

Shenzhen Toby Technology Co., Ltd.

Report No.: TB-FCC143499

Page: 1 of 92

FCC Radio Test Report FCC ID: 2ABNBHX-P320

Original Grant

Report No. : TB-FCC143499

Applicant: GOLDEN CHINA AUDIO (HK) PRODUCT LIMITED (AOK)

Equipment Under Test (EUT)

EUT Name : Jam Thrill

Model No. : HX-P320

Brand Name : N/A

Receipt Date : 2015-03-11

Test Date : 2015-03-11 to 2015-03-16

Issue Date : 2015-03-17

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

Test Method: ANSI C63.4:2009

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



Contents

COR	NIENIS	
1.	GENERAL INFORMATION ABOUT EUT	
	1.1 Client Information	
	1.2 General Description of EUT (Equipment Under Test)	∠
	1.3 Block Diagram Showing the Configuration of System Tested	6
	1.4 Description of Support Units	6
	1.5 Description of Test Mode	
	1.6 Description of Test Software Setting	8
	1.7 Measurement Uncertainty	
	1.8 Test Facility	9
2.	TEST SUMMARY	10
3.	CONDUCTED EMISSION TEST	1
	3.1 Test Standard and Limit	11
	3.2 Test Setup	
	3.3 Test Procedure	11
	3.4 Test Equipment Used	12
	3.5 EUT Operating Mode	12
	3.6 Test Data	12
4.	RADIATED EMISSION TEST	15
	4.1 Test Standard and Limit	
	4.2 Test Setup	
	4.3 Test Procedure	17
	4.4 EUT Operating Condition	18
	4.5 Test Equipment	18
5 .	RESTRICTED BANDS REQUIREMENT	37
	5.1 Test Standard and Limit	37
	5.2 Test Setup	
	5.3 Test Procedure	
	5.4 EUT Operating Condition	38
	5.5 Test Equipment	38
6.	NUMBER OF HOPPING CHANNEL	51
	6.1 Test Standard and Limit	
	6.2 Test Setup	
	6.3 Test Procedure	
	6.4 EUT Operating Condition	51
	6.5 Test Equipment	
	6.6 Test Data	
7.	AVERAGE TIME OF OCCUPANCY	53
	7.1 Test Standard and Limit	
	7.2 Test Setup	
	· - · · · · · · · · · · · · · · · · · ·	



Page: 3 of 92

	7.3 Test Procedure	53
	7.4 EUT Operating Condition	
	7.5 Test Equipment	
	7.6 Test Data	
8.	CHANNEL SEPARATION AND BANDWIDTH TEST	72
	8.1 Test Standard and Limit	72
	8.2 Test Setup	
	8.3 Test Procedure	
	8.4 EUT Operating Condition	
	8.5 Test Equipment	73
	8.6 Test Data	73
9.	PEAK OUTPUT POWER TEST	85
	9.1 Test Standard and Limit	85
	9.2 Test Setup	85
	9.3 Test Procedure	85
	9.4 EUT Operating Condition	85
	9.5 Test Equipment	85
	9.6 Test Data	85
10.	ANTENNA REQUIREMENT	92
	10.1 Standard Requirement	92
	10.2 Antenna Connected Construction	
	10.2 Result	92



Page: 4 of 92

1. General Information about EUT

1.1 Client Information

Applicant: GOLDEN CHINA AUDIO (HK) PRODUCT LIMITED (AOK)

Address : UNIT 2509, 25/F HO KING COMM CTR 2-16 FA YUEN ST KLN,

HONG KONG

Manufacturer : Dong Guan Jin Wen hua Audio Product Ltd.

Address : No.1, Hua da Road, Longbei ling, tang xia town, dongguan, China

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	Jam Thrill	Jam Thrill		
Models No.	:	HX-P320			
Model	:	N/A			
difference					
		Operation Frequency:			
		Bluetooth:2402~2480MHz			
	:	Number of Channel:	Bluetooth:79 Channels see note (2)		
Product Description		Max Peak Output Power:	8-DPSK: 4.167dBm (Conducted Power)		
Bescription		Antenna Gain:	0 dBi PCB Antenna		
		Modulation Type:	GFSK 1Mbps(1 Mbps)		
			π /4-DQPSK(2 Mbps)		
			8-DPSK(3 Mbps)		
Davisar Cummler		DC power by USB cable form Host System			
Power Supply		DC power by Li-ion battery	,		
Power Rating	:	DC 5V by USB Cable from PC system.			
		DC 3.7V by Li-ion Battery.			
Connecting I/O	:	Please refer to the User's Manual			
Port(S)					

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:

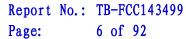
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	27	2429	54	2456
01	2403	28	2430	55	2457
02	2404	29	2431	56	2458



Page: 5 of 92

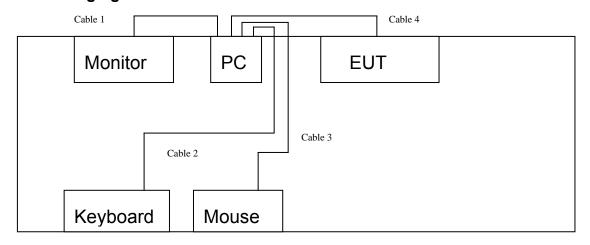
03	2405	30	2432	57	2459
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	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.

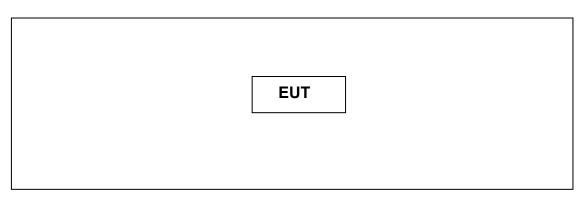




1.3 Block Diagram Showing the Configuration of System Tested USB Charging with TX Mode



TX Mode



1.4 Description of Support Units

Equipment Information						
Name	Model	Manufacturer	Used "√"			
LCD Monitor	E170Sc	DOC	DELL	√		
PC	OPTIPLEX380	DOC	DELL	√		
Keyboard	L100	DOC	DELL	√		
Mouse	M-UARDEL7	DOC	DELL	√		
		Cable Information	n			
Number Shielded Type Ferrite Core Length			Note			
Cable 1	YES	YES	1.5M			
Cable 2	YES	YES	1.5M			
Cable 3	YES	NO	1.5M			
Cable 4	YES	YES	0.5M			



Page: 7 of 92

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.

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(π /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) 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.



Page: 8 of 92

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	Putty Configuration		
Frequency	2402 MHz	2441MHz	2480 MHz
GFSK	DEF	DEF	DEF
π /4-DQPSK	DEF	DEF	DEF
8-DPSK	DEF	DEF	DEF

1.7 Measurement Uncertainty

The reported uncertainty of measurement y \pm U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

Test Item	Parameters	Expanded Uncertainty (U _{Lab})	
	Level Accuracy:		
Conducted Emission	9kHz~150kHz	±3.42 dB	
	150kHz to 30MHz	±3.42 dB	
Radiated Emission	Level Accuracy:	±4.60 dB	
Radiated Effission	9kHz to 30 MHz		
Radiated Emission	Level Accuracy:	±4.40 dB	
Radiated Emission	30MHz to 1000 MHz	±4.40 db	
Radiated Emission	Level Accuracy:	±4.20 dB	
Radiated Ellission	Above 1000MHz	±4.20 UD	



Page: 9 of 92

1.8 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.



Page: 10 of 92

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)	7(c) Antenna Conducted Spurious Emission		N/A	
15.247(a) 20dB Bandwidth		PASS	N/A	
Note: N/A is an abbreviat	Note: N/A is an abbreviation for Not Applicable.			



Page: 11 of 92

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

Eraguanov	Maximum RF Lin	ne 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.



Report No.: TB-FCC143499
Page: 12 of 92

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

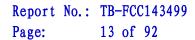
Description	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test	ROHDE&		400224	Aug. 08, 2014	Aug.07, 2015
Receiver	SCHWARZ	ESCI	100321	Aug. 00, 2014	Aug.07, 2015
50ΩCoaxial	Anritsu	MP59B	X10321	Aug. 08, 2014	Aug.07, 2015
Switch	Aillitsu	MESSE	X10321	Aug. 08, 2014	Aug.07, 2015
L.I.S.N	Rohde & 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.

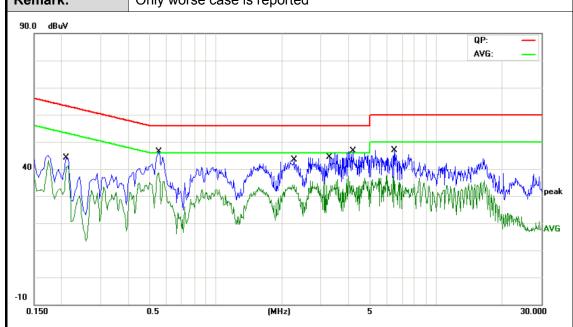
3.6 Test Data

Please see the next page.

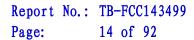




EUT: Jam Thrill HX-P320 **Model Name:** 25 ℃ Temperature: **Relative Humidity:** 55% DC 5V **Test Voltage:** Terminal: Line **Test Mode:** USB Charging with TX GFSK Mode 2402 MHz Remark: Only worse case is reported

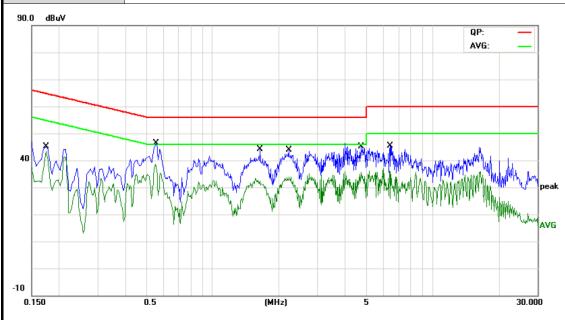


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.2100	32.64	10.02	42.66	63.20	-20.54	QP
2		0.2100	30.81	10.02	40.83	53.20	-12.37	AVG
3		0.5540	35.92	10.05	45.97	56.00	-10.03	QP
4	*	0.5540	28.04	10.05	38.09	46.00	-7.91	AVG
5		2.2659	30.17	10.05	40.22	56.00	-15.78	QP
6		2.2659	24.41	10.05	34.46	46.00	-11.54	AVG
7		3.2780	29.36	10.02	39.38	56.00	-16.62	QP
8		3.2780	22.82	10.02	32.84	46.00	-13.16	AVG
9		4.1979	31.06	9.99	41.05	56.00	-14.95	QP
10		4.1979	23.66	9.99	33.65	46.00	-12.35	AVG
11		6.4620	33.68	10.03	43.71	60.00	-16.29	QP
12		6.4620	26.26	10.03	36.29	50.00	-13.71	AVG





EUT: Jam Thrill **Model Name:** HX-P320 25 ℃ Temperature: **Relative Humidity:** 55% DC 5V **Test Voltage:** Terminal: Neutral **Test Mode:** USB Charging with TX GFSK Mode 2402 MHz Remark: Only worse case is reported



No. M	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz	dBu∨	dB	dBuV	dBuV	dB	Detector
1	0.1740	33.84	10.12	43.96	64.76	-20.80	QP
2	0.1740	33.12	10.12	43.24	54.76	-11.52	AVG
3	0.5540	35.93	10.02	45.95	56.00	-10.05	QP
4 *	0.5540	28.04	10.02	38.06	46.00	-7.94	AVG
5	1.6380	29.42	10.10	39.52	56.00	-16.48	QP
6	1.6380	21.99	10.10	32.09	46.00	-13.91	AVG
7	2.2180	29.36	10.06	39.42	56.00	-16.58	QP
8	2.2180	23.59	10.06	33.65	46.00	-12.35	AVG
9	4.7260	31.89	10.06	41.95	56.00	-14.05	QP
10	4.7260	25.92	10.06	35.98	46.00	-10.02	AVG
11	6.4140	32.61	10.06	42.67	60.00	-17.33	QP
12	6.4140	26.41	10.06	36.47	50.00	-13.53	AVG



Page: 15 of 92

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)

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		

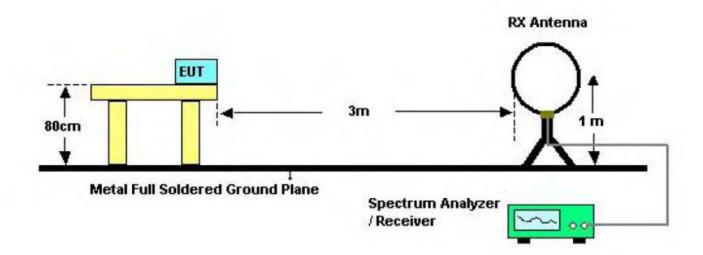
Note:

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

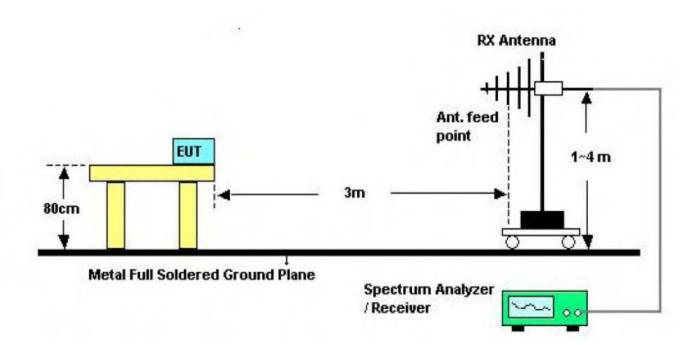


Page: 16 of 92

4.2 Test Setup

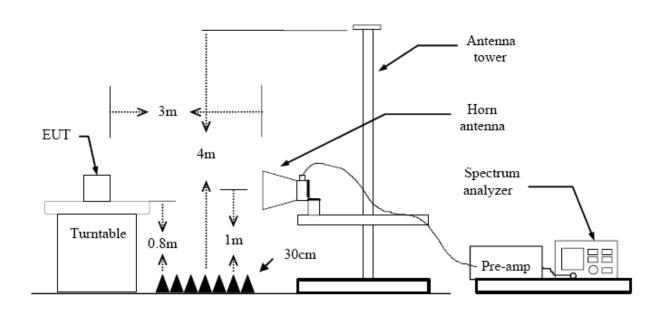


Bellow 30MHz Test Setup



Bellow 1000MHz Test Setup





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 ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- (2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 0.8m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (4) 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.
- (5) 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.
- (6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (7) 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.
- (8) For the actual test configuration, please see the test setup photo.



Page: 18 of 92

4.4 EUT Operating Condition

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

4.5 Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Aug. 08, 2014	Aug.07, 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. 06, 2015	Mar.05, 2016
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar. 06, 2015	Mar.05, 2016
Pre-amplifier	HP	11909A	185903	Mar. 06, 2015	Mar.05, 2016
Pre-amplifier	HP	8447B	3008A00849	Mar. 06, 2015	Mar.05, 2016
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar. 06, 2015	Mar.05, 2016
Signal Generator	Rohde & Schwarz	SML03	IKW682-054	Feb. 10, 2015	Feb.09, 2016
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.



EUT: HX-P320 Jam Thrill **Model Name:** 25 ℃ **Relative Humidity:** Temperature: 55% **Test Voltage:** DC 5V Ant. Pol. Horizontal **Test Mode:** TX GFSK Mode 2402MHz Remark: Only worse case is reported 80.0 dBuV/m (RF)FCC 15C 3M Radiation 30 -20 30.000 50 60 70 80 (MHz) 300 400 500 600 700 1000.000 Reading Correct Measure-Limit Over No. Mk. Freq. Level Factor ment MHz dBuV dΒ dBuV/m dBuV/m Detector dB/m 1 72.3376 53.81 -23.5330.28 40.00 -9.72peak 2 138.3873 62.82 -22.02 40.80 43.50 -2.70peak 3 239.9874 54.43 -18.59 35.84 -10.16 46.00 peak 4 300.3672 55.62 -17.07 38.55 46.00 -7.45 peak 5 360.4476 50.45 -14.55 35.90 -10.1046.00 peak 6 541.3725 47.65 -10.13 37.52 46.00 -8.48 peak *:Maximum data x:Over limit !:over margin **Emission Level= Read Level+ Correct Factor**



Report No.: TB-FCC143499
Page: 20 of 92

EUT:	Jam Thrill		Model Name :	I	HX-P320	
Temperature:	25 ℃		Relative Humid	ity:	55%	
Test Voltage:	DC 5V			·		
Ant. Pol.	Vertical					
Test Mode:	TX GFSK Mode 2	402MHz				
Remark:	Only worse case is	s reported				
30 dBuV/m	2 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	5	5 X		3M Radiation Margin - 6	worker week like
30.000 40 50 No. Mk. Fre	Reading	Correct Factor	Measure- ment Lin		600 700 Over	1000.000
MH	<u> </u>	dB/m		uV/m	dB	Detector
1 ! 56.00	007 59.56	-24.47	35.09 40	0.00	-4.91	peak
2 ! 61.99	951 58.74	-24.35	34.39 40	0.00	-5.61	peak
3 94.70	601 54.77	-22.28	32.49 43	3.50	-11.01	peak
4 * 126.3	285 63.87	-22.30	41.57 43	3.50	-1.93	peak
5 ! 134.0	882 63.02	-22.09	40.93 43	3.50	-2.57	peak
6 360.4	476 47.29	-14.55	32.74 46	3.00	-13.26	peak
	ver limit !:over margin	ect Factor				



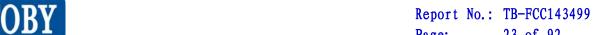
Page: 21 of 92

EUT:	Jam Thrill	Model Name :	HX-P320		
Temperature:	25 ℃	Relative Humidity: 55%			
Test Voltage:	DC 5V				
Ant. Pol.	Horizontal				
Test Mode:	TX π /4-DQPSK Mode 240	2MHz			
Remark:	Only worse case is reported	ed			
80.0 dBuV/m					
-20 30.000 40 50	60 70 80 (MHz)	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	6 X X X X X X X X X X X X X X X X X X X		
	Reading Correc eq. Level Factor	ment Limit	Over		
MI	db/III	dBuV/m dBuV/m			
1 72.3	375 53.81 -23.53	30.28 40.00	-9.72 peak		
2 ! 126.7	7723 60.07 -22.29	37.78 43.50	-5.72 peak		
3 * 138.3	8873 62.82 -22.02	40.80 43.50	-2.70 peak		
4 239.9	9874 53.93 -18.59	35.34 46.00	-10.66 peak		
5 ! 300.3	3672 57.12 - 17.07	40.05 46.00	-5.95 peak		
6 541.3	3721 47.65 -10.13	37.52 46.00	-8.48 peak		
	ver limit !:over margin Read Level+ Correct Factor	or			



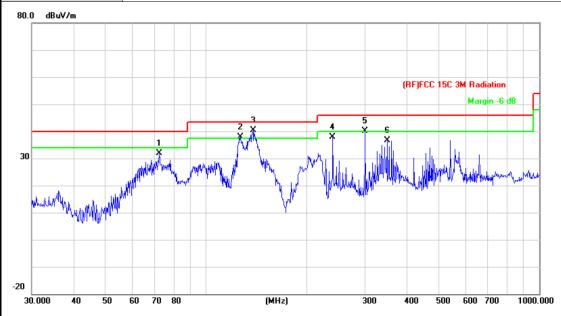
Report No.: TB-FCC143499
Page: 22 of 92

EUT:	Jam Thrill	Model Name :	HX-P320				
Temperature:	25 ℃	Relative Humidity	y : 55%				
Test Voltage:	DC 5V						
Ant. Pol.	Vertical	rertical					
Test Mode:	TX π /4-DQPSK Mod	X π /4-DQPSK Mode 2402MHz					
Remark:	Only worse case is r	Only worse case is reported					
80.0 dBuV/m							
-20		3 3 X	FJFCC 15C 3M Radiation Margin -6 dB				
30.000 40 50	60 70 80	(MHz) 300 40	0 500 600 700 1000.000				
No. Mk. Fr	•	orrect Measure- actor ment Lin	nit Over				
Mi	Hz dBuV (dB/m dBuV/m dBu	uV/m dB Detector				
1 * 126.3	3285 63.87 -2	22.30 41.57 43	3.50 -1.93 peak				
2 ! 134.0	0882 63.02 -2	22.09 40.93 43	3.50 -2.57 peak				
3 211.5	5261 49.84 -1	19.89 29.95 43	3.50 -13.55 peak				
4 360.4	1476 48.29 -1	14.55 33.74 46	6.00 -12.26 peak				
5 480.5	5276 43.82 -1	11.62 32.20 46	3.00 -13.80 peak				
6 541.3	3721 44.47 -1	10.13 34.34 46	3.00 -11.66 peak				
	ver limit !:over margin Read Level+ Correct	Factor					



Page: 23 of 92

EUT:	Jam Thrill	Model Name :	HX-P320		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	DC 5V				
Ant. Pol.	Horizontal				
Test Mode:	TX 8-DPSK Mode 2402MF	łz			
Remark:	Only worse case is reported				
80.0 dBuV/m					



No	o. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		72.3375	55.31	-23.53	31.78	40.00	-8.22	peak
2	İ	126.7723	60.07	-22.29	37.78	43.50	-5.72	peak
3	*	138.3873	62.32	-22.02	40.30	43.50	-3.20	peak
4		239.9874	56.43	-18.59	37.84	46.00	-8.16	peak
5	İ	300.3672	57.12	-17.07	40.05	46.00	-5.95	peak
6		349.2500	51.38	-14.65	36.73	46.00	-9.27	peak

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



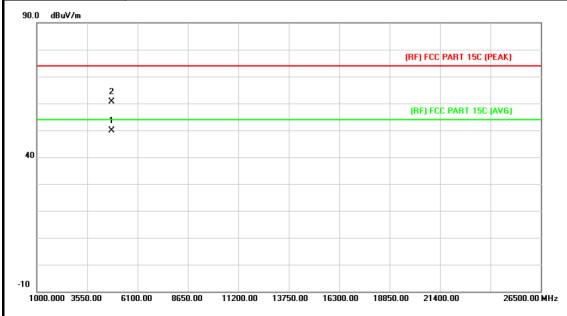
Page: 24 of 92

EUT:	Jam Thrill	1	Model Name :	HX-P320		
Temperature:	25 ℃	25 °C Relative Humidity: 55%				
Test Voltage:	DC 5V	"				
Ant. Pol.	Vertical					
Test Mode:	TX 8-DPSK Mode	2402MHz				
Remark:	Only worse case	is reported				
80.0 dBu∀/m					_	
-20 30.000 40 50	60 70 80	2 3	5 × × × × × × × × × × × × × × × × × × ×	15C 3M Radiation Margin -6 dB	000.000	
	Reading eq. Level	Correct Factor	Measure- ment Limit	Over		
MH	Hz dBuV	dB/m	dBuV/m dBuV/m	dB De	tector	
1 ! 56.00	007 58.56	-24.47	34.09 40.00	-5.91 p	eak	
2 ! 126.3	3285 61.87	-22.30	39.57 43.50	-3.93 p	eak	
3 * 134.0	882 62.02	-22.09	39.93 43.50	-3.57 p	eak	
4 211.5	5261 49.34	-19.89	29.45 43.50	-14.05 p	eak	
5 360.4	476 50.79	-14.55	36.24 46.00	-9.76 p	eak	
6 480.5	276 46.82	-11.62	35.20 46.00	-10.80 p	eak	
*:Maximum data x:O	ver limit !:over margin	ect Factor				



Page: 25 of 92

EUT:	Jam Thrill	Model Name :	HX-P320				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	DC 3.7V						
Ant. Pol.	Horizontal	Horizontal					
Test Mode:	TX GFSK Mode 2402MHz						
Remark:	No report for the emission which more than 10 dB below the						
	prescribed limit.						

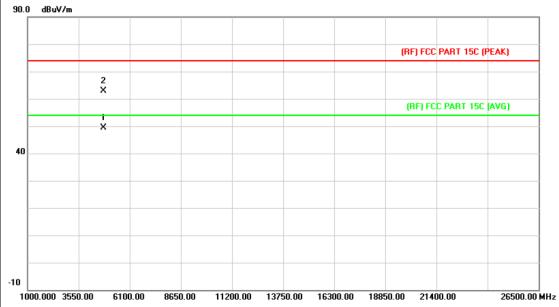


No	o. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4803.739	41.81	8.18	49.99	54.00	-4.01	AVG
2		4804.009	52.38	8.18	60.56	74.00	-13.44	peak



Page: 26 of 92

EUT:	Jam Thrill	Model Name :	HX-P320			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 3.7V					
Ant. Pol.	Vertical					
Test Mode:	TX GFSK Mode 2402MHz					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					

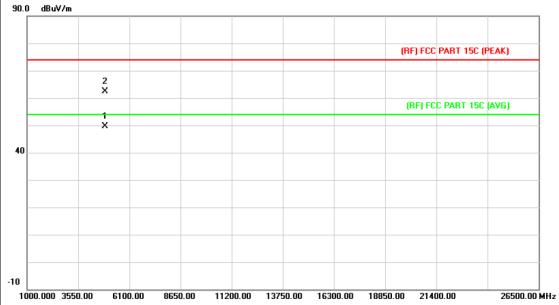


No	. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4803.793	41.16	8.18	49.34	54.00	-4.66	AVG
2		4803.958	54.65	8.18	62.83	74.00	-11.17	peak



Page: 27 of 92

EUT:	Jam Thrill	Model Name :	HX-P320			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 3.7V					
Ant. Pol.	Horizontal					
Test Mode:	TX GFSK Mode 2441MHz					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					
Processing						

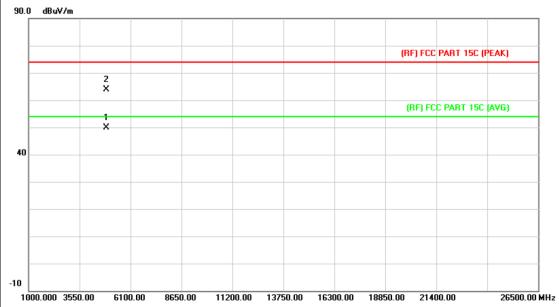


N	10.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4881.733	41.35	8.21	49.56	54.00	-4.44	AVG
2			4881.952	54.18	8.21	62.39	74.00	-11.61	peak



Page: 28 of 92

EUT:	Jam Thrill	Model Name :	HX-P320		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	DC 3.7V				
Ant. Pol.	Vertical				
Test Mode:	TX GFSK Mode 2441MHz				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.				

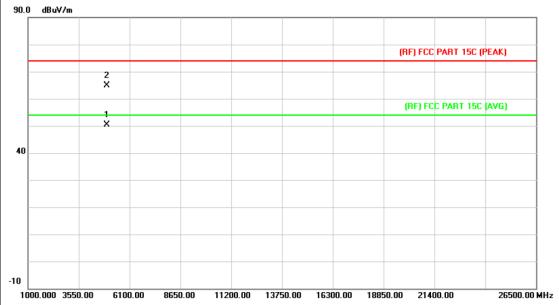


1	No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4881.883	41.59	8.21	49.80	54.00	-4.20	AVG
2			4882.117	55.71	8.21	63.92	74.00	-10.08	peak



Page: 29 of 92

EUT:	Jam Thrill	Model Name :	HX-P320		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	DC 3.7V				
Ant. Pol.	Horizontal				
Test Mode:	TX GFSK Mode 2480MHz				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.				

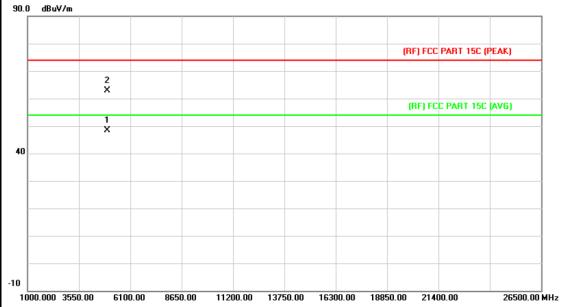


No	. Mk	. Freq.	_	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4959.757	42.23	8.23	50.46	54.00	-3.54	AVG
2		4960.252	56.72	8.23	64.95	74.00	-9.05	peak



Page: 30 of 92

EUT:	Jam Thrill	Model Name :	HX-P320			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 3.7V					
Ant. Pol.	Vertical					
Test Mode:	TX GFSK Mode 2480MHz					
Remark:	Remark: No report for the emission which more than 10 dB below the prescribed limit.					
00.0 40.40-						

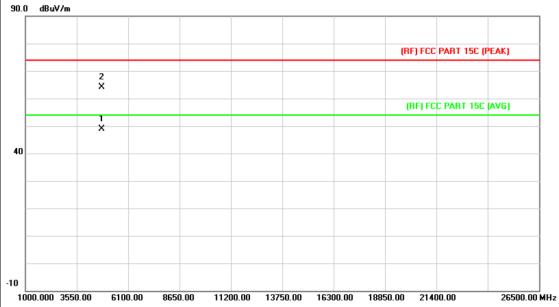


No	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4959.808	40.08	8.23	48.31	54.00	-5.69	AVG
2		4960.060	54.56	8.23	62.79	74.00	-11.21	peak



Page: 31 of 92

EUT:	Jam Thrill	Model Name :	HX-P320		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	DC 3.7V				
Ant. Pol.	Horizontal				
Test Mode:	TX 8-DPSK Mode 2402MHz				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.				
00.0					

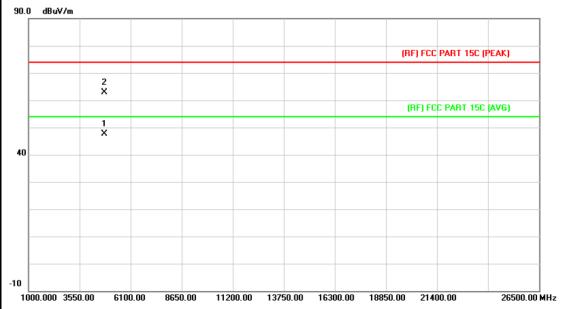


	No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4803.703	40.80	8.18	48.98	54.00	-5.02	AVG
2	2		4803.916	56.05	8.18	64.23	74.00	-9.77	peak



Page: 32 of 92

EUT:	Jam Thrill	Model Name :	HX-P320				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	DC 3.7V						
Ant. Pol.	Vertical	Vertical					
Test Mode:	TX 8-DPSK Mode 2402MHz						
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						
	F						

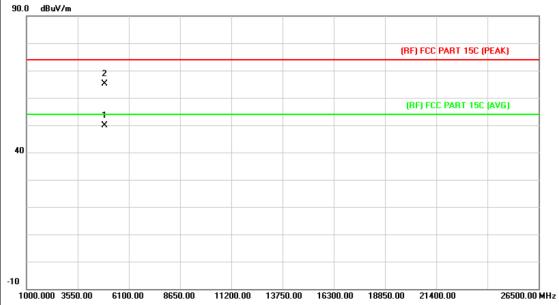


1	No.	Mk.	Freq.		Correct Factor	Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4803.712	39.40	8.18	47.58	54.00	-6.42	AVG
2			4804.123	54.80	8.18	62.98	74.00	-11.02	peak



Page: 33 of 92

EUT:	Jam Thrill	Model Name :	HX-P320				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	DC 3.7V						
Ant. Pol.	Horizontal						
Test Mode:	TX 8-DPSK Mode 2441MHz	-					
Remark:	No report for the emission w	hich more than 10 dB	below the				
	prescribed limit.						

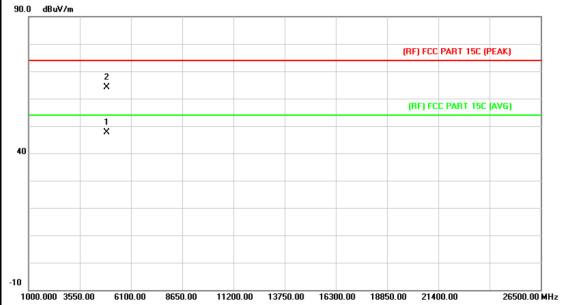


No	. Mk	. Freq.	_	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4881.886	41.69	8.21	49.90	54.00	-4.10	AVG
2		4882.216	56.82	8.21	65.03	74.00	-8.97	peak



Page: 34 of 92

EUT:	Jam Thrill	Model Name :	HX-P320				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	DC 3.7V						
Ant. Pol.	Vertical						
Test Mode:	TX 8-DPSK Mode 2441MHz						
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						
00 0 ID 111							

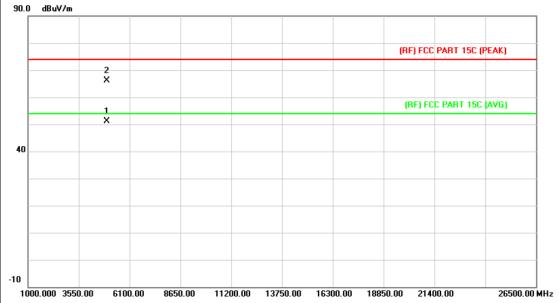


No	. Mk	. Freq.		Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4881.718	39.50	8.21	47.71	54.00	-6.29	AVG
2		4882.117	55.92	8.21	64.13	74.00	-9.87	peak



Page: 35 of 92

EUT:	Jam Thrill	Model Name :	HX-P320		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	DC 3.7V				
Ant. Pol.	Horizontal				
Test Mode:	TX 8-DPSK Mode 2480MHz				
Remark:	No report for the emission which more than 10 dB below the				
	prescribed limit.				

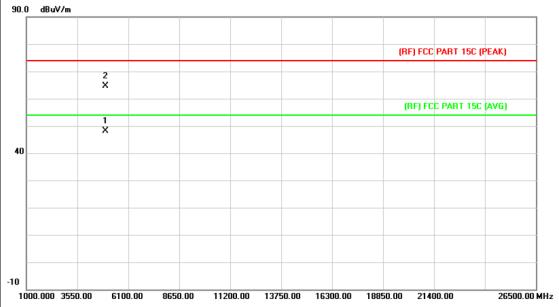


N	lo.	Mk.	Freq.	_	Correct Factor	Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4959.688	42.78	8.23	51.01	54.00	-2.99	AVG
2			4959.961	57.98	8.23	66.21	74.00	-7.79	peak



Page: 36 of 92

EUT:	Jam Thrill	Model Name :	HX-P320				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	DC 3.7V						
Ant. Pol.	Vertical						
Test Mode:	TX 8-DPSK Mode 2480MHz						
Remark:	No report for the emission wh	ich more than 10 dB be	elow the				
	prescribed limit.						
1							



1	Vo.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4959.733	39.86	8.23	48.09	54.00	-5.91	AVG
2			4959.940	56.28	8.23	64.51	74.00	-9.49	peak



Report No.: TB-FCC143499 Page: 37 of 92

5. Restricted Bands Requirement

5.1 Test Standard and Limit

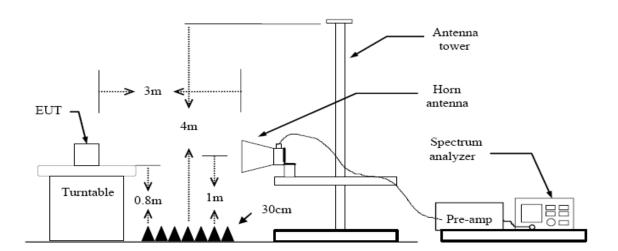
5.1.1 Test Standard FCC Part 15.209 FCC Part 15.205

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) Measurements at frequency above 1GHz. The EUT was placed on a rotating 0.8m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.



Report No.: TB-FCC143499 Page: 38 of 92

(4) 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.

- (5) 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.
- (6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (7) 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.
- (8) 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	Aug. 08, 2014	Aug.07, 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. 06, 2015	Mar.05, 2016
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar. 06, 2015	Mar.05, 2016
Pre-amplifier	HP	11909A	185903	Mar. 06, 2015	Mar.05, 2016
Pre-amplifier	HP	8447B	3008A00849	Mar. 06, 2015	Mar.05, 2016
Cable	HUBER+SUHNE R	100	SUCOFLEX	Mar. 06, 2015	Mar.05, 2016
Signal Generator	Rohde & Schwarz	SML03	IKW682-054	Feb. 10, 2015	Feb.09, 2016
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A

5.6 Test Data

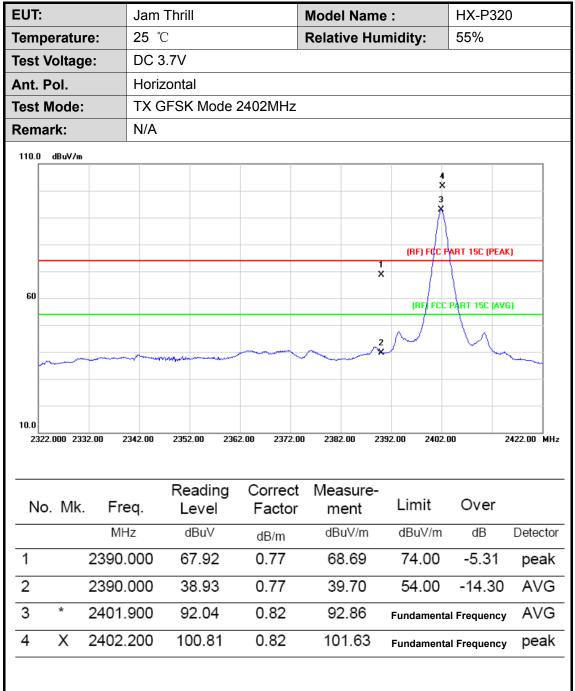
Remark: During testing above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=1 KHz with Peak Detector for Average Values.

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



Page: 39 of 92

(1) Radiation Test





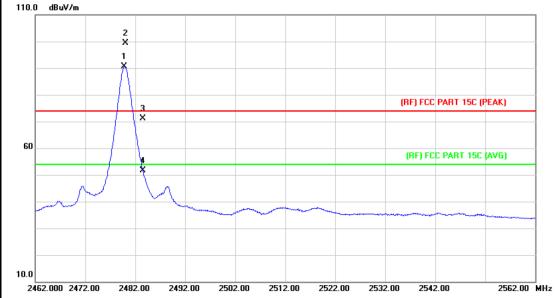
Page: 40 of 92

EU.	T:		Jam	Thrill			Model N	Name :	HX-P3	20
Ten	nperatu	re:	25	°C			Relative	Humidity:	55%	
Tes	t Voltaç	je:	DC	3.7V						
Ant	. Pol.		Vert	ical						
Tes	t Mode		TX (GFSK Mo	ode 2402N	1Hz				
Rer	nark:		N/A							
110.0	0 dBuV/m									
60 10.0 23	322.000 23:	32.00 2	342.00	2352.00	2362.00 2	2372.00	2382.00	1 X	PART 15C (PEAK	
	No. Mk	. Fre	eq.	Readir Leve	-		Measure ment	- Limit	Over	
		MH	łz	dBuV	dB/	 m	dBuV/m	dBuV/m	dB	Detector
		2390.	000	59.5	1 0.7	7	60.28	74.00	-13.72	peak
1							37.84	54.00	-16.16	AVG
1		2390.	000	37.07	7 0.7	7	37.0 4	57.00	10.10	
	*	2390. 2401.		37.07 89.10			89.92	Fundamental		AVG



Page: 41 of 92

EUT:	Jam Thrill	Model Name :	HX-P320					
Temperature:	25 ℃	Relative Humidity:	55%					
Test Voltage:	st Voltage: DC 3.7V							
Ant. Pol.	Horizontal							
Test Mode:	TX GFSK Mode 2480 MHz							
Remark:	N/A							
110.0 dBuV/m								
	2							
	X 1							



No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2479.800	89.48	1.15	90.63	Fundamental	Frequency	AVG
2	Χ	2480.000	98.17	1.15	99.32	Fundamental	Frequency	peak
3		2483.500	70.01	1.17	71.18	74.00	-2.82	peak
4		2483.500	50.50	1.17	51.67	54.00	-2.33	AVG



Page: 42 of 92

EUT	:		Jam	Thrill			Mod	del Na	me :		HX-P3	320	
Tem	peratu	re:	25 °	C			Rela	ative F	lumidit	y:	55%		
Test	t Voltag	je:	DC:	3.7V									
Ant.	Pol.		Vert	ical									
Test	Mode:		TX (GFSK Mo	de 248	0 MHz							
Ren	nark:		N/A										
110.0	dBuV/m												
60		2	۲	1							ART 15C (PEA		
- 1	62.000 247	2.00 24	182.00	2492.00	2502.00	2512.00	252	2.00 2	2532.00	2542.00	0	2562.00	MH
N	lo. Mk	. Fre	eq.	Readir Leve		orrect actor		asure- ent	Limi	t	Over		
		MH	lz	dBuV	C	dB/m	dB	uV/m	dBu∀	/m	dB	Detec	tor
1	Х	2479.	900	96.99	9 1	1.15	98	3.14	Fundam	ental	Frequency	pea	ık
2	*	2479.	900	88.50) 1	1.15	89	9.65	Fundam	ental	Frequency	AV	G
		2483.	500	69.10) 1	1.17	70	0.27	74.0	00	-3.73	pea	ık
3													



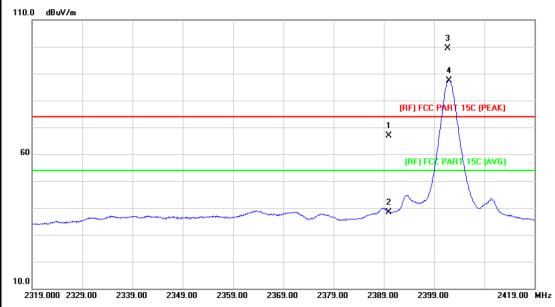
Page: 43 of 92

EUT:			Jam	Thril	l			Mod	el Nar	ne :		HX-P3	20	
Гет	peratu	re:	25 °	C				Rela	tive H	umid	ity:	55%		
Test	Voltag	je:	DC 3	3.7V										
٩nt.	Pol.		Hori	zonta	ı									
Гest	Mode:		TX 8	B-DPS	SK Mo	de 240	2MHz							
Rem	ark:		N/A											
110.0	0 dBuV/n	1												_
												3		
												×		
												X		
										(R	F) FCC F	ART 15C (P	EAK)	\dashv
60										1.				
										X (нгунц	PART 15C	AVGJ	
										2 /			^	
										کنیم			~~	~~~
														_
10.0	319.000 23	29 00	2339.00	2349	2.00 2	2359.00	2369.00	2379	1 NN 2	389.00	2399.	nn	2410	.00 MH
2.	313.000 2.	123.00	2333.00	2340	3.00 2	.333.00	2303.00	2373	J.00 2	.303.00	2333.	00	2413	.00 MII
				Do	ading	Car	rect	Mag	sure-					
Ν	o. Mk	. Fr	eq.		evel		ctor		ent	Lin	nit	Over		
		Mi	Hz	d	Bu∀	dB	/m	dBu	ıV/m	dΒι	ıV/m	dB	De	etector
1		2390	.000	56	6.01	0.7	77	56	.78	74	.00	-17.2	2 p	eak
2		2390	.000	37	7.08	0.7	77	37	.85	54	.00	-16.1	5 <i>A</i>	٩VG
3	Х	2402	.000	98	3.02	0.8	32	98	.84	Funda	menta	l Frequenc	y p	eak
4	*	2402	000	86	6.14	0.8	22	9.6	.96			l Frequenc		٩VG



Page: 44 of 92

EUT:	Jam Thrill	Model Name :	HX-P320					
Temperature:	25 ℃	Relative Humidity:	55%					
Test Voltage:	DC 3.7V							
Ant. Pol.	Vertical							
Test Mode:	TX 8-DPSK Mode 2402MHz	-						
Remark:	N/A							
110.0 dBuV/m	110.0 dB ₀ V/m							



N	lo. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	66.10	0.77	66.87	74.00	-7.13	peak
2		2390.000	37.57	0.77	38.34	54.00	-15.66	AVG
3	Х	2401.700	98.46	0.82	99.28	Fundamental Frequency		peak
4	*	2402.000	86.68	0.82	87.50	Fundamental	Frequency	AVG



Page: 45 of 92

-2.11

-4.19

peak

AVG

74.00

54.00

EUT:	Jam Thrill		Model Name :	HX-P320
Temperature:	25 ℃		Relative Humidit	ty : 55%
Test Voltage:	DC 3.7V			
Ant. Pol.	Horizontal			
Test Mode:	TX 8-DPSK Mode	e 2480MHz		
Remark:	N/A			
110.0 dBuV/m				
60	2 X 1 X X X X X X X X X X X X X X X X X			CC PART 15C (PEAK)
	2482.00 2492.00 2502 Reading	2.00 2512.00 Correct N	Measure-	342.00 2562.00 MHz
	eq. Level	Factor	ment Limit	
	Hz dBuV	dB/m	dBuV/m dBuV/i	m dB Detector
1 * 2479	.800 86.14	1.15	87.29 Fundame	ental Frequency AVG
2 X 2480	.100 98.11	1.15	99.26 Fundame	ntal Frequency peak

Emission Level= Read Level+ Correct Factor

70.72

48.64

1.17

1.17

71.89

49.81

2483.500

2483.500

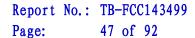
3

4



Page: 46 of 92

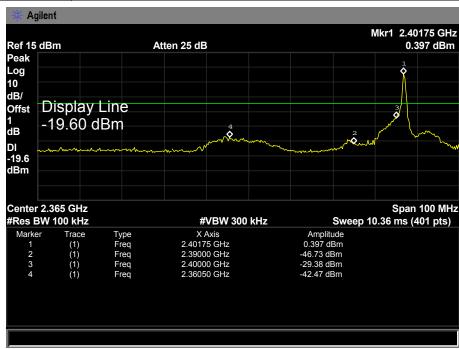
EUT:	Jam Thrill		Model Na	ame :	HX-P3	20
Temperature:	25 ℃		Relative	Humidity:	55%	
Test Voltage:	DC 3.7V					
Ant. Pol.	Vertical					
Test Mode:	TX 8-DPSK Mod	e 2480MHz				
Remark:	N/A					
110.0 dBuV/m						
60	1 x 2 x x x x x x x x x x x x x x x x x				ART 15C (PEA	
10.0 2462.000 2472.00	2482.00 2492.00 250	02.00 2512.00	2522.00 29	532.00 2542.0	0	2562.00 MHz
No. Mk. Fr	Reading eq. Level	Correct I	Measure- ment	Limit	Over	
Mi	Hz dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1 X 2480	.000 96.66	1.15	97.81	Fundamental I	Frequency	peak
2 * 2480	.000 84.77	1.15	85.92	Fundamental I	Frequency	AVG
3 2483	.500 69.38	1.17	70.55	74.00	-3.45	peak
4 2483	.500 47.27	1.17	48.44	54.00	-5.56	AVG

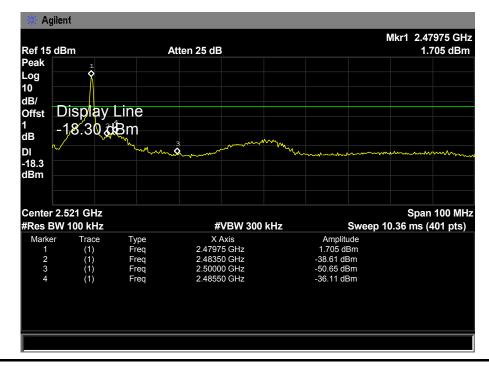


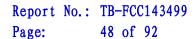


(1) Conducted Test

EUT:	Jam Thrill	HX-P320					
Temperature:	25 °C Relative Humidity: 55%						
Test Voltage:	DC 3.7V						
Test Mode:	TX GFSK Mode 2402MHz / 2480 MHz						
Remark:	N/A						









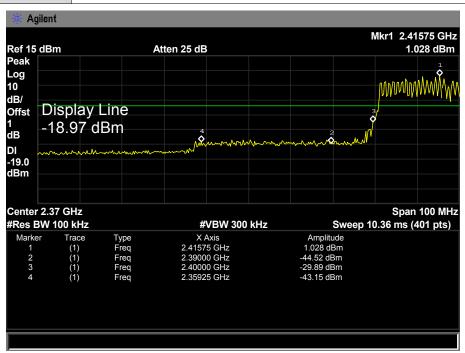
EUT: Jam Thrill Model Name: HX-P320

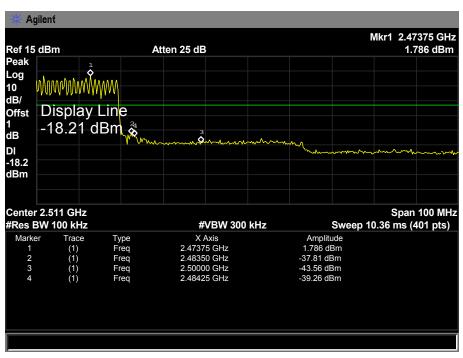
Temperature: 25 ℃ Relative Humidity: 55%

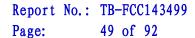
Test Voltage: DC 3.7V

Test Mode: GFSK Hopping Mode

Remark: N/A

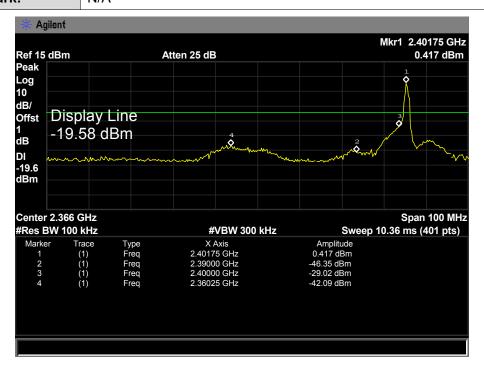


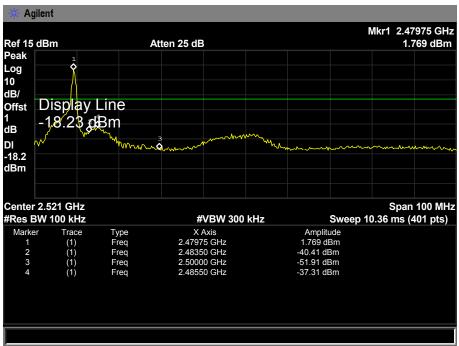


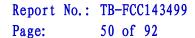




EUT:Jam ThrillModel Name :HX-P320Temperature:25 °CRelative Humidity:55%Test Voltage:DC 3.7VTest Mode:TX 8-DPSK Mode 2402MHz / 2480 MHzRemark:N/A









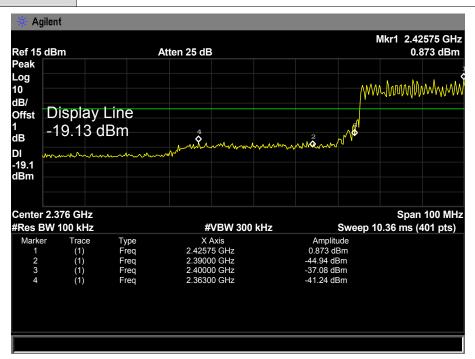
EUT: Jam Thrill Model Name: HX-P320

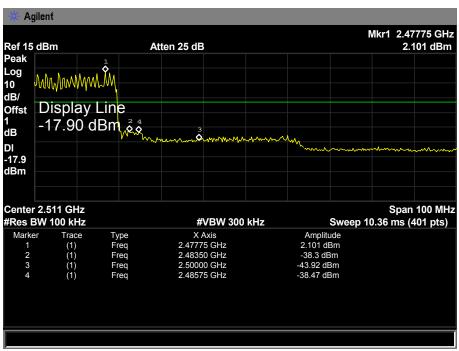
Temperature: 25 °C Relative Humidity: 55%

Test Voltage: DC 3.7V

Test Mode: 8-DPSK Hopping Mode

Remark: N/A







Page: 51 of 92

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.

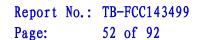
6.4 EUT Operating Condition

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	Aug. 08, 2014	Aug.07, 2015

6.6 Test Data





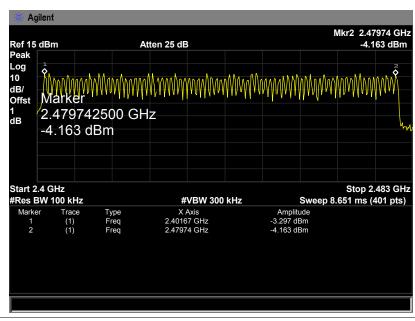
EUT:Jam ThrillModel Name :HX-P320Temperature:25 °CRelative Humidity:55%Test Voltage:DC 3.7V

Test Voltage: DC 3.7V

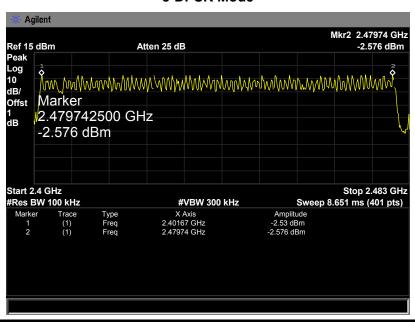
Test Mode: Hopping Mode (GFSK/ 8-DPSK)

Frequency Range	Quantity of Hopping Channel	Limit	
2402MU¬- 2400MU¬	79	\1 E	
2402MHz~2480MHz	79	>15	

GFSK Mode



8-DPSK Mode





Page: 53 of 92

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	Aug. 08, 2014	Aug.07, 2015

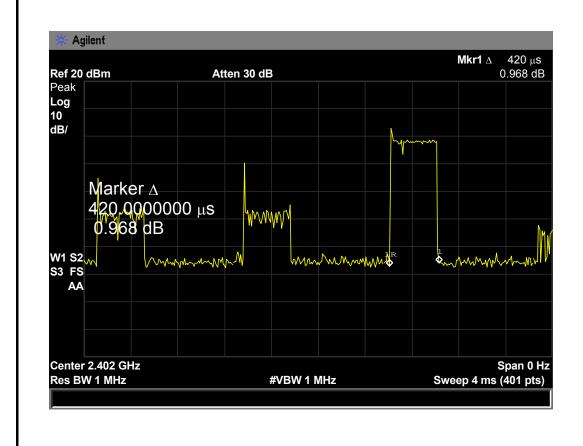


Page: 54 of 92

7.6 Test Data

EUT:		Jam Thrill		Model Name :		HX-P320
Temperature		25 ℃		Relative Hum	idity:	55%
Test Voltage:		DC 3.7V				
Test Mode:		Hopping I	Mode (GFSK DH1))		
Channel	Pu	lse Time	Total of Dwell	Period Time	Limit	Result
(MHz)		(ms)	(ms)	(s)	(ms)	Result
2402		0.420	134.40			
2441		0.420	134.40	31.60	400	PASS
2480		0.420	134.40			
		0.420	134.40			

GFSK Hopping Mode DH1







GFSK Hopping Mode DH1 2441 MHz Agilent Mkr1 Δ 420 μs -0.954 dB Ref 20 dBm Atten 30 dB Peak Log 10 dB/ Marker ∆ 420.0000000 μs -0.954 dB W1 S2 mymmymmymm S3 FS AA Center 2.441 GHz Span 0 Hz Res BW 1 MHz #VBW 1 MHz Sweep 4 ms (401 pts) **GFSK Hopping Mode DH1** 2480 MHz Agilent Mkr1 Δ 420 μs 0.093 dB Ref 20 dBm Atten 30 dB Peak Log 10 dB/

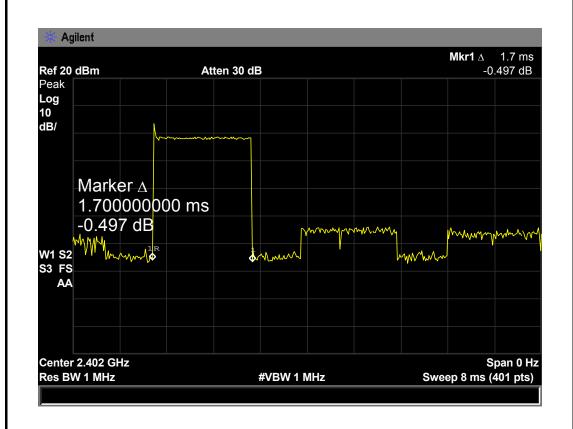


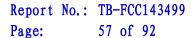
Page: 56 of 92

EUT:		Jam Thrill		Model Nar	ne :	HX-P320
Temperature:		25 ℃		Relative H	lumidity:	55%
Test Voltage:		DC 3.7V				
Test Mode:		Hopping N	Mode (GFSK DH3)			
Channal	Du	lee Time	Total of Dwall	Period	Limit	

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

GFSK Hopping Mode DH3







W1 S2 S3 FS AΑ

Center 2.48 GHz

Res BW 1 MHz

GFSK Hopping Mode DH3 2441 MHz Agilent Mkr1 \triangle 1.7 ms -1.048 dB Ref 20 dBm Atten 30 dB Peak Log 10 dB/ Marker ∆ 1.700000000 ms -1.048 dB MMMMMMM W1 S2 S3 FS humus AΑ Center 2.441 GHz Span 0 Hz Res BW 1 MHz #VBW 1 MHz Sweep 8 ms (401 pts) **GFSK Hopping Mode DH3** 2480 MHz Agilent Mkr1 \triangle 1.7 ms Ref 20 dBm Atten 30 dB -0.428 dB Peak Log 10 dB/ Marker ∆ 4.700000000 ms -0.428 dB MVWAMMVALLAVA

#VBW 1 MHz

\$mhh

Sweep 8 ms (401 pts)

Span 0 Hz

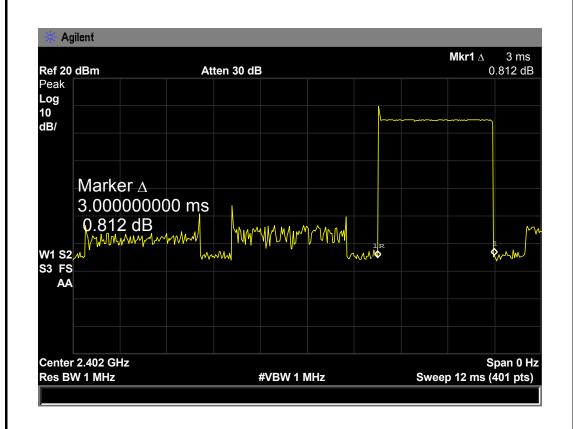


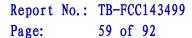
Page: 58 of 92

EUT:		Jam Thrill		Model Nar	ne :	HX-P320
Temperature:		25 ℃		Relative H	umidity:	55%
Test Voltage:		DC 3.7V				
Test Mode:		Hopping I	Mode (GFSK DH5)			
Chamal	D.,	la a Tima	Total of Durall	Period	1 : :-	

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

GFSK Hopping Mode DH5







GFSK Hopping Mode DH5 2441 MHz Agilent Mkr1 Δ 3 ms -2.745 dB Ref 20 dBm Atten 30 dB Peak Log 10 dB/ Marker ∆ 3.000000000 ms -2.745 dB W1 S2<mark>/∧</mark>₄ S3 FS AΑ Center 2.441 GHz Span 0 Hz Res BW 1 MHz #VBW 1 MHz Sweep 12 ms (401 pts) **GFSK Hopping Mode DH5** 2480 MHz Agilent Mkr1 Δ 3 ms Ref 20 dBm Atten 30 dB 0.251 dB Peak Log 10 dB/ Marker ∆

#VBW 1 MHz

3.0000000000 ms 0.251 dB

W1 S2 W

Center 2.48 GHz

Res BW 1 MHz

Span 0 Hz

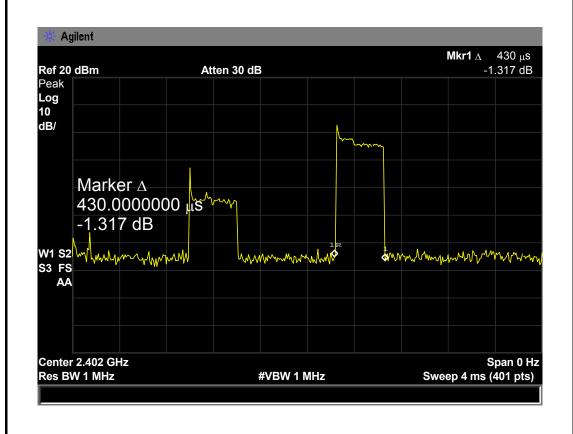
Sweep 12 ms (401 pts)

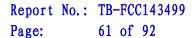


Page: 60 of 92

EUT:		Jam Thrill		Model Name :		HX-P320
Temperature:		25 ℃		Relative Hum	idity:	55%
Test Voltage:		DC 3.7V				
Test Mode: Hopping Mode (π /4-DQPS			Mode (π/4-DQPSI	K DH1)		
Channel	Pu	lse Time	Total of Dwell	Period Time	Limit	Result
(MHz)		(ms)	(ms)	(s)	(ms)	Result
2402		0.430	137.60			
2441		0.430	137.60	31.60	400	PASS
2480		0.430	137.60			

π /4-DQPSK Hopping Mode DH1







Center 2.48 GHz

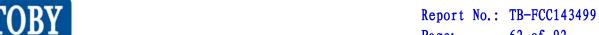
Res BW 1 MHz

π /4-DQPSK Hopping Mode DH1 2441 MHz Agilent Mkr1 Δ $430 \mu s$ 0.797 dB Ref 20 dBm Atten 30 dB Peak Log 10 dB/ Marker ∆ $430.0000000 \, \mu s$ 0.797 dB W1 S2 S3 FS AA Center 2.441 GHz Span 0 Hz Res BW 1 MHz #VBW 1 MHz Sweep 4 ms (401 pts) π /4-DQPSK Hopping Mode DH1 2480 MHz Agilent Mkr1 Δ 430 μs Ref 20 dBm Atten 30 dB 0.014 dB Peak Log 10 dB/ Marker ∆ $430.0000000 \, \mu s$ 0.014 dB \$mulyhynny-myn AA

#VBW 1 MHz

Span 0 Hz

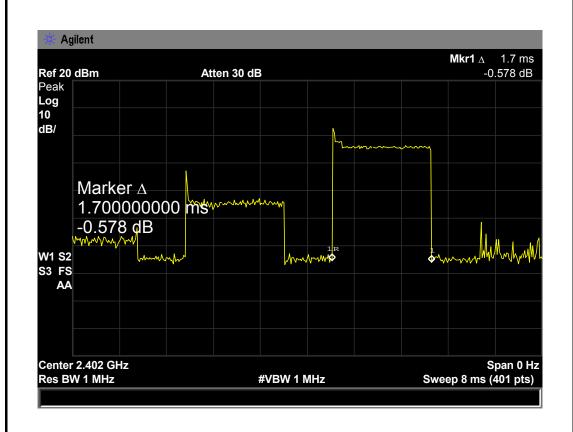
Sweep 4 ms (401 pts)

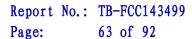


Page: 62 of 92

EUT:		Jam Thrill		Model Name :		HX-P320
Temperature:		25 ℃		Relative Hum	idity:	55%
Test Voltage:		DC 3.7V				
Test Mode: Hopping Mode (π /4-DQPSK DH3)						
Channel	Pu	Ise Time	Total of Dwell	Period Time	Limit	Result
(MHz)		(ms)	(ms)	(s)	(ms)	Result
2402		1.700	272.00			
2441		1.700	272.00	31.60	400	PASS
2480		1.700	272.00			
7 /4 DODSK Hamming Made DU2						

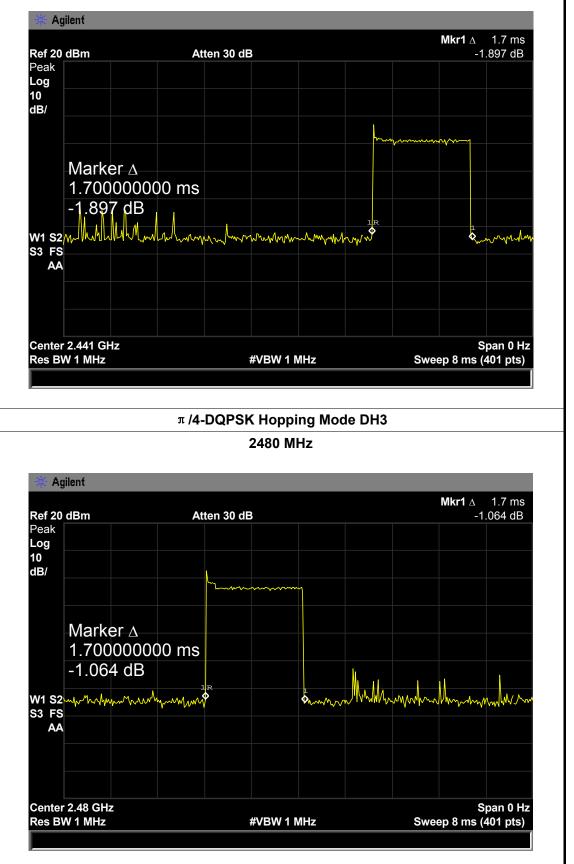
π /4-DQPSK Hopping Mode DH3







 π /4-DQPSK Hopping Mode DH3 2441 MHz Agilent Mkr1 Δ 1.7 ms -1.897 dB Ref 20 dBm Atten 30 dB Peak Log 10 dB/ Marker ∆ 1.700000000 ms -1.897 dB W1 S2<mark>/</mark> S3 FS AA Center 2.441 GHz Span 0 Hz Res BW 1 MHz #VBW 1 MHz Sweep 8 ms (401 pts) π /4-DQPSK Hopping Mode DH3 2480 MHz Agilent Mkr1 Δ 1.7 ms Ref 20 dBm Atten 30 dB -1.064 dB Peak Log 10 dB/

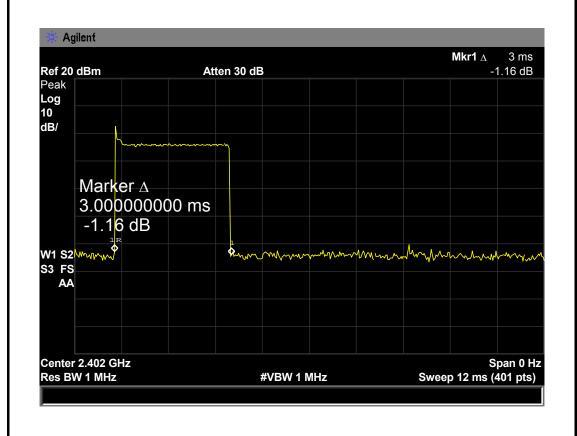


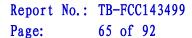


Page: 64 of 92

EUT : Jam Thrill			Model Name :		HX-P320	
Temperature: 25 ℃			Relative Humidity:		55%	
Test Voltage: DC 3.7						
Test Mode:		Hopping Mode (л /4-DQPSK DH5)				
Channel	Pu	lse Time	Total of Dwell	Period Time	Limit	Result
(MHz)		(ms)	(ms)	(s)	(ms)	Result
2402		3.000	320.00			
2441		3.000	320.00	31.60	400	PASS
2480		3.000	320.00			

π /4-DQPSK Hopping Mode DH5







 π /4-DQPSK Hopping Mode DH5 2441 MHz Agilent Mkr1 Δ 3 ms 0.652 dB Ref 20 dBm Atten 30 dB Peak Log 10 dB/ Marker ∆ 3.000000000 ms 0.652 dB Ammundan S3 FS AA Center 2.441 GHz Span 0 Hz Res BW 1 MHz #VBW 1 MHz Sweep 12 ms (401 pts) π /4-DQPSK Hopping Mode DH5 2480 MHz Agilent Mkr1 Δ 3 ms Ref 20 dBm Atten 30 dB 1.029 dB Peak Log 10 dB/ Marker A 3.000000000 ms 1.029 dB My may my my my my

#VBW 1 MHz

mh

W1 S2 My Mm M Mm morph MM

S3 FS AA

Center 2.48 GHz

Res BW 1 MHz

Q.M

Span 0 Hz

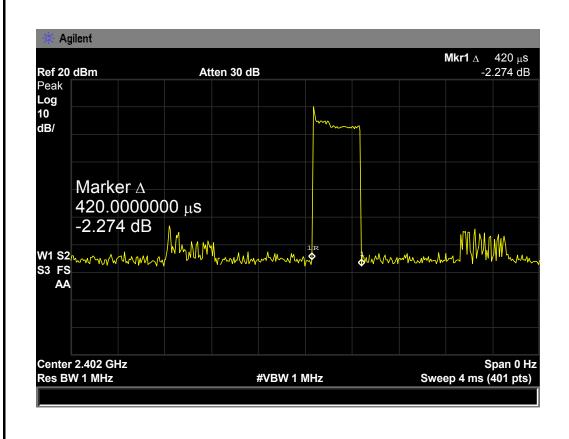
Sweep 12 ms (401 pts)

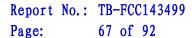


Page: 66 of 92

EUT:		Jam Thrill		Model Name :		HX-P320	
Temperature:		25 ℃		Relative Humidity:		55%	
Test Voltage:		DC 3.7V	DC 3.7V				
Test Mode:		Hopping I	Mode (8-DPSK DH	l1)			
Channel	Pu	lse Time	Total of Dwell	Period Time	Limit	Result	
(MHz)		(ms)	(ms)	(s)	(ms)		
2402		0.420	134.40	31.60	400		
2441		0.420	134.40			PASS	
2480		0.420	134.40				
9 DBSK Happing Mode DH4							

8-DPSK Hopping Mode DH1





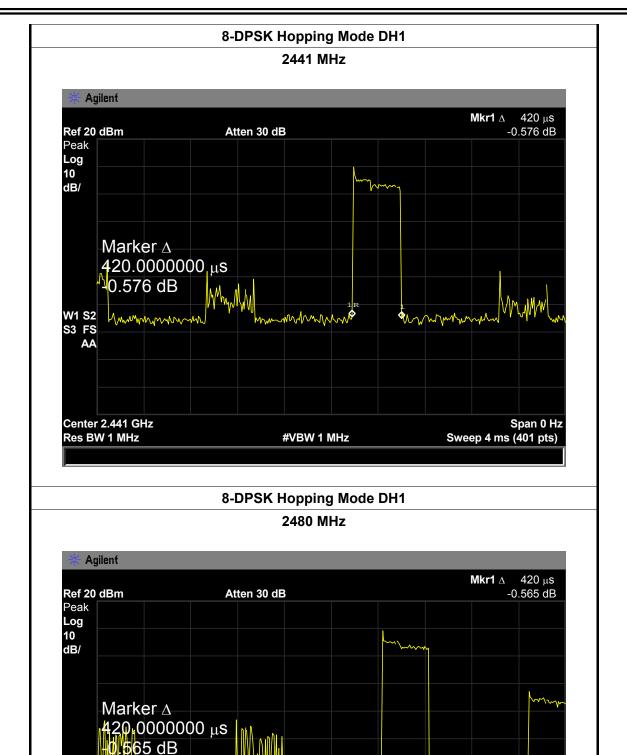


W1 S2 S3 FS

AΑ

Center 2.48 GHz

Res BW 1 MHz



#VBW 1 MHz

Span 0 Hz

Sweep 4 ms (401 pts)



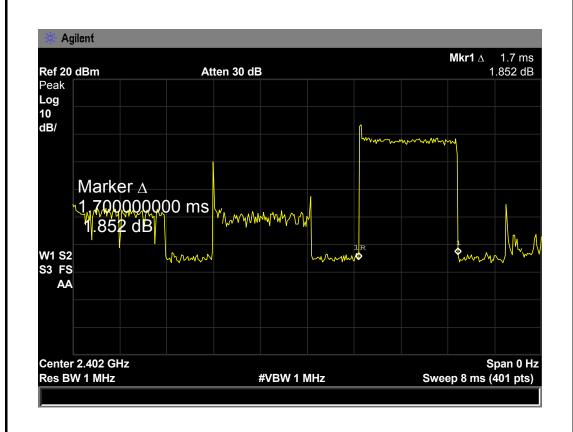
Report No.: TB-FCC143499
Page: 68 of 92

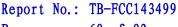
EUT:	Jam Thrill	Model Name :	HX-P320
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Tost Mode:	Honning Mode (8-DPSK DH3)		

Test Mode: Hopping Mode (8-DPSK DH3)

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

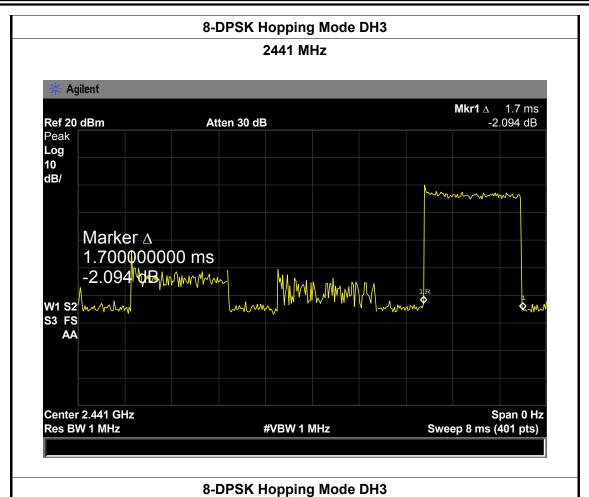
8-DPSK Hopping Mode DH3

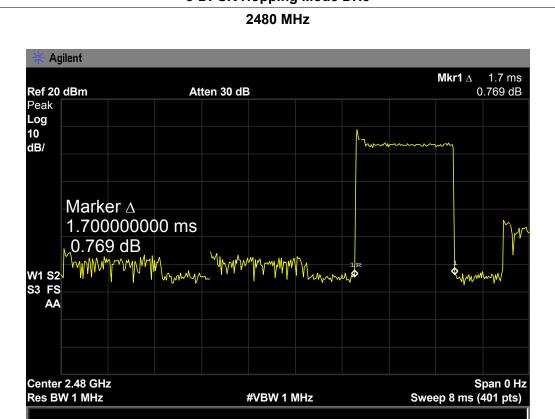






Page: 69 of 92





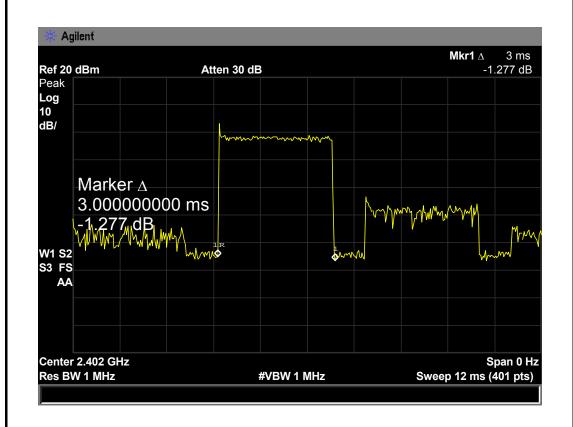


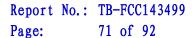
Page: 70 of 92

EUT:		Jam Thrill		Model Name :		HX-P320
Temperature:		25 ℃		Relative Humidity:		55%
Test Voltage:		DC 3.7V				
Test Mode:		Hopping I	Mode (8-DPSK DH5)			
Channel	Pu	lse Time	Total of Dwell	Period	Limit	

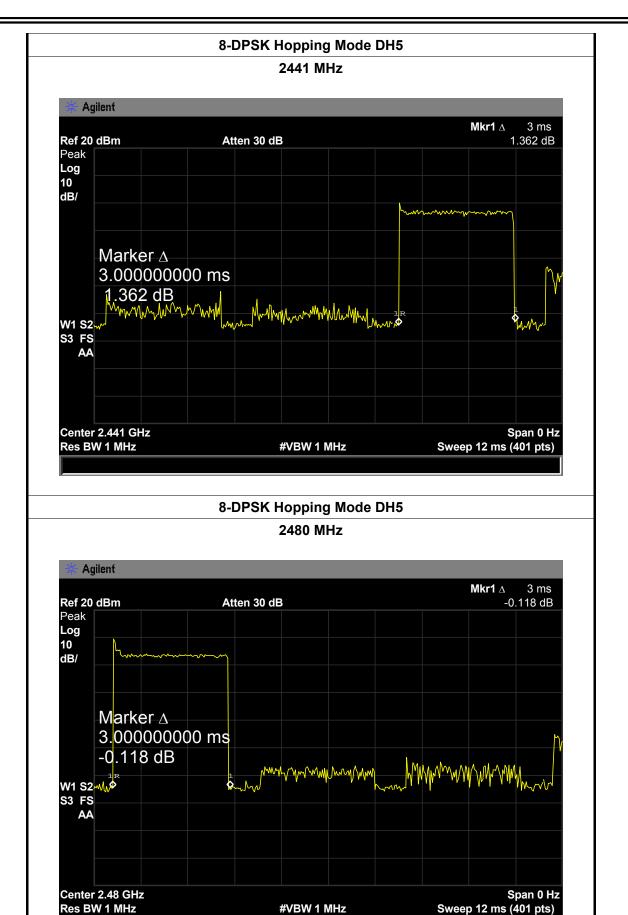
Channel (MHz)	Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
2402	3.000	320.00			
2441	3.000	320.00	31.60	400	PASS
2480	3.000	320.00			

8-DPSK Hopping Mode DH5











Report No.: TB-FCC143499
Page: 72 of 92

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.

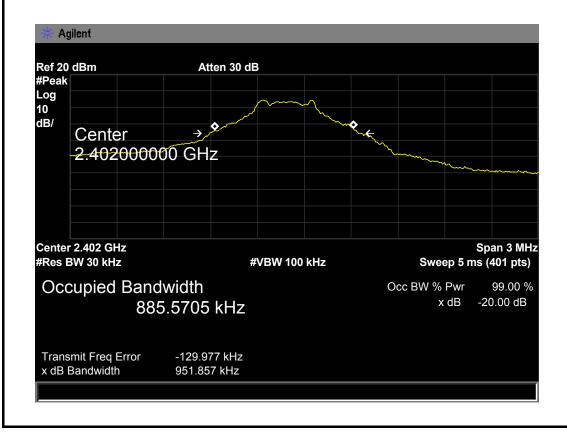


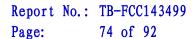
8.5 Test Equipment

Description	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum	Agilent		MV45106456	Aug. 08, 2014	Aug.07, 2015
Analyzer	Aglietit	E4407B	MY45106456	Aug. 00, 2014	Aug.07, 2015

8.6 Test Data

EUT:	Jam Thrill	Model Name :	HX-P320	
Temperature:	25 ℃	Relative Humidity:	55%	
Test Voltage:	DC 3.7V			
Test Mode:	TX Mode (GFSK)			
Channel frequence	99% OBW	20dB Bandwidth	20dB	
(MHz)	(kHz)	(kHz)	Bandwidth	
			*2/3 (kHz)	
2402	885.5705	951.857		
2441	884.2813	934.636		
2480	884.2860	946.158		
GFSK TX Mode				







GFSK TX Mode 2441 MHz Agilent Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ > 0 Center 2.441000000 GHz Span 3 MHz Center 2.441 GHz #Res BW 30 kHz **#VBW 100 kHz** Sweep 5 ms (401 pts) Occupied Bandwidth 99.00 % Occ BW % Pwr -20.00 dB 884.2813 kHz x dB Transmit Freq Error -131.508 kHz x dB Bandwidth 934.636 kHz

GFSK TX Mode 2480 MHz Agilent Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Center 2.480000000 GHz Center 2.48 GHz Span 3 MHz #Res BW 30 kHz **#VBW 100 kHz** Sweep 5 ms (401 pts) Occupied Bandwidth Occ BW % Pwr 99.00 % x dB -20.00 dB 884.2860 kHz Transmit Freq Error -139.391 kHz x dB Bandwidth 946.158 kHz

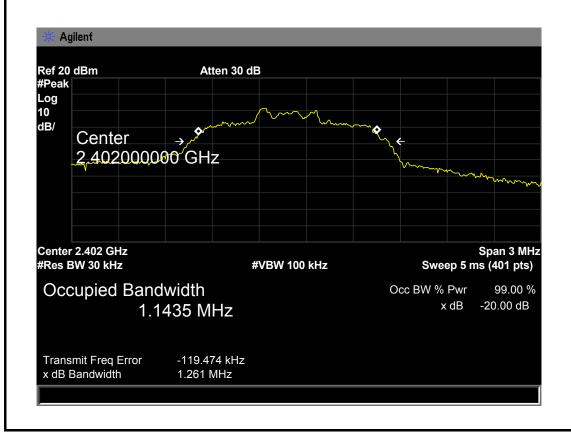


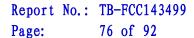
EUT:Jam ThrillModel Name :HX-P320Temperature:25 °CRelative Humidity:55%Test Voltage:DC 3.7V

Test Mode: TX Mode (π /4-DQPSK)

Channel frequency (MHz)	99% OBW (kHz)	20dB Bandwidth (kHz)	20dB Bandwidth *2/3 (kHz)
2402	1143.500	1261.00	840.67
2441	1143.200	1227.00	818.00
2480	1154.400	1248.00	832.00

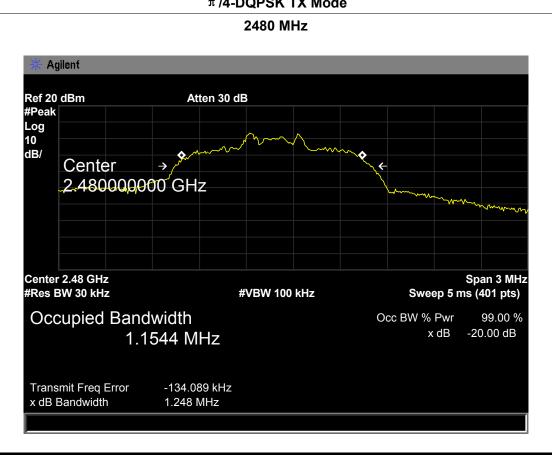
π/4-DQPSK TX Mode







π/4-DQPSK TX Mode 2441 MHz Agilent Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Center 2.4410000000 GHz Center 2.441 GHz Span 3 MHz #Res BW 30 kHz **#VBW 100 kHz** Sweep 5 ms (401 pts) Occupied Bandwidth 99.00 % Occ BW % Pwr x dB -20.00 dB 1.1432 MHz Transmit Freq Error -125.339 kHz x dB Bandwidth 1.227 MHz π/4-DQPSK TX Mode 2480 MHz Agilent





1273.00

1262.00

848.67

841.33



2441

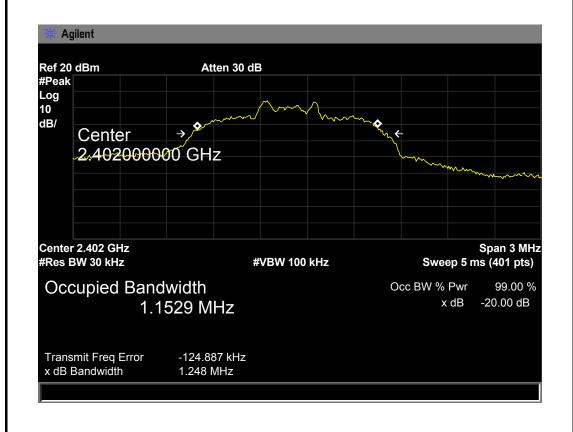
2480

EUT: Jam Thrill HX-P320 **Model Name:** 25 ℃ Temperature: **Relative Humidity:** 55% **Test Voltage:** DC 3.7V TX Mode (8-DPSK) **Test Mode: Channel frequency** 99% OBW 20dB Bandwidth 20dB (MHz) (kHz) (kHz) **Bandwidth** *2/3 (kHz) 2402 1152.90 1248.00 832.00

8-DPSK TX Mode 2402 MHz

1164.60

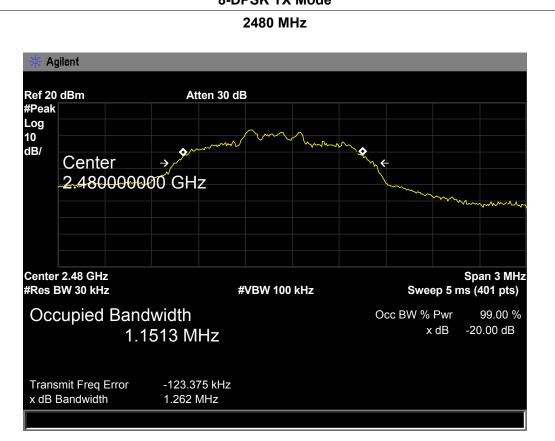
1151.30













Page: 79 of 92

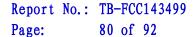
EUT:	Jam Thrill	Model Name :	HX-P320
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		

Test Mode: Hopping Mode (GFSK)

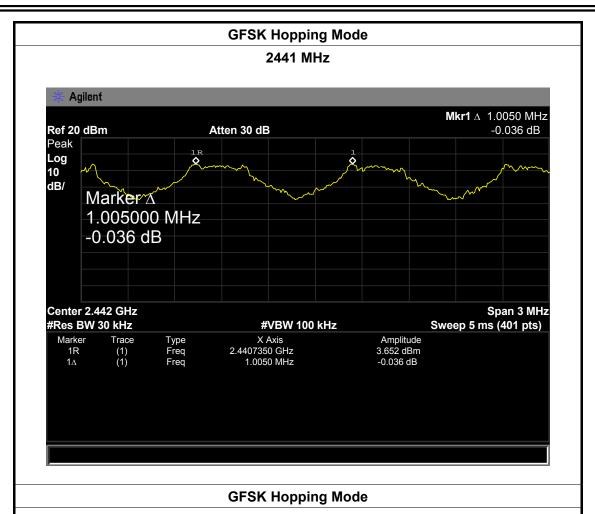
Channel frequency (MHz)	Separation Read Value (kHz)	Separation Limit (kHz)	
2402	1005.00	951.857	
2441	1005.00	934.636	
2480	1005.00	946.158	

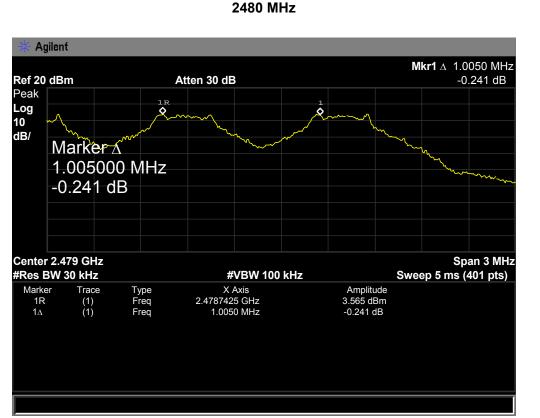
GFSK Hopping Mode











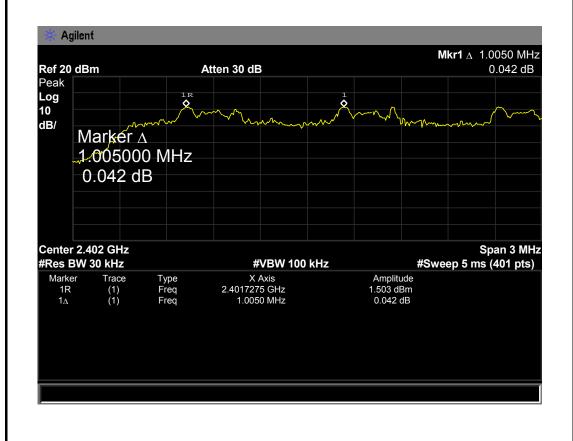


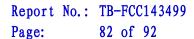
Page: 81 of 92

EUT:	Jam Thrill	Model Name :	HX-P320
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Test Mode:	Hopping Mode (π/4-DQPSK)		

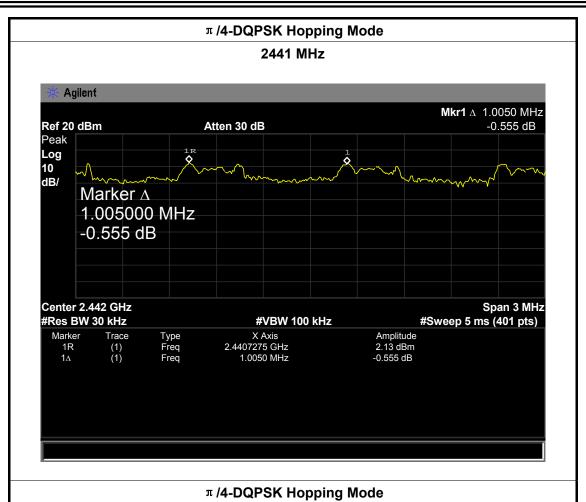
rest mode.			
Channel frequency		Separation Read Value	Separation Limit
(MHz)		(kHz)	(kHz)
2402		1005.00	840.67
2441		1005.00	818.00
2480		1005.00	832.00

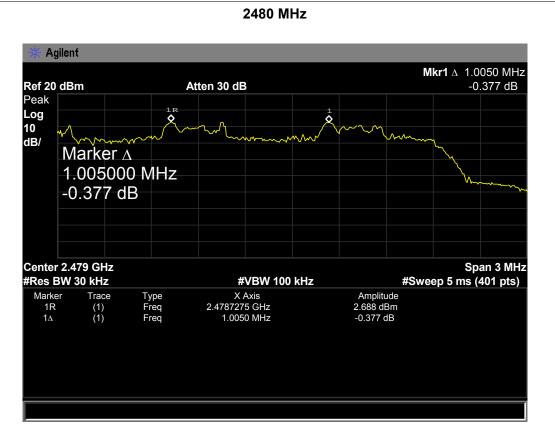
π /4-DQPSK Hopping Mode













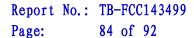
Page: 83 of 92

EUT:	Jam Thrill	Model Name :	HX-P320
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Toot Model	Hanning Made (9 DDCK)		

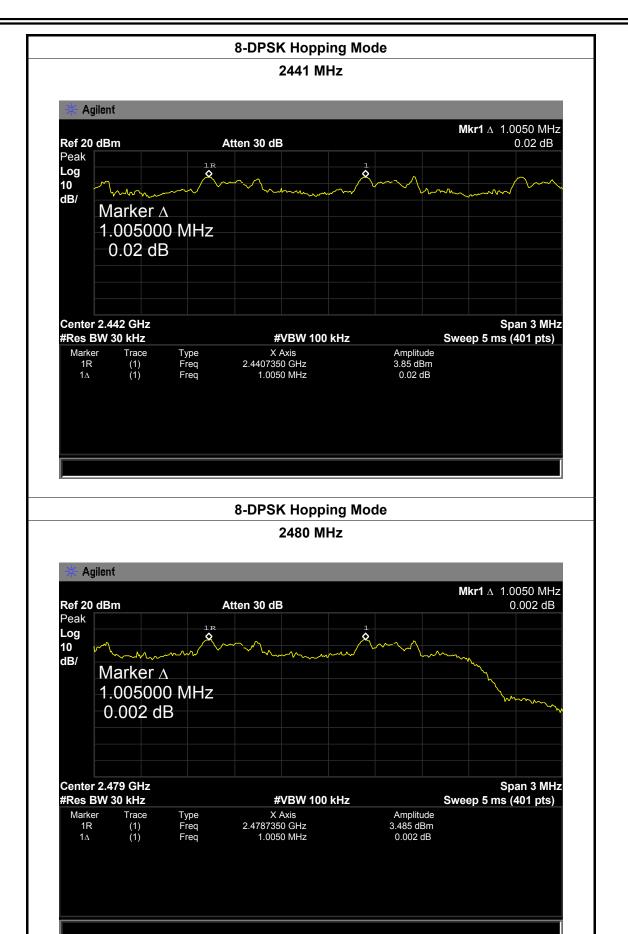
rest wode.	i lopping i	lopping Mode (0-b) Sity				
Channel frequency		Separation Read Value	Separation Limit			
(MHz)		(kHz)	(kHz)			
2402		1005.00	832.00			
2441		1005.00	848.67			
2480		1005.00	841.33			

8-DPSK Hopping Mode











Page: 85 of 92

9. Peak Output Power Test

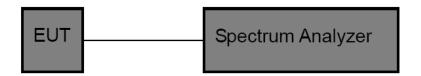
9.1 Test Standard and Limit

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	Aug. 08, 2014	Aug.07, 2015

9.6 Test Data

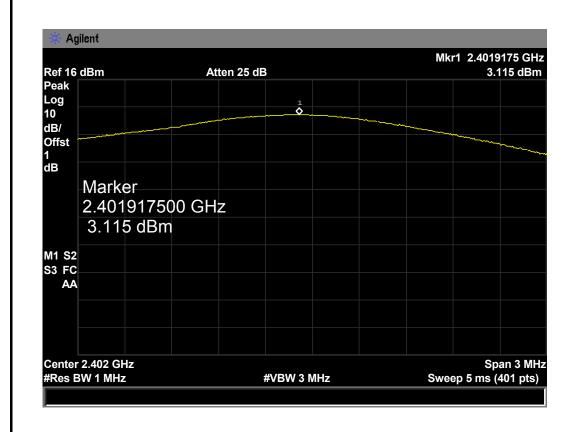


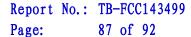
Page: 86 of 92

EUT:	Jam Thrill		Model Na	ame :	HX-P320	
Temperature:	25 ℃		Relative	Humidity:	55%	
Test Voltage:	DC 3.7V	DC 3.7V				
Test Mode:	TX Mode (GFSK)					
Channel frequen	cv (MHz)	Test Result (c	IBm)	l im	it (dBm)	

Channel frequency (MHz)	Test Result (dBm)	Limit (dBm)
2402	3.115	
2441	3.609	30
2480	4.034	

GFSK TX Mode

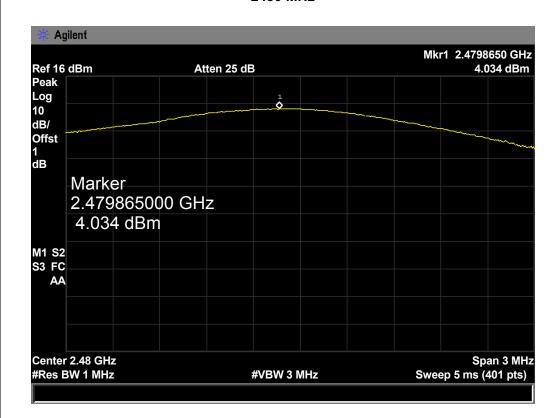






GFSK TX Mode 2441 MHz Agilent Mkr1 2.4409400 GHz 3.609 dBm Ref 16 dBm Atten 25 dB Peak Log 1 10 dB/ Offst 1 dB Marker 2.440940000 GHz 3.609 dBm M1 S2 S3 FC AΑ Center 2.441 GHz Span 3 MHz #Res BW 1 MHz #VBW 3 MHz Sweep 5 ms (401 pts)

GFSK TX Mode



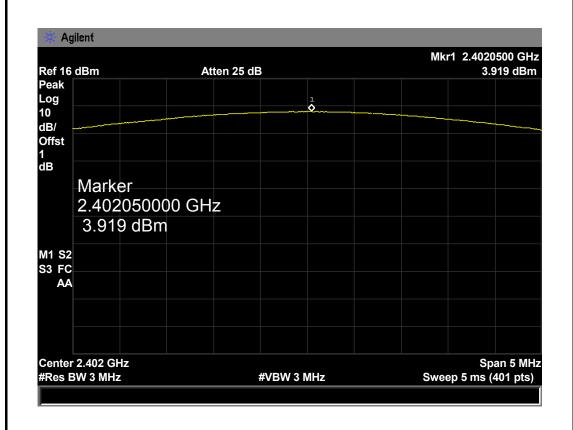


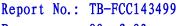
Page: 88 of 92

EUT:	Jam Thrill	Model Name :	HX-P320
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Test Mode:	TX Mode (π /4-DQPSK)		

Channel frequency (MHz)	Test Result (dBm)	Limit (dBm)
2402	3.919	
2441	3.926	21
2480	3.919	

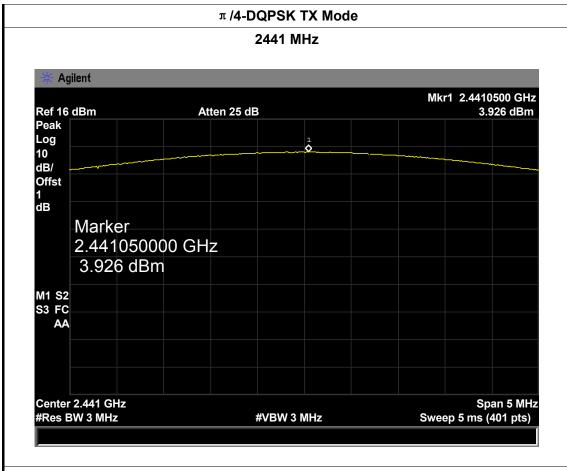
π /4-DQPSK TX Mode



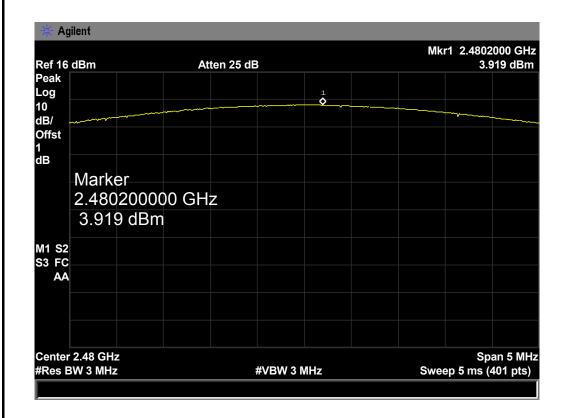




Page: 89 of 92



π/4-DQPSK TX Mode



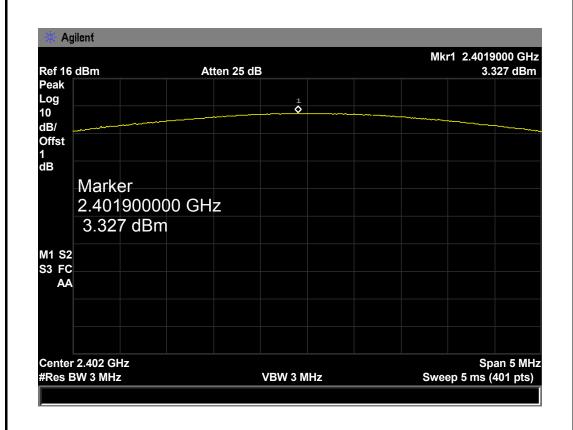


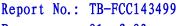
Page: 90 of 92

EUT:	Jam Thrill	Model Name :	HX-P320
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Test Mode:	TX Mode (8-DPSK)		

	<u> </u>	
Channel frequency (MHz)	Test Result (dBm)	Limit (dBm)
2402	3.327	
2441	3.694	21
2480	4.167	

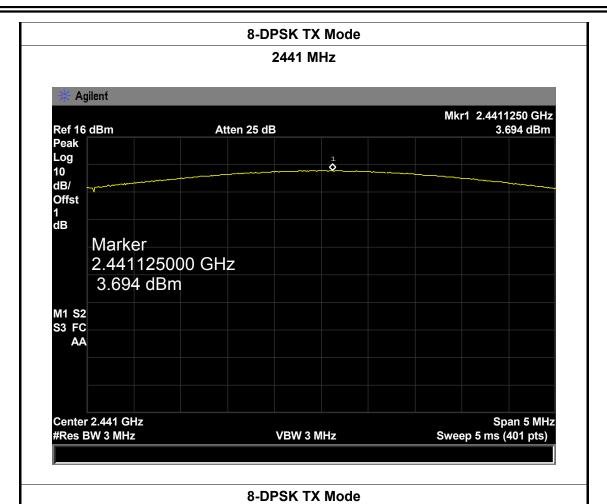
8-DPSK TX Mode

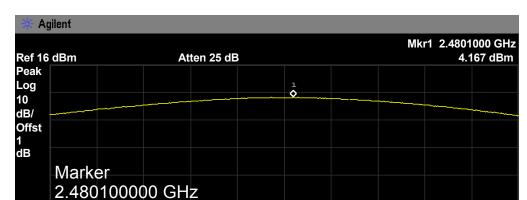






Page: 91 of 92







Page: 92 of 92

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 0 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. It complies with the standard requirement.

Antenna Type	
✓ Permanent attached antenna	
□ Unique connector antenna	
☐ Professional installation antenna	