FCC Test Report

Product Name	Afterglow Fener PS4/PS3 Wireless Headset, Afterglow Nur PS4/PS3 Wireless Headset
Model No	PL-051-014R, PL-051-003R
FCC ID.	X5B-PL051014R

Applicant	Performance Designed Products, LLC
Address	14144 Ventura Blvd., Suite 200 Sherman Oaks, CA91423 USA

Date of Receipt	Aug. 25, 2014
Issue Date	Sep. 15, 2014
Report No.	1480538R-RFUSP25V00
Report Version	V1.0

Testing Laboratory
0914

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 of the equipment and evaluated measurement uncertainty herein.
This report must not be used to claim product endorsement by TAF or any agency of the government.

Test Report

Issue Date: Sep. 15, 2014
Report No.: 1480538R-RFUSP25V00

Product Name	Afterglow Fener PS4/PS3 Wireless Headset, Afterglow Nur PS4/PS3 Wireless Headset
Applicant	Performance Designed Products, LLC
Address	14144 Ventura Blvd., Suite 200 Sherman Oaks, CA91423 USA
Manufacturer	Performance Designed Products, LLC
Model No.	PL-051-014R, PL-051-003R
EUT Rated Voltage	DC 3.7V (Power by Battery)
EUT Test Voltage	AC 120V/60Hz
Trade Name	pdp, Afterglow
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2013 ANSI C63.10: 2009, KDB 558074
Test Result	Complied

Documented By : Leven Huang

(Senior Adm. Specialist / Leven Huang)

Tested By : Benjamin Pan

(Engineer / Benjamin Pan)

Approved By :

(Director / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Afterglow Fener PS4/PS3 Wireless Headset, Afterglow Nur PS4/PS3 Wireless Headset
Trade Name	pdp, Afterglow
Model No.	PL-051-014R, PL-051-003R
FCC ID.	X5B-PL051014R
Frequency Range	2403.35 – 2479.35MHz
Channel Control	Auto
Channel Separation	2MHz
Antenna Gain	Refer to the table “Antenna List”
Channel Number	39
Type of Modulation	Pi/4 DQPSK
Antenna Type	Printed on PCB
USB Cable	Shielded, 1.8m
Audio Cable	Shielded, 1.2m

Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	TATUNG	N/A (TX0) N/A (TX1)	1.09 dBi for 2.4 GHz

Note: The antenna of EUT is conform to FCC 15.203

Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 1:	2403.35 MHz	Channel 11:	2423.35 MHz	Channel 21:	2443.35 MHz	Channel 31:	2463.35 MHz
Channel 2:	2405.35 MHz	Channel 12:	2425.35 MHz	Channel 22:	2445.35 MHz	Channel 32:	2465.35 MHz
Channel 3:	2407.35 MHz	Channel 13:	2427.35 MHz	Channel 23:	2447.35 MHz	Channel 33:	2467.35 MHz
Channel 4:	2409.35 MHz	Channel 14:	2429.35 MHz	Channel 24:	2449.35 MHz	Channel 34:	2469.35 MHz
Channel 5:	2411.35 MHz	Channel 15:	2431.35 MHz	Channel 25:	2451.35 MHz	Channel 35:	2471.35 MHz
Channel 6:	2413.35 MHz	Channel 16:	2433.35 MHz	Channel 26:	2453.35 MHz	Channel 36:	2473.35 MHz
Channel 7:	2415.35 MHz	Channel 17:	2435.35 MHz	Channel 27:	2455.35 MHz	Channel 37:	2475.35 MHz
Channel 8:	2417.35 MHz	Channel 18:	2437.35 MHz	Channel 28:	2457.35 MHz	Channel 38:	2477.35 MHz
Channel 9:	2419.35 MHz	Channel 19:	2439.35 MHz	Channel 29:	2459.35 MHz	Channel 39:	2479.35 MHz
Channel 10:	2421.35 MHz	Channel 20:	2441.35 MHz	Channel 30:	2461.35 MHz		

Note:

1. The EUT is an Afterglow Fener PS4/PS3 Wireless Headset,
   Afterglow Nur PS4/PS3 Wireless Headset with a built-in 2.4GHz transceiver.
2. The EUT is including two models for different marketing requirement.
3. Device contains a diversity function, only worst case is shown in the report.
4. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
5. These tests are conducted on a sample for the purpose of demonstrating compliance of 2.4GHz transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices

Test Mode:	Mode 1: Transmit

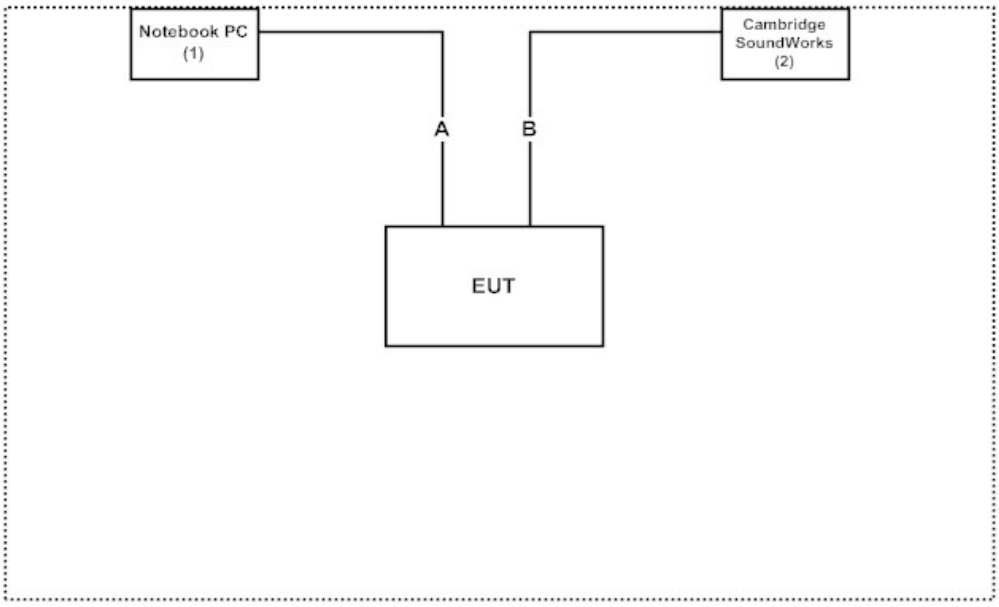
1.3. Tested System Details

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	PP18L	36119001664	Non-Shielded, 0.8m
2	Cambridge SoundWorks	Creative	S80130	AM01303200000941	Non-Shielded, 1.9m

Signal Cable Type		Signal cable Description
A	USB Cable	Shielded, 1.8m
B	Audio Cable	Shielded, 1.2m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown in Section 1.4.

(2) Execute “VMI debug.exe (v1.1.6.47)” 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 QuieTek Corporation's Web Site: http://www.quietek.com/tw/ctg/cts/accreditations.htm
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site: http://www.quietek.com/

Site Description: File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Registration Number: 92195

Site Name: Quietek Corporation
Site Address: No.5-22, Ruishukeng,
Linkou Dist. New Taipei City 24451,
Taiwan, R.O.C.
TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

2. Conducted Emission

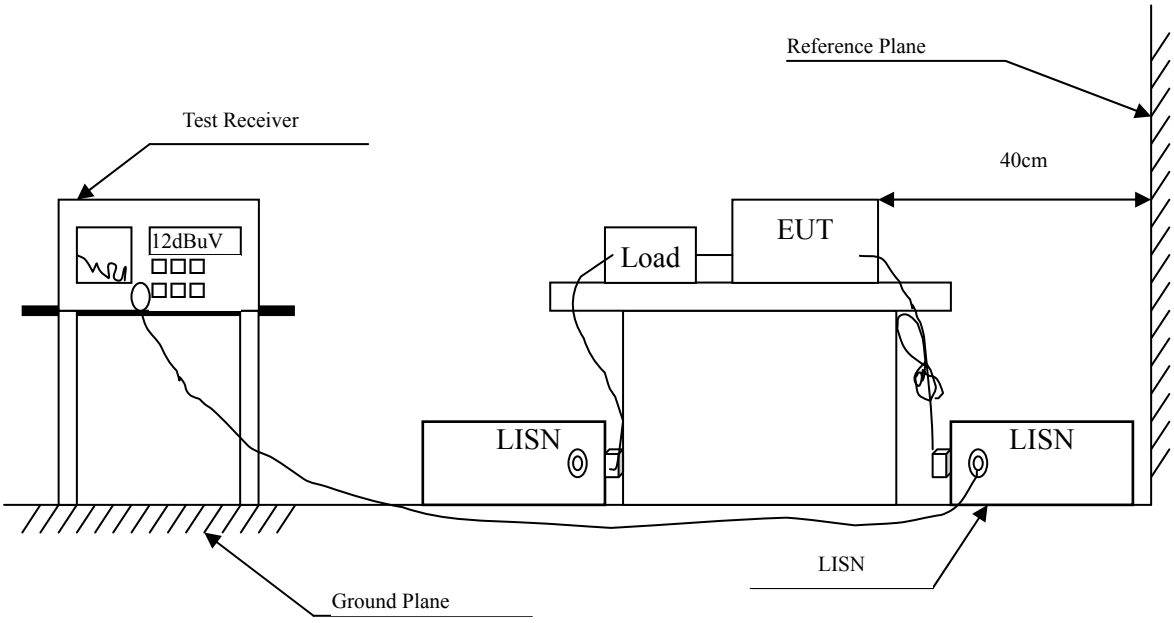
2.1. Test Equipment

The following test equipment are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 2014	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2014	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2014	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2014	
5	No.1 Shielded Room			N/A	

Note: All instruments are calibrated every one year.

2.2. Test Setup



2.3. Limits

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

2.4. Test Procedure

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

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2009 on conducted measurement.

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

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : Afterglow Fener PS4/PS3 Wireless Headset,
Afterglow Nur PS4/PS3 Wireless Headset
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 1: Transmit (2441.35MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.166	9.657	42.670	52.326	-13.217	65.543
0.189	9.650	40.690	50.340	-14.546	64.886
0.259	9.654	19.610	29.264	-33.622	62.886
0.576	9.671	27.270	36.941	-19.059	56.000
0.752	9.681	24.320	34.001	-21.999	56.000
20.709	10.184	24.290	34.474	-25.526	60.000
Average					
0.166	9.657	22.960	32.616	-22.927	55.543
0.189	9.650	19.740	29.390	-25.496	54.886
0.259	9.654	9.240	18.894	-33.992	52.886
0.576	9.671	17.130	26.801	-19.199	46.000
0.752	9.681	6.550	16.231	-29.769	46.000
20.709	10.184	16.560	26.744	-23.256	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 : Afterglow Fener PS4/PS3 Wireless Headset,
Afterglow Nur PS4/PS3 Wireless Headset
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 1: Transmit (2441.35MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.173	9.659	41.990	51.649	-13.694	65.343
0.259	9.664	33.180	42.844	-20.042	62.886
0.322	9.657	30.180	39.837	-21.249	61.086
0.521	9.668	20.940	30.608	-25.392	56.000
0.689	9.677	25.030	34.707	-21.293	56.000
4.459	9.851	23.030	32.881	-23.119	56.000
Average					
0.173	9.659	21.770	31.429	-23.914	55.343
0.259	9.664	13.760	23.424	-29.462	52.886
0.322	9.657	12.260	21.917	-29.169	51.086
0.521	9.668	2.140	11.808	-34.192	46.000
0.689	9.677	9.280	18.957	-27.043	46.000
4.459	9.851	16.560	26.411	-19.589	46.000

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

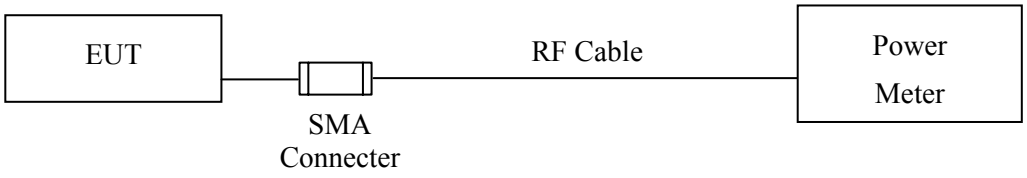
3.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2014
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2014

Note: 1. All equipments are calibrated every one year.

2. The test instruments marked by "X" are used to measure the final test results.

3.2. Test Setup



3.3. Limit

The maximum peak power shall be less 1Watt.

3.4. Test Procedure

The EUT was 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.

3.5. Test Result of Peak Power Output

Product : Afterglow Fener PS4/PS3 Wireless Headset,
Afterglow Nur PS4/PS3 Wireless Headset
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit

Signal Path A

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
01	2403.35	3.42	<30dBm	Pass
20	2441.35	3.44	<30dBm	Pass
39	2479.35	3.47	<30dBm	Pass

Signal Path B

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
01	2403.35	4.07	<30dBm	Pass
20	2441.35	4.03	<30dBm	Pass
39	2479.35	4.05	<30dBm	Pass

4. Radiated Emission

4.1. Test Equipment

The following test equipment are used during the radiated emission test:

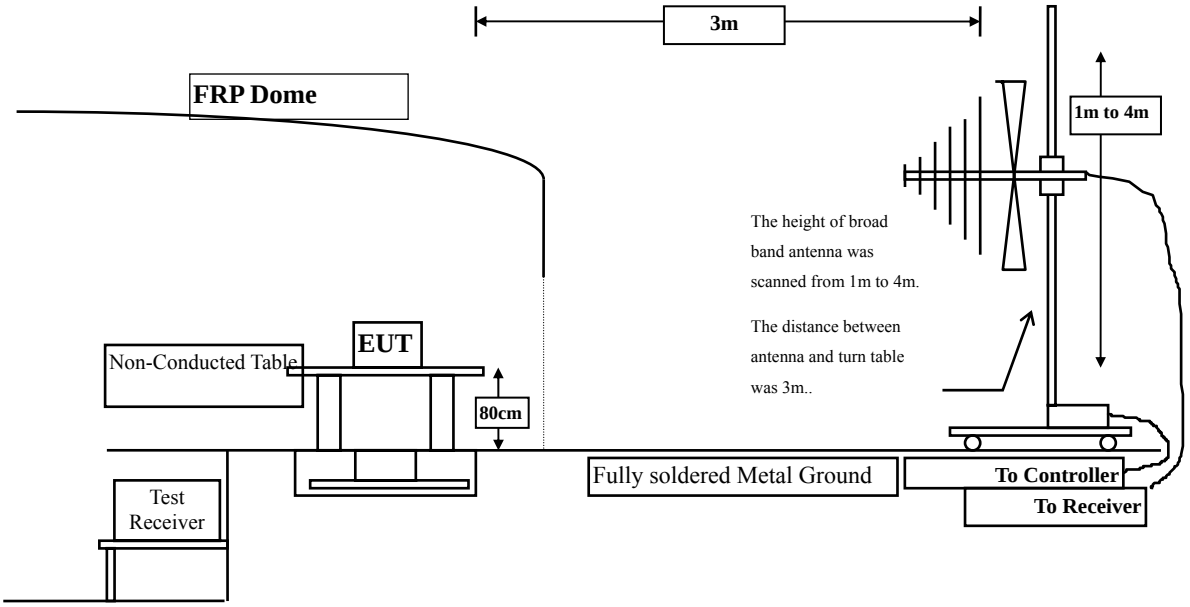
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Loop Antenna	Teseq	HLA6120 / 26739	Jul., 2014
	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2014
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2014
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2014
	X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2014
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2014
	X	Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2014
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2014
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2014
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2014
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

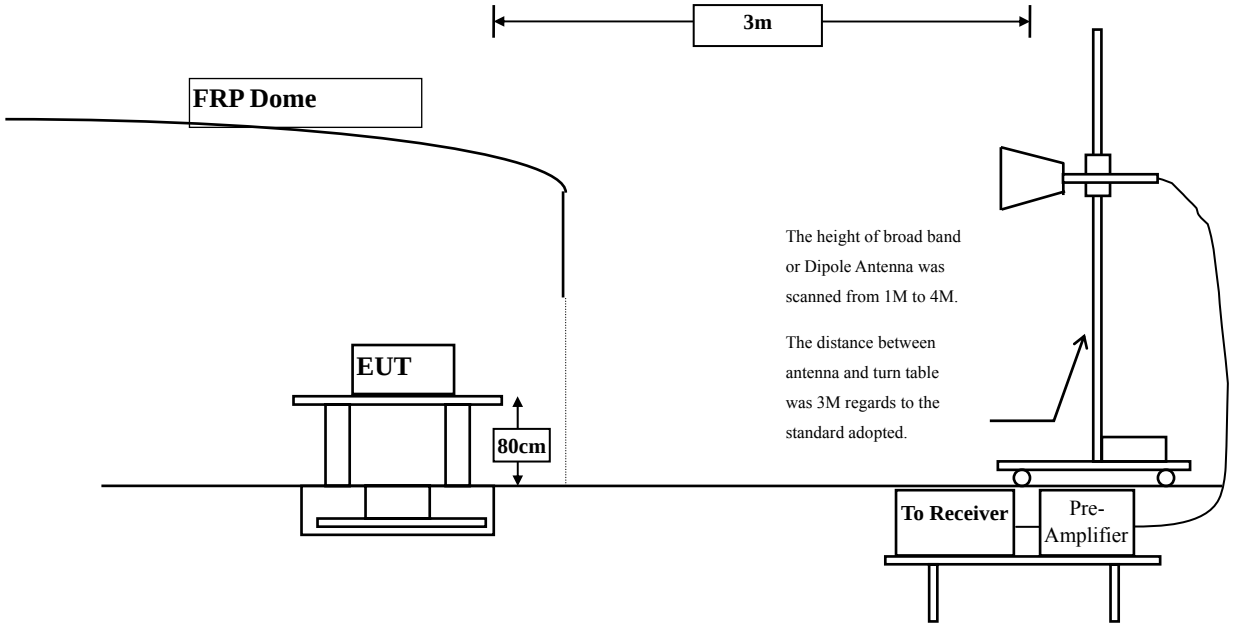
2. The test instruments marked with “X” are used to measure the final test results.

4.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.3. 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(a) 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:E field strength (dBuV/m) = 20 log E field strength (uV/m)

4.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2009 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 0.8 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 C63.10:2009 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 form 9KHz - 10th Harmonic of fundamental was investigated.

4.5. Uncertainty

± 3.9 dB above 1GHz
± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : Afterglow Fener PS4/PS3 Wireless Headset,
Afterglow Nur PS4/PS3 Wireless Headset
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (2403.35MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4806.700	3.331	39.170	42.500	-31.500	74.000
7210.050	10.205	37.990	48.195	-25.805	74.000
9613.400	13.656	39.810	53.466	-20.534	74.000
Vertical					
Peak Detector:					
4806.700	6.623	36.550	43.172	-30.828	74.000
7210.050	11.071	37.790	48.861	-25.139	74.000
9613.400	14.063	37.990	52.053	-21.947	74.000

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 = 10 Hz, 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 : Afterglow Fener PS4/PS3 Wireless Headset,
Afterglow Nur PS4/PS3 Wireless Headset
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (2441.35MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4882.700	2.999	38.190	41.188	-32.812	74.000
7324.050	11.851	35.700	47.551	-26.449	74.000
9765.400	12.556	37.600	50.156	-23.844	74.000
Vertical					
Peak Detector:					
4882.700	5.706	36.490	42.195	-31.805	74.000
7324.050	12.736	37.580	50.317	-23.683	74.000
9765.400	13.019	36.650	49.669	-24.331	74.000

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 = 10 Hz, 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 : Afterglow Fener PS4/PS3 Wireless Headset,
Afterglow Nur PS4/PS3 Wireless Headset
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (2479.35MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4958.700	2.764	37.760	40.524	-33.476	74.000
7438.050	12.548	40.180	52.728	-21.272	74.000
9917.400	13.441	36.010	49.452	-24.548	74.000
Vertical					
Peak Detector:					
4958.700	5.556	36.480	42.036	-31.964	74.000
7438.050	13.423	38.050	51.473	-22.527	74.000
9917.400	13.960	35.970	49.930	-24.070	74.000

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 = 10 Hz, 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 : Afterglow Fener PS4/PS3 Wireless Headset,
Afterglow Nur PS4/PS3 Wireless Headset
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (2441.35MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
113.420	-7.449	30.319	22.870	-20.630	43.500
247.280	-6.359	36.025	29.666	-16.334	46.000
460.680	4.030	23.461	27.491	-18.509	46.000
613.940	3.132	27.454	30.586	-15.414	46.000
825.400	7.346	23.745	31.091	-14.909	46.000
994.180	7.555	25.496	33.051	-20.949	54.000
Vertical					
177.440	-1.248	26.637	25.389	-18.111	43.500
334.580	-2.253	25.161	22.908	-23.092	46.000
501.420	-0.101	23.748	23.647	-22.353	46.000
613.940	1.782	27.020	28.802	-17.198	46.000
784.660	2.736	23.312	26.048	-19.952	46.000
885.540	1.322	22.290	23.612	-22.388	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 = 10 Hz, 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 Equipment

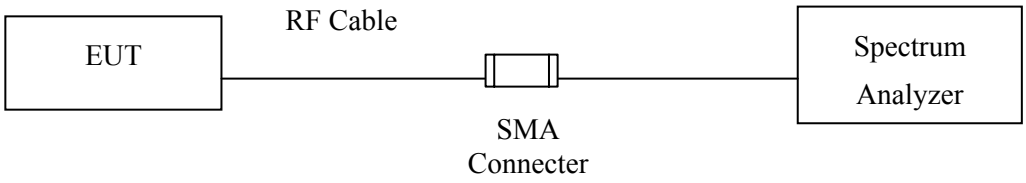
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

5.2. Test Setup

RF antenna Conducted Measurement:



5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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 a radiated measurement. 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)).

5.4. 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.

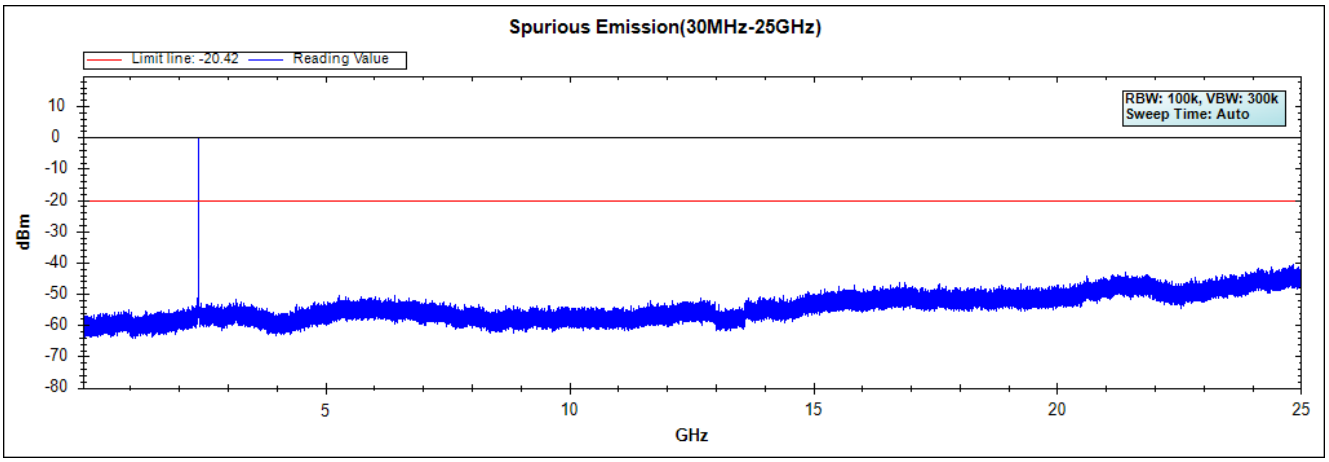
5.5. Uncertainty

The measurement uncertainty
Conducted is defined as ± 1.27dB

5.6. Test Result of RF antenna conducted test

Product	:	Afterglow Fener PS4/PS3 Wireless Headset, Afterglow Nur PS4/PS3 Wireless Headset
Test Item	:	RF antenna conducted test
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit

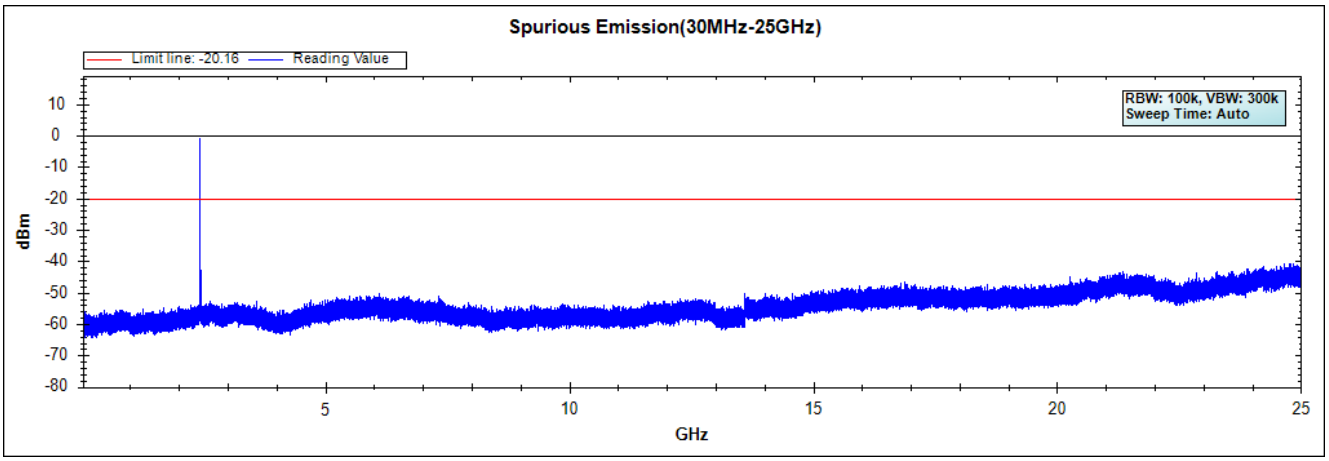
Channel 01 (2403.35MHz) 30M-25GHz



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

Product	:	Afterglow Fener PS4/PS3 Wireless Headset, Afterglow Nur PS4/PS3 Wireless Headset
Test Item	:	RF antenna conducted test
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit

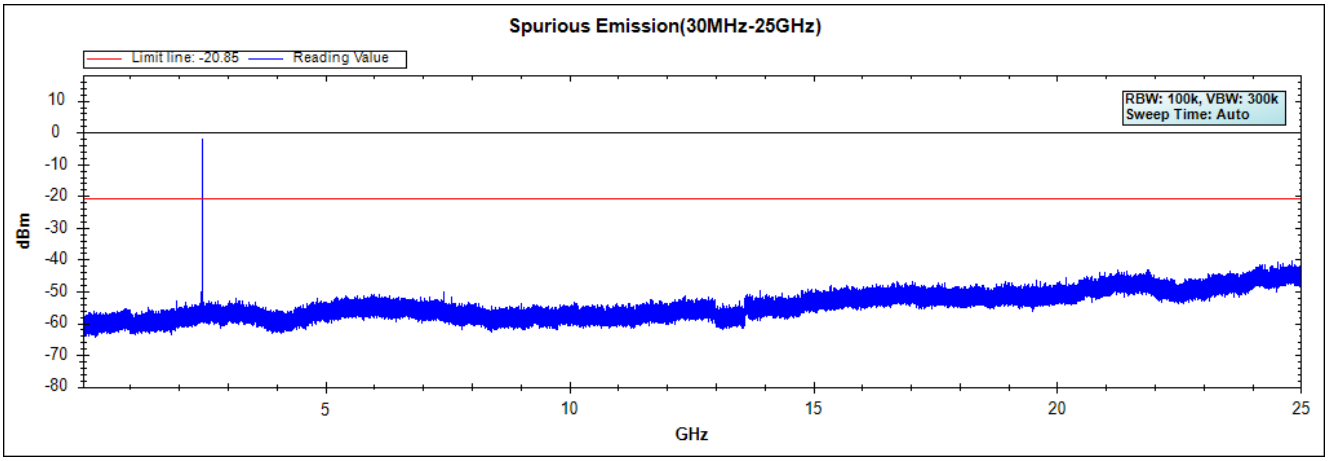
Channel 20 (2441.35MHz) 30M-25GHz



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

Product	:	Afterglow Fener PS4/PS3 Wireless Headset, Afterglow Nur PS4/PS3 Wireless Headset
Test Item	:	RF antenna conducted test
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit

Channel 39 (2479.35MHz) 30M-25GHz



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

6. Band Edge

6.1. Test Equipment

RF Radiated Measurement:

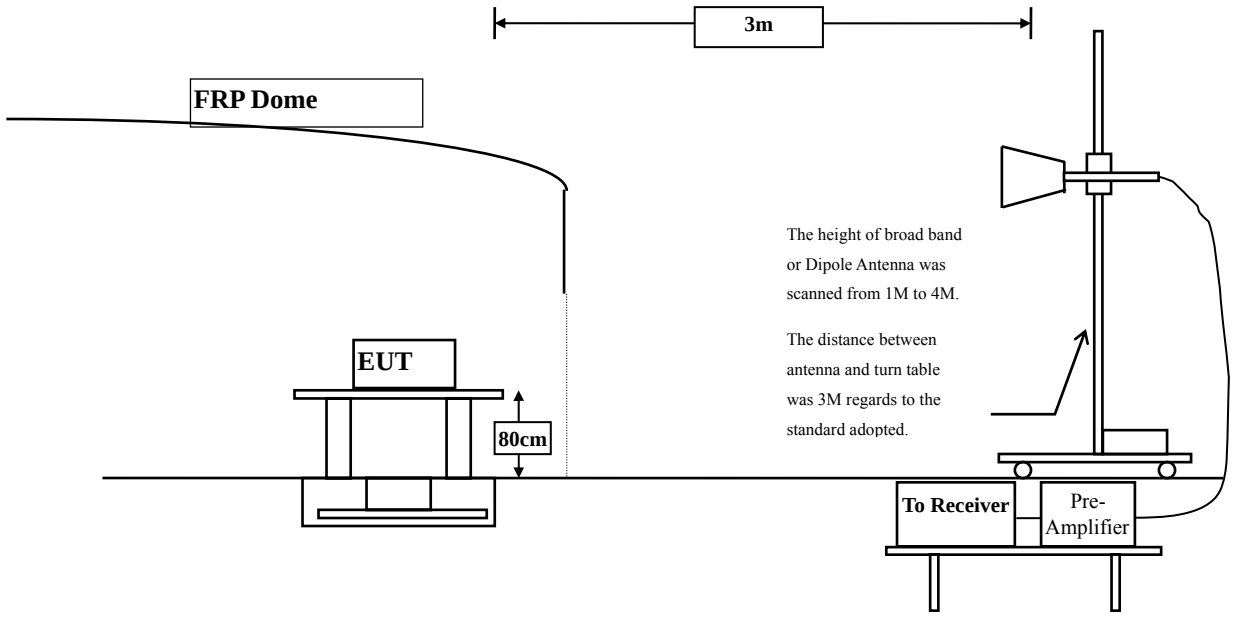
The following test equipments are used during the band edge tests:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2014
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2014
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2014
		Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2014
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2014
		Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2014
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2014
		Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2014
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2014
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

Note: 1. All instruments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

6.2. Test Setup

RF Radiated Measurement:



6.3. 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.

6.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2009 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 0.8 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 C63.10:2009 on radiated measurement.

6.5. Uncertainty

± 3.9 dB above 1GHz
± 3.8 dB below 1GHz

6.6. Test Result of Band Edge

Product : Afterglow Fener PS4/PS3 Wireless Headset,
Afterglow Nur PS4/PS3 Wireless Headset
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (2403.35MHz)

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
01 (Peak)	2390.000	-1.131	38.189	37.058	74.00	54.00	Pass
01 (Peak)	2400.000	-1.084	58.468	57.385	--	--	--
01 (Peak)	2403.200	-1.065	82.970	81.904	--	--	--
01 (Average)	2390.000	-1.131	25.293	24.162	74.00	54.00	Pass
01 (Average)	2400.000	-1.084	48.802	47.719	--	--	--
01 (Average)	2403.400	-1.065	80.030	78.965	--	--	--

Figure Channel 01: Horizontal (Peak)

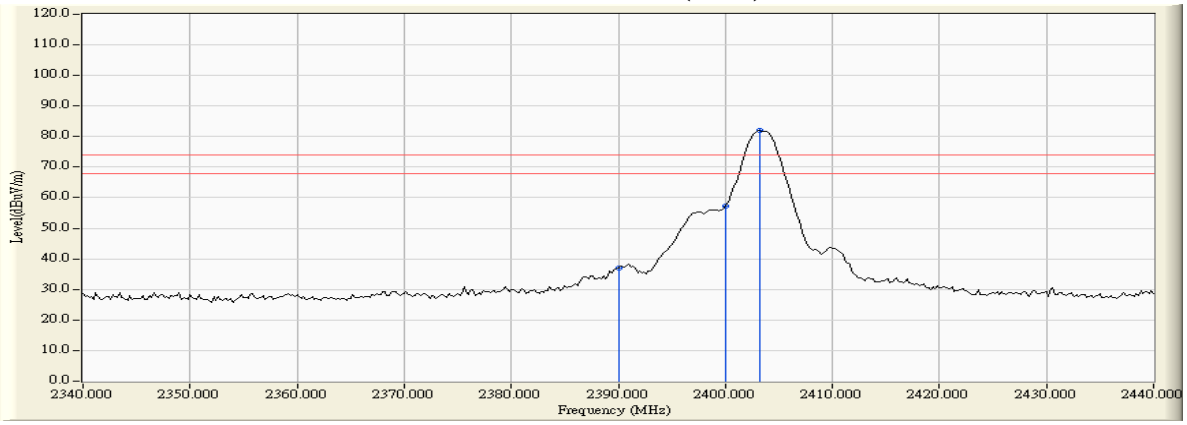
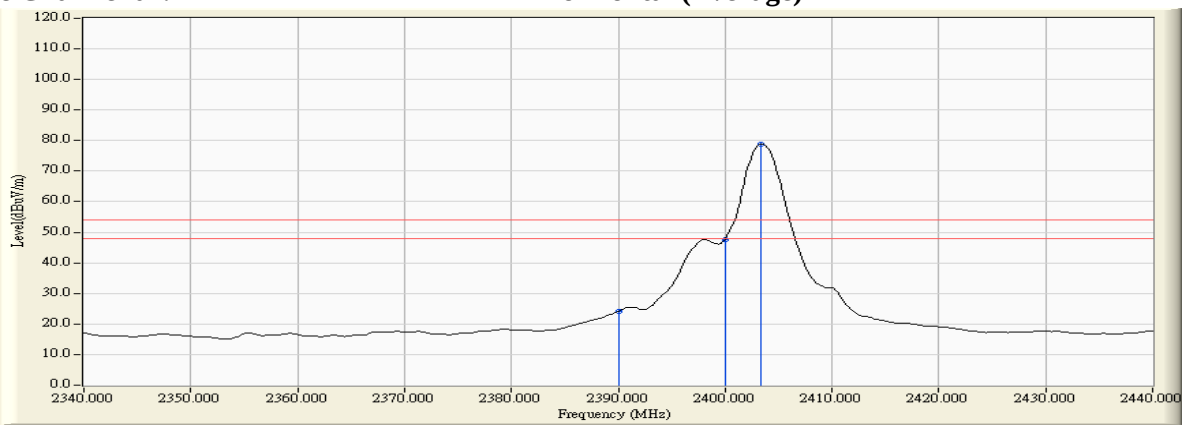


Figure Channel 01: Horizontal (Average)



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 = 10 Hz, 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 : Afterglow Fener PS4/PS3 Wireless Headset,
Afterglow Nur PS4/PS3 Wireless Headset
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (2403.35MHz)

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
01 (Peak)	2390.000	-1.725	42.598	40.873	74.00	54.00	Pass
01 (Peak)	2400.000	-1.733	63.395	61.663	--	--	--
01 (Peak)	2403.200	-1.726	88.440	86.714	--	--	--
01 (Average)	2390.000	-1.725	29.504	27.779	74.00	54.00	Pass
01 (Average)	2400.000	-1.733	53.802	52.070	--	--	--
01 (Average)	2403.400	-1.726	85.465	83.739	--	--	--

Figure Channel 01: Vertical (Peak)

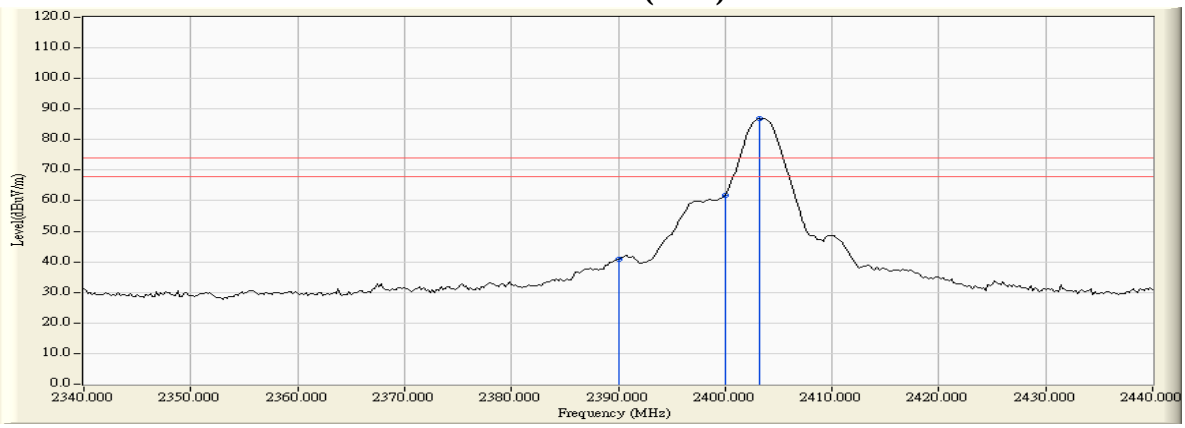
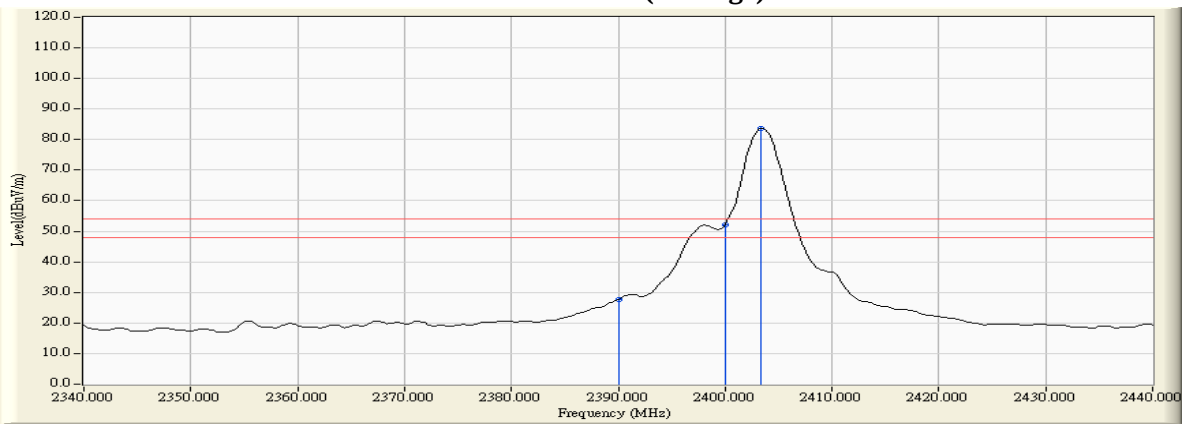


Figure Channel 01: Vertical (Average)



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 = 10 Hz, 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 : Afterglow Fener PS4/PS3 Wireless Headset,
Afterglow Nur PS4/PS3 Wireless Headset
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (2479.35MHz)

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)	2479.500	-0.584	84.551	83.967	--	--	--
39 (Peak)	2483.500	-0.558	48.982	48.424	74.00	54.00	Pass
39 (Average)	2479.300	-0.585	81.378	80.793	--	--	--
39 (Average)	2483.500	-0.558	41.956	41.398	74.00	54.00	Pass

Figure Channel 39: Horizontal (Peak)

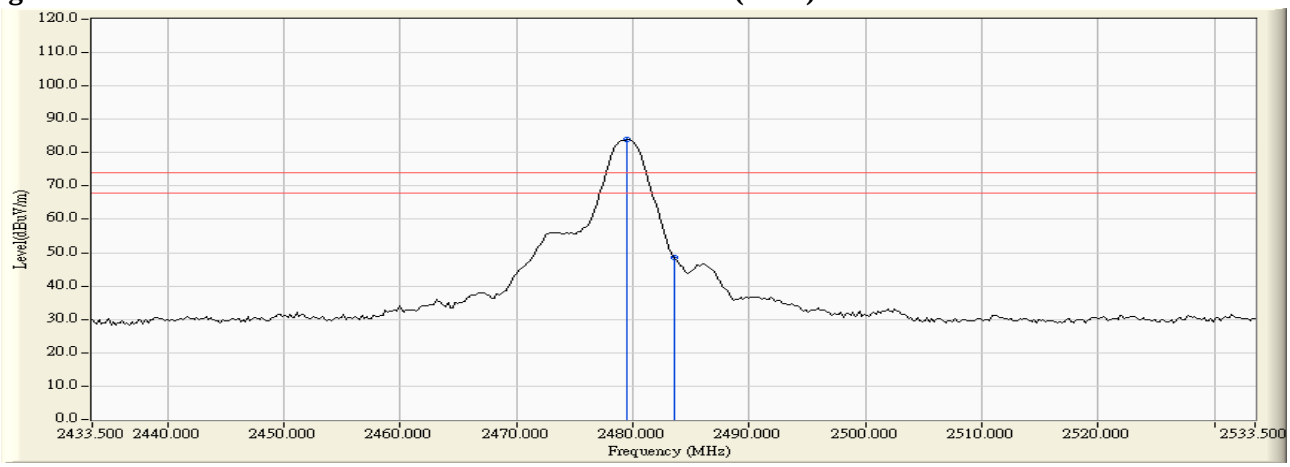
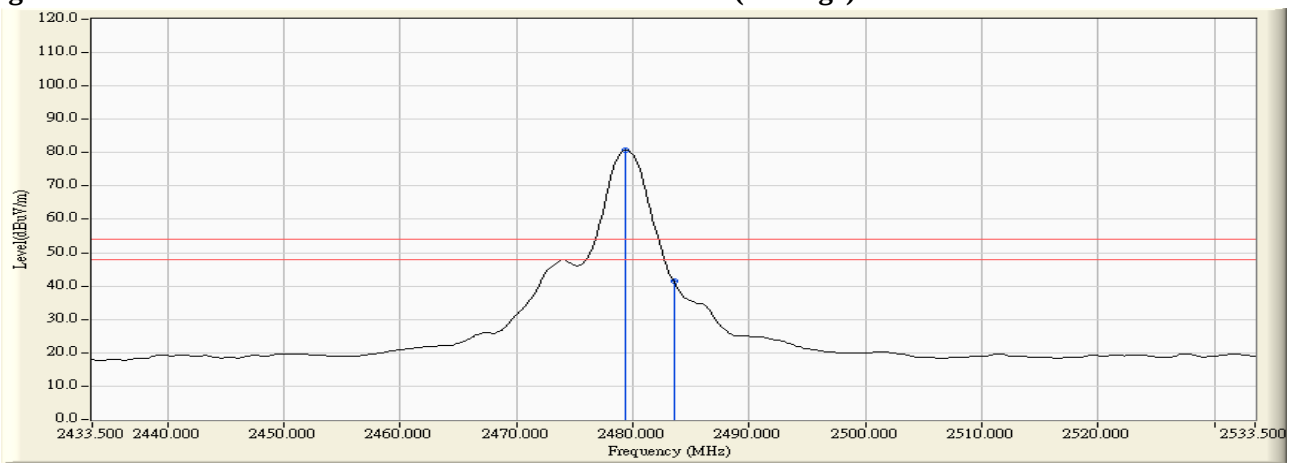


Figure Channel 39: Horizontal (Average)



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 = 10 Hz, 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 : Afterglow Fener PS4/PS3 Wireless Headset,
Afterglow Nur PS4/PS3 Wireless Headset
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (2479.35MHz)

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)	2479.500	-1.327	86.318	84.991	--	--	--
39 (Peak)	2483.500	-1.305	50.358	49.053	74.00	54.00	Pass
39 (Average)	2479.500	-1.327	83.139	81.812	--	--	--
39 (Average)	2483.500	-1.305	43.441	42.136	74.00	54.00	Pass

Figure Channel 39: Vertical (Peak)

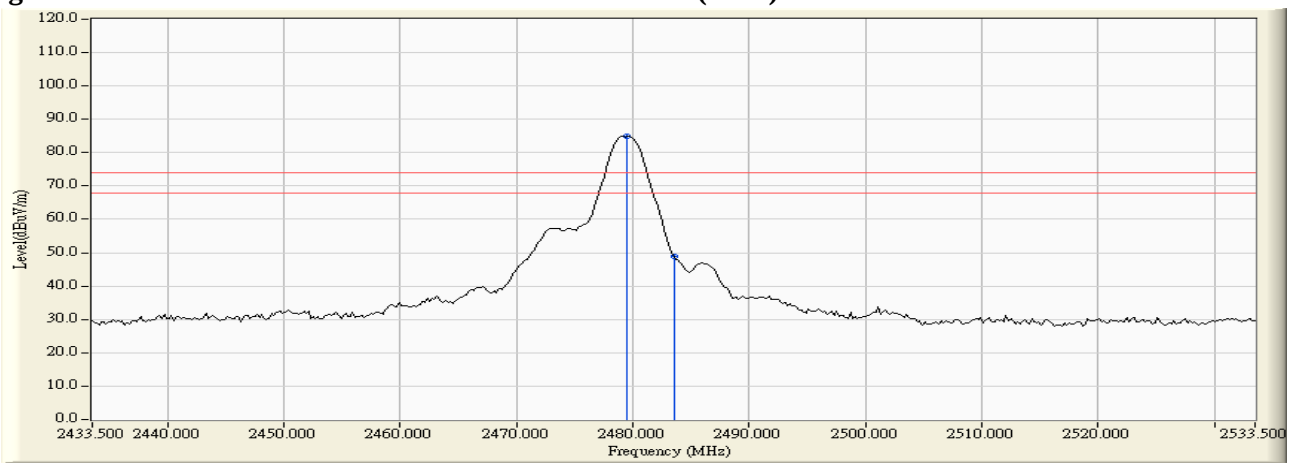
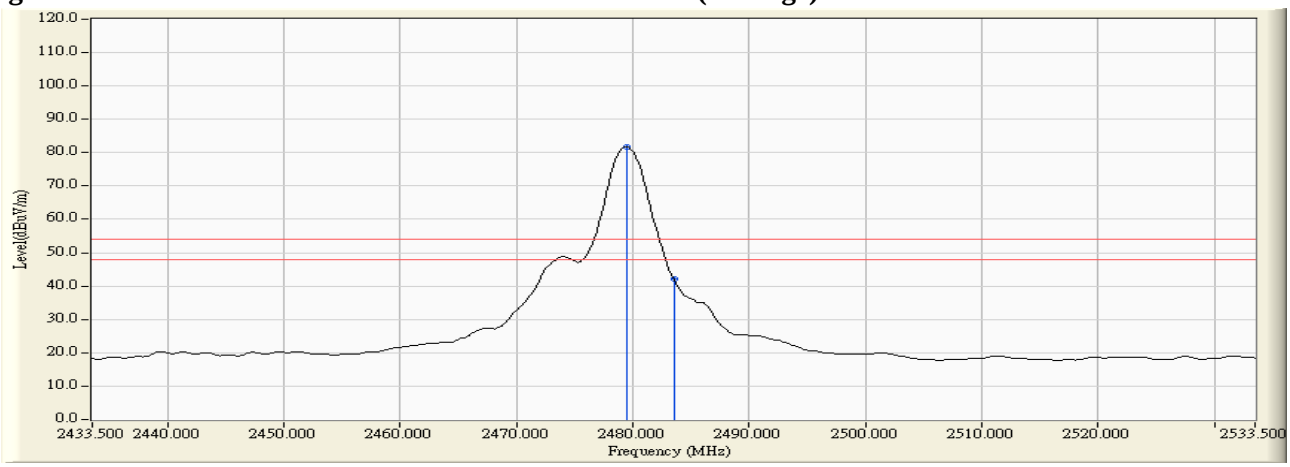


Figure Channel 39: Vertical (Average)



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 = 10 Hz, 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.

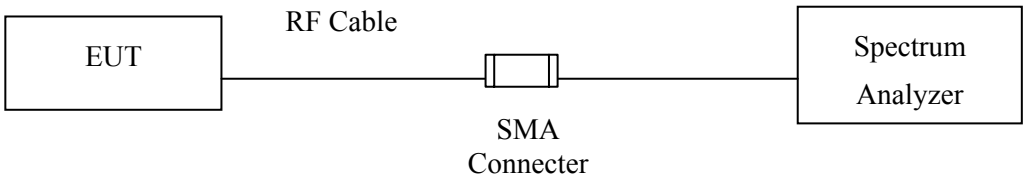
7. Occupied Bandwidth

7.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

Note: 1. All instruments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

7.2. Test Setup



7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2009; 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≥3*RBW

7.5. Uncertainty

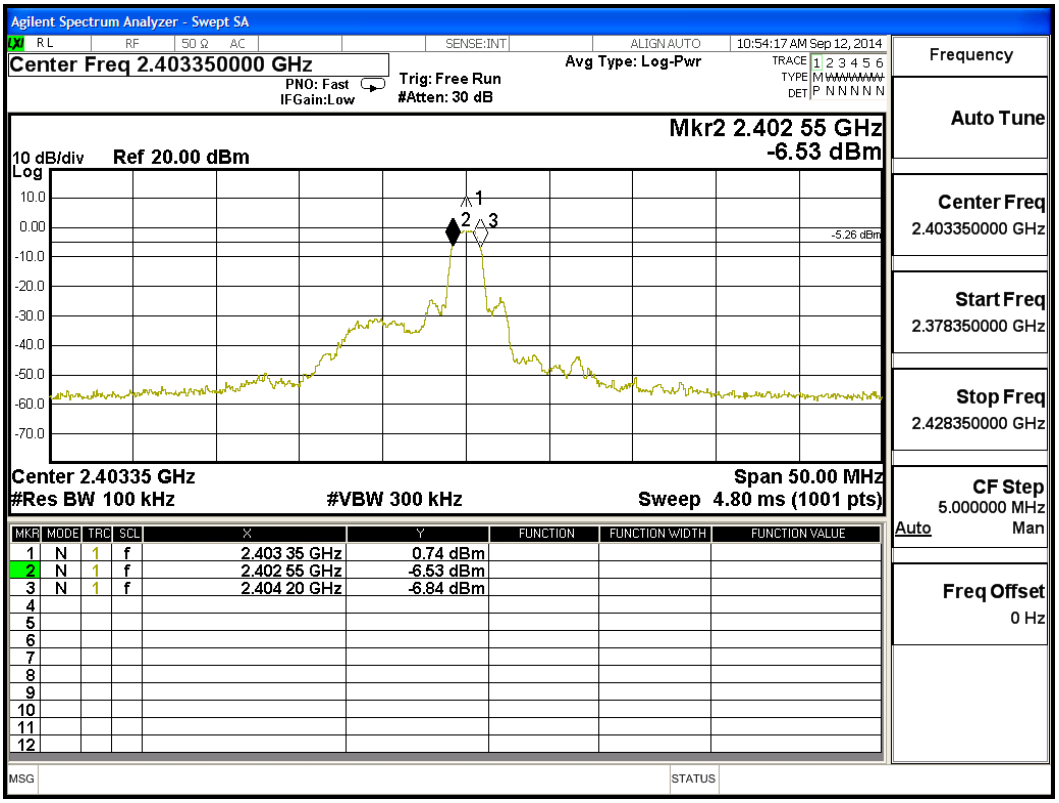
± 150Hz

7.6. Test Result of Occupied Bandwidth

Product : Afterglow Fener PS4/PS3 Wireless Headset,
Afterglow Nur PS4/PS3 Wireless Headset
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (2403.35MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2403.35	1650	>500	Pass

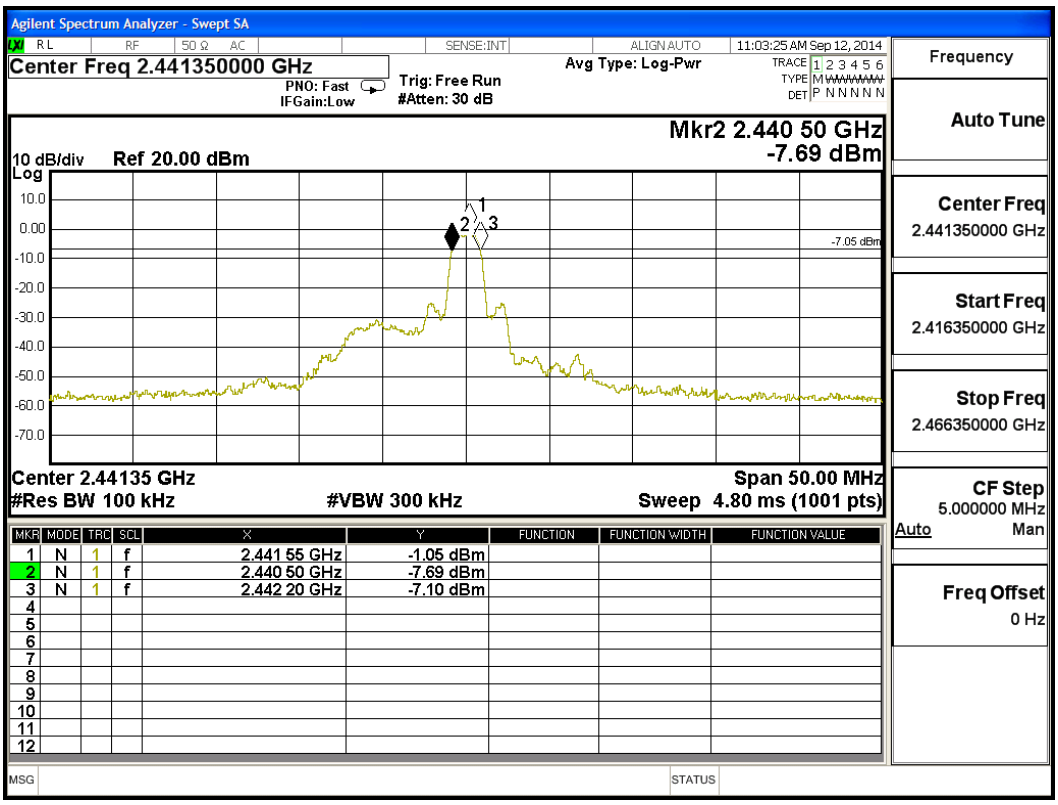
Figure Channel 01:



Product : Afterglow Fener PS4/PS3 Wireless Headset,
Afterglow Nur PS4/PS3 Wireless Headset
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (2441.35MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
20	2441.35	1700	>500	Pass

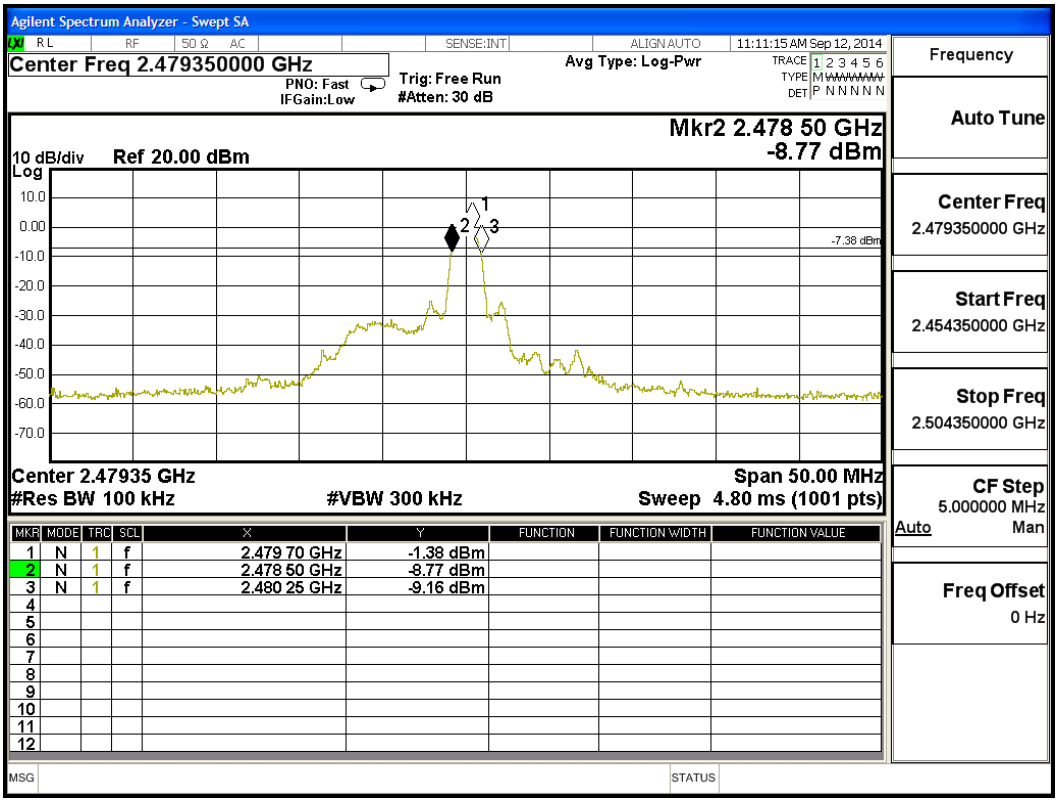
Figure Channel 20:



Product : Afterglow Fener PS4/PS3 Wireless Headset,
Afterglow Nur PS4/PS3 Wireless Headset
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (2479.35MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
39	2479.35	1750	>500	Pass

Figure Channel 39:



8. Power Density

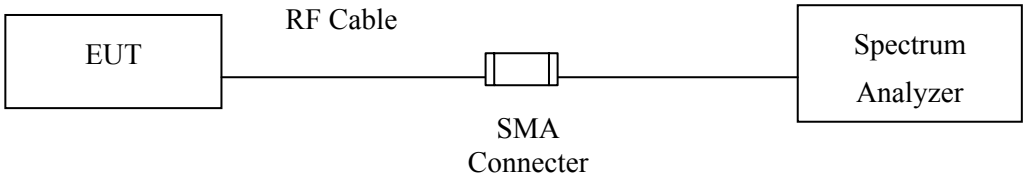
8.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

Note: 1. All equipments are calibrated every one year.

1. The test instruments marked by "X" are used to measure the final test results.

8.2. Test Setup



8.3. Limits

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

8.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2009; tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

The maximum power spectral density using KDB 558074 section 10.2 PKPSD (peak PSD) method.

8.5. Uncertainty

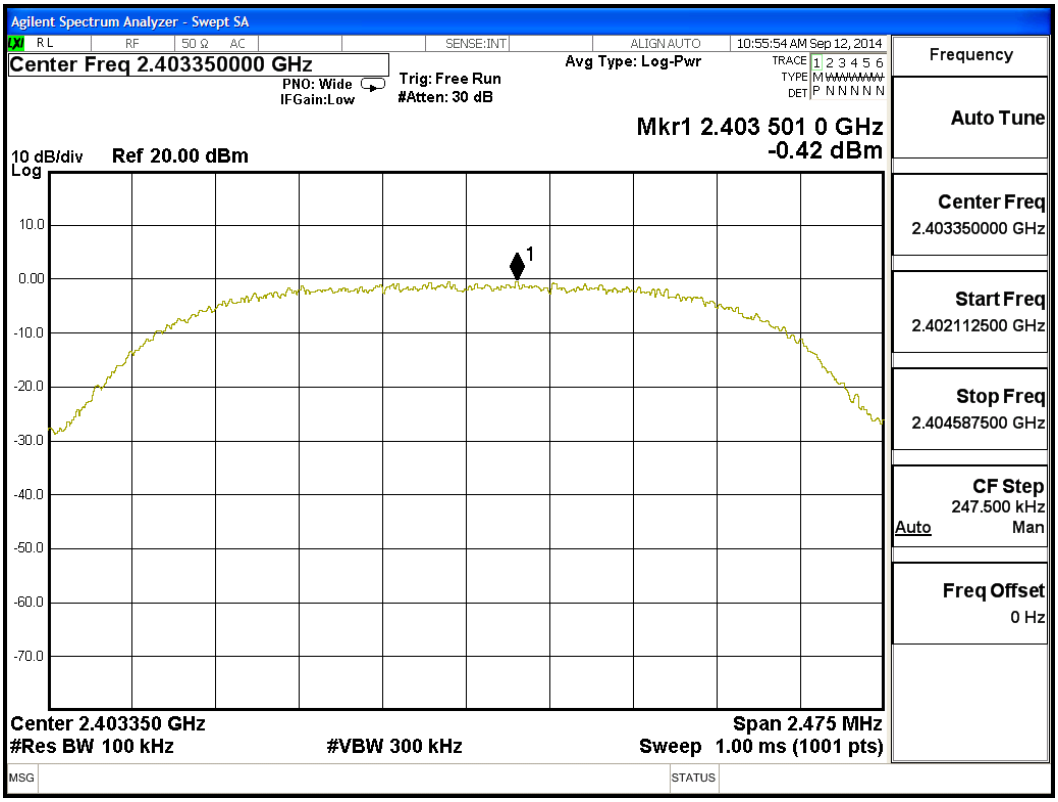
± 1.27 dB

8.6. Test Result of Power Density

Product : Afterglow Fener PS4/PS3 Wireless Headset,
Afterglow Nur PS4/PS3 Wireless Headset
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit(2403.35MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2403.35	-0.420	< 8dBm	Pass

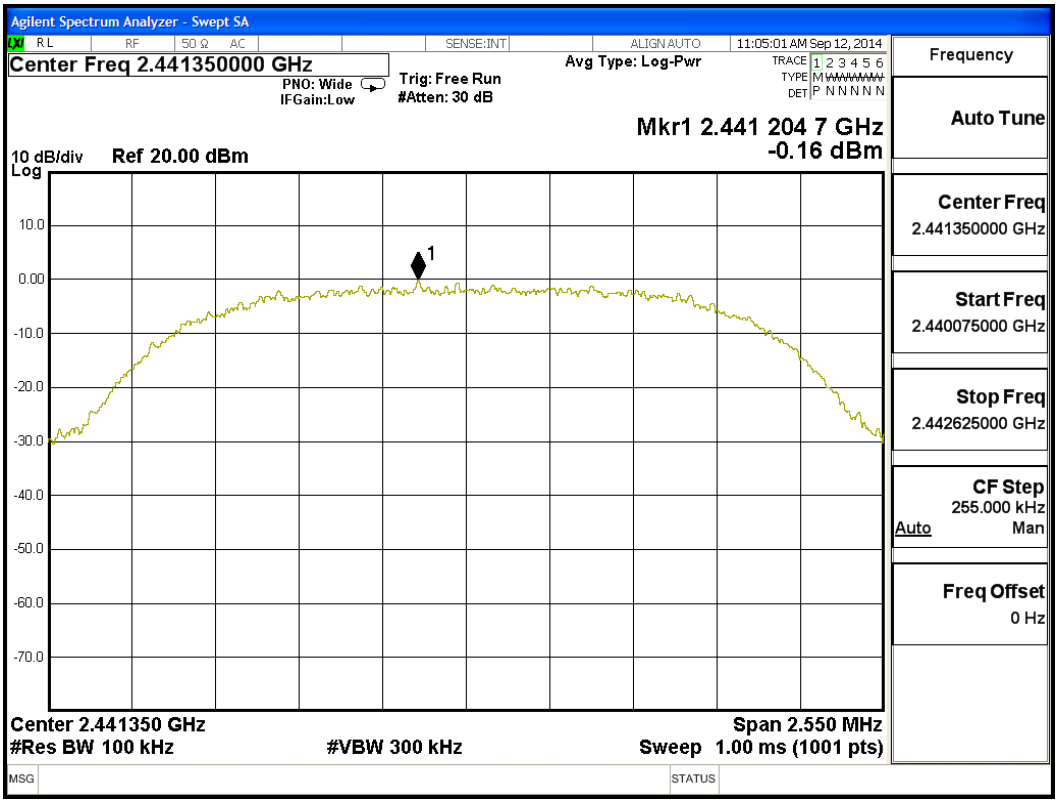
Figure Channel 01:



Product : Afterglow Fener PS4/PS3 Wireless Headset,
Afterglow Nur PS4/PS3 Wireless Headset
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 1: Transmit (2441.35MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
20	2441.35	-0.160	< 8dBm	Pass

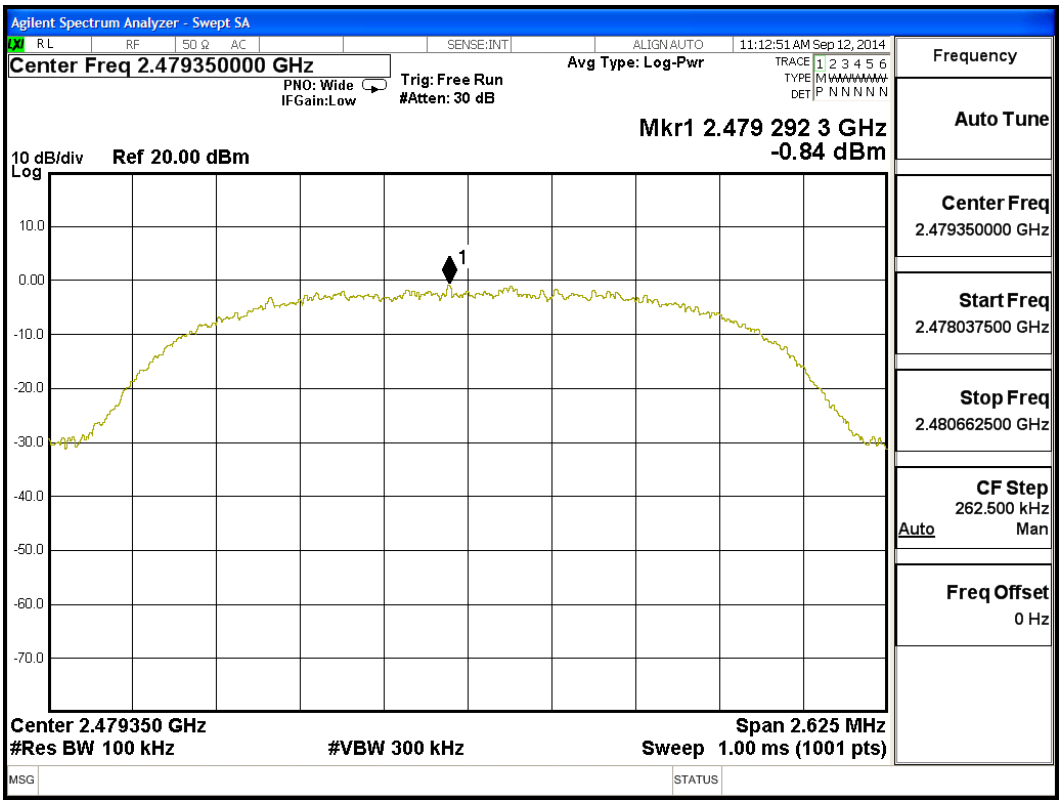
Figure Channel 20:



Product : Afterglow Fener PS4/PS3 Wireless Headset,
Afterglow Nur PS4/PS3 Wireless Headset
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (2479.35MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
39	2479.35	-0.840	< 8dBm	Pass

Figure Channel 39:



9. EMI Reduction Method During Compliance Testing

No modification was made during testing.