



RF Test Reportt

For

Applicant Name: Xwireless LLC
Address: 11565 Old Georgetown Road, Rockville, MD, USA
EUT Name: Tablet PC
Brand Name: N/A
Model Number: T10M

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: BTF-SZ230303R-022
Test Standards: 47 CFR Part 15.247
Test Conclusion: Pass
FCC ID: 2ADLJ-T10M
Test Date: 2023-03-18 to 2023-03-20
Date of Issue: 2023-03-20

Prepared By:

Chris Liu

Date:

Chris Liu / Project Engineer
2023-03-20

Approved By:

Ryan CJ

Date:

Ryan.CJ / EMC Manager
2023-03-20

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Revision History		
Version	Issue Date	Revisions Content
R_V0	2023-03-20	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:	Xwireless LLC
Address:	11565 Old Georgetown Road, Rockville, MD, USA

2.2 Manufacturer Information

Company Name:	Xwireless LLC
Address:	11565 Old Georgetown Road, Rockville, MD, USA

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:	Tablet PC
Test Model Number:	T10M

2.5 Technical Information

Power Supply:	DC 3.8V from battery
Power Adaptor:	Model:T10 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:	1.09dBi

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 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.

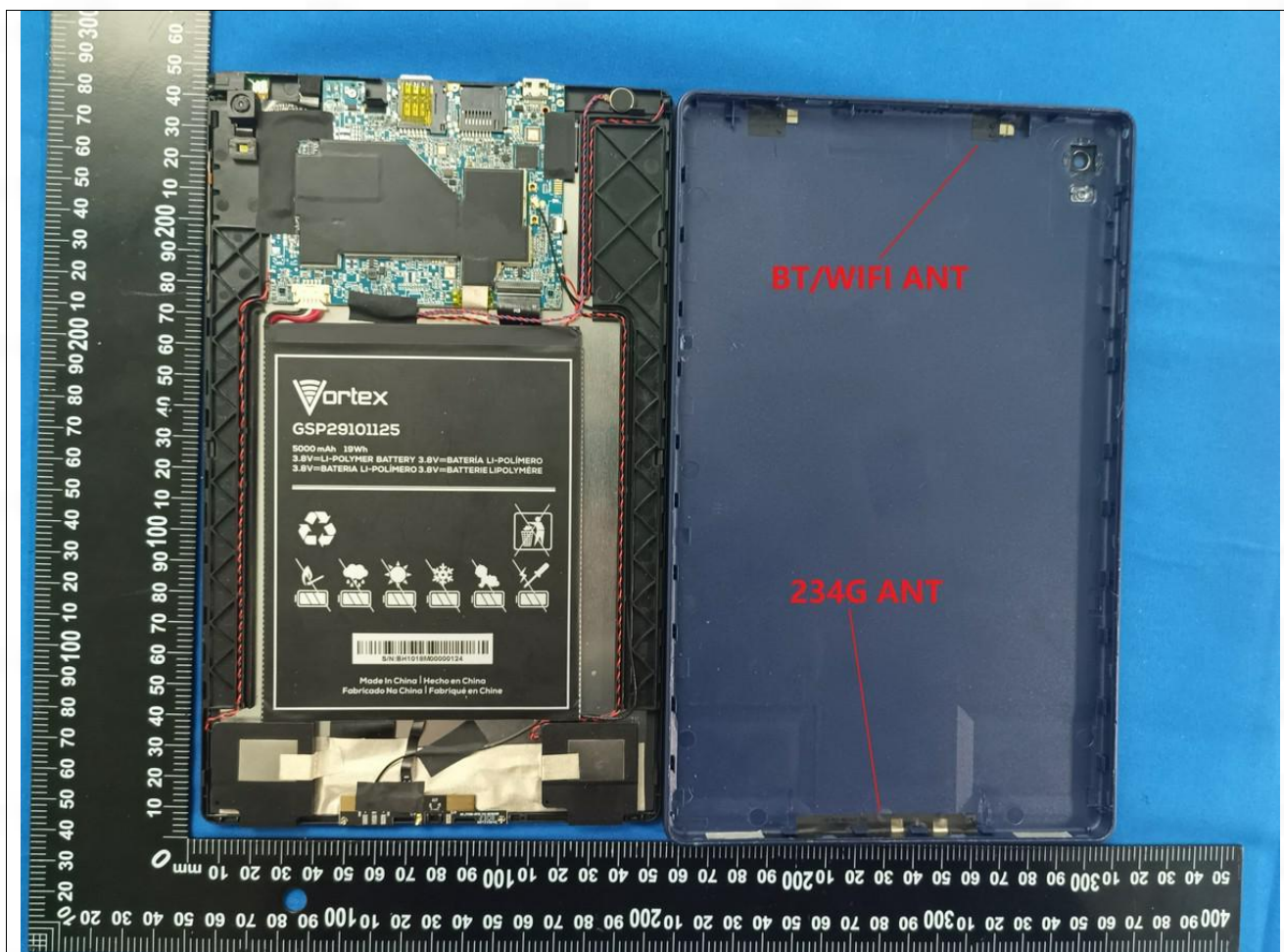
5 Evaluation Results (Evaluation)

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.

5.1.1 Conclusion:



6 Radio Spectrum Matter Test Results (RF)

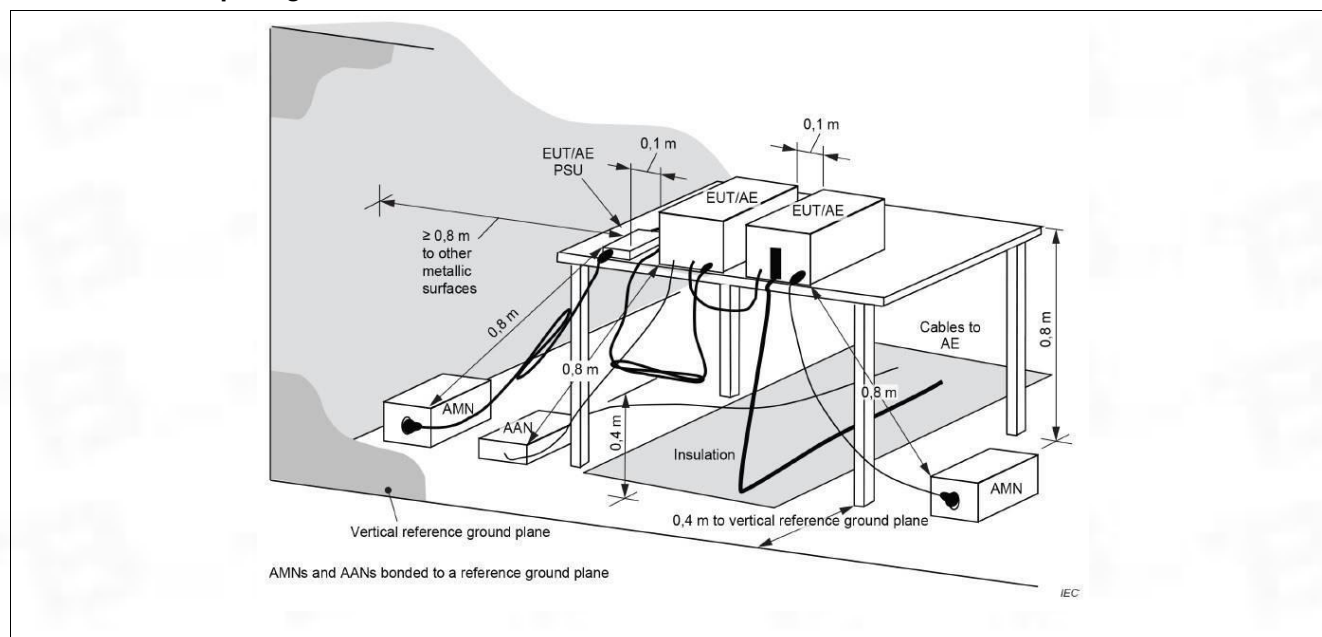
6.1 Conducted Emission at AC power line

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:

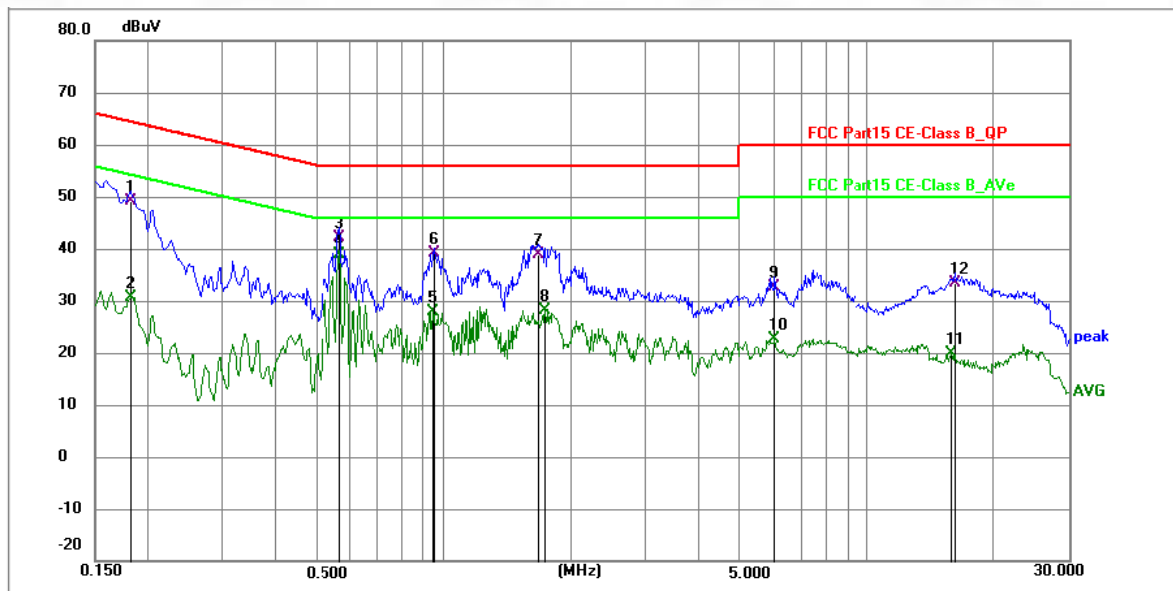
Operating Environment:	
Temperature:	24.8 °C
Humidity:	52.5 %
Atmospheric Pressure:	1010 mbar

6.1.2 Test Setup Diagram:



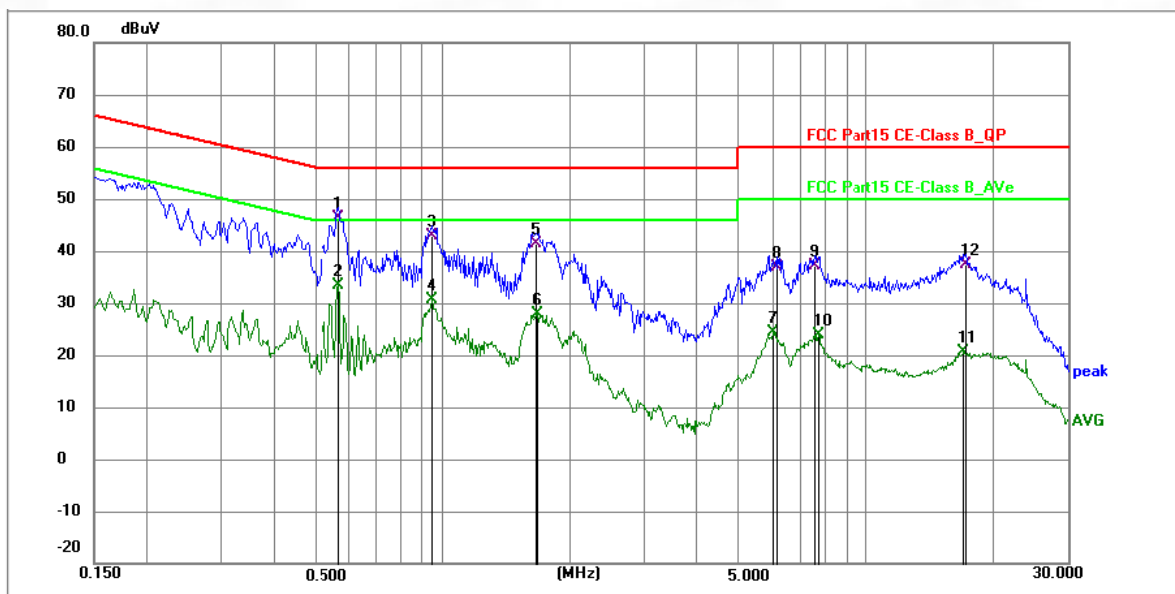
6.1.3 Test Data:

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	0.1814	38.56	10.58	49.14	64.42	-15.28	QP	P	
2	0.1814	20.16	10.58	30.74	54.42	-23.68	AVG	P	
3	0.5685	31.37	10.65	42.02	56.00	-13.98	QP	P	
4 *	0.5685	28.34	10.65	38.99	46.00	-7.01	AVG	P	
5	0.9465	17.11	10.77	27.88	46.00	-18.12	AVG	P	
6	0.9510	28.25	10.77	39.02	56.00	-16.98	QP	P	
7	1.6754	28.20	10.72	38.92	56.00	-17.08	QP	P	
8	1.7430	17.41	10.71	28.12	46.00	-17.88	AVG	P	
9	6.0495	22.00	10.72	32.72	60.00	-27.28	QP	P	
10	6.0495	12.00	10.72	22.72	50.00	-27.28	AVG	P	
11	15.8772	8.91	10.94	19.85	50.00	-30.15	AVG	P	
12	16.2150	22.38	10.94	33.32	60.00	-26.68	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 *	0.5685	35.67	10.65	46.32	56.00	-9.68	QP	P	
2	0.5685	22.64	10.65	33.29	46.00	-12.71	AVG	P	
3	0.9465	32.12	10.77	42.89	56.00	-13.11	QP	P	
4	0.9465	19.79	10.77	30.56	46.00	-15.44	AVG	P	
5	1.6710	30.66	10.72	41.38	56.00	-14.62	QP	P	
6	1.6800	17.17	10.72	27.89	46.00	-18.11	AVG	P	
7	6.0403	13.72	10.72	24.44	50.00	-25.56	AVG	P	
8	6.1485	26.07	10.72	36.79	60.00	-23.21	QP	P	
9	7.5480	26.46	10.78	37.24	60.00	-22.76	QP	P	
10	7.7010	13.19	10.79	23.98	50.00	-26.02	AVG	P	
11	17.1015	9.84	10.90	20.74	50.00	-29.26	AVG	P	
12	17.2905	26.46	10.92	37.38	60.00	-22.62	QP	P	

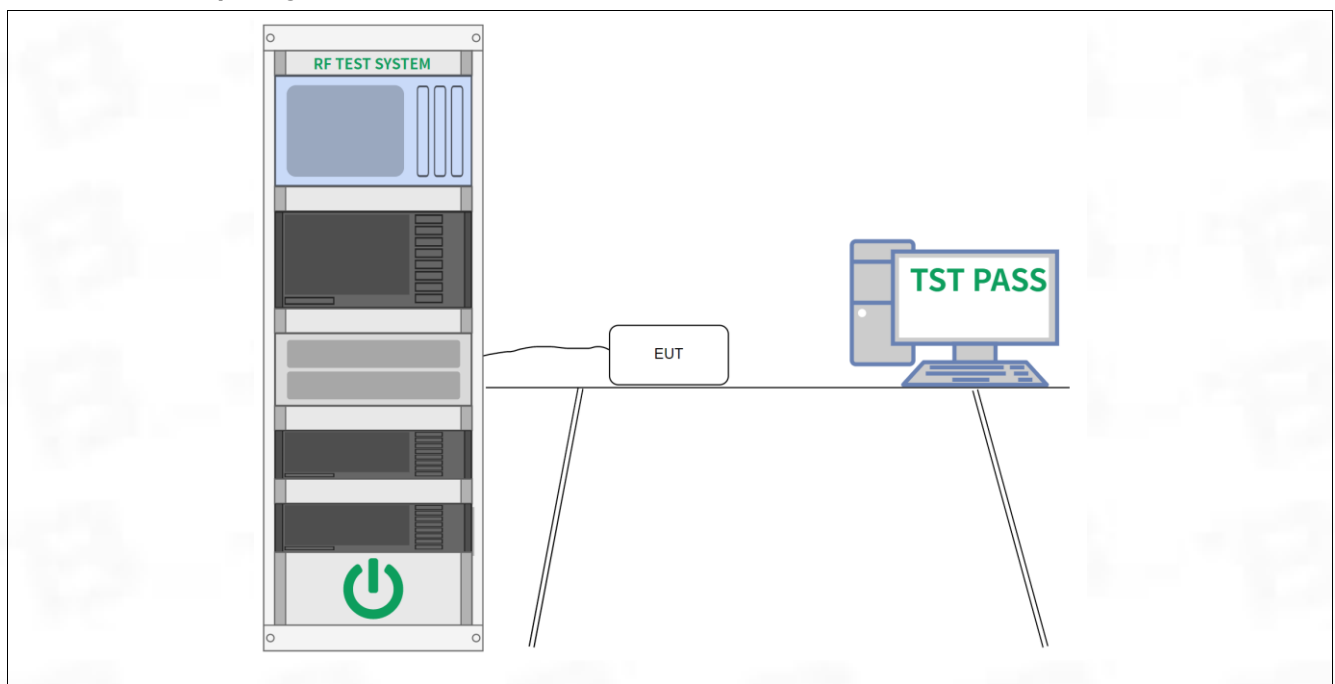
6.2 Occupied Bandwidth

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:	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:	23.6 °C
Humidity:	52.9 %
Atmospheric Pressure:	1010 mbar

6.2.2 Test Setup Diagram:



6.2.3 Test Data:

Please Refer to Appendix for Details.

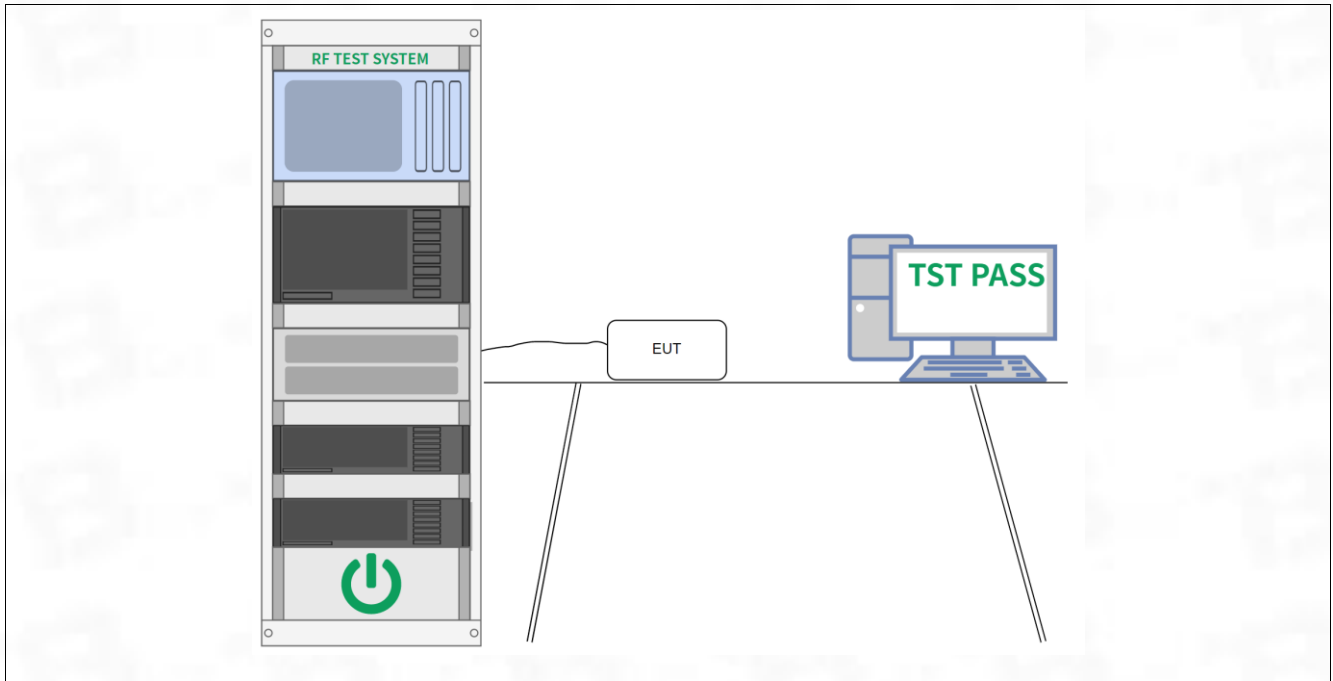
6.3 Maximum Conducted Output Power

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:	23.6 °C
Humidity:	52.9 %
Atmospheric Pressure:	1010 mbar

6.3.2 Test Setup Diagram:



6.3.3 Test Data:

Please Refer to Appendix for Details.

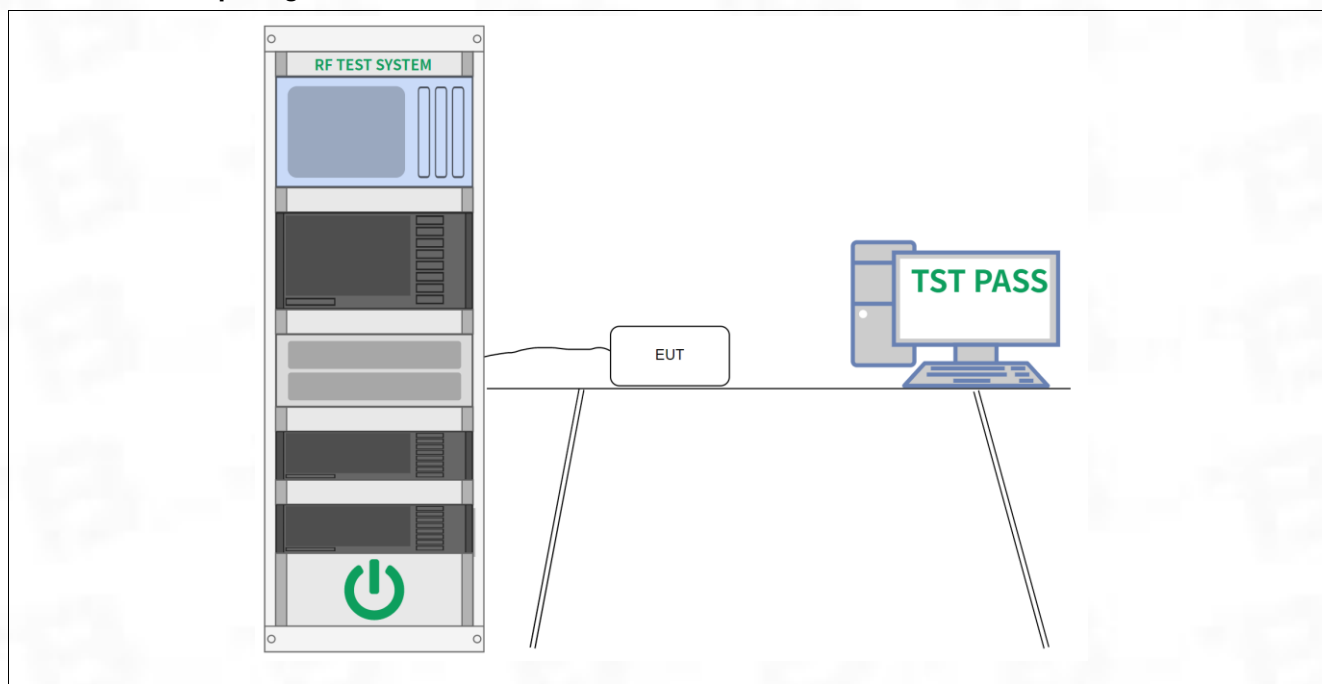
6.4 Power Spectral Density

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:	23.6 °C
Humidity:	52.9 %
Atmospheric Pressure:	1010 mbar

6.4.2 Test Setup Diagram:



6.4.3 Test Data:

Please Refer to Appendix for Details.

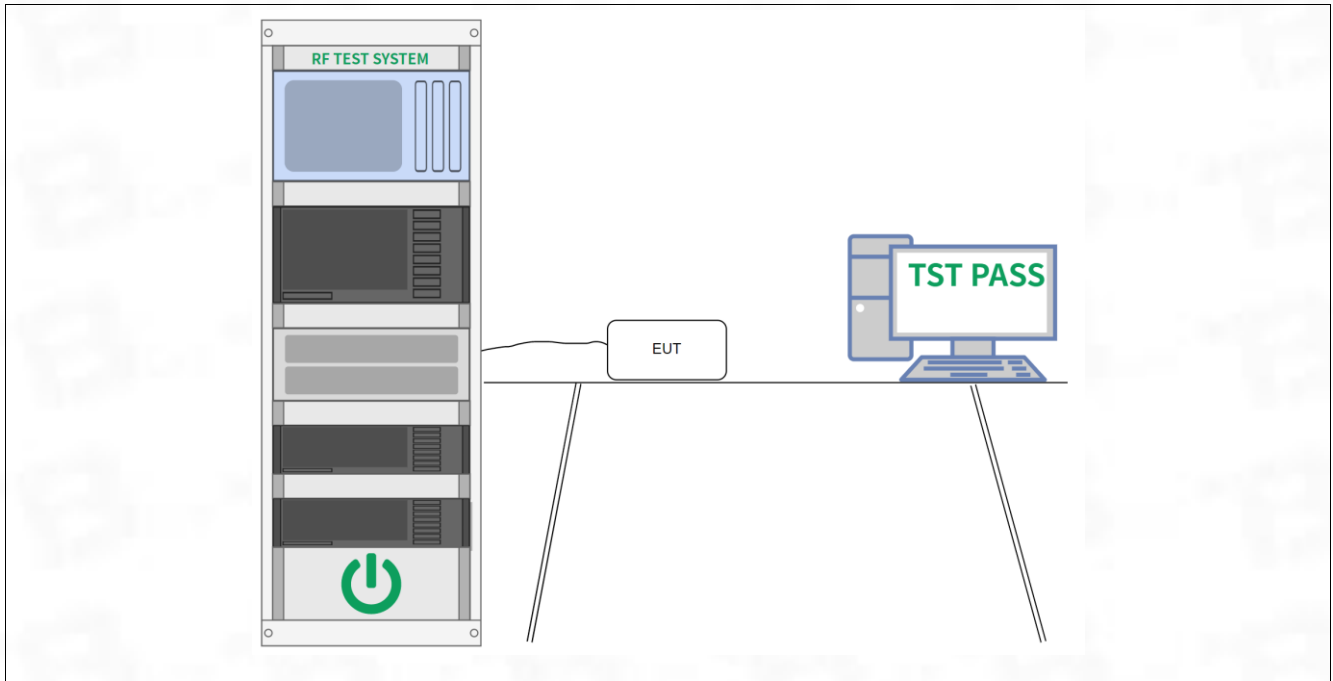
6.5 Emissions in non-restricted frequency bands

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:	23.6 °C
Humidity:	52.9 %
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:	25.8 °C
Humidity:	51.2 %
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	68.29	-30.59	37.70	74.00	-36.30	peak	P
2	2390.000	69.94	-30.49	39.45	74.00	-34.55	peak	P
3 *	2400.000	80.42	-30.48	49.94	74.00	-24.06	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	68.29	-30.59	37.70	74.00	-36.30	peak	P
2	2390.000	69.94	-30.49	39.45	74.00	-34.55	peak	P
3 *	2400.000	80.42	-30.48	49.94	74.00	-24.06	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	81.84	-30.39	51.45	74.00	-22.55	peak	P
2	2500.000	70.75	-30.37	40.38	74.00	-33.62	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	77.84	-30.39	47.45	74.00	-26.55	peak	P
2	2500.000	69.75	-30.37	39.38	74.00	-34.62	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	68.57	-30.59	37.98	74.00	-36.02	peak	P
2	2390.000	70.90	-30.49	40.41	74.00	-33.59	peak	P
3 *	2400.000	83.22	-30.48	52.74	74.00	-21.26	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	70.57	-30.59	39.98	74.00	-34.02	peak	P
2	2390.000	71.40	-30.49	40.91	74.00	-33.09	peak	P
3 *	2400.000	81.72	-30.48	51.24	74.00	-22.76	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	77.48	-30.39	47.09	74.00	-26.91	peak	P
2	2500.000	76.54	-30.37	46.17	74.00	-27.83	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	79.98	-30.39	49.59	74.00	-24.41	peak	P
2	2500.000	72.54	-30.37	42.17	74.00	-31.83	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	69.03	-30.59	38.44	74.00	-35.56	peak	P
2	2390.000	72.17	-30.49	41.68	74.00	-32.32	peak	P
3 *	2400.000	83.65	-30.48	53.17	74.00	-20.83	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	68.03	-30.59	37.44	74.00	-36.56	peak	P
2	2390.000	69.17	-30.49	38.68	74.00	-35.32	peak	P
3 *	2400.000	79.15	-30.48	48.67	74.00	-25.33	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	82.60	-30.39	52.21	74.00	-21.79	peak	P
2	2500.000	78.39	-30.37	48.02	74.00	-25.98	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	80.10	-30.39	49.71	74.00	-24.29	peak	P
2	2500.000	76.39	-30.37	46.02	74.00	-27.98	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	72.03	-30.59	41.44	74.00	-32.56	peak	P
2	2390.000	72.17	-30.49	41.68	74.00	-32.32	peak	P
3 *	2400.000	82.65	-30.48	52.17	74.00	-21.83	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	67.03	-30.59	36.44	74.00	-37.56	peak	P
2	2390.000	71.17	-30.49	40.68	74.00	-33.32	peak	P
3 *	2400.000	81.15	-30.48	50.67	74.00	-23.33	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	79.10	-30.39	48.71	74.00	-25.29	peak	P
2	2500.000	76.89	-30.37	46.52	74.00	-27.48	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	83.10	-30.39	52.71	74.00	-21.29	peak	P
2	2500.000	78.89	-30.37	48.52	74.00	-25.48	peak	P

6.7 Emissions in restricted frequency bands (below 1GHz)

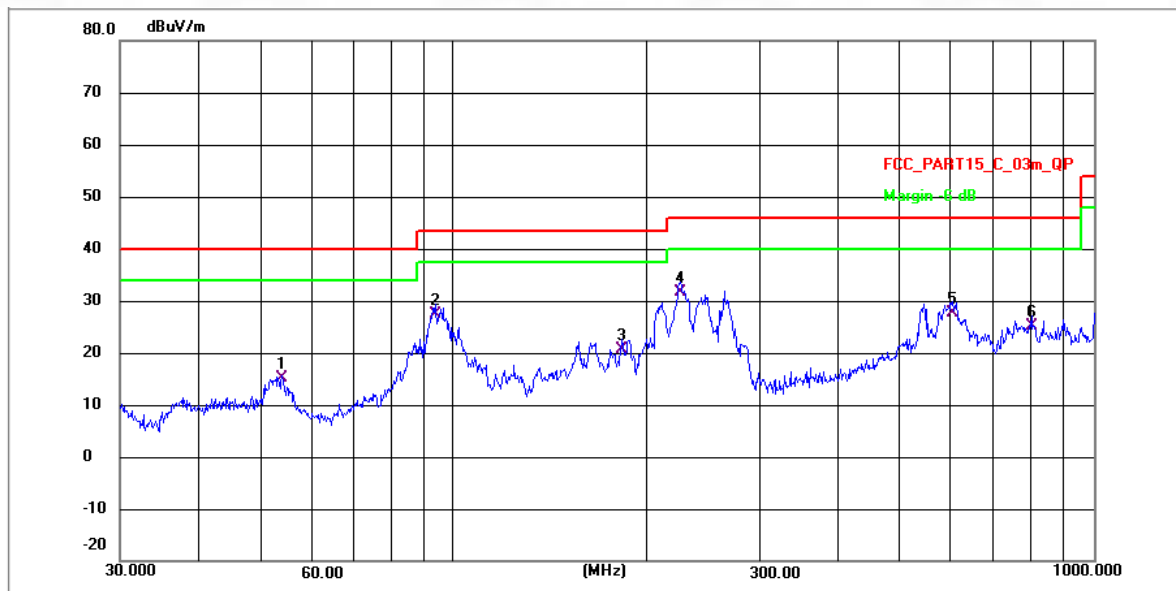
Test Requirement:	In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).`		
Test Method:	Radiated emissions tests		
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	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:	25.8 °C
Humidity:	51.2 %
Atmospheric Pressure:	1010 mbar

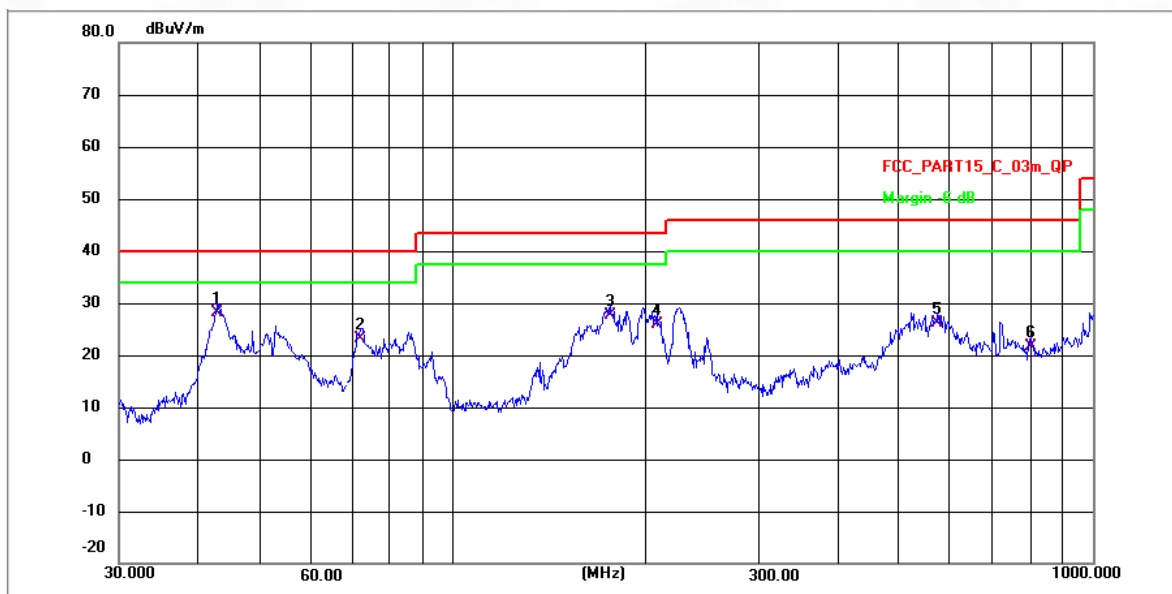
6.7.2 Test Data:

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



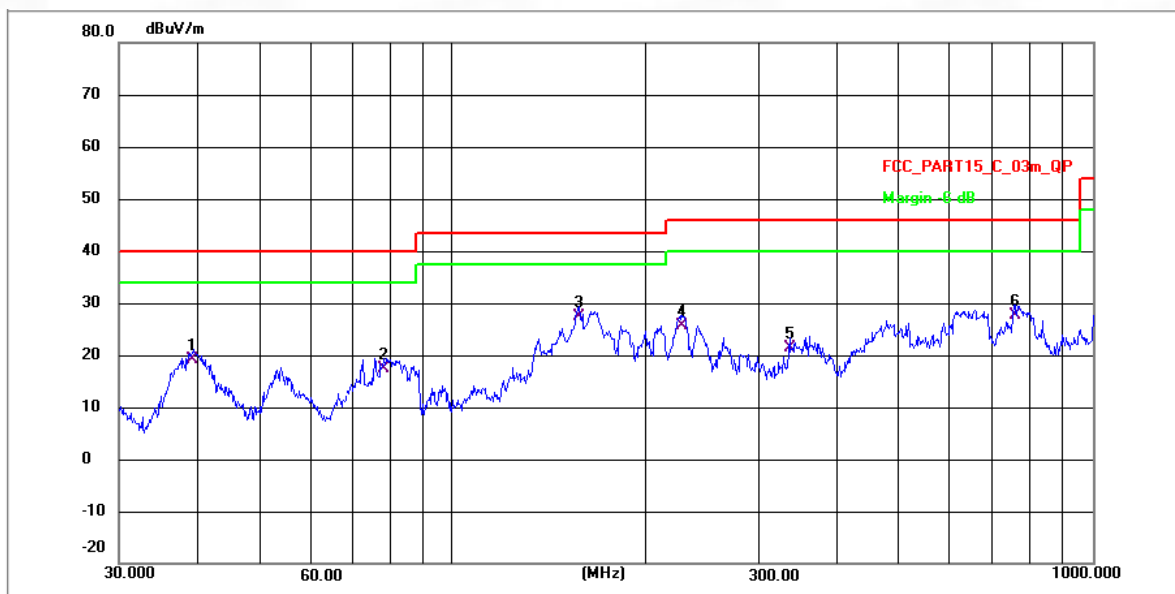
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	53.8817	33.04	-17.94	15.10	40.00	-24.90	QP	P
2	93.4402	56.79	-29.38	27.41	43.50	-16.09	QP	P
3	183.2005	48.14	-27.55	20.59	43.50	-22.91	QP	P
4 *	226.0994	57.94	-26.29	31.65	46.00	-14.35	QP	P
5	602.4820	50.82	-23.17	27.65	46.00	-18.35	QP	P
6	800.3817	50.98	-25.82	25.16	46.00	-20.84	QP	P

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



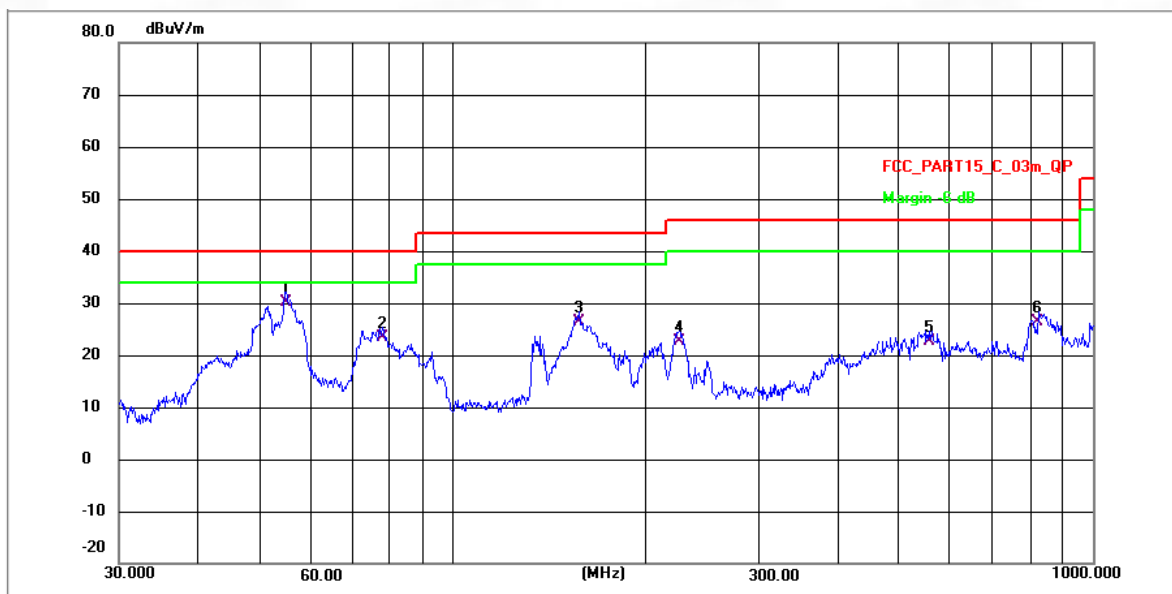
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	42.8245	48.17	-20.09	28.08	40.00	-11.92	QP	P
2	71.7061	43.01	-19.83	23.18	40.00	-16.82	QP	P
3	175.6516	55.17	-27.60	27.57	43.50	-15.93	QP	P
4	208.2147	53.00	-27.05	25.95	43.50	-17.55	QP	P
5	573.6191	49.00	-22.82	26.18	46.00	-19.82	QP	P
6	798.9796	47.45	-25.81	21.64	46.00	-24.36	QP	P

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



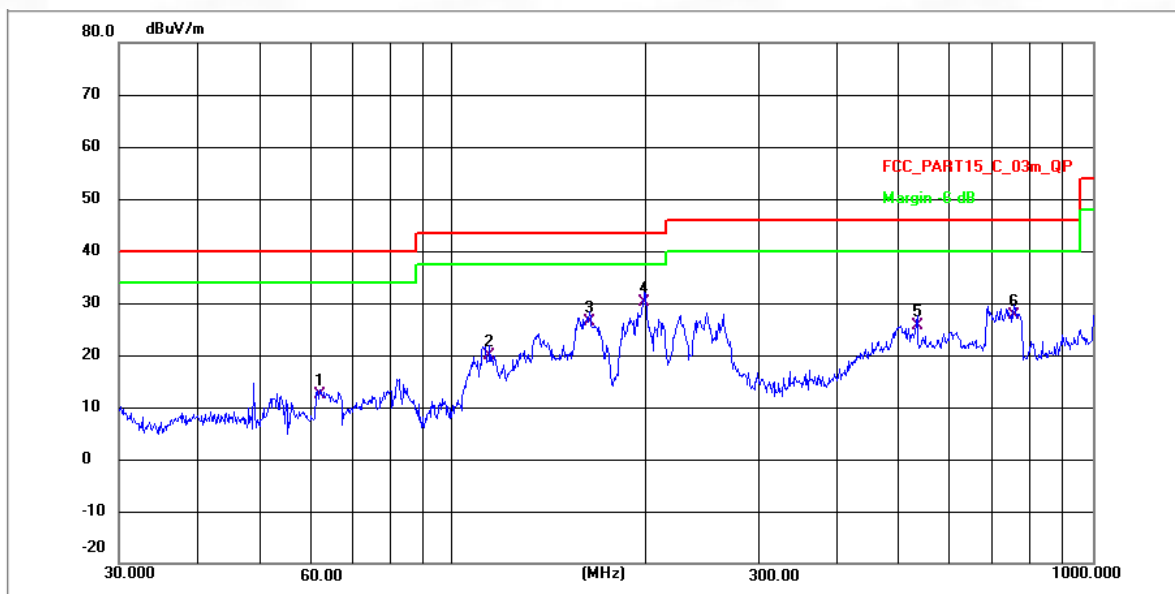
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	39.1613	37.26	-18.01	19.25	40.00	-20.75	QP	P
2	78.2760	35.37	-17.97	17.40	40.00	-22.60	QP	P
3 *	157.5586	54.99	-27.69	27.30	43.50	-16.20	QP	P
4	228.4901	51.91	-26.20	25.71	46.00	-20.29	QP	P
5	334.8586	46.82	-25.52	21.30	46.00	-24.70	QP	P
6	759.3710	53.00	-25.29	27.71	46.00	-18.29	QP	P

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



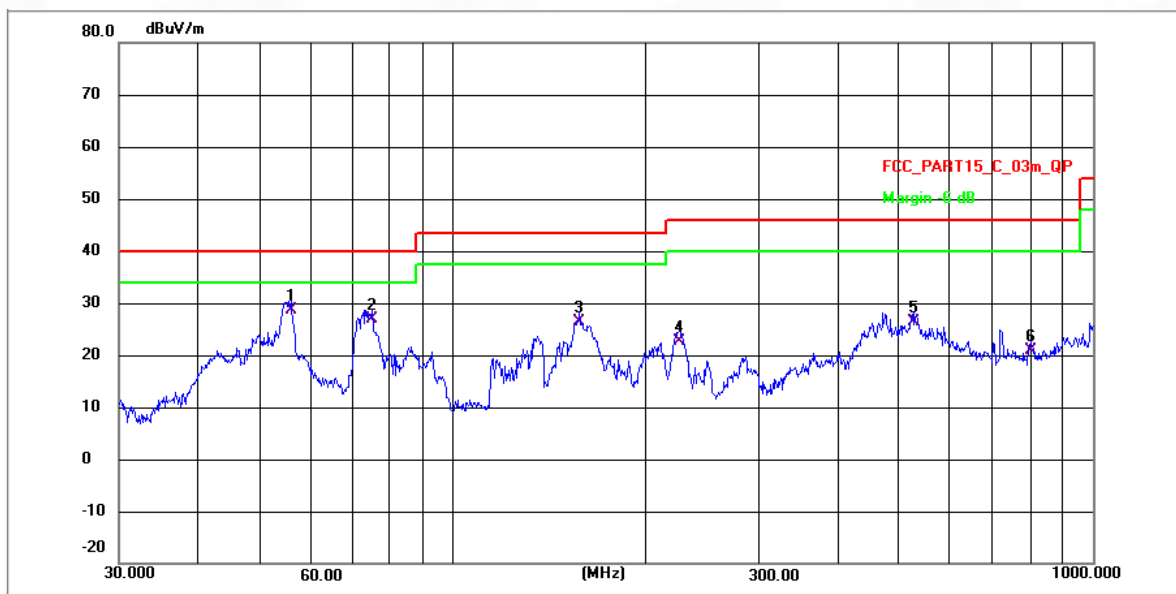
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	54.6428	50.08	-19.94	30.14	40.00	-9.86	QP	P
2	77.7290	43.20	-19.80	23.40	40.00	-16.60	QP	P
3	157.8352	54.05	-27.69	26.36	43.50	-17.14	QP	P
4	226.0994	48.85	-26.29	22.56	46.00	-23.44	QP	P
5	555.7990	45.37	-22.62	22.75	46.00	-23.25	QP	P
6	821.7103	51.97	-25.48	26.49	46.00	-19.51	QP	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	61.8864	30.31	-17.92	12.39	40.00	-27.61	QP	P
2	114.5146	48.07	-28.14	19.93	43.50	-23.57	QP	P
3	163.7550	54.15	-27.66	26.49	43.50	-17.01	QP	P
4 *	198.5880	57.59	-27.40	30.19	43.50	-13.31	QP	P
5	533.8320	48.08	-22.36	25.72	46.00	-20.28	QP	P
6	752.7431	52.86	-25.19	27.67	46.00	-18.33	QP	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 *	55.6092	48.66	-19.93	28.73	40.00	-11.27	QP	P
2	75.0503	46.76	-19.81	26.95	40.00	-13.05	QP	P
3	157.8351	54.05	-27.69	26.36	43.50	-17.14	QP	P
4	226.0994	48.85	-26.29	22.56	46.00	-23.44	QP	P
5	526.3967	48.65	-22.28	26.37	46.00	-19.63	QP	P
6	803.1933	46.73	-25.78	20.95	46.00	-25.05	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:	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	2092.773	68.41	-30.82	37.59	74.00	-36.41	peak	P
2	2900.296	70.53	-29.68	40.85	74.00	-33.15	peak	P
3	3618.018	73.35	-29.04	44.31	74.00	-29.69	peak	P
4	4827.774	75.90	-27.86	48.04	74.00	-25.96	peak	P
5	6667.467	71.75	-25.23	46.52	74.00	-27.48	peak	P
6 *	10194.370	72.85	-24.37	48.48	74.00	-25.52	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	2392.441	66.08	-30.49	35.59	74.00	-38.41	peak	P
2	4424.230	66.23	-28.81	37.42	74.00	-36.58	peak	P
3	6364.305	69.67	-25.37	44.30	74.00	-29.70	peak	P
4	7657.525	71.98	-25.01	46.97	74.00	-27.03	peak	P
5 *	11024.992	73.59	-23.42	50.17	74.00	-23.83	peak	P
6	14571.763	67.30	-21.08	46.22	74.00	-27.78	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	2201.351	75.02	-30.71	44.31	74.00	-29.69	peak	P
2	3118.529	69.54	-29.41	40.13	74.00	-33.87	peak	P
3	7265.115	69.43	-24.85	44.58	74.00	-29.42	peak	P
4	9585.684	70.97	-23.38	47.59	74.00	-26.41	peak	P
5	14034.390	69.52	-21.10	48.42	74.00	-25.58	peak	P
6 *	16296.380	70.37	-20.17	50.20	74.00	-23.80	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	2063.342	70.51	-30.85	39.66	74.00	-34.34	peak	P
2	3618.018	72.85	-29.04	43.81	74.00	-30.19	peak	P
3	4827.774	71.40	-27.86	43.54	74.00	-30.46	peak	P
4	6669.394	72.86	-25.23	47.63	74.00	-26.37	peak	P
5	11130.654	75.01	-23.34	51.67	74.00	-22.33	peak	P
6 *	17839.438	70.02	-16.68	53.34	74.00	-20.66	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	2473.300	73.47	-30.40	43.07	125.20	-82.13	peak	P
2	2868.616	71.21	-29.73	41.48	74.00	-32.52	peak	P
3	3618.018	73.35	-29.04	44.31	74.00	-29.69	peak	P
4	4827.774	75.90	-27.86	48.04	74.00	-25.96	peak	P
5	7724.213	75.13	-25.11	50.02	74.00	-23.98	peak	P
6 *	12336.967	75.02	-21.80	53.22	74.00	-20.78	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	2238.566	71.60	-30.66	40.94	74.00	-33.06	peak	P
2	3681.310	65.51	-29.04	36.47	74.00	-37.53	peak	P
3	6754.755	70.66	-25.15	45.51	74.00	-28.49	peak	P
4 *	10135.609	76.10	-24.36	51.74	74.00	-22.26	peak	P
5	13450.581	69.86	-21.00	48.86	74.00	-25.14	peak	P
6	16466.834	67.00	-19.35	47.65	74.00	-26.35	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	2158.507	71.95	-30.76	41.19	74.00	-32.81	peak	P
2	2891.926	70.20	-29.70	40.50	74.00	-33.50	peak	P
3	5090.007	68.74	-27.29	41.45	74.00	-32.55	peak	P
4 *	7409.319	75.19	-24.81	50.38	74.00	-23.62	peak	P
5	11735.245	70.85	-22.66	48.19	74.00	-25.81	peak	P
6	13666.114	70.75	-21.01	49.74	74.00	-24.26	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	2110.389	69.38	-30.81	38.57	74.00	-35.43	peak	P
2	3511.894	71.02	-29.06	41.96	74.00	-32.04	peak	P
3	6438.313	70.08	-25.38	44.70	74.00	-29.30	peak	P
4	10039.393	71.53	-24.31	47.22	74.00	-26.78	peak	P
5	12462.404	70.25	-21.66	48.59	74.00	-25.41	peak	P
6 *	14580.189	69.78	-21.06	48.72	74.00	-25.28	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	2145.445	71.61	-30.77	40.84	74.00	-33.16	peak	P
2	6322.136	65.92	-25.36	40.56	74.00	-33.44	peak	P
3	8635.903	69.82	-25.04	44.78	74.00	-29.22	peak	P
4	12816.752	70.26	-21.44	48.82	74.00	-25.18	peak	P
5	14685.925	68.63	-20.90	47.73	74.00	-26.27	peak	P
6 *	17619.091	65.72	-16.45	49.27	74.00	-24.73	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	2114.663	71.86	-30.80	41.06	74.00	-32.94	peak	P
2	2868.616	70.71	-29.73	40.98	74.00	-33.02	peak	P
3 *	7326.267	74.34	-24.83	49.51	74.00	-24.49	peak	P
4	9208.201	69.51	-23.85	45.66	74.00	-28.34	peak	P
5	12600.039	68.99	-21.56	47.43	74.00	-26.57	peak	P
6	15235.029	68.31	-20.91	47.40	74.00	-26.60	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	2088.543	68.53	-30.83	37.70	74.00	-36.30	peak	P
2	3353.182	69.29	-29.19	40.10	74.00	-33.90	peak	P
3	4586.999	66.63	-28.54	38.09	74.00	-35.91	peak	P
4	6827.380	72.10	-25.08	47.02	74.00	-26.98	peak	P
5 *	12354.809	75.15	-21.79	53.36	74.00	-20.64	peak	P
6	16721.031	67.13	-18.78	48.35	74.00	-25.65	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	2276.410	76.39	-30.62	45.77	74.00	-28.23	peak	P
2	5204.560	66.65	-27.20	39.45	74.00	-34.55	peak	P
3	6669.394	64.36	-25.23	39.13	74.00	-34.87	peak	P
4	11731.854	66.40	-22.66	43.74	74.00	-30.26	peak	P
5	15541.920	67.57	-21.51	46.06	74.00	-27.94	peak	P
6 *	17654.775	67.57	-16.49	51.08	74.00	-22.92	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	2191.828	70.89	-30.71	40.18	74.00	-33.82	peak	P
2	3353.182	70.79	-29.19	41.60	74.00	-32.40	peak	P
3	4944.993	72.62	-27.52	45.10	74.00	-28.90	peak	P
4	7177.452	72.31	-24.88	47.43	74.00	-26.57	peak	P
5 *	11299.211	72.82	-23.22	49.60	74.00	-24.40	peak	P
6	16687.234	65.09	-18.85	46.24	74.00	-27.76	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	2158.507	71.45	-30.76	40.69	74.00	-33.31	peak	P
2	4364.534	66.01	-28.84	37.17	74.00	-36.83	peak	P
3	6669.394	70.86	-25.23	45.63	74.00	-28.37	peak	P
4 *	9585.684	72.47	-23.38	49.09	74.00	-24.91	peak	P
5	11731.947	68.90	-22.66	46.24	74.00	-27.76	peak	P
6	14450.131	66.96	-21.18	45.78	74.00	-28.22	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	2186.134	73.20	-30.73	42.47	74.00	-31.53	peak	P
2	3921.867	73.36	-29.01	44.35	74.00	-29.65	peak	P
3 *	7284.038	76.33	-24.84	51.49	74.00	-22.51	peak	P
4	11731.854	71.40	-22.66	48.74	74.00	-25.26	peak	P
5	13450.581	72.20	-21.00	51.20	74.00	-22.80	peak	P
6	15618.475	72.74	-21.52	51.22	74.00	-22.78	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	2126.922	73.13	-30.79	42.34	74.00	-31.66	peak	P
2	2858.683	68.77	-29.75	39.02	74.00	-34.98	peak	P
3	4106.309	75.95	-28.95	47.00	74.00	-27.00	peak	P
4	4416.564	75.52	-28.82	46.70	74.00	-27.30	peak	P
5 *	7538.934	72.24	-24.84	47.40	74.00	-26.60	peak	P
6	13342.164	67.70	-21.08	46.62	74.00	-27.38	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	2174.790	75.20	-30.73	44.47	74.00	-29.53	peak	P
2	2887.749	69.03	-29.70	39.33	74.00	-34.67	peak	P
3	6258.502	66.44	-25.35	41.09	74.00	-32.91	peak	P
4	9147.190	72.27	-23.98	48.29	74.00	-25.71	peak	P
5 *	11430.604	74.10	-23.11	50.99	74.00	-23.01	peak	P
6	14010.072	70.53	-21.10	49.43	74.00	-24.57	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	2137.399	72.56	-30.78	41.78	74.00	-32.22	peak	P
2	3337.710	69.16	-29.20	39.96	74.00	-34.04	peak	P
3	5210.581	68.63	-27.20	41.43	74.00	-32.57	peak	P
4	7476.006	73.97	-24.79	49.18	74.00	-24.82	peak	P
5 *	12600.039	73.49	-21.56	51.93	74.00	-22.07	peak	P
6	16338.827	66.78	-19.96	46.82	74.00	-27.18	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	2069.315	72.27	-30.85	41.42	74.00	-32.58	peak	P
2	3544.527	68.60	-29.05	39.55	74.00	-34.45	peak	P
3	5040.232	68.63	-27.33	41.30	74.00	-32.70	peak	P
4	6594.636	71.36	-25.29	46.07	74.00	-27.93	peak	P
5 *	11397.613	75.41	-23.14	52.27	74.00	-21.73	peak	P
6	15345.515	68.40	-21.16	47.24	74.00	-26.76	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	2114.663	68.36	-30.80	37.56	74.00	-36.44	peak	P
2	3313.679	69.56	-29.23	40.33	74.00	-33.67	peak	P
3	6684.834	73.51	-25.21	48.30	74.00	-25.70	peak	P
4 *	9898.209	75.88	-24.07	51.81	74.00	-22.19	peak	P
5	11968.178	71.40	-22.25	49.15	74.00	-24.85	peak	P
6	15836.672	69.50	-21.56	47.94	74.00	-26.06	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	2069.315	72.27	-30.85	41.42	74.00	-32.58	peak	P
2	2665.560	66.35	-30.08	36.27	74.00	-37.73	peak	P
3	4064.978	69.37	-28.97	40.40	74.00	-33.60	peak	P
4	7469.527	72.97	-24.79	48.18	74.00	-25.82	peak	P
5 *	11803.280	73.01	-22.54	50.47	74.00	-23.53	peak	P
6	14279.900	69.50	-21.15	48.35	74.00	-25.65	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	2065.729	69.77	-30.85	38.92	74.00	-35.08	peak	P
2	3328.077	67.53	-29.21	38.32	74.00	-35.68	peak	P
3	3890.255	66.83	-29.01	37.82	74.00	-36.18	peak	P
4	6053.893	67.30	-25.33	41.97	74.00	-32.03	peak	P
5 *	12149.417	72.10	-22.02	50.08	74.00	-23.92	peak	P
6	16648.693	67.15	-18.91	48.24	74.00	-25.76	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	2083.719	66.54	-30.84	35.70	74.00	-38.30	peak	P
2	3366.778	65.87	-29.18	36.69	74.00	-37.31	peak	P
3	4694.299	67.32	-28.23	39.09	74.00	-34.91	peak	P
4	7606.788	70.34	-24.94	45.40	74.00	-28.60	peak	P
5 *	11335.193	74.89	-23.19	51.70	74.00	-22.30	peak	P
6	15310.072	69.32	-21.08	48.24	74.00	-25.76	peak	P

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

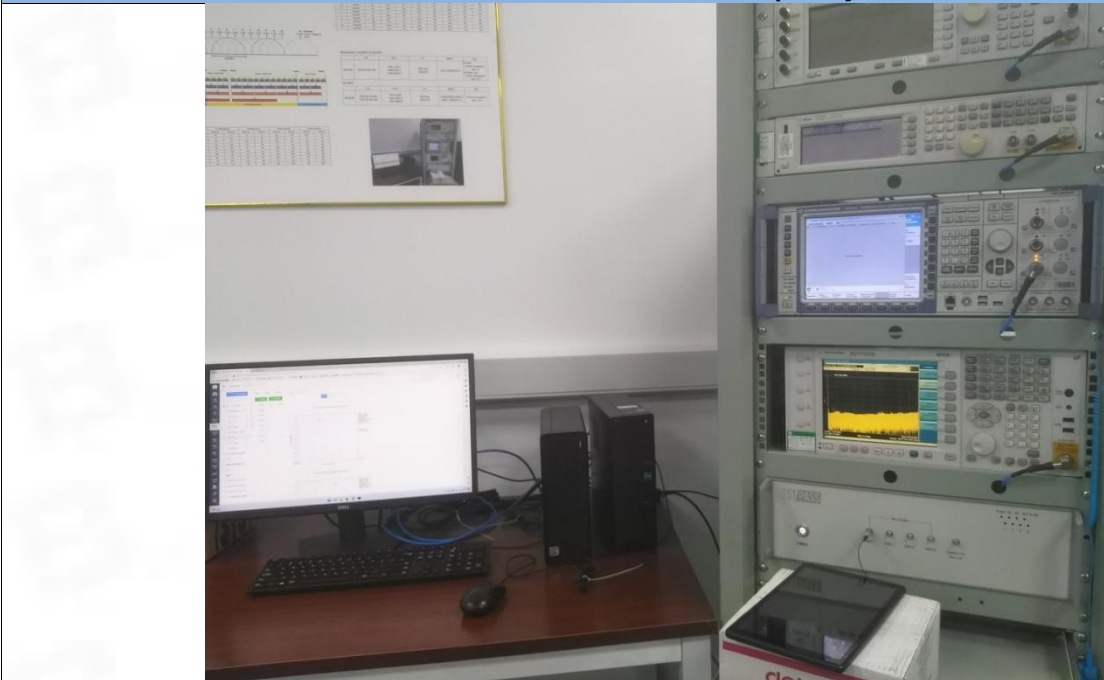
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2169.767	68.21	-30.74	37.47	74.00	-36.53	peak	P
2	3150.237	65.83	-29.37	36.46	74.00	-37.54	peak	P
3	4600.276	71.14	-28.50	42.64	74.00	-31.36	peak	P
4 *	9126.063	75.32	-24.03	51.29	74.00	-22.71	peak	P
5	14450.131	64.96	-21.18	43.78	74.00	-30.22	peak	P
6	17386.383	58.74	-16.77	41.97	74.00	-32.03	peak	P

7 Test Setup Photos

Conducted Emission at AC power line



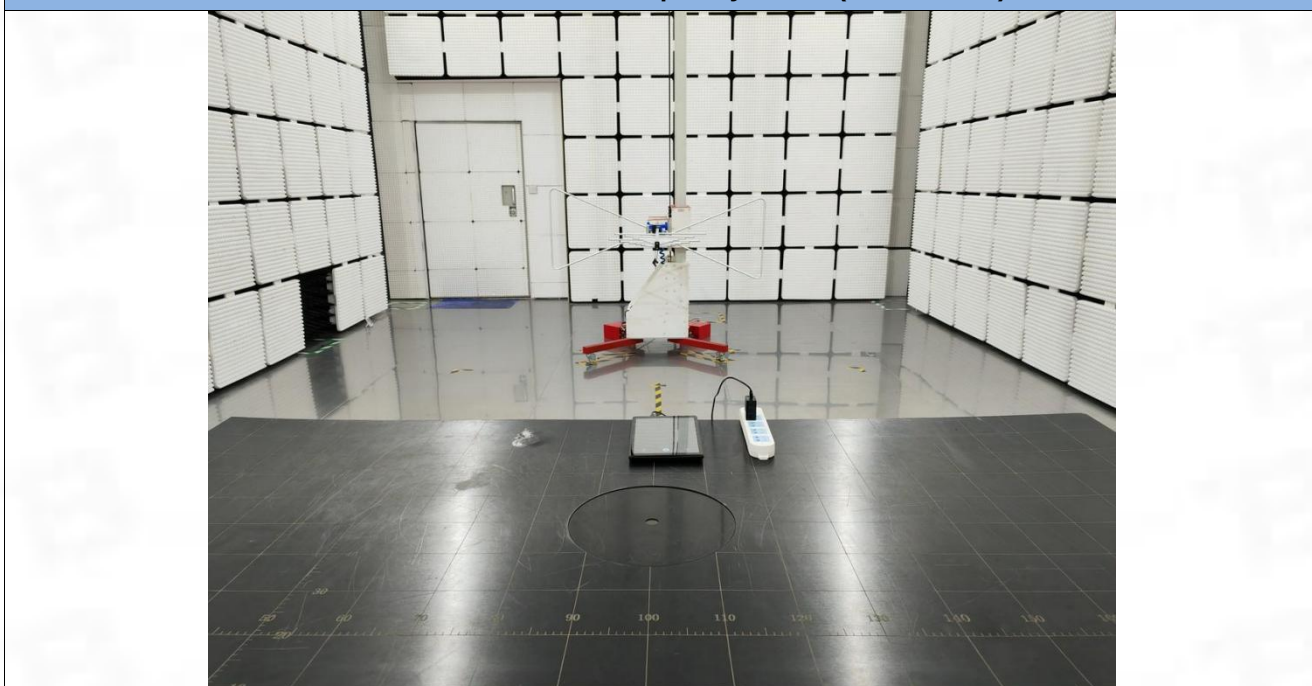
Occupied Bandwidth
Maximum Conducted Output Power
Power Spectral Density
Emissions in non-restricted frequency bands



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.BTF-SZ230303R-020.

Appendix

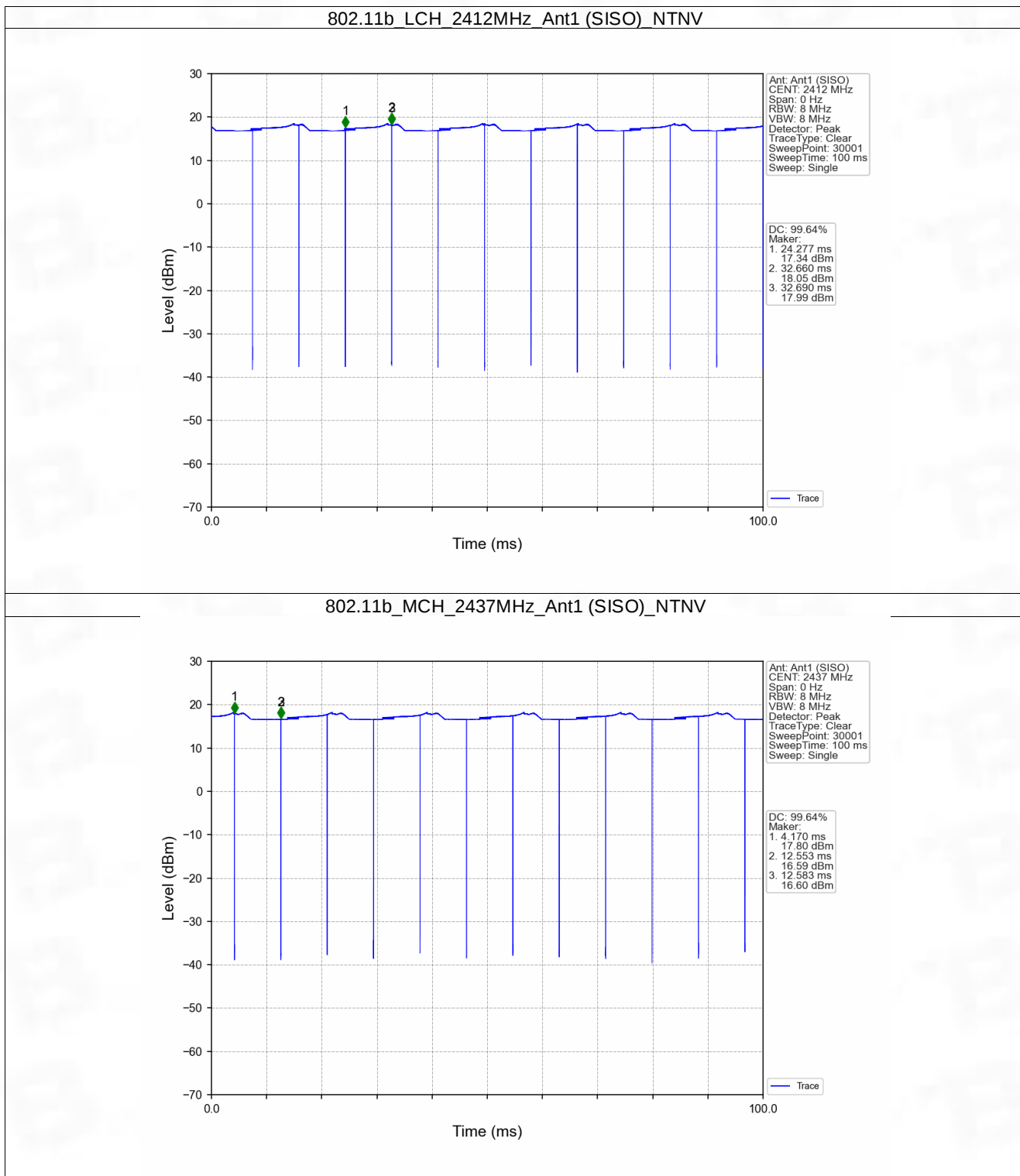
1. Duty Cycle

1.1 Ant1

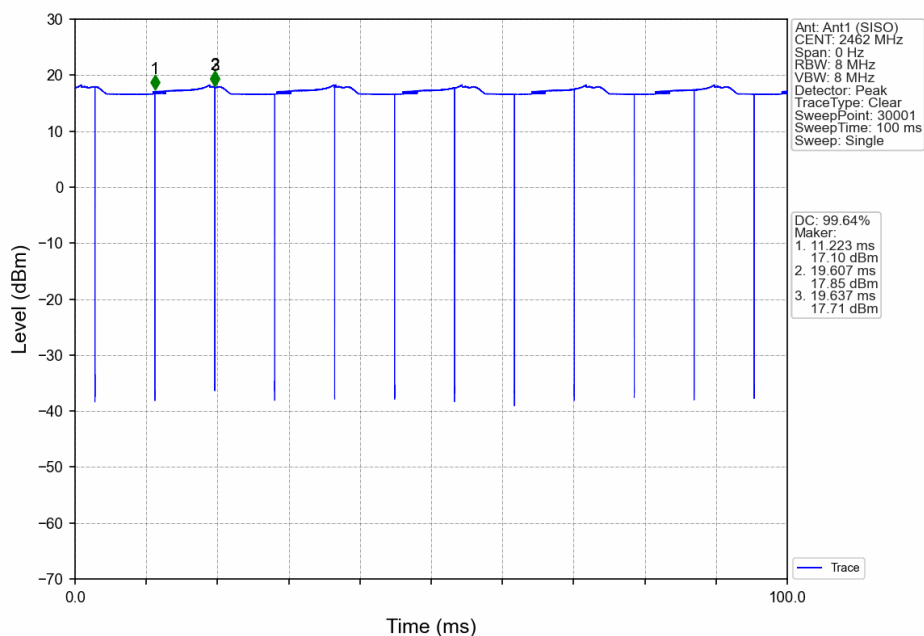
1.1.1 Test Result

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	8.384	8.414	99.64	0.02	0.04
802.11g	SISO	2412	1.394	1.428	97.62	0.10	0.03
		2437	1.395	1.428	97.69	0.10	0.03
		2462	1.394	1.428	97.62	0.10	0.03
802.11n (HT20)	SISO	2412	1.302	1.335	97.53	0.11	0.03
		2437	1.302	1.335	97.53	0.11	0.03
		2462	1.302	1.336	97.46	0.11	0.03
802.11n (HT40)	SISO	2422	0.649	0.683	95.02	0.22	0.10
		2437	0.649	0.683	95.02	0.22	0.03
		2452	0.650	0.683	95.17	0.22	0.03

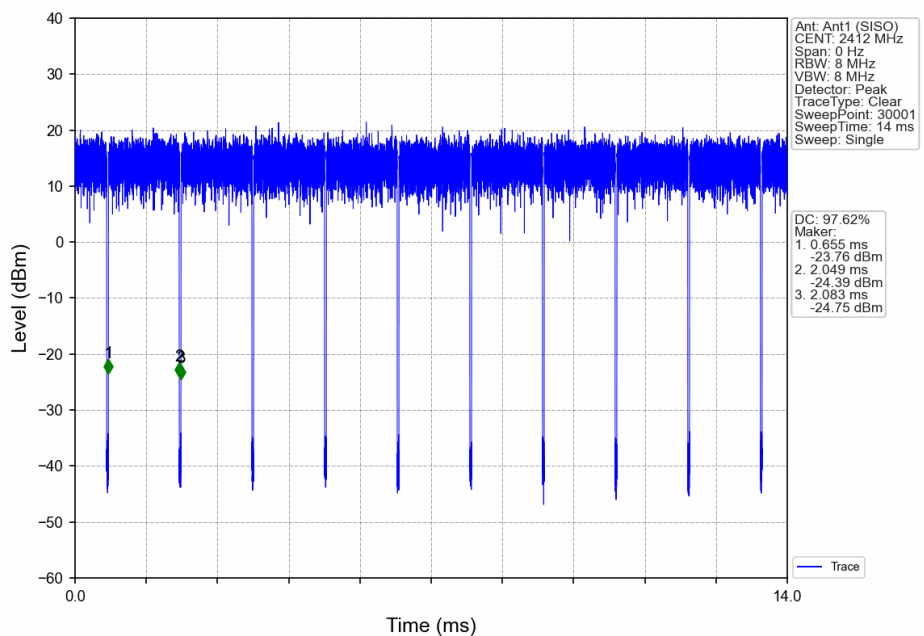
1.1.2 Test Graph



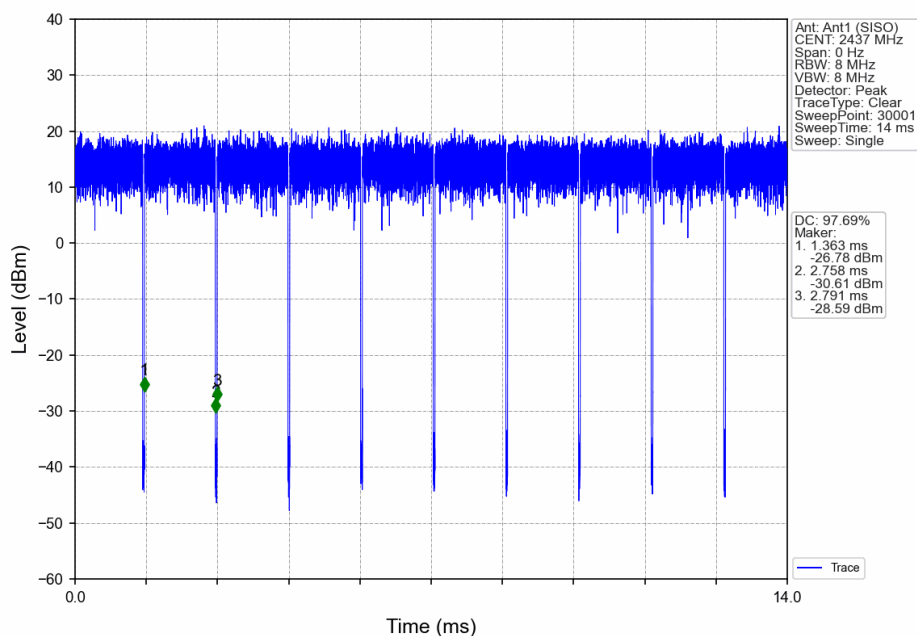
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



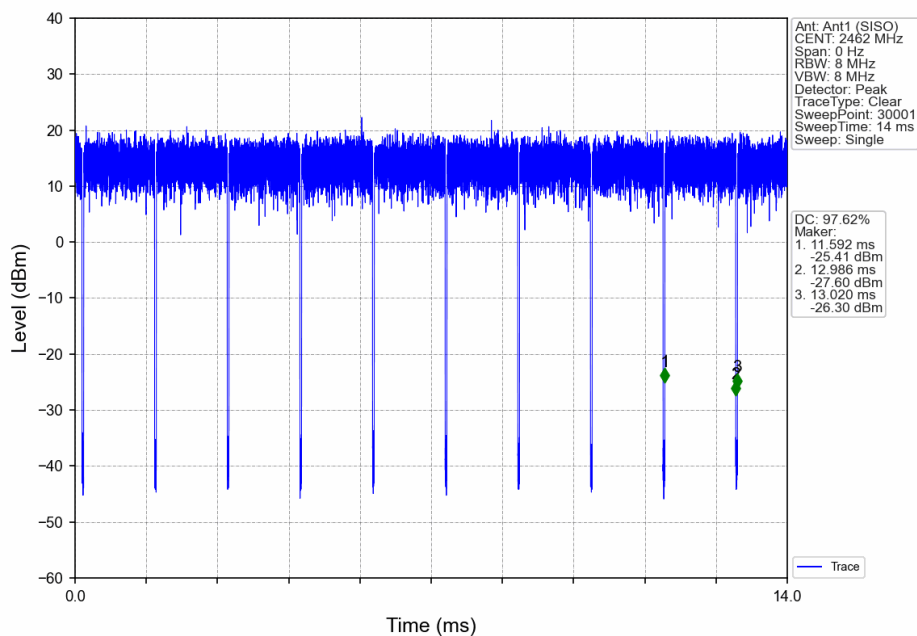
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



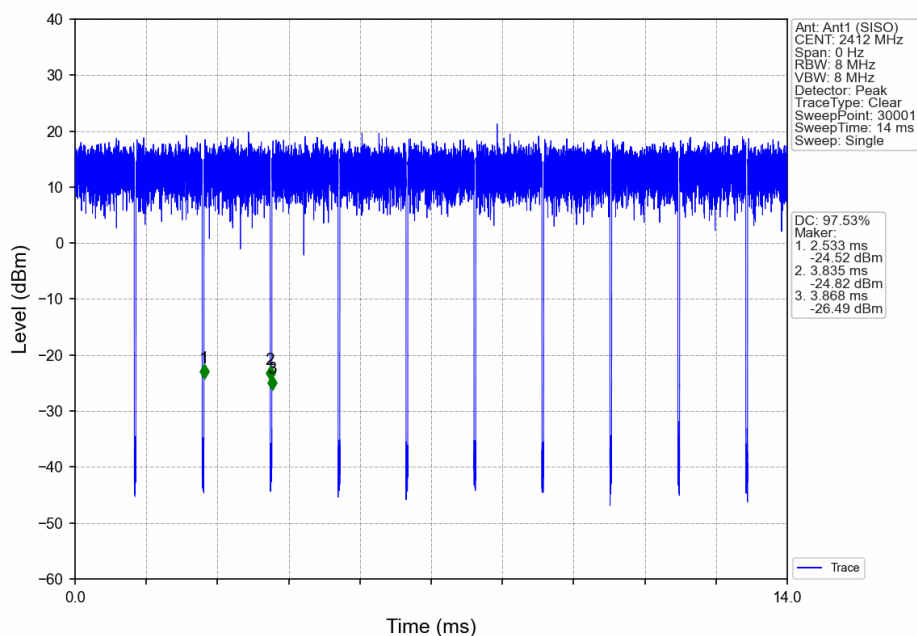
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



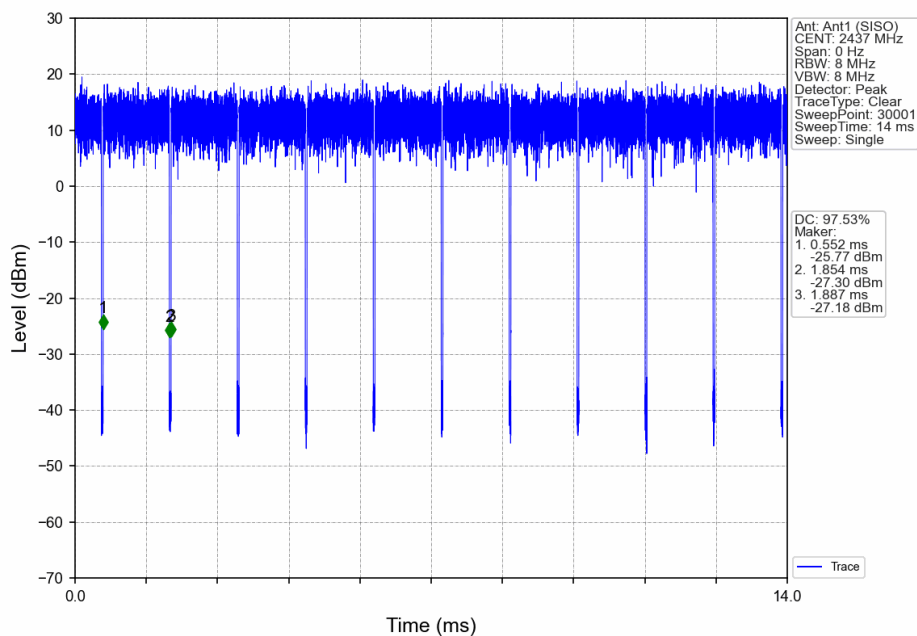
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



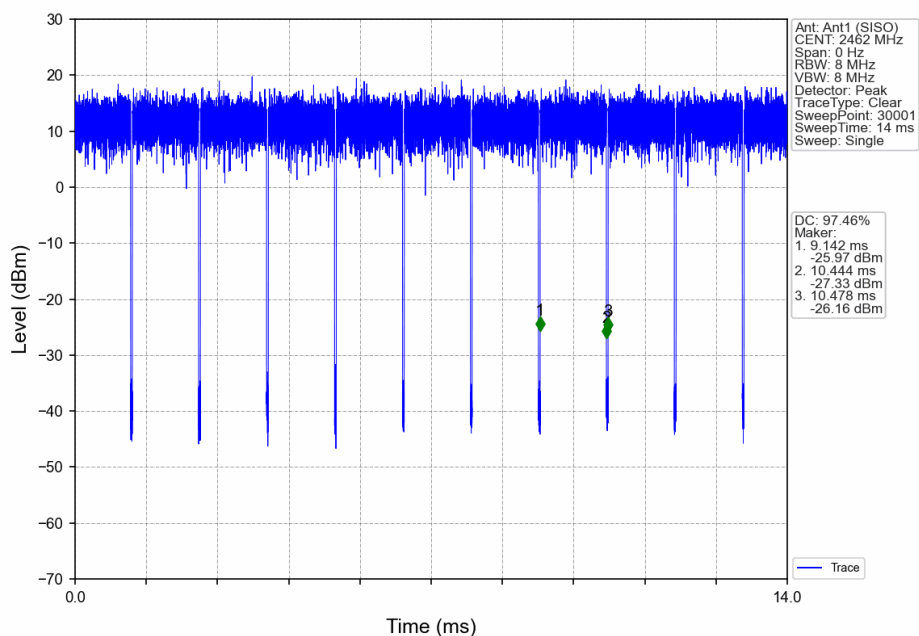
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



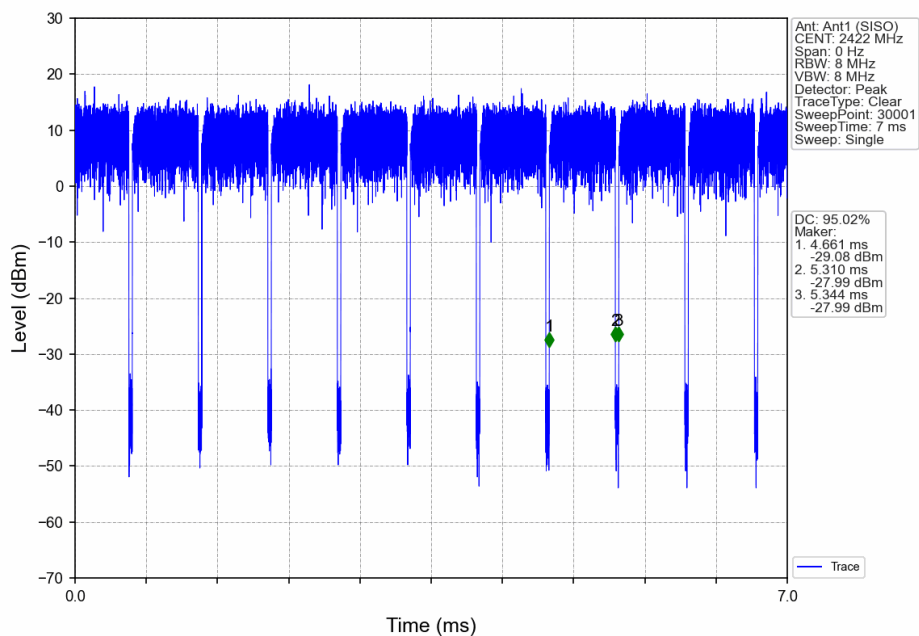
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



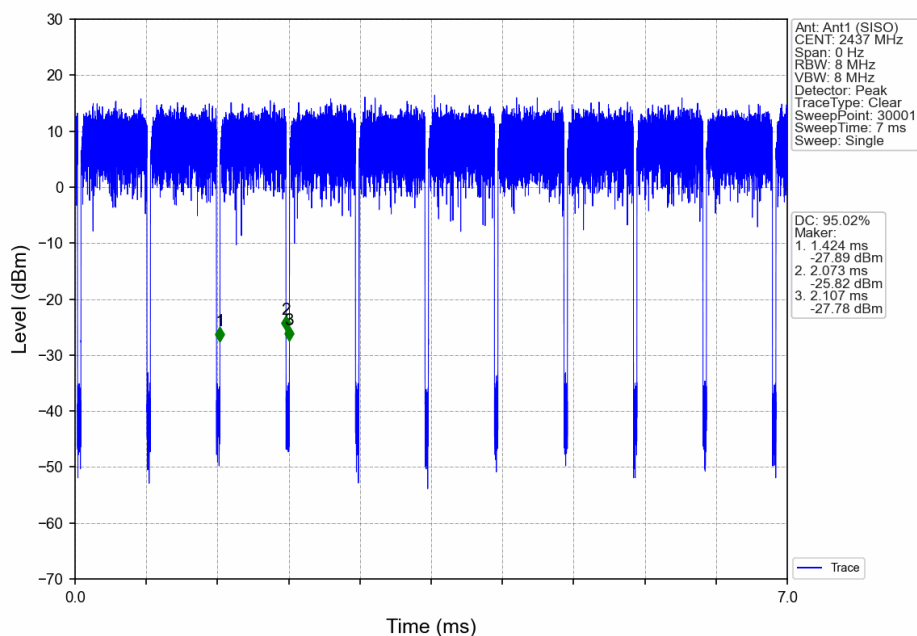
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



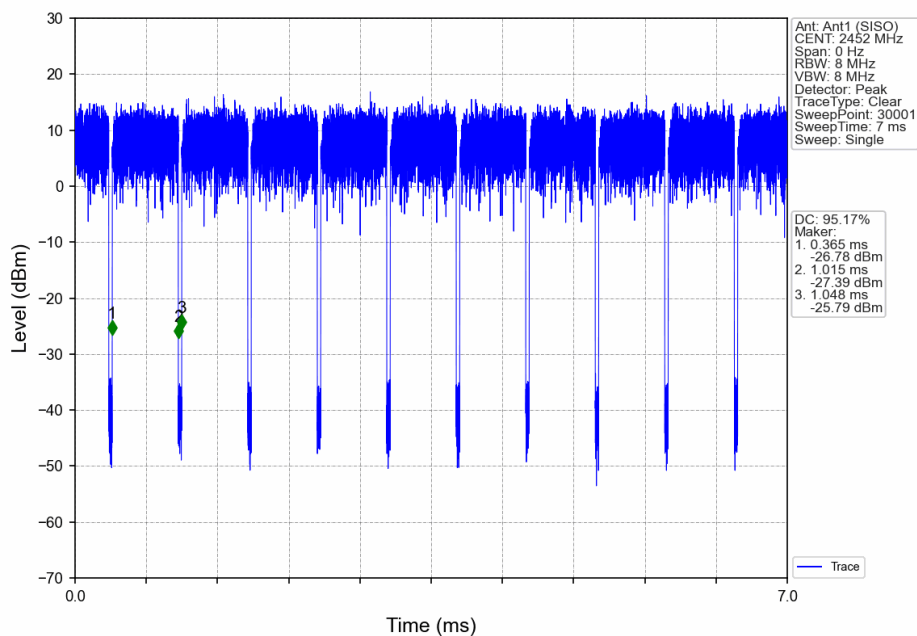
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV



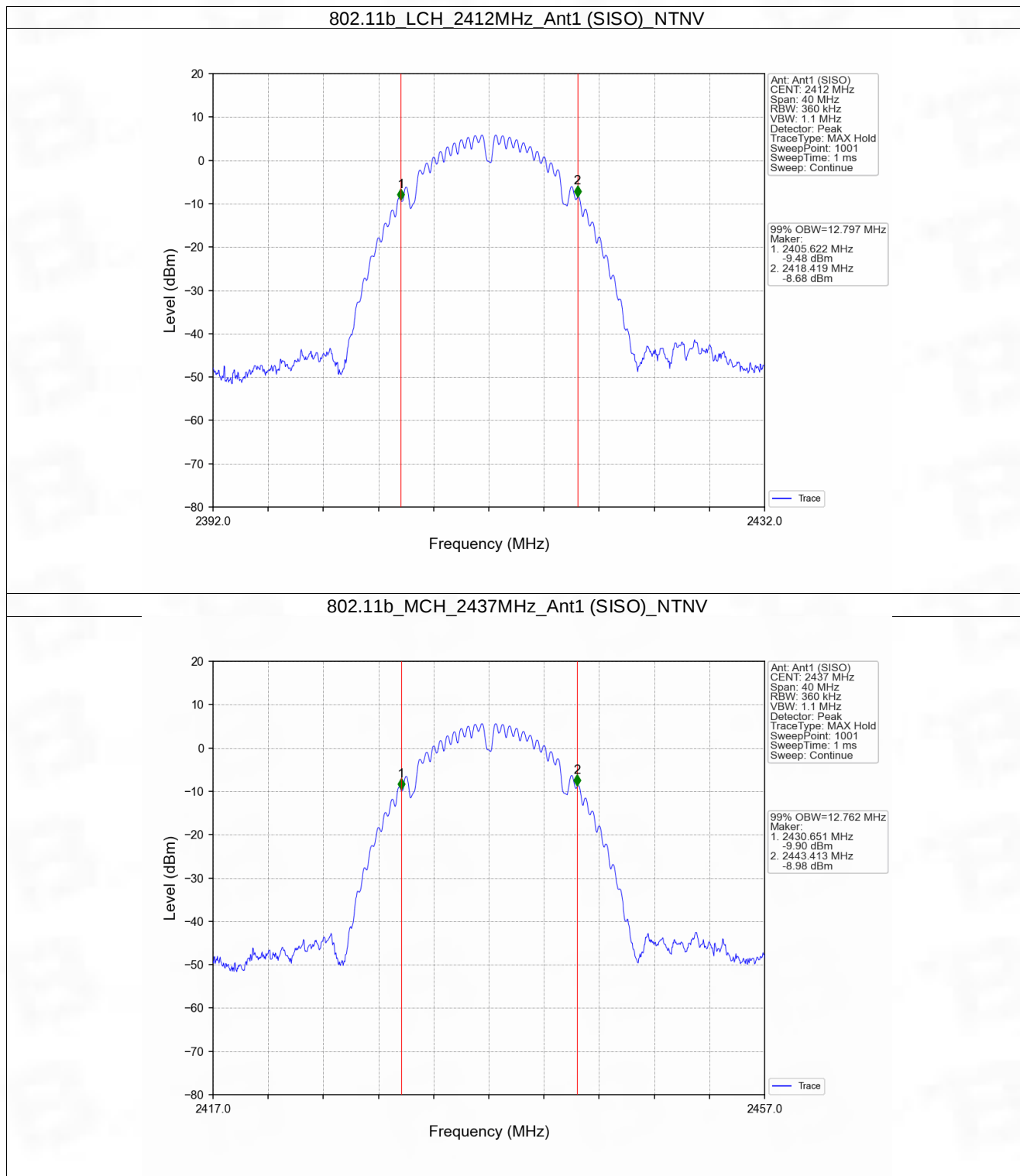
2. Bandwidth

2.1 OBW

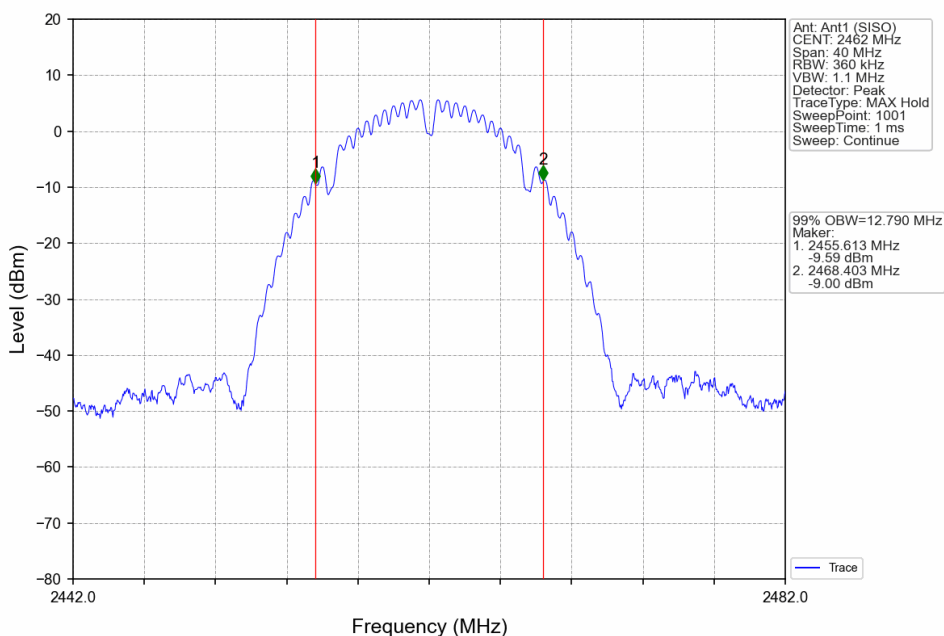
2.1.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)	Verdict
				Result	
802.11b	SISO	2412	1	12.797	Pass
		2437	1	12.762	Pass
		2462	1	12.790	Pass
802.11g	SISO	2412	1	17.406	Pass
		2437	1	17.437	Pass
		2462	1	17.498	Pass
802.11n (HT20)	SISO	2412	1	18.230	Pass
		2437	1	18.242	Pass
		2462	1	18.267	Pass
802.11n (HT40)	SISO	2422	1	36.677	Pass
		2437	1	36.545	Pass
		2452	1	36.612	Pass

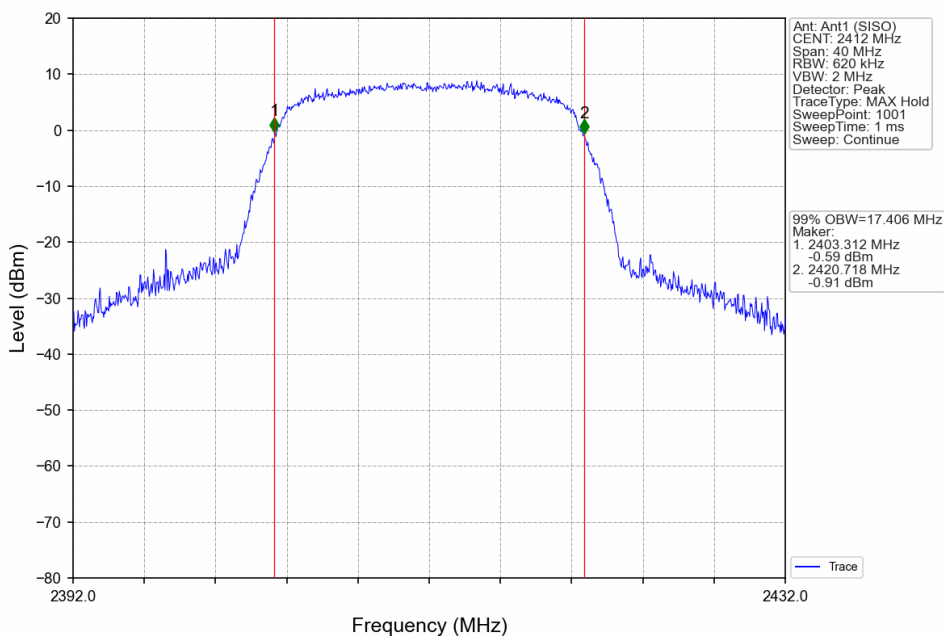
2.1.2 Test Graph



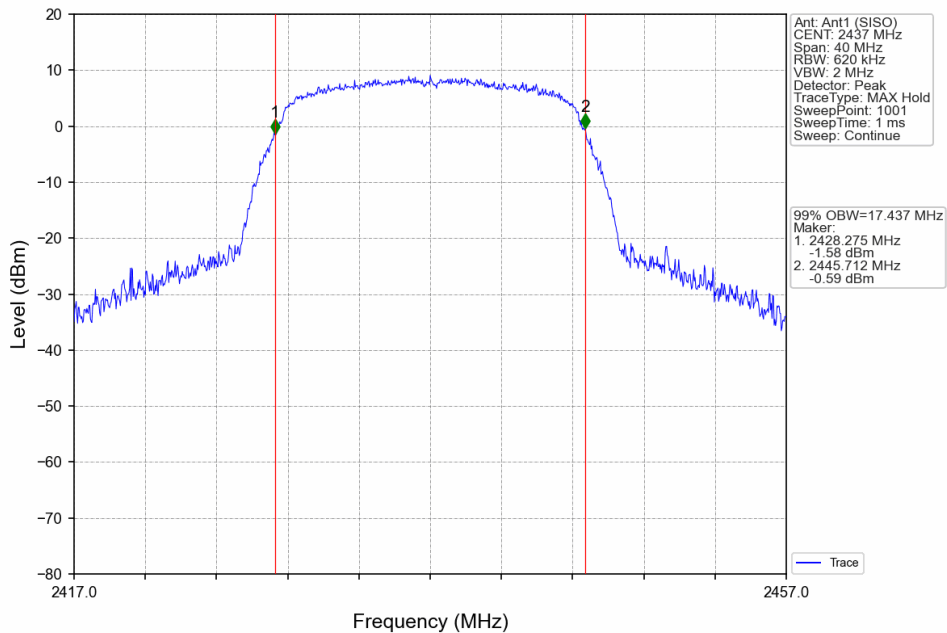
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



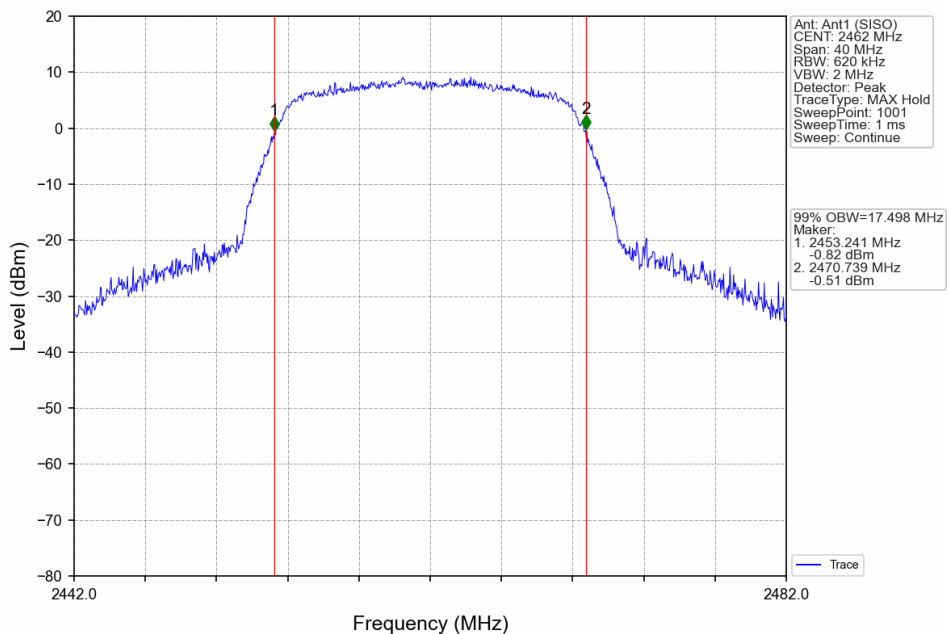
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



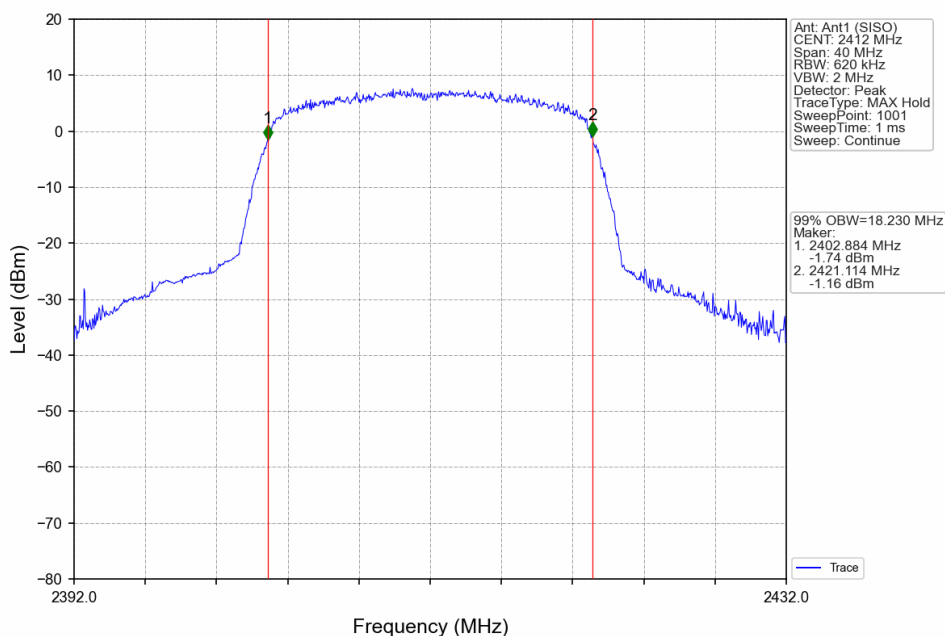
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



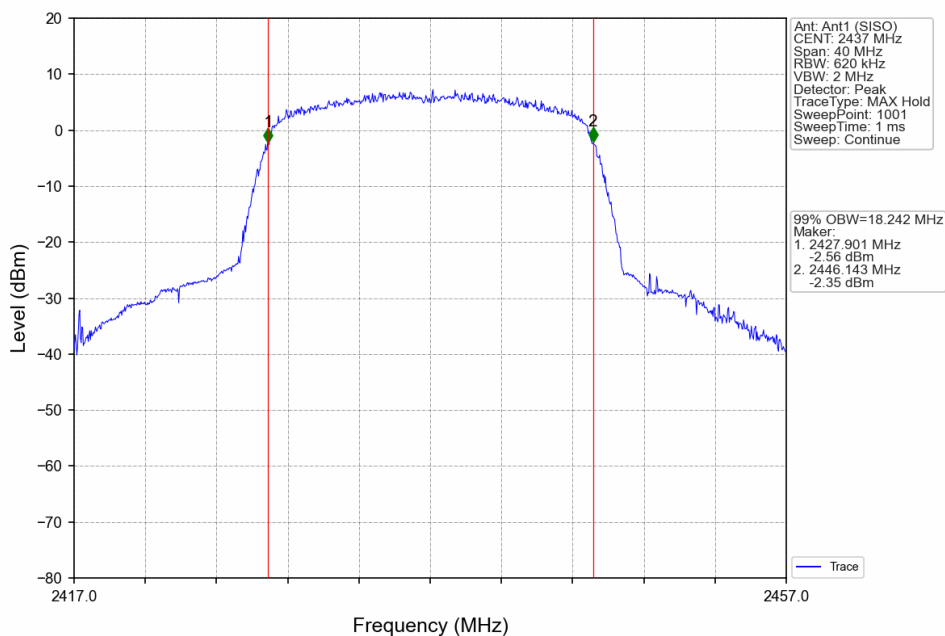
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



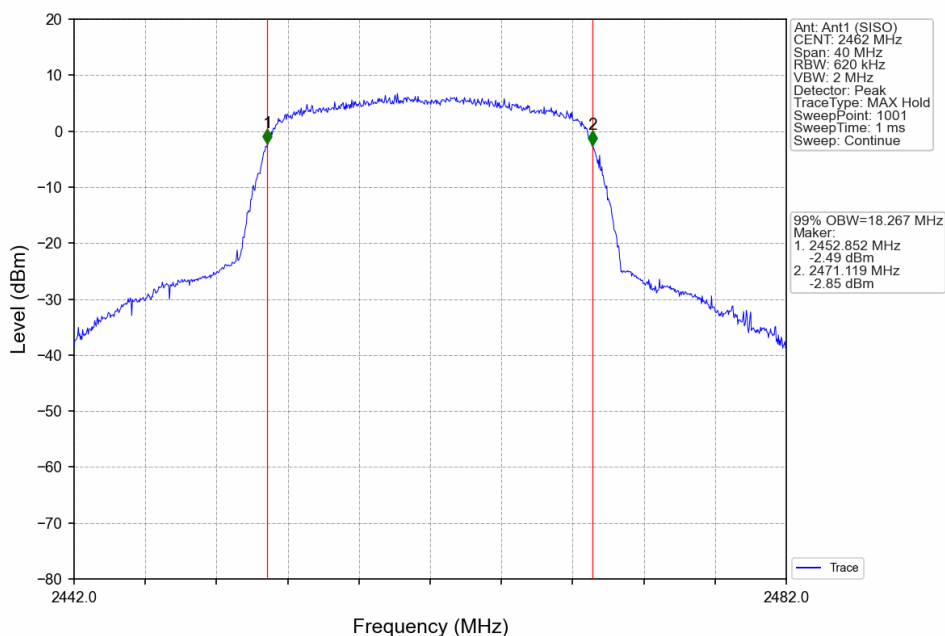
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



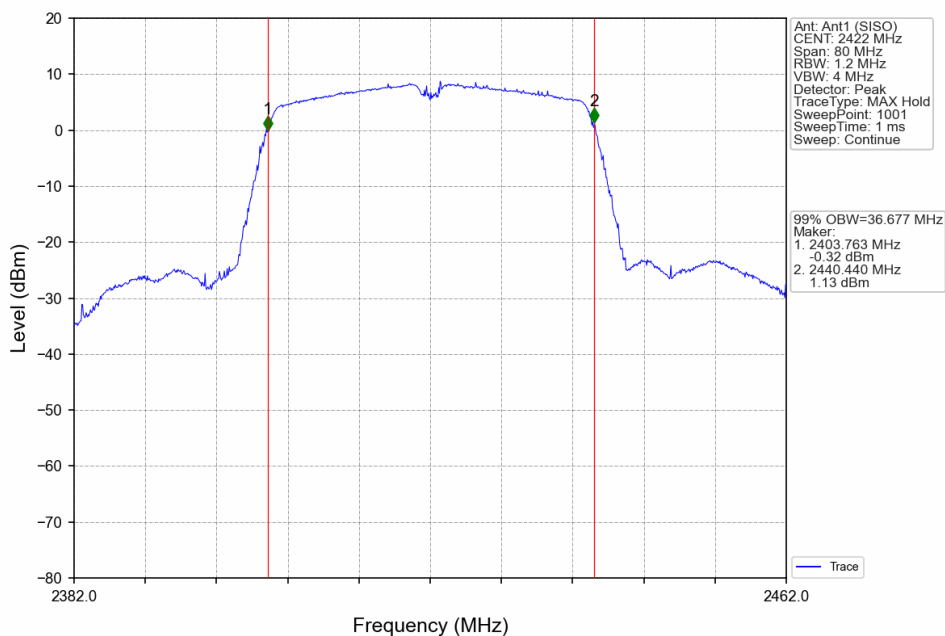
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



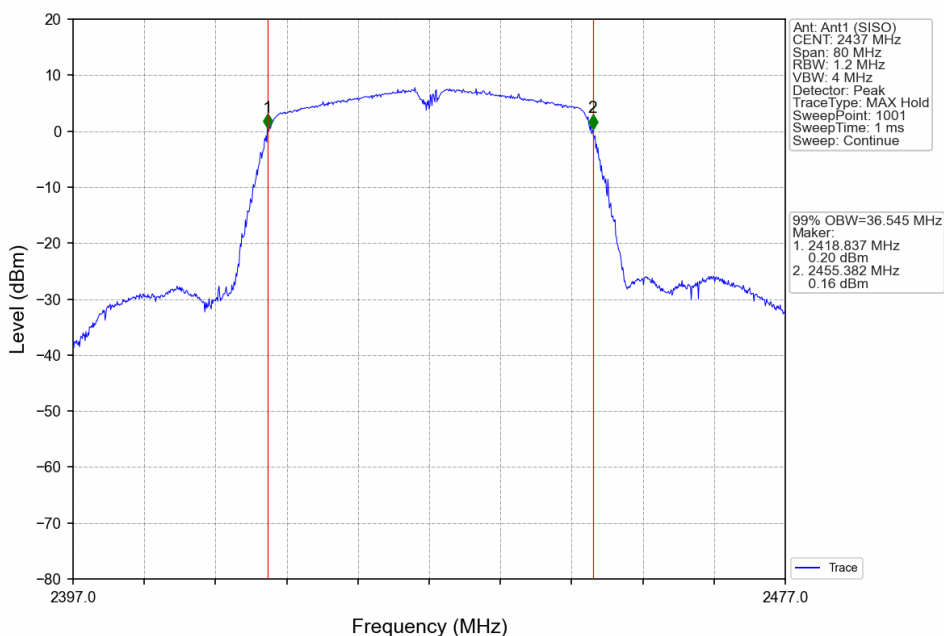
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



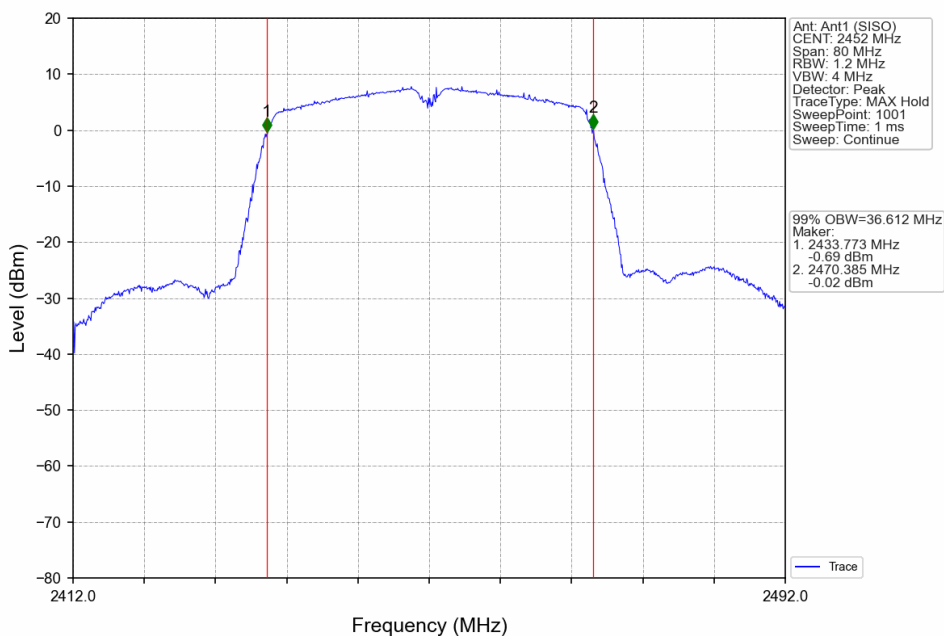
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (SISO)_NTNV

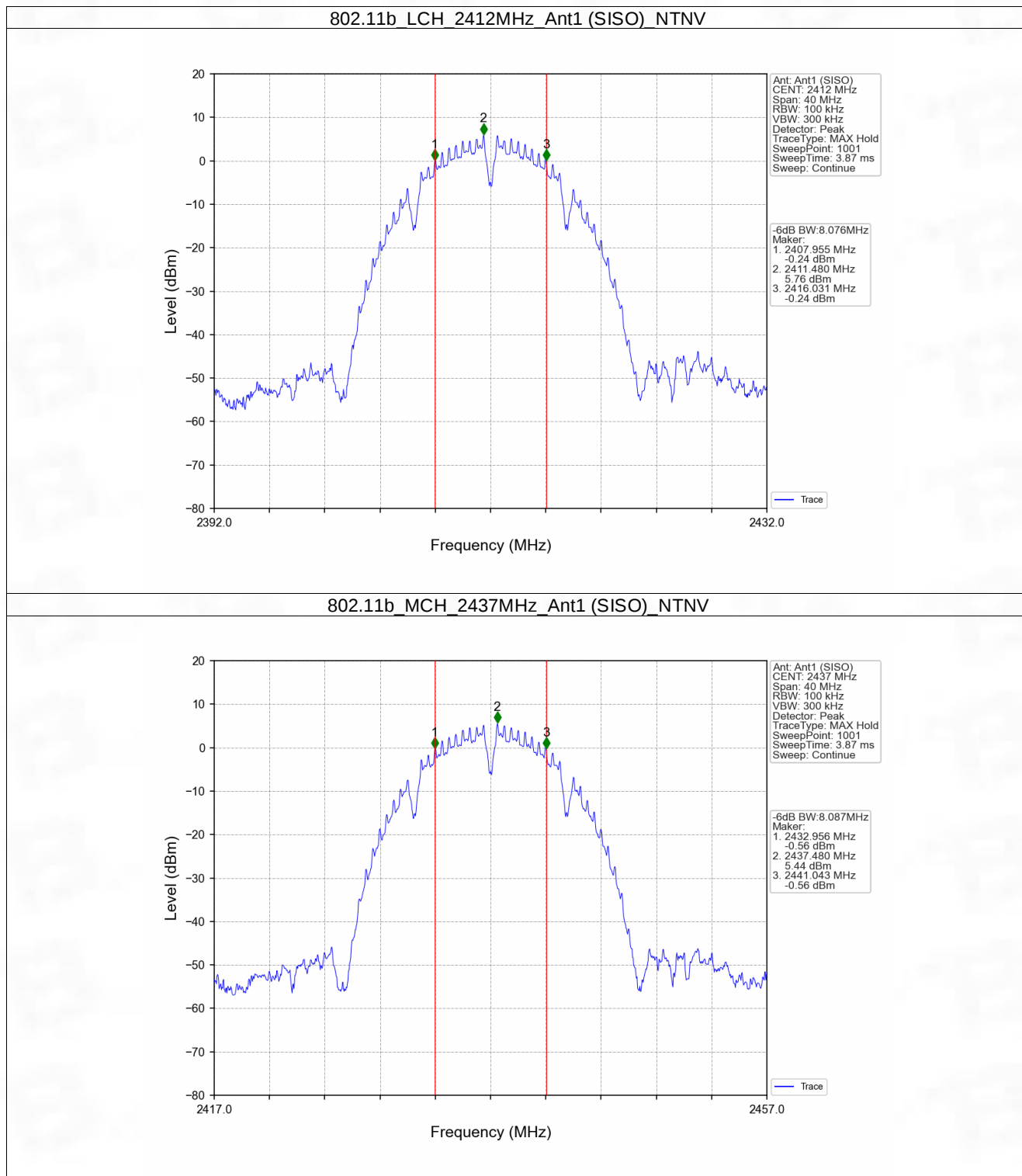


2.2 6dB BW

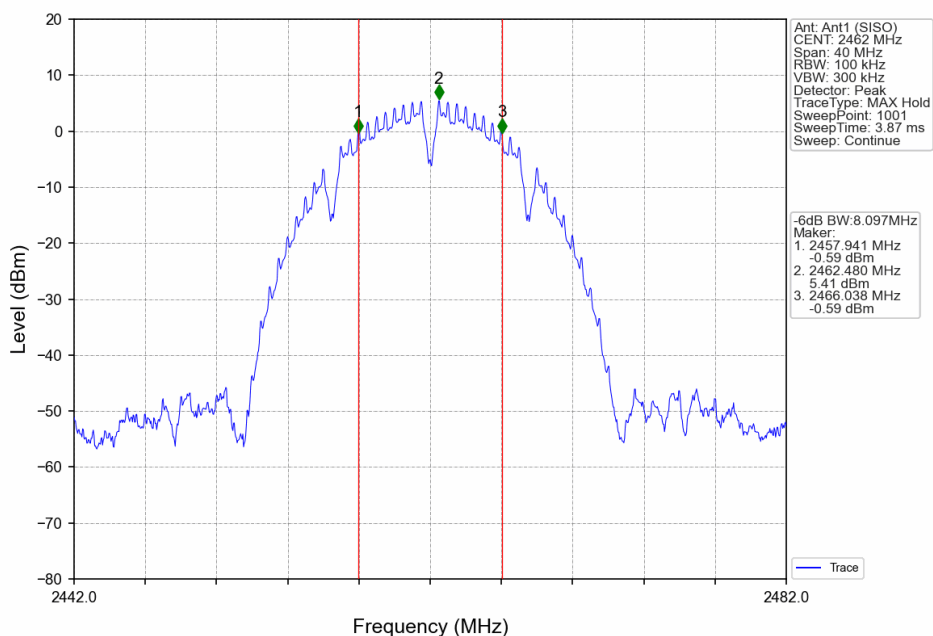
2.2.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	8.076	≥ 0.5	Pass
		2437	1	8.087	≥ 0.5	Pass
		2462	1	8.097	≥ 0.5	Pass
802.11g	SISO	2412	1	15.167	≥ 0.5	Pass
		2437	1	15.362	≥ 0.5	Pass
		2462	1	15.180	≥ 0.5	Pass
802.11n (HT20)	SISO	2412	1	15.171	≥ 0.5	Pass
		2437	1	15.165	≥ 0.5	Pass
		2462	1	15.175	≥ 0.5	Pass
802.11n (HT40)	SISO	2422	1	35.167	≥ 0.5	Pass
		2437	1	35.149	≥ 0.5	Pass
		2452	1	35.150	≥ 0.5	Pass

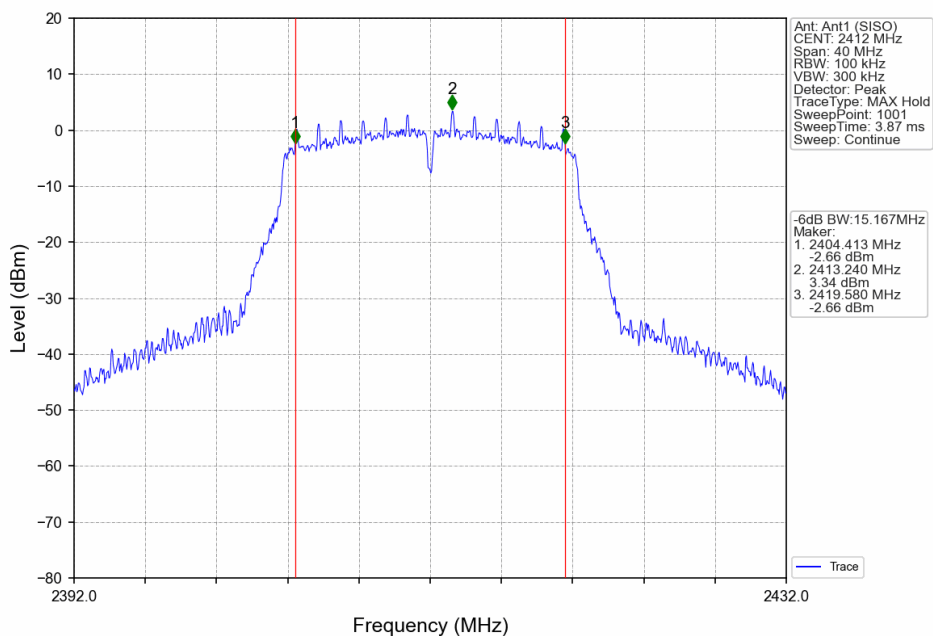
2.2.2 Test Graph



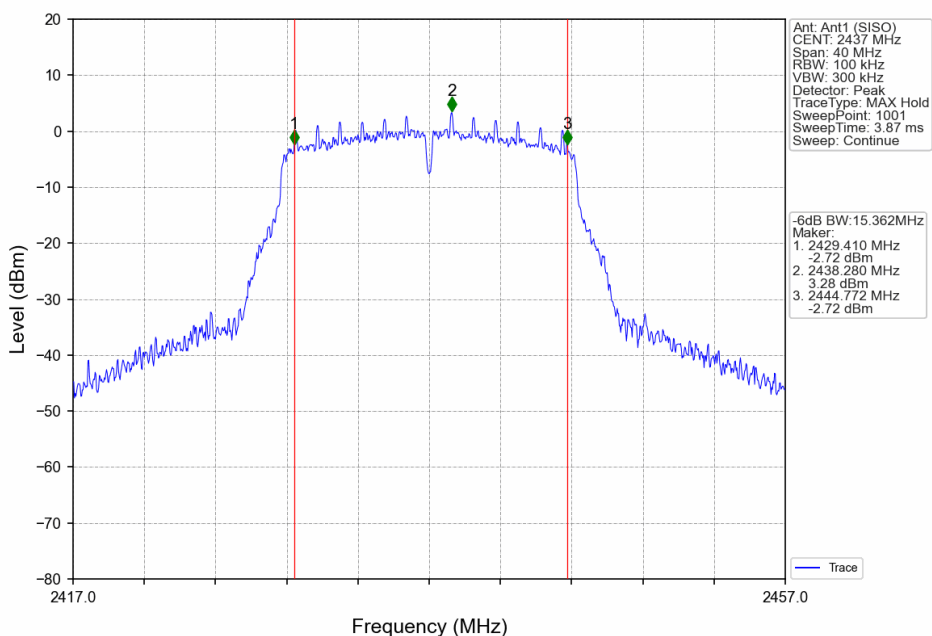
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



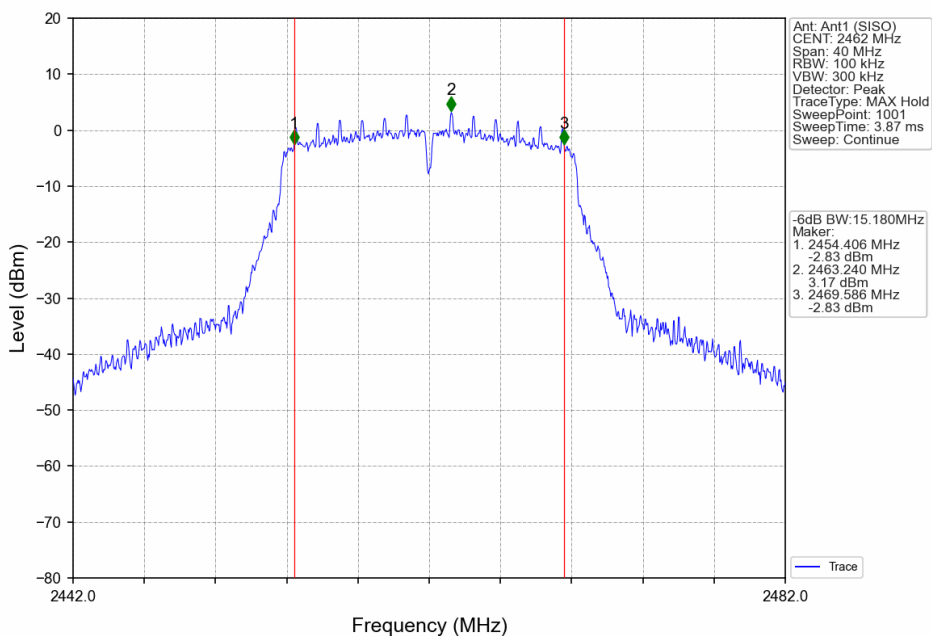
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



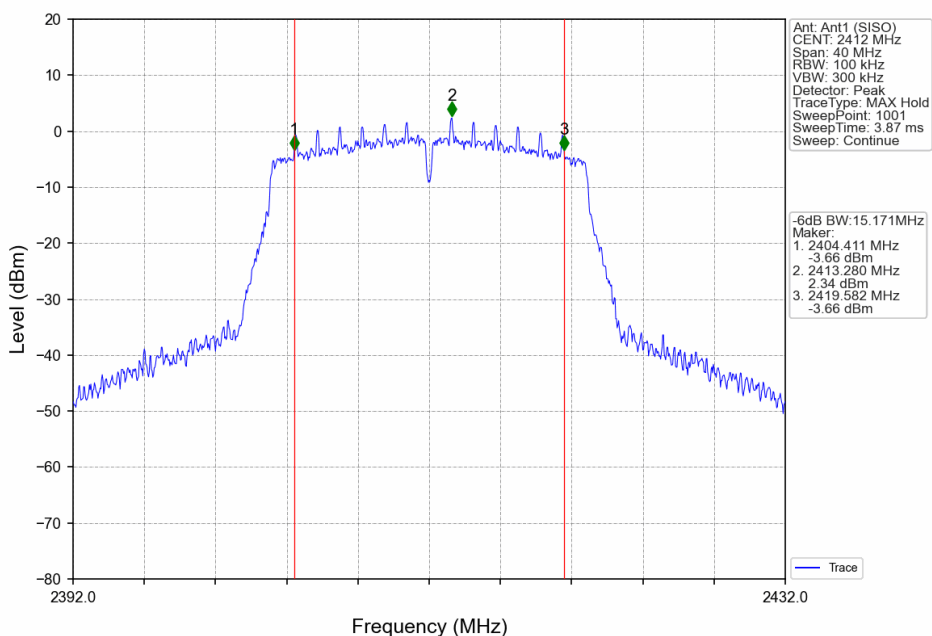
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



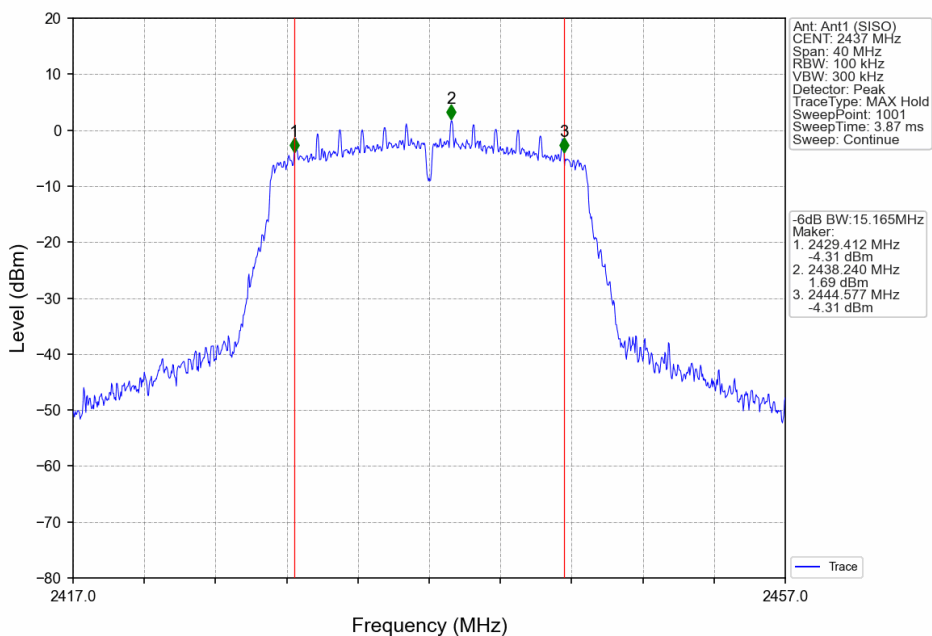
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



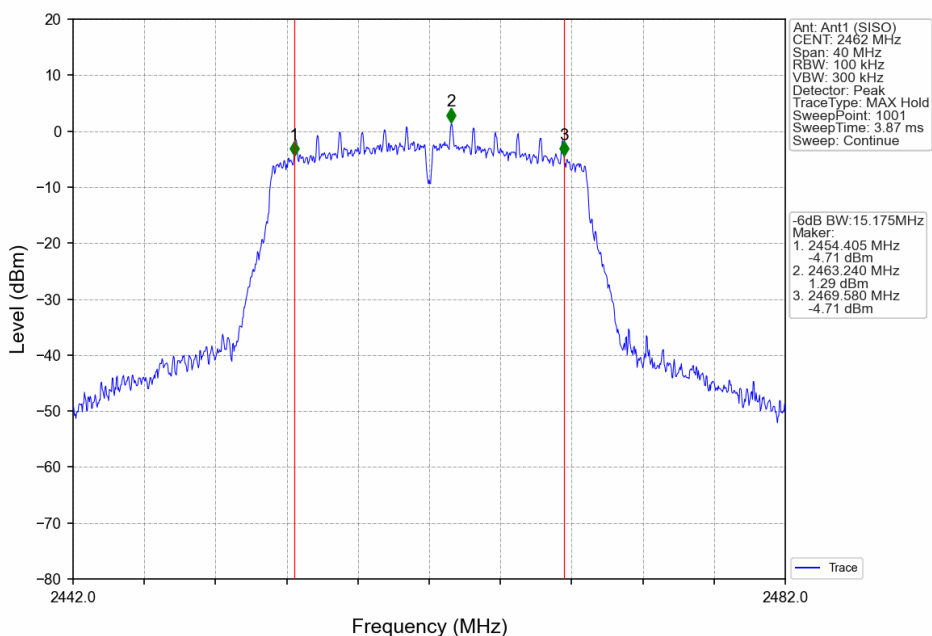
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



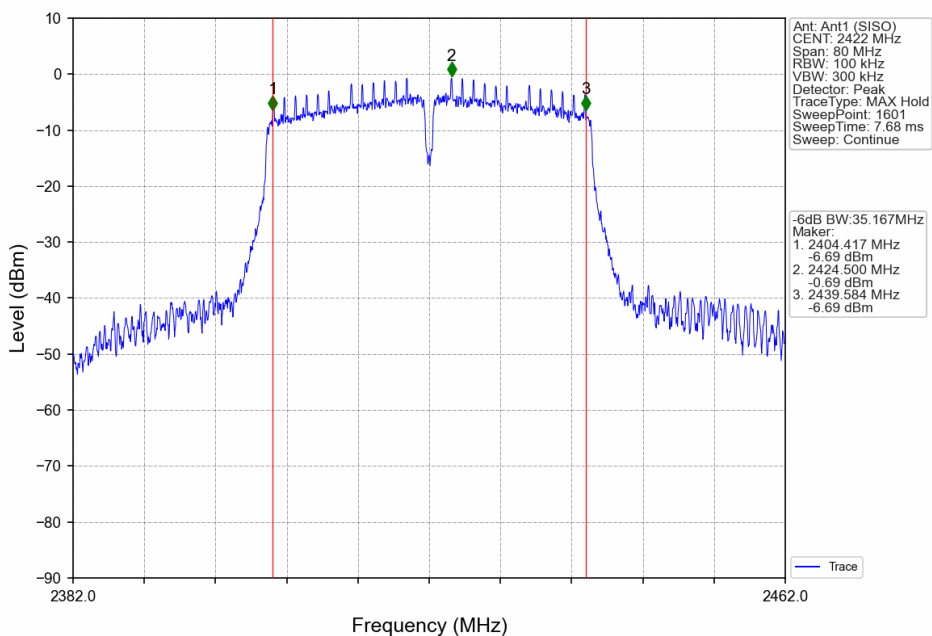
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



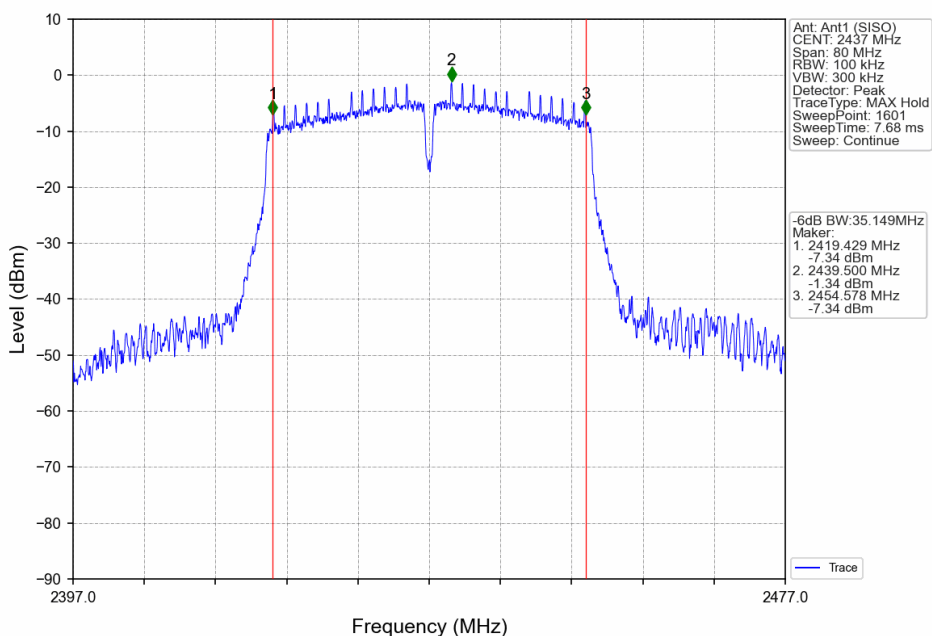
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



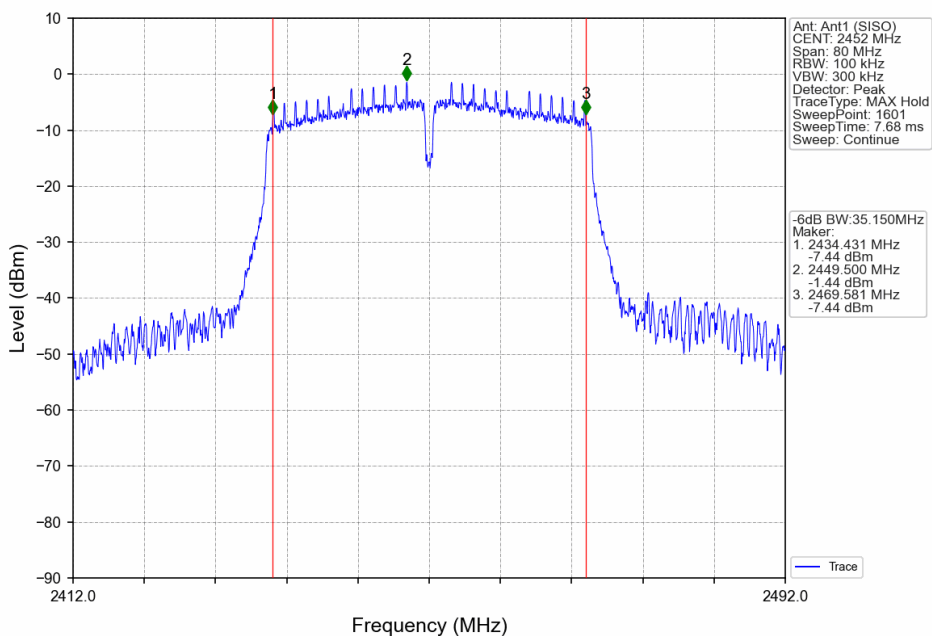
802.11n(HT40)_LCH_2422MHz_Ant1 (SISO)_NTNV



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	15.91	<=30	Pass
		2437	15.65	<=30	Pass
		2462	15.76	<=30	Pass
802.11g	SISO	2412	20.96	<=30	Pass
		2437	20.95	<=30	Pass
		2462	21.05	<=30	Pass
802.11n (HT20)	SISO	2412	19.79	<=30	Pass
		2437	19.13	<=30	Pass
		2462	18.83	<=30	Pass
802.11n (HT40)	SISO	2422	20.38	<=30	Pass
		2437	19.44	<=30	Pass
		2452	19.49	<=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	-4.54	<=8	Pass
		2437	-5.58	<=8	Pass
		2462	-3.84	<=8	Pass
802.11g	SISO	2412	-8.64	<=8	Pass
		2437	-7.70	<=8	Pass
		2462	-7.95	<=8	Pass
802.11n (HT20)	SISO	2412	-9.67	<=8	Pass
		2437	-9.36	<=8	Pass
		2462	-8.68	<=8	Pass
802.11n (HT40)	SISO	2422	-12.07	<=8	Pass
		2437	-12.68	<=8	Pass
		2452	-12.11	<=8	Pass

Note1: Antenna Gain: Ant1: 1.09dBi;