

Shenzhen Toby Technology Co., Ltd.

Report No.: TB-FCC142954 Page: 1 of 95

FCC Radio Test Report FCC ID: 2AAZMHFD-872

Original Grant

Report No. : TB-FCC142954

Applicant: East 2 West, LLC

Equipment Under Test (EUT)

EUT Name : Bluetooth Home Ringer

Model No. : HFD-872

Brand Name : Renny JR.

Receipt Date : 2014-12-11

Test Date : 2014-12-11 to 2014-12-26

Issue Date : 2014-12-30

Standards : FCC Part 15: 2014, Subpart C(15.247)

Test Method : ANSI C63.4:2003

Conclusions : PASS

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

The EUT technically complies with the FCC requirements

Test/Witness Engineer :

Approved& Authorized :

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

TB-RF-074-1. 0



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1. General Information about EUT

1.1 Client Information

Applicant : EAST 2 WEST, LLC

Address: 1432 S SALTAIR AVE #209 LOS ANGELES, CA 90025, UNITED

STATES

Manufacturer : OLENS TECHNOLOGY

Address : 679 AVENIDA DE DIAMANTE ARROYO GRANDE, CA93420,

UNITED STATES

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	Bluetooth Home Ringer			
Models No.	:	HFD-872			
Model Difference	:	N/A			
Product		Operation Frequency: Bluetooth:2402~2480MHz Number of Channel:	Bluetooth:79 Channels see note (2)		
Description	:	Max Peak Output Power:	GFSK: 2.711dBm (Conducted Power) -2.41 dBi PCB Antenna		
		Antenna Gain:	2 dBi Dipole Antenna		
		Modulation Type:	GFSK 1Mbps(1 Mbps) π /4-DQPSK(2 Mbps) 8-DPSK(3 Mbps)		
Power Supply	:	DC Voltage supplied from Host System by USB cable			
Power Rating	:	DC 5.0V by USB cable.			
Connecting I/O Port(S)	:	Please refer to the User's Manual			

Note:

- (1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- (2) This Test Report is FCC Part 15.247 for Bluetooth, and test procedure in accordance with Public Notice: DA 00-705.
- (3) Channel List:

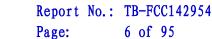
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	27	2429	54	2456
01	2403	28	2430	55	2457



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02	2404	29	2431	56	2458
03	2405	30	2432	57	2459
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454		
26	2428	53	2455		

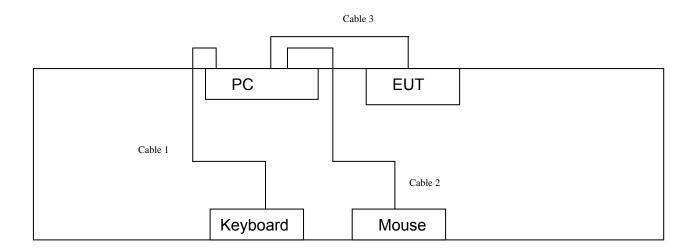
⁽⁴⁾ The Antenna information about the equipment is provided by the applicant.





1.3 Block Diagram Showing the Configuration of System Tested

TX Mode



1.4 Description of Support Units

Equipment Information							
Name	Model	FCC ID/DOC	Manufacturer	Used "√"			
LCD Monitor	E170Sc	DOC	DELL	√			
PC	OPTIPLEX380	DOC	DELL	√			
Keyboard	L100	DOC	DELL	1			
Mouse	M-UARDEL7	DOC DELL		√			
	Cable Information						
Number	Number Shielded Type Ferrite Core Length Note						
Cable 1	YES	NO	1.5M				
Cable 2	YES	NO	1.5M				
Cable 3	YES	YES	0.4M				

1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.



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For Conducted Test			
Final Test Mode Description			
Mode 1	USB Charging with TX GFSK Mode		

For Radiated Test			
Final Test Mode	Description		
Mode 1	USB Charging with TX GFSK Mode		
Mode 2	TX Mode(GFSK) Channel 00/39/78		
Mode 3	TX Mode(11 /4-DQPSK) Channel 00/39/78		
Mode 4	TX Mode(8-DPSK) Channel 00/39/78		
Mode 5	Hopping Mode(GFSK)		
Mode 6	Hopping Mode(π /4-DQPSK)		
Mode 7	Hopping Mode(8-DPSK)		
Note:	1		

Note:

(1)The EUT equipped two antennas for transmitting. Two antennas can switched by the switch button. Only one antenna for working.

Note:

(1) For all test, we have verified the construction and function in typical operation. And all the test modes were carried out with the EUT in transmitting operation in maximum power with all kinds of data rate. We have pretested all the test mode above.

According to ANSI C63.4 standards, the measurements are performed at the highest, middle, lowest available channels, and the worst case data rate as follows:

TX Mode: GFSK (1 Mbps)
TX Mode: 8-DPSK (3 Mbps)

(2) The EUT is considered a portable unit; it was pre-tested on the positioned of each 3 axis, X-plane, Y-plane and Z-plane. The worst case was found positioned on X-plane as the normal use. Therefore only the test data of this X-plane was used for radiated emission measurement test.



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1.6 Description of Test Software Setting

During testing channel& Power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of Bluetooth mode.

Test Software Version	Bluetooth Authentication Test Tool v1.3.3-CE/FCC			
Frequency	2402 MHz	2441MHz	2480 MHz	
GFSK	DEF	DEF	DEF	
π /4-DQPSK	DEF	DEF	DEF	
8-DPSK	DEF	DEF	DEF	

1.7 Test Facility

The testing was performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at:

1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China.

At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

FCC List No.: (811562)

The Laboratory is listed in the United States of American Federal Communications Commission (FCC), and the registration number is 811562.

IC Registration No.: (11950A-1)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A-1.



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2. Test Summary

FCC Part 15 Subpart C(15.247)				
Standard Section	Test Item	Judgment	Remark	
15.203	Antenna Requirement	PASS	N/A	
15.207	Conducted Emission	PASS	N/A	
15.205	Restricted Bands	PASS	N/A	
15.247(a)(1)	Hopping Channel Separation	PASS	N/A	
15.247(a)(1)	Dwell Time	PASS	N/A	
15.247(b)(1)	Peak Output Power	PASS	N/A	
15.247(b)(1)	Number of Hopping Frequency	PASS	N/A	
15.247(c)	Radiated Spurious Emission	PASS	N/A	
15.247(c)	Antenna Conducted Spurious Emission	PASS	N/A	
15.247(a)	20dB Bandwidth	PASS	N/A	
Note: N/A is an abbreviation for Not Applicable.				



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3. Conducted Emission Test

3.1 Test Standard and Limit

3.1.1Test Standard FCC Part 15.207

3.1.2 Test Limit

Conducted Emission Test Limit

Eroguanov	Maximum RF Line Voltage (dBμV)		
Frequency	Quasi-peak Level	Average Level	
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *	
500kHz~5MHz	56	46	
5MHz~30MHz	60	50	

Notes:

- (1) *Decreasing linearly with logarithm of the frequency.
- (2) The lower limit shall apply at the transition frequencies.
- (3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

3.2 Test Setup



3.3 Test Procedure

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/50uH of coupling impedance for the measuring instrument.

Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.



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I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

LISN at least 80 cm from nearest part of EUT chassis

The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

3.4 Test Equipment Used

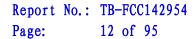
Description	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test	ROHDE&		400224	Aug. 08, 2014	Aug.07, 2015
Receiver	SCHWARZ	ESCI	100321	Aug. 00, 2014	Aug.07, 2015
50ΩCoaxial	Anritsu	MP59B	X10321	Aug. 08, 2014	Aug.07, 2015
Switch	Aillitsu	MESSE	X10321	Aug. 08, 2014	Aug.07, 2015
L.I.S.N	Rohde & Schwarz	ENV216	101131	Aug. 08, 2014	Aug.07, 2015
L.I.S.N	SCHWARZBECK	NNBL 8226-2	8226-2/164	Aug. 08, 2014	Aug.07, 2015

3.5 EUT Operating Mode

Please refer to the description of test mode.

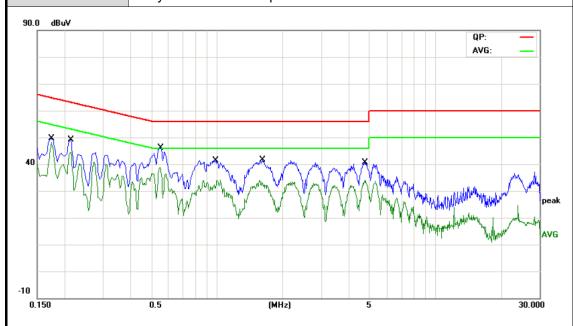
3.6 Test Data

Please see the next page.

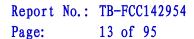




EUT: Bluetooth Home Ringer **Model Name:** HFD-872 Temperature: 25 ℃ **Relative Humidity:** 55% AC 120V/60 Hz **Test Voltage:** Terminal: Line **Test Mode:** USB Charging with TX GFSK Mode 2402 MHz Remark: Only worse case is reported



No. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz	dBu∨	dB	dBuV	dBuV	dB	Detector
1	0.1740	38.58	10.12	48.70	64.76	-16.06	QP
2 *	0.1740	37.98	10.12	48.10	54.76	-6.66	AVG
3	0.2140	37.58	10.12	47.70	63.04	-15.34	QP
4	0.2140	33.89	10.12	44.01	53.04	-9.03	AVG
5	0.5540	35.88	10.02	45.90	56.00	-10.10	QP
6	0.5540	28.24	10.02	38.26	46.00	-7.74	AVG
7	0.9860	29.63	10.15	39.78	56.00	-16.22	QP
8	0.9860	21.16	10.15	31.31	46.00	-14.69	AVG
9	1.6220	29.42	10.10	39.52	56.00	-16.48	QP
10	1.6220	22.77	10.10	32.87	46.00	-13.13	AVG
11	4.7819	27.44	10.06	37.50	56.00	-18.50	QP
12	4.7819	23.75	10.06	33.81	46.00	-12.19	AVG





EUT: Bluetooth Home Ringer **Model Name:** HFD-872 25 ℃ **Relative Humidity:** Temperature: 55% **Test Voltage:** AC 120V/60 Hz Terminal: Neutral **Test Mode:** USB Charging with TX GFSK Mode 2402 MHz Remark: Only worse case is reported 90.0 dBuV QP: AVG: -10 0.5 30.000 0.150 (MHz) Reading Correct Measure-Limit Over No. Mk. Freq. Level Factor ment dBuV dΒ MHz dBuV dBuV dΒ Detector 0.1740 38.44 10.12 48.56 64.76 -16.20 QΡ 1 2 47.95 AVG 0.1740 37.83 10.12 54.76 -6.81 3 0.2140 37.43 10.12 47.55 63.04 -15.49 QΡ 33.77 0.2140 10.12 43.89 53.04 -9.15 AVG 4 0.5540 35.92 10.02 45.94 56.00 -10.06 QΡ 5 0.5540 28.26 10.02 38.28 46.00 -7.72 AVG 6 7 29.67 10.16 39.83 56.00 -16.17 QΡ 0.9940 0.9940 22.84 10.16 33.00 46.00 -13.00 AVG 8 9 2.1860 28.98 10.06 39.04 56.00 -16.96 QΡ 23.29 33.35 46.00 -12.65 AVG 10 2.1860 10.06 4.7300 27.41 37.47 56.00 -18.53 QΡ 11 10.06 12 4.7300 23.37 10.06 33.43 46.00 -12.57 AVG **Emission Level= Read Level+ Correct Factor**



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4. Radiated Emission Test

4.1 Test Standard and Limit

4.1.1 Test Standard FCC Part 15.209

4.1.2 Test Limit

Radiated Emission Limit (9 kHz~1000MHz)

Radiated Linission Linit (5 kitz 1000mitz)							
Frequency (MHz	Field Strength (microvolt/meter)	Measurement Distance (meters)					
0.009~0.490	2400/F(KHz)	300					
0.490~1.705	24000/F(KHz)	30					
1.705~30.0	30	30					
30~88	100	3					
88~216	150	3					
216~960	200	3					
Above 960	500	3					

Radiated Emission Limit (Above 1000MHz)

Frequency	Class B (dBuV/m)(at 3m)				
(MHz)	Peak	Average			
Above 1000	74	54			

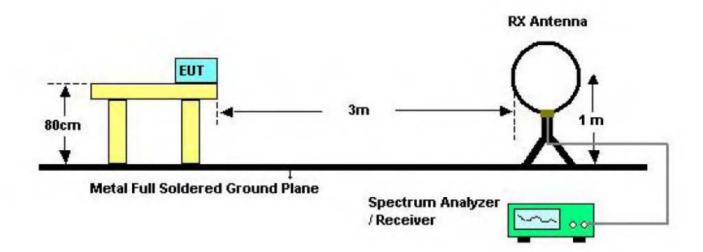
Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission Level (dBuV/m)=20log Emission Level (uV/m)

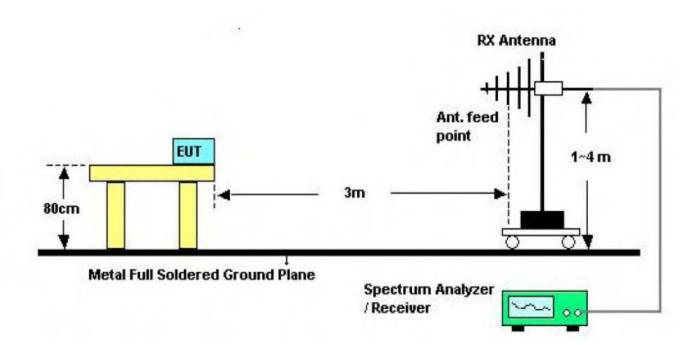


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4.2 Test Setup



Bellow 30MHz Test Setup



Bellow 1000MHz Test Setup



Turntable

EUT

0.8 m lm to 4m

Coaxial Cable

Above 1GHz Test Setup

4.3 Test Procedure

- (1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above the ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- (2) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (3) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (4) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (5) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (6) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (7) For the actual test configuration, please see the test setup photo.

4.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power in TX mode.



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4.5 Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Mar. 20, 2014	Mar. 19, 2015
Spectrum Analyzer	Rohde & Schwarz	FSP30	DE25181	Aug. 08, 2014	Aug.07, 2015
EMI Test Receiver	Rohde & Schwarz	ESCI	101165	Aug. 08, 2014	Aug.07, 2015
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar. 07, 2014	Mar.06, 2015
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar. 07, 2014	Mar.06, 2015
Pre-amplifier	HP	11909A	185903	Mar. 07, 2014	Mar.06, 2015
Pre-amplifier	HP	8447B	3008A00849	Mar. 07, 2014	Mar.06, 2015
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar. 07, 2014	Mar.06, 2015
Signal Generator	Rohde & Schwarz	SML03	IKW682-054	Feb. 11, 2014	Feb.10, 2015
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A

4.6 Test Data

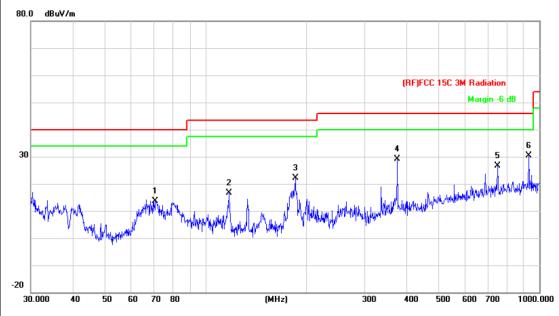
Remark: During testing above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=1 kHz with Peak Detector for Average Values.

Test data please refer the following pages.



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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 5V		
Ant. Pol.	Horizontal		
Test Mode:	TX GFSK Mode 2402MHz		
Remark:	Only worse case is reported		

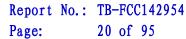


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		70.8315	37.31	-23.59	13.72	40.00	-26.28	peak
2		117.7725	39.00	-22.36	16.64	43.50	-26.86	peak
3		185.7882	42.87	-20.76	22.11	43.50	-21.39	peak
4		375.9385	43.51	-14.40	29.11	46.00	-16.89	peak
5		750.1083	33.82	-7.08	26.74	46.00	-19.26	peak
6	*	929.0082	35.30	-4.81	30.49	46.00	-15.51	peak

^{*:}Maximum data x:Over limit !:over margin



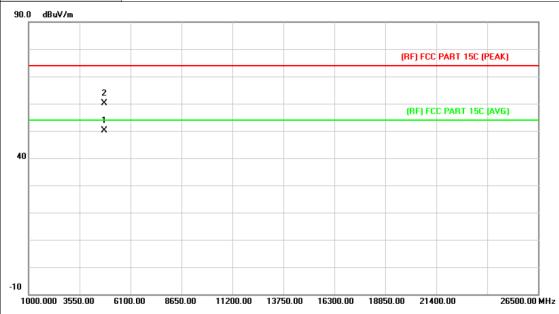
EUT: Bluetooth Home Ringer **Model Name:** HFD-872 25 ℃ **Relative Humidity:** Temperature: 55% **Test Voltage:** DC 5V Ant. Pol. Vertical **Test Mode:** TX GFSK Mode 2402MHz Remark: Only worse case is reported 80.0 dBuV/m (RF)FCC 15C 3M Radiation Margin -6 dB -20 30.000 60 70 80 (MHz) 300 400 500 600 700 1000.000 40 50 Reading Correct Measure-Limit Over No. Mk. Freq. Level Factor ment MHz dBuV dBuV/m dBuV/m dB Detector dB/m 1 36.7662 40.79 -18.16 22.63 40.00 -17.37peak 2 45.2166 44.10 -22.3721.73 40.00 -18.27 peak 3 67.2022 44.45 -23.87 20.58 40.00 -19.42 peak 4 183.2005 40.80 -20.6820.12 43.50 -23.38 peak 5 375.9385 44.49 -14.4030.09 46.00 -15.91 peak 6 929.0082 36.65 -4.81 31.84 46.00 -14.16 peak *:Maximum data x:Over limit !:over margin





PCB Antenna

EUT:	Bluetooth Home Ringer	Model Name :	HFD-872				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	DC 5V	DC 5V					
Ant. Pol.	Horizontal						
Test Mode:	TX GFSK Mode 2402MHz(PCB Ar	ntenna)					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						

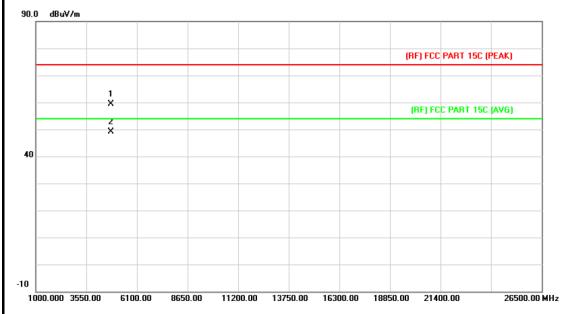


No	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4804.123				54.00	-3.81	AVG
2		4804.255	46.77	13.44	60.21	74.00	-13.79	peak



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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 5V		
Ant. Pol.	Vertical		
Test Mode:	TX GFSK Mode 2402MHz (PCB	Antenna)	
Remark:	No report for the emission which prescribed limit.	more than 10 dB below	the

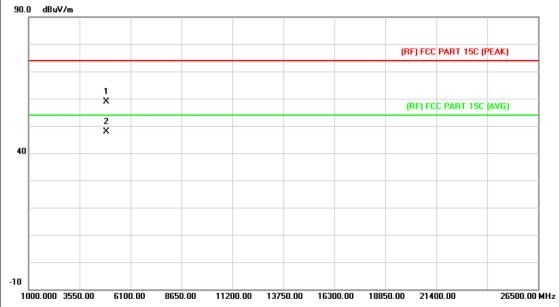


1	No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4804.051	45.86	13.44	59.30	74.00	-14.70	peak
2	1	*	4804.198	35.78	13.44	49.22	54.00	-4.78	AVG



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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	DC 5V	DC 5V					
Ant. Pol.	Horizontal						
Test Mode:	TX GFSK Mode 2441MHz(PCB	Antenna)					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						

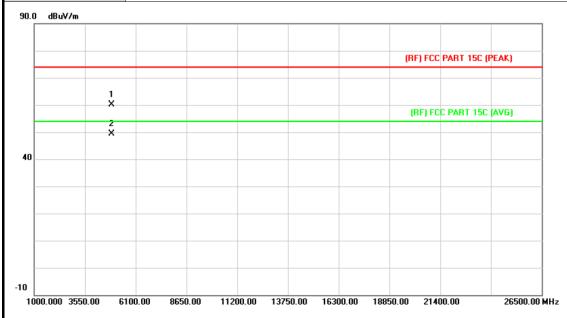


No	. Mk	. Freq.		Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4881.793	44.92	13.90	58.82	74.00	-15.18	peak
2	*	4882.117	33.95	13.90	47.85	54.00	-6.15	AVG



Report No.: TB-FCC142954 Page: 23 of 95

EUT:	Bluetooth Home Ringer	Bluetooth Home Ringer Model Name : HFD-87					
Temperature:	25 $^{\circ}$ Relative Humidity: 55%						
Test Voltage:	DC 5V						
Ant. Pol.	Vertical						
Test Mode:	TX GFSK Mode 2441MHz(PCB	Antenna)					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						

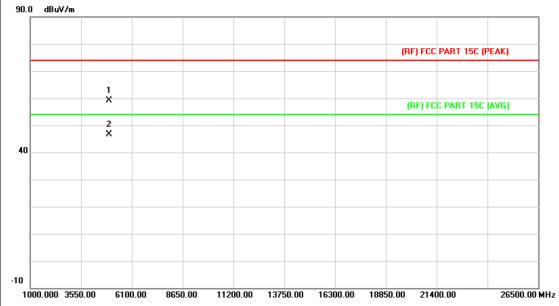


No	. Mk	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4881.862	46.18	13.90	60.08	74.00	-13.92	peak
2	*	4882.117	35.56	13.90	49.46	54.00	-4.54	AVG



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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872			
Temperature:	25 ℃	55%				
Test Voltage:	DC 5V					
Ant. Pol.	Horizontal	Horizontal				
Test Mode:	TX GFSK Mode 2480MHz(PCB	Antenna)				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					

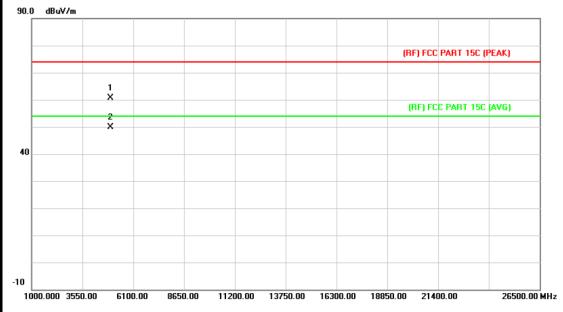


No	. Mk	. Freq.	_	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4959.979	44.86	14.36	59.22	74.00	-14.78	peak
2	*	4960.132	32.15	14.36	46.51	54.00	-7.49	AVG



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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	DC 5V						
Ant. Pol.	Vertical						
Test Mode:	TX GFSK Mode 2480MHz(PCB	Antenna)					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						

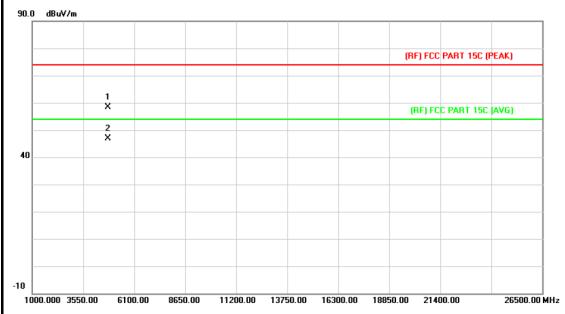


No.	Mk.	Freq.	_	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4959.784	46.35	14.36	60.71	74.00	-13.29	peak
2	*	4960.237	35.47	14.36	49.83	54.00	-4.17	AVG



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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	DC 5V						
Ant. Pol.	Horizontal	Horizontal					
Test Mode:	TX 8-DPSK Mode 2402MHz(PC	B Antenna)					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						

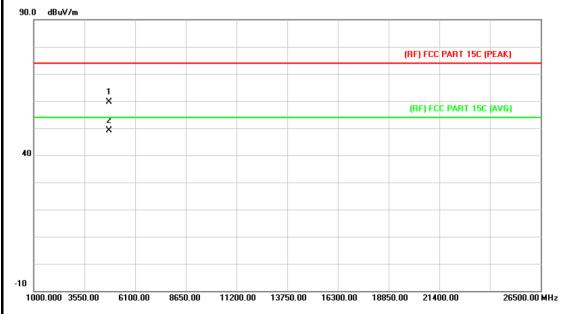


No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4804.120	44.85	13.44	58.29	74.00	-15.71	peak
2	*	4804.408	33.53	13.44	46.97	54.00	-7.03	AVG



Report No.: TB-FCC142954
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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	DC 5V						
Ant. Pol.	Vertical						
Test Mode:	TX 8-DPSK Mode 2402MHz(PC	B Antenna)					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						

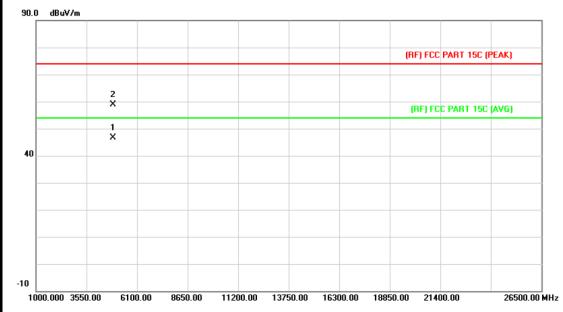


N	0.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4804.105	46.22	13.44	59.66	74.00	-14.34	peak
2		*	4804.177	35.72	13.44	49.16	54.00	-4.84	AVG



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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	DC 5V						
Ant. Pol.	Horizontal	Horizontal					
Test Mode:	TX 8-DPSK Mode 2441MHz(PC	B Antenna)					
Remark:	No report for the emission which more than 10 dB below the						
	prescribed limit.						

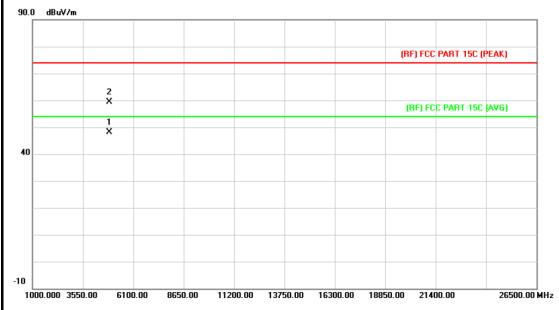


N	No.	Mk.	Freq.	_	Correct Factor	Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4882.024	32.70	13.90	46.60	54.00	-7.40	AVG
2			4882.180	44.93	13.90	58.83	74.00	-15.17	peak



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Bluetooth Home Ringer	Model Name :	HFD-872			
25 ℃	Relative Humidity:	55%			
DC 5V					
Vertical					
TX 8-DPSK Mode 2441MHz(PC	B Antenna)				
No report for the emission which more than 10 dB below the prescribed limit.					
	25 °C DC 5V Vertical TX 8-DPSK Mode 2441MHz(PC)	25 °C Relative Humidity: DC 5V Vertical TX 8-DPSK Mode 2441MHz(PCB Antenna) No report for the emission which more than 10 dB below			

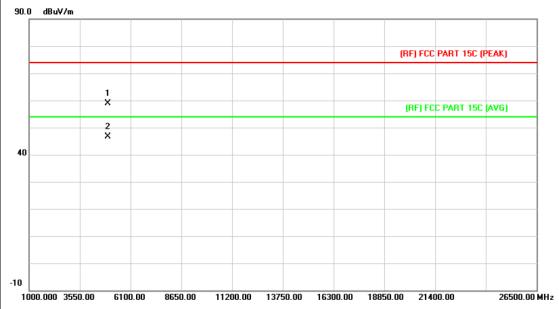


No	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4882.162	34.12	13.90	48.02	54.00	-5.98	AVG
2		4882.507	45.37	13.90	59.27	74.00	-14.73	peak



Report No.: TB-FCC142954 Page: 30 of 95

EUT:	Bluetooth Home Ringer	Model Name :	HFD-872		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	DC 5V				
Ant. Pol.	Horizontal				
Test Mode:	TX 8-DPSK Mode 2480MHz(PC	B Antenna)			
Remark:	No report for the emission which more than 10 dB below the prescribed limit.				

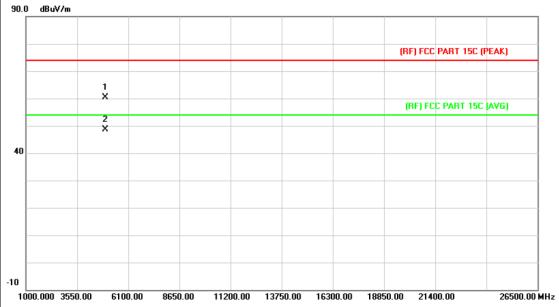


No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4960.282	44.51	14.36	58.87	74.00	-15.13	peak
2	*	4960.357	32.38	14.36	46.74	54.00	-7.26	AVG

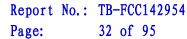


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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 5V					
Ant. Pol.	Vertical					
Test Mode:	TX 8-DPSK Mode 2480MHz(PC	B Antenna)				
Remark:	No report for the emission which more than 10 dB below the					
	prescribed limit.					



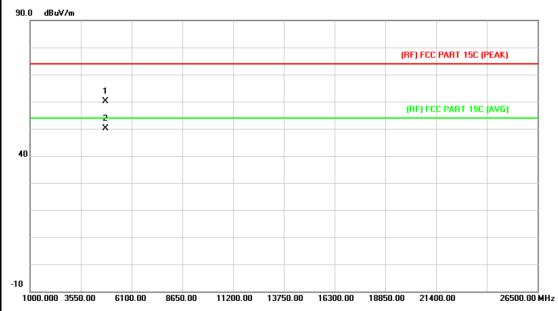
No	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4960.291	46.03	14.36	60.39	74.00	-13.61	peak
2	*	4960.333	34.36	14.36	48.72	54.00	-5.28	AVG





Dipole Antenna

EUT:	Bluetooth Home Ringer	Model Name :	HFD-872			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 5V					
Ant. Pol.	Horizontal					
Test Mode:	TX GFSK Mode 2402MHz(Dipole	Antenna)				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					

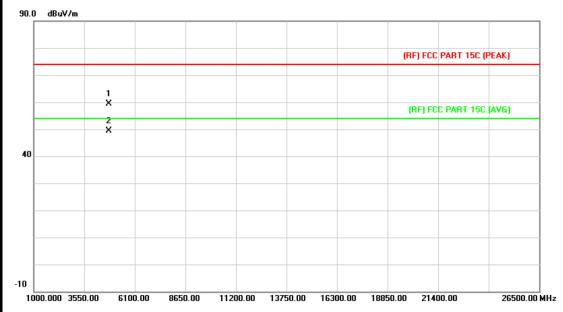


No	. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4804.201	46.71	13.44	60.15	74.00	-13.85	peak
2	*	4804.212	36.77	13.44	50.21	54.00	-3.79	AVG



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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 5V					
Ant. Pol.	Vertical					
Test Mode:	TX GFSK Mode 2402MHz(Dipole	e Antenna)				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					

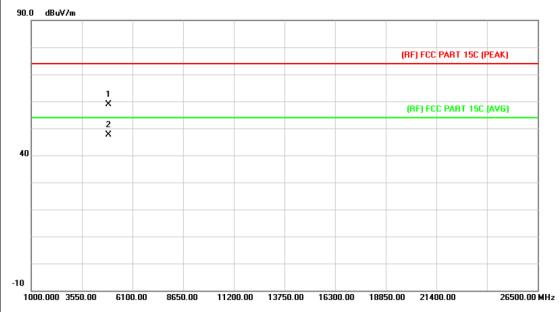


No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4804.041	45.87	13.44	59.31	74.00	-14.69	peak
2	*	4804.158	35.88	13.44	49.32	54.00	-4.68	AVG

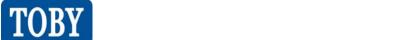


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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 5V					
Ant. Pol.	Horizontal					
Test Mode:	TX GFSK Mode 2441MHz(Dipole	e Antenna)				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					

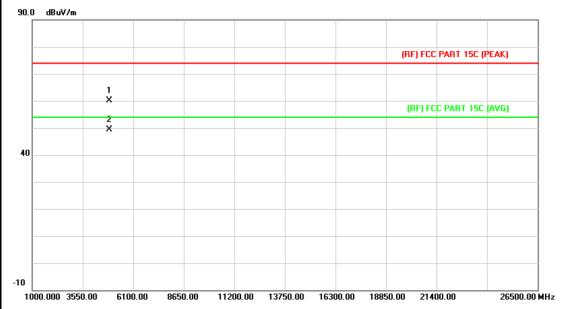


	No.	Mk.	Freq.	_	Correct Factor	Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4881.793	44.91	13.90	58.81	74.00	-15.19	peak
2		*	4882.423	33.71	13.90	47.61	54.00	-6.39	AVG



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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872		
Temperature:	25 ℃	Relative Humidity:			
Test Voltage:	DC 5V				
Ant. Pol.	Vertical				
Test Mode:	TX GFSK Mode 2441MHz(Dipole Antenna)				
Remark:	No report for the emission which more than 10 dB below the				
	prescribed limit.				

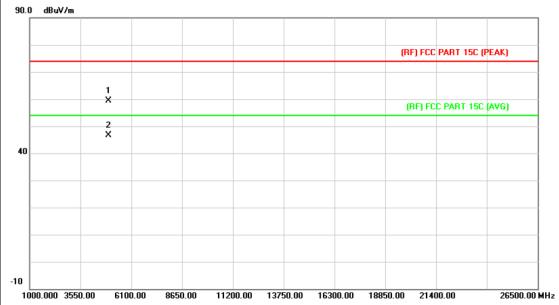


No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4881.654	46.22	13.90	60.12	74.00	-13.88	peak
2	*	4882.145	35.58	13.90	49.48	54.00	-4.52	AVG



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EUT:	Bluetooth Home Ringer Model Name :		HFD-872		
Temperature:	re: 25 °C Relative Humidity:		55%		
Test Voltage:	DC 5V				
Ant. Pol.	Horizontal				
Test Mode:	TX GFSK Mode 2480MHz(Dipole Antenna)				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.				

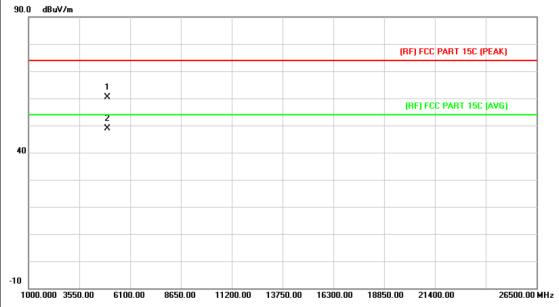


No	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4959.894	44.99	14.36	59.35	74.00	-14.65	peak
2	*	4960.458	32.32	14.36	46.68	54.00	-7.32	AVG



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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872
Temperature: 25 ℃		Relative Humidity:	55%
Test Voltage:	DC 5V		
Ant. Pol.	Vertical		
Test Mode:	TX GFSK Mode 2480MHz(Dipole	e Antenna)	
Remark:	No report for the emission which prescribed limit.	more than 10 dB below	the

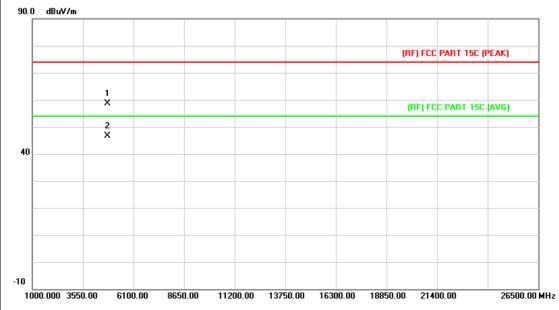


No	. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4959.684	46.12	14.36	60.48	74.00	-13.52	peak
2	*	4960.267	34.59	14.36	48.95	54.00	-5.05	AVG



Report No.: TB-FCC142954 Page: 38 of 95

Bluetooth Home Ringer	Model Name :	HFD-872
Temperature: 25 °C		55%
DC 5V		
Horizontal		
TX 8-DPSK Mode 2402MHz(Dip	ole Antenna)	
·		v the
	25 °C DC 5V Horizontal TX 8-DPSK Mode 2402MHz(Dip	25 °C Relative Humidity: DC 5V Horizontal TX 8-DPSK Mode 2402MHz(Dipole Antenna) No report for the emission which more than 10 dB below

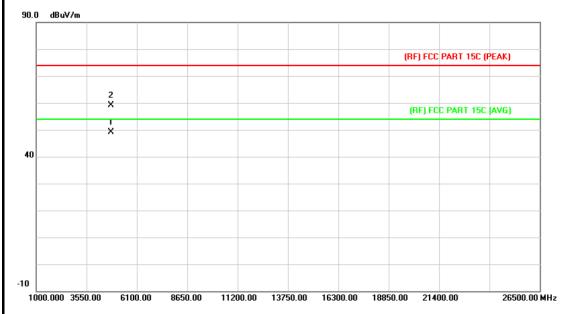


No	. Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4804.334	45.08	13.44	58.52	74.00	-15.48	peak
2	*	4804.432	33.10	13.44	46.54	54.00	-7.46	AVG



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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	DC 5V				
Ant. Pol.	Vertical				
Test Mode:	TX 8-DPSK Mode 2402MHz(Dipole Antenna)				
Remark:	No report for the emission which prescribed limit.	more than 10 dB below	v the		

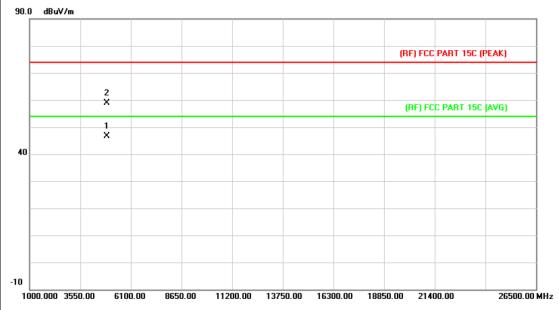


No	. Mk	c. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4804.213	35.73	13.44	49.17	54.00	-4.83	AVG
2		4804.421	45.70	13.44	59.14	74.00	-14.86	peak



Report No.: TB-FCC142954 Page: 40 of 95

EUT: Bluetooth Home Ringer		HFD-872	
emperature: 25 °C		55%	
Test Voltage: DC 5V			
Horizontal			
TX 8-DPSK Mode 2441MHz(Dip	ole Antenna)		
·		v the	
	25 °C DC 5V Horizontal TX 8-DPSK Mode 2441MHz(Dip	25 °C Relative Humidity: DC 5V Horizontal TX 8-DPSK Mode 2441MHz(Dipole Antenna) No report for the emission which more than 10 dB below	

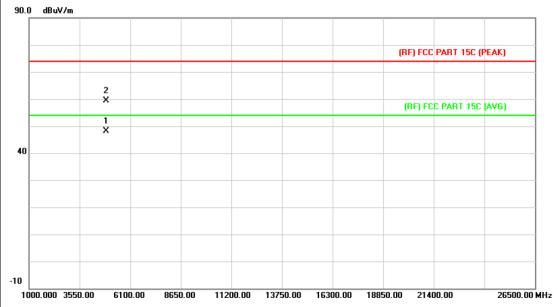


No	o. Ml	k. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4882.364	32.68	13.90	46.58	54.00	-7.42	AVG
2		4882.451	44.99	13.90	58.89	74.00	-15.11	peak



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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872	
Temperature:	25 ℃	Relative Humidity:	55%	
Test Voltage:	DC 5V			
Ant. Pol.	Vertical			
Test Mode:	TX 8-DPSK Mode 2441MHz(Dip	ole Antenna)		
Remark:	No report for the emission which more than 10 dB below the prescribed limit.			

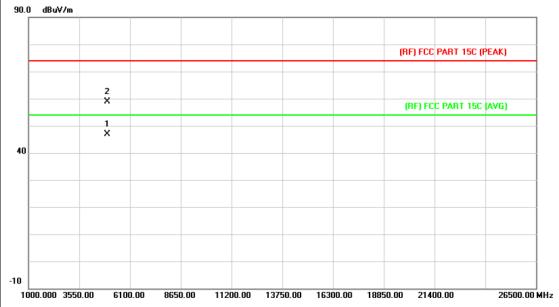


No	. Mk	. Freq.	_	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4882.145	34.31	13.90	48.21	54.00	-5.79	AVG
2		4882.565	45.44	13.90	59.34	74.00	-14.66	peak



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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872	
Temperature:	25 ℃	Relative Humidity:	55%	
Test Voltage:	DC 5V			
Ant. Pol.	Horizontal			
Test Mode:	TX 8-DPSK Mode 2480MHz(Dip	ole Antenna)		
Remark:	No report for the emission which more than 10 dB below the prescribed limit.			

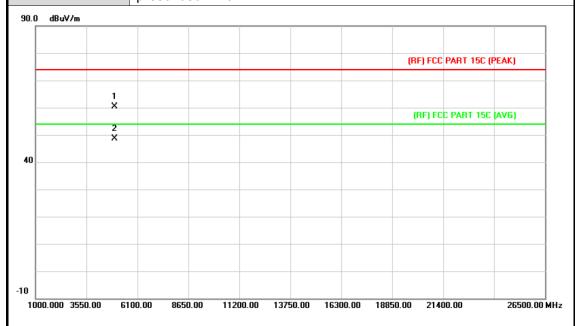


N	o. I	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	,	4960.453	32.48	14.36	46.84	54.00	-7.16	AVG
2			4960.542	44.60	14.36	58.96	74.00	-15.04	peak



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EUT:	Bluetooth Home Ringer	HFD-872						
Temperature:	25 °C Relative Humidity: 55%							
Test Voltage:	DC 5V							
Ant. Pol.	Vertical							
Test Mode:	TX 8-DPSK Mode 2480MHz(Dipole Antenna)							
Remark:	No report for the emission which more than 10 dB below the							
	prescribed limit.							



No	. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4960.287	46.05	14.36	60.41	74.00	-13.59	peak
2	*	4960.345	34.19	14.36	48.55	54.00	-5.45	AVG



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5. Restricted Bands Requirement

5.1 Test Standard and Limit

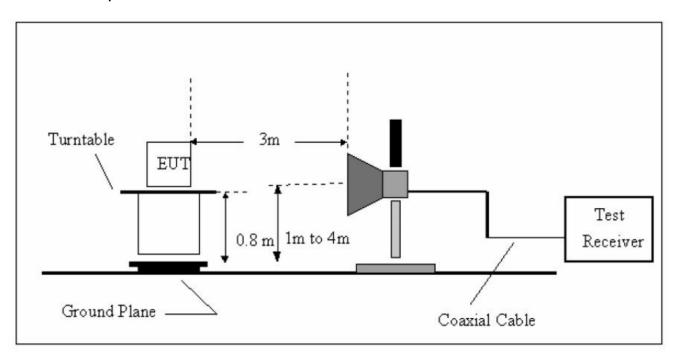
5.1.1 Test Standard FCC Part 15.209 FCC Part 15.205

5.1.2 Test Limit

Class B (dBuV/m)(at 3m)					
Peak	Average				
74	54				
74	54				
	Peak 74				

Note: All restriction bands have been tested, only the worst case is reported.

5.2 Test Setup



5.3 Test Procedure

- (1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- (2) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (3) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked



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and then Quasi Peak detector mode re-measured.

(4) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.

- (5) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (6) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (7) For the actual test configuration, please see the test setup photo.

5.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

5.5 Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Mar. 20, 2014	Mar. 19, 2015
Spectrum Analyzer	Rohde & Schwarz	FSP30	DE25181	Aug. 08, 2014	Aug. 07, 2015
EMI Test Receiver	Rohde & Schwarz	ESCI	101165	Aug. 08, 2014	Aug.07, 2015
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar. 07, 2014	Mar.06, 2015
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar. 07, 2014	Mar.06, 2015
Pre-amplifier	HP	11909A	185903	Mar. 07, 2014	Mar.06, 2015
Pre-amplifier	HP	8447B	3008A00849	Mar. 07, 2014	Mar.06, 2015
Cable	HUBER+SUHNE R	100	SUCOFLEX	Mar. 07, 2014	Mar.06, 2015
Signal Generator	Rohde & Schwarz	SML03	IKW682-054	Feb. 11, 2014	Feb.10, 2015
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A

5.6 Test Data

Remark: During testing above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=1 KHz with Peak Detector for Average Values.

All restriction bands have been tested, only the worst case is reported.





(1) Radiation Test(PCB Antenna)

55%							
Horizontal							
TX GFSK Mode 2402MHz(PCB Antenna)							
15C (PEAK)							
\15C (AVG)							
100,000							

2419.00 M							
2415.00 14							
)ver							
dB Detect							
25.38 peal							
14.37 AV							
_{equency} peal							
equency AVC							
1							



Emission Level= Read Level+ Correct Factor

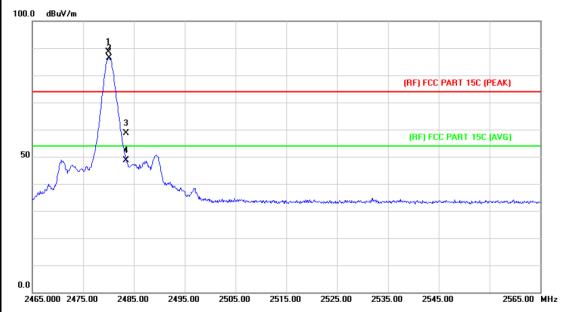
Report No.: TB-FCC142954 Page: 47 of 95

EUT			Blue	tooth H	ome F	Ringer		Mode	el Name :	HF	D-872
Tem	peratu	re:	25 °	С				Relat	ive Humid	ity: 55°	%
Test	t Voltag	je:	DC	5V				l			
Ant.	Pol.		Vert	Vertical							
Test	t Mode:		TX GFSK Mode 2402MHz(PCB Antenna)								
Ren	nark:	N/A									
100.0) dBuV/m										
										4	
										Ň	
									(RF) FCC	PART 15C (PEA	K)
									(BE) EC	PART 15C (AV	(G)
50									1 /		<u>-,</u>
									x	~~~	
	and the state of t	-		are a second		and the state of t	المرسيموسيس	~	uma a da		
0.0	19.000 232	29.00 2	339.00	2349.00	2359.	00 2369	3.00 2	2379.00 2	2389.00 2399	.00	2419.00 MHz
				Bood	ina	Corre	o+ N/I	easure-			
Ν	lo. Mk	. Fre	eq.	Read Leve		Facto		easure- ment	Limit	Over	
		MH	•	dBu\		dB/m		dBuV/m	dBuV/m	dB	Detector
1		2390.	000	46.6	0	0.77		47.37	74.00	-26.63	peak
2		2390.	000	38.1	5	0.77		38.92	54.00	-15.08	
3	*	2402.	100	87.1	9	0.82		88.01	Fundamenta	al Frequency	AVG
4	Х	2402.	300	89.0)4	0.82		89.86	Fundament	al Frequency	peak



Report No.: TB-FCC142954 Page: 48 of 95

EUT:	Bluetooth Home Ringer	HFD-872						
Temperature:	25 ℃	55%						
Test Voltage:	DC 5V							
Ant. Pol.	Horizontal							
Test Mode:	TX GFSK Mode 2480 MHz(PCB Antenna)							
Remark:	N/A							

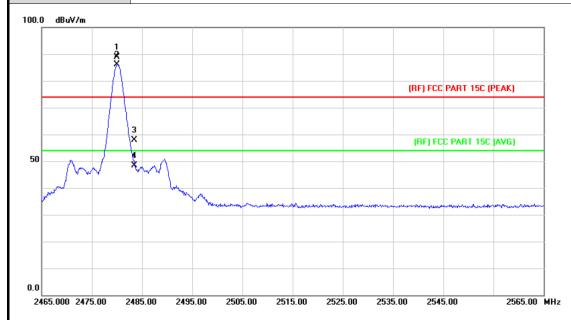


No	o. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Χ	2480.000	87.41	1.15	88.56	Fundamental	Frequency	peak
2	*	2480.200	85.20	1.15	86.35	Fundamental	Frequency	AVG
3		2483.500	57.36	1.17	58.53	74.00	-15.47	peak
4		2483.500	47.51	1.17	48.68	54.00	-5.32	AVG



Report No.: TB-FCC142954 Page: 49 of 95

EUT:	Bluetooth Home Ringer	HFD-872						
Temperature:	25 ℃ Relative Humidity: 55%							
Test Voltage:	DC 5V							
Ant. Pol.	Vertical							
Test Mode:	TX GFSK Mode 2480 MHz(PCB Antenna)							
Remark:	N/A							



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Χ	2480.000	87.80	1.15	88.95	Fundamenta	al Frequency	peak
2	*	2480.000	84.90	1.15	86.05	Fundament	al Frequency	AVG
3		2483.500	56.66	1.17	57.83	74.00	-16.17	peak
4		2483.500	47.21	1.17	48.38	54.00	-5.62	AVG



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UT:			Blue	tooth Ho	me R	linger			Model Name: HFD-87			HFD-872
emp	eratu	re:	25 °	C		Relative Humidity: 55%						55%
est \	/oltag	je:	DC 5	DC 5V								
nt. F	Pol.		Horiz	Horizontal								
est l	Mode:		TX 8	B-DPSK N	Mode	2402N	Hz(l	PCB	3 Anten	na)		
emark: N/A												
00.0	dBu∀/m											
											\$	
											Å	
										(RF) FCC	PART 15C	(PEAK)
										(DE) FOR		1446)
50										i X	PART 150	A
										2	100	
										*		
0.0												
2319.	.000 232	29.00 2	339.00	2349.00	2359.0	00 2369	.00	2379	9.00 23	89.00 2399.	.00	2419.00 MI
				Readir	ng	Correc		Mea	sure-		_	
No	. Mk	. Fr	eq.	Leve	1	Facto	r	m	ent	Limit	Ove	r
		M	Ηz	dBu∀	,	dB/m		dB	uV/m	dBuV/m	dB	Detecto
1		2390	.000	48.67	7	0.77		49	9.44	74.00	-24.	56 peak
		2390	.000	38.24	4	0.77		39	9.01	54.00	-14.9	99 AVG
2			200	88.02	2	0.82		88	3.84	Fundamenta	al Freque	_{ncy} AVG
2	*	2402	.000	00.02								
	* X	2402 2402		90.42		0.82		91	1.24	Fundamenta	al Freque	_{ncy} peak



Emission Level= Read Level+ Correct Factor

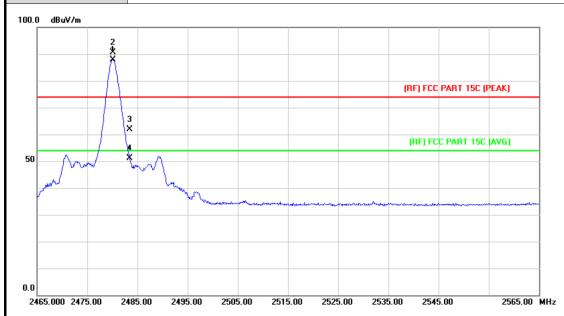
Report No.: TB-FCC142954
Page: 51 of 95

EUT:	Bluetooth Ho	me Ringer	Model Na	ime :	HFD-872						
Temperature:	25 ℃	25 °C Relative Humidity: 8									
Test Voltage:	DC 5V	DC 5V									
Ant. Pol.	Vertical	Vertical									
Test Mode:	TX 8-DPSK Mode 2402MHz(PCB Antenna)										
Remark:	: N/A										
100.0 dBuV/m											
50			1 X 2	(RF) FCC PART 15C (
0.0											
2319.000 2329.00 2	2339.00 2349.00		2379.00 2389.00	2399.00	2419.00 MHz						
No. Mk. Fr	Readi eq. Leve	-	leasure- ment ^L	imit Ove	er						
MI	Hz dBu∖	dB/m	dBuV/m d	iBuV/m dB	Detector						
1 2390	.000 47.5	9 0.77	48.36	74.00 -25.	64 peak						
2 2390	.000 37.4	2 0.77	38.19	54.00 -15.	81 AVG						
3 * 2402	.100 86.9	3 0.82	87.75 _{Fur}	ndamental Freque	ncy AVG						
4 X 2402	.200 89.5	4 0.82	90.36 _{Fur}	ndamental Freque	_{ncy} peak						



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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872							
Temperature:	25 ℃	25 °C Relative Humidity: 55%								
Test Voltage:	DC 5V	DC 5V								
Ant. Pol.	Horizontal									
Test Mode:	TX 8-DPSK Mode 2480MHz(PC	TX 8-DPSK Mode 2480MHz(PCB Antenna)								
Remark:	N/A									



No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2480.100	86.66	1.15	87.81	Fundamental	Frequency	AVG
2	Χ	2480.200	89.53	1.15	90.68	Fundamental	Frequency	peak
3		2483.500	60.64	1.17	61.81	74.00	-12.19	peak
4		2483.500	49.91	1.17	51.08	54.00	-2.92	AVG



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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872							
Temperature:	25 ℃	Relative Humidity:	55%							
Test Voltage:	DC 5V									
Ant. Pol.	/ertical									
Test Mode:	TX 8-DPSK Mode 2480MHz	TX 8-DPSK Mode 2480MHz(PCB Antenna)								
Remark:	N/A									
100.0 dBuV/m										
3										
, A										
		(RF) FCC PART	15C (PEAK)							
	3									

			\prod															
-				3 X											Œ	RF) FC	C PART 15C	(AVG)
50	كمهمو	w		*	wre/	may	Λ.	and a second	····	11 mm m m m m m m m m m m m m m m m m m	***********	المراضات		of white from	dan galangan	w~10+	dangkanan sakan Jawaska	Marine Marine and Marine
.0	65 000	2475.00	n :	2485	. NO	2495	OO.	250	5.00	251	5.00	2525	5.00	2535	5.00	2545	i NN	2565.00

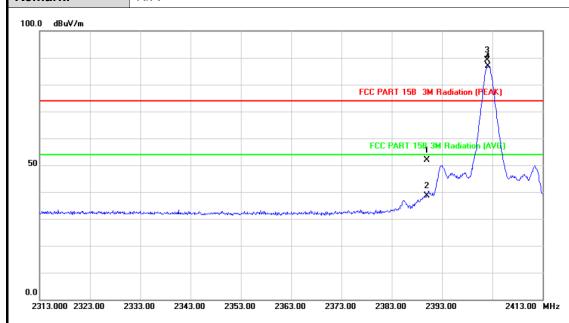
No	. Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
1		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Χ	2480.000	89.30	1.15	90.45	Fundamental	I Frequency	peak
2	*	2480.300	87.37	1.15	88.52	Fundamental	I Frequency	AVG
3		2483.500	60.75	1.17	61.92	74.00	-12.08	peak
4		2483.500	50.20	1.17	51.37	54.00	-2.63	AVG





(2) Radiation Test(Dipole Antenna)

EUT:	Bluetooth Home Ringer	Model Name :	HFD-872						
Temperature:	25 °C Relative Humidity: 55%								
Test Voltage:	DC 5V								
Ant. Pol.	Horizontal								
Test Mode:	TX GFSK Mode 2402MHz(Dipole	TX GFSK Mode 2402MHz(Dipole Antenna)							
Remark:	N/A								



No	. Mk	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	51.20	0.77	51.97	74.00	-22.03	peak
2		2390.000	37.86	0.77	38.63	54.00	-15.37	AVG
3	Χ	2402.000	88.32	0.82	89.14	Fundamenta	Frequency	peak
4	*	2402.100	85.95	0.82	86.77	Fundamental	Frequency	AVG



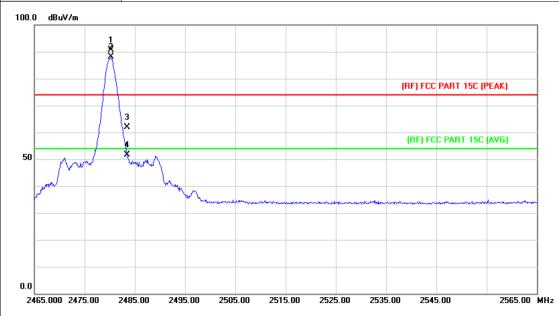
Report No.: TB-FCC142954
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EU	Γ:		Blue	tooth H	lome	Ringer			Mode	l Name :	HF	D-872
Ten	nperatu	ıre:	25 °	C					Relati	ve Humid	lity: 55°	%
Tes	t Volta	ge:	DC :	5V								
Ant	. Pol.		Vert	ical								
Tes	t Mode	:	TX (GFSK I	Node	2402M	Hz([Dipole	Anten	na)		
Ren	nark:		N/A									
110.0	0 dBuV/m											
											3	
											X	
											-	
									FCC PA	ART 15B 3M Ra	diation (PEAK)	
60										1 X PART 158 3M		
									FCL	2	Hadiation (AVG)	W 1
										\ \sigma_{\intimed\carbdiftinta\sigma_{\sigma_\intimed\carbdifta\simt\sigma_\sigma_\initin\simt\simt\simt\sim\initin\simt\simt\sim\simt\sim\sim\sim\sim\sim\sim\sim\sim\sim\sim		
	and the second second	and the second of the second of		والمستعيدون	ووساده المساور سياس	on production of the second		- AND COMPANY	~~~	manual C		
10.0 23	313.000 23	23.00 2	333.00	2343.00	23!	53.00 23	63.00	237	3.00 23	83.00 2393	.00	2413.00 MHz
				Read	lina	Corre	oot.	Maa	asure-			
Ν	lo. Mk	. Fre	eq.	Lev	_	Fact			ent	Limit	Over	
		MH	Z	dΒι	ıV	dB/m	1	dB	uV/m	dBuV/m	dB	Detector
1		2390.	000	58.	98	0.77	7	59	9.75	74.00	-14.25	peak
2		2390.	000	47.	04	0.77	7	4	7.81	54.00	-6.19	AVG
3	Х	2402.	000	98.	54	0.82	2	99	9.36	Fundament	al Frequency	peak
4	*	2402.	100	96.	36	0.82	2	9	7.18	Fundament	al Frequency	AVG



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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872						
Temperature:	25 °C Relative Humidity: 55%								
Test Voltage:	DC 5V								
Ant. Pol.	Horizontal	Horizontal							
Test Mode:	TX GFSK Mode 2480 MHz(Dipol	le Antenna)							
Remark:	N/A								
	•								

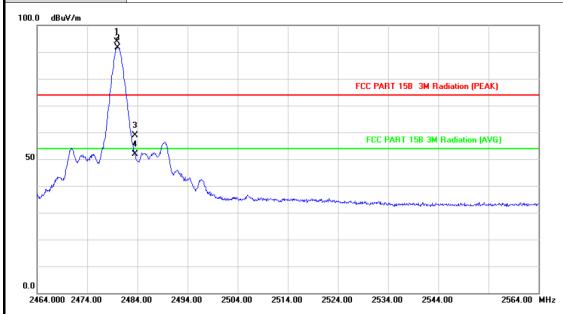


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Χ	2480.300	89.39	1.15	90.54	Fundamenta	l Frequency	peak
2	*	2480.300	86.87	1.15	88.02	Fundamenta	I Frequency	AVG
3		2483.500	60.59	1.17	61.76	74.00	-12.24	peak
4		2483.500	50.37	1.17	51.54	54.00	-2.46	AVG

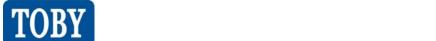


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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872							
Temperature:	25 ℃	25 ℃ Relative Humidity: 55%								
Test Voltage:	DC 5V	DC 5V								
Ant. Pol.	Vertical									
Test Mode:	TX GFSK Mode 2480 MHz(Dipo	TX GFSK Mode 2480 MHz(Dipole Antenna)								
Remark:	N/A									



No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Χ	2479.900	92.64	1.15	93.79	Fundamenta	I Frequency	peak
2	*	2480.000	90.53	1.15	91.68	Fundamenta	I Frequency	AVG
3		2483.500	57.67	1.17	58.84	74.00	-15.16	peak
4		2483.500	50.67	1.17	51.84	54.00	-2.16	AVG



Emission Level= Read Level+ Correct Factor

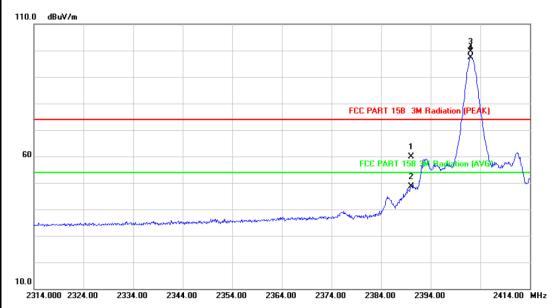
Report No.: TB-FCC142954 Page: 58 of 95

EUT:			Blue	tooth Home	e Ringer	Mod	el Name :	HFD-872
Temp	Temperature: 25 °C Relative Humidity: 55%					55%		
Test '	Voltag	e:	DC 5	SV .		·		
Ant.	Pol.		Horiz	ontal				
Test	Mode:		TX 8	-DPSK Mo	de 2402MHz	z(Dipole An	tenna)	
Rema	ark:		N/A					
110.0) dBuV/m							
60		No. Assertion and the second s					PART 15B 3M Radiation (C PART 15B 3M Radiation X	
L	14.000 23	24.00	2334.00	2344.00 23	354.00 2364.00	2374.00 2	2384.00 2394.00	2414.00 MHz
No.	o. Mk.		<u> </u>	Reading Level	Correct Factor	Measure ment	Limit O	ver
		MH		dBuV	dB/m	dBuV/m		dB Detector
1		2390.	000	50.37	0.77	51.14	74.00 -2	2.86 peak
2		2390.	000	39.07	0.77	39.84	54.00 -1	4.16 AVG
3	Х	2402.	100	88.49	0.82	89.31	Fundamental Free	_{quency} peak
4	*	2402.	200	86.22	0.82	87.04	Fundamental Fred	quency AVG



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EUT:	Bluetooth Home Ringer	ooth Home Ringer Model Name :				
Temperature:	25 ℃	Relative Humidity:				
Test Voltage:	DC 5V					
Ant. Pol.	Vertical					
Test Mode:	TX 8-DPSK Mode 2402MHz(Dipole Antenna)					
Remark: N/A						



No	o. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	59.23	0.77	60.00	74.00	-14.00	peak
2		2390.000	47.91	0.77	48.68	54.00	-5.32	AVG
3	Х	2402.000	98.83	0.82	99.65	Fundamenta	I Frequency	peak
4	*	2402.100	96.64	0.82	97.46	Fundamenta	l Frequency	AVG



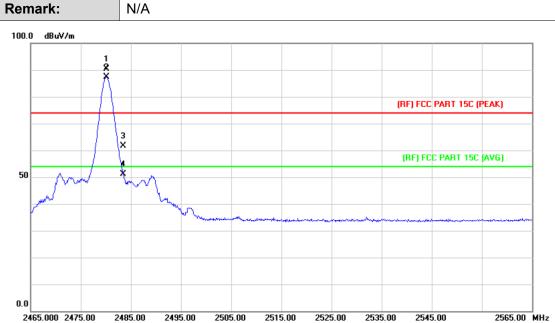
EUT: Bluetooth Home Ringer Model Name: HFD-872

Temperature: 25 ℃ Relative Humidity: 55%

Test Voltage: DC 5V

Ant. Pol. Horizontal

Test Mode: TX 8-DPSK Mode 2480MHz(Dipole Antenna)

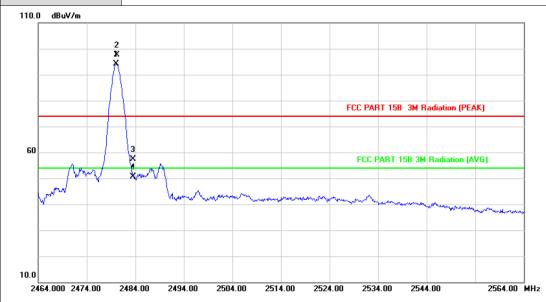


_	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
			MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
_	1	Χ	2480.100	89.16	1.15	90.31	Fundamental	Frequency	peak
-	2	*	2480.100	86.16	1.15	87.31	Fundamental	Frequency	AVG
,	3		2483.500	60.48	1.17	61.65	74.00	-12.35	peak
-	4		2483.500	49.95	1.17	51.12	54.00	-2.88	AVG

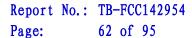


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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872		
Temperature:	25 ℃	Relative Humidity:			
Test Voltage:	DC 5V				
Ant. Pol.	Vertical				
Test Mode:	TX 8-DPSK Mode 2480MHz(Dipole Antenna)				
Remark:	N/A				



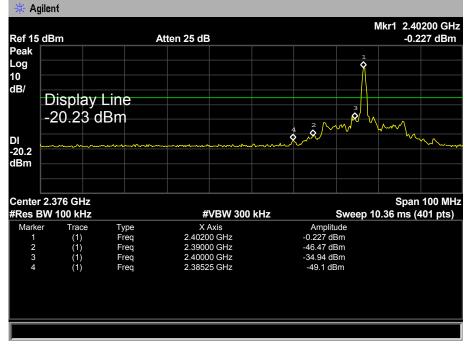
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2480.100	92.86	1.15	94.01	Fundamental	Frequency	AVG
2	Χ	2480.214	96.49	1.15	97.64	Fundamental	Frequency	peak
3		2483.500	56.19	1.17	57.36	74.00	-16.64	peak
4		2483.500	49.56	1.17	50.73	54.00	-3.27	AVG

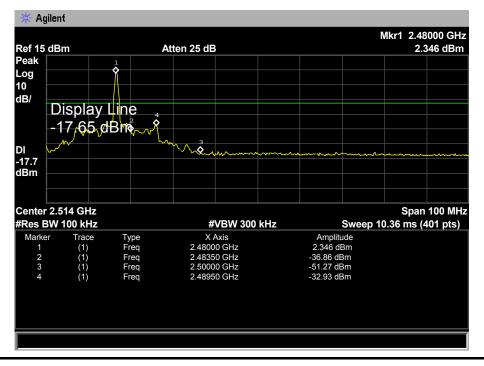


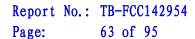


(1) Conducted Test

EUT:	Bluetooth Home Ringer	Model Name :	HFD-872				
Temperature:	25 ℃	Relative Humidity:					
Test Voltage:	DC 5V	DC 5V					
Test Mode:	TX GFSK Mode 2402MHz / 2480	TX GFSK Mode 2402MHz / 2480 MHz					
Remark:	N/A						
* Agilent							
	Mkr1 2.40200 GHz						

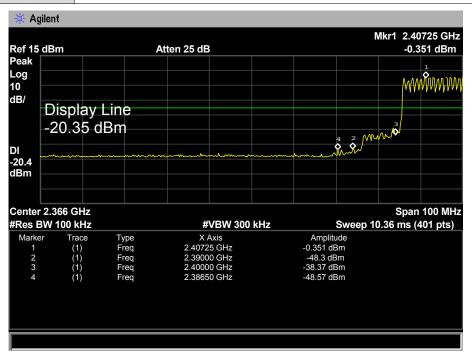


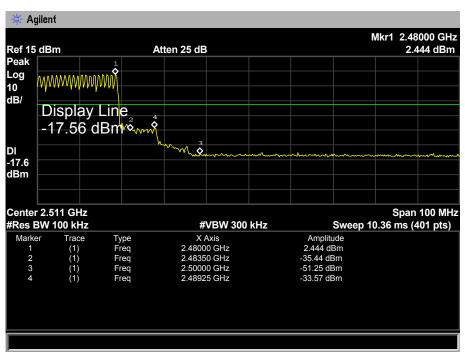


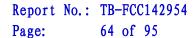




EUT:	Bluetooth Home Ringer	Model Name :	HFD-872
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 5V		
Test Mode:	GFSK Hopping Mode		
Remark:	N/A		

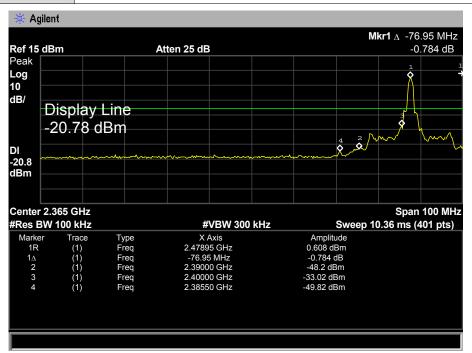


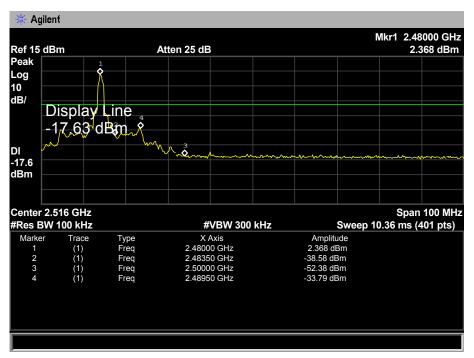


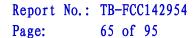




EUT:	EUT: Bluetooth Home Ringer		HFD-872			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 5V					
Test Mode:	TX 8-DPSK Mode 2402MHz / 2480 MHz					
Remark:	N/A					

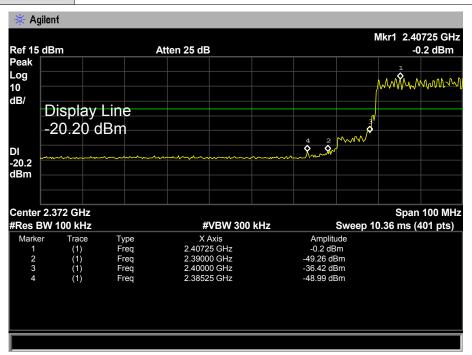


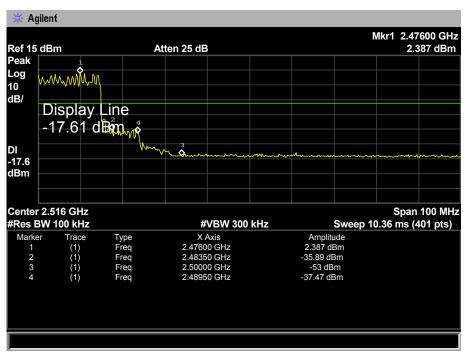






EUT:	Bluetooth Home Ringer	Model Name :	HFD-872
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 5V		
Test Mode:	8-DPSK Hopping Mode		
Remark:	N/A		







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6. Number of Hopping Channel

6.1 Test Standard and Limit

6.1.1 Test Standard FCC Part 15.247 (a)(1)

6.1.2 Test Limit

Section	Test Item	Limit
15.247	Number of Hopping Channel	>15

6.2 Test Setup



6.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Spectrum Setting: RBW=100 KHz, VBW=100 KHz, Sweep time= Auto.

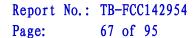
6.4 EUT Operating Condition

The EUT was set to the Hopping Mode by the Customer.

6.5 Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Mar. 20, 2014	Mar. 19, 2015

6.6 Test Data

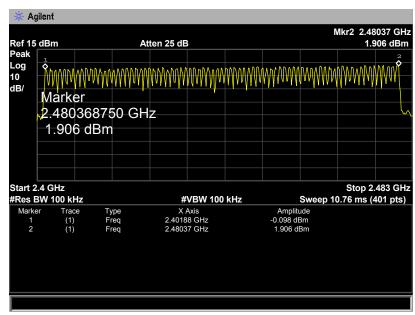




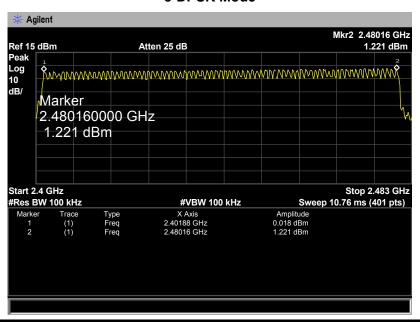
EUT:	Bluetooth Home Ringer	nger Model Name :		
Temperature:	25 ℃	Relative Humidity:	55%	
Test Voltage:	DC 5V			
Test Mode:	Hopping Mode (GFSK/ 8-DPSK)			

Frequency Range	Quantity of Hopping Channel	Limit
2402MU2490MU-	79	-4 E
2402MHz~2480MHz	79	>15

GFSK Mode



8-DPSK Mode





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7. Average Time of OcCupancy

7.1 Test Standard and Limit

5.1.1 Test Standard FCC Part 15.247 (a)(1)

5.1.2 Test Limit

Section	Test Item	Limit
15.247(a)(1)/ RSS-210	Average Time of	0.4.000
Annex 8(A8.1d)	OcCupancy	0.4 sec

7.2 Test Setup



7.3 Test Procedure

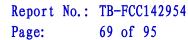
- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Spectrum Setting: RBW=1MHz, VBW=1MHz.
- (3) Use video trigger with the trigger level set to enable triggering only on full pulses.
- (4) Sweep Time is more than once pulse time.
- (5) Set the center frequency on any frequency would be measure and set the frequency span to zero.
- (6) Measure the maximum time duration of one single pulse.
- (7) Set the EUT for packet transmitting.
- (8) Measure the maximum time duration of one single pulse.

7.4 EUT Operating Condition

The EUT was set to the Hopping Mode by the Customer.

7.5 Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Mar. 20, 2014	Mar. 19, 2015



PASS

400

31.60



2402

2441

2480

0.470

0.460

0.440

7.6 Test Data

EUT:		Bluetooth	Home Ringer	Model Na	del Name: HFD-872		
Temperature:		25 °C Relative Humidity: 55%					
Test Voltage:	_	DC 5V					
Test Mode: Hopping N			Mode (GFSK DH1)				
Channel (MHz)	Pu	lse Time (ms)	Total of Dwell (ms)	Period Time	Limit (ms)	Result	

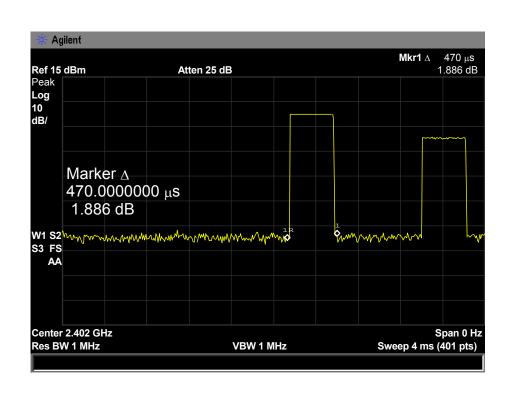
GFSK Hopping Mode DH1

150.40

147.20

140.80

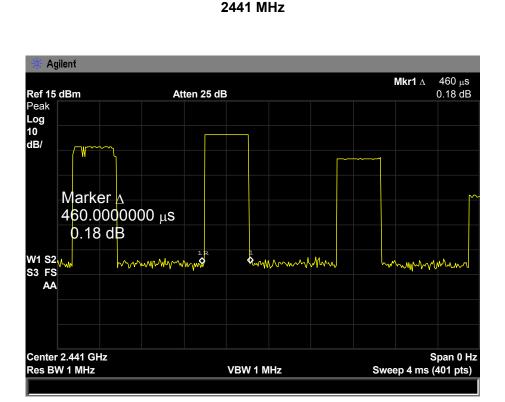
2402 MHz





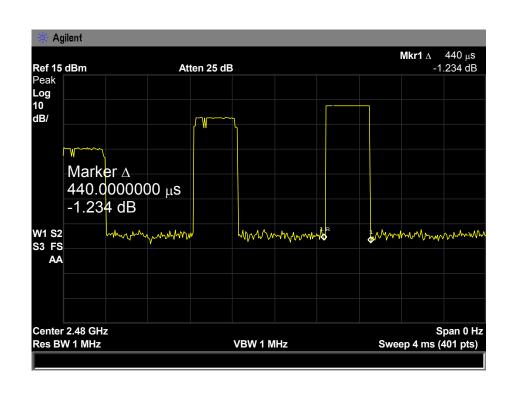


GFSK Hopping Mode DH1



GFSK Hopping Mode DH1

2480 MHz





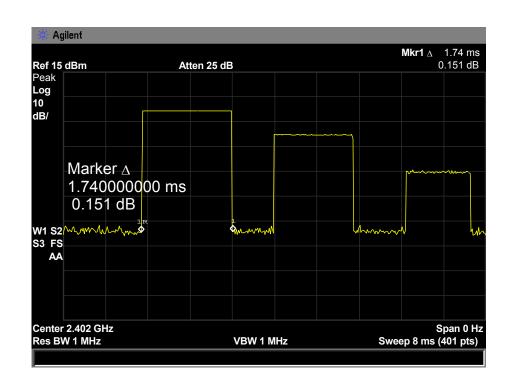
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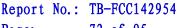
EUT:	Bluetooth Home Ringer	Model Name :	HFD-872
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 5V		
Test Mode:	Honning Mode (GESK DH3)		

rest wode.			viode (Gi SK Di is)			
Channel (MHz)	Pulse Time (ms)		Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
2402		1.740	278.40			
2441		1.740	278.40	31.60	400	PASS
2480		1.760	281.60			

GFSK Hopping Mode DH3

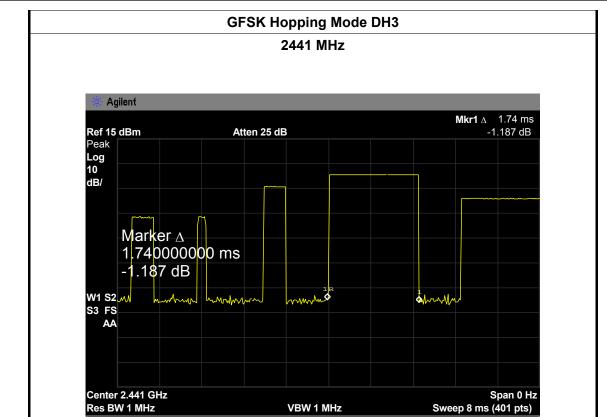
2402 MHz

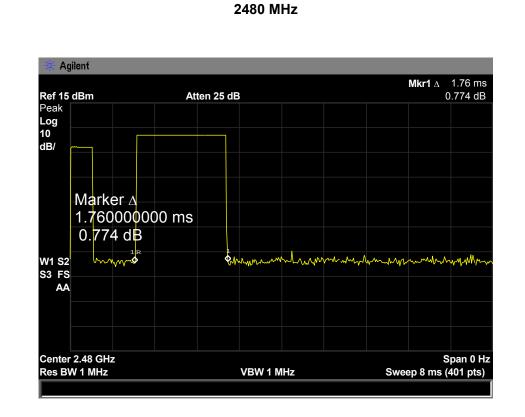






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GFSK Hopping Mode DH3



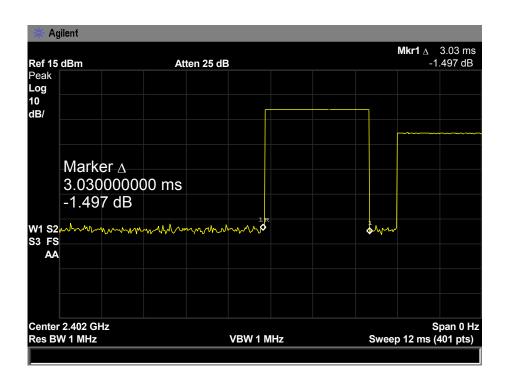
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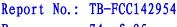
EUT:	Bluetooth Home Ringer	Model Name :	HFD-872
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 5V		
Toot Mode:	Hopping Mode (CESK DUS)		

Test Mode:		Hopping I	Mode	(GFSK I	DH5)

Channel (MHz)	Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
2402	3.030	323.20			
2441	3.030	323.20	31.60	400	PASS
2480	3.030	323.20			

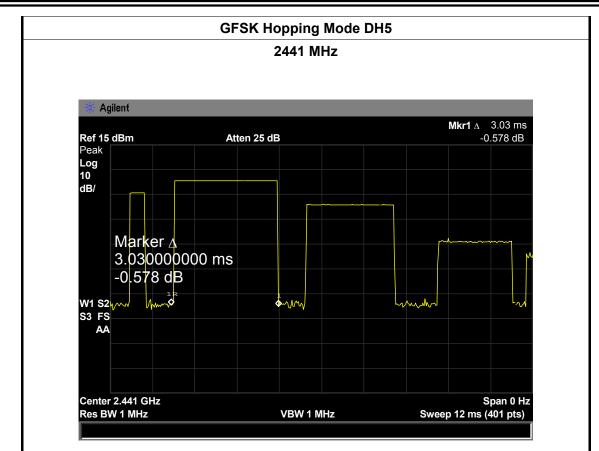
GFSK Hopping Mode DH5

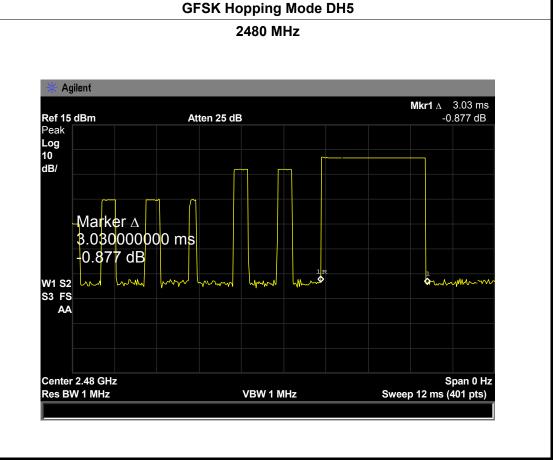






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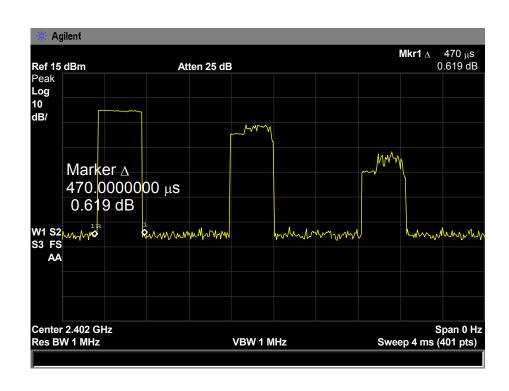
EUT:	Bluetooth Home Ringer	Model Name :	HFD-872
Temperature:	25 ℃	Relative Humidity:	55%

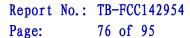
Test Voltage: DC 5V

Test Mode: Hopping Mode (8-DPSK DH1)

Channel (MHz)	Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
2402	0.470	150.40			
2441	0.460	147.20	31.60	400	PASS
2480	0.480	153.60			

8-DPSK Hopping Mode DH1







8-DPSK Hopping Mode DH1

2441 MHz

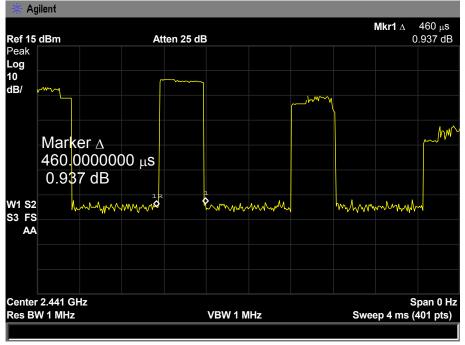
Agilent

Mkr1 \(\Delta \) 460 \(\mu \)s

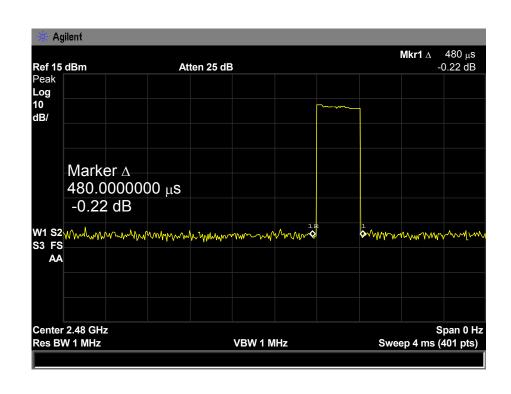
Ref 15 dBm

Atten 25 dB

Peak



8-DPSK Hopping Mode DH1





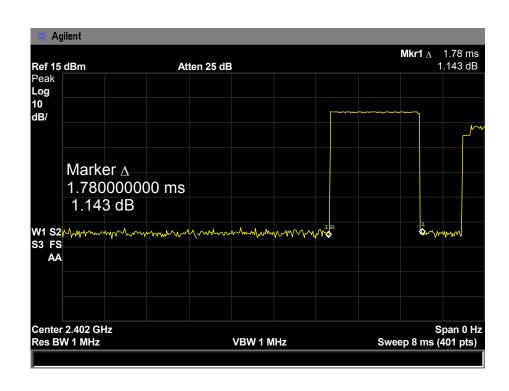
Report No.: TB-FCC142954 Page: 77 of 95

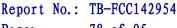
EUT:	Bluetooth Home Ringer	Model Name :	HFD-872
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 5V		
	(0 DD01(D110)		

Test Mode:	Hopping Mode (8-DPSK DH3)

Channel (MHz)	Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
2402	1.780	284.80			
2441	1.700	272.00	31.60	400	PASS
2480	1.780	284.80			

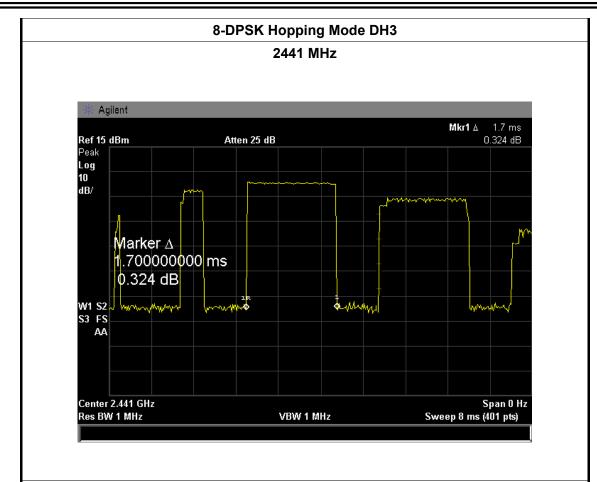
8-DPSK Hopping Mode DH3





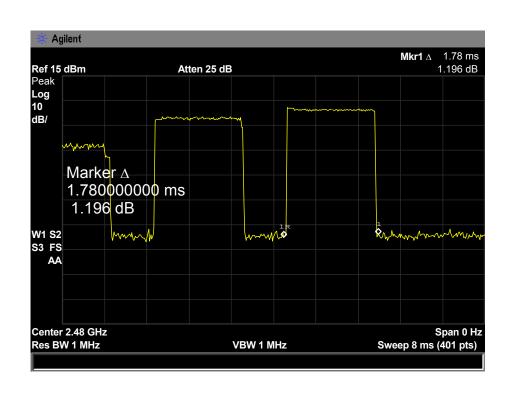


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8-DPSK Hopping Mode DH3





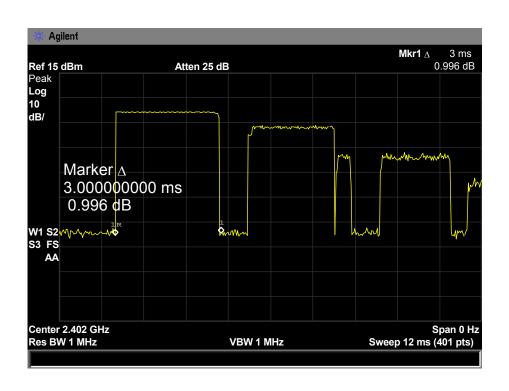


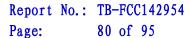
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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 5V		
Test Mode:	Hopping Mode (8-DPSK DH5)		

Channel (MHz)	Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
2402	3.000	320.00			
2441	3.060	326.40	31.60	400	PASS
2480	3.000	320.00			

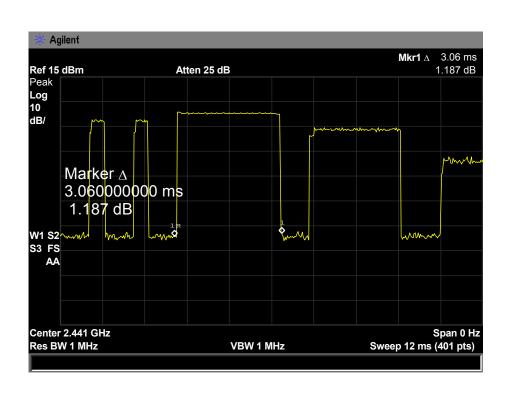
8-DPSK Hopping Mode DH5



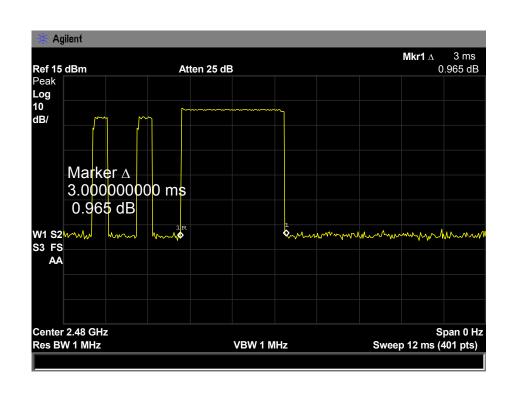




8-DPSK Hopping Mode DH5 2441 MHz



8-DPSK Hopping Mode DH5





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8. Channel Separation and Bandwidth Test

8.1 Test Standard and Limit

8.1.1 Test Standard FCC Part 15.247

8.1.2 Test Limit

Test Item	Limit	Frequency Range(MHz)
Bandwidth	<=1 MHz	2400~2483.5
	(20dB bandwidth)	
	>25KHz or >two-thirds of	
Channel Separation	the 20 dB bandwidth	2400~2483.5
	Which is greater	

8.2 Test Setup



8.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Spectrum Setting:

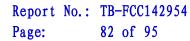
Channel Separation: RBW=30 kHz, VBW=100 kHz.

Bandwidth: RBW=30 kHz, VBW=100 kHz.

- (3) The bandwidth is measured at an amplitude level reduced 20dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst –case (i.e the widest) bandwidth.
- (4) Measure the channel separation the spectrum analyzer was set to Resolution Bandwidth:30 kHz, and Video Bandwidth:100 kHz. Sweep Time set auto.

8.4 EUT Operating Condition

The EUT was set to the Hopping Mode for Channel Separation Test and continuously transmitting for the Bandwidth Test.



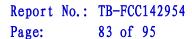


8.5 Test Equipment

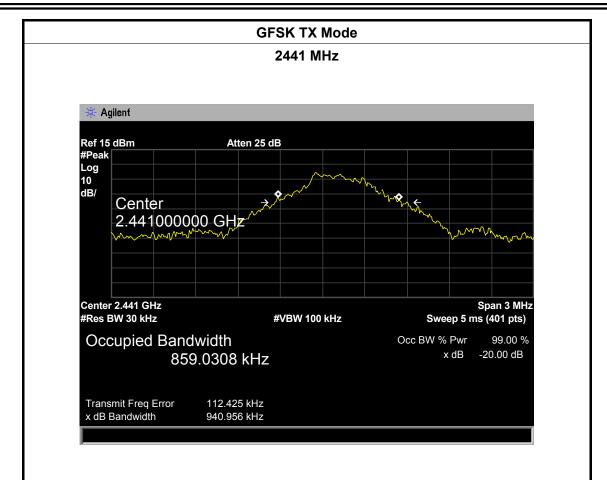
Description	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Mar. 20, 2014	Mar. 19, 2015

8.6 Test Data

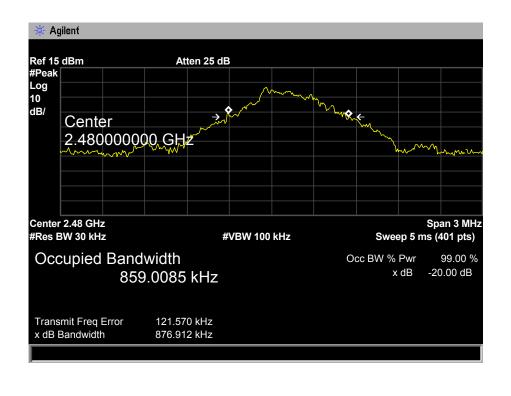
EUT:		Bluetooth Home Ringer	Model Name :	HFD-872
Temperatur	e:	25 ℃	Relative Humidity:	55%
Test Voltage) :	DC 5V		
Test Mode:		TX Mode (GFSK)		
Channel fre (MHz	-	99% OBW (kHz)	20dB Bandwidth (kHz)	
2402	-	853.2398	875.750	
2441		859.0308	940.956	
2480)	859.0085	876.912	
		GFSK TX Mod	de	
* A	gilent			_
Ref 15 #Peak	dBm	Atten 25 dB		
Ref 15	c dBm Cent			mmm
Ref 15 #Peak Log 10 dB/	c dBm Cent	er 2000000 GHz		an 3 MHz

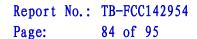






GFSK TX Mode





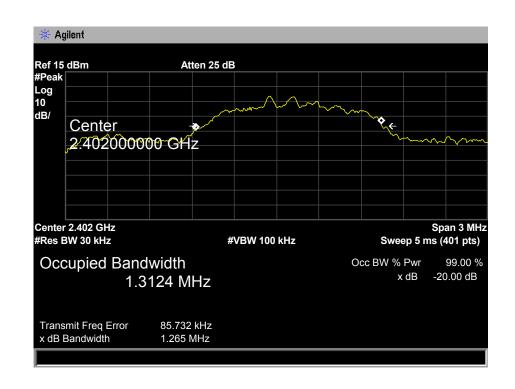


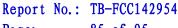
EUT: Bluetooth Home Ringer **Model Name:** HFD-872 25 ℃ **Relative Humidity:** Temperature: 55% Test Voltage: DC 5V TY MAda (8-DDSK)

Test Mode:	1^	Mode (8-DPSK)
Channel frequence	:v	99% OBW (k

Channel frequency (MHz)	99% OBW (kHz)	20dB Bandwidth (kHz)	20dB Bandwidth *2/3 (kHz)
2402	1312.40	1265.00	843.33
2441	1195.20	1226.00	817.33
2480	1198.40	1241.00	827.33

8-DPSK TX Mode 2402 MHz

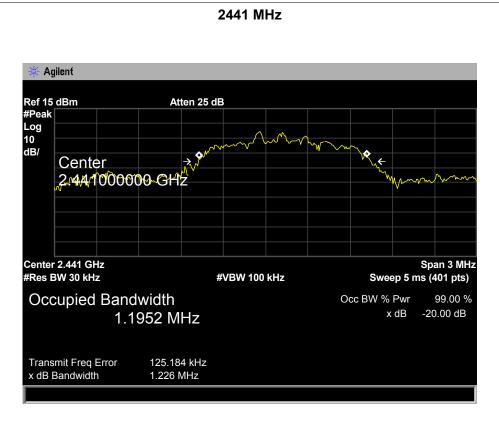




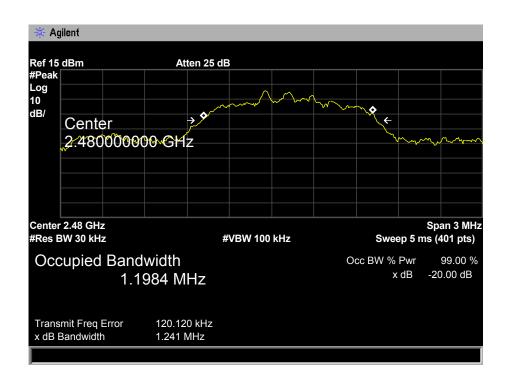


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8-DPSK TX Mode



8-DPSK TX Mode 2480 MHz





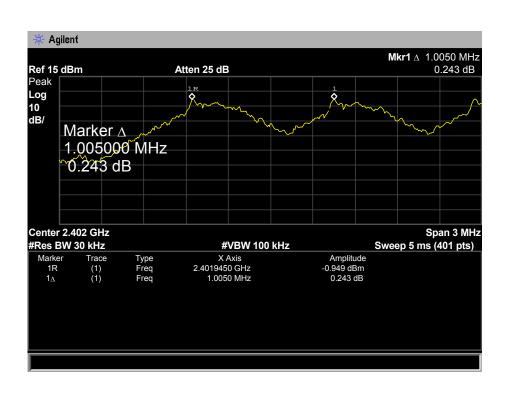
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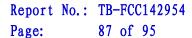
EUT:	Bluetooth Home Ringer	Model Name :	HFD-872
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 5V		

Test Mode: Hopping Mode (GFSK)

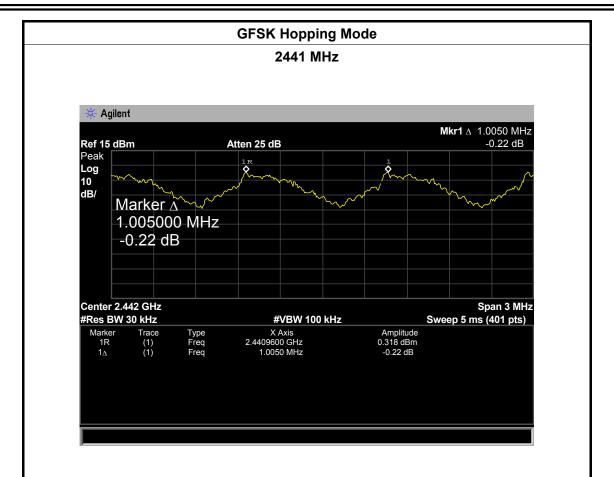
Channel frequency (MHz)	Separation Read Value (kHz)	Separation Limit (kHz)
2402	1005.00	875.750
2441	1005.00	940.956
2480	1005.00	876.912

GFSK Hopping Mode

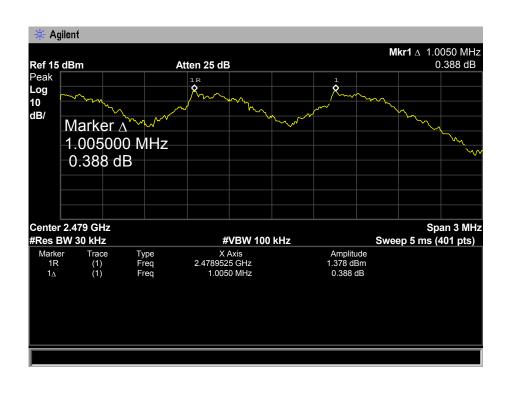












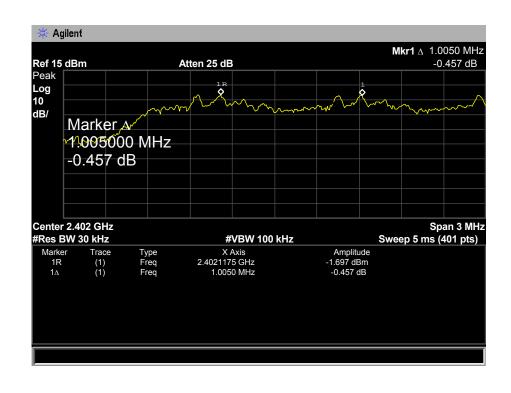


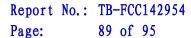
EUT:Bluetooth Home RingerModel Name :HFD-872Temperature:25 °CRelative Humidity:55%Test Voltage:DC 5V

Test Mode: Hopping Mode (8-DPSK)

110 pp. 13 1110 to (0 = 1 0 1)			
Channel frequency (MHz)	Separation Read Value	Separation Limit (kHz)	
	(kHz)		
2402	1005.00	843.33	
2441	1005.00	817.33	
2480	1005.00	827.33	
·			

8-DPSK Hopping Mode

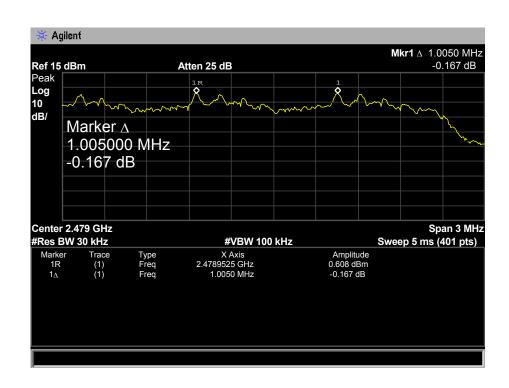






8-DPSK Hopping Mode 2441 MHz Agilent **Mkr1** ∆ 1.0050 MHz 0.23 dB Ref 15 dBm Atten 25 dB Peak Log 10 dB/ Marker ∧ 1.005000 MHz 0.23 dB Center 2.442 GHz Span 3 MHz #Res BW 30 kHz **#VBW 100 kHz** Sweep 5 ms (401 pts) Amplitude -1.463 dBm 0.23 dB X Axis 2.4411100 GHz 1.0050 MHz Trace (1) (1) Type Freq Freq







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9. Peak Output Power Test

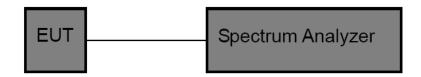
9.1 Test Standard and Limit

9.1.1 Test Standard FCC Part 15.247 (b) (1)

9.1.2 Test Limit

Test Item	Limit	Frequency Range(MHz)
Peak Output Power	Hopping Channels>75 Power<1W(30dBm)	2400~2483.5
	Other <125 mW(21dBm)	

9.2 Test Setup



9.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Spectrum Setting:

Peak Detector: RBW=1 MHz, VBW=3 MHz for bandwidth less than 1MHz. RBW=3 MHz, VBW=3 MHz for bandwidth more than 1MHz.

9.4 EUT Operating Condition

The EUT was set to continuously transmitting in the max power during the test.

9.5 Test Equipment

Description	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Mar. 20, 2014	Mar. 19, 2015

9.6 Test Data



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EUT: Bluetooth Home Ringer Model Name: HFD-872

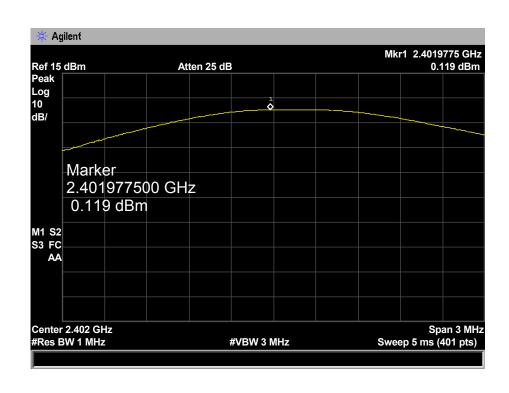
Temperature: 25 ℃ Relative Humidity: 55%

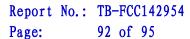
Test Voltage: DC 5V

Test Mode: TX Mode (GFSK)

	'	
Channel frequency (MHz)	Test Result (dBm)	Limit (dBm)
2402	0.119	
2441	1.584	30
2480	2.711	

GFSK TX Mode

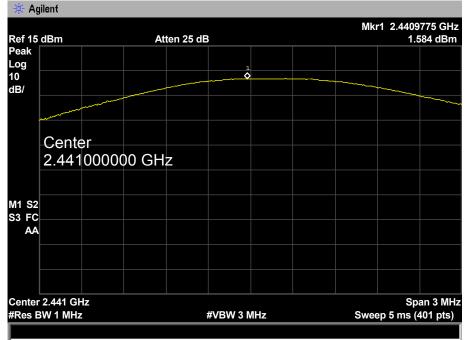




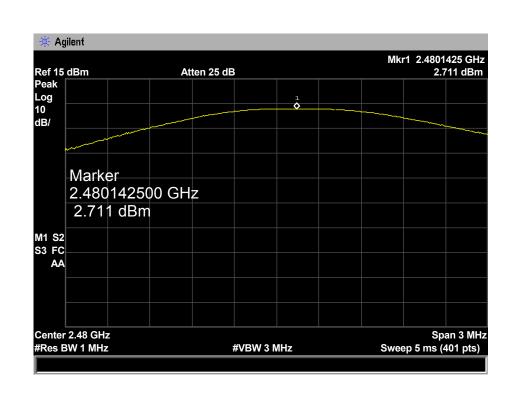


GFSK TX Mode





GFSK TX Mode



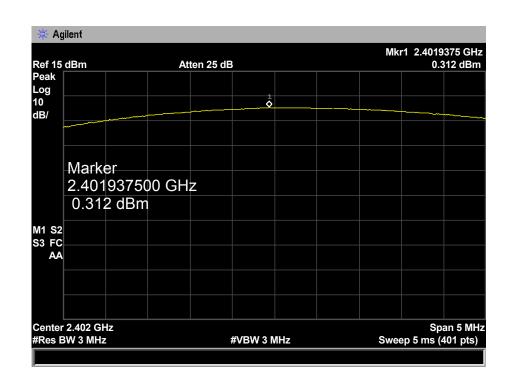


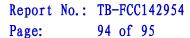
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EUT:	Bluetooth Home Ringer	Model Name :	HFD-872
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 5V		
Test Mode:	TX Mode (8-DPSK)		

Channel frequency (MHz)	Test Result (dBm)	Limit (dBm)
2402	0.312	
2441	1.460	21
2480	2.559	

8-DPSK TX Mode

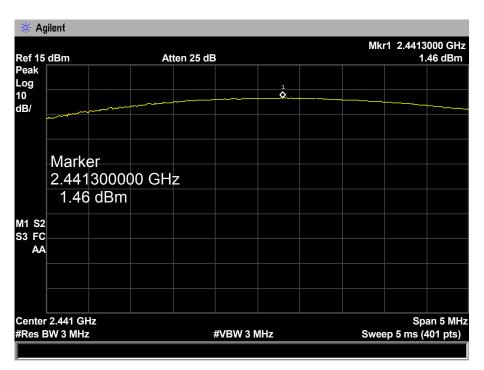




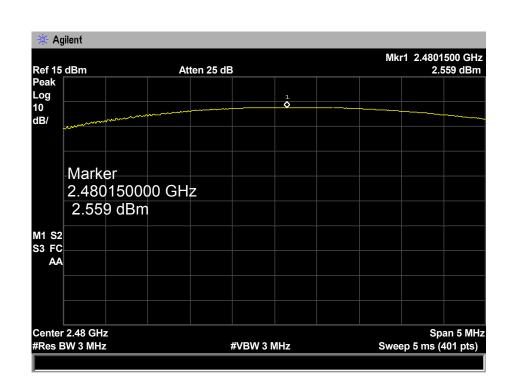


8-DPSK TX Mode





8-DPSK TX Mode





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10. Antenna Requirement

10.1 Standard Requirement

10.1.1 Standard FCC Part 15.203

10.1.2 Requirement

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

10.2 Antenna Connected Construction

The directional gain of the PCB antenna used for transmitting is -2.41 dBi. The directional gain of the Dipole antenna used for transmitting is 2 dBi. And the antenna connector is de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

10.2 Result

The EUT antenna equipped a PCB Antenna and a Dipole Antenna with reverse connector. It complies with the standard requirement.

	Antenna Type
▽ Perma	nent attached antenna
☑ Uniqu	e connector antenna
□Profe	ssional installation antenna