RF Test Report

For

Applicant Name:	**SHENZHEN AMS COMMUNICATIONS COMPANY LIMITED**
Address:	5F, Unit B, Building 1#, Hongfa Industrial Park, Lezhujiao, Jiuwei Community, Hangcheng Street, Baoan District, Shenzhen, China
EUT Name:	Mobile Phone
Brand Name:	MAZE SPEED, SOHO STYLE, LUSH MINT, TRUE SLIM, LIST MINT, MINT MIST
Model Number:	M1586K
Series Model Number:	Refer to section 2

Issued By

Company Name:	**BTF Testing Lab (Shenzhen) Co., Ltd.**
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Report Number:	BTF230801R00403
Test Standards:	47 CFR Part 15.247
Test Conclusion:	Pass
FCC ID:	2A55S-M1586K
Test Date:	2023-08-01 to 2023-08-15
Date of Issue:	2023-08-16
Prepared By:	Chris Liu / Project Engineer
Date:	2023-08-16
Approved By:	Ryan.CJ / EMC Manager
Date:	2023-08-16

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Revision History		
Version	Issue Date	Revisions Content
R_V0	2023-08-16	Original
Note: Once the revision has been made, then previous versions reports are invalid.		

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1 Introduction

1.1 Identification of Testing Laboratory

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

1.2 Identification of the Responsible Testing Location

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.
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(6) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

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2 Product Information

2.1 Application Information

Company Name:	SHENZHEN AMS COMMUNICATIONS COMPANY LIMITED
Address:	5F, Unit B, Building 1#, Hongfa Industrial Park, Lezhujiao, Jiuwei Community, Hangcheng Street, Baoan District, Shenzhen, China

2.2 Manufacturer Information

Company Name:	SHENZHEN AMS COMMUNICATIONS COMPANY LIMITED
Address:	5F, Unit B, Building 1#, Hongfa Industrial Park, Lezhujiao, Jiuwei Community, Hangcheng Street, Baoan District, Shenzhen, China

2.3 Factory Information

Company Name:	SHENZHEN AMS COMMUNICATIONS COMPANY LIMITED
Address:	5F, Unit B, Building 1#, Hongfa Industrial Park, Lezhujiao, Jiuwei Community, Hangcheng Street, Baoan District, Shenzhen, China

2.4 General Description of Equipment under Test (EUT)

EUT Name:	Mobile Phone
Test Model Number:	M1586K
Series Model Number:	S1586K, L1586K, T1586K, LT58K, MT58K
Description of Model name differentiation:	Only the model name and brand name are different, others are the same.
Hardware Version:	Q112_MB_V2.0
Software and Firmware Version	MAZE SPEED_M1582C_V1.0_20220225

2.5 Technical Information

Power Supply:	DC 3.7V from Battery
Power Adaptor:	Input: 100-240V AC. 50/60Hz Output: 5V 1000mA
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz;
Number of Channels:	802.11b/g/n(HT20): 11 Channels;
Modulation Type:	802.11b: DSSS(CCK, DQPSK, DBPSK); 802.11g: OFDM(BPSK, QPSK, 16QAM, 64QAM); 802.11n(HT20): OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna Type:	PIFA ANT
Antenna Gain#:	1.37 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.	

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3 Summary of Test Results

3.1 Test Standards

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

3.2 Uncertainty of Test

Item	Measurement Uncertainty
Conducted Emission (150 kHz-30 MHz)	±2.64dB
Occupied Bandwidth	±69kHz
Transmitter Power, Conducted	±0.87dB
Conducted Spurious Emissions	±0.95dB
Radiated Spurious Emissions (above 1GHz)	1-6GHz: ±3.94dB 6-18GHz: ±4.16dB
Radiated Spurious Emissions (30M - 1GHz)	±4.12dB
The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3.3 Summary of Test Result

Item	Standard	Requirement	Result
Antenna requirement	47 CFR Part 15.247	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

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4 Test Configuration

4.1 Test Equipment List

Conducted Emission at AC power line					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Pulse Limiter	SCHWARZBECK	VTSD 9561-F	00953	2022-11-24	2023-11-23
Coaxial Switcher	SCHWARZBECK	CX210	CX210	2022-11-24	2023-11-23
V-LISN	SCHWARZBECK	NSLK 8127	01073	2022-11-24	2023-11-23
LISN	AFJ	LS16/110VAC	16010020076	2023-02-23	2024-02-22
EMI Receiver	ROHDE&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 COMMNUNICATION 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 COMMNUNICATION 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	/	/	/

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RF Control Unit	Techy	TR1029-1	/	2022-11-24	2023-11-23
RF Sensor Unit	Techy	TR1029-2	/	2022-11-24	2023-11-23
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2022-11-24	2023-11-23
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2022-11-24	2023-11-23
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022-11-24	2023-11-23
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022-11-24	2023-11-23

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

Band edge emissions (Radiated)					
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-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

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POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Broadband Preamplilifier	SCHWARZBECK	BBV9718D	00008	2023-03-24	2024-03-23
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ_EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
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
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 Preamplilifier	SCHWARZBECK	BBV9718D	00008	2023-03-24	2024-03-23
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ_EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
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
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

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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 Preamplilifier	SCHWARZBECK	BBV9718D	00008	2023-03-24	2024-03-23
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ_EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2021-11-28	2023-11-27

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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.

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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.

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 μH/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:	

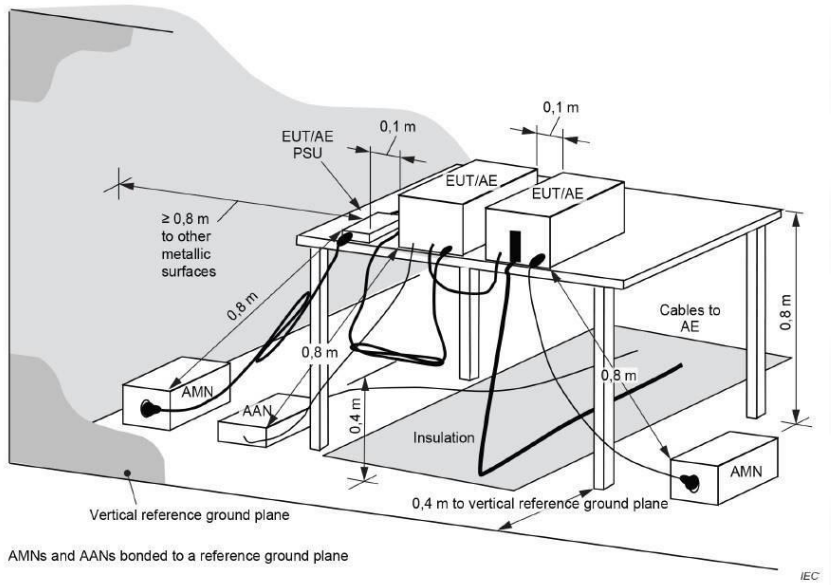
Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

6.1.1 E.U.T. Operation:

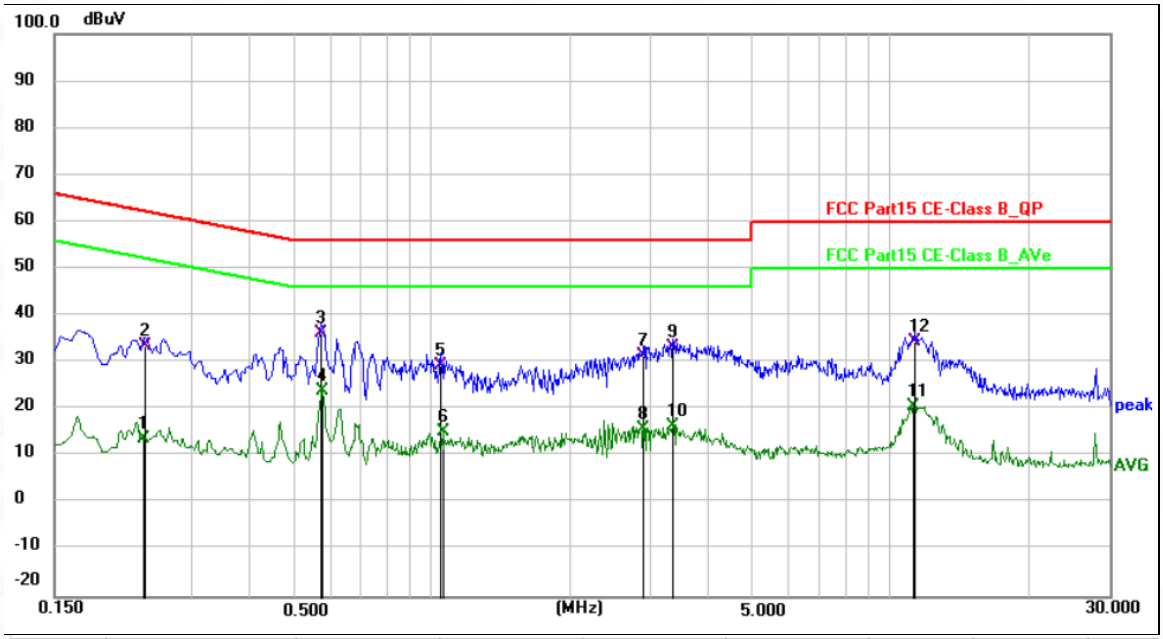
Operating Environment:	
Temperature:	24.1 °C
Humidity:	53.8 %
Atmospheric Pressure:	1010 mbar

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
1	0.235300	3.63	10.20	13.83	52.26	-38.43	AVG	P
2	0.235500	23.21	10.20	33.41	62.25	-28.84	QP	P
3 *	0.573000	26.10	10.26	36.36	56.00	-19.64	QP	P
4	0.577500	13.57	10.25	23.82	46.00	-22.18	AVG	P
5	1.045500	19.12	10.25	29.37	56.00	-26.63	QP	P
6	1.059000	5.04	10.25	15.29	46.00	-30.71	AVG	P
7	2.890500	21.28	10.28	31.56	56.00	-24.44	QP	P
8	2.890500	5.68	10.28	15.96	46.00	-30.04	AVG	P
9	3.358500	22.83	10.28	33.11	56.00	-22.89	QP	P
10	3.358500	6.21	10.28	16.49	46.00	-29.51	AVG	P
11	11.220000	10.27	10.27	20.54	50.00	-29.46	AVG	P
12	11.283000	24.28	10.27	34.55	60.00	-25.45	QP	P

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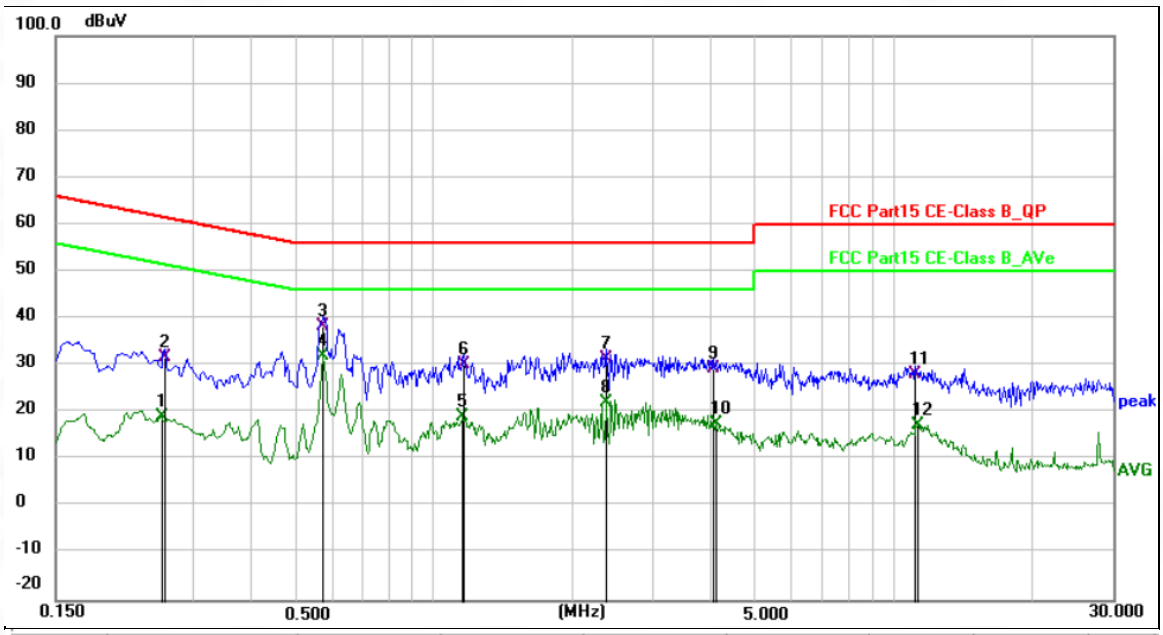
TM1 / Line: Neutral / Band: 2.4G / BW: 20 / CH: M



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.253500	9.09	10.16	19.25	51.64	-32.39	AVG	P
2	0.258000	21.50	10.16	31.66	61.50	-29.84	QP	P
3	0.573000	28.22	10.26	38.48	56.00	-17.52	QP	P
4 *	0.573000	21.67	10.26	31.93	46.00	-14.07	AVG	P
5	1.153500	8.76	10.27	19.03	46.00	-26.97	AVG	P
6	1.162500	19.95	10.27	30.22	56.00	-25.78	QP	P
7	2.368500	21.17	10.27	31.44	56.00	-24.56	QP	P
8	2.368500	11.96	10.27	22.23	46.00	-23.77	AVG	P
9	4.060500	19.28	10.22	29.50	56.00	-26.50	QP	P
10	4.105500	7.41	10.22	17.63	46.00	-28.37	AVG	P
11	11.103000	17.76	10.29	28.05	60.00	-31.95	QP	P
12	11.269500	7.06	10.28	17.34	50.00	-32.66	AVG	P

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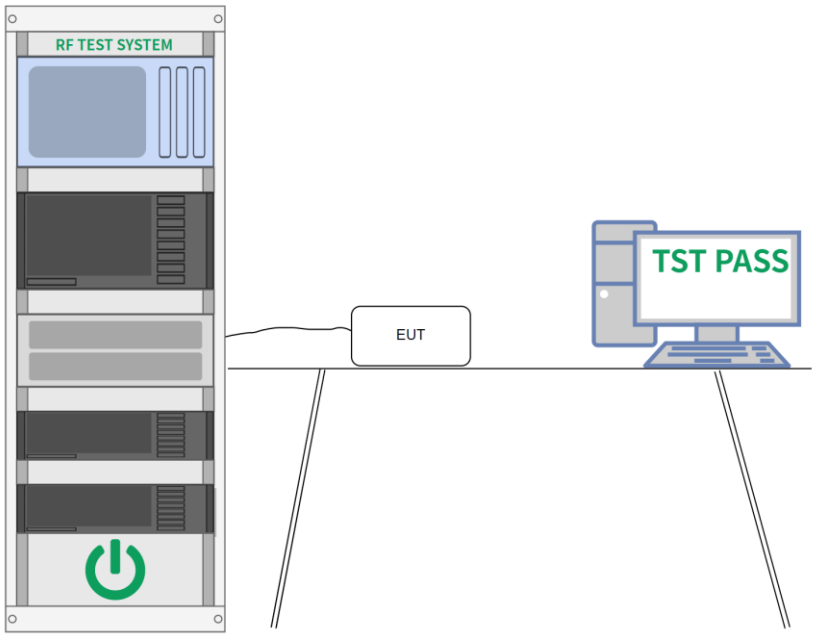
6.2 Occupied Bandwidth

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 >= [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:	24.8 °C
Humidity:	51.9 %
Atmospheric Pressure:	1010 mbar

6.2.2 Test Setup Diagram:



6.2.3 Test Data:

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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:	24.8 °C
Humidity:	51.9 %
Atmospheric Pressure:	1010 mbar

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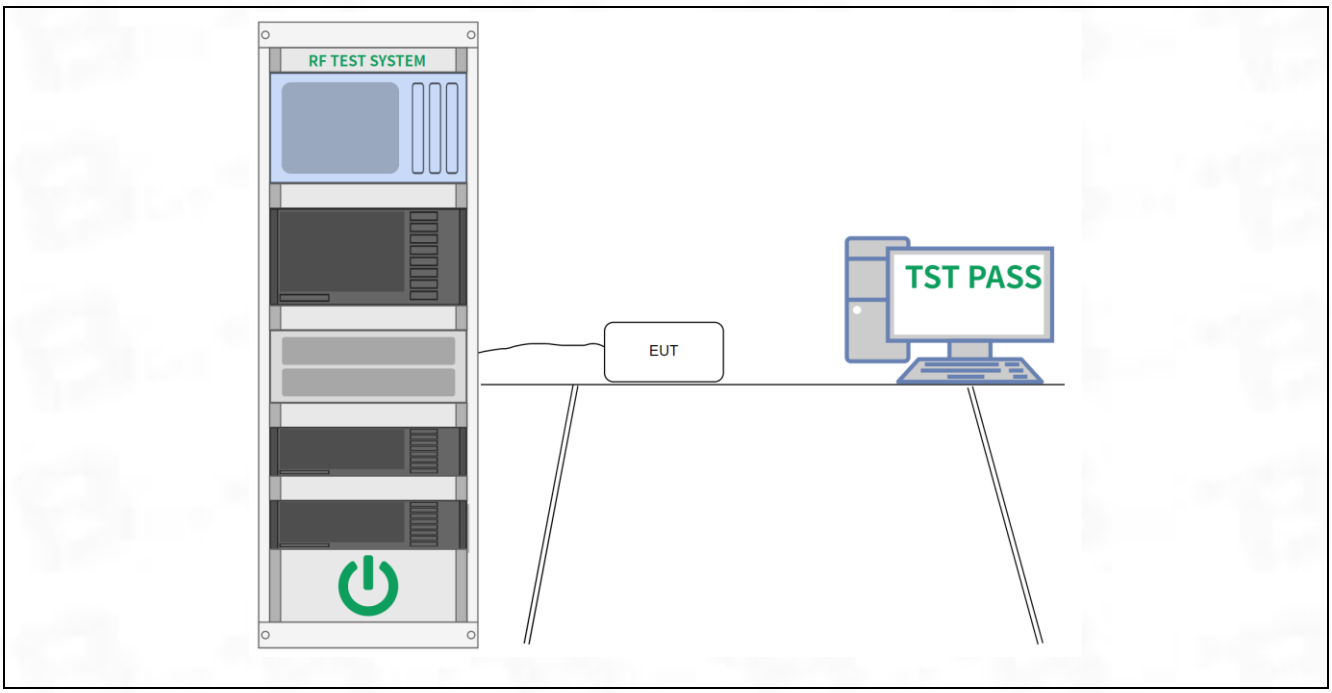
6.3.2 Test Setup Diagram:



6.3.3 Test Data:

Please Refer to Appendix for Details.

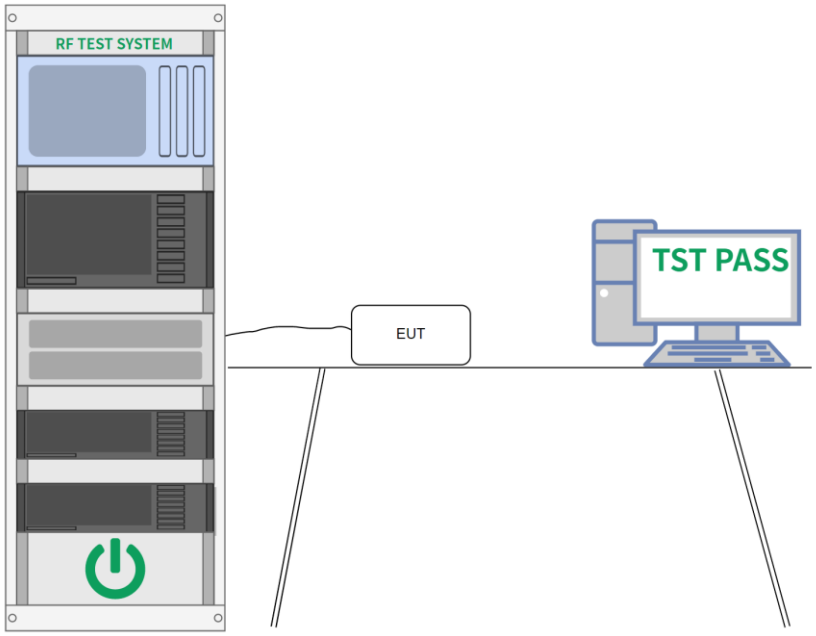
6.4 Power Spectral Density

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:	24.8 °C
Humidity:	51.9 %
Atmospheric Pressure:	1010 mbar

6.4.2 Test Setup Diagram:



6.4.3 Test Data:

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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:	24.8 °C
Humidity:	51.9 %
Atmospheric Pressure:	1010 mbar

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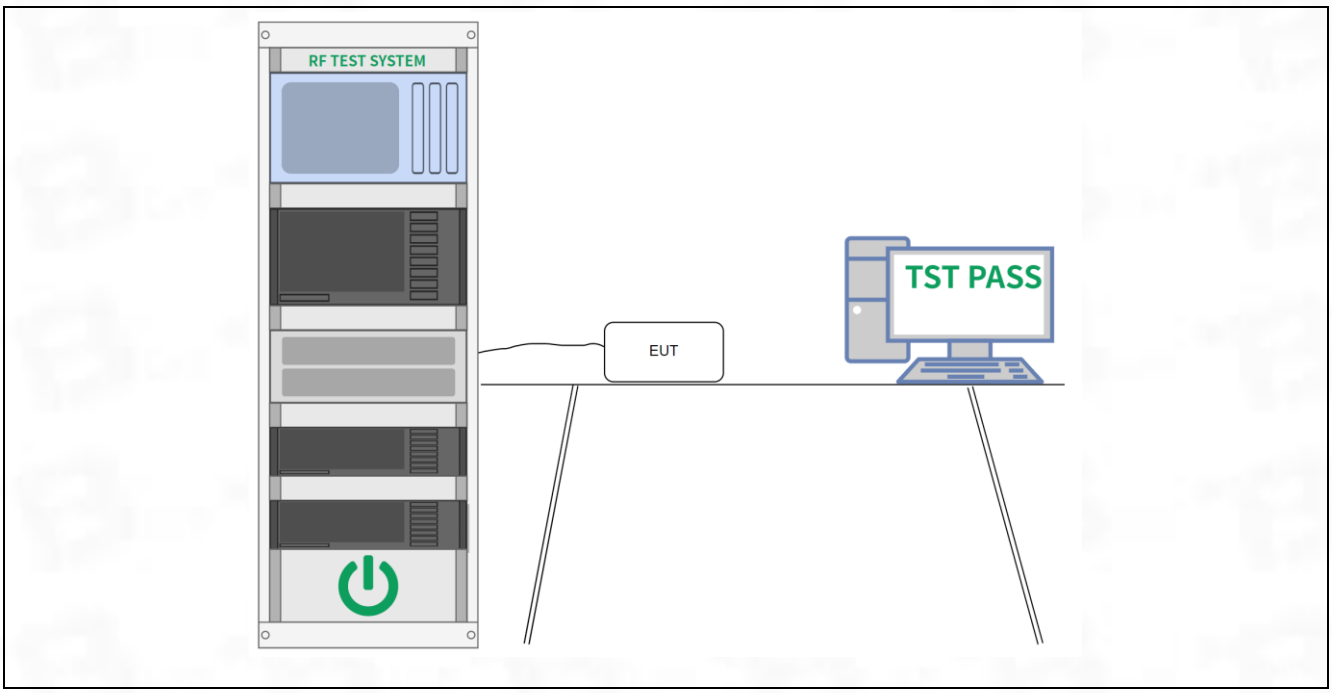
6.5.2 Test Setup Diagram:



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:	25.9 °C
Humidity:	52.5 %
Atmospheric Pressure:	1010 mbar

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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	66.79	-26.48	40.31	74.00	-33.69	peak	P
2	2390.000	66.27	-26.44	39.83	74.00	-34.17	peak	P
3 *	2400.000	75.11	-26.44	48.67	74.00	-25.33	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	66.96	-26.48	40.48	74.00	-33.52	peak	P
2	2390.000	67.26	-26.44	40.82	74.00	-33.18	peak	P
3 *	2400.000	71.39	-26.44	44.95	74.00	-29.05	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	68.97	-26.41	42.56	74.00	-31.44	peak	P
2	2500.000	66.57	-26.40	40.17	74.00	-33.83	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	67.56	-26.41	41.15	74.00	-32.85	peak	P
2	2500.000	66.44	-26.40	40.04	74.00	-33.96	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	66.05	-26.48	39.57	74.00	-34.43	peak	P
2	2390.000	70.59	-26.44	44.15	74.00	-29.85	peak	P
3 *	2400.000	78.33	-26.44	51.89	74.00	-22.11	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	43.02	-1.68	41.34	74.00	-32.66	peak	P
2	2390.000	44.98	-1.64	43.34	74.00	-30.66	peak	P
3 *	2400.000	53.74	-1.64	52.10	74.00	-21.90	peak	P

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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	77.86	-26.41	51.45	74.00	-22.55	peak	P
2	2500.000	67.15	-26.40	40.75	74.00	-33.25	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	75.91	-26.41	49.50	74.00	-24.50	peak	P
2	2500.000	66.15	-26.40	39.75	74.00	-34.25	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	66.06	-26.48	39.58	74.00	-34.42	peak	P
2	2390.000	70.47	-26.44	44.03	74.00	-29.97	peak	P
3 *	2400.000	79.07	-26.44	52.63	74.00	-21.37	peak	P

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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	2310.000	66.05	-26.48	39.57	74.00	-34.43	peak	P
2	2390.000	69.15	-26.44	42.71	74.00	-31.29	peak	P
3 *	2400.000	76.03	-26.44	49.59	74.00	-24.41	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	74.19	-26.41	47.78	74.00	-26.22	peak	P
2	2500.000	66.77	-26.40	40.37	74.00	-33.63	peak	P

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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	2483.500	79.28	-26.41	52.87	74.00	-21.13	peak	P
2	2500.000	66.39	-26.40	39.99	74.00	-34.01	peak	P

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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:	24.1 °C
Humidity:	54 %
Atmospheric Pressure:	1010 mbar

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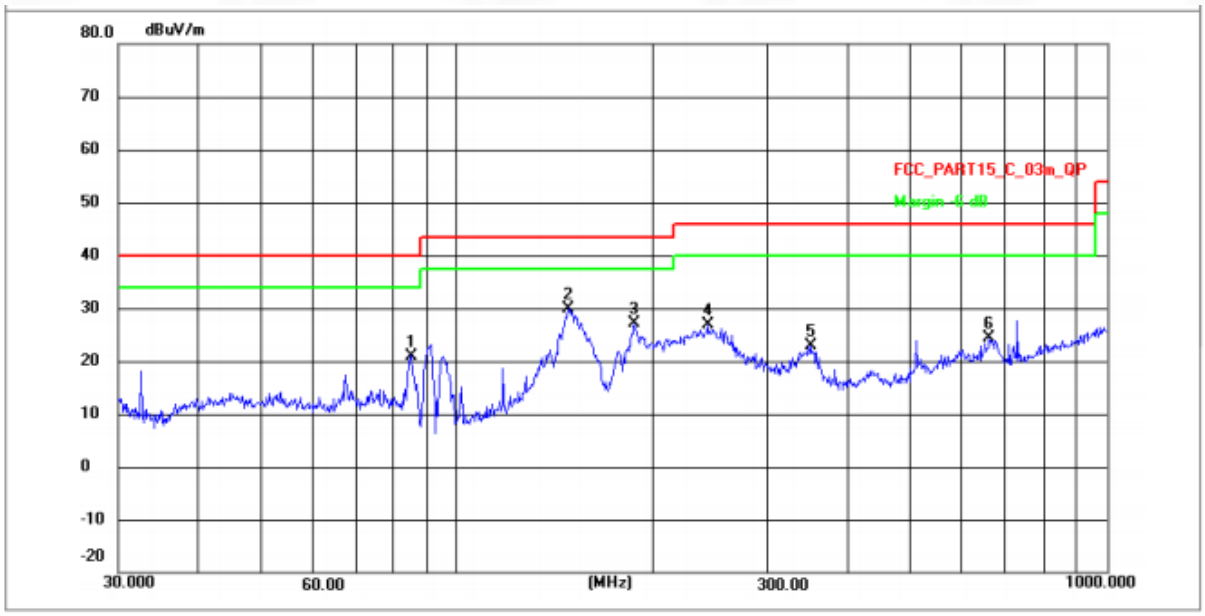
6.7.2 Test Data:

Note: All the mode have been tested, and only the worst mode are in the report
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	84.9995	48.70	-27.86	20.84	40.00	-19.16	peak	P
2 *	148.4410	57.08	-27.26	29.82	43.50	-13.68	peak	P
3	187.4241	54.10	-27.08	27.02	43.50	-16.48	peak	P
4	242.9509	53.63	-26.75	26.88	46.00	-19.12	peak	P
5	349.8628	49.12	-26.16	22.96	46.00	-23.04	peak	P
6	661.1505	49.41	-24.92	24.49	46.00	-21.51	peak	P

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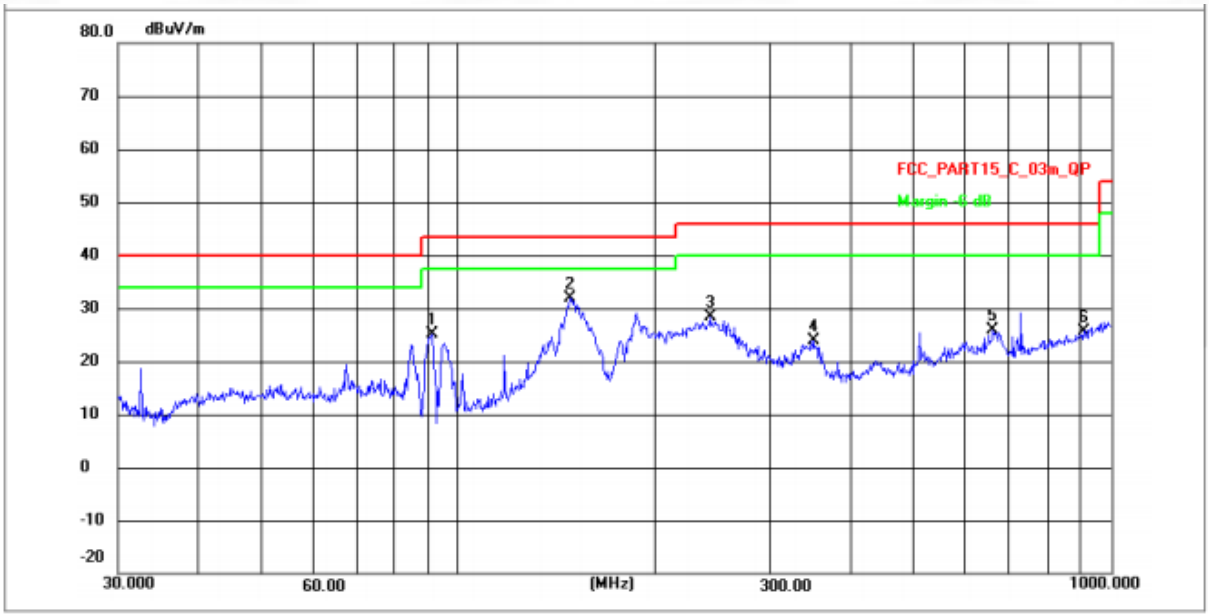
TM1 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	91.1746	53.05	-27.82	25.23	43.50	-18.27	peak	P
2 *	148.4410	59.08	-27.26	31.82	43.50	-11.68	peak	P
3	242.9509	55.13	-26.75	28.38	46.00	-17.62	peak	P
4	349.8628	50.12	-26.16	23.96	46.00	-22.04	peak	P
5	661.1505	50.91	-24.92	25.99	46.00	-20.01	peak	P
6	906.4824	50.05	-24.39	25.66	46.00	-20.34	peak	P

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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:	24.1 °C
Humidity:	54 %
Atmospheric Pressure:	1010 mbar

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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	2951.886	70.87	-30.95	39.92	74.00	-34.08	peak	P
2	4902.300	74.91	-32.81	42.10	74.00	-31.90	peak	P
3	6305.712	76.69	-31.82	44.87	74.00	-29.13	peak	P
4	7642.048	79.24	-33.65	45.59	74.00	-28.41	peak	P
5	11256.834	81.87	-34.63	47.24	74.00	-26.76	peak	P
6 *	14218.123	83.79	-34.60	49.19	74.00	-24.81	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	2933.175	70.90	-30.97	39.93	74.00	-34.07	peak	P
2	4354.454	73.30	-33.67	39.63	74.00	-34.37	peak	P
3	5517.477	75.53	-32.95	42.58	74.00	-31.42	peak	P
4	9176.319	81.77	-33.63	48.14	74.00	-25.86	peak	P
5 *	11995.884	83.61	-34.20	49.41	74.00	-24.59	peak	P
6	15046.851	83.48	-34.13	49.35	74.00	-24.65	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	3029.682	71.27	-31.04	40.23	74.00	-33.77	peak	P
2	4874.043	81.68	-32.88	48.80	74.00	-25.20	peak	P
3	6636.704	77.92	-32.26	45.66	74.00	-28.34	peak	P
4	9073.460	81.68	-33.79	47.89	74.00	-26.11	peak	P
5	12319.150	82.74	-33.98	48.76	74.00	-25.24	peak	P
6 *	14350.239	85.71	-34.79	50.92	74.00	-23.08	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	2807.099	69.42	-31.09	38.33	74.00	-35.67	peak	P
2	3472.529	73.29	-33.17	40.12	74.00	-33.88	peak	P
3	4874.043	78.47	-32.88	45.59	74.00	-28.41	peak	P
4	6673.251	78.03	-32.35	45.68	74.00	-28.32	peak	P
5	9538.699	81.79	-33.26	48.53	74.00	-25.47	peak	P
6 *	13737.399	85.05	-34.45	50.60	74.00	-23.40	peak	P

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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	3486.609	72.31	-33.23	39.08	74.00	-34.92	peak	P
2	4925.024	76.60	-32.76	43.84	74.00	-30.16	peak	P
3	6661.688	77.69	-32.32	45.37	74.00	-28.63	peak	P
4	9549.733	81.31	-33.29	48.02	74.00	-25.98	peak	P
5	11975.098	83.98	-34.22	49.76	74.00	-24.24	peak	P
6 *	13458.358	85.75	-34.62	51.13	74.00	-22.87	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	3433.605	71.68	-32.98	38.70	74.00	-35.30	peak	P
2	4925.024	75.33	-32.76	42.57	74.00	-31.43	peak	P
3	6692.567	77.94	-32.40	45.54	74.00	-28.46	peak	P
4	9921.123	82.88	-34.37	48.51	74.00	-25.49	peak	P
5 *	12347.669	83.30	-33.95	49.35	74.00	-24.65	peak	P
6	14677.438	83.09	-34.65	48.44	74.00	-25.56	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	3076.451	71.01	-31.26	39.75	74.00	-34.25	peak	P
2	4038.044	71.92	-33.61	38.31	74.00	-35.69	peak	P
3	4909.390	75.61	-32.80	42.81	74.00	-31.19	peak	P
4	6655.914	78.54	-32.31	46.23	74.00	-27.77	peak	P
5	9533.186	81.87	-33.25	48.62	74.00	-25.38	peak	P
6 *	14022.226	84.53	-34.33	50.20	74.00	-23.80	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	2943.366	70.28	-30.96	39.32	74.00	-34.68	peak	P
2	4144.466	70.95	-33.63	37.32	74.00	-36.68	peak	P
3	5200.049	75.97	-32.76	43.21	74.00	-30.79	peak	P
4	6655.914	78.07	-32.31	45.76	74.00	-28.24	peak	P
5	9533.186	81.17	-33.25	47.92	74.00	-26.08	peak	P
6 *	13450.581	84.62	-34.63	49.99	74.00	-24.01	peak	P

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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	2899.458	70.46	-31.00	39.46	74.00	-34.54	peak	P
2	3403.960	72.05	-32.84	39.21	74.00	-34.79	peak	P
3	4878.271	77.97	-32.87	45.10	74.00	-28.90	peak	P
4	6307.535	77.72	-31.82	45.90	74.00	-28.10	peak	P
5	9544.214	81.34	-33.27	48.07	74.00	-25.93	peak	P
6 *	11975.098	83.53	-34.22	49.31	74.00	-24.69	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	2981.038	70.13	-30.92	39.21	74.00	-34.79	peak	P
2	4876.861	75.76	-32.87	42.89	74.00	-31.11	peak	P
3	6663.614	77.93	-32.32	45.61	74.00	-28.39	peak	P
4	9555.255	82.01	-33.31	48.70	74.00	-25.30	peak	P
5	12301.360	83.30	-33.99	49.31	74.00	-24.69	peak	P
6 *	15345.515	84.52	-35.00	49.52	74.00	-24.48	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	2981.900	70.34	-30.92	39.42	74.00	-34.58	peak	P
2	4876.861	75.76	-32.87	42.89	74.00	-31.11	peak	P
3	6331.280	77.46	-31.83	45.63	74.00	-28.37	peak	P
4	9555.255	82.01	-33.31	48.70	74.00	-25.30	peak	P
5	11995.884	83.70	-34.20	49.50	74.00	-24.50	peak	P
6 *	13769.201	85.50	-34.44	51.06	74.00	-22.94	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	3451.515	72.26	-33.07	39.19	74.00	-34.81	peak	P
2	5201.552	75.28	-32.76	42.52	74.00	-31.48	peak	P
3	6661.688	79.02	-32.32	46.70	74.00	-27.30	peak	P
4	9555.255	81.82	-33.31	48.51	74.00	-25.49	peak	P
5	11964.719	83.39	-34.23	49.16	74.00	-24.84	peak	P
6 *	13442.808	85.68	-34.63	51.05	74.00	-22.95	peak	P

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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	3434.597	72.53	-32.98	39.55	74.00	-34.45	peak	P
2	4943.564	75.99	-32.72	43.27	74.00	-30.73	peak	P
3	6342.269	77.38	-31.84	45.54	74.00	-28.46	peak	P
4	9569.074	82.40	-33.35	49.05	74.00	-24.95	peak	P
5 *	13431.156	86.53	-34.64	51.89	74.00	-22.11	peak	P
6	16677.591	83.06	-32.65	50.41	74.00	-23.59	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	2945.068	71.06	-30.95	40.11	74.00	-33.89	peak	P
2	4375.903	74.75	-33.68	41.07	74.00	-32.93	peak	P
3	5815.492	75.65	-32.18	43.47	74.00	-30.53	peak	P
4	6987.089	76.60	-33.17	43.43	74.00	-30.57	peak	P
5	9566.309	81.28	-33.34	47.94	74.00	-26.06	peak	P
6 *	13709.633	84.23	-34.47	49.76	74.00	-24.24	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	3545.552	72.99	-33.33	39.66	74.00	-34.34	peak	P
2	4869.818	80.52	-32.89	47.63	74.00	-26.37	peak	P
3	7265.115	79.12	-33.28	45.84	74.00	-28.16	peak	P
4	9250.884	80.81	-33.53	47.28	74.00	-26.72	peak	P
5	11450.445	81.85	-34.65	47.20	74.00	-26.80	peak	P
6 *	13993.884	83.12	-34.31	48.81	74.00	-25.19	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	3495.691	72.47	-33.28	39.19	74.00	-34.81	peak	P
2	5185.041	75.61	-32.75	42.86	74.00	-31.14	peak	P
3	6644.381	78.57	-32.27	46.30	74.00	-27.70	peak	P
4	9582.914	81.52	-33.39	48.13	74.00	-25.87	peak	P
5	11674.349	82.94	-34.49	48.45	74.00	-25.55	peak	P
6 *	14296.420	85.35	-34.72	50.63	74.00	-23.37	peak	P

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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	3730.582	73.33	-33.44	39.89	74.00	-34.11	peak	P
2	5165.594	74.95	-32.74	42.21	74.00	-31.79	peak	P
3	7613.387	79.03	-33.58	45.45	74.00	-28.55	peak	P
4	9511.168	81.33	-33.18	48.15	74.00	-25.85	peak	P
5	11961.261	82.93	-34.24	48.69	74.00	-25.31	peak	P
6 *	14800.983	83.44	-34.40	49.04	74.00	-24.96	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	3156.617	70.79	-31.65	39.14	74.00	-34.86	peak	P
2	4299.426	73.07	-33.66	39.41	74.00	-34.59	peak	P
3	6087.231	76.34	-31.73	44.61	74.00	-29.39	peak	P
4	8103.857	78.09	-34.43	43.66	74.00	-30.34	peak	P
5	9522.171	81.37	-33.22	48.15	74.00	-25.85	peak	P
6 *	13415.637	85.50	-34.65	50.85	74.00	-23.15	peak	P

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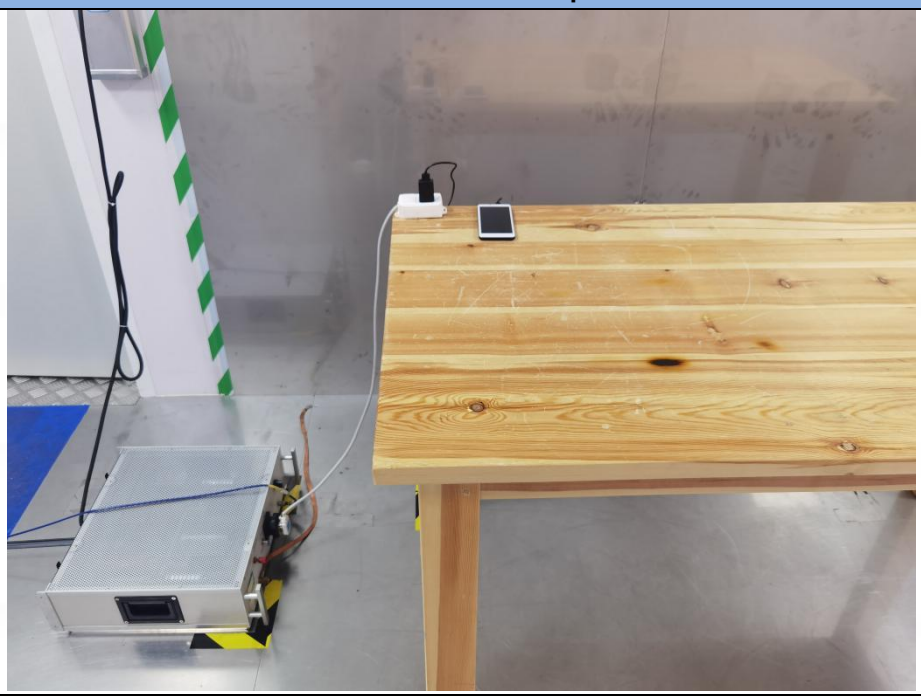
7 Test Setup Photos

Conducted Emission at AC power line


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

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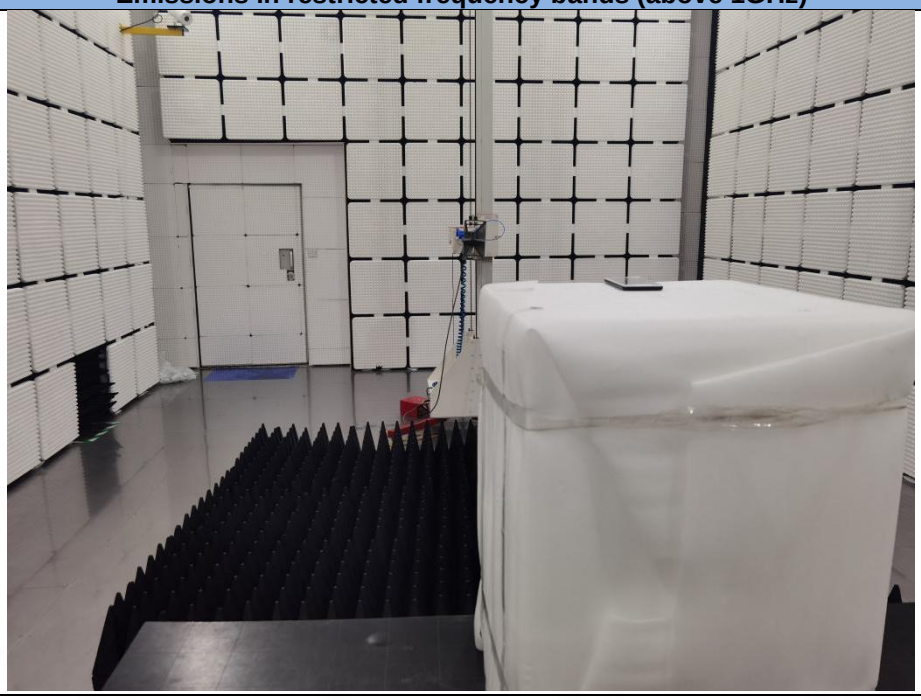
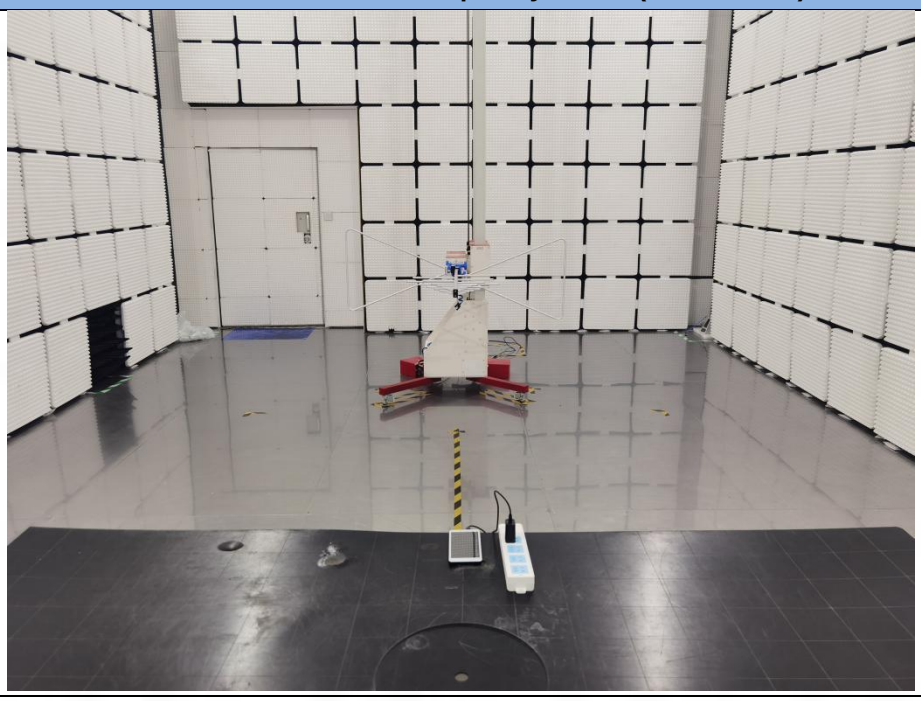
Band edge emissions (Radiated)
Emissions in restricted frequency bands (above 1GHz)



Emissions in restricted frequency bands (below 1GHz)



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8 EUT Constructional Details (EUT Photos)

Please refer to Report BTF230801R00401

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Appendix

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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	12.484	12.527	99.66	0.01	0.13
		2437	12.480	12.533	99.58	0.02	0.13
		2462	12.480	12.533	99.58	0.02	0.19
802.11g	SISO	2412	2.073	2.133	97.19	0.12	1.25
		2437	2.073	2.133	97.19	0.12	1.25
		2462	2.073	2.115	98.01	0.09	0.44
802.11n (HT20)	SISO	2412	1.933	1.984	97.43	0.11	0.89
		2437	1.933	1.975	97.87	0.09	0.50
		2462	1.933	1.984	97.43	0.11	0.89

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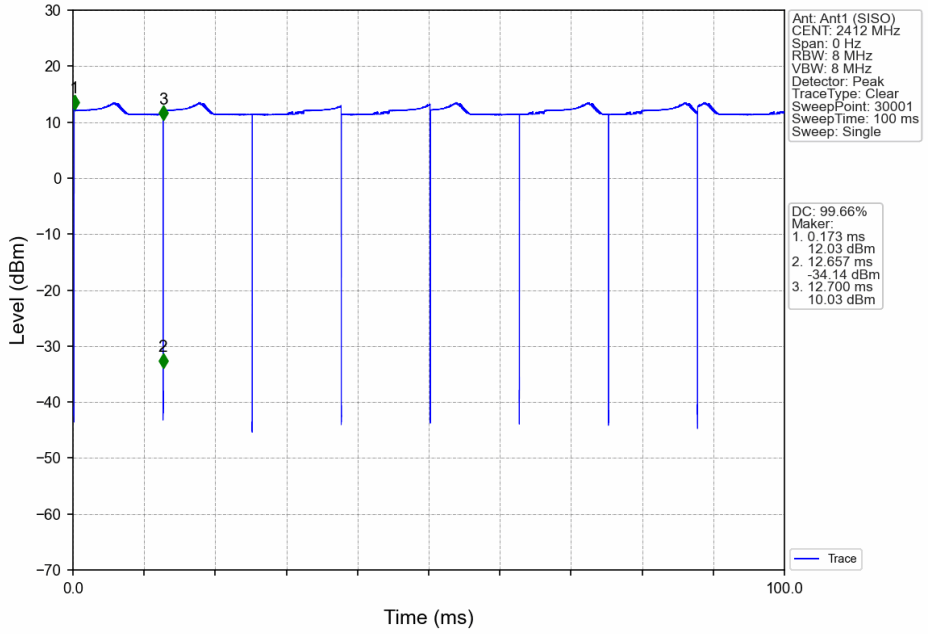
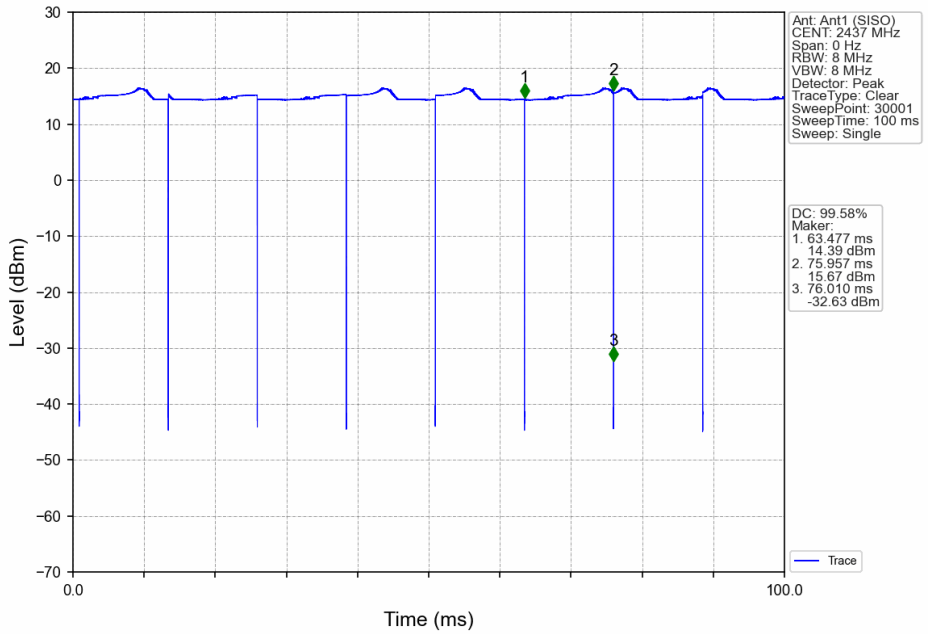
1.1.2 Test Graph

802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



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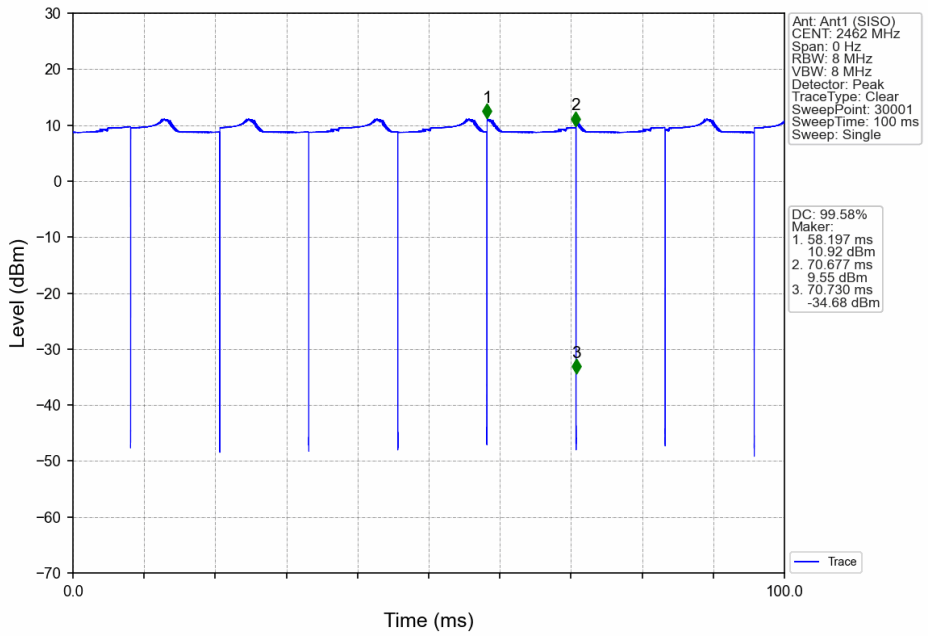
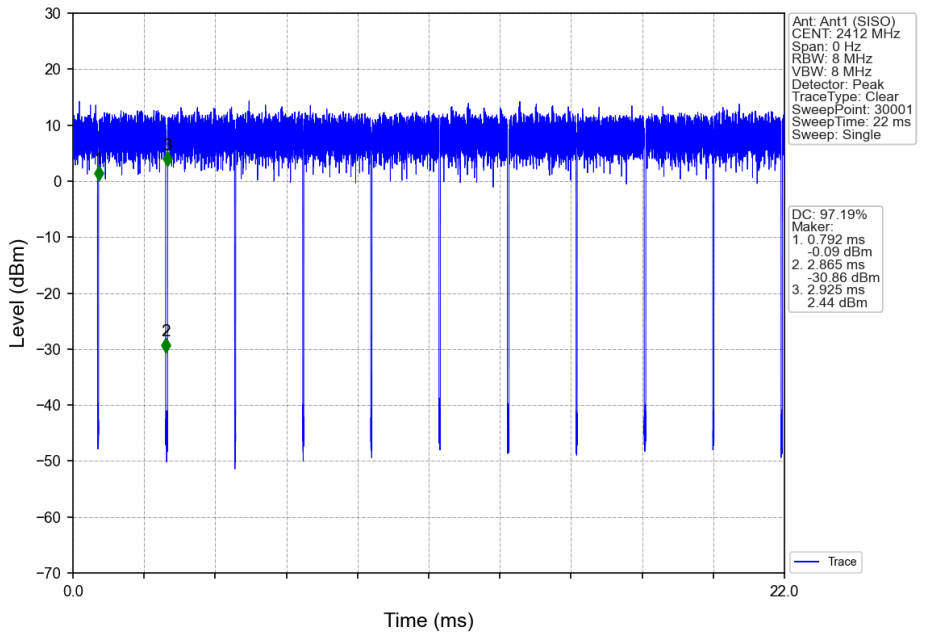
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



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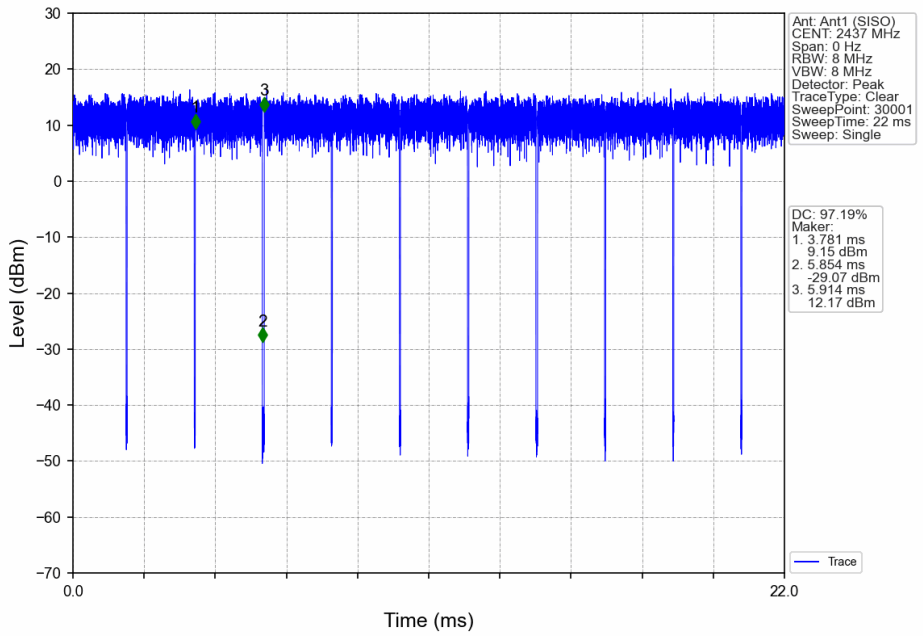
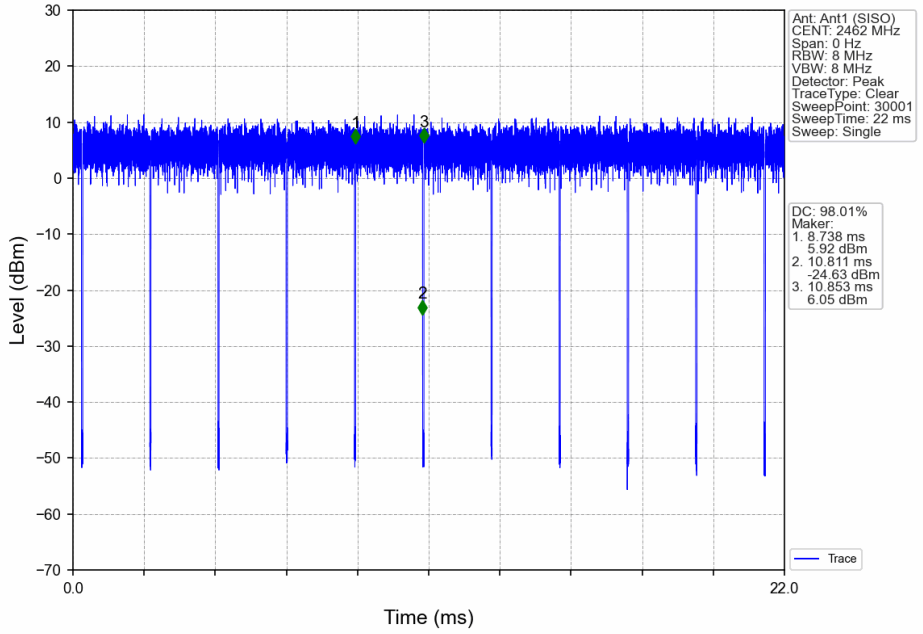
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



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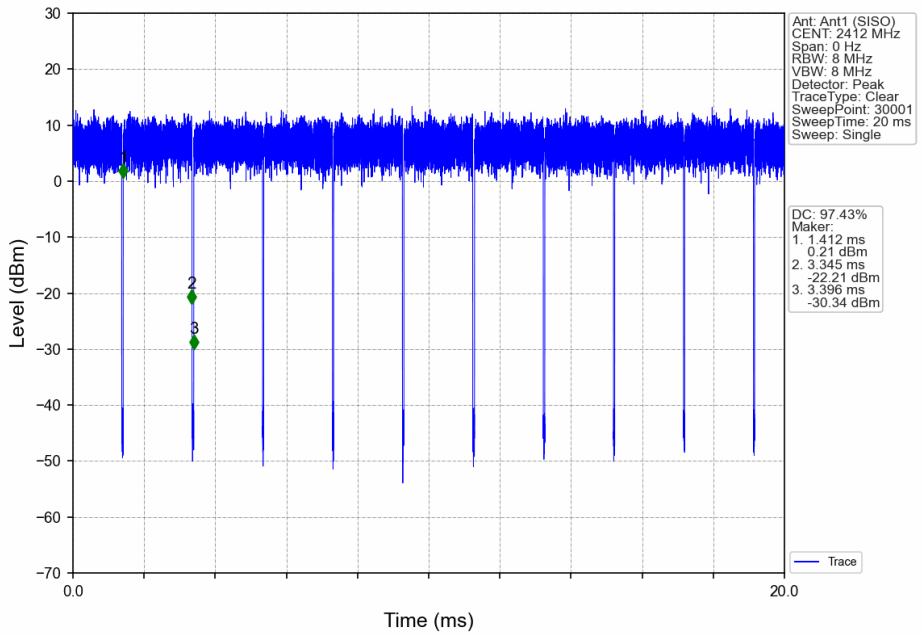
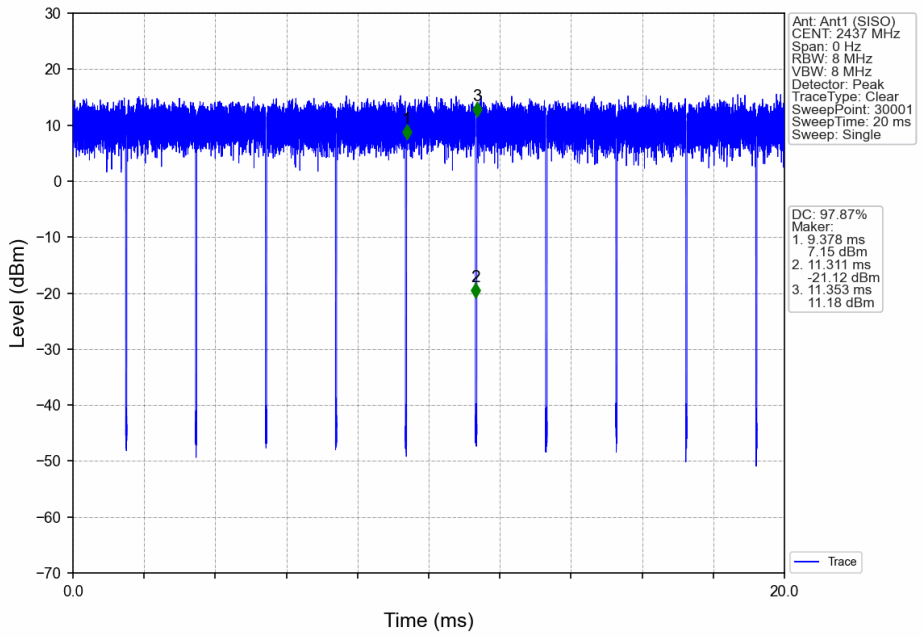
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



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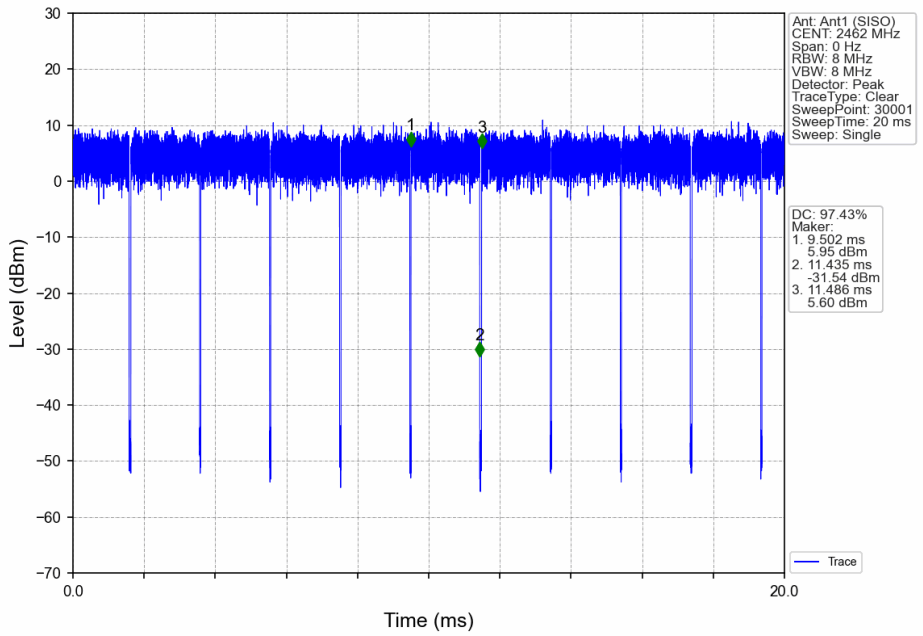
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



2. Bandwidth
2.1 OBW
2.1.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz) Result	Verdict
802.11b	SISO	2412	1	12.074	Pass
		2437	1	12.039	Pass
		2462	1	12.247	Pass
802.11g	SISO	2412	1	18.700	Pass
		2437	1	18.205	Pass
		2462	1	19.226	Pass
802.11n (HT20)	SISO	2412	1	18.945	Pass
		2437	1	18.705	Pass
		2462	1	19.286	Pass

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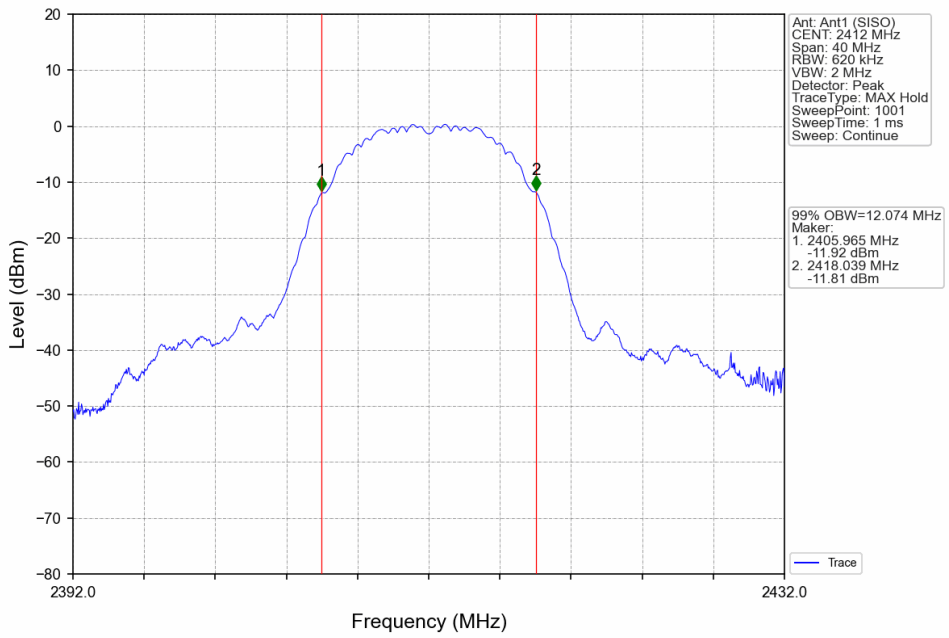
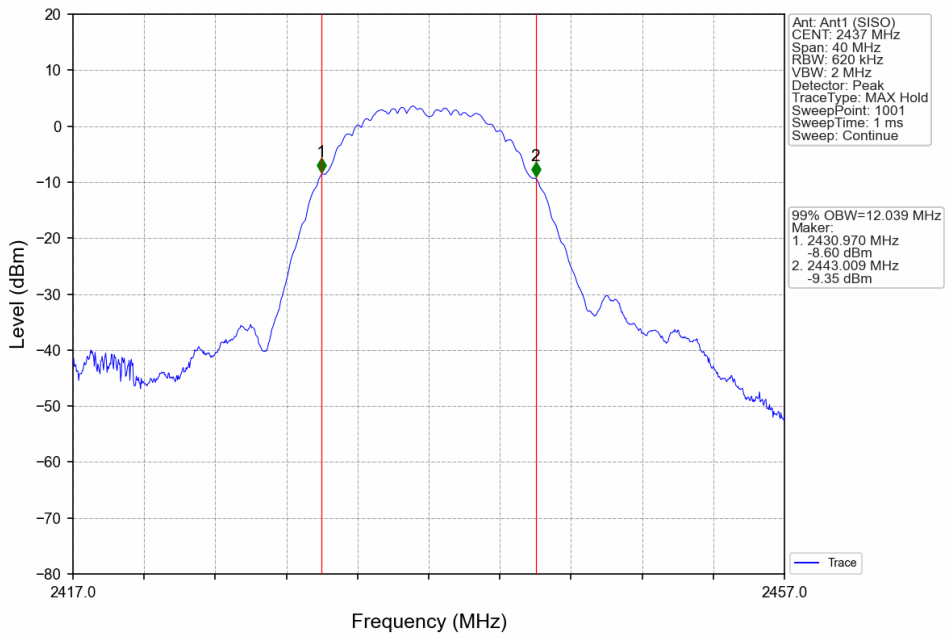
2.1.2 Test Graph

802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



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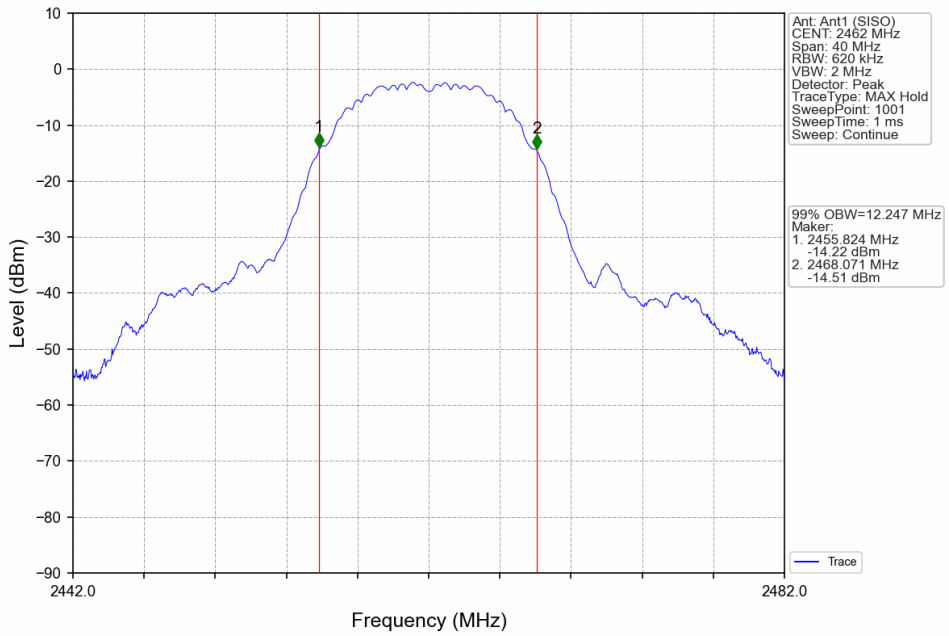
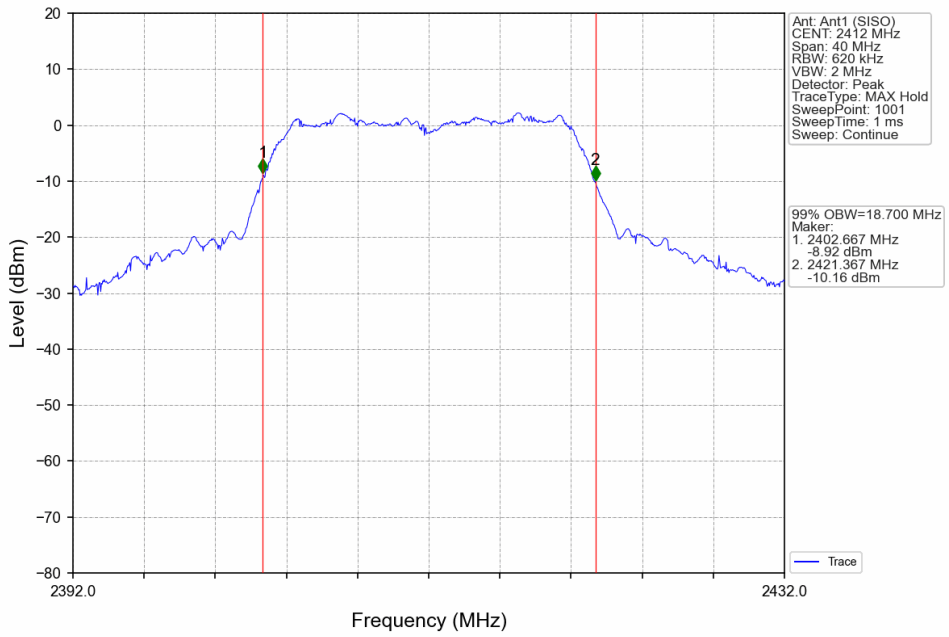
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



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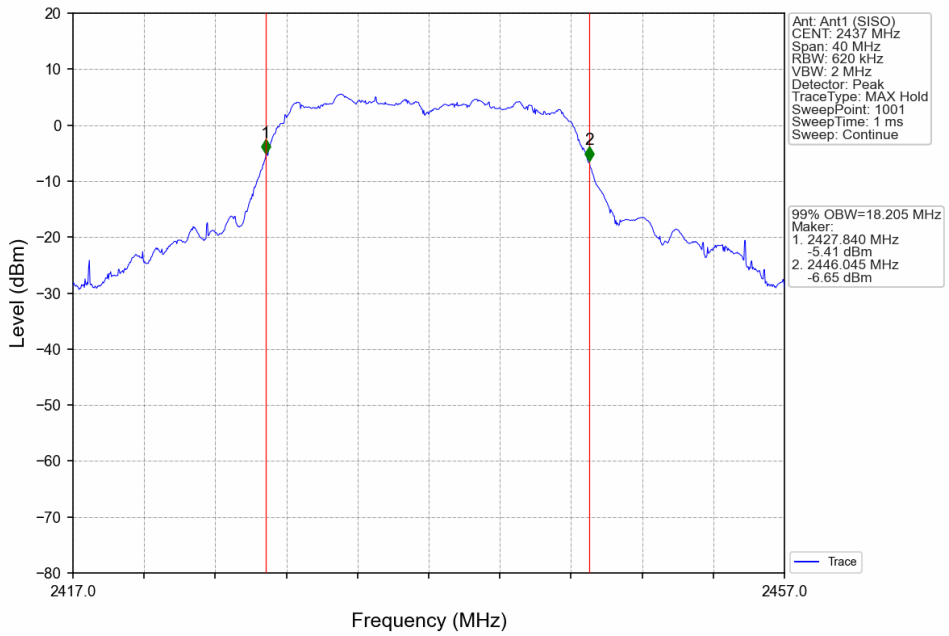
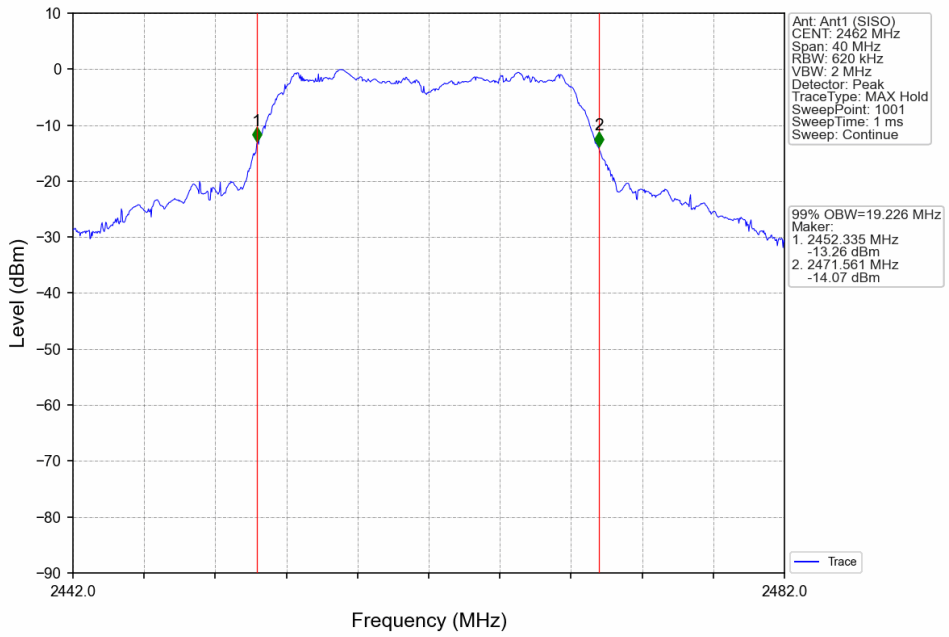
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



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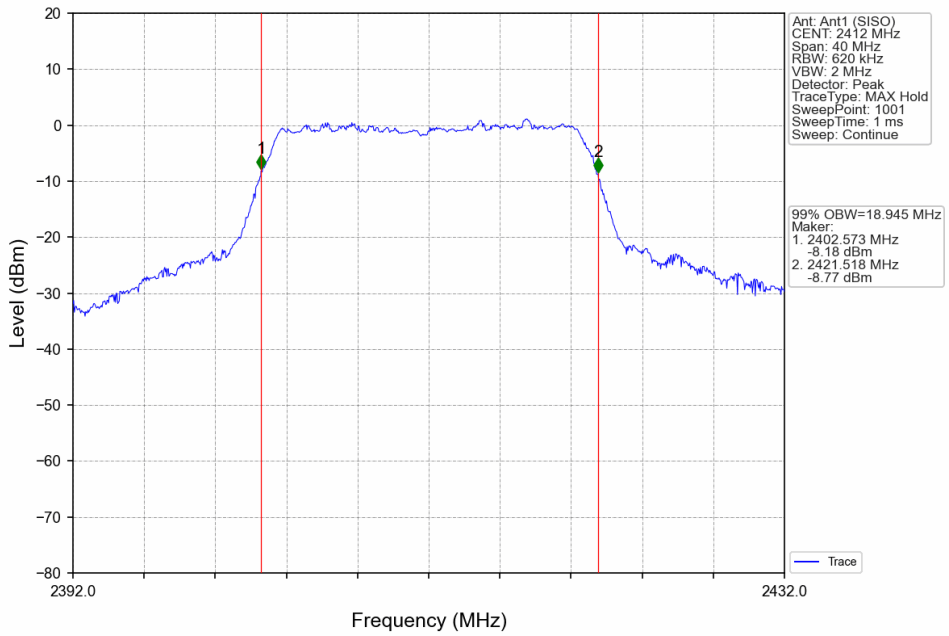
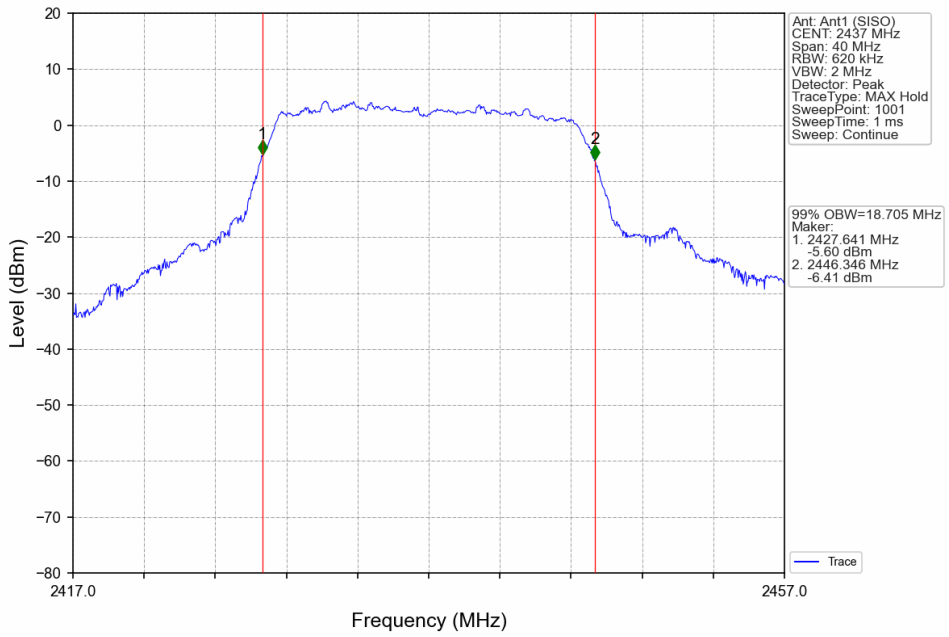
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



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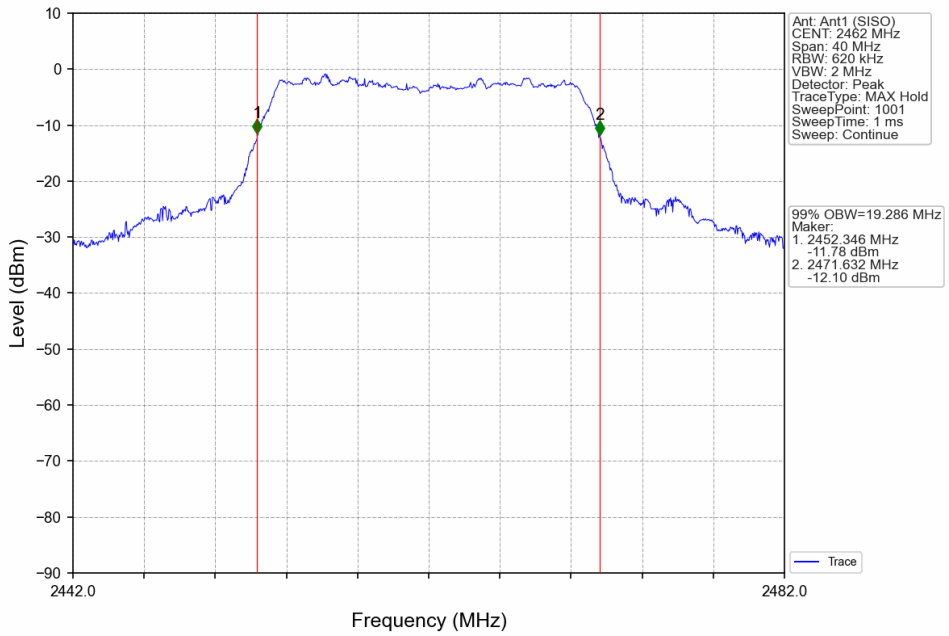
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



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	9.151	>=0.5	Pass
		2437	1	9.107	>=0.5	Pass
		2462	1	9.182	>=0.5	Pass
802.11g	SISO	2412	1	16.459	>=0.5	Pass
		2437	1	15.789	>=0.5	Pass
		2462	1	16.465	>=0.5	Pass
802.11n (HT20)	SISO	2412	1	17.635	>=0.5	Pass
		2437	1	17.232	>=0.5	Pass
		2462	1	17.630	>=0.5	Pass

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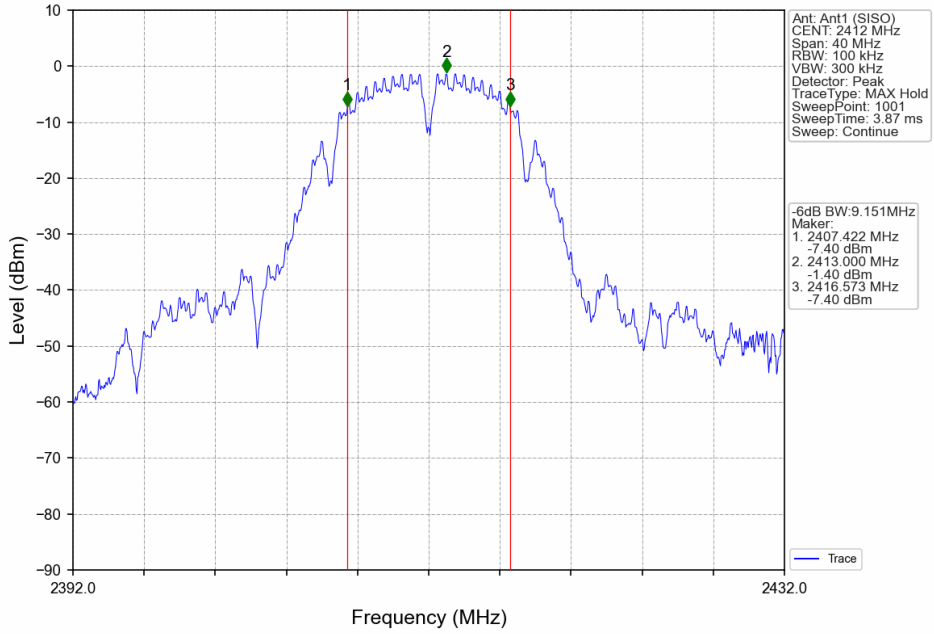
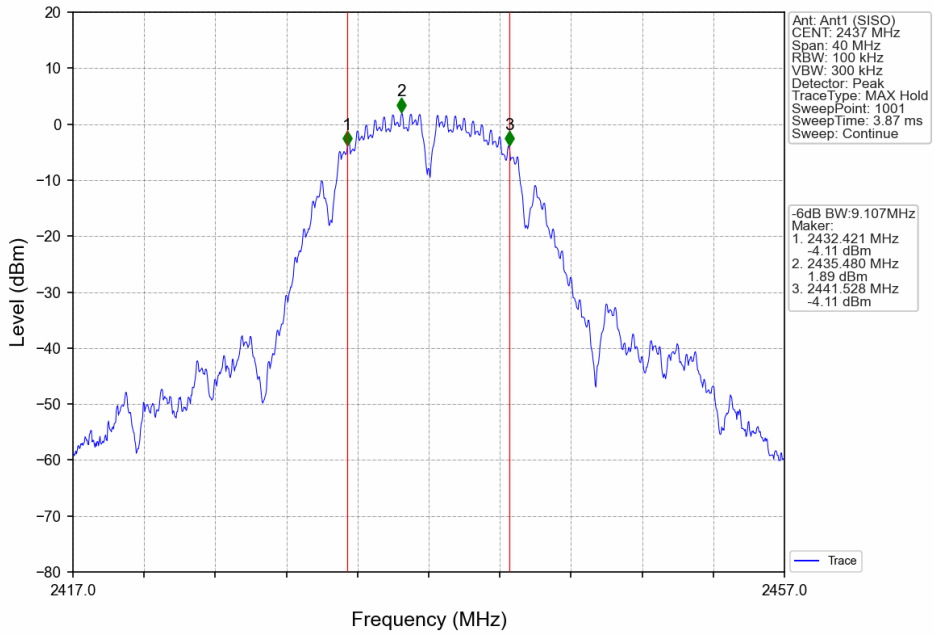
2.2.2 Test Graph

802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



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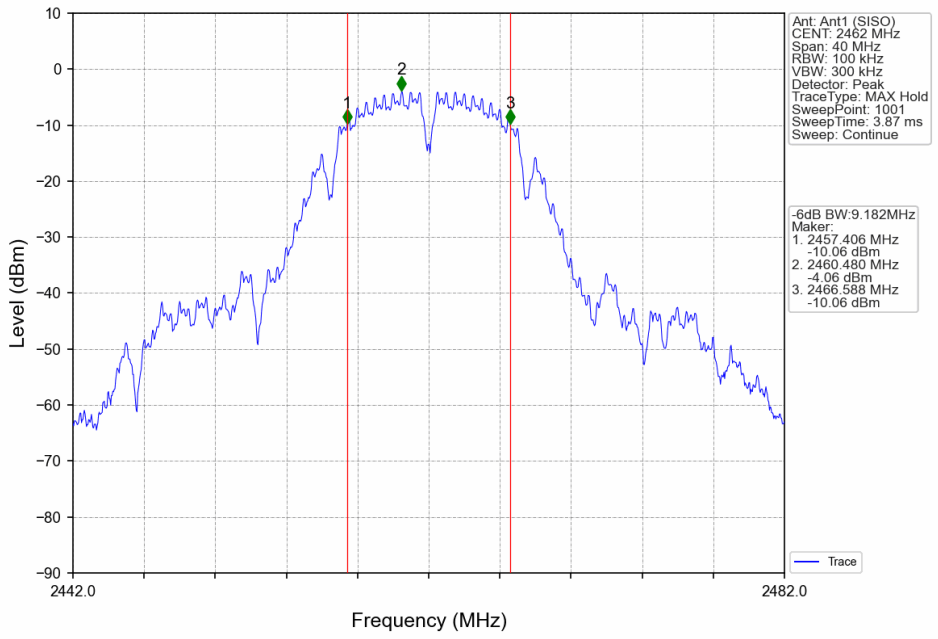
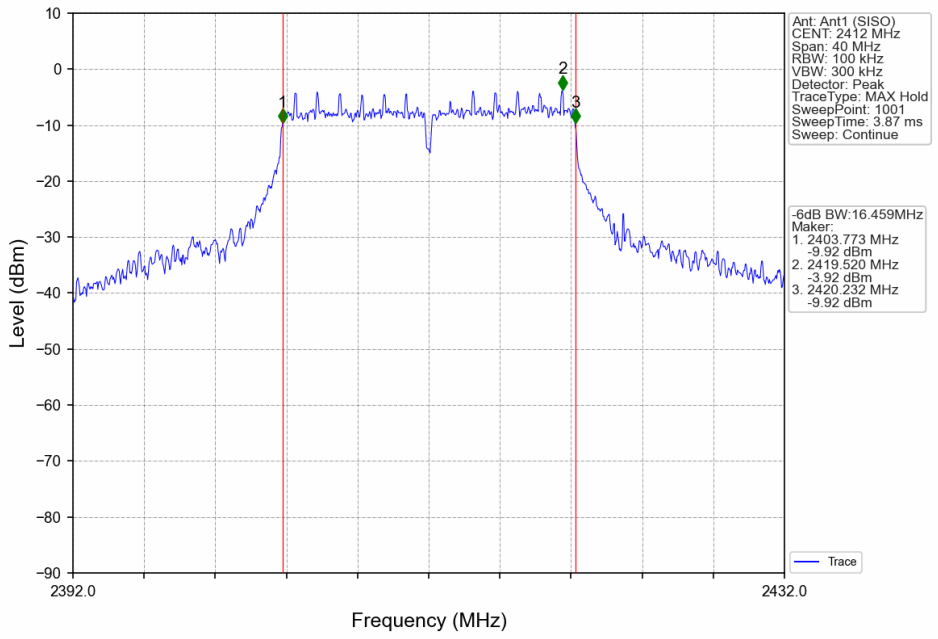
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



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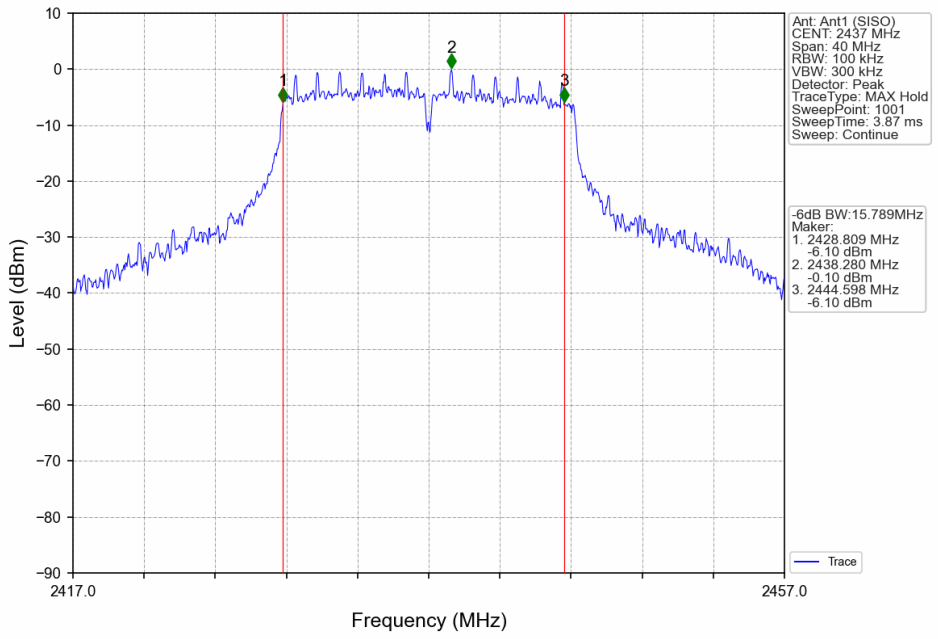
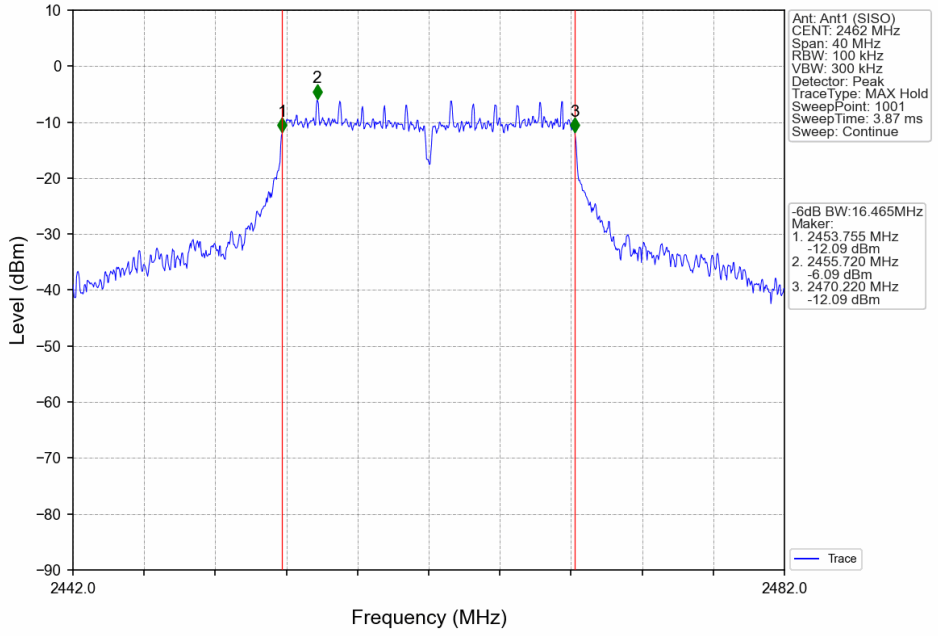
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



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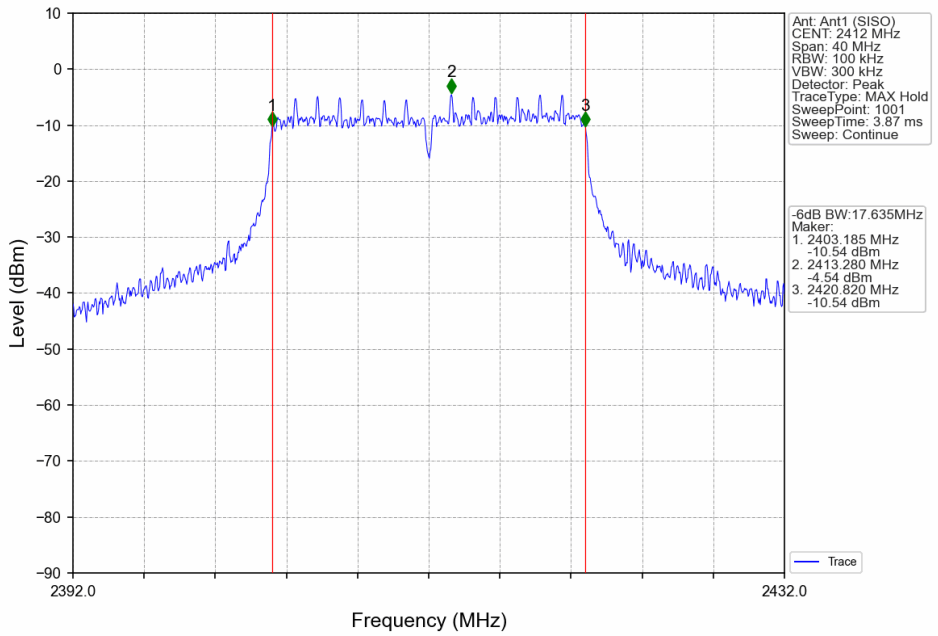
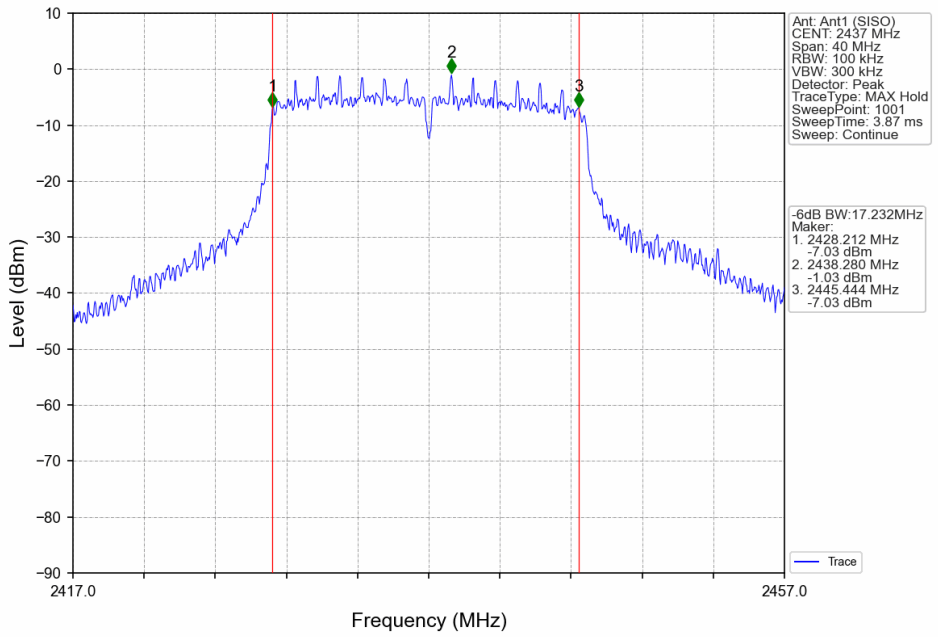
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



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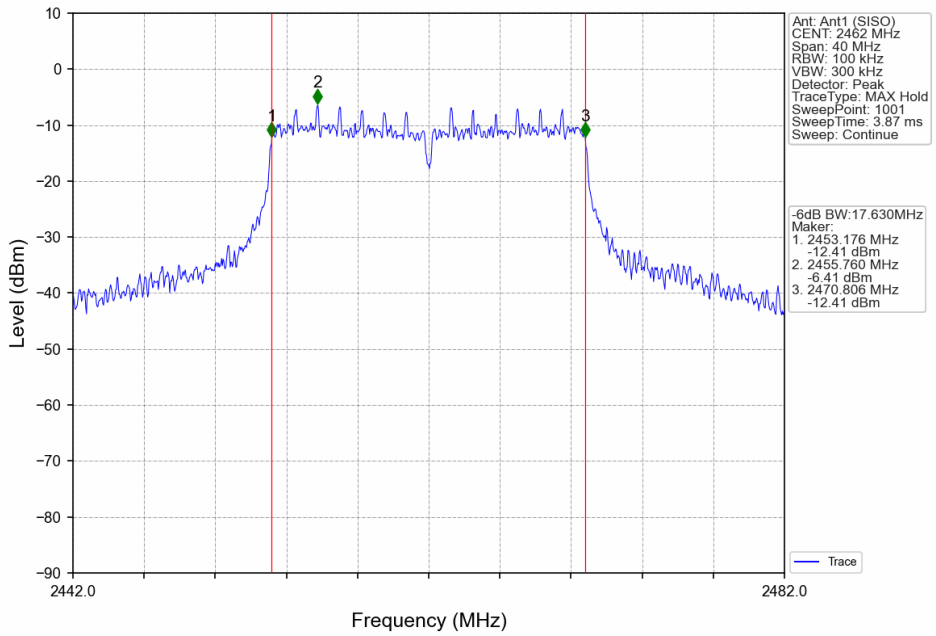
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



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	10.90	<=30	Pass
		2437	13.90	<=30	Pass
		2462	8.28	<=30	Pass
802.11g	SISO	2412	15.36	<=30	Pass
		2437	18.12	<=30	Pass
		2462	12.85	<=30	Pass
802.11n (HT20)	SISO	2412	14.46	<=30	Pass
		2437	17.28	<=30	Pass
		2462	12.31	<=30	Pass
Note1: Antenna Gain: Ant1: 1.37dBi;					

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	-17.07	<=8	Pass
		2437	-4.09	<=8	Pass
		2462	-17.05	<=8	Pass
802.11g	SISO	2412	-19.45	<=8	Pass
		2437	-16.31	<=8	Pass
		2462	-21.79	<=8	Pass
802.11n (HT20)	SISO	2412	-20.94	<=8	Pass
		2437	-17.05	<=8	Pass
		2462	-22.56	<=8	Pass
Note1: Antenna Gain: Ant1: 1.37dBi;					

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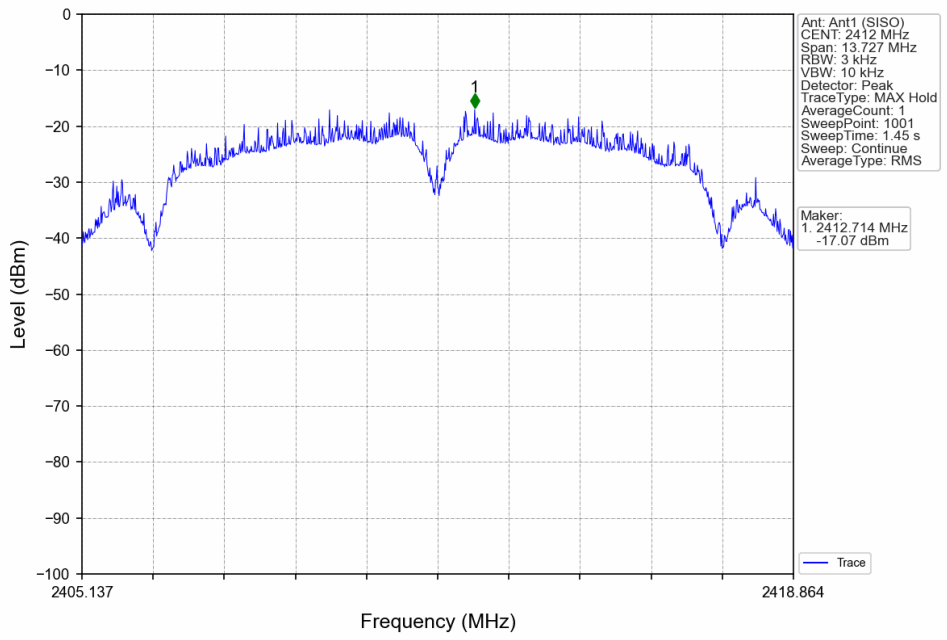
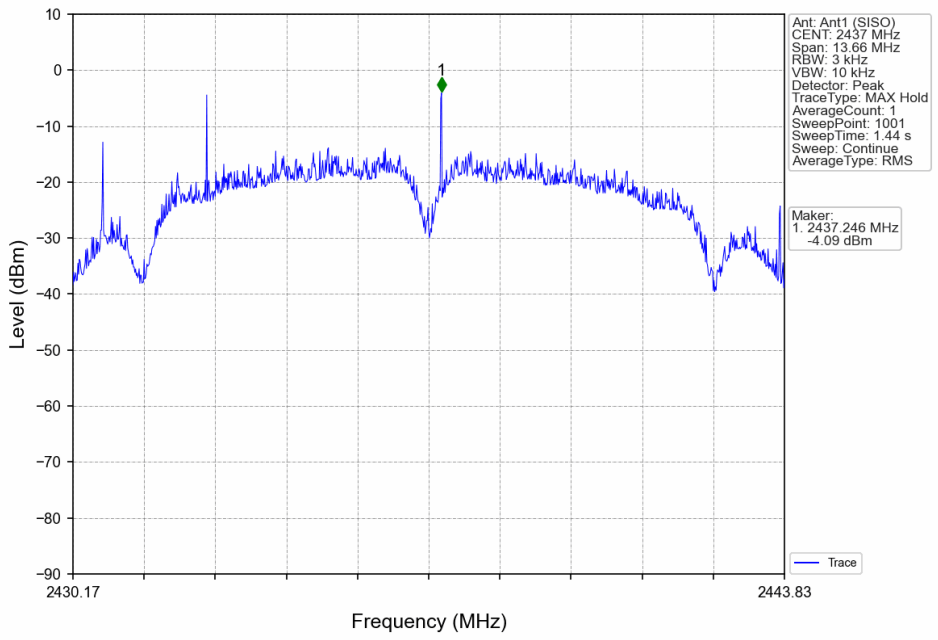
4.1.2 Test Graph

802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



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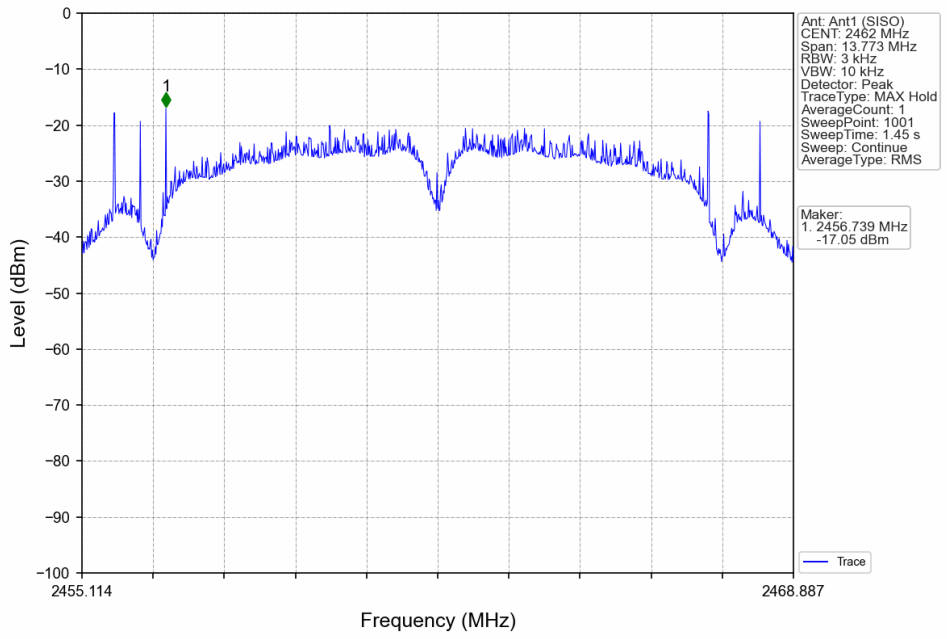
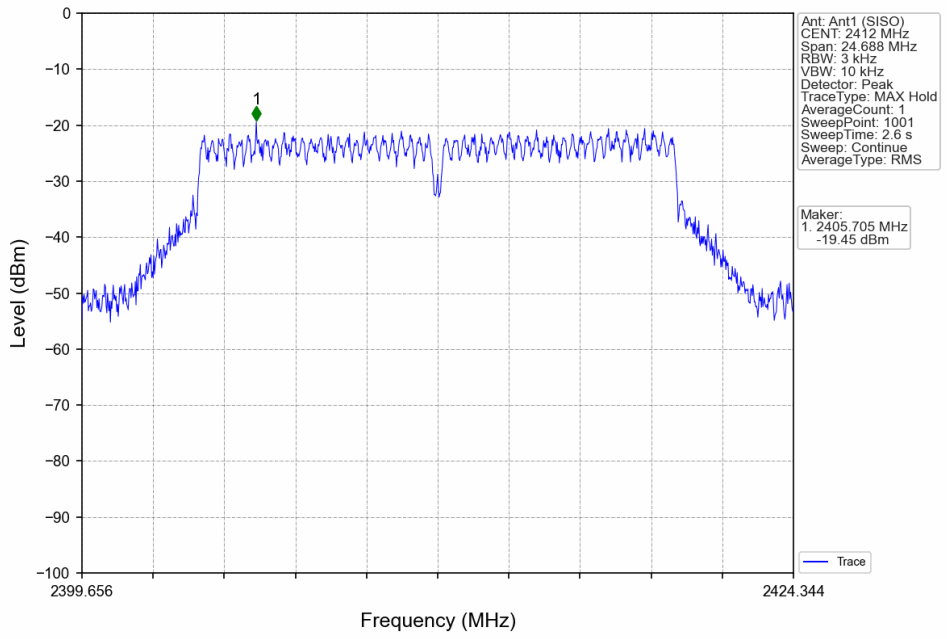
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



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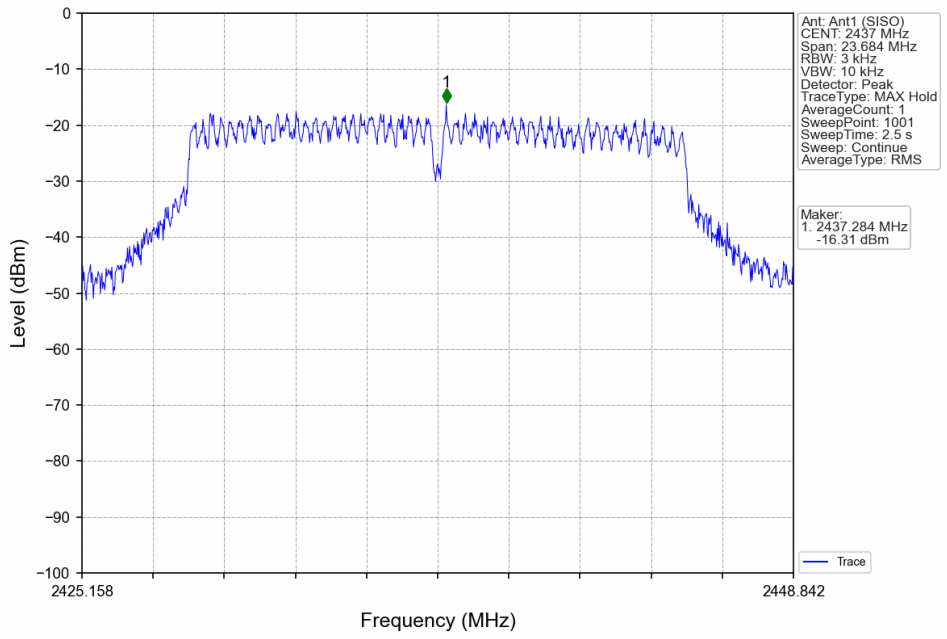
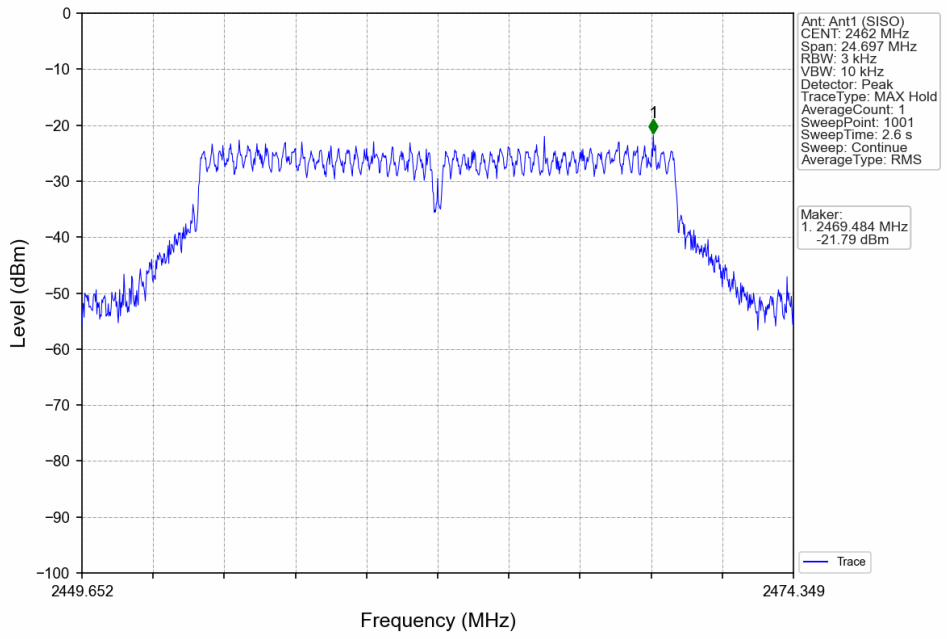
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



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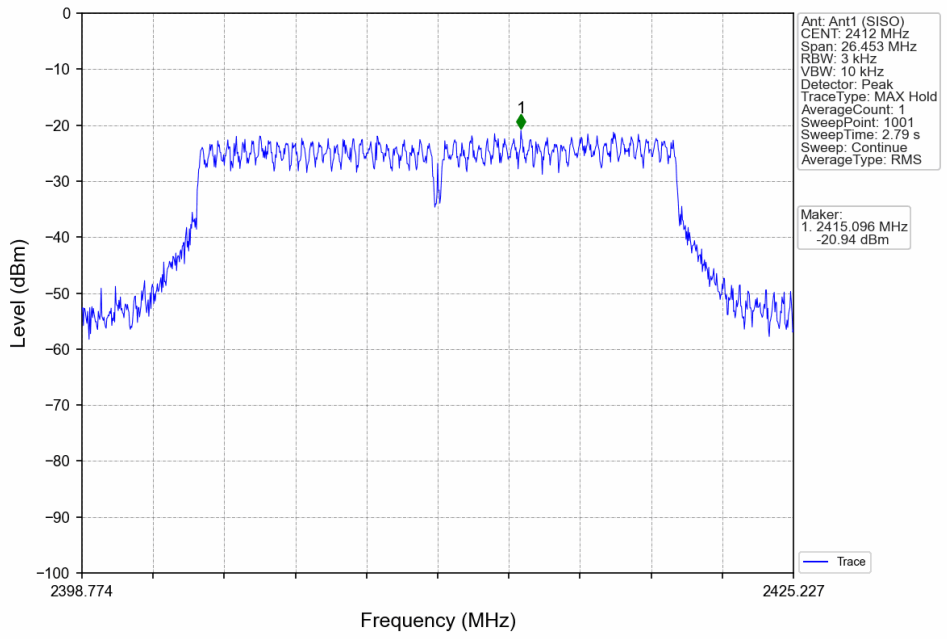
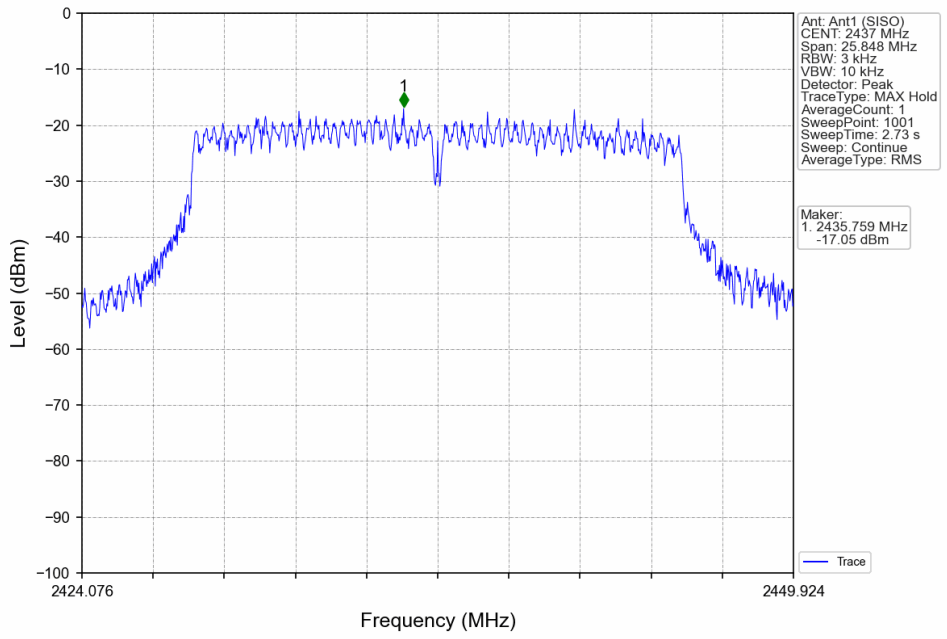
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



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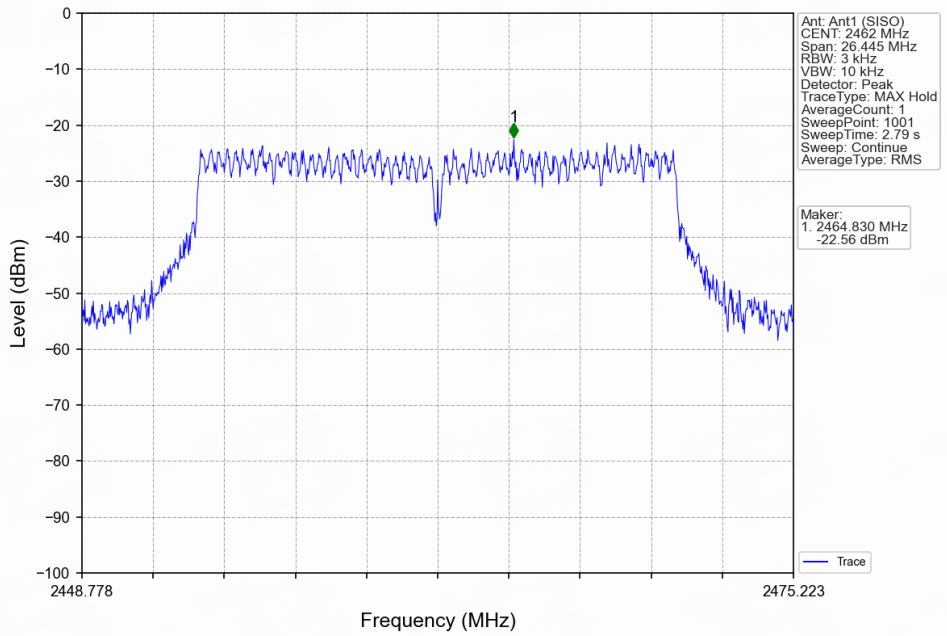
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



5. Unwanted Emissions In Non-restricted Frequency Bands
5.1 Ref
5.1.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
802.11b	SISO	2412	1	-1.04
		2437	1	1.89
		2462	1	-4.07
802.11g	SISO	2412	1	-3.90
		2437	1	-0.31
		2462	1	-5.89
802.11n (HT20)	SISO	2412	1	-4.69
		2437	1	-0.95
		2462	1	-6.32
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.				

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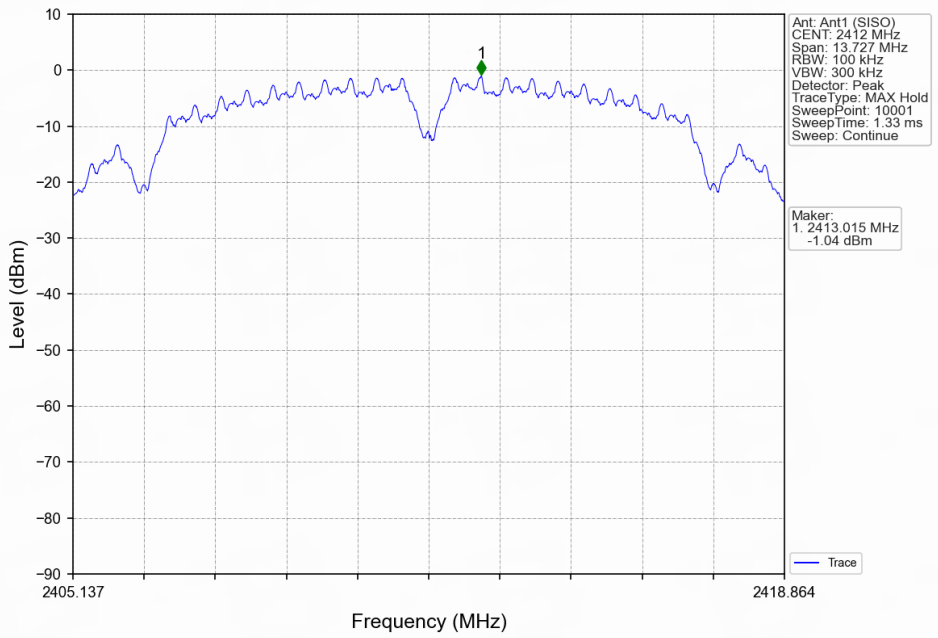
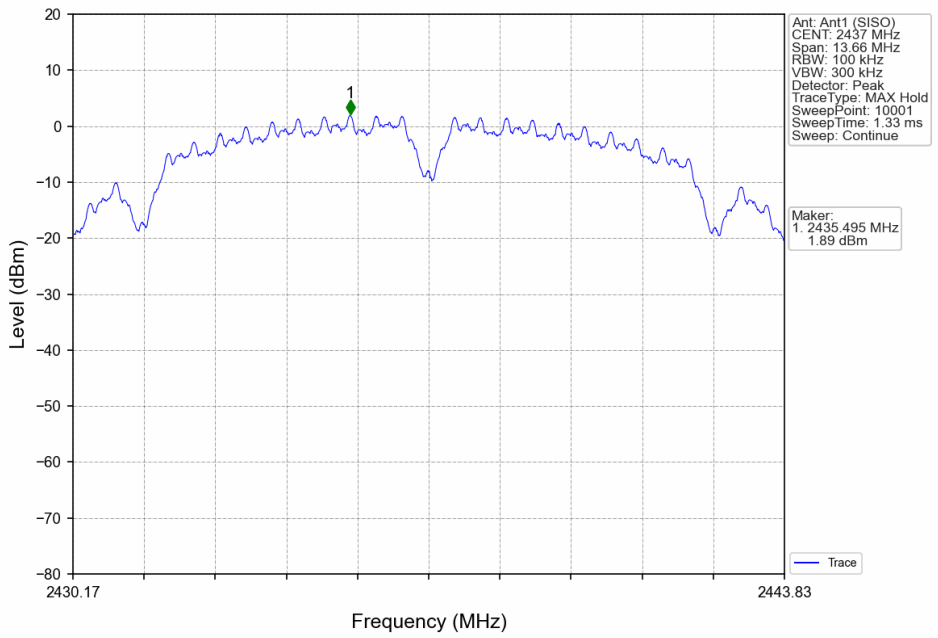
5.1.2 Test Graph

802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



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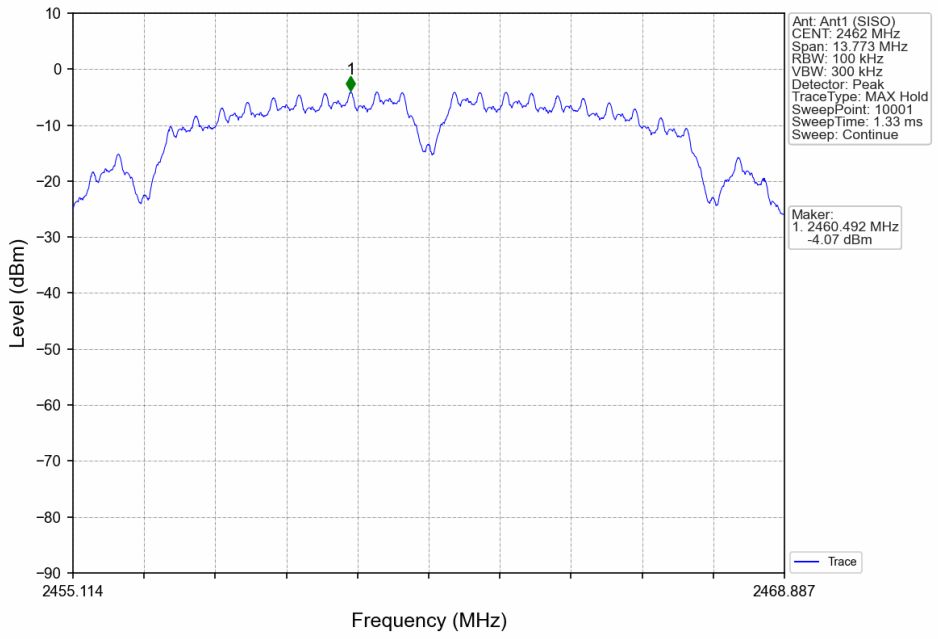
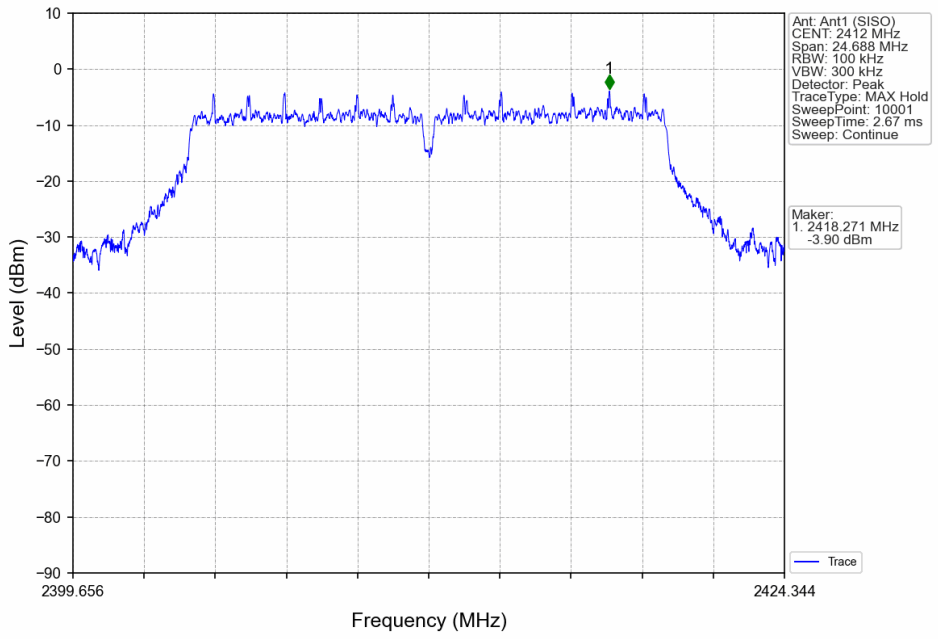
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



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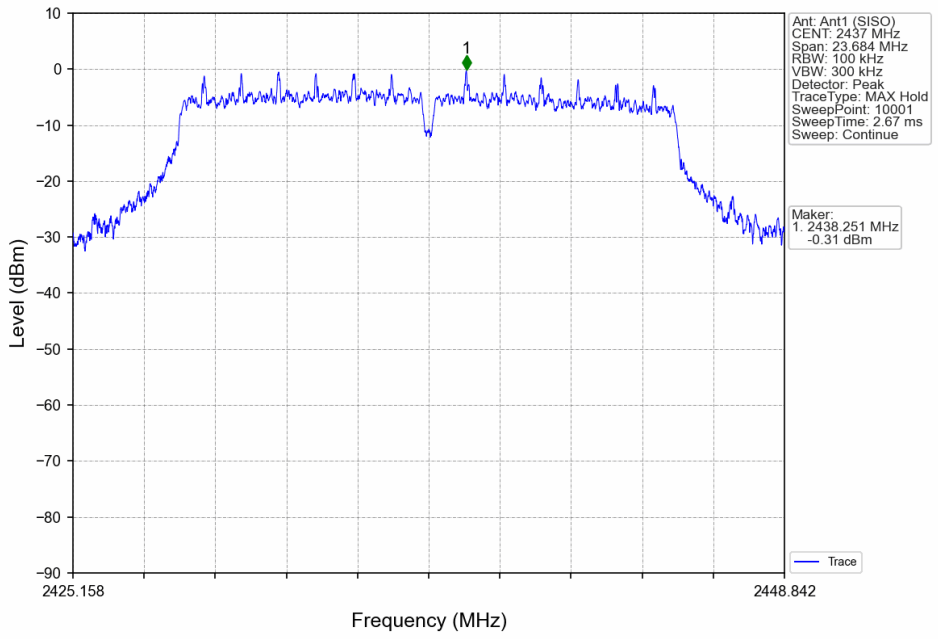
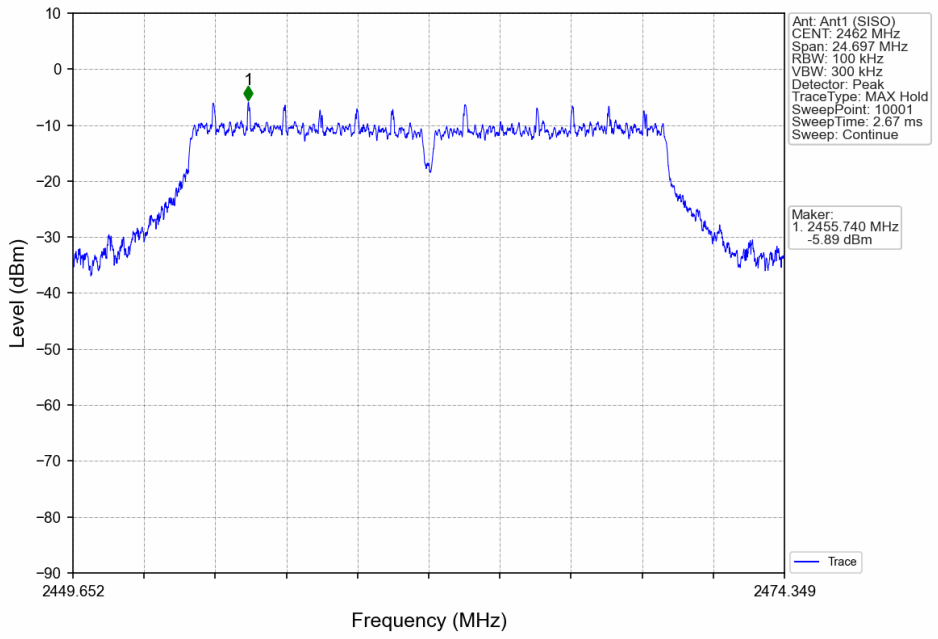
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



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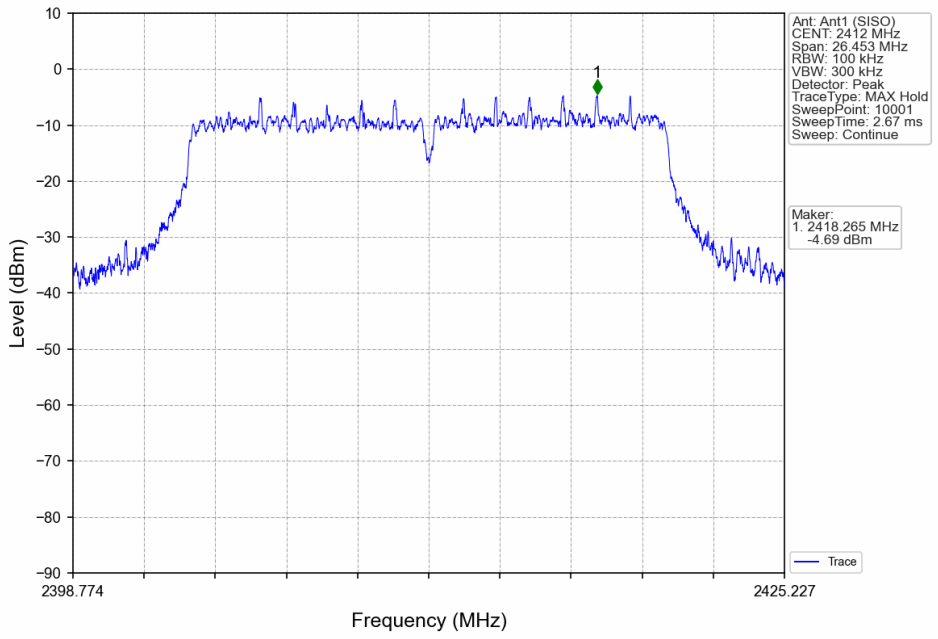
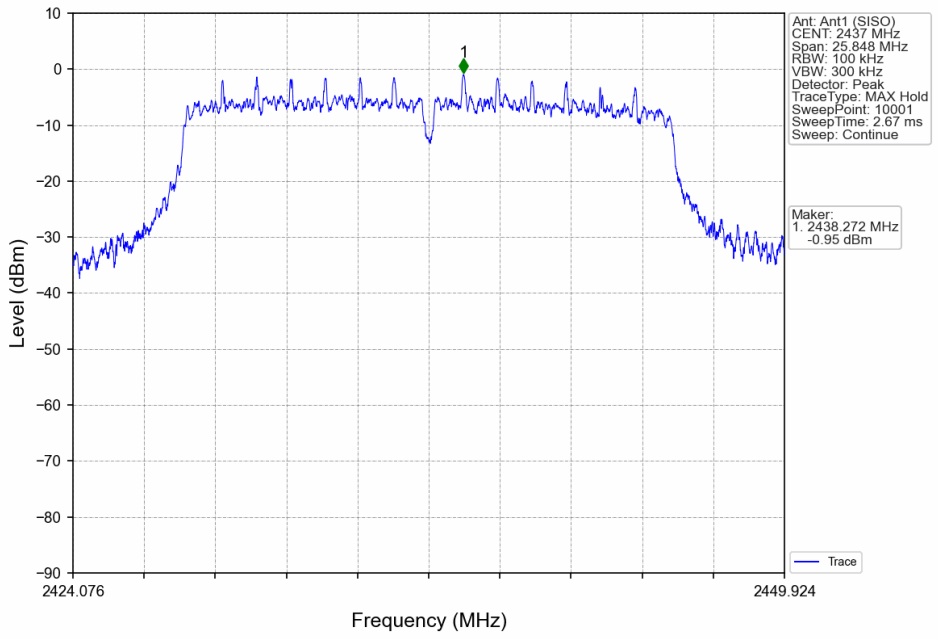
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



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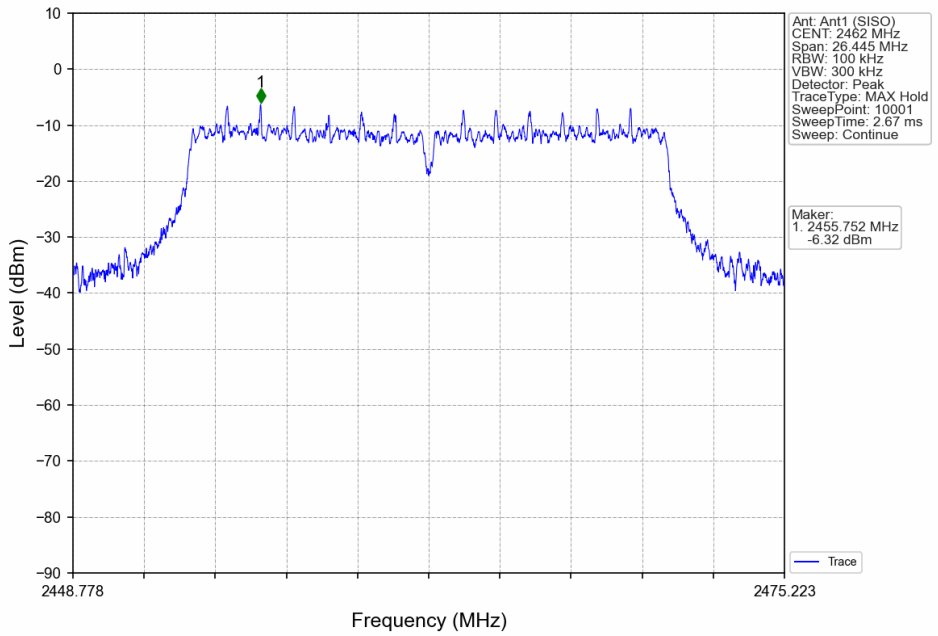
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



5.2 CSE

5.2.1 Test Result

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	1.89	-18.11	Pass
		2437	1	1.89	-18.11	Pass
		2462	1	1.89	-18.11	Pass
802.11g	SISO	2412	1	-0.31	-20.31	Pass
		2437	1	-0.31	-20.31	Pass
		2462	1	-0.31	-20.31	Pass
802.11n (HT20)	SISO	2412	1	-0.95	-20.95	Pass
		2437	1	-0.95	-20.95	Pass
		2462	1	-0.95	-20.95	Pass
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.						

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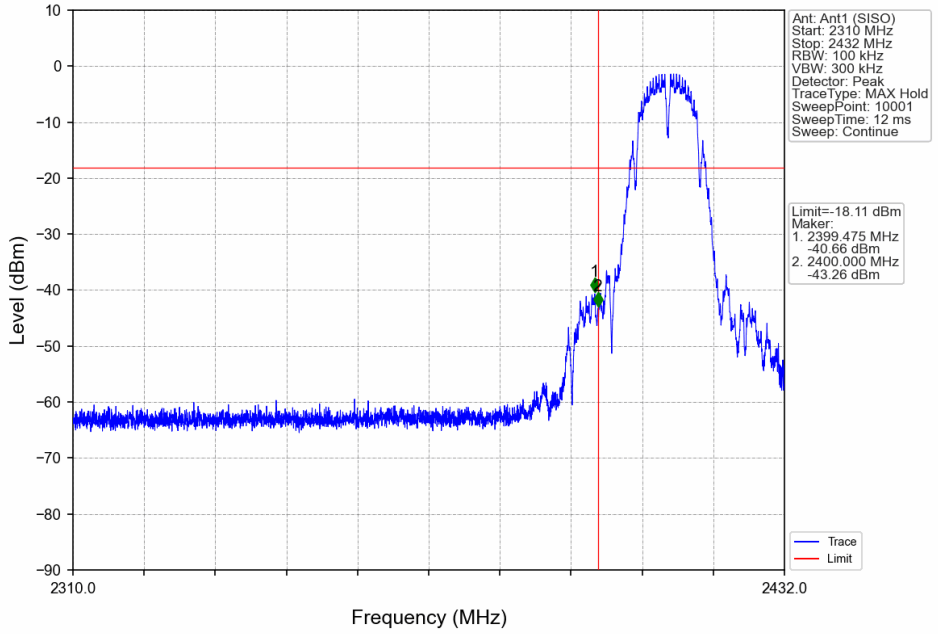
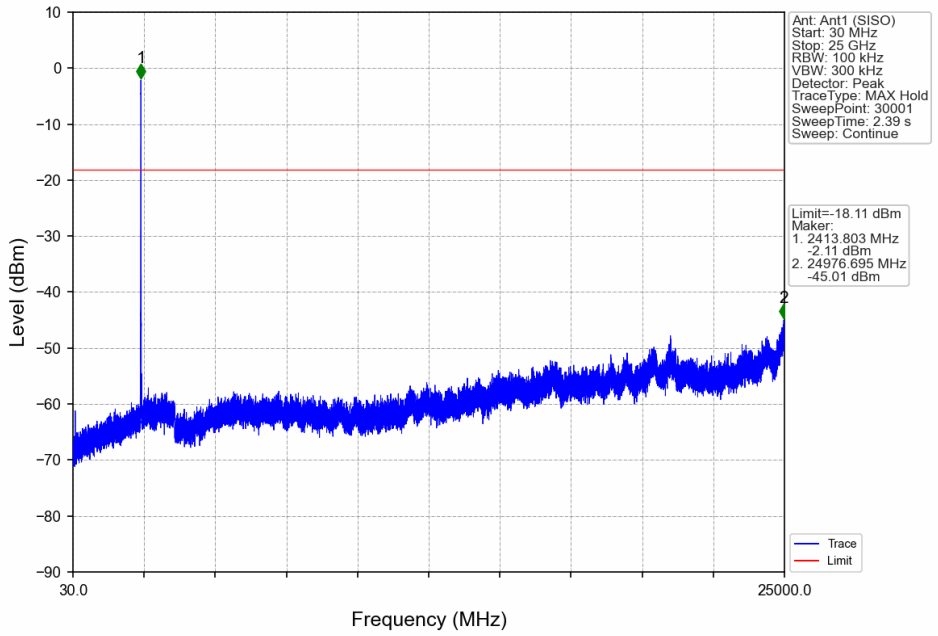
5.2.2 Test Graph

802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



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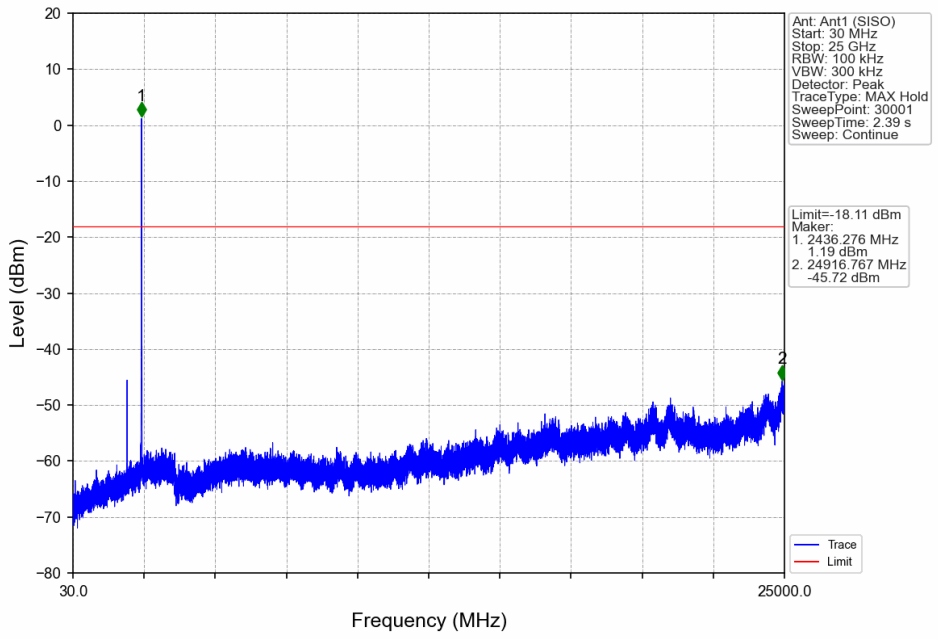
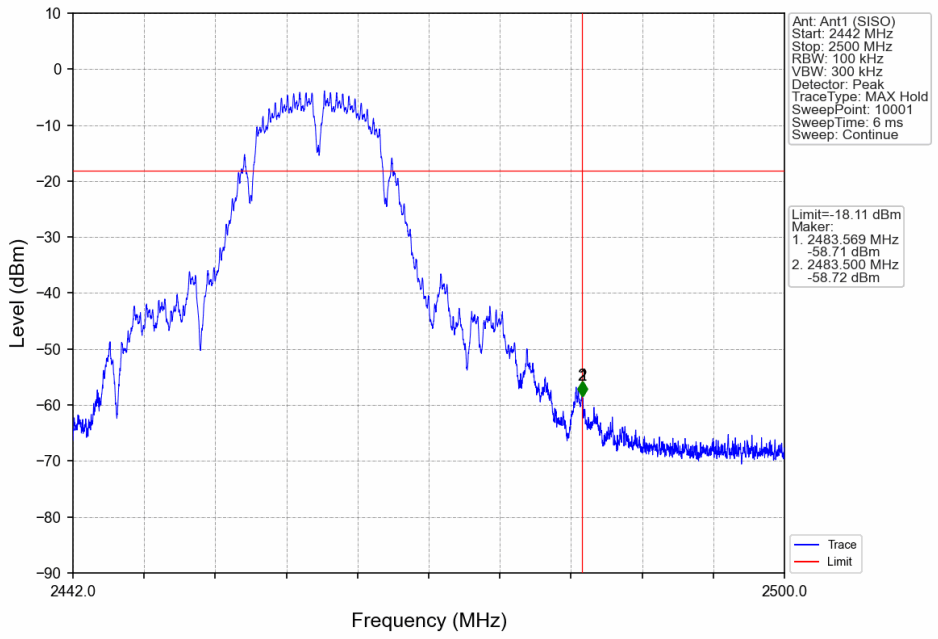
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



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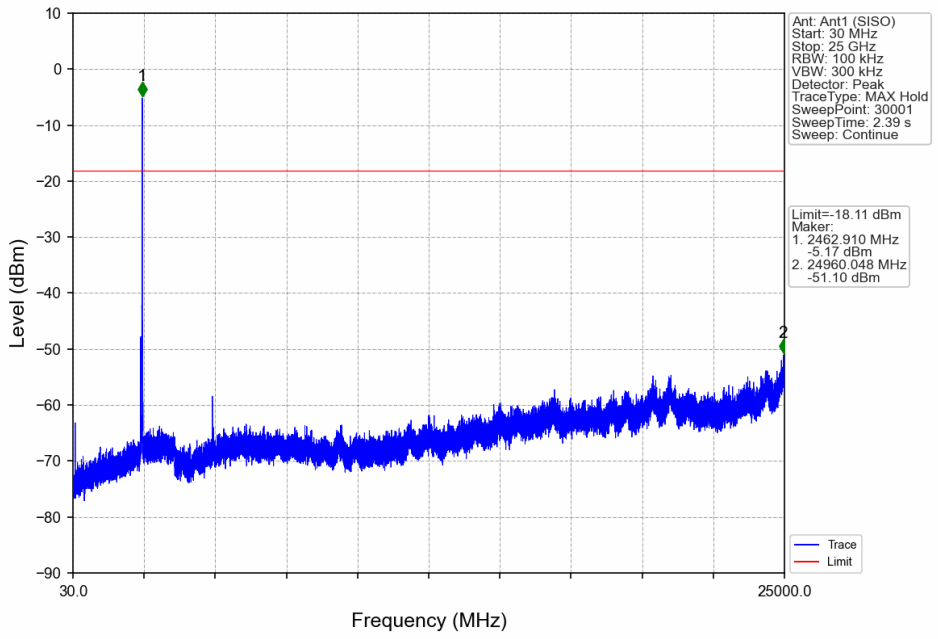
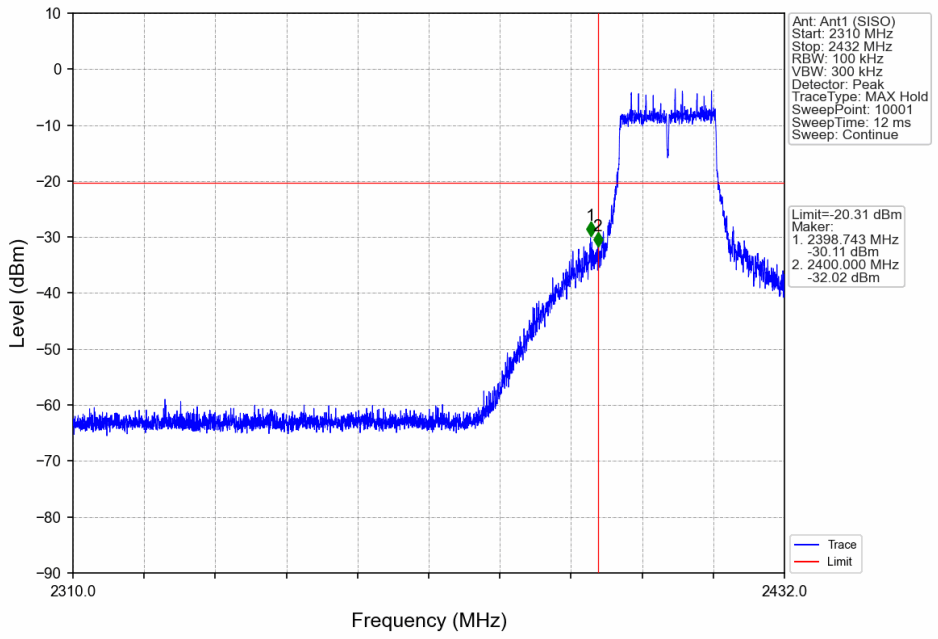
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



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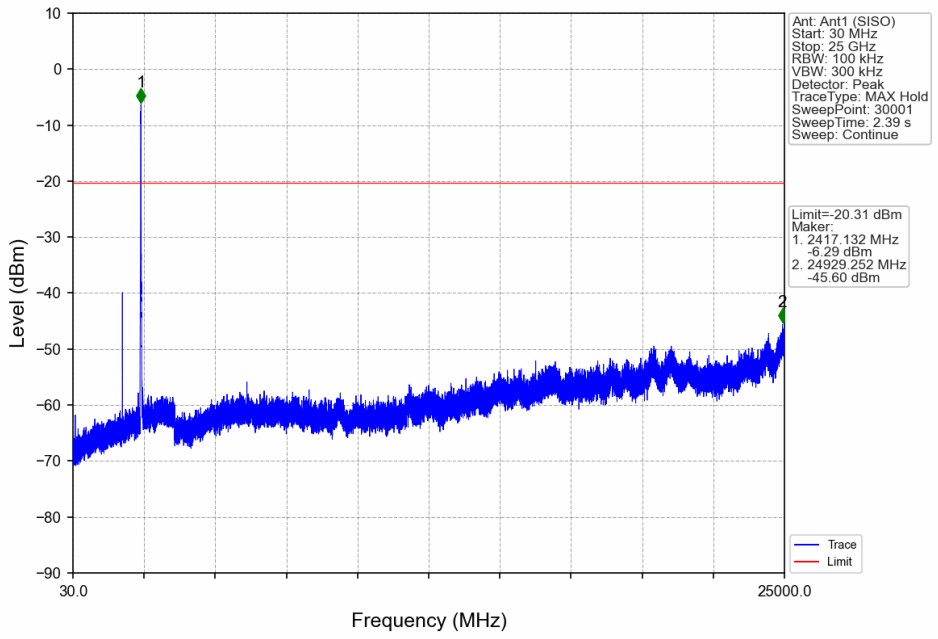
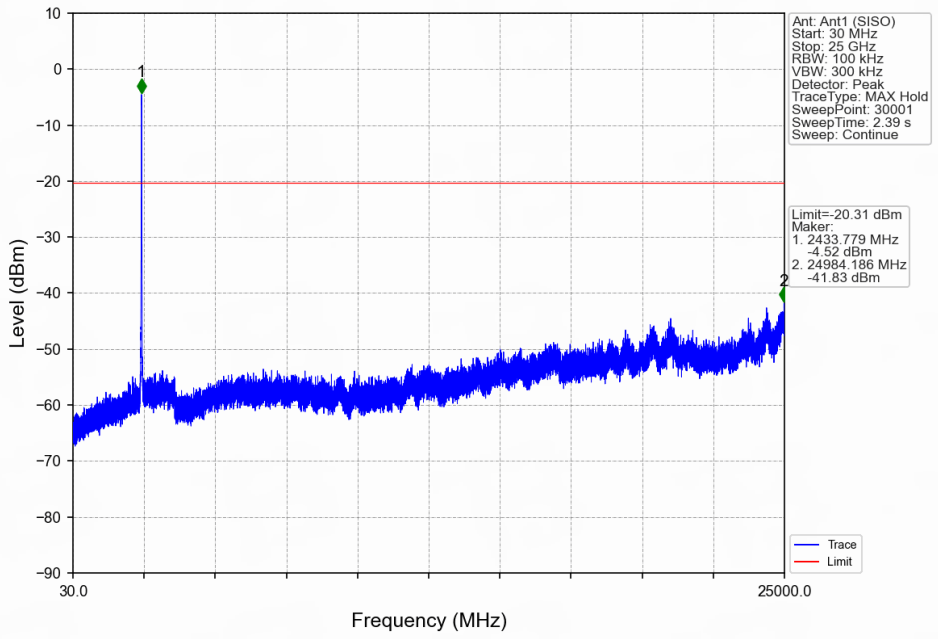
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



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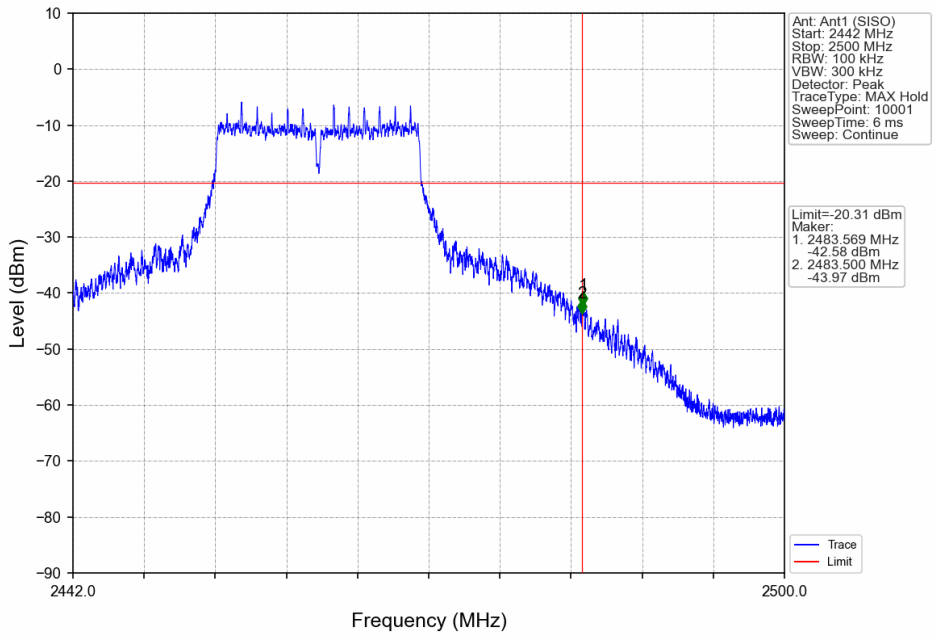
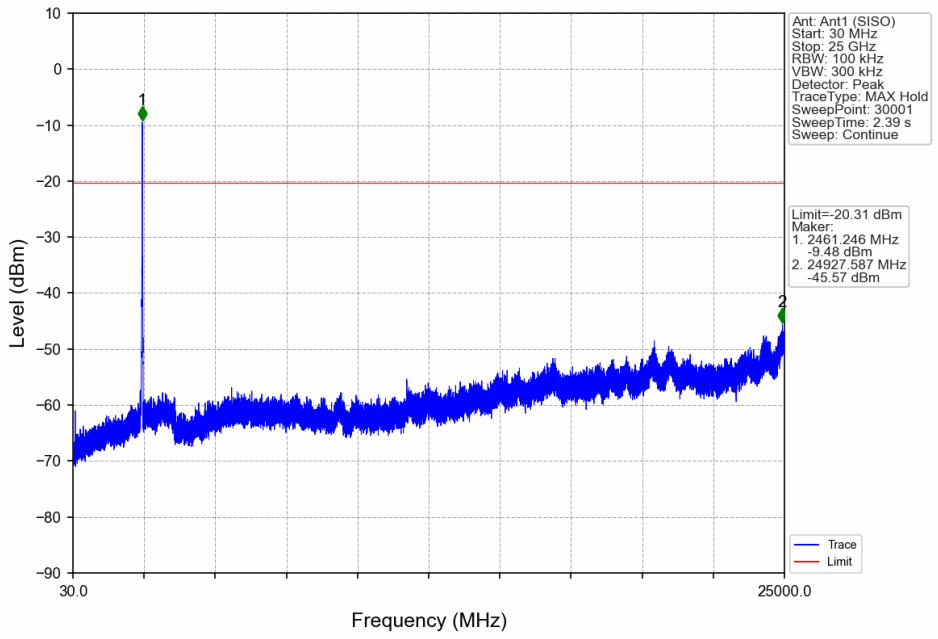
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



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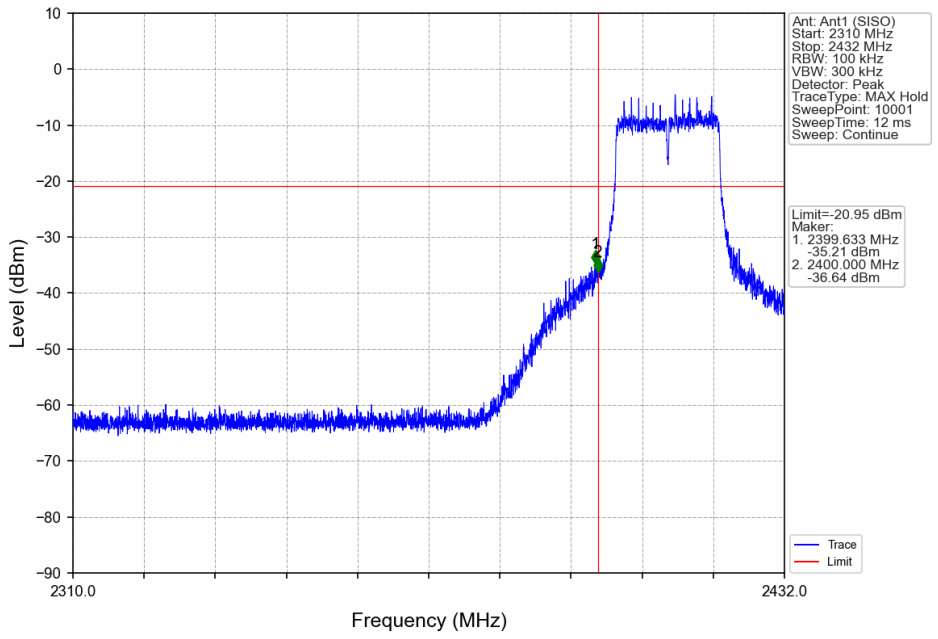
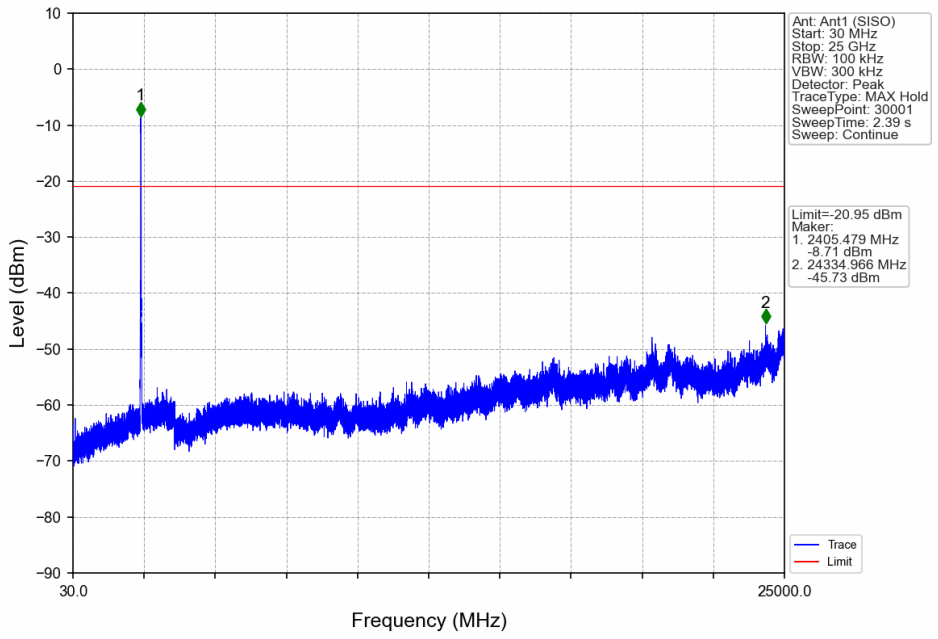
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



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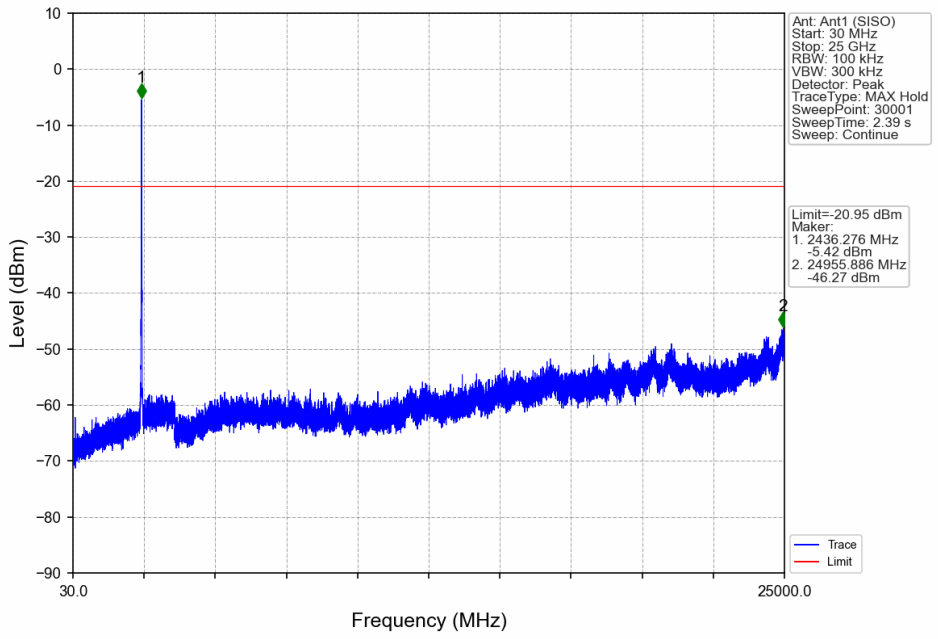
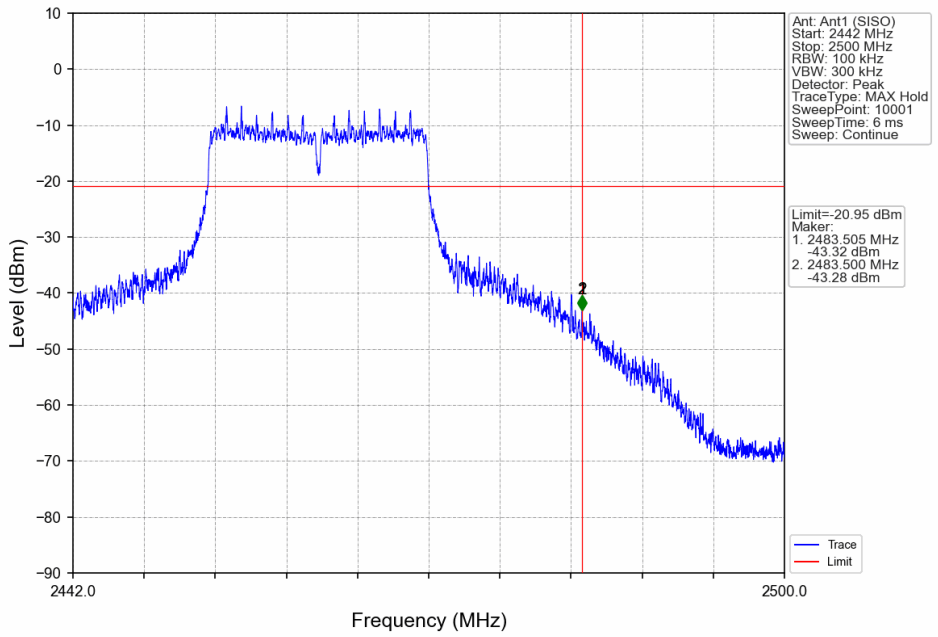
802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



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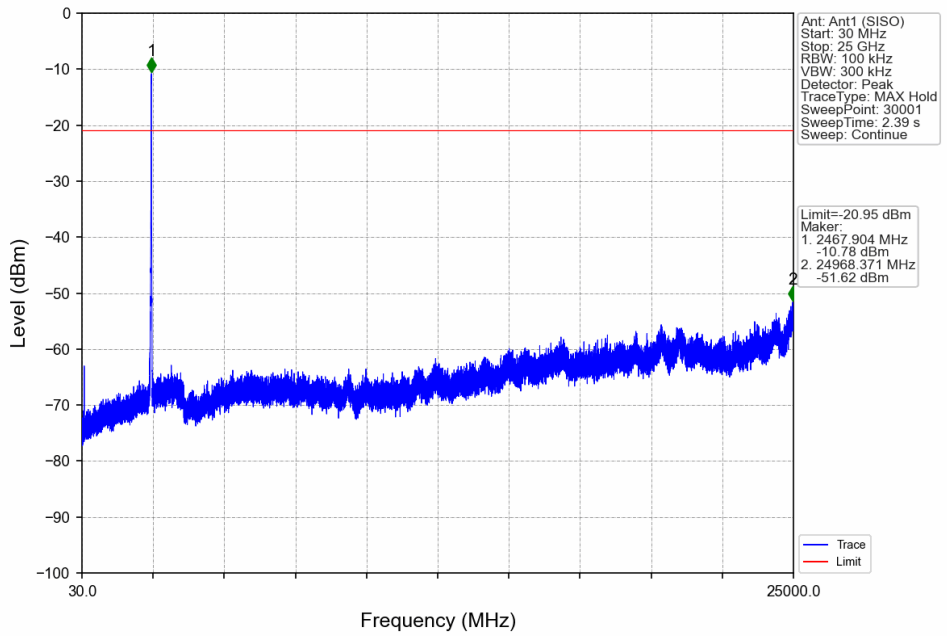
802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



6. Form731

6.1 Form731

6.1.1 Test Result

Lower Freq (MHz)	High Freq (MHz)	MAX Power (W)	MAX Power (dBm)
2412	2462	0.0649	18.12

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