

FCC Test Report

Product Name	ROG Strix Fusion 500 RGB 7.1 Gaming Headset
Model No.	ROGSTRIX F500/BLK/UBD/AS
FCC ID.	MSQ-ROGSTRIXF500

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

Date of Receipt	Nov. 07, 2017
Issued Date	Dec. 27, 2017
Report No.	17B0103R-RFUSP01V00
Report Version	V1.0



The test results relate only to the samples tested.

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

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Test Report

Issued Date: Dec. 27, 2017

Report No.: 17B0103R-RFUSP01V00



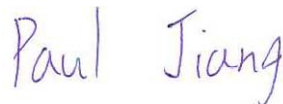
Product Name	ROG Strix Fusion 500 RGB 7.1 Gaming Headset
Applicant	ASUSTeK COMPUTER INC.
Address	4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan
Manufacturer	ASUSTeK COMPUTER INC.
Model No.	ROGSTRIX F500/BLK/UBD/AS
FCC ID.	MSQ-ROGSTRIXF500
EUT Rated Voltage	DC 5V (Power By USB)
EUT Test Voltage	AC 120V / 60Hz
Trade Name	ASUS
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2016 ANSI C63.4: 2014, ANSI C63.10: 2013 KDB 558074 D01 DTS Meas Guidance v04
Test Result	Complied

Documented By :



(Senior Adm. Specialist / Rita Huang)

Tested By :



(Engineer / Paul Jiang)

Approved By :



(Director / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	ROG Strix Fusion 500 RGB 7.1 Gaming Headset
Trade Name	ASUS
Model No.	ROGSTRIX F500/BLK/UBD/AS
FCC ID.	MSQ-ROGSTRIXF500
Frequency Range	2402 – 2480MHz
Channel Number	V4.0: 40CH
Type of Modulation	V4.0: GFSK(1Mbps)
Antenna Type	PIFA Antenna
Channel Control	Auto
Antenna Gain	Refer to the table “Antenna List”
USB Cable	Shielded, 2.0m

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	ASUS	GEN2M_BLE	PIFA Antenna	1.73dBi for 2.4 GHz

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

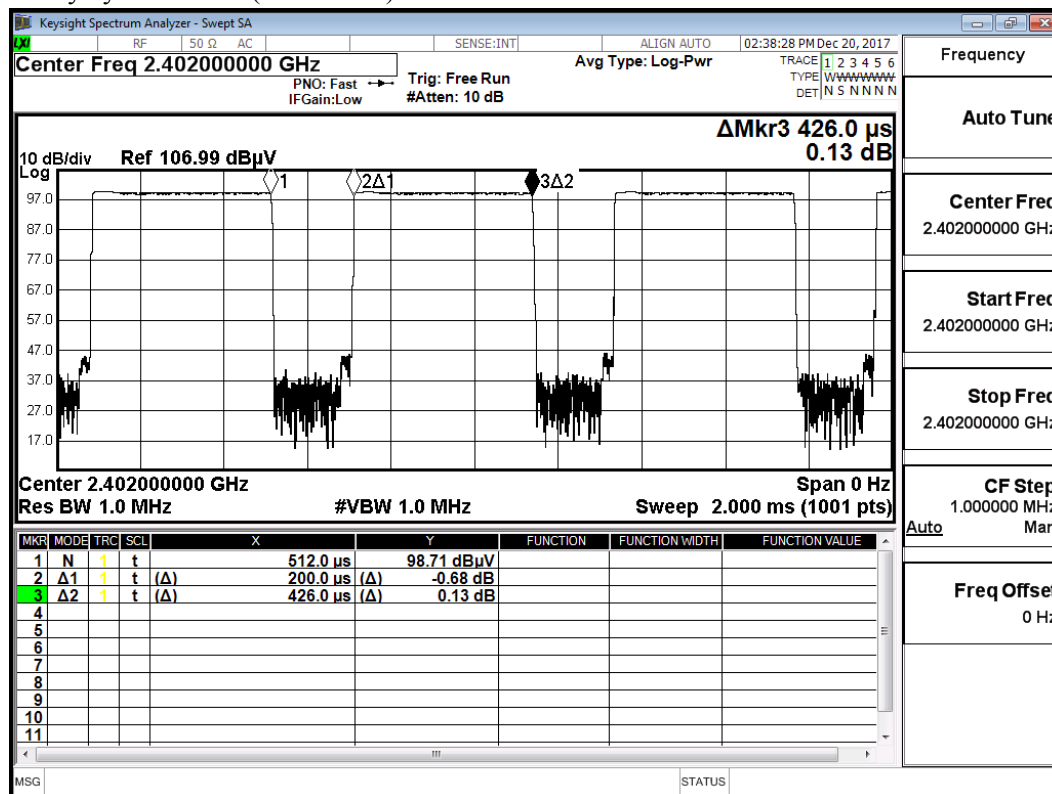
Center Frequency of Each Channel: (For V4.0)

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

Duty Cycle:

BLE	68.05 %
-----	---------

*Duty cycle = Ton / (Ton + Toff)



Note:

1. The EUT is a ROG Strix Fusion 500 RGB 7.1 Gaming Headset with a built-in Bluetooth V4.0 transceiver, this report for Bluetooth V4.0.
2. These tests were conducted on a sample for the purpose of demonstrating compliance of Bluetooth 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 (GFSK)
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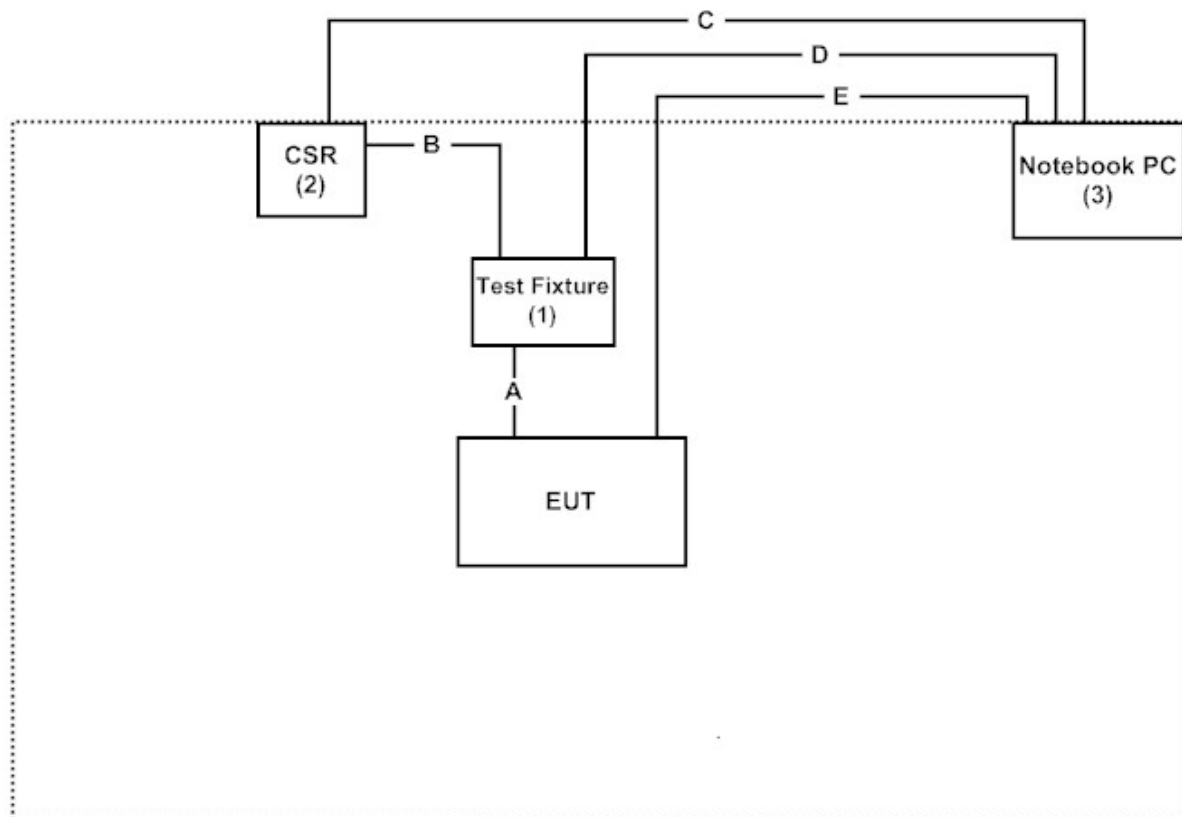
1.3. Tested System Details

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	Test Fixture	N/A	N/A	N/A	N/A
2	CSR	N/A	N/A	N/A	N/A
3	Notebook PC	DELL	Latitude 5580	2HRD7H2	Non-Shielded, 1.8m

Signal Cable Type	Signal cable Description
A	Signal Cable
B	LAN Cable
C	USB Cable
D	Signal Cable
E	USB to Micro 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 "CSRlxxx Test Application" 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	30-65
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.aspx

Site Description: Accredited by TAF
Accredited Number: 3023

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E-Mail : info.tw@dekra.com

FCC Accreditation Number: TW3023

1.7. List of Test Equipment

For Conducted measurements /CB3/SR8

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Date	Due. Date
	Temperature Chamber	WIT GROUP	TH-1S-B	EQ-201-00146	2017/11/28	2018/11/27
X	Spectrum Analyzer	Agilent	N9010A	MY48030495	2017/7/22	2018/7/21
X	Power Meter	Anritsu	ML2495A	6K00003357	2017/6/23	2018/6/22
X	Pulse power sensor	Anritsu	MA2411B	0846193	2017/6/23	2018/6/22
X	EMI Test Receiver	R&S	ESCS 30	100369	2017/10/13	2018/10/12
X	LISN	R&S	ESH3-Z5	836679/017	2017/1/18	2018/1/17
X	LISN	R&S	ENV216	100097	2017/1/18	2018/1/17
X	Coaxial Cable	QTK(Arnist)	RG 400	LC018-RG	2017/6/25	2018/6/24

For Radiated measurements /Site3/CB8

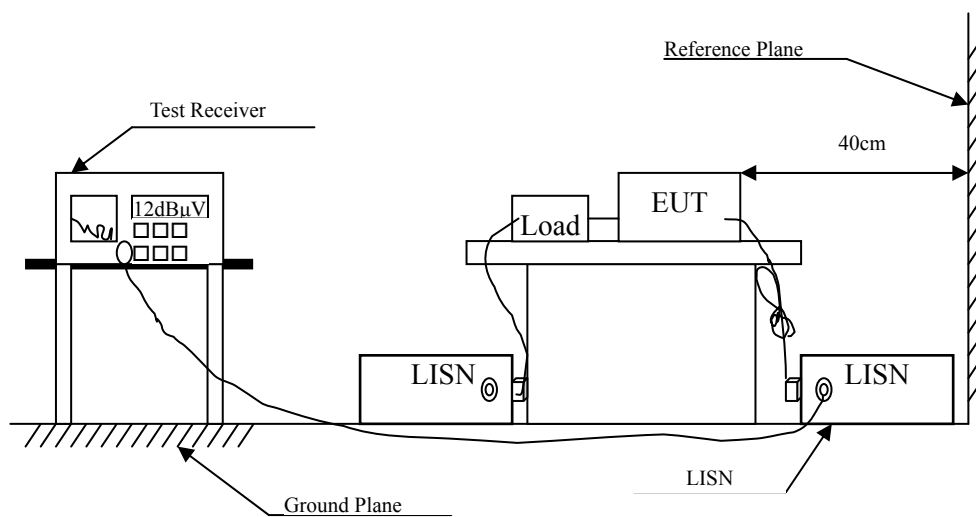
	Equipment	Manufacturer	Model No.	Serial No.	Cali. Date	Due. Date
X	Spectrum Analyzer	R&S	FSP40	100170	2017/1/18	2018/1/17
	Loop Antenna	Teseq	HLA6121	37133	2017/3/18	2018/3/17
X	Bi-Log Antenna	Schaffner Chase	CBL6112B	2707	2017/6/11	2018/6/10
X	<u>Horn Antenna</u>	ETS-Lindgren	3117	00135205	2017/4/6	2018/4/5
	<u>Horn Antenna</u>	Schwarzbeck	BBHA9170	209	2017/4/14	2018/4/13
X	<u>Pre-Amplifier</u>	QTK	AP/0100A	CHM/0901069	2017/6/23	2018/6/22
X	<u>Pre-Amplifier</u>	EMCI	EMC012630SE	980210	2017/1/26	2018/1/24
	<u>Pre-Amplifier</u>	NARDA WE	DBL-1840N506	013	2017/9/30	2018/9/29
X	Filter	MicroTRON	BRM50701	019	2017/11/2	2018/11/1
	Filter	Microwave Circuits	N0257881	36681	2017/1/3	2018/1/2
X	EMI Test Receiver	R&S	ESR26	101385	2017/9/29	2018/9/28
X	Coaxial Cable	QTK(Arnist)	SUCOFLEX 106	L1606-015C	2017/6/23	2018/6/22
X	EMI Test Receiver	R&S	ESCS 30	838251/001	2017/7/21	2018/7/20
X	Coaxial Cable	QTK(Arnist)	RG 214	LC003-RG	2017/6/16	2018/6/15
X	Coaxial signal switch	Anritsu	MP59B	6201415889	2017/6/16	2018/6/15

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 (dBμV) 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

± 2.26 dB

2.5. Test Result of Conducted Emission

Product : ROG Strix Fusion 500 RGB 7.1 Gaming Headset
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test date : 2017/12/21
 Test Mode : Mode 1: Transmit - BLE (GFSK) (2440MHz)

Frequency MHz	Correct Factor dB	Reading Level dB μ V	Measurement Level dB μ V	Margin dB	Limit dB μ V
LINE 1					
Quasi-Peak					
0.150	9.761	47.060	56.821	-9.179	66.000
0.201	9.772	36.400	46.172	-18.371	64.543
0.599	9.748	26.640	36.388	-19.612	56.000
1.666	9.725	22.080	31.805	-24.195	56.000
3.369	9.846	30.460	40.306	-15.694	56.000
9.709	9.958	26.300	36.258	-23.742	60.000
Average					
0.150	9.761	30.240	40.001	-15.999	56.000
0.201	9.772	18.100	27.872	-26.671	54.543
0.599	9.748	12.420	22.168	-23.832	46.000
1.666	9.725	13.300	23.025	-22.975	46.000
3.369	9.846	18.940	28.786	-17.214	46.000
9.709	9.958	20.520	30.478	-19.522	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 500 RGB 7.1 Gaming Headset
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test date : 2017/12/21
 Test Mode : Mode 1: Transmit - BLE (GFSK) (2440MHz)

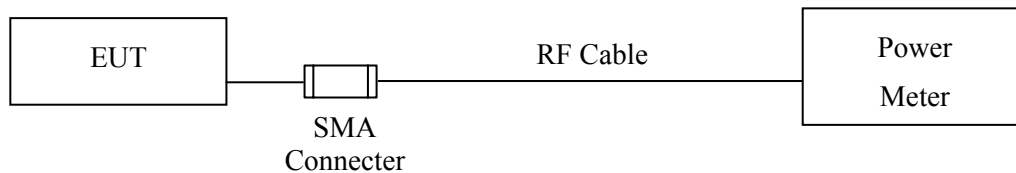
Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level	dB	dB μ V
	dB	dB μ V	dB μ V		
LINE 2					
Quasi-Peak					
0.181	9.731	41.260	50.991	-14.123	65.114
0.263	9.756	33.940	43.696	-19.075	62.771
0.498	9.784	31.680	41.464	-14.593	56.057
1.654	9.827	24.060	33.886	-22.114	56.000
3.404	9.927	29.800	39.727	-16.273	56.000
9.263	10.014	20.740	30.754	-29.246	60.000
Average					
0.181	9.731	28.720	38.451	-16.663	55.114
0.263	9.756	23.420	33.176	-19.595	52.771
0.498	9.784	22.000	31.784	-14.273	46.057
1.654	9.827	15.780	25.606	-20.394	46.000
3.404	9.927	19.060	28.987	-17.013	46.000
9.263	10.014	13.560	23.574	-26.426	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

± 1.19 dB

3.5. Test Result of Peak Power Output

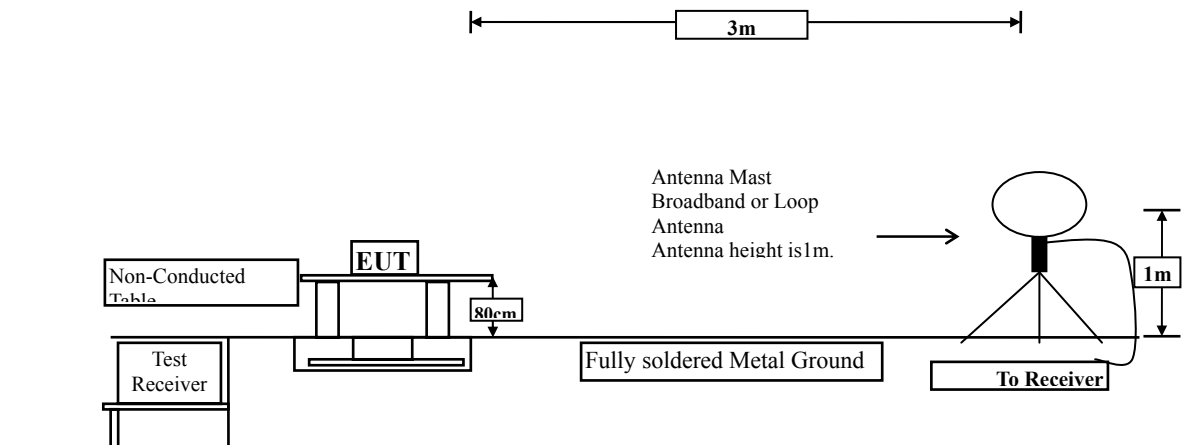
Product : ROG Strix Fusion 500 RGB 7.1 Gaming Headset
Test Item : Peak Power Output
Test Site : No.3 OATS
Test date : 2017/12/21
Test Mode : Mode 1: Transmit - BLE (GFSK)

Channel No.	Frequency (MHz)	Measurement (dBm)	Required Limit	Result
Channel 00	2402.00	2.81	1 Watt= 30 dBm	Pass
Channel 19	2440.00	2.78	1 Watt= 30 dBm	Pass
Channel 39	2480.00	2.58	1 Watt= 30 dBm	Pass

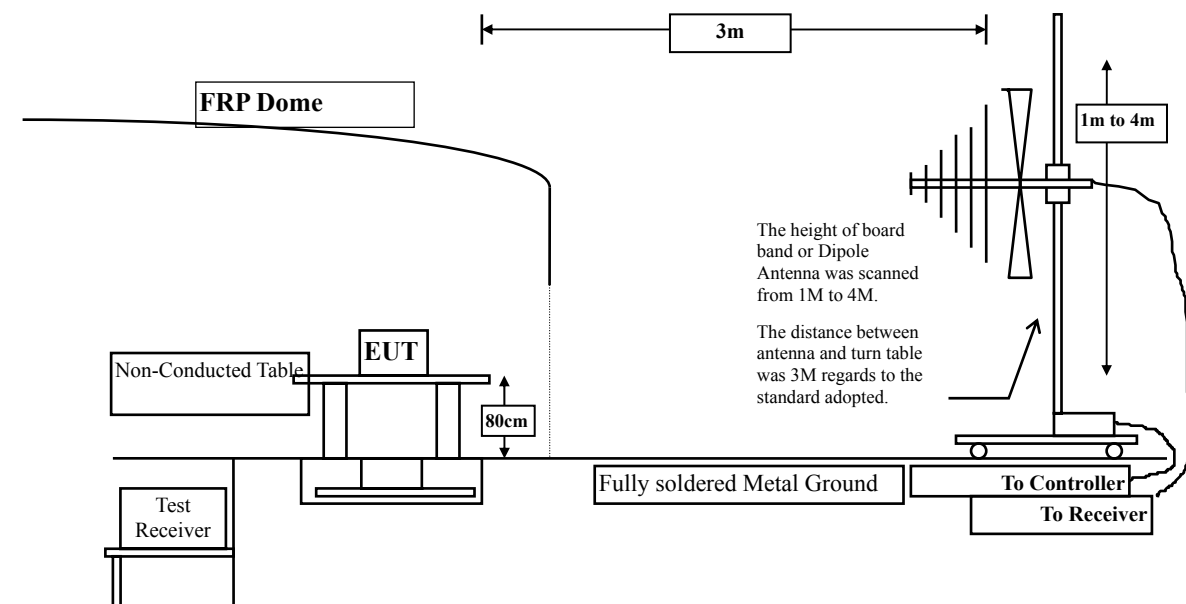
4. Radiated Emission

4.1. Test Setup

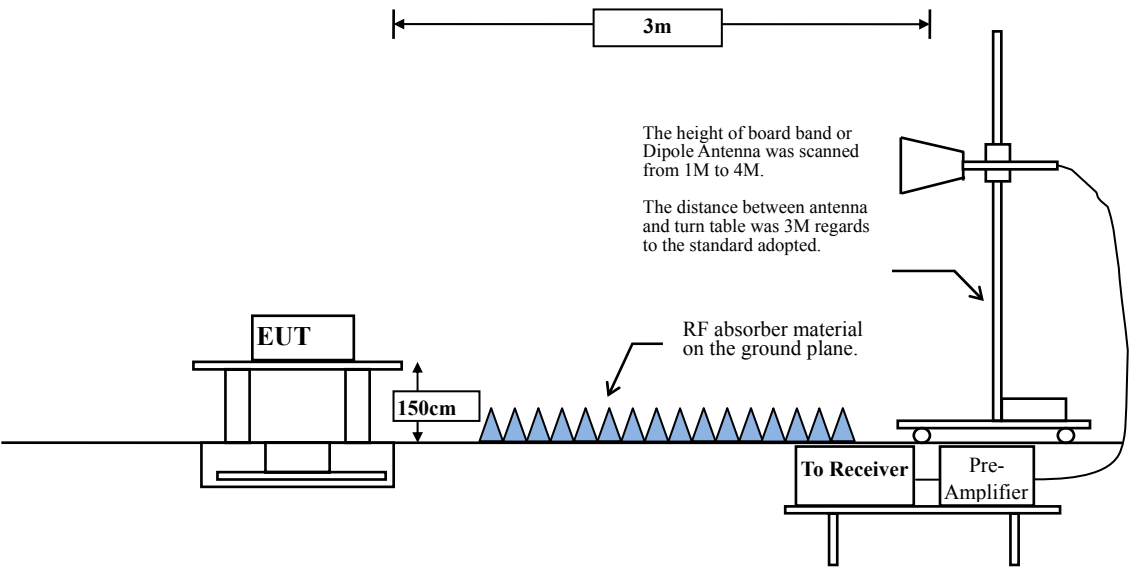
Under 30MHz



Below 1GHz



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 (dBμV) = 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 worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

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

The average measurement tested according to KDB 558074 section 12.2.5.3. Reduced VBW averaging across on- and off-times of the EUT transmissions with max hold.

$VBW \geq 1/T$:

Duty Cycle	T	1/T	VBW Setting
68.05 %	0.4260 ms	2347 Hz	3 KHz

4.4. Uncertainty

± 4.08 dB above 1GHz

± 4.22 dB below 1GHz

4.5. Test Result of Radiated Emission

Product : ROG Strix Fusion 500 RGB 7.1 Gaming Headset
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test date : 2017/12/20
 Test Mode : Mode 1: Transmit - BLE (GFSK)(2402MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
4804.000	2.511	40.527	43.037	-30.963	74.000
7206.000	9.511	39.765	49.276	-24.724	74.000
9608.000	10.394	37.521	47.915	-26.085	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4804.000	2.923	40.558	43.480	-30.520	74.000
7206.000	9.988	39.235	49.224	-24.776	74.000
9608.000	10.847	37.571	48.418	-25.582	74.000
Average Detector:					
--					

Note:

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

Product : ROG Strix Fusion 500 RGB 7.1 Gaming Headset
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test date : 2017/12/20
 Test Mode : Mode 1: Transmit - BLE (GFSK) (2440MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dB μ V	dB μ V/m	dB	dB μ V/m
Horizontal					
Peak Detector:					
4880.000	2.038	51.320	53.358	-20.642	74.000
7320.000	9.699	39.240	48.939	-25.061	74.000
9760.000	9.665	38.300	47.965	-26.035	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4880.000	2.499	40.396	42.895	-31.105	74.000
7320.000	10.303	41.762	52.065	-21.935	74.000
9760.000	10.299	39.217	49.517	-24.483	74.000
Average					
Detector:					
--					

Note:

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

Product : ROG Strix Fusion 500 RGB 7.1 Gaming Headset
 Test Item : Harmonic Radiated Emission
 Test Site : No.3 OATS
 Test date : 2017/12/20
 Test Mode : Mode 1: Transmit - BLE (GFSK) (2480MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dB μ V	dB μ V/m	dB	dB μ V/m
Horizontal					
Peak Detector:					
4960.000	2.582	40.714	43.296	-30.704	74.000
7440.000	10.555	41.531	52.086	-21.914	74.000
9920.000	10.206	39.721	49.927	-24.073	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4960.000	3.398	40.959	44.358	-29.642	74.000
7440.000	11.214	44.246	55.460	-18.540	74.000
9920.000	11.245	38.743	49.988	-24.012	74.000
Average					
Detector:					
7440.000	11.214	37.377	48.591	-5.409	54.000

Note:

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

Product : ROG Strix Fusion 500 RGB 7.1 Gaming Headset
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test date : 2017/12/20
 Test Mode : Mode 1: Transmit - BLE (GFSK) (2440MHz)

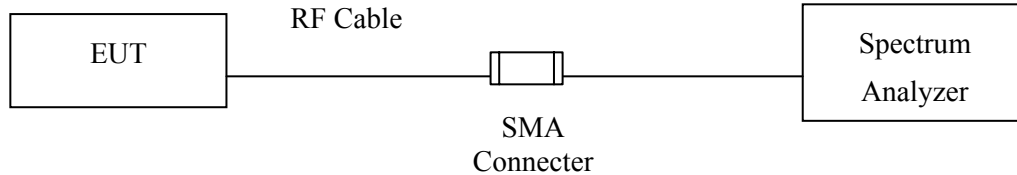
Frequency MHz	Correct Factor dB	Reading Level dB μ V	Measurement Level dB μ V/m	Margin dB	Limit dB μ V/m
Horizontal					
147.460	-12.575	53.157	40.582	-2.918	43.500
294.900	-9.057	50.120	41.063	-4.937	46.000
389.640	-5.679	49.800	44.121	-1.879	46.000
589.800	-1.688	43.210	41.522	-4.478	46.000
835.570	1.560	34.590	36.150	-9.850	46.000
933.870	2.458	39.930	42.388	-3.612	46.000
Vertical					
147.460	-12.575	45.850	33.275	-10.225	43.500
294.900	-9.057	35.840	26.783	-19.217	46.000
389.640	-5.679	40.220	34.541	-11.459	46.000
589.800	-1.688	34.030	32.342	-13.658	46.000
687.660	-1.375	34.960	33.585	-12.415	46.000
835.570	1.560	30.670	32.230	-13.770	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 3KHz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. 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.

5.4. Uncertainty

$\pm 1.20\text{dB}$

5.5. Test Result of RF Antenna Conducted Test

Product : ROG Strix Fusion 500 RGB 7.1 Gaming Headset
Test Item : RF Antenna Conducted Test
Test Site : No.3 OATS
Test date : 2017/12/20
Test Mode : Mode 1: Transmit - BLE (GFSK)

Figure Channel 00:

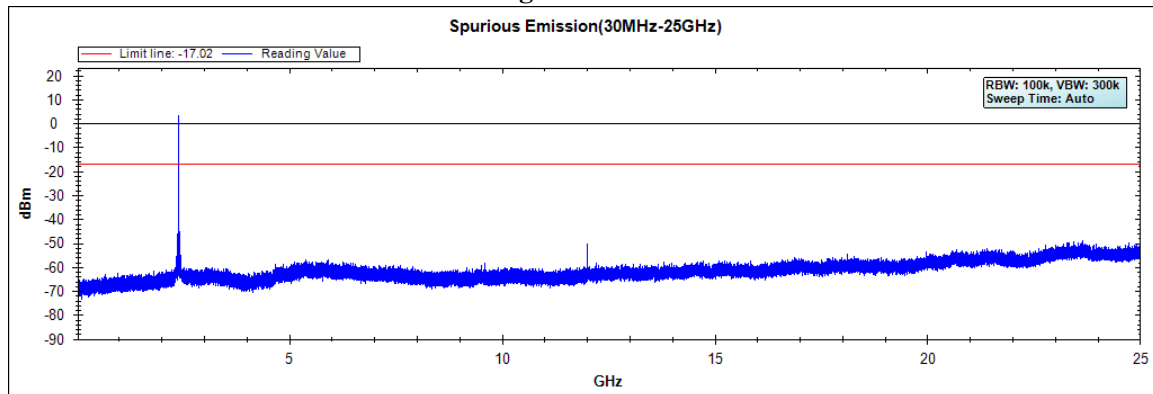


Figure Channel 19:

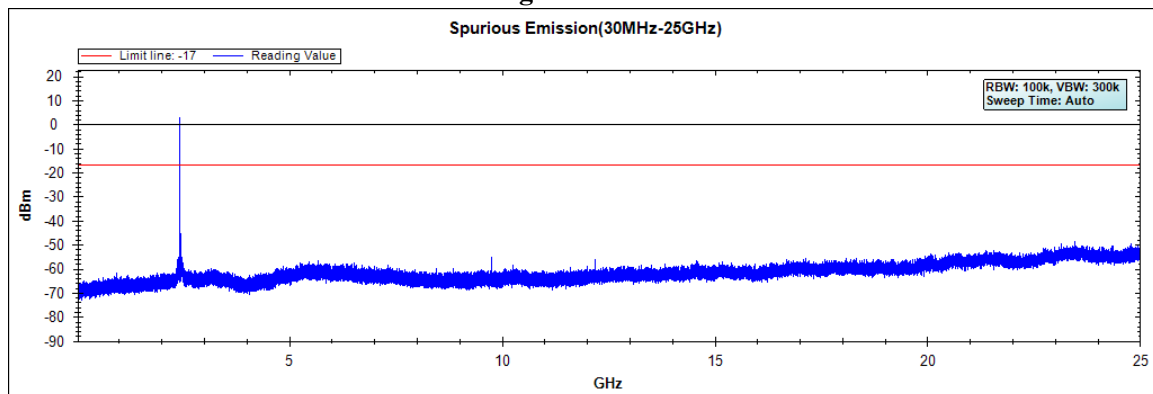
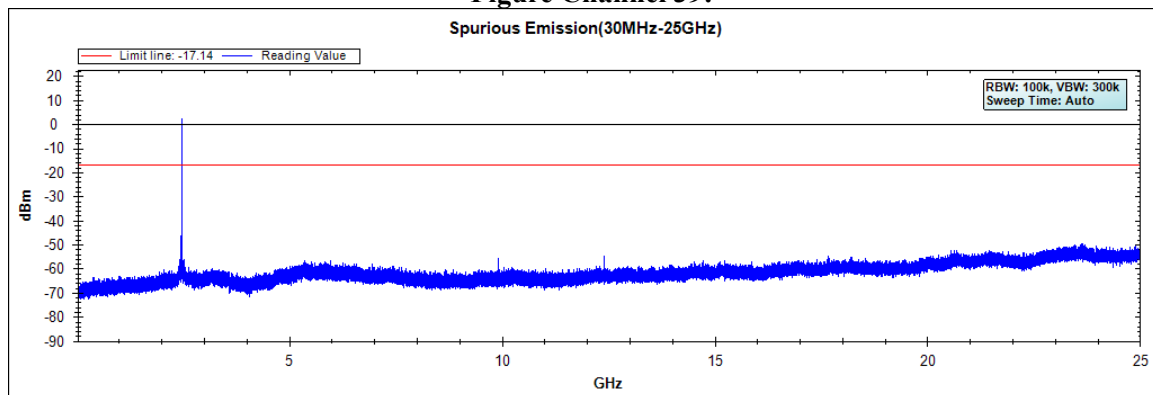


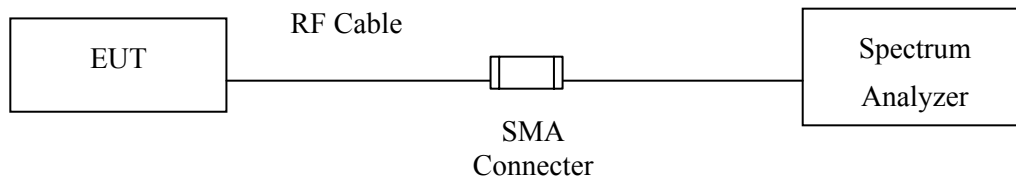
Figure Channel 39:



6. Band Edge

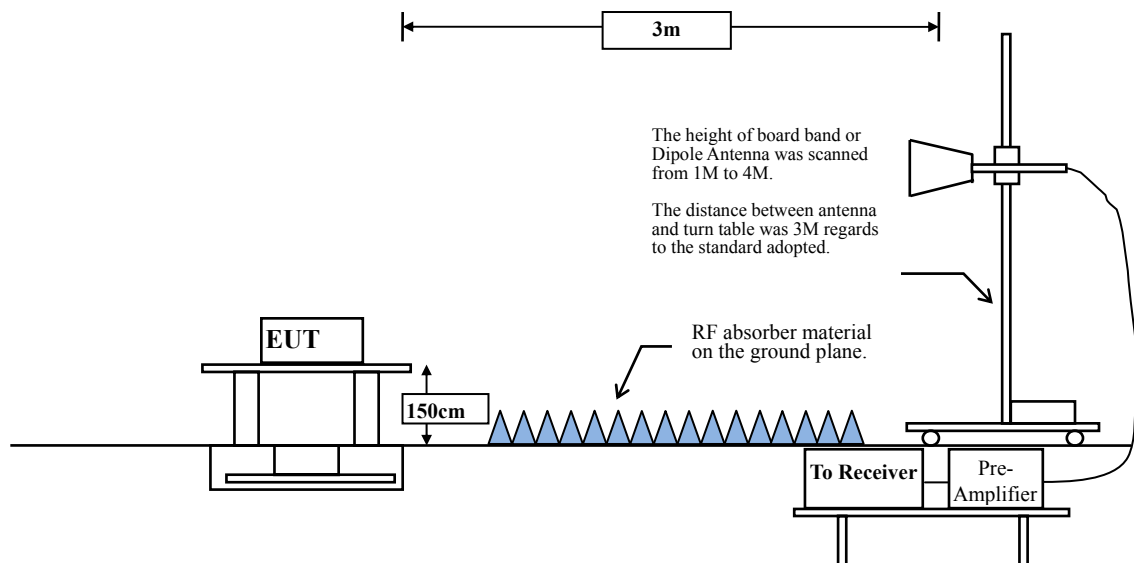
6.1. Test Setup

RF Conducted Measurement



RF Radiated Measurement:

Above 1GHz



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.

The average measurement tested according to KDB 558074 section 12.2.5.3. Reduced VBW averaging across on- and off-times of the EUT transmissions with max hold.

VBW $\geq$ 1/T:

Duty Cycle	T	1/T	VBW Setting
68.05 %	0.4260 ms	2347 Hz	3 KHz

6.4. Uncertainty

± 4.08 dB above 1GHz

± 4.22 dB below 1GHz

6.5. Test Result of Band Edge

Product : ROG Strix Fusion 500 RGB 7.1 Gaming Headset
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test date : 2017/12/20
 Test Mode : Mode 1: Transmit - BLE (GFSK)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
00 (Peak)	2385.700	-2.706	54.219	51.513	74.00	54.00	Pass
00 (Peak)	2390.000	-2.687	52.582	49.895	74.00	54.00	Pass
00 (Peak)	2400.000	-2.660	70.363	67.703	--	--	--
00 (Peak)	2401.800	-2.658	99.417	96.759	--	--	--
00 (Average)	2386.000	-2.704	50.218	47.513	74.00	54.00	Pass
00 (Average)	2390.000	-2.687	35.842	33.155	74.00	54.00	Pass
00 (Average)	2400.000	-2.660	55.574	52.914	--	--	--
00 (Average)	2402.100	-2.657	98.935	96.278	--	--	--

Figure Channel 00:

Horizontal (Peak)

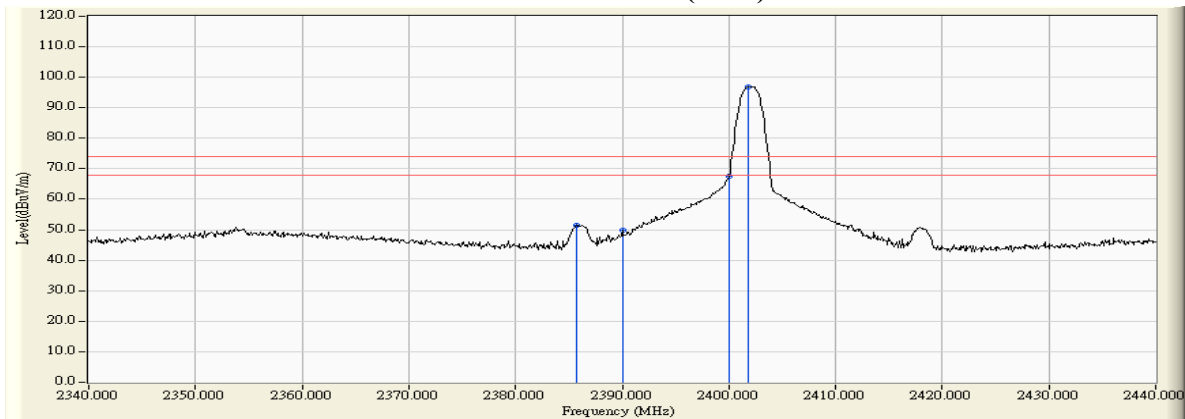
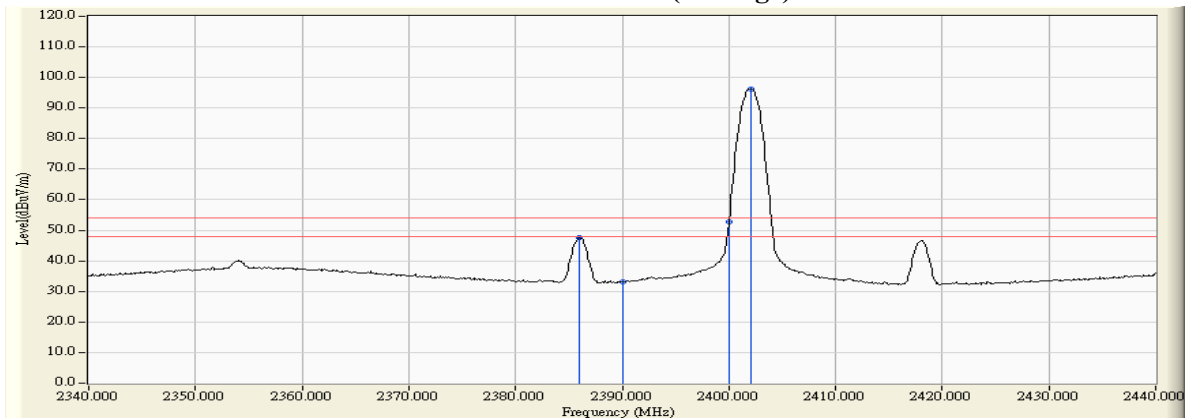


Figure Channel 00:

Horizontal (Average)



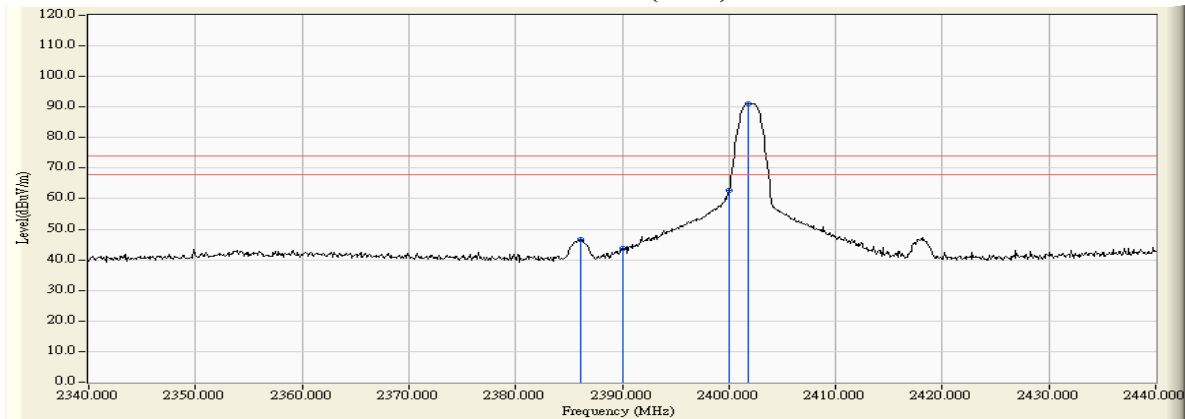
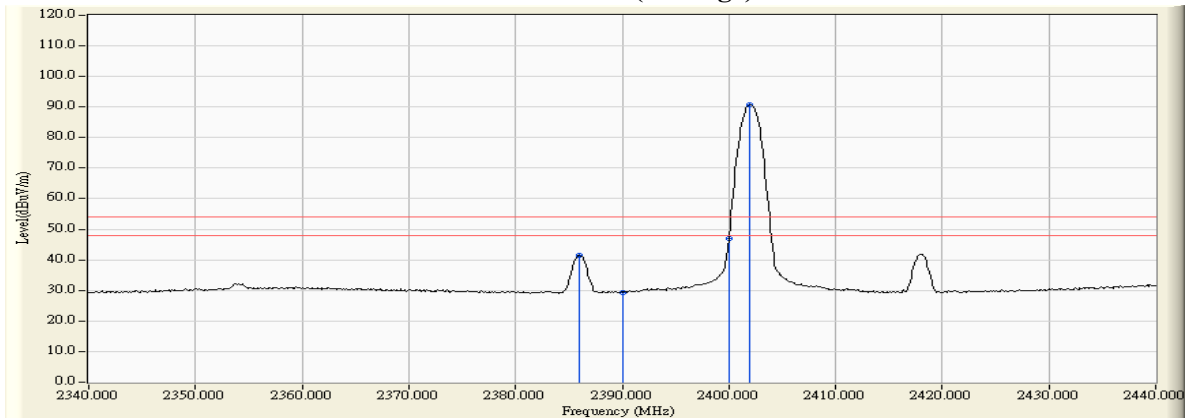
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 3KHz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : ROG Strix Fusion 500 RGB 7.1 Gaming Headset
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test date : 2017/12/20
 Test Mode : Mode 1: Transmit - BLE (GFSK)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dB μ V)	Emission Level (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Result
00 (Peak)	2386.100	-4.146	50.647	46.501	74.00	54.00	Pass
00 (Peak)	2390.000	-4.159	47.810	43.651	74.00	54.00	Pass
00 (Peak)	2400.000	-4.171	66.774	62.603	--	--	--
00 (Peak)	2401.800	-4.171	95.306	91.135	--	--	--
00 (Average)	2386.000	-4.145	45.542	41.397	74.00	54.00	Pass
00 (Average)	2390.000	-4.159	33.447	29.288	74.00	54.00	Pass
00 (Average)	2400.000	-4.171	51.297	47.126	--	--	--
00 (Average)	2402.000	-4.171	94.843	90.672	--	--	--

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

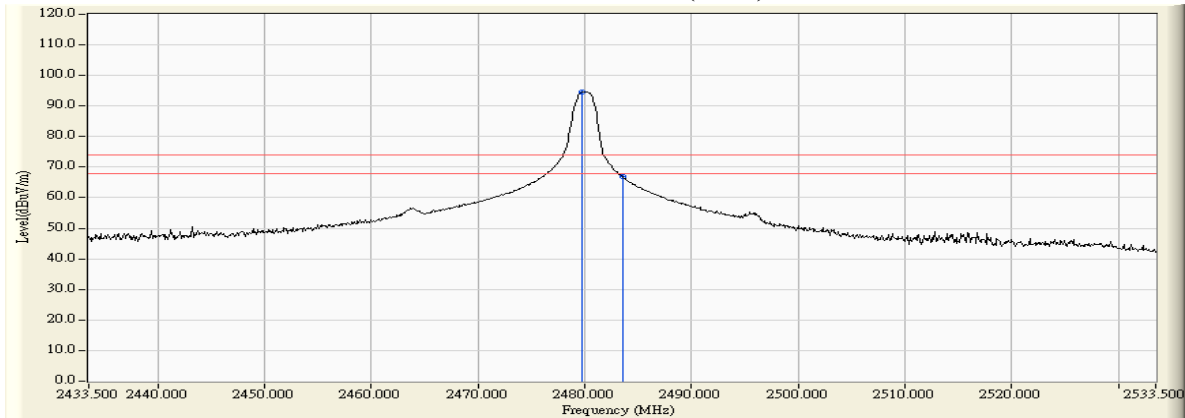
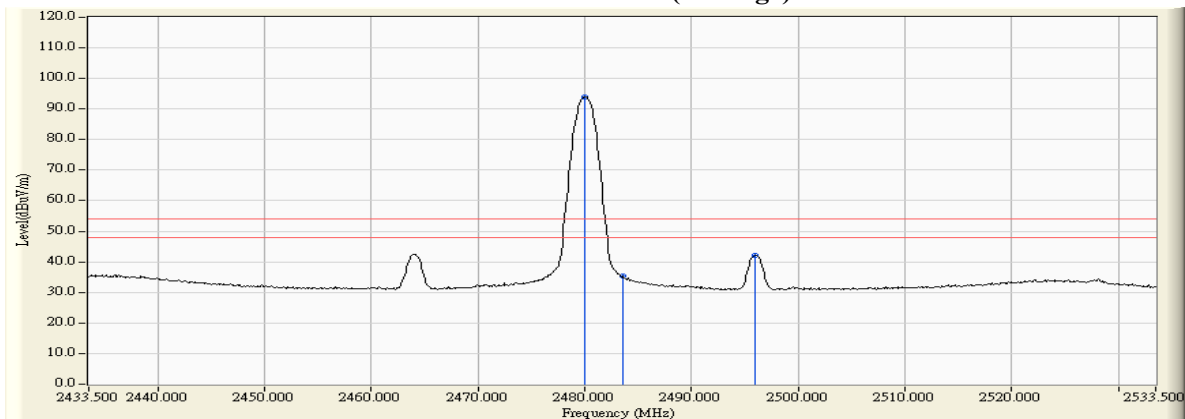
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 3KHz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : ROG Strix Fusion 500 RGB 7.1 Gaming Headset
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test date : 2017/12/20
 Test Mode : Mode 1: Transmit - BLE (GFSK)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
39 (Peak)	2479.700	32.411	97.057	94.452	--	--	--
39 (Peak)	2483.500	32.417	69.583	66.981	74.00	54.00	Pass
39 (Average)	2480.000	-2.605	96.593	93.988	--	--	--
39 (Average)	2483.500	-2.601	38.035	35.433	74.00	54.00	Pass
39 (Average)	2495.900	-2.591	44.790	42.199	74.00	54.00	Pass

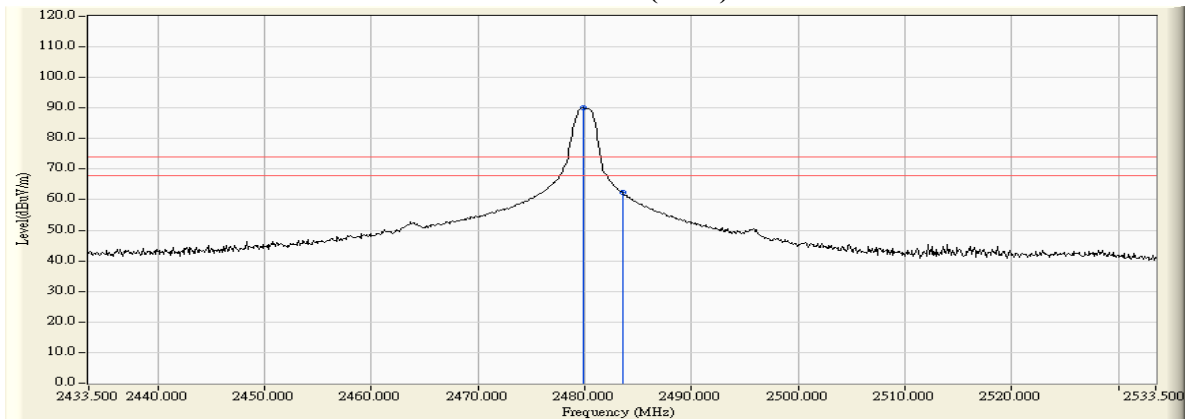
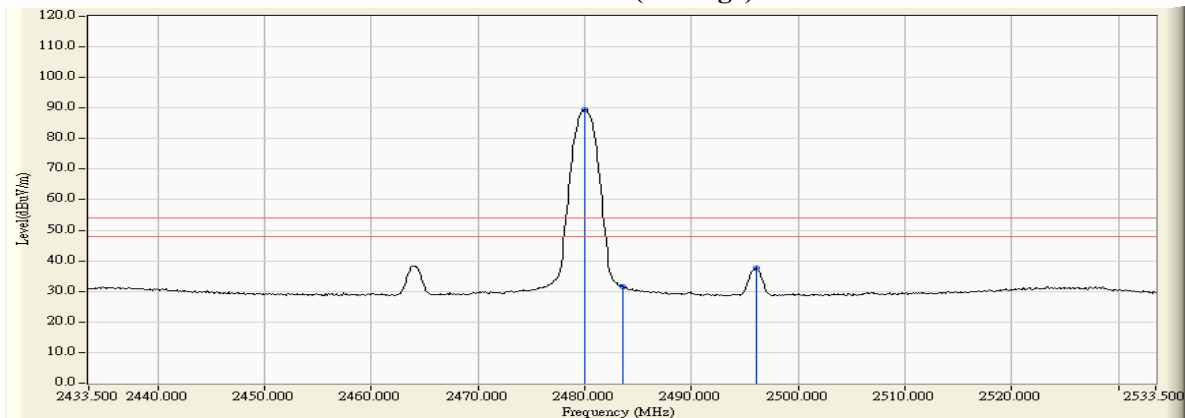
Figure Channel 39: Horizontal (Peak)**Figure Channel 39: Horizontal (Average)****Note:**

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 3KHz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : ROG Strix Fusion 500 RGB 7.1 Gaming Headset
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test date : 2017/12/20
 Test Mode : Mode 1: Transmit - BLE (GFSK)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
39 (Peak)	2479.800	-3.978	93.917	89.939	--	--	--
39 (Peak)	2483.500	-3.966	66.245	62.278	74.00	54.00	Pass
39 (Average)	2480.000	-3.978	93.421	89.443	--	--	--
39 (Average)	2483.500	-3.966	35.559	31.592	74.00	54.00	Pass
39 (Average)	2496.100	-3.927	41.418	37.491	74.00	54.00	Pass

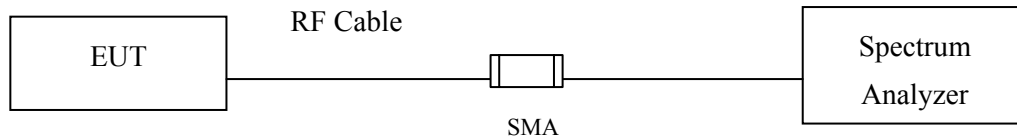
Figure Channel 39:**Vertical (Peak)****Figure Channel 39:****Vertical (Average)**

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 3KHz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. 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, $VBW \geq 3 \cdot RBW$

7.4. Uncertainty

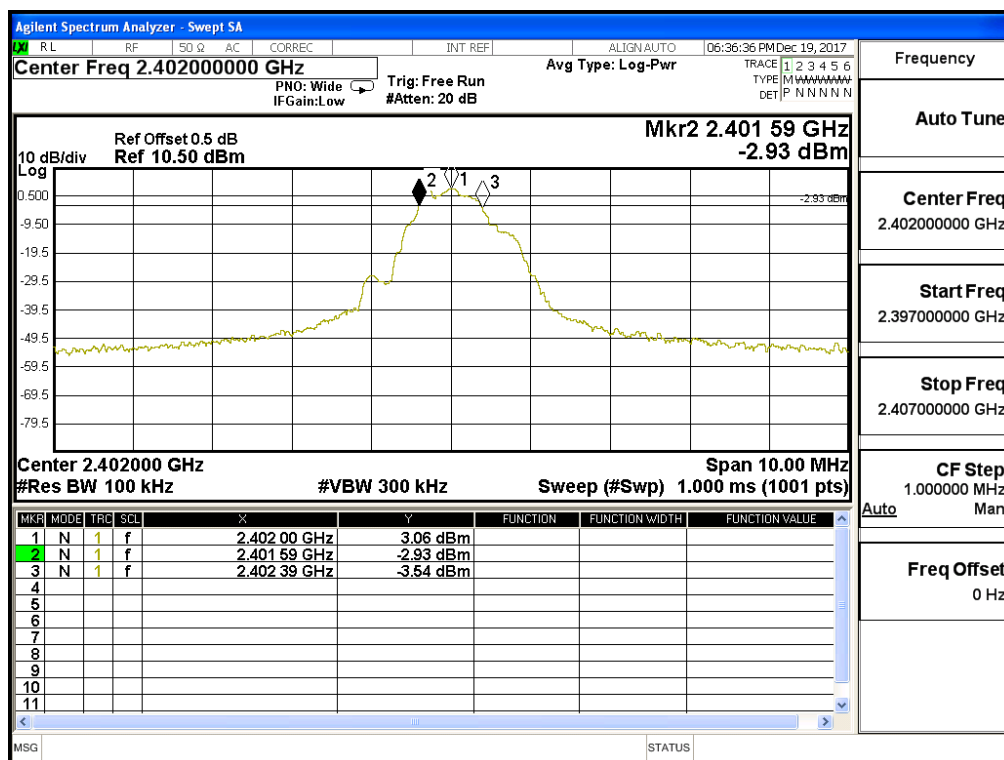
$\pm 283\text{Hz}$

7.5. Test Result of 6dB Bandwidth

Product : ROG Strix Fusion 500 RGB 7.1 Gaming Headset
 Test Item : 6dB Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit - BLE (GFSK) (2402MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
00	2402	800	>500	Pass

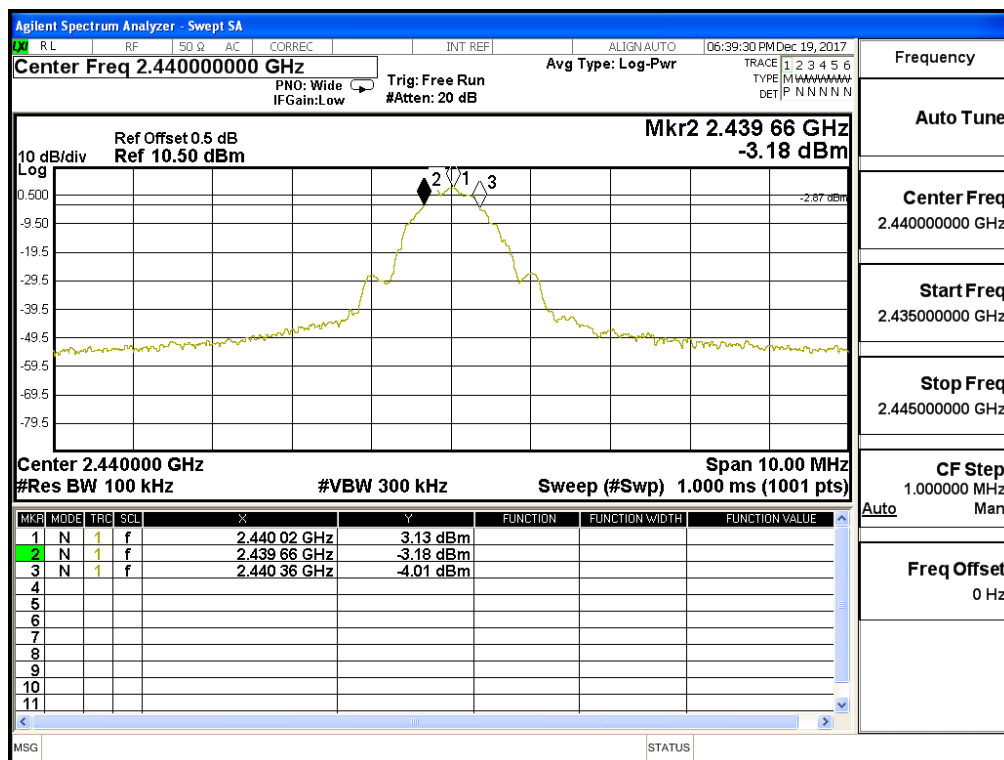
Figure Channel 00:



Product : ROG Strix Fusion 500 RGB 7.1 Gaming Headset
 Test Item : 6dB Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit - BLE (GFSK) (2440MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
19	2440	700	>500	Pass

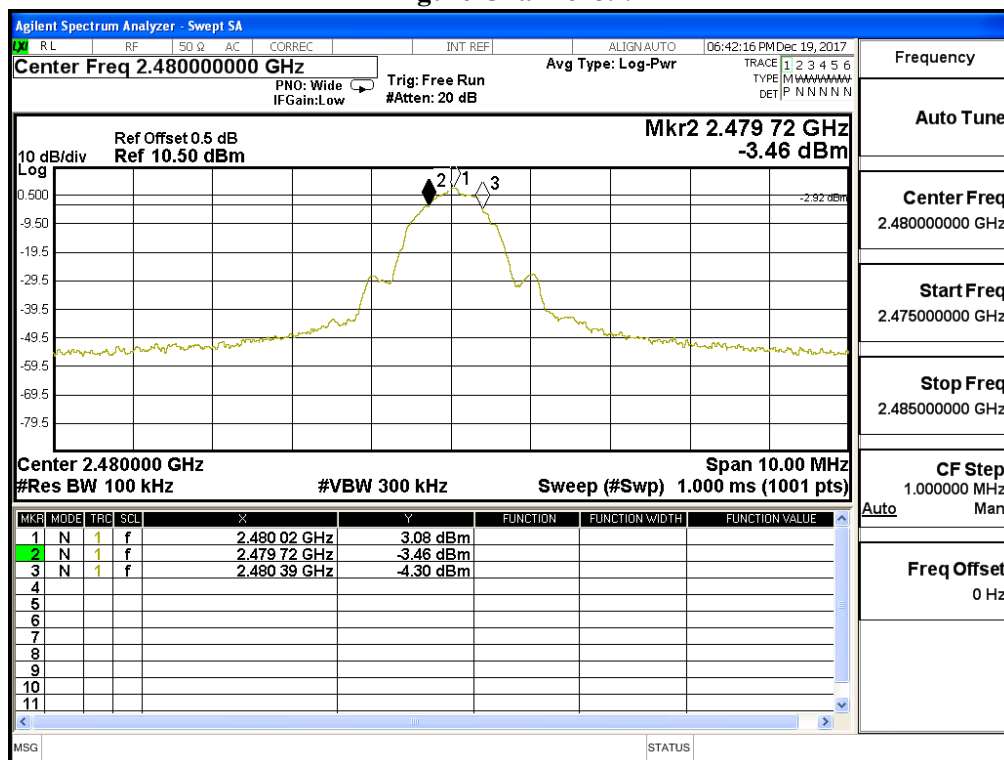
Figure Channel 19:



Product : ROG Strix Fusion 500 RGB 7.1 Gaming Headset
 Test Item : 6dB Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit - BLE (GFSK) (2480MHz)

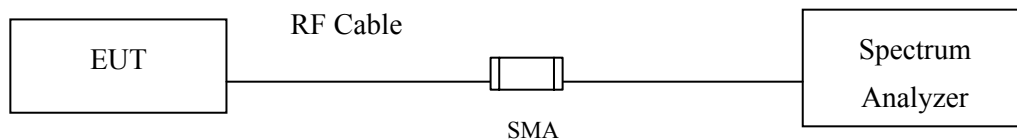
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
39	2480	670	>500	Pass

Figure Channel 39:



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

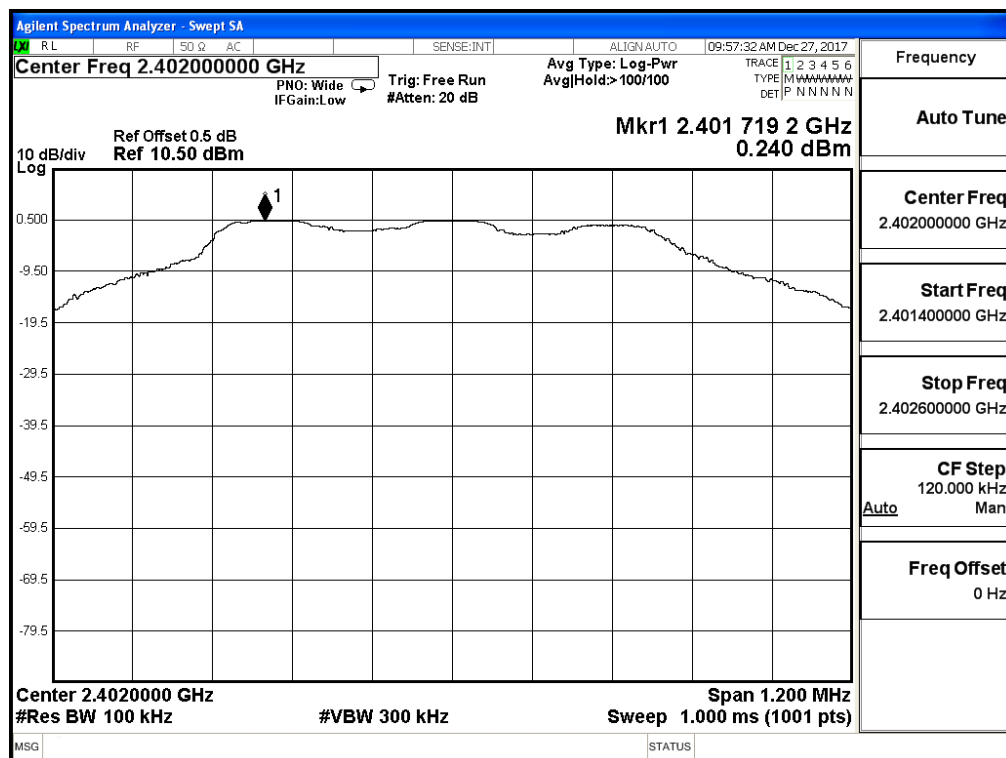
± 1.20 dB

8.5. Test Result of Power Density

Product : ROG Strix Fusion 500 RGB 7.1 Gaming Headset
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit - BLE (GFSK) (2402MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402	0.240	$\leq 8\text{dBm}$	Pass

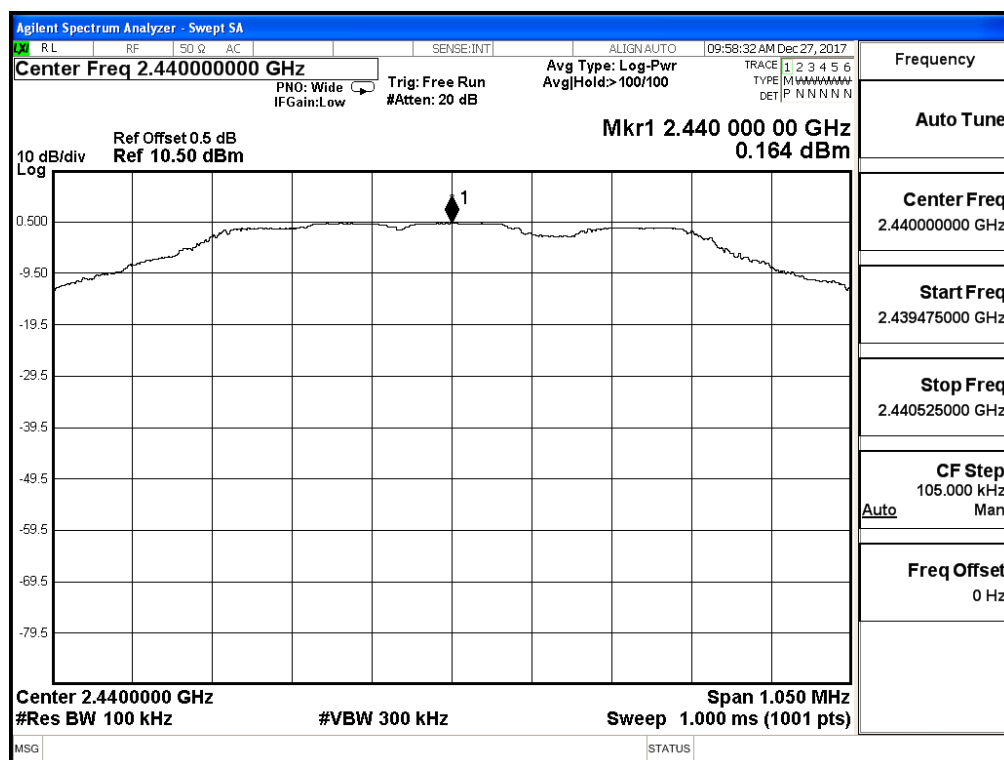
Figure Channel 00:



Product : ROG Strix Fusion 500 RGB 7.1 Gaming Headset
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 1: Transmit - BLE (GFSK) (2440MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
19	2440	0.164	$\leq 8\text{dBm}$	Pass

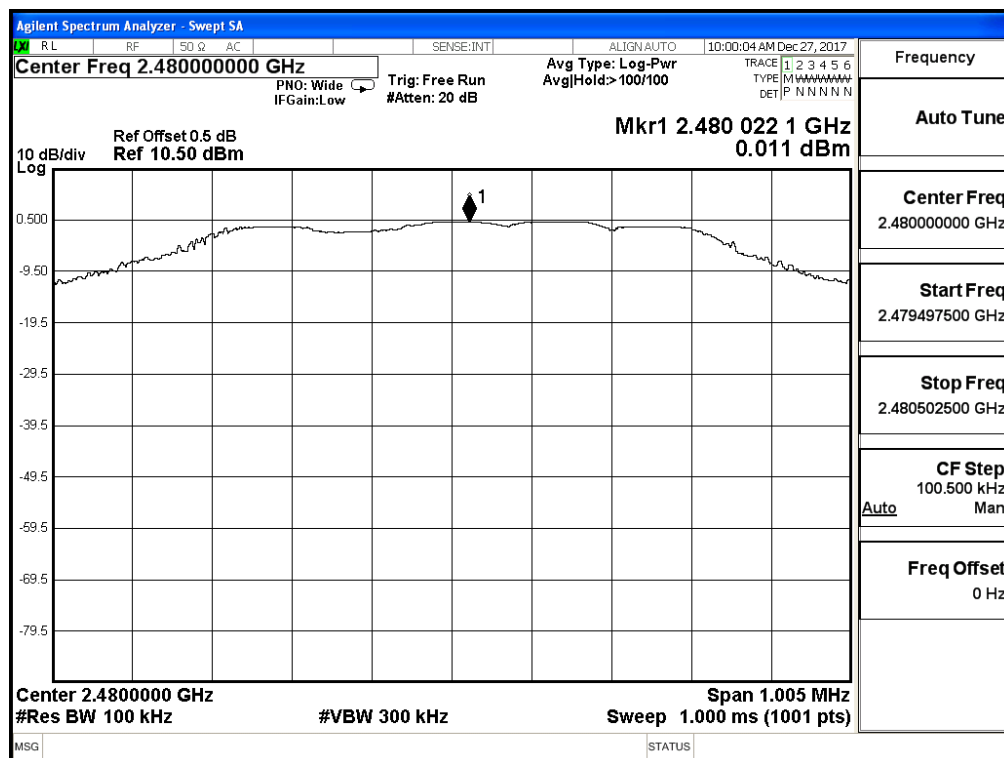
Figure Channel 19:



Product : ROG Strix Fusion 500 RGB 7.1 Gaming Headset
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit - BLE (GFSK) (2480MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
39	2480	0.011	$\leq 8\text{dBm}$	Pass

Figure Channel 39:



9. EMI Reduction Method During Compliance Testing

No modification was made during testing.