




TEST REPORT

FCC: Y40-DX18 IC: 11215A-DX18

Applicant : InMusic Brands, Inc
Address : 200 Scenic View Drive, Cumberland, RI 02864, U.S.A

Equipment Under Test (EUT):

Name : Wireless Audio Transmitter
Model : DX18, DN-202WT
Trademark : 

Standards : FCC PART 15, SUBPART C : 2014 (Section 15.247)
RSS-247 ISSUE 1 MAY 2015; RSS-GEN ISSUE 4 NOV 2014
ANSI C63.4:2014 ; ANSI C63.10:2013

Report No : T1850593 05

Date of Test : June 03, 2015- June 10, 2015

Date of Issue : June 11, 2015

Tset Result : PASS

In the configuration tested, the EUT complied with the standards specified above
Authorized Signature



(Mark Zhu)
Manager

The manufacture should ensure that all the products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of Shenzhen Alpha Product Testing Co., Ltd. Or test done by Shenzhen Alpha Product Testing Co., Ltd. Approvals in connection with, distribution or use of the product described in this report must be approved by Shenzhen Alpha Product Testing Co., Ltd. Approvals in writing.


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TEST REPORT VERIFICATION

Applicant : InMusic Brands, Inc.
Manufacturer : InMusic Brands, Inc.
EUT Description : Wireless Audio Transmitter

(A) Model No. : DX18, DN-202WT
(B) Trademark : 
(C) Ratings Supply : DC 5V from adapter
(D) Test Voltage : DC 5V from adapter

Measurement Standard Used:

FCC Rules and Regulations Part 15 Subpart C 2014, ANSI C63.4-2014

The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits both conducted and radiated emissions. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.


After the test, our opinion is that EUT compliance with the requirement of the above standards.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

Tested by (name + signature).....: Eric Huang
Test Engineer

..........


Approved by (name + signature).....: Simple Guan
Project Manager

..........

Date of issue.....: June 11, 2015

1. General Information

1.1. Description of Device (EUT)

EUT	:	Wireless Audio Transmitter
Model No.	:	DX18, DN-202WT
DIFF	:	Differ only in model name
Trade mark	:	
Power supply	:	DC 5V from adapter
Radio Technology	:	2.4G
Operation frequency	:	2404-2476MHz
Modulation	:	GFSK
Antenna Type	:	Integrated Antenna, max gain 3dBi.
Adapter	:	N/A
Applicant	:	InMusic Brands, Inc
Address	:	200 Scenic View Drive, Cumberland, RI 02864, U.S.A
manufacture	:	Dongguan Jingheng Electron Co., Ltd.
Address	:	Shenshan Industrial City, Hengli Town, Dongguan, Guangdong 523465, P. R. China

1.2. Accessories of device (EUT)

Description : SWITCHING MODE POWER SUPPLY
Manufacturer : N/A
Model No. : GP303U-050-300

1.3. Test Lab information

Shenzhen Alpha Product Testing Co., Ltd
Building B, East Area of Nanchang Second, Industrial Zone, Gushu 2nd Road,
Bao'an, Shenzhen, China

August 11, 2014 File on Federal Communication Commission
Registration Number: 203110

July 18, 2014 Certificated by IC
Registration Number: 12135A

2. Summary of test

2.1. Summary of test result

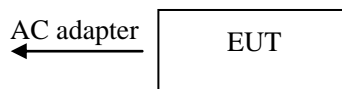
Description of Test Item	Standard	Results
Maximum Peak Output Power	FCC Part 15: 15.247(b)(1) ANSI C63.4 :2014&RSS-247 5.4(2)& ANSI C63.10 :2013	PASS
Bandwidth	FCC Part 15: 15.215 ANSI C63.4 :2014&RSS-247 5.1(2) & ANSI C63.10 :2013	PASS
Carrier Frequency Separation	FCC Part 15: 15.247(a)(1) ANSI C63.4 :2014& RSS-247 5.1(2) & ANSI C63.10 :2013	PASS
Number Of Hopping Channel	FCC Part 15: 15.247(a)(1)(iii) ANSI C63.4 :2014&RSS-247 5.1(4)	PASS
Dwell Time	FCC Part 15: 15.247(a)(1)(iii) ANSI C63.4 :2014&RSS-247 5.1(4) & ANSI C63.10 :2013	PASS
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.4 :2014&RSS-247 Section 5.5& ANSI C63.10 :2013	PASS
Band Edge Compliance	FCC Part 15: 15.247(d) ANSI C63.4 :2014&RSS-247 Section 5.5& ANSI C63.10 :2013	PASS
Power Line Conducted Emissions	FCC Part 15: 15.207 ANSI C63.4 :2014&IC RSS Gen, Section 7.2.4& ANSI C63.10 :2013	PASS
Antenna requirement	FCC Part 15: 15.203 &IC RSS Gen, Section 7.1.43	PASS
Note: Test with the test software Hyperterminal.		

2.2. Assistant equipment used for test

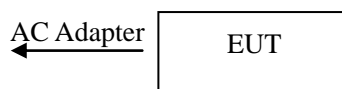
Description	:	Notebook
Manufacturer	:	ACER
Model No.	:	ZQT
Remark: FCC DOC approved		

2.3. Block Diagram

1, For radiated emissions test: EUT was placed on a turn table, which is 0.8 meter high above ground. EUT was be set into BT test mode by Hyperterminal.exe software before test.



2, For Power Line Conducted Emissions Test: EUT was connected to notebook by 1.5m USB line



2.4. Test mode

The test software “Hyperterminal.exe” was used to control EUT work in Continuous TX mode, and select test channel, wireless mode.

Tested mode, channel, and data rate information		
Mode	Channel	Frequency (MHz)
GFSK	Low :CH1	2404
	Middle: CH13	2440
	High: CH25	2476

Channel List

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	2404	10	2431	19	2458
2	2407	11	2434	20	2461
3	2410	12	2437	21	2464
4	2413	13	2440	22	2467
5	2416	14	2443	23	2470
6	2419	15	2446	24	2473
7	2422	16	2449	25	2476
8	2425	17	2452		
9	2428	18	2455		

2.5. Test Conditions

Temperature range	21-25°C
Humidity range	40-75%
Pressure range	86-106kPa

2.6. Measurement Uncertainty (95% confidence levels, k=2)

Item	MU	Remark
Uncertainty for Power point Conducted Emissions Test	2.42dB	
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	2.13 dB	Polarize: V
	2.57dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.54dB	Polarize: V
	4.1dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	2.08dB	Polarize: H
	2.56dB	Polarize: V
Uncertainty for radio frequency	1×10-9	
Uncertainty for conducted RF Power	0.65dB	
Uncertainty for temperature	0.2°C	
Uncertainty for humidity	1%	
Uncertainty for DC and low frequency voltages	0.06%	

2.7. Test Equipment

Equipment	Manufacture	Model No.	Serial No.	Cal. Due day	Cal Interval
3m Semi-Anechoic	ETS-LINDGREN	N/A	SEL0017	2016.01.19	1 Year
Spectrum analyzer	Agilent	E4407B	MY49510055	2016.01.19	1 Year
Receiver	R&S	ESCI	101165	2016.01.19	1 Year
Bilog Antenna	SCHWARZBECK	VULB 9168	9168-438	2017.01.21	2 Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D(1201)	2017.01.21	2 Year
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170 D(1432)	2017.01.21	2 Year
Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	2016.01.19	1 Year
Cable	Resenberger	SUCOFLEX 104	MY6562/4	2016.01.19	1 Year
Cable	Resenberger	SUCOFLEX 104	309972/4	2016.01.19	1 Year
Cable	Resenberger	SUCOFLEX 104	329112/4	2016.01.19	1 Year
L.I.S.N.#1	Schwarzbeck	NSLK8126	8126466	2016.01.19	1 Year
L.I.S.N.#2	ROHDE&SCHWARZ	ENV216	101043	2016.01.19	1 Year
Power Meter	Anritsu	ML2487A	6K00001491	2016.01.19	1 Year
Power sensor	Anritsu	ML2491A	32516	2016.01.19	1 Year
Pre-amplifier	SCHWARZBECK	BBV9743	9743-019	2016.01.19	1 Year
Pre-amplifier	Quietek	AP-180C	CHM-0602012	2016.01.19	1 Year

3. Maximum Peak Output power

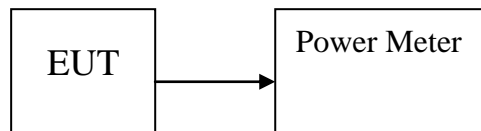
3.1. Limit

Please refer RSS-247 & section15.247.

3.2. Test Procedure

The transmitter output is connected to the RF Power Meter. The RF Power Meter is set to the peak power detection.

3.3. Test Setup



3.4. Test Result

EUT: Wireless Audio Transmitter			M/N: DN-202WT		
Test date: 2015-06-10		Test site: RF site		Tested by: Eric Huang	
Mode	Freq (MHz)	PK Output Power (dBm)	PK Output Power (mW)	Limit (dBm)	Margin (dB)
GFSK	2404	14.76	29.92	21	6.24
	2440	15.64	36.64	21	5.36
	2476	15.59	36.22	21	5.41
Conclusion: PASS					

4. Bandwidth

4.1. Limit

Please refer RSS-247 & section15.247.

4.2. Test Procedure

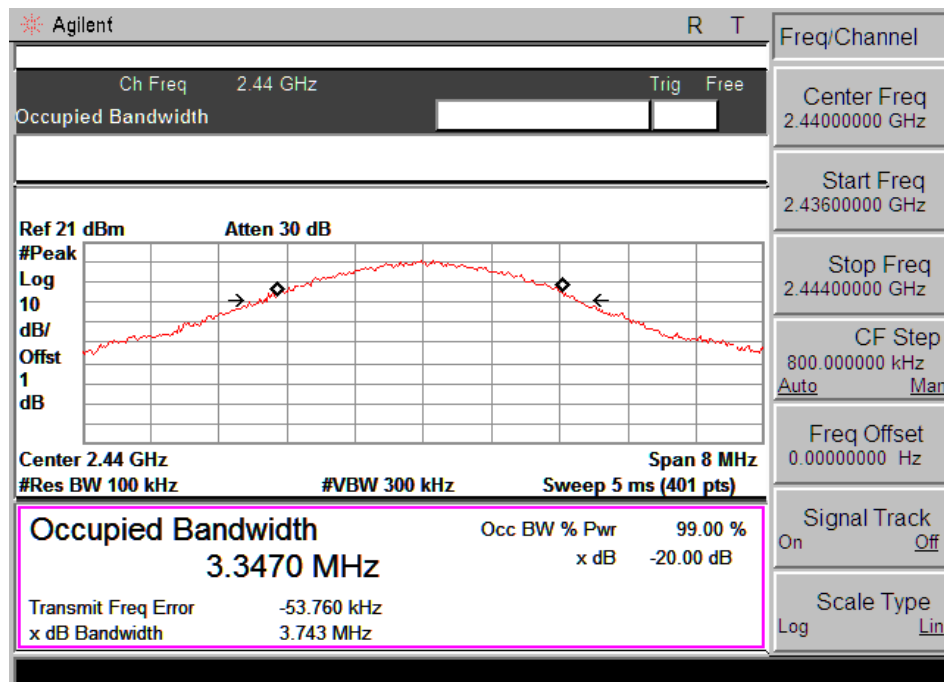
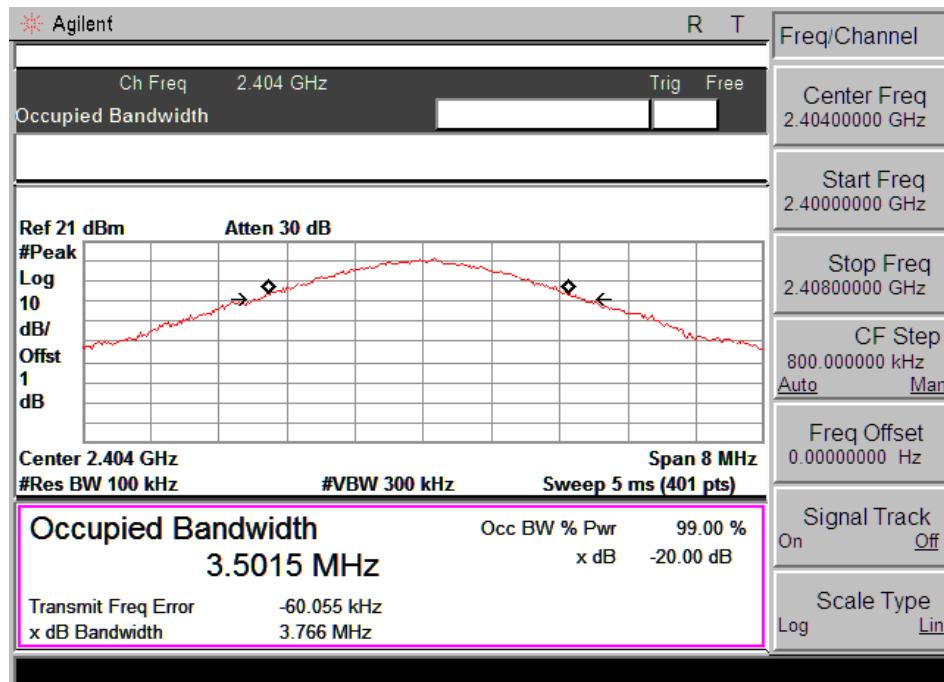
The transmitter output was coupled to a spectrum analyzer via a antenna. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30kHz RBW and 100kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

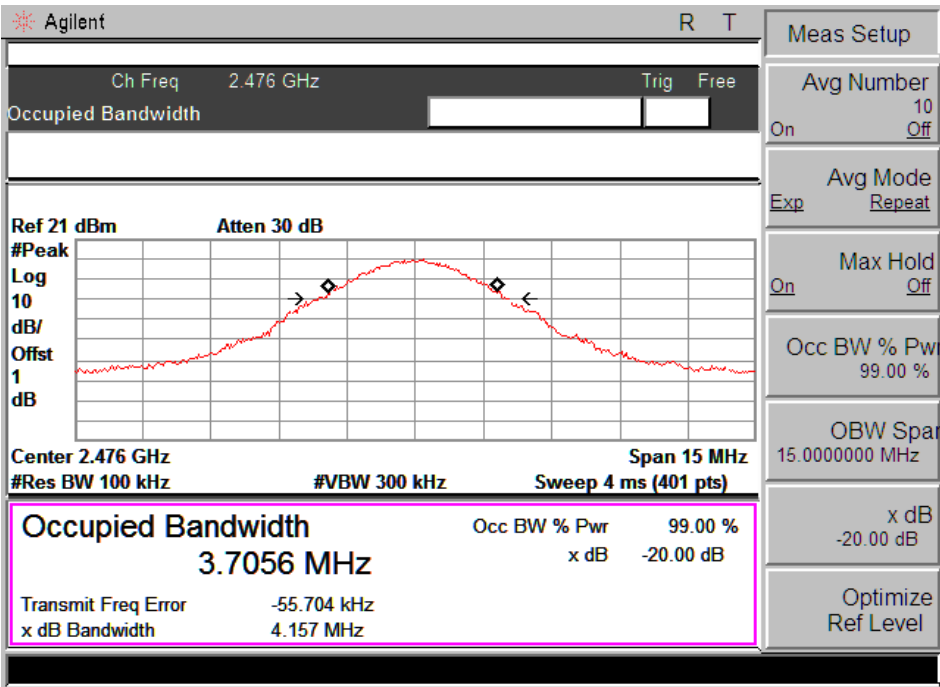
4.3. Test Result

EUT: Wireless Audio Transmitter		M/N: DN-202WT		
Test date: 2015-06-10		Test site: RF site		Tested by: Eric Huang
Mode	Freq (MHz)	20dB Bandwidth (MHz)	Limit (kHz)	Conclusion
GFSK	2404	3.766	/	PASS
	2440	3.743	/	PASS
	2476	4.157	/	PASS

Original Test data For 20dB bandwidth

GFSK:





5. Carrier Frequency Separation

5.1. Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW

5.2. Test Procedure

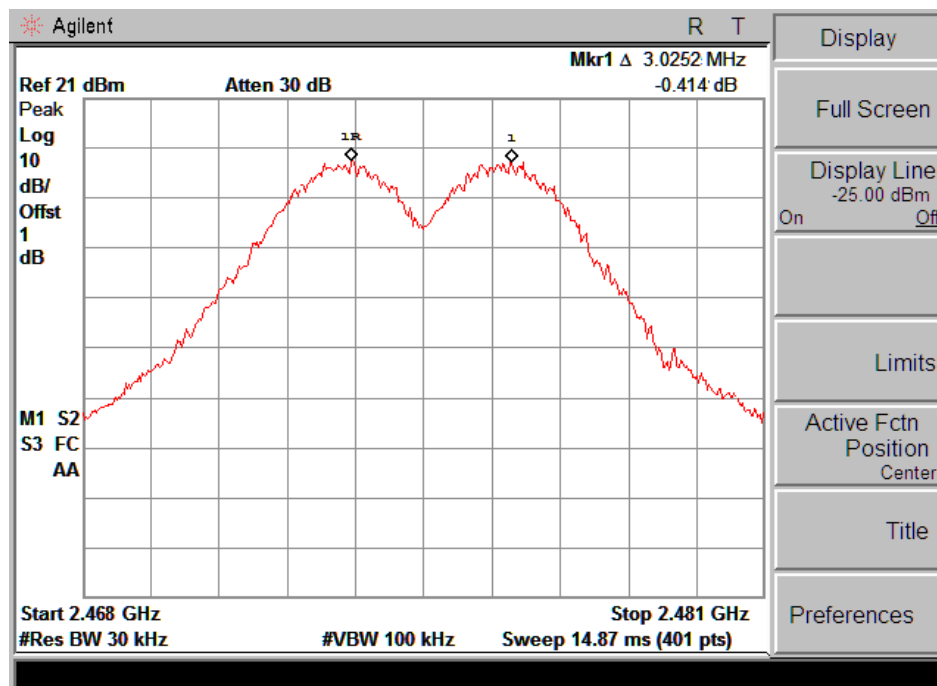
The transmitter output was coupled to a spectrum analyzer via a antenna. The carrier frequency was measured by spectrum analyzer with 30kHz RBW and 100kHz VBW.

5.3. Test Result

EUT: Wireless Audio Transmitter		M/N: DN-202WT		
Test date: 2015-06-10		Test site: RF site		Tested by: Eric Huang
Mode/Channel	Channel separation (MHz)	20dB Bandwidth (MHz)	Limit (MHz) 2/3 20dB bandwidth	Conclusion
GFSK	3.0252	4.157	2.721	PASS

Original test data for channel separation

GFSK



6. Number Of Hopping Channel

6.1. Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels

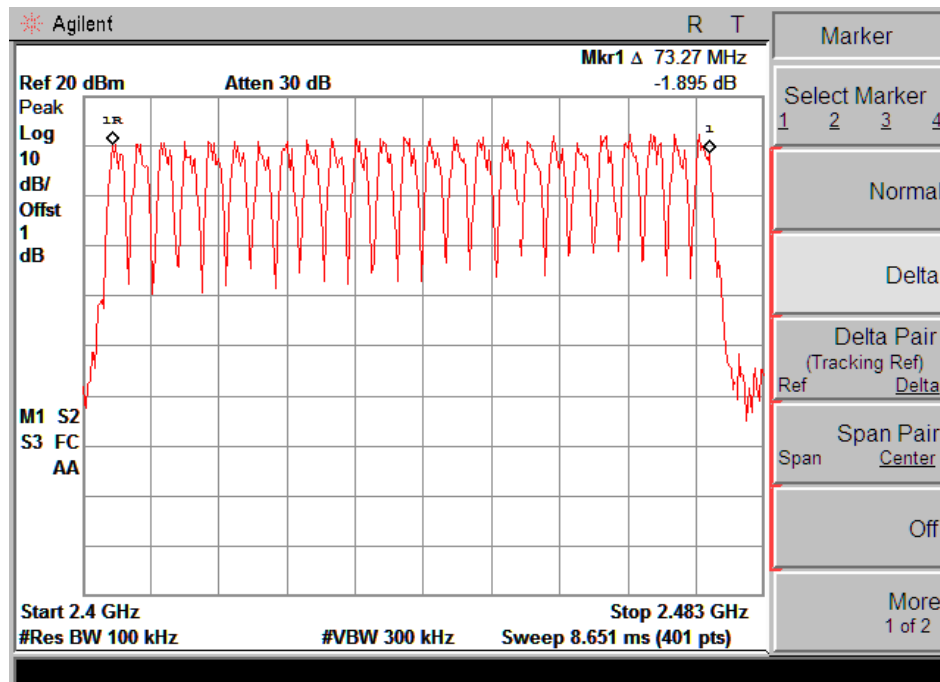
6.2. Test Procedure

The transmitter output was coupled to a spectrum analyzer via a antenna. The number of hopping channel was measured by spectrum analyzer with 100kHz RBW and 300KHz VBW.

6.3. Test Result

EUT: Wireless Audio Transmitter		M/N: DN-202WT	
Test date: 2015-06-10		Test site: RF site	Tested by: Eric Huang
Mode	Number of hopping channel	Limit	Conclusion
GFSK	25	>15	PASS

Original test data for hopping channel number
GFSK



7. Dwell Time

7.1. Test limit

Please refer RSS-247 & section15.247.

7.2. Test Procedure

7.2.1. Place the EUT on the table and set it in transmitting mode.

7.2.2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

7.2.3. Set center frequency of spectrum analyzer = operating frequency.

7.2.4. Set the spectrum analyzer as RBW, VBW=1MHz, Span = 0Hz, Sweep = auto.

7.2.5. Repeat above procedures until all frequency measured were complete.

7.3. Test Results

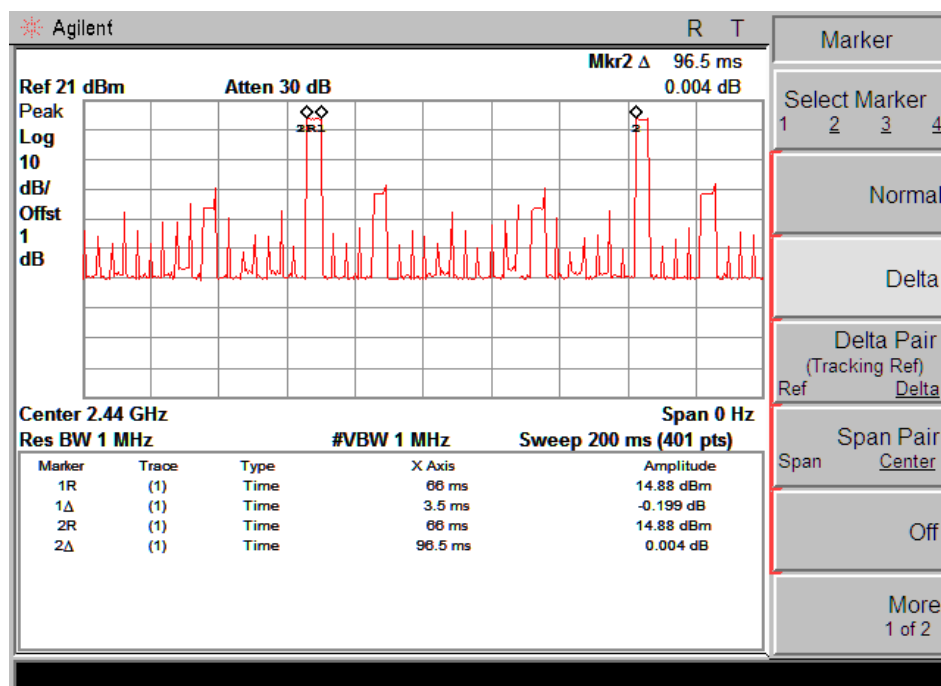
PASS.

Detailed information please see the following page.

EUT: Wireless Audio Transmitter M/N: DN-202WT						
Test date: 2015-06-10		Test site: RF site		Tested by: Eric Huang		
Mode	Channel No.	Frequency (MHz)	Pulse Duration (ms)	Dwell Time (s)	Limit (s)	Conclusion
GFSK	13	2440	3.5	0.35	<0.4	PASS
Note: 1 A period time = 0.4 (s) * 25 = 10(s)						
Note: 2 Dwell time=10*1000/200*number of Burst*Pluse Duration/1000						

GFSK

DH13:



8. Radiated emissions

8.1. Limit

All the emissions appearing within RSS-GEN restricted frequency bands shall not exceed the limits shown in RSS-GEN, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with RSS-GEN limits.

RSS-GEN Restricted frequency band

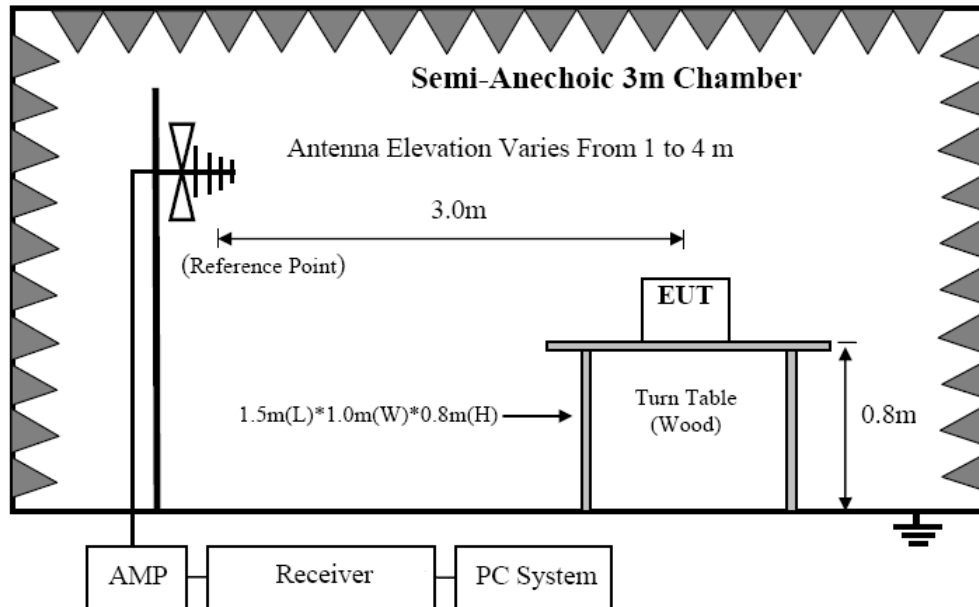
MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 -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

RSS-GEN Limit

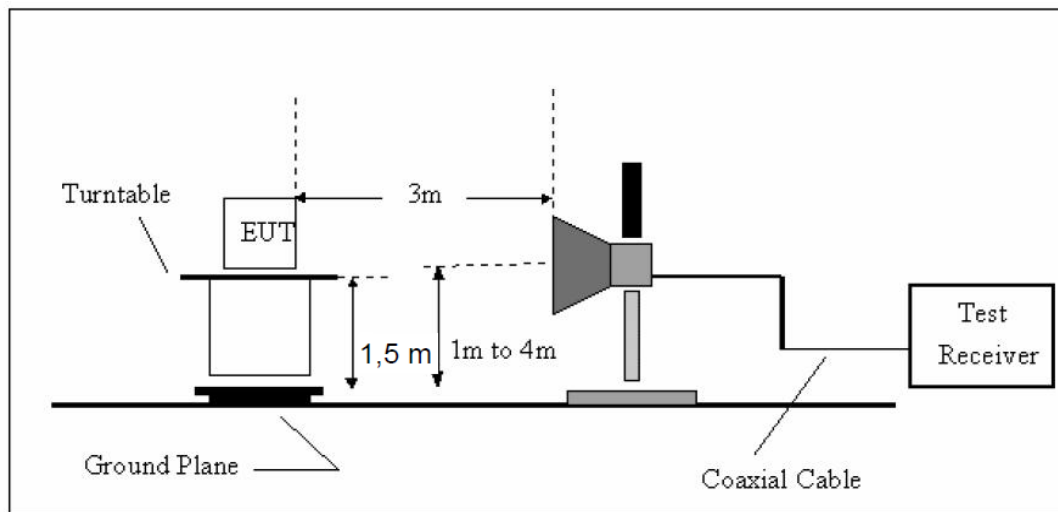
FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
0.009-0.490	300	2400/F(KHz)	/
0.490-1.705	30	24000/F(KHz)	/
1.705-30	30	30	29.5
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

8.2. Block Diagram of Test setup

8.2.1 In 3m Anechoic Chamber Test Setup Diagram for below 1GHz



8.2.2 In 3m Anechoic Chamber Test Setup Diagram for frequency above 1GHz



Note: For harmonic emissions test a appropriate high pass filter was inserted in the input port of AMP.

8.3. Test Procedure

- (1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber.
- (2) Setup EUT and simulator as shown in section 1.4 and 6.1
- (3) Test antenna was located 3m from the EUT on an adjustable mast. Below pre-scan procedure was first performed in order to find prominent radiated emissions.
 - (a) Change work frequency or channel of device if practicable.
 - (b) Change modulation type of device if practicable.
 - (c) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions
- (4) Spectrum frequency from 9KHz to 25GHz (tenth harmonic of fundamental frequency) was investigated
- (5) For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4 2014 on Radiated Emission test.
- (6) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz, VBW is set at 3MHz for Peak measure; RBW is set at 1MHz, VBW is set at 10Hz for Average measure.

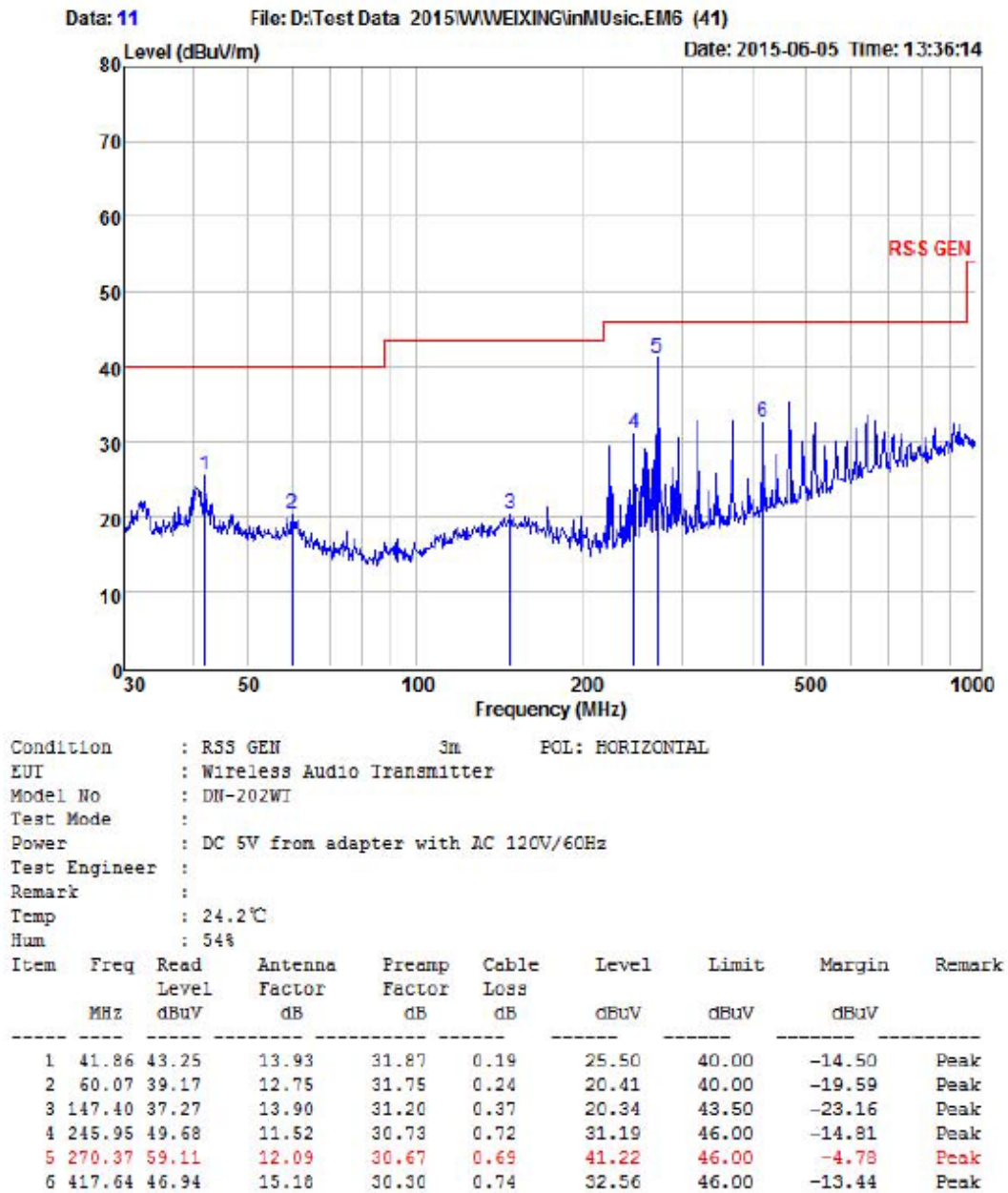
8.4. Test Result

We have scanned the 10th harmonic from 9KHz to the EUT.
Detailed information please see the following page.

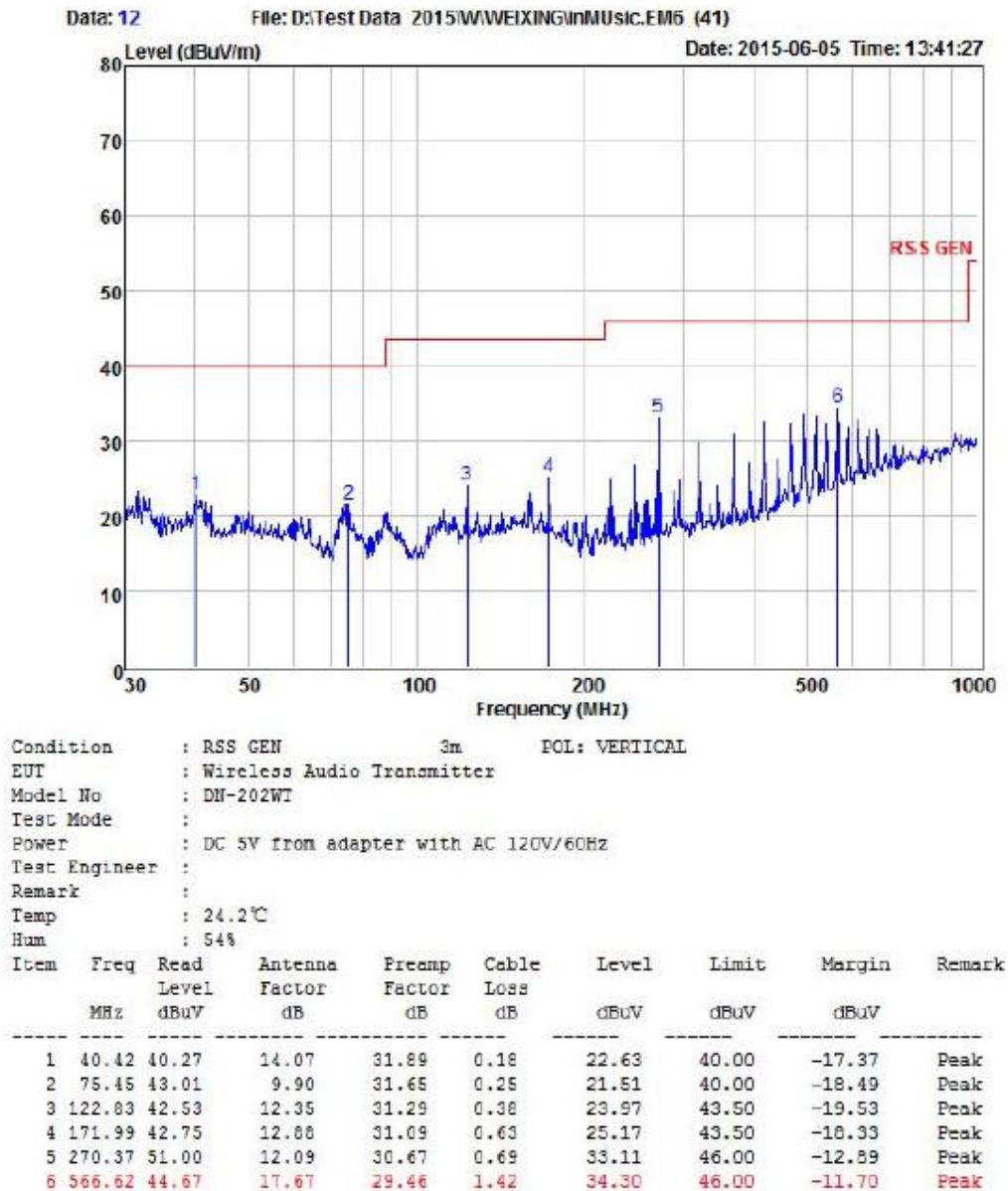
From 9KHz to 30MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

From 30MHz to 1000MHz: Conclusion: PASS



Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

Remark: All modes have been tested, and only worst data of GFSK mode, Channel 2404MHz was listed in this report.

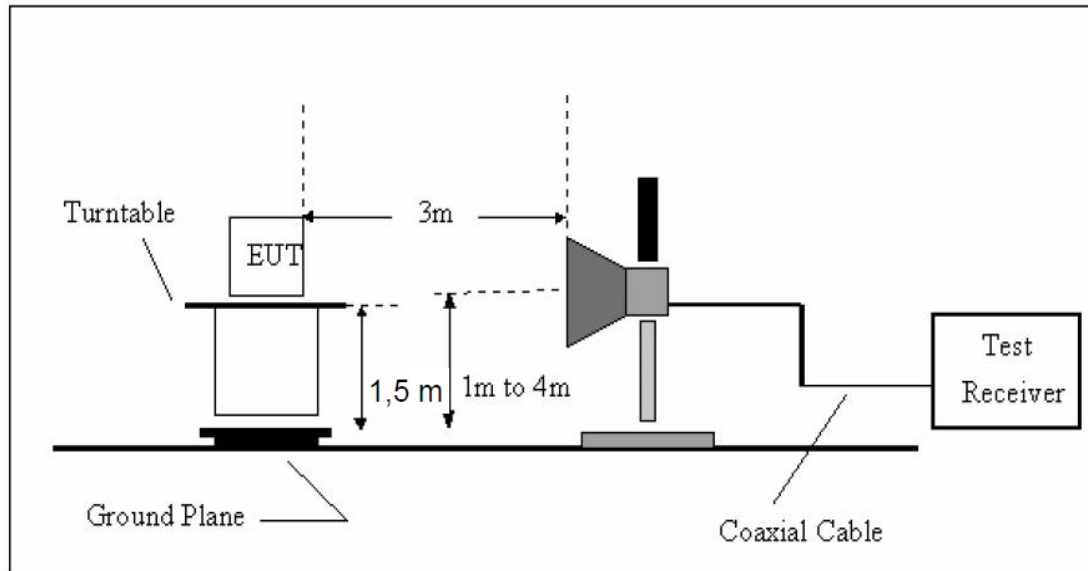
1GHz—25GHz Radiated emission Test result									
EUT: Wireless Audio Transmitter					M/N: DN-202WT				
Power: DC 5.0V From adapter AC 120V/60Hz									
Test date: 2015-06-06			Test site: 3m Chamber			Tested by: Eric Huang			
Test mode: GFSK Tx CH1 2404MHz									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4808	52.38	31.26	5.7	34.2	55.14	74	18.86	PK
2	4808	39.88	31.26	5.7	34.2	42.64	54	11.36	AV
3	7212	/							
4	9612	/							
5	/	/							
Antenna Polarity: Horizontal									
1	4808	58.91	31.26	5.7	34.2	61.67	74	12.33	PK
2	4808	45.68	31.26	5.7	34.2	48.44	54	5.56	AV
3	7212	/							
4	9612	/							
5	/	/							
Note:									
1, Measuring frequency from 1GHz to 25GHz									
2, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto.									
Detector: PK									
2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto.									
Detector: PK									
3, Result = Read level + Antenna factor + cable loss-Amp factor									
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.									

1GHz—25GHz Radiated emissison Test result									
EUT: Wireless Audio Transmitter					M/N: DN-202WT				
Power: DC 5.0V From adapter AC 120V/60Hz									
Test date: 2015-06-06 Test site: 3m Chamber Tested by: Eric Huang									
Test mode: GFSK Tx CH40 2440MHz									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(d B)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4880	52.46	31.38	5.75	34.14	55.45	74	18.55	PK
2	4880	40.57	31.38	5.75	34.14	43.56	54	10.44	AV
3	7320	/							
4	9760	/							
5	/	/							
Antenna Polarity: Horizontal									
1	4880	58.97	31.38	5.75	34.14	61.96	74	12.04	PK
2	4880	45.83	31.38	5.75	34.14	48.82	54	5.18	AV
3	7320	/							
4	9760	/							
5	/	/							
Note:									
1, Measuring frequency from 1GHz to 25GHz									
2, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK									
2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK									
3, Result = Read level + Antenna factor + cable loss-Amp factor									
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.									

1GHz—25GHz Radiated emissison Test result									
EUT: Wireless Audio Transmitter					M/N: DN-202WT				
Power: DC 5.0V From adapter AC 120V/60Hz									
Test date: 2015-06-06			Test site: 3m Chamber			Tested by: Eric Huang			
Test mode: GFSK Tx CH79 2476MHz									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4952	52.37	31.48	5.79	34.08	55.56	74	18.44	PK
2	4952	40.29	31.48	5.79	34.08	43.48	54	10.52	AV
3	7428	/							
4	9904	/							
5	/	/							
Antenna Polarity: Horizontal									
1	4952	58.16	31.48	5.79	34.08	61.35	74	12.65	PK
2	4952	44.96	31.48	5.79	34.08	48.15	54	5.85	AV
3	7428	/							
4	9904	/							
5	/	/							
Note:									
1, Measuring frequency from 1GHz to 25GHz									
2, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK									
2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK									
3, Result = Read level + Antenna factor + cable loss-Amp factor									
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.									

9. Band Edge Compliance

9.1. Block Diagram of Test Setup



9.2. Limit

All the lower and upper band-edges emissions appearing within restricted frequency bands shall not exceed the limits shown in RSS-GEN, all the other emissions outside operation shall be at least 20dB below the fundamental emissions, or comply with RSS-GEN limits.

9.3. Test Procedure

All restriction band and non- restriction band have been tested , only worse case is reported.

9.4. Test Result

PASS. (See below detailed test data)

Radiated Method

GFSK (CH Low)

Band Edge Test result								
EUT: Wireless Audio Transmitter					M/N: DN-202WT			
Power: DC 5.0V From adapter								
Test date: 2015-06-06			Test site: 3m Chamber		Tested by: Eric Huang			
Test mode: Tx CH Low 2404MHz								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2390	42.56	27.62	3.92	34.97	39.13	74	34.87	PK
2390	--	27.62	3.92	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2390	43.19	27.62	3.92	34.97	39.76	74	34.24	PK
2390	--	27.62	3.92	34.97	--	54	--	AV
Note:								
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK								
2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK								
3, Result = Read level + Antenna factor + cable loss-Amp factor								
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

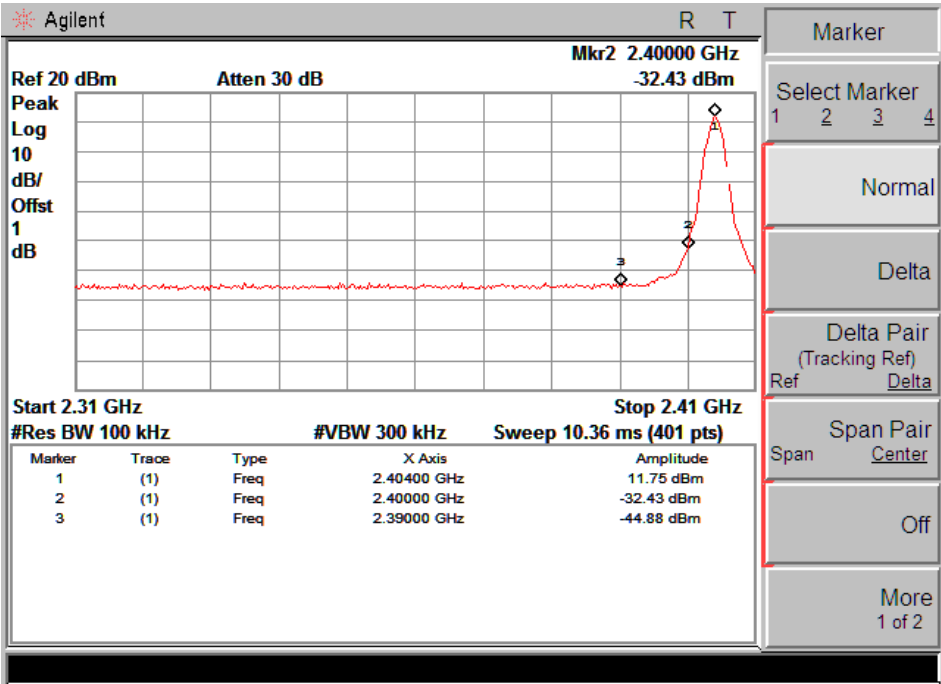
Band Edge Test result								
EUT: Wireless Audio Transmitter					M/N: DN-202WT			
Power: DC 5.0V From adapter								
Test date: 2015-06-06			Test site: 3m Chamber		Tested by: Eric Huang			
Test mode: Tx CH High 2476MHz								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2483.5	43.58	27.89	4	34.97	40.5	74	33.5	PK
2483.5		--	--	--	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	45.24	27.89	4	34.97	42.16	74	31.84	PK
2483.5		--	--	--	--	54	--	AV
Note:								
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK								
2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK								
3, Result = Read level + Antenna factor + cable loss-Amp factor								
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

GFSK (Hopping Low)

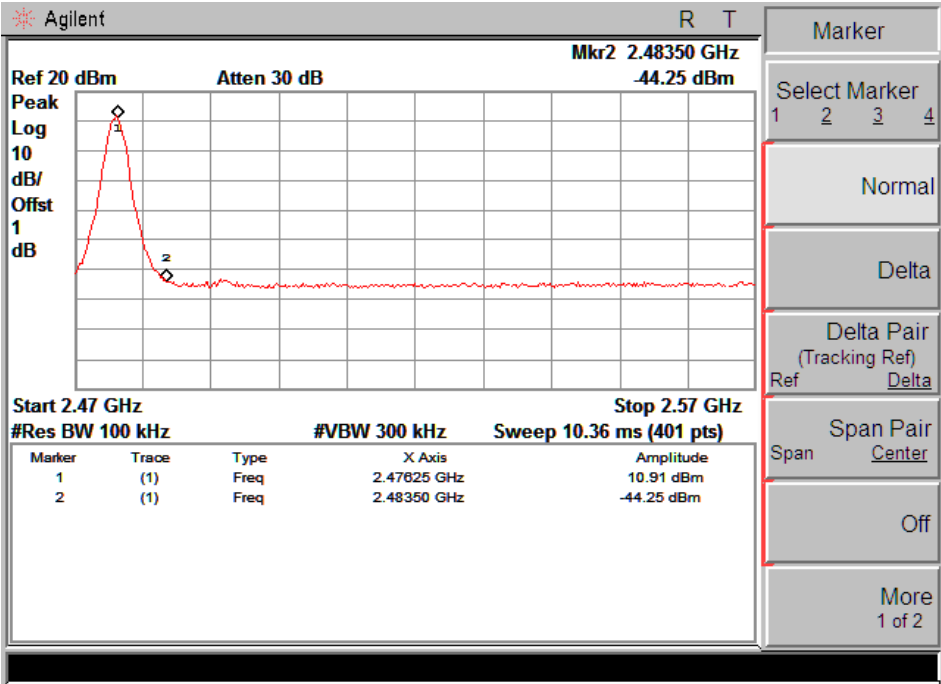
Band Edge Test result								
EUT: Wireless Audio Transmitter					M/N: DN-202WT			
Power: DC 5.0V From adapter								
Test date: 2015-06-06			Test site: 3m Chamber		Tested by: Eric Huang			
Test mode: Tx								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2390	43.29	27.62	3.92	34.97	39.86	74	34.14	PK
2390	--	27.62	3.92	34.97	--	54	--	AV
Antenna Polarity: Horizontal								
2390	44.51	27.62	3.92	34.97	41.08	74	32.92	PK
2390	--	27.62	3.92	34.97	--	54	--	AV
Note:								
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK								
2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK								
3, Result = Read level + Antenna factor + cable loss-Amp factor								
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

Band Edge Test result								
EUT: Wireless Audio Transmitter					M/N: DN-202WT			
Power: DC 5.0V From adapter								
Test date: 2015-06-06			Test site: 3m Chamber		Tested by: Eric Huang			
Test mode: Tx								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2483.5	43.81	27.89	4	34.97	40.73	74	33.27	PK
2483.5		--	--	--	--	54	--	AV
Antenna Polarity: Horizontal								
2483.5	44.26	27.89	4	34.97	41.18	74	32.82	PK
2483.5		--	--	--	--	54	--	AV
Note:								
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK								
2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK								
3, Result = Read level + Antenna factor + cable loss-Amp factor								
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

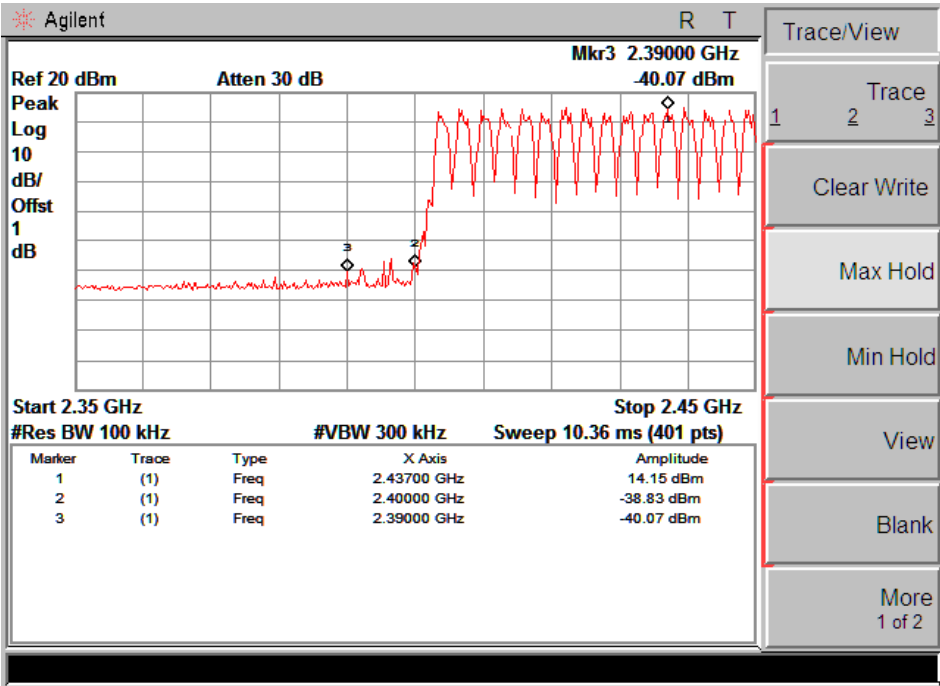
Conducted Method
GFSK
CH LOW :



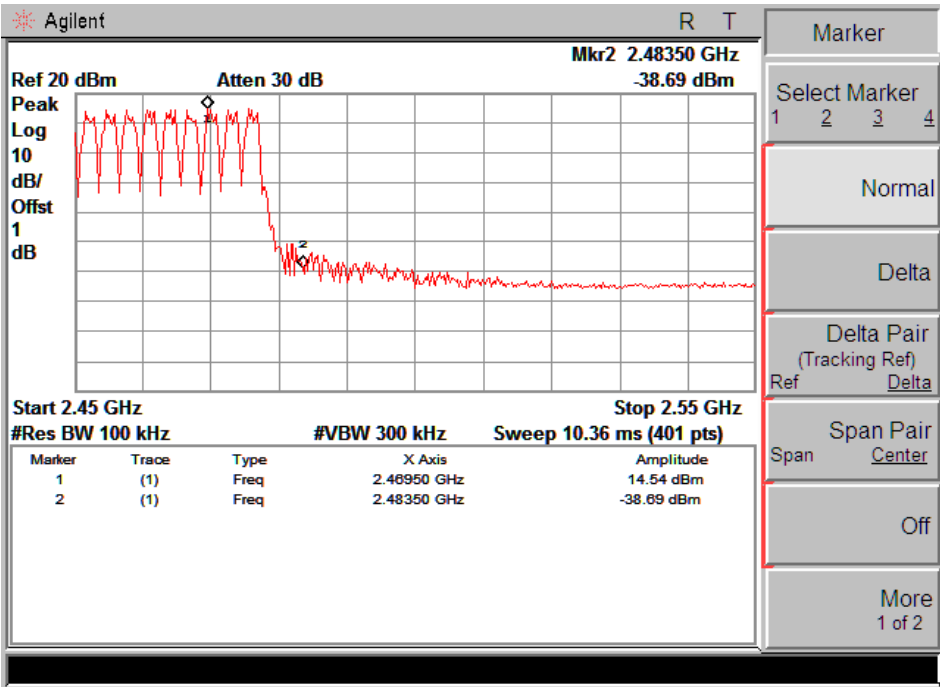
CH High :



Hopping
Low

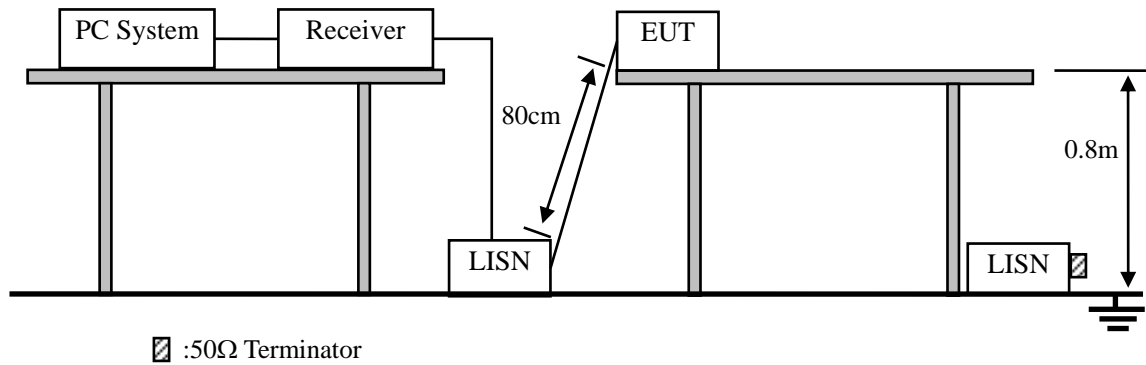


High



10. Power Line Conducted Emissions

10.1. Block Diagram of Test Setup



10.2. Limit

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μ V)	Average Level dB(μ V)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

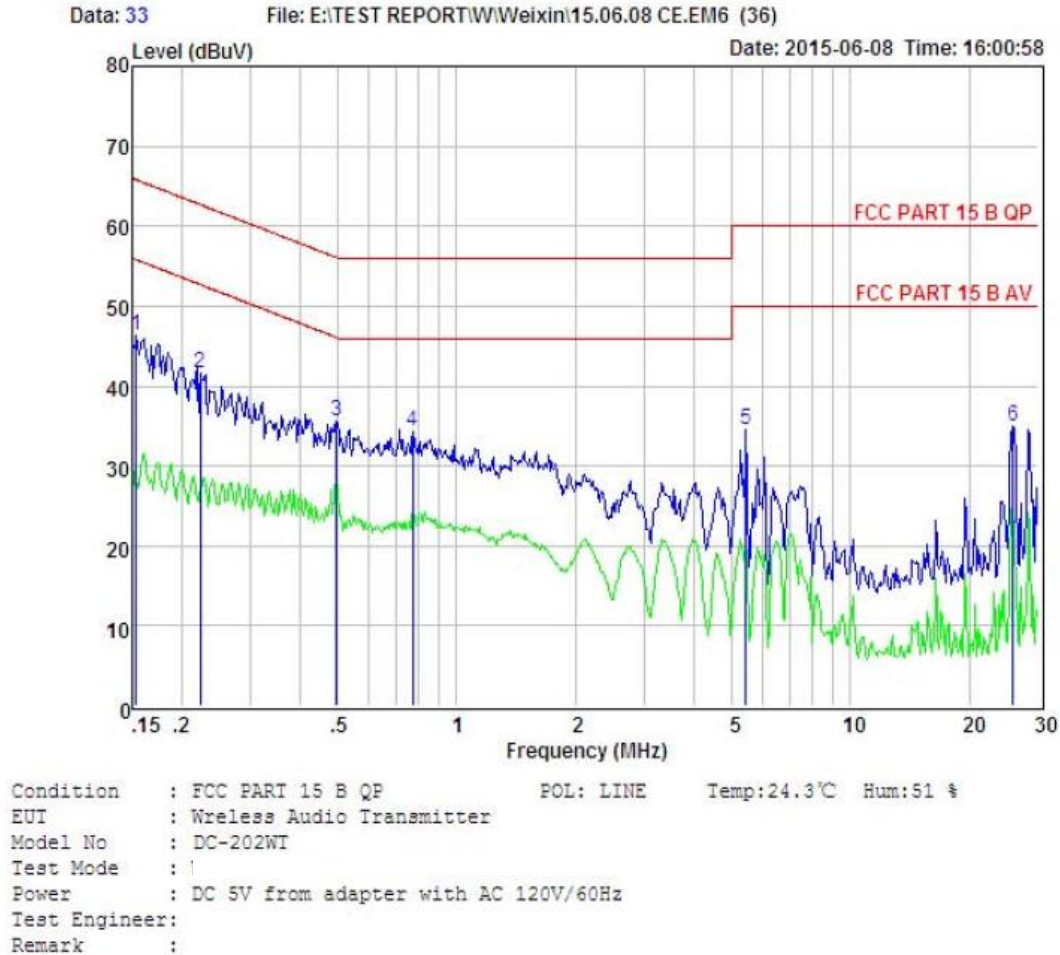
Notes: 1. * Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

10.3. Test Procedure

- (1) The EUT was placed on a non-metallic table, 80cm above the ground plane.
- (2) Setup the EUT and simulator as shown in 10.1
- (3) The EUT Power connected to the power mains through a power adapter and a line impedance stabilization network (L.I.S.N1). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N2), this provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4 2014 on conducted Emission test.
- (4) The bandwidth of test receiver is set at 10KHz.
- (5) The frequency range from 150 KHz to 30MHz is checked.

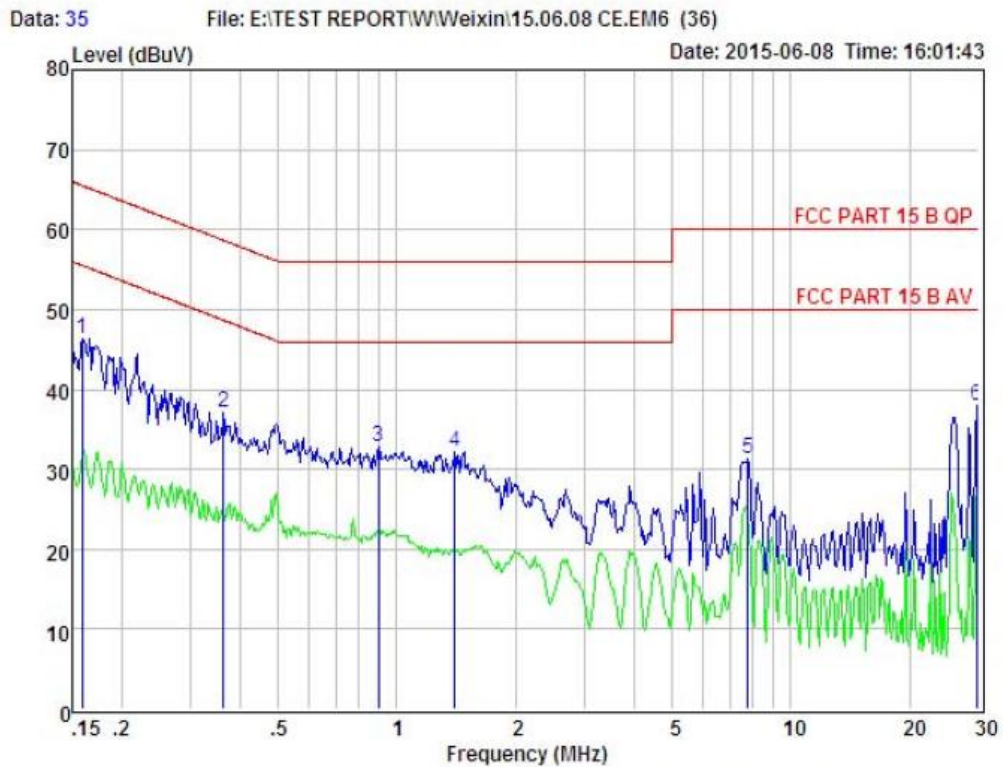
10.4. Test Result

PASS. (See below detailed test data)



Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.153	36.45	0.03	-9.72	0.10	46.30	65.82	-19.52	Peak
2	0.223	31.69	0.03	-9.72	0.10	41.54	62.70	-21.16	Peak
3	0.494	25.73	0.03	-9.72	0.10	35.58	56.10	-20.52	Peak
4	0.775	24.45	0.00	-9.71	0.10	34.26	56.00	-21.74	Peak
5	5.419	24.66	0.10	-9.65	0.13	34.54	60.00	-25.46	Peak
6	25.864	24.44	0.46	-9.63	0.51	35.04	60.00	-24.96	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss



Condition : FCC PART 15 B QP POL: NEUTRAL Temp:24.3℃ Hum:51 %
 EUT : Wireless Audio Transmitter
 Model No : DC-202WT
 Test Mode :
 Power : DC 5V from adapter with AC 120V/60Hz
 Test Engineer:
 Remark :

Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.159	36.53	0.03	-9.72	0.10	46.38	65.52	-19.14	Peak
2	0.363	27.23	0.03	-9.72	0.10	37.08	58.65	-21.57	Peak
3	0.899	23.03	0.04	-9.71	0.10	32.88	56.00	-23.12	Peak
4	1.403	22.38	0.05	-9.71	0.10	32.24	56.00	-23.76	Peak
5	7.769	21.45	0.14	-9.49	0.16	31.24	60.00	-28.76	Peak
6	29.684	26.93	0.49	-9.82	0.66	37.90	60.00	-22.10	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss

Note: If QP Result comply with AV limit, AV Result is deemed to comply with AV limit

11. Antenna Requirements

11.1. Limit

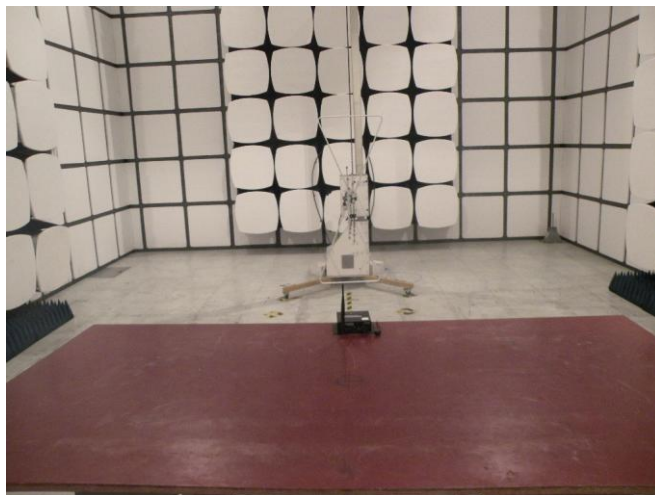
For intentional device, according to RSS-GEN, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to RSS-GEN, if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

11.2. Result

The antennas used for this product are PCB Antenna for Bluetooth, no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 3dBi .

12. Test setup photo

12.1. Photos of Radiated emission



12.2.Photos of Conducted Emission test

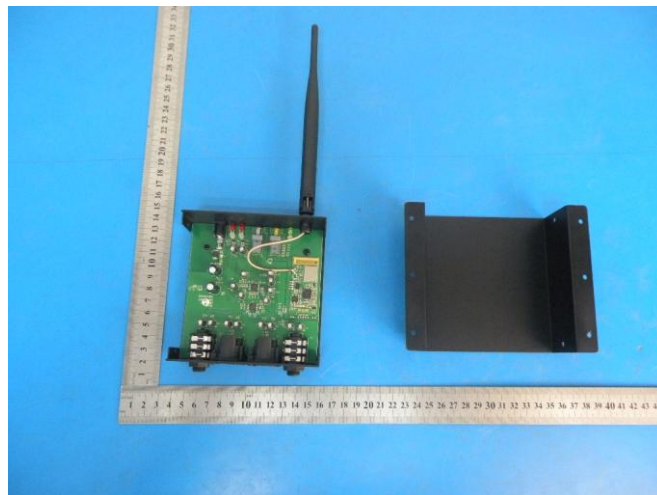


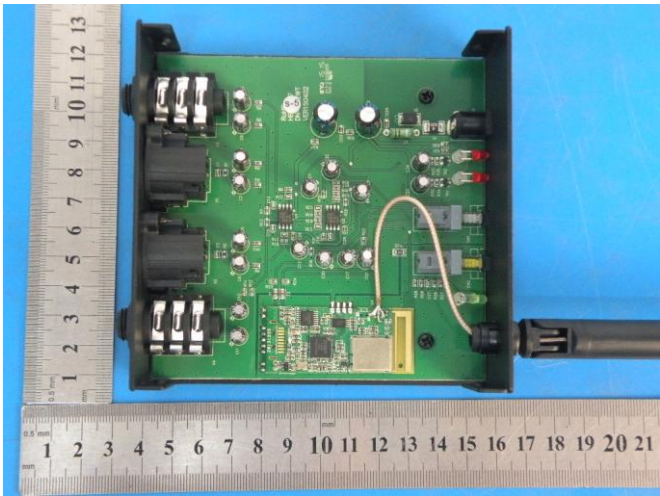
13.Photos of EUT

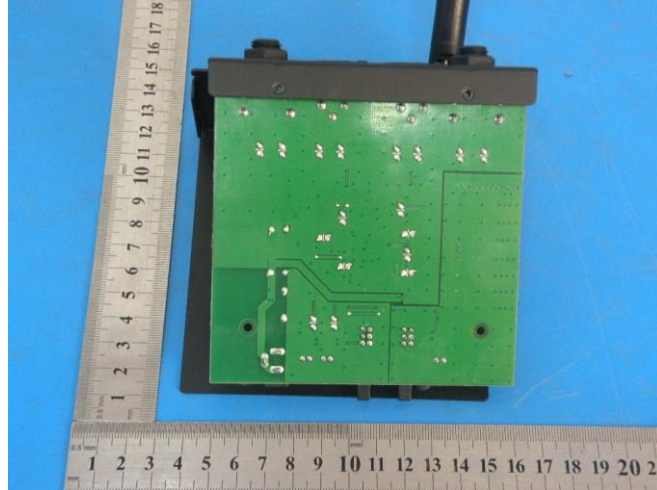












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