Report Number: 68.920.16.020.01 FCC- TEST REPORT 68.920.16.020.01 **Report Number** Date of Issue: 14 January 2016 W800BTR, W800BT/XX, W800BTYY/XX, (X=0 to 9 for marketing Model purpose representing different counties, Y=A to Z or Blank for different color). Product Type True Wireless Headphones and Charging Case Applicant **Gibson Innovations Limited** Address 5/F Philips Electronics Building, 5 Science Park East Ave, HK Science Park, Shatin, NT, Hong Kong **Production Facility** Sheng Hai Electronics (Shenzhen) Ltd. Address Block 17-19, Hui Ming Ying Industry, Yan Chuan, Song Gang Bao'an District, 518105 Shenzhen, PEOPLE'S REPUBLIC OF CHINA Test Result Positive □ Negative Total pages including Appendices 24

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2 Details about the Test Laboratory

Details about the Test Laboratory

Test Site 1

Company name:	TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch Building 12&13, Zhiheng Wisdomland Business Park, Nantou Checkpoint Road 2, Nanshan District, Shenzhen City, 518052, P. R. China
FCC Registration Number:	502708
Telephone: Fax:	86 755 8828 6998 86 755 828 5299



3 Description of the Equipment under Test

Description of the Equipment Under Test

Product:	True Wireless Headphones and Charging Case
Model no.:	W800BTR
FCC ID:	2AANUW800BTR
Options and accessories:	NIL
Rating:	3.7VDC (Supplied by the internal Li-ion rechargeable battery) 5.0VDC, 0.5A (Charging by USB Port from PC)
RF Transmission	2402-2480MHz
Frequency: No. of Operated Channel:	40
Modulation:	GFSK
Duty Cycle:	62%
Antenna Type:	Integrated Antenna
Antenna Gain:	-1.0dBi
Description of the EUT:	The Equipment Under Test (EUT) is a True Wireless Headphones and Charging Case with Bluetooth function operating at 2.4GHz



4 Summary of Test Standards

	Test Standards
FCC Part 15 Subpart C	PART 15 - RADIO FREQUENCY DEVICES
10-1-2014 Edition	Subpart C - Intentional Radiators

All the test methods were according to KDB558074 D01 DTS Meas Guidance v03r02 issued by FCC on July 05, 2014 and ANSI C63.10 (2009).

Summary of Test Results 5

	Technical Requirements		
FCC Part 15 Subpart C			
Test Condition		Pages	Test Result
§15.207	Conducted emission AC power port		N/A
§15.247(b)(1)	Conducted peak output power	10	Pass
§15.247(a)(2)	6dB bandwidth	11	Pass
§15.247(e)	Power spectral density*	13	Pass
§15.247(a)(1)	20dB bandwidth and 99% Occupied Bandwidth		N/A
§15.247(a)(1)	Carrier frequency separation		N/A
§15.247(a)(1)(iii)	Number of hopping frequencies		N/A
§15.247(a)(1)(iii)	Dwell Time		N/A
§15.247(d)	Spurious RF conducted emissions	14	Pass
§15.247(d)	Band edge	18	Pass
§15.247(d) & §15.209 &	Spurious radiated emissions for transmitter and receiver	20	Pass
§15.203	Antenna requirement	See note 1	Pass

Remark 1: N/A – Not Applicable. Note 1: The EUT uses an Integrated Antenna, which gain is -1.0dBi. According to §15.203, it is considered sufficiently to comply with the provisions of this section.



6 General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: 2AANUW800BTR complies with Section 15.209, 15.247 of the FCC Part 15.

All models are identical with W800BTR except model name, so full testing was applied on W800BTR, the other models were deemed to fulfill the EMC test requirement without further testing.

This report is for the BT 4.1 part.

SUMMARY:

All tests according to the regulations cited on page 5 were

- Performed
- □ Not Performed

The Equipment under Test

■ - Fulfills the general approval requirements.

□ - **Does not** fulfill the general approval requirements.

Sample Received Date:

10 December 2015

04 January 2016

07 January 2016

Testing Start Date:

Testing End Date:

- TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch -

Reviewed by:

Prepared by:

Tested by:

Phoebe Hu EMC Project Manager

Ham h]

Aaron Lai

EMC Project Engineer

Jeon zhans

Leon Zhang EMC Test Engineer

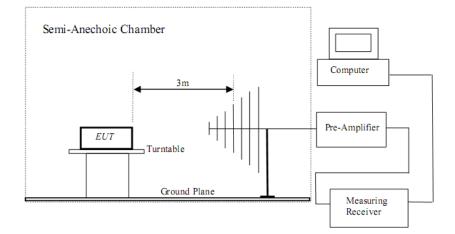
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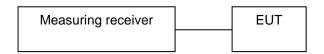


7 Test Setups

7.1 Radiated test setups



7.2 Conducted RF test setups







8 Systems test configuration

Auxiliary Equipment Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)

Test software: Blue test 3.0, which used to control the EUT in continues transmitting mode.

The system was configured to channel 0, 19, and 39 for the test.

9 Technical Requirement

9.1 Conducted peak output power

Test Method

- Use the following spectrum analyzer settings: RBW > the 6 dB bandwidth of the emission being measured, VBW≥3RBW, Span≥3RBW Sweep = auto, Detector function = peak, Trace = max hold.
- 2. Add a correction factor to the display.
- 3. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power.

Limits

According to §15.247 (b) (1), conducted peak output power limit as below:

Frequency Range	Limit	Limit
MHz	W	dBm
2400-2483.5	≤1	≤30

Test result as below table

	Conducted Peak	
Frequency	Output Power	Result
MHz	dBm	
Top channel 2402MHz	9.31	Pass
Middle channel 2440MHz	9.56	Pass
Bottom channel 2480MHz	9.42	Pass





9.2 6dB bandwidth

Test Method

- Use the following spectrum analyzer settings: RBW=100K, VBW≥3RBW, Sweep = auto, Detector function = peak, Trace = max hold
- 2. Use the automatic bandwidth measurement capability of an instrument, may be employed using the X dB bandwidth mode with X set to 6 dB, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be \geq 6 dB.
- 3. Allow the trace to stabilize, record the X dB Bandwidth value.

Limit

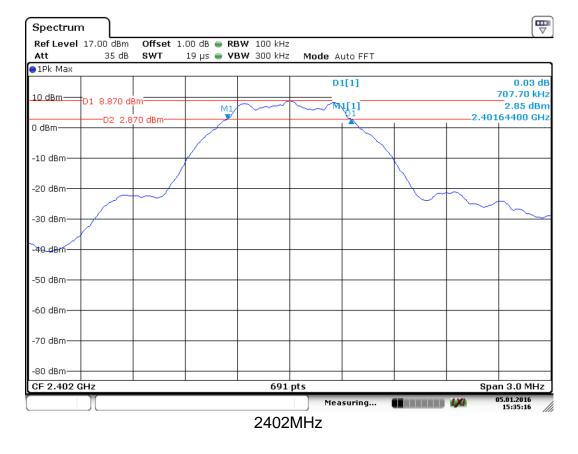
Limit [kHz]

≥500

6 dB Bandwidth

Test result

Frequency MHz	6dB bandwidth kHz	Result
Top channel 2402MHz	707.70	Pass
Middle channel 2440MHz	703.30	Pass
Bottom channel 2480MHz	712.00	Pass

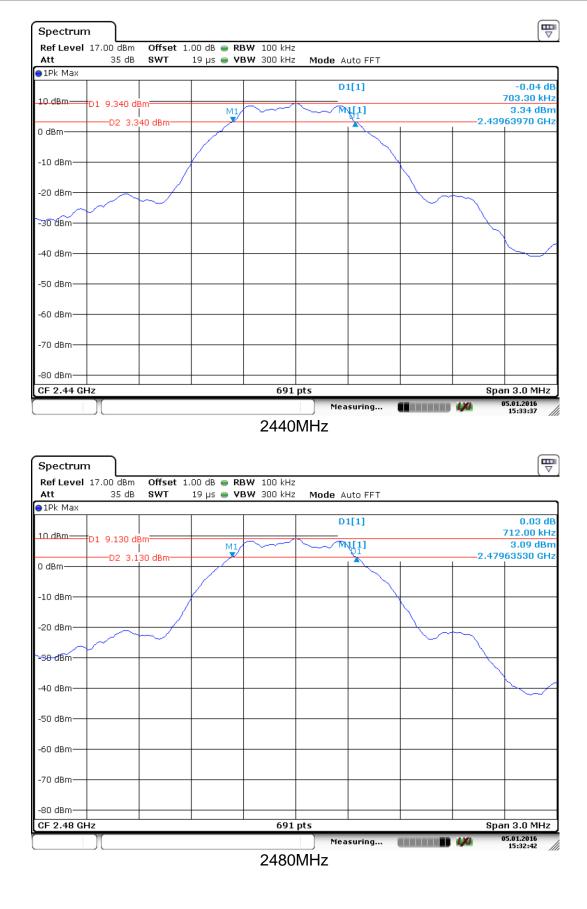


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6 dB Bandwidth



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9.3 Power spectral density

Test Method

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance:

- Set analyzer center frequency to DTS channel center frequency. RBW=3kHz,VBW≥3RBW,Span=1.5 times DTS bandwidth, Detector=Peak, Sweep=auto, Trace= max hold.
- 2. Allow trace to fully stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.
- 3. Repeat above procedures until other frequencies measured were completed.

Limit

Limit [dBm]

≤8

Test result

Frequency	Power spectral density	Result
MHz	dBm	
Top channel 2402MHz	-6.85	Pass
Middle channel 2440MHz	-6.27	Pass
Bottom channel 2480MHz	-6.51	Pass



9.4 Spurious RF conducted emissions

Test Method

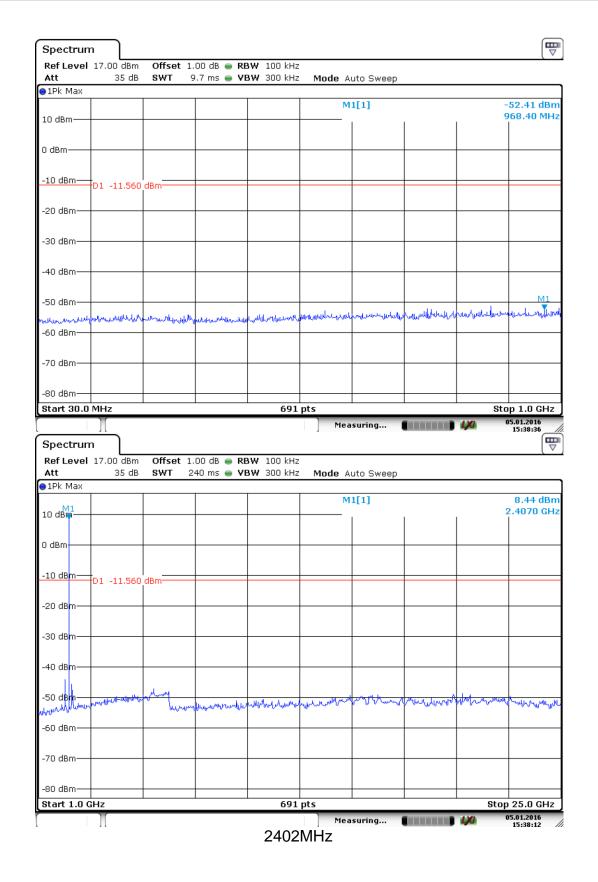
- 1. Establish a reference level by using the following procedure:
 - a. Set RBW=100 kHz. VBW≥3RBW. Detector =peak, Sweep time = auto couple, Trace mode = max hold.
 - b. Allow trace to fully stabilize, use the peak marker function to determine the maximum PSD level.
- 2. Use the maximum PSD level to establish the reference level.
 - a. Set the center frequency and span to encompass frequency range to be measured.
 - b. Use the peak marker function to determine the maximum amplitude level. Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements, report the three highest emissions relative to the limit.
- 3. Repeat above procedures until other frequencies measured were completed.

Limit

Frequency Range MHz	Limit (dBc)
30-25000	-20

SUD

Spurious RF conducted emissions



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Spurious RF conducted emissions

Ref Level 17.00 dBn			RBW 100 kHz					· · · ·
Att 35 di	SWT	9.7 ms 👄	VBW 300 kHz	Mode A	uto Sweep			
)1Pk Max	1				4[4]			50.00 dp
LO dBm				INI I	1[1]			52.23 dB 77.50 MF
) dBm								
10 dBm-D1 -11.25	0 dBm							
20 dBm								
30 dBm								
40 dBm								
50 dBm						M1		
while and while and	In Harak an church .	wards thattaked a str	1. M. M. M. Markenson	Lanarantelar	bakalungu	madernality	moundully	mound
50 dBm		A recorded on the Color	Wester					
70 dBm								
80 dBm								
							Sto	p 1.0 GH
Spectrum Ref Level 17.00 dBr			691 RBW 100 kHz VBW 300 kHz	Mea				05.01.2016 15:40:04
Spectrum Ref Level 17.00 dBr Att 35 di			RBW 100 kHz	Mea	uto Sweep			05.01.2016 15:40:04
Spectrum Ref Level 17.00 dBn Att 35 di 1Pk Max M1			RBW 100 kHz	Mea Mode A				8.92 dB
Spectrum Ref Level 17.00 dBn Att 35 di 1Pk Max M1			RBW 100 kHz	Mea Mode A	uto Sweep			8.92 dB
Spectrum Ref Level 17.00 dBn Att 35 di 1Pk Max			RBW 100 kHz	Mea Mode A	uto Sweep			8.92 dB
Gpectrum Ref Level 17.00 dBn Att 35 di 1Pk Max			RBW 100 kHz	Mea Mode A	uto Sweep			8.92 dB
Bpectrum Ref Level 17.00 dBr Att 35 di 1Pk Max 0 dBm dBm	3 SWT		RBW 100 kHz	Mea Mode A	uto Sweep			8.92 dB
Bpectrum Ref Level 17.00 dBr Att 35 di 1Pk Max 0 dBm dBm	3 SWT		RBW 100 kHz	Mea Mode A	uto Sweep			8.92 dB
Spectrum Ref Level 17.00 dBn Att 35 dl 1Pk Max 0 dBm 10 dBm D1 -11.25	3 SWT		RBW 100 kHz	Mea Mode A	uto Sweep			8.92 dB
Spectrum Ref Level 17.00 dBn Att 35 dl 1Pk Max 0 dBn 0 dBn 0 dBn 10 dBn D1 -11.25	3 SWT		RBW 100 kHz	Mea Mode A	uto Sweep			8.92 dB
Spectrum Ref Level 17.00 dBn 1Pk Max 35 dl 0 dBm 0 10 dBm D1 20 dBm 0	3 SWT		RBW 100 kHz	Mea Mode A	uto Sweep			8.92 dB
Spectrum Ref Level 17.00 dBn Att 35 dl 1Pk Max 0 dBn 0 dBn 0 dBn 10 dBn D1 -11.25 20 dBn 0 dBn	3 SWT		RBW 100 kHz	Mea Mode A	uto Sweep			8.92 dB
Spectrum Ref Level 17.00 dBn 1Pk Max 35 dl 0 dBm 0 dBm 0 10 dBm 01 20 dBm 01 30 dBm 01	3 SWT		RBW 100 kHz	Mea Mode A	uto Sweep			8.92 dB
Spectrum Ref Level 17.00 dBn Att 35 dl 1Pk Max 0 dBm 0 dBm 0 - 11.25 20 dBm 0 - 11.25 30 dBm 0 - 11.25	3 SWT		RBW 100 kHz	Mea Mode A	uto Sweep			8.92 dB
Spectrum Ref Level 17.00 dBr 17.00 dBr 35 dl 1Pk Max 35 dl 0 dBr 0 10 dBr 01 -11.25 20 dB n 30 dB n 40 dB n 1	0 dBm	240 ms • '	RBW 100 kHz	Mode A	uto Sweep			8.92 dB 2.4410 G
Bpectrum Ref Level 17.00 dBr 1Pk Max 35 dl 0 dBr 0 dBm 0 10 dBr 01 -11.25 20 dB n 30 dB n 40 dB n 1	0 dBm		RBW 100 kHz	Mea Mode A	uto Sweep			8.92 dB 2.4410 G
Spectrum Ref Level 17.00 dBn 1Pk Max 35 dl 0 dBm 0 10 dBm D1 20 dBm 01 30 dBm 0 40 dBm 0	0 dBm	240 ms • '	RBW 100 kHz	Mode A	uto Sweep			8.92 dB 2.4410 G
Spectrum Ref Level 17.00 dBn 1Pk Max 35 dl 0 dBm 0 10 dBm D1 20 dBm 01 30 dBm 0 40 dBm 0	0 dBm	240 ms • '	RBW 100 kHz	Mode A	uto Sweep			8.92 dB 2.4410 G
Spectrum Ref Level 17.00 dBn Att 35 dl 1Pk Max 0 dBn 0 dBn 0 - 11.25 20 dBn 0 - 11.25 20 dBn 0 - 11.25 30 dBn 0 - 11.25 30 dBn 0 - 11.25 50 dBn 0 - 11.25 50 dBn 0 - 11.25	0 dBm	240 ms • '	RBW 100 kHz	Mode A	uto Sweep			8.92 dB 2.4410 G
Spectrum Ref Level 17.00 dBn Att 35 dl 1Pk Max 0 dBn 0 dBn 0 - 11.25 20 dBn 0 - 11.25 20 dBn 0 - 11.25 30 dBn 0 - 11.25 30 dBn 0 - 11.25 50 dBn 0 - 11.25 50 dBn 0 - 11.25	0 dBm	240 ms • '	RBW 100 kHz	Mode A	uto Sweep			8.92 dB 2.4410 GH
Spectrum Ref Level 17.00 dBn 1Pk Max 35 di 0 dBm 0 10 dBm D1 -11.25 20 dBm 0 30 dBm 0 40 dBm 0 50 dBm 0 50 dBm 0 70 dBm 0	0 dBm	240 ms • '	RBW 100 kHz	Mode A	uto Sweep			5.01.2016
Spectrum Ref Level 17.00 dBn 1Pk Max 35 dl 0 dBm 01 -11.25 20 dBm 01 -11.25 30 dBm 01 -11.25	0 dBm	240 ms • '	RBW 100 kHz	Mode A Mode A	uto Sweep			8.92 dB 2.4410 Gł
1Pk Max 0 dBm 1 dBm 10 dBm 10 dBm 10 dBm 0 1 -11.25 20 dBm 40 dBm 50 dBm	0 dBm	240 ms • '	RBW 100 kHz	Mode A Mode A M	uto Sweep		stop	8.92 dB 2.4410 GH

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Spurious RF conducted emissions

⊜1Pk Max	35 dB	SWT 9).7 ms 😑 VE		: Mode A				
					М	1[1]			-52.56 dBr
10 dBm									975.40 MH
0 dBm									
<u>-10 dBm</u>	01 -11.240	dBm 							
-20 dBm									
-30 dBm									
-40 dBm									
-50 dBm				1			at and date	Juliana Lan Ad	M1
4. vin/w/w/w/	white the second second	bolourburn	white warde	www.	(Marther and a start of the sta	manu	սի. այսկչութ. լուրակ	and an other care	1 v l v v v v v v
-00 0011									
-70 dBm									
-80 dBm									
				691	pts			Sto	 pp 1.0 GHz
Start 30.0 N		Offset 1.	00 dB 👄 RE		Mea	suring		LXI	05.01.2016 15:41:36
Start 30.0 M Spectrum Ref Level 3 Att			00 dB 👄 RE 40 ms 👄 VE	3W 100 kHz	Mea	uto Sweep		1991	15:41:36
Start 30.0 M Spectrum Ref Level : Att 1Pk Max) [17.00 dBm			3W 100 kHz	Mea				15:41:36
Start 30.0 M Spectrum Ref Level 3) [17.00 dBm			3W 100 kHz	Mea	uto Sweep			15:41:36
Start 30.0 M Spectrum Ref Level : Att 1Pk Max) [17.00 dBm			3W 100 kHz	Mea	uto Sweep			15:41:36
Start 30.0 M Spectrum Ref Level : Att 1Pk Max 10 dBm 0 dBm)[17.00 dBm 35 dB	SWT 2		3W 100 kHz	Mea	uto Sweep			15:41:36
Start 30.0 M Spectrum Ref Level : Att 10 dBm -10 dBm)[17.00 dBm 35 dB	SWT 2		3W 100 kHz	Mea	uto Sweep			15:41:36
Start 30.0 M Spectrum Ref Level : Att 1Pk Max 10 dBm 0 dBm)[17.00 dBm 35 dB	SWT 2		3W 100 kHz	Mea	uto Sweep			15:41:36 ↓ ▼ 8.76 dBr
Start 30.0 M Spectrum Ref Level : Att 10 dBm -10 dBm)[17.00 dBm 35 dB	SWT 2		3W 100 kHz	Mea	uto Sweep			15:41:36
Start 30.0 M Spectrum Ref Level : Att 1Pk Max 0 dBm -10 dBm -20 dBm -30 dBm)[17.00 dBm 35 dB	SWT 2		3W 100 kHz	Mea	uto Sweep			15:41:36 ↓ ▼ 8.76 dBr
Start 30.0 N Spectrum Ref Level : Att 10 dBm -10 dBm -20 dBm)[17.00 dBm 35 dB	SWT 2		3W 100 kHz	Mea	uto Sweep			15:41:36 ↓ ▼ 8.76 dBr
Start 30.0 M Spectrum Ref Level : Att 1Pk Max 0 dBm -10 dBm -20 dBm -30 dBm	17.00 dBm 35 dB	SWT 2	40 ms 💿 VE	3W 100 kHz 3W 300 kHz	Mode A	uto Sweep			8.76 dBr 2.4760 GH
Start 30.0 M Spectrum Ref Level : Att 10 dBm -10 dBm -20 dBm -30 dBm -40 dBm)[17.00 dBm 35 dB	SWT 2		3W 100 kHz	Mea	uto Sweep	I I I I I I I I I I I I I I I I I I I		8.76 dBr 2.4760 GH
Start 30.0 M Spectrum Ref Level : Att 10 dBm -10 dBm -20 dBm -30 dBm -40 dBm	17.00 dBm 35 dB	SWT 2	40 ms 💿 VE	3W 100 kHz 3W 300 kHz	Mode A	uto Sweep			8.76 dBr 2.4760 GH
Start 30.0 N Spectrum Ref Level : Att 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -30 dBm -50 dBm -50 dBm	17.00 dBm 35 dB	SWT 2	40 ms 💿 VE	3W 100 kHz 3W 300 kHz	Mode A	uto Sweep			8.76 dBr 2.4760 GH
Start 30.0 N Spectrum Ref Level : Att 10 dBm -10 dBm -20 dBm -30 dBm -50 dBm -50 dBm -60 dBm	17.00 dBm 35 dB	SWT 2	40 ms 💿 VE	3W 100 kHz 3W 300 kHz	Mode A	uto Sweep			8.76 dBr 2.4760 GH
Start 30.0 N Spectrum Ref Level : Att 1Pk Max 10 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dEm -60 dBm -70 dBm -80 dBm	01 -11.240	SWT 2	40 ms 💿 VE	3W 100 kHz 3W 300 kHz	Mea Mode A Mode A	uto Sweep			15:41:36
Start 30.0 N Spectrum Ref Level : Att 1Pk Max 10 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dEm -60 dBm	01 -11.240	SWT 2	40 ms 💿 VE	3W 100 kHz 3W 300 kHz	Mea Mode A Mode A	uto Sweep		Stop	8.76 dBr 2.4760 GH

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9.5 Band edge

Test Method

- 1 Use the following spectrum analyzer settings:
- Span = wide enough to capture the peak level of the in-band emission and all spurious RBW = 100 kHz, VBW≥RBW, Sweep = auto, Detector function = peak, Trace = max hold.
- 2 Allow the trace to stabilize, use the peak and delta measurement to record the result.
- 3 The level displayed must comply with the limit specified in this Section.

Limit

Frequency Range MHz	Limit (dBc)
30-25000	-20

Test result

Spectrum							
Ref Level 1			_	RBW 100 kHz			
Att	35 d	B SWT	1.1 ms 😑	VBW 300 kHz	Mode Auto Swe	eep	
1Pk Max							0.40.40
10 dBm					M1[1]		8.42 dBn 2.402040 @H
					M2[1]		-34.26 dBn
							2.400000 GH
-10 dBm	1 -11.58						
	1 -11.58						
-20 dBm —							
-30 dBm —							- M2
-40 dBm							
-50 dBm	a.m.m.	munerman	man	my when white when we	newyhater marine	un handly mar	March March
-60 dBm							
-00 ubiii							
-70 dBm							
, o dom							
-80 dBm		_					
Start 2.31 G	Hz			691 pts	I		Stop 2.405 GHz
/larker				· ·			•
Type Ref	Trc	X-valu	ie	Y-value	Function	Fun	ction Result
M1	1	2.40	204 GHz	8.42 dBm			
M2	1		2.4 GHz	-34.26 dBm			
MЗ	1	2	2.39 GHz	-54.47 dBm			

2402MHz

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Band edge

Spect	rum													
Ref Le	vel 1	7.00 dB												
Att		35 c	IB SWT 1	1 ms 🧉	VBW	300 kHz	M	lode A	uto Sw	еер				
😑 1Pk M	ax													
M1								M	3[1]				-5	3.45 dBm
10 🥵 m	-+												2.50	0000 GHz
								M	1[1]					3.99 dBm
0 dβm –													2.480	0010 GHz
-10 dBn	ע ל	1 -11.0	50_dBm										-	
-20 <mark></mark> dBn	י−+-													
-30 dBn	+-י												-	
10														
-40 dB	712												-	
	WT I			мз										
-50 dBn	۳۲ ۰	well march	anine an idea down as the a	W3	Instantin has	-	مر مار م	من والعربية	M. Mary	A	and	الدير وسيرمان	man	Marine Longer
													1	
-60 dBn	די													
70 10														
-70 dBn	די													
00 JD-														
-80 dBn							<u> </u>							55.011
Start 2	.477	GHZ				691	pts						top 2	.55 GHz
Marker						-						-		
Туре	Ref		X-value		Y·	value		Func	tion		Fu	nction Re	sult	
M1		1		01 GHz		8.99 dE								
M2 M3		1		35 GHz		45.23 dE 53.45 dE								
			2			55. 4 5 ue						-	05.	
		Л						Mea	suring.					01.2016 5:46:06

2480MHz

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9.6 Spurious radiated emissions for transmitter

Test Method

- 1. The EUT is placed on a turntable, which is 0.8m above ground plane.
- 2. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- Use the following spectrum analyzer settings: Span = wide enough to fully capture the emission being measured, RBW = 1 MHz for f ≥ 1GHz, 100 kHz for f < 1 GHz, VBW ≥ RBW, Sweep = auto, Detector function = peak, Trace = max hold
- 4. Follow the guidelines in ANSI C63.4-2009 with respect to maximizing the emission by rotating the EUT, adjusting the measurement antenna height and polarization, etc. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, submit this data. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 5. Set the VBW to 10 Hz, while maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit specified in Section 15.209. If the duty cycle per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from 20log(duty cycle/100 ms), in an effort to demonstrate compliance with the 15.209 limit. Submit this data.

Limit

According to part 15.247(d), the radio emission outside the operating frequency band shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. Radiated emissions which fall in the restricted bands, as defined in section15.205, must comply with the radiated emission limits specified in section 15.209.

Frequency MHz	Field Strength uV/m	Field Strength dBµV/m	Detector
30-88	100	40	QP
88-216	150	43.5	QP
216-960	200	46	QP
960-1000	500	54	QP
Above 1000	500	54	AV
Above 1000	5000	74	PK



Spurious radiated emissions for transmitter

101-)

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

Transmitting spurious emission test result as below:

	Frequency	Emission Level	Polarization	Limit	Detector	Result
	MHz	dBuV/m		dBµV/m		
	879.72	31.48	Horizontal	46.00	QP	Pass
	878.58	34.48	Vertical	46.00	QP	Pass
2402MHz (Al	bove 1GHz)					
·	Frequency	Emission Level	Polarization	Limit	Detector	Result
	MHz	dBuV/m		dBµV/m		
	2245.66	47.80	Horizontal	74.00	PK	Pass
	2246.26	49.02	Vertical	74.00	PK	Pass
	4804.00	50.41	Horizontal	74.00	PK	Pass
	4803.50	45.47	Vertical	74.00	PK	Pass
2440MHz (30)MHz – 1GHz)					
	Frequency	Emission Level	Polarization	Limit	Detecto	r Resul
	MHz	dBuV/m		dBµV/m	1	
			Horizontal		PK	Pass
			Vertical		PK	Pass
2440MHz (Al	bove 1GHz)					
	Frequency	Emission Level	Polarization	Limit	Detector	Result
	MHz	dBuV/m		dBµV/m		
	2284.33	50.55	Horizontal	74.00	PK	Pass
	2283.86	43.95	Vertical	74.00	PK	Pass
						_
	4879.50 4879.50	51.44 52.56	Horizontal Vertical	74.00 74.00	PK PK	Pass Pass

 QP Emission Level= Antenna Factor +Cable Loss + Reading PK Emission Level= Antenna Factor +Cable Loss - Amp. Factor + Reading AV Emission Level= PK Emission Level+20log (dutycycle) or set the RBW/VBW to be 1MHz/10Hz to read the level.

- (2) Data of measurement within 30-1000MHz frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20db below the permissible limits or the field strength is too small to be measured.
- (3) "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.



2480MHz (30MHz - 1GHz)

Frequency	Emission Level	Polarization	Limit	Detector	Result
MHz	dBuV/m		dBµV/m		
		Horizontal		PK	Pass
		Vertical		PK	Pass

2480MHz (Above 1GHz)

Emission Level dBuV/m	Polarization	Limit dBµV/m	Detector	Result
46.85	Horizontal	74.00	PK	Pass
50.56	Vertical	74.00	PK	Pass
45.82	Horizontal	74.00	PK	Pass
48.49	Vertical	74.00	PK	Pass
	Level dBuV/m 46.85 50.56 45.82	LevelPolarizationdBuV/m46.8550.5645.82Horizontal	LevelPolarizationLimitdBuV/mdBµV/m46.85Horizontal74.0050.56Vertical74.0045.82Horizontal74.00	LevelPolarizationLimitDetectordBuV/mdBµV/m46.85Horizontal74.00PK50.56Vertical74.00PK45.82Horizontal74.00PK

Remark:

(4) QP Emission Level= Antenna Factor +Cable Loss + Reading PK Emission Level= Antenna Factor +Cable Loss - Amp. Factor + Reading AV Emission Level= PK Emission Level+20log (dutycycle) or set the RBW/VBW to be 1MHz/10Hz to read the level.

(5) Data of measurement within 30-1000MHz frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20db below the permissible limits or the field strength is too small to be measured.

(6) "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.



10 Test Equipment List

List of Test Instruments

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
Signal Analyzer	Rohde & Schwarz	FSV40	101031	2016-7-24
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	708	2016-7-31
Horn Antenna	Rohde & Schwarz	HF907	102295	2016-7-24
Wideband Horn Antenna	Q-PAR	QWH-SL-18- 40-K-SG	12827	2017-10-21
Pre-amplifier	Rohde & Schwarz	SCU 18	102230	2016-7-24
Pre-amplifier	Rohde & Schwarz	SCU 40A	100432	2016-7-24
Fully Anechoic Chamber	TDK	8X4X4		2019-5-29

C - Conducted RF tests

- Conducted peak output power
- 6dB bandwidth
- Power spectral density*
- Spurious RF conducted emissions
- Band edge



11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty					
Test Items	Extended Uncertainty				
Uncertainty for Radiated Spurious Emission 25MHz-	Horizontal: 4.95dB;				
3000MHz	Vertical: 5.02dB;				
Uncertainty for Radiated Spurious Emission 3000MHz-	Horizontal: 4.89dB;				
18000MHz	Vertical: 4.88dB;				
Uncertainty for Radiated Spurious Emission 18000MHz-	Horizontal: 4.93dB;				
40000MHz	Vertical: 4.92dB;				
Uncertainty for Conducted RF test with TS 8997	2.04dB				