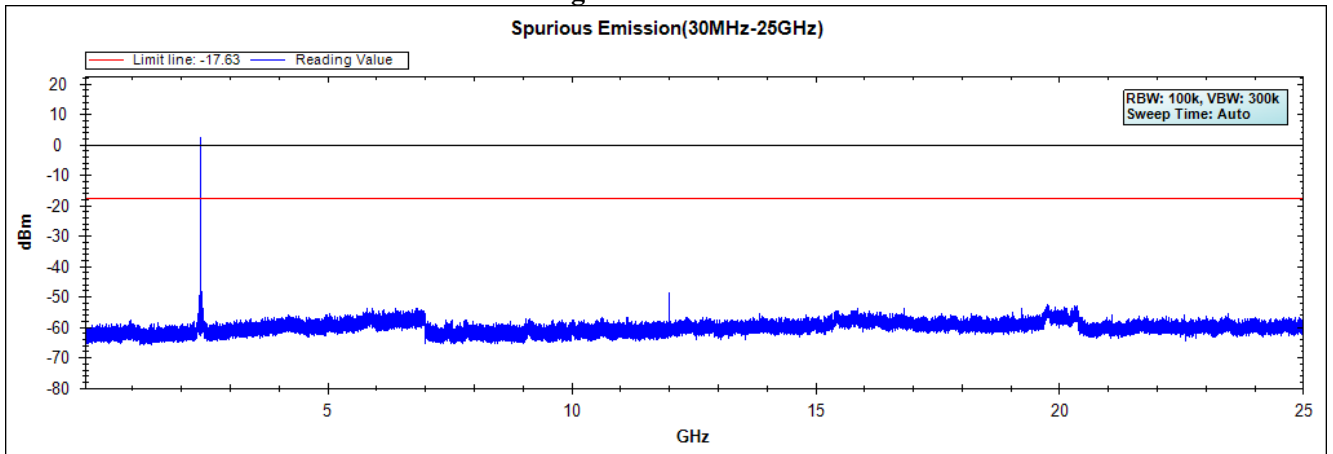


Figure Channel 19:

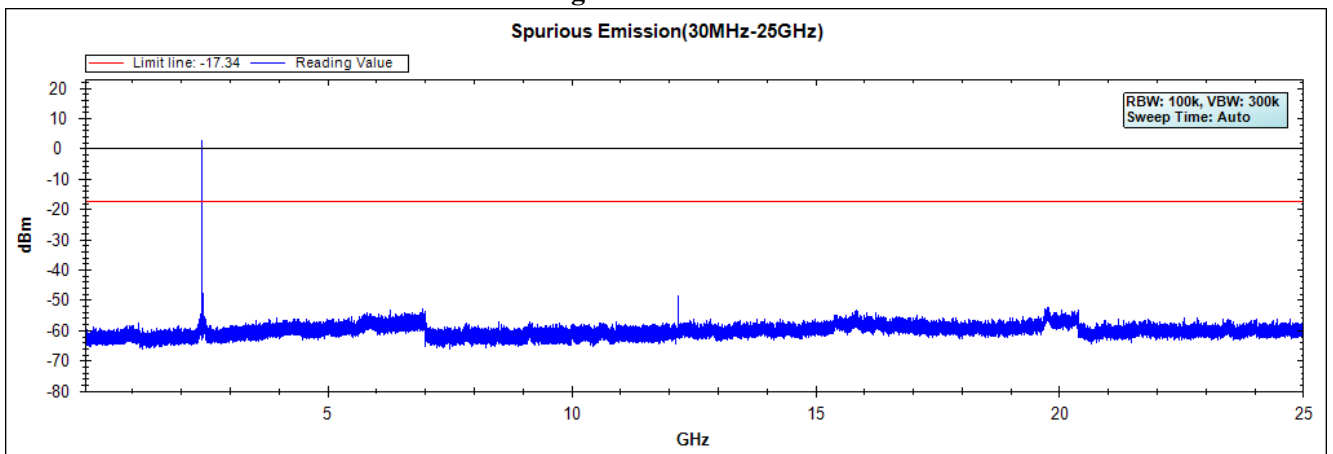
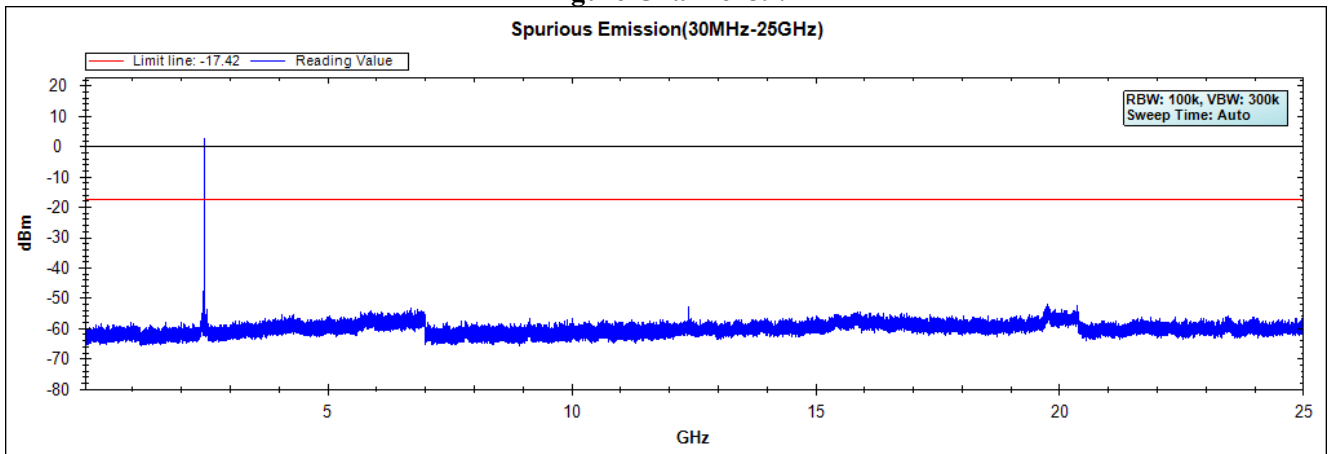


Figure Channel 39:

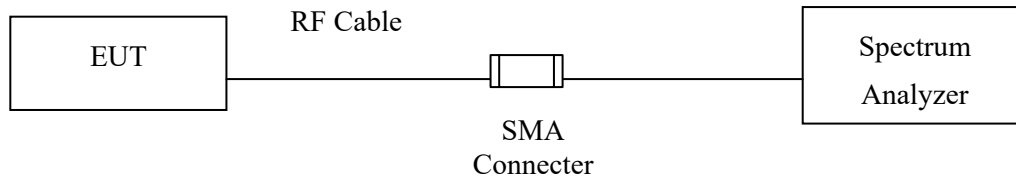


Note: The above test pattern is synthesized by multiple of the frequency range.

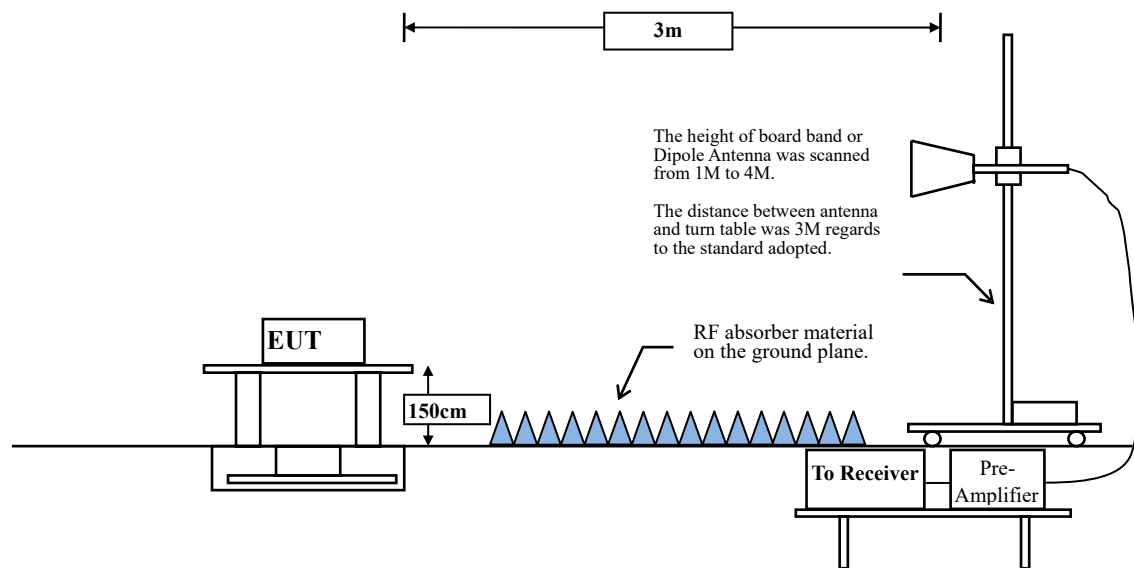
6. Band Edge

6.1. Test Setup

RF Conducted Measurement



RF Radiated Measurement:



6.2. Limit

According to FCC Section 15.247(d). 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 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

6.3. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.

RBW and VBW Parameter setting:

According to KDB 558074 section 12.2.4. Peak power measurement procedure

RBW = as specified in Table 1.

$VBW \geq 3 \times RBW$.

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

According to KDB 558074 section 12.2.5. Average power measurement procedure

RBW = 1MHz.

VBW = 10Hz, when duty cycle $\geq 98\%$

$VBW \geq 1/T$, when duty cycle $< 98\%$

(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

2.4GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
BLE	66.35	0.4173	2396	3k

Note: Duty Cycle Refer to Section 9

6.4. Uncertainty

Conducted: $\pm 1.23\text{dB}$

Radiated:

Horizontal polarization : 1-18GHz: $\pm 3.77\text{dB}$

Vertical polarization : 1-18GHz : $\pm 3.83\text{dB}$

6.5. Test Result of Band Edge

Product : ROG Strix Fusion 700 Gaming Headset
 Test Item : Band Edge
 Test Mode : Mode 1: Transmit - BLE
 Test Date : 2018/05/03

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2385.942	10.245	42.834	53.079	74.00	54.00	Pass
00 (Peak)	2390.000	10.262	39.334	49.596	74.00	54.00	Pass
00 (Peak)	2400.000	10.304	58.411	68.714	--	--	Pass
00 (Peak)	2401.739	10.311	84.558	94.869	--	--	--
00 (Average)	2385.797	10.244	34.705	44.949	74.00	54.00	Pass
00 (Average)	2390.000	10.262	26.433	36.695	74.00	54.00	Pass
00 (Average)	2400.000	10.304	44.279	54.582	--	--	Pass
00 (Average)	2402.029	10.312	83.987	94.299	--	--	--

Figure Channel 00:

Horizontal (Peak)

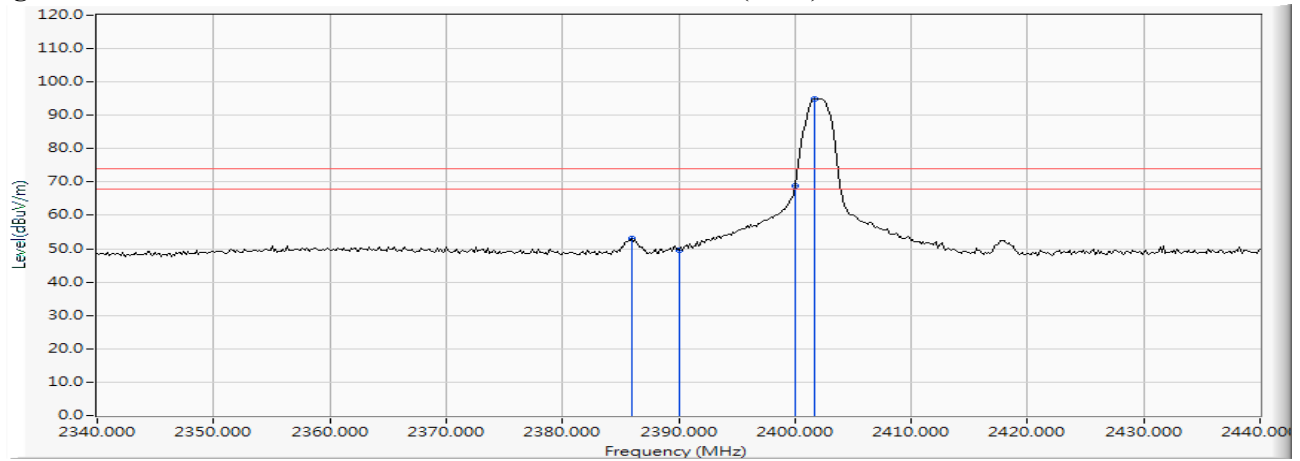
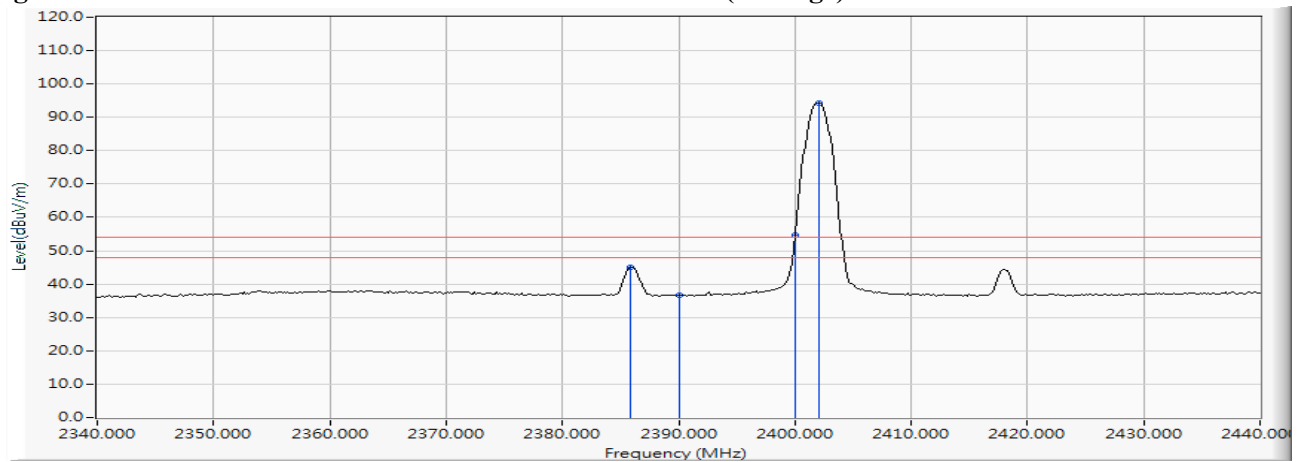


Figure Channel 00:

Horizontal (Average)



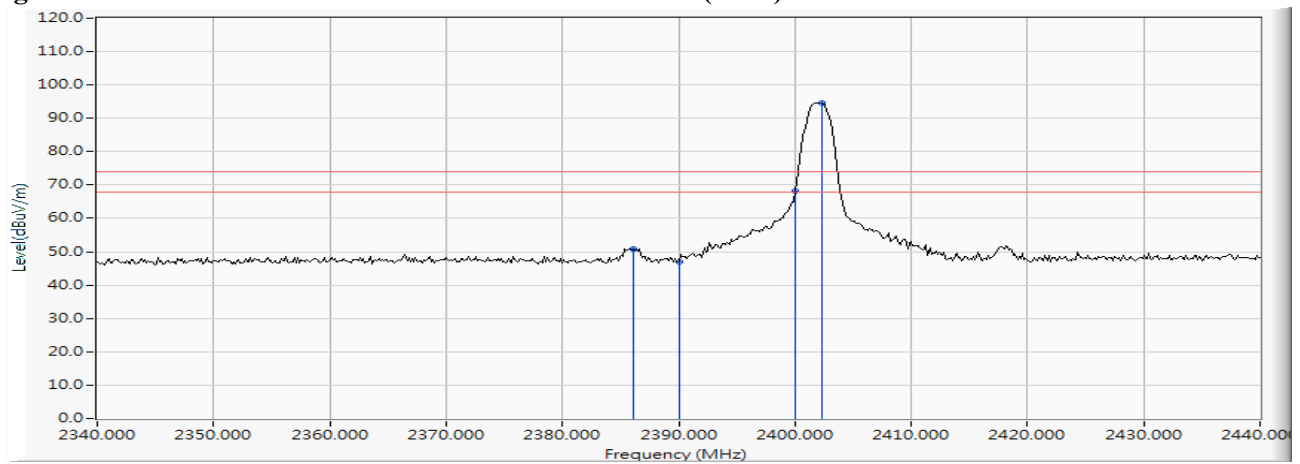
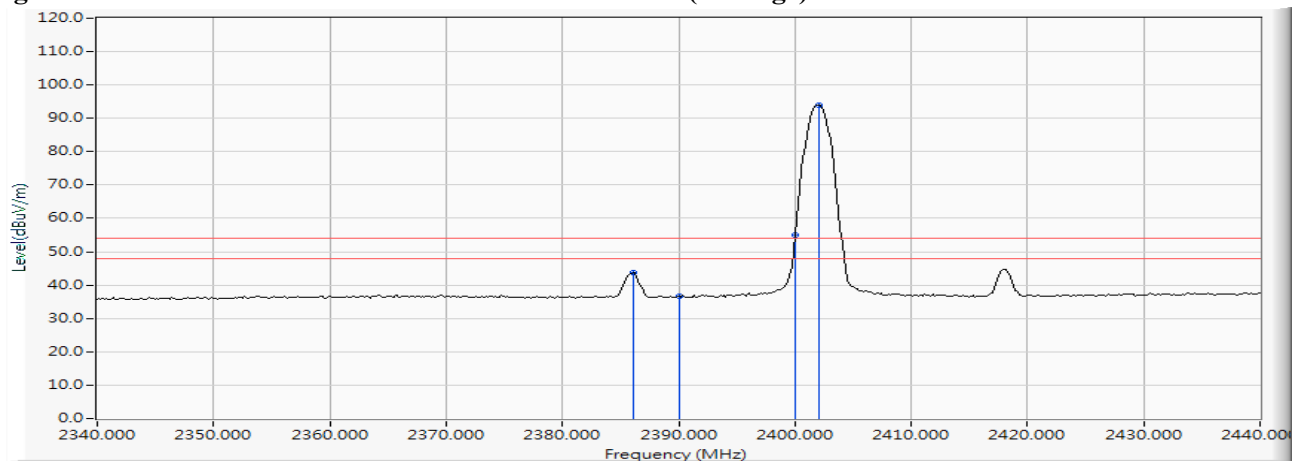
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : ROG Strix Fusion 700 Gaming Headset
 Test Item : Band Edge
 Test Mode : Mode 1: Transmit - BLE
 Test Date : 2018/05/03

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2386.087	10.245	40.666	50.912	74.00	54.00	Pass
00 (Peak)	2390.000	10.262	36.863	47.125	74.00	54.00	Pass
00 (Peak)	2400.000	10.304	58.024	68.327	--	--	Pass
00 (Peak)	2402.319	10.312	84.183	94.496	--	--	--
00 (Average)	2386.087	10.245	33.412	43.658	74.00	54.00	Pass
00 (Average)	2390.000	10.262	26.433	36.695	74.00	54.00	Pass
00 (Average)	2400.000	10.304	44.599	54.902	--	--	Pass
00 (Average)	2402.029	10.312	83.607	93.919	--	--	--

Figure Channel 00:**Vertical (Peak)****Figure Channel 00:****Vertical (Average)**

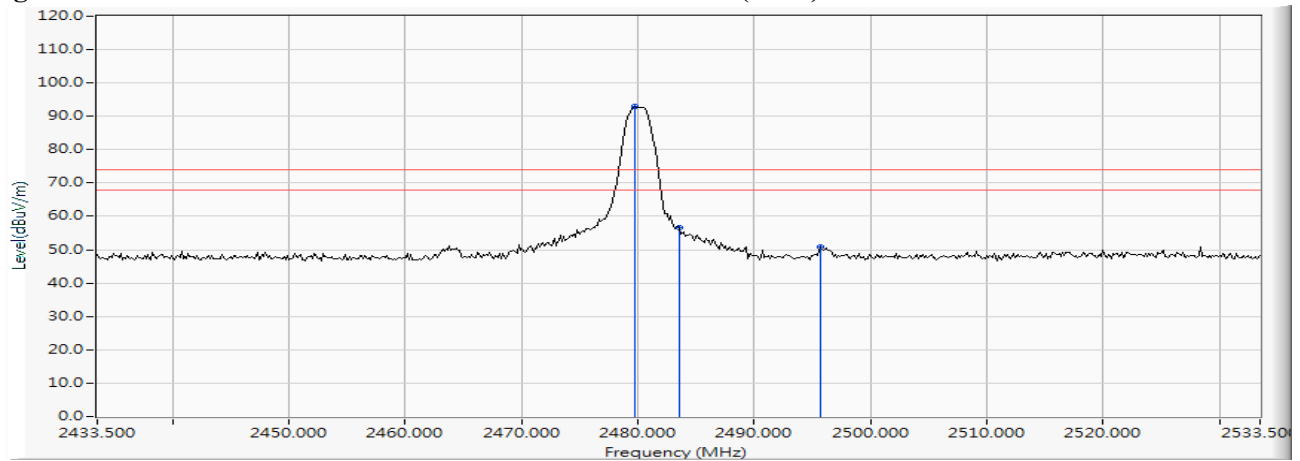
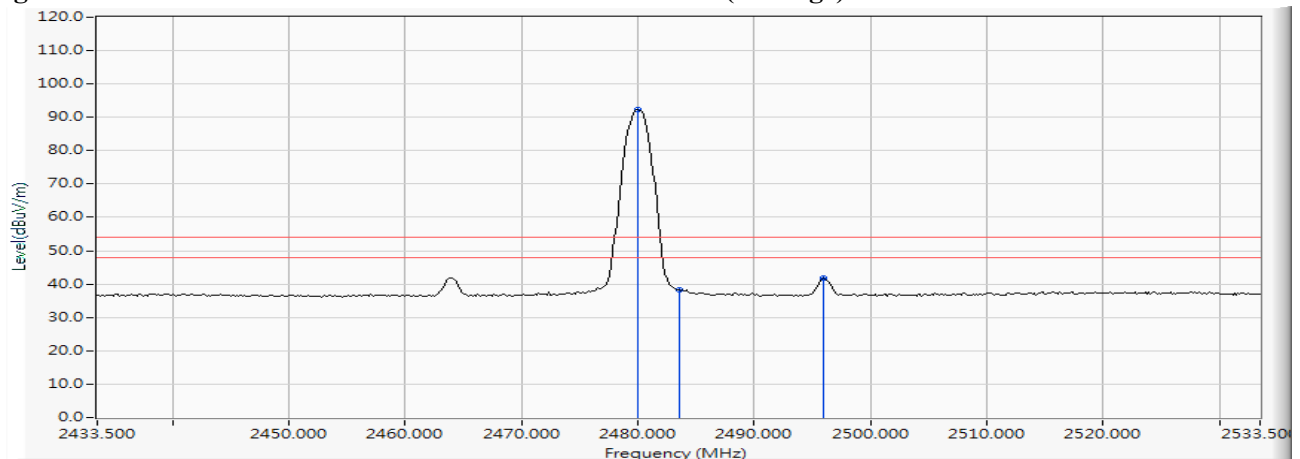
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : ROG Strix Fusion 700 Gaming Headset
 Test Item : Band Edge
 Test Mode : Mode 1: Transmit - BLE
 Test Date : 2018/05/03

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
39 (Peak)	2479.732	10.627	82.199	92.826	--	--	--
39 (Peak)	2483.500	10.640	45.982	56.623	74.00	54.00	Pass
39 (Peak)	2495.674	10.689	40.098	50.787	74.00	54.00	Pass
39 (Average)	2480.022	10.628	81.612	92.240	--	--	--
39 (Average)	2483.500	10.640	27.712	38.353	74.00	54.00	Pass
39 (Average)	2495.964	10.690	31.083	41.773	74.00	54.00	Pass

Figure Channel 39: Horizontal (Peak)**Figure Channel 39: Horizontal (Average)**

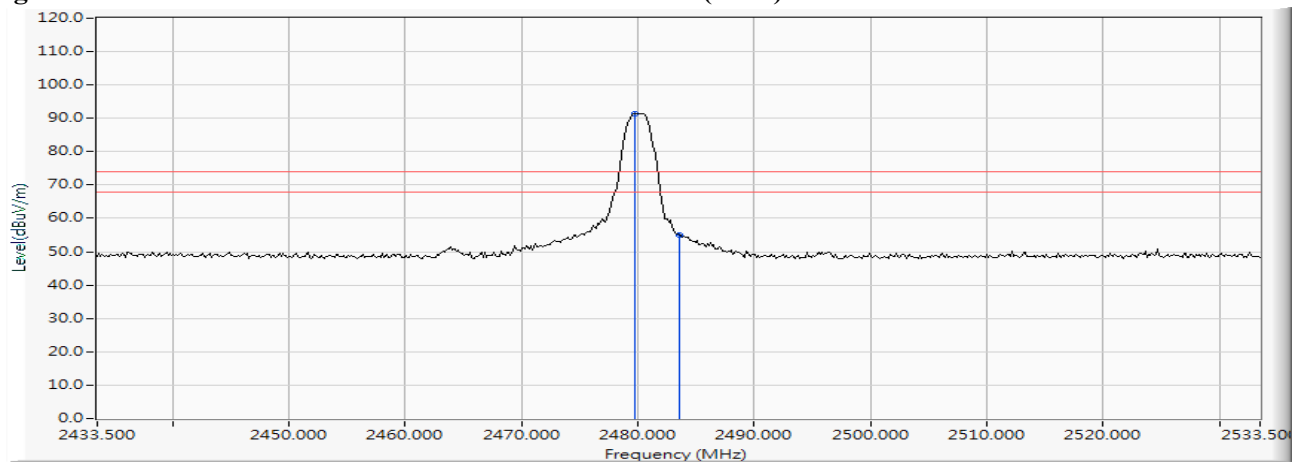
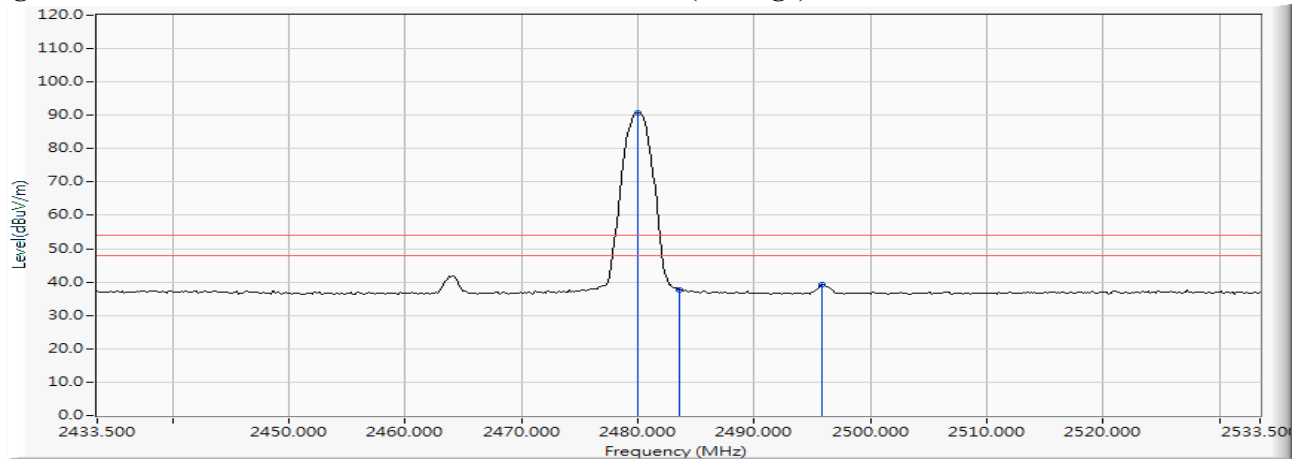
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : ROG Strix Fusion 700 Gaming Headset
 Test Item : Band Edge
 Test Mode : Mode 1: Transmit - BLE
 Test Date : 2018/05/03

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
39 (Peak)	2479.732	10.627	80.836	91.463	--	--	--
39 (Peak)	2483.500	10.640	44.266	54.907	74.00	54.00	Pass
39 (Average)	2480.022	10.628	80.194	90.822	--	--	--
39 (Average)	2483.500	10.640	27.098	37.739	74.00	54.00	Pass
39 (Average)	2495.819	10.689	28.473	39.162	74.00	54.00	Pass

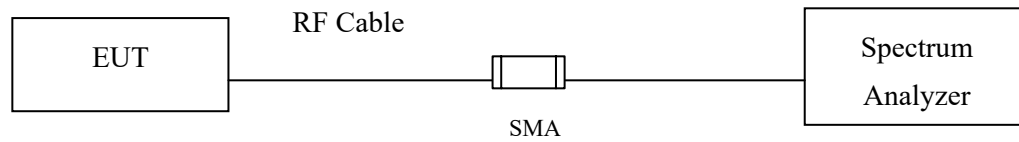
Figure Channel 39:**Vertical (Peak)****Figure Channel 39:****Vertical (Average)**

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

7. 6dB Bandwidth

7.1. Test Setup



7.2. Limits

The minimum bandwidth shall be at least 500 kHz.

7.3. Test Procedure

The EUT was setup according to ANSI C63.10 2013; tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 1-5% of the emission bandwidth, $VBW \geq 3 * RBW$

7.4. Uncertainty

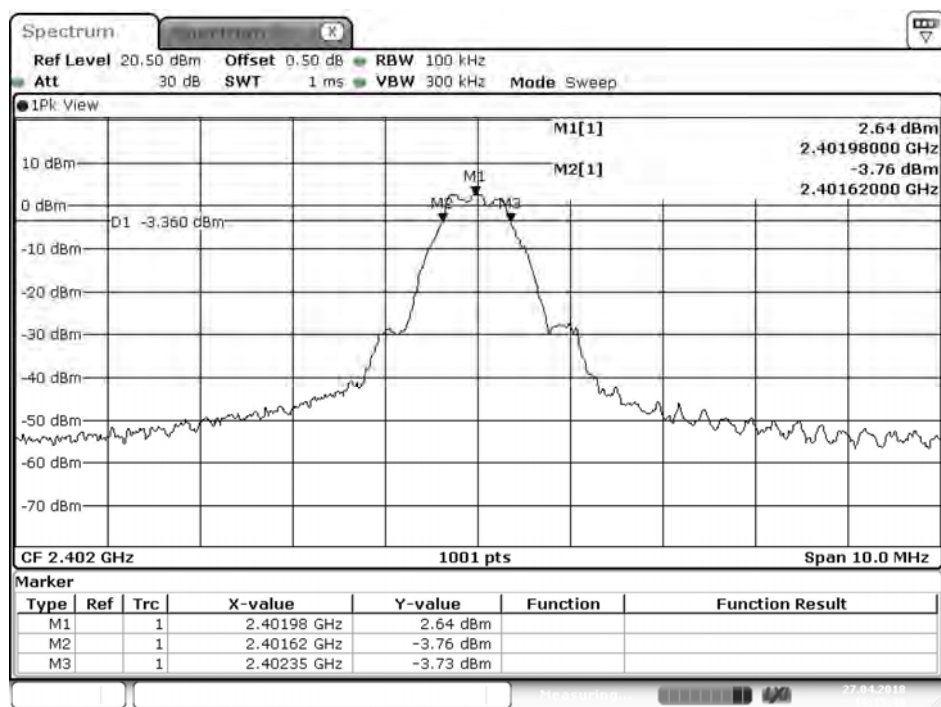
$\pm 279.2 \text{ Hz}$

7.5. Test Result of 6dB Bandwidth

Product : ROG Strix Fusion 700 Gaming Headset
 Test Item : 6dB Bandwidth Data
 Test Mode : Mode 1: Transmit - BLE (2402MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	730	>500	Pass

Figure Channel 00:

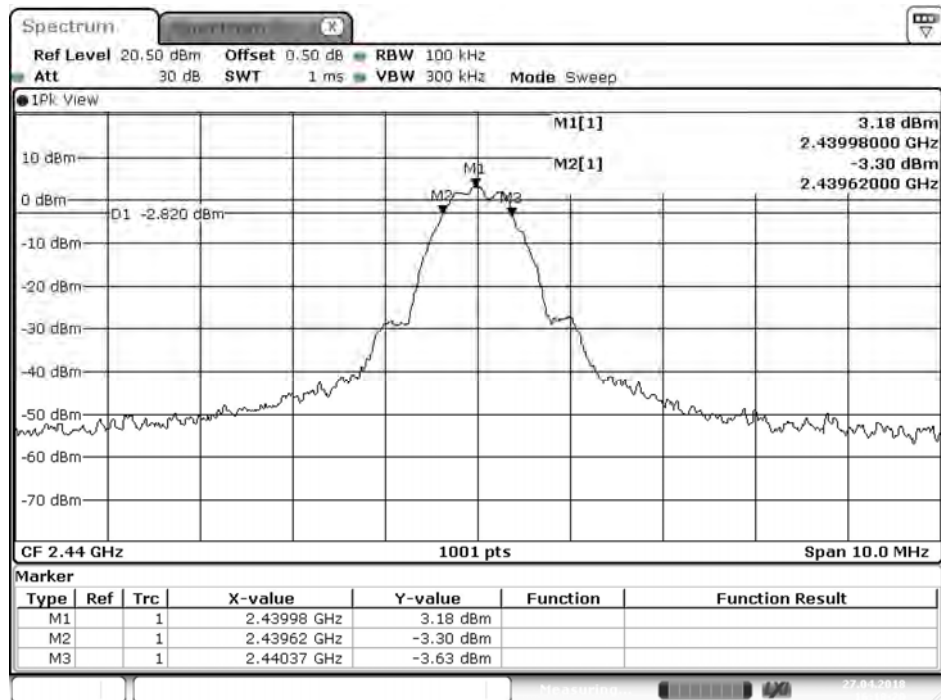


Date: 27.APR.2018 16:15:47

Product : ROG Strix Fusion 700 Gaming Headset
 Test Item : 6dB Bandwidth Data
 Test Mode : Mode 1: Transmit - BLE (2440MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
19	2440	750	>500	Pass

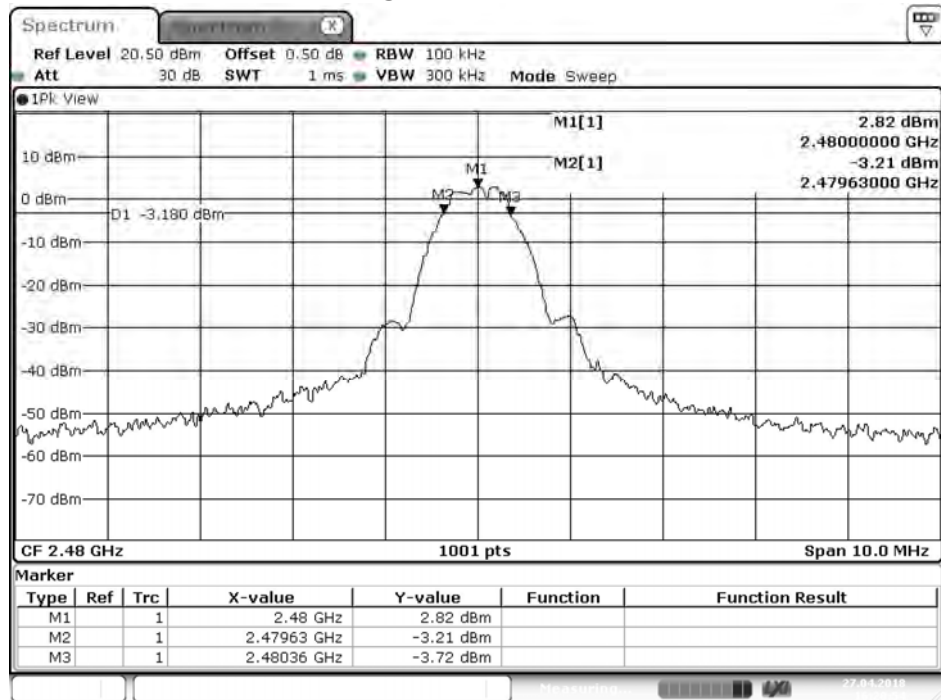
Figure Channel 19:



Product : ROG Strix Fusion 700 Gaming Headset
 Test Item : 6dB Bandwidth Data
 Test Mode : Mode 1: Transmit - BLE (2480MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
39	2480	730	>500	Pass

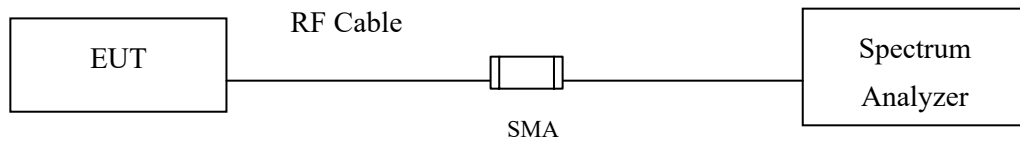
Figure Channel 39:



Date: 27.APR.2018 16:20:54

8. Power Density

8.1. Test Setup



8.2. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

8.3. Test Procedure

The EUT was setup according to ANSI C63.10: 2013, the maximum power spectral density using KDB 558074 section 10.2 PKPSD (peak PSD) method.

8.4. Uncertainty

$\pm 1.23\text{dB}$

8.5. Test Result of Power Density

Product : ROG Strix Fusion 700 Gaming Headset
 Test Item : Power Density Data
 Test Mode : Mode 1: Transmit - BLE (2402MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402	2.37	$\leq 8\text{dBm}$	Pass

Figure Channel 00:

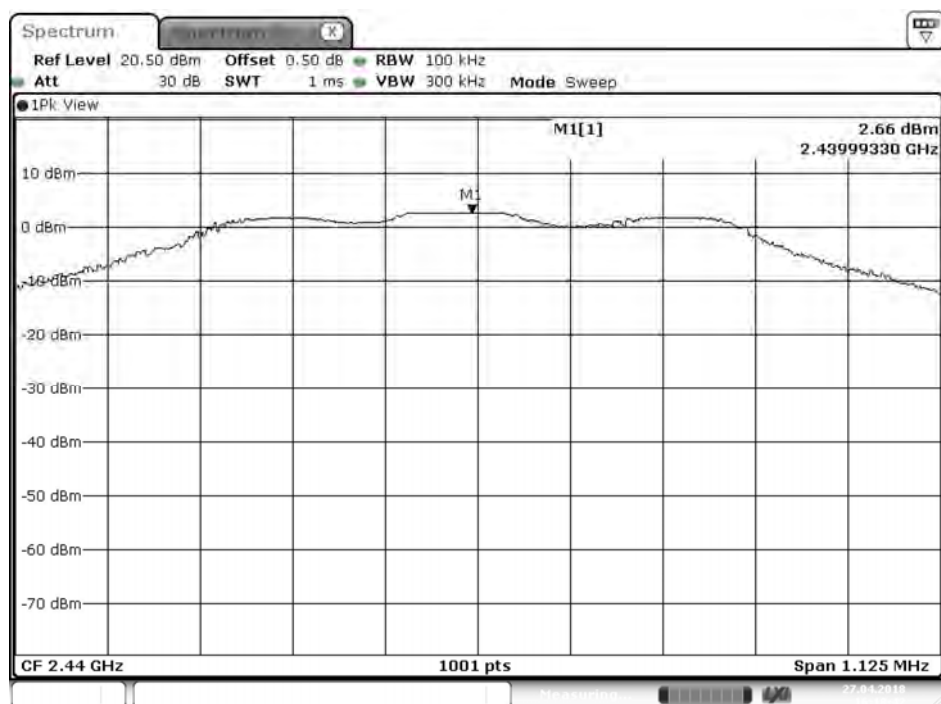


Date: 27.APR.2018 16:16:10

Product : ROG Strix Fusion 700 Gaming Headset
 Test Item : Power Density Data
 Test Mode : Mode 1: Transmit - BLE (2440MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
19	2440	2.66	$\leq 8\text{dBm}$	Pass

Figure Channel 19:

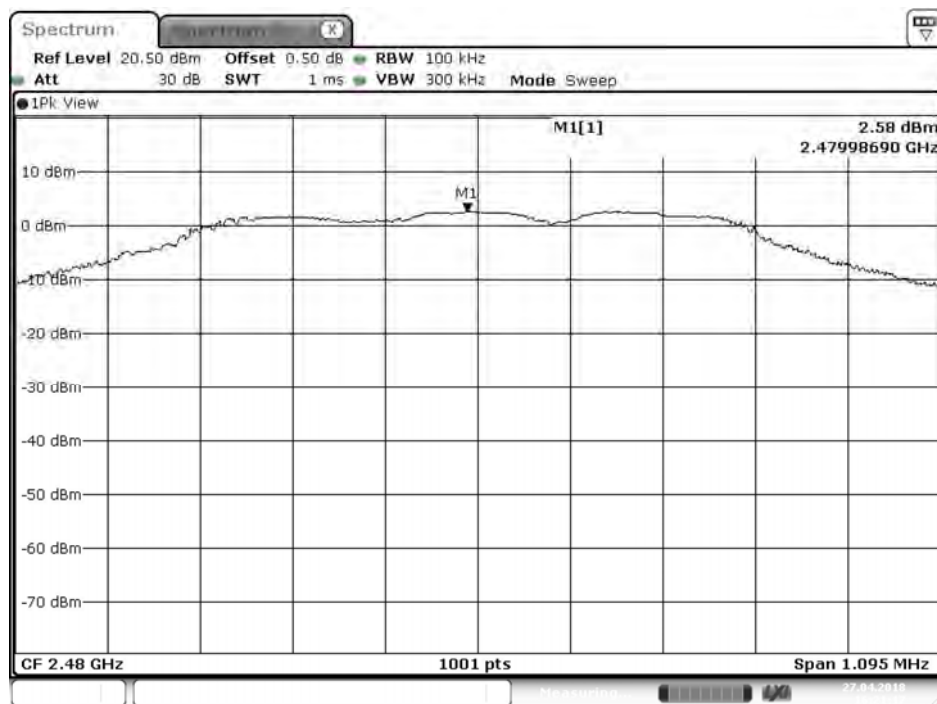


Date: 27.APR.2018 16:18:42

Product : ROG Strix Fusion 700 Gaming Headset
 Test Item : Power Density Data
 Test Mode : Mode 1: Transmit - BLE (2480MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
39	2480	2.58	$\leq 8\text{dBm}$	Pass

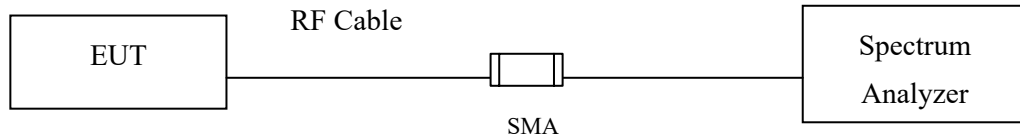
Figure Channel 39:



Date: 27.APR.2018 16:21:17

9. Duty Cycle

9.1. Test Setup



9.2. Test Procedure

The EUT was setup according to ANSI C63.10 2013; tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

9.3. Uncertainty

$\pm 2.31\text{msec}$

9.4. Test Result of Duty Cycle

Product : ROG Strix Fusion 700 Gaming Headset
 Test Item : Duty Cycle
 Test Mode : Mode 1: Transmit - BLE

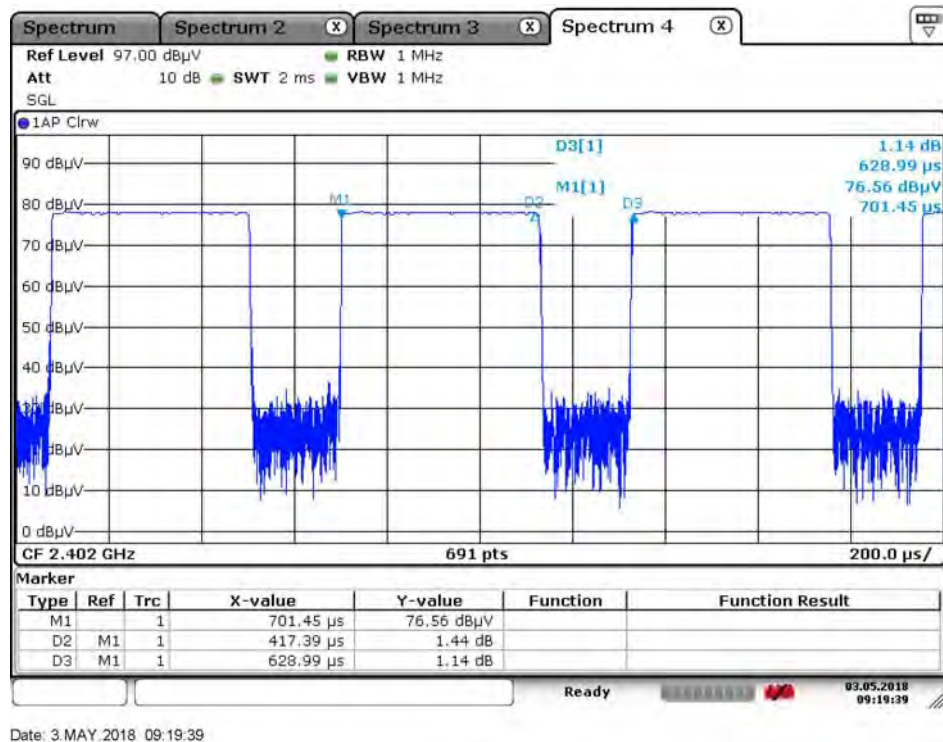
Duty Cycle Formula:

Duty Cycle = Ton / (Ton + Toff)

Duty Factor = 10 Log (1/Duty Cycle)

Results:

2.4GHz band	Ton (ms)	Ton + Toff (ms)	Duty Cycle (%)	Duty Factor (dB)
BLE	0.4173	0.6289	66.35	1.78



Date: 3.MAY.2018 09:19:39

10. EMI Reduction Method During Compliance Testing

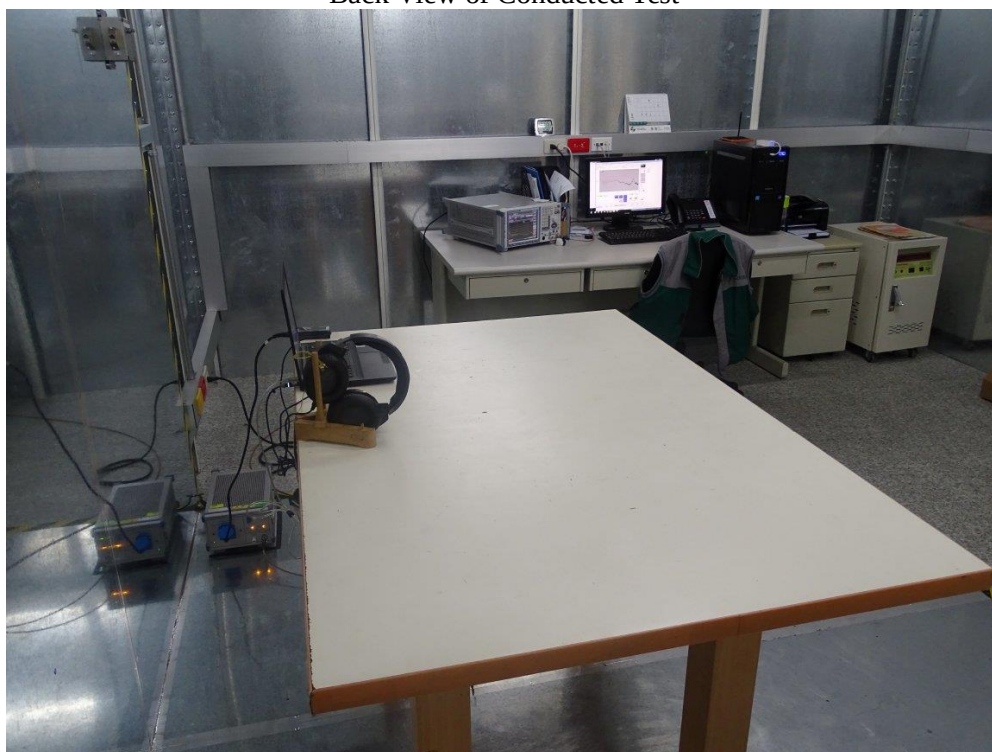
No modification was made during testing.

Attachment 1: EUT Test Setup Photographs

Front View of Conducted Test



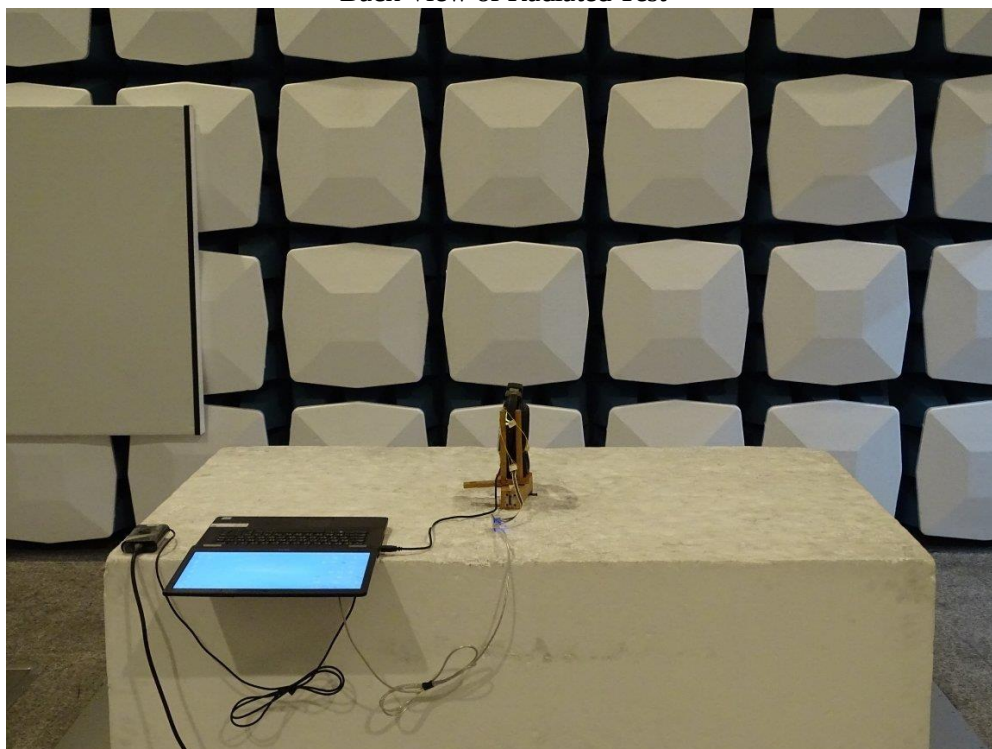
Back View of Conducted Test



Front View of Radiated Test



Back View of Radiated Test



Front View of Radiated Test (Horn)



Back View of Radiated Test (Horn)

