

Test Report

FCC Part15 Subpart E

Product Name : DWAM83 Wireless Audio Module
Model No. : 1492549
FCC ID : AK81492549
IC : 409B-1492549

Applicant : Sony Corporation

Address : 1-7-1 Konan, Minato-ku, Tokyo 108-0075 Japan

Date of Receipt : Jan. 26, 2016
Test Date : Jan. 26, 2016~ Mar. 03, 2016
Issued Date : Mar. 24, 2016
Report No. : 1612100R-RF-US-P09V01
Report Version : V1.2

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 any agency of the government.

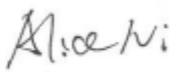
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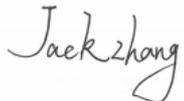
Test Report Certification

Issued Date : Mar. 24, 2016
Report No. : 1612100R-RF-US-P09V01



Product Name : DWAM83 Wireless Audio Module
Applicant : Sony Corporation
Address : 1-7-1 Konan, Minato-ku, Tokyo 108-0075 Japan
Manufacturer : Weifang GoerTek Electronics Co., Ltd
Address : Gaoxin 2 Road, Free Trade Zone, Weifang, Shandong,
261205, P.R. China
Model No. : 1492549
FCC ID : AK81492549
IC : 409B-1492549
EUT Voltage : DC 3.5V
Brand Name : Sony
Applicable Standard : FCC CFR Title 47 Part 15 Subpart E: 2015
ANSI C63.4:2014;
ANSI C63.10:2013;
789033 D02 General UNII Test Procedures New Rules v01
Test Result : Complied
Performed Location : Quietek Corporation - Suzhou EMC Laboratory
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TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098
FCC Registration Number: 800392

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Laboratory Information

We, **Quietek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted(audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scope:

Taiwan R.O.C.	:	BSMI, NCC, TAF
USA	:	FCC
Japan	:	VCCI
China	:	CNAS

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/english/about/certificates.aspx?bval=5>
The address and introduction of Quietek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/index_en.aspx

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
1612100R-RF-US-P09V01	V1.0	Initial Issued Report	Mar. 08, 2016
1612100R-RF-US-P09V01	V1.1	Added the worst case data of power/ bandedge/ RSE of 5G Band I	Mar. 24, 2016
1612100R-RF-US-P09V01	V1.2	Added the test plots of Occupied Bandwidth 5240MHz.	Mar. 24, 2016

1. General Information

1.1. EUT Description

Product Name	DWAM83 Wireless Audio Module		
Brand Name	Sony		
Model No.	1492549		
EUT Voltage	DC 3.5V		
Type of Modulation	QPSK		
Channel Control	Auto		
Support Bands	<input checked="" type="checkbox"/>	5150MHz~5250MHz	<input type="checkbox"/> Outdoor AP
			<input type="checkbox"/> Indoor AP
			<input type="checkbox"/> Fixed point-to-point AP
			<input checked="" type="checkbox"/> Mobile and Portable Client
	<input type="checkbox"/>	5250MHz~5350MHz	
	<input type="checkbox"/>	5470MHz~5725MHz	<input type="checkbox"/> With TDWR Channels
			<input type="checkbox"/> Without TDWR Channels
<input checked="" type="checkbox"/>	5725MHz~5850MHz		

1.2. Antenna information

Model No.	N/A		
Antenna manufacturer	TP-LINK		
Antenna Delivery	<input type="checkbox"/> 1*TX+1*RX	<input checked="" type="checkbox"/> 2*TX+2*RX	<input type="checkbox"/> 3*TX+3*RX
Antenna technology	<input checked="" type="checkbox"/> SISO		
	<input type="checkbox"/> MIMO	<input type="checkbox"/> Basic	
		<input type="checkbox"/> CDD	
		<input type="checkbox"/> Beam-forming	
Antenna Type	<input type="checkbox"/> External	<input type="checkbox"/> Dipole	
	<input checked="" type="checkbox"/> Internal	<input type="checkbox"/> PIFA	
		<input checked="" type="checkbox"/> PCB	
		<input type="checkbox"/> Ceramic Chip Antenna	
		<input type="checkbox"/> Metal plate type F antenna	
Antenna A Gain	1.57dBi for 2.4GHz, 2.82dBi for 5.2GHz, 3dBi for 5.8GHz		
Antenna B Gain	0.82dBi for 2.4GHz, 0.67dBi for 5.2GHz, 2.8dBi for 5.8GHz		

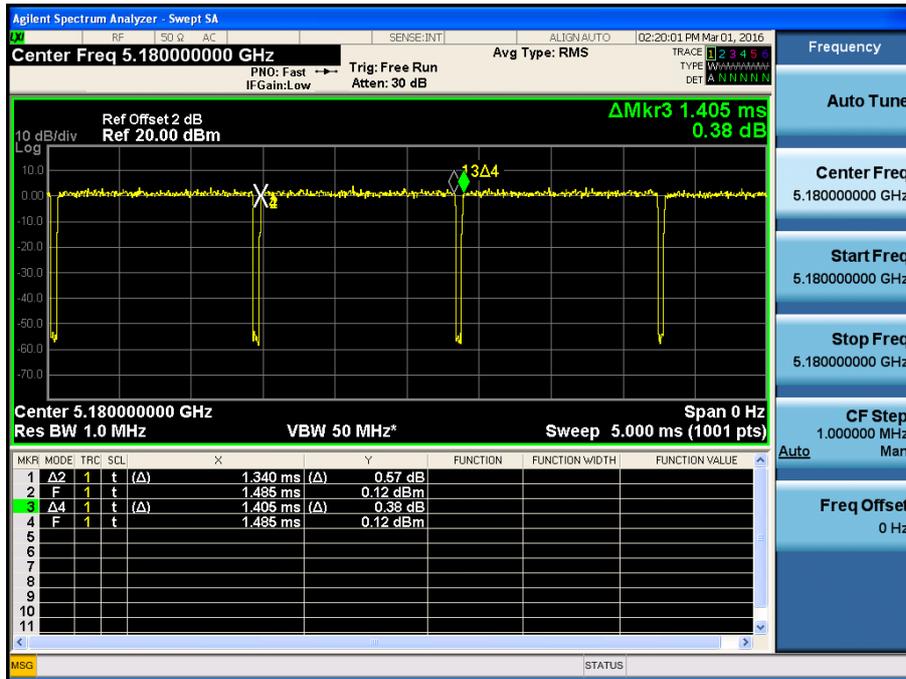
1.3. Working Frequency of Each Channel:

5.2GHz Band Center Frequency							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Low	5180 MHz	Mid	5210 MHz	High	5240 MHz	N/A	N/A
5.8GHz Band Center Frequency							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Low	5736 MHz	Mid	5762 MHz	High	5814 MHz	N/A	N/A

1.4. Duty Cycle

Test Mode	Tx On (ms)	Tx Off (ms)	VBW 1/T(KHz)	Tx On + Tx Off (ms)	Duty Cycle
1	1.340	0.065	0.75	1.405	95.37%

802.11a



1.5. Mode of Operation

QuieTek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: Transmit

Note 1: Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.

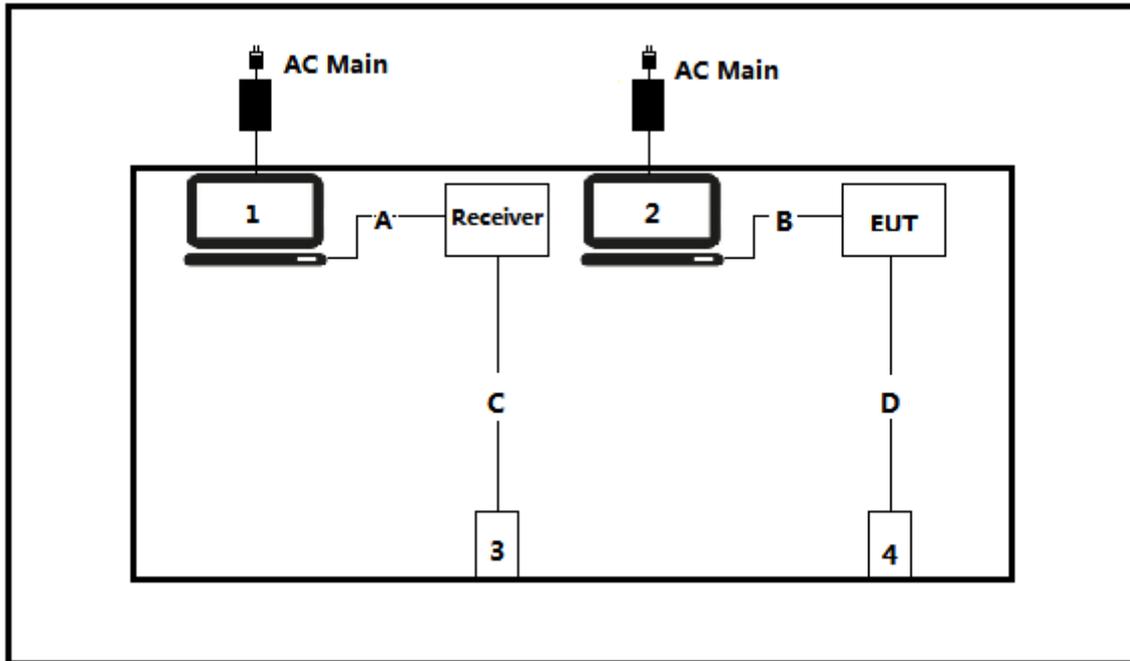
1.6. Tested System Details

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

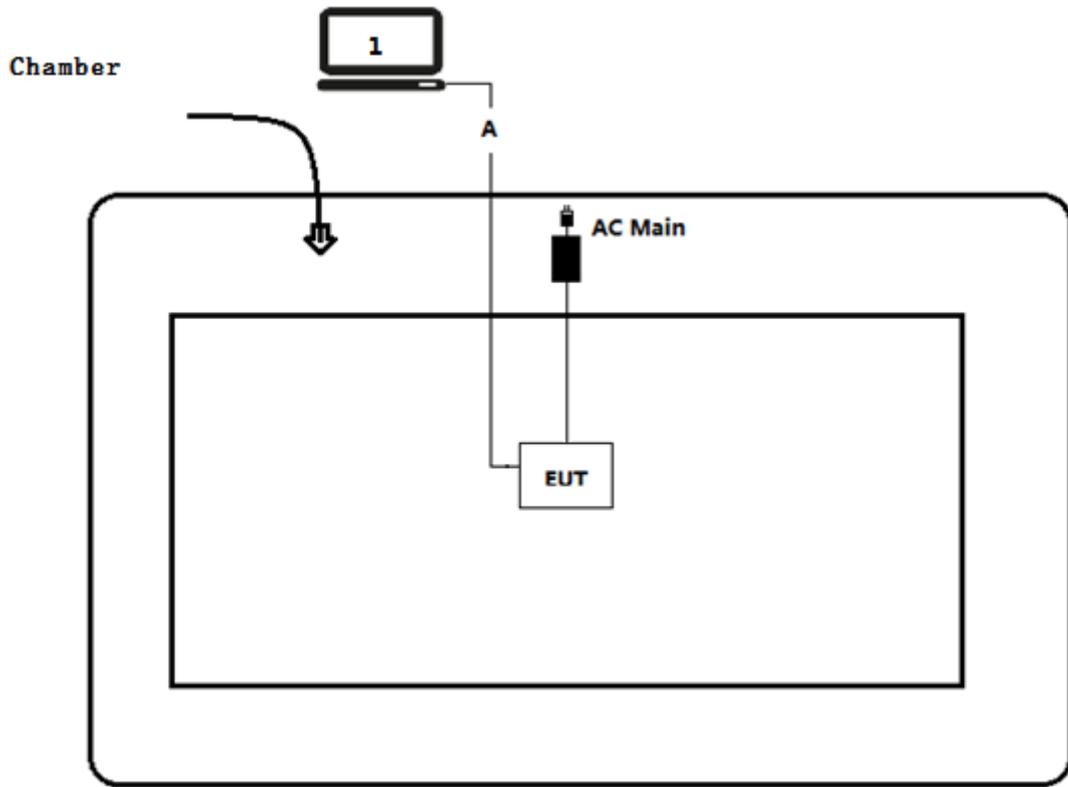
Product	Manufacturer	Model No.	Serial No.	Power Cord
1 Notebook	ASUS	N80V	8BN0AS226971468	Non-Shielded, 1.8m
2 Notebook	Dell	PP19L	JH097A01	N/A
3 USB Mouse	DELL	MOC5UO	10D00JJL	N/A
4 USB Mouse	DELL	MOC5UO	10D00JJL	N/A

1.7. Configuration of Tested System

Test setup Diagram- AC Line Conducted Emission Test



Test setup Diagram- Radiated Emission



Signal Cable Type		Signal cable Description
A	USB Cable	Shielded, 0.3m
B	USB Cable	Shielded, 0.3m
C	USB Cable	Shielded, 0.8m
D	USB Cable	Shielded, 0.8m

1.8. EUT Exercise Software

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of equipment.
3	Input RF commands, and set the test mode and channel, then press OK to start to continue transmit or receive.

2. Technical Test

2.1. Summary of Test Result

- No deviations from the test standards
 Deviations from the test standards as below description:

Performed Test Item	Normative References	Limit	Result
Conducted Emission	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.207	FCC 15.207	PASS
Radiated Emission	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.209	FCC 15.209	PASS
Emission bandwidth and occupied bandwidth	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.407(a)	≥500KHz	PASS
Power Output	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.407(a)	FCC 15.407(a)	PASS
Peak Power Spectral Density	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.407(a)	FCC 15.407(a)	PASS
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.205, 15.407(b)	FCC 15.407(b)	PASS
Frequency Stability	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.407(g)	Within the band	PASS

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	RSS-Gen Issue 4 November 2014 Section 8.8	Yes	No
Radiated Emission	RSS-Gen Issue 4 November 2014 Section 8.9	Yes	No
99% Occupied Bandwidth 6dB Occupied Bandwidth	RSS-Gen Issue 4 November 2014 Section 6.6 RSS-247 Issue 1 May 2015 Section 6.2.4	Yes	No
Power Output	RSS-247 Issue 1 May 2015 Section 6.2	Yes	No
Peak Power Spectral Density	RSS-247 Issue 1 May 2015 Section 6.2	Yes	No
Radiated Emission Band Edge	RSS-Gen Issue 4 November 2014 Section 8.10	Yes	No
Frequency Stability	RSS-Gen Issue 4 November 2014 Section 6.11	Yes	No

2.2. Test Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

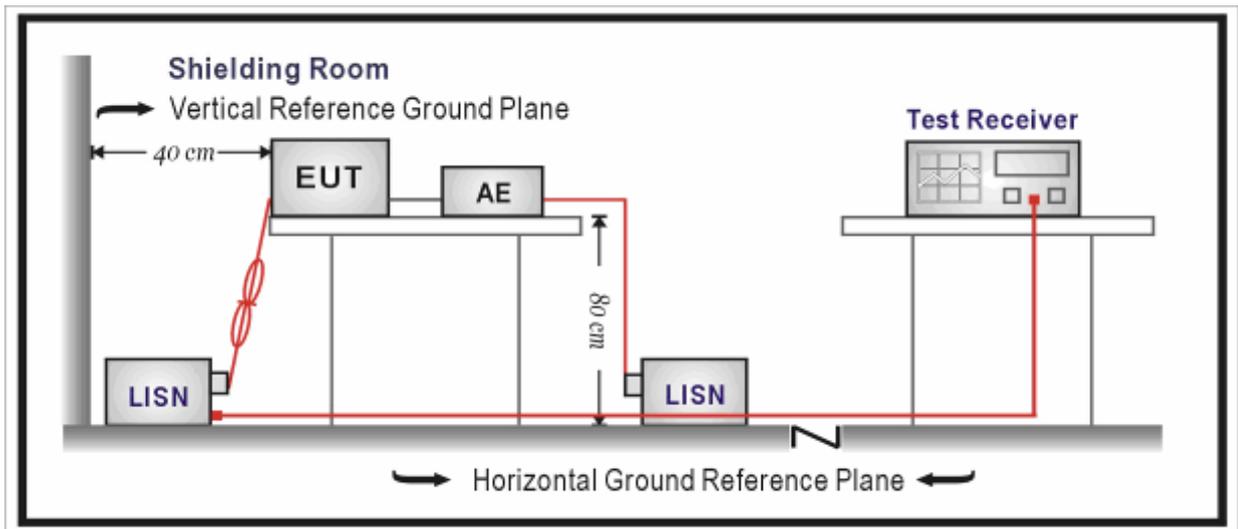
3. Conducted Emission

3.1. Test Equipment

Conducted Emission / TR-1					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100726	2015.03.29	2016.03.28
Two-Line V-Network	R&S	ENV216	100043	2015.03.29	2016.03.28
Two-Line V-Network	R&S	ENV216	100044	2015.09.17	2016.09.16
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2015.03.02	2017.03.01
50ohm Termination	SHX	TF2	07081401	2015.09.17	2016.09.16
Temperature/Humidity Meter	zhichen	ZC1-2	TR1-TH	2015.01.09	2017.01.04

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

3.2. Test Setup



3.3. Limit

Frequency (MHz)	QP (dB μ V)	AV (dB μ V)
0.15 - 0.50	66 – 56	56 – 46
0.50 - 5.0	56	46
5.0 - 30	60	50

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

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

3.4. Test Procedure

Test Method			
	References Rule	Chapter	Item
<input checked="" type="checkbox"/>	ANSI C63.10-2013	6.2	Standard test method for ac power-line conducted emissions from unlicensed wireless devices
<input checked="" type="checkbox"/>	ANSI C63.4-2014	7	AC power-line conducted emission measurements

3.5. Uncertainty

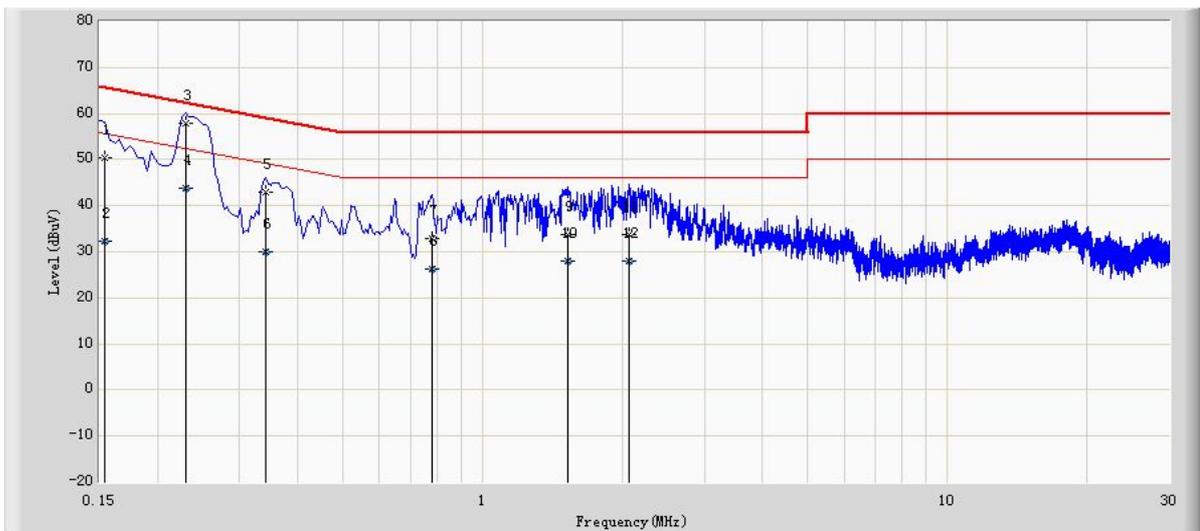
The measurement uncertainty is defined as ± 2.02 dB

3.6. Test Result

Product Name	: DWAM83 Wireless Audio Module	Polarity	: Line
Test Item	: AC Power Line Conducted Emission	Power	: AC 120V/60Hz
Test Site	: TR1	Test Mode	: Mode 1

No	Frequency (MHz)	Measure Level (dB μ V)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V)	Probe (dB)	Type
1	0.158	50.020	40.175	-15.548	65.568	9.846	QP
2	0.158	30.804	20.958	-24.765	55.568	9.846	AV
3	0.230	58.000	48.136	-4.449	62.450	9.864	QP
4	0.230	43.799	33.935	-8.650	52.450	9.864	AV
5	0.366	41.565	31.683	-17.026	58.591	9.883	QP
6	0.366	28.529	18.646	-20.063	48.591	9.883	AV
7	0.646	37.132	27.274	-18.868	56.000	9.859	QP
8	0.646	34.795	24.937	-11.205	46.000	9.859	AV
9	1.258	29.385	19.586	-26.615	56.000	9.799	QP
10	1.258	20.505	10.706	-25.495	46.000	9.799	AV
11	1.922	34.638	24.844	-21.362	56.000	9.793	QP
12	1.922	29.088	19.295	-16.912	46.000	9.793	AV

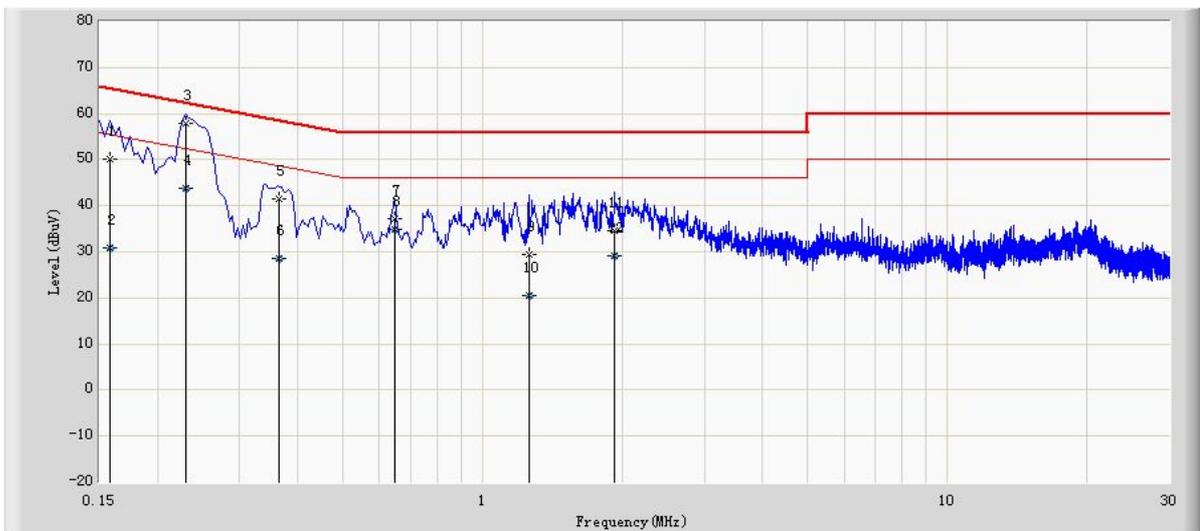
Polarity: Line



Product Name	: DWAM83 Wireless Audio Module	Polarity	: Neutral
Test Item	: AC Power Line Conducted Emission	Power	: AC 120V/60Hz
Test Site	: TR1	Test Mode	: Mode 1

No	Frequency (MHz)	Measure Level (dB μ V)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V)	Probe (dB)	Type
1	0.154	50.282	40.435	-15.500	65.781	9.846	QP
2	0.154	32.306	22.460	-23.475	55.781	9.846	AV
3	0.230	57.775	47.910	-4.675	62.450	9.864	QP
4	0.230	43.867	34.003	-8.582	52.450	9.864	AV
5	0.342	42.962	33.082	-16.193	59.155	9.879	QP
6	0.342	30.077	20.198	-19.078	49.155	9.879	AV
7	0.778	32.778	22.949	-23.222	56.000	9.829	QP
8	0.778	26.276	16.446	-19.724	46.000	9.829	AV
9	1.526	33.726	23.928	-22.274	56.000	9.799	QP
10	1.526	27.912	18.113	-18.088	46.000	9.799	AV
11	2.070	33.791	24.001	-22.209	56.000	9.790	QP
12	2.070	28.081	18.291	-17.919	46.000	9.790	AV

Polarity: Neutral



4. Radiated Emission

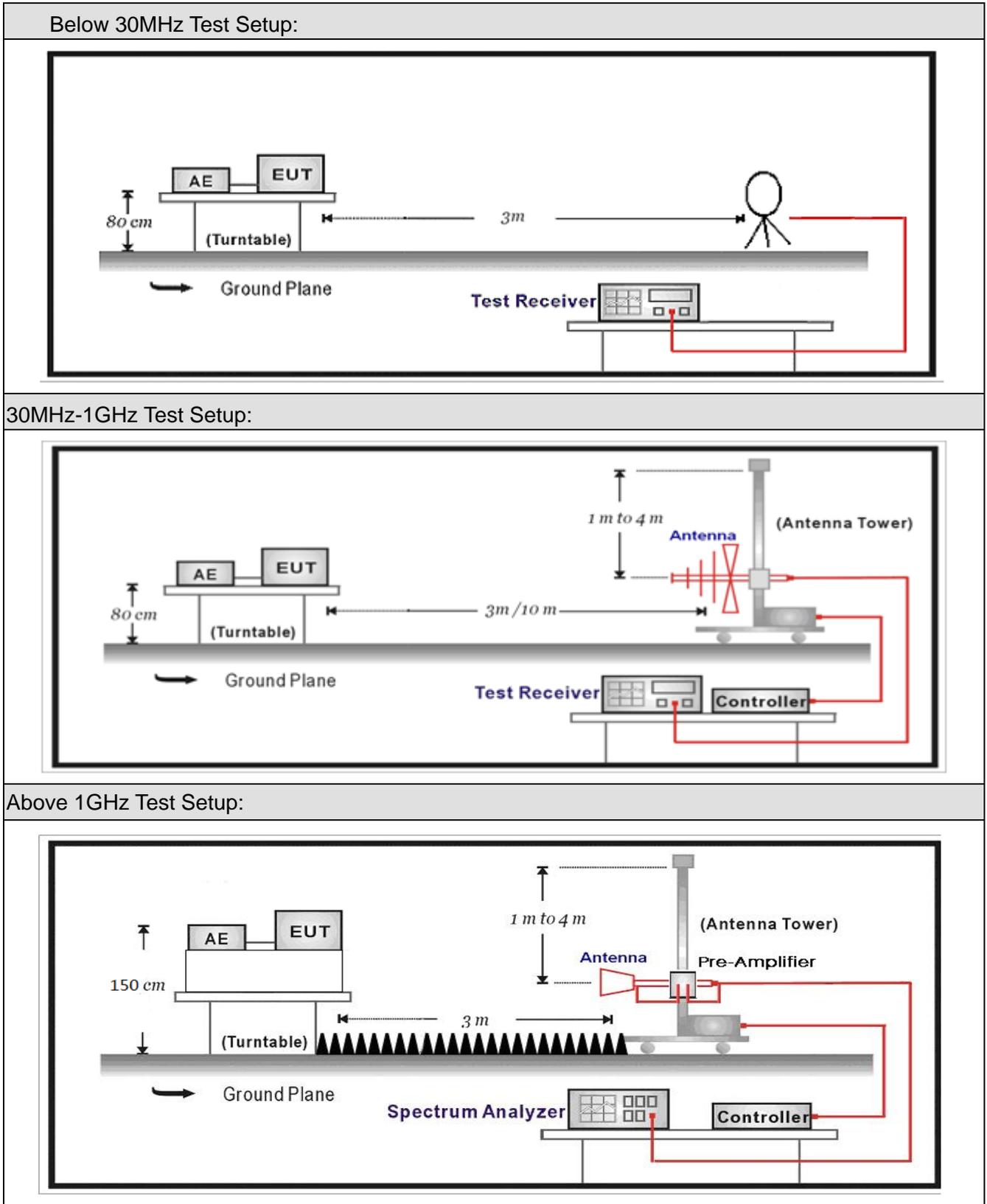
4.1. Test Equipment

Radiated Emission / AC-2					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100573	2015.03.29	2016.03.28
Loop Antenna	R&S	HFH2-Z2	833799/003	2015.11.18	2016.11.17
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2015.10.16	2016.10.15
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2016.03.02	2017.03.01
Temperature/Humidity Meter	Zhichen	ZC1-2	AC2-TH	2015.01.09	2017.01.04

Radiated Emission / AC-5					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2015.01.08	2017.01.04
Preamplifier	Miteq	NSP1800-25	1364185	2015.05.06	2016.05.05
Preamplifier	Quietek	AP-040G	CHM-0906001	2015.05.06	2016.05.05
DRG Horn	ETS-Lindgren	3117	00123988	2015.01.22	2017.01.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2015.11.25	2016.11.24
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2015.03.02	2017.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2015.03.02	2017.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2015.03.02	2017.03.01
EMI Receiver	Agilent	N9038A	MY51210196	2015.06.10	2016.06.09
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2015.01.09	2017.01.04

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

4.2. Test Setup



4.3. Limit

FCC Part 15 Subpart C Paragraph 15.209 (Restricted Band Emissions Limit)		
Frequency (MHz)	Distance (m)	Level (dB μ V/m)
0.009-0.490	300	2400/F(kHz)
0.490-1.705	30	24000/F(kHz)
1.705-30.0	30	30
30-88	3	100**
88-216	3	150**
216-960	3	200**
Above 960	3	500

Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

FCC Part 15 Subpart C Paragraph 15.205 (Restricted Band)			
Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15
0.495 – 0.505	16.69475 – 16.69525	608 – 614	5.35 – 5.46
2.1735 – 2.1905	16.80425 – 16.80475	960 – 1240	7.25 – 7.75
4.125 – 4.128	25.5 – 25.67	1300 – 1427	8.025 – 8.5
4.17725 – 4.17775	37.5 – 38.25	1435 – 1626.5	9.0 – 9.2
4.20725 – 4.20775	73 – 74.6	1645.5 – 1646.5	9.3 – 9.5
6.215 – 6.218	74.8 – 75.2	1660 – 1710	10.6 – 12.7
6.26775 – 6.26825	108 – 121.94	1718.8 – 1722.2	13.25 – 13.4
6.31175 – 6.31225	123 – 138	2200 – 2300	14.47 – 14.5
8.291 – 8.294	149.9 – 150.05	2310 – 2390	15.35 – 16.2
8.362 – 8.366	156.52475 – 156.52525	2483.5 – 2500	17.7 – 21.4
8.37625 – 8.38675	156.7 – 156.9	2690 – 2900	22.01 – 23.12
8.81425 – 8.81475	162.0125 – 167.17	3260 – 3267	23.6 – 24.0
12.29 – 12.293	167.72 – 173.2	3332 – 3339	31.2 – 31.8
12.51975 – 12.52025	240 – 285	3345.8 – 3358	36.43 – 36.5
12.57675 – 12.57725	322 – 335.4	3600 – 4400	
13.36 – 13.41			

FCC Part 15 Subpart C Paragraph 15.407(5)(b) (Unrestricted Band Emissions Limit)		
Operating Frequency Band (MHz)	EIRP Limit (dBm/MHz)	Equivalent Field Strength at 3m (dB μ V/m)
5150 - 5250	-27	68.3
5250 - 5350	-27	68.3
5470 - 5725	-27	68.3
5725 - 5825	-27 [Note(1)]	68.3
	-17 [Note(2)]	78.3
<p>Note1: Outside the frequency range 5715 - 5835MHz.</p> <p>Note2: Within the frequency range from the band edge to 10MHz below or above the band edge, 5715 – 5725MHz and 5825 - 5835MHz.</p>		

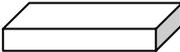
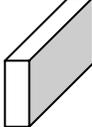
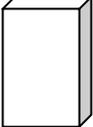
4.4. Test Procedure

Test Method			
	References Rule	Chapter	Description
<input type="checkbox"/>	ANSI C63.10	12.7.3	Emissions in non-restricted frequency bands
<input checked="" type="checkbox"/>	ANSI C63.10	12.7.2	Emissions in restricted frequency bands
	<input checked="" type="checkbox"/>	ANSI C63.10	Radiated emission measurements
	<input checked="" type="checkbox"/>	ANSI C63.10	Procedure for peak unwanted emissions measurements above 1000 MHz
	<input checked="" type="checkbox"/>	ANSI C63.10	Procedures for average unwanted emissions measurements above 1000 MHz
	<input type="checkbox"/>	ANSI C63.10	12.7.7.2 Method AD (average detection)—primary method
	<input checked="" type="checkbox"/>	ANSI C63.10	12.7.7.3 Method VB-A (Alternative)
	<input checked="" type="checkbox"/>	ANSI C63.10	6.4 Radiated emissions from unlicensed wireless devices below 30 MHz
	<input checked="" type="checkbox"/>	ANSI C63.10	6.5 Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
	<input checked="" type="checkbox"/>	ANSI C63.10	6.6 Radiated emissions from unlicensed wireless devices above 1 GHz
<input type="checkbox"/>	FCC KDB 789033 D02v01	G.2	Unwanted Emissions that fall Outside of the Restricted Bands
<input type="checkbox"/>	FCC KDB 789033 D02v01	G.1	Unwanted Emissions in the Restricted Bands
	<input type="checkbox"/>	FCC KDB 789033 D02v01	G.4 Procedure for Unwanted Emissions Measurements below 1000 MHz
	<input type="checkbox"/>	FCC KDB 789033 D02v01	G.5 Procedure for Unwanted Maximum Emissions Measurements above 1000 MHz
	<input type="checkbox"/>	FCC KDB 789033 D02v01	G.6 Procedures for Average Unwanted Emissions Measurements above 1000 MHz
	<input type="checkbox"/>	FCC KDB 789033 D02v01	G.6.c Method AD (Average detection)—primary method
	<input type="checkbox"/>	FCC KDB 789033 D02v01	G.6.d Method VB (Averaging using reduced video bandwidth): Alternative method.

4.5. Uncertainty

The measurement uncertainty above 1GHz is defined as ± 3.9 dB
 below 1GHz is defined as ± 3.8 dB

4.6. EUT test Axis definition

Item	Radiated Emissions		
Device Category	<input checked="" type="checkbox"/>	Fixed position use	
	<input type="checkbox"/>	Mobile position use	
Test mode	Mode 1, Mode 2, Mode 3		
Axis	X Axis	Y Axis	Z Axis
			
Worst Axis	Worst Axis <input checked="" type="checkbox"/>	Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>

4.7. Test Result

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBµV/m)	Factor (dB)	Measure Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
Ant A	5180	H	10360.0	36.4	4.0	40.4	54(Note3)	-13.6	PK
		V	10360.0	37.0	4.0	41.0	54(Note3)	-13.0	PK
		H	15540.0	35.0	6.9	42.0	54(Note3)	-12.0	PK
		V	15540.0	34.7	6.7	41.4	54(Note3)	-12.6	PK
	5210	H	10420.0	34.7	4.0	38.6	54(Note3)	-15.4	PK
		V	10420.0	33.8	4.0	37.8	54(Note3)	-16.2	PK
		H	15630.0	33.9	7.0	40.9	54(Note3)	-13.1	PK
		V	15630.0	33.7	6.8	40.5	54(Note3)	-13.5	PK
	5240	H	10480.0	34.2	4.0	38.3	54(Note3)	-15.7	PK
		V	10480.0	34.2	4.0	38.3	54(Note3)	-15.7	PK
		H	15720.0	34.6	7.1	41.7	54(Note3)	-12.3	PK
		V	15720.0	33.4	7.1	40.5	54(Note3)	-13.5	PK
	5736	H	11472.0	34.7	5.9	40.6	54(note3)	-13.4	PK
		V	11472.0	34.3	5.8	40.1	54(note3)	-13.9	PK
		H	17208.0	33.5	10.4	43.9	54(note3)	-10.1	PK
		V	17208.0	34.3	10.5	44.8	54(note3)	-9.2	PK
	5762	H	11524.0	35.1	6.2	41.3	54(note3)	-12.7	PK
		V	11524.0	34.3	6.1	40.4	54(note3)	-13.6	PK
		H	17286.0	34.8	10.5	45.3	54(note3)	-8.7	PK
		V	17286.0	35.0	10.6	45.6	54(note3)	-8.4	PK
5814	H	11628.0	34.6	6.5	41.1	54(note3)	-12.9	PK	
	V	11628.0	34.6	6.4	41.0	54(note3)	-13.0	PK	
	H	17442.0	32.3	10.5	42.8	54(note3)	-11.2	PK	
	V	17442.0	32.5	10.6	43.1	54(note3)	-10.9	PK	

1. Measure Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, 18GHz~40GHz, both of the worst case are at least 6dB below the limits, therefore no data appear in the report.
3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
- 4.VBW set up, please refer to clause 1.5

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBµV/m)	Factor (dB)	Measure Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
Ant B	5180	H	10360.0	36.7	4.0	40.7	54(Note3)	-13.3	PK
		V	10360.0	36.9	4.0	40.9	54(Note3)	-13.1	PK
		H	15540.0	34.6	6.9	41.6	54(Note3)	-12.4	PK
		V	15540.0	34.6	6.7	41.3	54(Note3)	-12.7	PK
	5210	H	10420.0	34.3	4.0	38.3	54(Note3)	-15.7	PK
		V	10420.0	34.9	4.0	38.8	54(Note3)	-15.2	PK
		H	15630.0	33.1	7.0	40.1	54(Note3)	-13.9	PK
		V	15630.0	34.1	6.8	40.9	54(Note3)	-13.1	PK
	5240	H	10480.0	34.0	4.0	38.0	54(Note3)	-16.0	PK
		V	10480.0	34.1	4.0	38.2	54(Note3)	-15.8	PK
		H	15720.0	34.0	7.1	41.1	54(Note3)	-12.9	PK
		V	15720.0	34.2	7.1	41.3	54(Note3)	-12.7	PK
	5736	H	10360.0	36.7	4.0	40.7	54(Note3)	-13.3	PK
		V	10360.0	36.9	4.0	40.9	54(Note3)	-13.1	PK
		H	15540.0	34.6	6.9	41.6	54(Note3)	-12.4	PK
		V	15540.0	34.6	6.7	41.3	54(Note3)	-12.7	PK
	5762	H	10420.0	34.3	4.0	38.3	54(Note3)	-15.7	PK
		V	10420.0	34.9	4.0	38.8	54(Note3)	-15.2	PK
		H	15630.0	33.1	7.0	40.1	54(Note3)	-13.9	PK
		V	15630.0	34.1	6.8	40.9	54(Note3)	-13.1	PK
5814	H	10480.0	34.0	4.0	38.0	54(Note3)	-16.0	PK	
	V	10480.0	34.1	4.0	38.2	54(Note3)	-15.8	PK	
	H	15720.0	34.0	7.1	41.1	54(Note3)	-12.9	PK	
	V	15720.0	34.2	7.1	41.3	54(Note3)	-12.7	PK	

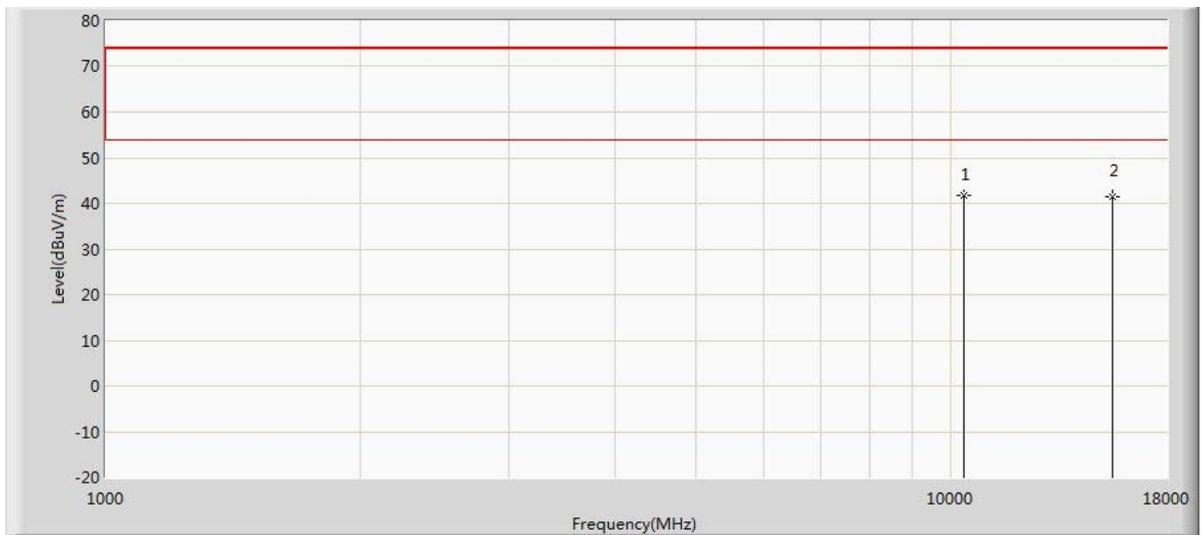
1. Measure Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, 18GHz~40GHz, both of the worst case are at least 6dB below the limits, therefore no data appear in the report.
3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
4. VBW set up, please refer to clause 1.5

The worst case of Radiated Emission above 1GHz:

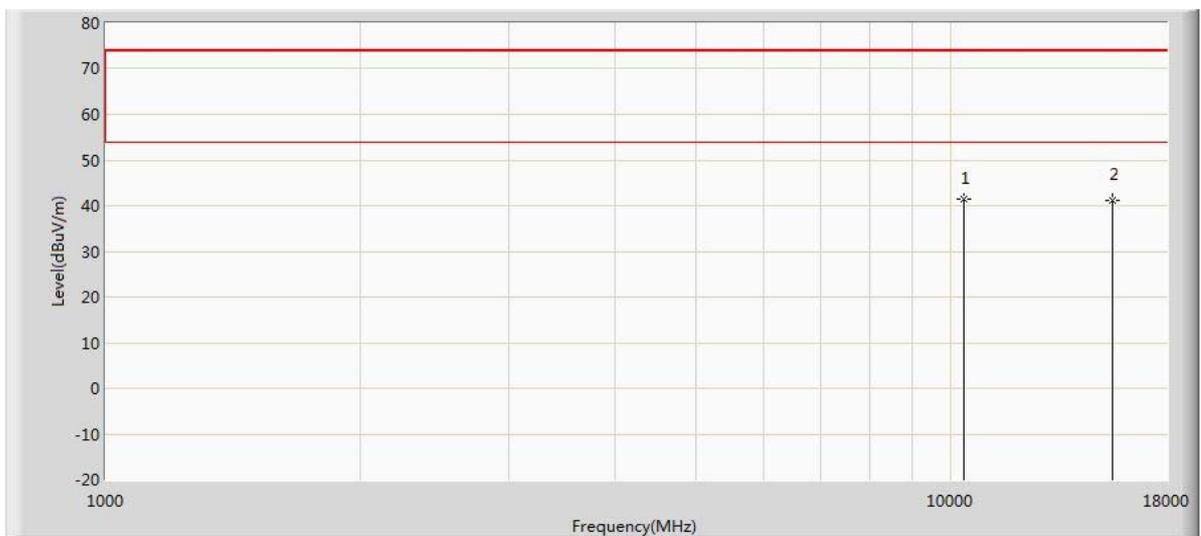
Chain	CH	Antenna	Frequency (MHz)	Reading Level (dB μ V/m)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
Ant A	36	H	10360.0	36.4	4.0	40.4	54(Note3)	-13.6	PK
		V	10360.0	36.7	4.0	40.7	54(Note3)	-13.3	PK
		H	15540.0	34.9	6.9	41.8	54(Note3)	-12.2	PK
		V	15540.0	35.1	6.7	41.8	54(Note3)	-12.2	PK

Note 1: The worst case of Radiated Emission below 1GHz:

Polarity: Horizontal



Polarity: Vertical

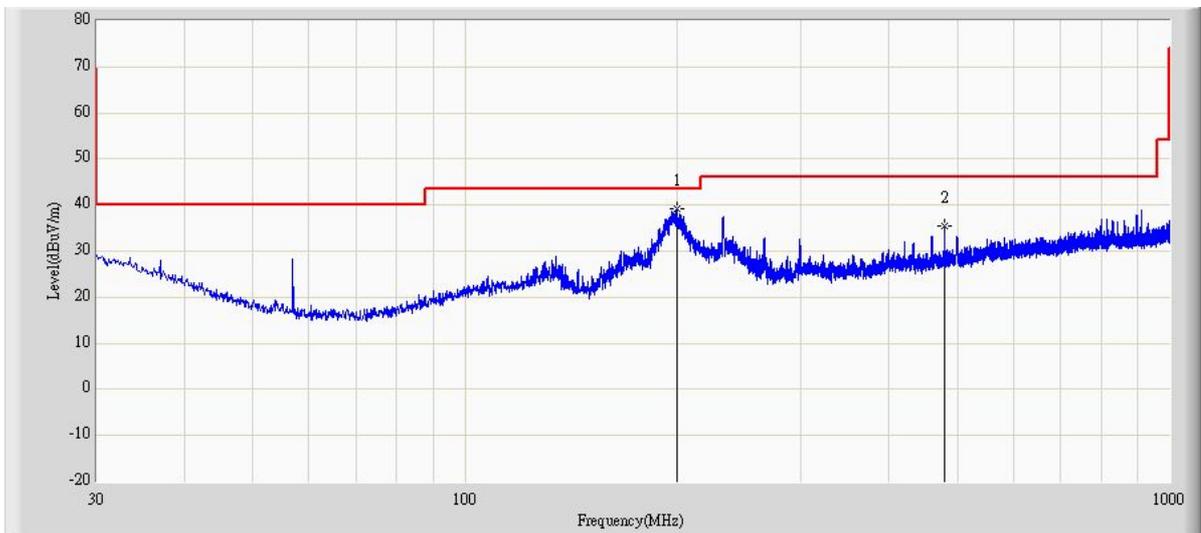


The worst case of Radiated Emission below 1GHz:

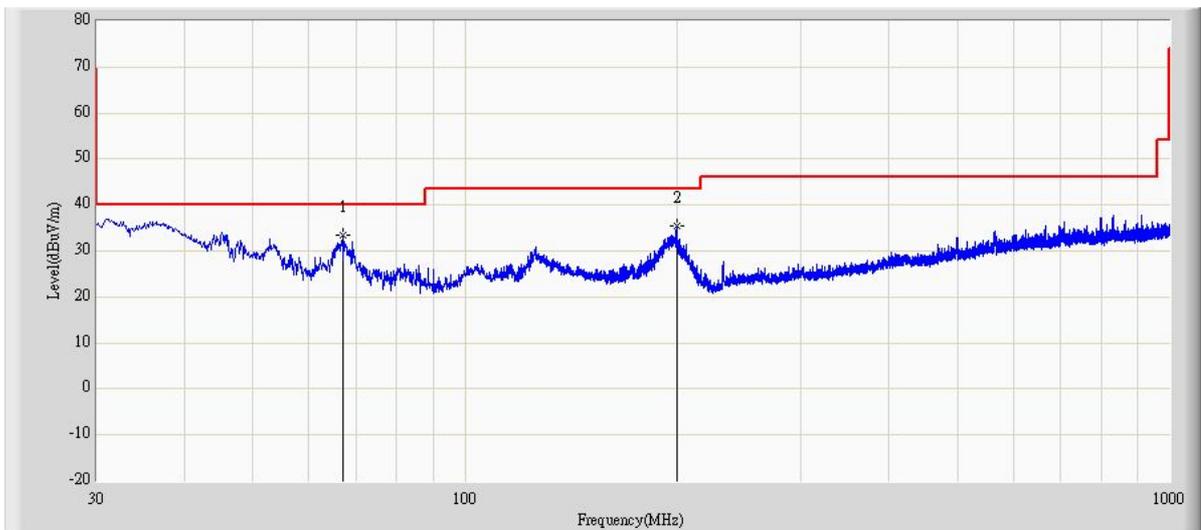
Chain	CH	Antenna	Frequency (MHz)	Reading Level (dB μ V/m)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
Ant A	36	H	199.8	23.1	16.1	39.2	43.5	-4.3	QP
		H	480.1	10.4	25.2	35.6	46.0	-10.4	QP
		V	67.0	21.7	11.7	33.4	40.0	-6.6	QP
		V	199.9	19.3	16.1	35.4	43.5	-8.1	QP

Note 1: The worst case of Radiated Emission below 1GHz:

Polarity: Horizontal



Polarity: Vertical



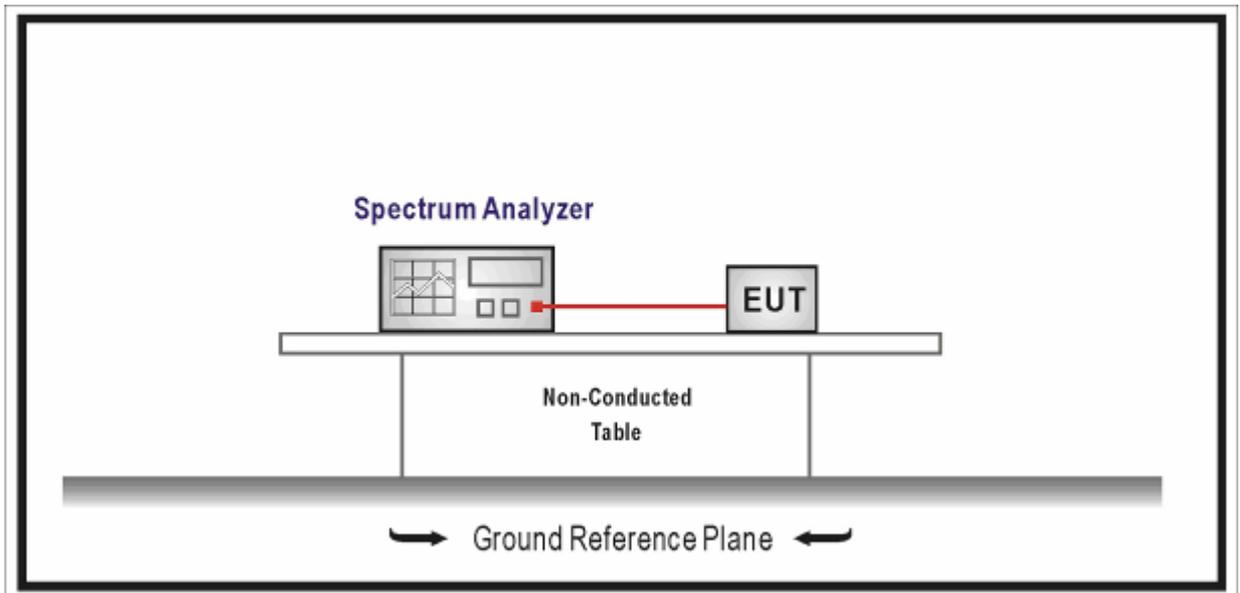
5. Emission bandwidth and occupied bandwidth

5.1. Test Equipment

Emission bandwidth and occupied bandwidth / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2015.03.11	2016.03.10
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2015.04.10	2016.04.09

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

5.2. Test Setup



5.3. Limit

The limit of 99% and 26dBm occupied bandwidth is not required.

6dB occupied bandwidth $\leq 500\text{KHz}$

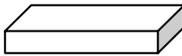
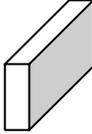
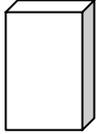
5.4. Test Procedure

Test Method			
	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	12.4	Emission bandwidth and occupied bandwidth
	<input type="checkbox"/> ANSI C63.10	12.4.1	Emission bandwidth (26dB)
	<input checked="" type="checkbox"/> ANSI C63.10	12.4.2	Occupied bandwidth (99%)
<input checked="" type="checkbox"/>	FCC KDB 789033 D02v01	C	Bandwidth Measurement
	<input checked="" type="checkbox"/> FCC KDB 789033 D02v01	C.1	Emission Bandwidth (26dB)
	<input checked="" type="checkbox"/> FCC KDB 789033 D02v01	C.2	Minimum Emission Bandwidth for the band 5.725-5.85 GHz (6dB)
<input checked="" type="checkbox"/>	FCC KDB 789033 D02v01	D	99 Percent Occupied Bandwidth

5.5. Uncertainty

The measurement uncertainty is defined as ± 1 kHz

5.6. EUT test Axis definition

Item	Emission bandwidth and occupied bandwidth		
Device Category	<input type="checkbox"/>	Fixed position use	
	<input checked="" type="checkbox"/>	Mobile position use	
Test mode	Mode 1, Mode 2, Mode 3, Mode 4		
Axis	X Axis	Y Axis	Z Axis
			
Worst Axis	Worst Axis <input checked="" type="checkbox"/>	Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>

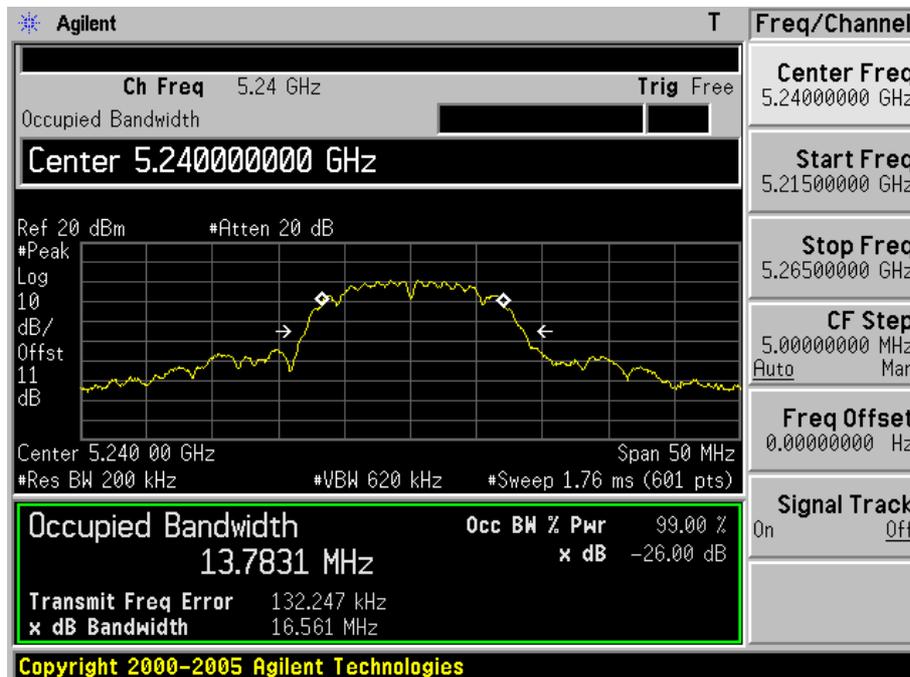
5.7. Test Result

Product	:	DWAM83 Wireless Audio Module
Test Item	:	Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a with Ant0

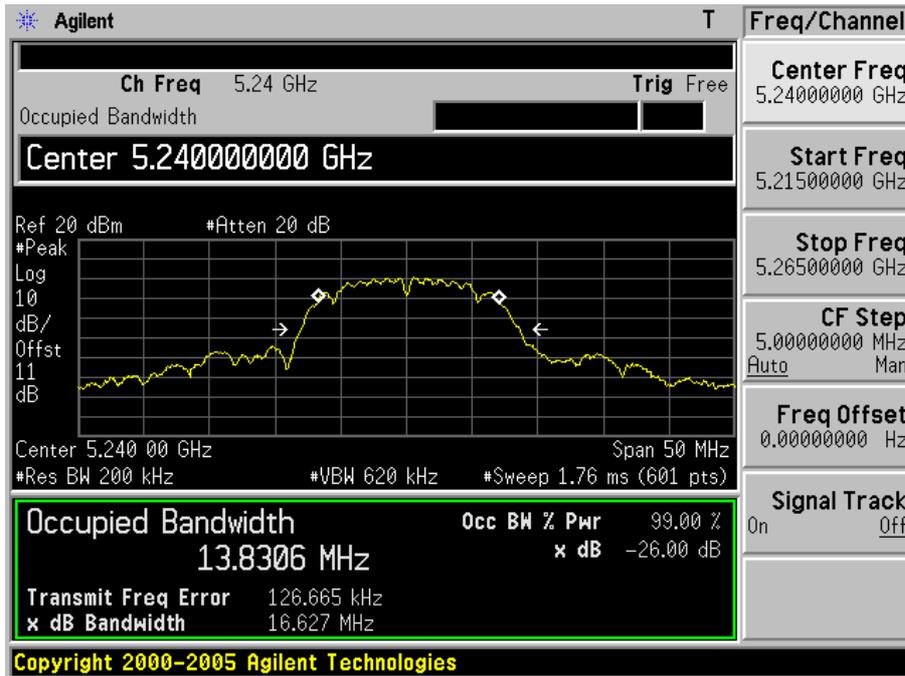
Channel	Frequency (MHz)	26dB Occupied Bandwidth (MHz)		99% Occupied Bandwidth (MHz)		6dB Occupied Bandwidth (MHz)		Limit	Result
		Ant0	Ant1	Ant0	Ant1	Ant0	Ant1		
Low	5180	16.582	16.591	13.7797	13.7949	N/A	N/A	N/A	Pass
Mid	5210	16.601	16.571	13.8062	13.7866	N/A	N/A	N/A	Pass
High	5240	16.561	16.627	13.7831	13.8306	N/A	N/A	N/A	Pass
Low	5736	16.581	16.575	13798.2	13788.6	9850	9850	≥500kHz	Pass
Mid	5742	16.597	16.593	13830.4	13827.6	9850	9850	≥500kHz	Pass
High	5814	16.587	16.583	13813.6	13812.1	9850	9850	≥500kHz	Pass

Note: The worst data OB is as follows.

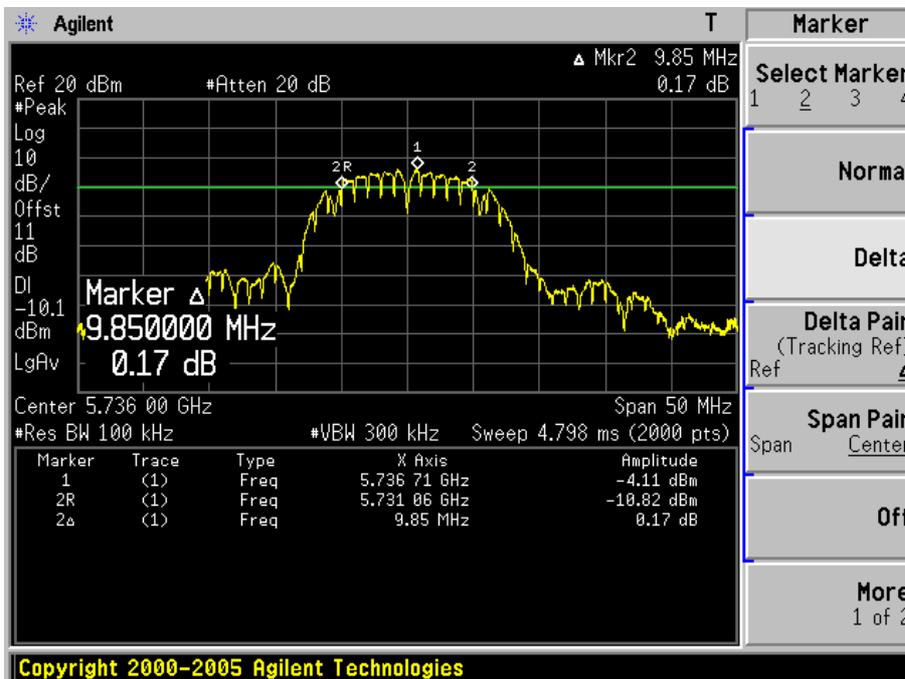
CH5240 Ant 0



CH5240 Ant 1



CH5736 Ant A



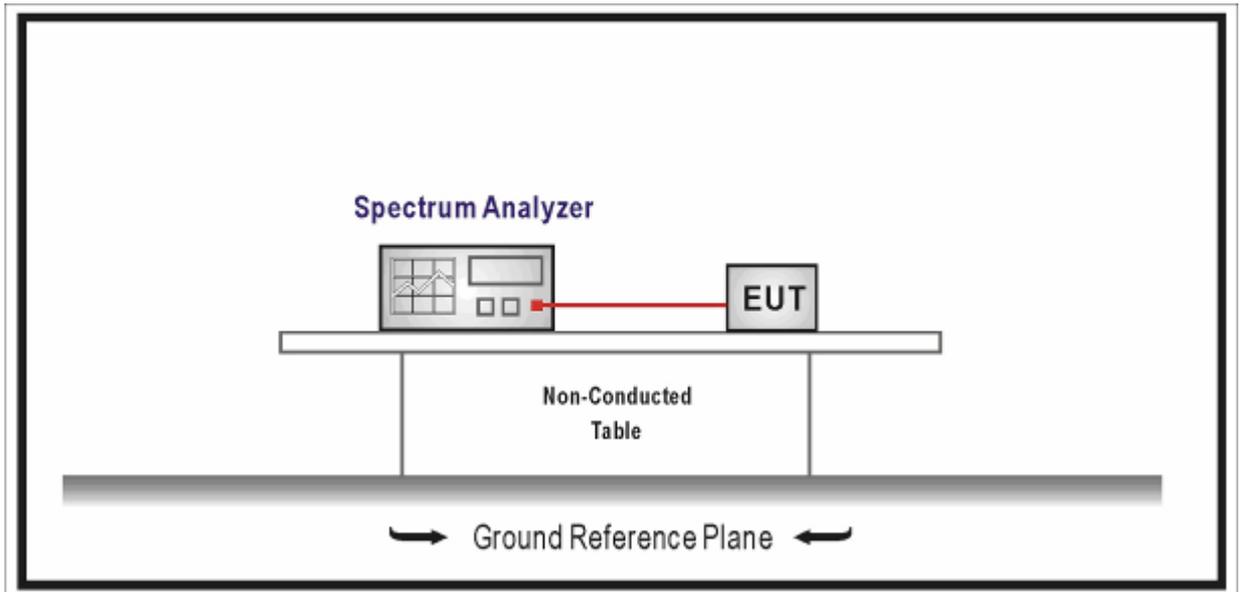
6. Power Output

6.1. Test Equipment

Power Output / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2015.03.11	2016.03.10
Power Sensor	Anritsu	MA2411B	0846014	2016.11.11	2016.11.10
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2015.04.10	2016.04.09

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

6.2. Test Setup



6.3. Limit

Fundamental emission output power Limit	
<input checked="" type="checkbox"/>	For the band 5.15-5.25 GHz
<input type="checkbox"/>	Outdoor access point: the maximum conducted output power shall not exceed 1 W. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 30 - (G_{TX} - 6)$ and $\leq 125\text{mW}$ at any angle above 30 degrees
<input type="checkbox"/>	Indoor access point: the maximum conducted output power shall not exceed 1 W. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 30 - (G_{TX} - 6)$
<input type="checkbox"/>	Fixed point-to-point access points: the maximum conducted output power shall not exceed 1 W. If $G_{TX} > 23\text{dBi}$, then $P_{out} \leq 30 - (G_{TX} - 23)$
<input checked="" type="checkbox"/>	For FCC Mobile and portable client devices: the maximum conducted output power shall not exceed 250mW. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 24 - (G_{TX} - 6)$ For IC The maximum conducted output power shall not exceed 250mW. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 23 - (G_{TX} - 6)$
<input type="checkbox"/>	For the 5.25-5.35 GHz: the maximum conducted output power shall not exceed 250mW or $11\text{dBm} + 10 \text{Log B}$, where B is the 26dB emission bandwidth in MHz. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq (\text{The lesser of } 24 \text{ or } 11\text{dBm} + 10 \text{Log B}) - (G_{TX} - 6)$
<input type="checkbox"/>	For the 5.47-5.725 GHz: the maximum conducted output power shall not exceed 250mW or $11\text{dBm} + 10 \text{Log B}$, where B is the 26dB emission bandwidth in MHz. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq (\text{The lesser of } 24 \text{ or } 11\text{dBm} + 10 \text{Log B}) - (G_{TX} - 6)$
<input checked="" type="checkbox"/>	For the band 5.725-5.85 GHz:
<input checked="" type="checkbox"/>	Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 30 - (G_{TX} - 6)$
<input type="checkbox"/>	Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W
Note 1 : G_{TX} directional gain of transmitting antennas.	
Note 2 : P_{out} is maximum peak conducted output power .	

6.4. Test Procedure

Fundamental emission output power Test Method					
	References Rule		Chapter	Description	
<input checked="" type="checkbox"/>	ANSI C63.10		12.3	Maximum conducted output power	
	<input type="checkbox"/>	ANSI C63.10	12.3.2	Maximum conducted output power measurement using a spectrum analyzer (SA) or EMI receiver	
		<input type="checkbox"/>	ANSI C63.10	12.3.2.2	Method SA-1
		<input type="checkbox"/>	ANSI C63.10	12.3.2.3	Method SA-1A (alternative)
		<input type="checkbox"/>	ANSI C63.10	12.3.2.4	Method SA-2
		<input type="checkbox"/>	ANSI C63.10	12.3.2.5	Method SA-2A (alternative)
		<input type="checkbox"/>	ANSI C63.10	12.3.2.6	Method SA-3
		<input type="checkbox"/>	ANSI C63.10	12.3.2.7	Method SA-3A (alternative)
	<input checked="" type="checkbox"/>	ANSI C63.10		12.3.3	Maximum conducted output power using a power meter
	<input type="checkbox"/>	ANSI C63.10	12.3.3.1	Method PM	
	<input checked="" type="checkbox"/>	ANSI C63.10	12.3.3.2	Method PM-G	
<input checked="" type="checkbox"/>	FCC KDB 789033 D02v01		E	Maximum conducted output power	
	<input type="checkbox"/>	ANSI C63.10	E.2	Measurement using a Spectrum Analyzer or EMI Receiver (SA)	
		<input type="checkbox"/>	ANSI C63.10	E.2.b	Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep)
		<input type="checkbox"/>	ANSI C63.10	E.2.c	Method SA-1 Alternative (RMS detection with slow sweep and EUT transmitting continuously at full power)
		<input type="checkbox"/>	ANSI C63.10	E.2.d	Method SA-2 (trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction)
		<input type="checkbox"/>	ANSI C63.10	E.2.e	Method SA-2 Alternative (RMS detection with slow sweep with each spectrum bin averaging across on and off times of the EUT transmissions, followed by duty cycle correction)

		<input type="checkbox"/>	ANSI C63.10	E.2.f	Method SA-3 (RMS detection with max hold)
		<input type="checkbox"/>	ANSI C63.10	E.2.g	Method SA-3 Alternative (Reduced VBW with max hold)
	<input checked="" type="checkbox"/>	ANSI C63.10	E.3	Measurement using a Power Meter (PM)	
		<input type="checkbox"/>	ANSI C63.10	E.3.a	Method PM (Measurement using an RF average power meter)
		<input checked="" type="checkbox"/>	ANSI C63.10	E.3.b	Method PM-G (Measurement using a gated RF average power meter)

Directional Gain Calculations for In-Band test method			
	References Rule	Chapter	Description
<input type="checkbox"/>	KDB 662911	F2)a)	Basic methodology with NANT transmit antennas
	<input type="checkbox"/> KDB 662911	F2)a) (i)	transmit signals are correlated
	<input type="checkbox"/> KDB 662911	F2)a) (ii)	transmit signals are uncorrelated
<input type="checkbox"/>	KDB 662911	F2)b)	Sectorized antenna systems.
<input type="checkbox"/>	KDB 662911	F2)c)	Cross-polarized antennas
	<input type="checkbox"/> ANSI C63.10	F2)c) (i)	Cross-polarized antennas with NANT = 2.
	<input type="checkbox"/> ANSI C63.10	F2)c) (ii)	Multiple antennas
<input type="checkbox"/>	KDB 662911	F2)d)	Sectorized antenna systems.
	<input type="checkbox"/> KDB 662911	F2)d) (i)	transmit signals are correlated
	<input type="checkbox"/> KDB 662911	F2)d) (ii)	transmit signals are uncorrelated
<input type="checkbox"/>	KDB 662911	F2)e)	Spatial Multiplexing
	<input checked="" type="checkbox"/> KDB 662911	F2)e) (i)	Antennas have the same gain
	<input type="checkbox"/> KDB 662911	F2)e) (ii)	Antenna have the different gain with one spatial stream
	<input type="checkbox"/> KDB 662911	F2)e) (iii)	Antenna have the different gain with more than one spatial stream
<input checked="" type="checkbox"/>	KDB 662911	F2)f)	Cyclic Delay Diversity (CDD)
	<input checked="" type="checkbox"/> KDB 662911	F2)f) (i)	Antennas have the same gain
	<input type="checkbox"/> KDB 662911	F2)f) (ii)	Antenna have the different gain with one spatial stream
	<input type="checkbox"/> KDB 662911	F2)f) (ii)	Antenna have the different gain with more than one spatial stream

6.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

6.6. Test Result

Product	:	DWAM83 Wireless Audio Module
Test Item	:	Power Output
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit

Channel No.	Frequency (MHz)	Power (dBm)		FCC Limit (dBm)	IC Limit (dBm)	Result
		Ant A	Ant B			
36	5180	15.56	15.43	24.00	23.00	Pass
40	5200	15.09	14.98	24.00	23.00	Pass
48	5240	15.36	15.02	24.00	23.00	Pass
149	5745	14.94	15.43	30.00	30.00	Pass
157	5785	14.43	14.98	30.00	30.00	Pass
165	5825	15.01	15.02	30.00	30.00	Pass

The worst case of Power Output of Band I:

Channel No.	Frequency (MHz)	Power (dBm)		FCC Limit (dBm)	IC Limit (dBm)	Result
		Ant A	Ant B			
36	5180	15.52	15.46	24.00	23.00	Pass
40	5200	15.13	15.03	24.00	23.00	Pass
48	5240	15.35	15.29	24.00	23.00	Pass

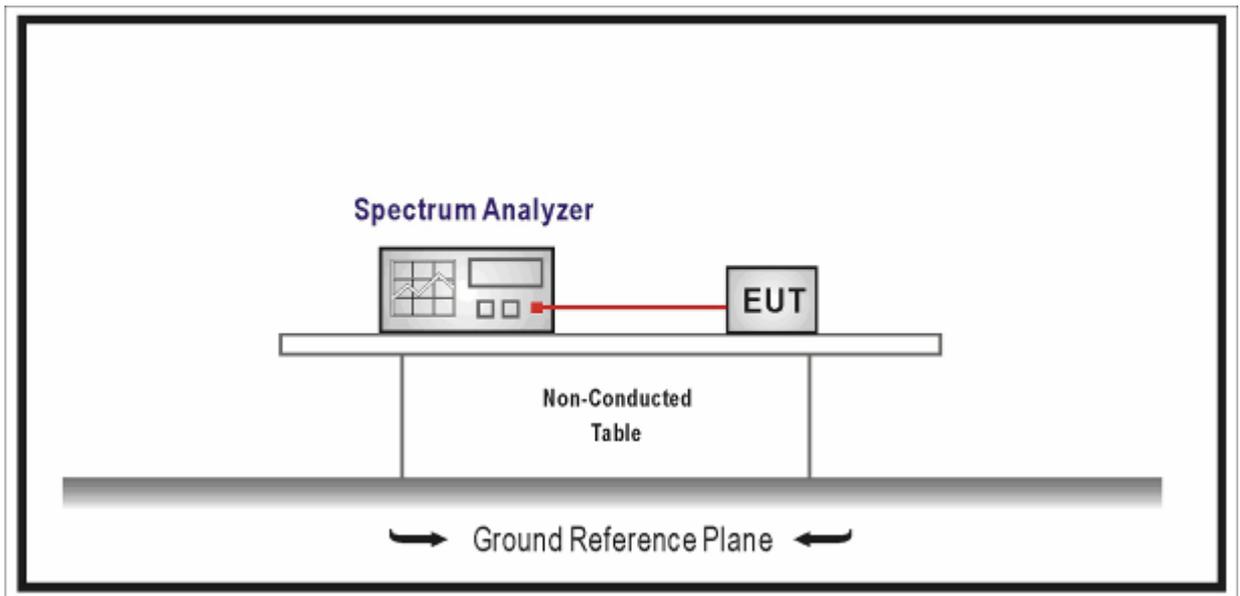
7. Peak Power Spectral Density

7.1. Test Equipment

Peak Power Spectral Density / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2015.03.11	2016.03.10
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2015.04.10	2016.04.09

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

7.2. Test Setup



7.3. Limit

Peak Power Spectral Density Limit	
<input checked="" type="checkbox"/>	For the band 5.15-5.25 GHz
<input type="checkbox"/>	Outdoor access point: the maximum power spectral density shall not exceed 17 dBm/MHz. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 17 - (G_{TX} - 6)$
<input type="checkbox"/>	Indoor access point: the maximum power spectral density shall not exceed 17 dBm/MHz. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 17 - (G_{TX} - 6)$
<input type="checkbox"/>	Fixed point-to-point access points: the maximum power spectral density shall not exceed 17 dBm/MHz. If $G_{TX} > 23\text{dBi}$, then $P_{out} \leq 17 - (G_{TX} - 23)$
<input checked="" type="checkbox"/>	For FCC Mobile and portable client devices: the maximum power spectral density shall not exceed 11 dBm/MHz. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 11 - (G_{TX} - 6)$ For IC The maximum power spectral density shall not exceed 11 dBm/MHz. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 10 - (G_{TX} - 6)$
<input type="checkbox"/>	For the 5.25-5.35 GHz: the maximum power spectral density shall not exceed 11 dBm/MHz. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 11 - (G_{TX} - 6)$
<input type="checkbox"/>	For the 5.47-5.725 GHz: the maximum power spectral density shall not exceed 11 dBm/MHz. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 11 - (G_{TX} - 6)$
<input checked="" type="checkbox"/>	For the band 5.725-5.85 GHz: the maximum power spectral density shall not exceed 30 dBm/500KHz. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 30 - (G_{TX} - 6)$
Note 1 : G_{TX} directional gain of transmitting antennas.	
Note 2 : P_{out} is maximum peak conducted output power .	

7.4. Test Procedure

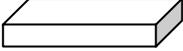
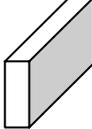
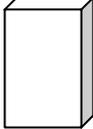
Peak Power Spectral Density Test Method			
	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	12.5	Peak power spectral density
<input checked="" type="checkbox"/>	FCC KDB 789033 D02v01	F	Maximum Power Spectral Density (PSD)

Directional Gain Calculations for In-Band test method			
	References Rule	Chapter	Description
<input type="checkbox"/>	KDB 662911	F2)a)	Basic methodology with NANT transmit antennas
	<input type="checkbox"/> KDB 662911	F2)a) (i)	transmit signals are correlated
	<input type="checkbox"/> KDB 662911	F2)a) (ii)	transmit signals are uncorrelated
<input type="checkbox"/>	KDB 662911	F2)b)	Sectorized antenna systems.
<input type="checkbox"/>	KDB 662911	F2)c)	Cross-polarized antennas
	<input type="checkbox"/> ANSI C63.10	F2)c) (i)	Cross-polarized antennas with NANT = 2.
	<input type="checkbox"/> ANSI C63.10	F2)c) (ii)	Multiple antennas
<input type="checkbox"/>	KDB 662911	F2)d)	Sectorized antenna systems.
	<input type="checkbox"/> KDB 662911	F2)d) (i)	transmit signals are correlated
	<input type="checkbox"/> KDB 662911	F2)d) (ii)	transmit signals are uncorrelated
<input type="checkbox"/>	KDB 662911	F2)e)	Spatial Multiplexing
	<input checked="" type="checkbox"/> KDB 662911	F2)e) (i)	Antennas have the same gain
	<input type="checkbox"/> KDB 662911	F2)e) (ii)	Antenna have the different gain with one spatial stream
	<input type="checkbox"/> KDB 662911	F2)e) (iii)	Antenna have the different gain with more than one spatial stream
<input checked="" type="checkbox"/>	KDB 662911	F2)f)	Cyclic Delay Diversity (CDD)
	<input checked="" type="checkbox"/> KDB 662911	F2)f) (i)	Antennas have the same gain
	<input type="checkbox"/> KDB 662911	F2)f) (ii)	Antenna have the different gain with one spatial stream
	<input type="checkbox"/> KDB 662911	F2)f) (ii)	Antenna have the different gain with more than one spatial stream

7.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

7.6. EUT test Axis definition

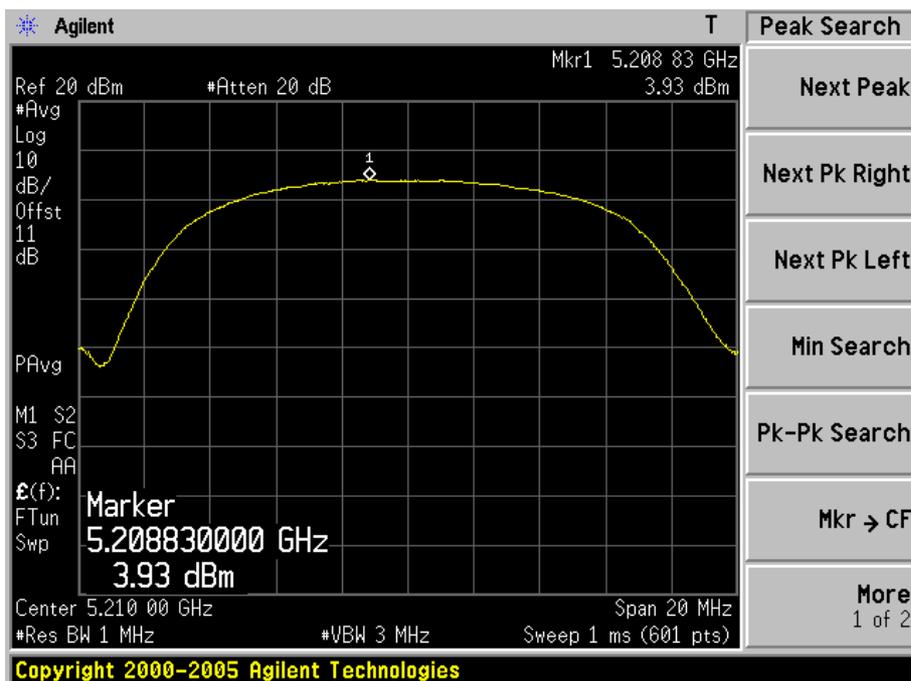
Item	Peak Power Spectral Density		
Device Category	<input checked="" type="checkbox"/>	Fixed position use	
	<input type="checkbox"/>	Mobile position use	
Test mode	Mode 1, Mode 2, Mode 3		
Axis	X Axis	Y Axis	Z Axis
			
Worse Axis			

7.7. Test Result

Product	:	DWAM83 Wireless Audio Module
Test Item	:	Peak Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit

Ant.	Channel No.	Frequency (MHz)	Measurement Power Output (dBm/MHz)	Duty Cycle (%)	Total PPSD (dBm/MHz)	For FCC Limit (dBm/MHz)	For IC Limit (dBm/MHz)	Result
Ant A	Low	5180	3.28	0.45	3.73	11.00	10.00	Pass
	Mid	5210	3.31	0.45	3.76	11.00	10.00	Pass
	High	5240	3.47	0.45	3.92	11.00	10.00	Pass
	Low	5736	3.14	0.45	3.59	30.00	30.00	Pass
	Mid	5762	3.13	0.45	3.58	30.00	30.00	Pass
	High	5814	3.21	0.45	3.66	30.00	30.00	Pass
Ant B	Low	5180	3.49	0.45	3.94	11.00	10.00	Pass
	Mid	5210	3.93	0.45	4.38	11.00	10.00	Pass
	High	5240	3.21	0.45	3.66	11.00	10.00	Pass
	Low	5736	3.11	0.45	3.56	30.00	30.00	Pass
	Mid	5762	3.08	0.45	3.53	30.00	30.00	Pass
	High	5814	3.11	0.45	3.56	30.00	30.00	Pass

CH5210 Ant B



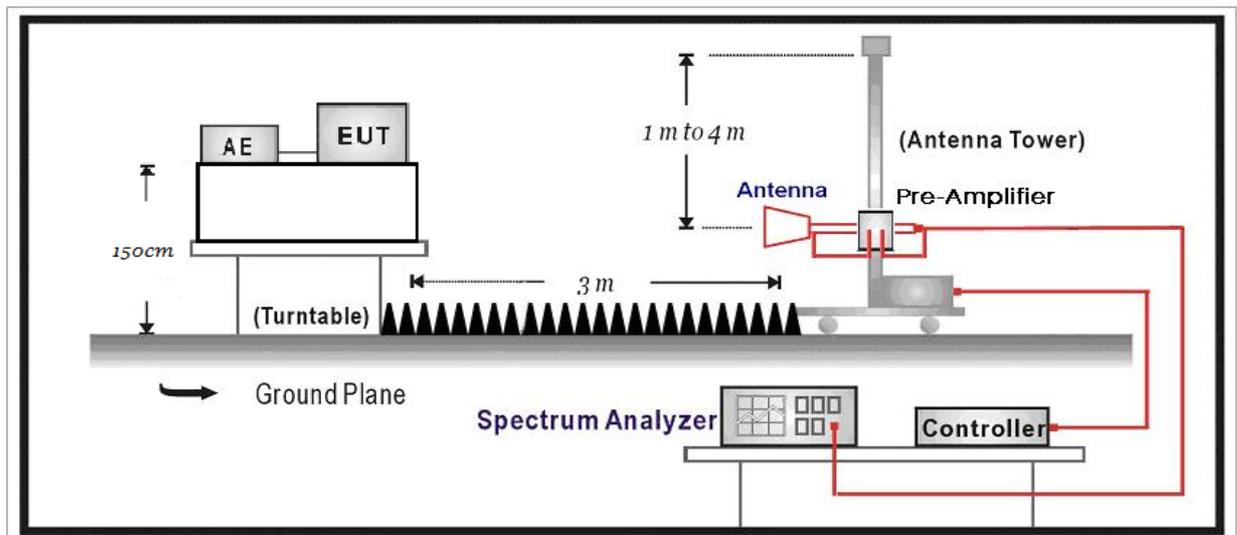
8. Radiated Emission Band Edge

8.1. Test Equipment

Radiated Emission Band Edge / AC-5					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2015.03.11	2016.03.10
Preamplifier	Miteq	NSP1800-25	1364185	2015.05.04	2016.05.03
Preamplifier	Quietek	AP-040G	CHM-0906001	2015.05.04	2016.05.03
Bilog Antenna	Teseq GmbH	CBL6112D	27612	2015.10.16	2016.10.15
DRG Horn	ETS-Lindgren	3117	00123988	2016.01.04	2017.01.03
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2016.03.02	2017.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2016.03.02	2017.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2016.03.02	2017.03.01
EMI Receiver	Agilent	N9038A	MY51210196	2015.06.10	2016.06.09
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2016.01.04	2017.01.03

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

8.2. Test Setup



8.3. Limit

FCC Part 15 Subpart C Paragraph 15.209 (Restricted Band Emissions Limit)		
Frequency (MHz)	Distance (m)	Level (dB μ V/m)
0.009-0.490	300	2400/F(kHz)
0.490-1.705	30	24000/F(kHz)
1.705-30.0	30	30
30-88	3	100**
88-216	3	150**
216-960	3	200**
Above 960	3	500

Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

FCC Part 15 Subpart C Paragraph 15.205 (Restricted Band)			
Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (MHz)
0.090 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15
0.495 – 0.505	16.69475 – 16.69525	608 – 614	5.35 – 5.46
2.1735 – 2.1905	16.80425 – 16.80475	960 – 1240	7.25 – 7.75
4.125 – 4.128	25.5 – 25.67	1300 – 1427	8.025 – 8.5
4.17725 – 4.17775	37.5 – 38.25	1435 – 1626.5	9.0 – 9.2
4.20725 – 4.20775	73 – 74.6	1645.5 – 1646.5	9.3 – 9.5
6.215 – 6.218	74.8 – 75.2	1660 – 1710	10.6 – 12.7
6.26775 – 6.26825	108 – 121.94	1718.8 – 1722.2	13.25 – 13.4
6.31175 – 6.31225	123 – 138	2200 – 2300	14.47 – 14.5
8.291 – 8.294	149.9 – 150.05	2310 – 2390	15.35 – 16.2
8.362 – 8.366	156.52475 – 156.52525	2483.5 – 2500	17.7 – 21.4
8.37625 – 8.38675	156.7 – 156.9	2690 – 2900	22.01 – 23.12
8.81425 – 8.81475	162.0125 – 167.17	3260 – 3267	23.6 – 24.0
12.29 – 12.293	167.72 – 173.2	3332 – 3339	31.2 – 31.8
12.51975 – 12.52025	240 – 285	3345.8 – 3358	36.43 – 36.5
12.57675 – 12.57725	322 – 335.4	3600 – 4400	
13.36 – 13.41			

FCC Part 15 Subpart C Paragraph 15.407(5)(b) (Unrestricted Band Emissions Limit)		
Operating Frequency Band (MHz)	EIRP Limit (dBm/MHz)	Equivalent Field Strength at 3m (dB μ V/m)
5150 - 5250	-27	68.3
5250 - 5350	-27	68.3
5470 - 5725	-27	68.3
5725 - 5825	-27 [Note(1)]	68.3
	-17 [Note(2)]	78.3
<p>Note(1): Outside the frequency range 5715 - 5835MHz. Note(2): Within the frequency range from the band edge to 10MHz below or above the band edge, 5715 – 5725MHz and 5825 - 5835MHz.</p>		

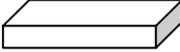
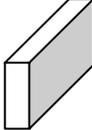
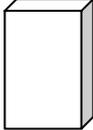
8.4. Test Procedure

Test Method			
	References Rule	Chapter	Description
<input type="checkbox"/>	ANSI C63.10	12.7.3	Emissions in non-restricted frequency bands
<input checked="" type="checkbox"/>	ANSI C63.10	12.7.2	Emissions in restricted frequency bands
	<input checked="" type="checkbox"/> ANSI C63.10	12.7.5	Radiated emission measurements
	<input checked="" type="checkbox"/> ANSI C63.10	12.7.6	Procedure for peak unwanted emissions measurements above 1000 MHz
	<input checked="" type="checkbox"/> ANSI C63.10	12.7.7	Procedures for average unwanted emissions measurements above 1000 MHz
	<input type="checkbox"/> ANSI C63.10	12.7.7.2	Method AD (average detection)—primary method
	<input checked="" type="checkbox"/> ANSI C63.10	12.7.7.3	Method VB-A (Alternative)
	<input checked="" type="checkbox"/> ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
	<input checked="" type="checkbox"/> ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
	<input checked="" type="checkbox"/> ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz
<input type="checkbox"/>	FCC KDB 789033 D02v01	G.2	Unwanted Emissions that fall Outside of the Restricted Bands
<input type="checkbox"/>	FCC KDB 789033 D02v01	G.1	Unwanted Emissions in the Restricted Bands
	<input type="checkbox"/> FCC KDB 789033 D02v01	G.4	Procedure for Unwanted Emissions Measurements below 1000 MHz
	<input type="checkbox"/> FCC KDB 789033 D02v01	G.5	Procedure for Unwanted Maximum Emissions Measurements above 1000 MHz
	<input type="checkbox"/> FCC KDB 789033 D02v01	G.6	Procedures for Average Unwanted Emissions Measurements above 1000 MHz
	<input type="checkbox"/> FCC KDB 789033 D02v01	G.6.c	Method AD (Average detection)—primary method
	<input type="checkbox"/> FCC KDB 789033 D02v01	G.6.d	Method VB (Averaging using reduced video bandwidth): Alternative method.

8.5. Uncertainty

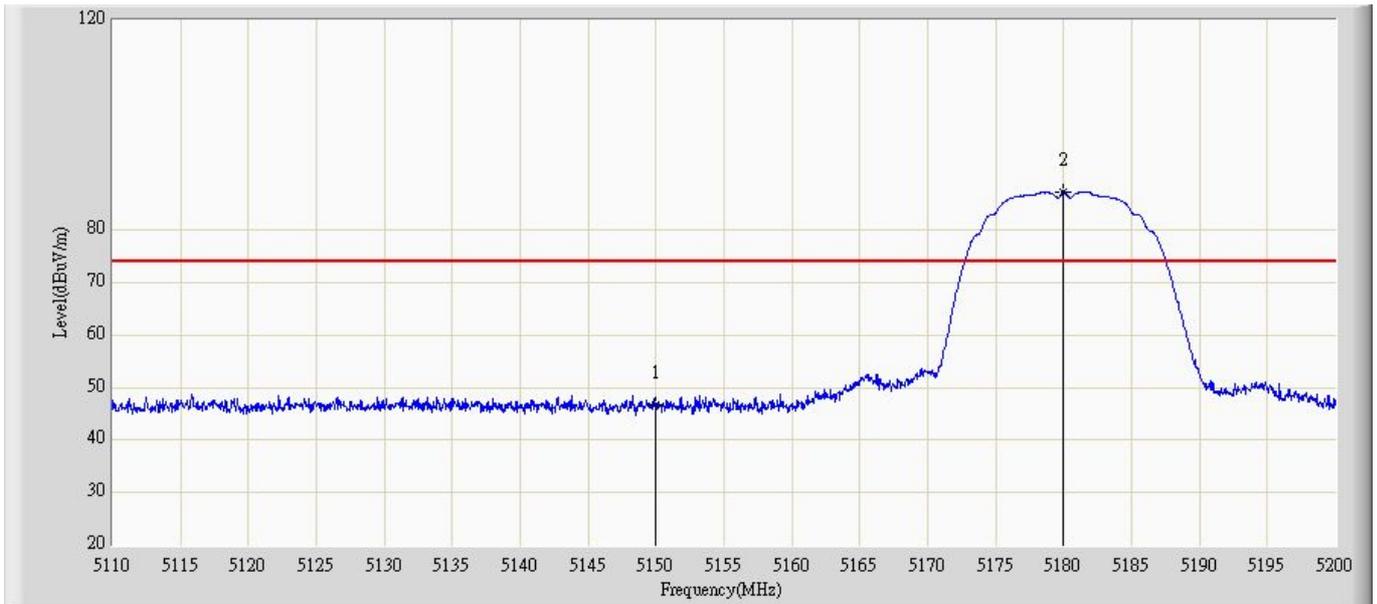
The measurement uncertainty above 1GHz is defined as ± 3.9 dB

8.6. EUT test Axis definition

Item	Radiated Emissions		
Device Category	<input checked="" type="checkbox"/>	Fixed position use	
	<input type="checkbox"/>	Mobile position use	
Test mode	Mode 1, Mode 2, Mode 3, Mode 4		
Axis	X Axis	Y Axis	Z Axis
			
Worse Axis	Worst Axis <input checked="" type="checkbox"/>	Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>

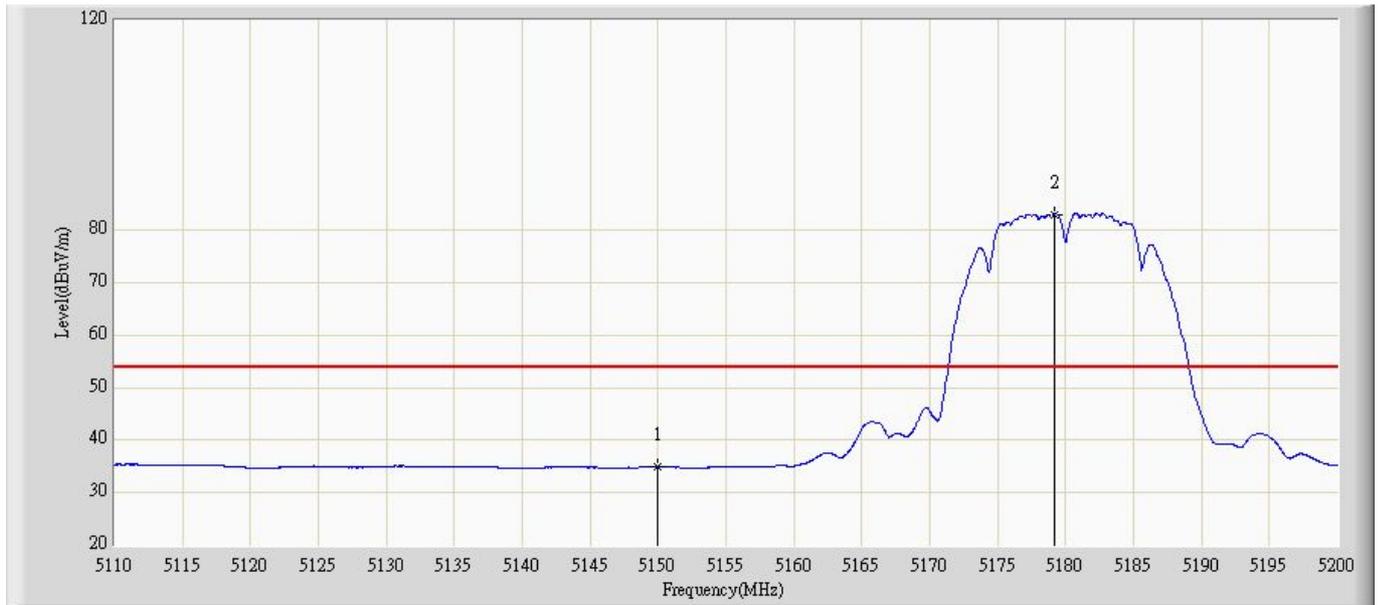
8.7. Test Result

Engineer: Jack	
Site: AC5	Time: 2016/02/17 - 15:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at channel 5180MHz Ant A	



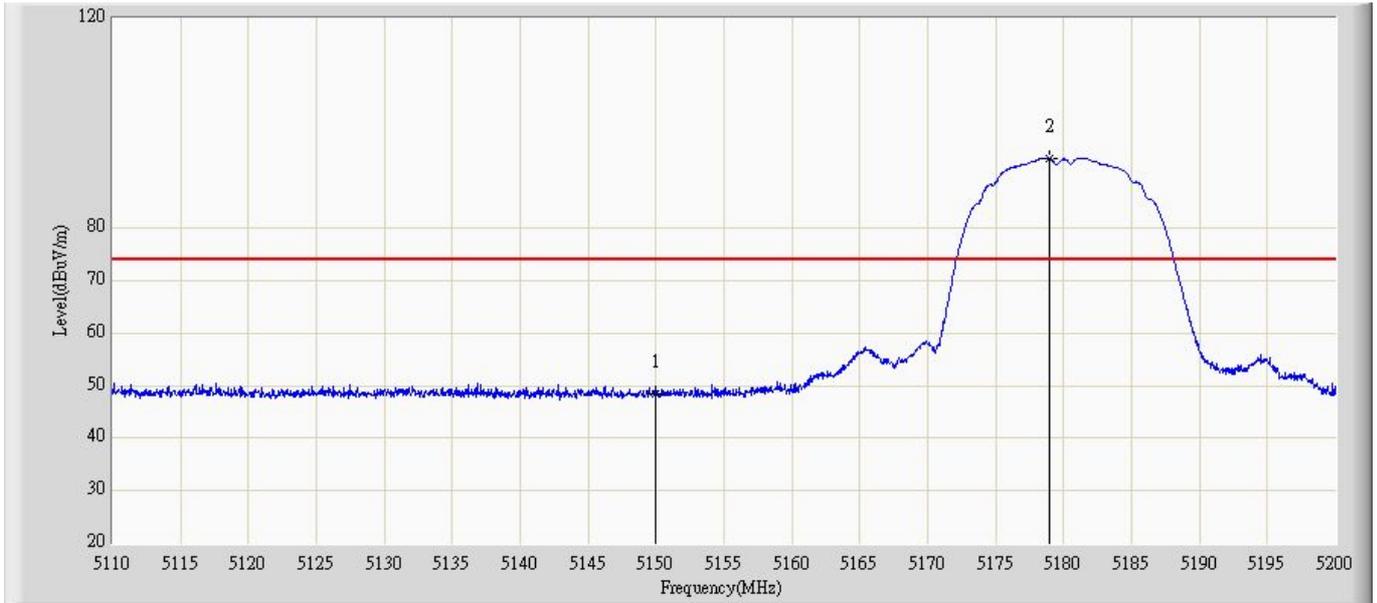
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	46.746	54.790	-27.253	74.000	-8.044	PK
2		*	5179.420	87.323	95.258	N/A	N/A	-7.934	PK

Engineer: Jack	
Site: AC5	Time: 2016/02/17 - 15:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at channel 5180MHz Ant A	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	34.873	42.917	-19.126	54.000	-8.044	AV
2		*	5179.235	82.987	90.924	N/A	N/A	-7.938	AV

Engineer: Jack	
Site: AC5	Time: 2016/02/17 - 15:05
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at channel 5180MHz Ant A	



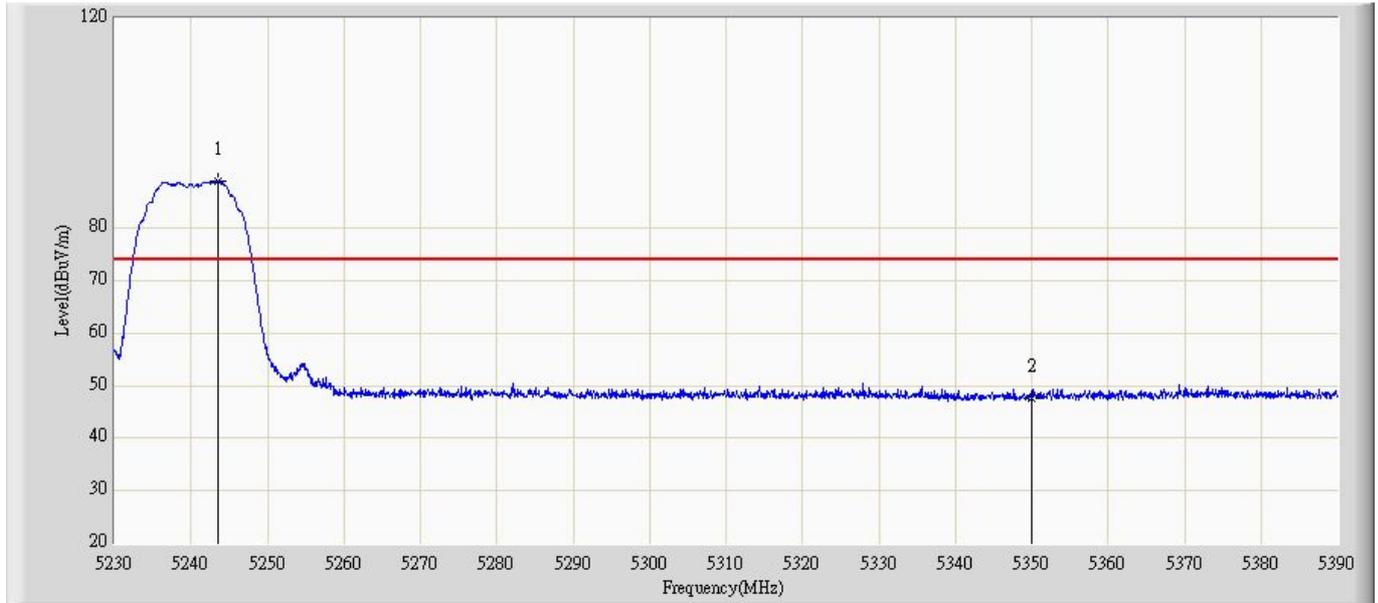
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	48.432	56.516	-25.570	74.000	-8.084	PK
2		*	5178.882	93.273	101.297	N/A	N/A	-8.024	PK

Engineer: Jack	
Site: AC5	Time: 2016/02/17 - 15:07
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at channel 5180MHz Ant A	



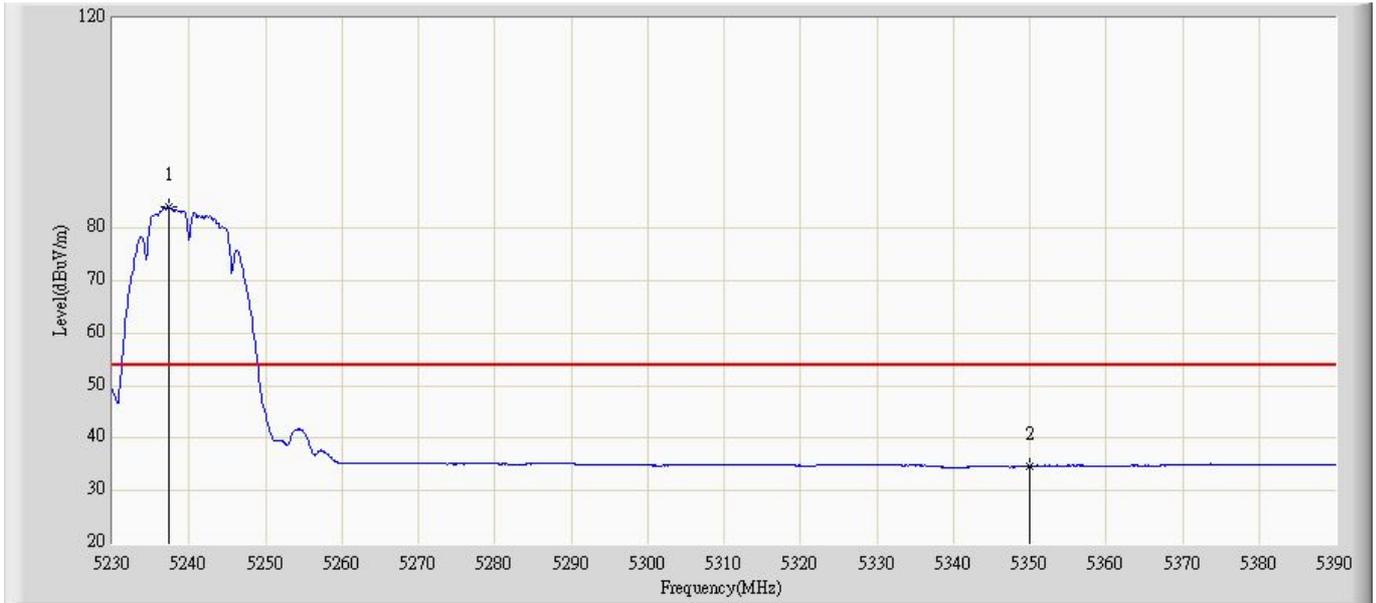
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	35.403	43.487	-18.597	54.000	-8.084	AV
2		*	5179.255	87.897	95.920	N/A	N/A	-8.024	AV

Engineer: Jack	
Site: AC5	Time: 2016/02/17 - 15:08
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at channel 5240MHz Ant A	



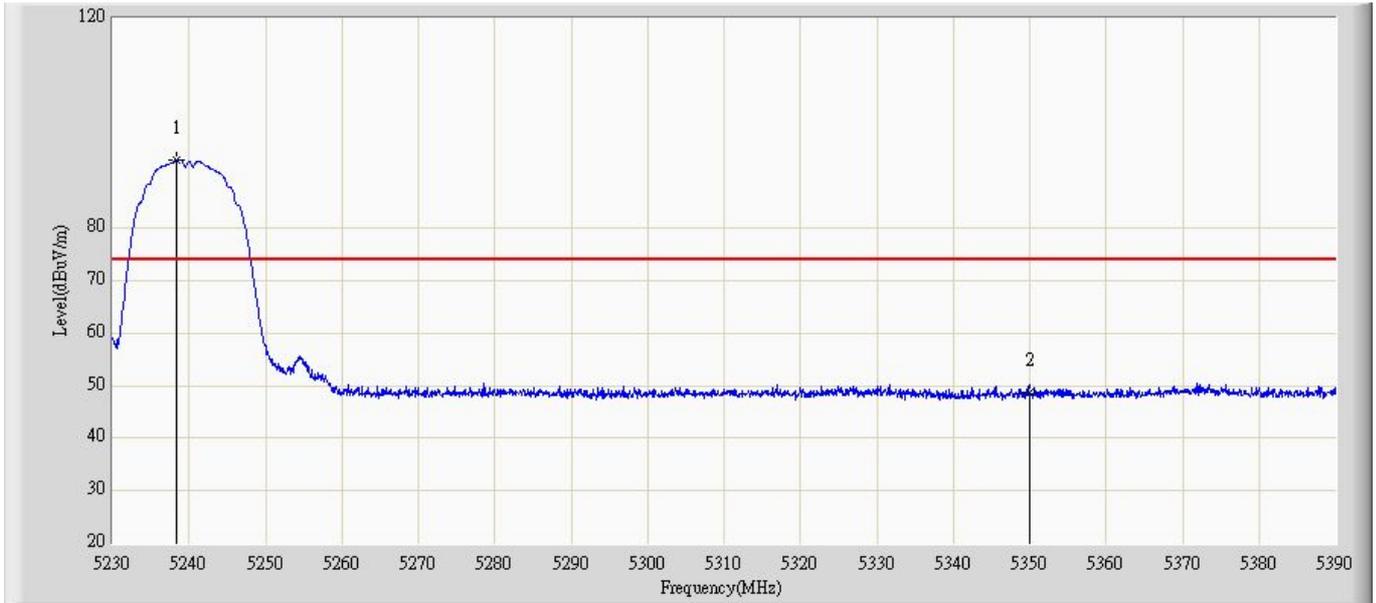
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5243.611	89.002	96.790	N/A	N/A	-7.788	PK
2			5350.000	47.638	55.261	-26.361	74.000	-7.623	PK

Engineer: Jack	
Site: AC5	Time: 2016/02/17 - 15:12
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at channel 5240MHz Ant A	



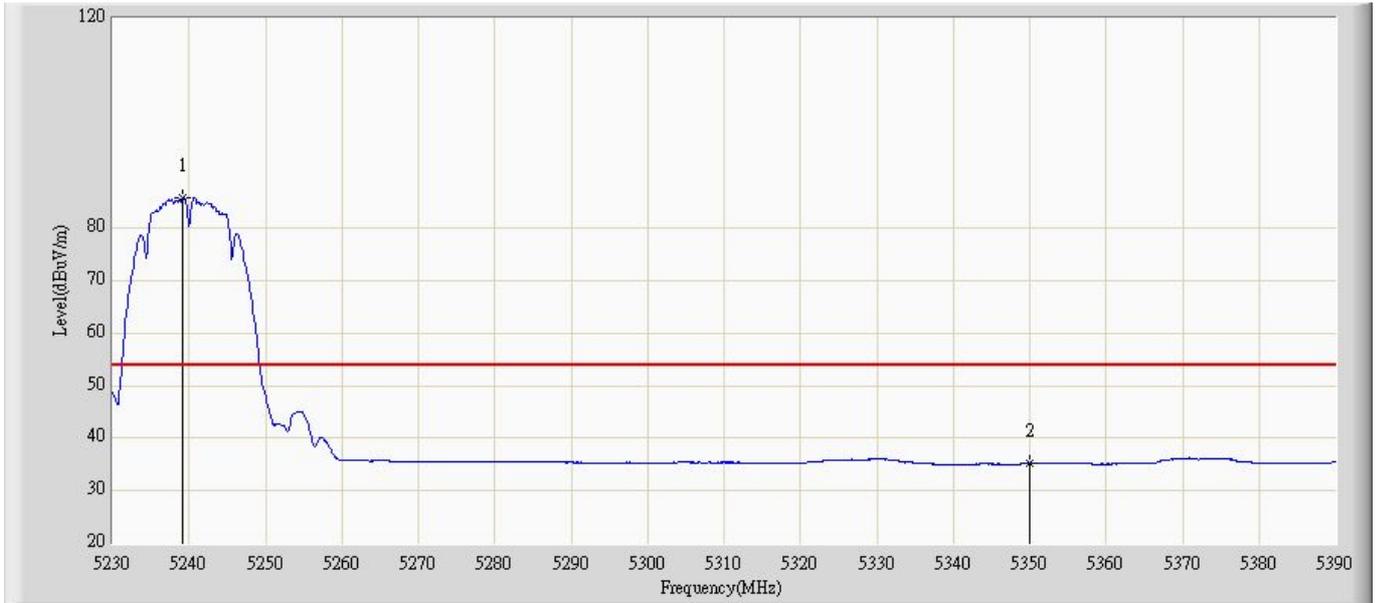
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5237.360	84.058	91.863	N/A	N/A	-7.805	AV
2			5350.000	34.758	42.381	-19.242	54.000	-7.623	AV

Engineer: Jack	
Site: AC5	Time: 2016/02/17 - 15:13
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at channel 5240MHz Ant A	



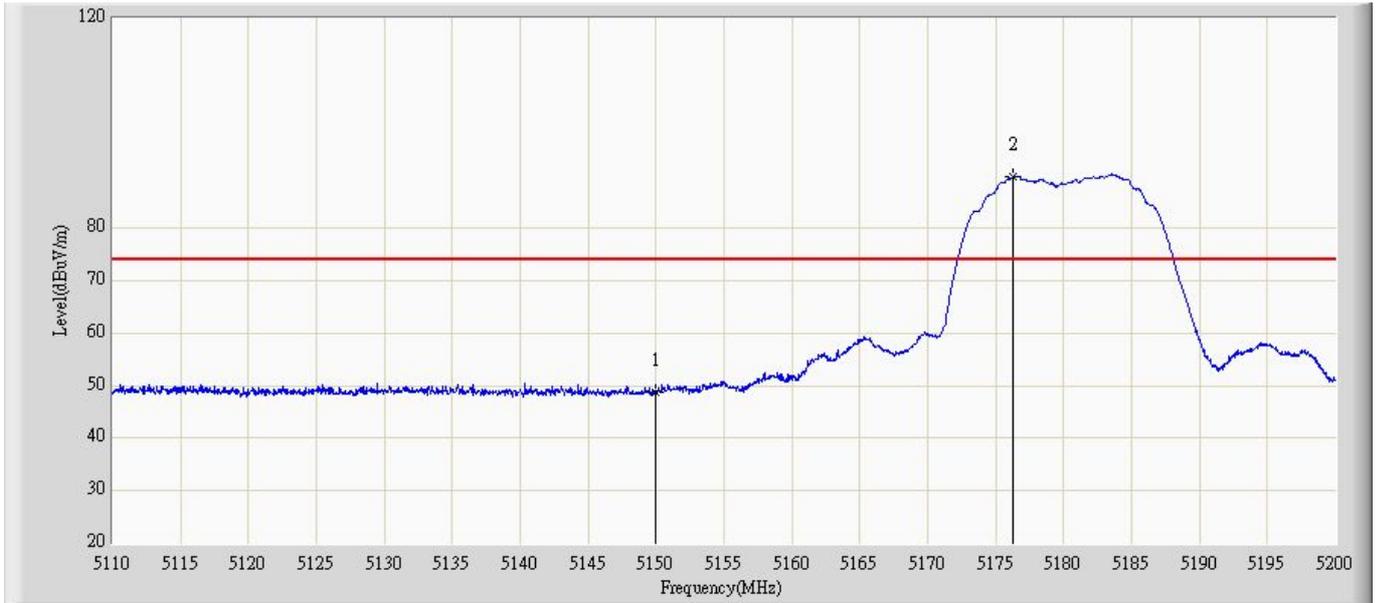
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5238.400	93.042	101.026	N/A	N/A	-7.984	PK
2			5350.000	48.684	56.467	-25.315	74.000	-7.783	PK

Engineer: Jack	
Site: AC5	Time: 2016/02/17 - 15:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at channel 5240MHz Ant A	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5239.200	85.818	93.801	N/A	N/A	-7.983	AV
2			5350.000	35.153	42.936	-18.847	54.000	-7.783	AV

Engineer: Jack	
Site: AC5	Time: 2016/02/17 - 15:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at channel 5180MHz Ant B	



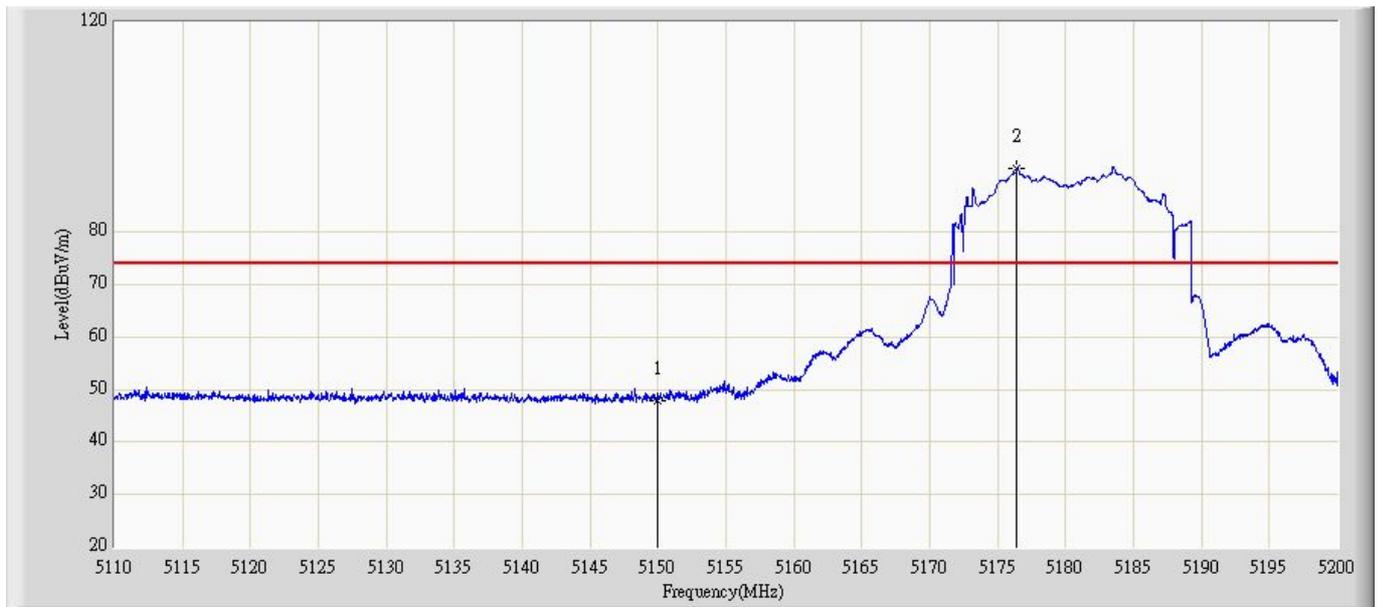
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	48.863	56.907	-25.136	74.000	-8.044	PK
2		*	5176.240	89.732	97.677	N/A	N/A	-7.944	PK

Engineer: Jack	
Site: AC5	Time: 2016/02/17 - 15:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at channel 5180MHz Ant B	



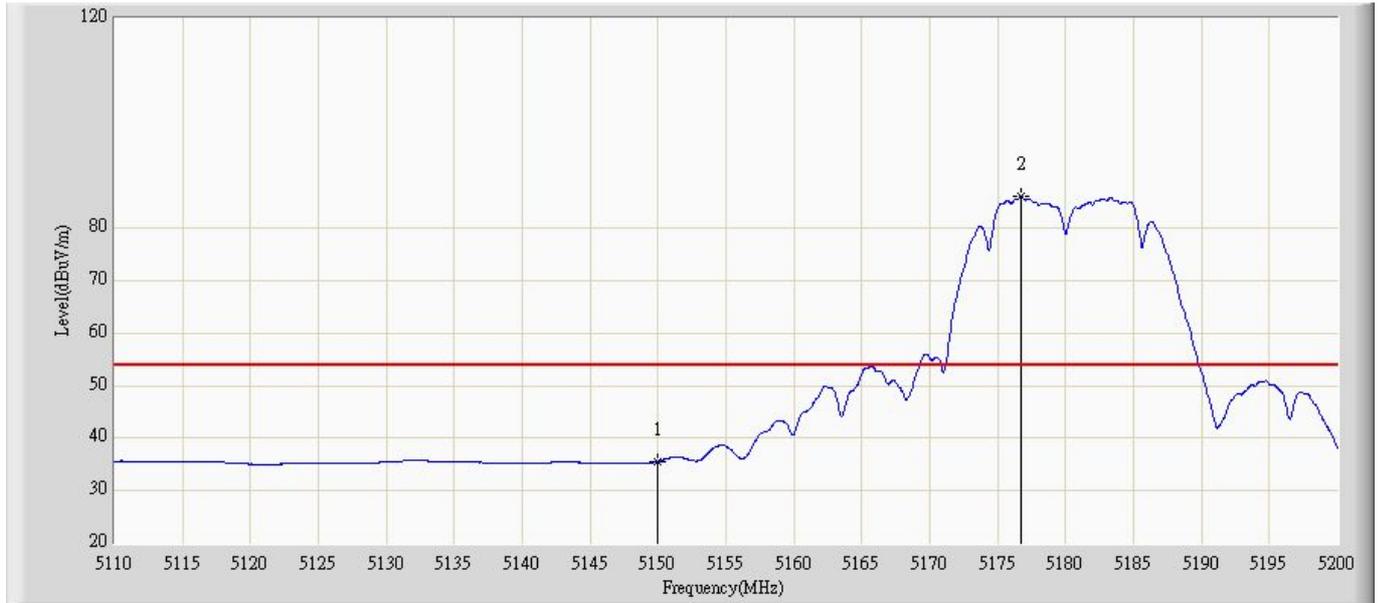
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	35.341	43.385	-18.659	54.000	-8.044	AV
2		*	5183.260	85.684	93.608	N/A	N/A	-7.925	AV

Profile: 2013.6.10	Page No.: 133
Engineer: Jack	
Site: AC5	Time: 2016/02/17 - 15:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at channel 5180MHz Ant B	



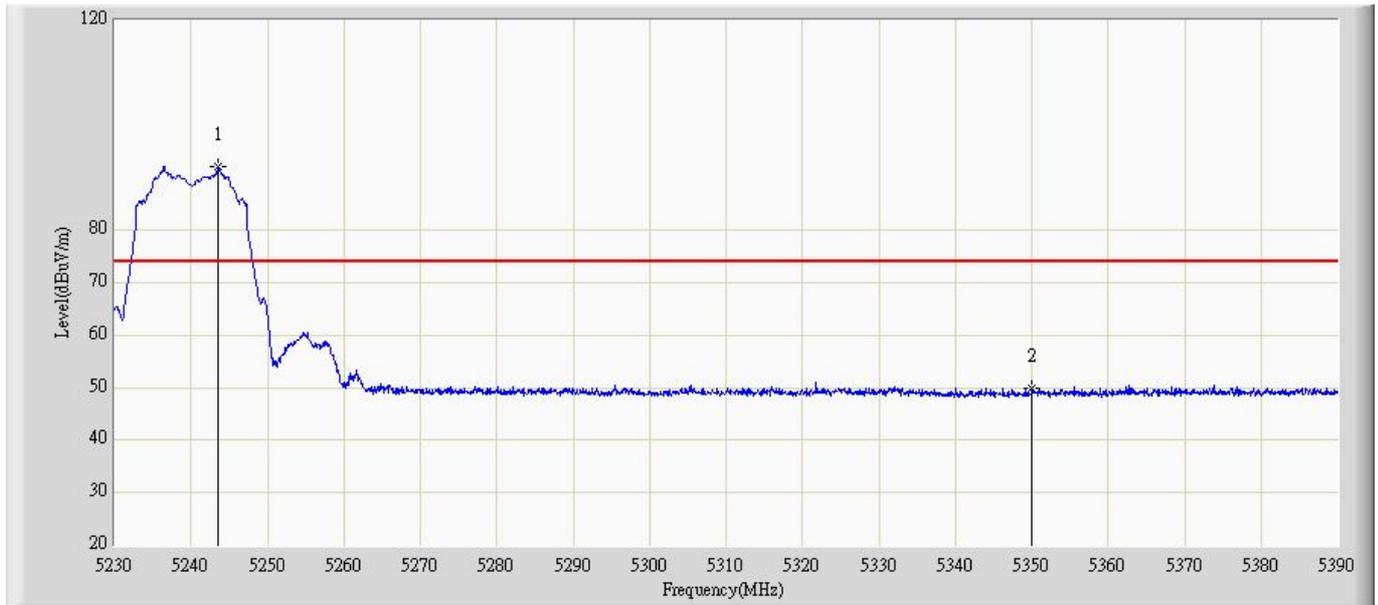
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	47.909	55.993	-26.091	74.000	-8.084	PK
2		*	5176.420	92.038	100.065	N/A	N/A	-8.026	PK

Engineer: Jack	
Site: AC5	Time: 2016/02/17 - 15:43
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at channel 5180MHz Ant B	



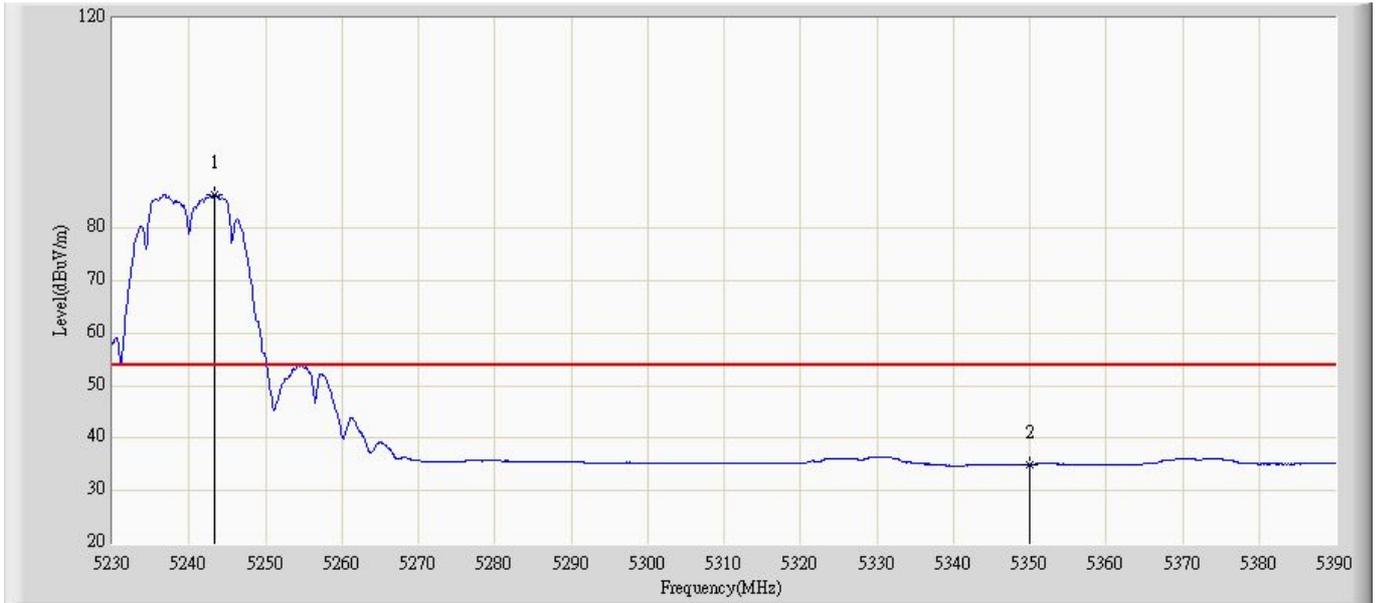
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	35.538	43.622	-18.462	54.000	-8.084	AV
2		*	5176.735	85.999	94.025	N/A	N/A	-8.026	AV

Engineer: Jack	
Site: AC5	Time: 2016/02/17 - 15:53
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at channel 5240MHz Ant B	



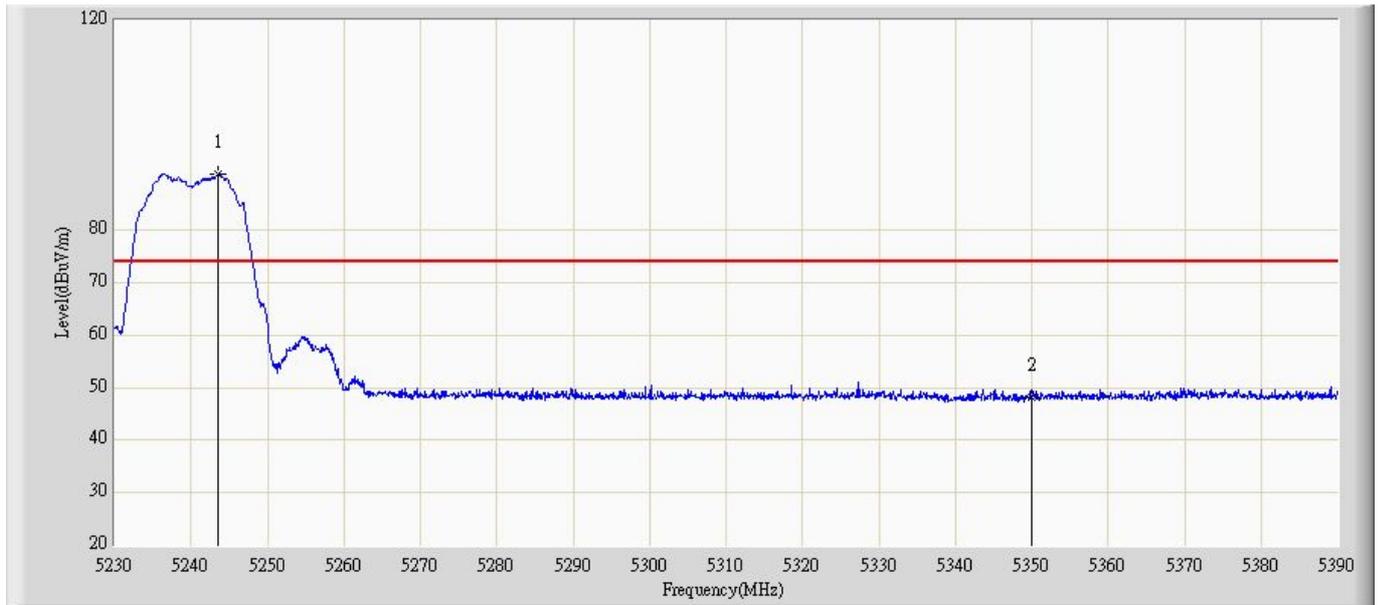
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5243.600	91.994	99.782	N/A	N/A	-7.788	PK
2			5350.000	49.843	57.466	-24.157	74.000	-7.623	PK

Engineer: Jack	
Site: AC5	Time: 2016/02/17 - 16:05
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at channel 5240MHz Ant B	



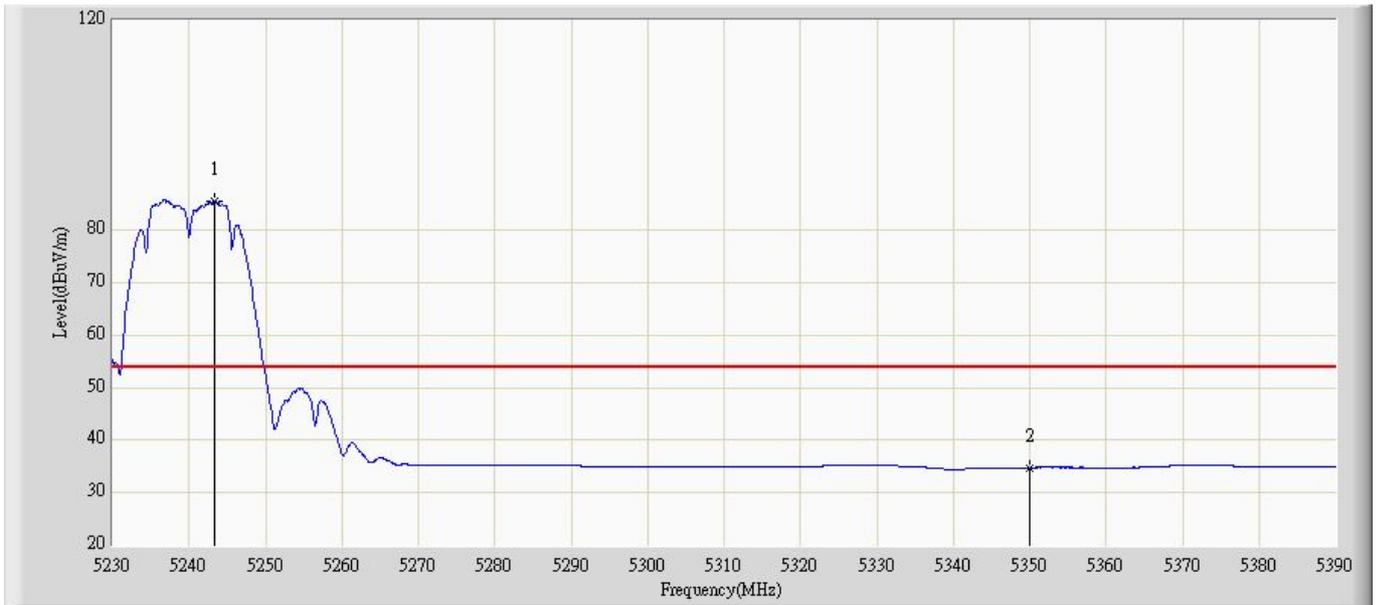
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5243.360	86.468	94.256	N/A	N/A	-7.789	AV
2			5350.000	35.069	42.692	-18.931	54.000	-7.623	AV

Engineer: Jack	
Site: AC5	Time: 2016/02/17 - 16:06
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at channel 5240MHz Ant B	



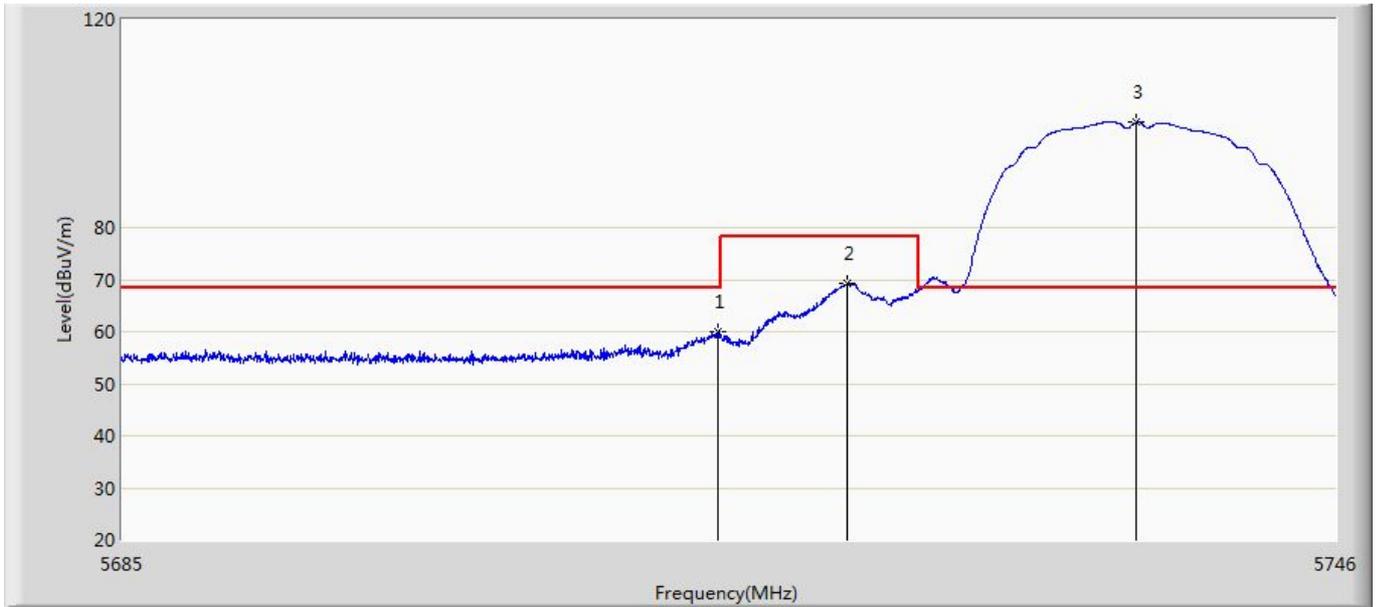
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5243.520	90.788	98.766	N/A	N/A	-7.978	PK
2			5350.000	48.255	56.038	-25.745	74.000	-7.783	PK

Engineer: Jack	
Site: AC5	Time: 2016/02/17 - 16:11
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at channel 5240MHz Ant B	



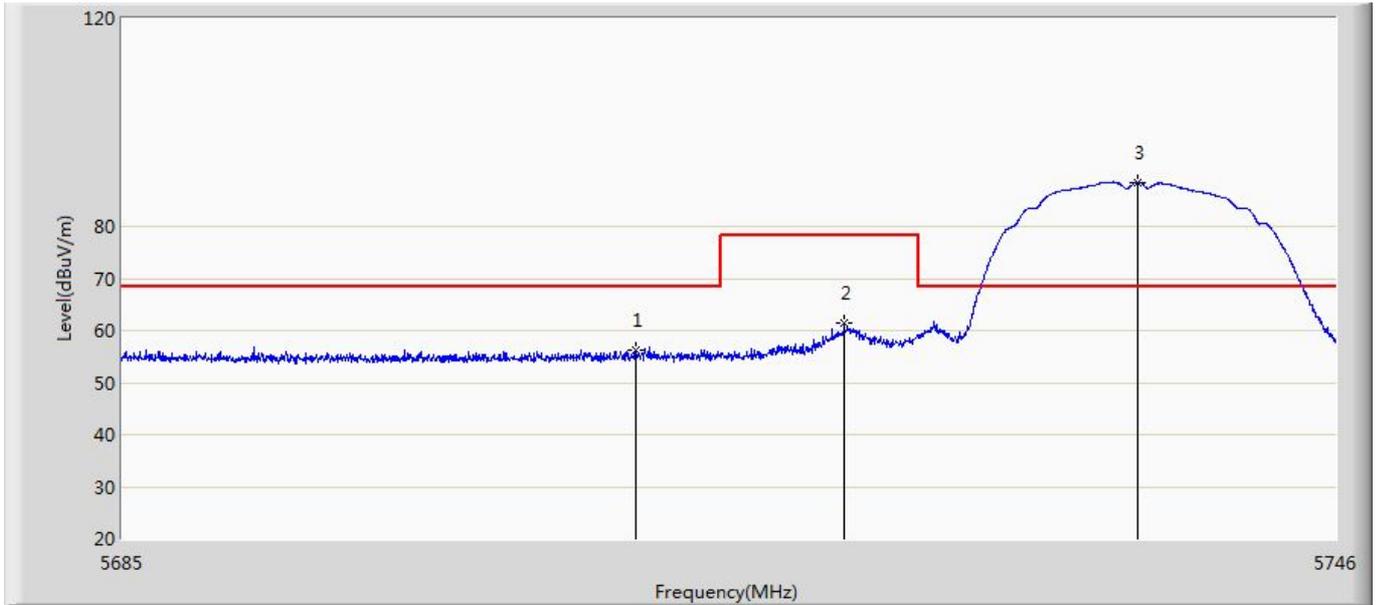
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5243.360	85.620	93.598	N/A	N/A	-7.978	AV
2			5350.000	34.711	42.494	-19.289	54.000	-7.783	AV

Engineer: Jack	
Site: AC5	Time: 2016/03/04 - 14:58
Limit: FCC-15.407 new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1:Transmit at CH5736Mhz with Ant A	



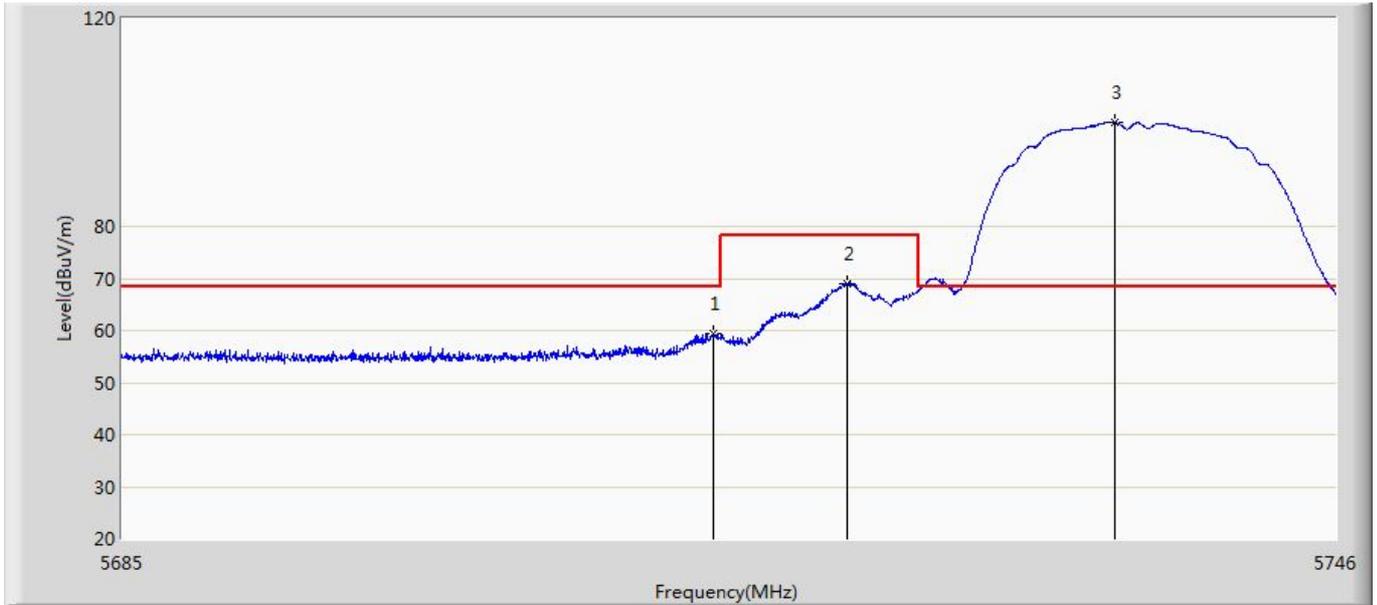
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5714.859	60.125	16.825	-8.175	68.300	43.301	PK
2		5721.356	69.351	26.073	-8.949	78.300	43.279	PK
3	*	5735.904	100.164	56.878	N/A	N/A	43.286	PK

Engineer: Jack	
Site: AC5	Time: 2016/03/04 - 15:06
Limit: FCC-15.407 new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at CH5736Mhz with Ant A	



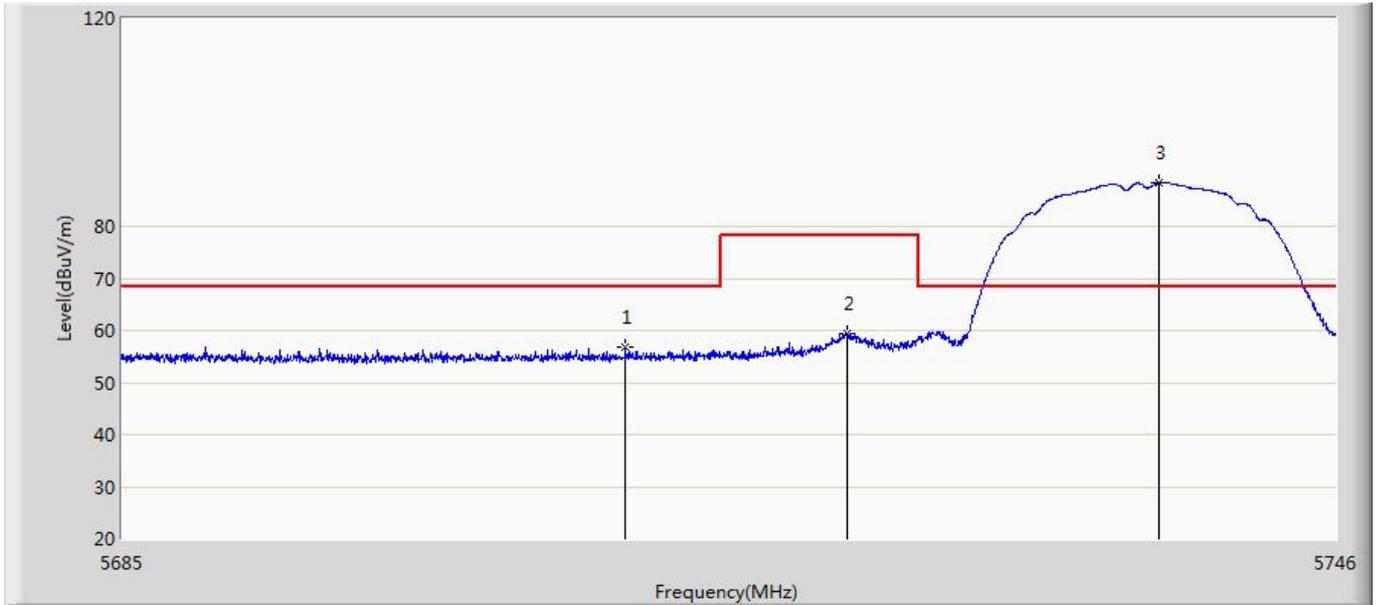
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5710.742	56.183	12.869	-12.117	68.300	43.314	PK
2		5721.234	61.497	18.218	-16.803	78.300	43.279	PK
3	*	5736.026	88.489	45.203	N/A	N/A	43.286	PK

Engineer: Jack	
Site: AC5	Time: 2016/03/04 - 15:13
Limit: FCC-15.407 new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at CH5736Mhz with Ant B	



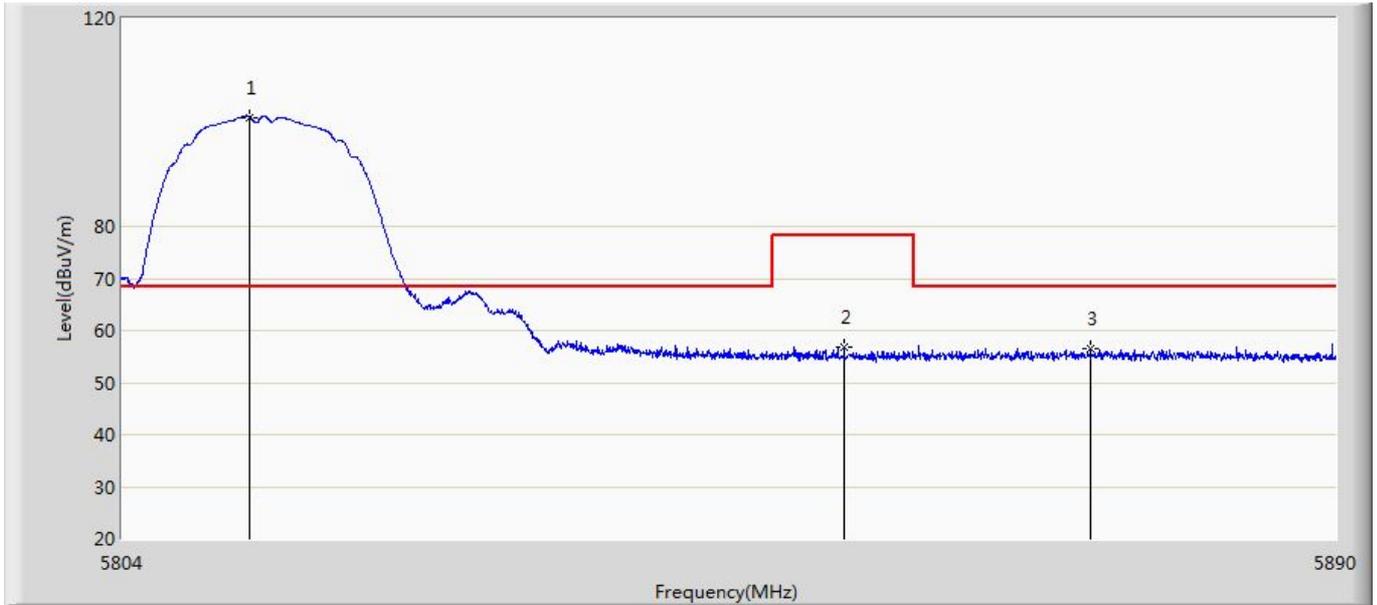
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5714.646	59.340	16.039	-8.960	68.300	43.302	PK
2		5721.417	68.952	25.674	-9.348	78.300	43.278	PK
3	*	5734.837	99.980	56.697	N/A	N/A	43.283	PK

Engineer: Jack	
Site: AC5	Time: 2016/03/04 - 15:14
Limit: FCC-15.407 new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at CH5736Mhz with Ant B	



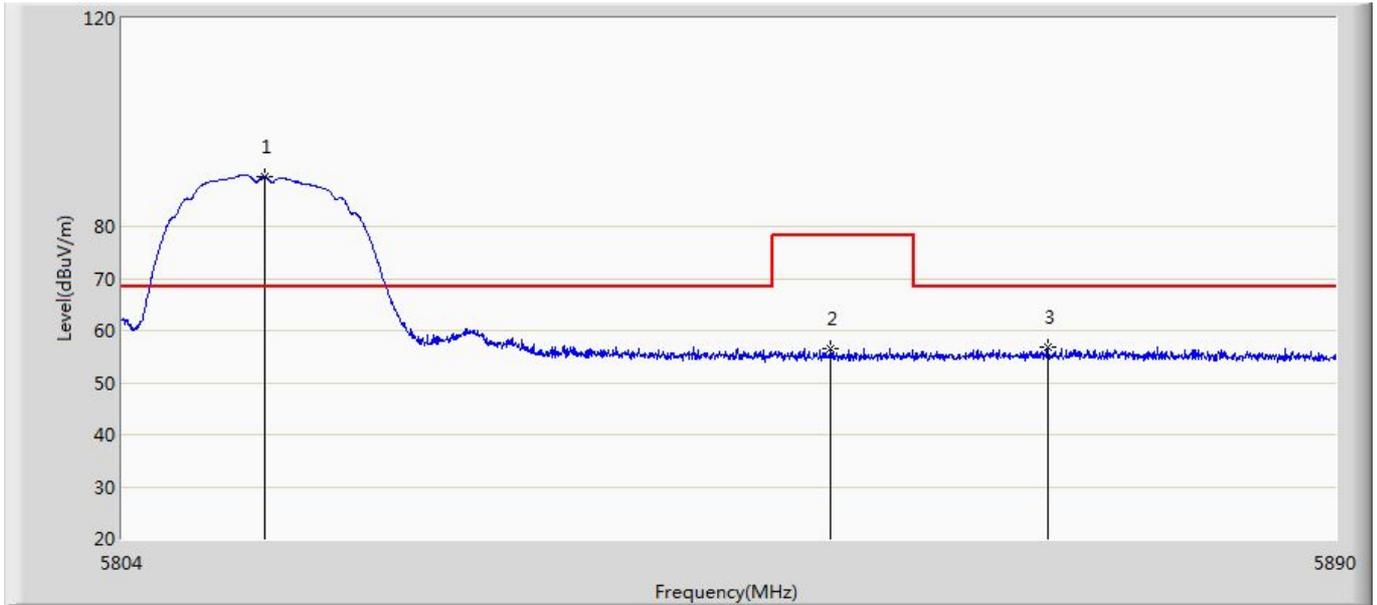
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5710.224	56.826	13.510	-11.474	68.300	43.317	PK
2		5721.387	59.353	16.075	-18.947	78.300	43.278	PK
3	*	5737.063	88.431	45.142	N/A	N/A	43.289	PK

Engineer: Jack	
Site: AC5	Time: 2016/03/04 - 15:16
Limit: FCC-15.407 new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at CH5814Mhz with Ant A	



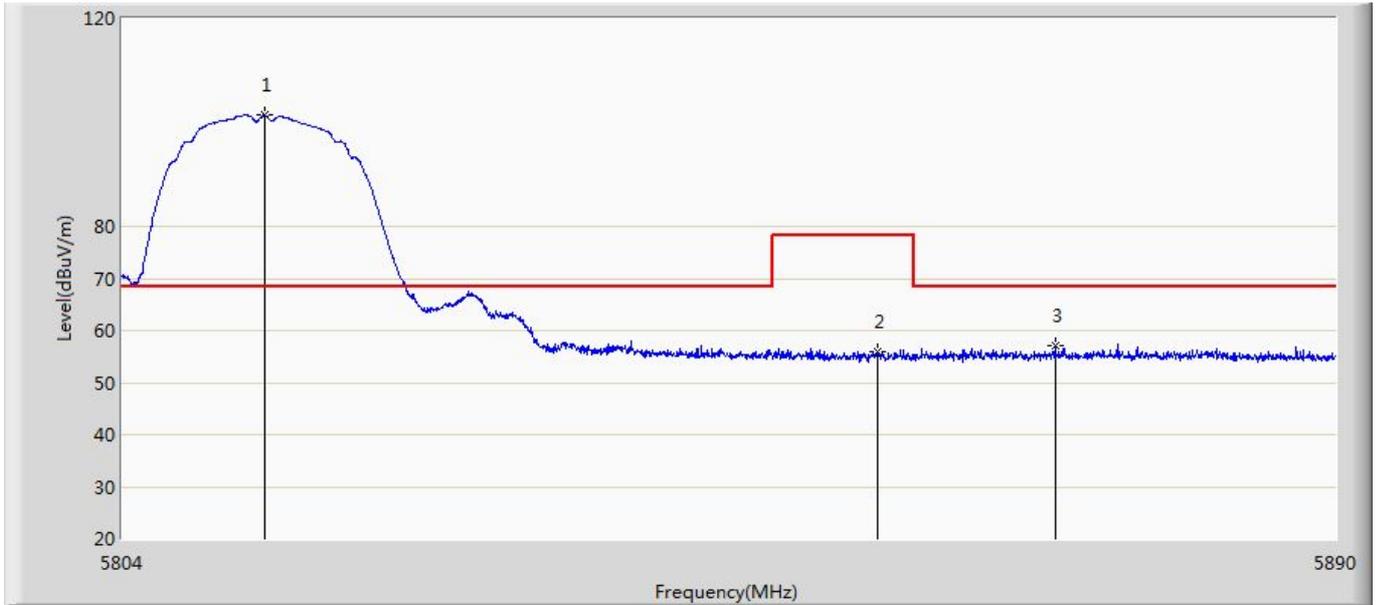
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5813.030	100.909	57.534	N/A	N/A	43.375	PK
2		5855.041	56.839	13.331	-21.461	78.300	43.508	PK
3		5872.542	56.459	12.865	-11.841	68.300	43.594	PK

Engineer: Jack	
Site: AC5	Time: 2016/03/04 - 16:00
Limit: FCC-15.407 new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at CH5814Mhz with Ant A	



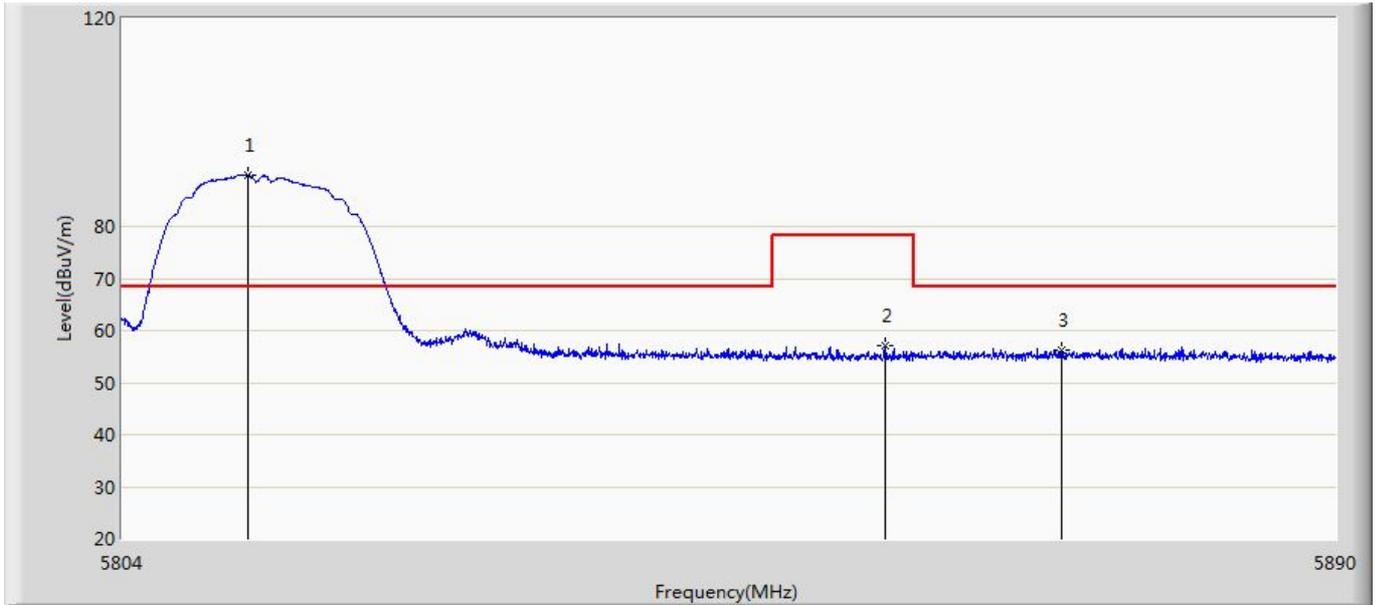
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5814.105	89.571	46.193	N/A	N/A	43.377	PK
2		5854.095	56.535	13.034	-21.765	78.300	43.501	PK
3		5869.489	56.723	13.138	-11.577	68.300	43.585	PK

Engineer: Jack	
Site: AC5	Time: 2016/03/04 - 16:01
Limit: FCC-15.407 new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at CH5814Mhz with Ant B	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5814.105	101.327	57.949	N/A	N/A	43.377	PK
2		5857.449	56.038	12.512	-22.262	78.300	43.527	PK
3		5870.005	57.004	13.418	-11.296	68.300	43.586	PK

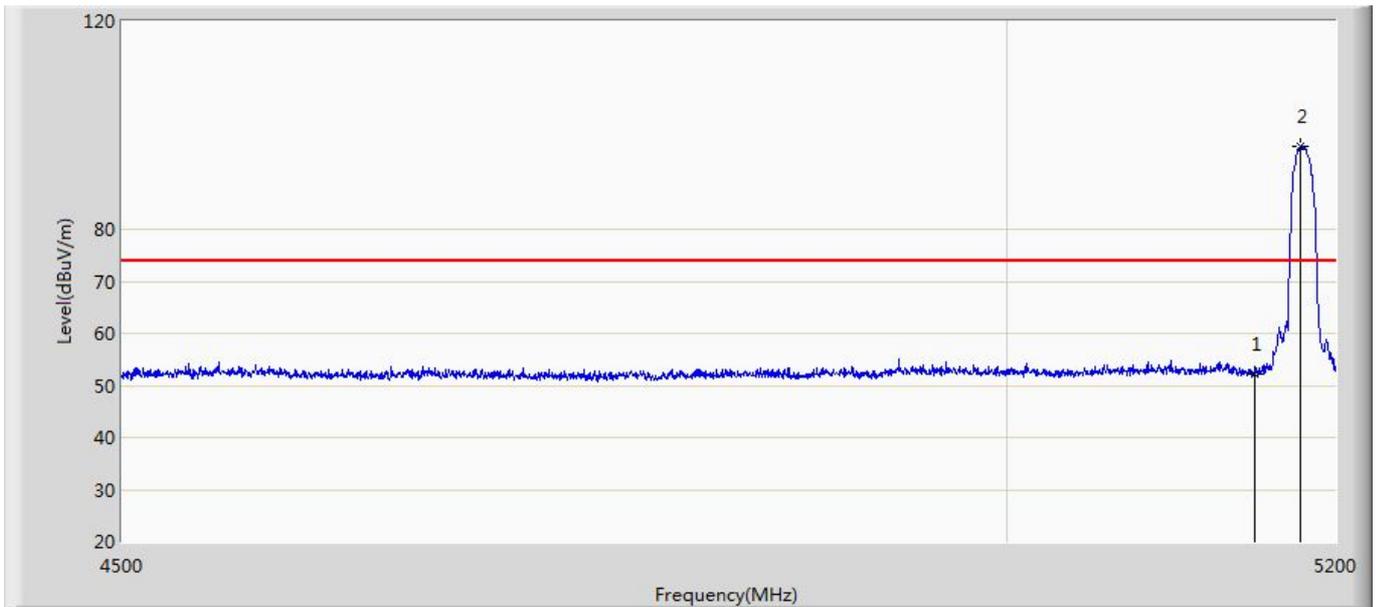
Engineer: Jack	
Site: AC5	Time: 2016/03/04 - 16:02
Limit: FCC-15.407 new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: DWAM83 Wireless Audio Module	Power: DC 5V
Note: Mode 1: Transmit at CH5814Mhz with Ant B	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5812.901	89.840	46.465	N/A	N/A	43.375	PK
2		5857.922	57.230	13.700	-21.070	78.300	43.530	PK
3		5870.478	56.307	12.719	-11.993	68.300	43.588	PK

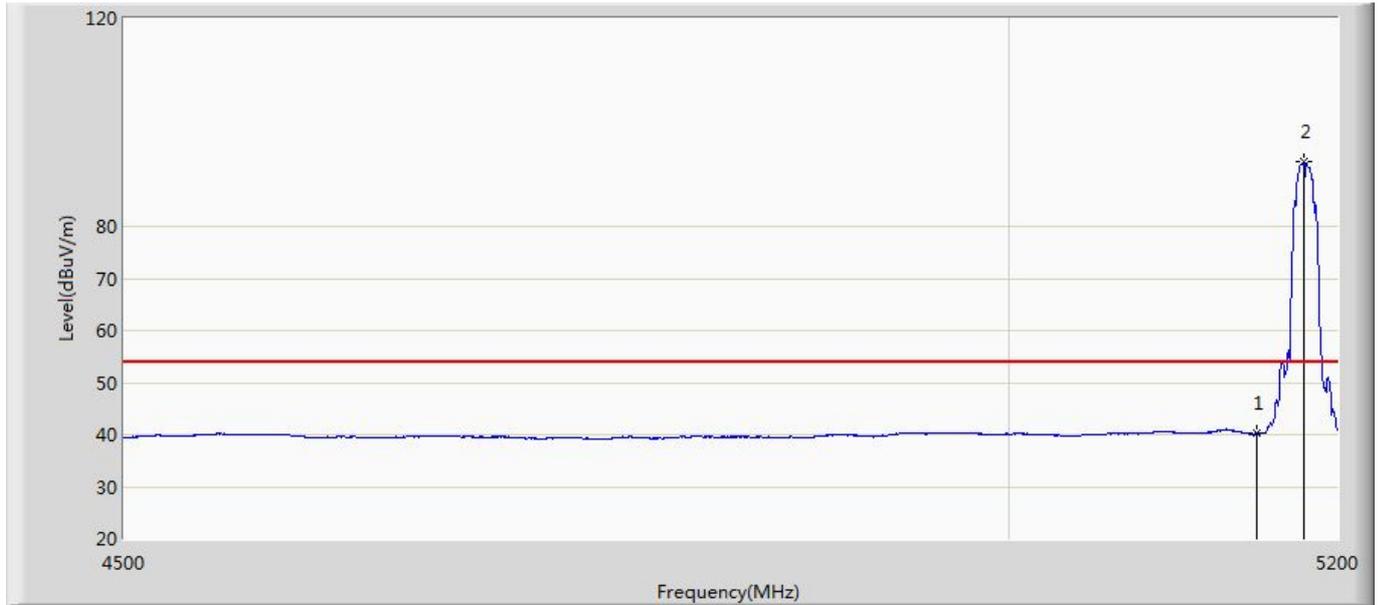
The worst case of Bandedge of Band I:

Engineer: Jack	
Site: AC5	Time: 2016/03/04 - 14:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: DWAM83 WIRELESS AUDIO MODULE	Power: DC 5V
Note: Mode 1:Transmit at CH5180Mhz with Ant B	



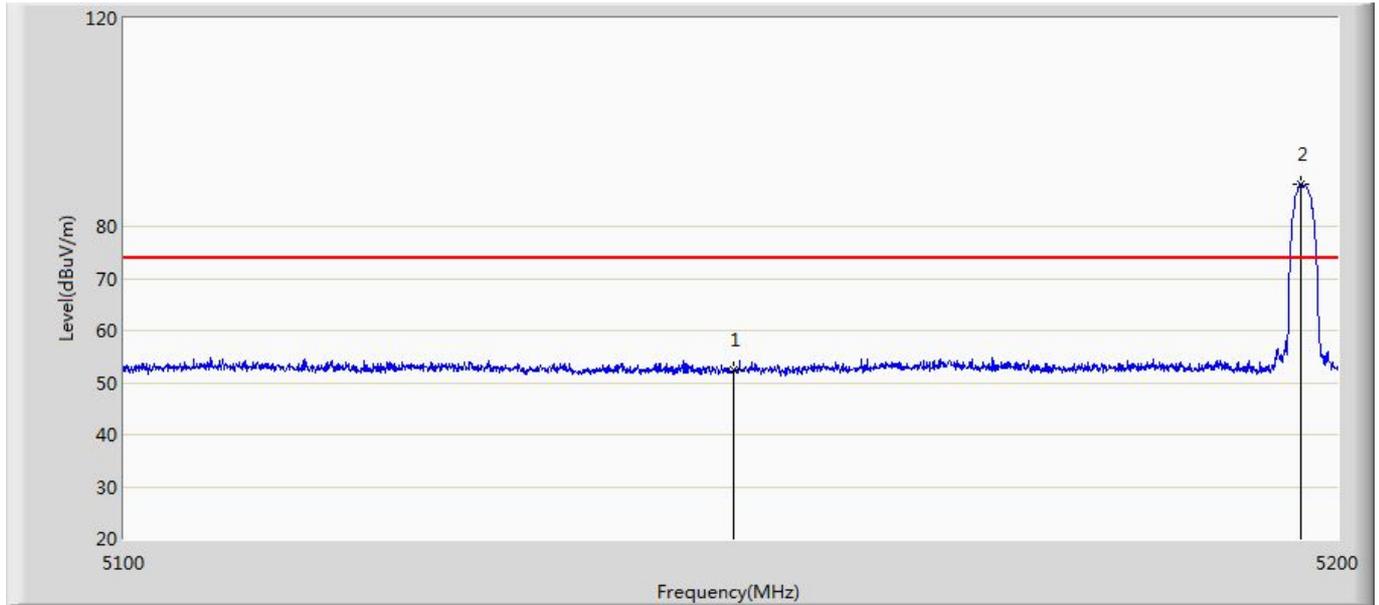
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	52.108	10.093	-21.892	74.000	42.015	PK
2	*	5178.300	95.959	53.814	21.959	74.000	42.145	PK

Engineer: Jack	
Site: AC5	Time: 2016/03/04 - 14:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: DWAM83 WIRELESS AUDIO MODULE	Power: DC 5V
Note: Mode 1:Transmit at CH5180Mhz with Ant B	



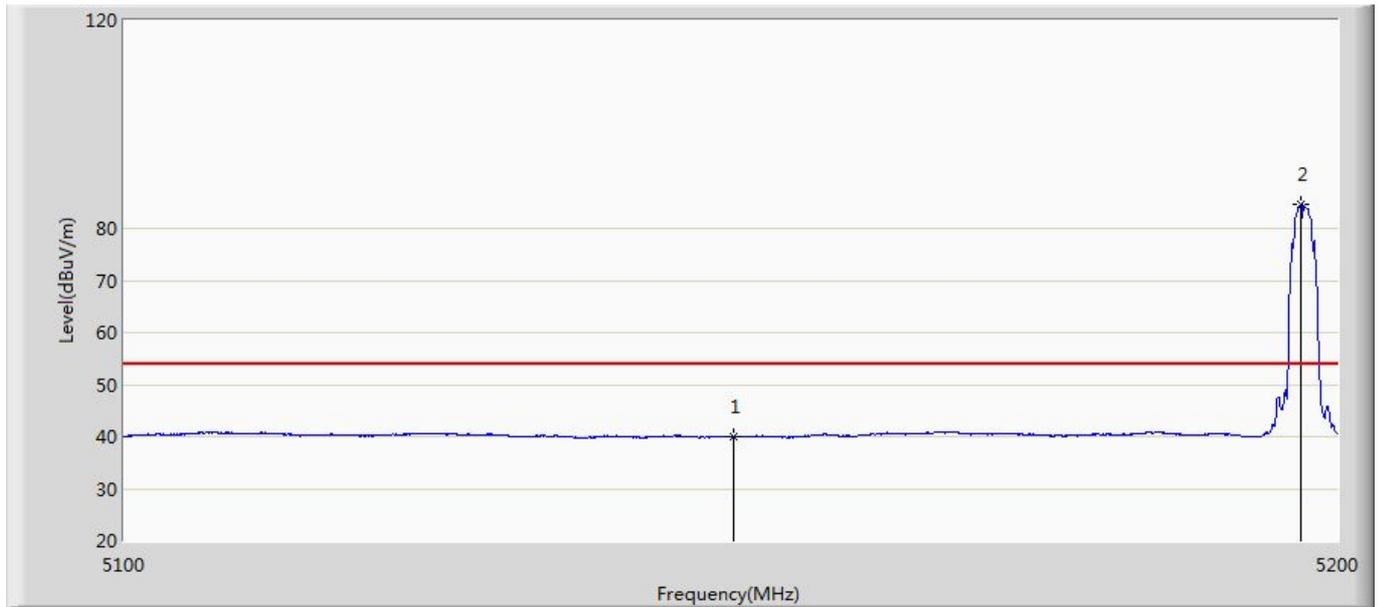
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	40.189	-1.826	-13.811	54.000	42.015	AV
2	*	5179.000	92.345	50.200	38.345	54.000	42.145	AV

Engineer: Jack	
Site: AC5	Time: 2016/03/04 - 14:06
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: DWAM83 WIRELESS AUDIO MODULE	Power: DC 5V
Note: Mode 1:Transmit at CH5180Mhz with Ant B	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	52.557	10.542	-21.443	74.000	42.015	PK
2	*	5196.950	88.228	46.178	14.228	74.000	42.050	PK

Engineer: Jack	
Site: AC5	Time: 2016/03/04 - 14:06
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: DWAM83 WIRELESS AUDIO MODULE	Power: DC 5V
Note: Mode 1:Transmit at CH5180Mhz with Ant B	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	39.947	-2.068	-14.053	54.000	42.015	AV
2	*	5197.000	84.653	42.604	30.653	54.000	42.049	AV

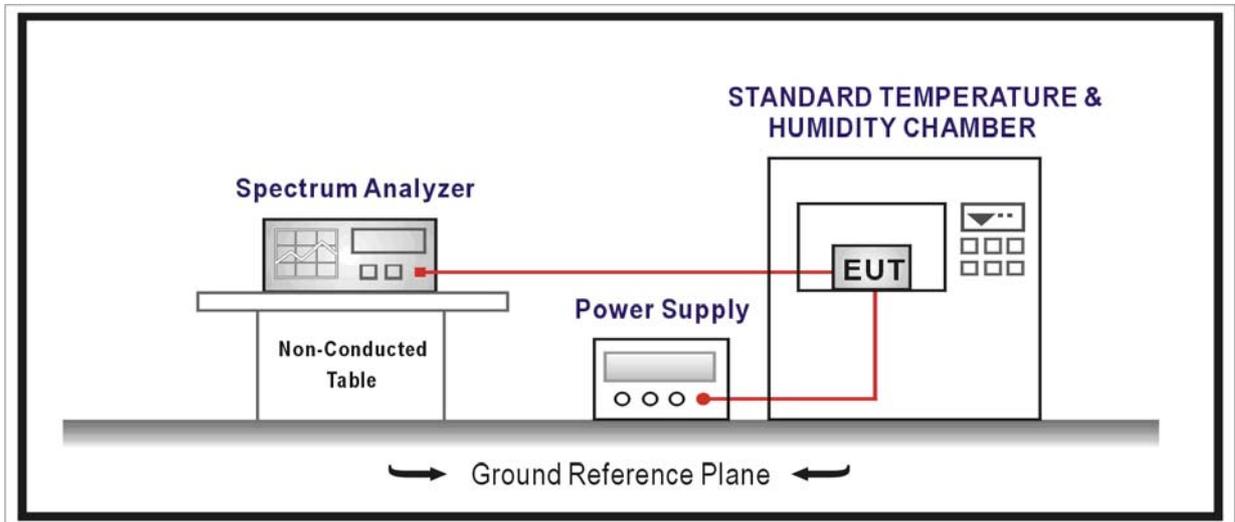
9. Frequency Stability

9.1. Test Equipment

Frequency Stability / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2016.01.04	2017.01.03
AC Power Supply	IDRC	CF-500TP	979422	2015.09.17	2016.09.16
DC Power Supply	IDRC	CD-035-020PR	977272	2015.09.17	2016.09.16
Programmable Temperature & Humidity Chamber	Gaoyu	TH-1P-B	WIT-05121302	2016.01.04	2017.01.03
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2015.04.10	2016.04.09

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

9.2. Test Setup



9.3. Limit

Frequency Stability Limit	
UNII Devices	
<input checked="" type="checkbox"/>	In-band emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.
IEEE Std. 802.11n-2009	
<input checked="" type="checkbox"/>	The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band and ± 25 ppm maximum for the 2.4 GHz band.

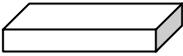
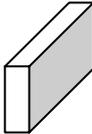
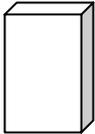
9.4. Test Procedure

Frequency Stability Test Method			
	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	6.8	Frequency stability tests
	<input checked="" type="checkbox"/> ANSI C63.10	6.8.1	Frequency stability with respect to ambient temperature
	<input checked="" type="checkbox"/> ANSI C63.10	6.8.2	Frequency stability when varying supply voltage

9.5. Uncertainty

The measurement uncertainty is defined as ± 100 Hz

9.6. EUT test Axis definition

Item	Radiated Emissions		
Device Category	<input checked="" type="checkbox"/>	Fixed position use	
	<input type="checkbox"/>	Mobile position use	
Test mode	Mode 1, Mode 2, Mode 3, Mode 4		
Axis	X Axis	Y Axis	Z Axis
			
Worse Axis			

9.7. Test Result

Product	:	DWAM83 Wireless Audio Module
Test Item	:	Frequency Stability
Test Site	:	TR-8
Test Mode	:	Carrier Transmit

Frequency Stability under Temperature

Temperature Interval (°C)	Test Frequency (MHz)	Deviation (Hz)
-30	5210.000	171
-20	5210.000	-181
-10	5210.000	-132
0	5210.000	214
10	5210.000	-116
20	5210.000	-88
30	5210.000	118
40	5210.000	100
50	5210.000	-115
-30	5762.000	138
-20	5762.000	154
-10	5762.000	221
0	5762.000	136
10	5762.000	-80
20	5762.000	-70
30	5762.000	253
40	5762.000	187
50	5762.000	132

Frequency Stability under Voltage

AC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)
40.8	5200.000	141
48	5200.000	104
50.4	5200.000	109
40.8	5785.000	118
48	5785.000	121
50.4	5785.000	-153

The End
