



RF Test Report

For

Applicant Name: GSM GLOBE.COM INC
Address: 10286 SW 22nd pl. Davie Florida United States 33324
EUT Name: Mobile Phone
Brand Name: Rayo Movil
Model Number: Rayo Atlas

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: BTF230526R00403
Test Standards: 47 CFR Part 15.247

Test Conclusion: Pass
FCC ID: 2AEJA-ATLAS
Test Date: 2023-05-26 to 2023-06-08
Date of Issue: 2023-06-09

Prepared By:

Elma.Yang

Date:

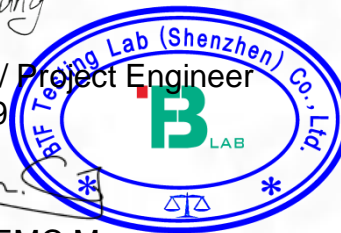
elma.yang / Project Engineer
2023-06-09

Approved By:

Ryan.CJ

Date:

Ryan.CJ / EMC Manager
2023-06-09



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Revision History		
Version	Issue Date	Revisions Content
R_V0	2023-06-09	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:	GSM GLOBE.COM INC
Address:	10286 SW 22nd pl. Davie Florida United States 33324

2.2 Manufacturer Information

Company Name:	GSM GLOBE.COM INC
Address:	10286 SW 22nd pl. Davie Florida United States 33324

2.3 Factory Information

Company Name:	ZTECH COMMUNICATION(SZ) CO LTD
Address:	FL 7 BLOCK D BAO'AN ZHIGU INNOVATION PARK YIN'TIAN ROAD NO.4 XI'XIANG STR' BAO'AN DISTRICT SZ CHINA

2.4 General Description of Equipment under Test (EUT)

EUT Name:	Mobile Phone
Test Model Number:	Rayo Atlas

2.5 Technical Information

Power Supply:	DC 4.45V from Battery
Power Adaptor:	Input:100-240V 50/60Hz 0.3A Output:5.0v 2.0A 10.0W
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:	PIFA ANT
Antenna Gain [#] :	1.09 dBi

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

3.3 Summary of Test Result

Item	Standard	Requirement	Result
Antenna requirement	47 CFR Part 15.247	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	2023-03-24	2024-03-23
Preamplifier	SCHWARZBECK	BBV9744	00246	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMAMAM-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-SMAMAM-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 Preampilifier	SCHWARZBECK	BBV9718D	00008	2023-03-24	2024-03-23
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
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	2023-03-24	2024-03-23
Preampilifier	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 Preampilifier	SCHWARZBECK	BBV9718D	00008	2023-03-24	2024-03-23
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
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	2023-03-24	2024-03-23
Preampilifier	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	2023-03-24	2024-03-23
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ_EMCC	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.

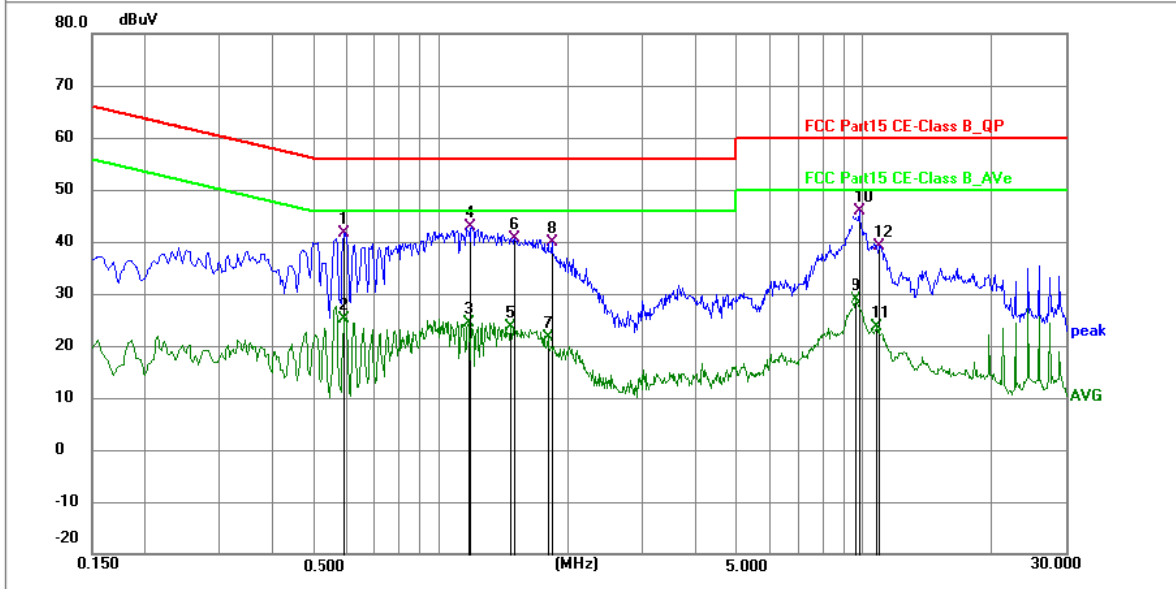
4.3 Test Modes

No.	Test Modes	Description
TM1	802.11b mode	Keep the EUT in 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.



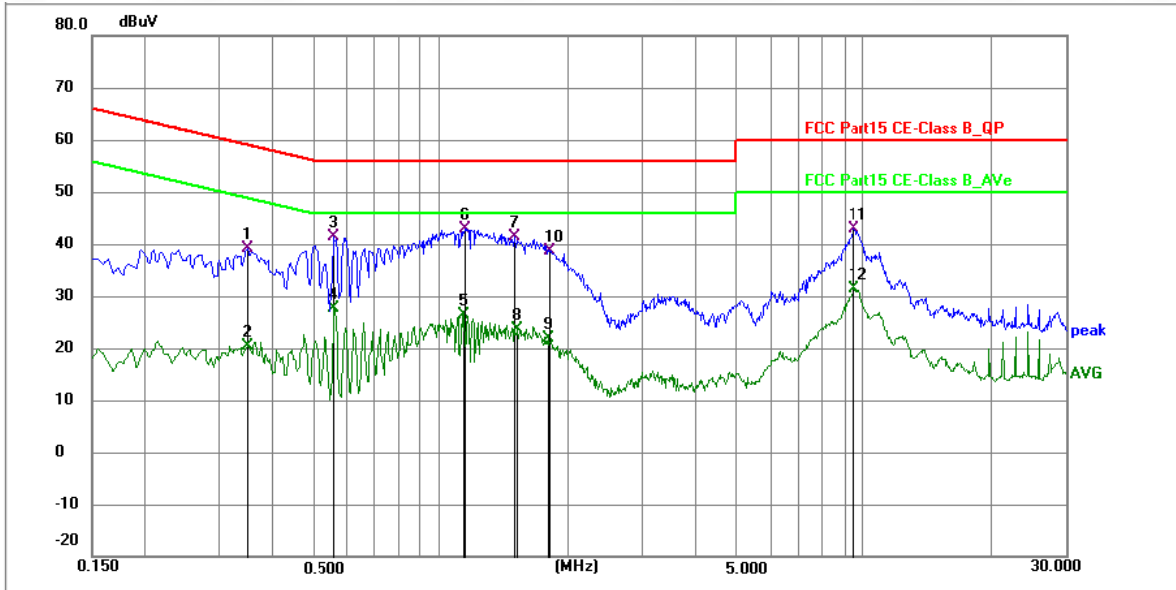
6.1.3 Test Data:

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	0.5910	31.01	10.67	41.68	56.00	-14.32	QP	P	
2	0.5910	14.48	10.67	25.15	46.00	-20.85	AVG	P	
3	1.1713	13.62	10.76	24.38	46.00	-21.62	AVG	P	
4 *	1.1849	32.05	10.76	42.81	56.00	-13.19	QP	P	
5	1.4640	12.90	10.74	23.64	46.00	-22.36	AVG	P	
6	1.4955	29.77	10.74	40.51	56.00	-15.49	QP	P	
7	1.7924	10.92	10.71	21.63	46.00	-24.37	AVG	P	
8	1.8374	29.20	10.70	39.90	56.00	-16.10	QP	P	
9	9.6000	17.86	10.93	28.79	50.00	-21.21	AVG	P	
10	9.7844	34.83	10.93	45.76	60.00	-14.24	QP	P	
11	10.7340	12.68	10.94	23.62	50.00	-26.38	AVG	P	
12	10.8825	28.21	10.95	39.16	60.00	-20.84	QP	P	

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	0.3480	28.45	10.60	39.05	59.01	-19.96	QP	P	
2	0.3480	9.89	10.60	20.49	49.01	-28.52	AVG	P	
3	0.5594	30.65	10.65	41.30	56.00	-14.70	QP	P	
4	0.5639	16.96	10.65	27.61	46.00	-18.39	AVG	P	
5	1.1354	15.68	10.77	26.45	46.00	-19.55	AVG	P	
6 *	1.1445	32.15	10.77	42.92	56.00	-13.08	QP	P	
7	1.4955	30.61	10.74	41.35	56.00	-14.65	QP	P	
8	1.5270	13.00	10.73	23.73	46.00	-22.27	AVG	P	
9	1.7924	11.05	10.71	21.76	46.00	-24.24	AVG	P	
10	1.8104	28.02	10.71	38.73	56.00	-17.27	QP	P	
11	9.4514	31.93	10.91	42.84	60.00	-17.16	QP	P	
12	9.4514	20.48	10.91	31.39	50.00	-18.61	AVG	P	

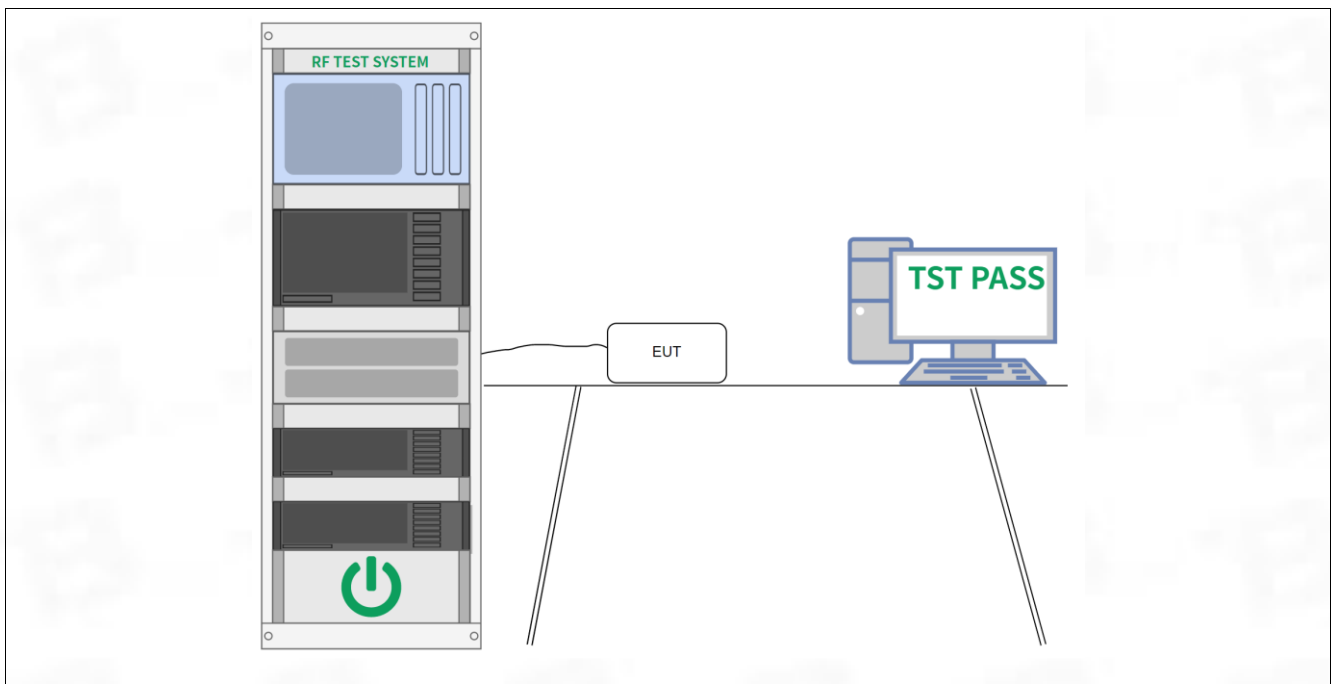
6.2 Occupied Bandwidth

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:	<ul style="list-style-type: none"> a) Set RBW = 100 kHz. b) Set the VBW \geq [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.

6.2.1 E.U.T. Operation:

Operating Environment:	
Temperature:	22.1 °C
Humidity:	45.1 %
Atmospheric Pressure:	1010 mbar

6.2.2 Test Setup Diagram:



6.2.3 Test Data:

Please Refer to Appendix for Details.

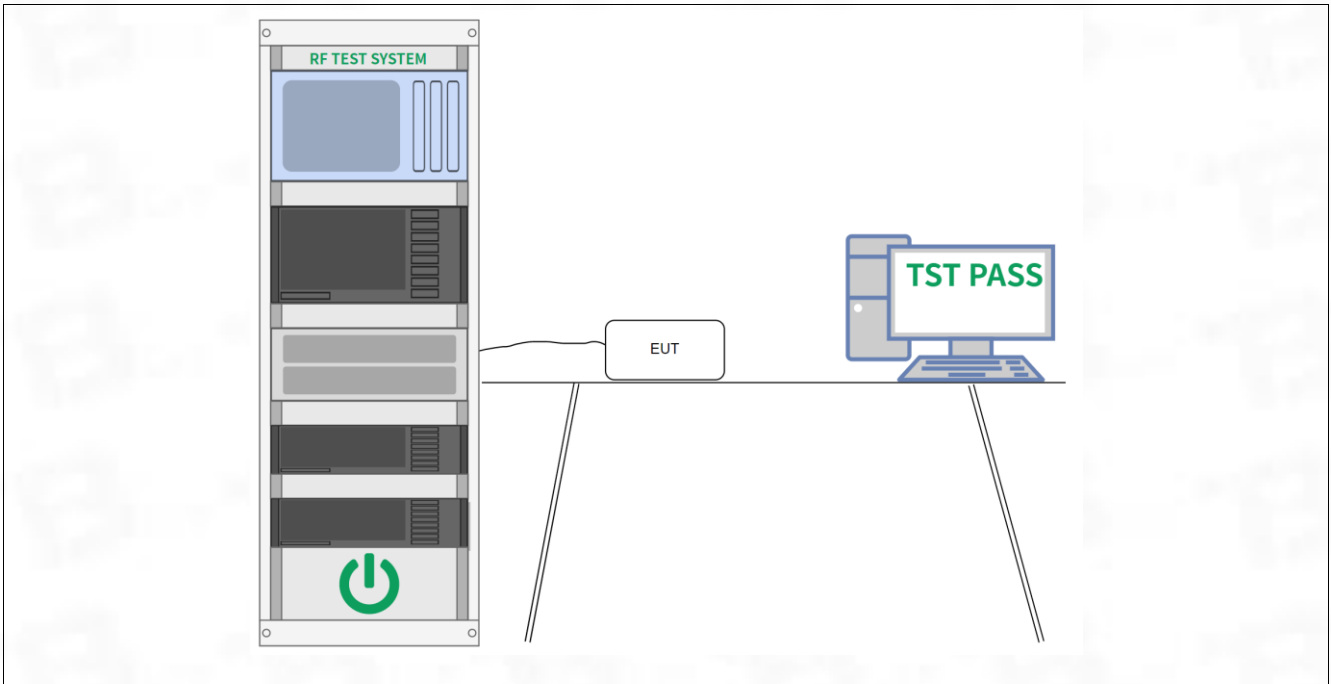
6.3 Maximum Conducted Output Power

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:	22.1 °C
Humidity:	45.1 %
Atmospheric Pressure:	1010 mbar

6.3.2 Test Setup Diagram:



6.3.3 Test Data:

Please Refer to Appendix for Details.

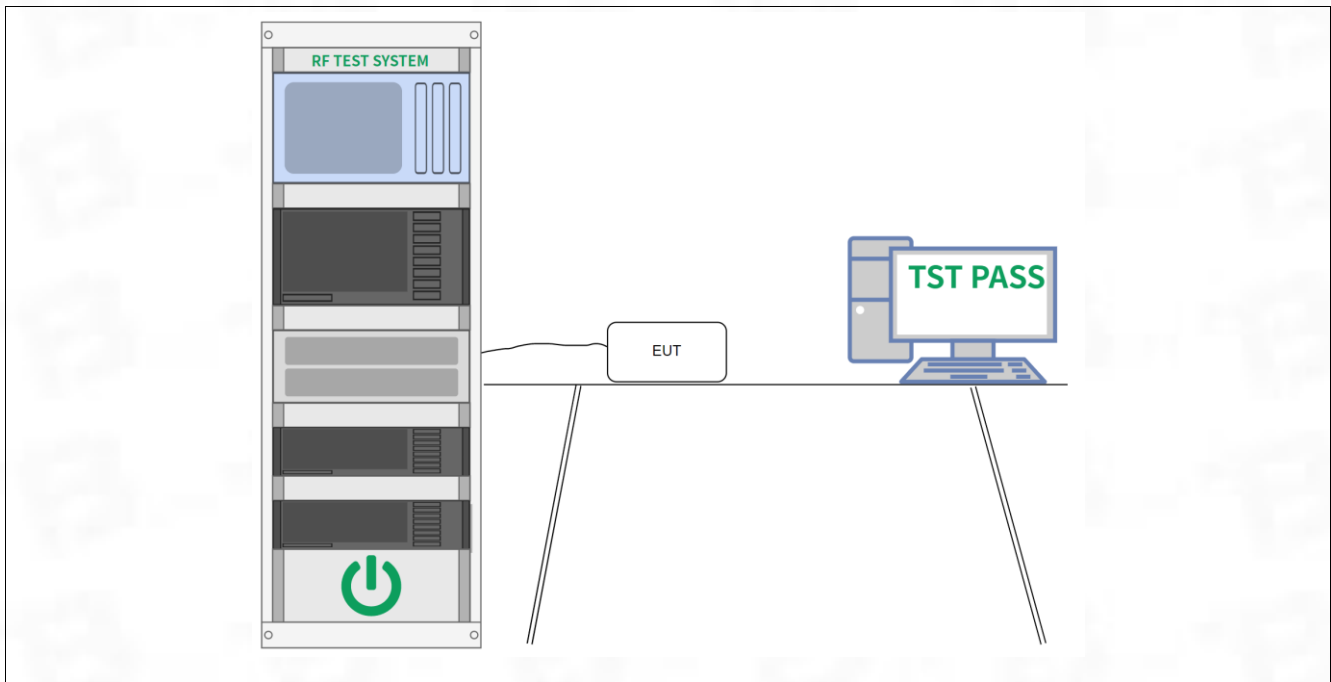
6.4 Power Spectral Density

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:	22.1 °C
Humidity:	45.1 %
Atmospheric Pressure:	1010 mbar

6.4.2 Test Setup Diagram:



6.4.3 Test Data:

Please Refer to Appendix for Details.

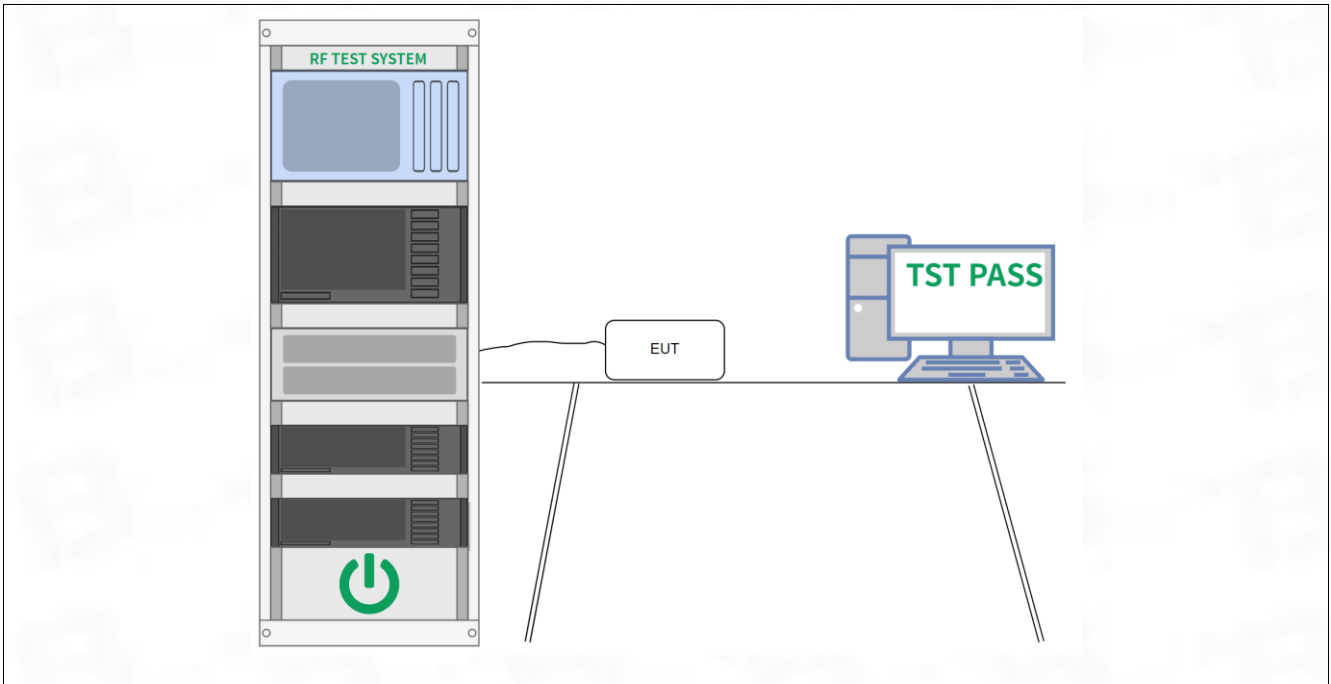
6.5 Emissions in non-restricted frequency bands

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:	22.1 °C
Humidity:	45.1 %
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:	22.4 °C
Humidity:	49.1 %
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	69.06	-30.59	38.47	74.00	-35.53	peak	P
2	2390.000	67.88	-30.49	37.39	74.00	-36.61	peak	P
3 *	2400.000	69.34	-30.48	38.86	74.00	-35.14	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	70.06	-30.59	39.47	74.00	-34.53	peak	P
2	2390.000	70.38	-30.49	39.89	74.00	-34.11	peak	P
3 *	2400.000	73.34	-30.48	42.86	74.00	-31.14	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	76.60	-30.39	46.21	74.00	-27.79	peak	P
2	2500.000	70.87	-30.37	40.50	74.00	-33.50	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	70.60	-30.39	40.21	74.00	-33.79	peak	P
2 *	2500.000	71.37	-30.37	41.00	74.00	-33.00	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	67.93	-30.59	37.34	74.00	-36.66	peak	P
2	2390.000	67.11	-30.49	36.62	74.00	-37.38	peak	P
3 *	2400.000	70.68	-30.48	40.20	74.00	-33.80	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	2390.000	68.11	-30.49	37.62	74.00	-36.38	peak	P
2 *	2400.000	71.18	-30.48	40.70	74.00	-33.30	peak	P
3	2310.000	66.93	-30.59	36.34	74.00	-37.66	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	73.25	-30.39	42.86	74.00	-31.14	peak	P
2	2500.000	71.25	-30.37	40.88	74.00	-33.12	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	73.75	-30.39	43.36	74.00	-30.64	peak	P
2	2500.000	70.25	-30.37	39.88	74.00	-34.12	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	68.84	-30.59	38.25	74.00	-35.75	peak	P
2	2390.000	72.84	-30.49	42.35	74.00	-31.65	peak	P
3 *	2400.000	80.63	-30.48	50.15	74.00	-23.85	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	69.84	-30.59	39.25	74.00	-34.75	peak	P
2	2390.000	71.34	-30.49	40.85	74.00	-33.15	peak	P
3 *	2400.000	76.63	-30.48	46.15	74.00	-27.85	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	82.91	-30.39	52.52	74.00	-21.48	peak	P
2	2500.000	70.85	-30.37	40.48	74.00	-33.52	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	78.91	-30.39	48.52	74.00	-25.48	peak	P
2	2500.000	71.85	-30.37	41.48	74.00	-32.52	peak	P

TM4 / Polarization: Horizontal / Band: 2.4G / BW: 40 / CH: L

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2310.000	68.69	-30.59	38.10	74.00	-35.90	peak	P
2	2390.000	71.78	-30.49	41.29	74.00	-32.71	peak	P
3 *	2400.000	81.07	-30.48	50.59	74.00	-23.41	peak	P

TM4 / Polarization: Vertical / Band: 2.4G / BW: 40 / CH: L

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2310.000	70.69	-30.59	40.10	74.00	-33.90	peak	P
2	2390.000	70.28	-30.49	39.79	74.00	-34.21	peak	P
3 *	2400.000	78.07	-30.48	47.59	74.00	-26.41	peak	P

TM4 / Polarization: Horizontal / Band: 2.4G / BW: 40 / CH: H

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	2483.500	75.93	-30.39	45.54	74.00	-28.46	peak	P
2	2500.000	74.57	-30.37	44.20	74.00	-29.80	peak	P

TM4 / Polarization: Vertical / Band: 2.4G / BW: 40 / CH: H

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	2483.500	72.93	-30.39	42.54	74.00	-31.46	peak	P
2	2500.000	69.57	-30.37	39.20	74.00	-34.80	peak	P

6.7 Emissions in restricted frequency bands (below 1GHz)

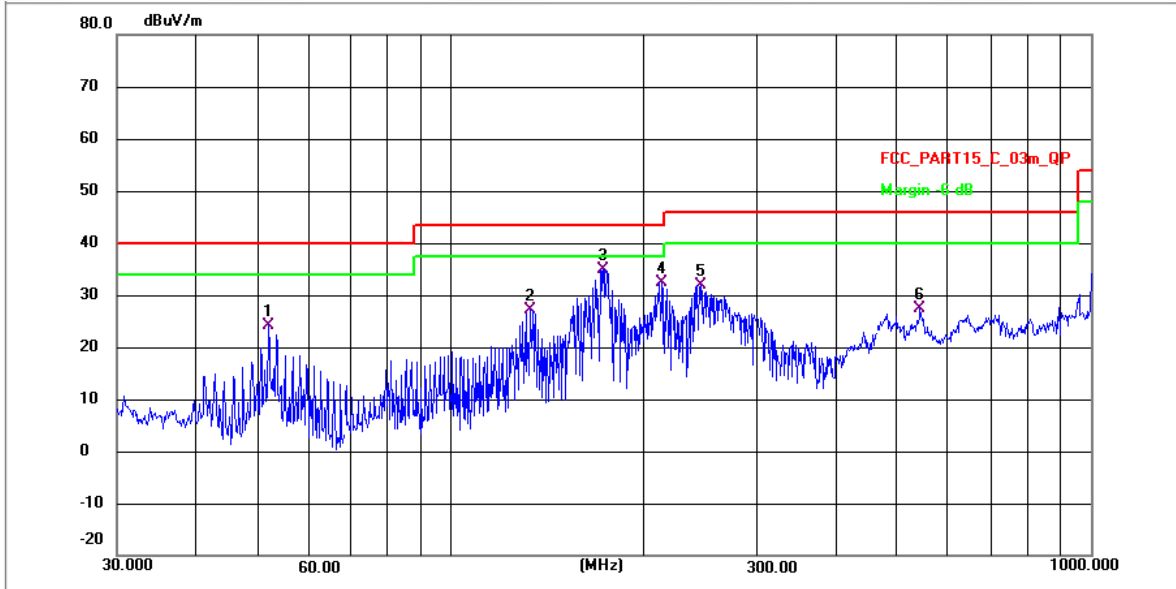
Test Requirement:	In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).`		
Test Method:	Radiated emissions tests		
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	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:	22.4 °C
Humidity:	49.1 %
Atmospheric Pressure:	1010 mbar

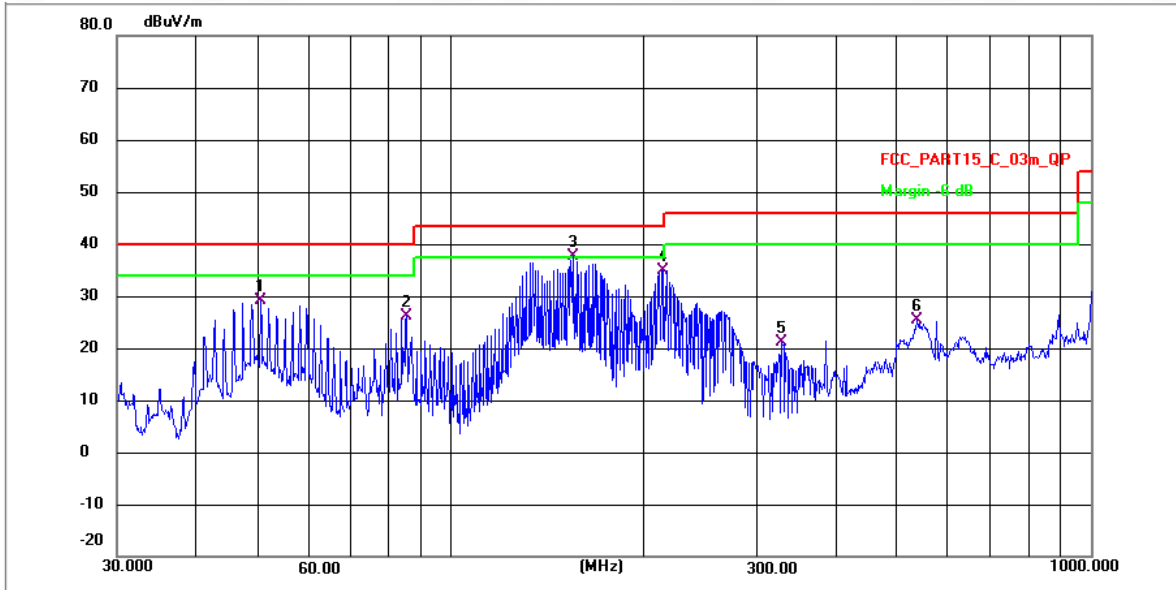
6.7.2 Test Data:

Note: All the mode have been tested, and only the worst 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	P/F
1	51.8430	42.28	-18.26	24.02	40.00	-15.98	QP	P
2	132.6850	55.15	-27.93	27.22	43.50	-16.28	QP	P
3 *	172.5988	62.55	-27.57	34.98	43.50	-8.52	QP	P
4	213.7634	59.18	-26.73	32.45	43.50	-11.05	QP	P
5	245.5201	57.72	-25.89	31.83	46.00	-14.17	QP	P
6	542.3225	48.89	-21.58	27.31	46.00	-18.69	QP	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	50.3206	49.39	-20.32	29.07	40.00	-10.93	QP	P
2	85.4477	56.78	-30.62	26.16	40.00	-13.84	QP	P
3 *	155.6370	65.29	-27.73	37.56	43.50	-5.94	QP	P
4	215.2678	61.60	-26.66	34.94	43.50	-8.56	QP	P
5	327.8873	46.29	-25.20	21.09	46.00	-24.91	QP	P
6	535.7073	46.97	-21.52	25.45	46.00	-20.55	QP	P

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:	24.9 °C
Humidity:	48.4 %
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	3355.120	63.05	-29.19	33.86	74.00	-40.14	peak	P
2	5110.646	67.41	-27.28	40.13	74.00	-33.87	peak	P
3	6190.139	68.13	-25.35	42.78	74.00	-31.22	peak	P
4	7360.227	68.83	-24.82	44.01	74.00	-29.99	peak	P
5	9750.552	69.24	-23.74	45.50	74.00	-28.50	peak	P
6 *	12505.705	71.06	-21.61	49.45	74.00	-24.55	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	3980.107	64.89	-29.00	35.89	74.00	-38.11	peak	P
2	4415.288	65.93	-28.82	37.11	74.00	-36.89	peak	P
3	5780.300	67.31	-26.04	41.27	74.00	-32.73	peak	P
4	8866.061	69.14	-24.58	44.56	74.00	-29.44	peak	P
5	12408.490	69.81	-21.72	48.09	74.00	-25.91	peak	P
6 *	14973.097	71.21	-20.44	50.77	74.00	-23.23	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	3318.471	64.82	-29.22	35.60	74.00	-38.40	peak	P
2	4478.266	69.21	-28.80	40.41	74.00	-33.59	peak	P
3	6416.020	68.15	-25.38	42.77	74.00	-31.23	peak	P
4	9010.736	70.07	-24.29	45.78	74.00	-28.22	peak	P
5 *	12607.325	72.96	-21.56	51.40	74.00	-22.60	peak	P
6	15407.737	72.38	-21.29	51.09	74.00	-22.91	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	3619.064	63.53	-29.04	34.49	74.00	-39.51	peak	P
2	4858.571	66.24	-27.77	38.47	74.00	-35.53	peak	P
3	7920.911	66.87	-25.41	41.46	74.00	-32.54	peak	P
4	9549.733	70.43	-23.31	47.12	74.00	-26.88	peak	P
5	12086.372	71.12	-22.09	49.03	74.00	-24.97	peak	P
6 *	14878.188	72.23	-20.60	51.63	74.00	-22.37	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	3206.272	63.11	-29.32	33.79	74.00	-40.21	peak	P
2	4728.343	68.56	-28.14	40.42	74.00	-33.58	peak	P
3	6059.145	67.60	-25.33	42.27	74.00	-31.73	peak	P
4	8935.523	69.14	-24.44	44.70	74.00	-29.30	peak	P
5	10945.613	69.89	-23.56	46.33	74.00	-27.67	peak	P
6 *	16109.054	70.14	-21.07	49.07	74.00	-24.93	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	3103.243	64.46	-29.42	35.04	74.00	-38.96	peak	P
2	3857.783	68.24	-29.01	39.23	74.00	-34.77	peak	P
3	5583.251	69.06	-26.68	42.38	74.00	-31.62	peak	P
4	6673.251	71.19	-25.23	45.96	74.00	-28.04	peak	P
5	8945.860	70.03	-24.42	45.61	74.00	-28.39	peak	P
6 *	12640.163	71.50	-21.53	49.97	74.00	-24.03	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	3966.326	60.95	-29.00	31.95	74.00	-42.05	peak	P
2	5480.919	64.65	-26.96	37.69	74.00	-36.31	peak	P
3	6673.251	66.69	-25.23	41.46	74.00	-32.54	peak	P
4	8645.893	67.29	-25.03	42.26	74.00	-31.74	peak	P
5	11221.100	65.99	-23.28	42.71	74.00	-31.29	peak	P
6 *	13520.742	71.06	-20.97	50.09	74.00	-23.91	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	3842.204	64.37	-29.02	35.35	74.00	-38.65	peak	P
2	4728.343	68.06	-28.14	39.92	74.00	-34.08	peak	P
3	6526.372	66.81	-25.35	41.46	74.00	-32.54	peak	P
4	8190.988	68.07	-25.45	42.62	74.00	-31.38	peak	P
5	10822.922	72.57	-23.82	48.75	74.00	-25.25	peak	P
6 *	14826.673	69.92	-20.68	49.24	74.00	-24.76	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	3255.767	63.10	-29.28	33.82	74.00	-40.18	peak	P
2	4947.852	67.11	-27.51	39.60	74.00	-34.40	peak	P
3	5738.683	68.08	-26.18	41.90	74.00	-32.10	peak	P
4	8645.893	71.29	-25.03	46.26	74.00	-27.74	peak	P
5	10609.213	70.53	-24.29	46.24	74.00	-27.76	peak	P
6 *	15772.718	71.69	-21.54	50.15	74.00	-23.85	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	3420.727	60.63	-29.13	31.50	74.00	-42.50	peak	P
2	4424.230	64.05	-28.81	35.24	74.00	-38.76	peak	P
3	6443.898	66.50	-25.38	41.12	74.00	-32.88	peak	P
4	7900.332	67.93	-25.38	42.55	74.00	-31.45	peak	P
5	11221.100	69.49	-23.28	46.21	74.00	-27.79	peak	P
6 *	15864.160	71.71	-21.57	50.14	74.00	-23.86	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	3286.020	63.57	-29.25	34.32	74.00	-39.68	peak	P
2	4133.699	65.32	-28.95	36.37	74.00	-37.63	peak	P
3	5085.596	65.38	-27.30	38.08	74.00	-35.92	peak	P
4	7019.476	69.32	-24.92	44.40	74.00	-29.60	peak	P
5	8935.523	68.64	-24.44	44.20	74.00	-29.80	peak	P
6 *	12294.251	69.91	-21.86	48.05	74.00	-25.95	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	3980.107	63.89	-29.00	34.89	74.00	-39.11	peak	P
2	5405.403	67.40	-27.03	40.37	74.00	-33.63	peak	P
3	6338.604	66.53	-25.36	41.17	74.00	-32.83	peak	P
4	7814.034	68.52	-25.26	43.26	74.00	-30.74	peak	P
5	10062.634	69.09	-24.32	44.77	74.00	-29.23	peak	P
6 *	14826.673	69.92	-20.68	49.24	74.00	-24.76	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	3560.957	65.30	-29.05	36.25	74.00	-37.75	peak	P
2	5480.919	66.15	-26.96	39.19	74.00	-34.81	peak	P
3	7360.227	66.83	-24.82	42.01	74.00	-31.99	peak	P
4	9489.201	66.70	-23.22	43.48	74.00	-30.52	peak	P
5	11721.685	68.92	-22.67	46.25	74.00	-27.75	peak	P
6 *	13797.088	69.26	-21.04	48.22	74.00	-25.78	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	3652.693	65.39	-29.04	36.35	74.00	-37.65	peak	P
2	4927.871	66.92	-27.58	39.34	74.00	-34.66	peak	P
3	5780.300	67.31	-26.04	41.27	74.00	-32.73	peak	P
4	7814.034	69.02	-25.26	43.76	74.00	-30.24	peak	P
5	8945.860	68.53	-24.42	44.11	74.00	-29.89	peak	P
6 *	9708.370	70.79	-23.65	47.14	74.00	-26.86	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	4033.378	65.97	-28.99	36.98	74.00	-37.02	peak	P
2	5575.188	66.34	-26.70	39.64	74.00	-34.36	peak	P
3	7501.981	65.44	-24.78	40.66	74.00	-33.34	peak	P
4	9759.011	68.10	-23.76	44.34	74.00	-29.66	peak	P
5	12850.136	69.14	-21.42	47.72	74.00	-26.28	peak	P
6 *	15248.245	72.28	-20.95	51.33	74.00	-22.67	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	4629.621	60.36	-28.41	31.95	74.00	-42.05	peak	P
2	6291.148	60.72	-25.36	35.36	74.00	-38.64	peak	P
3	7829.860	63.15	-25.27	37.88	74.00	-36.12	peak	P
4	9036.818	65.39	-24.22	41.17	74.00	-32.83	peak	P
5	10551.110	68.49	-24.41	44.08	74.00	-29.92	peak	P
6 *	12354.809	67.14	-21.79	45.35	74.00	-28.65	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	3755.465	62.33	-29.02	33.31	74.00	-40.69	peak	P
2	5069.452	65.26	-27.32	37.94	74.00	-36.06	peak	P
3	6954.851	65.88	-24.97	40.91	74.00	-33.09	peak	P
4	8526.770	68.14	-25.27	42.87	74.00	-31.13	peak	P
5	13595.198	69.16	-20.99	48.17	74.00	-25.83	peak	P
6 *	17461.926	66.30	-16.47	49.83	74.00	-24.17	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	3579.532	63.22	-29.05	34.17	74.00	-39.83	peak	P
2	5170.075	67.05	-27.23	39.82	74.00	-34.18	peak	P
3	6416.020	67.15	-25.38	41.77	74.00	-32.23	peak	P
4	9353.050	70.55	-23.52	47.03	74.00	-26.97	peak	P
5	11550.165	69.86	-22.98	46.88	74.00	-27.12	peak	P
6 *	17517.533	68.25	-16.34	51.91	74.00	-22.09	peak	P

TM4 / Polarization: Horizontal / Band: 2.4G / BW: 40 / CH: L

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3579.532	62.22	-29.05	33.17	74.00	-40.83	peak	P
2	4682.104	68.83	-28.27	40.56	74.00	-33.44	peak	P
3	5449.327	68.11	-26.99	41.12	74.00	-32.88	peak	P
4	7456.584	67.54	-24.79	42.75	74.00	-31.25	peak	P
5	8935.523	68.14	-24.44	43.70	74.00	-30.30	peak	P
6 *	9616.209	71.42	-23.45	47.97	74.00	-26.03	peak	P

TM4 / Polarization: Vertical / Band: 2.4G / BW: 40 / CH: L

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3698.374	62.94	-29.03	33.91	74.00	-40.09	peak	P
2	5085.596	64.88	-27.30	37.58	74.00	-36.42	peak	P
3	6262.121	62.31	-25.35	36.96	74.00	-37.04	peak	P
4	8327.053	68.34	-25.39	42.95	74.00	-31.05	peak	P
5	11647.386	70.19	-22.80	47.39	74.00	-26.61	peak	P
6 *	14643.539	71.54	-20.97	50.57	74.00	-23.43	peak	P

TM4 / Polarization: Horizontal / Band: 2.4G / BW: 40 / CH: M

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3473.533	59.25	-29.08	30.17	74.00	-43.83	peak	P
2	4449.879	65.65	-28.81	36.84	74.00	-37.16	peak	P
3	5272.696	68.32	-27.15	41.17	74.00	-32.83	peak	P
4	6912.765	68.48	-25.01	43.47	74.00	-30.53	peak	P
5	8576.204	72.09	-25.17	46.92	74.00	-27.08	peak	P
6 *	14034.390	70.93	-21.10	49.83	74.00	-24.17	peak	P

TM4 / Polarization: Vertical / Band: 2.4G / BW: 40 / CH: M

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3791.457	63.79	-29.02	34.77	74.00	-39.23	peak	P
2	4640.339	68.84	-28.39	40.45	74.00	-33.55	peak	P
3	5405.403	68.40	-27.03	41.37	74.00	-32.63	peak	P
4	6983.051	68.72	-24.95	43.77	74.00	-30.23	peak	P
5	8825.154	70.07	-24.66	45.41	74.00	-28.59	peak	P
6 *	13473.927	70.89	-20.99	49.90	74.00	-24.10	peak	P

TM4 / Polarization: Horizontal / Band: 2.4G / BW: 40 / CH: H

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3629.539	63.84	-29.04	34.80	74.00	-39.20	peak	P
2	6371.667	66.29	-25.37	40.92	74.00	-33.08	peak	P
3	9527.677	69.43	-23.26	46.17	74.00	-27.83	peak	P
4	11721.685	69.42	-22.67	46.75	74.00	-27.25	peak	P
5	16905.697	68.34	-18.45	49.89	74.00	-24.11	peak	P
6 *	17803.380	67.94	-16.65	51.29	74.00	-22.71	peak	P

TM4 / Polarization: Vertical / Band: 2.4G / BW: 40 / CH: H

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3698.374	64.44	-29.03	35.41	74.00	-38.59	peak	P
2	4593.632	68.08	-28.52	39.56	74.00	-34.44	peak	P
3	5391.360	68.31	-27.04	41.27	74.00	-32.73	peak	P
4	6247.658	68.97	-25.36	43.61	74.00	-30.39	peak	P
5	8421.450	71.98	-25.35	46.63	74.00	-27.37	peak	P
6 *	10062.634	71.59	-24.32	47.27	74.00	-26.73	peak	P

7 Test Setup Photos

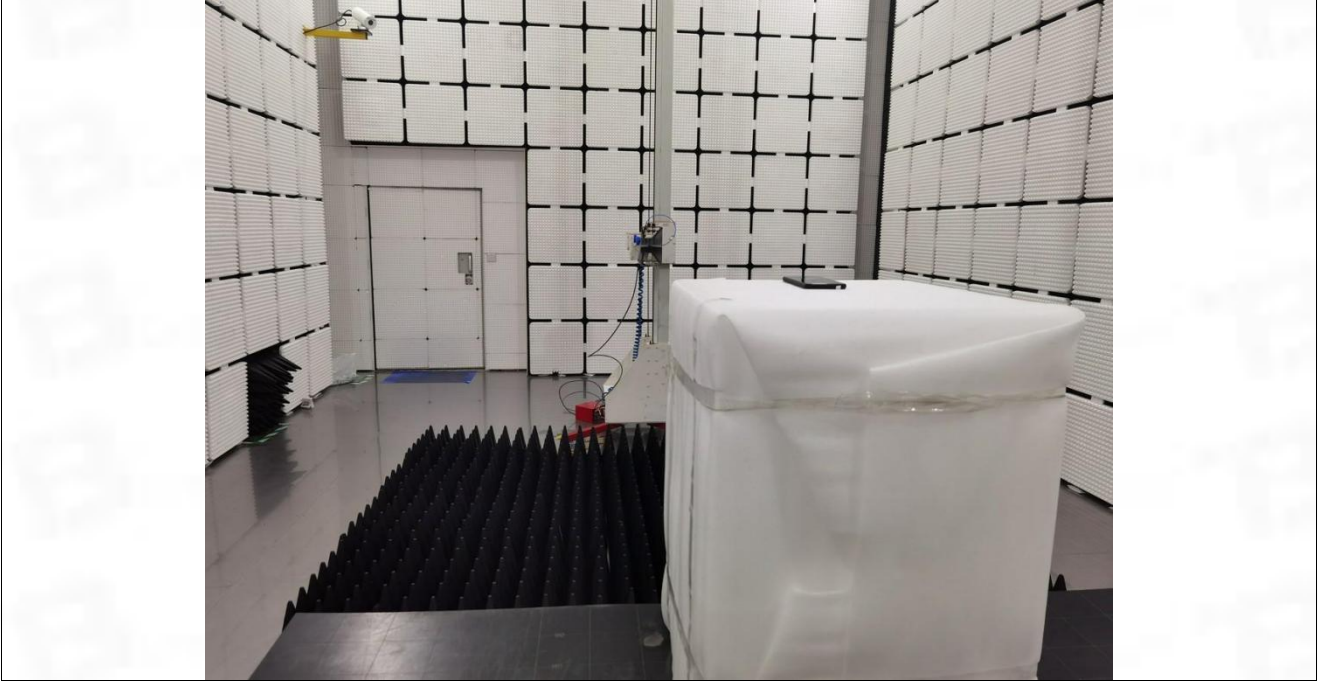
Conducted Emission at AC power line



Occupied Bandwidth
Maximum Conducted Output Power
Power Spectral Density
Emissions in non-restricted frequency bands



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 report No.BTF230526R00401

Appendix

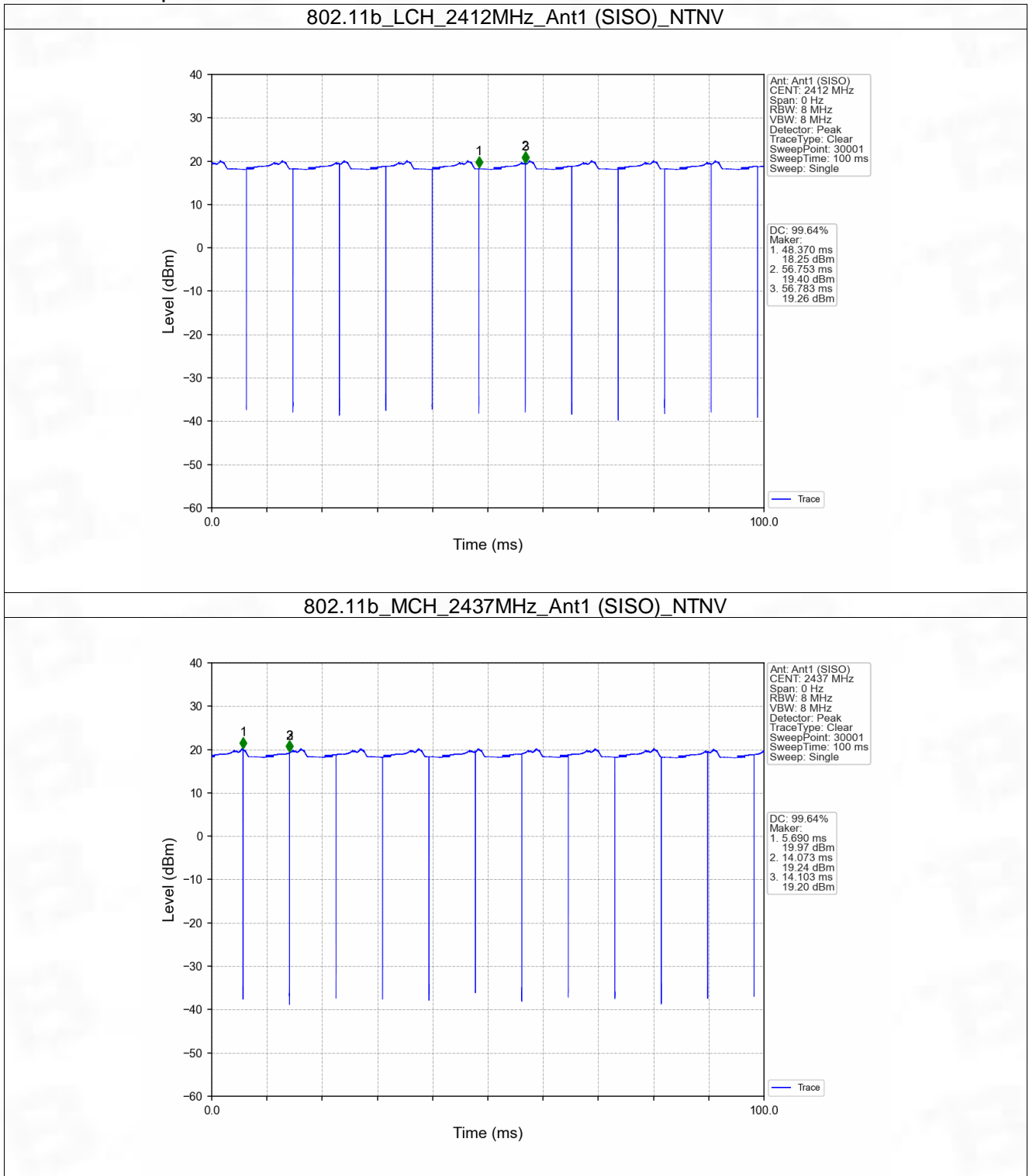
1. Duty Cycle

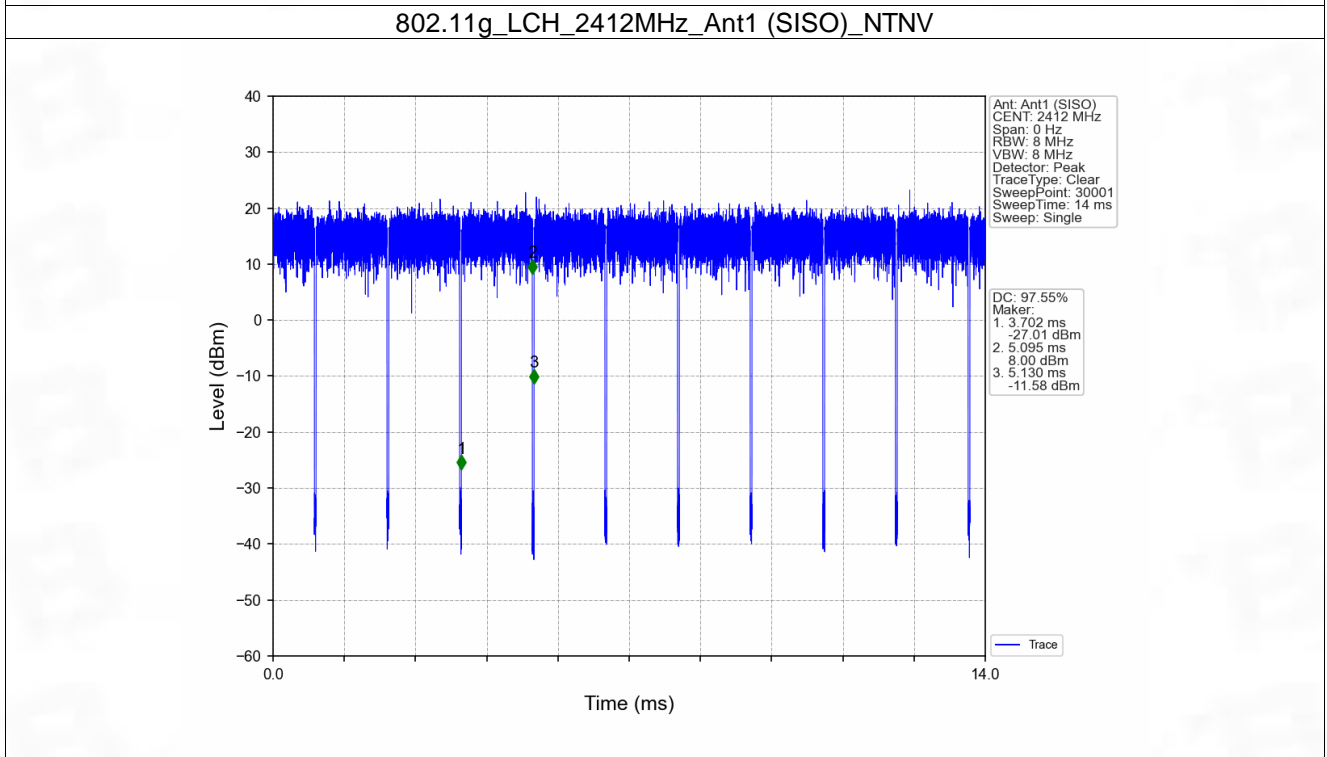
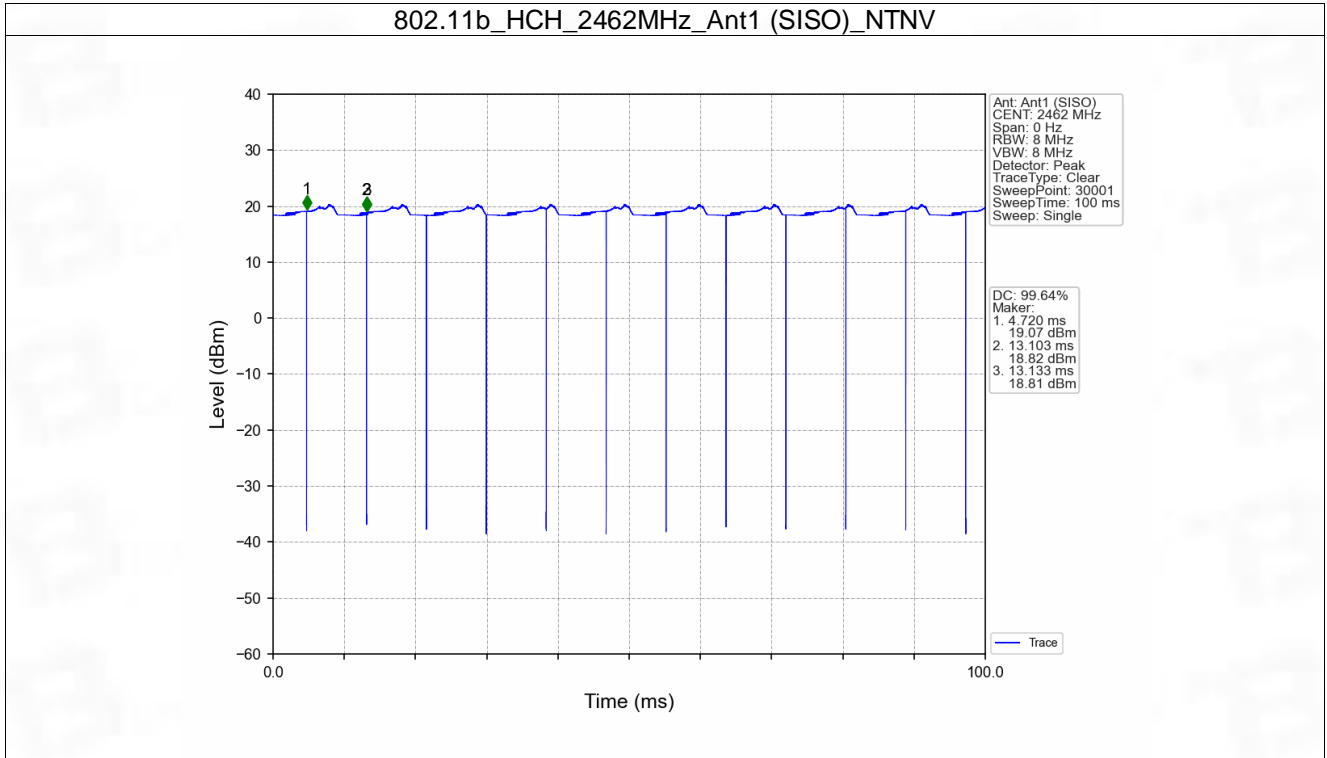
1.1 Ant1

1.1.1 Test Result

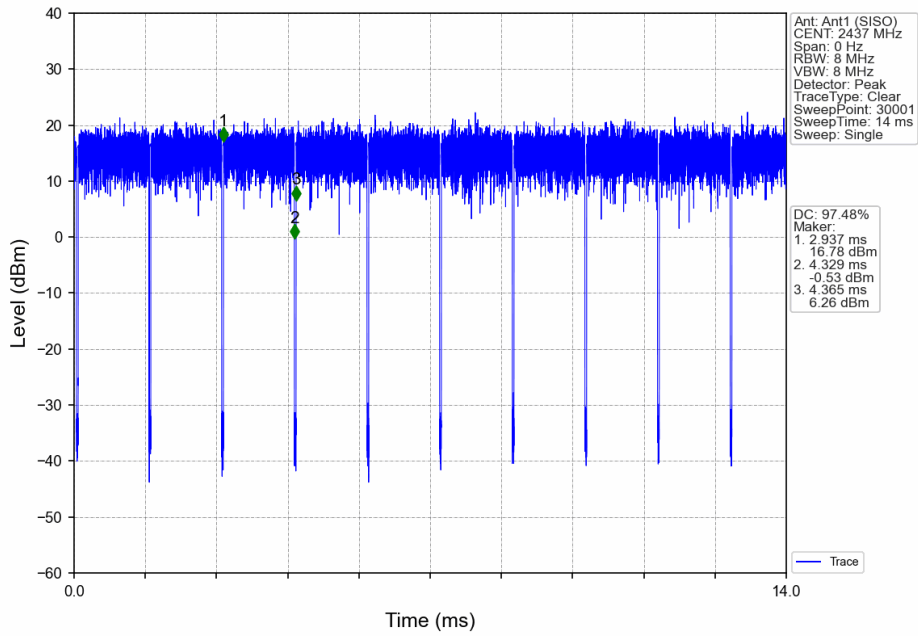
Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	SISO	2412	8.383	8.413	99.64	0.02	0.04
		2437	8.383	8.413	99.64	0.02	0.04
		2462	8.383	8.413	99.64	0.02	0.04
802.11g	SISO	2412	1.393	1.428	97.55	0.11	0.07
		2437	1.392	1.428	97.48	0.11	0.03
		2462	1.394	1.428	97.62	0.10	0.07
802.11n (HT20)	SISO	2412	1.302	1.335	97.53	0.11	0.03
		2437	1.300	1.336	97.31	0.12	0.03
		2462	1.301	1.336	97.38	0.12	0.07
802.11n (HT40)	SISO	2422	0.649	0.683	95.02	0.22	0.07
		2437	0.649	0.684	94.88	0.23	0.10
		2452	0.649	0.683	95.02	0.22	0.07

1.1.2 Test Graph

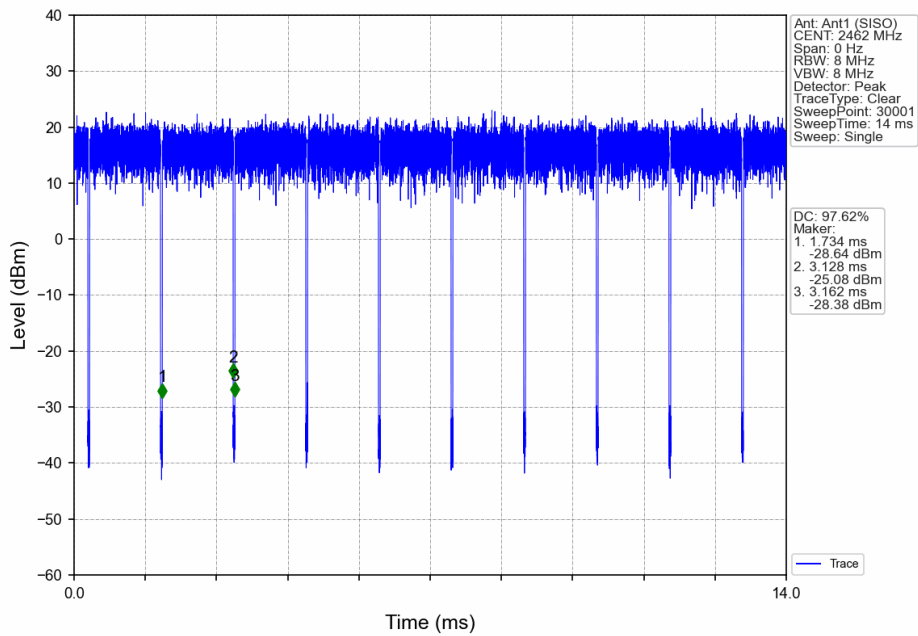


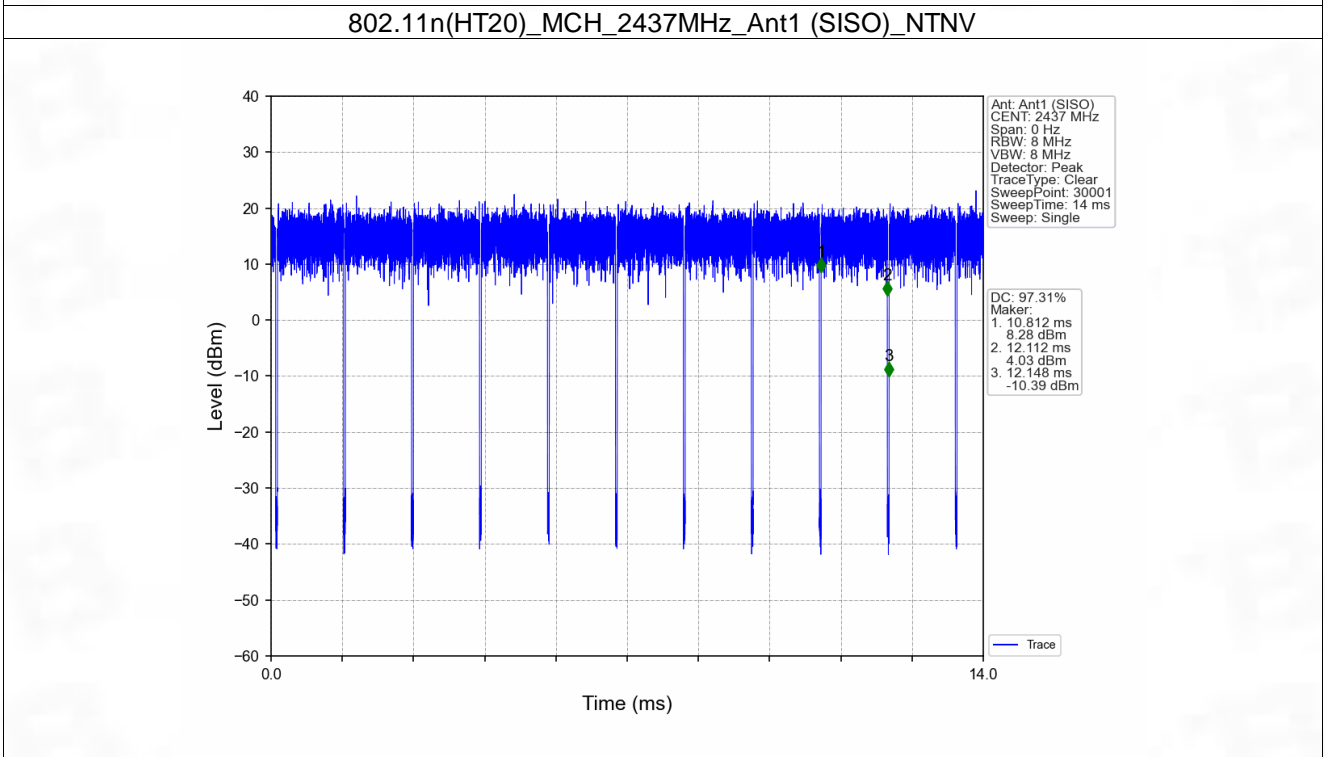
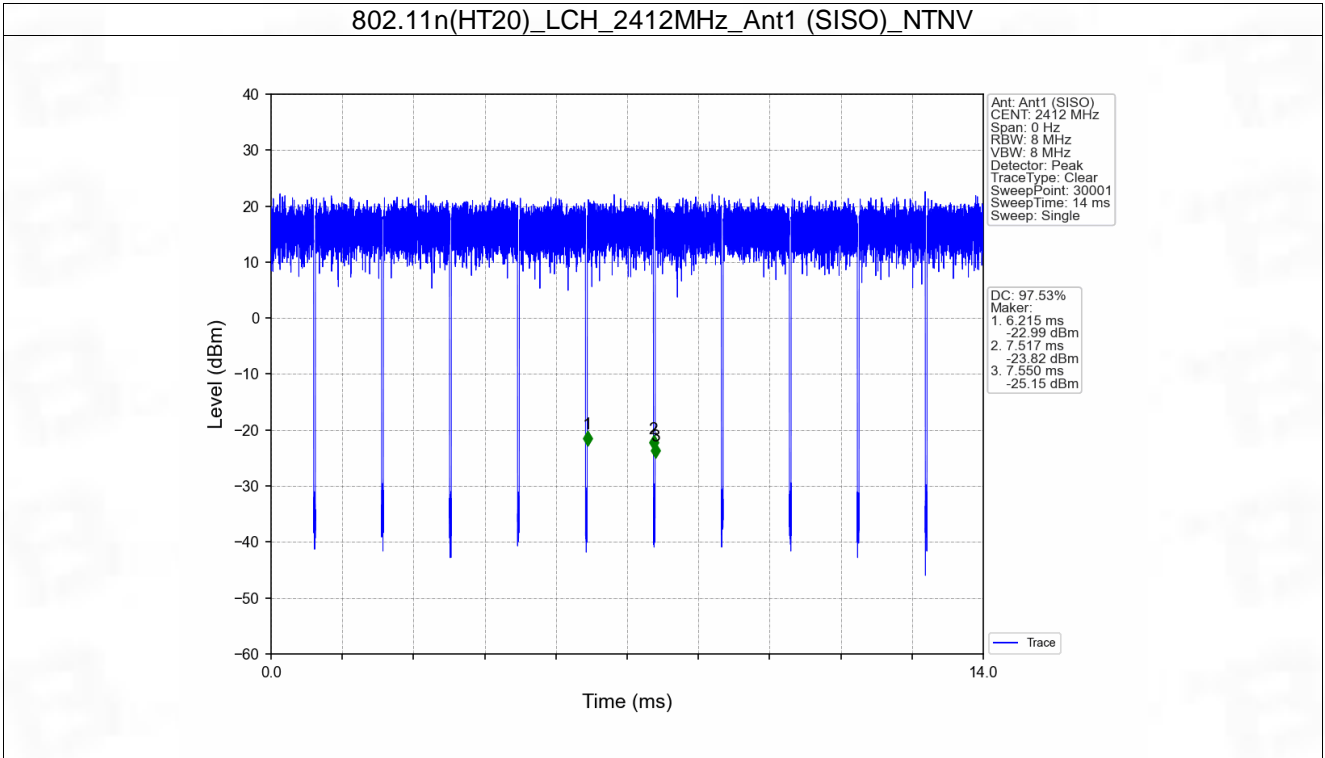


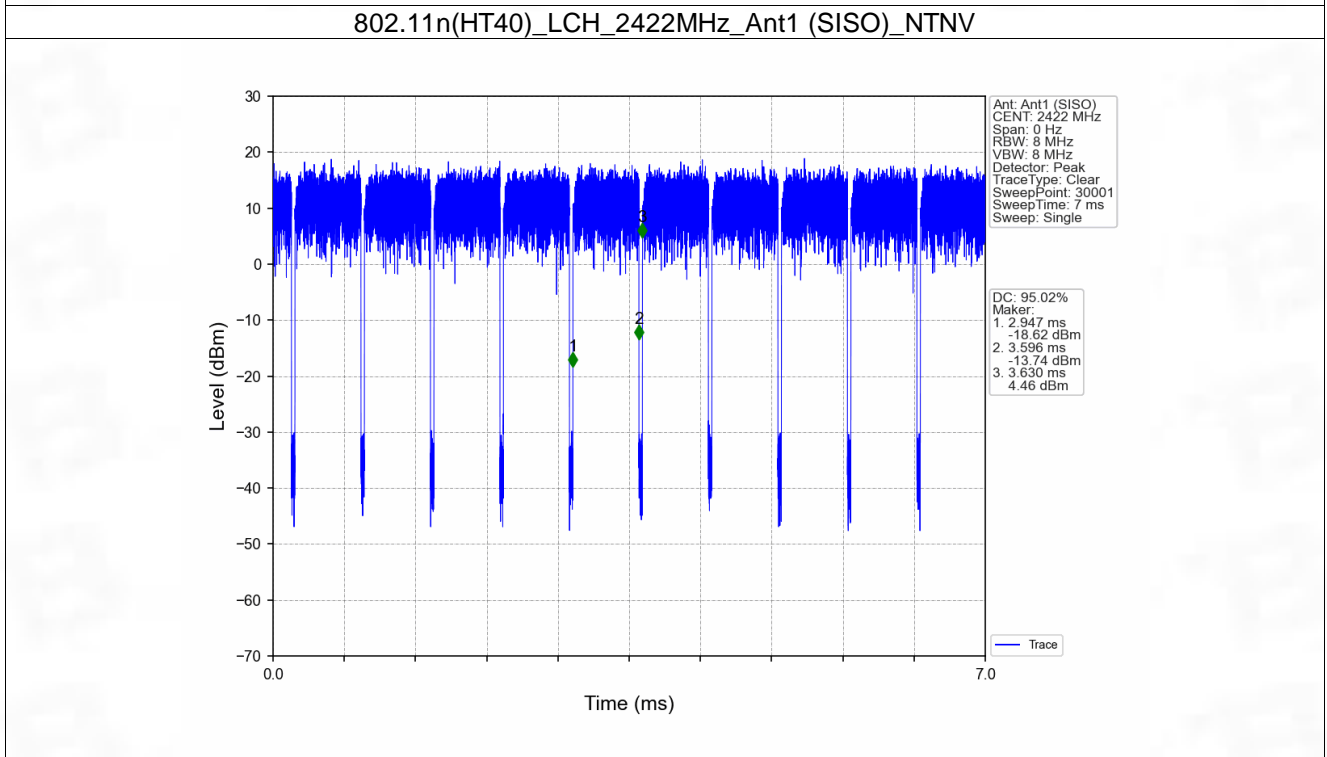
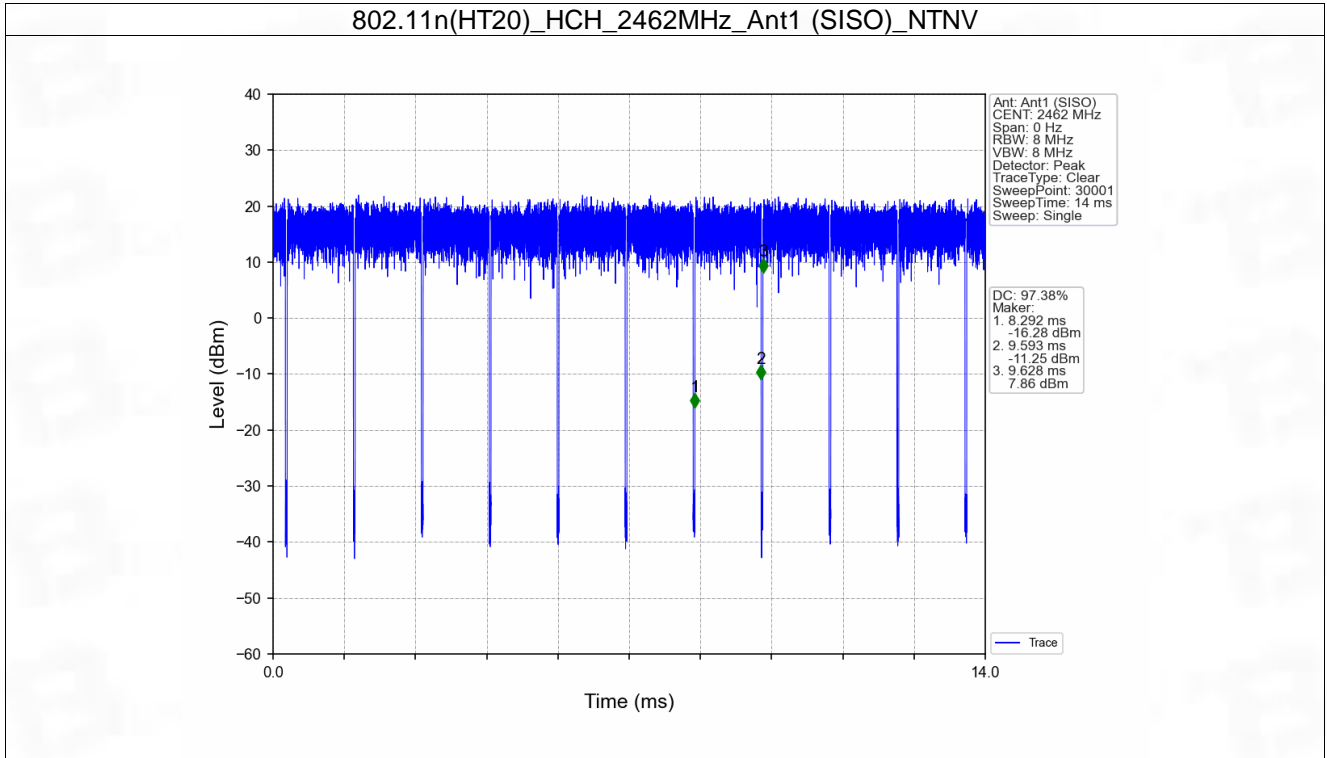
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



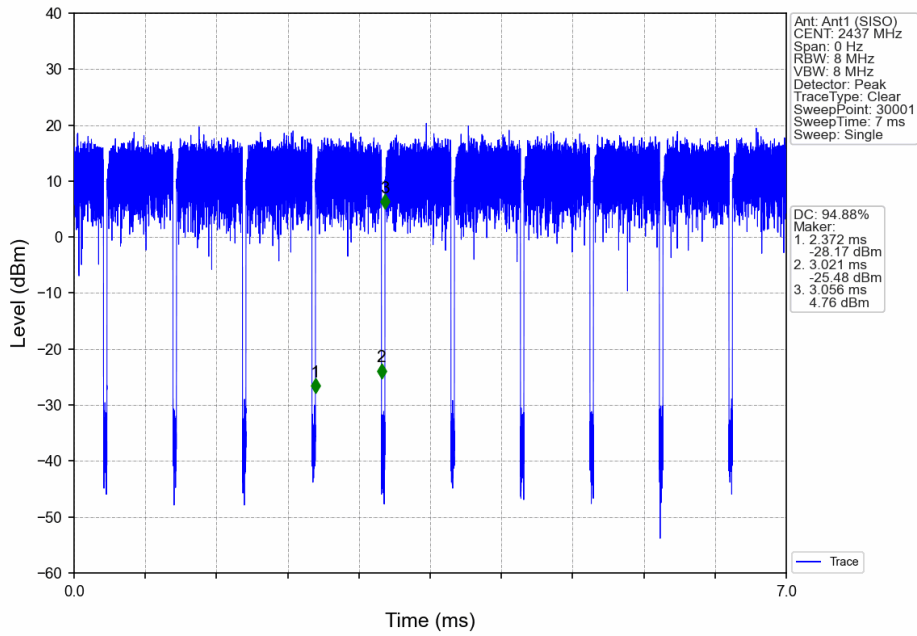
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



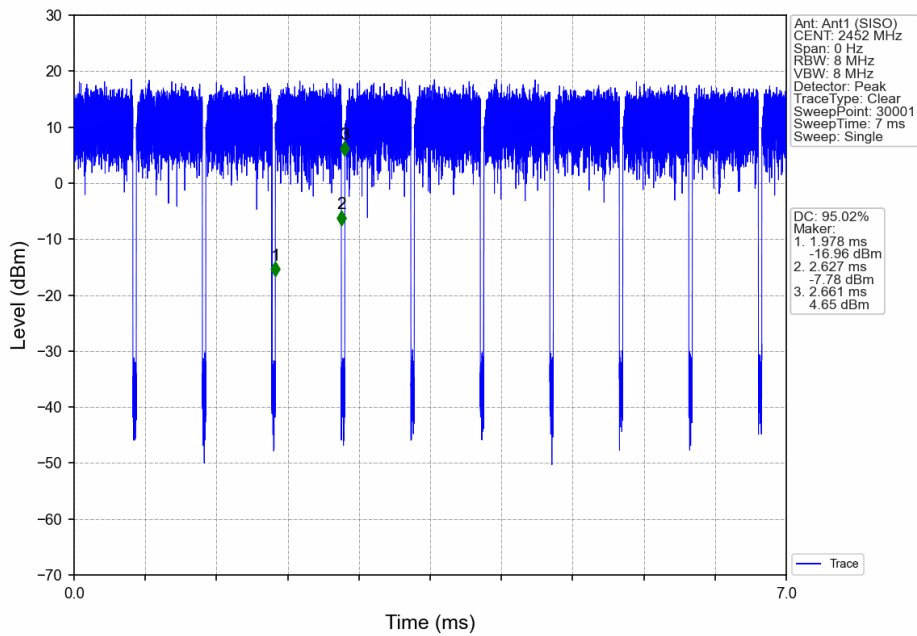




802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



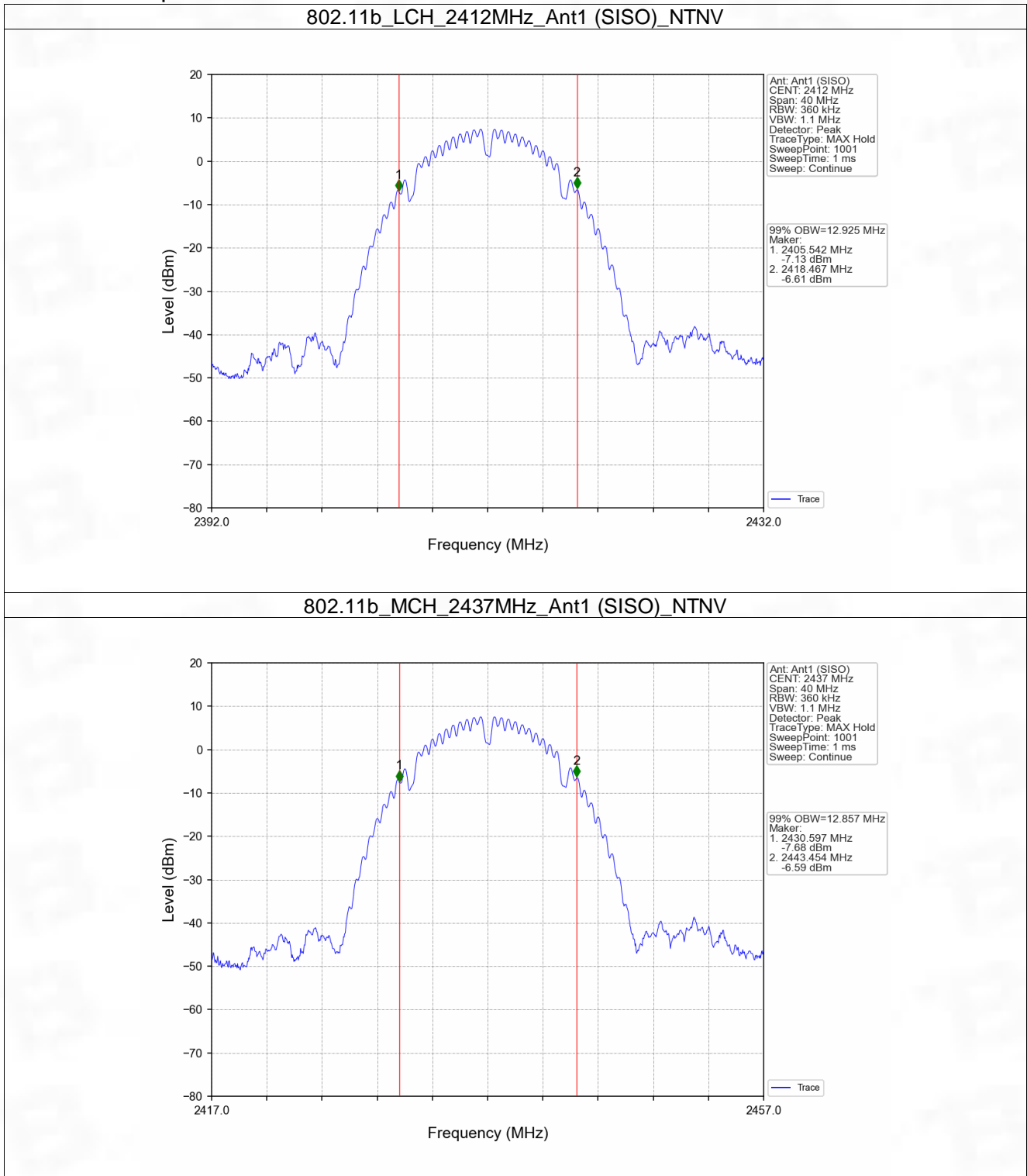
2. Bandwidth

2.1 OBW

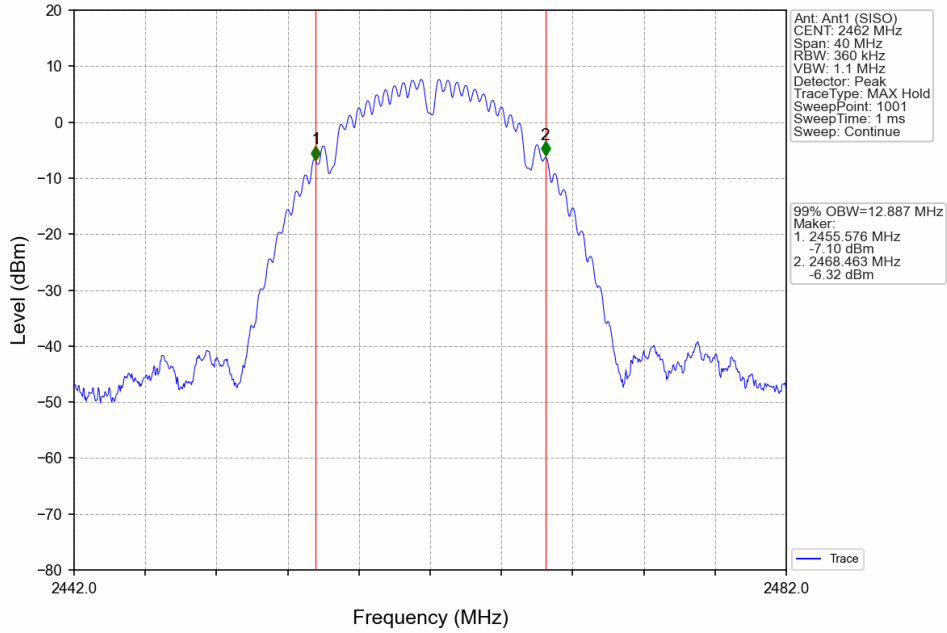
2.1.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)	Verdict
				Result	
802.11b	SISO	2412	1	12.925	Pass
		2437	1	12.857	Pass
		2462	1	12.887	Pass
802.11g	SISO	2412	1	17.513	Pass
		2437	1	17.454	Pass
		2462	1	17.680	Pass
802.11n (HT20)	SISO	2412	1	18.426	Pass
		2437	1	18.409	Pass
		2462	1	18.488	Pass
802.11n (HT40)	SISO	2422	1	36.906	Pass
		2437	1	36.699	Pass
		2452	1	36.815	Pass

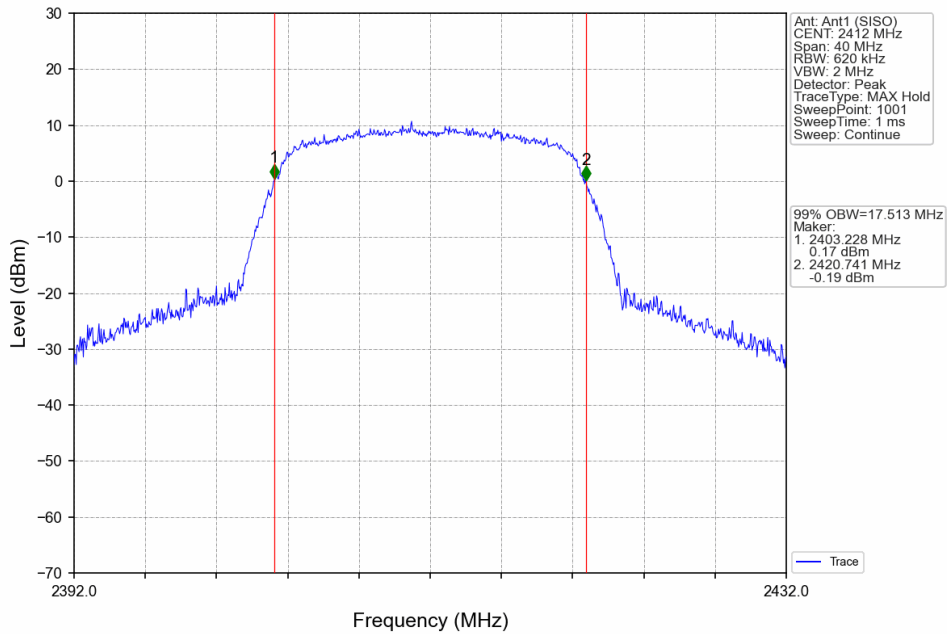
2.1.2 Test Graph



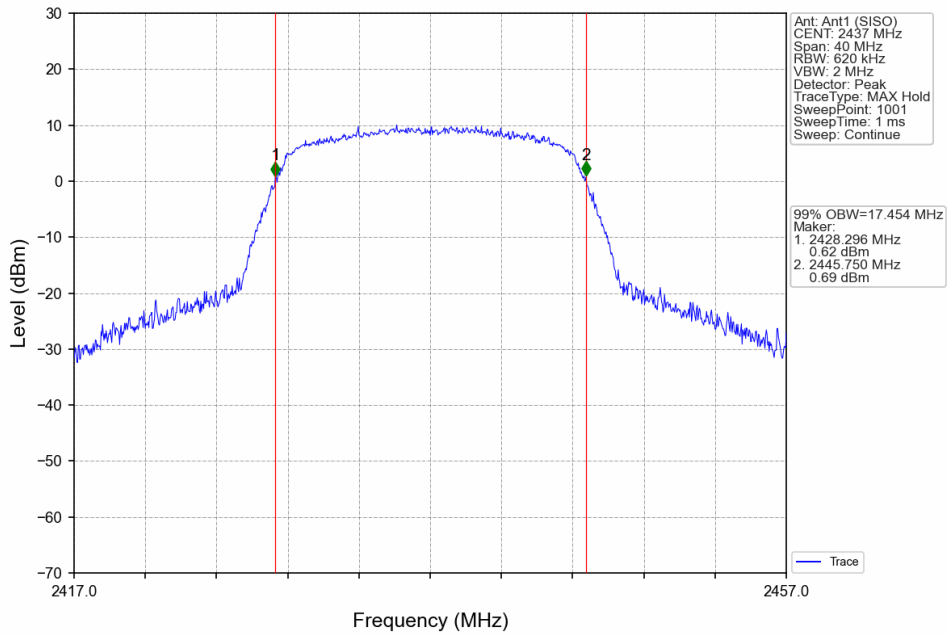
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



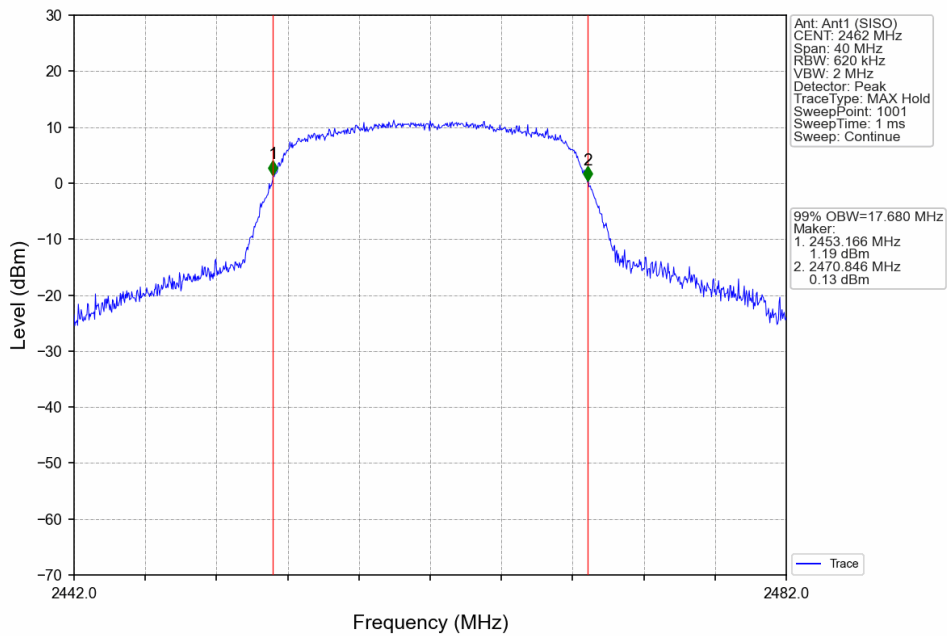
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

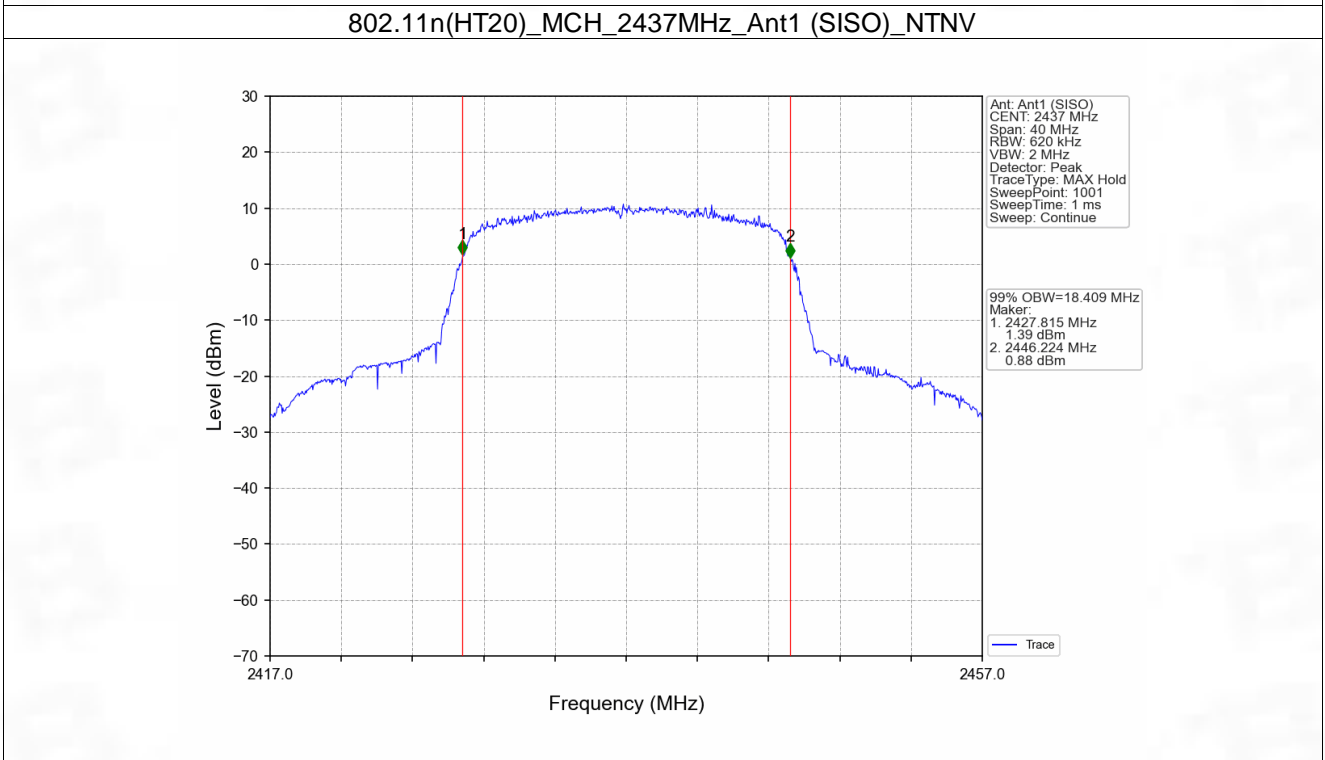
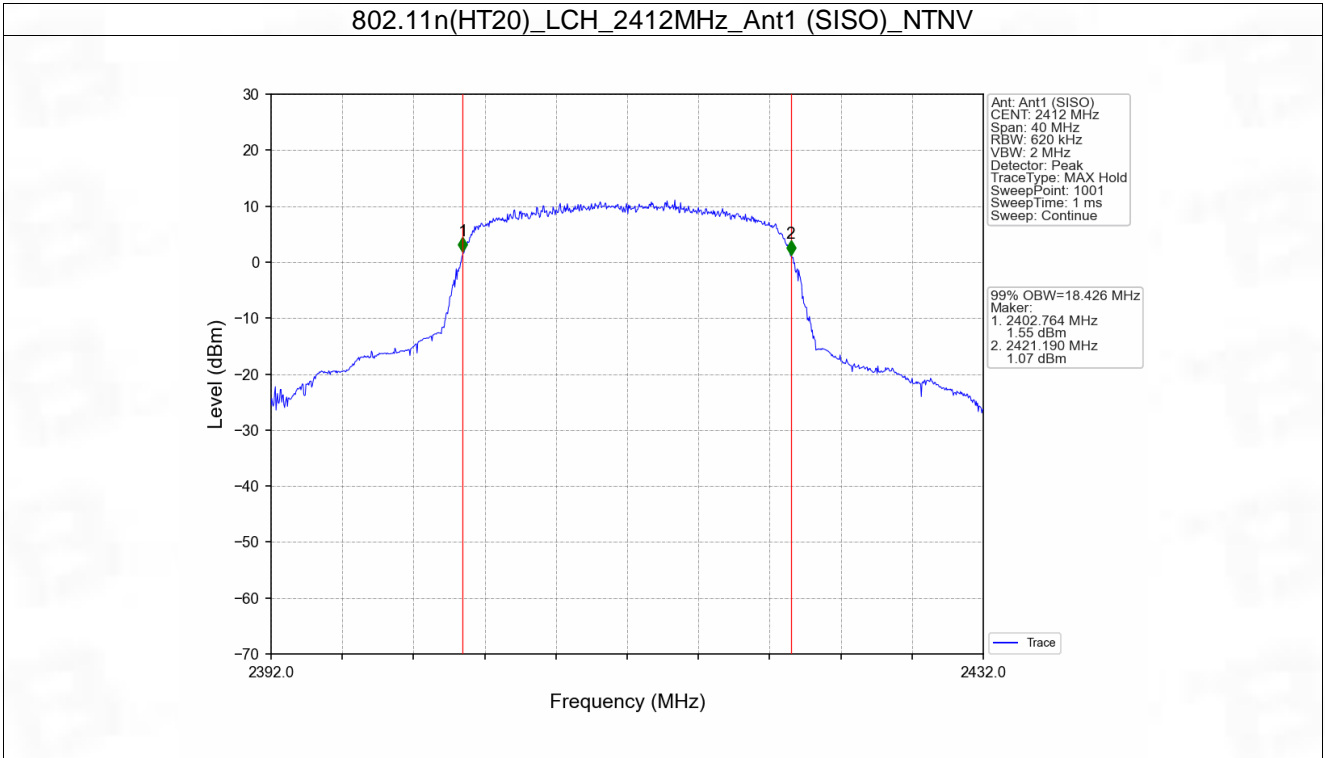


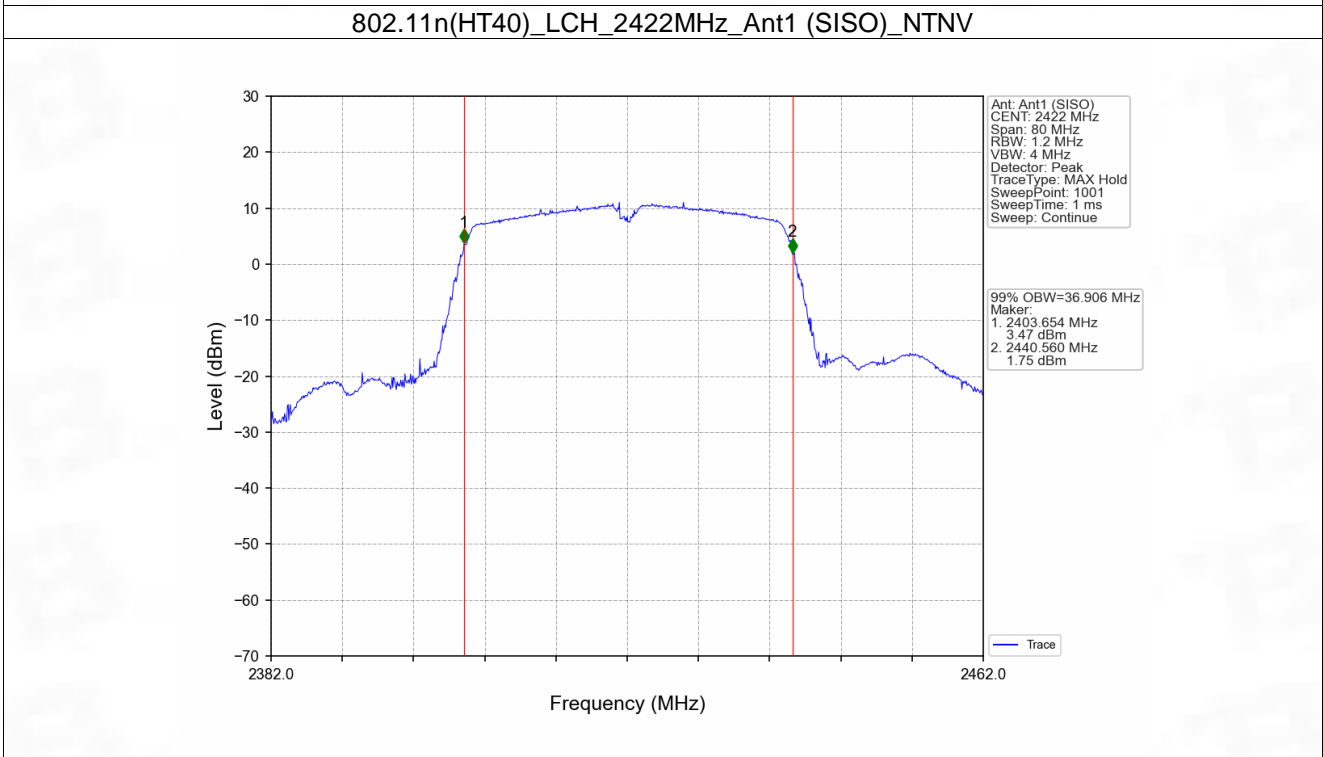
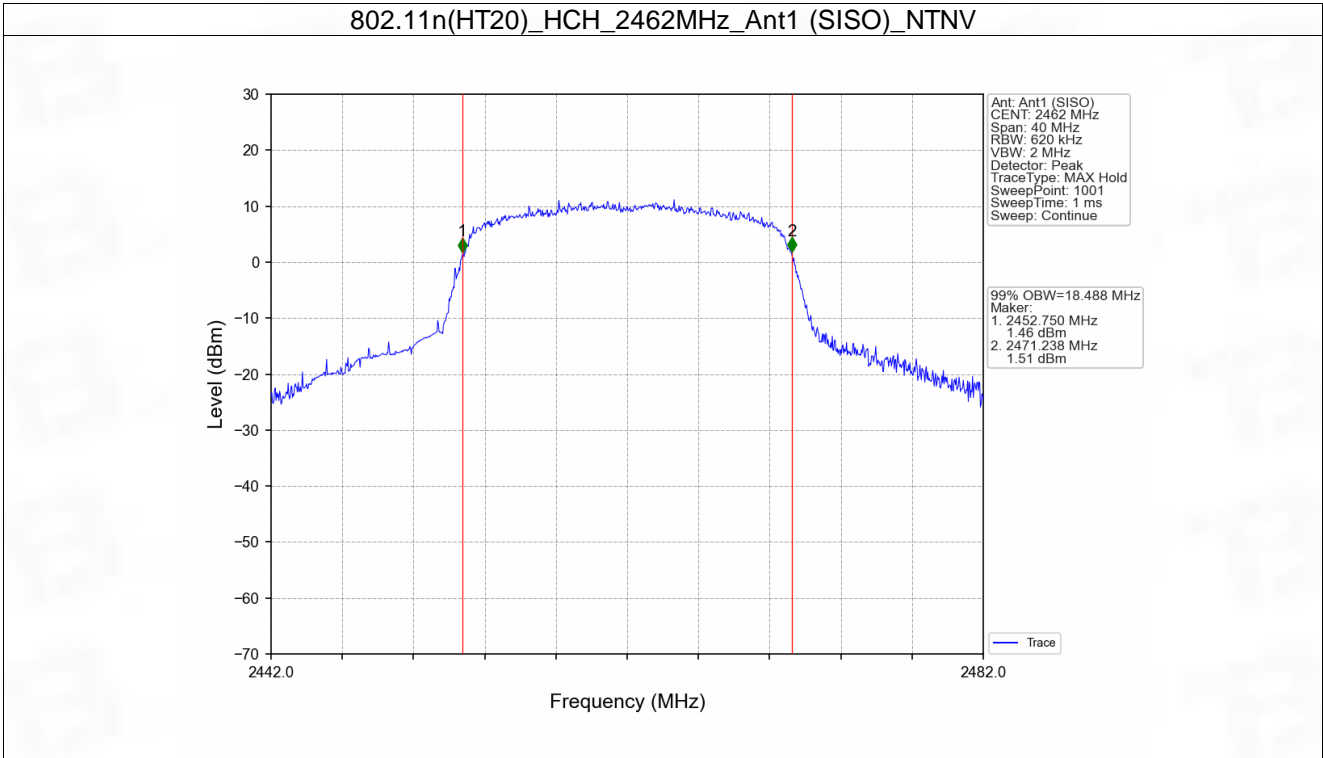
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV

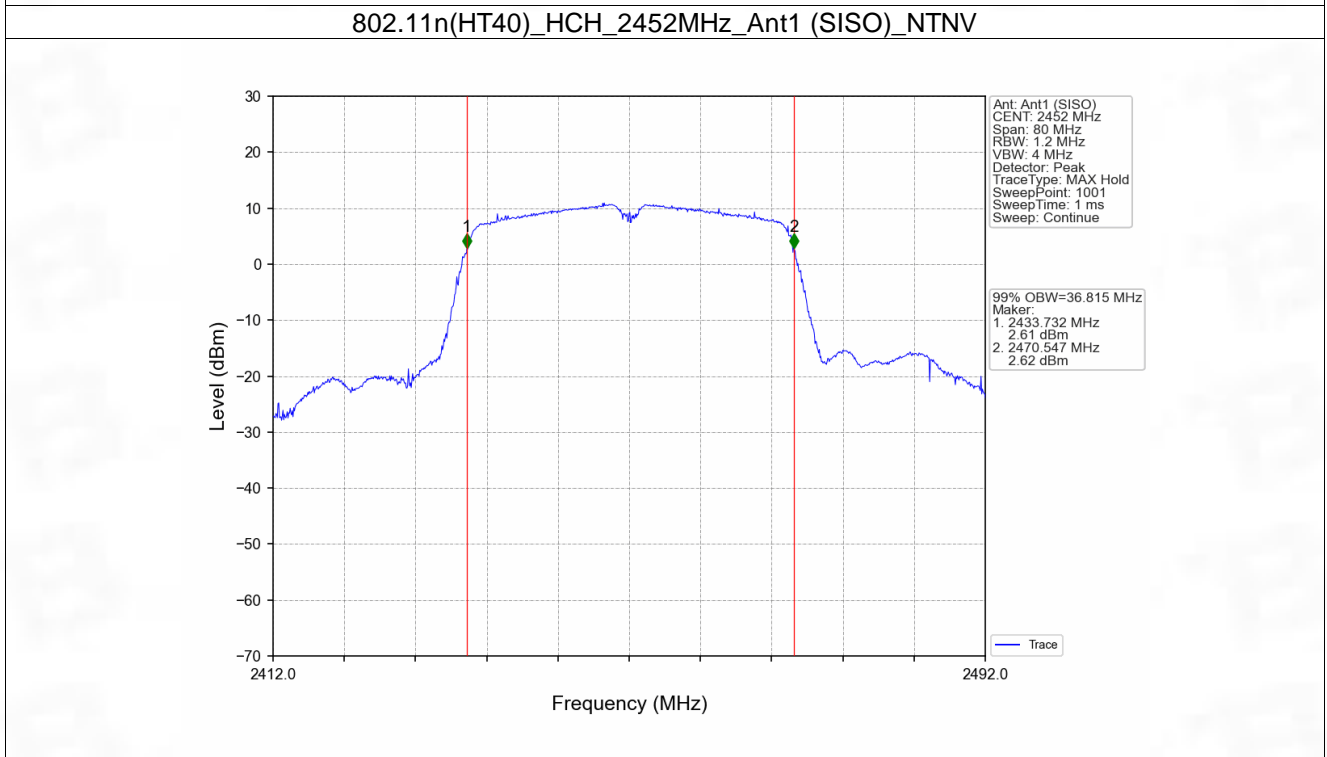
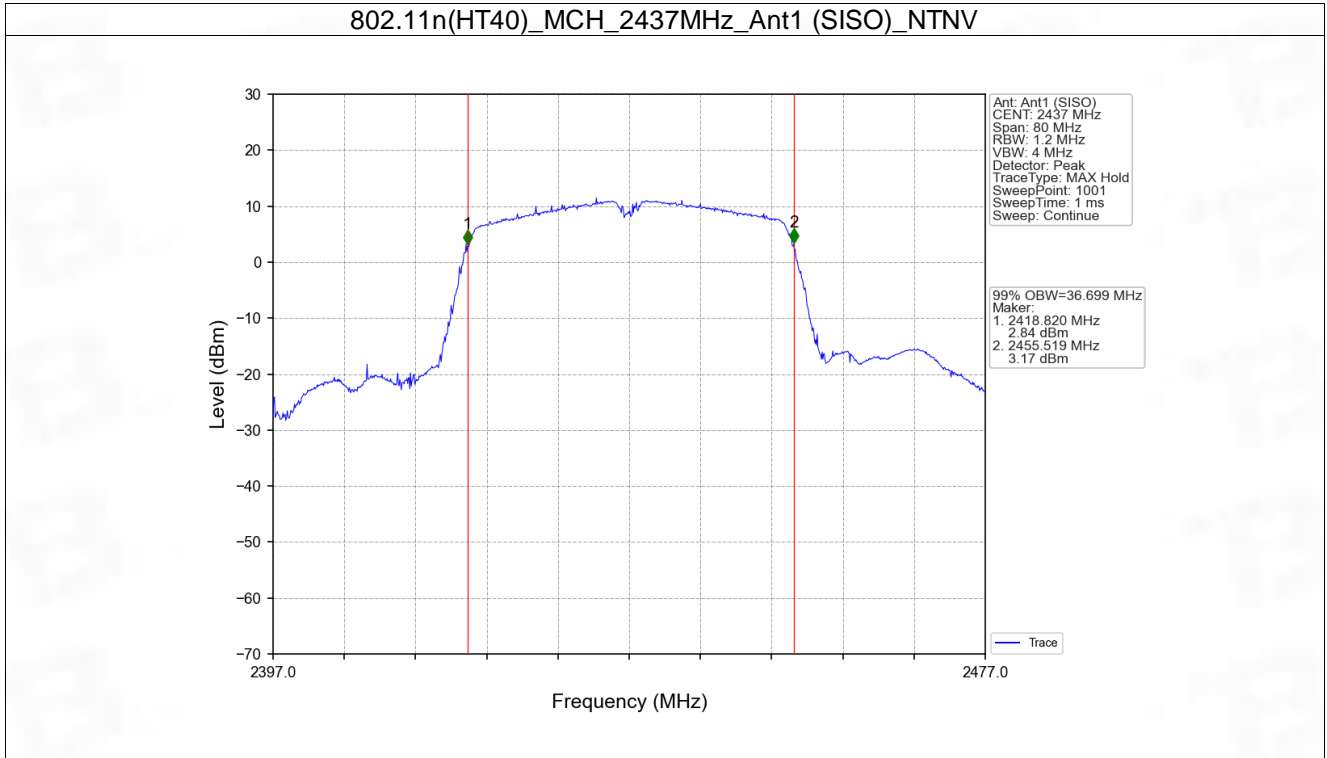


802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV







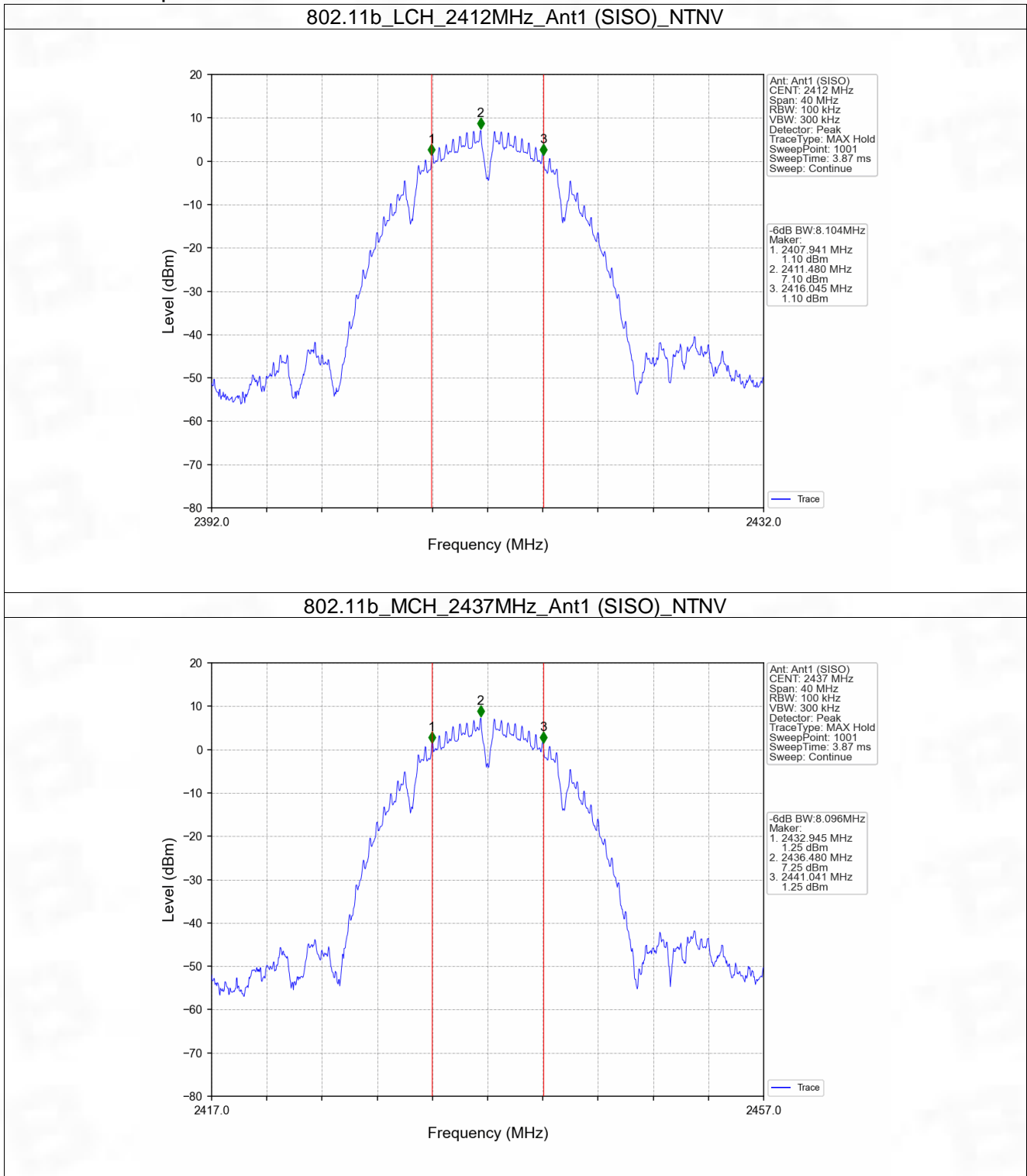


2.2 6dB BW

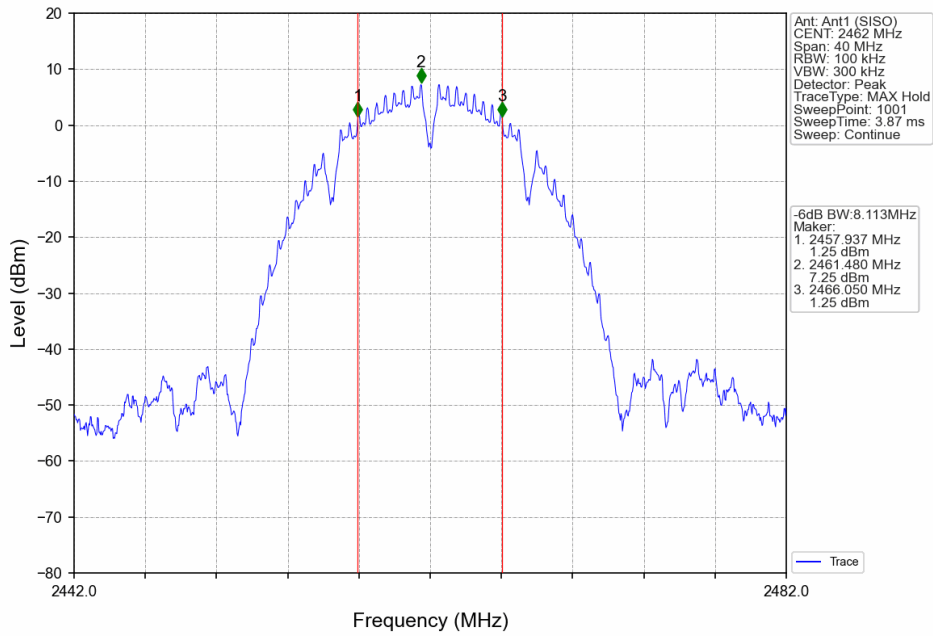
2.2.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	8.104	≥ 0.5	Pass
		2437	1	8.096	≥ 0.5	Pass
		2462	1	8.113	≥ 0.5	Pass
802.11g	SISO	2412	1	15.182	≥ 0.5	Pass
		2437	1	15.175	≥ 0.5	Pass
		2462	1	15.170	≥ 0.5	Pass
802.11n (HT20)	SISO	2412	1	15.180	≥ 0.5	Pass
		2437	1	15.993	≥ 0.5	Pass
		2462	1	15.172	≥ 0.5	Pass
802.11n (HT40)	SISO	2422	1	35.179	≥ 0.5	Pass
		2437	1	35.144	≥ 0.5	Pass
		2452	1	35.160	≥ 0.5	Pass

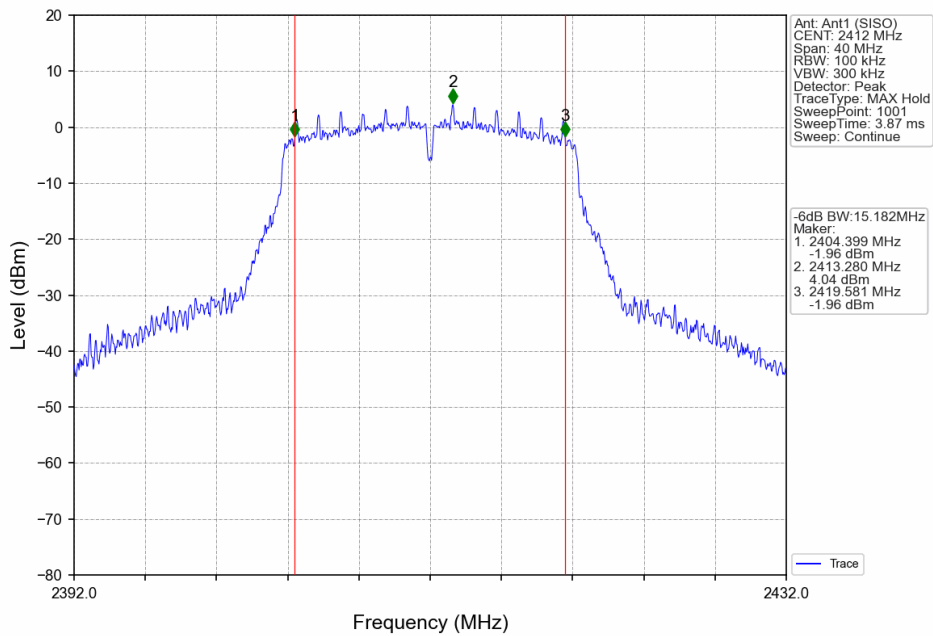
2.2.2 Test Graph



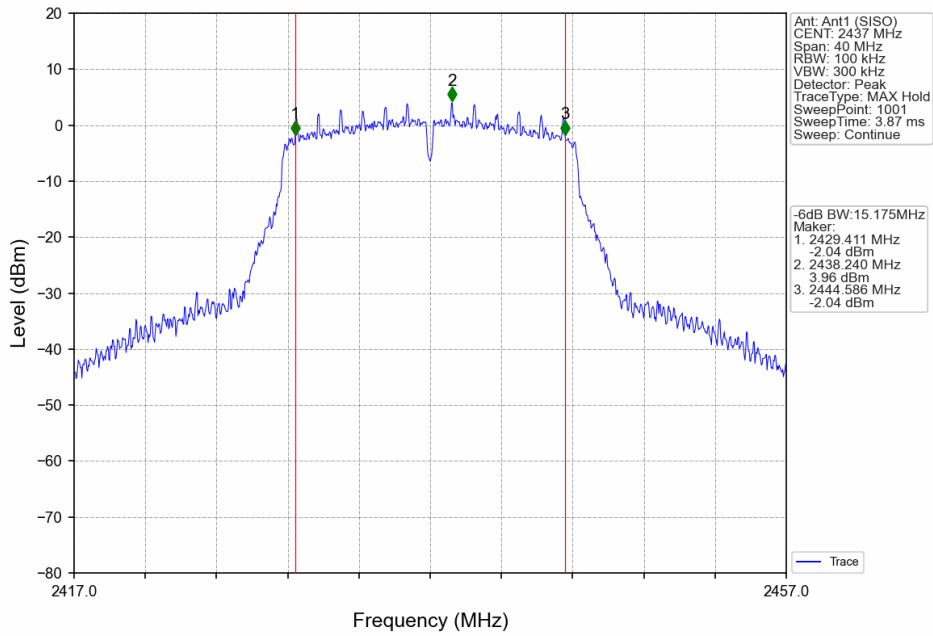
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



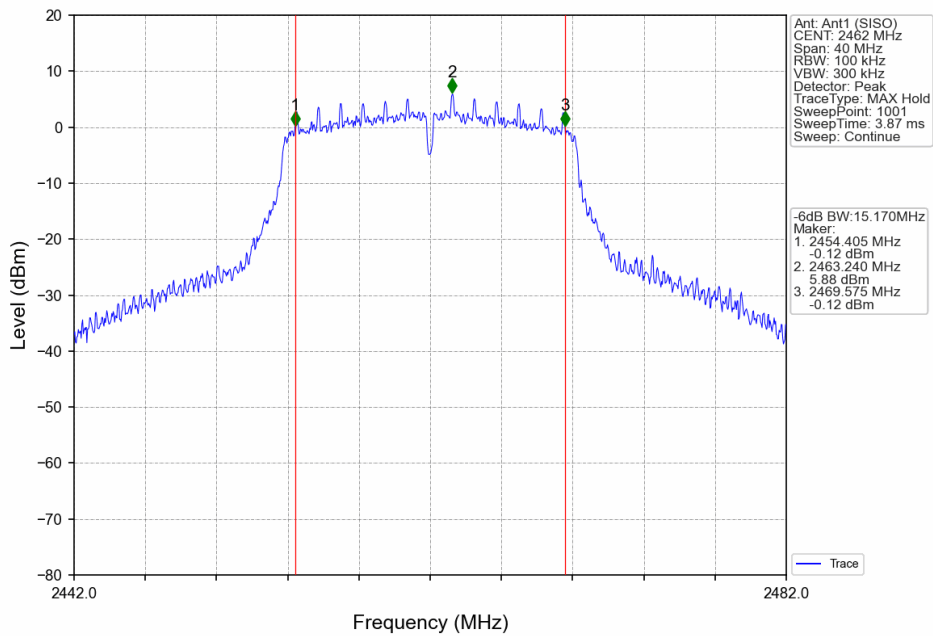
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

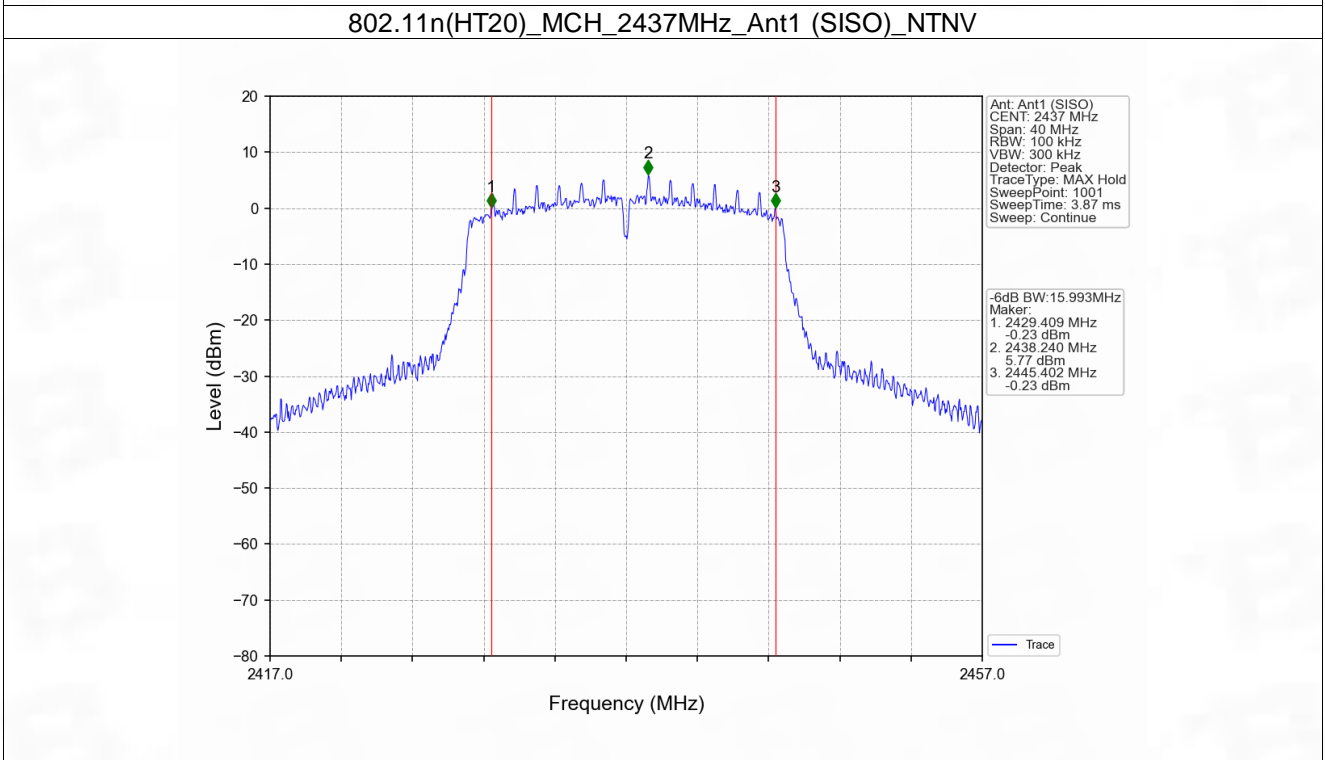
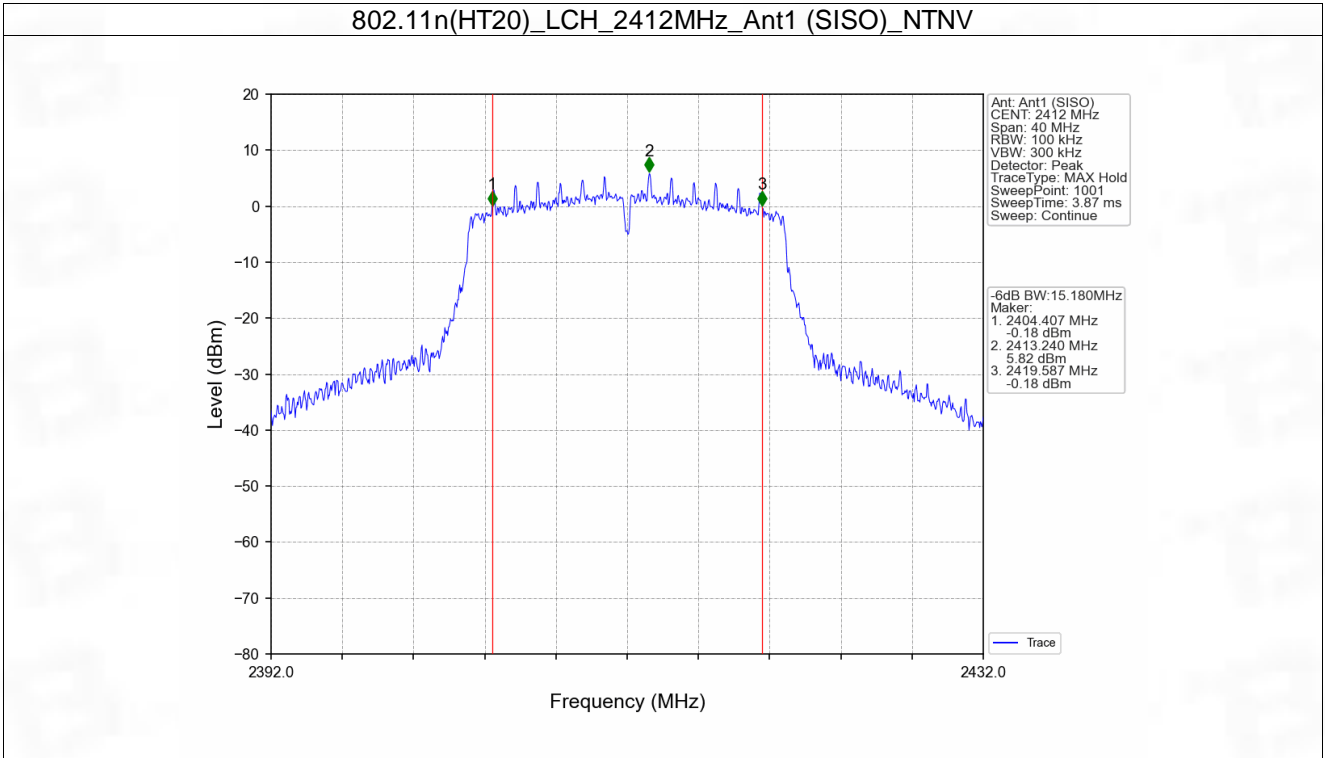


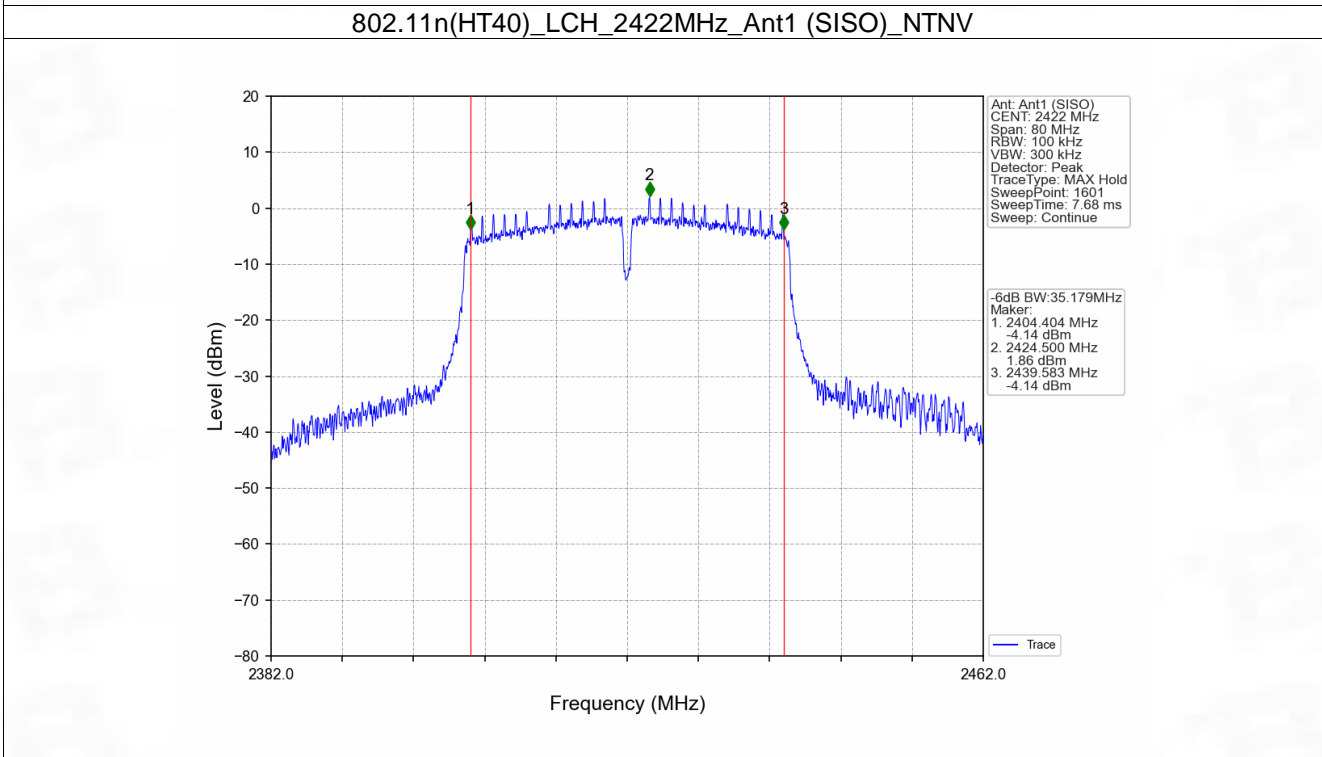
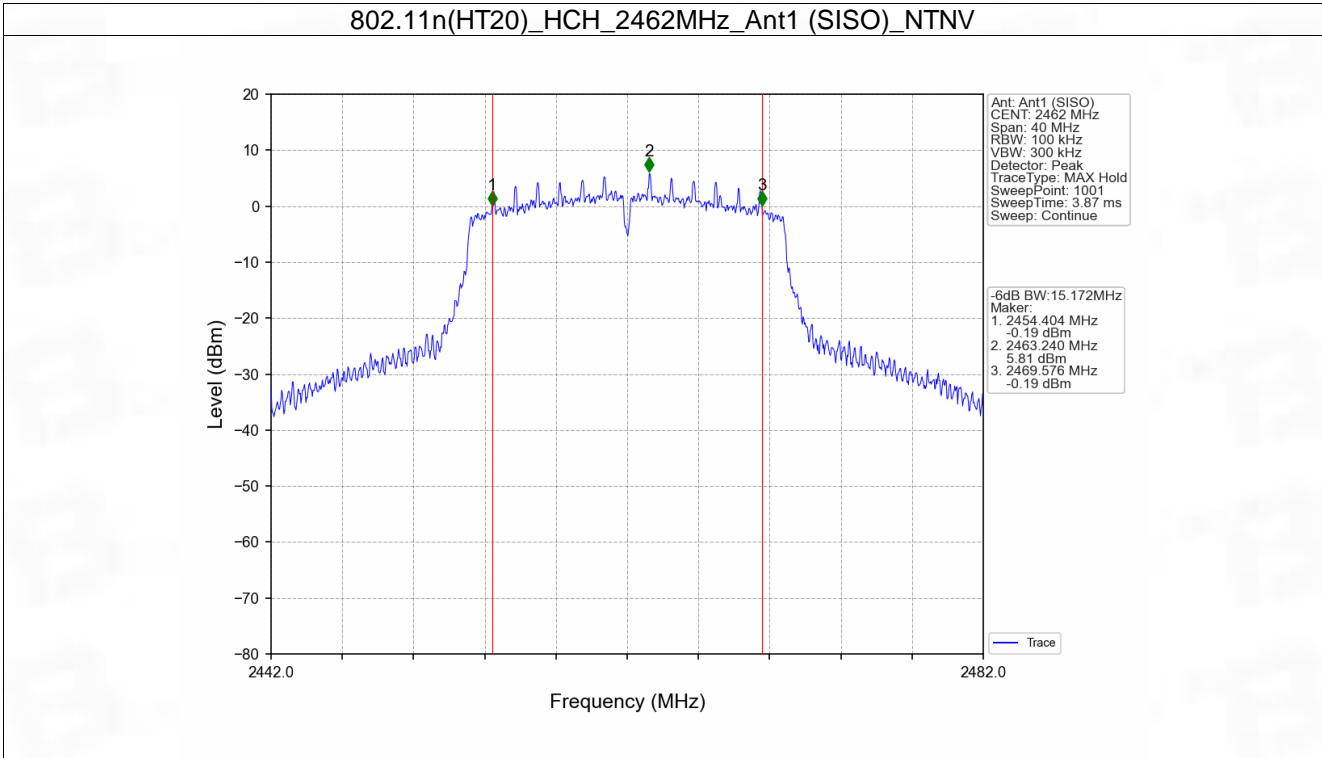
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



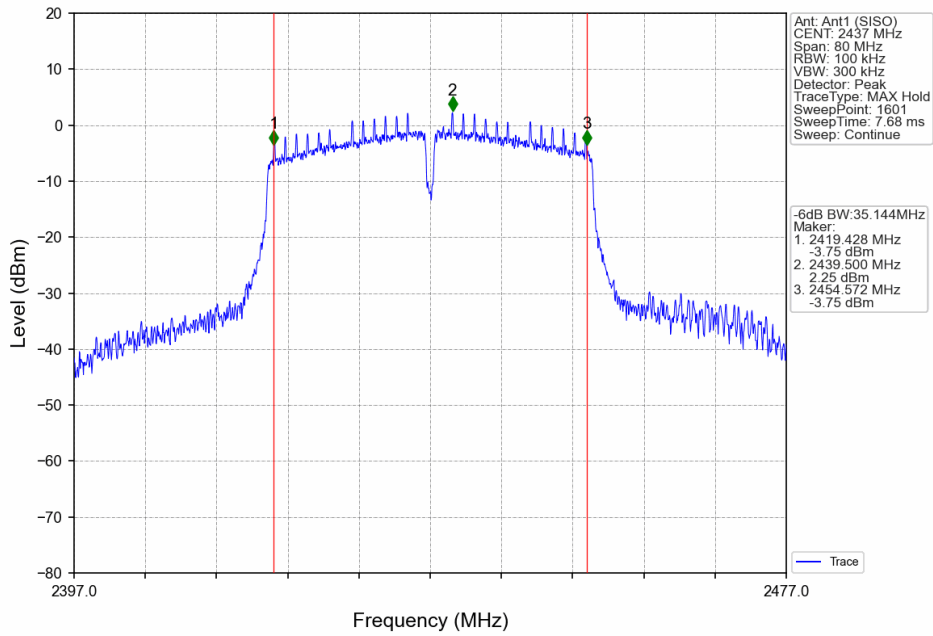
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



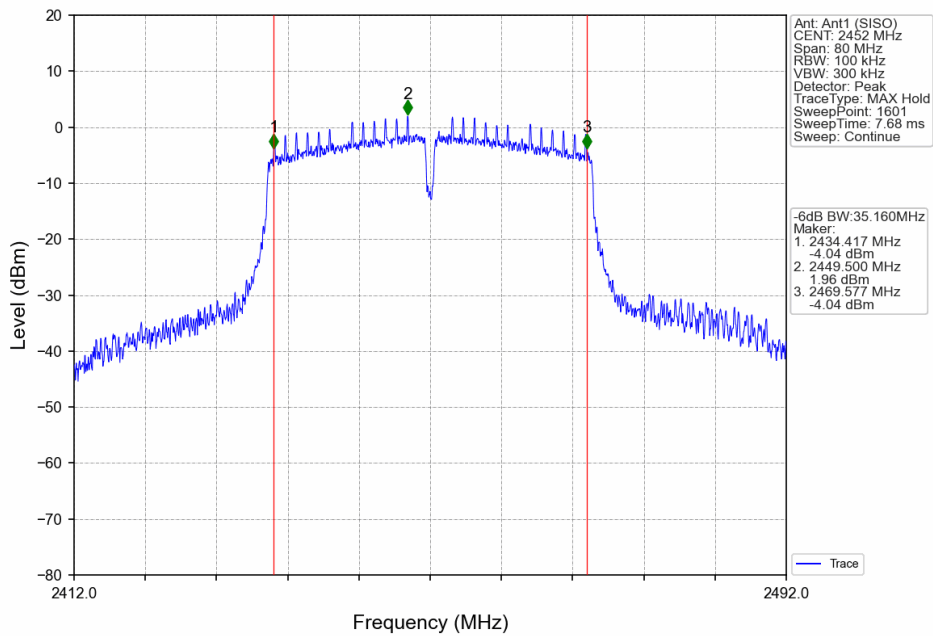




802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



3. Maximum Conducted Output Power

3.1 Power

3.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	20.23	<=30	Pass
		2437	20.10	<=30	Pass
		2462	20.31	<=30	Pass
802.11g	SISO	2412	23.49	<=30	Pass
		2437	23.09	<=30	Pass
		2462	23.28	<=30	Pass
802.11n (HT20)	SISO	2412	22.89	<=30	Pass
		2437	23.23	<=30	Pass
		2462	23.07	<=30	Pass
802.11n (HT40)	SISO	2422	22.57	<=30	Pass
		2437	22.54	<=30	Pass
		2452	22.64	<=30	Pass

Note1: Antenna Gain: Ant1: 1.09dBi;

4. Maximum Power Spectral Density

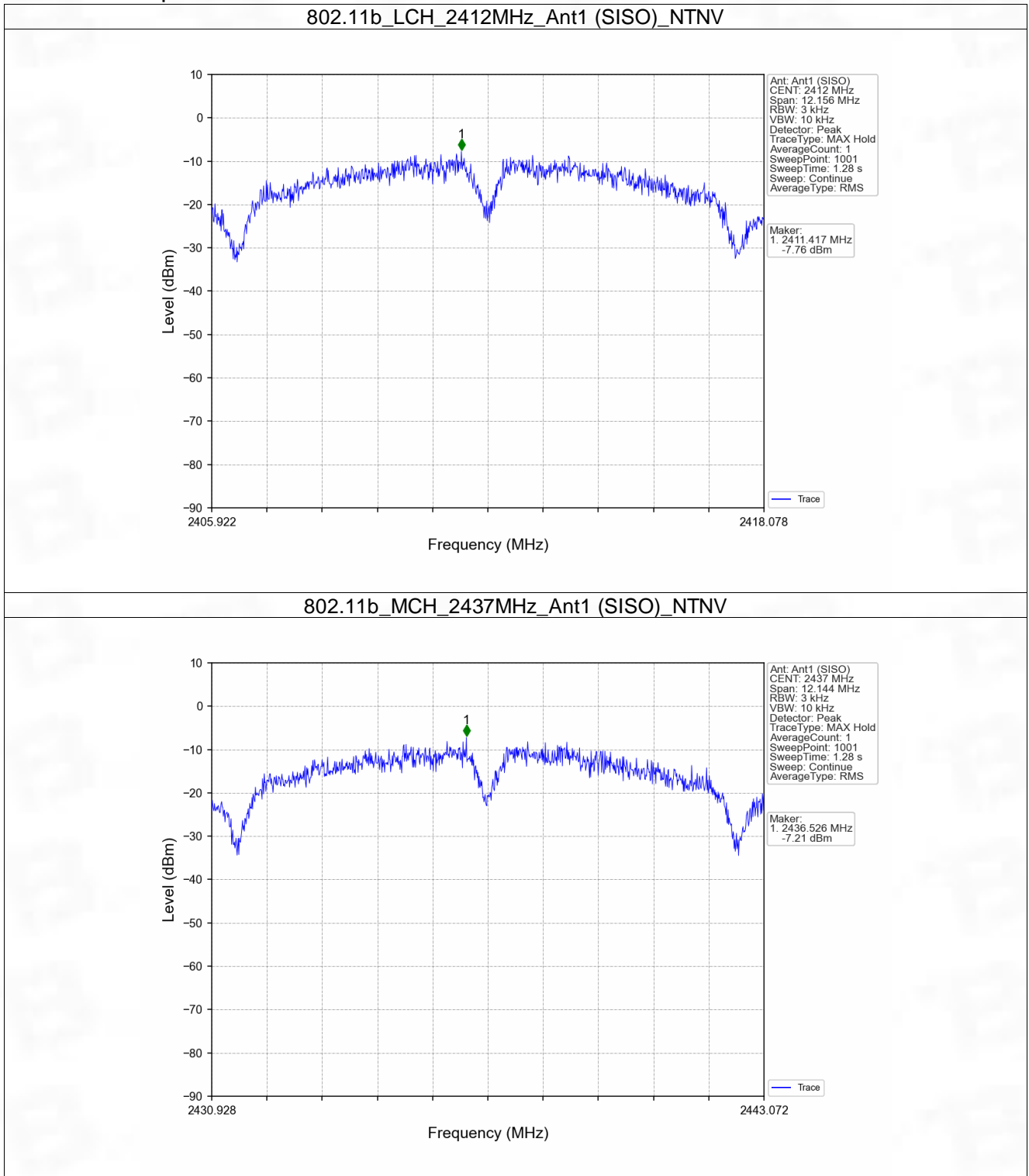
4.1 PSD

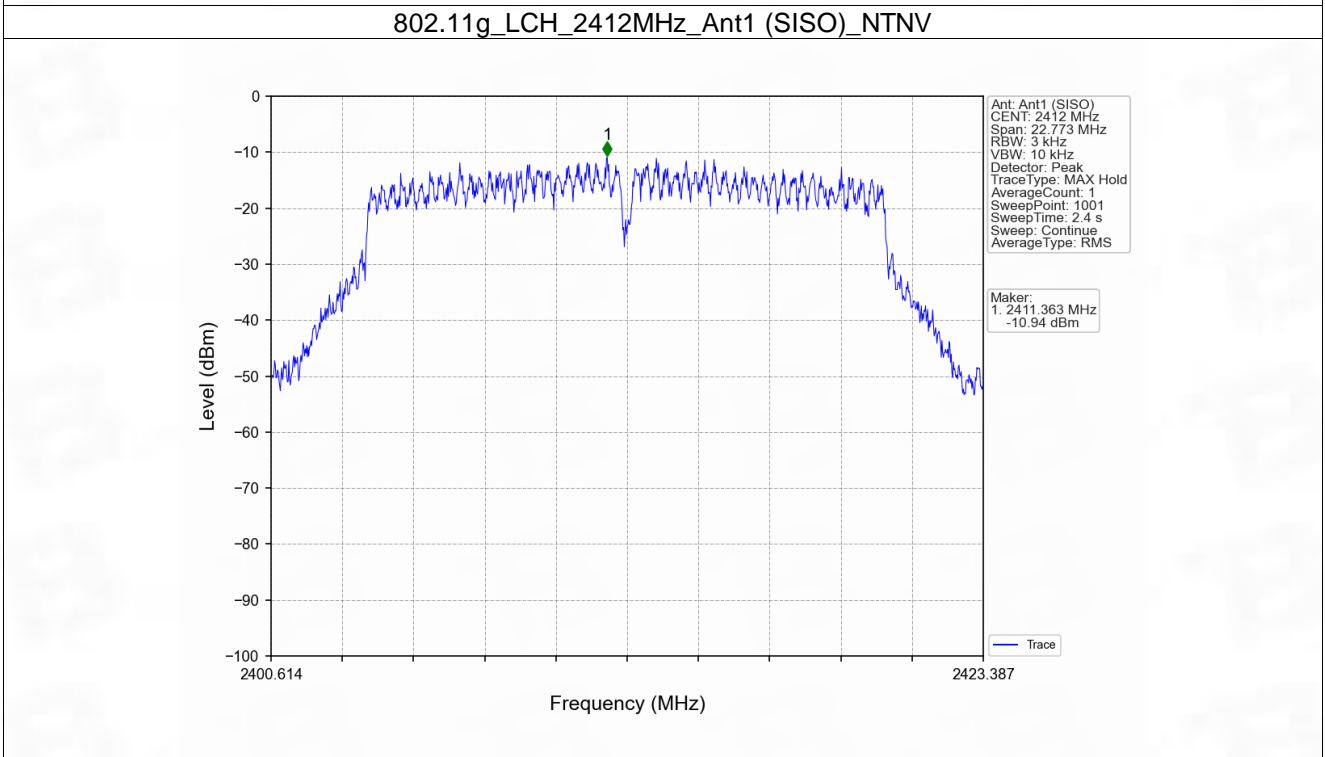
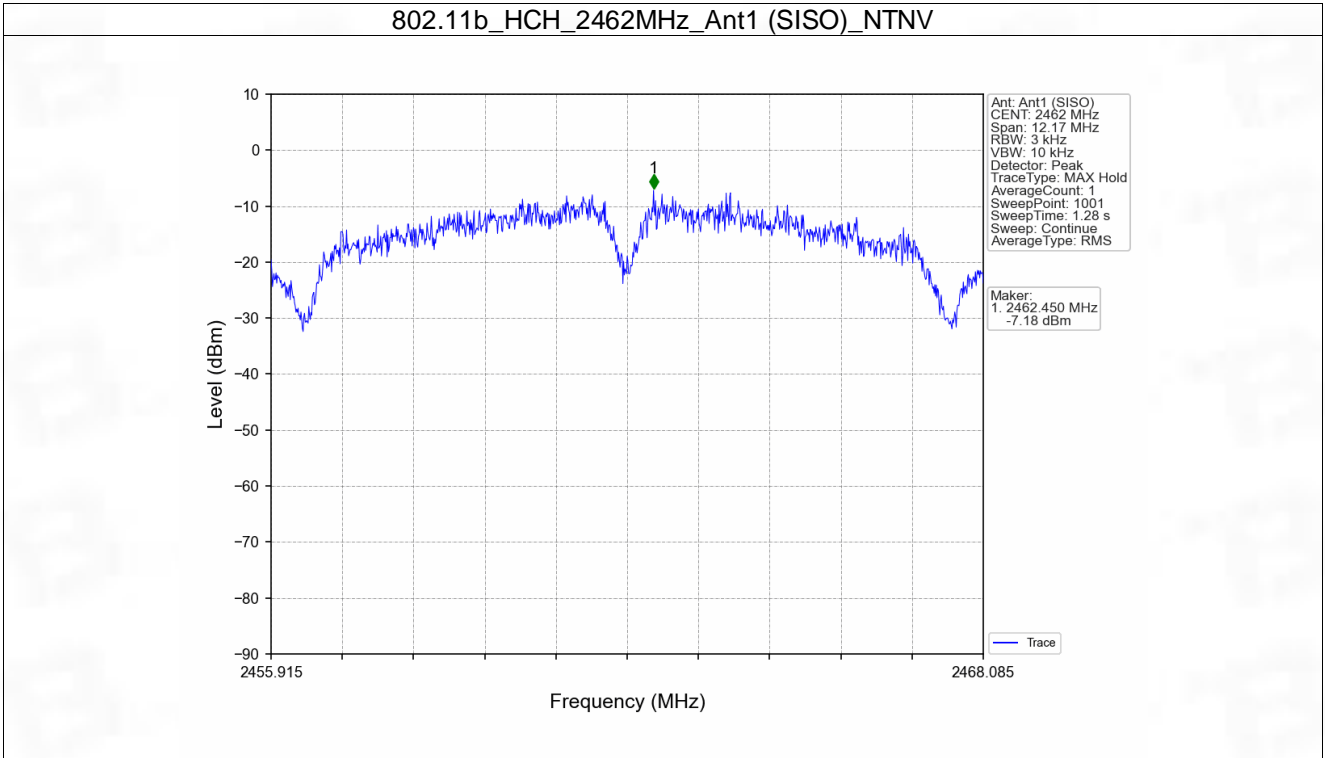
4.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	-7.76	<=8	Pass
		2437	-7.21	<=8	Pass
		2462	-7.18	<=8	Pass
802.11g	SISO	2412	-10.94	<=8	Pass
		2437	-8.91	<=8	Pass
		2462	-8.38	<=8	Pass
802.11n (HT20)	SISO	2412	-8.75	<=8	Pass
		2437	-9.64	<=8	Pass
		2462	-9.06	<=8	Pass
802.11n (HT40)	SISO	2422	-13.53	<=8	Pass
		2437	-12.20	<=8	Pass
		2452	-11.81	<=8	Pass

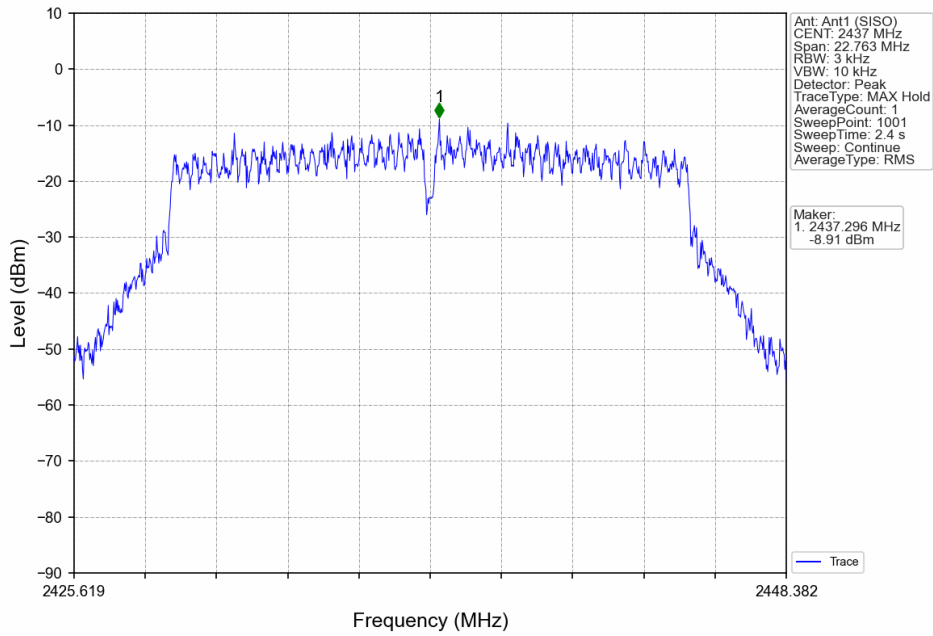
Note1: Antenna Gain: Ant1: 1.09dBi;

4.1.2 Test Graph





802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

