

RF Test Report

For

Applicant Name:

RDI Technology (Shenzhen) Co., Ltd

Address:

EUT Name: Brand Name: Model Number:

Building 1#, Yongyue Road 7#, Xingtang Industrial Park, East Baishixia, Fuyong, Baoan, Shenzhen, PRC Wireless 5" LCD Monitor RDI M514

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: BTF231008R00301 **Test Standards:** 47 CFR Part 15.247

Test Conclusion: FCC ID: Test Date: Date of Issue:

Pass SJ8M514 2023-10-09 to 2023-11-09 2023-11-10

Prepared By:

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2023-11-10

2023-11-10

Aria Zhang / Project Engineer

Ryan.CJ / EMC Manager

Date:

Approved By:

Date:

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Revision History		
Issue Date	Revisions Content	
2023-11-10	Original	
	Issue Date	Issue Date Revisions Content

Note: Once the revision has been made, then previous versions reports are invalid.



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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

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
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518915
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: RDI Technology (Shenzhen) Co., Ltd	
Address:	Building 1#, Yongyue Road 7#, Xingtang Industrial Park, East Baishixia, Fuyong, Baoan, Shenzhen, PRC
0.0 Manufactures Information	

2.2 Manufacturer Information

Company Name:	RDI Technology (Shenzhen) Co., Ltd
Address:	Building 1#, Yongyue Road 7#, Xingtang Industrial Park, East Baishixia, Fuyong, Baoan, Shenzhen, PRC

2.3 Factory Information

Company Name:	RDI Technology (Shenzhen) Co., Ltd
Address:	Building 1#, Yongyue Road 7#, Xingtang Industrial Park, East Baishixia, Fuyong, Baoan, Shenzhen, PRC

2.4 General Description of Equipment under Test (EUT)

EUT Name:	Wireless 5" LCD Monitor
Test Model Number:	M514

2.5 Technical Information

Power Supply:	DC 3.7V from battery
Power Adaptor:	MODEL: CS7C050100FGF INPUT:100-240V~50/60Hz 0.2A OUTPUT 1.0A 5.0W
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz; 802.11n(HT40): 2422MHz to 2452MHz
Number of Channels:	802.11b/g/n(HT20): 11 Channels; 802.11n(HT40): 7 Channels
Modulation Type:	802.11b: DSSS(CCK, DQPSK, DBPSK); 802.11g: OFDM(BPSK, QPSK, 16QAM, 64QAM); 802.11n(HT20 and HT40): OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna Type:	External Antenna
Antenna Gain#:	2dBi
NI (

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
Power Spectral Density	±0.69dB
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.

Summary of Test Result 3.3

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 15.247(a)(2)	Pass
Maximum Conducted Output Power	47 CFR Part 15.247	47 CFR 15.247(b)(3)	Pass
Power Spectral Density	47 CFR Part 15.247	47 CFR 15.247(e)	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

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4 Test Configuration

4.1 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	2022-11-24	2023-11-23				
Coaxial Switcher	SCHWARZBECK	CX210	CX210	2022-11-24	2023-11-23				
V-LISN	SCHWARZBECK	NSLK 8127	01073	2022-11-24	2023-11-23				
LISN	AFJ	LS16/110VAC	16010020076	2023-02-23	2024-02-22				
EMI Receiver	ROHDE&SCHWA RZ	ESCI3	101422	2022-11-24	2023-11-23				

Occupied Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in non-restricted frequency bands											
Equipment	Equipment Manufacturer Model No Inventory No Cal Date Cal Due Date										
RFTest software	/	V1.00	/	/	/						
RF Control Unit	Techy	TR1029-1	/	2022-11-24	2023-11-23						
RF Sensor Unit	Techy	TR1029-2	/	2022-11-24	2023-11-23						
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2022-11-24	2023-11-23						
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2022-11-24	2023-11-23						
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022-11-24	2023-11-23						
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022-11-24	2023-11-23						



Band edge emissions (Radiated) Emissions in frequency bands (below 1GHz)								
Emissions in frequent	cy bands (above 1 Manufacturer	GHz) 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	2022-11-24	2023-11-23			
RE Cable	REBES Talent	UF1-SMASMAM-1 0m	21101566	2022-11-24	2023-11-23			
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2022-11-24	2023-11-23			
RE Cable	REBES Talent	UF1-SMASMAM-1 m	21101568	2022-11-24	2023-11-23 2023-11-23			
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2022-11-24				
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2022-11-24	2023-11-23			
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	1	/			
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2021-11-28	2023-11-27			
EMI TEST RECEIVER	ROHDE&SCHWA RZ	ESCI7	101032	2022-11-24	2023-11-23			
SIGNAL ANALYZER	ROHDE&SCHWA RZ	FSQ40	100010	2022-11-24	2023-11-23			
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	1	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+	/	1	1			
POSITIONAL CONTROLLER	SKET	PCI-GPIB	1	1	1			
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2021-11-28	2023-11-27			



4.2 Test Auxiliary Equipment

The EUT was tested as an independent device.

4.3 Test Modes

No.	Test Modes	Description
TM1	802.11b mode	Keep the EUT in 802.11b transmitting mode.
TM2	802.11g mode	Keep the EUT in 802.11g transmitting mode.
TM3	802.11n(HT20) mode	Keep the EUT in 802.11n(HT20) transmitting mode.
TM4	802.11n(HT40) mode	Keep the EUT in 802.11n(HT40) transmitting mode.



0 30 20 10 500 00

5 Evaluation Results (Evaluation)

20

9

30

0

0/ 08

09

40 30

07

80

2

40 50 60

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:	
0 10 20 30 40 50 60 70 8	70 80 90100 10 20 30 40

09 09 04

08

40 30 50 10100 a0



6 Radio Spectrum Matter Test Results (RF)

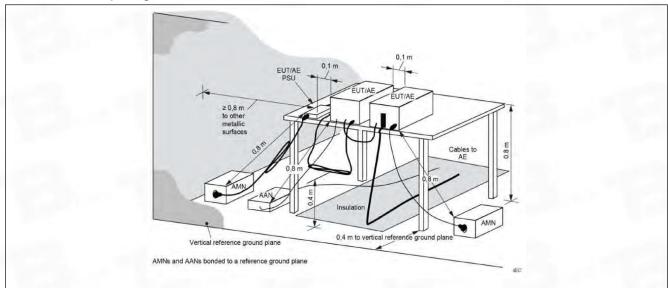
6.1 Conducted Emission at AC power line

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 μ H/50 ohms line impedance stabilization network (LISN).						
Test Method:	ANSI C63.10-2013 section 6.2 ANSI C63.10-2020 section 6.2						
	Frequency of emission (MHz)	Conducted limit (dBµV)					
		Quasi-peak	Average				
	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						
	Refer to ANSI C63.10-2020 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 °C
Humidity:	52.7 %
Atmospheric Pressure:	1010 mbar

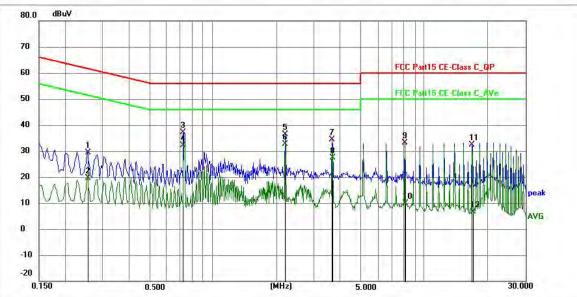
6.1.2 Test Setup Diagram:





6.1.3 Test Data:

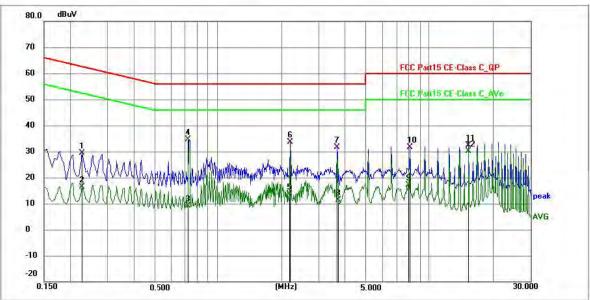
TM1 / Line: Line / Band: 2400-2483.5 MHz / BW: 20 / CH: M



No.	Frequency	Reading	Factor	Level	Limit	Margin	Detector	P/F	Remark
NO.	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	Delector	F/F	Hemark
1	0.2535	18.76	10.59	29.35	61.64	-32.29	QP	Р	
2	0.2535	9.14	10.59	19.73	51.64	-31.91	AVG	P	· · · · · · · · · · · · · · · · · · ·
3	0.7304	26.33	10.74	37.07	56.00	-18.93	QP	Р	
4	0.7304	21.30	10.74	32.04	46.00	-13.96	AVG	P	
5	2.1974	25.68	10.69	36.37	56.00	-19.63	QP	P	
6 *	2.1974	21.91	10.69	32.60	46.00	-13.40	AVG	P	
7	3.6600	23.78	10.72	34.50	56.00	-21.50	QP	P	
8	3.6644	16.67	10.72	27.39	46.00	-18.61	AVG	P	
9	8.0520	22.22	10.81	33.03	60.00	-26.97	QP	P	
10	8.0790	-0.83	10.82	9.99	50.00	-40.01	AVG	P	
11	16.8360	21.48	10.96	32.44	60.00	-27.56	QP	P	
12	16.9980	-4.30	10.96	6.66	50.00	-43.34	AVG	P	

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TM1 / Line: Neutral / Band: 2400-2483.5 MHz / BW: 20 / CH: M

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.2265	18.81	10.59	29.40	62.58	-33.18	QP	P	
2	0.2265	5.90	10.59	16.49	52.58	-36.09	AVG	P	
3	0.7215	-1.51	10.73	9.22	46.00	-36.78	AVG	P	
4 *	0.7304	23.88	10.74	34.62	46.00	-11.38	AVG	P	
5	2.1884	2.95	10.69	13.64	46.00	-32.36	AVG	P	
6	2.1974	22.87	10.69	33.56	56.00	-22.44	QP	P	
7	3.6600	20.83	10.72	31.55	56.00	-24.45	QP	P	
8	3.6960	0.76	10.72	11.48	46.00	-34.52	AVG	P	
9	7.9305	6.45	10.80	17.25	50.00	-32.75	AVG	P	
10	8.0520	20.80	10.81	31.61	60.00	-28.39	QP	P	
11	15.3734	21.61	10.84	32.45	60.00	-27.55	QP	P	
12	15.3734	19.27	10.84	30.11	50.00	-19.89	AVG	P	



Occupied Bandwidth 6.2

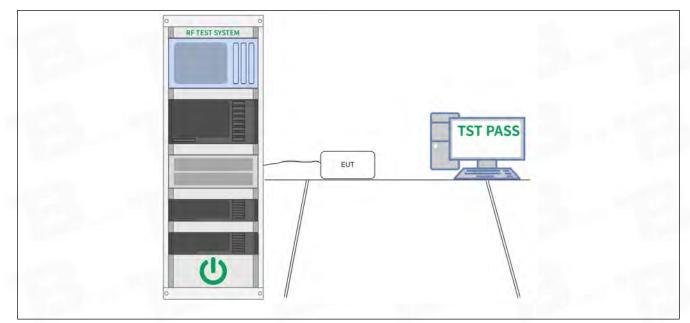
Test Requirement:	47 CFR 15.247(a)(2)
Test Method:	ANSI C63.10-2013, section 11.8 ANSI C63.10-2020, section 11.8 KDB 558074 D01 15.247 Meas Guidance v05r02
Test Limit:	Refer to 47 CFR 15.247(a)(2), Systems using digital modulation techniques may operate in the 902-928 MHz, and 2400-2483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.
Procedure:	 a) Set RBW = 100 kHz. b) Set the VBW >= [3 × RBW]. c) Detector = peak. d) Trace mode = max hold. e) Sweep = auto couple. f) Allow the trace to stabilize. g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission. 11.8.1 Option 1 The steps for the first option are as follows: a) Set RBW ≥ [3 × RBW]. c) Detector = peak. d) Trace mode = max-hold. e) Sweep = No faster than coupled (auto) time. f) Allow the trace to stabilize. g) Measure the maximum width of the emission by placing 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 "-6 dB down amplitude". If a marker is below this "-6 dB down amplitude" value, then it shall be as close as possible to this value. 11.8.2 Option 2 The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described in 11.8.1 (i.e., RBW = 100 kHz, VBW ≥ 3 × RBW, and peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that is not influenced by any intermediate power nulls in the fundamental emission that influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB.

6.2.1 E.U.T. Operation:

Operating Environment:					
Temperature:	25.2 °C				
Humidity:	47.8 %		100 million (1997)		
Atmospheric Pressure:	1010 mbar				
6.2.2 Test Setup Diagram:					

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6.2.3 Test Data:

Please Refer to Appendix for Details.



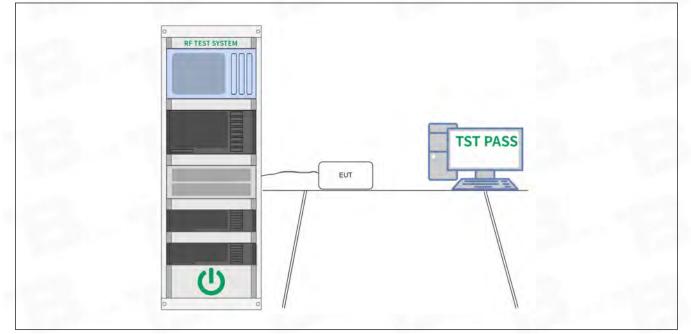
6.3 Maximum Conducted Output Power

Test Requirement:	47 CFR 15.247(b)(3)
Test Method:	ANSI C63.10-2013, section 11.9.1 ANSI C63.10-2020 section 11.9.1 KDB 558074 D01 15.247 Meas Guidance v05r02
Test Limit:	Refer to 47 CFR 15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.
Procedure:	ANSI C63.10-2013, section 11.9.1 Maximum peak conducted output power ANSI C63.10-2020, section 11.9.1 Maximum peak conducted output power

6.3.1 E.U.T. Operation:

Operating Environment:			
Temperature:	25.2 °C	100	
Humidity:	47.8 %		
Atmospheric Pressure:	1010 mbar		

6.3.2 Test Setup Diagram:



6.3.3 Test Data:

Please Refer to Appendix for Details.



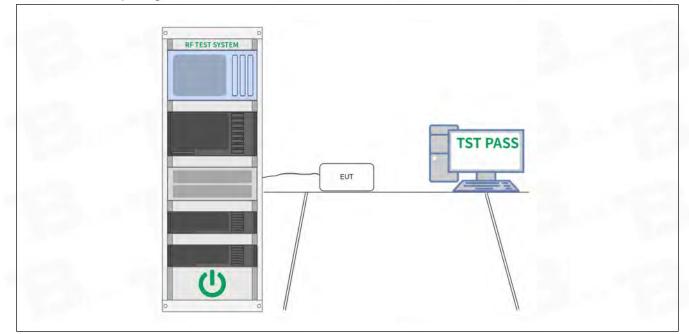
6.4 Power Spectral Density

Test Requirement:	47 CFR 15.247(e)
Test Method:	ANSI C63.10-2013, section 11.10 ANSI C63.10-2020, section 11.10 KDB 558074 D01 15.247 Meas Guidance v05r02
Test Limit:	Refer to 47 CFR 15.247(e), For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.
Procedure:	ANSI C63.10-2013, section 11.10, Maximum power spectral density level in the fundamental emissionANSI C63.10-2020, section 11.10, Maximum power spectral density level in the fundamental emission

6.4.1 E.U.T. Operation:

Operating Environment:	
Temperature:	25.2 °C
Humidity:	47.8 %
Atmospheric Pressure:	1010 mbar

6.4.2 Test Setup Diagram:



6.4.3 Test Data: Please Refer to Appendix for Details.



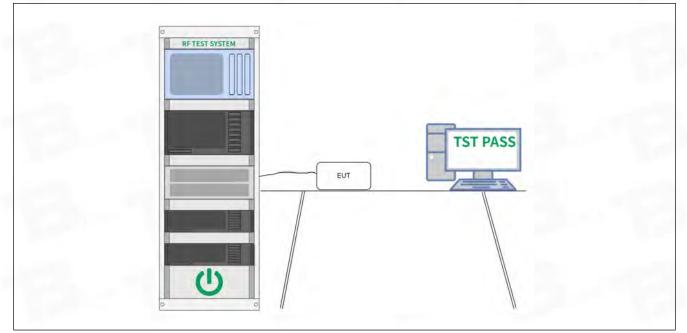
6.5 Emissions in non-restricted frequency bands

Test Requirement:	47 CFR 15.247(d), 15.209, 15.205
Test Method:	ANSI C63.10-2013 section 11.11 ANSI C63.10-2020 section 11.11 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:	ANSI C63.10-2013 Section 11.11.1, Section 11.11.2, Section 11.11.3 ANSI C63.10-2020 Section 11.11.1, Section 11.11.2, Section 11.11.3

6.5.1 E.U.T. Operation:

Operating Environment:	
Temperature:	25.2 °C
Humidity:	47.8 %
Atmospheric Pressure:	1010 mbar

6.5.2 Test Setup Diagram:



6.5.3 Test Data: Please Refer to Appendix for Details.



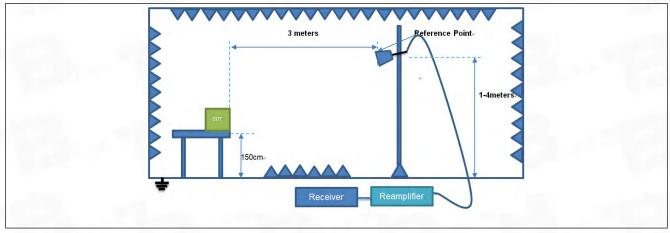
Band edge emissions (Radiated) 6.6

Test Requirement:	restricted bands, as defi	′(d), In addition, radiated emissio ined in § 15.205(a), must also co I in § 15.209(a)(see § 15.205(c)	omply with the radiated
Test Method:	ANSI C63.10-2013 sect ANSI C63.10-2020 sect KDB 558074 D01 15.24		ca
	Frequency (MHz)	Field strength (microvolts/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
Test Limit:	Above 960	500	3
	radiators operating under 54-72 MHz, 76-88 MHz, these frequency bands in 15.231 and 15.241. In the emission table ab The emission limits show employing a CISPR quar 110–490 kHz and above	a paragraph (g), fundamental em er this section shall not be locate , 174-216 MHz or 470-806 MHz. is permitted under other sections ove, the tighter limit applies at the wn in the above table are based isi-peak detector except for the f e 1000 MHz. Radiated emission nents employing an average det	ed in the frequency bands . However, operation within s of this part, e.g., §§ he band edges. I on measurements frequency bands 9–90 kHz, limits in these three bands
Procedure:	ANSI C63.10-2013 sect	ion 6.10.5.2	1000
	ANSI C63.10-2020 sect	ion 6.10.5.2	Constant Constant

6.6.1 E.U.T. Operation:

Operating Environment:			
Temperature:	22.8 °C		
Humidity:	54.7 %		
Atmospheric Pressure:	1010 mbar		

6.6.2 Test Setup Diagram:



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6.6.3 Test Data:

Note: All the mode have been tested, and only the worst case of mode are in the report TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: L

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2310.000	19.76	30.77	50.53	74.00	-23.47	peak	Р
2	2390.000	20.47	31.13	51.60	74.00	-22.40	peak	Р
3 *	2400.000	22.30	31.18	53.48	74.00	-20.52	peak	Р

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: L

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2310.000	21.12	30.04	51.16	74.00	-22.84	peak	Р
2	2390.000	22.33	30.38	52.71	74.00	-21.29	peak	Р
3 *	2400.000	23.42	30.42	53.84	74.00	-20.16	peak	Р

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: H

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	2483.500	20.72	31.56	52.28	74.00	-21.72	peak	Р
2	2500.000	19.09	31.63	50.72	74.00	-23.28	peak	Р

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: H

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2483.500	19.49	30.76	50.25	74.00	-23.75	peak	Р
2	2483.500	6.52	30.76	37.28	54.00	-16.72	AVG	Р
3	2500.000	18.94	30.83	49.77	74.00	-24.23	peak	Р
4 *	2500.000	8.28	30.83	39.11	54.00	-14.89	AVG	Р



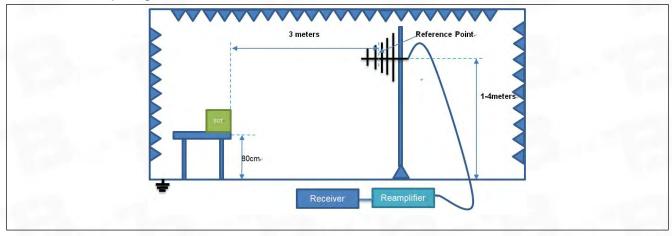
Emissions in frequency bands (below 1GHz) 6.7

Test Requirement:	restricted bands, as defi	(d), In addition, radiated emission ned in § 15.205(a), must also co l in § 15.209(a)(see § 15.205(c)	omply with the radiated				
Test Method:	ANSI C63.10-2013 sect ANSI C63.10-2020 sect KDB 558074 D01 15.24		aa				
	Frequency (MHz)	Field strength (microvolts/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				
Test Limit:	Above 960	500	3				
	 ** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. In the emission table above, the tighter limit applies at the 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 sect	ion 6.6.4	1000				
	ANSI C63.10-2020 sect	ion 6.6.4					

6.7.1 E.U.T. Operation:

Operating Environment:			
Temperature:	23.4 °C		
Humidity:	45.9 %		
Atmospheric Pressure:	1010 mbar	1000	

6.7.2 Test Setup Diagram:

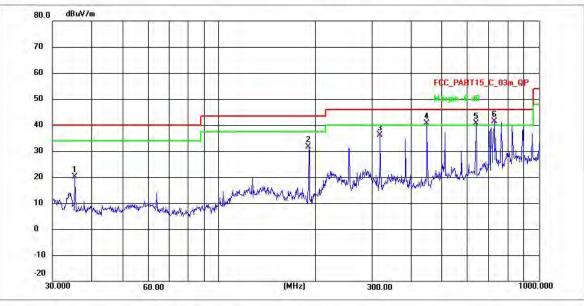


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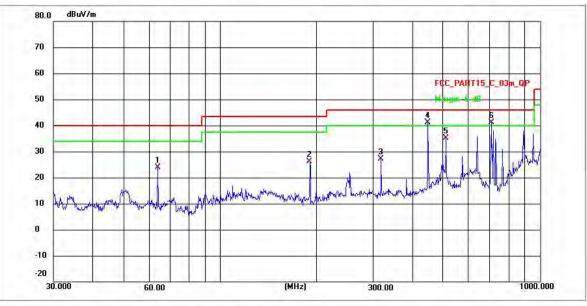
6.7.3 Test Data:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	35.3750	38.47	-18.46	20.01	40.00	-19.99	QP	Р
2	190.7390	59.09	-27.41	31.68	43.50	-11.82	QP	Р
3	318.2585	61.47	-25.28	36.19	46.00	-9.81	QP	P
4 !	445.6320	63.22	-22.49	40.73	46.00	-5.27	QP	P
5!	636.1340	63.35	-22.64	40.71	46.00	-5.29	QP	P
6 *	724.2610	65.02	-23.70	41.32	46.00	-4.68	QP	P





TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: L

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	63.5356	43.96	-20.10	23.86	40.00	-16.14	QP	Р
2	190.7390	53.44	-27.41	26.03	43.50	-17.47	QP	Р
3	318.2585	52.37	-25.28	27.09	46.00	-18.91	QP	P
4 *	445.6320	63.59	-22.49	41.10	46.00	-4.90	QP	Р
5	509.1501	56.34	-21.24	35.10	46.00	-10.90	QP	Р
6!	706.6997	64.63	-23.53	41.10	46.00	-4.90	QP	P



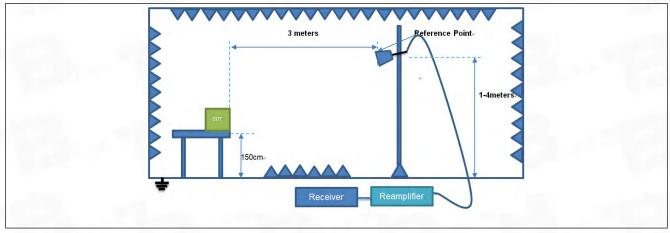
Emissions in frequency bands (above 1GHz) 6.8

radiators operating under this section shall not be located 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. H these frequency bands is permitted under other sections 15.231 and 15.241. In the emission table above, the tighter limit applies at the The emission limits shown in the above table are based of employing a CISPR quasi-peak detector except for the free	Test Requirement:		ssions which fall in the restricte mply with the radiated emission c)).`					
Test Limit: (microvolts/meter) 0.009-0.490 2400/F(kHz) 0.490-1.705 24000/F(kHz) 1.705-30.0 30 30-88 100 ** 88-216 150 ** 216-960 200 ** Above 960 500 ** Except as provided in paragraph (g), fundamental emis radiators operating under this section shall not be located 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. H these frequency bands is permitted under other sections 15.231 and 15.241. In the emission table above, the tighter limit applies at the The emission limits shown in the above table are based of employing a CISPR quasi-peak detector except for the free 110–490 kHz and above 1000 MHz. Radiated emission limits	Test Method:	ANSI C63.10-2020 sect	on 6.6.4					
Test Limit:0.490-1.70524000/F(kHz)1.705-30.03030-88100 **88-216150 **216-960200 **Above 960500** Except as provided in paragraph (g), fundamental emis radiators operating under this section shall not be located 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. H these frequency bands is permitted under other sections 15.231 and 15.241. In the emission table above, the tighter limit applies at the The emission limits shown in the above table are based of employing a CISPR quasi-peak detector except for the fre 110-490 kHz and above 1000 MHz. Radiated emission limits		Frequency (MHz)		Measurement distance (meters)				
Test Limit:1.705-30.03030-88100 **88-216150 **216-960200 **Above 960500** Except as provided in paragraph (g), fundamental emis radiators operating under this section shall not be located 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. H these frequency bands is permitted under other sections 15.231 and 15.241.In the emission table above, the tighter limit applies at the The emission limits shown in the above table are based of employing a CISPR quasi-peak detector except for the fre 110-490 kHz and above 1000 MHz. Radiated emission limits		0.009-0.490	2400/F(kHz)	300				
30-88 100 ** 88-216 150 ** 216-960 200 ** Above 960 500 ** Except as provided in paragraph (g), fundamental emis radiators operating under this section shall not be located 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. H these frequency bands is permitted under other sections 15.231 and 15.241. In the emission table above, the tighter limit applies at the The emission limits shown in the above table are based of employing a CISPR quasi-peak detector except for the fre 110–490 kHz and above 1000 MHz. Radiated emission limits		0.490-1.705	24000/F(kHz)	30				
Test Limit: 88-216 150 ** 216-960 200 ** Above 960 500 ** Except as provided in paragraph (g), fundamental emis radiators operating under this section shall not be located 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. H these frequency bands is permitted under other sections 15.231 and 15.241. In the emission table above, the tighter limit applies at the The emission limits shown in the above table are based of employing a CISPR quasi-peak detector except for the free 110–490 kHz and above 1000 MHz. Radiated emission limits shown in the above table are based of employing a CISPR quasi-peak detector except for the free 110–490 kHz and above 1000 MHz. Radiated emission limits shown in the above table and the emission limits applies at the tighter limit applies at		1.705-30.0		30				
Test Limit:216-960 Above 960200 ** 500** Except as provided in paragraph (g), fundamental emis radiators operating under this section shall not be located 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. H these frequency bands is permitted under other sections 15.231 and 15.241. In the emission table above, the tighter limit applies at the The emission limits shown in the above table are based of employing a CISPR quasi-peak detector except for the free 110-490 kHz and above 1000 MHz. Radiated emission limits		30-88		3				
Test Limit:Above 960500** Except as provided in paragraph (g), fundamental emis radiators operating under this section shall not be located 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. H these frequency bands is permitted under other sections 15.231 and 15.241. In the emission table above, the tighter limit applies at the The emission limits shown in the above table are based of employing a CISPR quasi-peak detector except for the fre 110–490 kHz and above 1000 MHz. Radiated emission limits		88-216		3				
Test Limit: ** Except as provided in paragraph (g), fundamental emis radiators operating under this section shall not be located 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. H these frequency bands is permitted under other sections 15.231 and 15.241. In the emission table above, the tighter limit applies at the The emission limits shown in the above table are based of employing a CISPR quasi-peak detector except for the free 110–490 kHz and above 1000 MHz. Radiated emission limits		216-960	200 **	3				
** Except as provided in paragraph (g), fundamental emis radiators operating under this section shall not be located 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. H these frequency bands is permitted under other sections 15.231 and 15.241. In the emission table above, the tighter limit applies at the The emission limits shown in the above table are based of employing a CISPR quasi-peak detector except for the fre 110–490 kHz and above 1000 MHz. Radiated emission limits	Test Limit:	Above 960	500	3				
		In the emission table above, the tighter limit applies at the 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						
Procedure: ANSI C63.10-2013 section 6.6.4 ANSI C63.10-2020 section 6.6.4	Procedure:			1.0				

6.8.1 E.U.T. Operation:

Operating Environment:			
Temperature:	23.4 °C	1940 B	
Humidity:	45.9 %		
Atmospheric Pressure:	1010 mbar		

6.8.2 Test Setup Diagram:



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6.8.3 Test Data:

Note: All the mode have been tested, and only the worst case of mode are in the report TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: L

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	4029.883	69.88	-28.99	40.89	74.00	-33.11	peak	Р
2	4900.883	71.46	-27.65	43.81	74.00	-30.19	peak	Р
3	5515.882	72.56	-26.90	45.66	74.00	-28.34	peak	Р
4	8274.271	75.62	-25.42	50.20	74.00	-23.80	peak	Р
5	10372.705	75.42	-24.46	50.96	74.00	-23.04	peak	Р
6 *	12484.036	74.64	-21.64	53.00	74.00	-21.00	peak	Р

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: L

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3507.836	73.23	-29.05	44.18	74.00	-29.82	peak	Р
2	4614.925	70.99	-28.46	42.53	74.00	-31.47	peak	Р
3	6688.699	72.59	-25.21	47.38	74.00	-26.62	peak	Р
4	8250.389	70.21	-25.43	44.78	74.00	-29.22	peak	Р
5	9591.227	72.90	-23.40	49.50	74.00	-24.50	peak	Р
6 *	13423.394	73.55	-21.03	52.52	74.00	-21.48	peak	Р

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: M

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3381.406	71.99	-29.16	42.83	74.00	-31.17	peak	Р
2	3970.914	72.55	-29.00	43.55	74.00	-30.45	peak	Р
3	5210.581	74.18	-27.20	46.98	74.00	-27.02	peak	Р
4	6073.172	72.11	-25.34	46.77	74.00	-27.23	peak	Р
5	9126.063	72.25	-24.03	48.22	74.00	-25.78	peak	Р
6 *	12665.763	73.19	-21.52	51.67	74.00	-22.33	peak	Р

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: M

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3345.437	72.28	-29.19	43.09	74.00	-30.91	peak	Р
2	4349.422	73.15	-28.85	44.30	74.00	-29.70	peak	Р
3	5069.452	74.18	-27.32	46.86	74.00	-27.14	peak	Р
4	6073.172	76.11	-25.34	50.77	74.00	-23.23	peak	Р
5	7334.742	78.23	-24.83	53.40	74.00	-20.60	peak	Р
6 *	8448.268	78.95	-25.34	53.61	74.00	-20.39	peak	Р

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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3480.568	72.34	-29.07	43.27	74.00	-30.73	peak	Р
2	4316.859	74.22	-28.86	45.36	74.00	-28.64	peak	Р
3	4990.943	73.26	-27.40	45.86	74.00	-28.14	peak	Р
4	6655.914	76.40	-25.24	51.16	74.00	-22.84	peak	Р
5	7552.020	76.97	-24.85	52.12	74.00	-21.88	peak	Р
6 *	8943.274	79.30	-24.42	54.88	74.00	-19.12	peak	Р

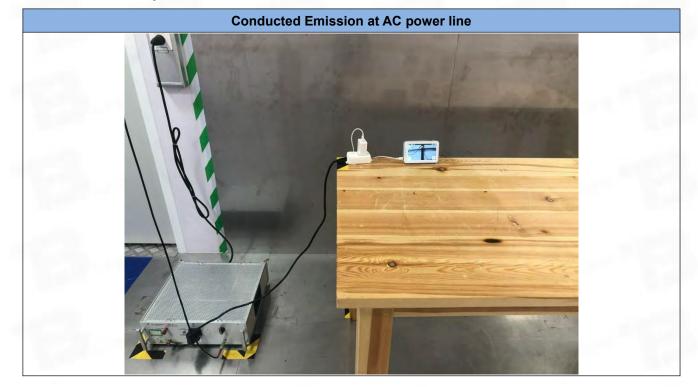
TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: H

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: H

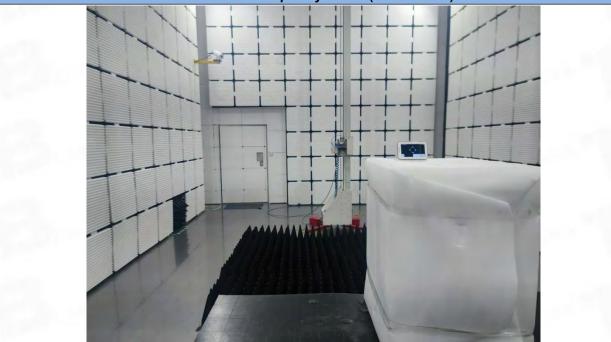
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3766.336	72.29	-29.03	43.26	74.00	-30.74	peak	Р
2	5396.037	70.24	-27.04	43.20	74.00	-30.80	peak	Р
3	6025.961	70.73	-25.33	45.40	74.00	-28.60	peak	Р
4	6686.766	72.28	-25.21	47.07	74.00	-26.93	peak	Р
5	9618.989	73.92	-23.46	50.46	74.00	-23.54	peak	Р
6 *	12290.698	72.56	-21.86	50.70	74.00	-23.30	peak	Р



7 Test Setup Photos

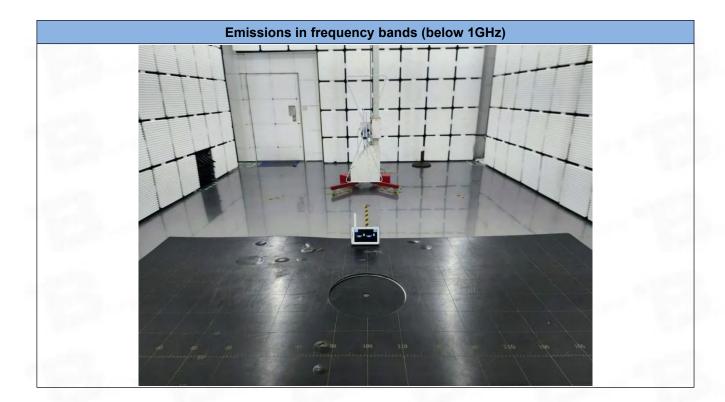


Band edge emissions (Radiated) Emissions in frequency bands (above 1GHz)



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8 EUT Constructional Details (EUT Photos)

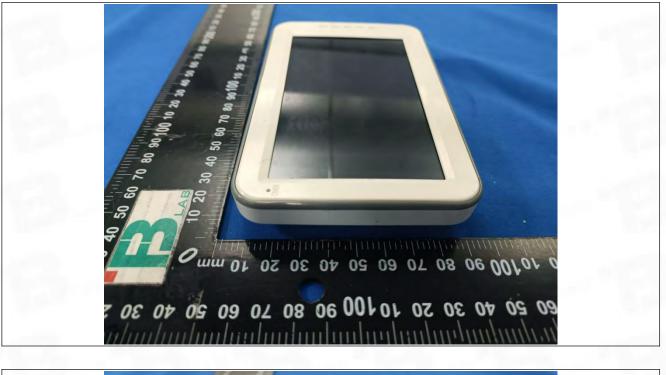






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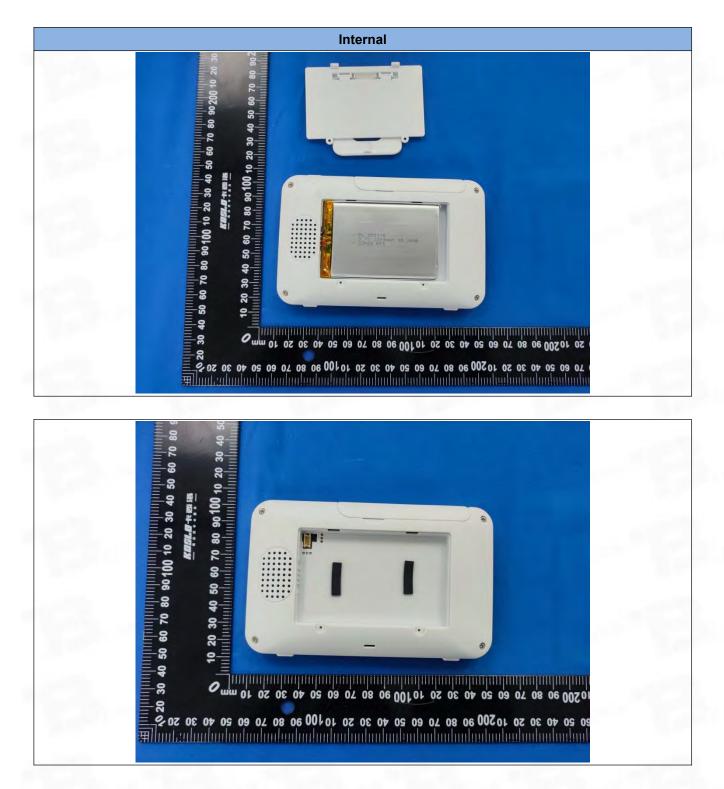
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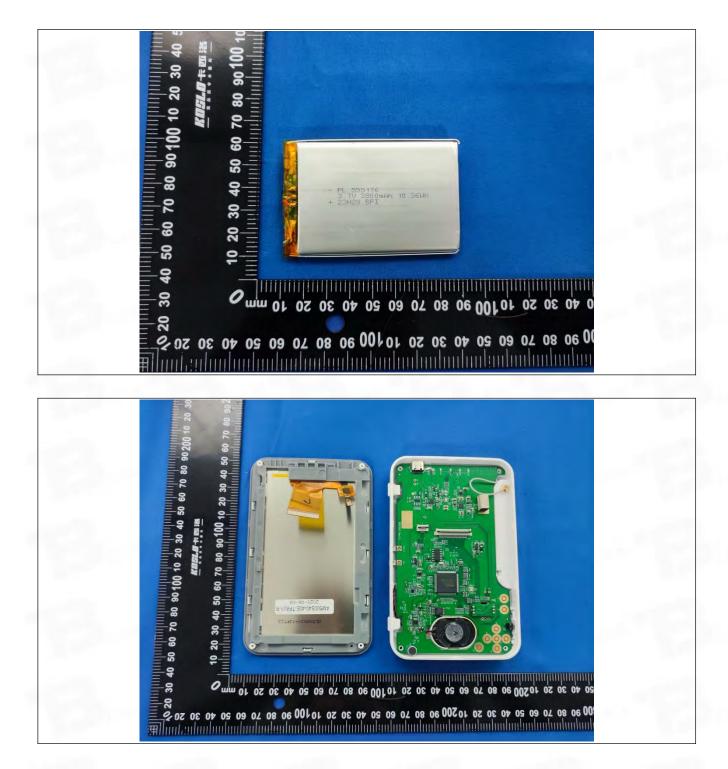


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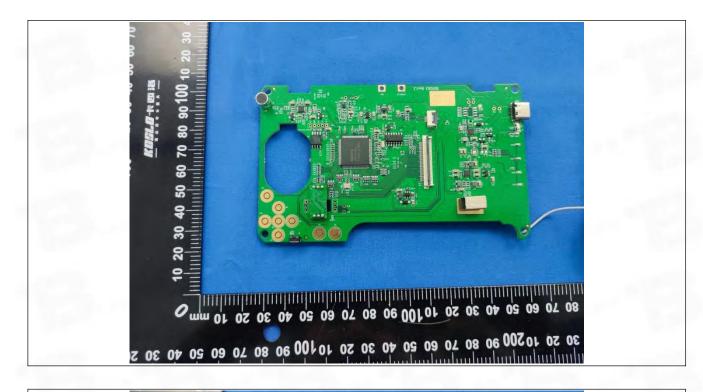


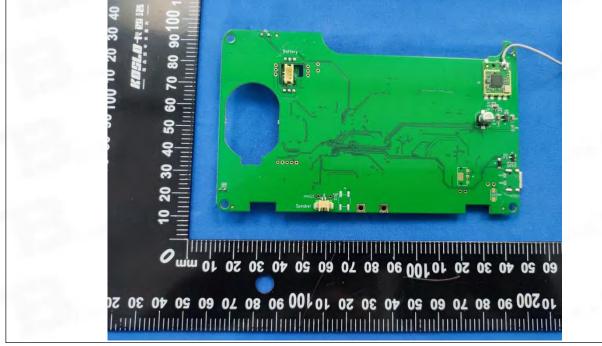




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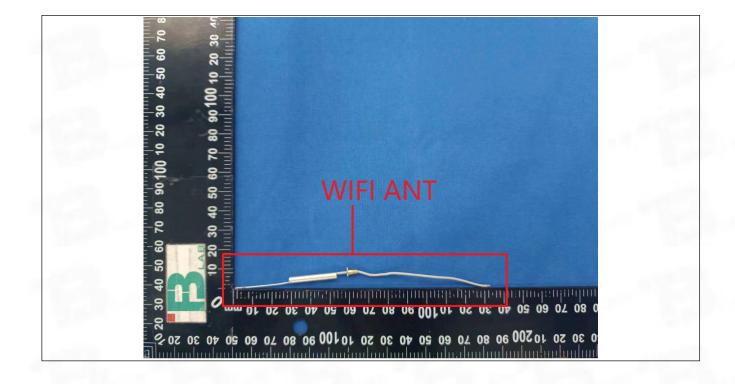




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Test Report Number: BTF231008R00301

Appendix

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1. Duty Cycle

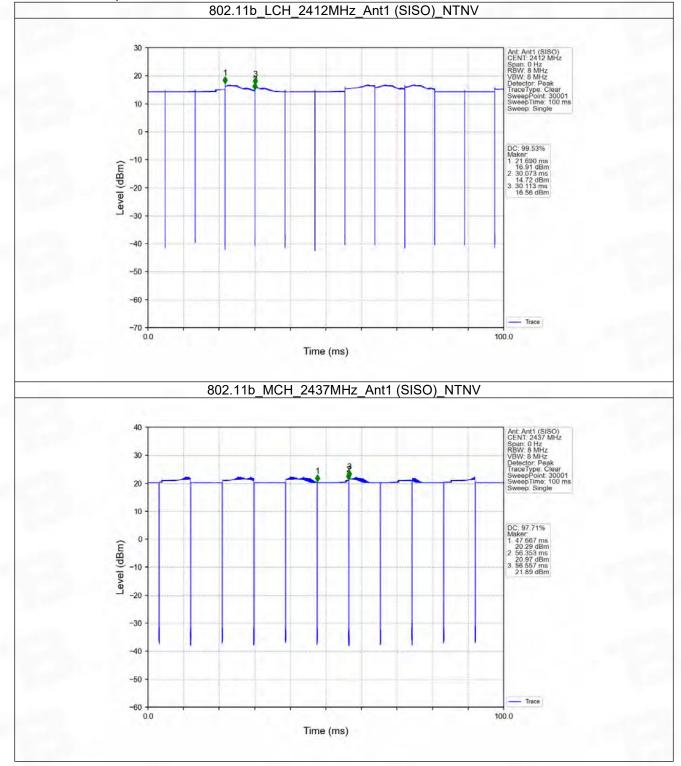
1.1 Ant1

1.1.1 Test Result

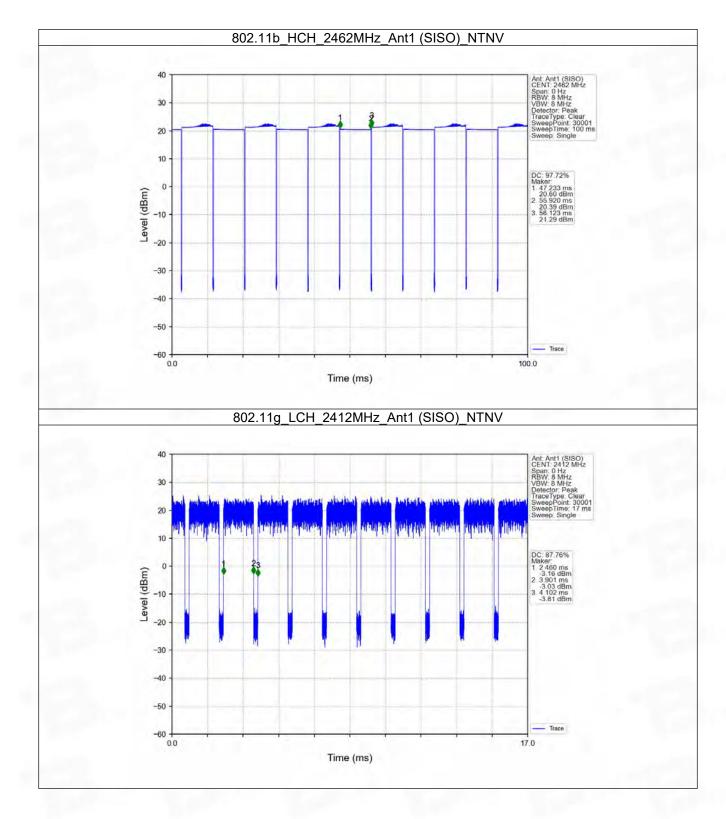
					Ant1		
Mode	TX	Frequency	T_on	Period	Duty Cycle	Duty Cycle	Max. DC
woue	Туре	(MHz)	(ms)	(ms)	(%)	Correction Factor (dB)	Variation (%)
		2412	8.383	8.423	99.53	0.02	0.04
802.11b	SISO	2437	8.686	8.890	97.71	0.10	0.04
1.000		2462	8.687	8.890	97.72	0.10	0.04
	1	2412	1.441	1.642	87.76	0.57	0.03
802.11g	SISO	2437	1.441	1.642	87.76	0.57	0.03
		2462 1.441 1.642	87.76	0.57	0.03		
802.11n		2412	1.349	1.550	87.03	0.60	0.03
(HT20)	SISO	2437	1.349	1.550	87.03	0.60	0.03
(1120)		2462	1.349	1.550	87.03	0.60	0.03
902 11p		2422	0.669	0.870	76.90	1.14	0.03
802.11n (HT40)	SISO	2437	0.668	0.869	76.87	1.14	0.03
(11140)		2452	0.669	0.870	76.90	1.14	0.03



1.1.2 Test Graph

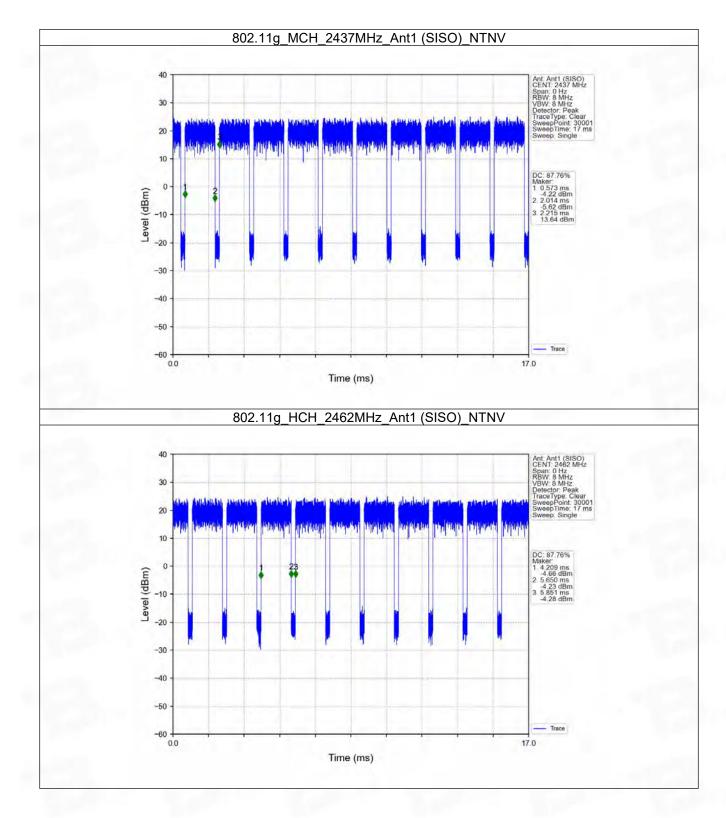






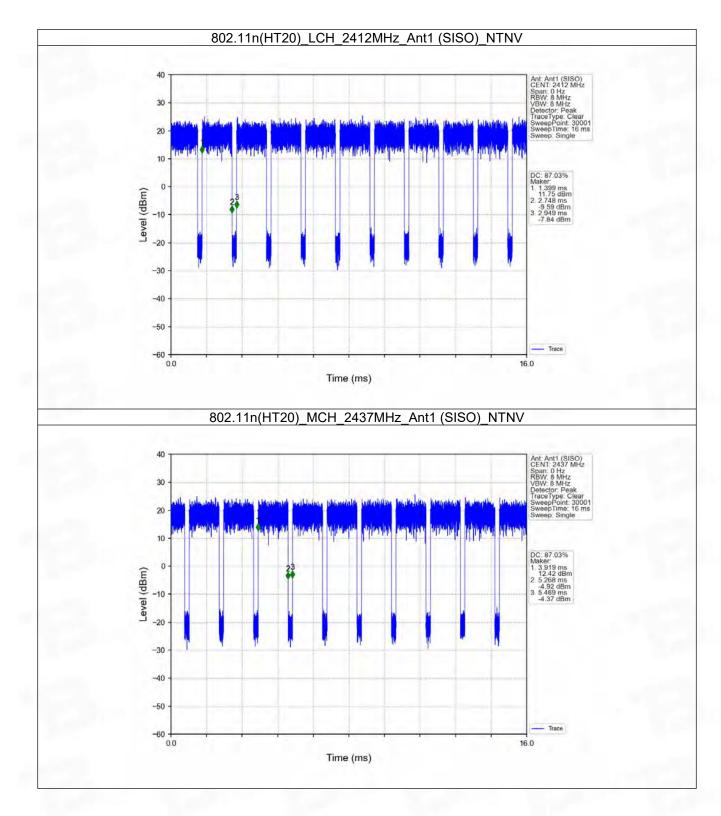
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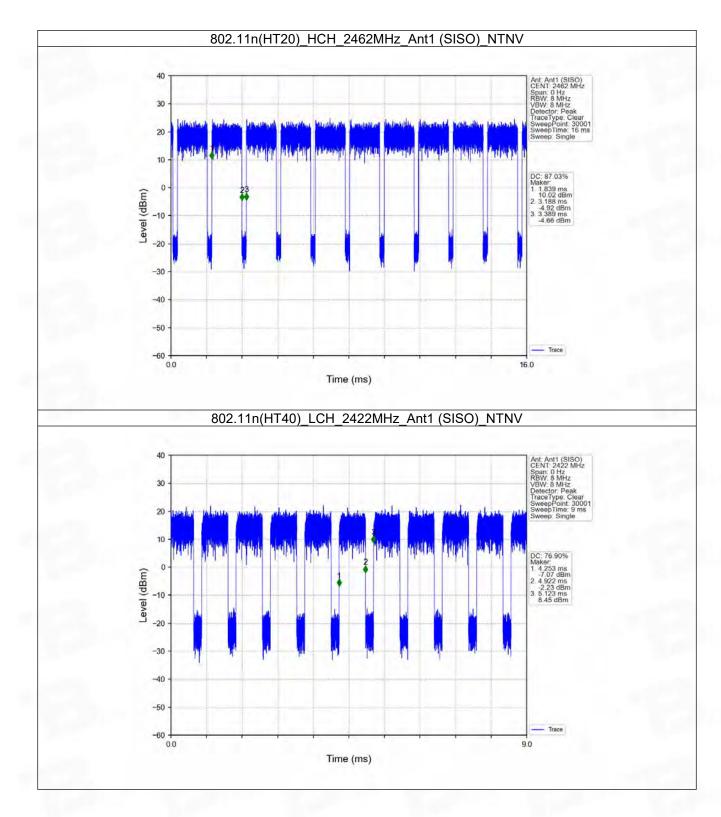
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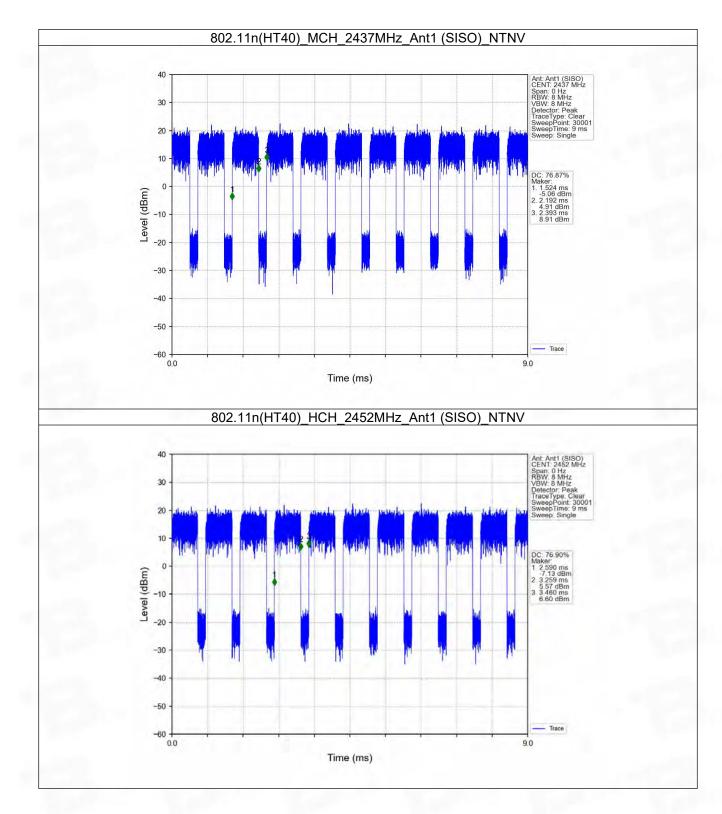
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2. Bandwidth

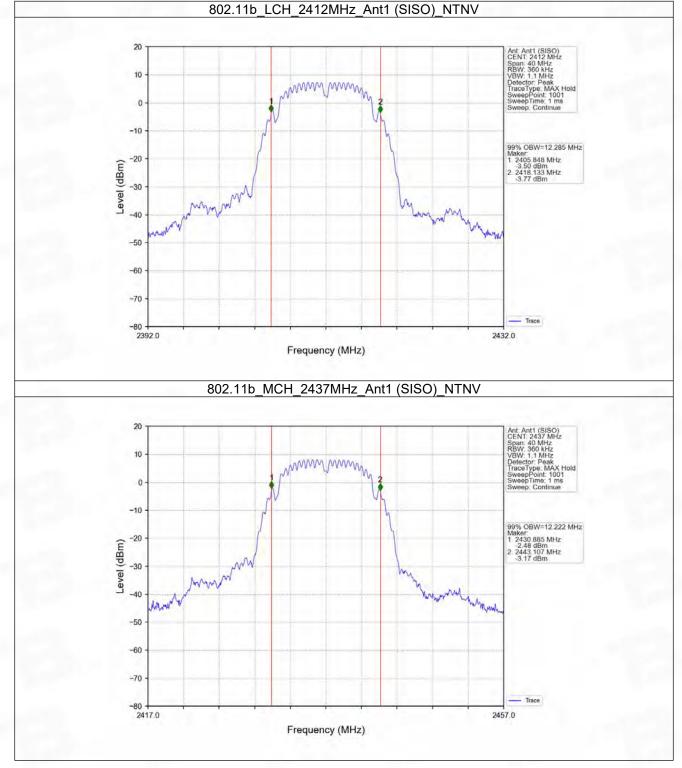
2.1 OBW

2.1.1 Test Result

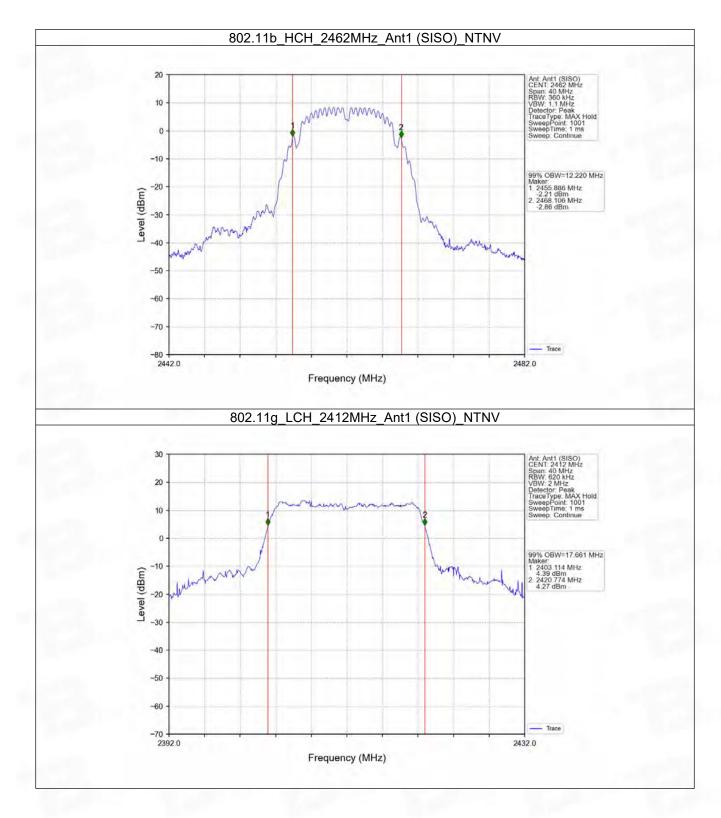
Mode	ТΧ	Frequency	ANT	99% Occupied B	Manaliat	
	Туре	(MHz)		Result	Limit	- Verdict
	SISO	2412	1	12.285	1	Pass
802.11b		2437	1	12.222	1	Pass
		2462	1	12.220	1	Pass
	SISO	2412	1	17.661	1	Pass
802.11g		2437	1	17.741	1	Pass
		2462	1	17.742	1	Pass
000.11-		2412	1	18.716	1	Pass
802.11n (HT20)	SISO	2437	1	18.436	1	Pass
	100	2462	1	18.603	1	Pass
902 115		2422	1	36.623	1	Pass
802.11n (HT40)	SISO	SISO 2437	1	36.611	1	Pass
		2452	1	36.657	1	Pass



2.1.2 Test Graph

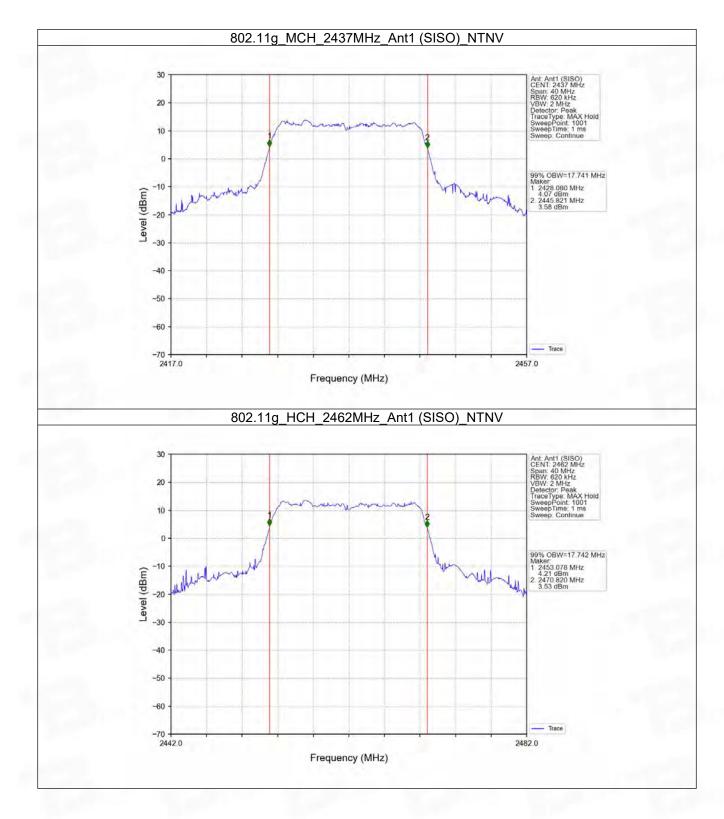






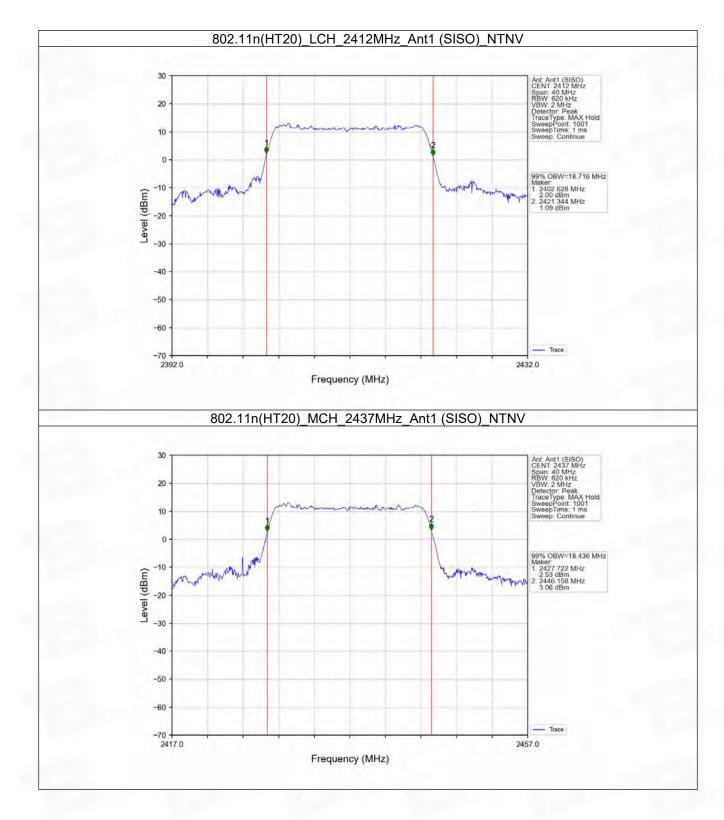
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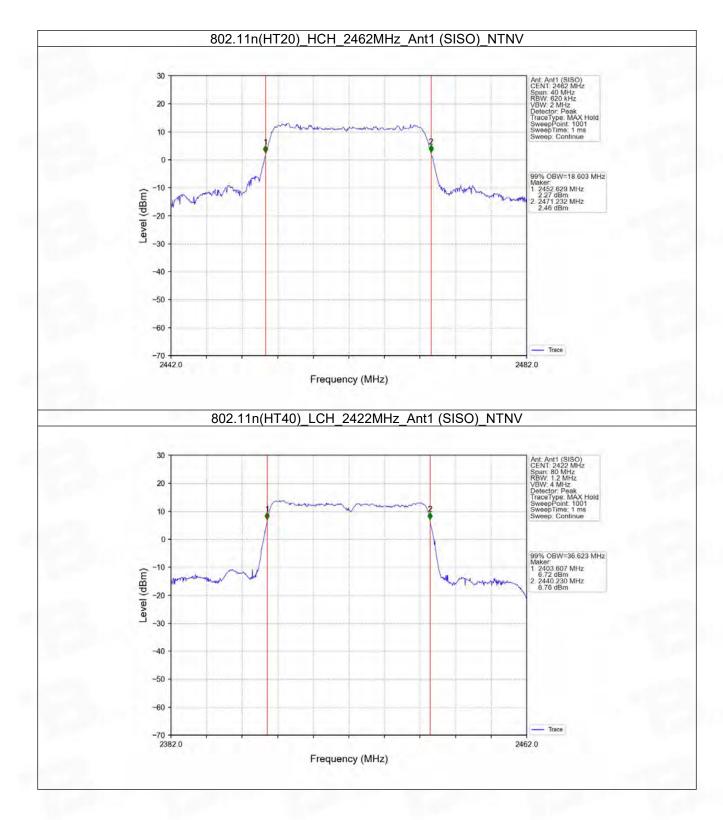
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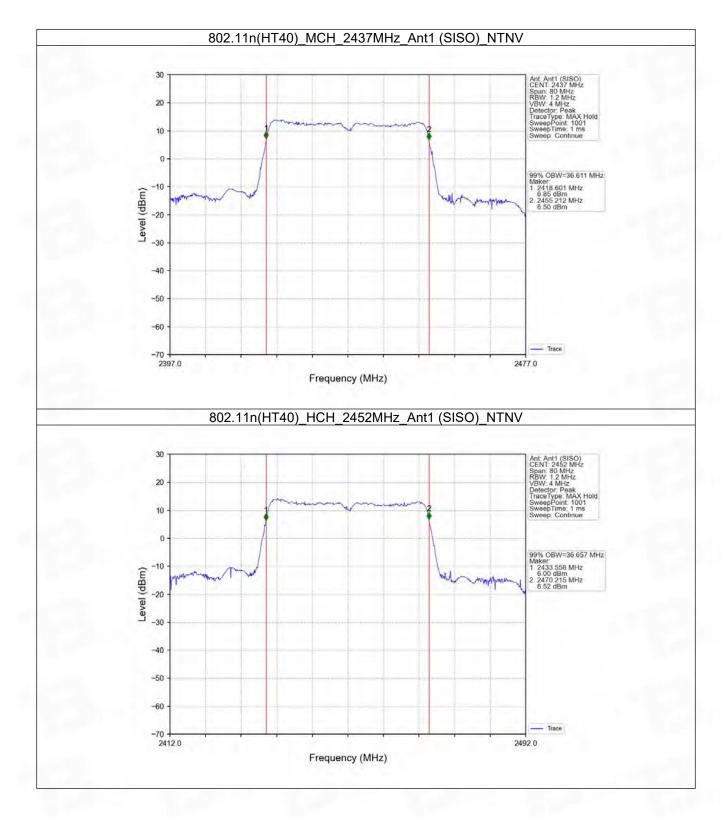
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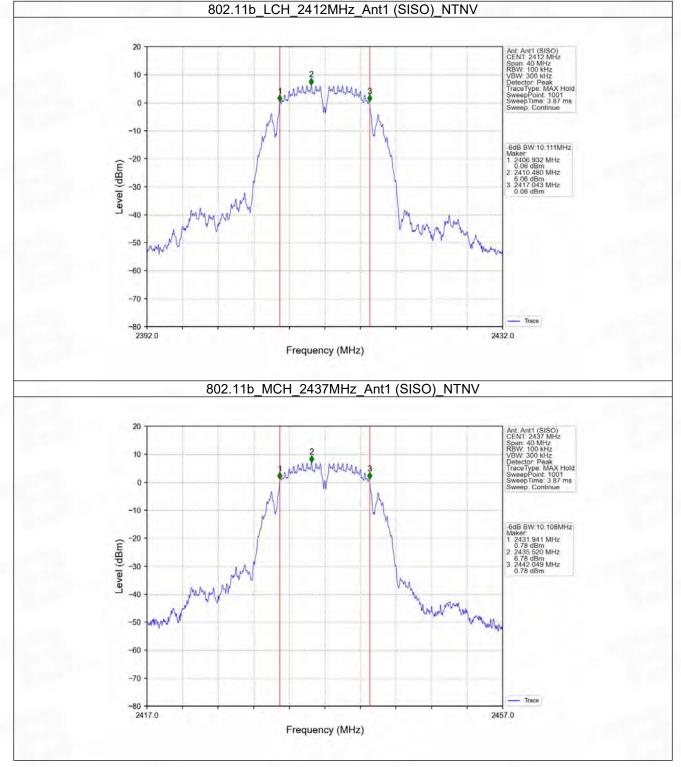
2.2 6dB BW

2.2.1 Test Result

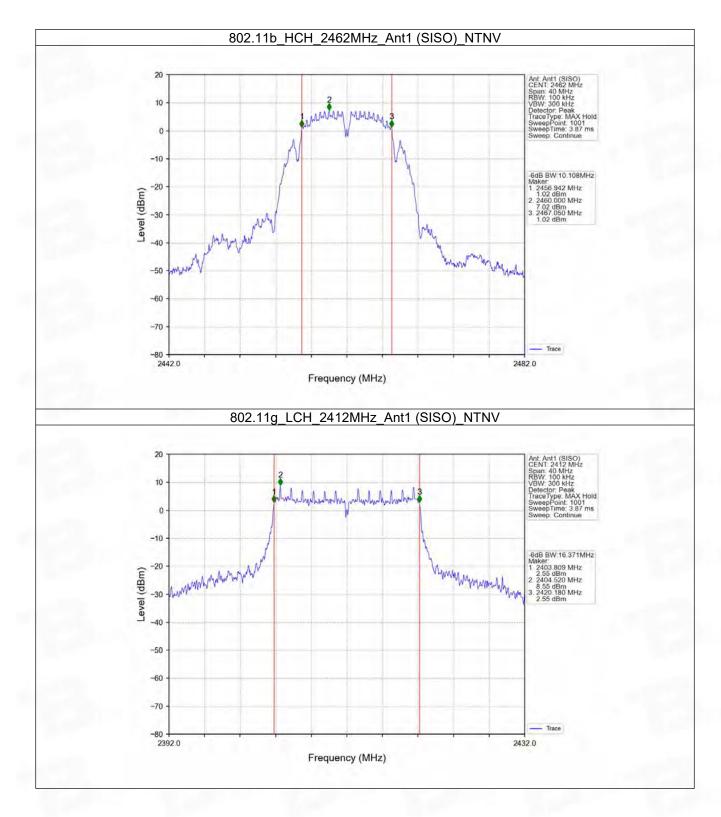
Mode	TX	Frequency	ANT	6dB Bandv	Verdict	
Mode	Туре	(MHz)		Result	Limit	Verdici
	SISO	2412	1	10.111	>=0.5	Pass
802.11b		2437	1	10.108	>=0.5	Pass
		2462	1	10.108	>=0.5	Pass
	SISO	2412	1	16.371	>=0.5	Pass
802.11g		2437	1	16.371	>=0.5	Pass
100		2462	1	16.378	>=0.5	Pass
900 11p		2412	1	17.049	>=0.5	Pass
802.11n (HT20)	SISO	2437	1	17.022	>=0.5	Pass
(1120)		2462	1	17.035	>=0.5	Pass
802.11n		2422	1	35.212	>=0.5	Pass
	SISO	2437	1	35.404	>=0.5	Pass
(HT40)		2452	1	35.193	>=0.5	Pass



2.2.2 Test Graph

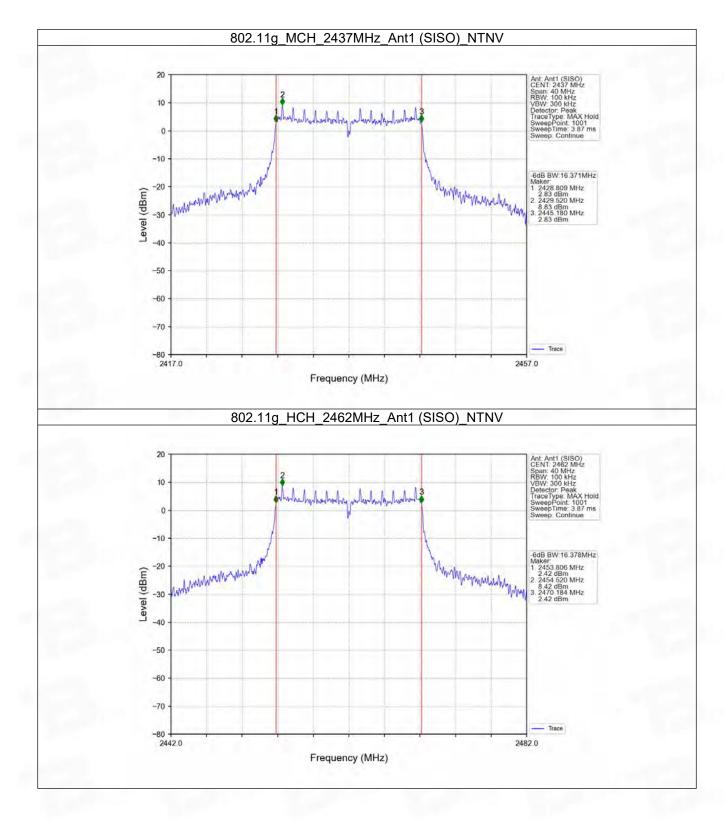






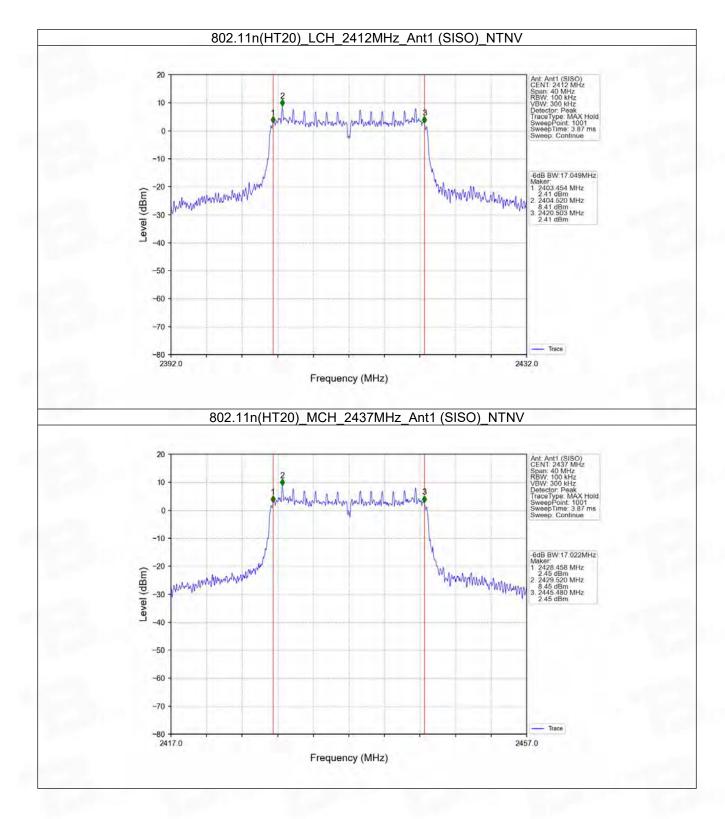
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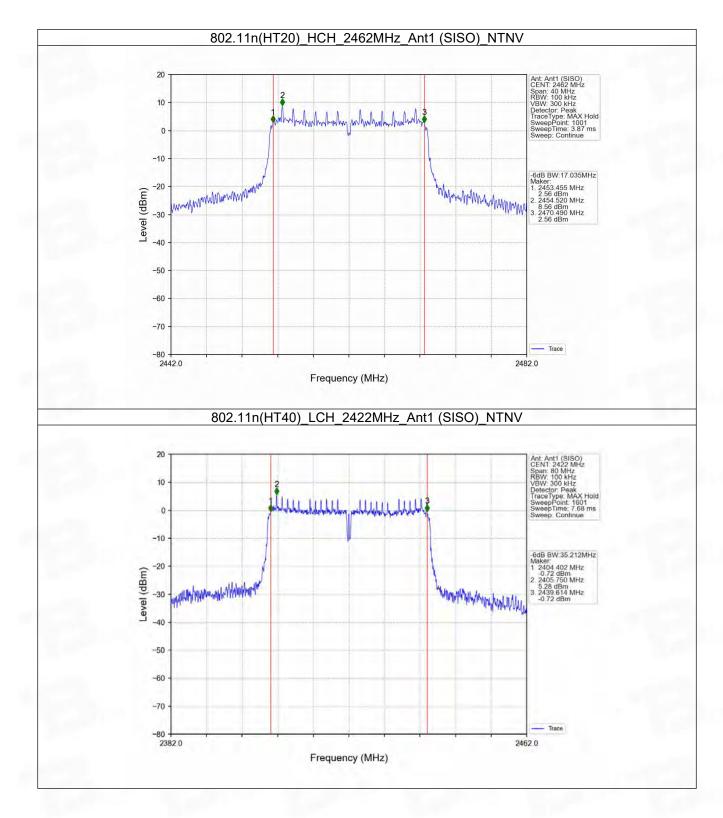
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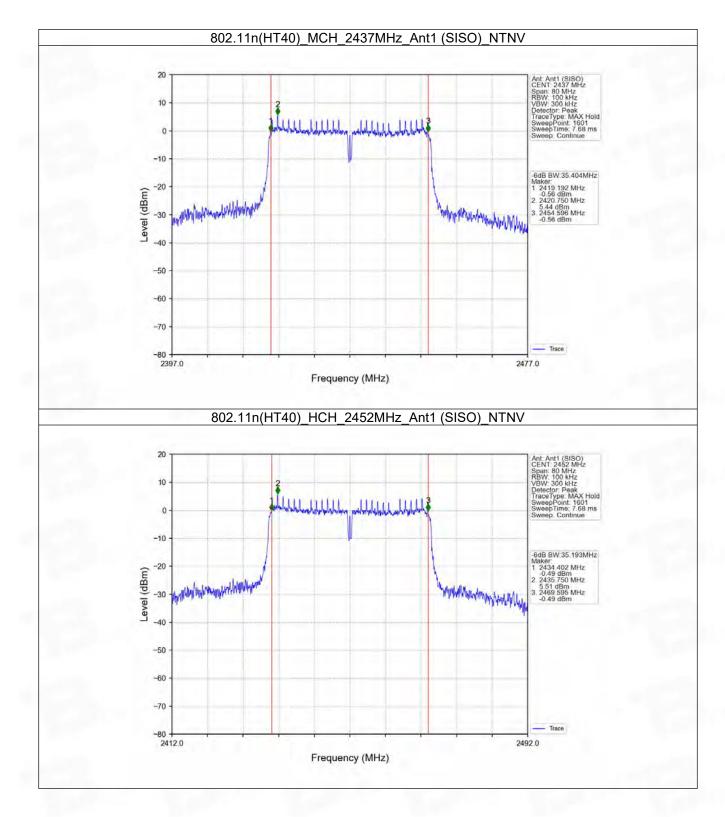


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3. Maximum Conducted Output Power

3.1 Power

3.1.1 Test Result

Mode	TX	Frequency	Maximum Peak Conducte	Vardiat	
	Туре	(MHz)	ANT1	Limit	verdict
		2412	14.02	<=30	Pass
802.11b	SISO	2437	15.21	<=30	Pass
		2462	15.67	<=30	Pass
		2412	18.95	<=30	Pass
802.11g	SISO	2437	20.18	<=30	Pass
		2462	20.81	<=30	Pass
802.11n (HT20)	SISO	2412	18.02	<=30	Pass
		2437	19.22	<=30	Pass
		2462	19.69	<=30	Pass
802.11n (HT40)	SISO	2422	18.22	<=30	Pass
		2437	19.50	<=30	Pass
		2452	19.88	<=30	Pass Pass Pass Pass Pass Pass Pass Pass

4. Maximum Power Spectral Density

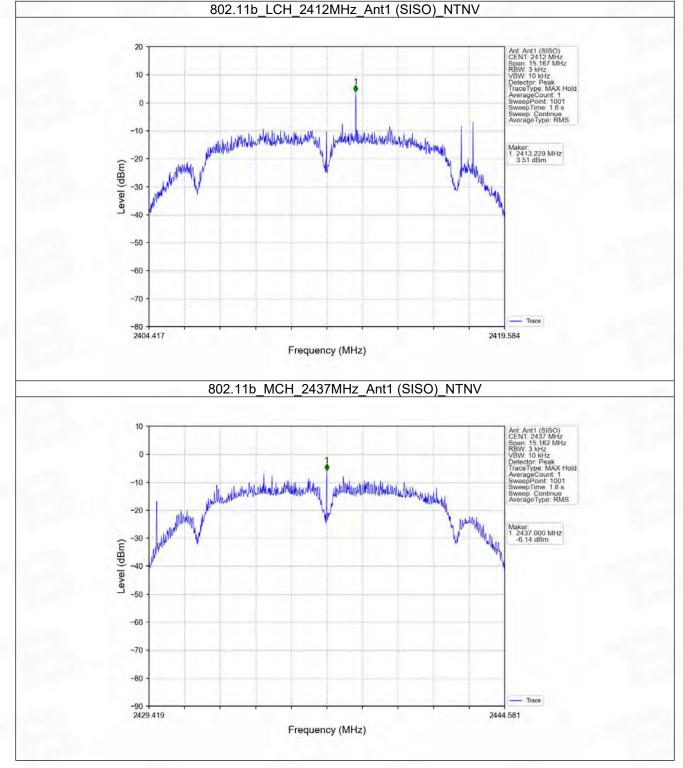
4.1 PSD

4.1.1 Test Result

Mode	TX	Frequency	Maximum PSD	(dBm/3kHz)	Verdict	
Mode	Туре	(MHz)	ANT1	Limit	Verdict	
		2412	3.51	<=8	Pass	
802.11b	SISO	2437	-6.14	<=8	Pass	
		2462	1.75	<=8	Pass	
		2412	-5.01	<=8	Pass	
802.11g	SISO	2437	-5.42	<=8	Pass	
		2462	-6.20	<=8	Pass	
000 11-		2412	-4.52	<=8	Pass	
802.11n (HT20)	SISO	2437	-6.93	<=8	Pass	
		2462	-6.11	<=8	Pass	
802.11n (HT40)		2422	-3.42	<=8	Pass	
	SISO	2437	-4.33	<=8	Pass	
		2452	-4.48	<=8	Pass	
Vote1: Antenna	Gain: Ant1: 2.0	0dBi;				

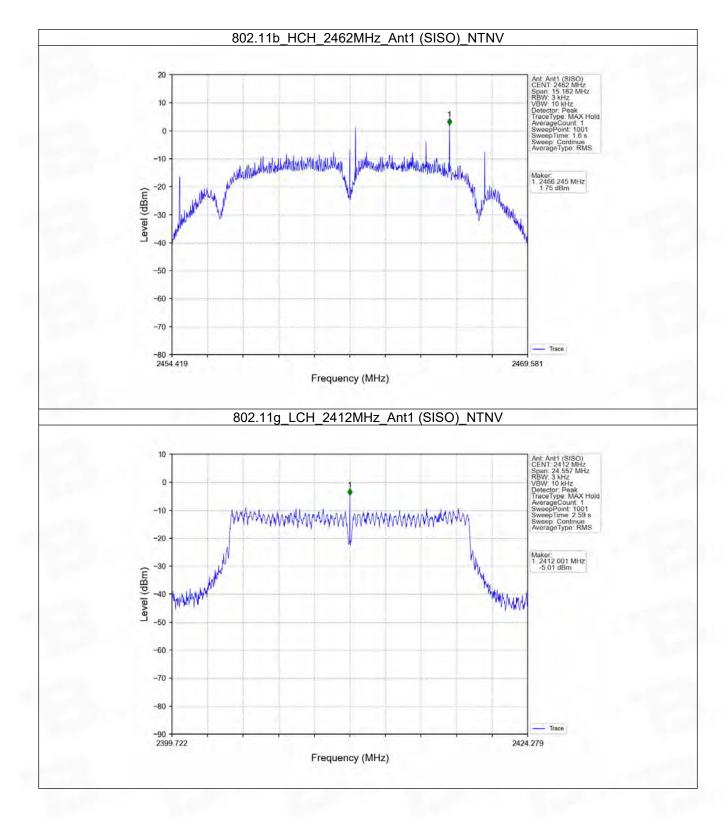


4.1.2 Test Graph



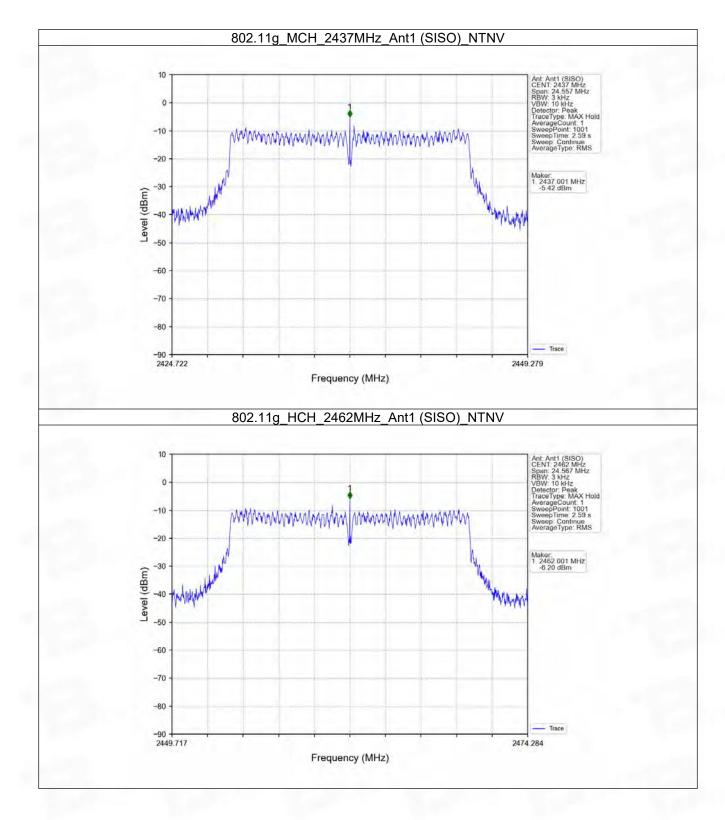
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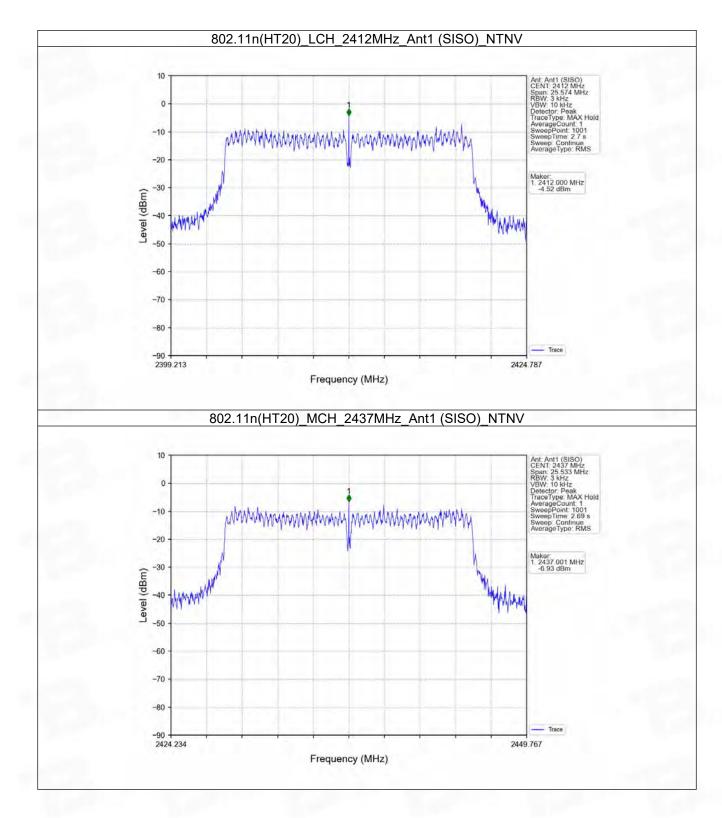


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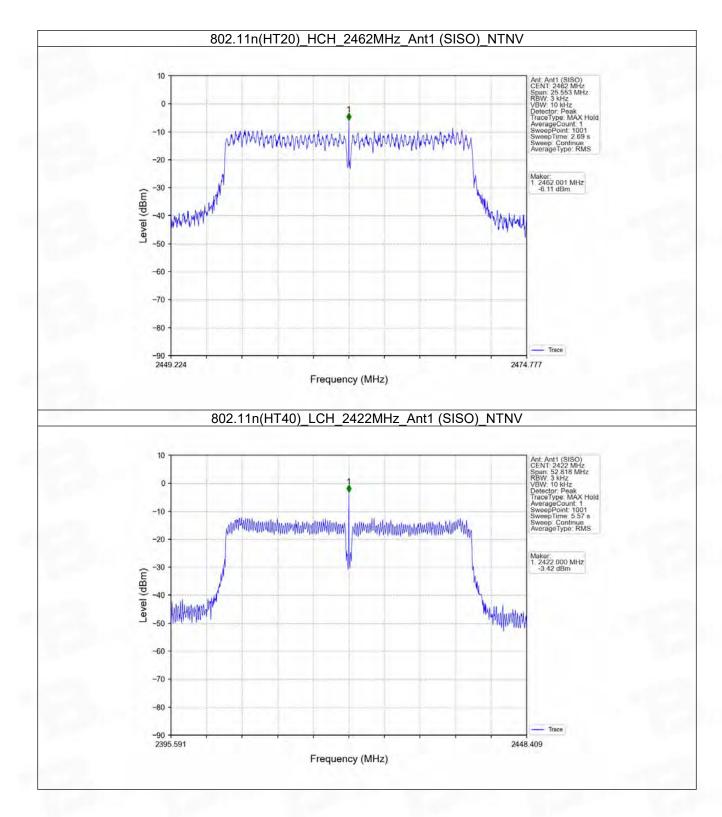






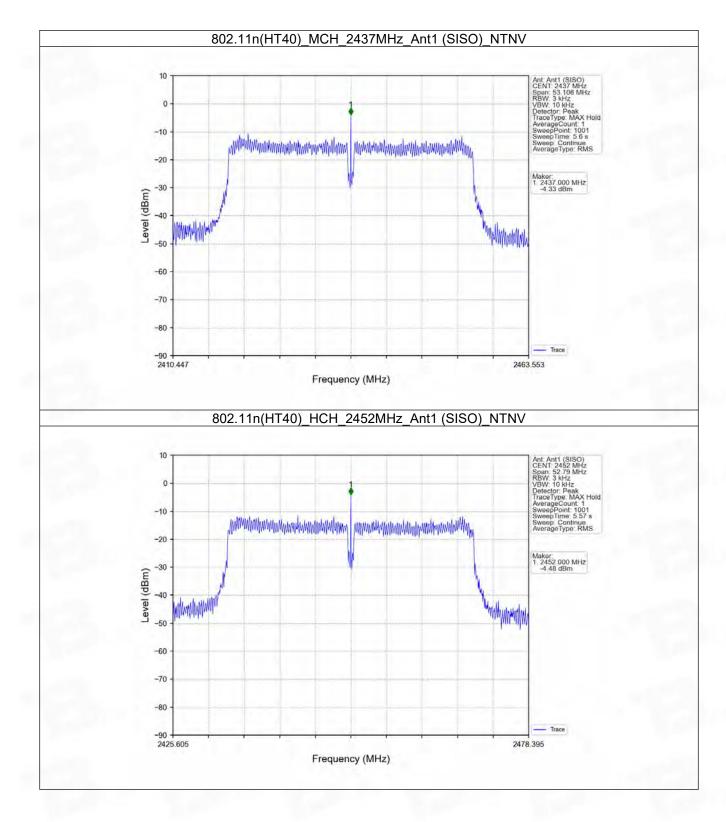
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5. Unwanted Emissions In Non-restricted Frequency Bands

5.1 Ref

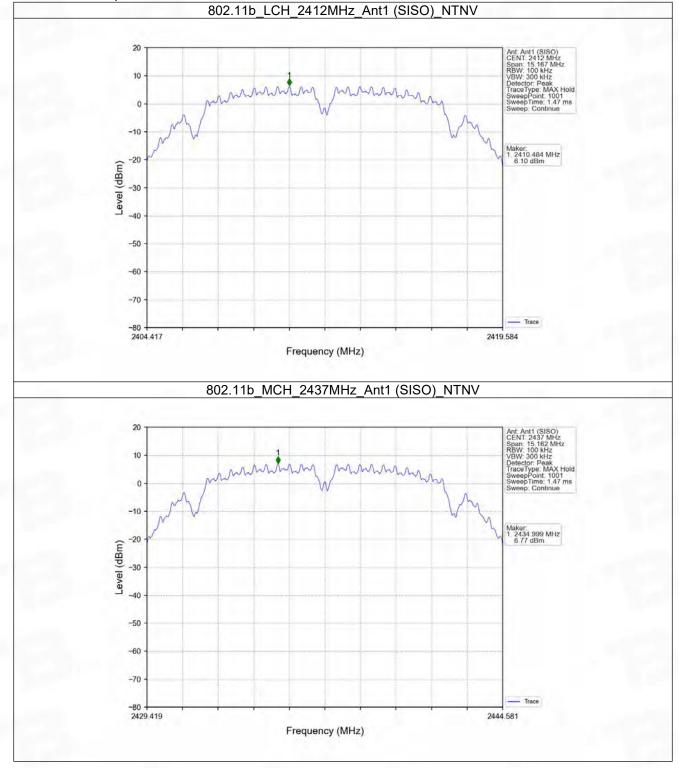
5.1.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
	SISO	2412	1	6.10
802.11b		2437	1	6.77
100		2462	1	7.04
	SISO	2412	1	8.52
802.11g		2437	1	8.82
		2462	1	8.66
000.44	SISO	2412	1	8.58
802.11n (HT20)		2437	1	8.93
(11120)		2462	1	8.51
	SISO	2422	1	4.80
802.11n		2437	1	5.45
(HT40)		2452	1	5.54

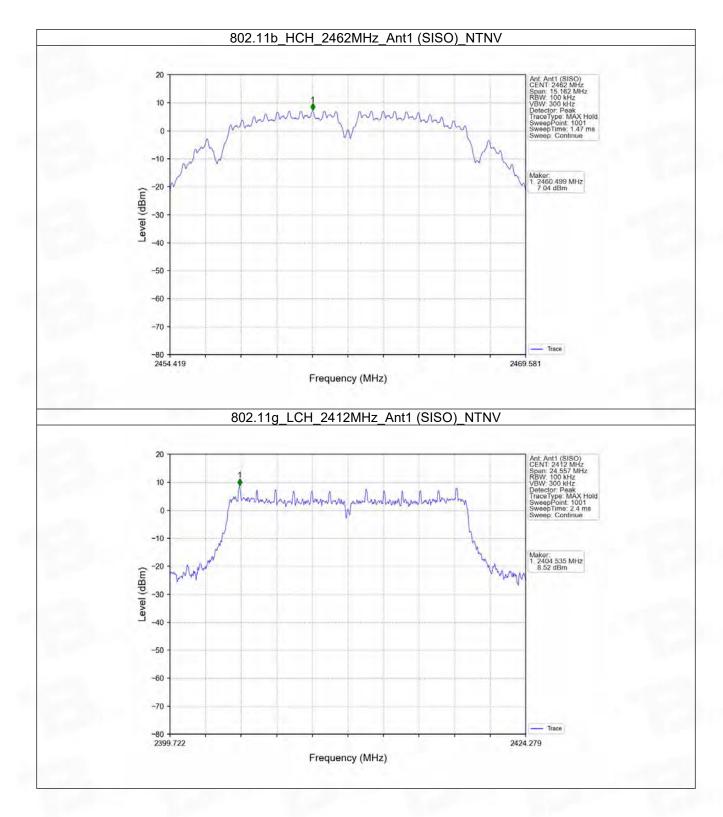
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.



5.1.2 Test Graph

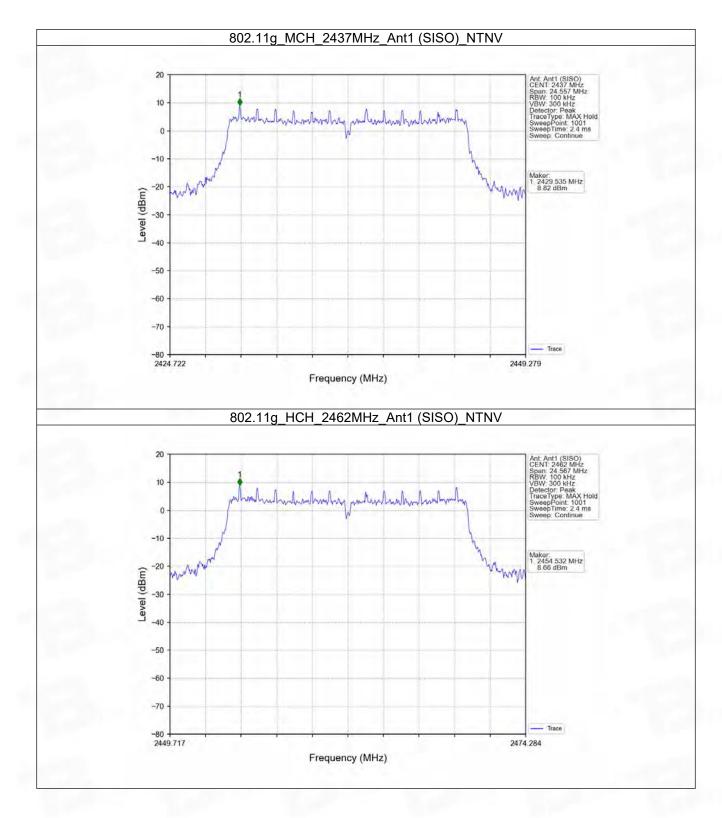






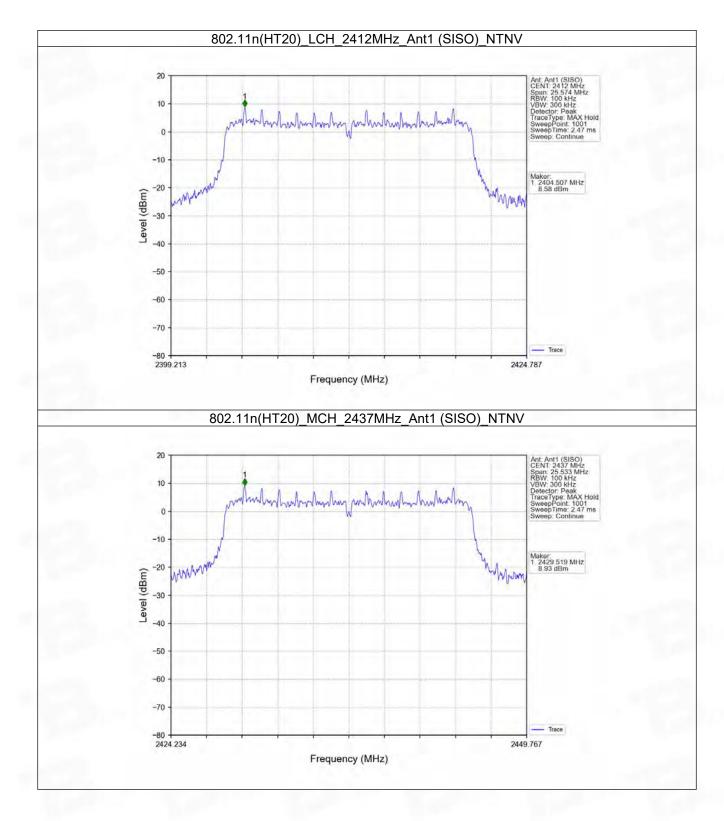
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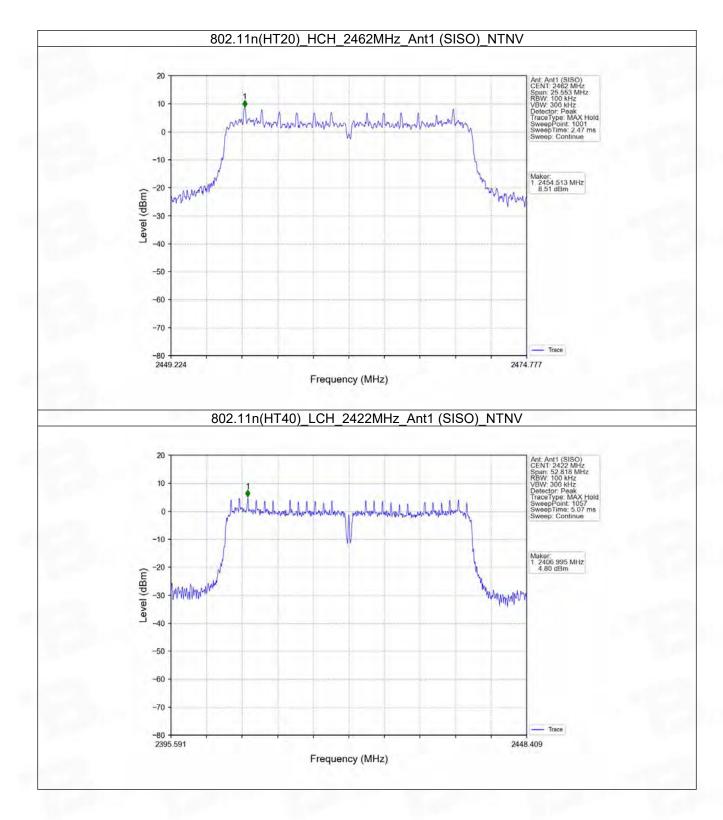
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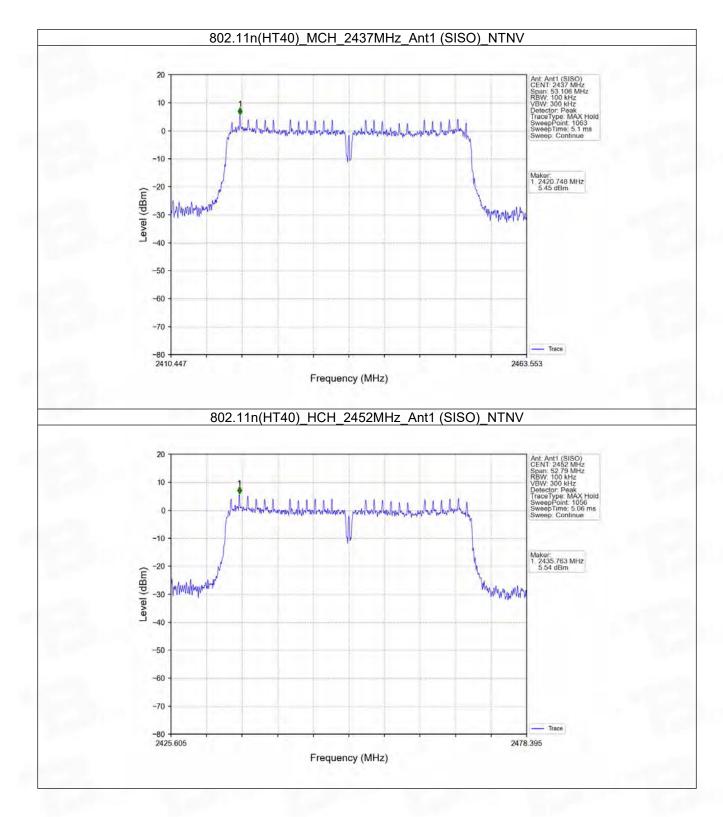
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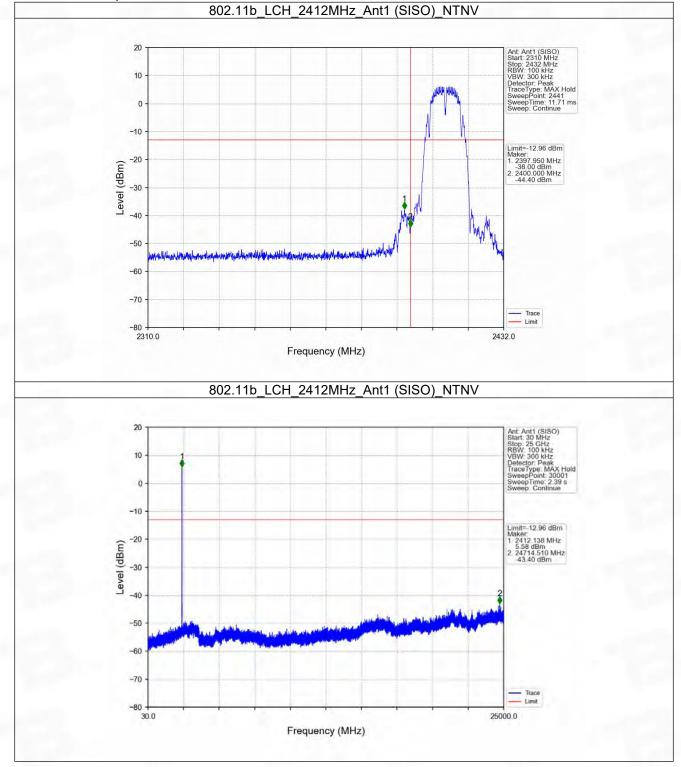
5.2 CSE

5.2.1 Test Result

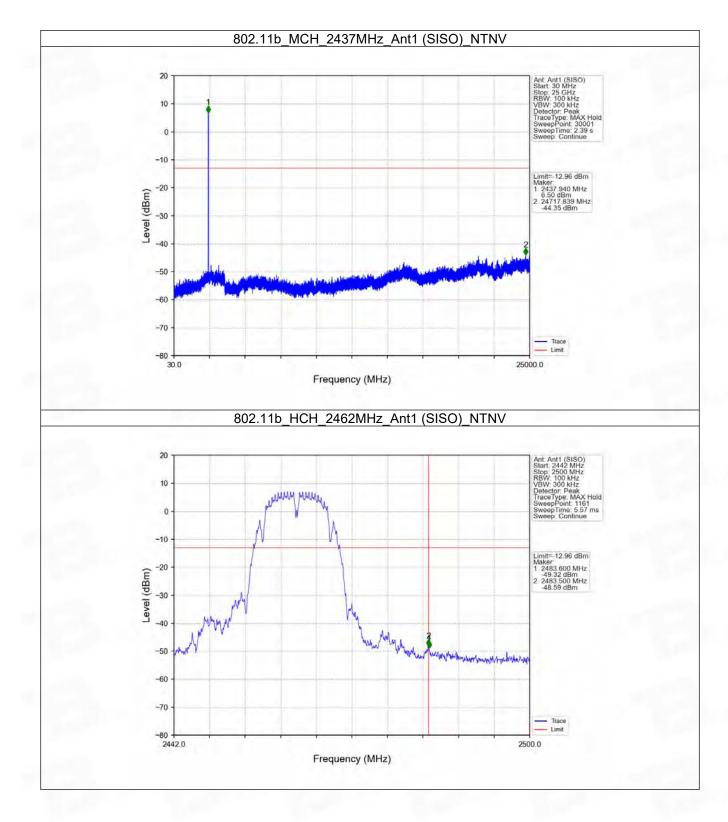
Mode	TX	Frequency	ANT	Level of Reference	Limit	Verdict
	Туре	(MHz)		(dBm)	(dBm)	
802.11b	SISO	2412	1	7.04	-12.96	Pass
		2437	1	7.04	-12.96	Pass
		2462	1	7.04	-12.96	Pass
802.11g	SISO	2412	1	8.82	-11.18	Pass
		2437	1	8.82	-11.18	Pass
		2462	1	8.82	-11.18	Pass
802.11n (HT20)	SISO	2412	1	8.93	-11.07	Pass
		2437	1	8.93	-11.07	Pass
		2462	1	8.93	-11.07	Pass
802.11n (HT40)	SISO	2422	1	5.54	-14.46	Pass
		2437	1	5.54	-14.46	Pass
		2452	1	5.54	-14.46	Pass
		15.247 (d) and A reference level.	NSI C63.10-	2013, the channel contain	s the maximur	n PSD level



5.2.2 Test Graph

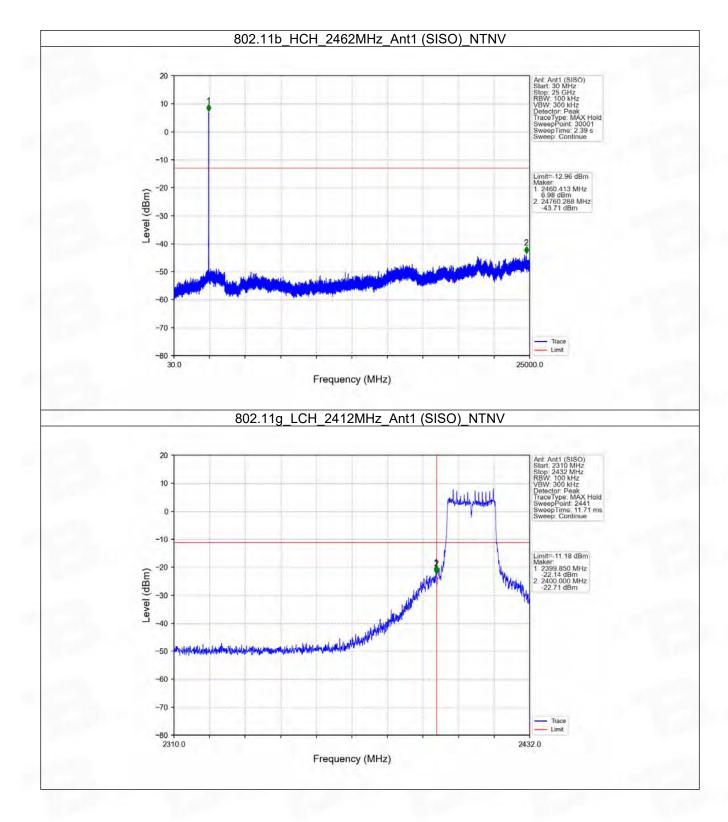




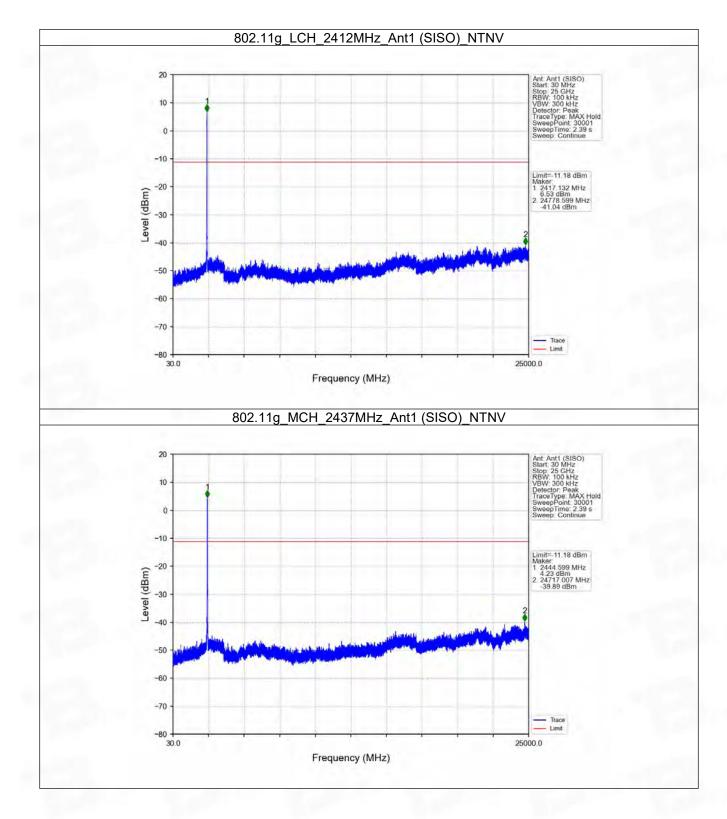


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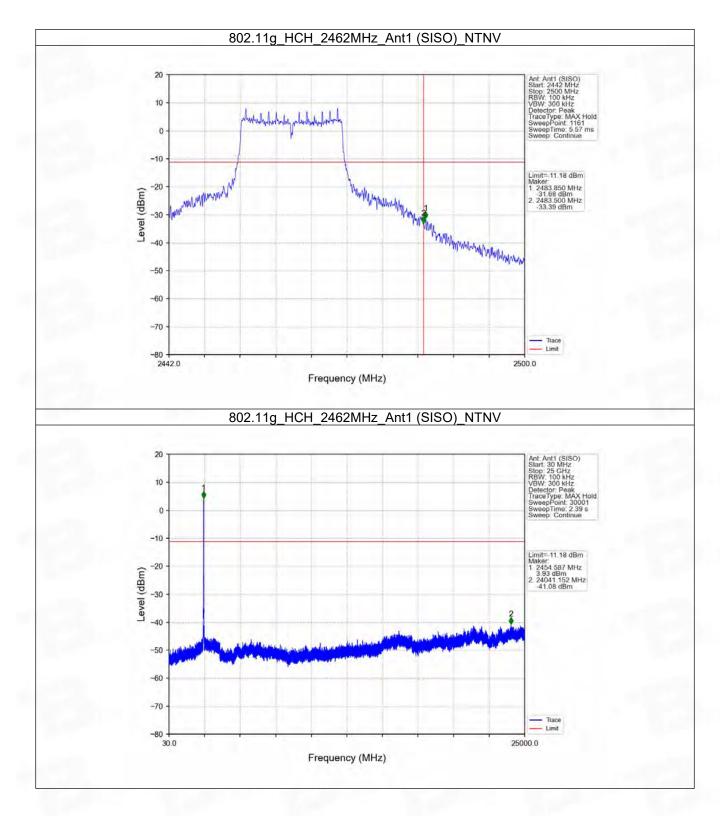






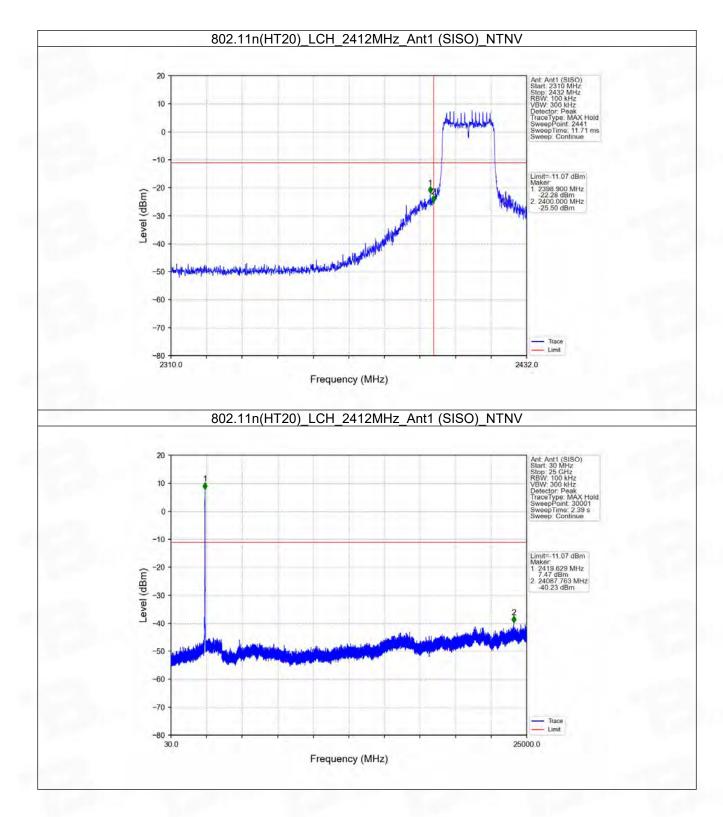
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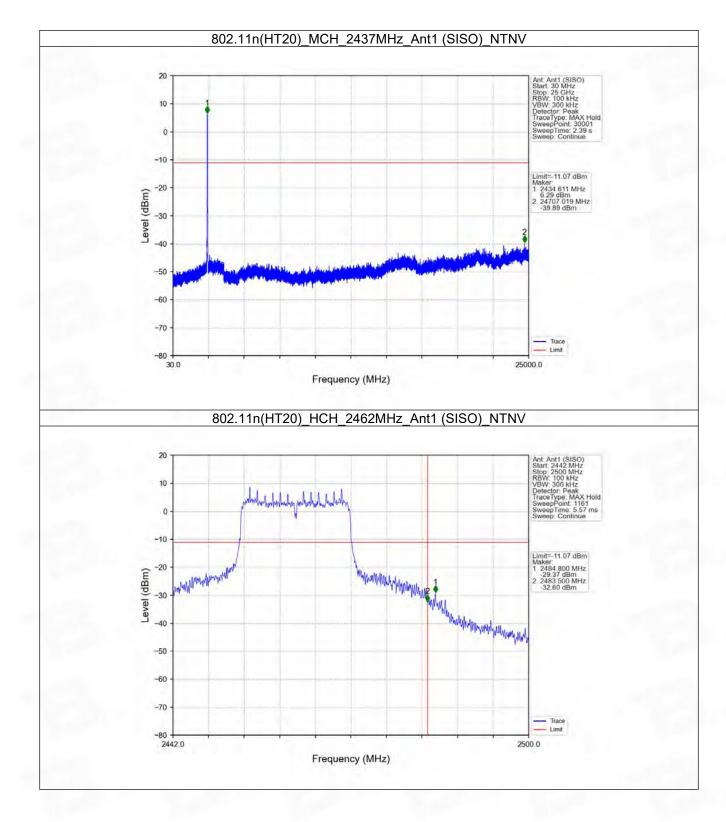


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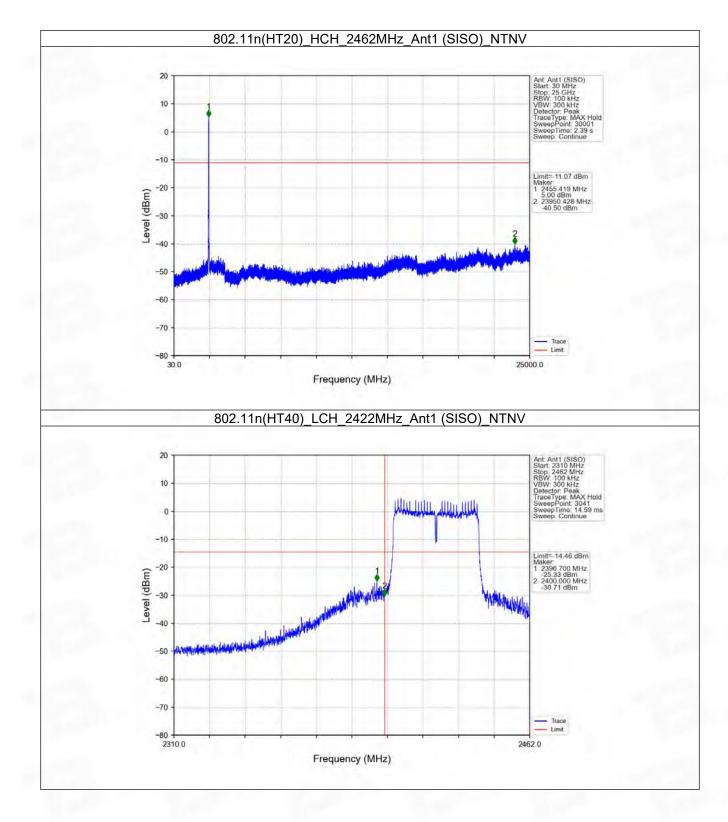






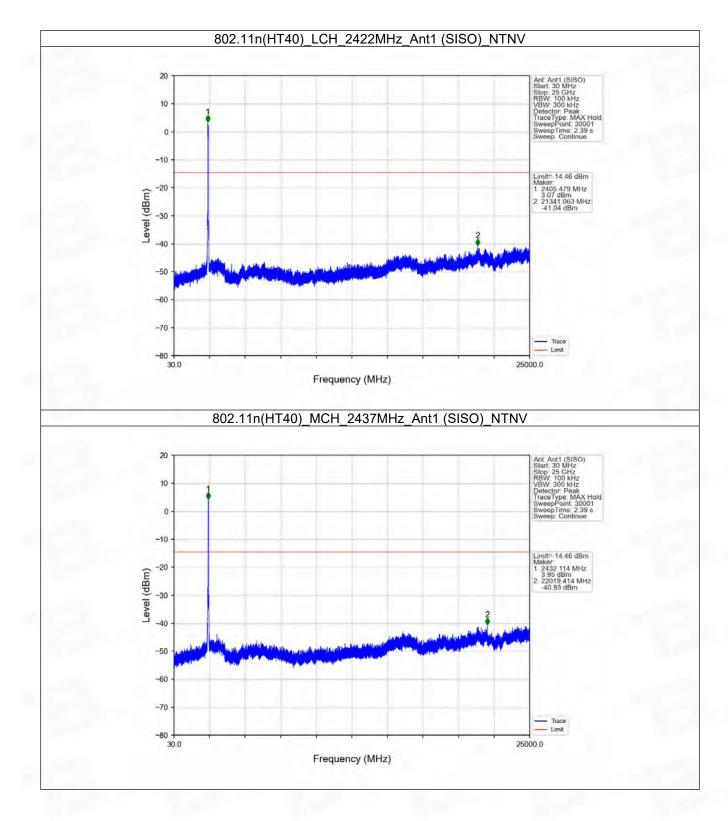






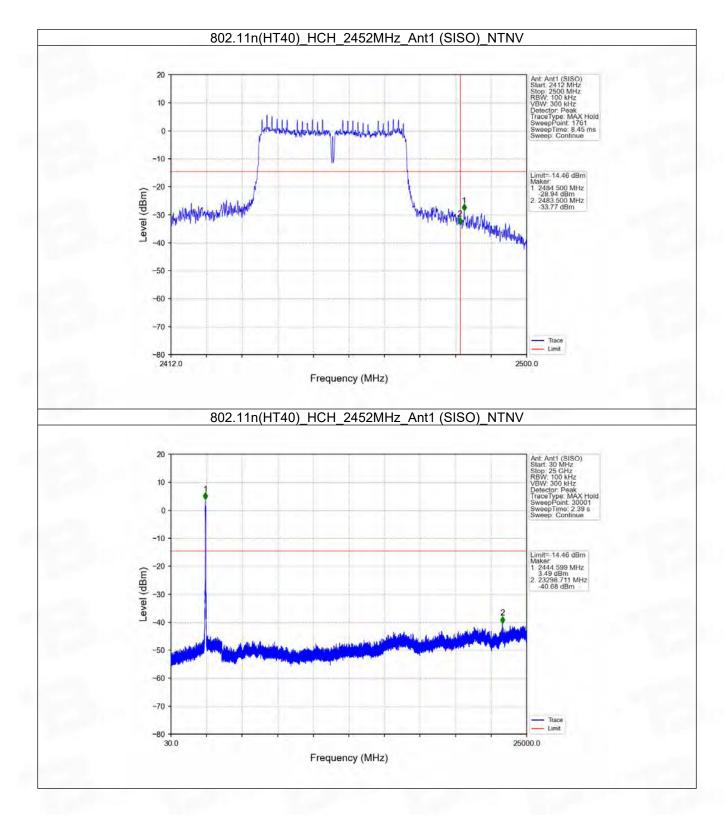
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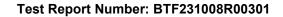


6. Form731

6.1 Form731

6.1.1 Test Result

Lower Freq (MHz)	High Freq (MHz)	MAX Power (W)	MAX Power (dBm)
2412	2462	0.1205	20.81
2422	2452	0.0973	19.88







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