



Annex for 2.4G Wi-Fi

Test Report No.: CTL2506252041-WF02

TABLE OF CONTENTS

1. Bandwidth	3
1.1 Test Result	3
1.1.1 OBW	3
1.1.2 6dB BW	3
1.2 Test Graph	4
1.2.1 OBW	4
1.2.2 6dB BW	9
2. Maximum Conducted Output Power	14
2.1 Test Result	14
2.1.1 Power	14
3. Maximum Power Spectral Density	15
3.1 Test Result	15
3.1.1 PSD	15
3.2 Test Graph	16
3.2.1 PSD	16
4. Unwanted Emissions In Non-restricted Frequency Bands	21
4.1 Test Result	21
4.1.1 Ref	21
4.1.2 CSE	21
4.2 Test Graph	22

FCC ID:2A53H-SQ400C

4.2.1 Ref..... 22

4.2.2 CSE..... 27

FCC ID:2A53H-SQ400C

1. Bandwidth

1.1 Test Result

1.1.1 OBW

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	13.923	/	Pass
		2437	1	14.090	/	Pass
		2462	1	13.960	/	Pass
802.11g	SISO	2412	1	17.691	/	Pass
		2437	1	17.715	/	Pass
		2462	1	17.707	/	Pass
802.11n (HT20)	SISO	2412	1	17.706	/	Pass
		2437	1	17.860	/	Pass
		2462	1	17.777	/	Pass

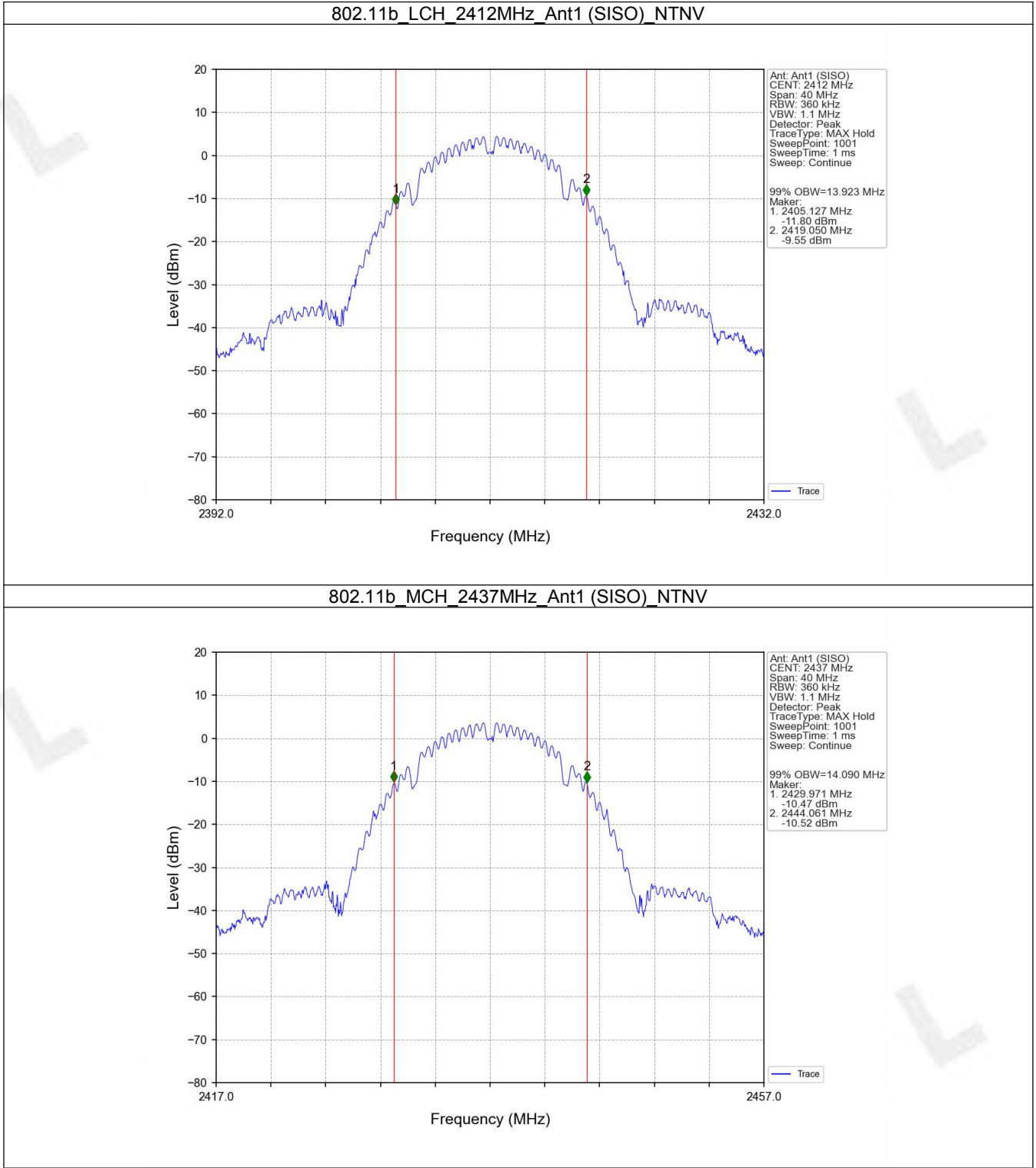
1.1.2 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	9.045	≥ 0.5	Pass
		2437	1	9.080	≥ 0.5	Pass
		2462	1	9.072	≥ 0.5	Pass
802.11g	SISO	2412	1	13.828	≥ 0.5	Pass
		2437	1	15.004	≥ 0.5	Pass
		2462	1	12.538	≥ 0.5	Pass
802.11n (HT20)	SISO	2412	1	15.178	≥ 0.5	Pass
		2437	1	15.197	≥ 0.5	Pass
		2462	1	15.186	≥ 0.5	Pass

FCC ID:2A53H-SQ400C

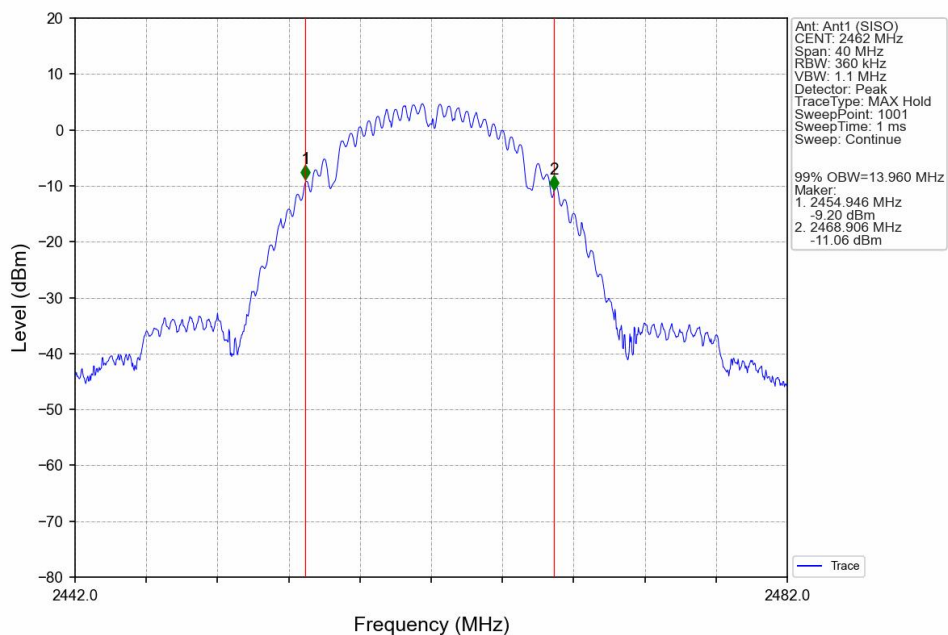
1.2 Test Graph

1.2.1 OBW

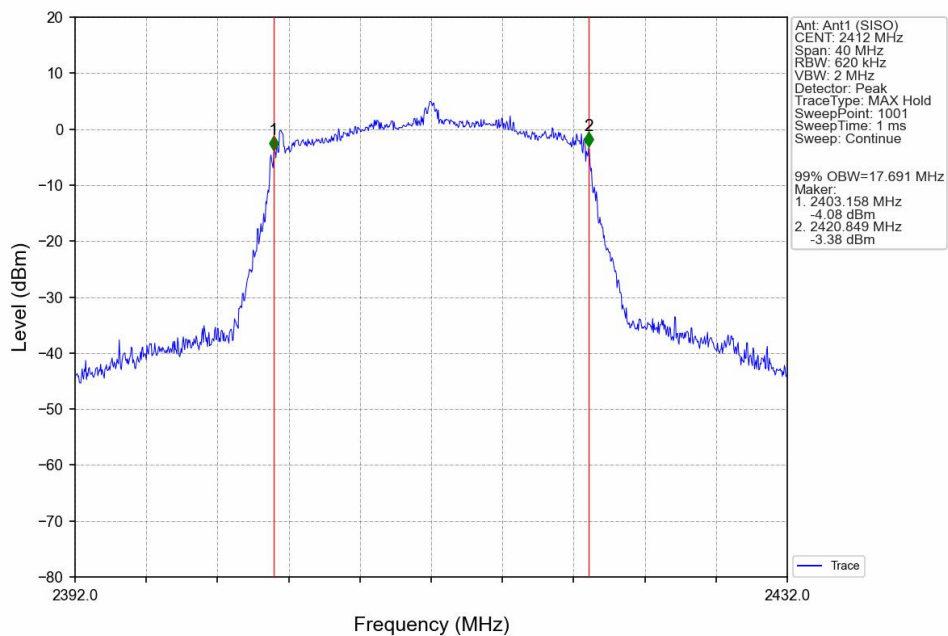


FCC ID:2A53H-SQ400C

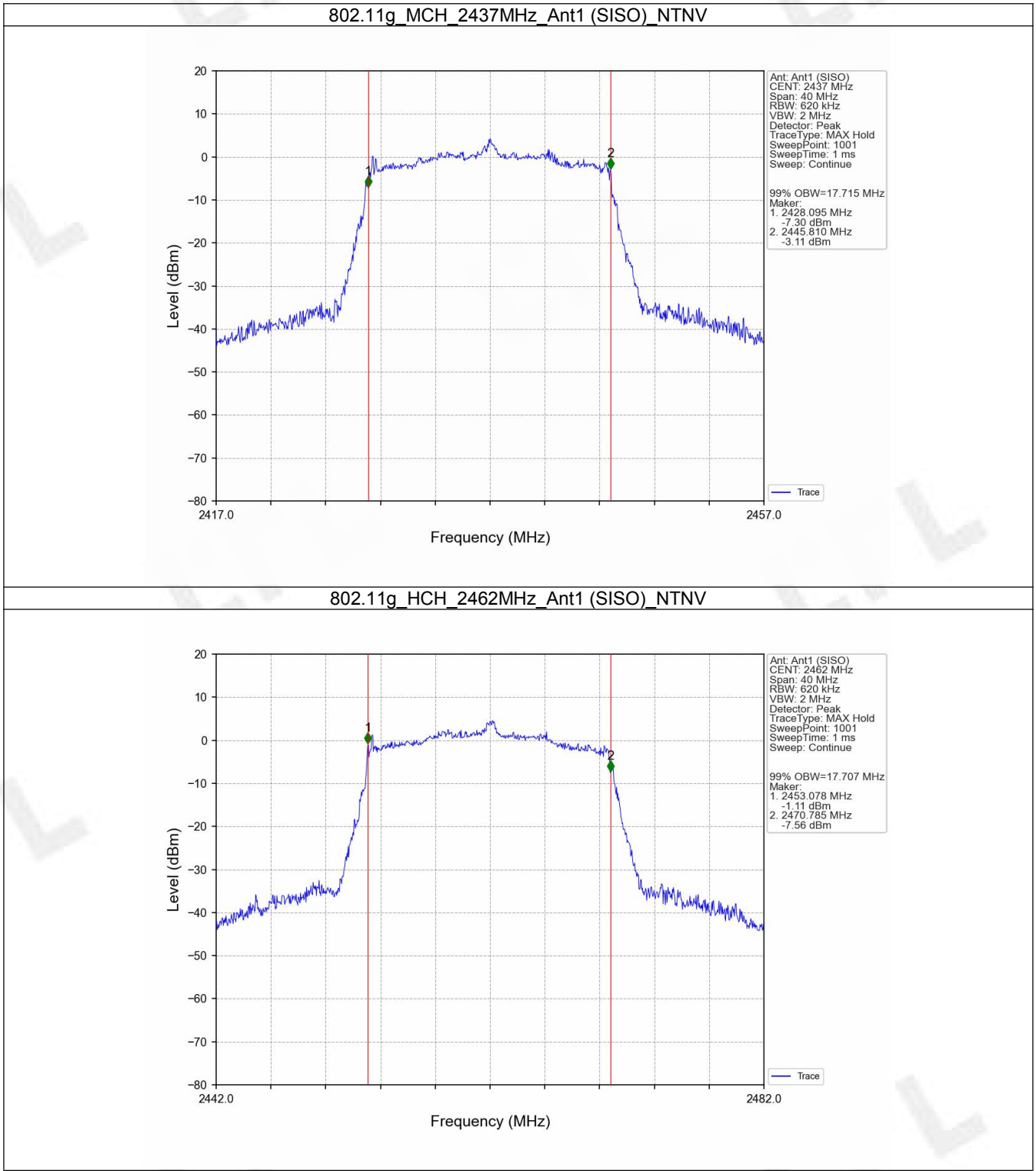
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

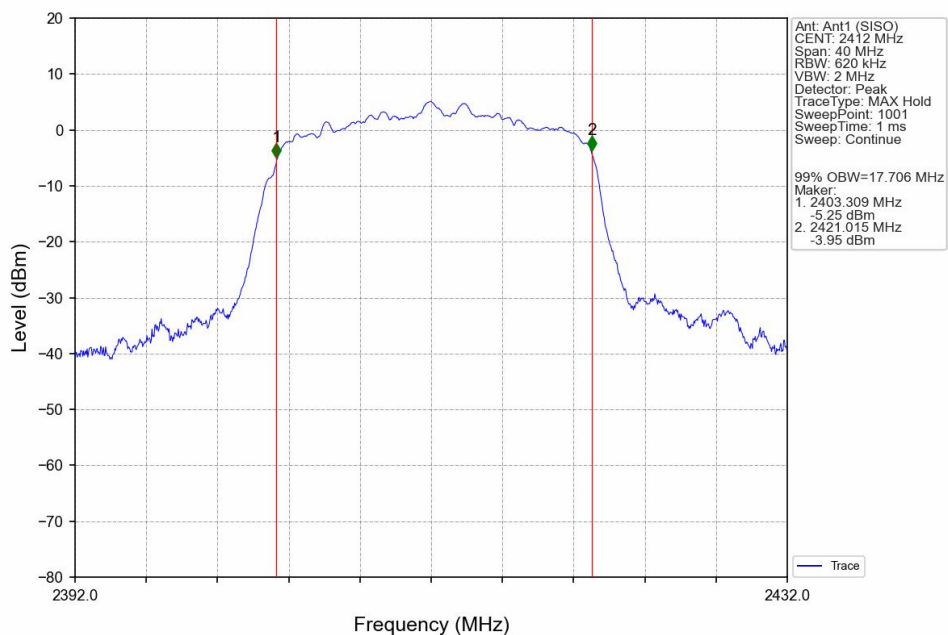


FCC ID:2A53H-SQ400C

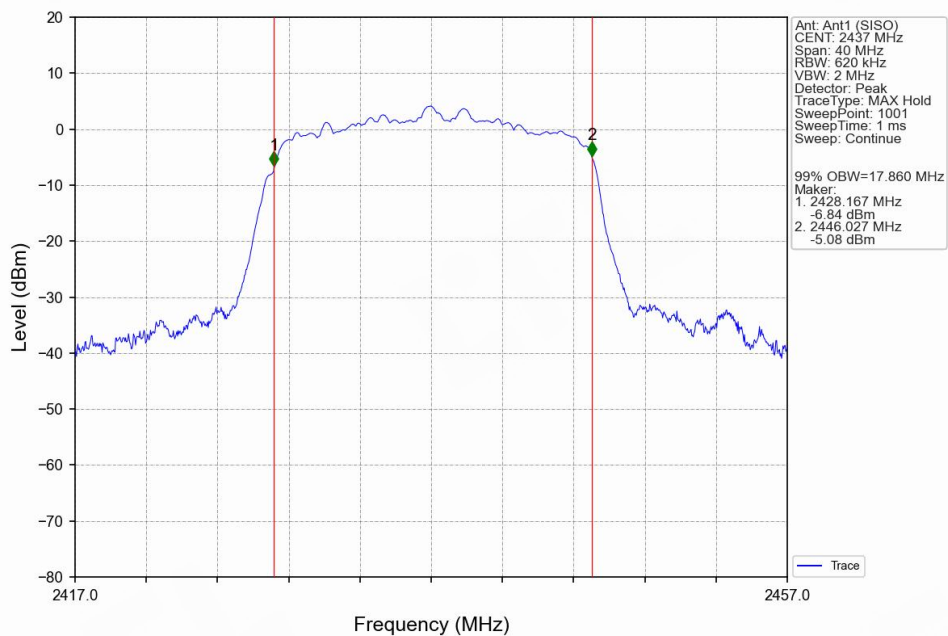


FCC ID:2A53H-SQ400C

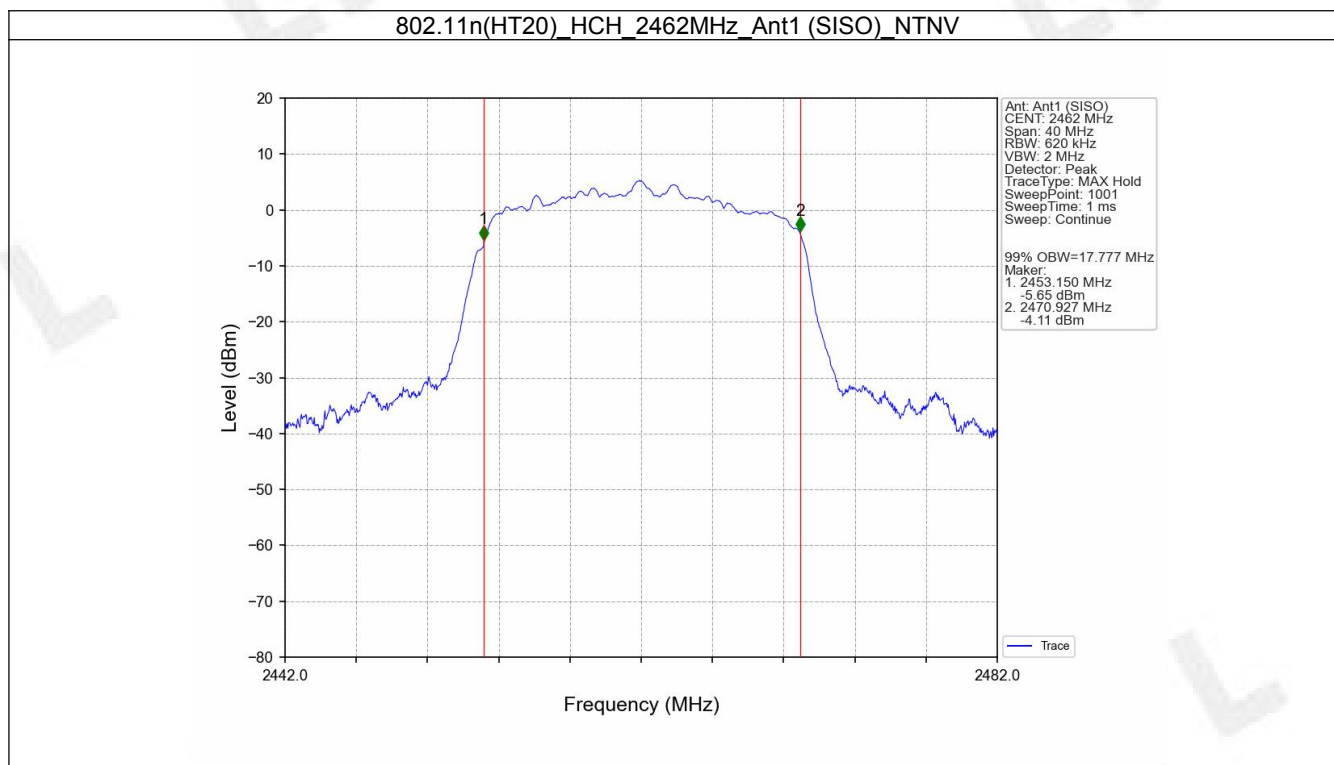
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV

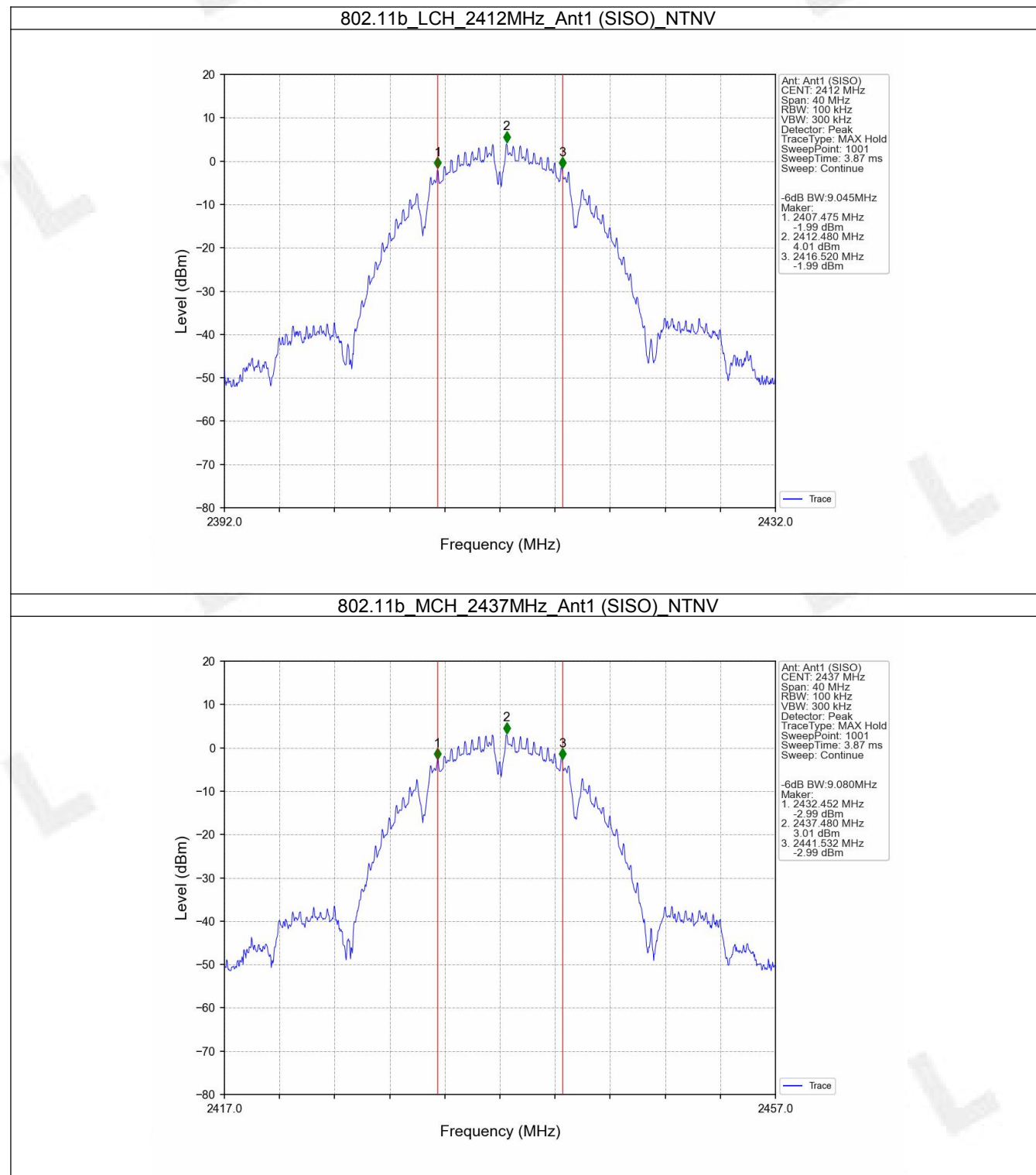


FCC ID:2A53H-SQ400C



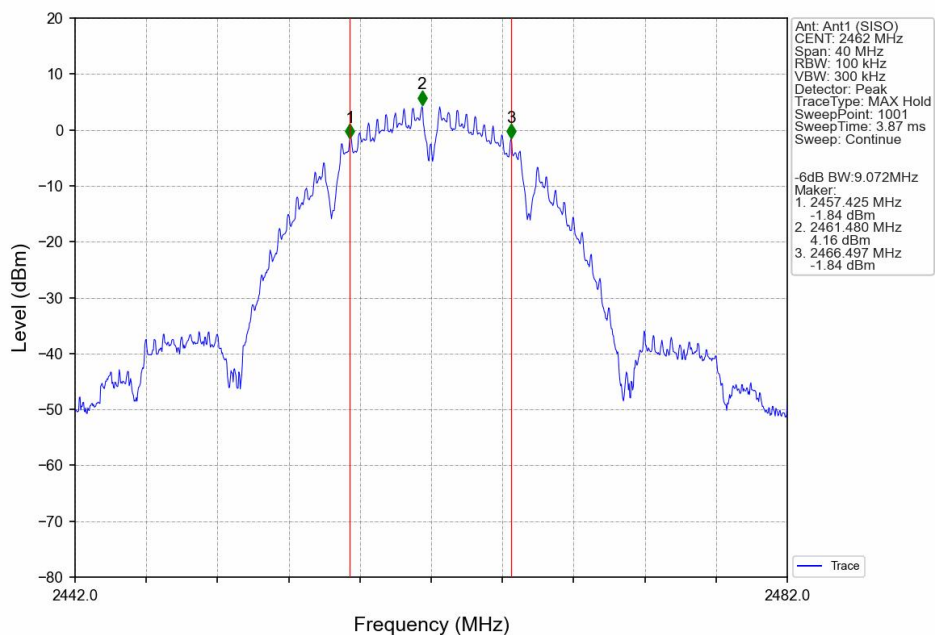
FCC ID:2A53H-SQ400C

1.2.2 6dB BW

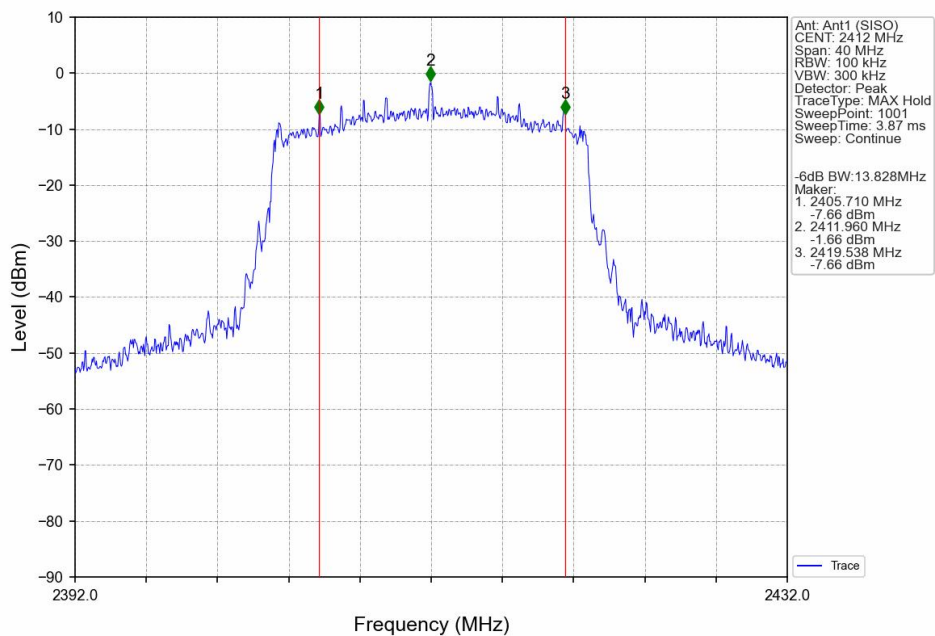


FCC ID:2A53H-SQ400C

802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

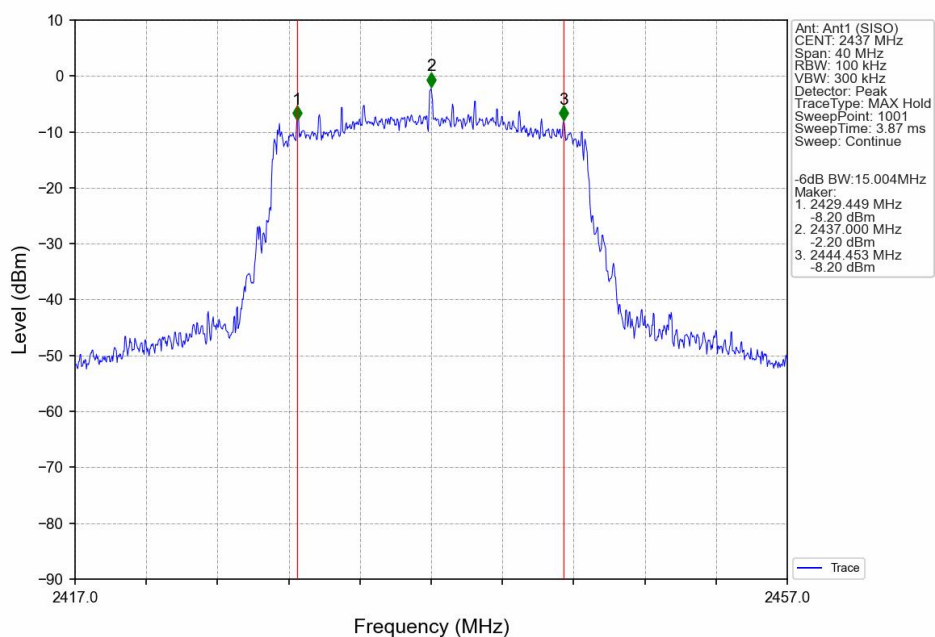


802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

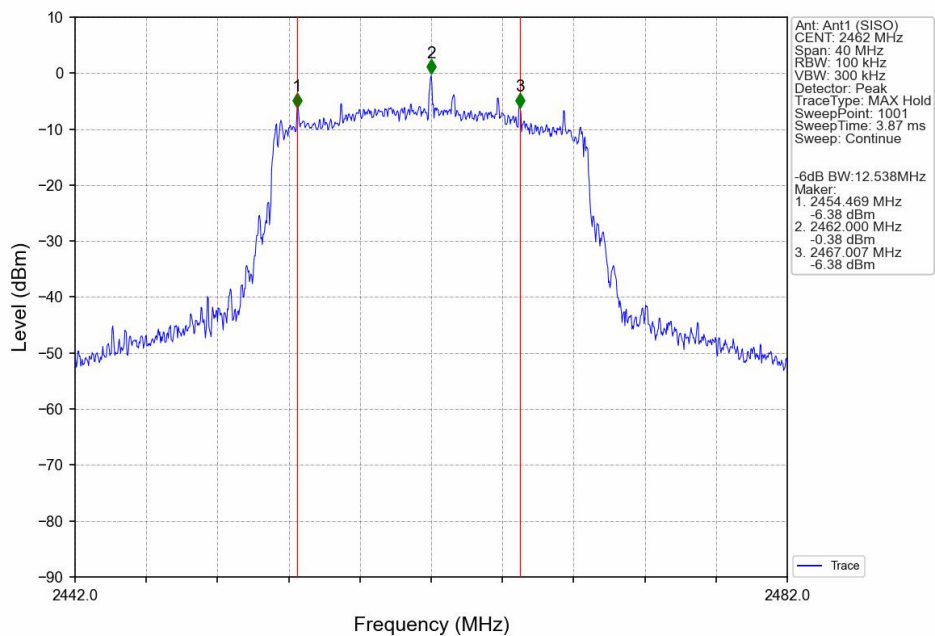


FCC ID:2A53H-SQ400C

802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV

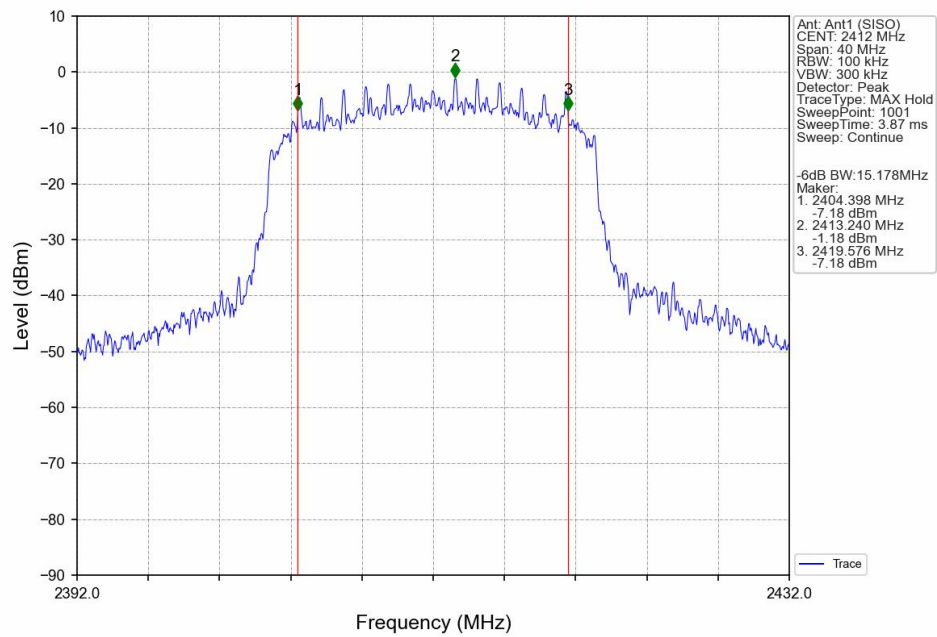


802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

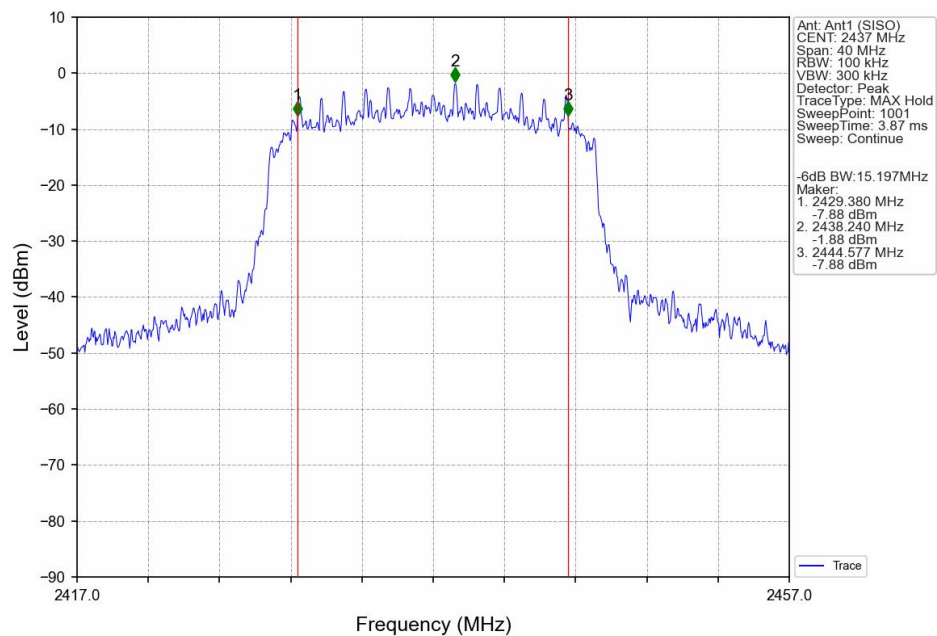


FCC ID:2A53H-SQ400C

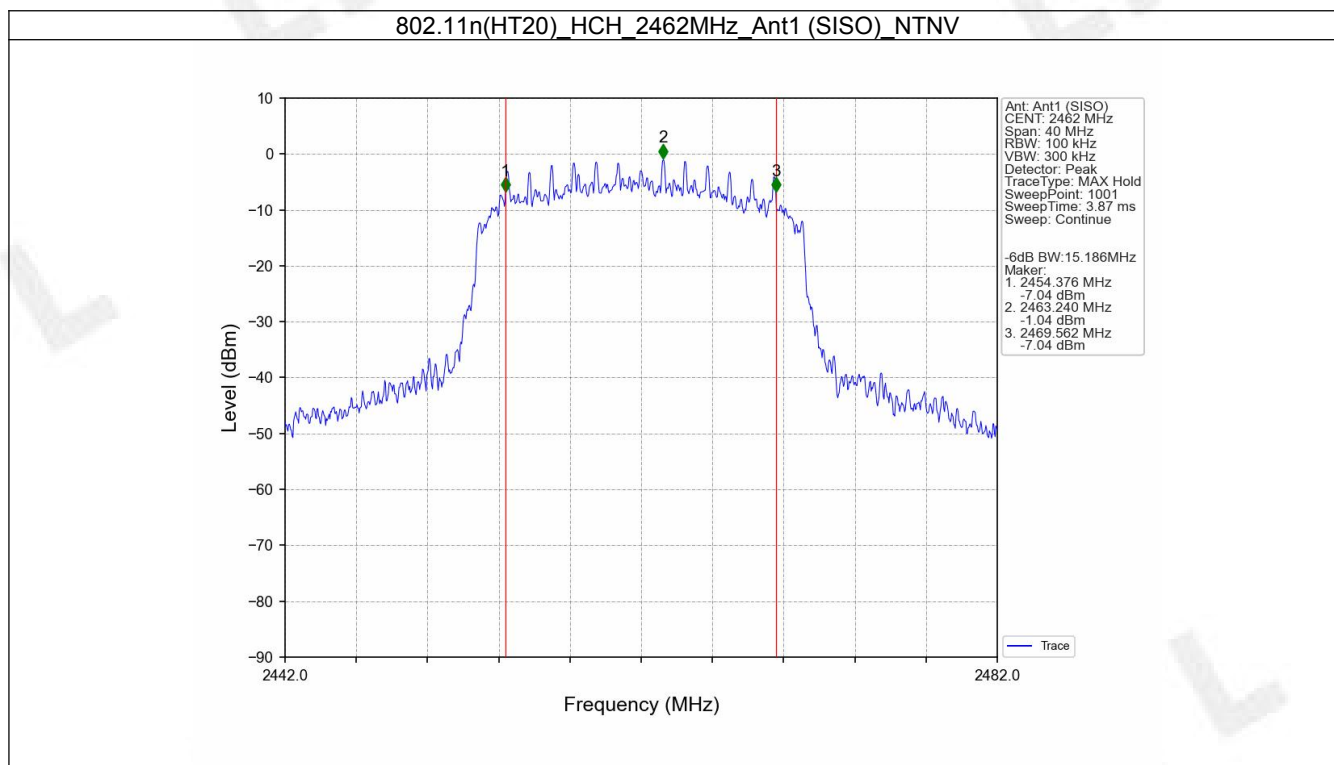
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



FCC ID:2A53H-SQ400C



FCC ID:2A53H-SQ400C

2. Maximum Conducted Output Power

2.1 Test Result

2.1.1 Power

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	15.20	<=30	Pass
		2437	14.49	<=30	Pass
		2462	15.47	<=30	Pass
802.11g	SISO	2412	14.54	<=30	Pass
		2437	14.15	<=30	Pass
		2462	14.57	<=30	Pass
802.11n (HT20)	SISO	2412	15.77	<=30	Pass
		2437	15.39	<=30	Pass
		2462	16.24	<=30	Pass

Note1: Antenna Gain: Ant1: -0.23dBi;

FCC ID:2A53H-SQ400C

3. Maximum Power Spectral Density

3.1 Test Result

3.1.1 PSD

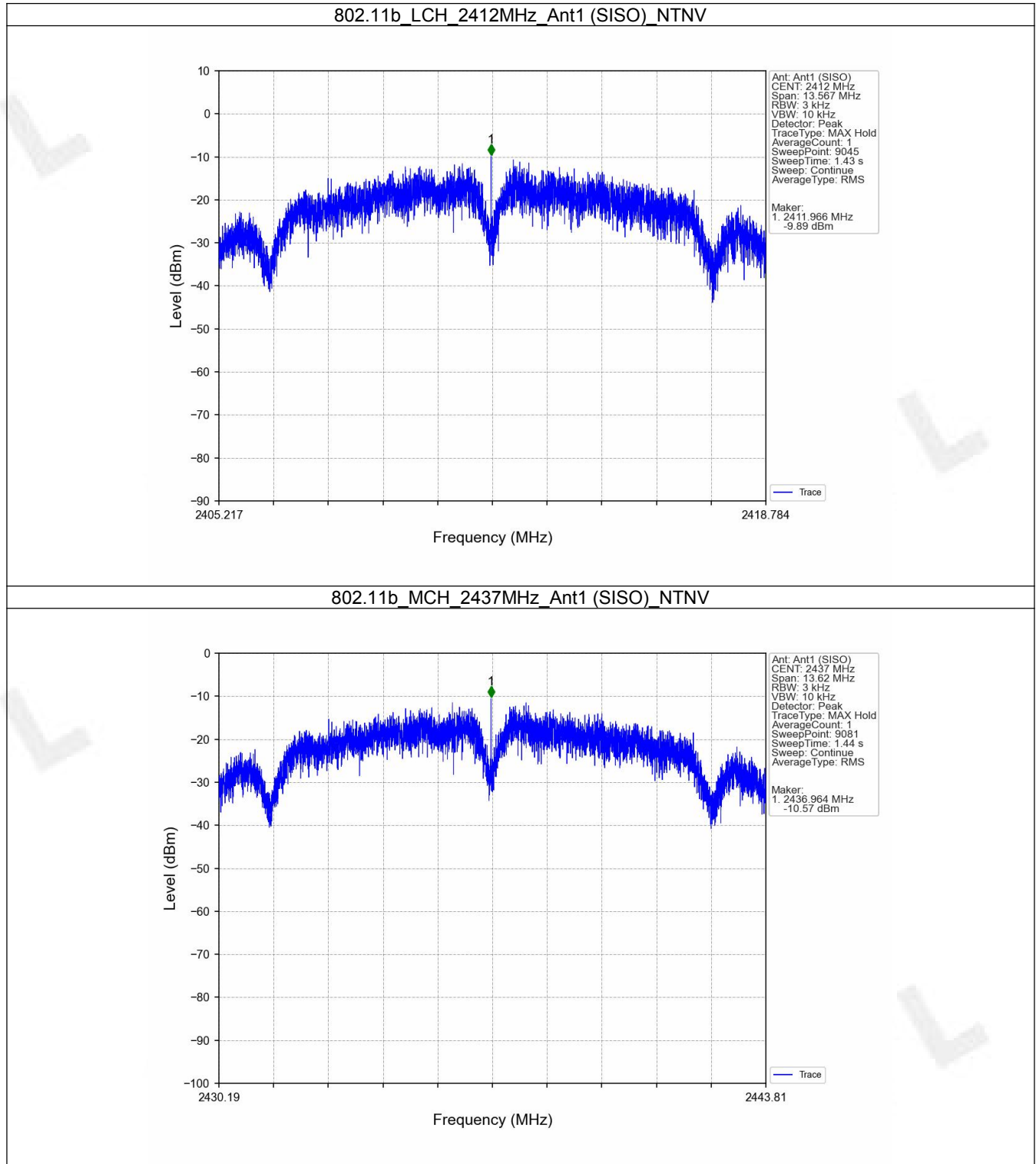
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
802.11b	SISO	2412	-9.89	<=8	Pass
		2437	-10.57	<=8	Pass
		2462	-9.56	<=8	Pass
802.11g	SISO	2412	-10.34	<=8	Pass
		2437	-10.10	<=8	Pass
		2462	-9.86	<=8	Pass
802.11n (HT20)	SISO	2412	-9.50	<=8	Pass
		2437	-10.28	<=8	Pass
		2462	-9.55	<=8	Pass

Note1: Antenna Gain: Ant1: -0.23dBi;

FCC ID:2A53H-SQ400C

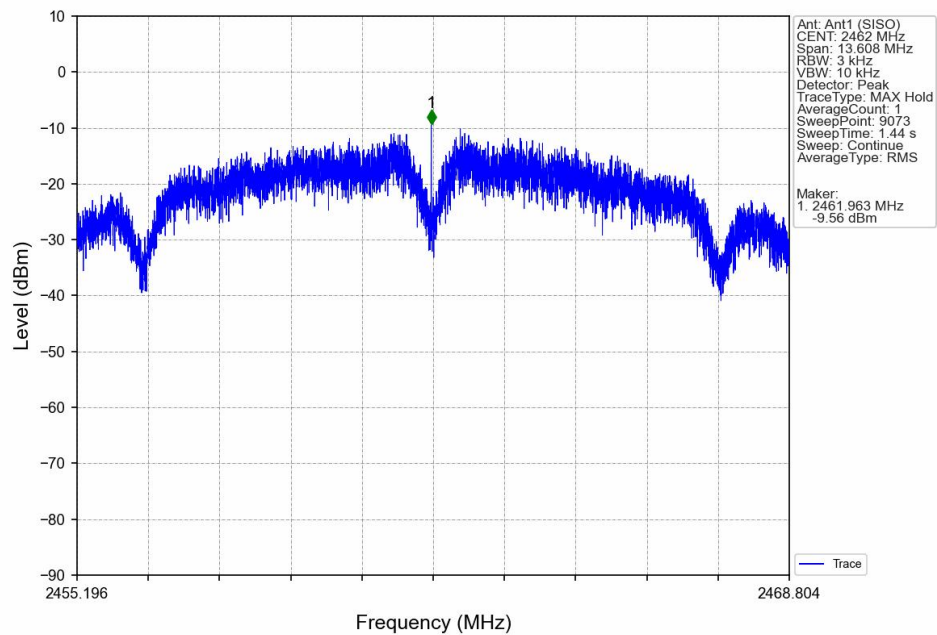
3.2 Test Graph

3.2.1 PSD

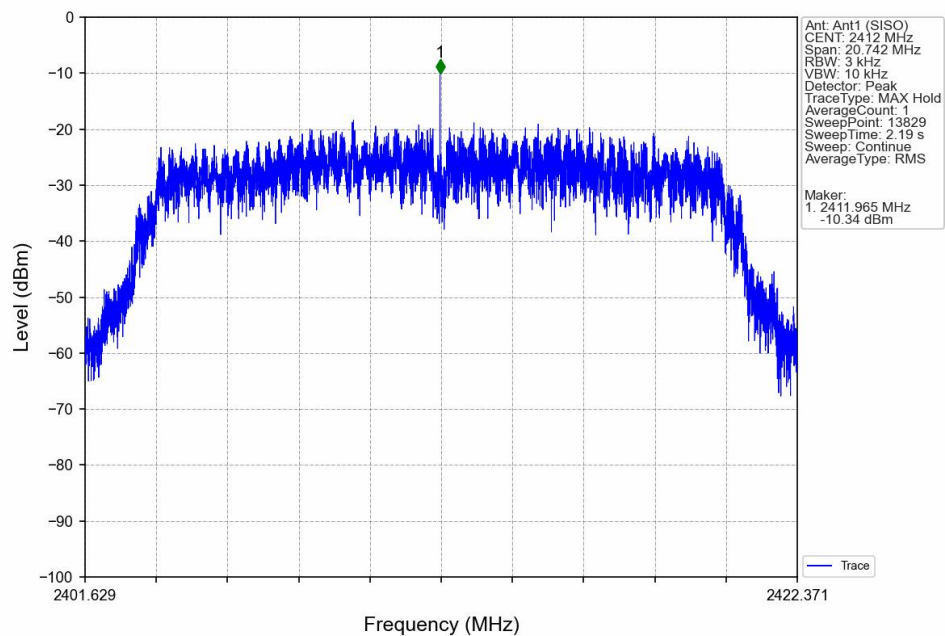


FCC ID:2A53H-SQ400C

802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

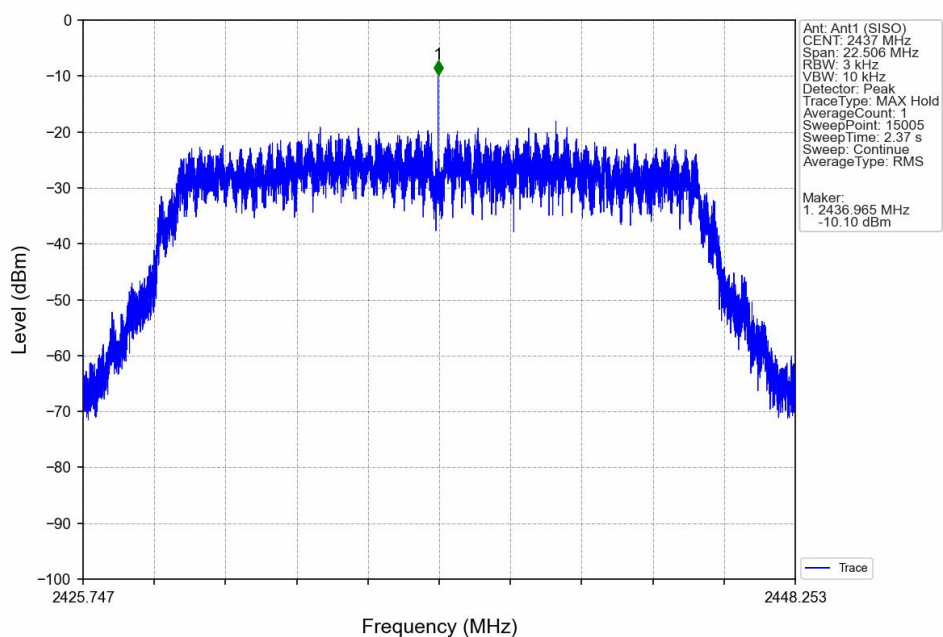


802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

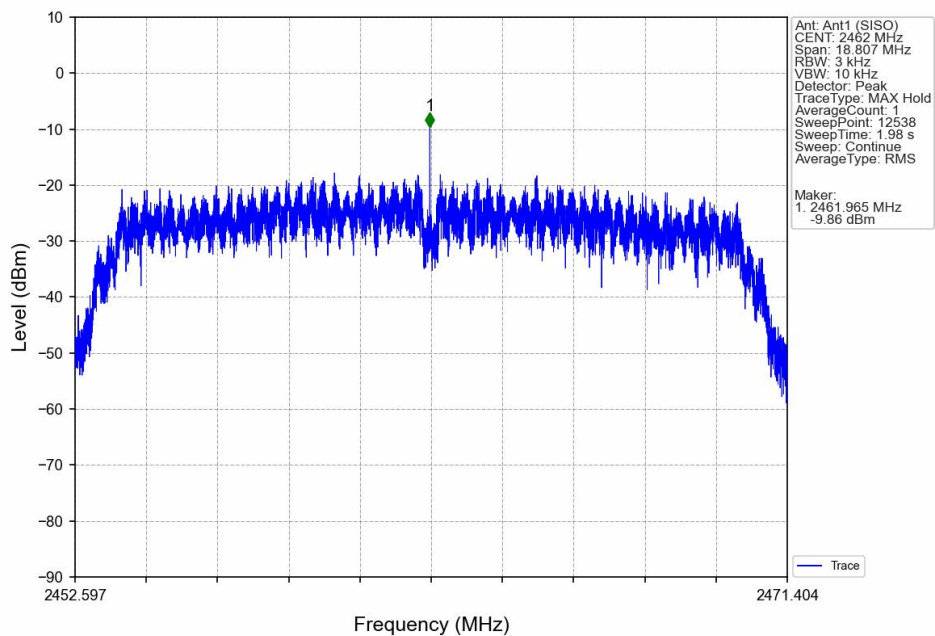


FCC ID:2A53H-SQ400C

802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV

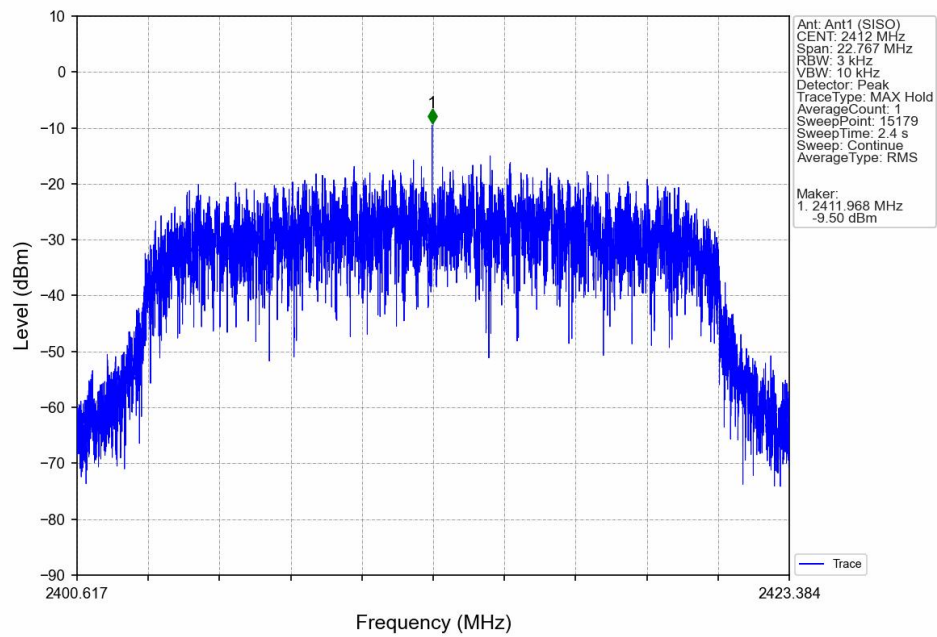


802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

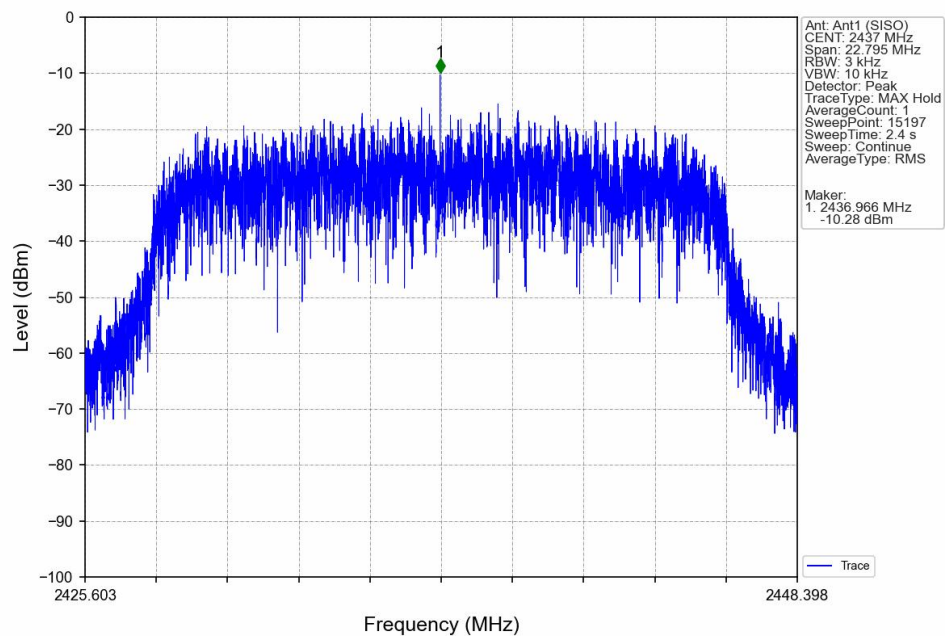


FCC ID:2A53H-SQ400C

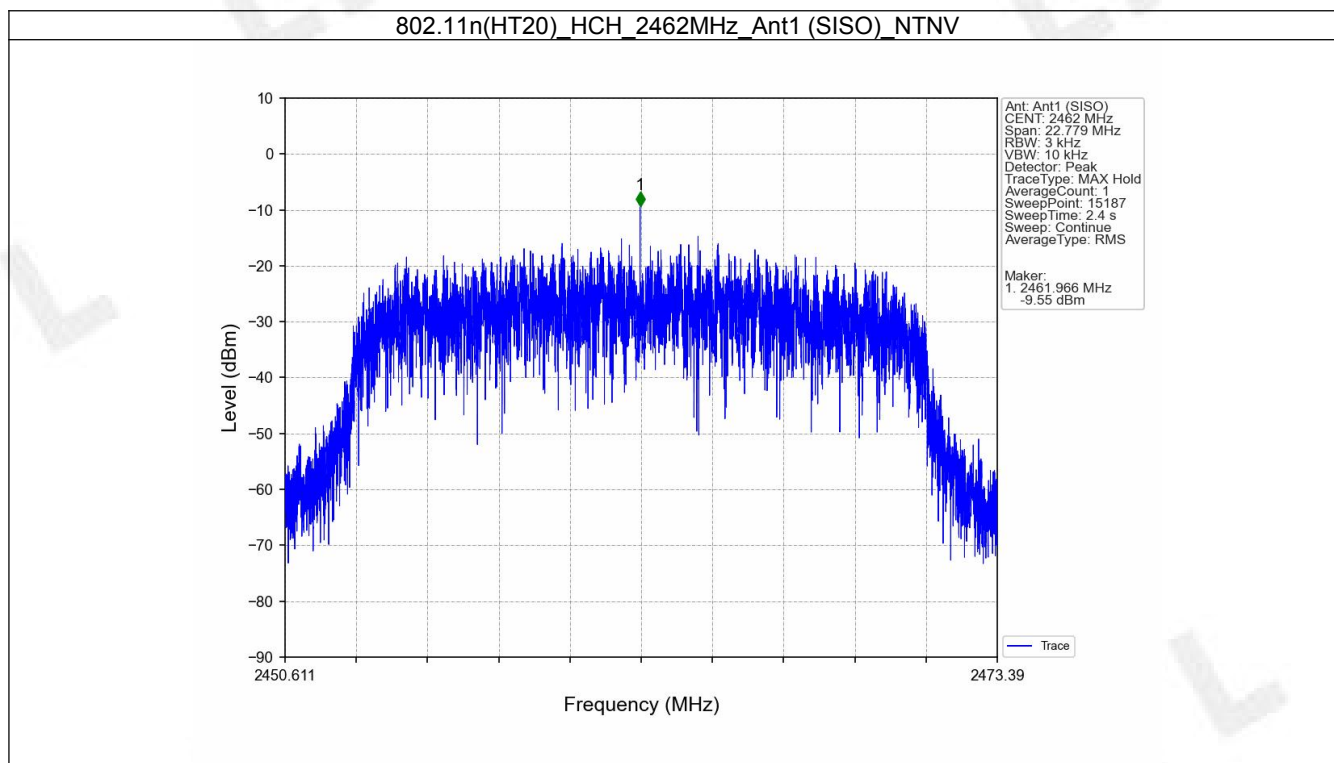
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



FCC ID:2A53H-SQ400C



FCC ID:2A53H-SQ400C

4. Unwanted Emissions In Non-restricted Frequency Bands

4.1 Test Result

4.1.1 Ref

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
802.11b	SISO	2412	1	3.91
		2437	1	3.07
		2462	1	4.19
802.11g	SISO	2412	1	-0.62
		2437	1	-2.10
		2462	1	-2.21
802.11n (HT20)	SISO	2412	1	-1.36
		2437	1	-1.84
		2462	1	-0.89

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.

4.1.2 CSE

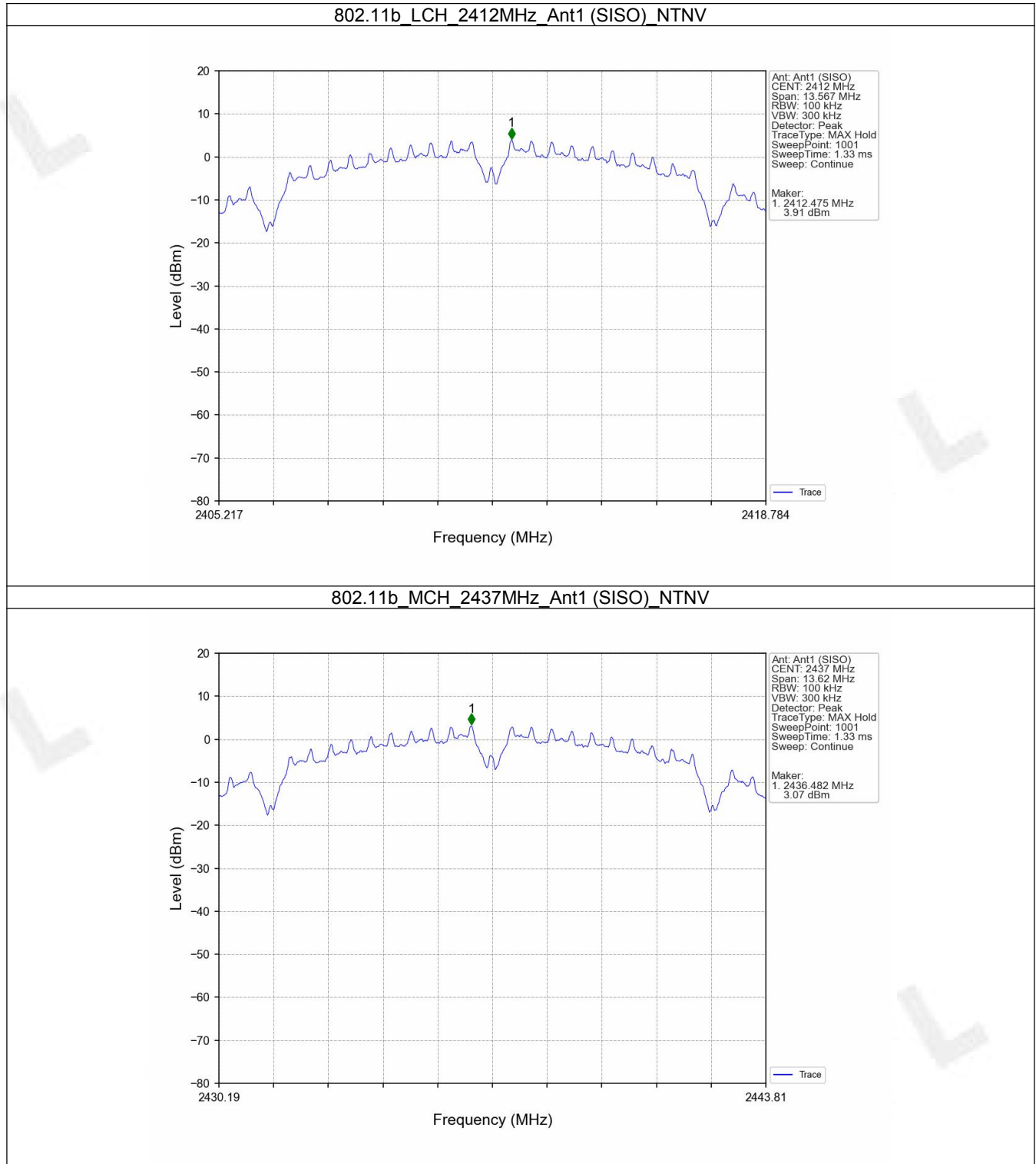
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	4.19	-15.81	Pass
		2437	1	4.19	-15.81	Pass
		2462	1	4.19	-15.81	Pass
802.11g	SISO	2412	1	-0.62	-20.62	Pass
		2437	1	-0.62	-20.62	Pass
		2462	1	-0.62	-20.62	Pass
802.11n (HT20)	SISO	2412	1	-0.89	-20.89	Pass
		2437	1	-0.89	-20.89	Pass
		2462	1	-0.89	-20.89	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.

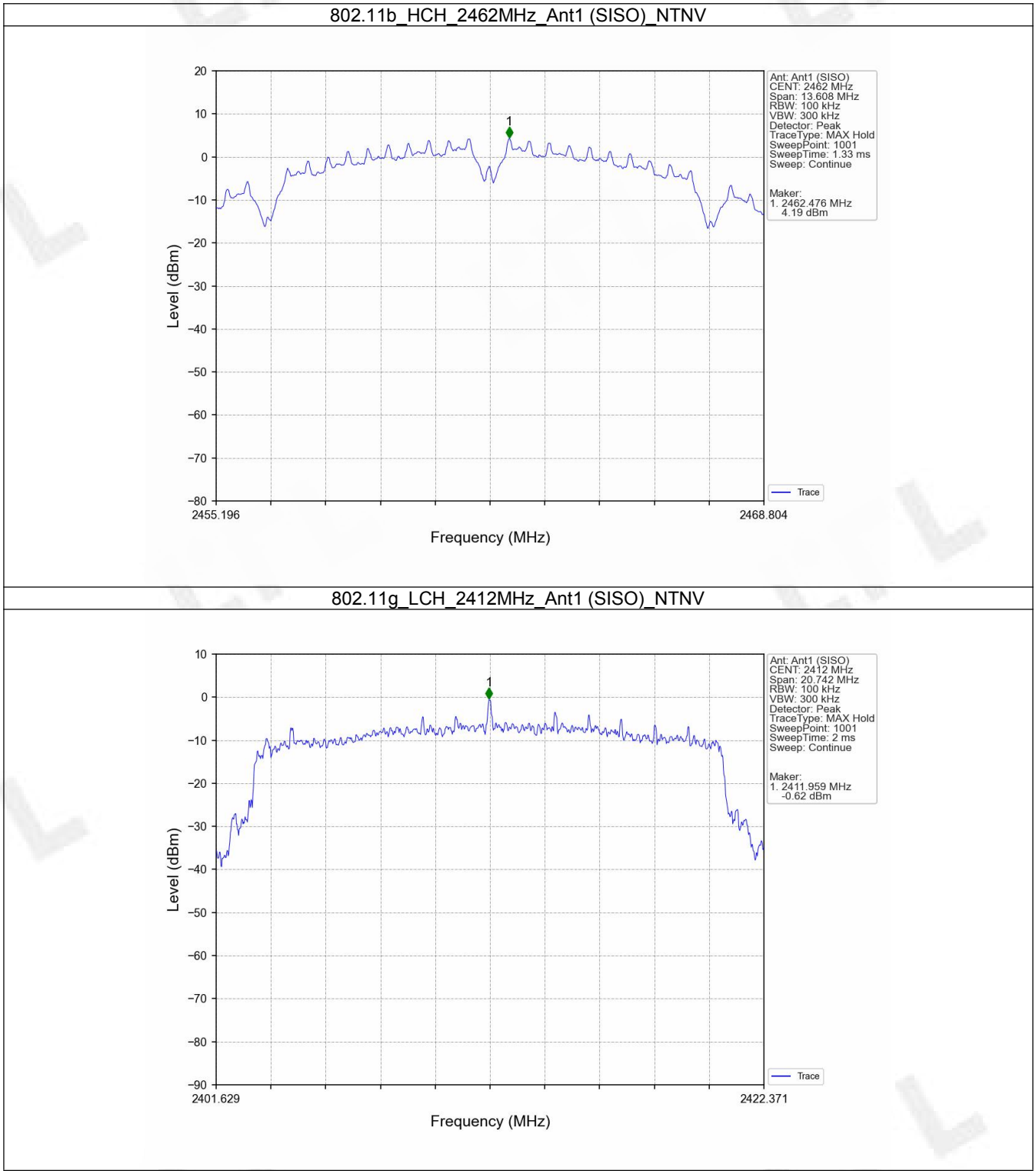
FCC ID:2A53H-SQ400C

4.2 Test Graph

4.2.1 Ref

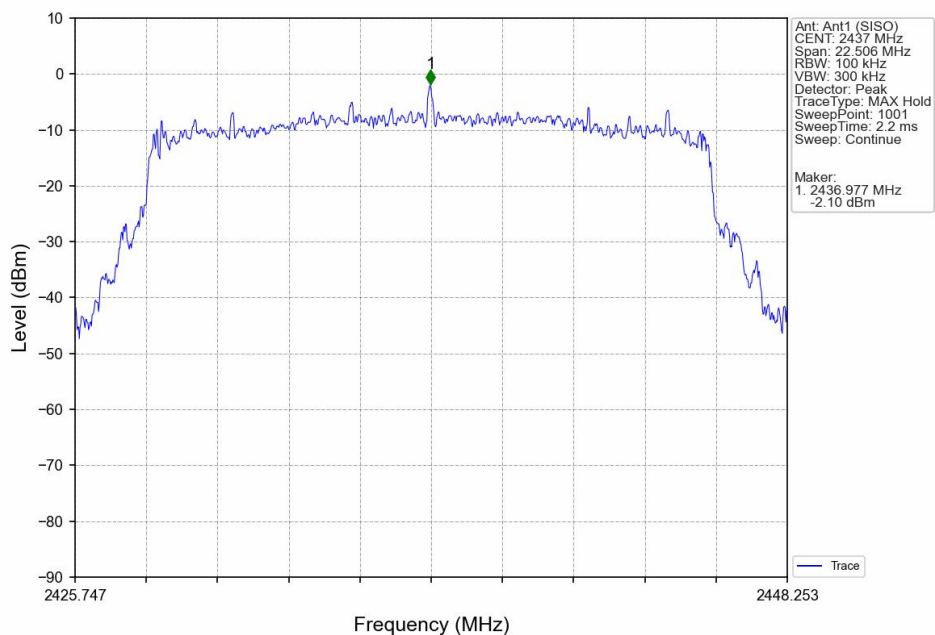


FCC ID:2A53H-SQ400C

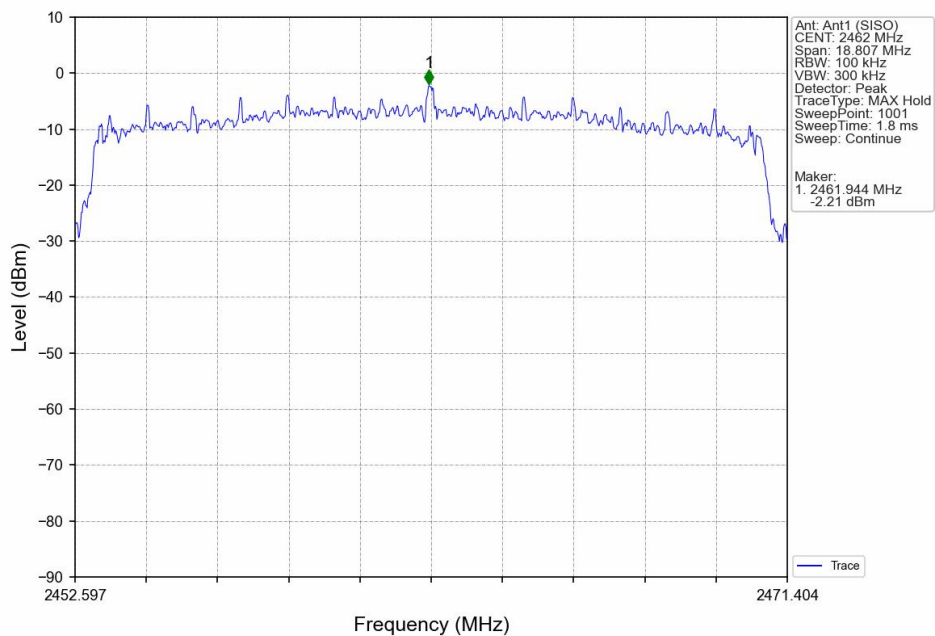


FCC ID:2A53H-SQ400C

802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV

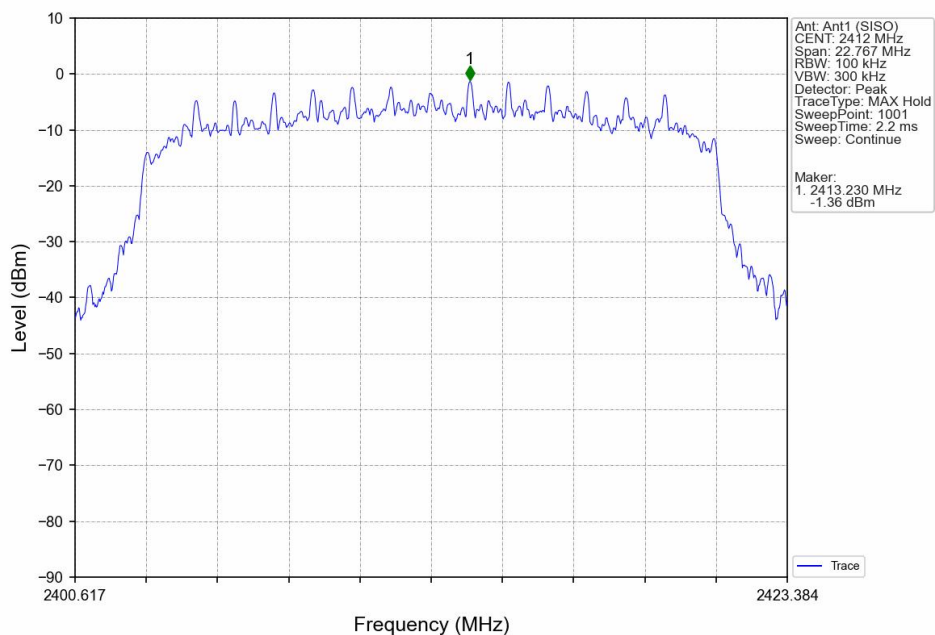


802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

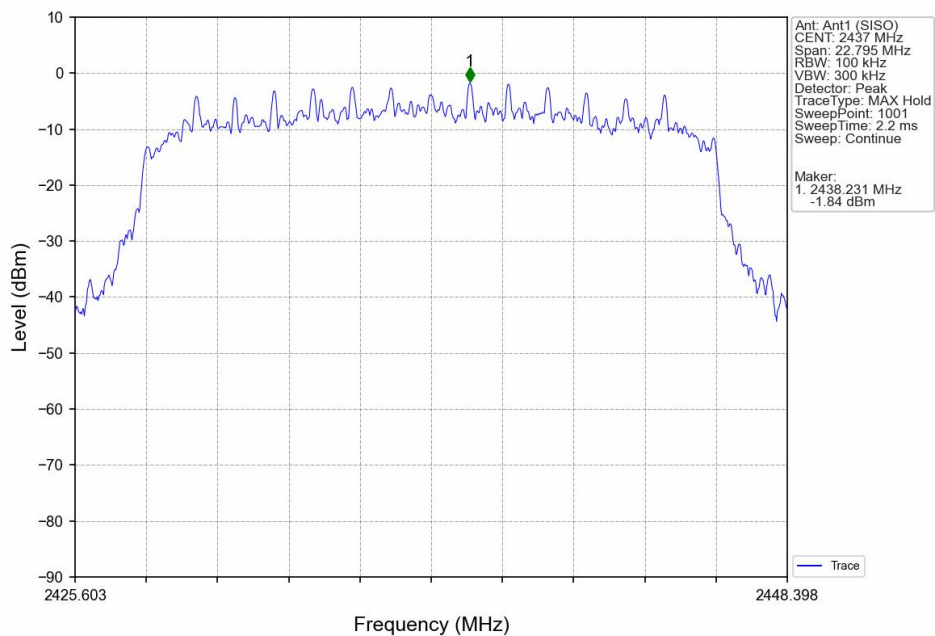


FCC ID:2A53H-SQ400C

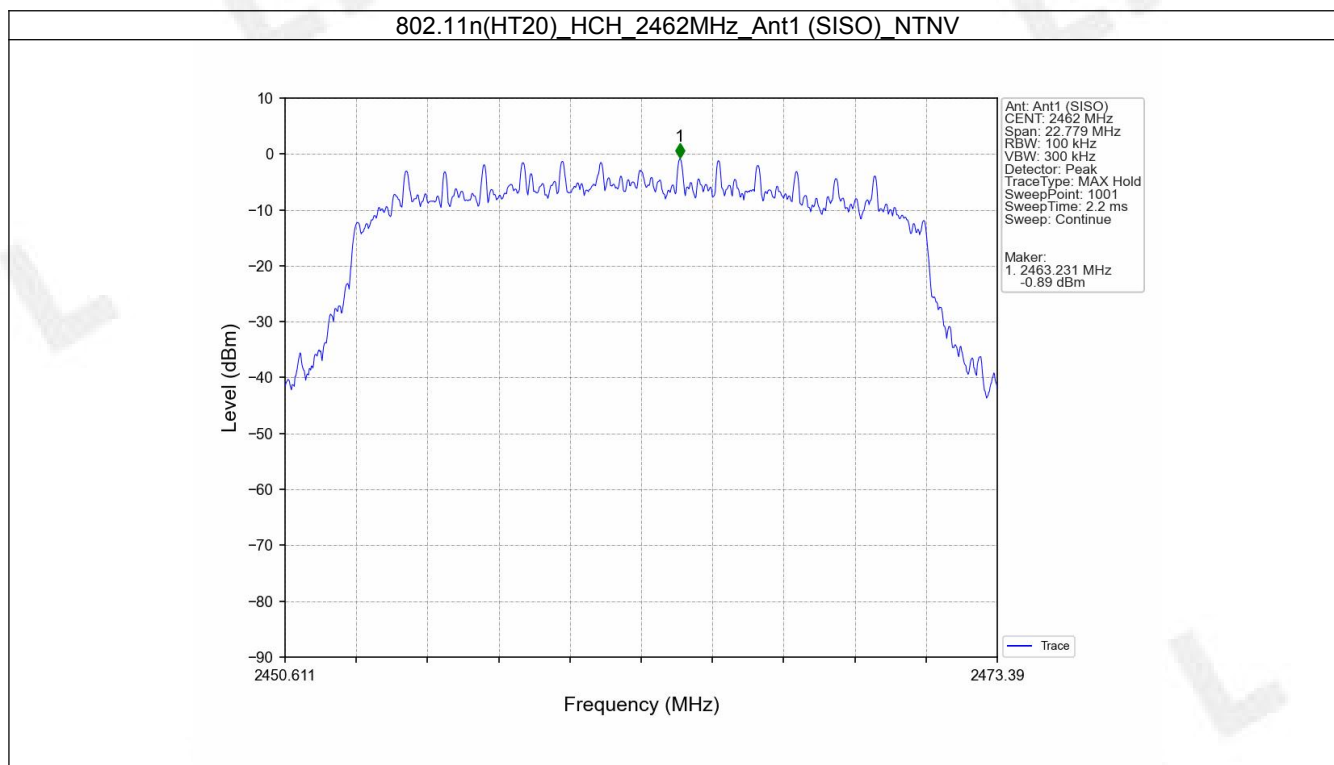
802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV

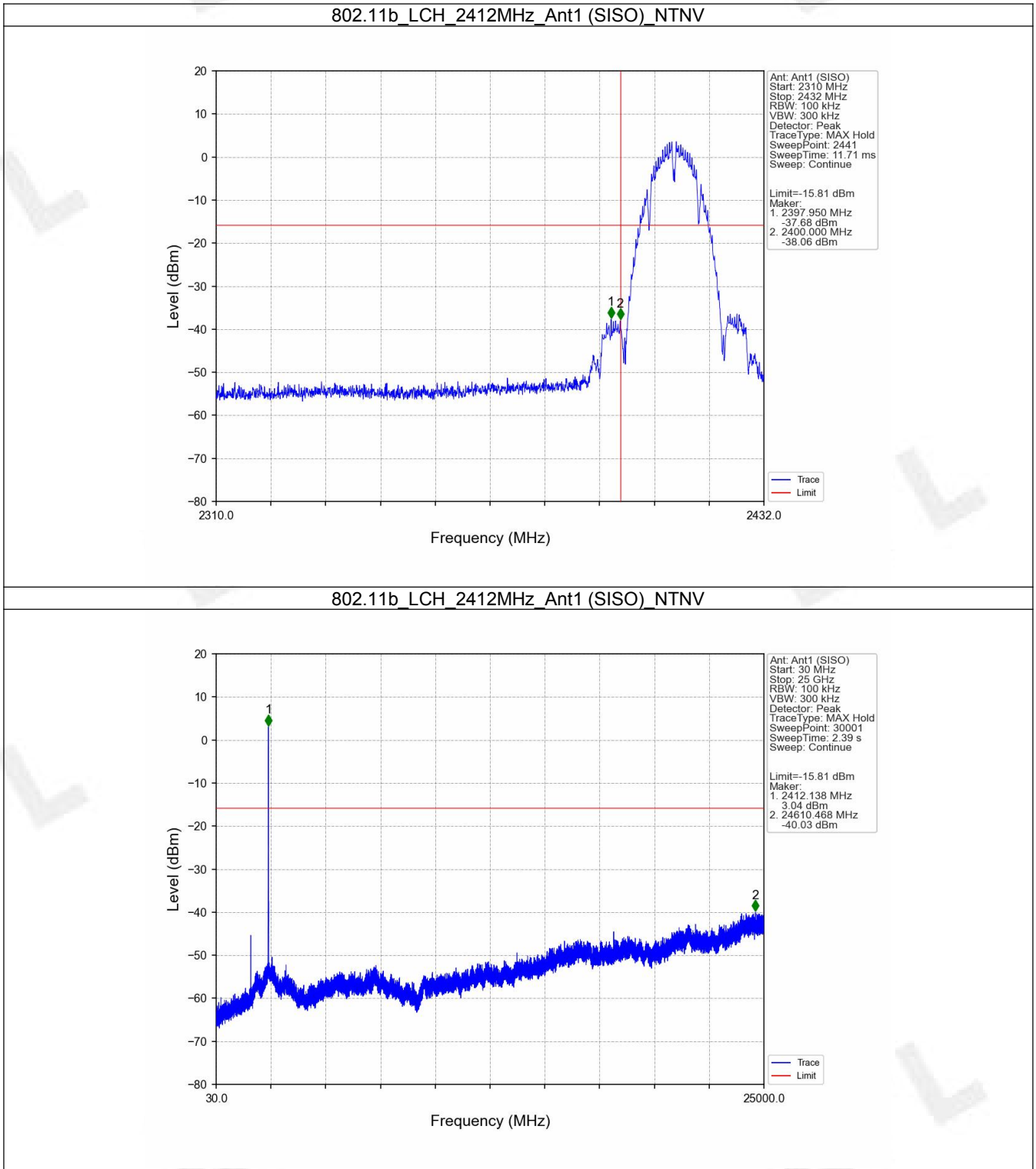


FCC ID:2A53H-SQ400C

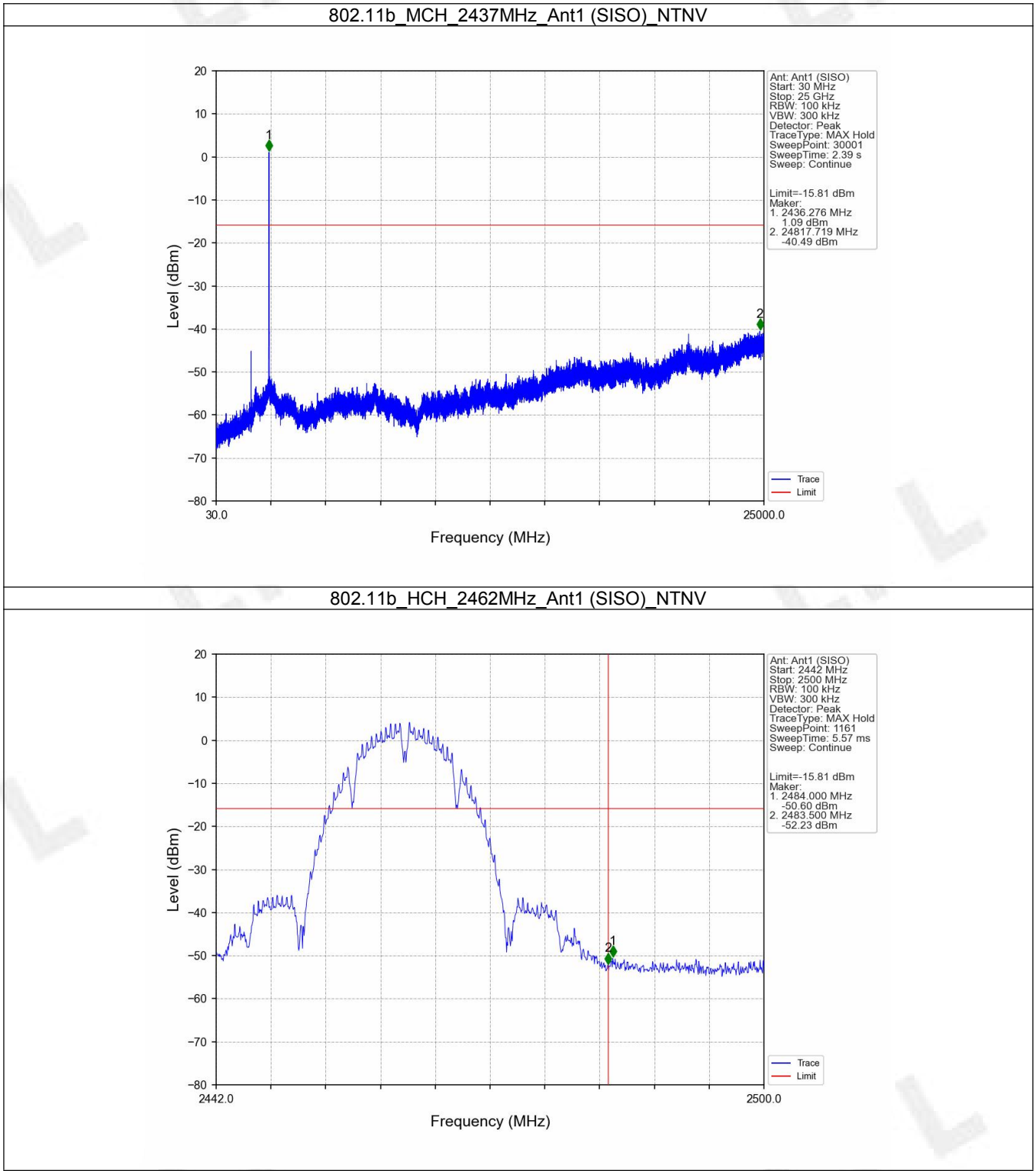


FCC ID:2A53H-SQ400C

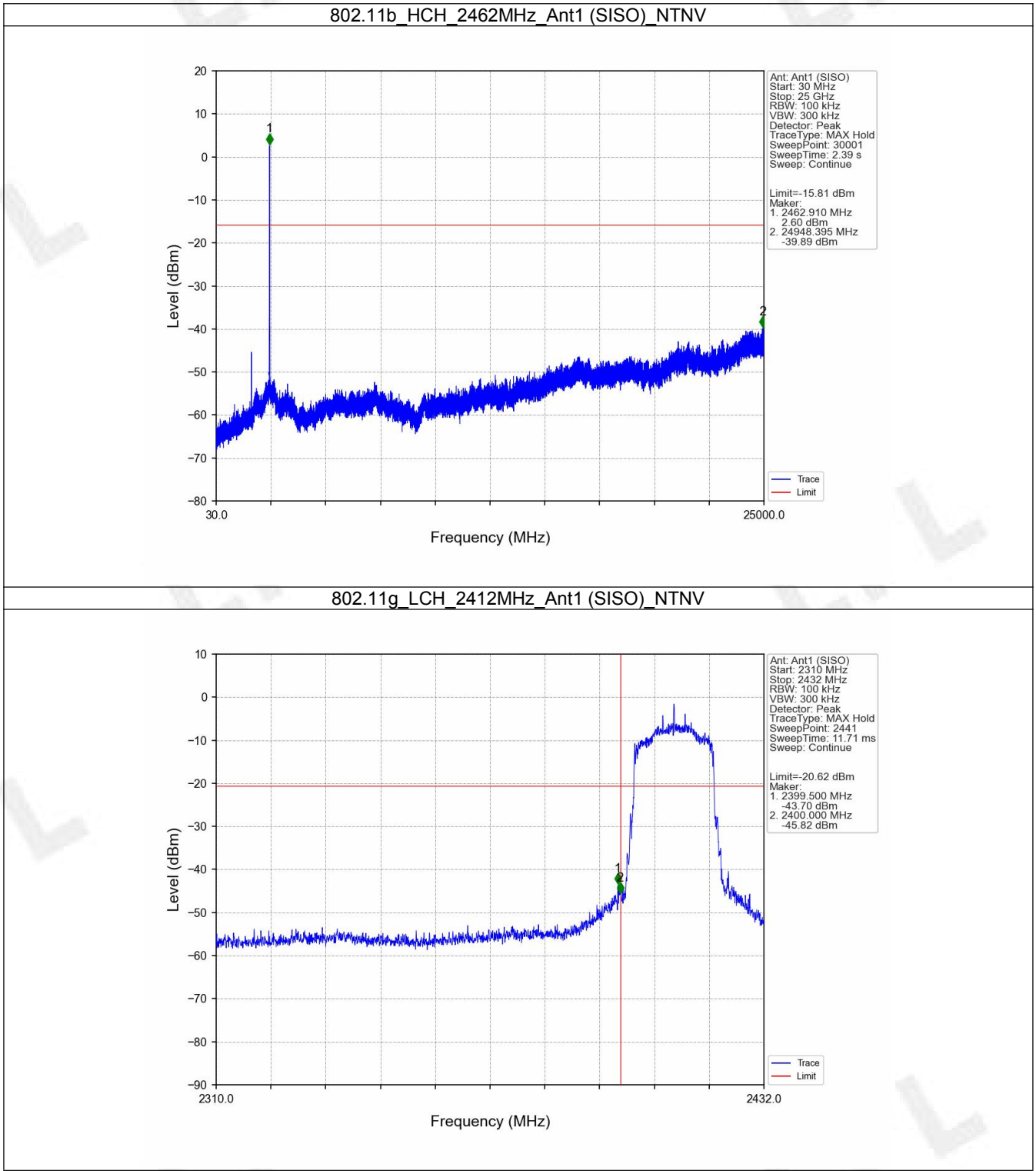
4.2.2 CSE



FCC ID:2A53H-SQ400C

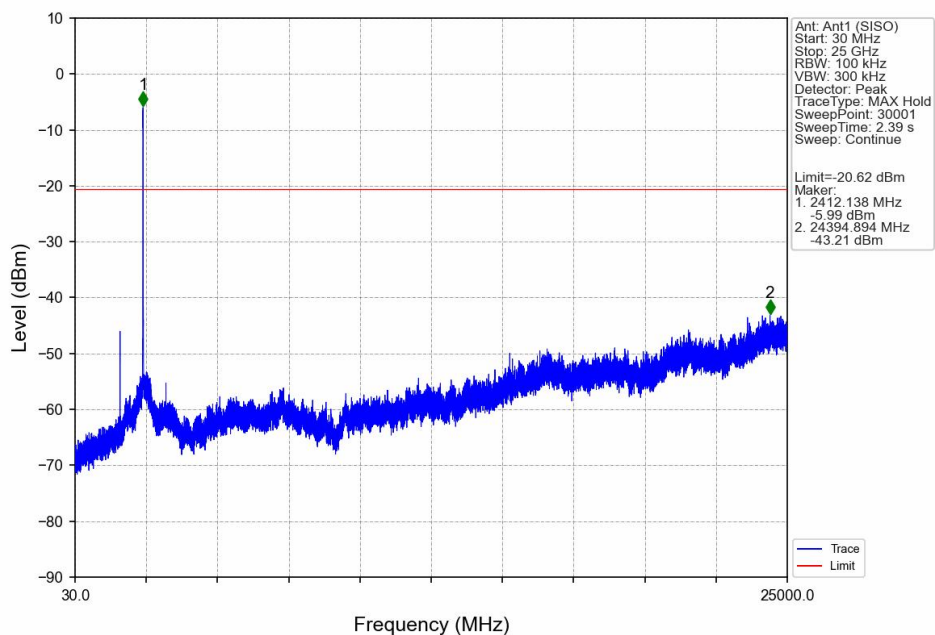


FCC ID:2A53H-SQ400C

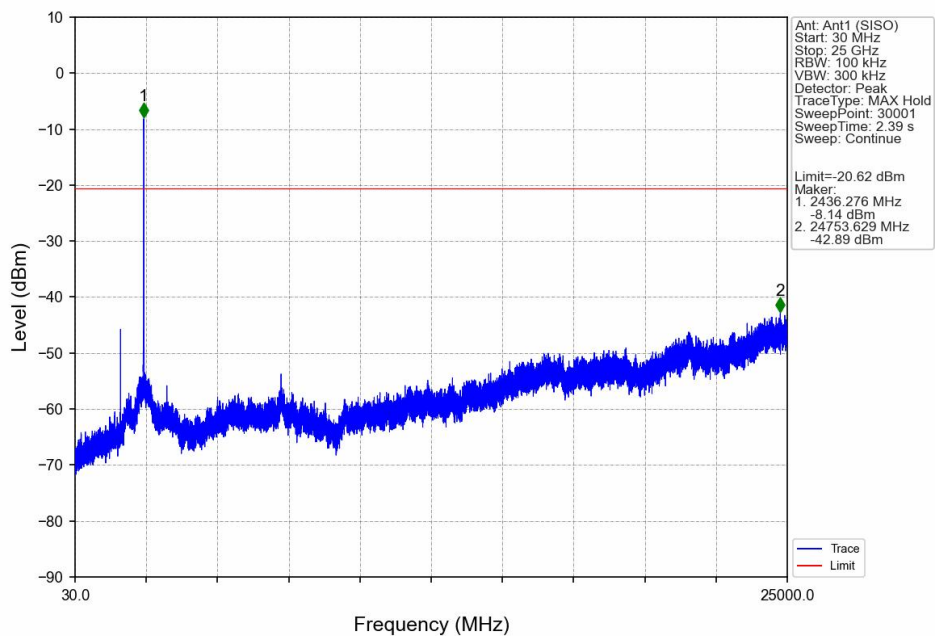


FCC ID:2A53H-SQ400C

802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

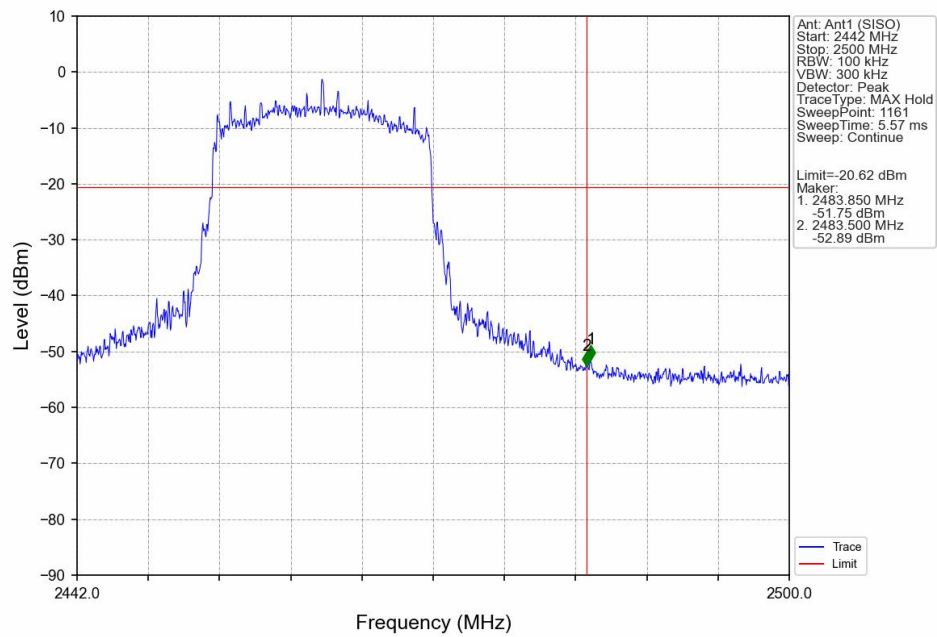


802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV

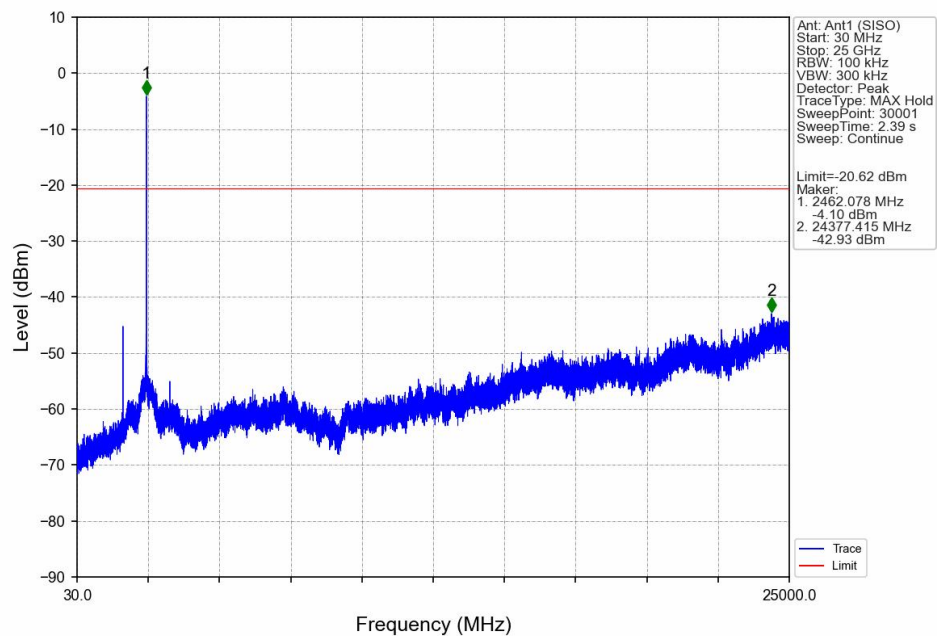


FCC ID:2A53H-SQ400C

802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

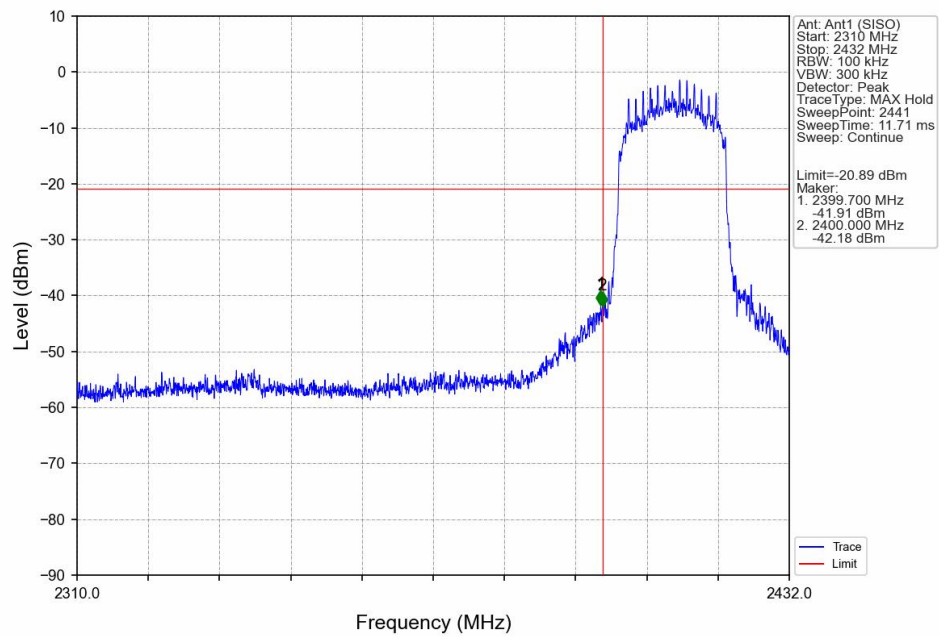


802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

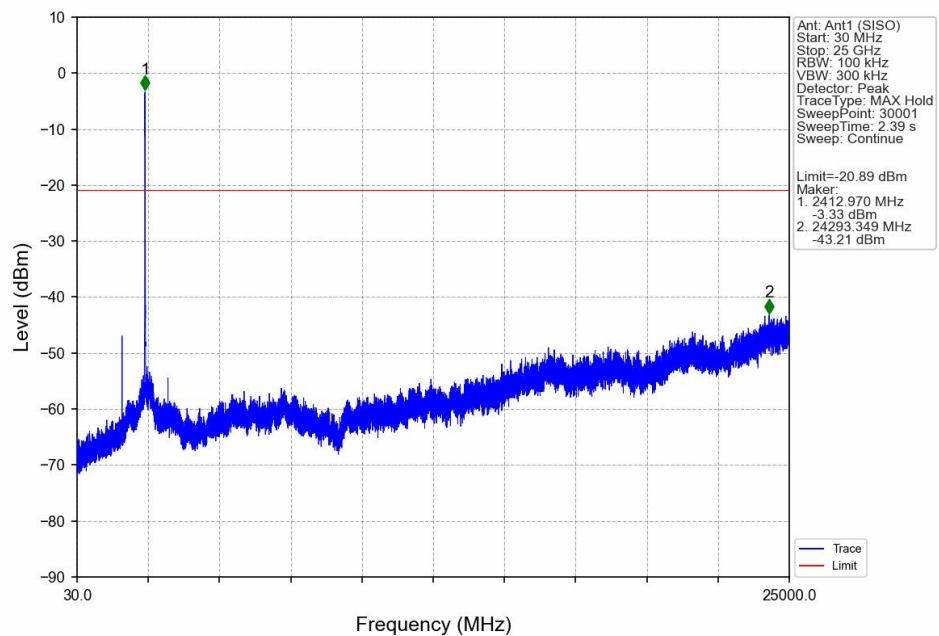


FCC ID:2A53H-SQ400C

802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV

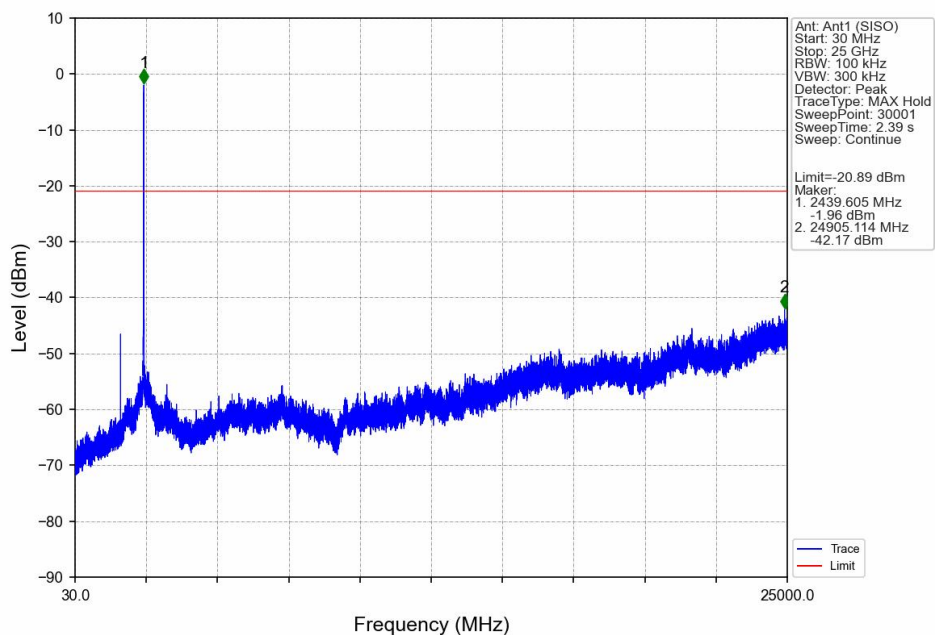


802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV

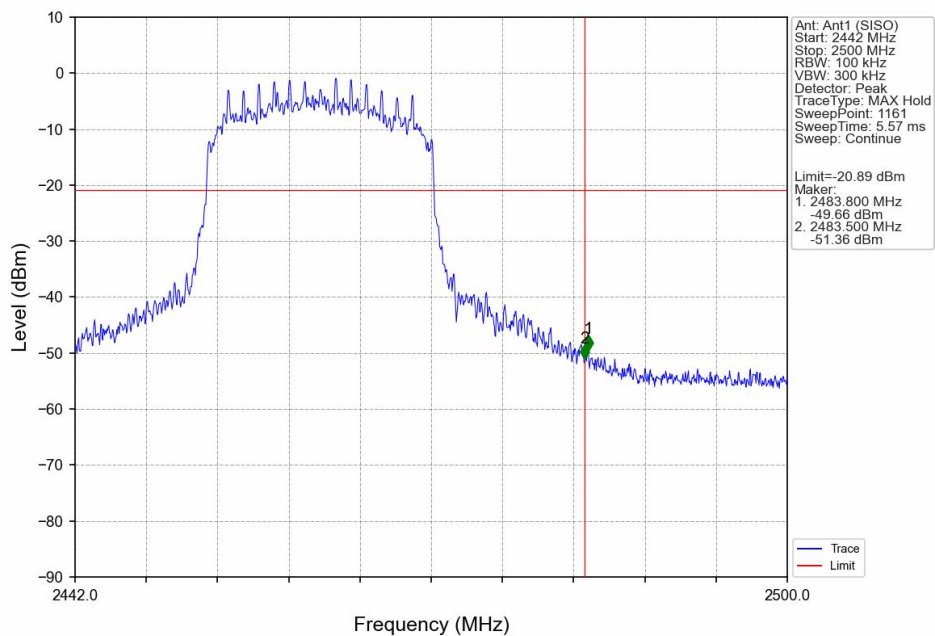


FCC ID:2A53H-SQ400C

802.11n(HT20)_MCH_2437MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



FCC ID:2A53H-SQ400C

