

RF Test Report

For

Applicant Name: SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD

A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU

Address: INDUSTRIAL ZONE, GUANLAN, LONGHUA SHENZHEN, 518XXX

China

EUT Name: tablet
Brand Name: OUKITEL
Model Number: OT6

Series Model Number: Refer to section 2

Issued By

Company Name: BTF Testing Lab (Shenzhen) Co., Ltd.

F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park,

Address: Tantou Community, Songgang Street, Bao'an District, Shenzhen,

China

Report Number: BTF231127R00401 Test Standards: 47 CFR Part 15.247

Test Conclusion: Pass

FCC ID: 2ANMU-OT6

Test Date: 2023-11-28 to 2023-12-15

Date of Issue: 2023-12-18

Prepared By:

Chris Liu / Project Enginee

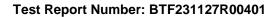
Date: 2023-12-18

Approved By:

Ryan.CJ/ EMC Manager

Date: 2023-12-18

Note: All the test results in this report only related to the testing samples. Which can be duplicated completely for the legal use with approval of applicant; it shall not be reproduced except in full without the written approval of BTF Testing Lab (Shenzhen) Co., Ltd., All the objections should be raised within thirty days from the date of issue. To validate the report, you can contact us.



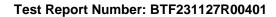


Revision History			
Version	Issue Date	Revisions Content	
R_V0	2023-12-18	Original	
Note: Once the i	revision has been made, then pre	/ious versions reports are invalid.	



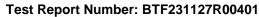
Table of Contents

1	INTR	ODUCTION	5
	1.1	Identification of Testing Laboratory	5
	1.2	Identification of the Responsible Testing Location	
	1.3	Announcement	5
2	PRO	DUCT INFORMATION	6
	2.1	Application Information	6
	2.2	Manufacturer Information	
	2.3	Factory Information	
	2.4	General Description of Equipment under Test (EUT)	
	2.5	Technical Information	
3	SUM	MARY OF TEST RESULTS	7
	3.1	Test Standards	7
	3.2	Uncertainty of Test	
	3.3	Summary of Test Result	7
4	TEST	T CONFIGURATION	8
	4.1	Test Equipment List	
	4.2	Test Auxiliary Equipment	
	4.3	Test Modes	
5	EVAI	LUATION RESULTS (EVALUATION)	11
	5.1	Antenna requirement	
	3.1	5.1.1 Conclusion:	
_			
6		IO SPECTRUM MATTER TEST RESULTS (RF)	
	6.1	Conducted Emission at AC power line	
		6.1.1 E.U.T. Operation:	
		6.1.2 Test Setup Diagram:	
		6.1.3 Test Data:	
	6.2	Occupied Bandwidth	
		6.2.1 E.U.T. Operation:	
		6.2.2 Test Setup Diagram: 6.2.3 Test Data:	
	6.3	Maximum Conducted Output Power	
	0.3	·	
		6.3.1 E.U.T. Operation: 6.3.2 Test Setup Diagram: 6.3.2	
		6.3.3 Test Data:	
	6.4	Channel Separation	
	0.1	6.4.1 E.U.T. Operation:	
		6.4.2 Test Setup Diagram:	
		6.4.3 Test Data:	
	6.5	Number of Hopping Frequencies	. 21
		6.5.1 E.U.T. Operation:	
		6.5.2 Test Setup Diagram:	
		6.5.3 Test Data:	. 22
	6.6	Dwell Time	. 23
		6.6.1 E.U.T. Operation:	. 23
		6.6.2 Test Setup Diagram:	
		6.6.3 Test Data:	
	6.7	Emissions in non-restricted frequency bands	
		6.7.1 E.U.T. Operation:	
		6.7.2 Test Setup Diagram:	. 25





		6.7.3 Test Data:	25
	6.8	Band edge emissions (Radiated)	27
		6.8.1 E.U.T. Operation: 6.8.2 Test Setup Diagram: 6.8.3 Test Data:	27
	6.9	Emissions in frequency bands (below 1GHz)	29
		6.9.1 E.U.T. Operation: 6.9.2 Test Setup Diagram:	29
		6.9.2 Test Setup Diagram:	29
		6.9.3 Test Data:	30
	6.10	Emissions in frequency bands (above 1GHz)	32
		6.10.1 E.U.T. Operation:	32
		6.10.2 Test Setup Diagram:	
		6.10.3 Test Data:	33
7	TEST	T SETUP PHOTOS	35
8	EUT	CONSTRUCTIONAL DETAILS (EUT PHOTOS)	35
APP		(





1 Introduction

1.1 Identification of Testing Laboratory

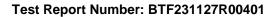
Company Name: BTF Testing Lab (Shenzhen) Co., Ltd.	
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Phone Number:	+86-0755-23146130
Fax Number:	+86-0755-23146130

1.2 Identification of the Responsible Testing Location

Company Name: BTF Testing Lab (Shenzhen) Co., Ltd.	
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Phone Number:	+86-0755-23146130
Fax Number:	+86-0755-23146130
FCC Registration Number:	518915
Designation Number:	CN1330

1.3 Announcement

- (1) The test report reference to the report template version v0.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) This document may not be altered or revised in any way unless done so by BTF and all revisions are duly noted in the revisions section.
- (5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
- (6) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.





2 Product Information

2.1 Application Information

Company Name:	SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD	
Address:	A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU INDUSTRIAL ZONE, GUANLAN, LONGHUA SHENZHEN, 518XXX China	

2.2 Manufacturer Information

Company Name:	SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD
Address:	A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU INDUSTRIAL ZONE,
Address.	GUANLAN, LONGHUA SHENZHEN, 518XXX China

2.3 Factory Information

	Company Name:	SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD
	Address:	A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU INDUSTRIAL ZONE,
	Address.	GUANLAN, LONGHUA SHENZHEN, 518XXX China

2.4 General Description of Equipment under Test (EUT)

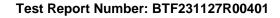
EUT Name:	tablet
Test Model Number:	OT6
Series Model Number:	OT6 S, OT6 Pro, OT6 Ultra, OT6 Kids
Description of Model name differentiation:	Only the model name is different, everything else is the same
Hardware Version:	R8631-RK3562-V1.0
Software Version:	OUKITEL_OT6_EEA_V01

2.5 Technical Information

Power Supply:	DC 3.8V from battery
Power Adaptor:	Model:PS10UA050K2000EU Input:100-240v~50/60Hz 0.35A Max Output:5.0V==2.0A 10.0W
Operation Frequency:	2402MHz to 2480MHz
Number of Channels:	79
Modulation Type:	GFSK, π/4 DQPSK, 8DPSK
Antenna Type:	PIFA ANT
Antenna Gain#:	1.19dBi
N. I. d	

Note:

#: The antenna gain provided by the applicant, and the laboratory will not be responsible for the accumulated calculation results which covers the information provided by the applicant.





3 Summary of Test Results

3.1 Test Standards

The tests were performed according to following standards: 47 CFR Part 15.247: Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz

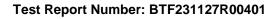
3.2 Uncertainty of Test

Item	Measurement Uncertainty
Conducted Emission (150 kHz-30 MHz)	±2.64dB
Occupied Bandwidth	±69kHz
Transmitter Power, Conducted	±0.87dB
Conducted Spurious Emissions	±0.95dB
Radiated Spurious Emissions (above 1GHz)	1-6GHz: ±3.94dB 6-18GHz: ±4.16dB
Radiated Spurious Emissions (30M - 1GHz)	±4.12dB

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.3 Summary of Test Result

Item	Standard	Requirement	Result
Antenna requirement	47 CFR Part 15.247	47 CFR 15.203	Pass
Conducted Emission at AC power line	47 CFR Part 15.247	47 CFR 15.207(a)	Pass
Occupied Bandwidth	47 CFR Part 15.247	47 CFR 15.215(c)	Pass
Maximum Conducted Output Power	47 CFR Part 15.247	47 CFR 15.247(b)(1)	Pass
Channel Separation	47 CFR Part 15.247	47 CFR 15.247(a)(1)	Pass
Number of Hopping Frequencies	47 CFR Part 15.247	47 CFR 15.247(a)(1)(iii)	Pass
Dwell Time	47 CFR Part 15.247	47 CFR 15.247(a)(1)(iii)	Pass
Emissions in non-restricted frequency bands	47 CFR Part 15.247	47 CFR 15.247(d), 15.209, 15.205	Pass
Band edge emissions (Radiated)	47 CFR Part 15.247	47 CFR 15.247(d), 15.209, 15.205	Pass
Emissions in frequency bands (below 1GHz)	47 CFR Part 15.247	47 CFR 15.247(d), 15.209, 15.205	Pass
Emissions in frequency bands (above 1GHz)	47 CFR Part 15.247	47 CFR 15.247(d), 15.209, 15.205	Pass





Test Configuration

Test Equipment List

Conducted Emission at AC power line								
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date			
Pulse Limiter	SCHWARZBECK	VTSD 9561-F	00953	/	/			
Coaxial Switcher	SCHWARZBECK	CX210	CX210	/	/			
V-LISN	SCHWARZBECK	NSLK 8127	01073	2023-11-16	2024-11-15			
LISN	AFJ	LS16/110VAC	16010020076	2023-02-23	2024-02-22			
EMI Receiver	ROHDE&SCHWA RZ	ESCI3	101422	2023-11-15	2024-11-14			

Occupied Bandwidth

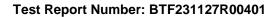
Maximum Conducted Output Power

Channel Separation

Number of Hopping Frequencies

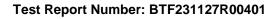
Dwell Time

Emissions in non-restricted frequency bands								
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date			
RFTest software	/	V1.00	/	/	/			
RF Control Unit	Techy	TR1029-1	/	/	/			
RF Sensor Unit	Techy	TR1029-2	/	/	/			
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2023-11-16	2024-11-15			
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	/	/			
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2023-11-16	2024-11-15			
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2023-11-16	2024-11-15			





Pand adda amissions	(Padiated)				
Band edge emissions Emissions in frequen		GHz)			
Emissions in frequen					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2023-03-24	2024-03-23
Preamplifier	SCHWARZBECK	BBV9744	00246	/	/
RE Cable	REBES Talent	UF1-SMASMAM-1 0m	21101566	/	/
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	/	/
RE Cable	REBES Talent	UF1-SMASMAM-1 m	21101568	/	/
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	/	/
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	1	/	1
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2023-11-13	2024-11-12
EMI TEST RECEIVER	ROHDE&SCHWA RZ	ESCI7	101032	2023-11-16	2024-11-15
SIGNAL ANALYZER	ROHDE&SCHWA RZ	FSQ40	100010	2023-11-16	2024-11-15
POSITIONAL CONTROLLER	SKET	PCI-GPIB	1	/	/
Broadband Preamplilifier	SCHWARZBECK	BBV9718D	00008	2023-03-24	2024-03-23
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ_EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	1	/	1
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2023-11-13	2024-11-12



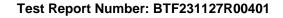


4.2 Test Auxiliary Equipment

The EUT was tested as an independent device.

4.3 Test Modes

No.	Test Modes	Description
TM1	TX-GFSK	Keep the EUT in continuously transmitting mode (non-hopping) with
I IVI I	(Non-Hopping)	GFSK modulation.
TM2	TX-Pi/4DQPSK	Keep the EUT in continuously transmitting mode (non-hopping) with
I IVIZ	(Non-Hopping)	Pi/4DQPSK modulation.
TM3	TX-8DPSK	Keep the EUT in continuously transmitting mode (non-hopping) with
TIVIS	(Non-Hopping)	8DPSK modulation.
TM4	TX-GFSK (Hopping)	Keep the EUT in continuously transmitting mode (hopping) with GFSK modulation,.
TM5	TX-Pi/4DQPSK	Keep the EUT in continuously transmitting mode (hopping) with
CIVIT	(Hopping)	Pi/4DQPSK modulation.
TM6	TX-8DPSK (Hopping)	Keep the EUT in continuously transmitting mode (hopping) with 8DPSK
	(11 0/	modulation.





5 Evaluation Results (Evaluation)

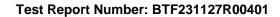
5.1 Antenna requirement

Test Requirement:

Refer to 47 CFR Part 15.203, 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.

5.1.1 Conclusion:







6 Radio Spectrum Matter Test Results (RF)

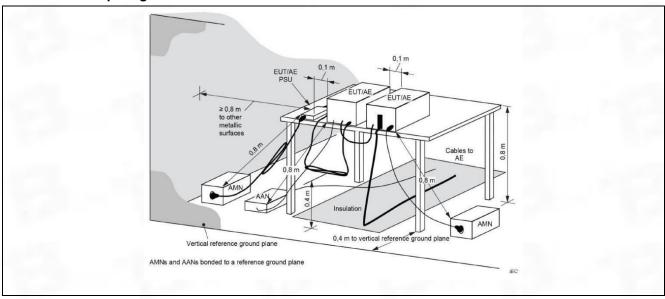
6.1 Conducted Emission at AC power line

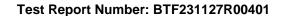
Test Requirement:	Refer to 47 CFR 15.207(a), Except as shown in paragraphs (b)and (c)of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN).						
Test Method:	ANSI C63.10-2013 section 6.2						
	Frequency of emission (MHz)	Conducted limit (dBµ Quasi-peak	Average				
Took Limits	0.15-0.5	66 to 56*	56 to 46*				
Test Limit:	0.5-5	56	46				
	5-30	60	50				
	*Decreases with the logarithm of the frequency.						
Procedure:	Refer to ANSI C63.10-2013 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices						

6.1.1 E.U.T. Operation:

Operating Environment:	
Temperature:	23.9 °C
Humidity:	53 %
Atmospheric Pressure:	1010 mbar

6.1.2 Test Setup Diagram:

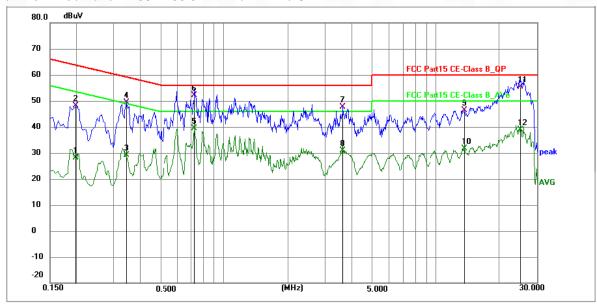




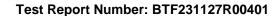


6.1.3 Test Data:

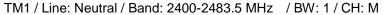
TM1 / Line: Line / Band: 2400-2483.5 MHz / BW: 1 / CH: M

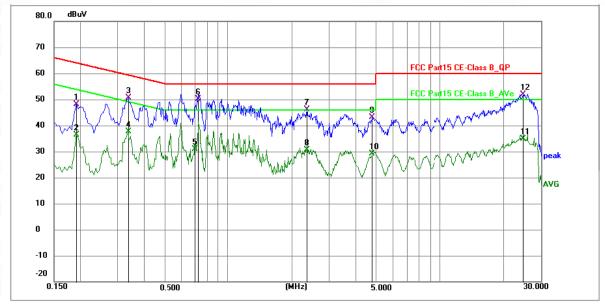


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1975	17.49	10.56	28.05	53.72	-25.67	AVG	Р	
2	0.1986	37.61	10.56	48.17	63.67	-15.50	QP	Р	
3	0.3428	17.99	11.02	29.01	49.14	-20.13	AVG	Р	
4	0.3435	38.28	11.02	49.30	59.12	-9.82	QP	Р	
5	0.7215	28.57	10.93	39.50	46.00	-6.50	AVG	Р	
6 *	0.7260	41.18	10.92	52.10	56.00	-3.90	QP	Р	
7	3.6240	37.04	10.64	47.68	56.00	-8.32	QP	Р	
8	3.6240	20.22	10.64	30.86	46.00	-15.14	AVG	Р	
9	13.6410	35.48	10.91	46.39	60.00	-13.61	QP	Р	
10	13.6410	20.60	10.91	31.51	50.00	-18.49	AVG	Р	
11	25.1430	44.10	11.20	55.30	60.00	-4.70	QP	Р	
12	25.1430	27.79	11.20	38.99	50.00	-11.01	AVG	Р	

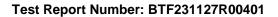








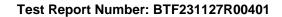
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1905	37.61	10.54	48.15	64.01	-15.86	QP	Р	
2	0.1905	25.72	10.54	36.26	54.01	-17.75	AVG	Р	
3	0.3345	39.52	10.99	50.51	59.34	-8.83	QP	Р	
4	0.3345	26.63	10.99	37.62	49.34	-11.72	AVG	Р	
5	0.6990	19.95	11.00	30.95	46.00	-15.05	AVG	Р	
6 *	0.7260	39.28	10.92	50.20	56.00	-5.80	QP	Р	
7	2.3460	35.57	10.67	46.24	56.00	-9.76	QP	Р	
8	2.3460	19.85	10.67	30.52	46.00	-15.48	AVG	Р	
9	4.7850	32.42	10.72	43.14	56.00	-12.86	QP	Р	
10	4.7850	18.30	10.72	29.02	46.00	-16.98	AVG	Р	
11	24.6930	23.76	11.19	34.95	50.00	-15.05	AVG	Р	
12	24.7919	40.74	11.20	51.94	60.00	-8.06	QP	Р	





6.2 Occupied Bandwidth

Test Requirement:	47 CFR 15.215(c)
root requirement.	ANSI C63.10-2013, section 7.8.7, For occupied bandwidth measurements, use the
Test Method:	procedure in 6.9.2. KDB 558074 D01 15.247 Meas Guidance v05r02
Test Limit:	Refer to 47 CFR 15.215(c), intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.
	a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW. b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW, unless otherwise specified by the applicable requirement. c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.
	d) Steps a) through c) might require iteration to adjust within the specified tolerances. e) The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target "-xx dB down" requirement; that is, if the requirement calls for measuring the -20 dB OBW, the instrument noise floor at the selected RBW shall be at least 30 dB below the reference value.
Procedure:	f) Set detection mode to peak and trace mode to max hold. g) Determine the reference value: Set the EUT to transmit an unmodulated carrier or modulated signal, as applicable. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value). h) Determine the "-xx dB down amplitude" using [(reference value) - xx]. Alternatively, this calculation may be made by using the marker-delta function of
	the instrument. i) If the reference value is determined by an unmodulated carrier, then turn the EUT modulation ON, and either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise, the trace from step g) shall be used for step j).
	j) Place two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the "-xx dB down amplitude" determined in step h). If a marker is below this "-xx dB down amplitude" value, then it shall be as close as possible to this value. The occupied bandwidth is the frequency difference between the two markers. Alternatively, set a marker at the lowest frequency of the envelope of the spectral display, such that the marker is at or slightly below the "-xx dB down
	amplitude" determined in step h). Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker-delta frequency reading at this point is the specified emission bandwidth. k) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

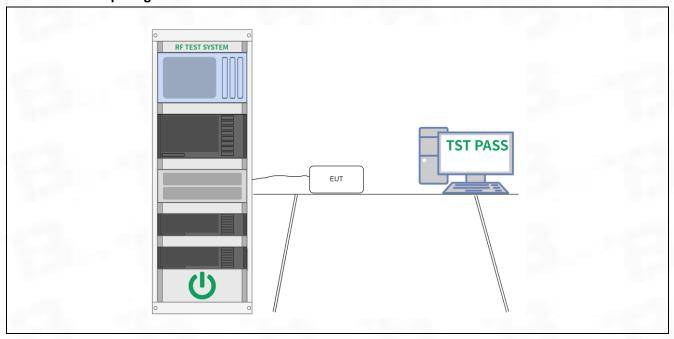




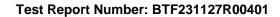
6.2.1 E.U.T. Operation:

Operating Environment:	
Temperature:	23.9 °C
Humidity:	53 %
Atmospheric Pressure:	1010 mbar

6.2.2 Test Setup Diagram:



6.2.3 Test Data:





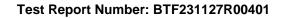
6.3 Maximum Conducted Output Power

Test Requirement:	47 CFR 15.247(b)(1)
Test Method:	ANSI C63.10-2013, section 7.8.5
Test Method.	KDB 558074 D01 15.247 Meas Guidance v05r02
Test Limit:	Refer to 47 CFR 15.247(b)(1), For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.
Procedure:	This is an RF-conducted test to evaluate maximum peak output power. Use a direct connection between the antenna port of the unlicensed wireless device and the spectrum analyzer, through suitable attenuation. The hopping shall be disabled for this test: a) Use the following spectrum analyzer settings: 1) Span: Approximately five times the 20 dB bandwidth, centered on a hopping channel. 2) RBW > 20 dB bandwidth of the emission being measured. 3) VBW >= RBW. 4) Sweep: Auto. 5) Detector function: Peak. 6) Trace: Max hold. b) Allow trace to stabilize. c) Use the marker-to-peak function to set the marker to the peak of the emission. d) The indicated level is the peak output power, after any corrections for external attenuators and cables. e) A plot of the test results and setup description shall be included in the test report. NOTE—A peak responding power meter may be used, where the power meter and sensor system video bandwidth is greater than the occupied bandwidth of the unlicensed wireless device, rather than a spectrum analyzer.

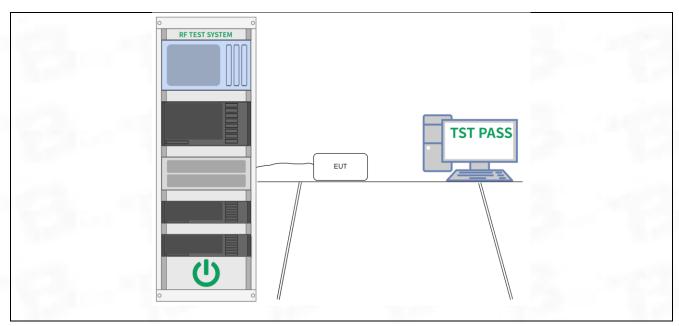
6.3.1 E.U.T. Operation:

Operating Environment:	
Temperature:	23.9 °C
Humidity:	53 %
Atmospheric Pressure:	1010 mbar

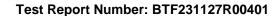
6.3.2 Test Setup Diagram:







6.3.3 Test Data:





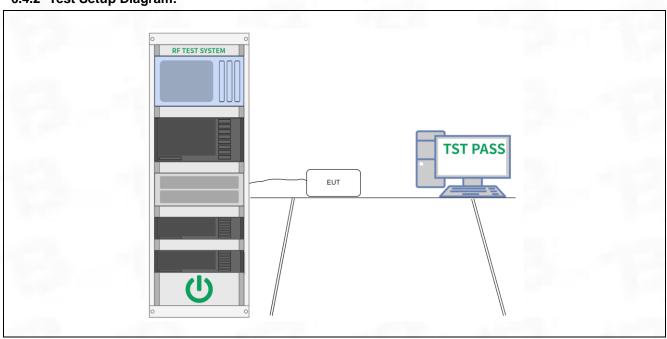
6.4 Channel Separation

Test Requirement:	47 CFR 15.247(a)(1)
Test Method:	ANSI C63.10-2013, section 7.8.2
Test Wethou.	KDB 558074 D01 15.247 Meas Guidance v05r02
Test Limit:	Refer to 47 CFR 15.247(a)(1), Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.
Procedure:	The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings: a) Span: Wide enough to capture the peaks of two adjacent channels. b) RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel. c) Video (or average) bandwidth (VBW) ≥ RBW. d) Sweep: Auto. e) Detector function: Peak. f) Trace: Max hold. g) Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. Compliance of an EUT with the appropriate regulatory limit shall be determined. A plot of the data shall be included in the test report.

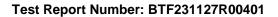
6.4.1 E.U.T. Operation:

	<u> </u>			
Operating Environment:				
	Temperature:	23.9 °C		
	Humidity:	53 %		
	Atmospheric Pressure:	1010 mbar		

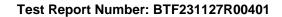
6.4.2 Test Setup Diagram:



6.4.3 Test Data:









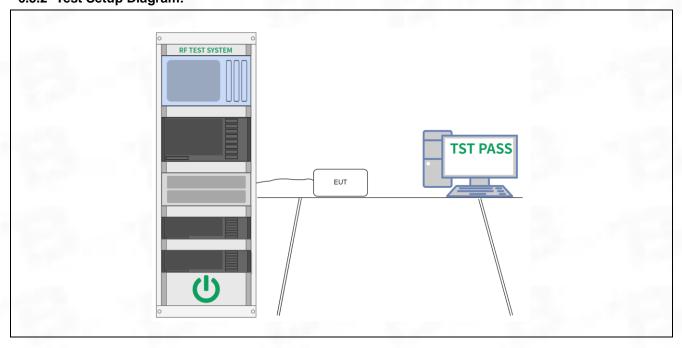
6.5 Number of Hopping Frequencies

-	
Test Requirement:	47 CFR 15.247(a)(1)(iii)
Test Method:	ANSI C63.10-2013, section 7.8.3
Test Method.	KDB 558074 D01 15.247 Meas Guidance v05r02
Test Limit:	Refer to 47 CFR 15.247(a)(1)(iii), Fequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.
Procedure:	The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings: a) Span: The frequency band of operation. Depending on the number of channels the device supports, it may be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen. b) RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller. c) VBW ≥ RBW. d) Sweep: Auto. e) Detector function: Peak. f) Trace: Max hold. g) Allow the trace to stabilize. It might prove necessary to break the span up into subranges to show clearly all of the hopping frequencies. Compliance of an EUT with the appropriate regulatory limit shall be determined for the number of hopping channels. A plot of the data shall be included in the test report.

6.5.1 E.U.T. Operation:

Operating Environment:	
Temperature:	23.9 °C
Humidity:	53 %
Atmospheric Pressure:	1010 mbar

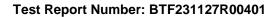
6.5.2 Test Setup Diagram:





Test Report Number: BTF231127R00401

6.5.3 Test Data:





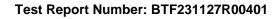
6.6 Dwell Time

Test Requirement:	47 CFR 15.247(a)(1)(iii)
	ANSI C63.10-2013, section 7.8.4
Test Method:	KDB 558074 D01 15.247 Meas Guidance v05r02
Test Limit:	Refer to 47 CFR 15.247(a)(1)(iii), Fequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.
Procedure:	The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings: a) Span: Zero span, centered on a hopping channel. b) RBW shall be <= channel spacing and where possible RBW should be set >> 1 / T, where T is the expected dwell time per channel. c) Sweep: As necessary to capture the entire dwell time per hopping channel; where possible use a video trigger and trigger delay so that the transmitted signal starts a little to the right of the start of the plot. The trigger level might need slight adjustment to prevent triggering when the system hops on an adjacent channel; a second plot might be needed with a longer sweep time to show two successive hops on a channel. d) Detector function: Peak. e) Trace: Max hold. Use the marker-delta function to determine the transmit time per hop. If this value varies with different modes of operation (data rate, modulation format, number of hopping channels, etc.), then repeat this test for each variation in transmit time. Repeat the measurement using a longer sweep time to determine the number of hops over the period specified in the requirements. The sweep time shall be equal to, or less than, the period specified in the requirements. Determine the number of hops over the sweep time and calculate the total number of hops in the period specified in the requirements, using the following equation: (Number of hops in the period specified in the requirements) = (number of hops in the period specified in the requirements / analyzer sweep time) The average time of occupancy is calculated from the transmit time per hop multiplied by the number of hops in the period specified in the requirements. If the number of hops in a specific time varies with different modes of operation (data rate, modulation format, number of hopping channels, etc.), then repeat this test for each variation. The measured transmit time and time between hops shall be consistent with the values described in the operational description for the EUT.

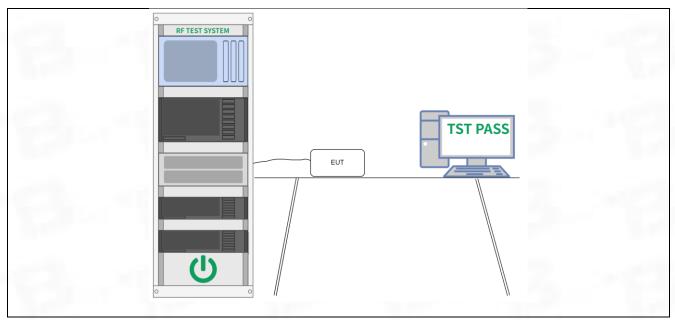
6.6.1 E.U.T. Operation:

Operating Environment:	
Temperature:	23.9 °C
Humidity:	53 %
Atmospheric Pressure:	1010 mbar

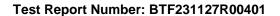
6.6.2 Test Setup Diagram:







6.6.3 Test Data:





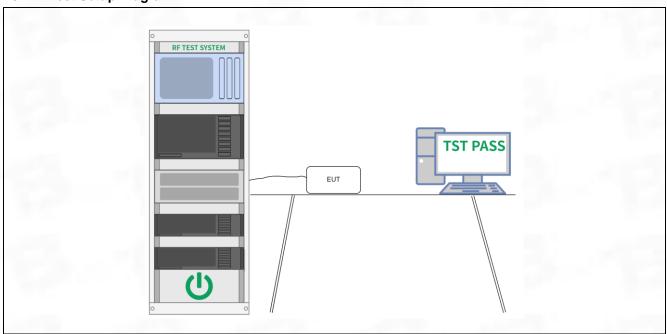
6.7 Emissions in non-restricted frequency bands

Test Requirement:	47 CFR 15.247(d), 15.209, 15.205
·	ANSI C63.10-2013 section 7.8.8
Test Method:	KDB 558074 D01 15.247 Meas Guidance v05r02
Test Limit:	Refer to 47 CFR 15.247(d), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required.
Procedure:	Conducted spurious emissions shall be measured for the transmit frequency, per 5.5 and 5.6, and at the maximum transmit powers. Connect the primary antenna port through an attenuator to the spectrum analyzer input; in the results, account for all losses between the unlicensed wireless device output and the spectrum analyzer. The instrument shall span 30 MHz to 10 times the operating frequency in GHz, with a resolution bandwidth of 100 kHz, video bandwidth of 300 kHz, and a coupled sweep time with a peak detector. The band 30 MHz to the highest frequency may be split into smaller spans, as long as the entire spectrum is covered.

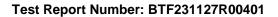
6.7.1 E.U.T. Operation:

•	
Operating Environment:	
Temperature:	23.9 °C
Humidity:	53 %
Atmospheric Pressure:	1010 mbar

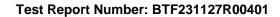
6.7.2 Test Setup Diagram:



6.7.3 Test Data:









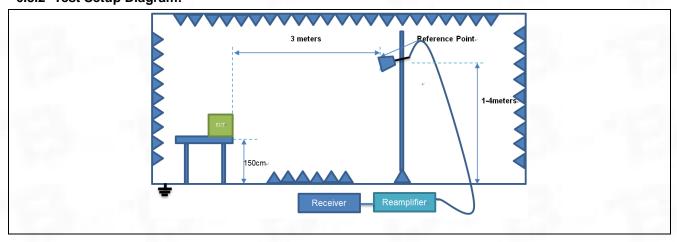
6.8 Band edge emissions (Radiated)

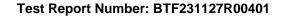
	moorono (rtaaratoa)				
Test Requirement:	Refer to 47 CFR 15.247(d), In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).`				
).		
Test Method:	ANSI C63.10-2013 secti				
		7 Meas Guidance v05r02			
	Frequency (MHz)	Field strength	Measurement		
		(microvolts/meter)	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		
Test Limit:	Above 960	500	3		
	radiators operating unde 54-72 MHz, 76-88 MHz, these frequency bands is 15.231 and 15.241. In the emission table about the emission limits show employing a CISPR quart 110–490 kHz and above	paragraph (g), fundamental em r this section shall not be located 174-216 MHz or 470-806 MHz. It is permitted under other sections ove, the tighter limit applies at the result of the above table are based in the above t	ed in the frequency bands However, operation within s of this part, e.g., §§ ne band edges. on measurements frequency bands 9–90 kHz, limits in these three bands		
Procedure: ANSI C63.10-2013 section 6.10.5.2					

6.8.1 E.U.T. Operation:

Operating Environment:				
Temperature:	22 °C			
Humidity:	46.4 %			
Atmospheric Pressure:	1010 mbar			

6.8.2 Test Setup Diagram:







6.8.3 Test Data:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L

	No.	Frequency	Reading	Factor	Level	Limit	Margin	Detector	P/F
		(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector	P/F
	1	2310.000	78.28	-30.21	48.07	74.00	-25.93	peak	Р
	2	2390.000	80.15	-28.75	51.40	74.00	-22.60	peak	Р
	3	2400.000	77.94	-26.13	51.81	74.00	-22.19	peak	Р

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L

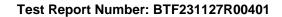
	No.	Frequency	Reading	Factor	Level	Limit	Margin	Detector	D/E
		(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector	P/F
	1	2310.000	79.14	-30.21	48.93	74.00	-25.07	peak	Р
	2	2390.000	81.01	-28.75	52.26	74.00	-21.74	peak	Р
	3	2400.000	78.80	-26.13	52.67	74.00	-21.33	peak	Р

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: H

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2483.500	81.97	-28.68	53.29	74.00	-20.71	peak	Р
2	2500.000	76.84	-26.68	50.16	74.00	-23.84	peak	Р

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H

	No.	Frequency	Reading	Factor	Level	Limit	Margin	Detector	P/F
	INO.	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)		F/F
	1	2483.500	82.53	-28.68	53.85	74.00	-20.15	peak	Р
	2	2500.000	77.40	-26.68	50.72	74.00	-23.28	peak	Р





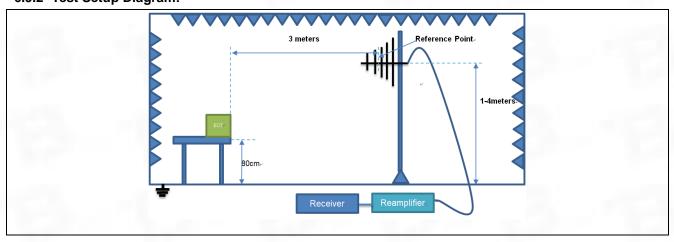
6.9 Emissions in frequency bands (below 1GHz)

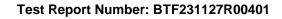
	1 - 4							
		, In addition, radiated emissior						
Test Requirement:		d in § 15.205(a), must also cor						
		§ 15.209(a)(see § 15.205(c)).	`					
Test Method:	ANSI C63.10-2013 section 6.6.4							
Test Wethod.	KDB 558074 D01 15.247 Meas Guidance v05r02							
	Frequency (MHz)	Field strength	Measurement					
		(microvolts/meter)	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					
Test Limit:	Above 960	500	3					
1 oot Limit.	** Except as provided in pa	aragraph (g), fundamental emis	ssions from intentional					
	radiators operating under t	his section shall not be located	d in the frequency bands					
	54-72 MHz, 76-88 MHz, 17	74-216 MHz or 470-806 MHz. I	However, operation within					
	these frequency bands is p	permitted under other sections	of this part, e.g., §§					
	15.231 and 15.241.							
	In the emission table abov	e, the tighter limit applies at the	e band edges.					
	The emission limits shown in the above table are based on measurements							
	employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz,							
	110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands							
	are based on measurements employing an average detector.							
Procedure:	ANSI C63.10-2013 section	6.6.4						

6.9.1 E.U.T. Operation:

Operating Environment:							
Temperature:	23.8 °C						
Humidity:	50.1 %						
Atmospheric Pressure:	1010 mbar						

6.9.2 Test Setup Diagram:

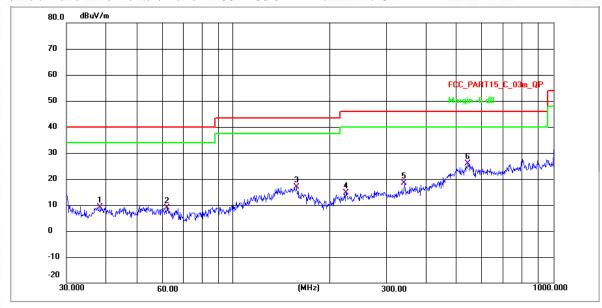




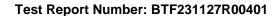


6.9.3 Test Data:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: M

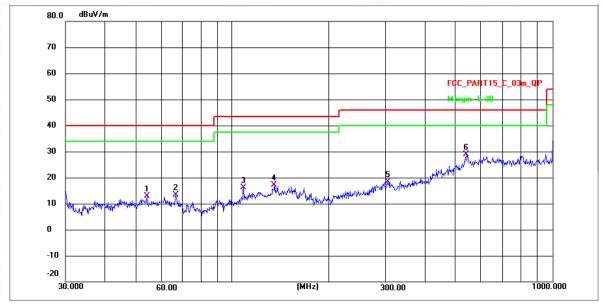


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	38.3462	27.56	-18.42	9.14	40.00	-30.86	QP	Р
2	61.7781	27.06	-18.17	8.89	40.00	-31.11	QP	Р
3	157.8354	44.48	-27.71	16.77	43.50	-26.73	QP	Р
4	224.9133	40.81	-26.25	14.56	46.00	-31.44	QP	Р
5	341.9786	43.50	-25.10	18.40	46.00	-27.60	QP	Р
6 *	541.3725	47.42	-21.57	25.85	46.00	-20.15	QP	Р

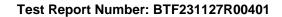








No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	54.0711	33.18	-20.25	12.93	40.00	-27.07	QP	Р
2	66.2662	33.37	-20.05	13.32	40.00	-26.68	QP	Р
3	108.2667	44.20	-28.15	16.05	43.50	-27.45	QP	Р
4	135.2688	44.97	-27.91	17.06	43.50	-26.44	QP	Р
5	306.7537	43.71	-25.37	18.34	46.00	-27.66	QP	Р
6 *	538.5324	50.43	-21.54	28.89	46.00	-17.11	QP	Р





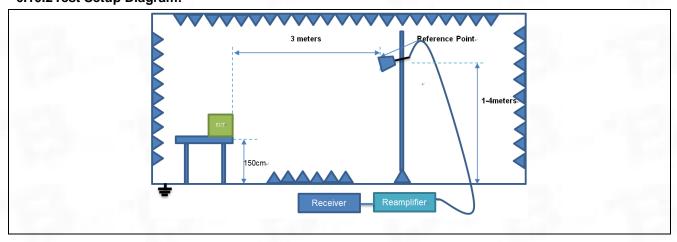
6.10 Emissions in frequency bands (above 1GHz)

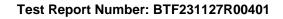
	In addition, radiated emi	ssions which fall in the restricted	d hands as defined in 8					
Test Requirement:		nply with the radiated emission						
rest requirement.	15.209(a)(see § 15.205(minto opcomed in 3					
	ANSI C63.10-2013 secti	,,						
Test Method:	KDB 558074 D01 15.247 Meas Guidance v05r02							
	Frequency (MHz)	Field strength	Measurement					
	1 requeries (wii iz)	(microvolts/meter)	distance					
		(meroveite/meter)	(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					
Test Limit:	Above 960	500	3					
165t Lillit.	** Except as provided in	paragraph (g), fundamental em	issions from intentional					
	radiators operating unde	r this section shall not be locate	ed in the frequency bands					
	54-72 MHz, 76-88 MHz,	174-216 MHz or 470-806 MHz.	However, operation within					
	these frequency bands is	s permitted under other sections	s of this part, e.g., §§					
	15.231 and 15.241.							
		ove, the tighter limit applies at th						
		The emission limits shown in the above table are based on measurements						
		employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz,						
		110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands						
	are based on measurements employing an average detector.							
Procedure:	ANSI C63.10-2013 secti	on 6.6.4						

6.10.1 E.U.T. Operation:

Operating Environment:							
Temperature:	23.8 °C						
Humidity:	50.1 %						
Atmospheric Pressure:	1010 mbar						

6.10.2Test Setup Diagram:







6.10.3Test Data:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2734.229	62.78	-29.97	32.81	74.00	-41.19	peak	Р
2	3270.858	70.07	-29.27	40.80	74.00	-33.20	peak	Р
3	4242.641	69.63	-28.90	40.73	74.00	-33.27	peak	Р
4	5315.541	72.54	-27.11	45.43	74.00	-28.57	peak	Р
5	8688.481	77.50	-24.94	52.56	74.00	-21.44	peak	Р
6 *	11803.280	79.90	-22.54	57.36	74.00	-16.64	peak	Р

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L

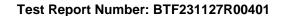
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2207.723	60.43	-30.70	29.73	74.00	-44.27	peak	Р
2	3425.674	70.27	-29.12	41.15	74.00	-32.85	peak	Р
3	4521.185	70.27	-28.72	41.55	74.00	-32.45	peak	Р
4	5763.617	71.66	-26.09	45.57	74.00	-28.43	peak	Р
5	8106.200	75.90	-25.49	50.41	74.00	-23.59	peak	Р
6 *	12947.068	80.78	-21.37	59.41	74.00	-14.59	peak	Р

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: M

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2565.777	60.55	-30.25	30.30	74.00	-43.70	peak	Р
2	3445.535	69.69	-29.10	40.59	74.00	-33.41	peak	Р
3	3629.540	69.88	-29.04	40.84	74.00	-33.16	peak	Р
4	5315.541	70.90	-27.11	43.79	74.00	-30.21	peak	Р
5	7875.254	76.29	-25.35	50.94	74.00	-23.06	peak	Р
6 *	12009.761	79.39	-22.18	57.21	74.00	-16.79	peak	Р

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: M

N	о.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1		3016.575	69.03	-29.50	39.53	74.00	-34.47	peak	Р
2	2	3445.535	70.18	-29.10	41.08	74.00	-32.92	peak	Р
3	3	4707.887	70.00	-28.19	41.81	74.00	-32.19	peak	Р
4	1	6142.019	73.01	-25.35	47.66	74.00	-26.34	peak	Р
5	5	8295.823	76.92	-25.41	51.51	74.00	-22.49	peak	Р
6	*	11871.710	79.83	-22.41	57.42	74.00	-16.58	peak	Р



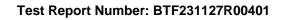


TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: H

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2947.623	63.84	-29.60	34.24	74.00	-39.76	peak	Р
2	3425.674	69.24	-29.12	40.12	74.00	-33.88	peak	Р
3	4930.721	70.78	-27.56	43.22	74.00	-30.78	peak	Р
4	7056.092	74.38	-24.91	49.47	74.00	-24.53	peak	Р
5	9366.577	77.78	-23.50	54.28	74.00	-19.72	peak	Р
6 *	13097.624	81.82	-21.27	60.55	74.00	-13.45	peak	Р

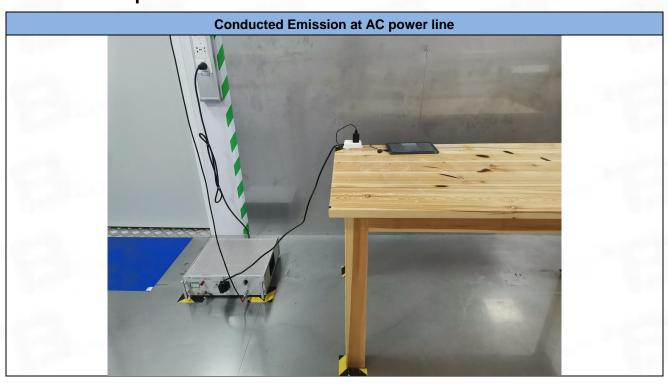
TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H

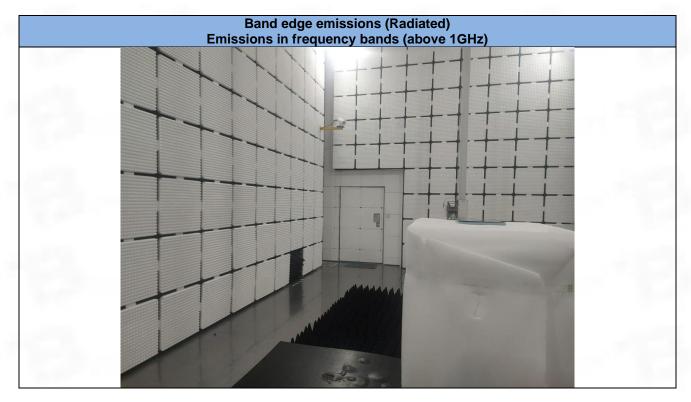
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2863.645	63.74	-29.75	33.99	74.00	-40.01	peak	Р
2	3252.005	70.89	-29.28	41.61	74.00	-32.39	peak	Р
3	4930.721	69.79	-27.56	42.23	74.00	-31.77	peak	Р
4	5967.033	71.96	-25.44	46.52	74.00	-27.48	peak	Р
5	8943.274	77.00	-24.42	52.58	74.00	-21.42	peak	Р
6 *	11076.096	79.53	-23.38	56.15	74.00	-17.85	peak	Р

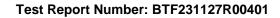




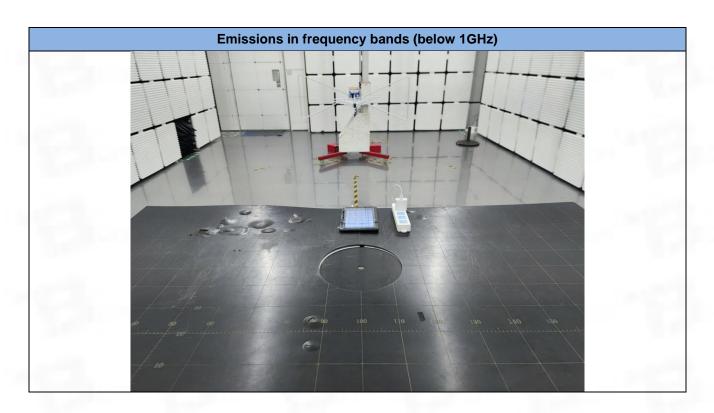
Test Setup Photos

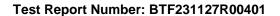








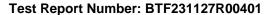






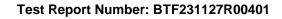
EUT Constructional Details (EUT Photos)

Please refer to the test report No. BTF231127E00401





Appendix

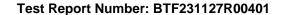




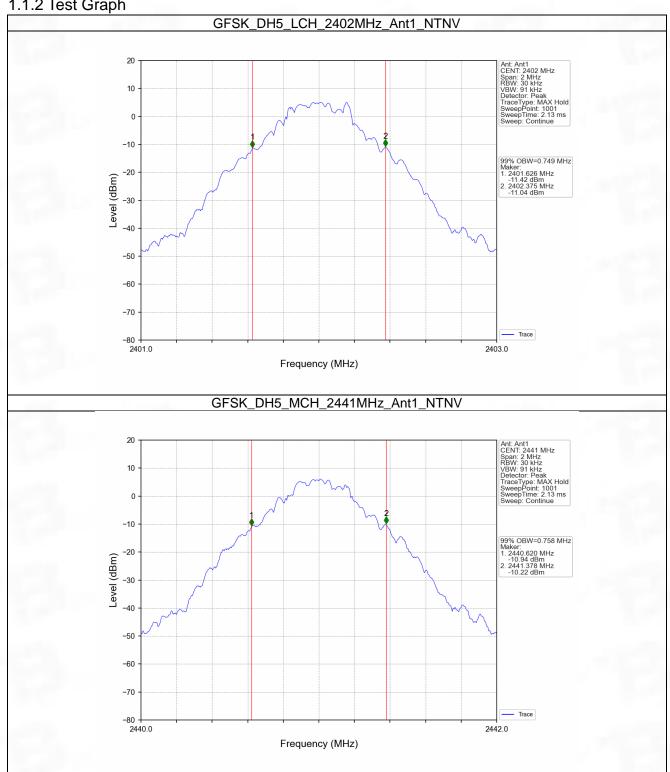
1. Bandwidth

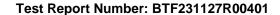
1.1 OBW

Mode	TX	Frequency	Packet	ANT	99% Occupied E	Verdict			
	Type	(MHz)	Type	ANI	Result	Limit	VEIUICI		
	SISO	2402	DH5	1	0.749	/	Pass		
GFSK		2441	DH5	1	0.758	/	Pass		
		2480	DH5	1	0.757	/	Pass		
	SISO	2402	2DH5	1	1.146	/	Pass		
Pi/4DQPSK		2441	2DH5	1	1.143	/	Pass		
		2480	2DH5	1	1.150	/	Pass		
8DPSK		2402	3DH5	1	1.157	/	Pass		
	SISO	2441	3DH5	1	1.158	/	Pass		
		2480	3DH5	1	1.153	/	Pass		

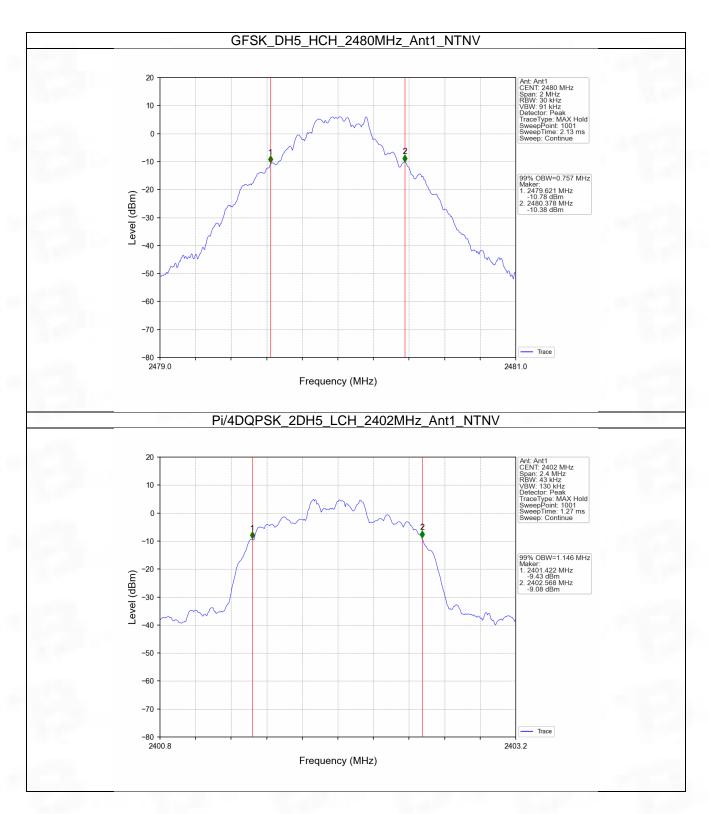


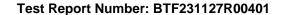




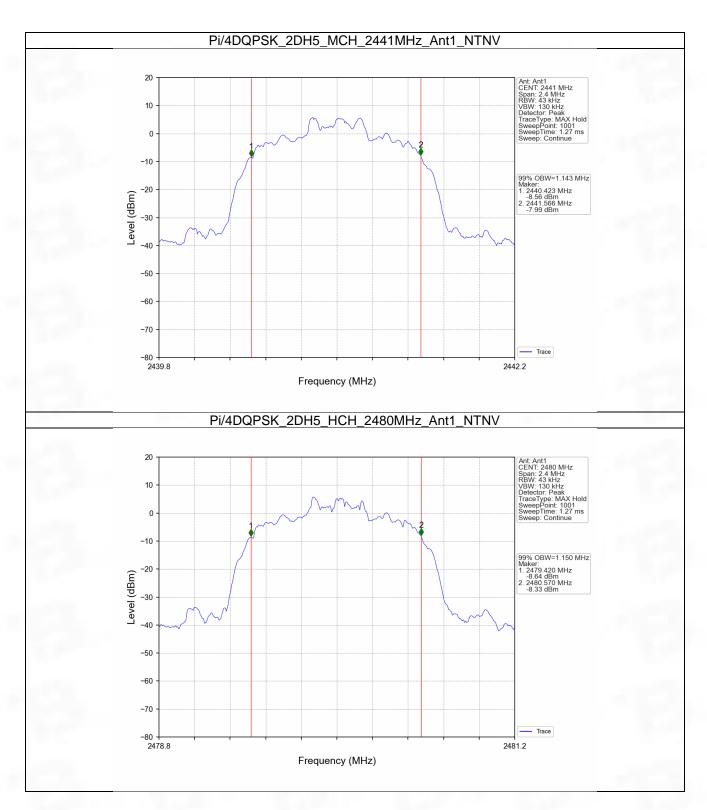


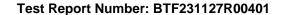




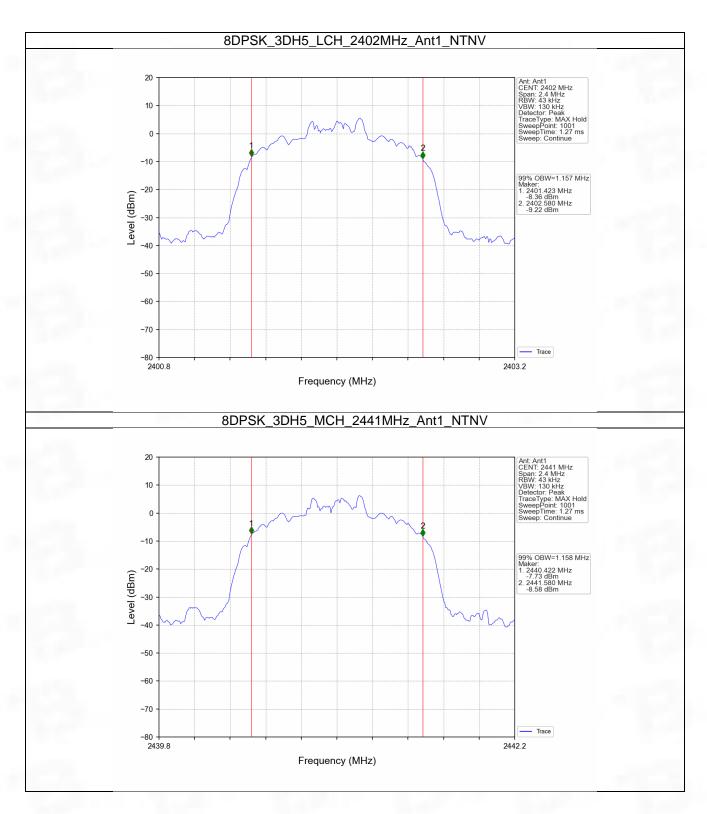


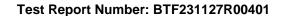




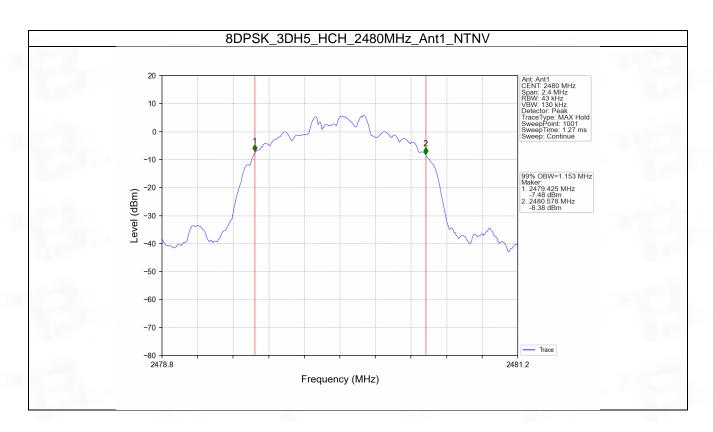


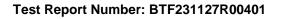








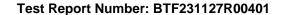




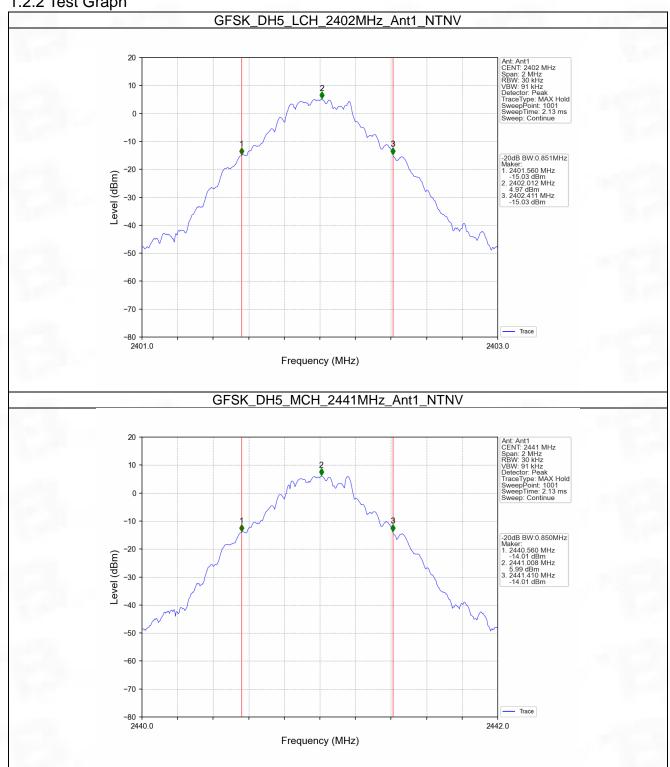


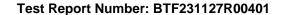
1.2 20dB BW

Mode	TX	Frequency	Packet	ANT	20dB Bandwidth (MHz)		Verdict	
	Type	(MHz)	Type	AINT	Result	Limit	verdict	
		2402	DH5	1	0.851	/	Pass	
GFSK	SISO	2441	DH5	1	0.850	/	Pass	
		2480	DH5	1	0.849	/	Pass	
	SISO	2402	2DH5	1	1.285	/	Pass	
Pi/4DQPSK		2441	2DH5	1	1.285	/	Pass	
		2480	2DH5	1	1.279	/	Pass	
8DPSK	SISO	2402	3DH5	1	1.295	/	Pass	
		2441	3DH5	1	1.814	/	Pass	
		2480	3DH5	1	1.295	/	Pass	

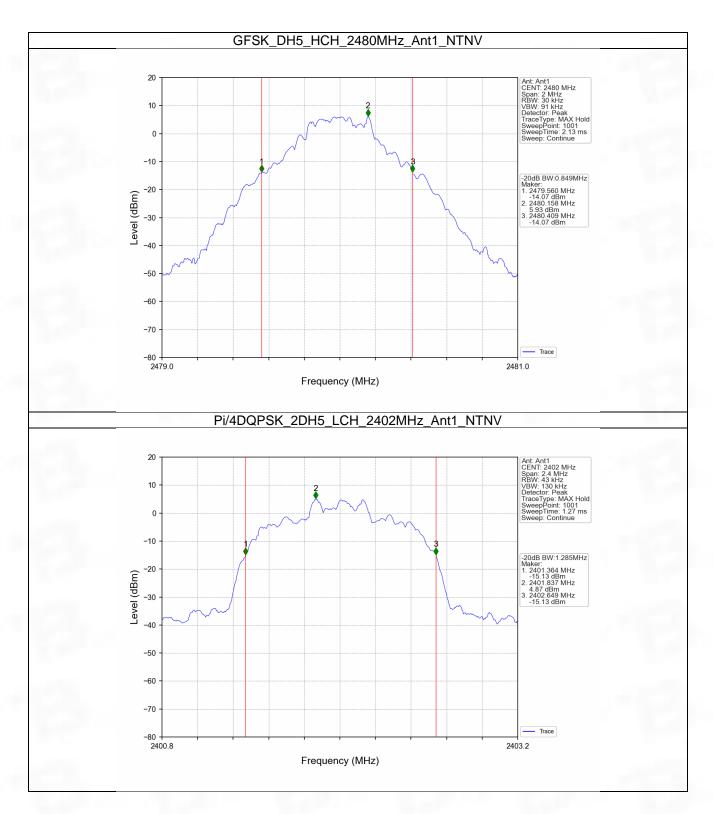


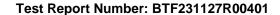




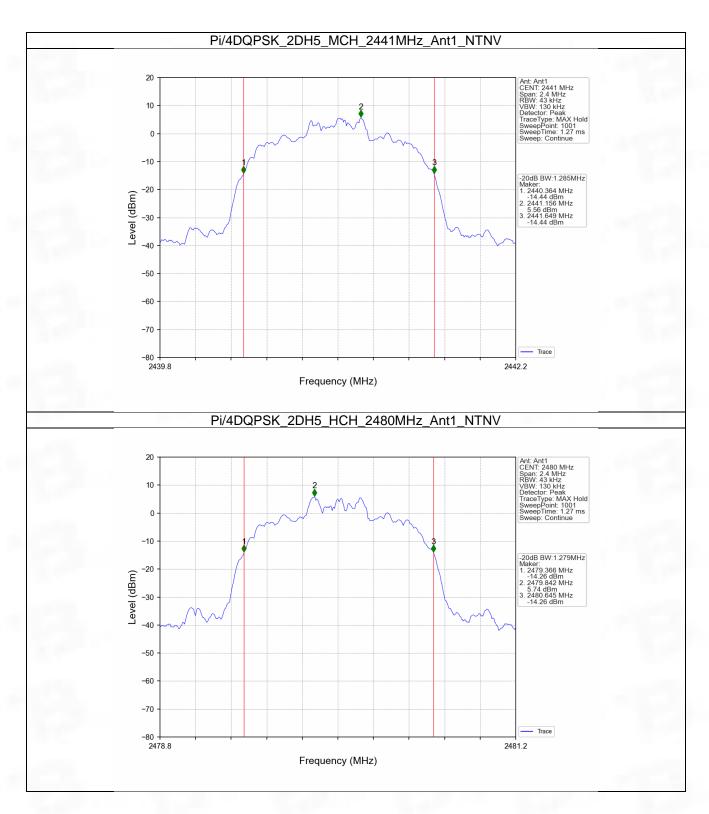


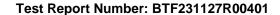




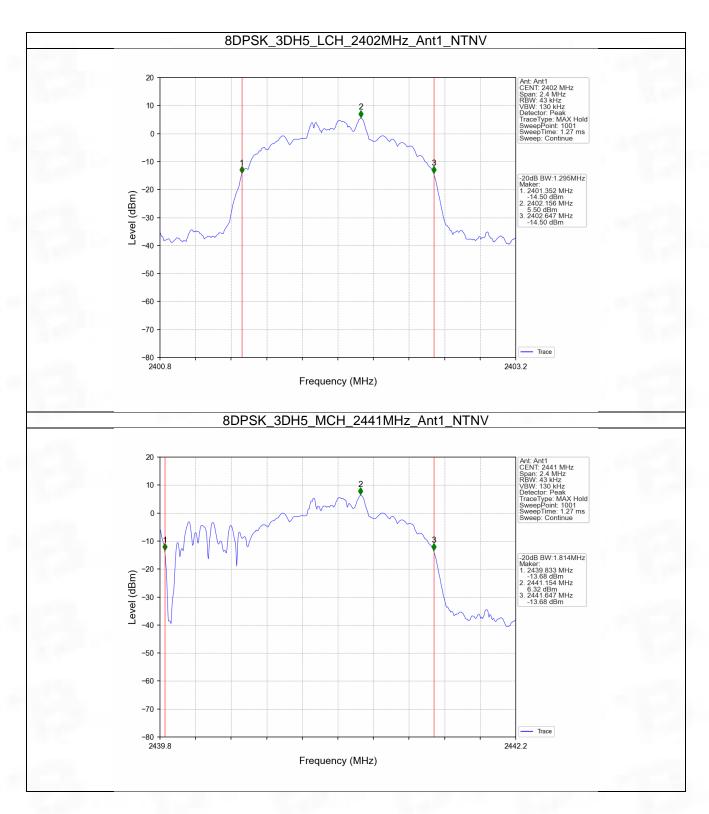


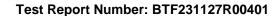




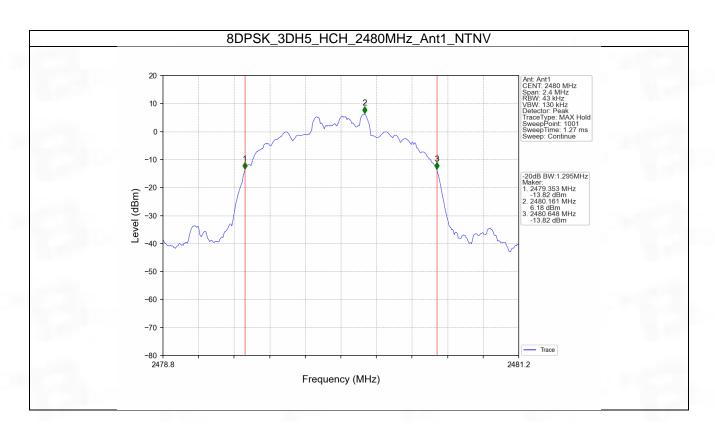


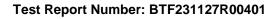










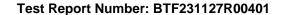




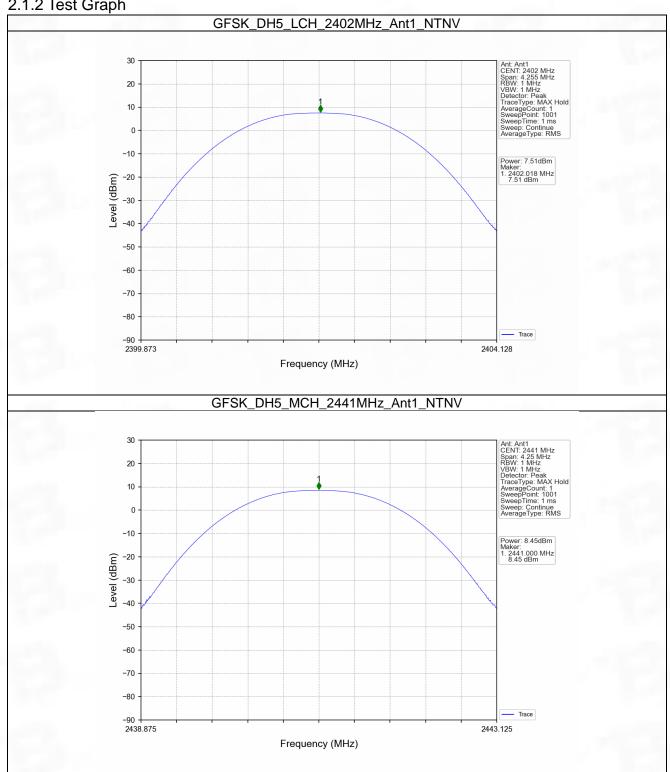
2. Maximum Conducted Output Power

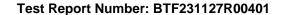
2.1 Power

Mode	TX Type	Frequency	Packet	Maximum Peak Cond (dE	Verdict			
		(MHz)	Type	ANT1	Limit			
		2402	DH5	7.51	<=30	Pass		
GFSK	SISO	2441	DH5	8.45	<=30	Pass		
		2480	DH5	8.52	<=30	Pass		
Pi/4DQPSK	SISO	2402	2DH5	7.06	<=20.97	Pass		
		2441	2DH5	7.94	<=20.97	Pass		
		2480	2DH5	7.94	<=20.97	Pass		
	SISO	2402	3DH5	7.10	<=20.97	Pass		
8DPSK		2441	3DH5	7.97	<=20.97	Pass		
		2480	3DH5	7.98	<=20.97	Pass		
Note1: Antenna Gain: Ant1: 1.19dBi;								

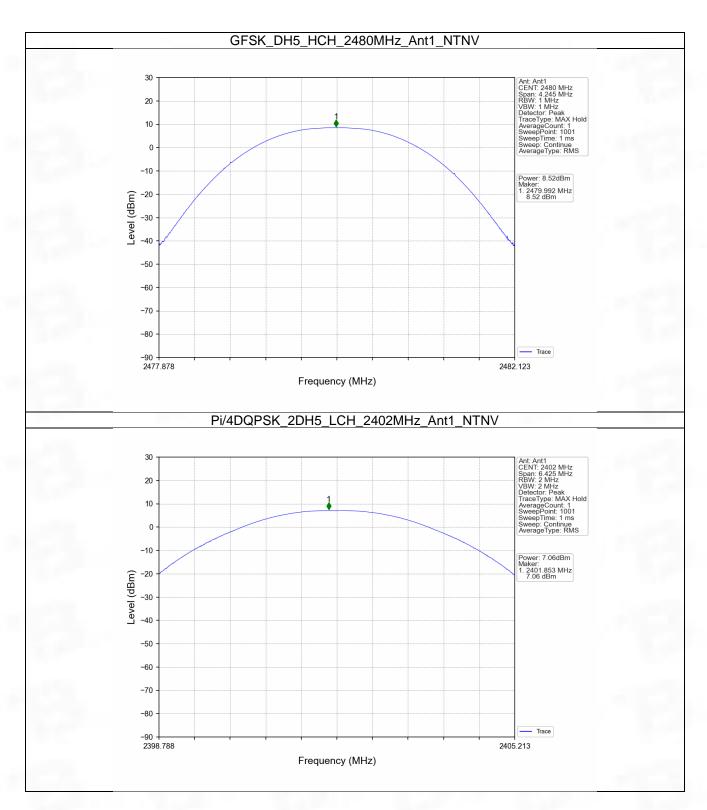


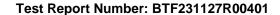




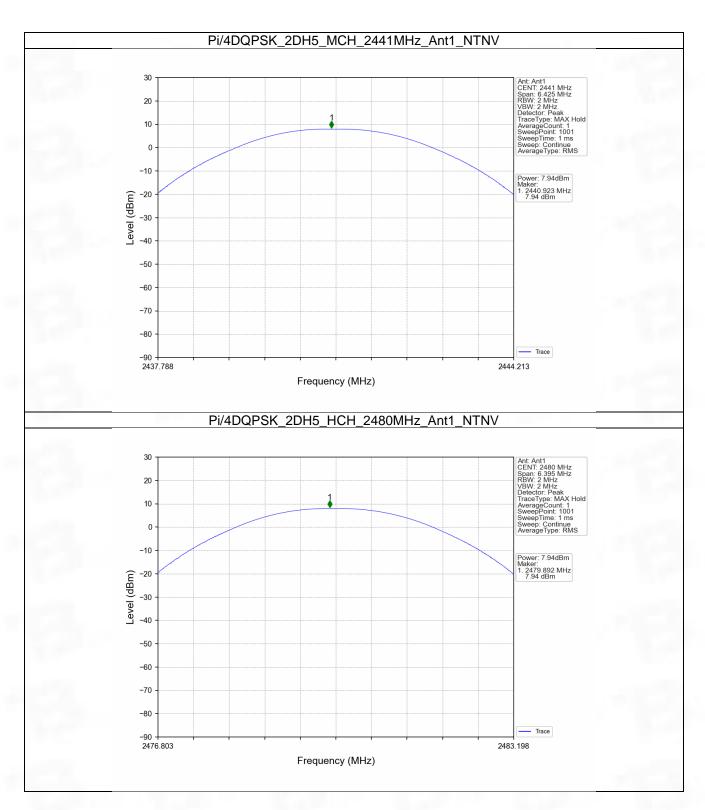


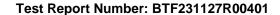




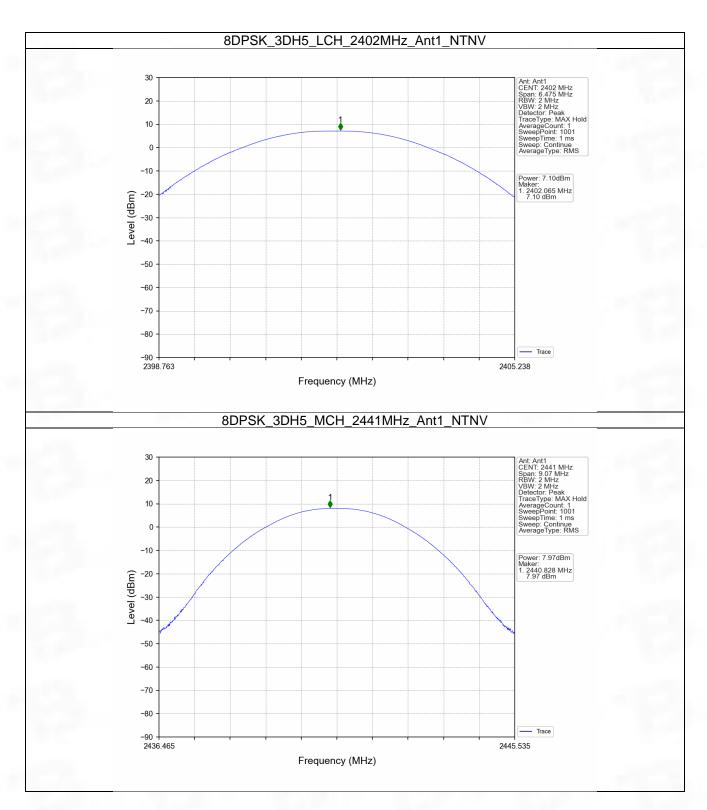


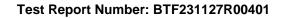




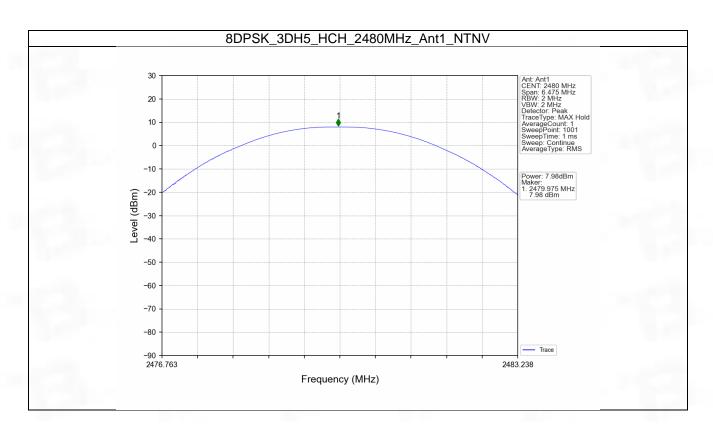


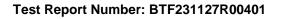










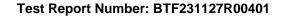




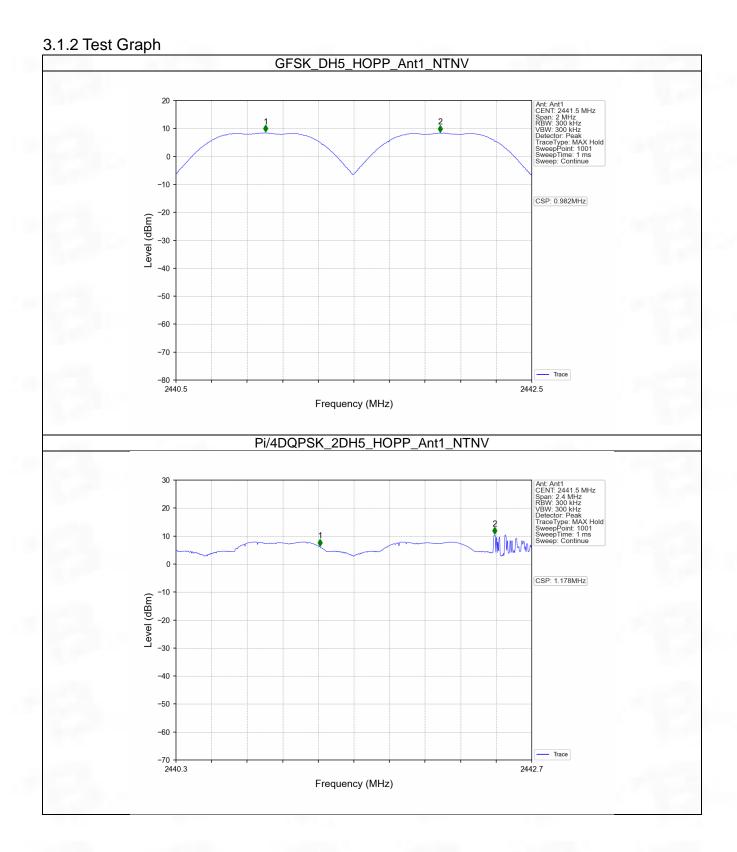
3. Carrier Frequency Separation

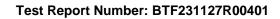
3.1 Ant1

Ant1									
Mode	TX	Frequency	Packet	Channel Separation	20dB Bandwidth	Limit	Verdict		
	Type	(MHz)	Type	(MHz)	(MHz)	(MHz)	verdict		
GFSK	SISO	HOPP	DH5	0.982	0.851	>=0.851	Pass		
Pi/4DQPSK	SISO	HOPP	2DH5	1.178	1.285	>=0.857	Pass		
8DPSK	SISO	HOPP	3DH5	1.222	1.814	>=1.209	Pass		

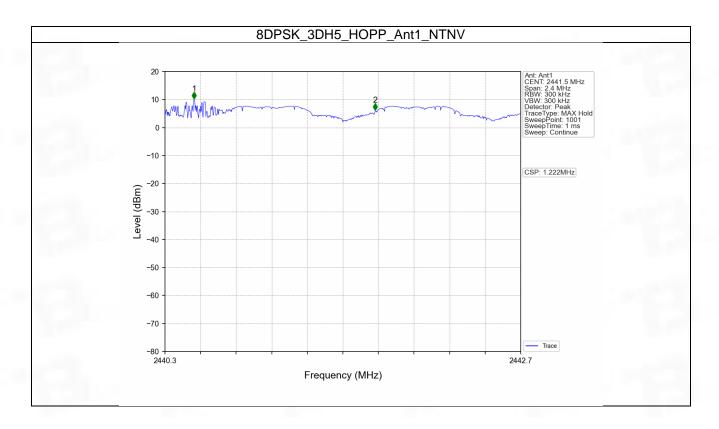


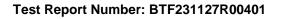










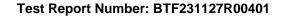




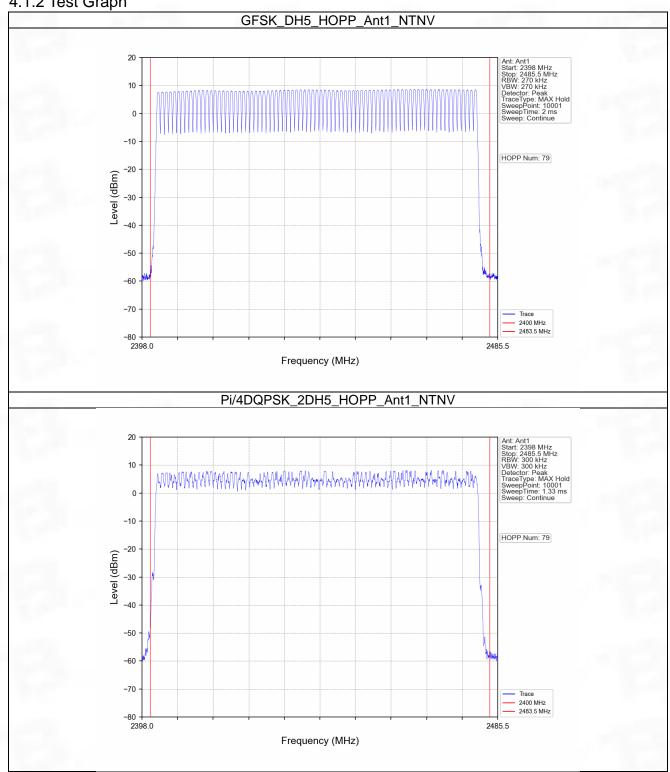
4. Number of Hopping Frequencies

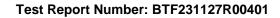
4.1 HoppNum

Mode	TX	Frequency	Packet Num of Hopping Frequencies			Verdict	
Mode	Type	(MHz)	Type	ANT1	Limit	verdict	
GFSK	SISO	HOPP	DH5	79	>=15	Pass	
Pi/4DQPSK	SISO	HOPP	2DH5	79	>=15	Pass	
8DPSK	SISO	HOPP	3DH5	79	>=15	Pass	

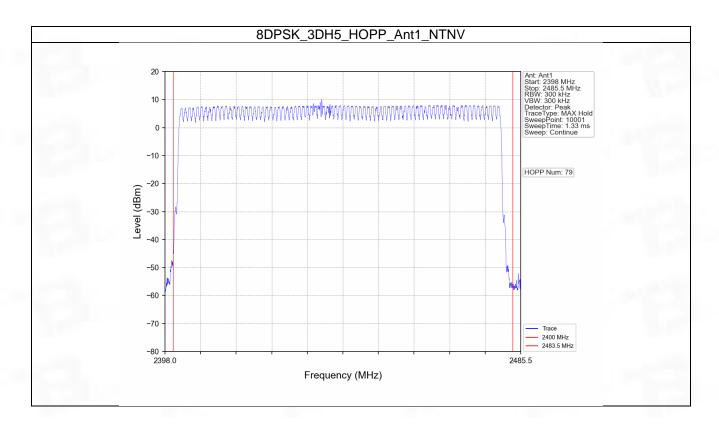


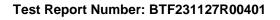










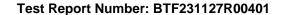




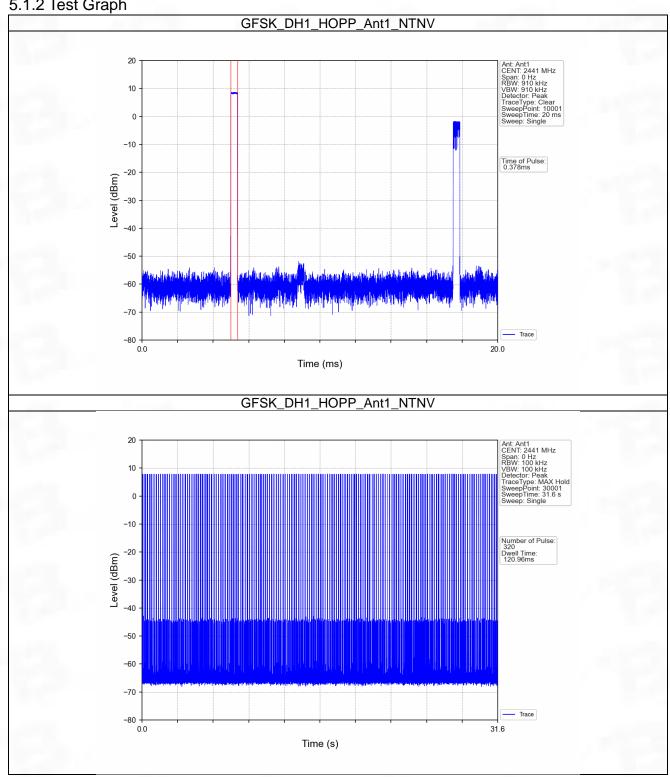
5. Time of Occupancy (Dwell Time)

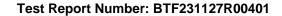
5.1 Ant1

Ant1										
Mode	TX Type	Frequency (MHz)	Packet Type	Duration of Single Pulse (ms)	Observation Period (s)	()hearyation	Dwell Time (ms)	Limit (ms)	Verdict	
GFSK SIS		SISO HOPP	DH1	0.378	31.600	320	120.960	<=400	Pass	
	SISO		DH3	1.638	31.600	157	257.166	<=400	Pass	
			DH5	2.900	31.600	104	301.600	<=400	Pass	
		HOPP	2DH1	0.386	31.600	320	123.520	<=400	Pass	
Pi/4DQPSK	SISO		2DH3	1.654	31.600	160	264.640	<=400	Pass	
			2DH5	2.900	31.600	92	266.800	<=400	Pass	
8DPSK		SO HOPP	3DH1	0.386	31.600	320	123.520	<=400	Pass	
	SISO		3DH3	1.654	31.600	162	267.948	<=400	Pass	
			3DH5	2.904	31.600	114	331.056	<=400	Pass	

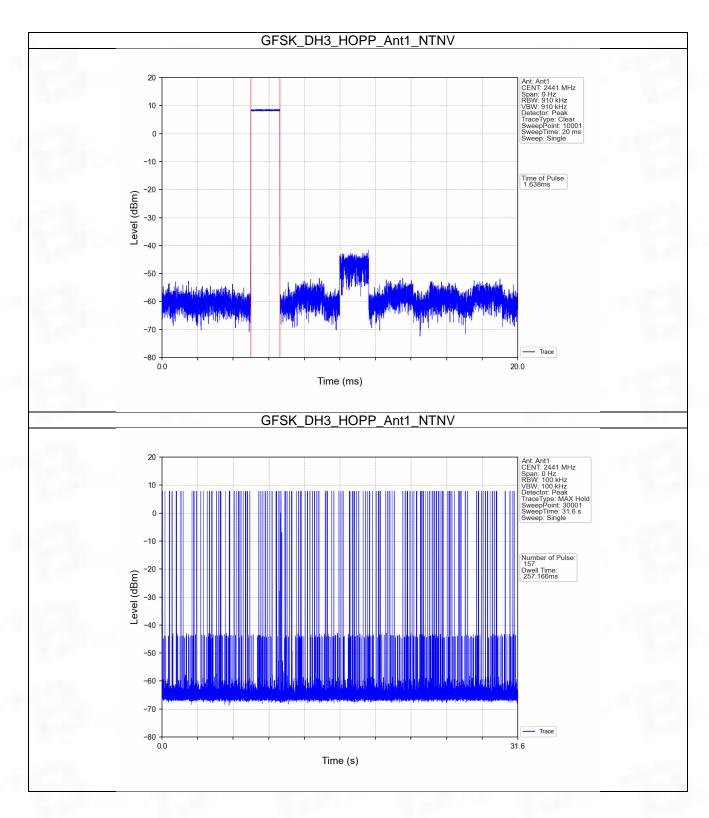


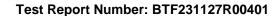




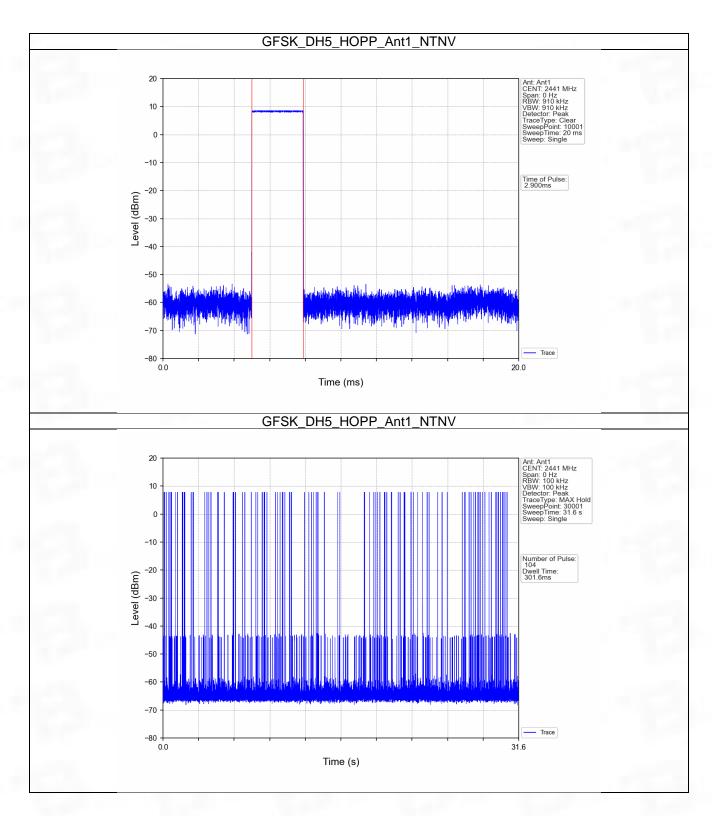




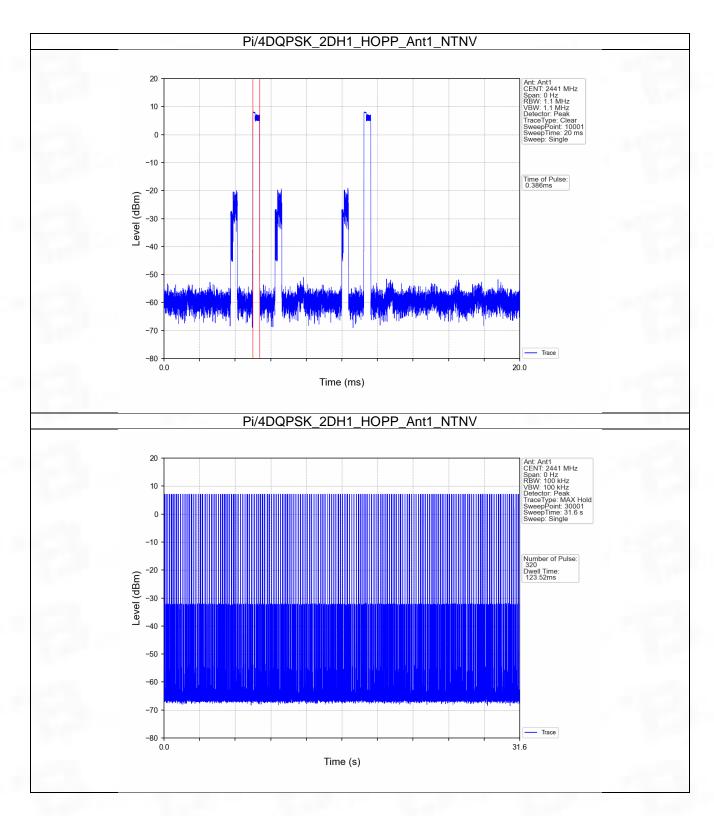


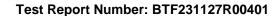




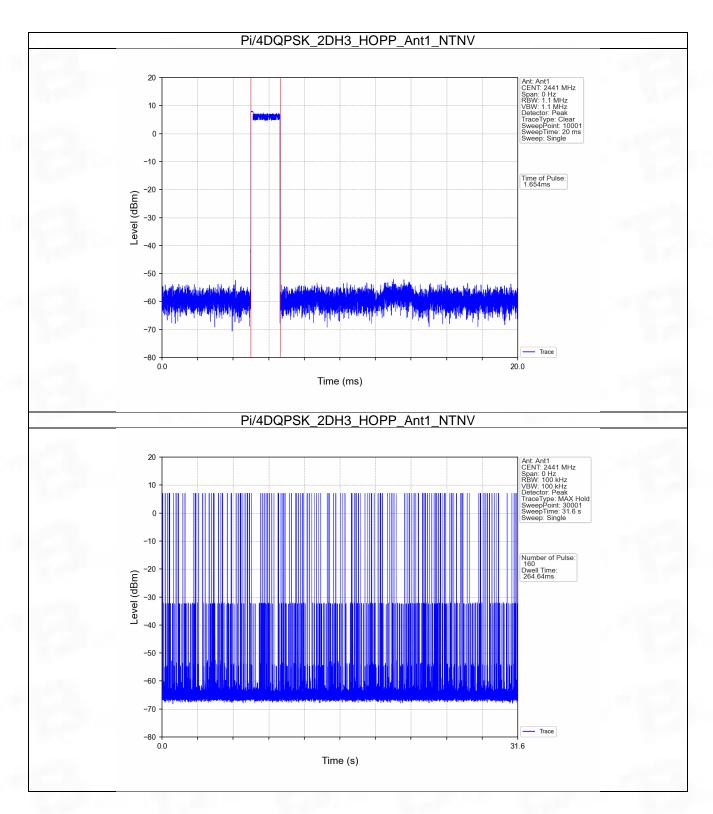


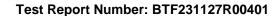




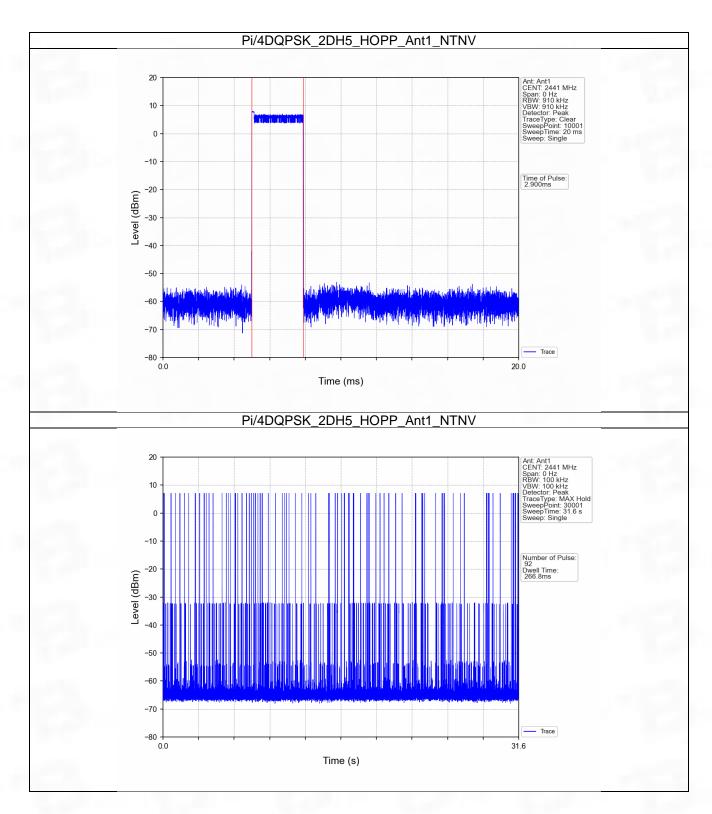


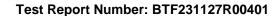




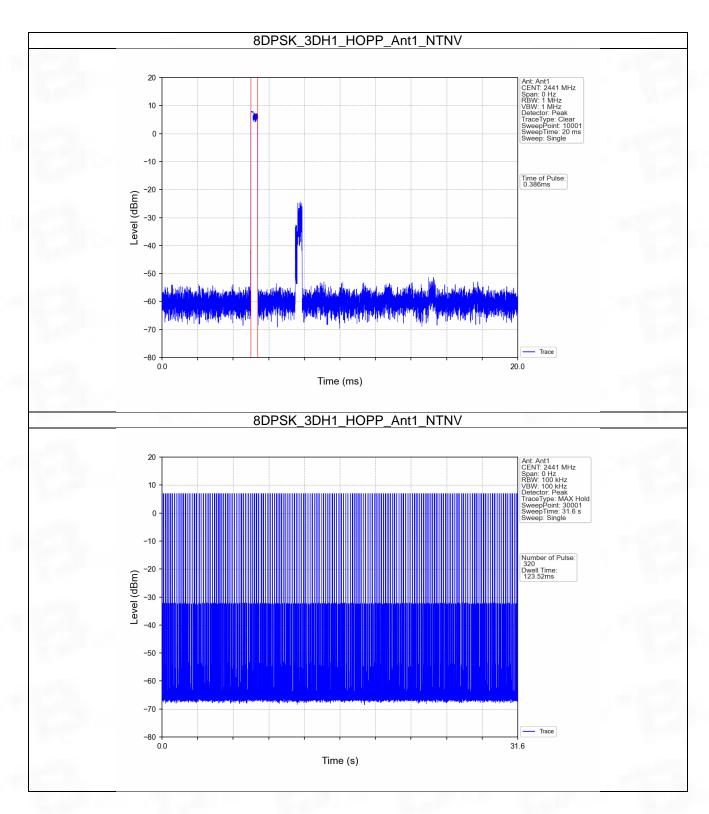


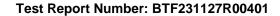




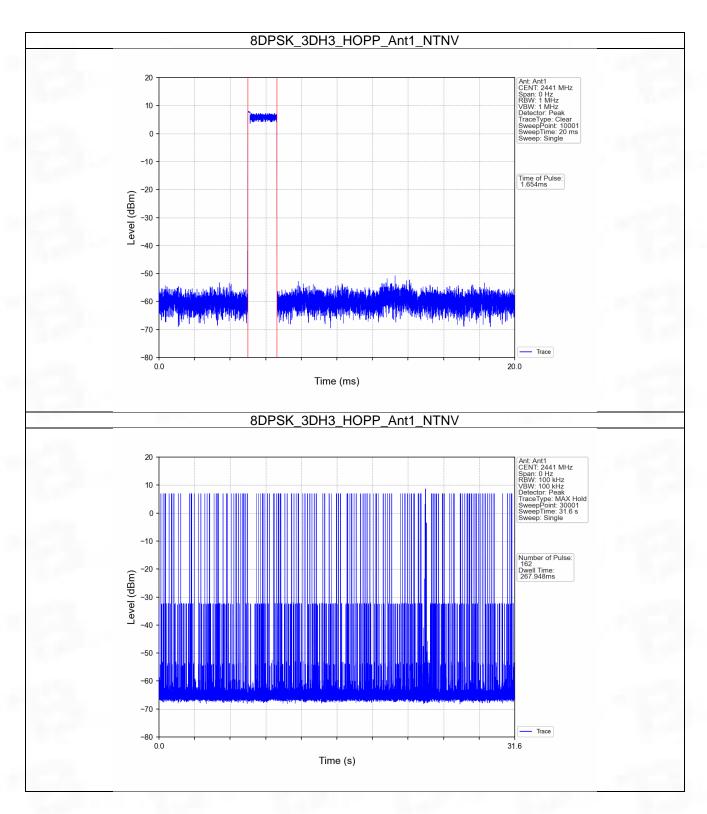


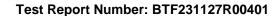




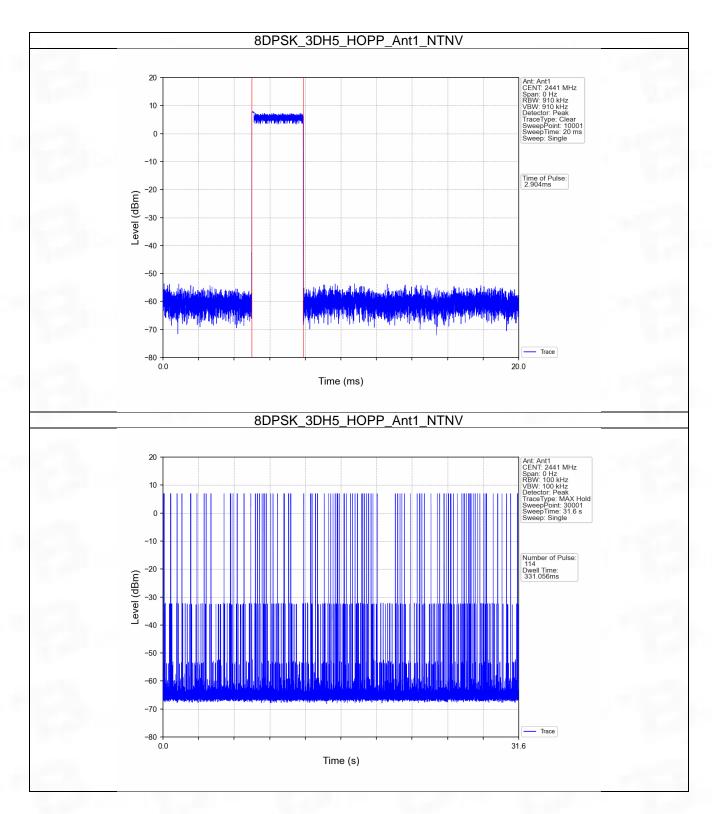


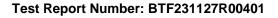














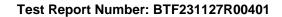
6. Unwanted Emissions In Non-restricted Frequency Bands

6.1 Ref

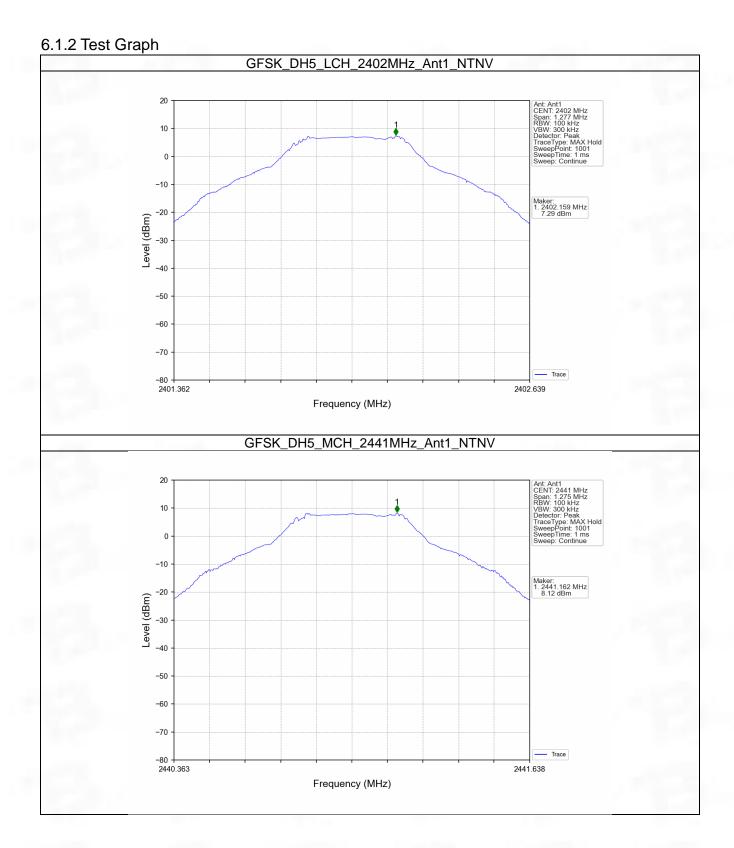
6.1.1 Test Result

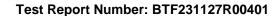
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)	
GFSK		2402	DH5	1	7.29	
	SISO	2441	DH5	1	8.12	
		2480	DH5	1	8.21	
Pi/4DQPSK	SISO	2402	2DH5	1	6.90	
		2441	2DH5	1	7.86	
		2480	2DH5	1	7.85	
8DPSK	SISO	2402	3DH5	1	7.00	
		2441	3DH5	1	7.82	
		2480	3DH5	1	7.71	

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

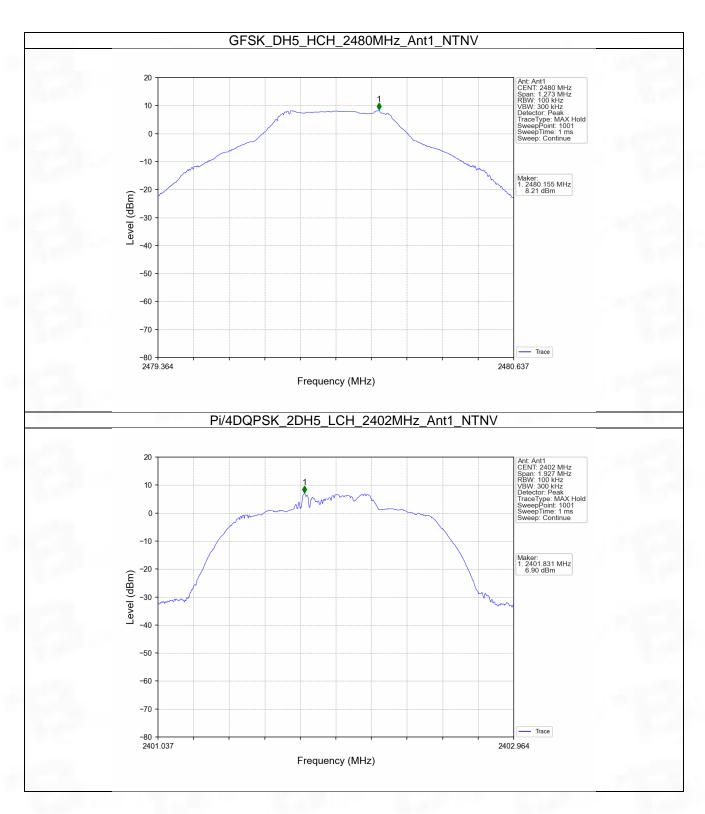


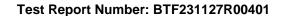




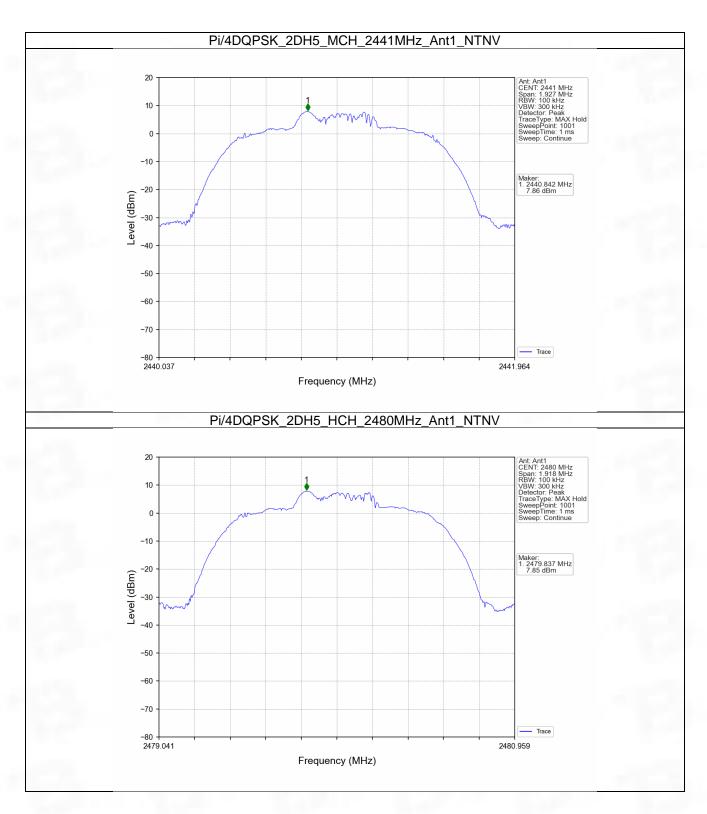


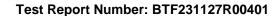




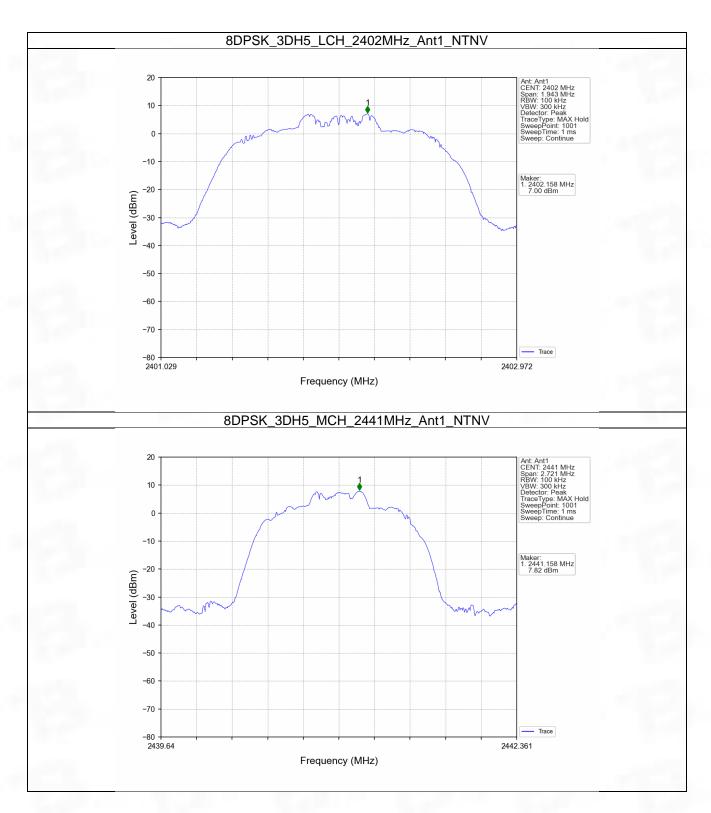


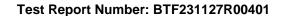




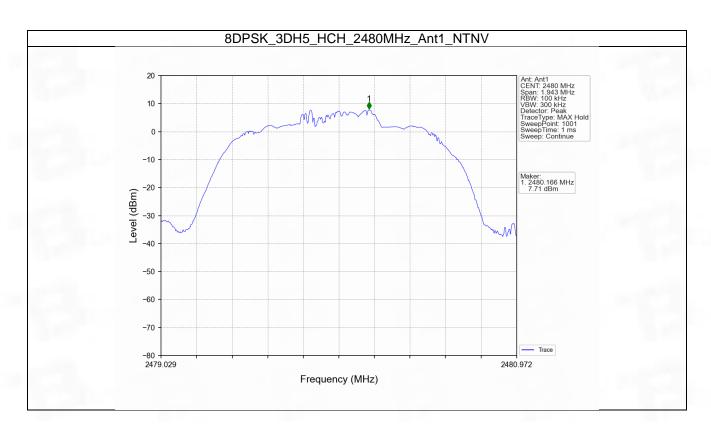


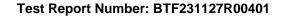












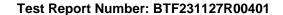


6.2 CSE

6.2.1 Test Result

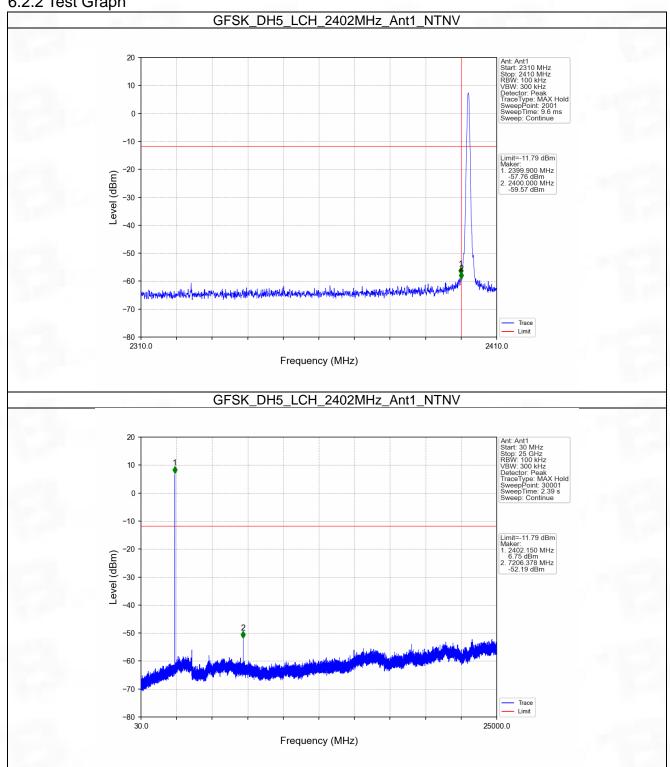
Mode	_TX	Frequency	Packet ANT	Level of Reference	Limit	Verdict	
	Туре	(MHz)	Type	,	(dBm)	(dBm)	
GFSK	SISO	2402	DH5	1	8.21	-11.79	Pass
		2441	DH5	1	8.21	-11.79	Pass
		2480	DH5	1	8.21	-11.79	Pass
		НОРР	DH5	1	8.21	-11.79	Pass
					8.21	-11.79	Pass
Pi/4DQPSK		2402	2DH5	1	7.86	-12.14	Pass
	SISO	2441	2DH5	1	7.86	-12.14	Pass
		2480	2DH5	1	7.86	-12.14	Pass
		HOPP	2DH5	1	7.86	-12.14	Pass
					7.86	-12.14	Pass
8DPSK	SISO	2402	3DH5	1	7.82	-12.18	Pass
		2441	3DH5	1	7.82	-12.18	Pass
		2480	3DH5	1	7.82	-12.18	Pass
		НОРР	3DH5	1	7.82	-12.18	Pass
					7.82	-12.18	Pass

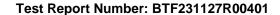
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.



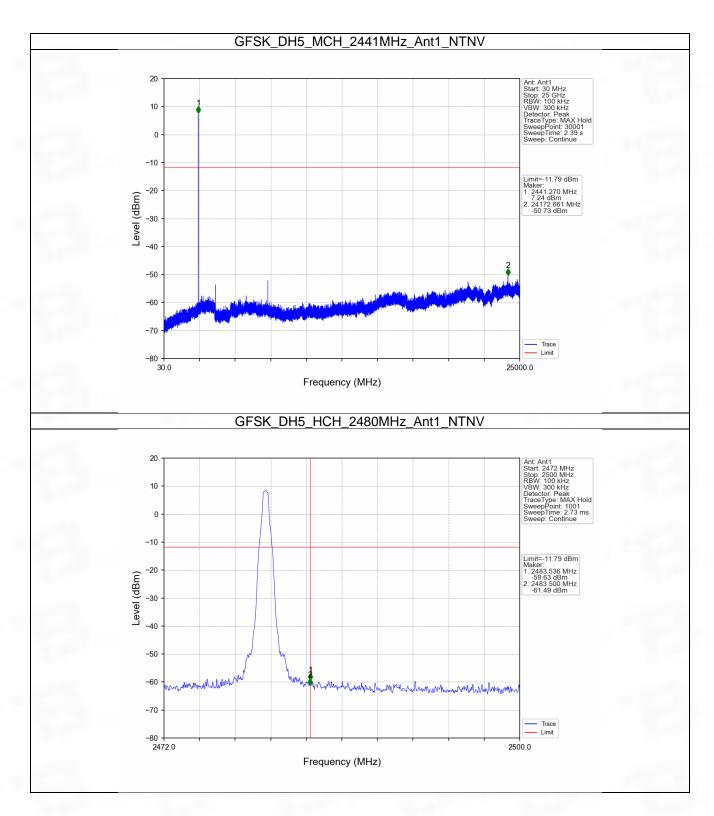


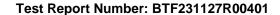
6.2.2 Test Graph



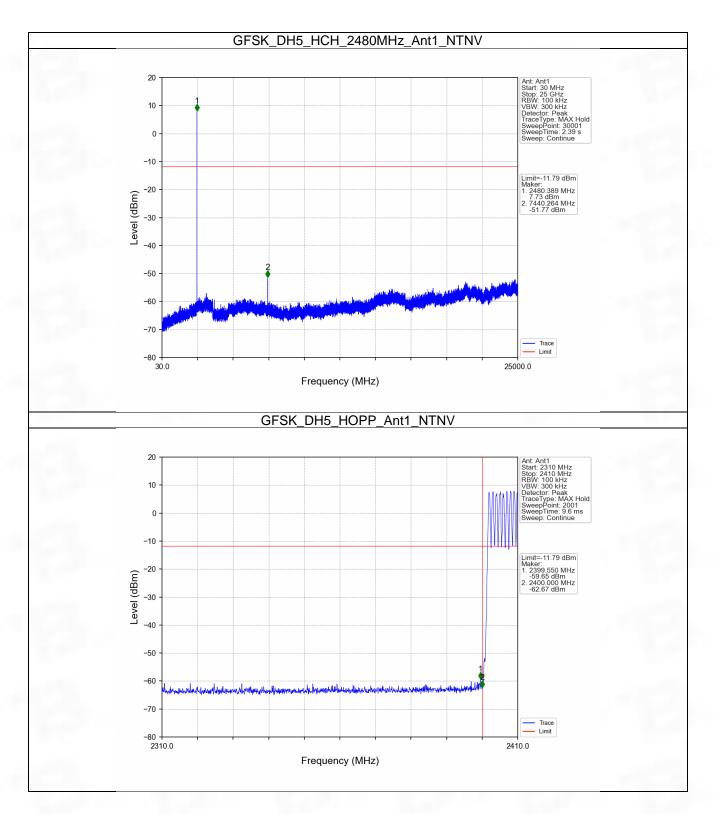


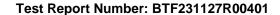




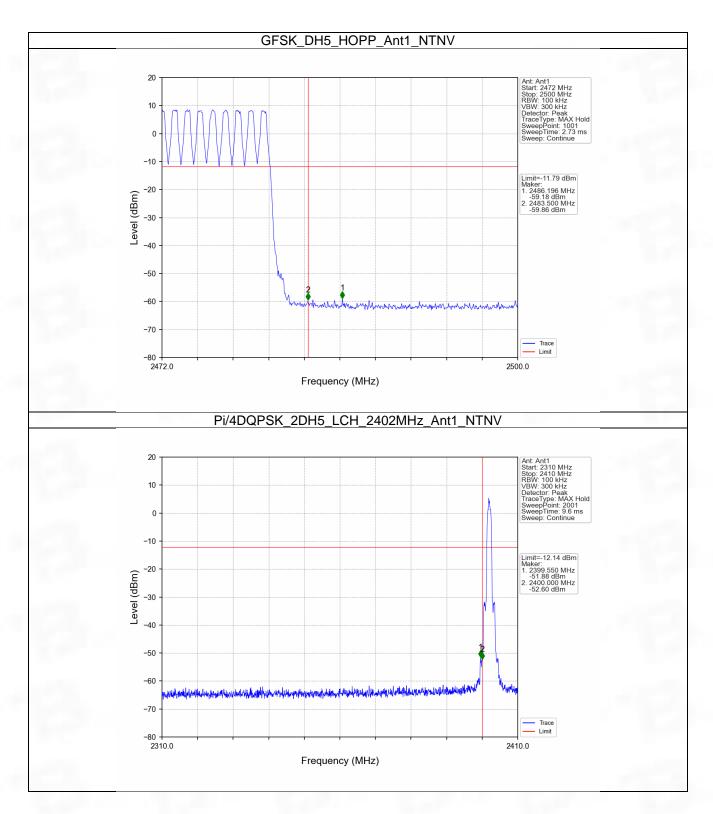


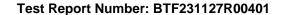




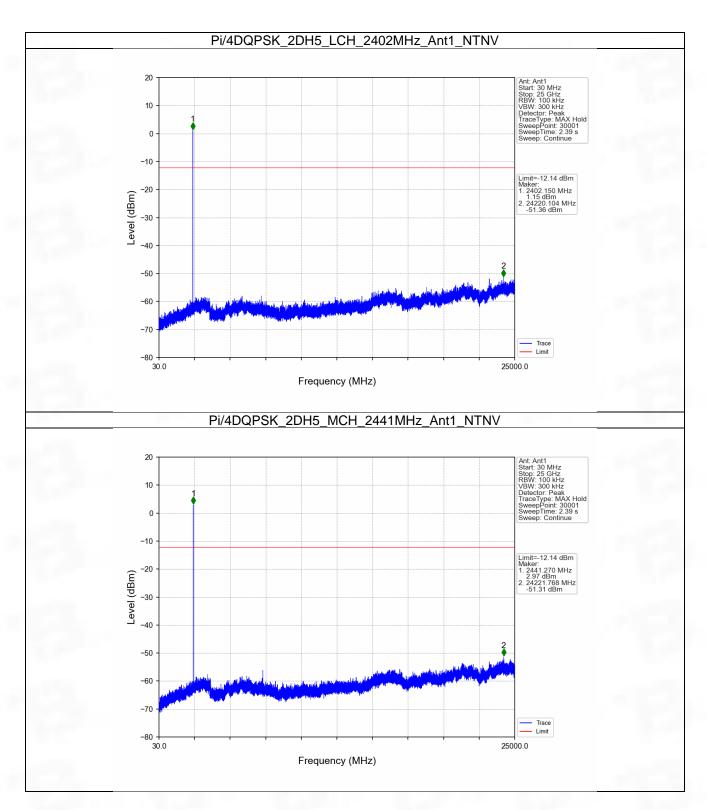


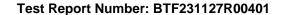




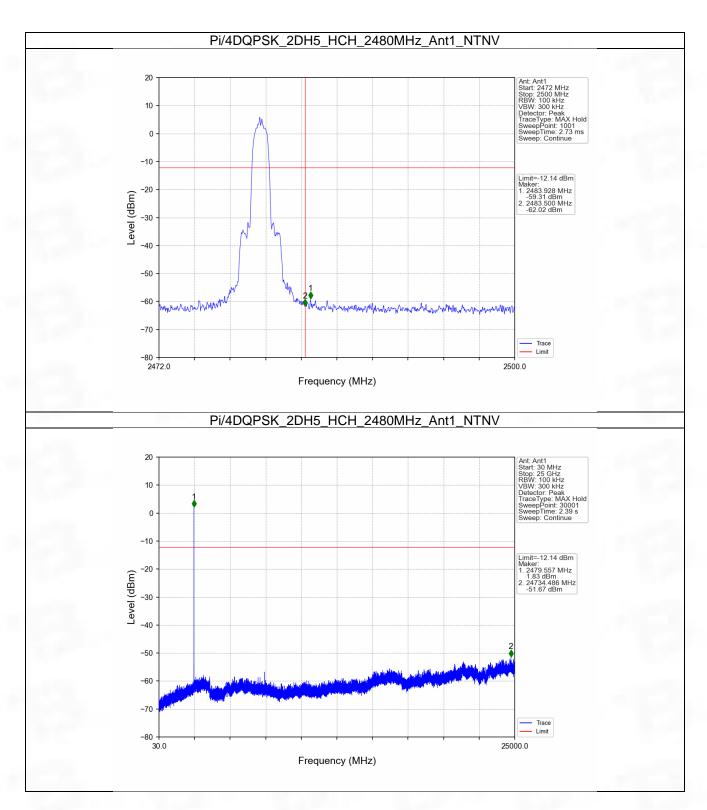


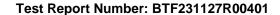




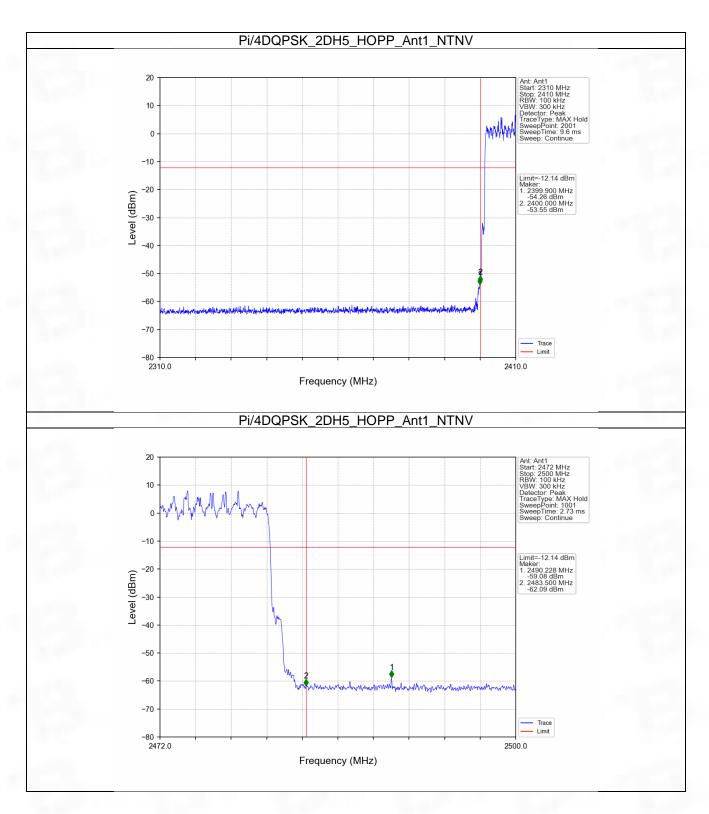


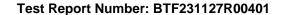




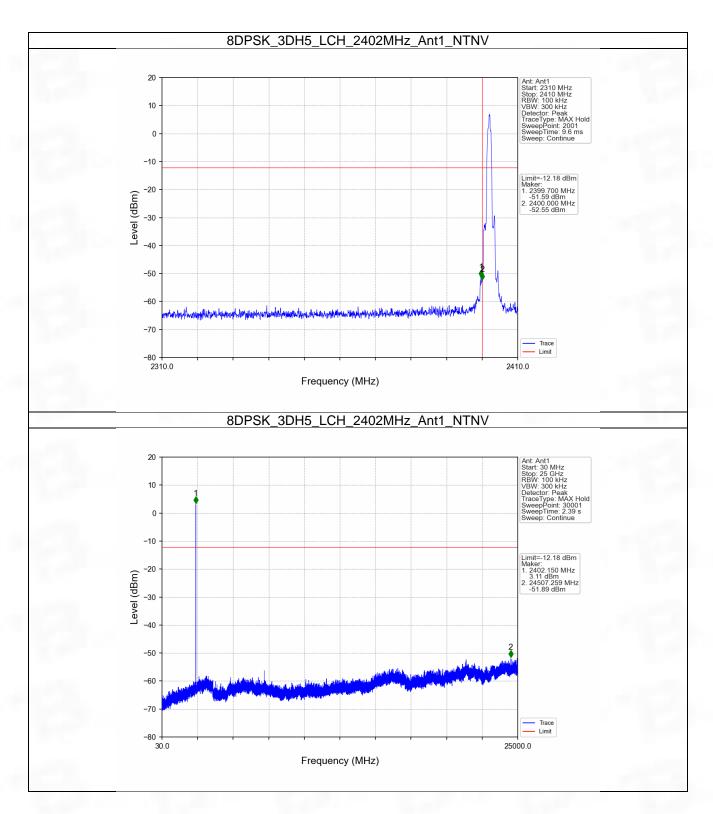


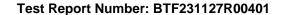




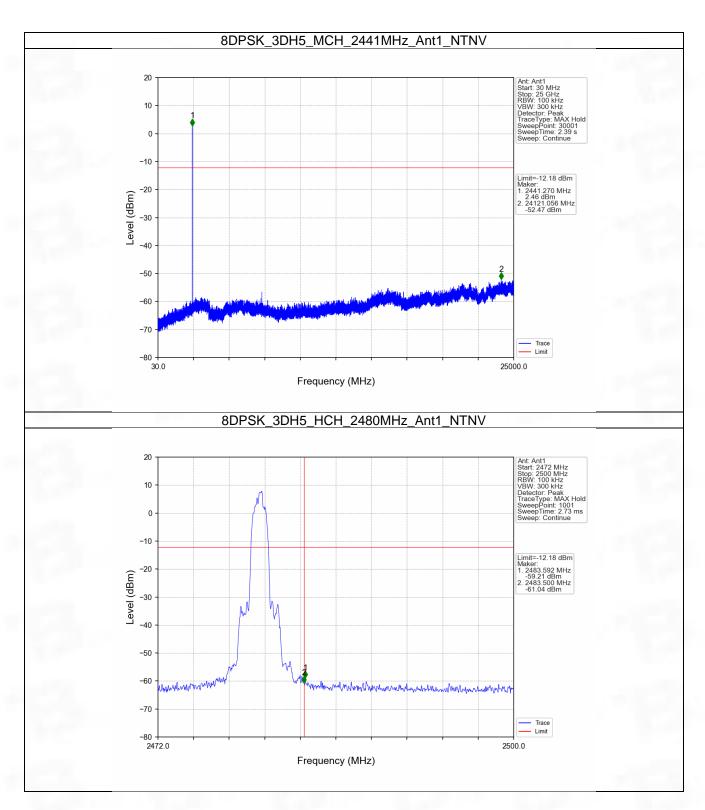


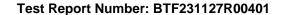




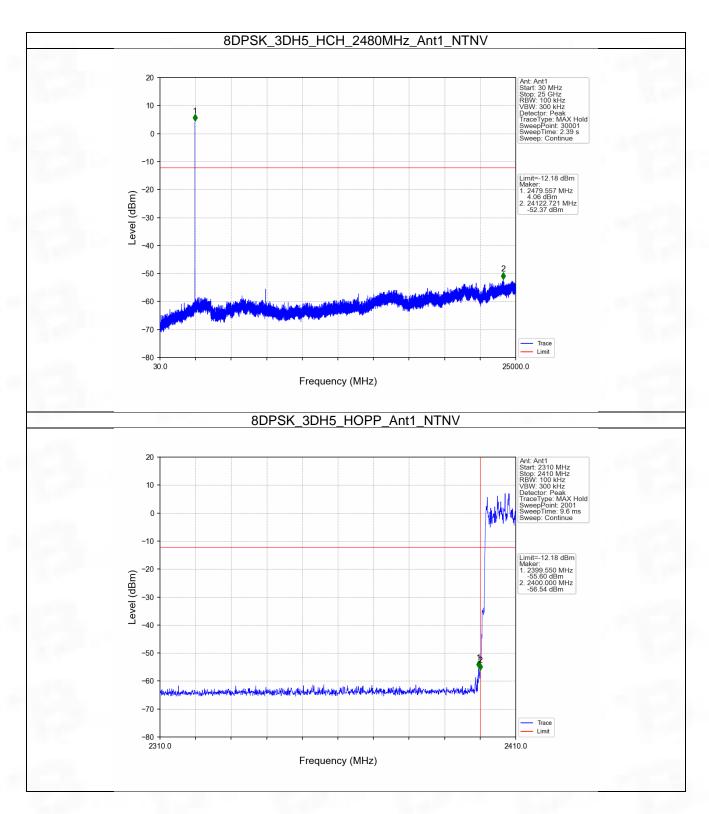


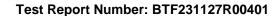




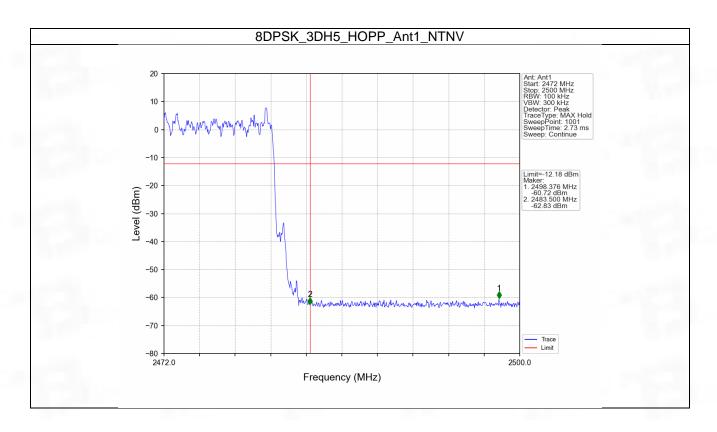


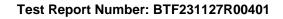












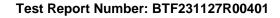


7. Form731

7.1 Form731

7.1.1 Test Result

Lower Freq (MHz)	High Freq (MHz)	MAX Power (W)	MAX Power (dBm)
2402	2480	0.0071	8.52







BTF Testing Lab (Shenzhen) Co., Ltd.

F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

www.btf-lab.com

-- END OF REPORT --