



RF Test Report

For

Applicant Name: Shenzhen JBT Smart Lighting Co., LTD
Address: No.7 Building, No.1 Furong Road, Furong Industrial Park, Shajing Town, Baoan District, Shenzhen City, China
EUT Name: Smart Outdoor Wifi Plug
Brand Name: N/A
Model Number: MI-OW104-101
Series Model Number: Refer to section 2

Issued By

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

Report Number: BTF230628R00901
Test Standards: 47 CFR Part 15.247

Test Conclusion: Pass
FCC ID: 2AKG3-OW104
Test Date: 2023-06-21 to 2023-06-30
Date of Issue: 2023-07-11

Prepared By: 
Date: Elma. Yang / Project Engineer
2023-07-11

Approved By: 
Date: Ryan CJ/ EMC Manager
2023-07-11

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Test Report Number: BTF230628R00901

Revision History		
Version	Issue Date	Revisions Content
R_V0	2023-07-11	Original
<i>Note: Once the revision has been made, then previous versions reports are invalid.</i>		

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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

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 JBT Smart Lighting Co., LTD
Address:	No.7 Building, No.1 Furong Road, Furong Industrial Park, Shajing Town, Baoan District, Shenzhen City China

2.2 Manufacturer Information

Company Name:	Shenzhen JBT Smart Lighting Co., LTD
Address:	No.7 Building, No.1 Furong Road, Furong Industrial Park, Shajing Town, Baoan District, Shenzhen City China

2.3 Factory Information

Company Name:	/
Address:	/

2.4 General Description of Equipment under Test (EUT)

EUT Name:	Smart Outdoor Wifi Plug
Test Model Number:	MI-OW104-101
Series Model Name:	MI-OW104-101P, MI-OW104-101, MIC-OW104-101, MIC-OW104-101P, MI-OW204-101, MI-OW204-101P, MIC-OW204-101, MIC-OW204-101P, GN-OW104-101, GN-OW104-101P, GNC-OW104-101, GNC-OW104-101P, GN-OW204-101, GN-OW204-101P, GNC-OW204-101, GNC-OW204-101P, JBT-SMT-WFCZ-2301-1, JBT-SMT-WFCZ-2301-2
Description of Model name differentiation:	Since according to the declaration from the applicant, the electrical circuit design, layout, components used, internal wiring and functions were identical for the above models, with only different on colour.
Hardware Version:	V1.0
Software and Firmware Version:	V1.0
Sample No.:	BTFSN230628E011-1/1

2.5 Technical Information

Power Supply:	AC 120V, 50/60Hz, 15A
Power Adaptor:	/
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz;
Number of Channels:	802.11b/g/n(HT20): 11 Channels;
Modulation Type:	802.11b: DSSS(CCK, DQPSK, DBPSK); 802.11g: OFDM(BPSK, QPSK, 16QAM, 64QAM); 802.11n(HT20): OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna Type:	PCB ANT
Antenna Gain#:	2.21dBi

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

Measurement	Value
Occupied Channel Bandwidth	69 KHz
RF output power, conducted	0.87 dB
Power Spectral Density, conducted	0.69 dB
Unwanted Emissions, conducted	0.94 dB
All emissions, radiated(<1GHz)	4.12 dB
All emissions, radiated(>1GHz)	4.16 dB
Temperature	0.82 °C
Humidity	4.1 %

3.3 Summary of Test Result

Item	Standard	Requirement	Result
Antenna requirement	47 CFR Part 15.247	Part 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)	Pass
Band edge emissions (Radiated)	47 CFR Part 15.247	47 CFR 15.247(d)	Pass
Emissions in restricted frequency bands (below 1GHz)	47 CFR Part 15.247	47 CFR 15.247(d)	Pass
Emissions in restricted frequency bands (above 1GHz)	47 CFR Part 15.247	47 CFR 15.247(d)	Pass

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&SCHWARZ	ESCI3	101422	2022-11-24	2023-11-23

Occupied Bandwidth					
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 COMMUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022-11-24	2023-11-23
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022-11-24	2023-11-23

Maximum Conducted Output Power					
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 COMMUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022-11-24	2023-11-23
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022-11-24	2023-11-23

Power Spectral Density					
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 COMMUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022-11-24	2023-11-23
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022-11-24	2023-11-23

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	/	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 COMMUNICATION 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)

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2022-03-26	2023-03-25
Preamplifier	SCHWARZBECK	BBV9744	00246	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMAM-10m	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-SMAM-1m	21101568	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2021-11-28	2023-11-27
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI7	101032	2022-11-24	2023-11-23
SIGNAL ANALYZER	ROHDE&SCHWARZ	FSQ40	100010	2022-11-24	2023-11-23

POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Broadband Preamplifier	SCHWARZBECK	BBV9718D	00008	2022-03-26	2023-03-25
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2021-11-28	2023-11-27

Emissions in restricted frequency bands (below 1GHz)

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2022-03-26	2023-03-25
Preamplifier	SCHWARZBECK	BBV9744	00246	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMAM-10m	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-1m	21101568	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2021-11-28	2023-11-27
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI7	101032	2022-11-24	2023-11-23
SIGNAL ANALYZER	ROHDE&SCHWARZ	FSQ40	100010	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Broadband Preamplifier	SCHWARZBECK	BBV9718D	00008	2022-03-26	2023-03-25
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2021-11-28	2023-11-27

Emissions in restricted frequency bands (above 1GHz)

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2022-03-26	2023-03-25
Preamplifier	SCHWARZBECK	BBV9744	00246	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMAM-10m	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-1m	21101568	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2022-11-24	2023-11-23

POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2021-11-28	2023-11-27
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI7	101032	2022-11-24	2023-11-23
SIGNAL ANALYZER	ROHDE&SCHWARZ	FSQ40	100010	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Broadband Preamplifier	SCHWARZBECK	BBV9718D	00008	2022-03-26	2023-03-25
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
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

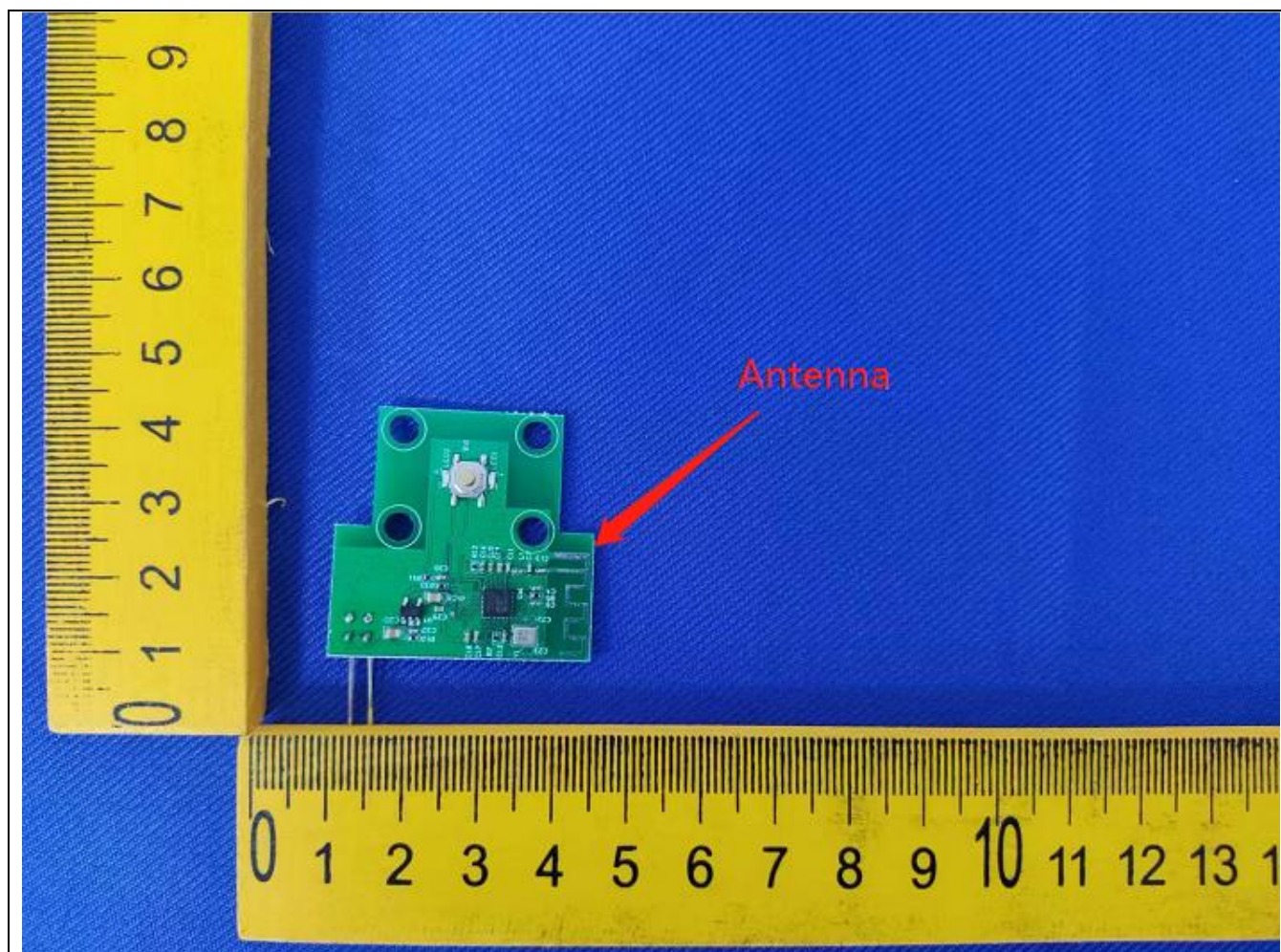
No.	Test Modes	Description
TM1	802.11b mode	Keep the EUT in continuously transmitting mode with 802.11b modulation.
TM2	802.11g mode	Keep the EUT in continuously transmitting mode with 802.11g modulation.
TM3	802.11n(HT20) mode	Keep the EUT in continuously transmitting mode with 802.11n(HT20) modulation.

5 Evaluation Results (Evaluation)

5.1 Antenna requirement

Test Requirement:	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.
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5.1.1 Conclusion:



6 Radio Spectrum Matter Test Results (RF)

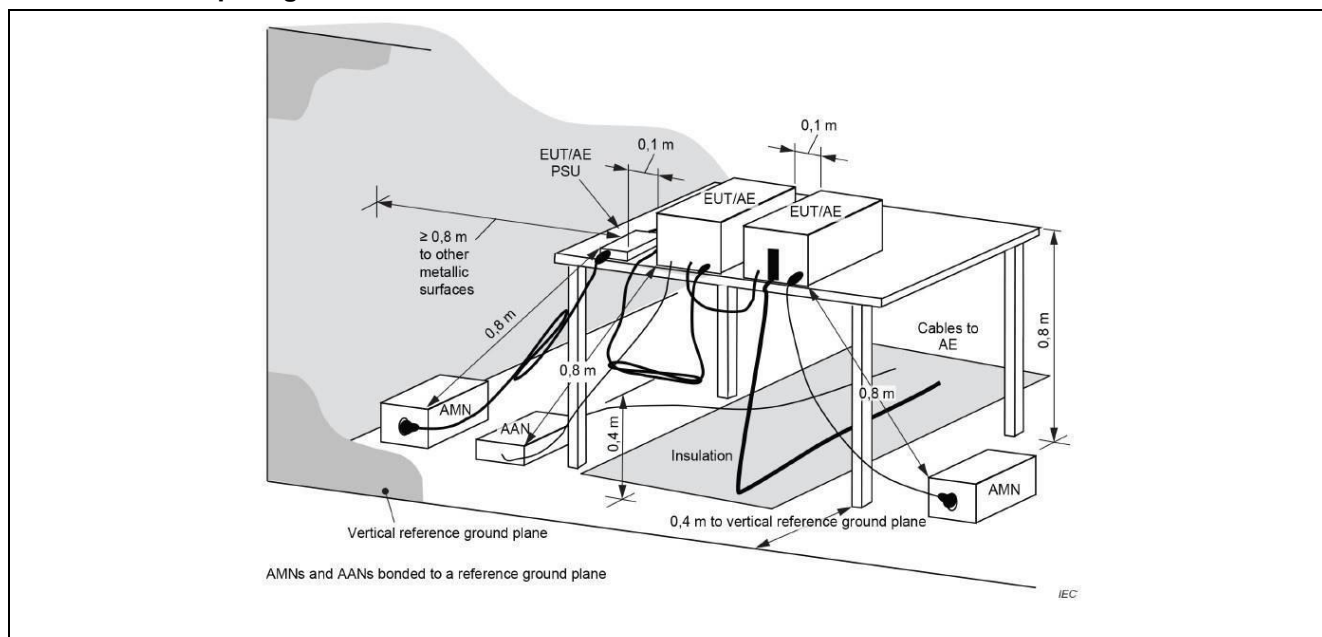
6.1 Conducted Emission at AC power line

Test Requirement:	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:	Refer to ANSI C63.10-2013 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices		
Test Limit:	Frequency of emission (MHz)	Conducted limit (dB μ V)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
*Decreases with the logarithm of the frequency.			

6.1.1 E.U.T. Operation:

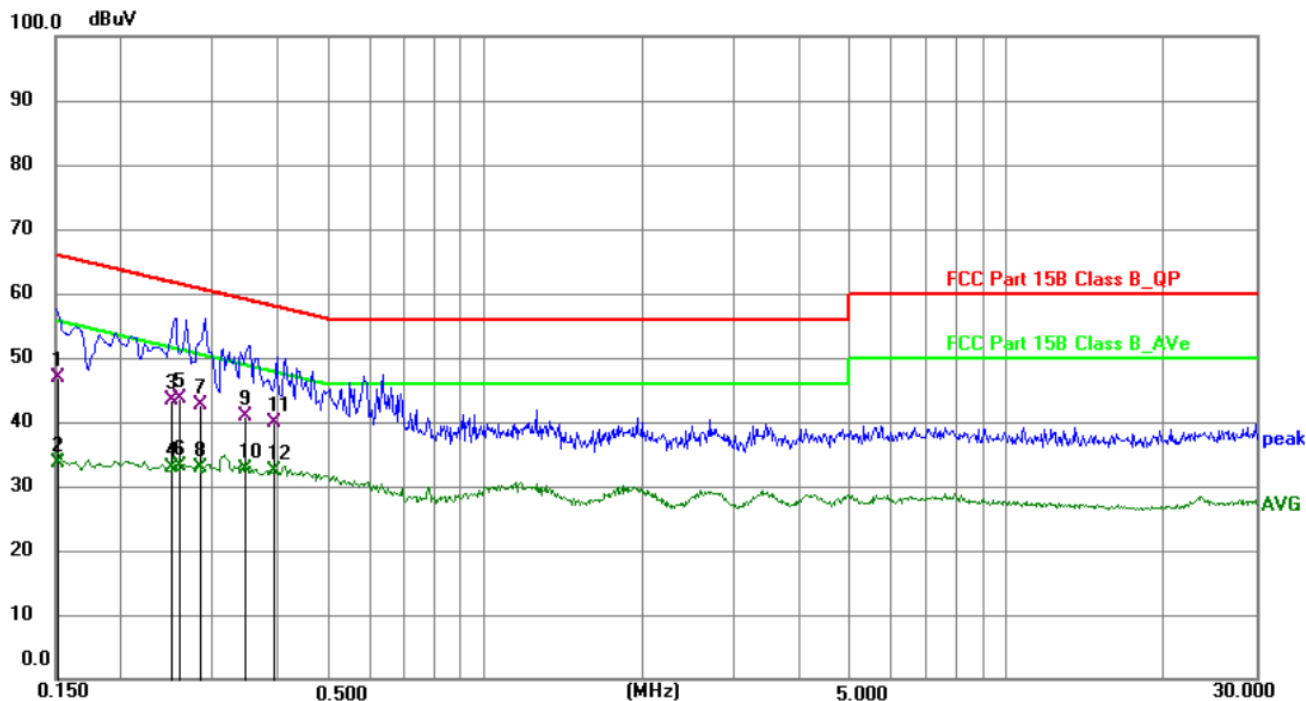
Operating Environment:	
Temperature:	24.6 °C
Humidity:	52.4 %
Atmospheric Pressure:	1010 mbar

6.1.2 Test Setup Diagram:



6.1.3 Test Data:

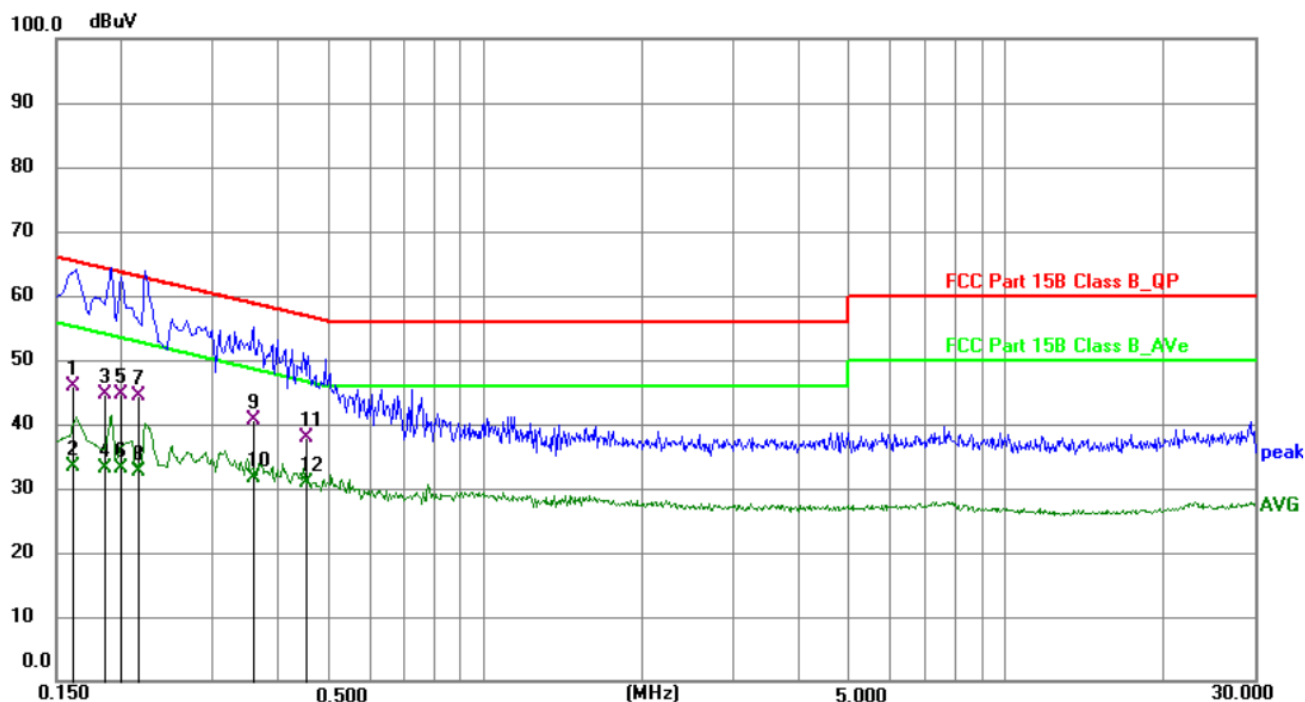
TM1 / Line: Line / Band: 2.4G / BW: 20 / CH: M



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1516	26.82	20.08	46.90	65.91	-19.01	QP	P	
2	0.1516	13.50	20.08	33.58	55.91	-22.33	AVG	P	
3	0.2500	23.37	20.10	43.47	61.76	-18.29	QP	P	
4	0.2500	12.81	20.10	32.91	51.76	-18.85	AVG	P	
5	0.2601	23.52	20.11	43.63	61.43	-17.80	QP	P	
6	0.2601	13.06	20.11	33.17	51.43	-18.26	AVG	P	
7	0.2847	22.59	20.11	42.70	60.68	-17.98	QP	P	
8	0.2847	12.76	20.11	32.87	50.68	-17.81	AVG	P	
9	0.3470	20.84	20.13	40.97	59.03	-18.06	QP	P	
10	0.3470	12.52	20.13	32.65	49.03	-16.38	AVG	P	
11	0.3941	19.69	20.14	39.83	57.98	-18.15	QP	P	
12 *	0.3941	12.25	20.14	32.39	47.98	-15.59	AVG	P	

Level= Reading Level+Factor.

TM1 / Line: Neutral / Band: 2.4G / BW: 20 / CH: M



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1615	25.78	20.08	45.86	65.39	-19.53	QP	P	
2	0.1615	13.26	20.08	33.34	55.39	-22.05	AVG	P	
3	0.1856	24.56	20.09	44.65	64.23	-19.58	QP	P	
4	0.1856	12.95	20.09	33.04	54.23	-21.19	AVG	P	
5	0.1999	24.55	20.09	44.64	63.61	-18.97	QP	P	
6	0.1999	12.93	20.09	33.02	53.61	-20.59	AVG	P	
7	0.2153	24.19	20.10	44.29	63.00	-18.71	QP	P	
8	0.2153	12.50	20.10	32.60	53.00	-20.40	AVG	P	
9	0.3573	20.39	20.13	40.52	58.79	-18.27	QP	P	
10	0.3573	11.48	20.13	31.61	48.79	-17.18	AVG	P	
11	0.4543	17.81	20.15	37.96	56.80	-18.84	QP	P	
12 *	0.4543	10.82	20.15	30.97	46.80	-15.83	AVG	P	

Level= Reading Level+Factor.

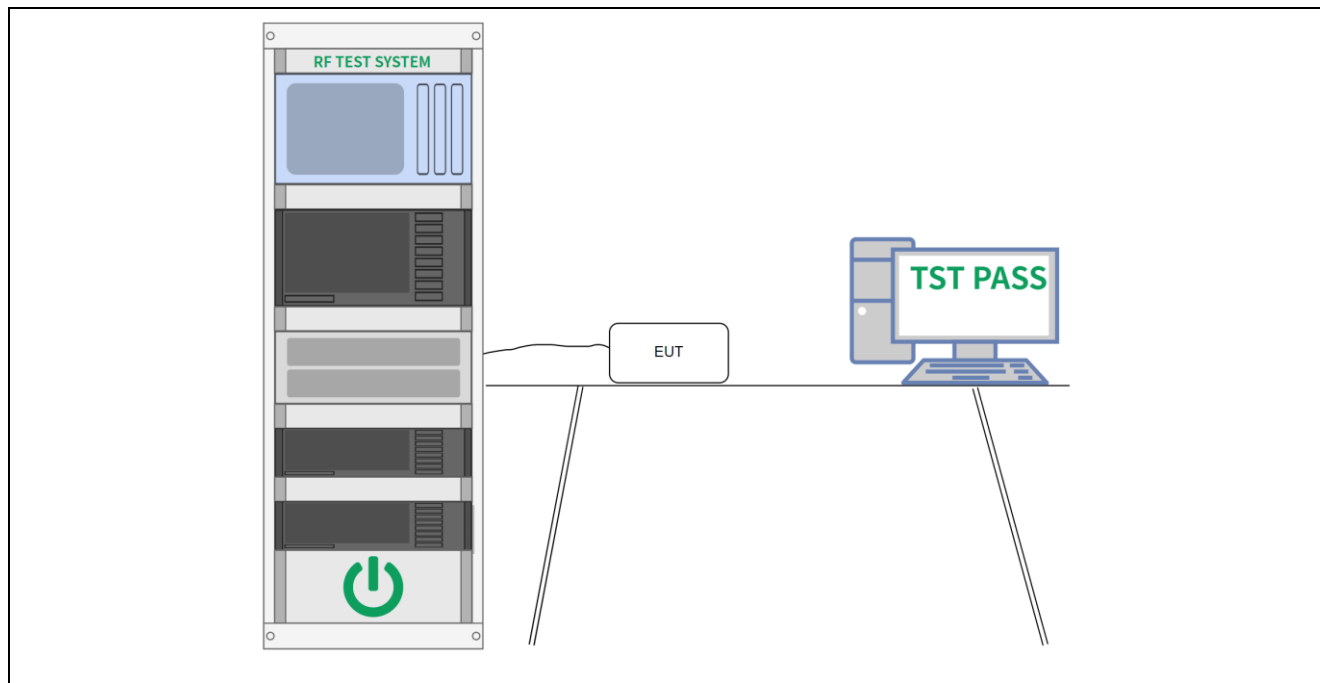
6.2 Occupied Bandwidth

Test Requirement:	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.
Test Method:	DTS bandwidth
Test Limit:	Section (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 $\geq [3 \times \text{RBW}]$. 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.

6.2.1 E.U.T. Operation:

Operating Environment:	
Temperature:	23.4 °C
Humidity:	52.8 %
Atmospheric Pressure:	1010 mbar

6.2.2 Test Setup Diagram:



6.2.3 Test Data:

Please Refer to Appendix for Details.

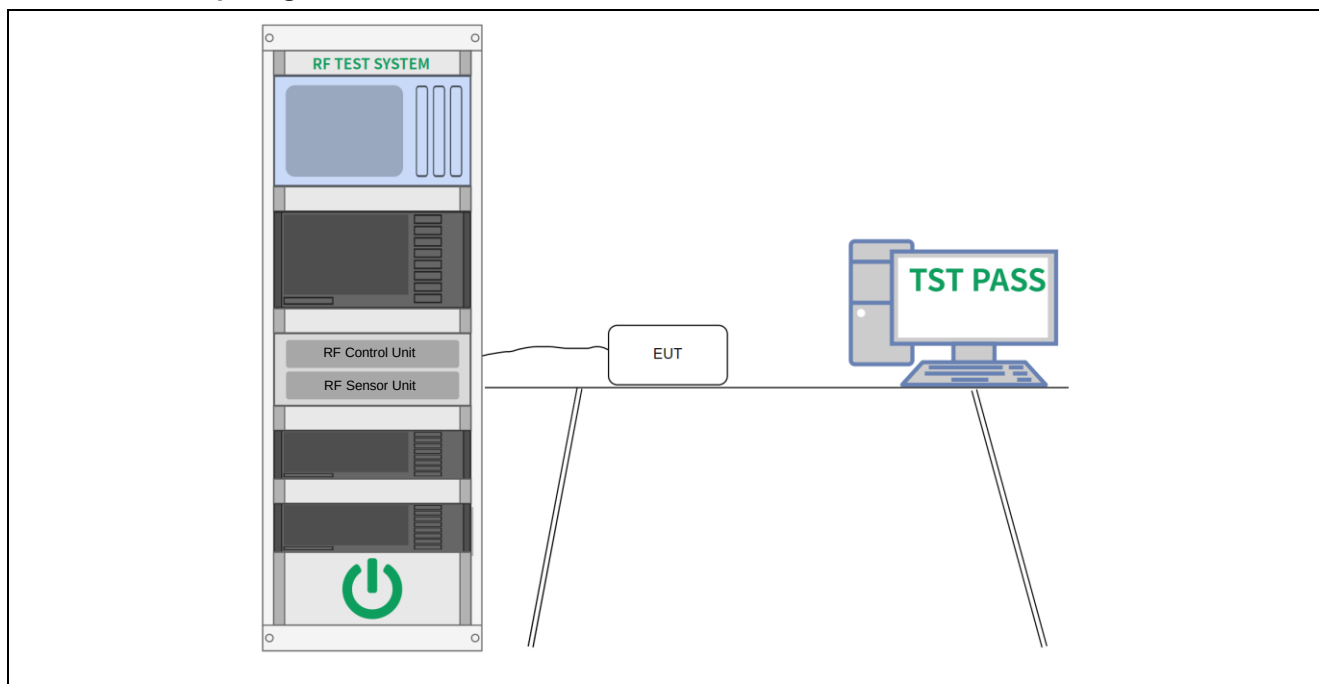
6.3 Maximum Conducted Output Power

Test Requirement:	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.
Test Method:	Maximum peak conducted output power
Test Limit:	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

6.3.1 E.U.T. Operation:

Operating Environment:	
Temperature:	23.4 °C
Humidity:	52.8 %
Atmospheric Pressure:	1010 mbar

6.3.2 Test Setup Diagram:



6.3.3 Test Data:

Please Refer to Appendix for Details.

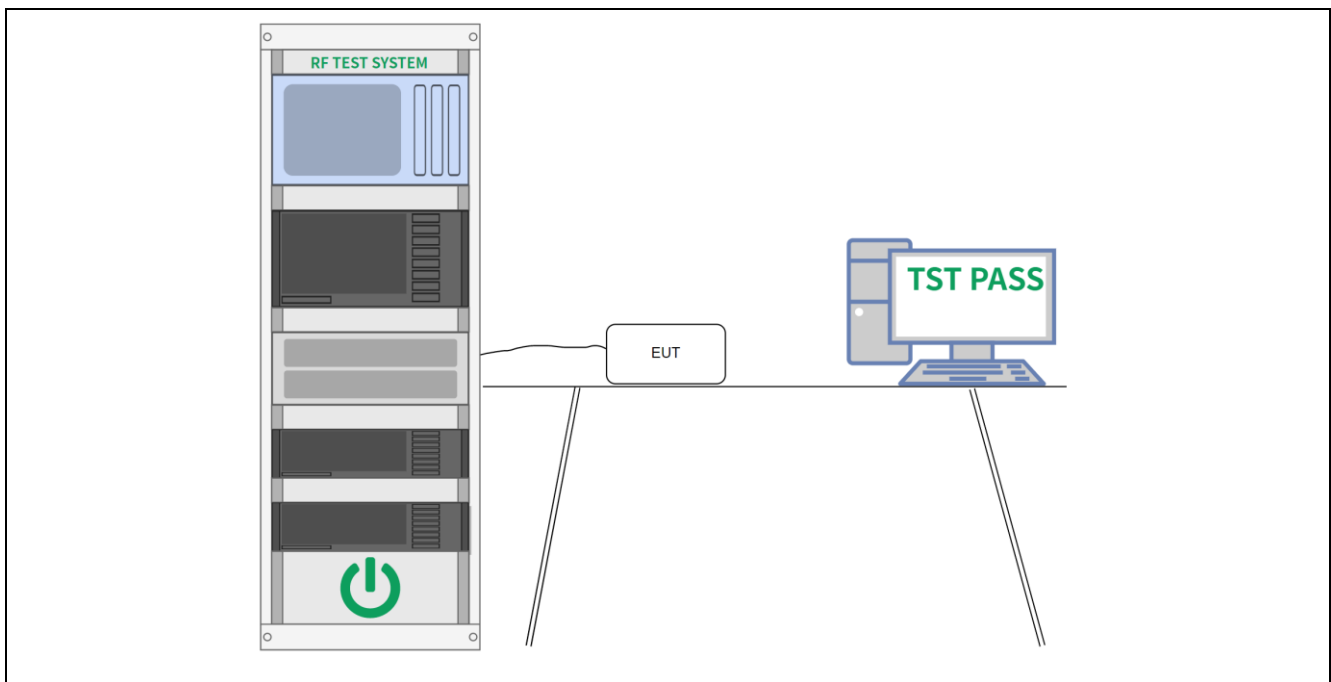
6.4 Power Spectral Density

Test Requirement:	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.
Test Method:	Maximum power spectral density level in the fundamental emission
Test Limit:	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.

6.4.1 E.U.T. Operation:

Operating Environment:	
Temperature:	23.4 °C
Humidity:	52.8 %
Atmospheric Pressure:	1010 mbar

6.4.2 Test Setup Diagram:



6.4.3 Test Data:

Please Refer to Appendix for Details.

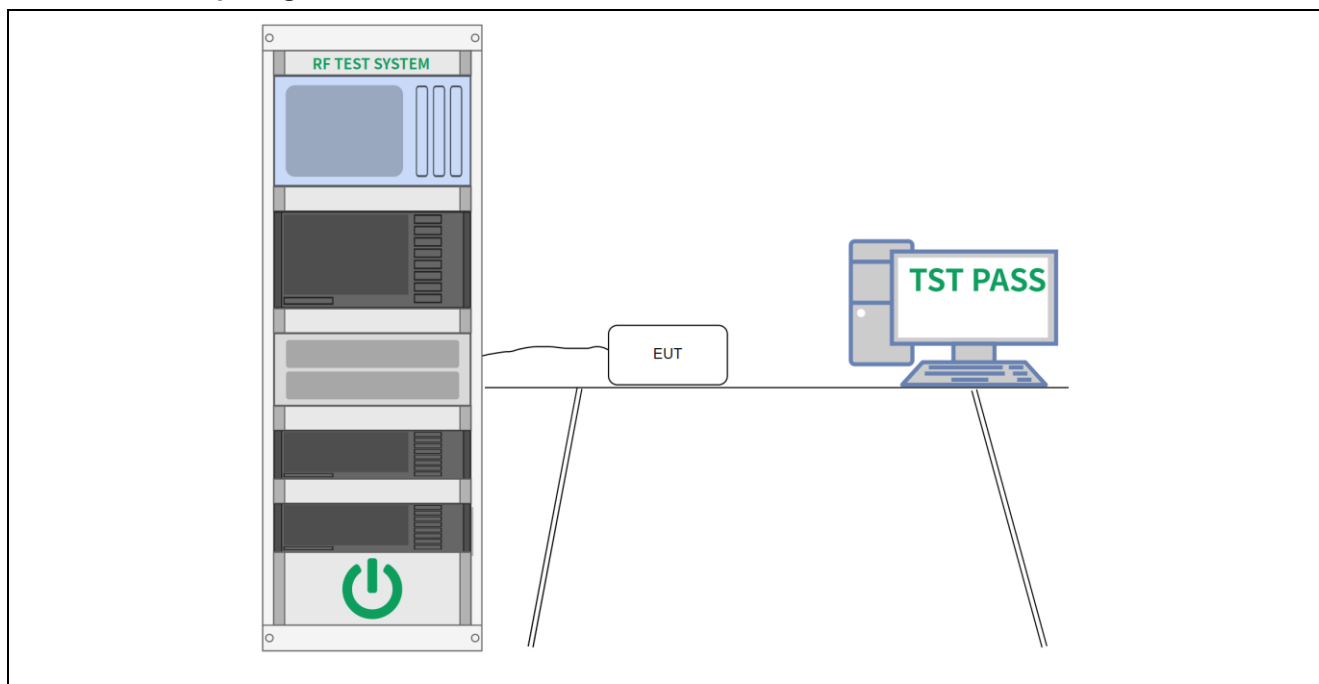
6.5 Emissions in non-restricted frequency bands

Test Requirement:	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.
Test Method:	Emissions in nonrestricted frequency bands
Test Limit:	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

6.5.1 E.U.T. Operation:

Operating Environment:	
Temperature:	23.4 °C
Humidity:	52.8 %
Atmospheric Pressure:	1010 mbar

6.5.2 Test Setup Diagram:



6.5.3 Test Data:

Please Refer to Appendix for Details.

6.6 Band edge emissions (Radiated)

Test Requirement:	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:	Radiated emissions tests		
Test Limit:	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
	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.			
Procedure:	ANSI C63.10-2013 section 6.6.4		

6.6.1 E.U.T. Operation:

Operating Environment:	
Temperature:	25.1 °C
Humidity:	51.9 %
Atmospheric Pressure:	1010 mbar

6.6.2 Test Data:

TM1 / Polarization: Horizontal / Band: 2.4G / 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	69.48	-30.59	38.89	74.00	-35.11	peak	P
2	2390.000	69.49	-30.49	39.00	74.00	-35.00	peak	P
3	2400.000	78.77	-30.48	48.29	74.00	-25.71	peak	P

TM1 / Polarization: Vertical / Band: 2.4G / 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	69.66	-30.59	39.07	74.00	-34.93	peak	P
2	2390.000	67.19	-30.49	36.70	74.00	-37.30	peak	P
3	2400.000	79.82	-30.48	49.34	74.00	-24.66	peak	P

TM1 / Polarization: Horizontal / Band: 2.4G / 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	79.57	-30.59	48.98	74.00	-25.02	peak	P
2	2500.000	68.47	-30.49	37.98	74.00	-36.02	peak	P

TM1 / Polarization: Vertical / Band: 2.4G / 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	79.07	-30.59	48.48	74.00	-25.52	peak	P
2	2500.000	71.82	-30.49	41.33	74.00	-32.67	peak	P

TM2 / Polarization: Horizontal / Band: 2.4G / 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	67.40	-30.59	36.81	74.00	-37.19	peak	P
2	2390.000	70.50	-30.49	40.01	74.00	-33.99	peak	P
3	2400.000	77.69	-30.48	47.21	74.00	-26.79	peak	P

TM2 / Polarization: Vertical / Band: 2.4G / 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	67.95	-30.59	37.36	74.00	-36.64	peak	P
2	2390.000	68.12	-30.49	37.63	74.00	-36.37	peak	P
3	2400.000	78.71	-30.48	48.23	74.00	-25.77	peak	P

TM2 / Polarization: Horizontal / Band: 2.4G / 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	79.87	-30.59	49.28	74.00	-24.72	peak	P
2	2500.000	69.61	-30.49	39.12	74.00	-34.88	peak	P

TM2 / Polarization: Vertical / Band: 2.4G / 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	80.23	-30.59	49.64	74.00	-24.36	peak	P
2	2500.000	69.20	-30.49	38.71	74.00	-35.29	peak	P

TM3 / Polarization: Horizontal / Band: 2.4G / 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	67.72	-30.59	37.13	74.00	-36.87	peak	P
2	2390.000	68.78	-30.49	38.29	74.00	-35.71	peak	P
3	2400.000	79.60	-30.48	49.12	74.00	-24.88	peak	P

TM3 / Polarization: Vertical / Band: 2.4G / 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	66.49	-30.59	35.90	74.00	-38.10	peak	P
2	2390.000	69.99	-30.49	39.50	74.00	-34.50	peak	P
3	2400.000	76.44	-30.48	45.96	74.00	-28.04	peak	P

TM3 / Polarization: Horizontal / Band: 2.4G / 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	78.02	-30.59	47.43	74.00	-26.57	peak	P
2	2500.000	71.01	-30.49	40.52	74.00	-33.48	peak	P

TM3 / Polarization: Vertical / Band: 2.4G / 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	79.89	-30.59	49.30	74.00	-24.70	peak	P
2	2500.000	71.04	-30.49	40.55	74.00	-33.45	peak	P

6.7 Emissions in restricted frequency bands (below 1GHz)

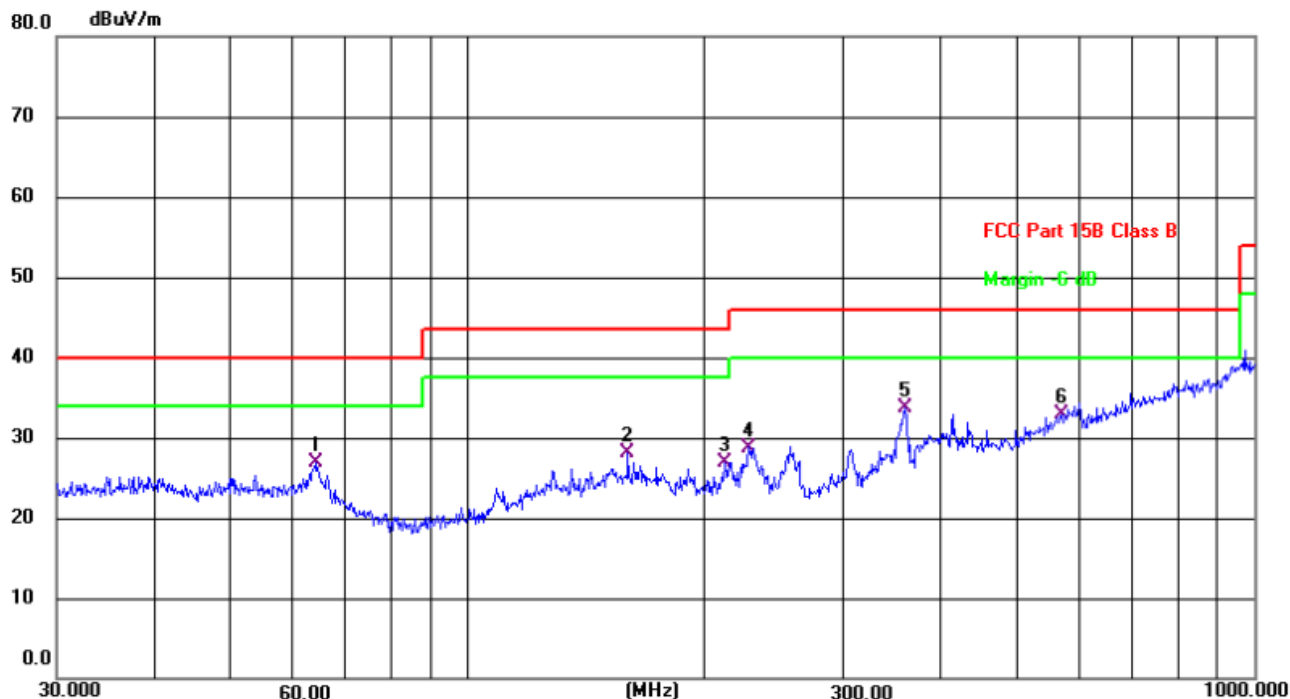
Test Requirement:	In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).`		
Test Method:	Radiated emissions tests		
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	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
	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.			
Procedure:	ANSI C63.10-2013 section 6.6.4		

6.7.1 E.U.T. Operation:

Operating Environment:	
Temperature:	25.4 °C
Humidity:	51.1 %
Atmospheric Pressure:	1010 mbar

6.7.2 Test Data:

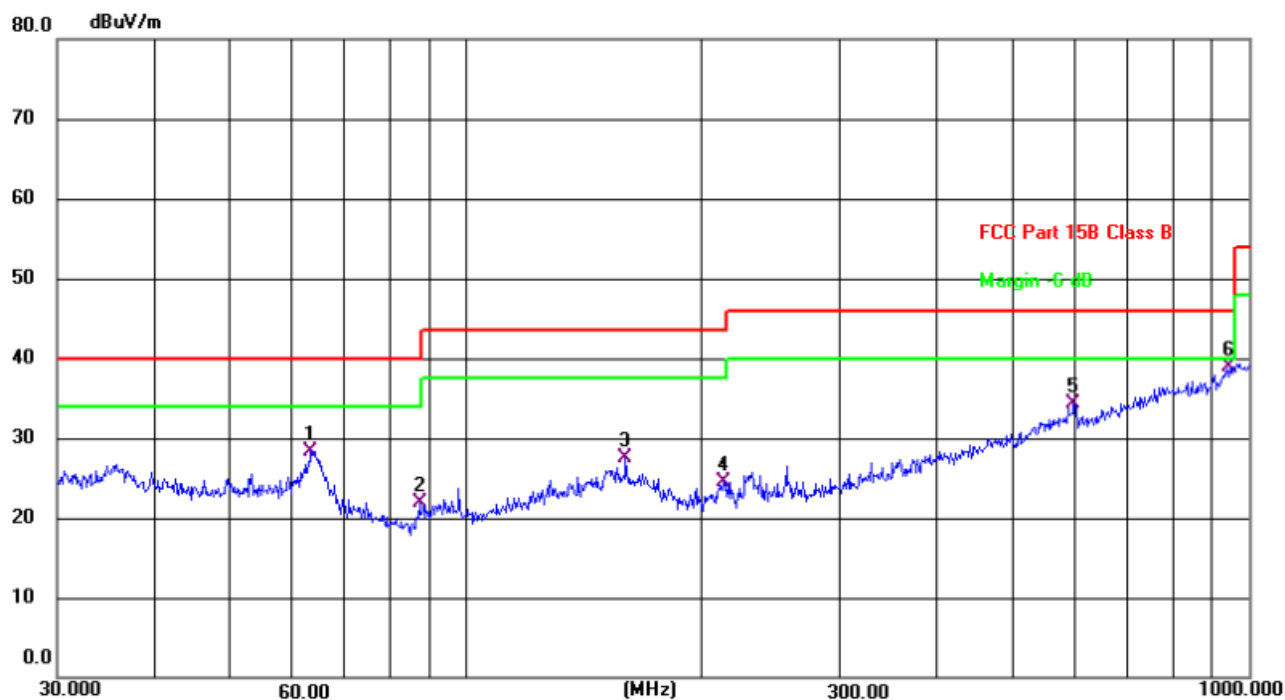
Note: All the mode have been tested, and only the worst case of 802.11n mode are in the report
 TM3 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	64.2074	44.77	-17.80	26.97	40.00	-13.03	QP	199	349	P	
2	159.7844	48.31	-20.21	28.10	43.50	-15.40	QP	199	118	P	
3	212.2695	46.41	-19.54	26.87	43.50	-16.63	QP	199	327	P	
4	227.6906	48.36	-19.56	28.80	46.00	-17.20	QP	100	165	P	
5 *	359.1860	53.32	-19.54	33.78	46.00	-12.22	QP	100	142	P	
6	568.6127	51.99	-18.99	33.00	46.00	-13.00	QP	199	349	P	

Level= Reading Level+Factor.

TM3 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	63.3132	46.11	-17.80	28.31	40.00	-11.69	QP	100	11	P	
2	87.1117	44.15	-22.17	21.98	40.00	-18.02	QP	199	348	P	
3	159.7844	47.68	-20.21	27.47	43.50	-16.03	QP	199	305	P	
4	213.0151	43.98	-19.54	24.44	43.50	-19.06	QP	100	22	P	
5	597.2234	53.31	-18.97	34.34	46.00	-11.66	QP	100	100	P	
6 *	945.4399	57.38	-18.49	38.89	46.00	-7.11	QP	100	177	P	

Level= Reading Level+Factor.

6.8 Emissions in restricted frequency bands (above 1GHz)

Test Requirement:	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:	Radiated emissions tests		
Test Limit:	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
	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.			
Procedure:	ANSI C63.10-2013 section 6.6.4		

6.8.1 E.U.T. Operation:

Operating Environment:	
Temperature:	25.8 °C
Humidity:	51.2 %
Atmospheric Pressure:	1010 mbar

6.8.2 Test Data:

TM1 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH: L

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2913.804	68.75	-29.20	39.54	74.00	-34.46	peak	P
2	4277.422	67.95	-29.10	38.85	74.00	-35.15	peak	P
3	6084.604	64.75	-25.22	39.53	74.00	-34.47	peak	P
4	8645.407	68.81	-24.06	44.76	74.00	-29.24	peak	P
5	11047.837	66.97	-23.98	42.99	74.00	-31.01	peak	P
6	14217.313	70.77	-21.23	49.54	74.00	-24.46	peak	P

TM1 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: L

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2914.069	70.38	-30.58	39.80	74.00	-34.20	peak	P
2	4277.675	69.13	-29.64	39.49	74.00	-34.51	peak	P
3	6085.122	64.07	-24.61	39.46	74.00	-34.54	peak	P
4	8645.156	70.34	-24.69	45.65	74.00	-28.35	peak	P
5	11047.025	68.92	-23.39	45.53	74.00	-28.47	peak	P
6	14217.747	70.68	-21.65	49.02	74.00	-24.98	peak	P

TM1 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH: M

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3032.347	65.90	-29.01	36.89	74.00	-37.11	peak	P
2	4478.971	68.18	-28.44	39.74	74.00	-34.26	peak	P
3	6404.813	68.65	-25.56	43.09	74.00	-30.91	peak	P
4	9118.946	68.27	-24.77	43.50	74.00	-30.50	peak	P
5	11647.821	69.77	-23.18	46.59	74.00	-27.41	peak	P
6	13474.849	73.34	-19.61	53.73	74.00	-20.27	peak	P

TM1 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: M

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3118.527	63.80	-29.98	33.82	74.00	-40.18	peak	P
2	4109.811	68.16	-29.34	38.82	74.00	-35.18	peak	P
3	5953.000	69.40	-25.33	44.06	74.00	-29.94	peak	P
4	7571.199	65.69	-24.89	40.80	74.00	-33.20	peak	P
5	9929.592	70.20	-24.62	45.58	74.00	-28.42	peak	P
6	12827.518	69.88	-21.60	48.28	74.00	-25.72	peak	P

TM1 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH: H

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3117.519	65.71	-28.85	36.86	74.00	-37.14	peak	P
2	4492.190	66.95	-29.44	37.52	74.00	-36.48	peak	P
3	6547.565	69.78	-25.66	44.12	74.00	-29.88	peak	P
4	9274.434	68.29	-24.07	44.22	74.00	-29.78	peak	P
5	11776.622	70.83	-22.11	48.72	74.00	-25.28	peak	P
6	13630.795	72.69	-21.20	51.48	74.00	-22.52	peak	P

TM1 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: H

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3250.657	63.33	-30.18	33.15	74.00	-40.85	peak	P
2	4112.248	68.12	-29.55	38.57	74.00	-35.43	peak	P
3	6083.867	69.16	-25.57	43.59	74.00	-30.41	peak	P
4	7700.814	65.37	-25.56	39.80	74.00	-34.20	peak	P
5	9968.135	69.76	-23.47	46.30	74.00	-27.70	peak	P
6	12824.940	69.91	-21.03	48.88	74.00	-25.12	peak	P

TM2 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH: L

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2913.807	69.07	-30.01	39.05	74.00	-34.95	peak	P
2	4277.622	68.46	-28.04	40.43	74.00	-33.57	peak	P
3	6085.513	65.41	-25.98	39.43	74.00	-34.57	peak	P
4	8645.088	70.72	-25.48	45.24	74.00	-28.76	peak	P
5	11046.539	67.96	-23.57	44.39	74.00	-29.61	peak	P
6	14218.217	70.34	-21.82	48.52	74.00	-25.48	peak	P

TM2 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: L

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2974.205	67.23	-30.36	36.87	74.00	-37.13	peak	P
2	4313.015	67.97	-28.00	39.97	74.00	-34.03	peak	P
3	6353.696	67.43	-24.89	42.54	74.00	-31.46	peak	P
4	8577.047	69.51	-24.23	45.27	74.00	-28.73	peak	P
5	11287.078	68.76	-24.06	44.70	74.00	-29.30	peak	P
6	14955.410	71.99	-20.41	51.58	74.00	-22.42	peak	P

TM2 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH: M

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3063.190	65.83	-28.95	36.88	74.00	-37.12	peak	P
2	4646.721	68.17	-29.08	39.09	74.00	-34.91	peak	P
3	6453.602	69.73	-26.10	43.63	74.00	-30.37	peak	P
4	9124.162	68.23	-23.70	44.54	74.00	-29.46	peak	P
5	11770.011	69.40	-22.77	46.63	74.00	-27.37	peak	P
6	13567.599	71.70	-20.80	50.90	74.00	-23.10	peak	P

TM2 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: M

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3226.492	63.93	-29.41	34.52	74.00	-39.48	peak	P
2	4278.406	68.44	-28.92	39.51	74.00	-34.49	peak	P
3	5965.255	68.68	-25.30	43.38	74.00	-30.62	peak	P
4	7623.615	66.15	-24.21	41.95	74.00	-32.05	peak	P
5	9979.490	69.93	-23.74	46.19	74.00	-27.81	peak	P
6	12968.990	69.80	-21.20	48.60	74.00	-25.40	peak	P

TM2 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH: H

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3146.865	65.91	-29.66	36.25	74.00	-37.75	peak	P
2	4508.717	67.23	-28.35	38.88	74.00	-35.12	peak	P
3	6447.965	69.66	-26.17	43.49	74.00	-30.51	peak	P
4	9271.650	69.62	-23.96	45.66	74.00	-28.34	peak	P
5	11741.352	70.25	-22.60	47.66	74.00	-26.34	peak	P
6	13511.718	71.61	-20.53	51.08	74.00	-22.92	peak	P

TM2 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: H

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3184.365	64.01	-30.34	33.67	74.00	-40.33	peak	P
2	4212.818	67.18	-29.80	37.38	74.00	-36.62	peak	P
3	6084.778	68.46	-24.96	43.50	74.00	-30.50	peak	P
4	7697.345	65.50	-24.53	40.97	74.00	-33.03	peak	P
5	10073.917	69.59	-23.38	46.21	74.00	-27.79	peak	P
6	13016.196	70.67	-21.72	48.94	74.00	-25.06	peak	P

TM3 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH: L

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2914.379	69.90	-29.31	40.59	74.00	-33.41	peak	P
2	4277.373	69.15	-28.77	40.38	74.00	-33.62	peak	P
3	6084.501	65.82	-26.24	39.58	74.00	-34.42	peak	P
4	8645.373	68.99	-25.37	43.62	74.00	-30.38	peak	P
5	11047.962	67.24	-22.59	44.66	74.00	-29.34	peak	P
6	14218.869	70.40	-21.83	48.57	74.00	-25.43	peak	P

TM3 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: L

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2973.378	66.73	-28.97	37.76	74.00	-36.24	peak	P
2	4313.701	69.62	-28.74	40.88	74.00	-33.12	peak	P
3	6354.024	67.83	-25.51	42.32	74.00	-31.68	peak	P
4	8576.457	68.93	-25.72	43.21	74.00	-30.79	peak	P
5	11286.890	68.74	-22.67	46.07	74.00	-27.93	peak	P
6	14955.603	71.89	-19.97	51.93	74.00	-22.07	peak	P

TM3 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH: M

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3172.671	66.39	-29.26	37.12	74.00	-36.88	peak	P
2	4664.972	67.57	-27.92	39.65	74.00	-34.35	peak	P
3	6566.886	68.49	-24.50	43.99	74.00	-30.01	peak	P
4	9200.705	69.14	-23.37	45.76	74.00	-28.24	peak	P
5	11831.313	70.49	-22.71	47.78	74.00	-26.22	peak	P
6	13554.174	72.73	-21.09	51.63	74.00	-22.37	peak	P

TM3 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: M

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3150.352	63.71	-28.82	34.89	74.00	-39.11	peak	P
2	4113.544	68.49	-28.30	40.19	74.00	-33.81	peak	P
3	6074.266	68.63	-26.34	42.29	74.00	-31.71	peak	P
4	7693.365	65.76	-25.24	40.52	74.00	-33.48	peak	P
5	10026.487	70.62	-23.35	47.27	74.00	-26.73	peak	P
6	12963.165	70.19	-22.07	48.12	74.00	-25.88	peak	P

TM3 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH: H

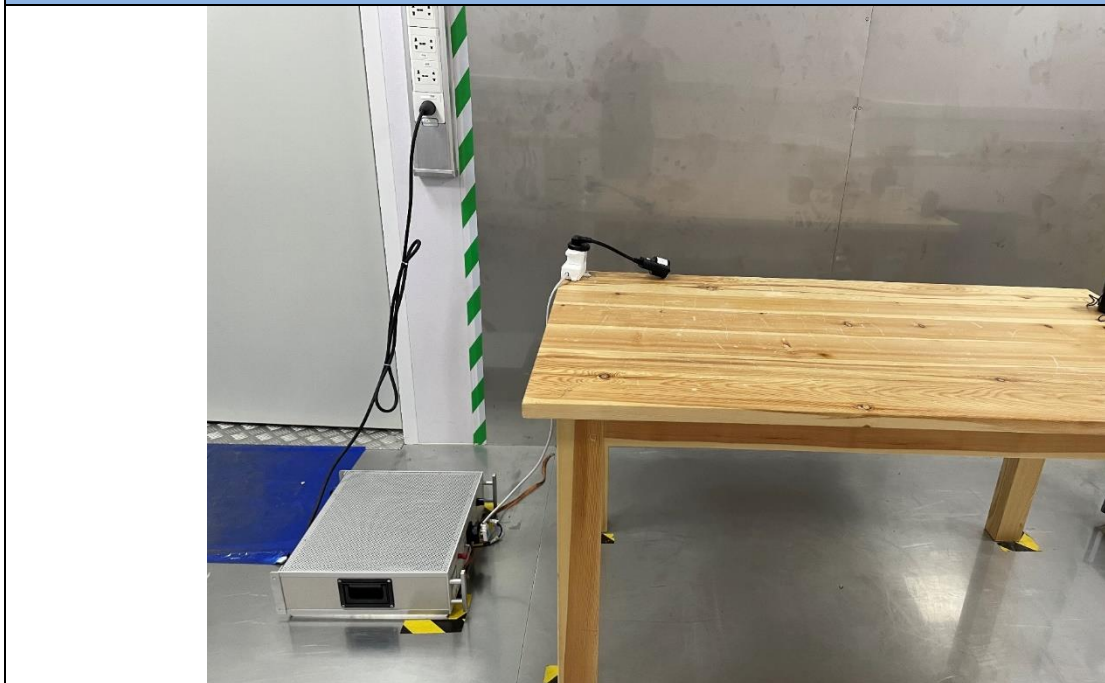
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3148.804	65.60	-29.28	36.32	74.00	-37.68	peak	P
2	4581.582	66.83	-29.59	37.25	74.00	-36.75	peak	P
3	6461.999	68.48	-26.30	42.18	74.00	-31.82	peak	P
4	9293.553	69.35	-24.70	44.64	74.00	-29.36	peak	P
5	11833.379	69.77	-23.15	46.61	74.00	-27.39	peak	P
6	13567.910	73.39	-19.45	53.94	74.00	-20.06	peak	P

TM3 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: H

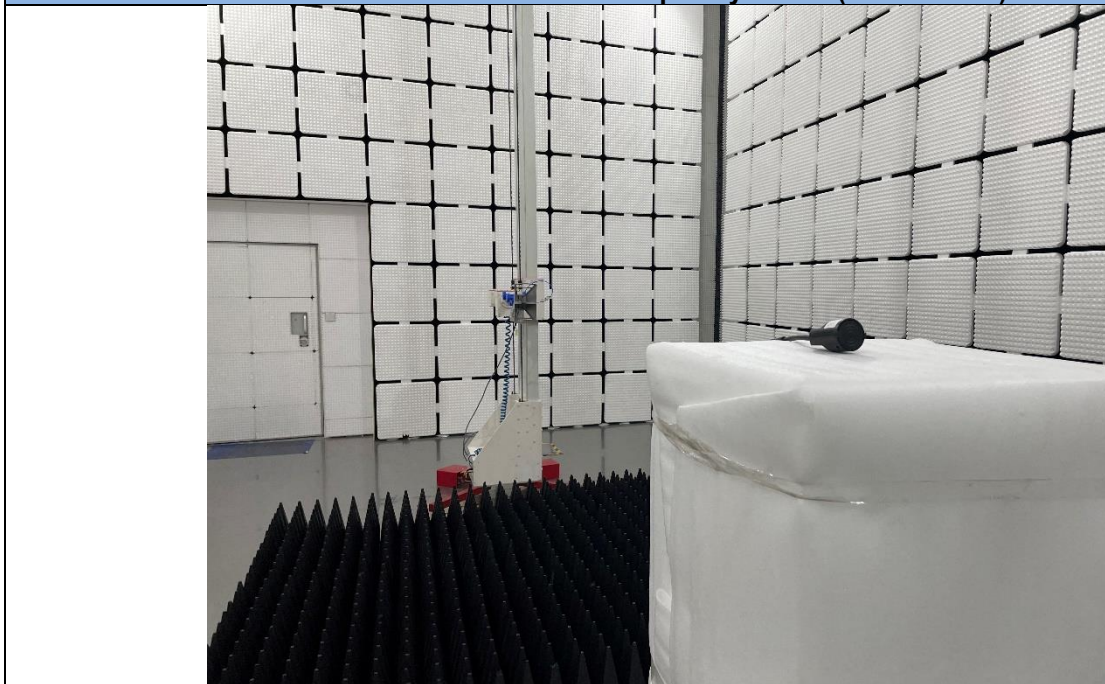
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3217.757	64.19	-29.82	34.37	74.00	-39.63	peak	P
2	4298.217	66.85	-28.47	38.38	74.00	-35.62	peak	P
3	5983.999	68.03	-26.30	41.74	74.00	-32.26	peak	P
4	7659.966	65.87	-24.97	40.90	74.00	-33.10	peak	P
5	9952.041	71.17	-23.46	47.71	74.00	-26.29	peak	P
6	12838.215	69.70	-21.77	47.93	74.00	-26.07	peak	P

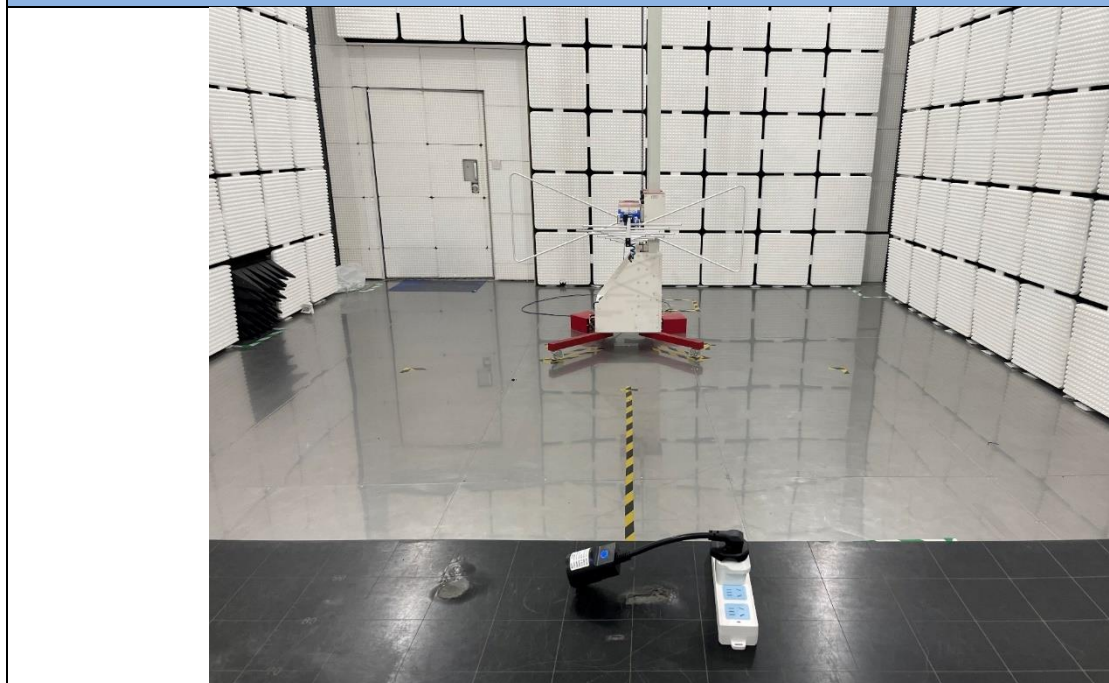
7 Test Setup Photos

Conducted Emission at AC power line



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



Emissions in restricted frequency bands (below 1GHz)

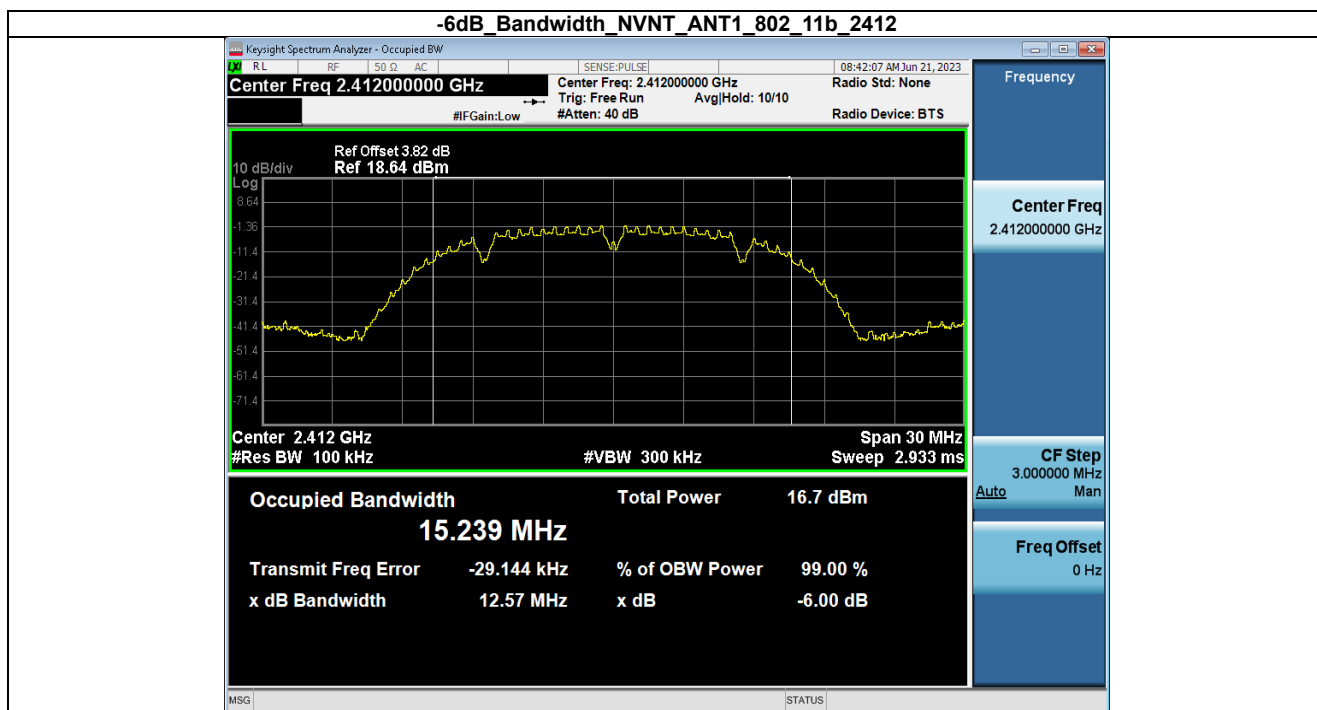
8 EUT Constructional Details (EUT Photos)

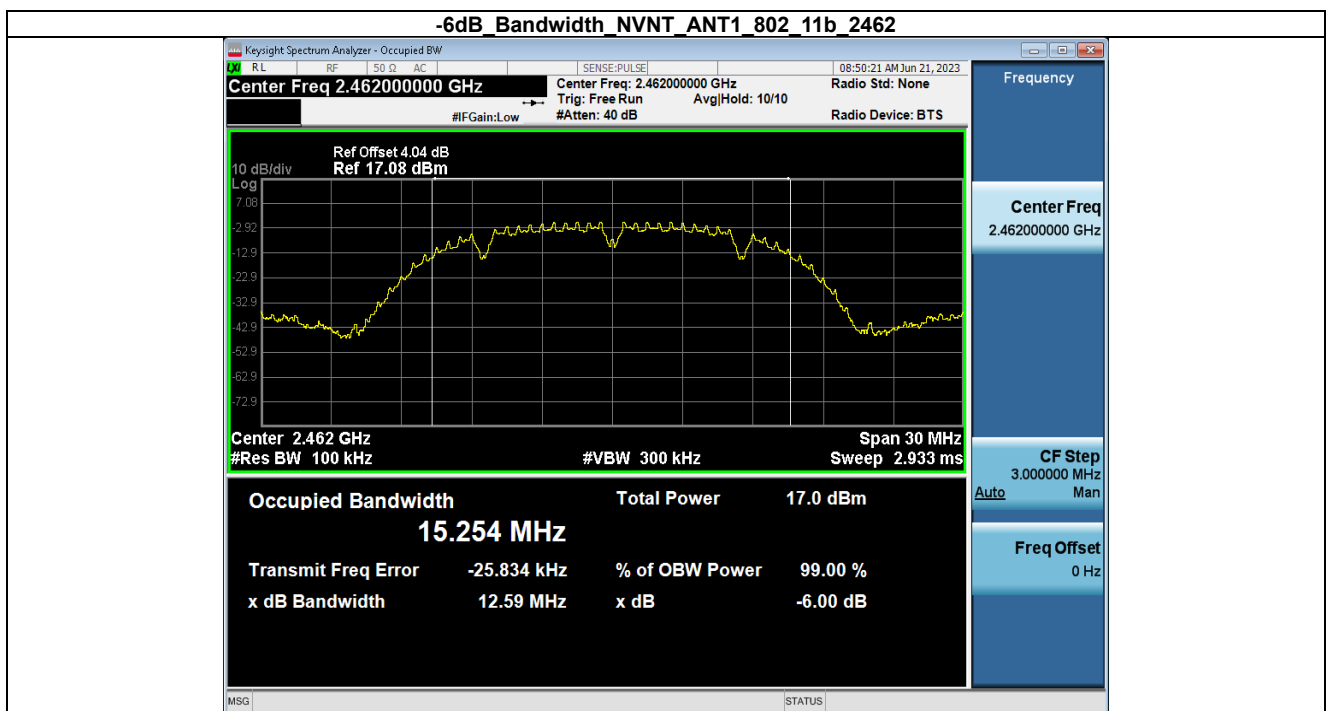
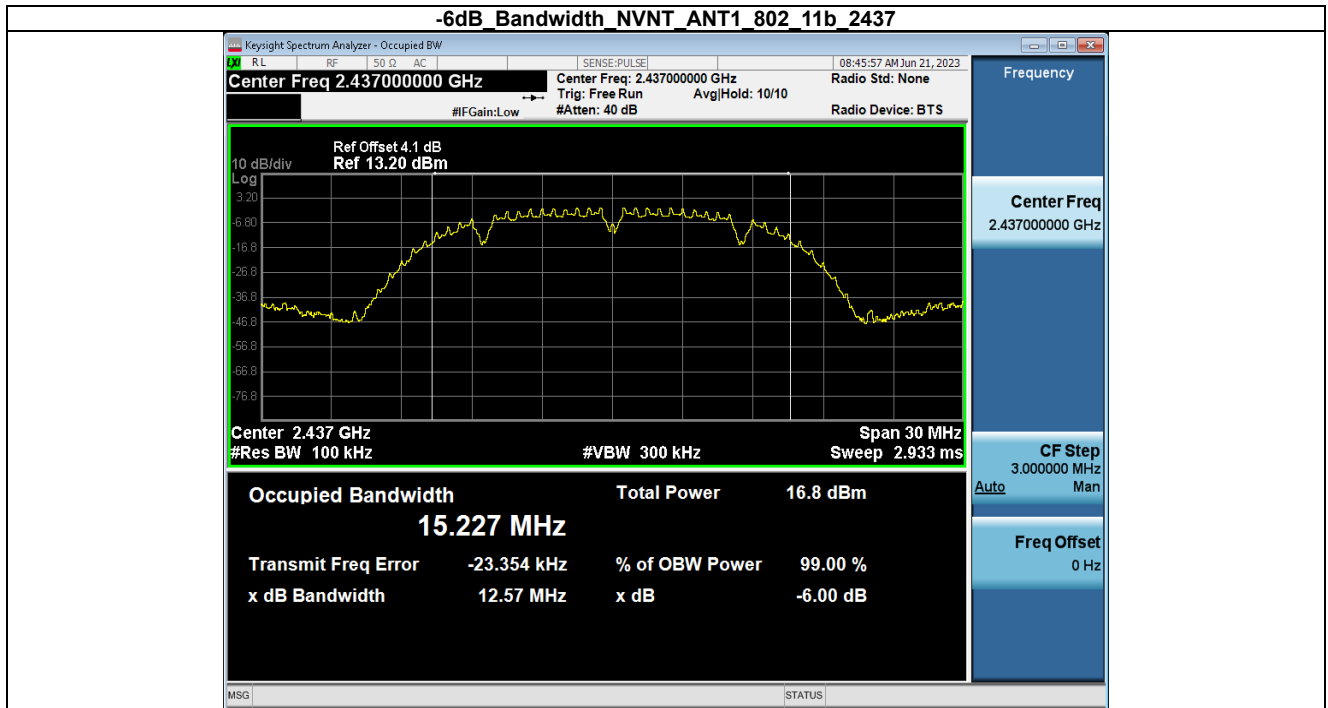
Please refer to the Appendix EUT Photos.

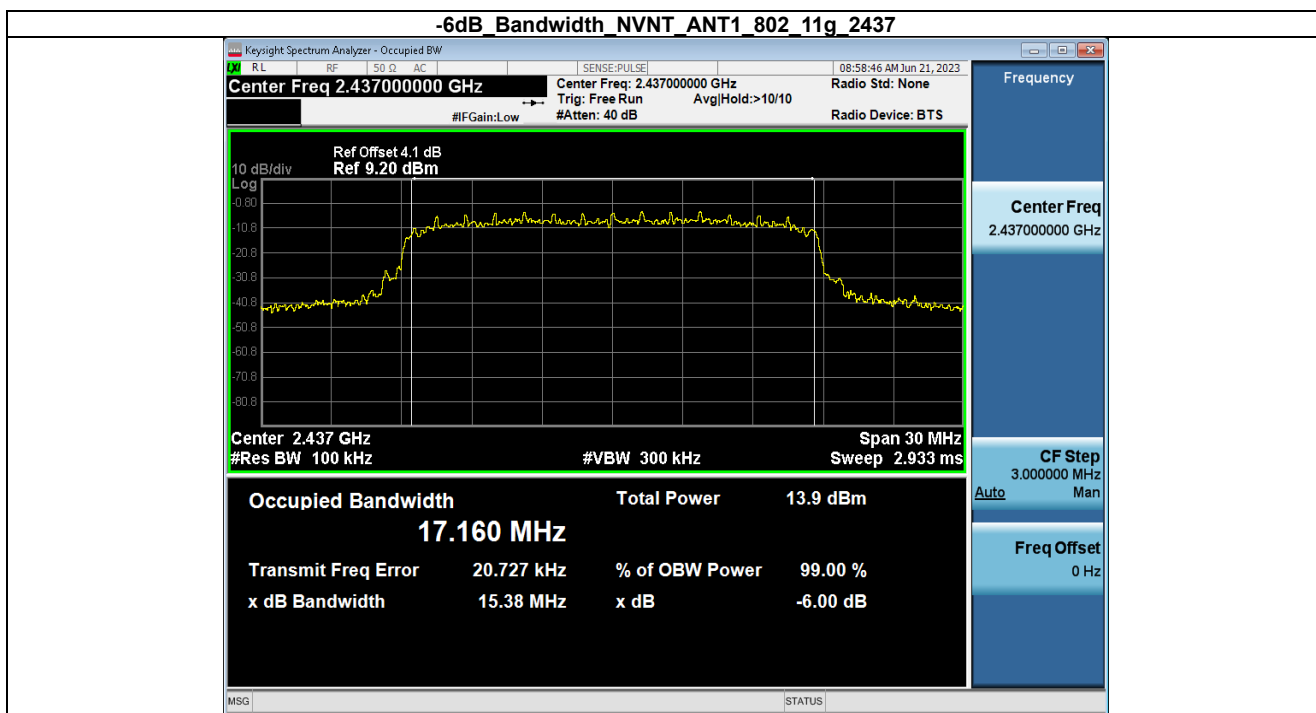
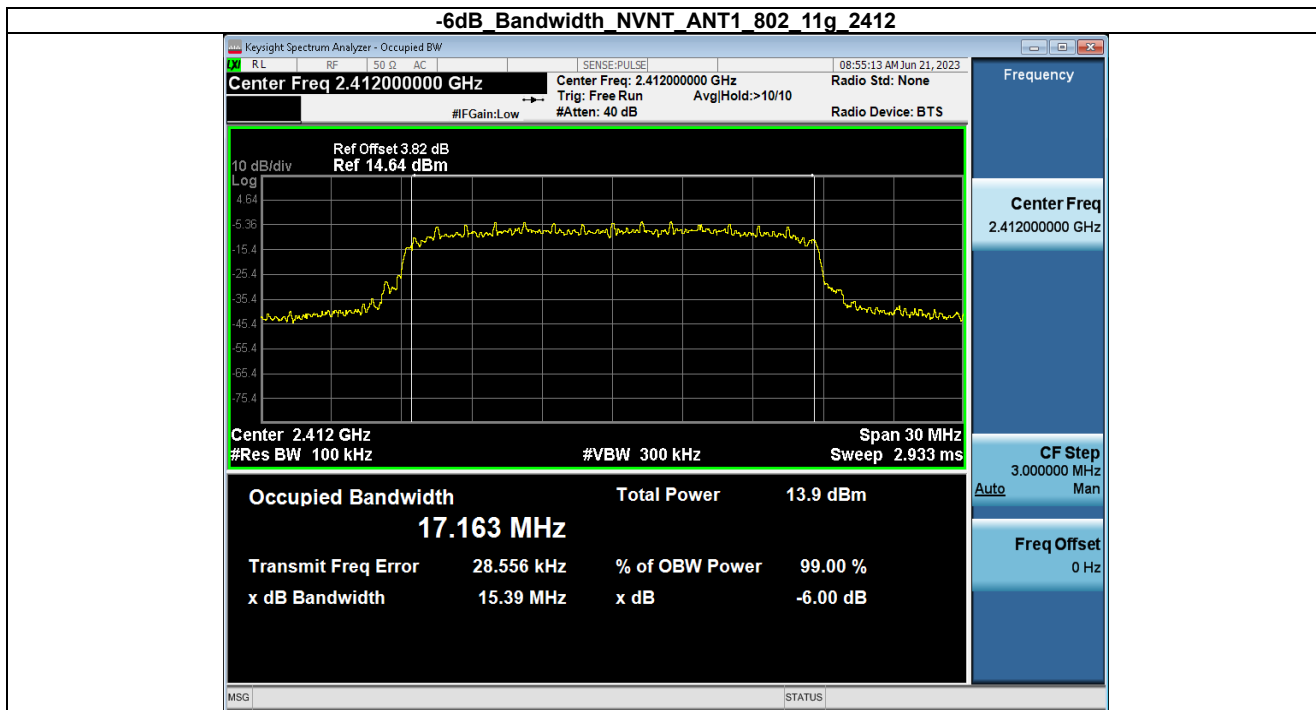
Appendix

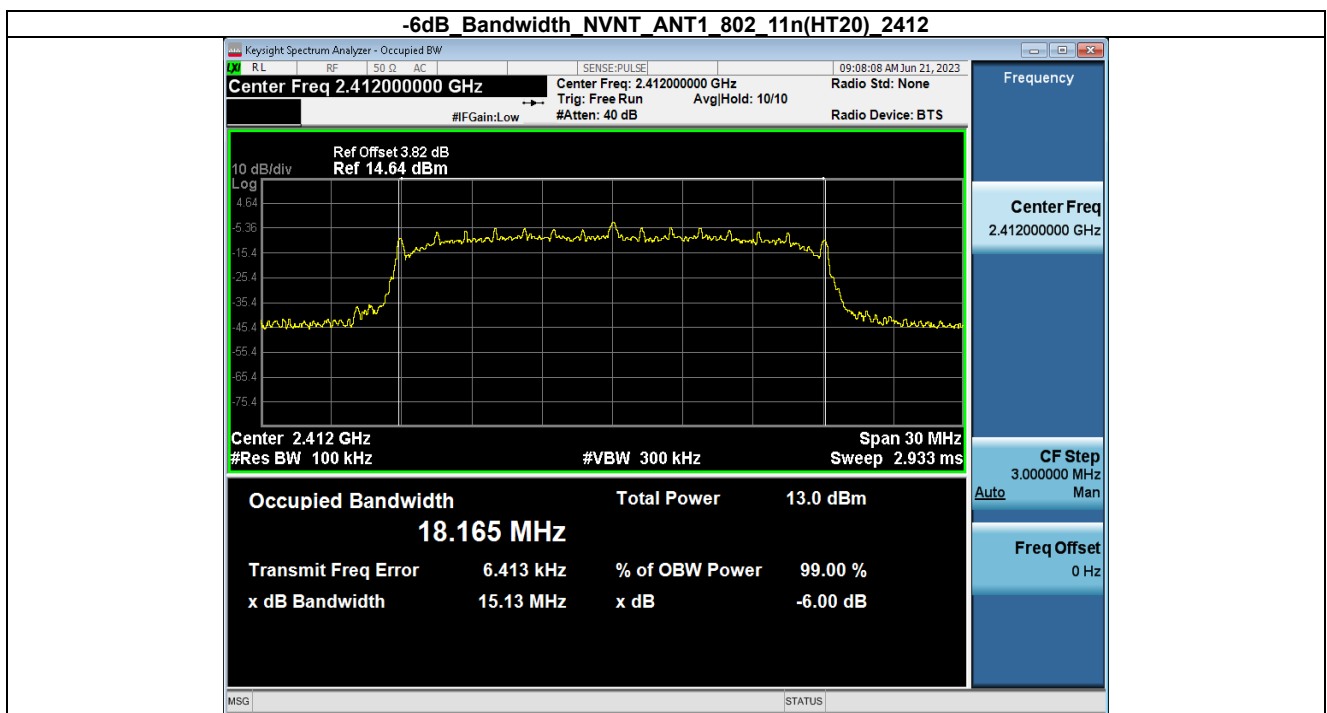
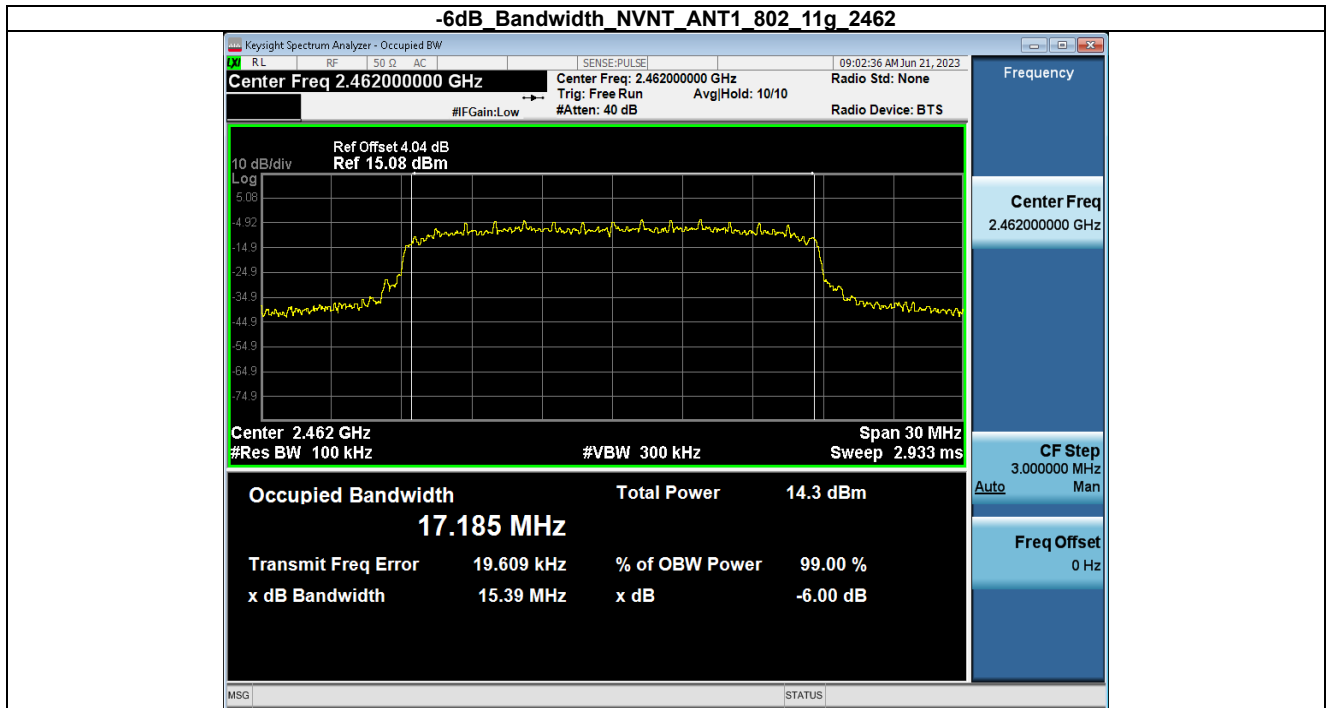
1. -6dB Bandwidth

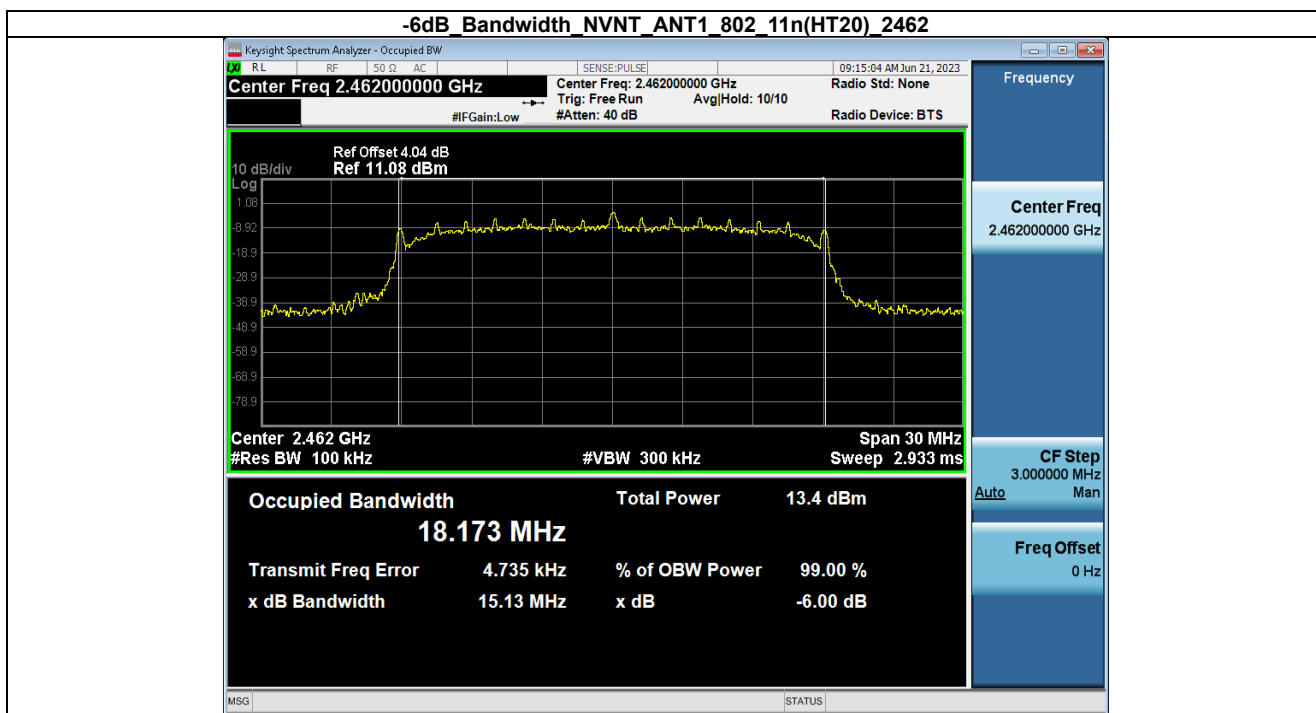
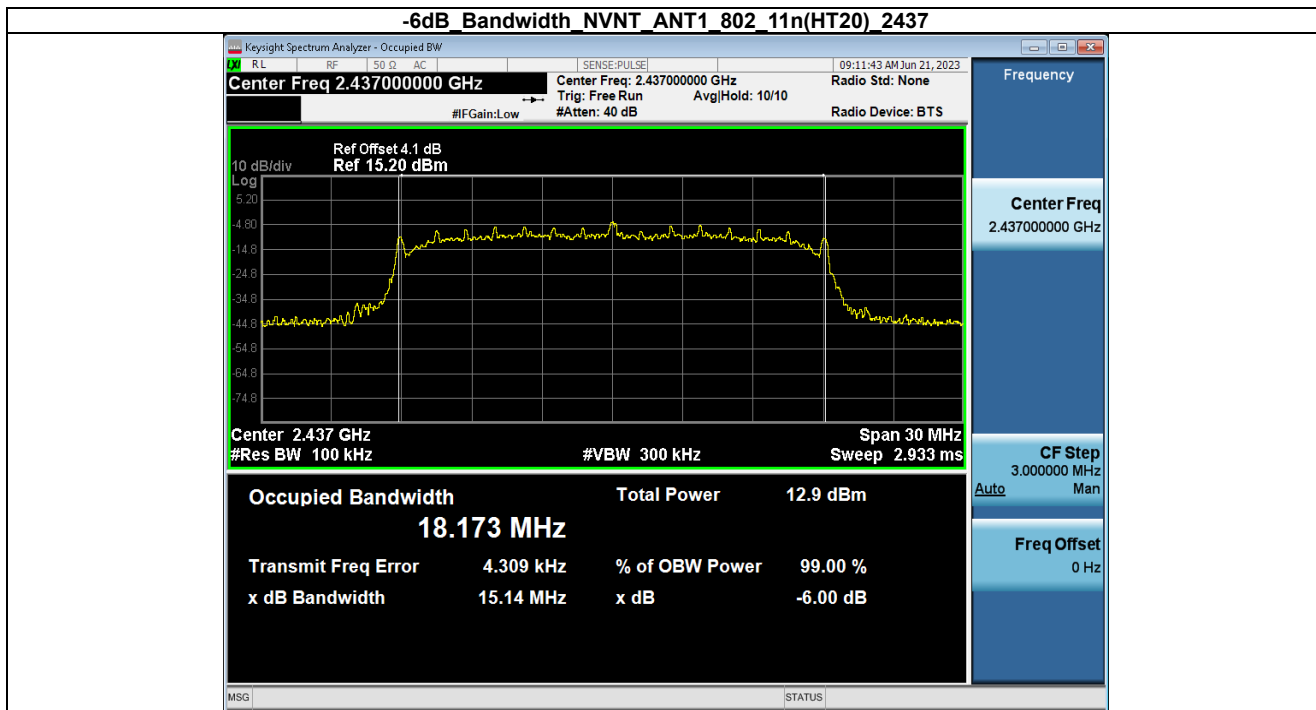
Condition	Antenna	Modulation	Frequency (MHz)	-6dB BW(MHz)	limit(kHz)	Result
NVNT	ANT1	802.11b	2412.00	12.57	500	Pass
NVNT	ANT1	802.11b	2437.00	12.57	500	Pass
NVNT	ANT1	802.11b	2462.00	12.59	500	Pass
NVNT	ANT1	802.11g	2412.00	15.39	500	Pass
NVNT	ANT1	802.11g	2437.00	15.38	500	Pass
NVNT	ANT1	802.11g	2462.00	15.39	500	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	15.13	500	Pass
NVNT	ANT1	802.11n(HT20)	2437.00	15.14	500	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	15.13	500	Pass





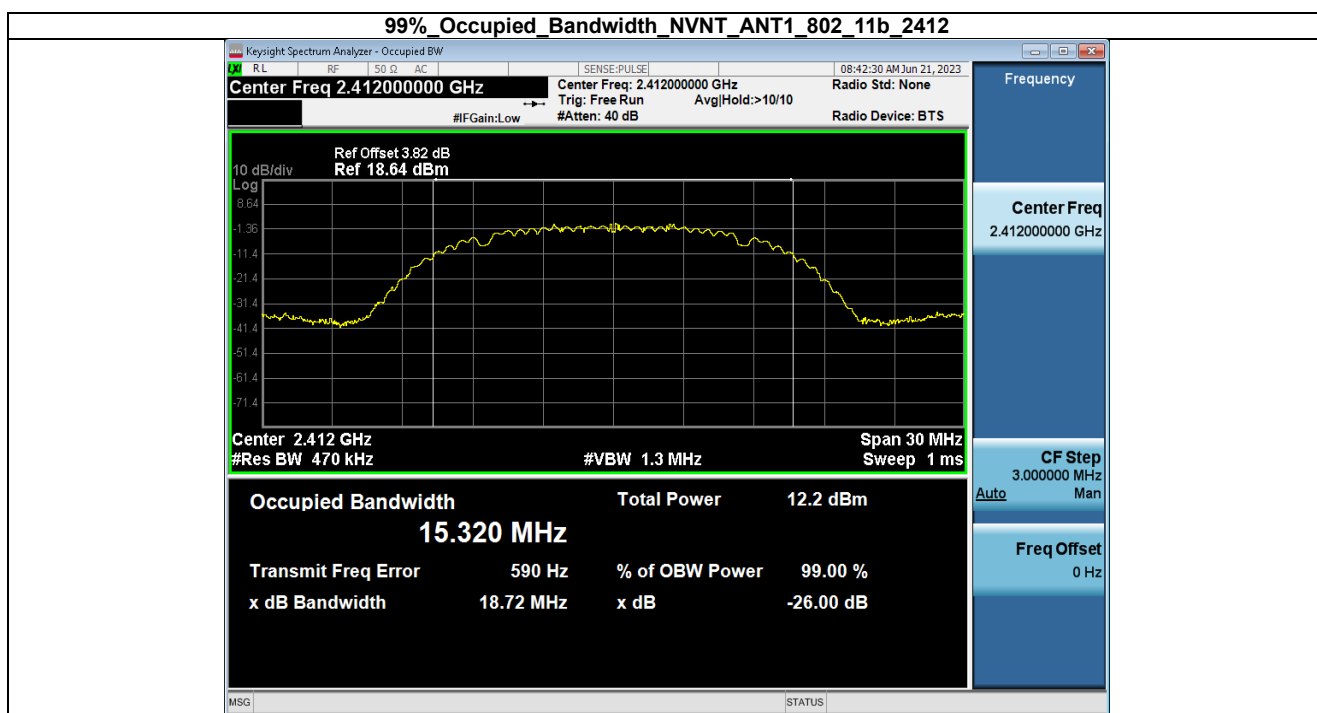


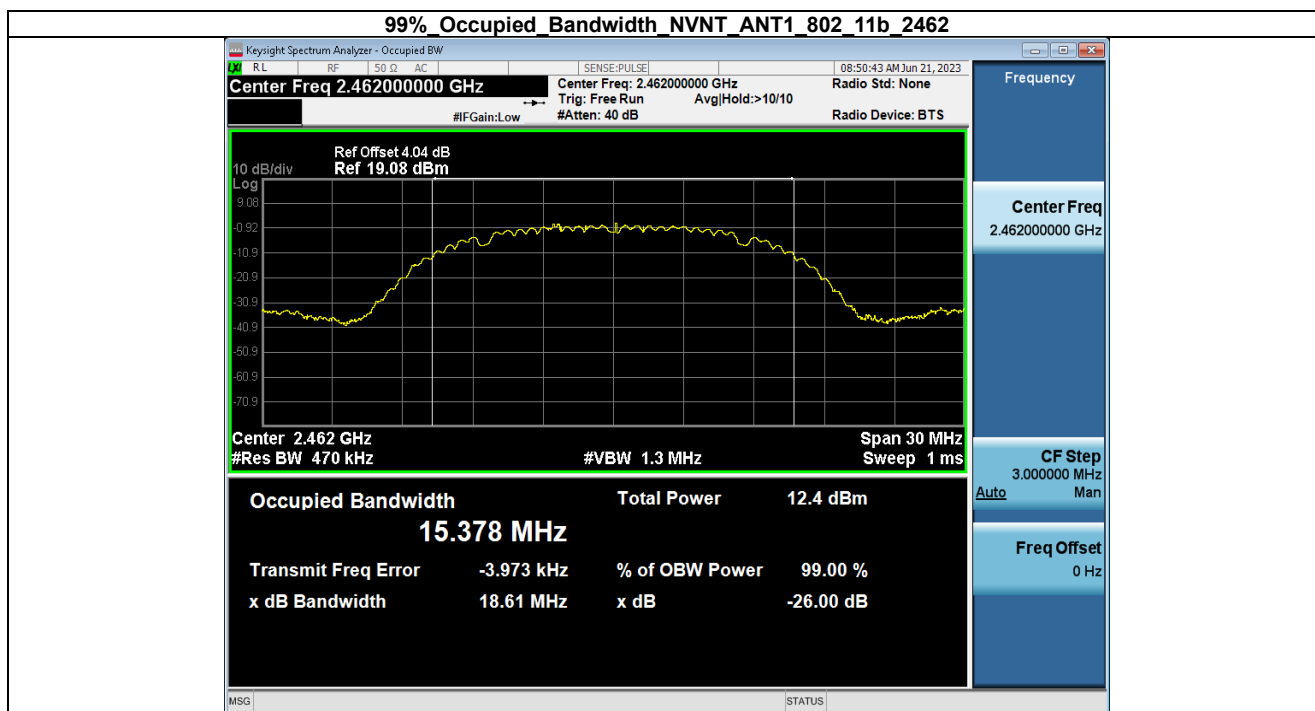
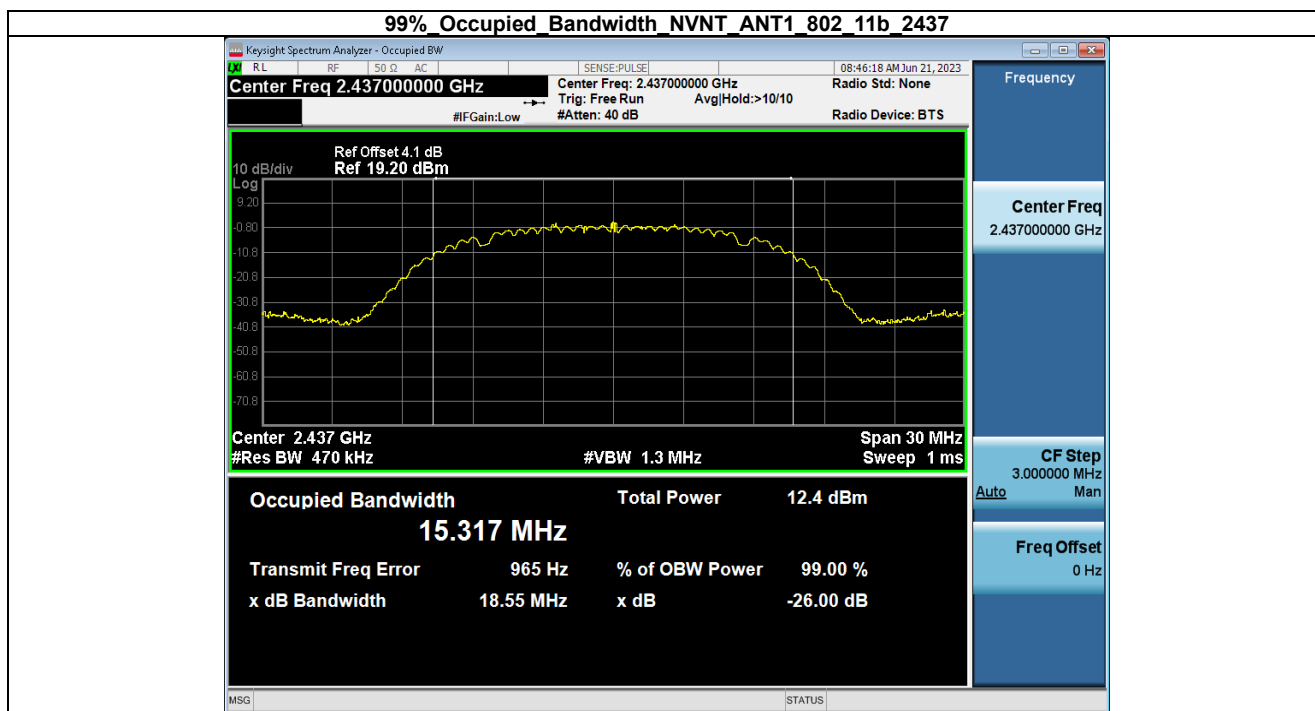


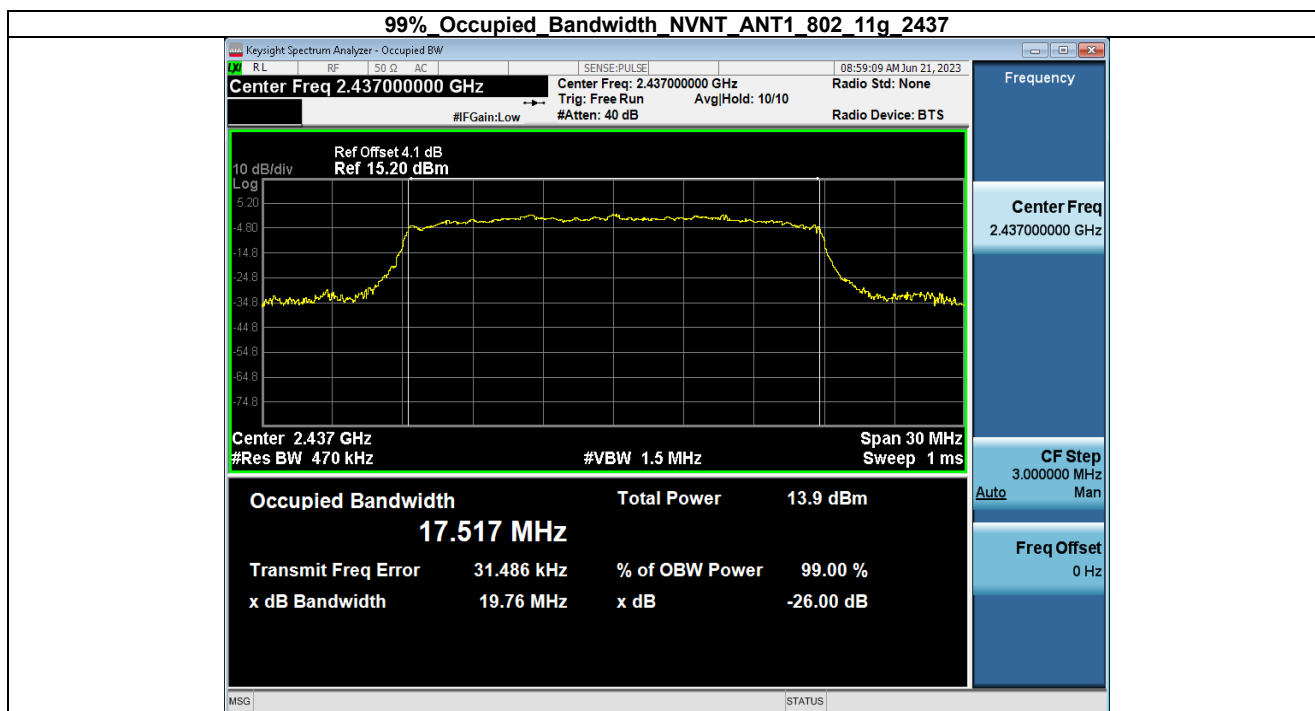
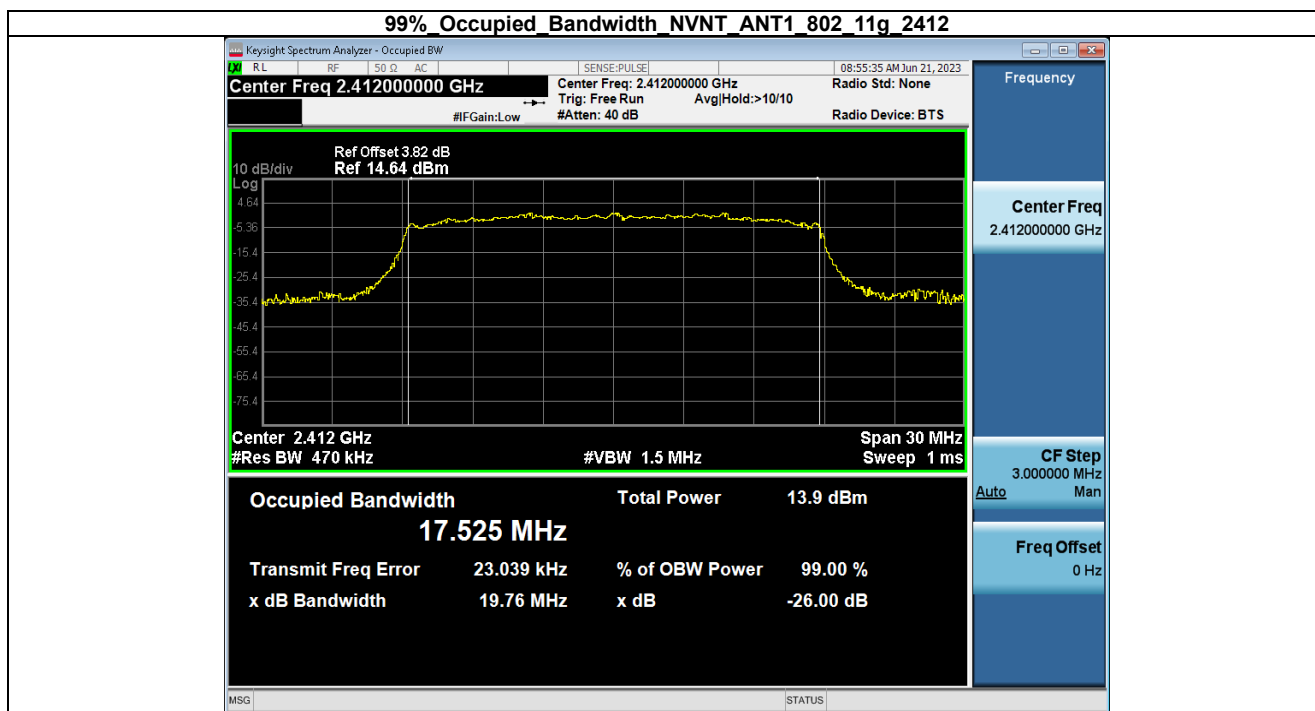


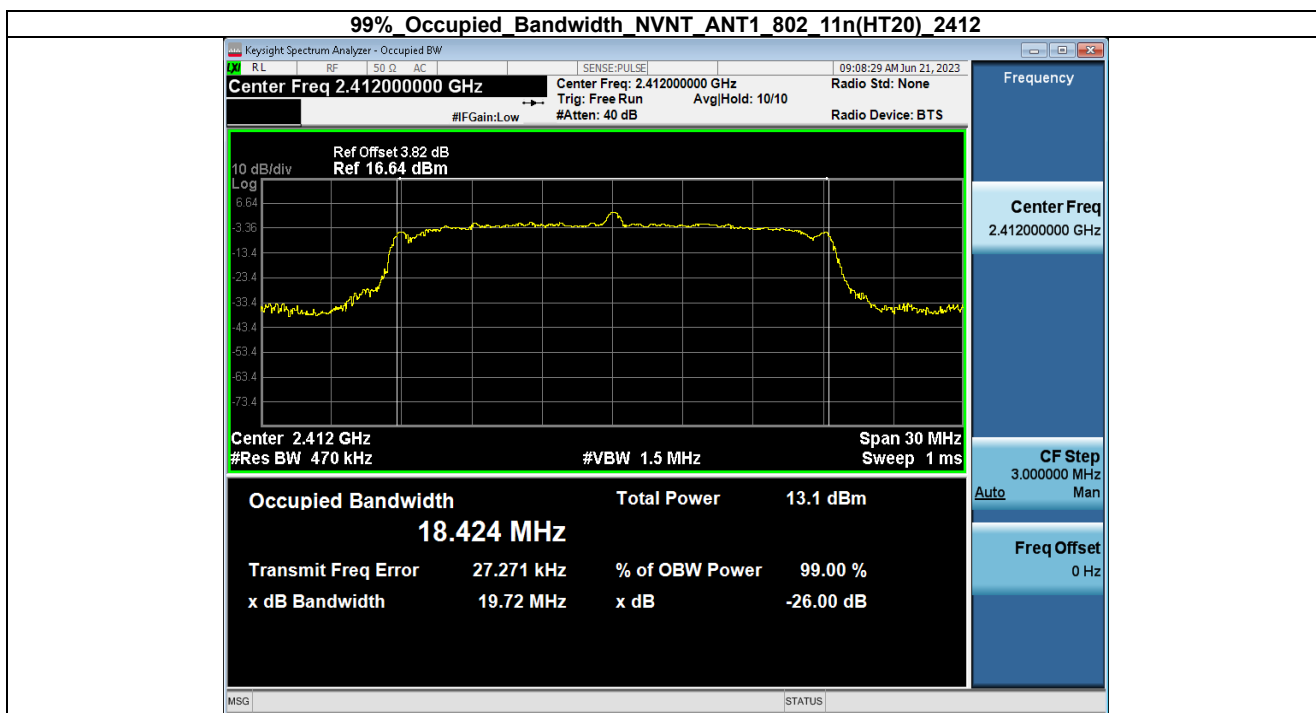
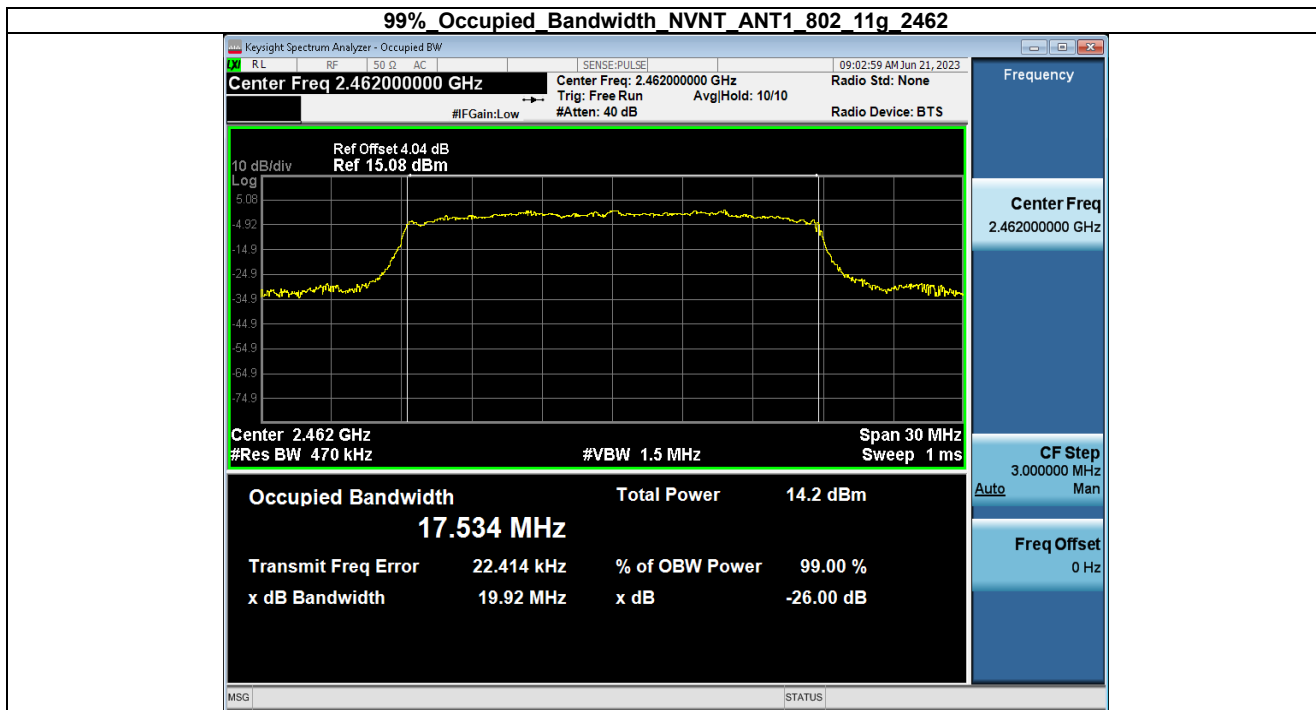
99% Occupied Bandwidth

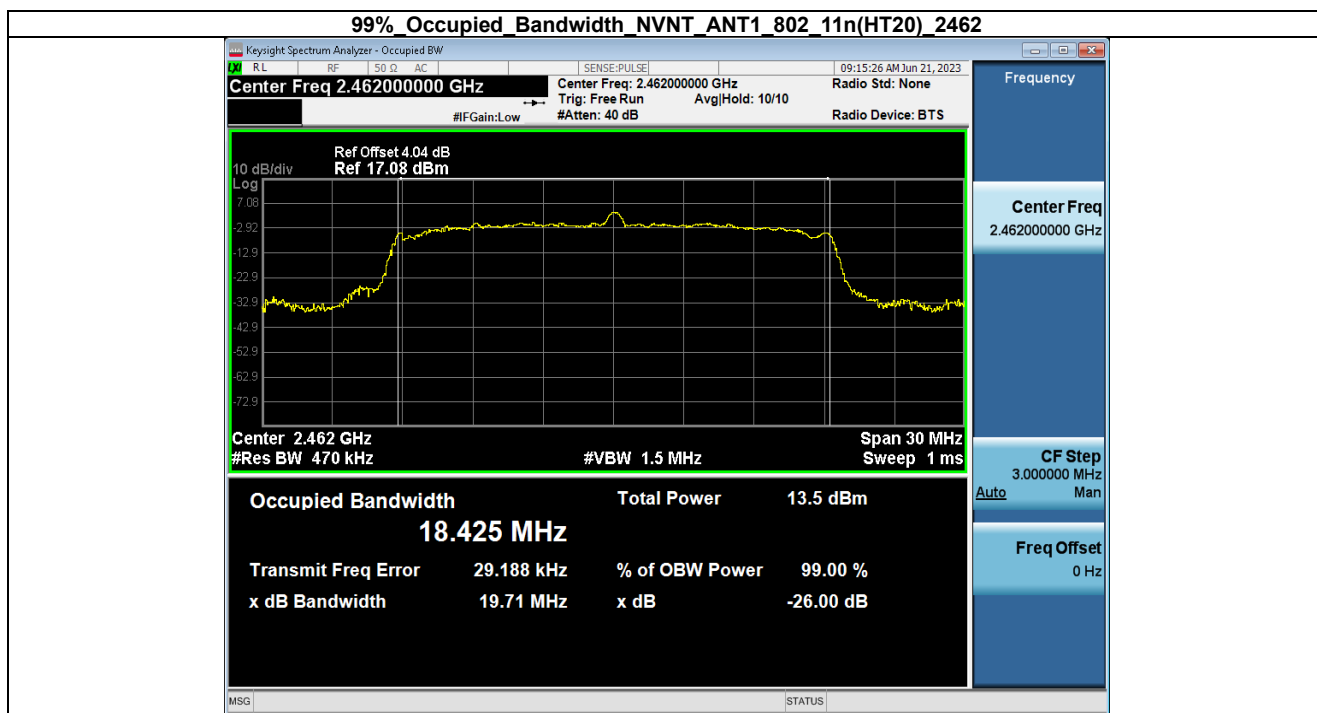
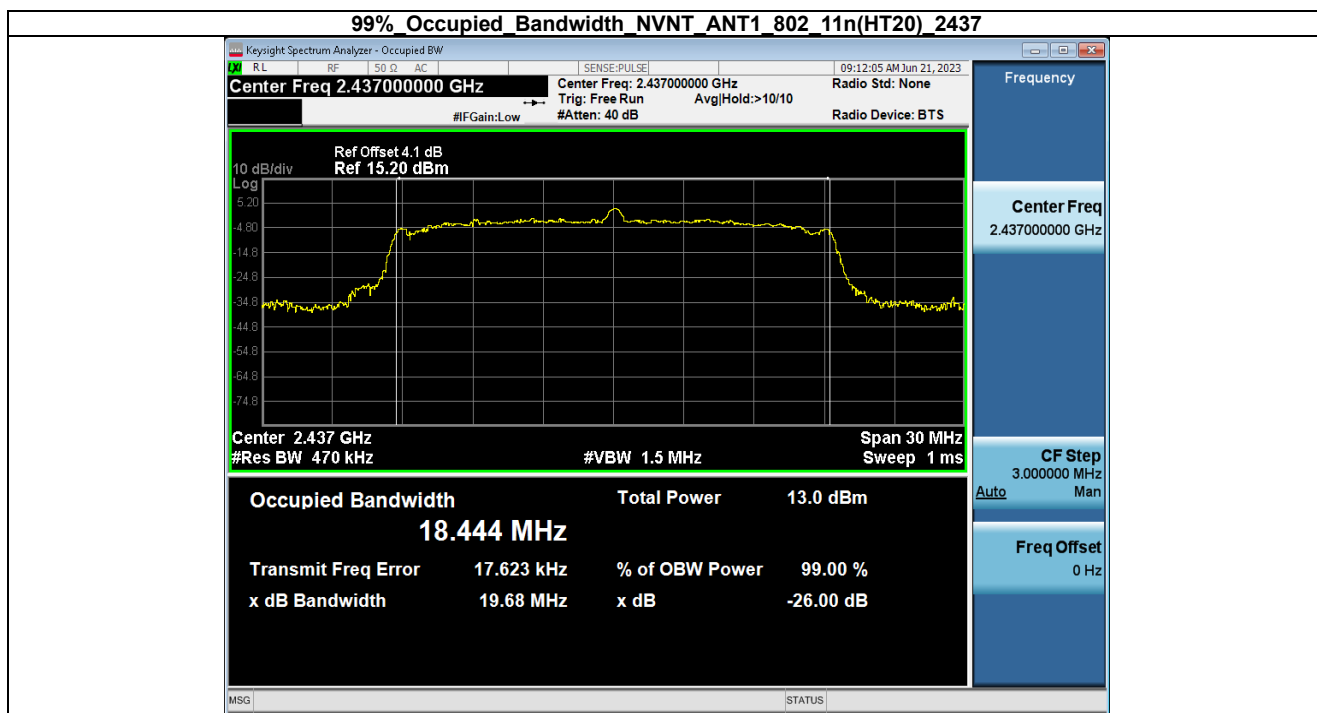
Condition	Antenna	Modulation	Frequency (MHz)	99% BW (MHz)
NVNT	ANT1	802.11b	2412.00	15.320
NVNT	ANT1	802.11b	2437.00	15.317
NVNT	ANT1	802.11b	2462.00	15.378
NVNT	ANT1	802.11g	2412.00	17.525
NVNT	ANT1	802.11g	2437.00	17.517
NVNT	ANT1	802.11g	2462.00	17.534
NVNT	ANT1	802.11n(HT20)	2412.00	18.424
NVNT	ANT1	802.11n(HT20)	2437.00	18.444
NVNT	ANT1	802.11n(HT20)	2462.00	18.425









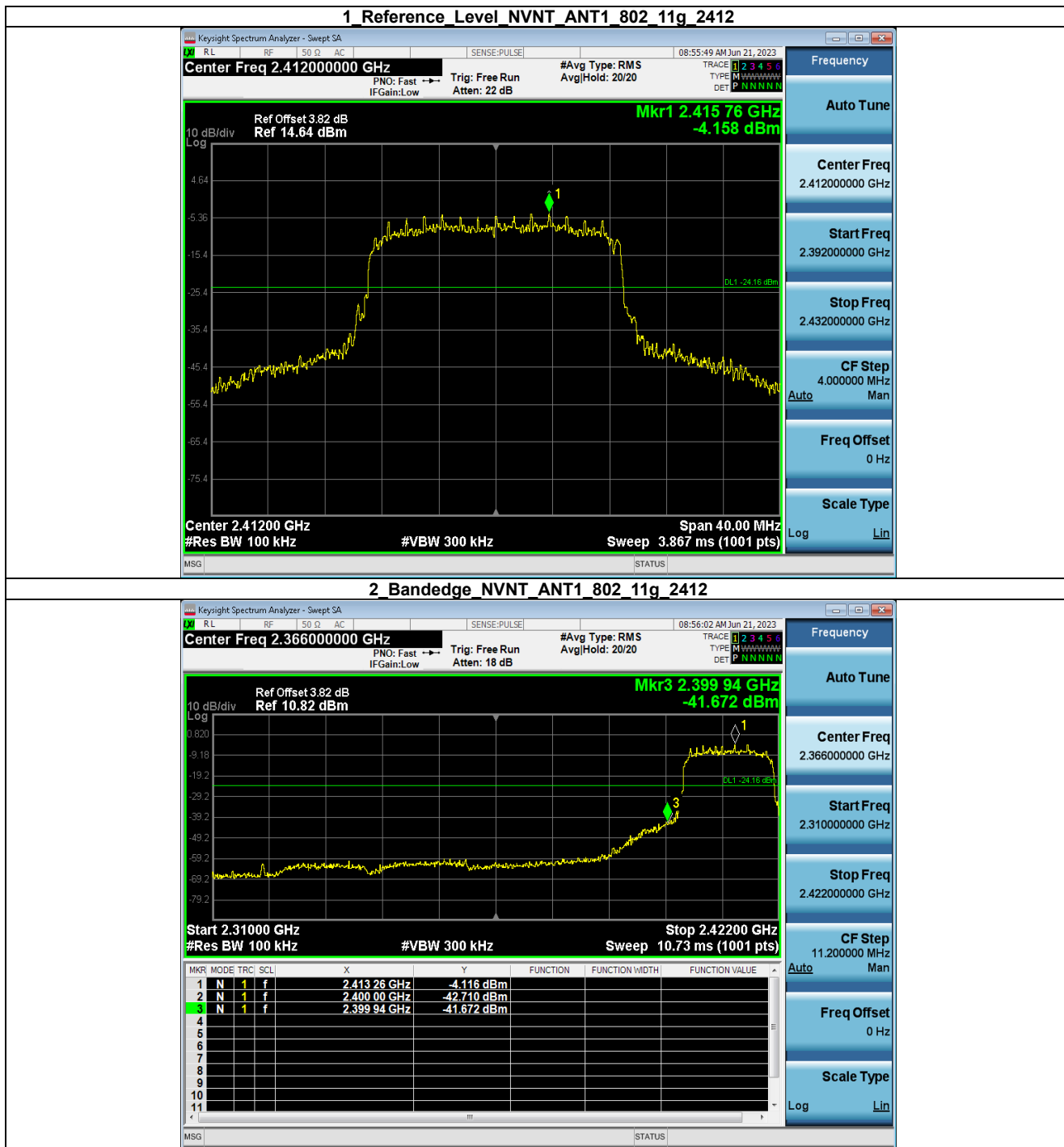


2. Bandedge

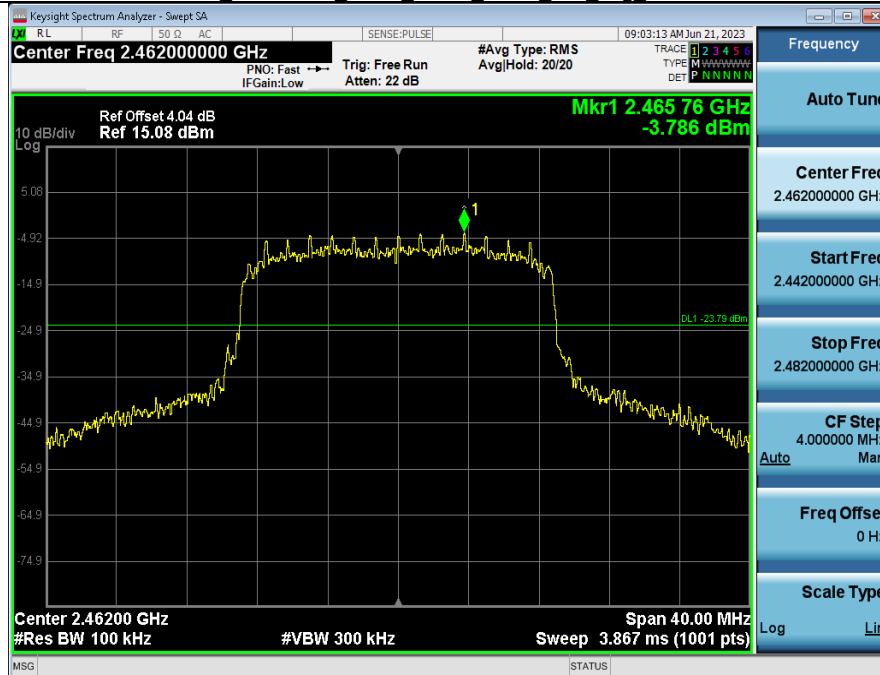
Condition	Antenna	Modulation	TX_Frequency (MHz)	Max. Mark_frequency(MHz)	Spurious level(dBm)	limit(dBm)	Result
NVNT	ANT1	802.11b	2412.00	2397.024	-41.352	-20.894	Pass
NVNT	ANT1	802.11b	2462.00	2486.992	-52.572	-20.541	Pass
NVNT	ANT1	802.11g	2412.00	2399.936	-41.672	-24.158	Pass
NVNT	ANT1	802.11g	2462.00	2483.872	-51.332	-23.786	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	2394.784	-44.741	-23.129	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	2484.208	-49.925	-22.710	Pass



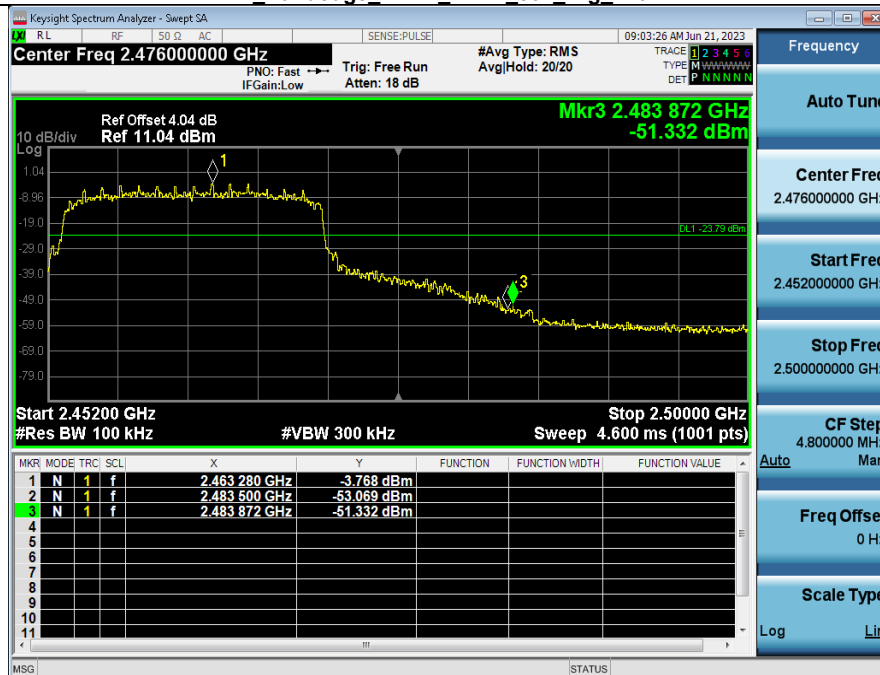


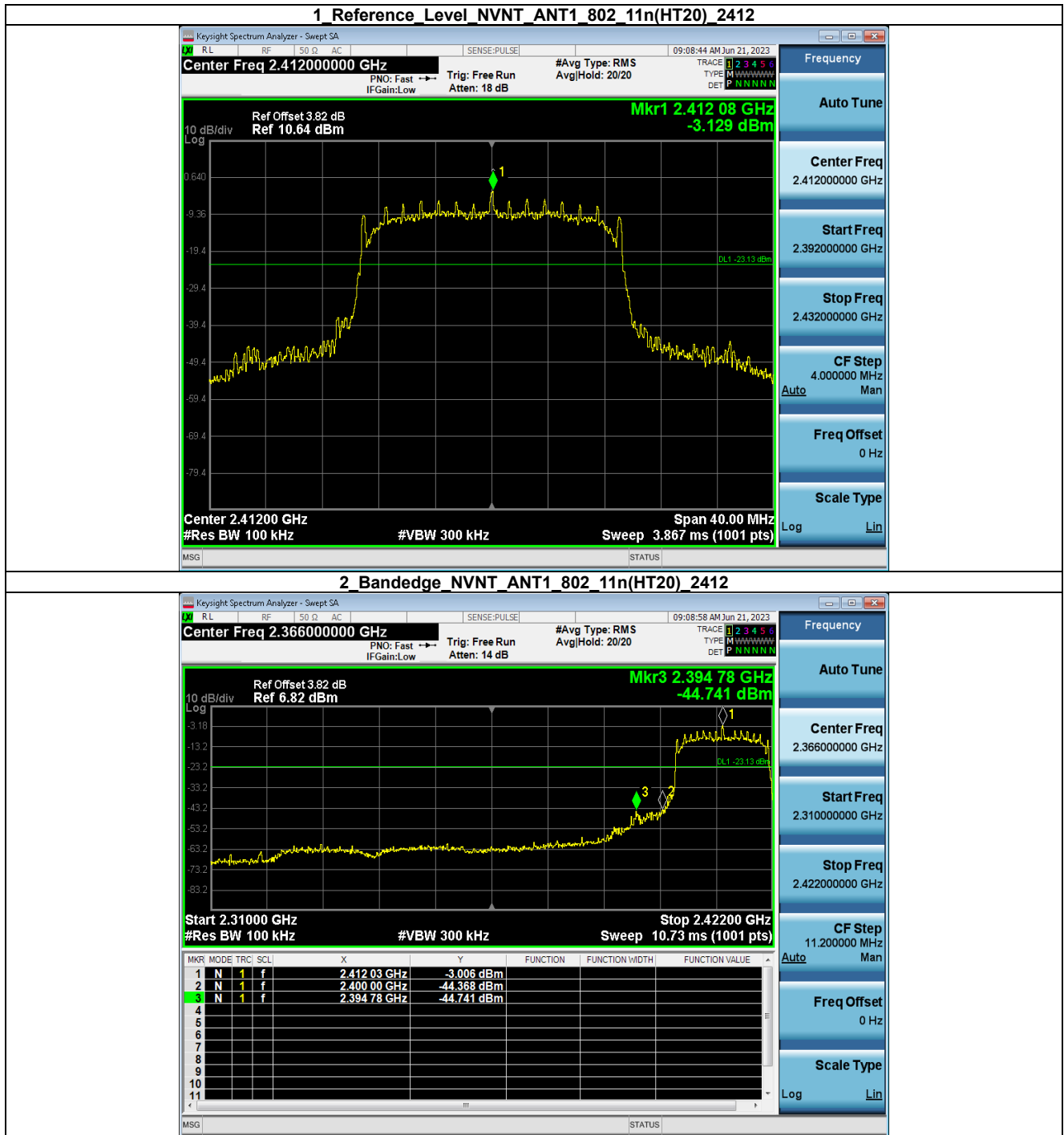


1 Reference_Level_NVNT_ANT1_802_11g_2462



2 Bandedge_NVNT_ANT1_802_11g_2462

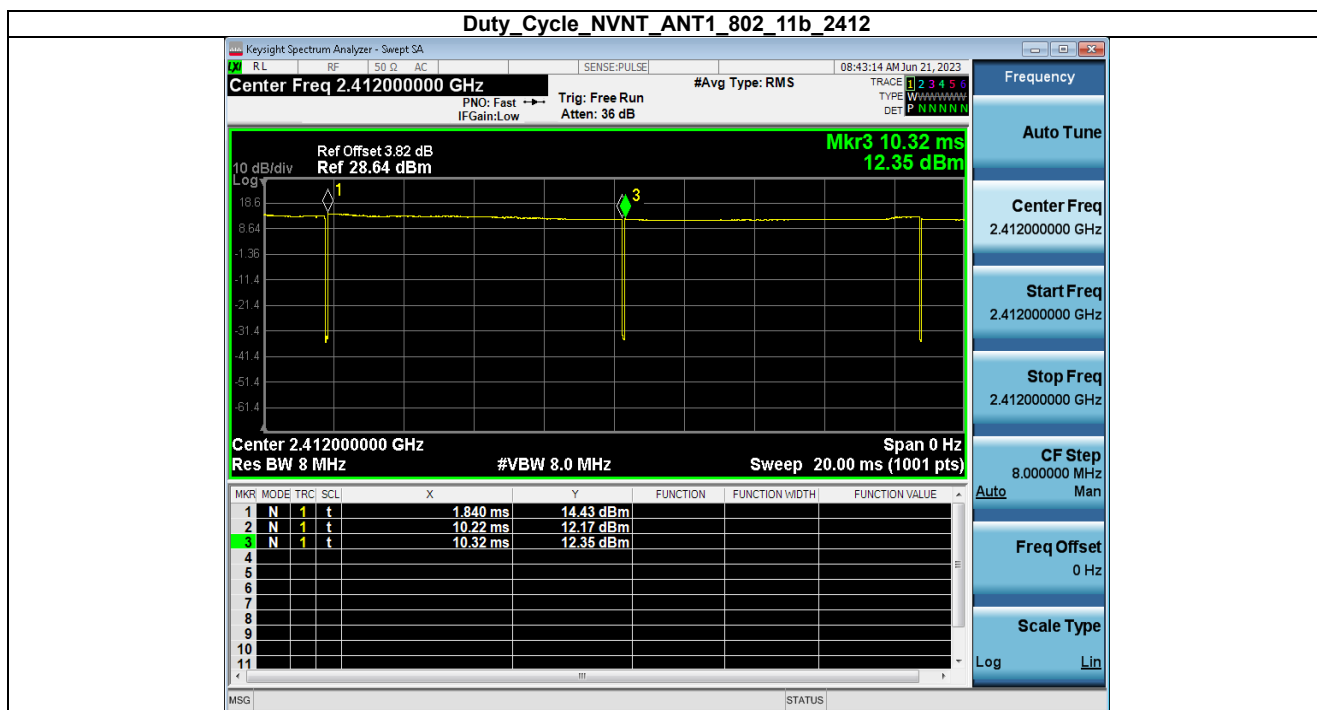


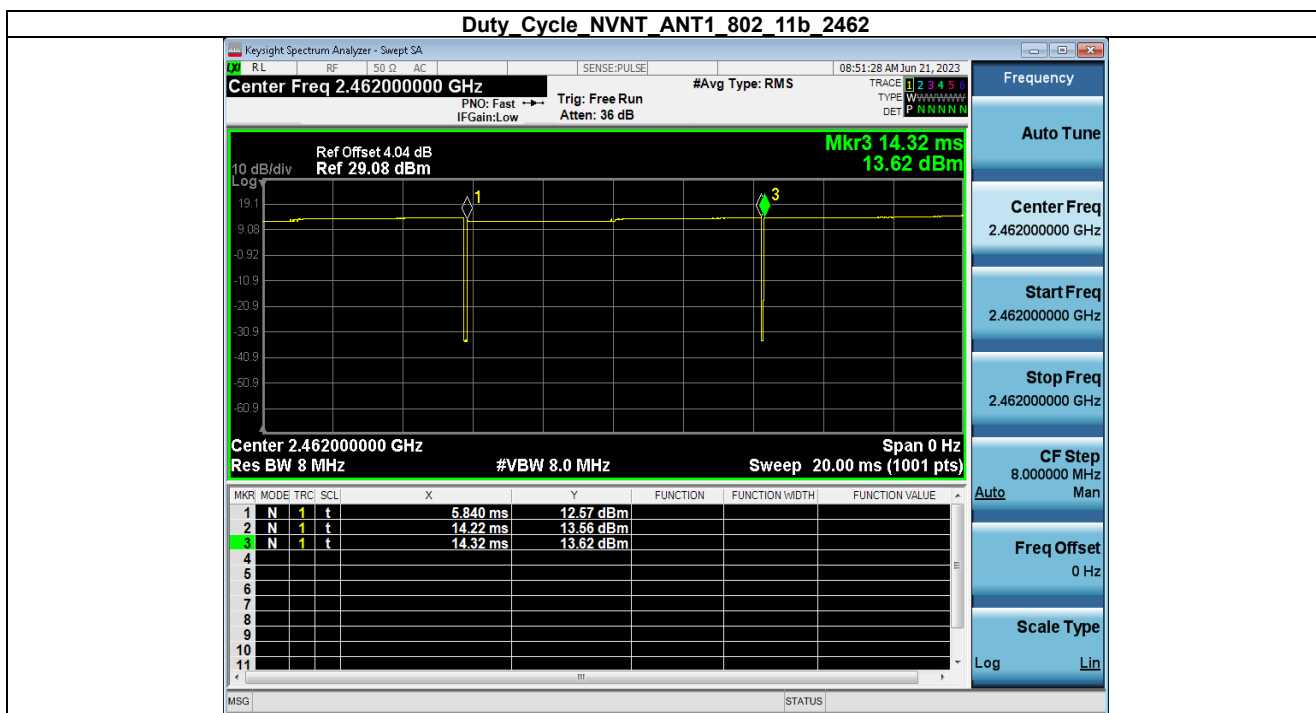
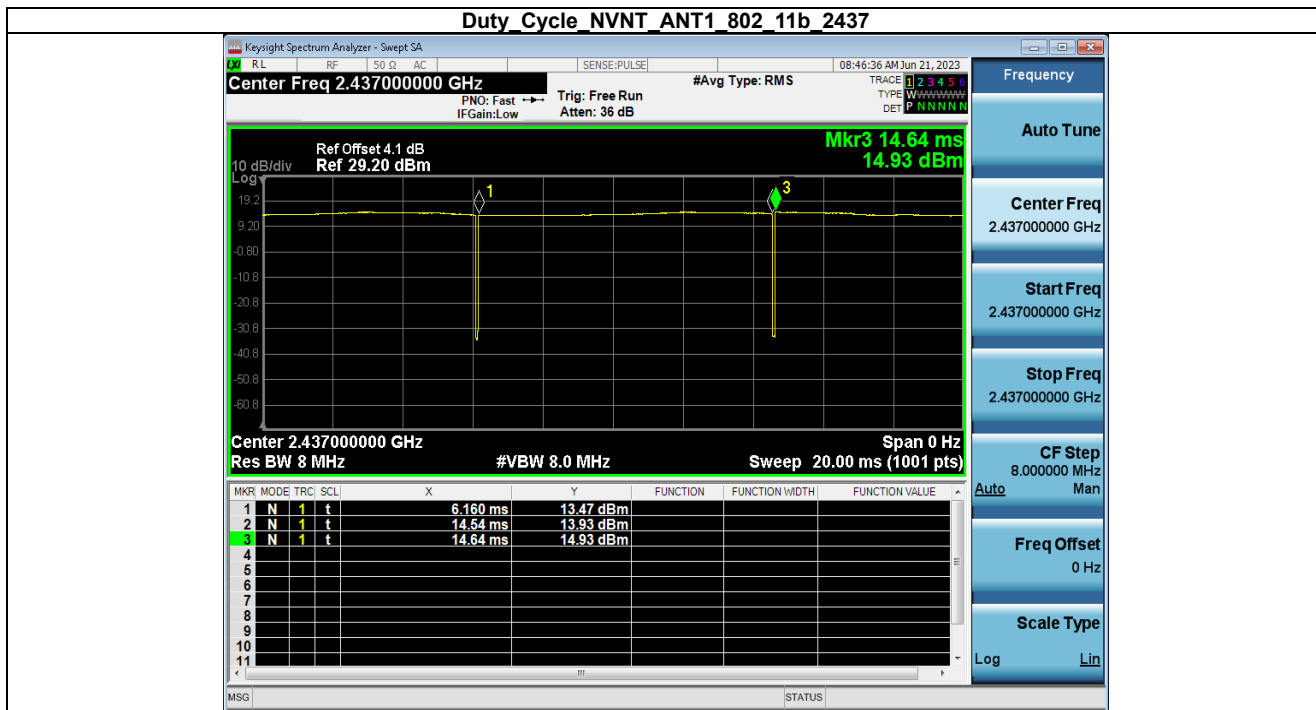


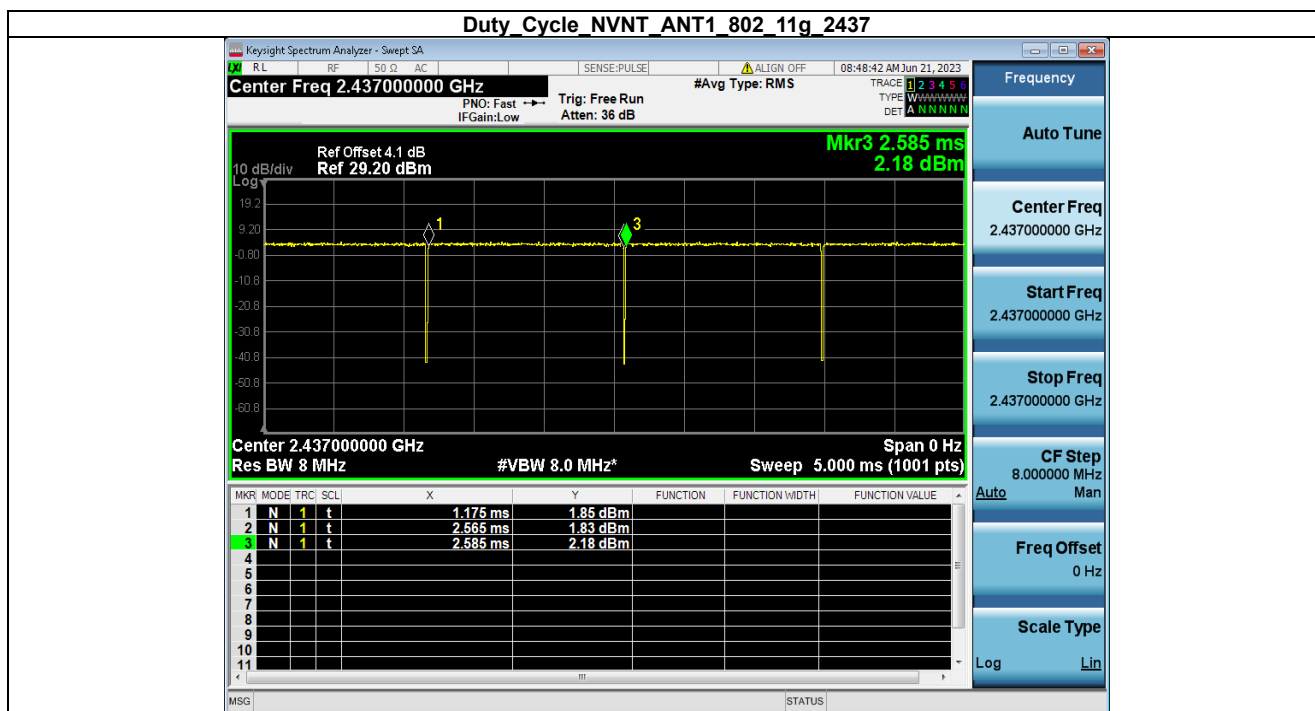
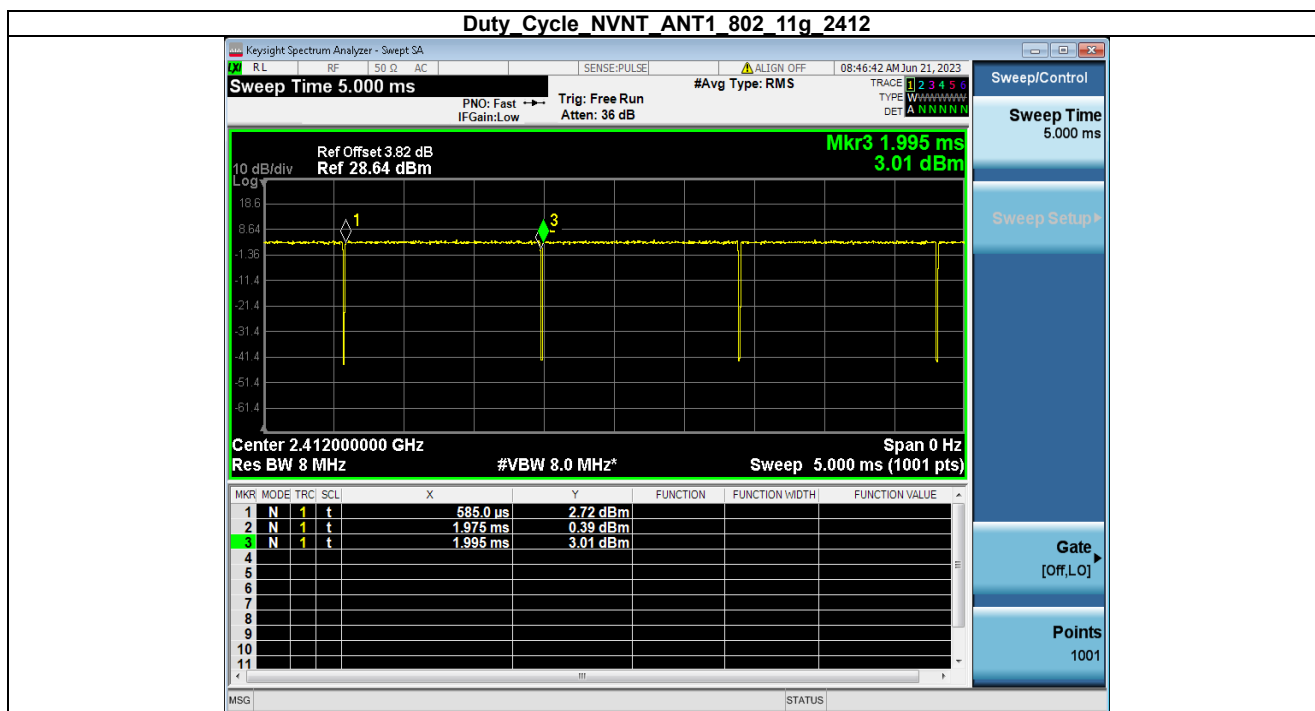


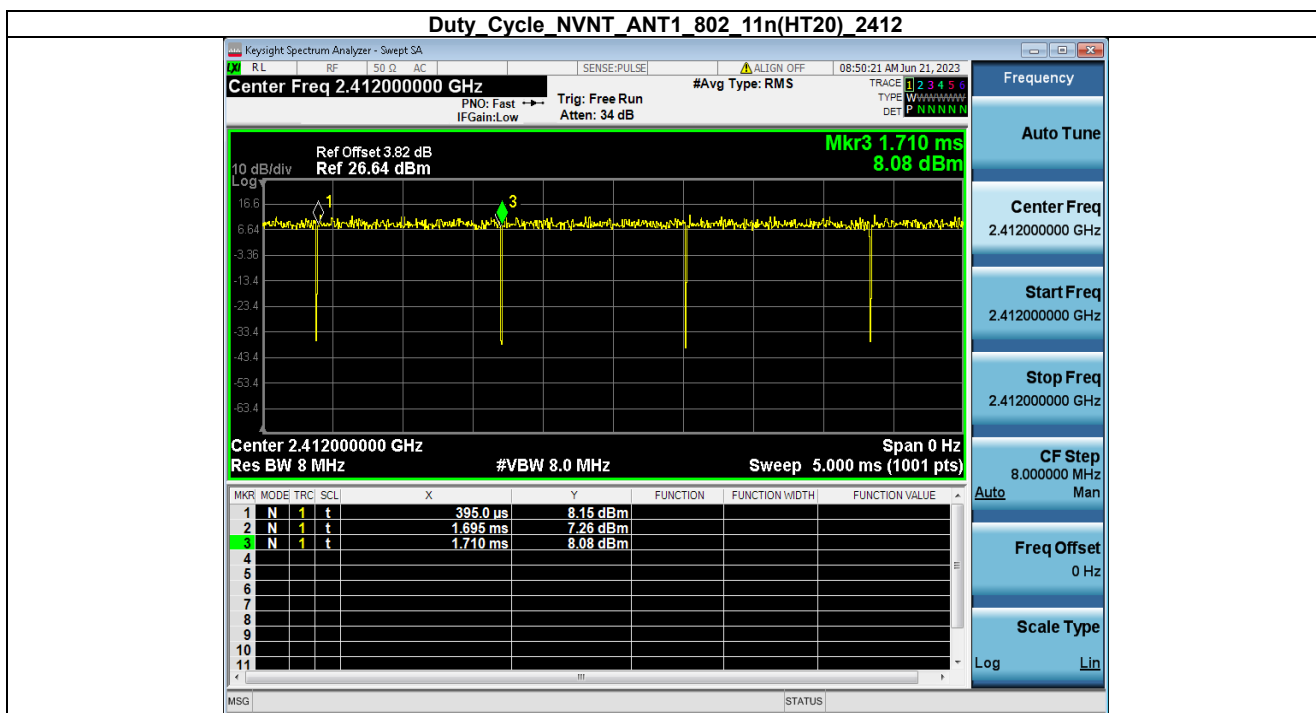
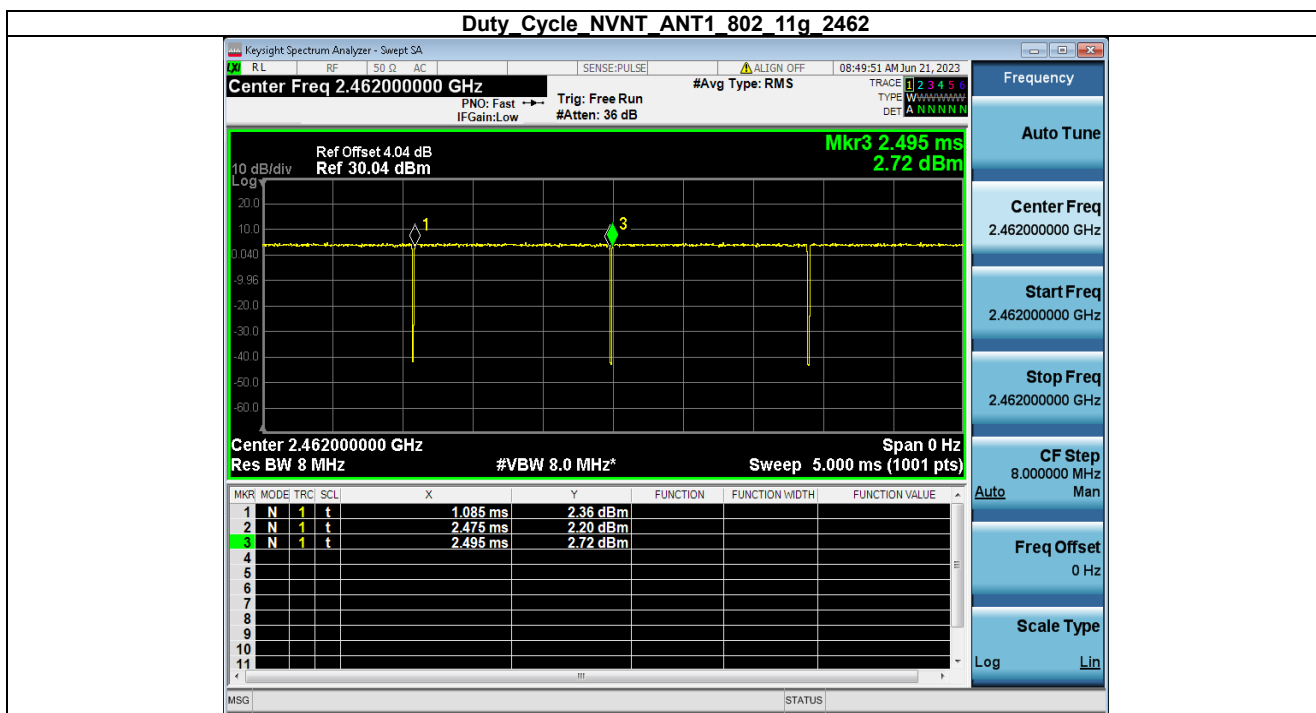
3. Duty Cycle

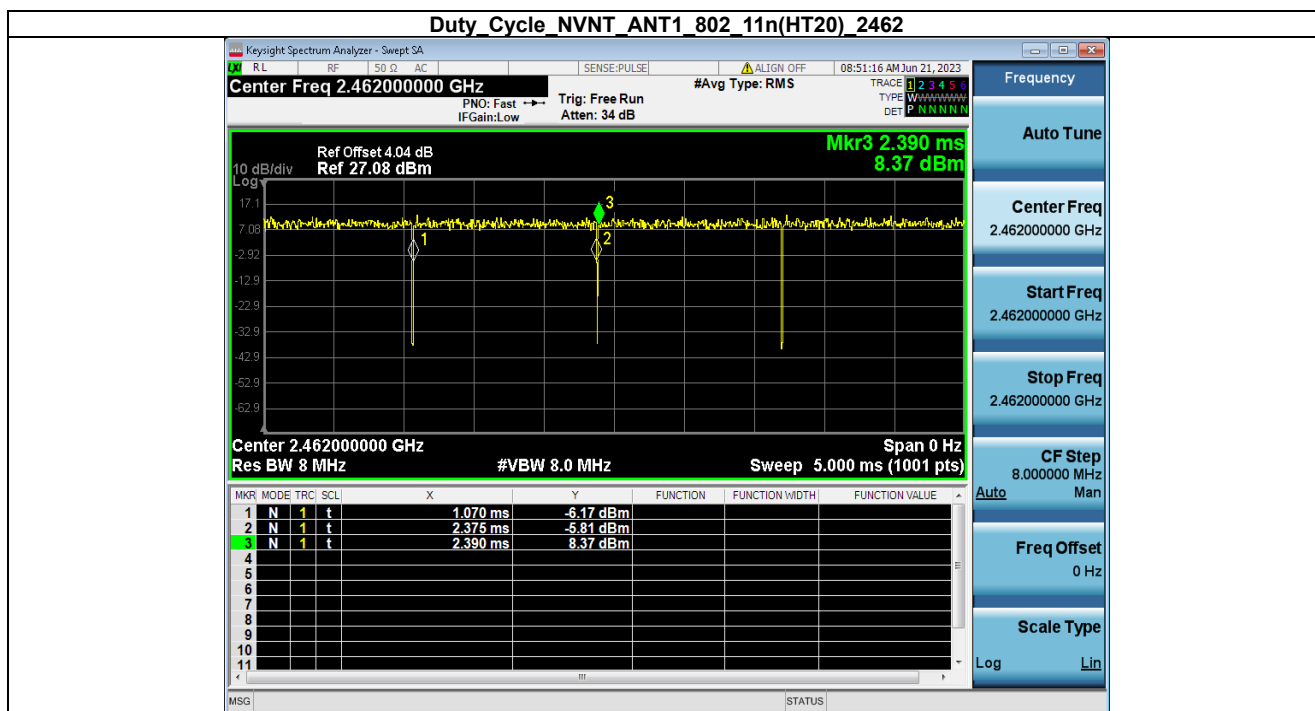
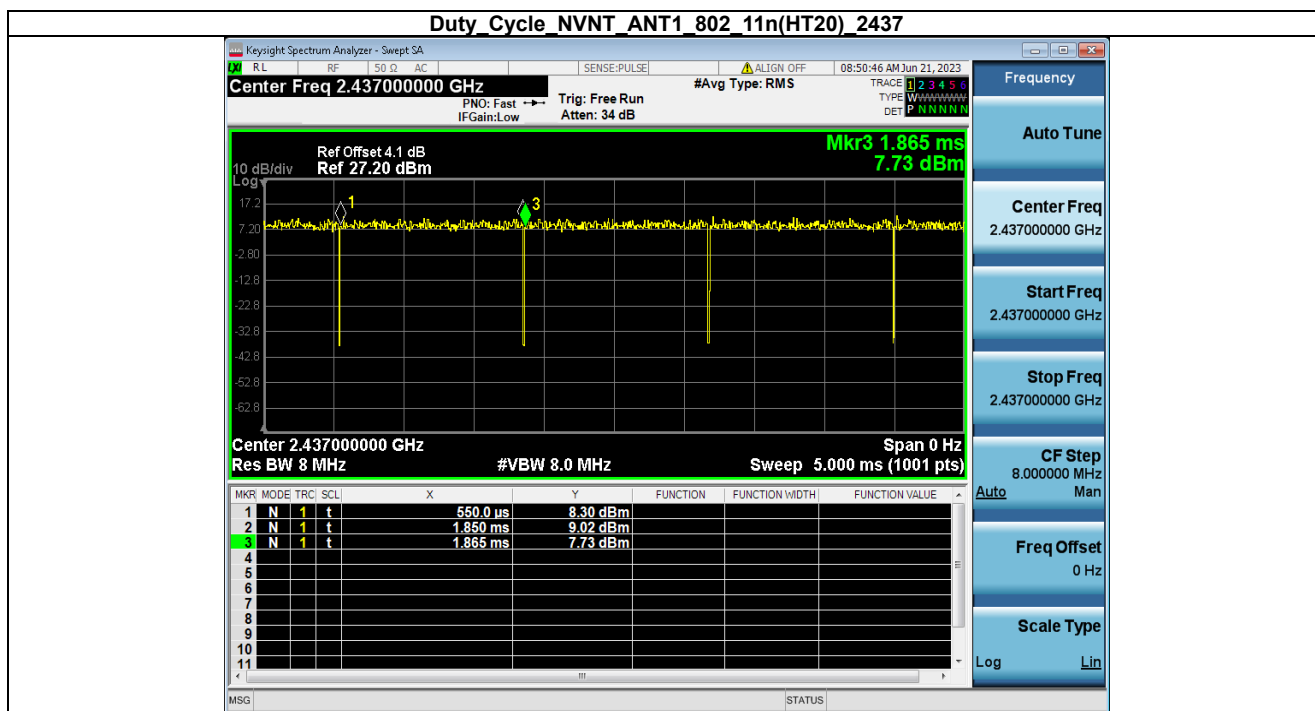
Condition	Antenna	Modulation	Frequency (MHz)	Dutycycle(%)	Duty_factor
NVNT	ANT1	802.11b	2412.00	99.06	0.00
NVNT	ANT1	802.11b	2437.00	99.06	0.00
NVNT	ANT1	802.11b	2462.00	99.06	0.00
NVNT	ANT1	802.11g	2412.00	98.94	0.00
NVNT	ANT1	802.11g	2437.00	98.94	0.00
NVNT	ANT1	802.11g	2462.00	98.94	0.00
NVNT	ANT1	802.11n(HT20)	2412.00	99.24	0.00
NVNT	ANT1	802.11n(HT20)	2437.00	99.24	0.00
NVNT	ANT1	802.11n(HT20)	2462.00	99.24	0.00









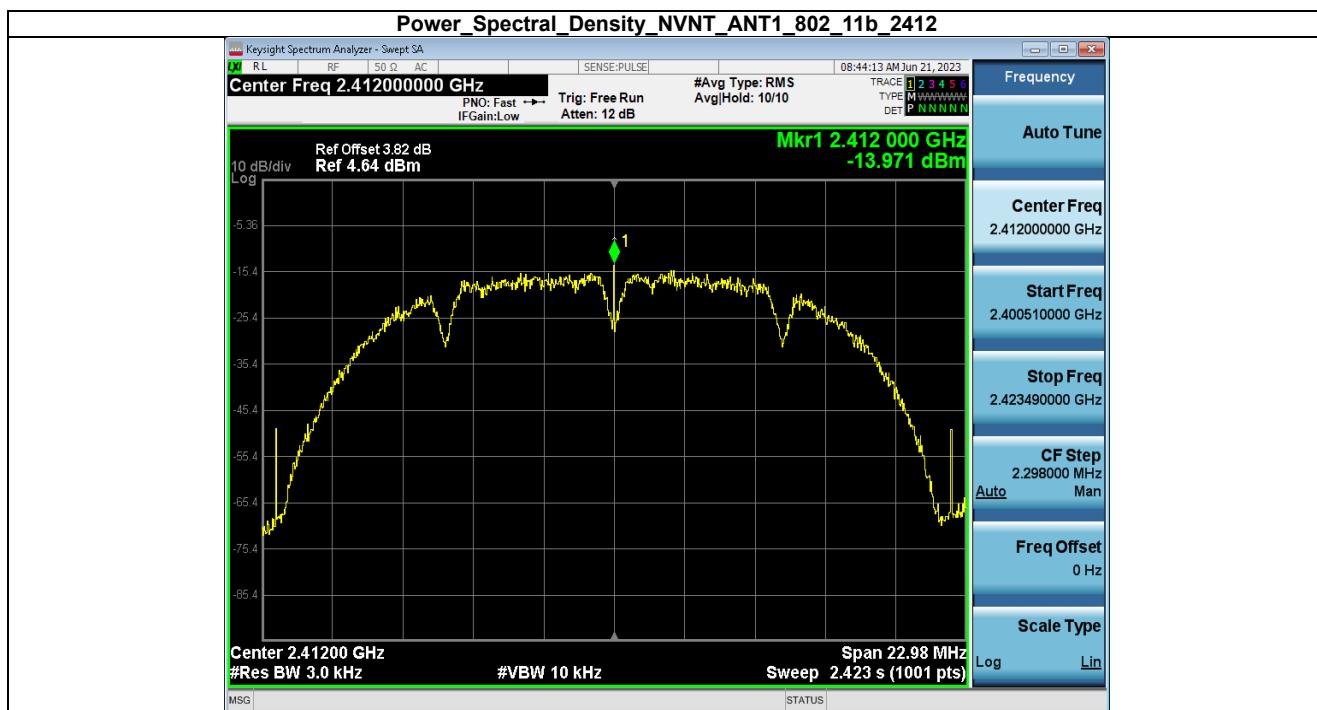


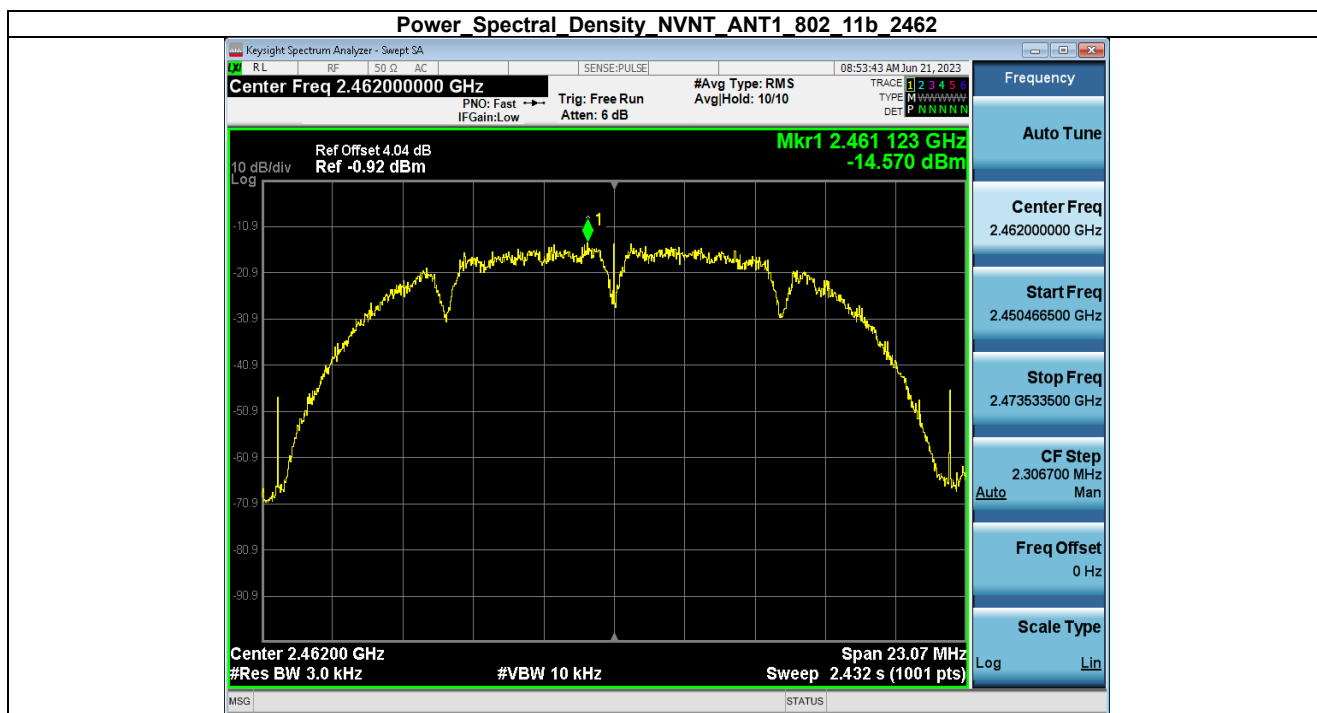
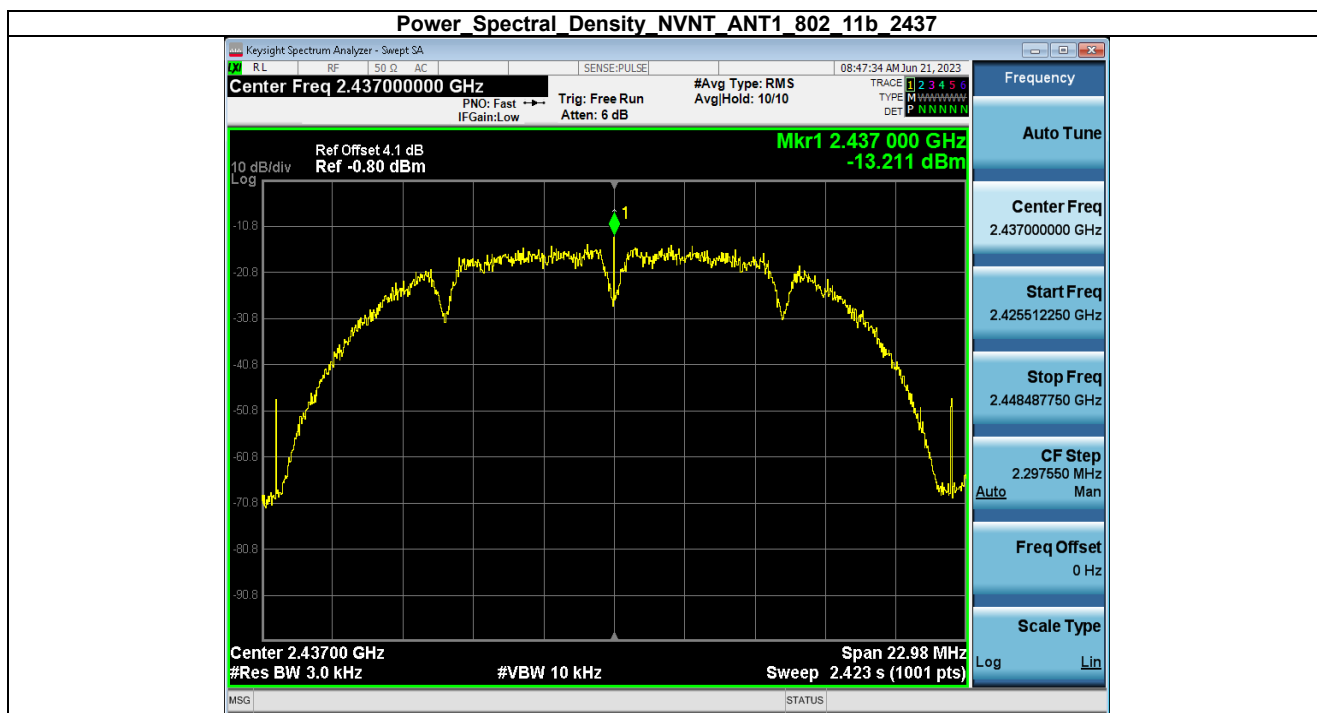
4. MAX. Output Power

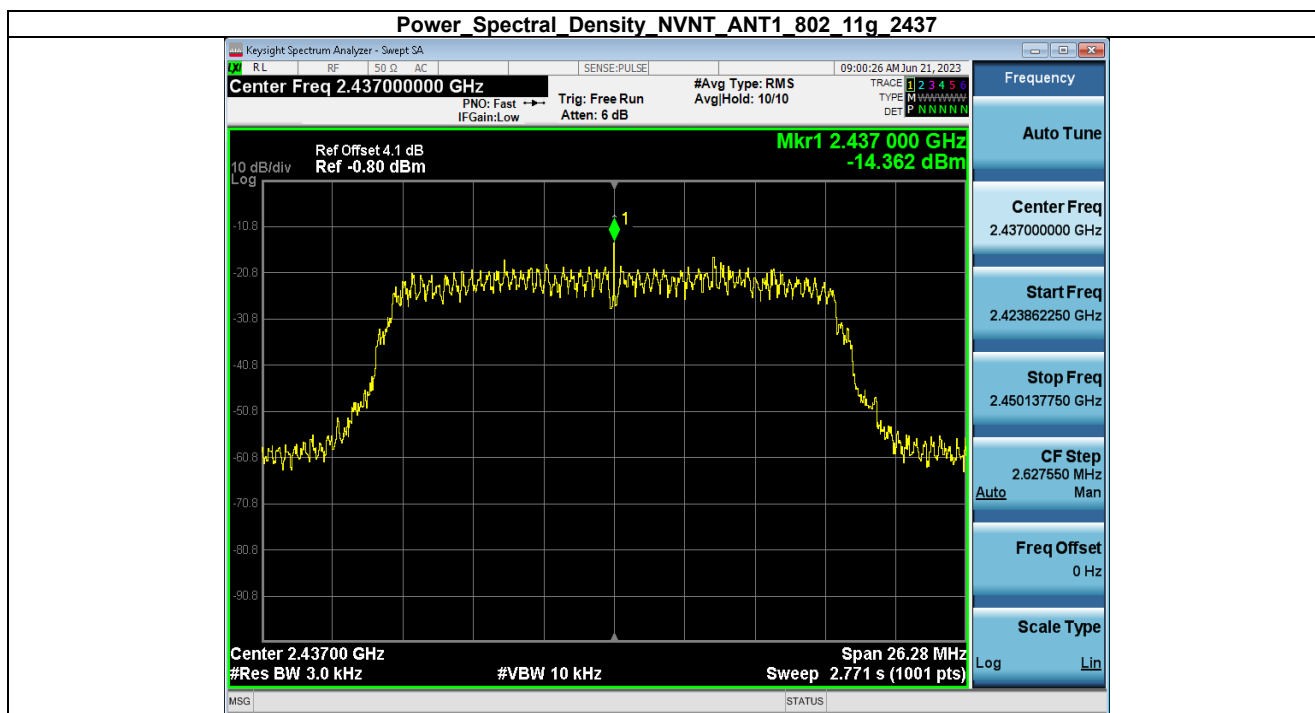
Condition	Antenna	Modulation	Frequency (MHz)	Detector	Conducted Power(dBm)	Duty factor(dB)	Total Power(dBm)	limit(dBm)	Result
NVNT	ANT1	802.11b	2412.00	Peak	12.54	N/A	12.54	30	Pass
NVNT	ANT1	802.11b	2437.00	Peak	12.79	N/A	12.79	30	Pass
NVNT	ANT1	802.11b	2462.00	Peak	12.97	N/A	12.97	30	Pass
NVNT	ANT1	802.11g	2412.00	Peak	14.67	N/A	14.67	30	Pass
NVNT	ANT1	802.11g	2437.00	Peak	14.65	N/A	14.65	30	Pass
NVNT	ANT1	802.11g	2462.00	Peak	15.05	N/A	15.05	30	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	Peak	13.76	N/A	13.76	30	Pass
NVNT	ANT1	802.11n(HT20)	2437.00	Peak	13.79	N/A	13.79	30	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	Peak	14.27	N/A	14.27	30	Pass

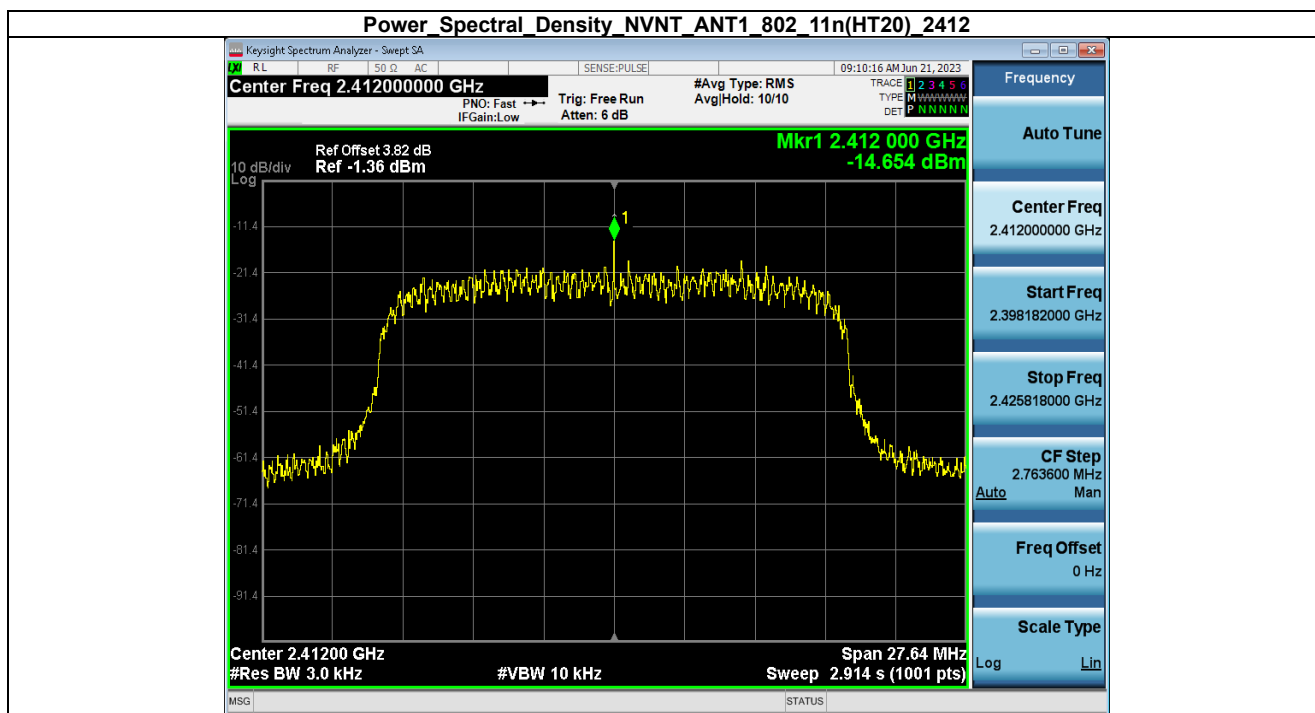
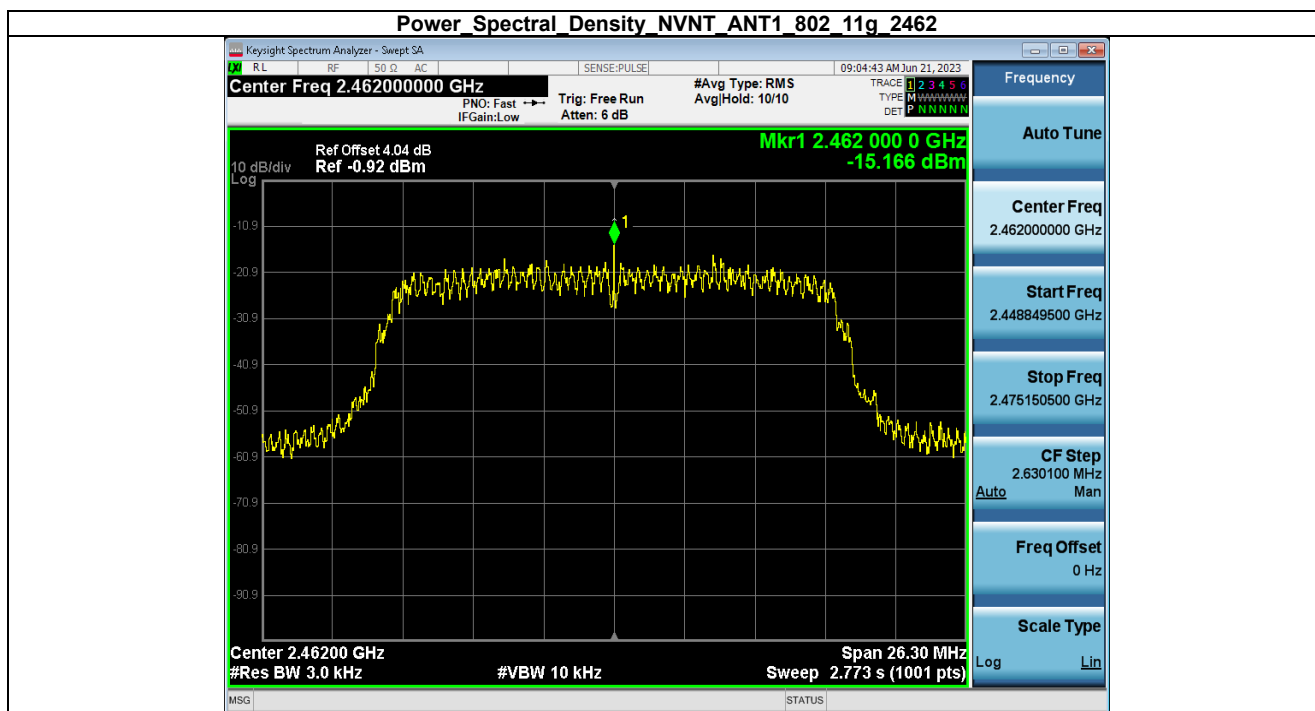
5. Power Spectral Density

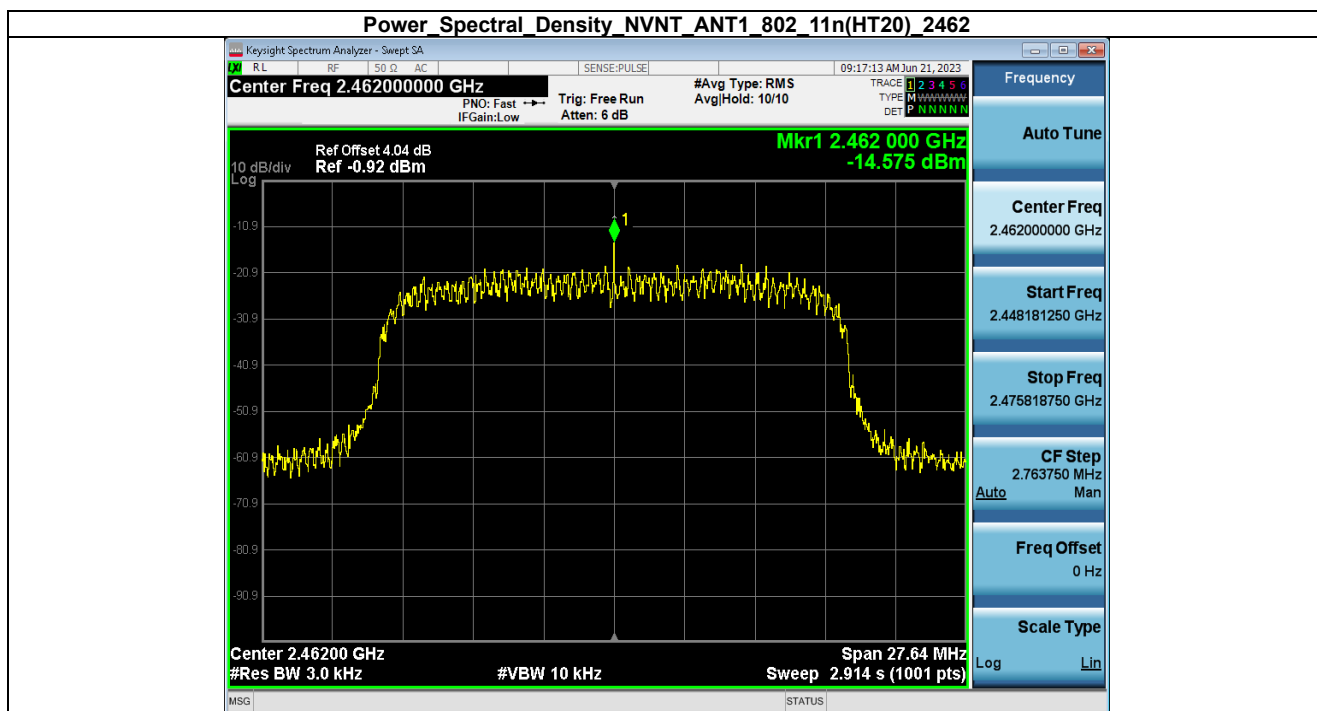
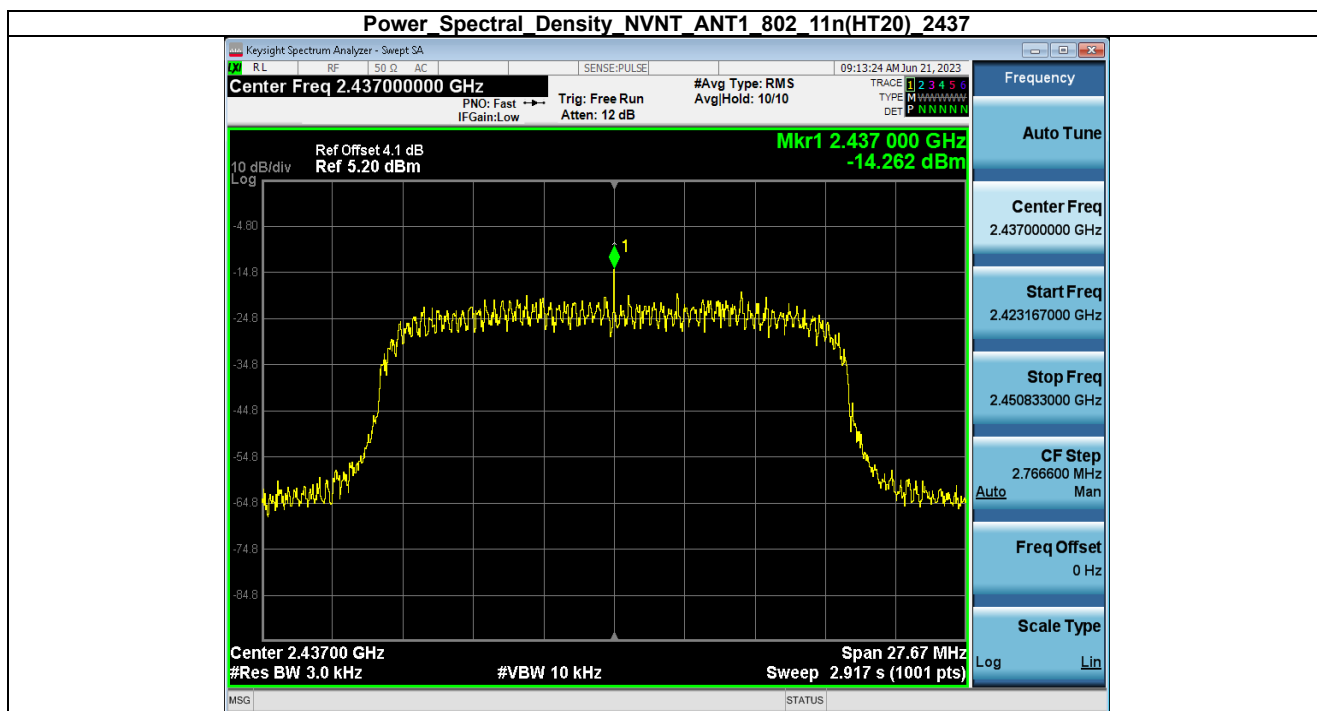
Condition	Antenna	Modulation	Frequency (MHz)	PSD(dBm/3kHz)	limit(dBm/3kHz)	Result
NVNT	ANT1	802.11b	2412.00	-13.97	8	Pass
NVNT	ANT1	802.11b	2437.00	-13.21	8	Pass
NVNT	ANT1	802.11b	2462.00	-14.57	8	Pass
NVNT	ANT1	802.11g	2412.00	-14.52	8	Pass
NVNT	ANT1	802.11g	2437.00	-14.36	8	Pass
NVNT	ANT1	802.11g	2462.00	-15.17	8	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	-14.65	8	Pass
NVNT	ANT1	802.11n(HT20)	2437.00	-14.26	8	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	-14.57	8	Pass





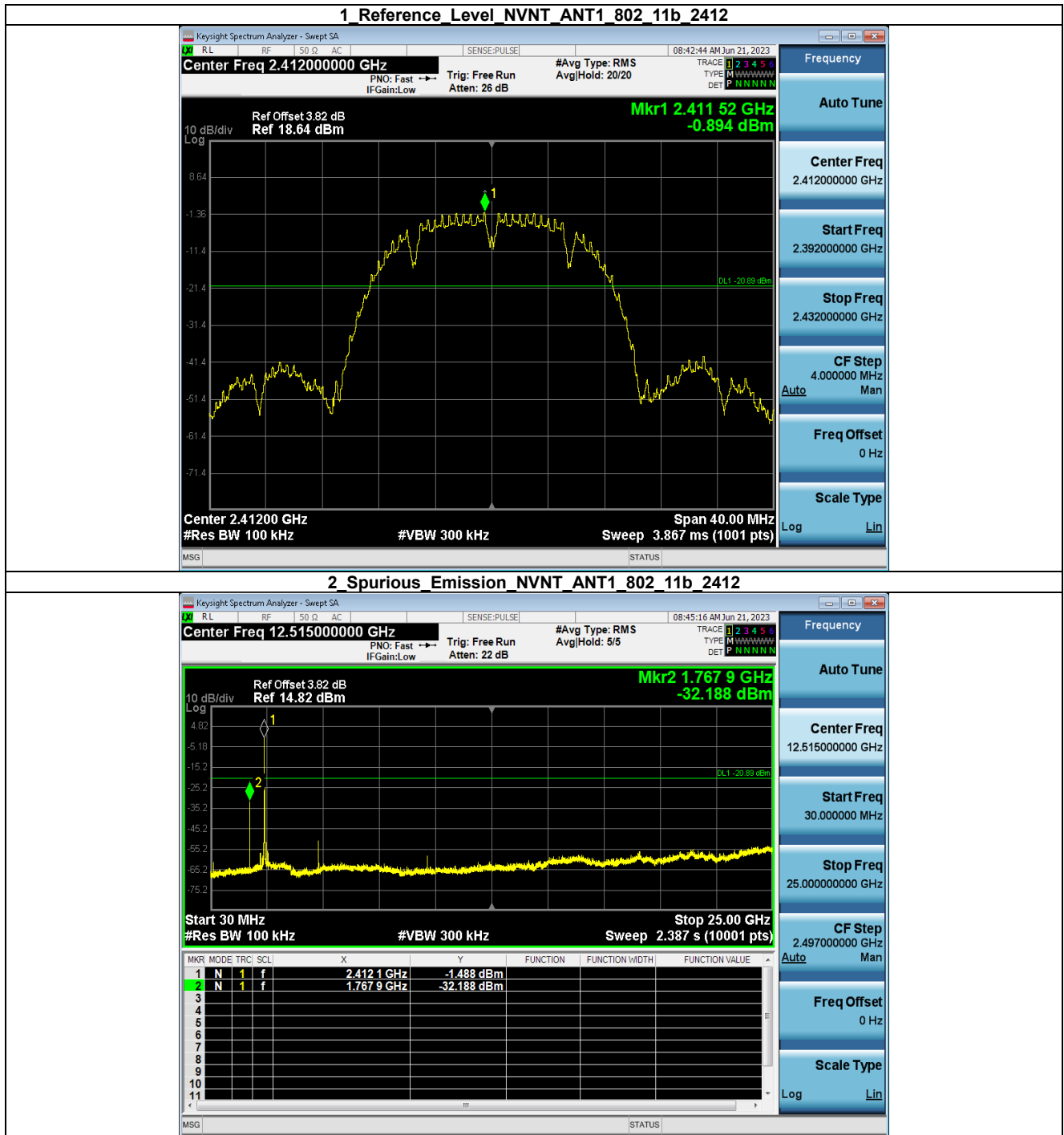


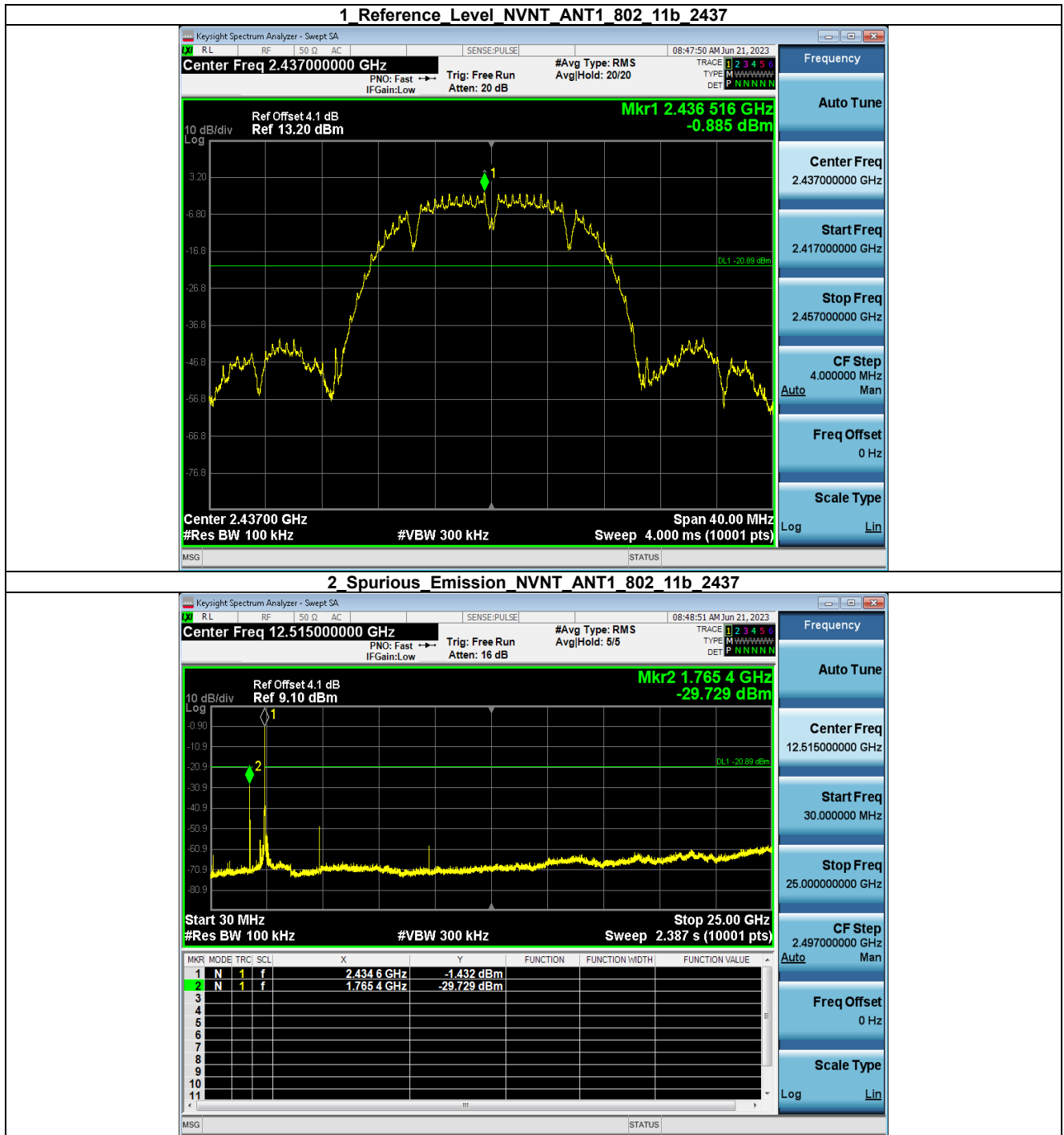


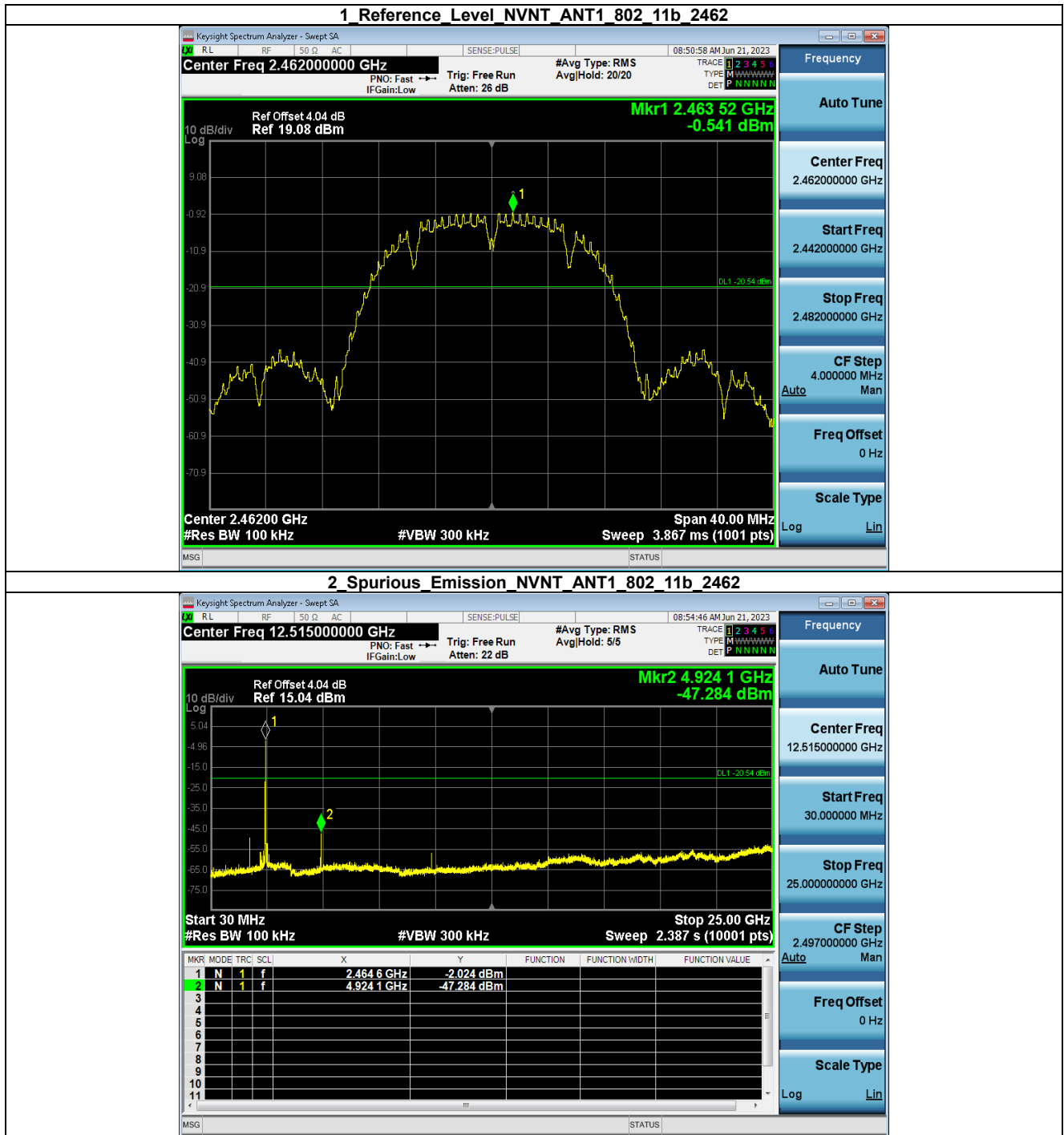


6. Spurious Emission

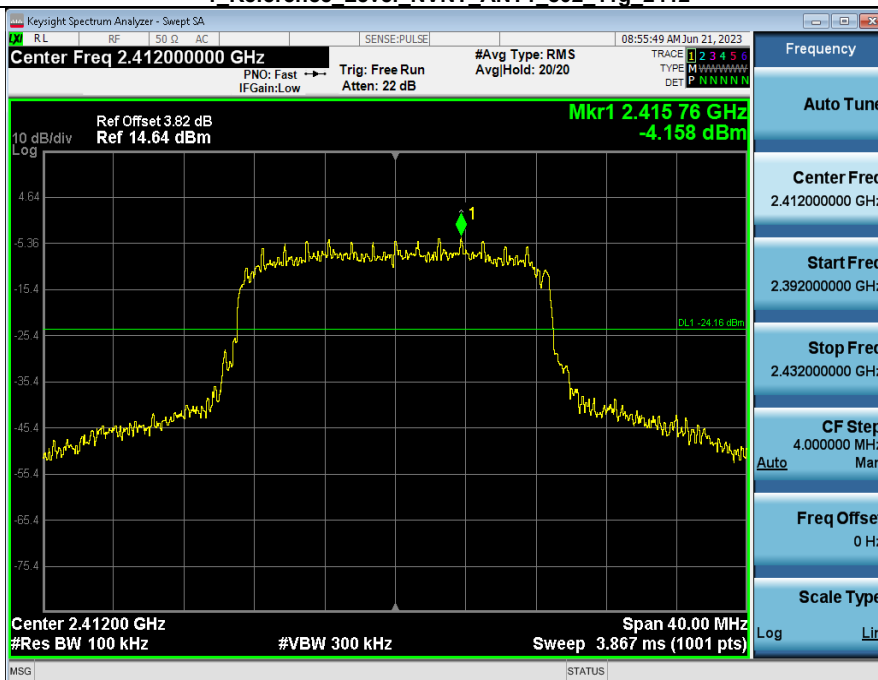
Condition	Antenna	Modulation	TX_Frequency (MHz)	Max. Mark frequency(MHz)	Spurious level(dBm)	limit(dBm)	Result
NVNT	ANT1	802.11b	2412.00	1767.912	-32.188	-20.894	Pass
NVNT	ANT1	802.11b	2437.00	1765.415	-29.729	-20.885	Pass
NVNT	ANT1	802.11b	2462.00	4924.120	-47.284	-20.541	Pass
NVNT	ANT1	802.11g	2412.00	1767.912	-40.538	-24.158	Pass
NVNT	ANT1	802.11g	2437.00	1770.409	-44.782	-24.153	Pass
NVNT	ANT1	802.11g	2462.00	1767.912	-37.143	-23.786	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	1767.912	-31.157	-23.129	Pass
NVNT	ANT1	802.11n(HT20)	2437.00	1767.912	-38.553	-23.137	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	2559.461	-54.663	-22.710	Pass



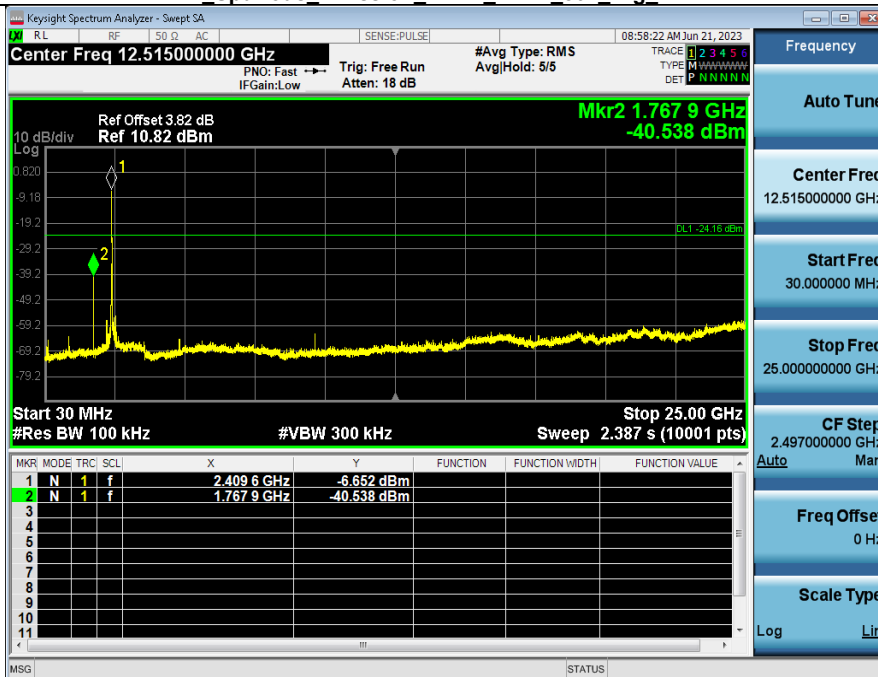




1 Reference_Level_NVNT_ANT1_802_11g_2412



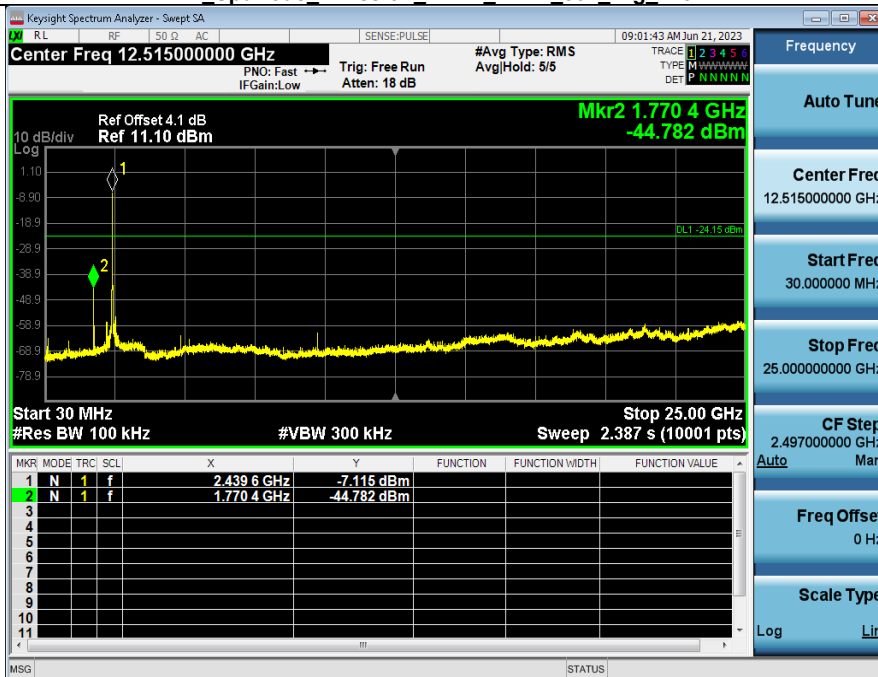
2 Spurious_Emission_NVNT_ANT1_802_11g_2412



1 Reference_Level_NVNT_ANT1_802_11g_2437



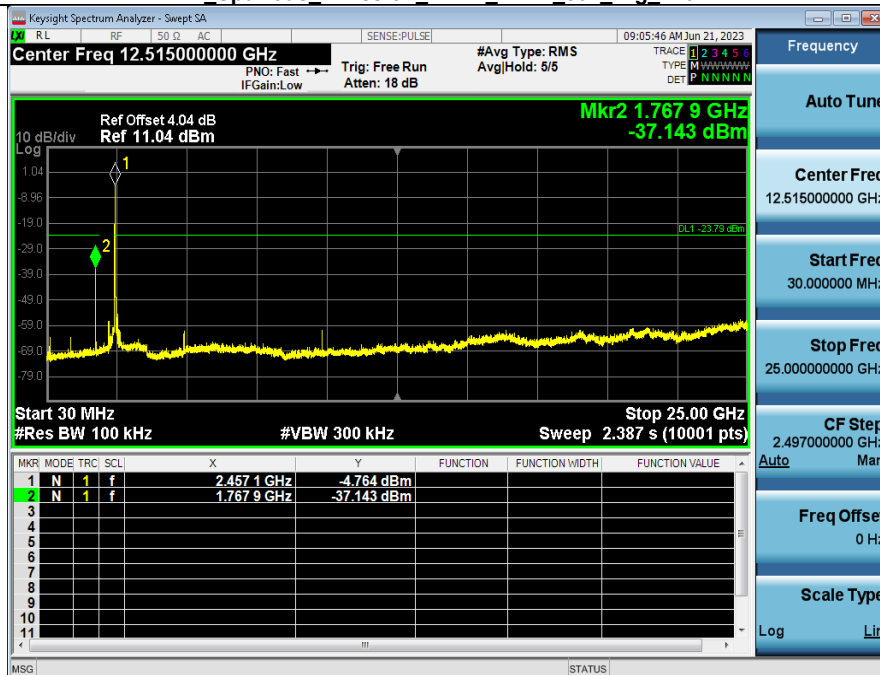
2 Spurious_Emission_NVNT_ANT1_802_11g_2437

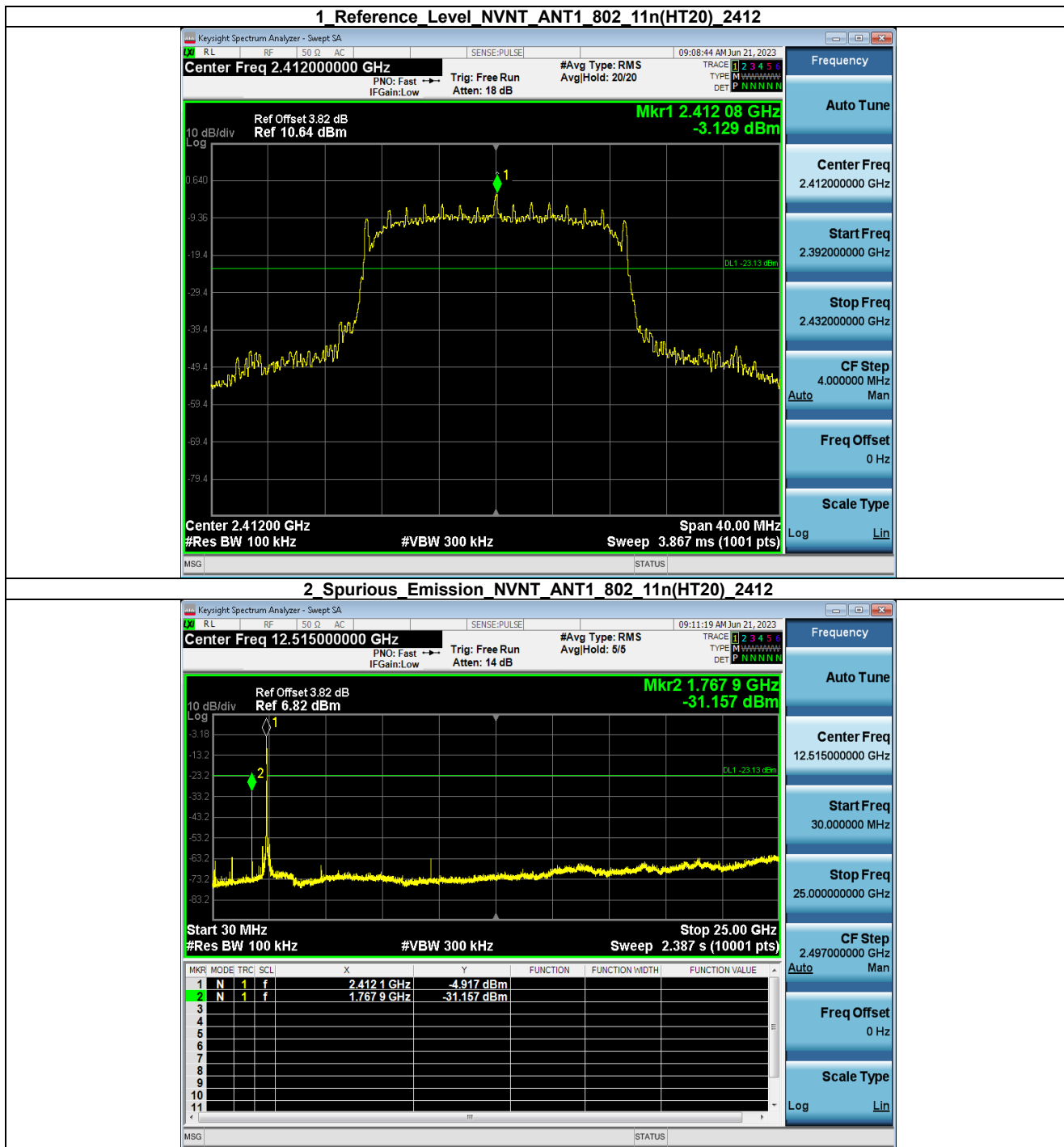


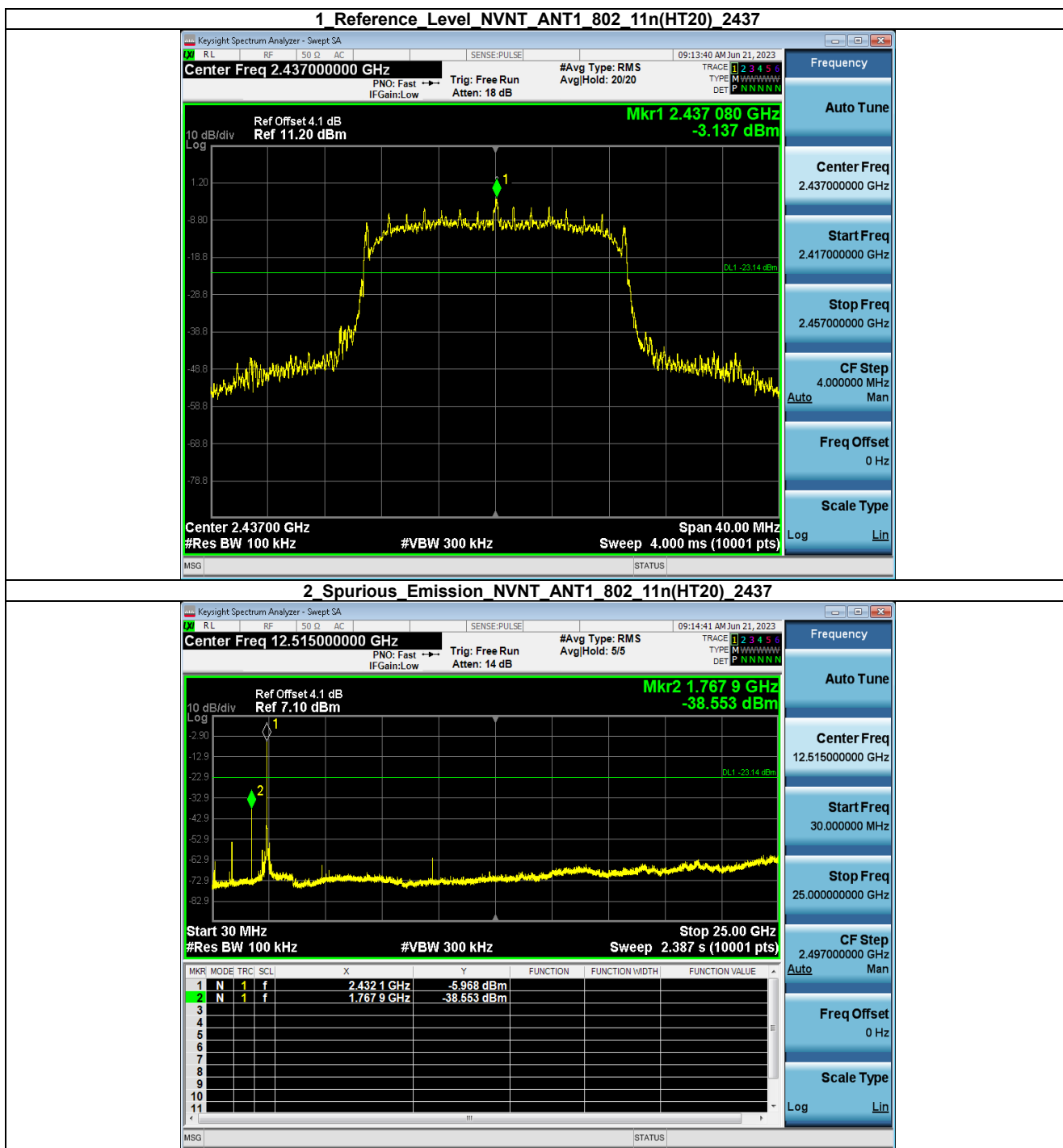
1 Reference_Level_NVNT_ANT1_802_11g_2462

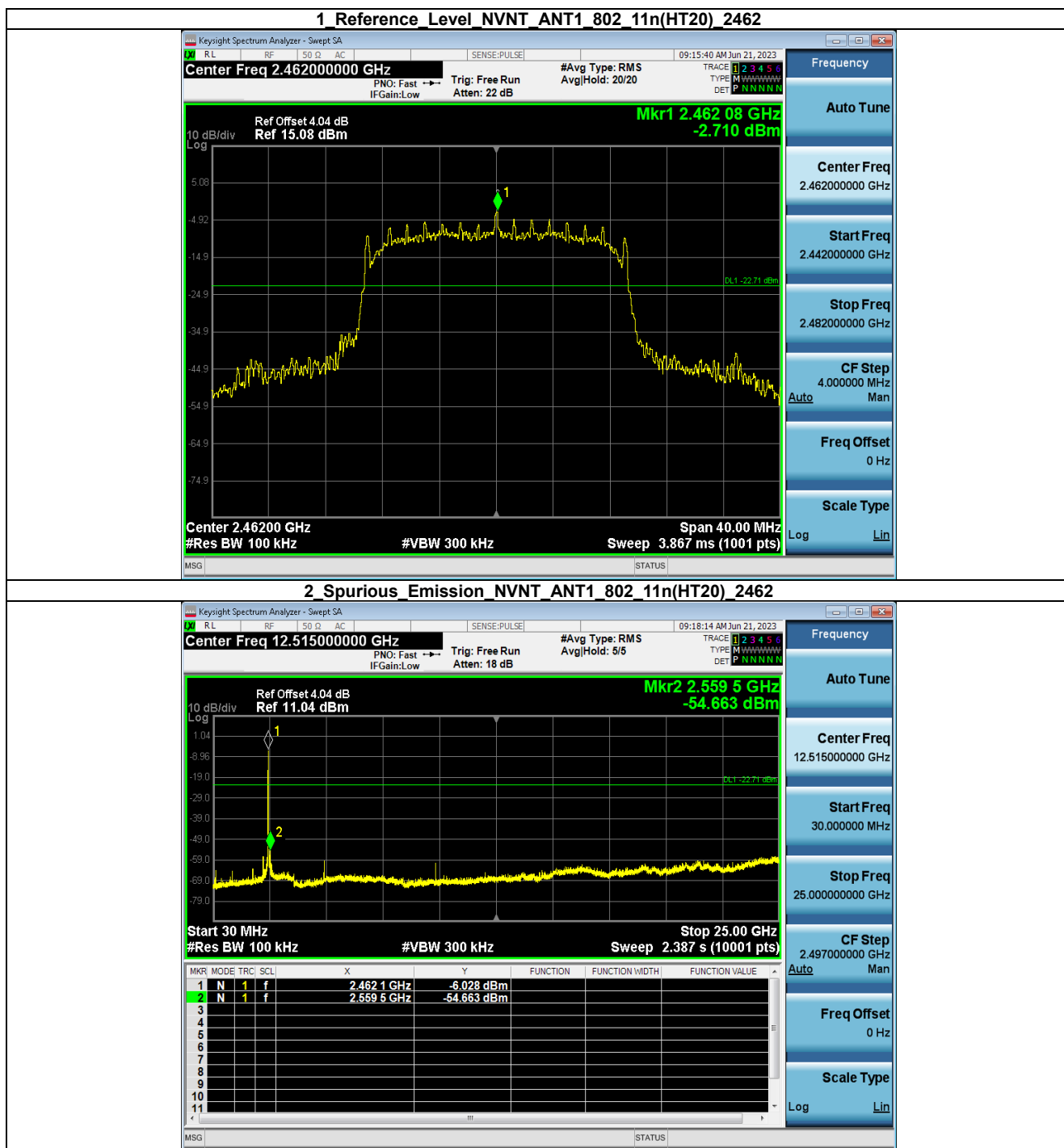


2 Spurious_Emission_NVNT_ANT1_802_11g_2462











Test Report Number: BTF230628R00901



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

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