



Appendix A for SHEM210700793801

1. Duty Cycle

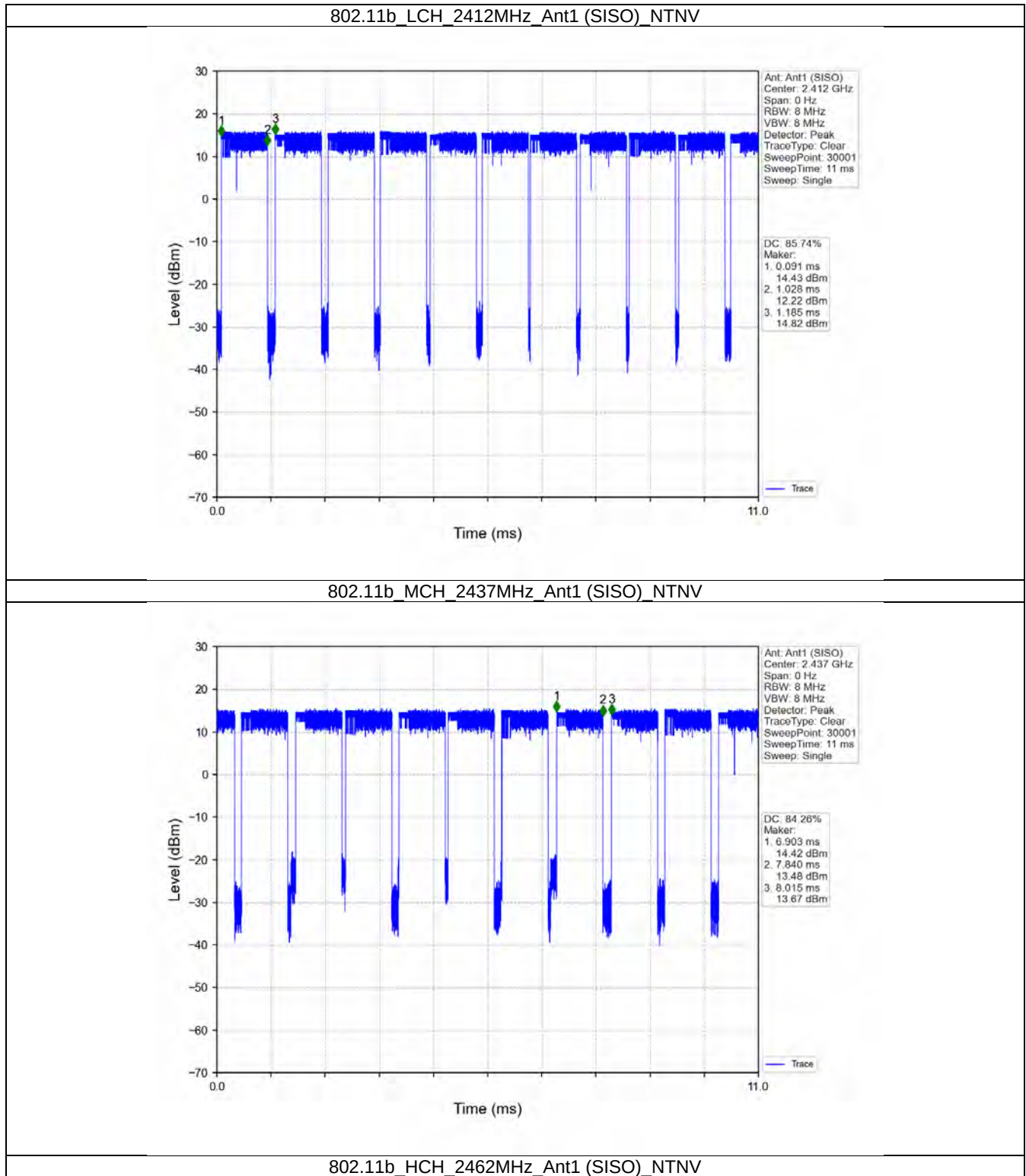
1.1 Ant1

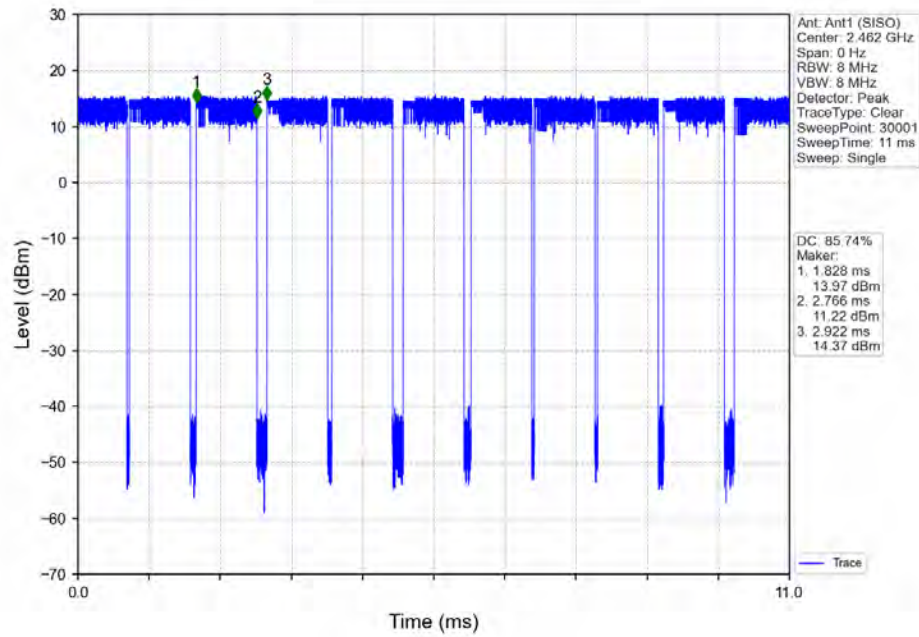
1.1.1 Test Result

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	0.938	1.094	85.74	0.67	10.26
		2437	0.937	1.112	84.26	0.74	9.91
		2462	0.938	1.094	85.74	0.67	10.27
802.11g	SISO	2412	1.396	1.557	89.66	0.47	6.12
		2437	1.396	1.566	89.14	0.50	6.64
		2462	1.396	1.566	89.14	0.50	7.21
802.11n (HT20)	MIMO	2412	1.308	1.450	90.21	0.45	5.35
		2437	1.308	1.487	87.96	0.56	8.15
		2462	1.308	1.478	88.50	0.53	8.25

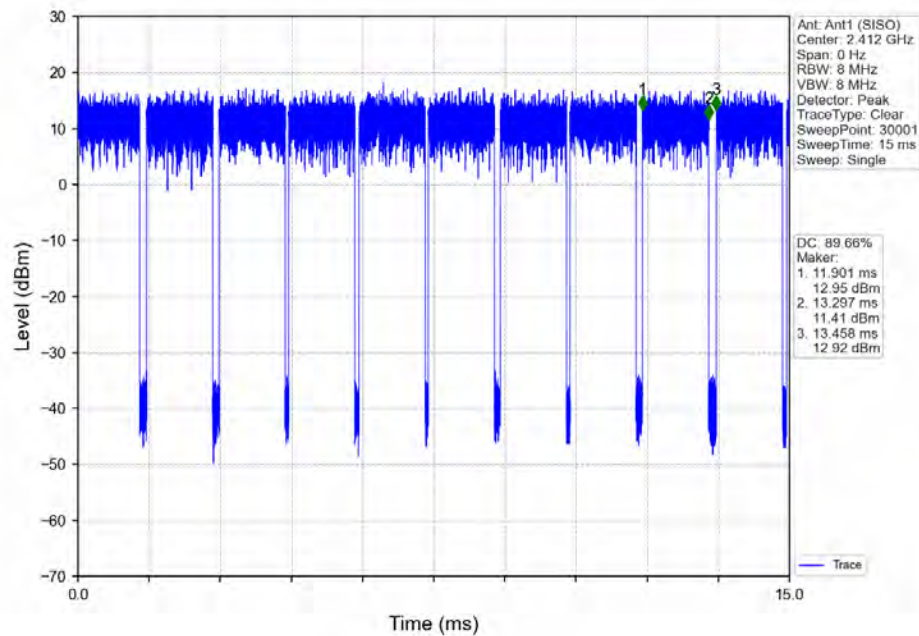
Note: 802.11g/n mode has reached the maximum duty cycle under the continuous transmission program provided by the customer.

1.1.2 Test Graph

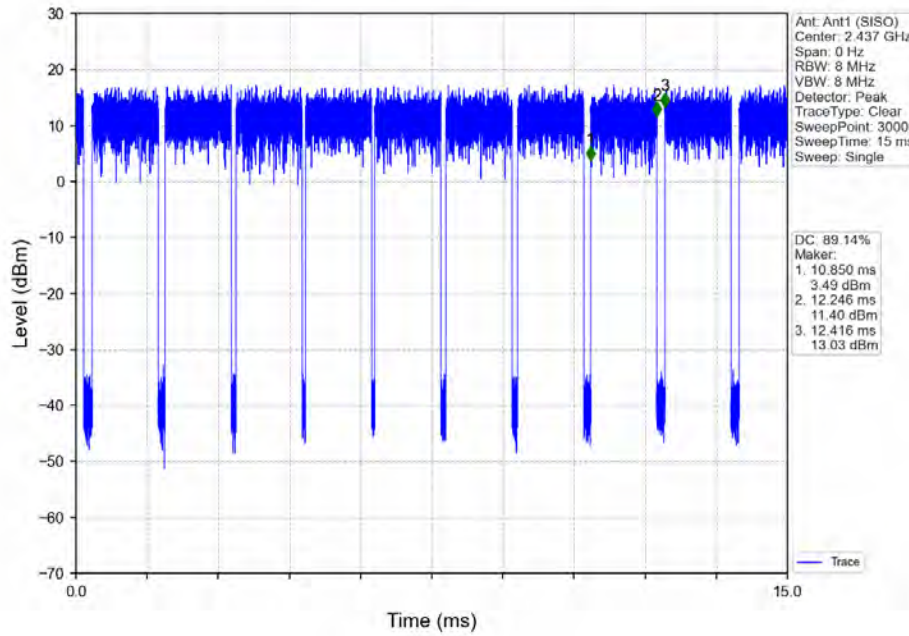




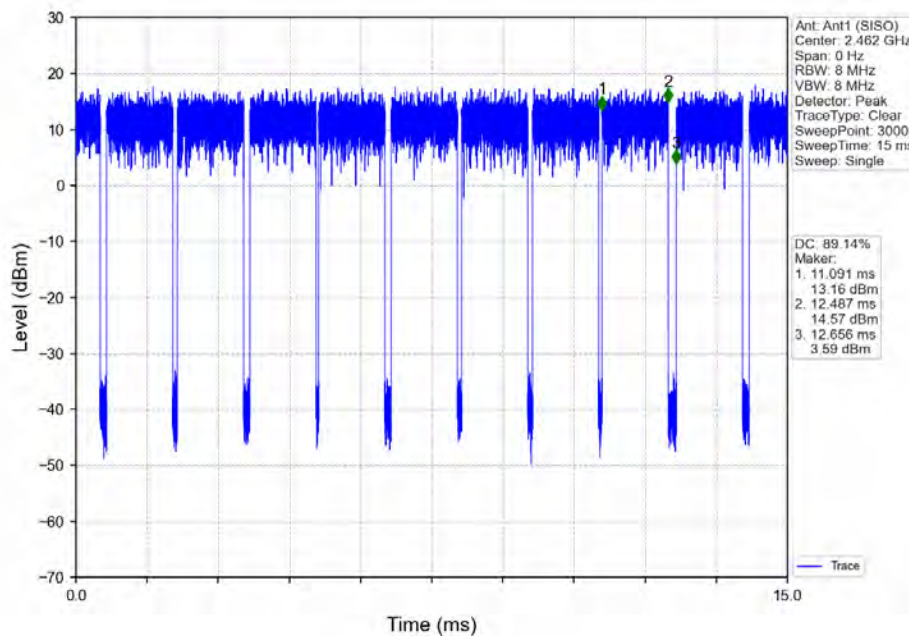
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



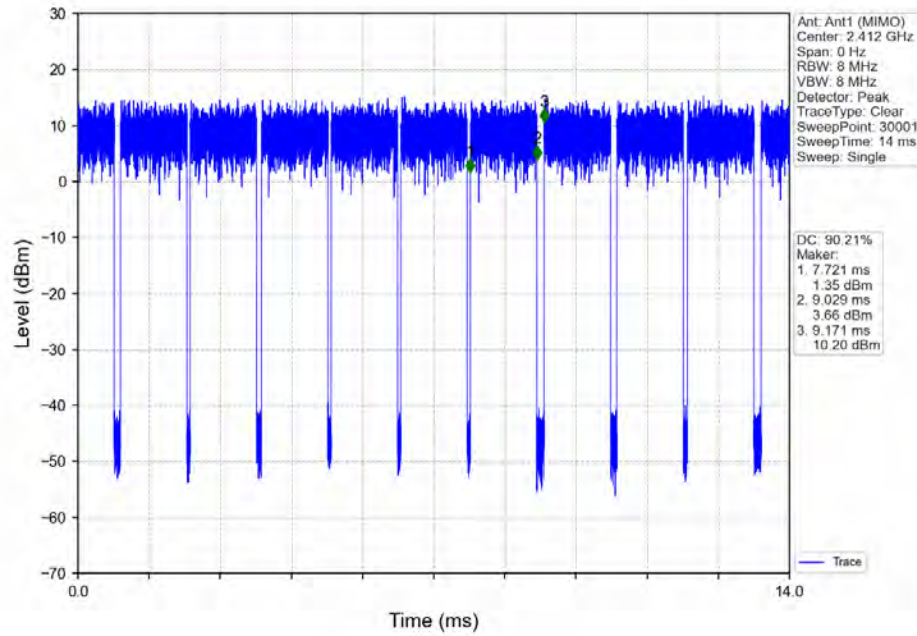
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



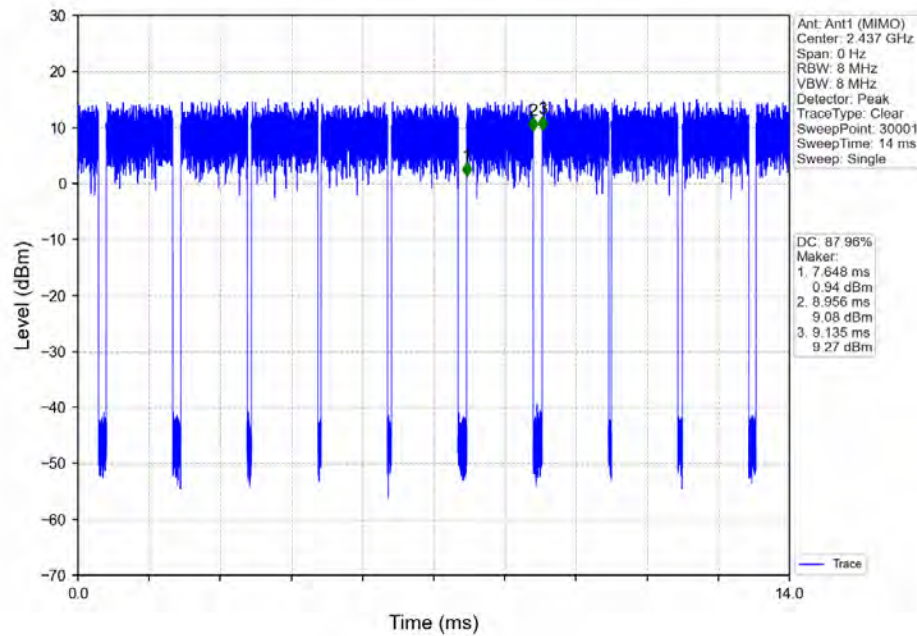
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV

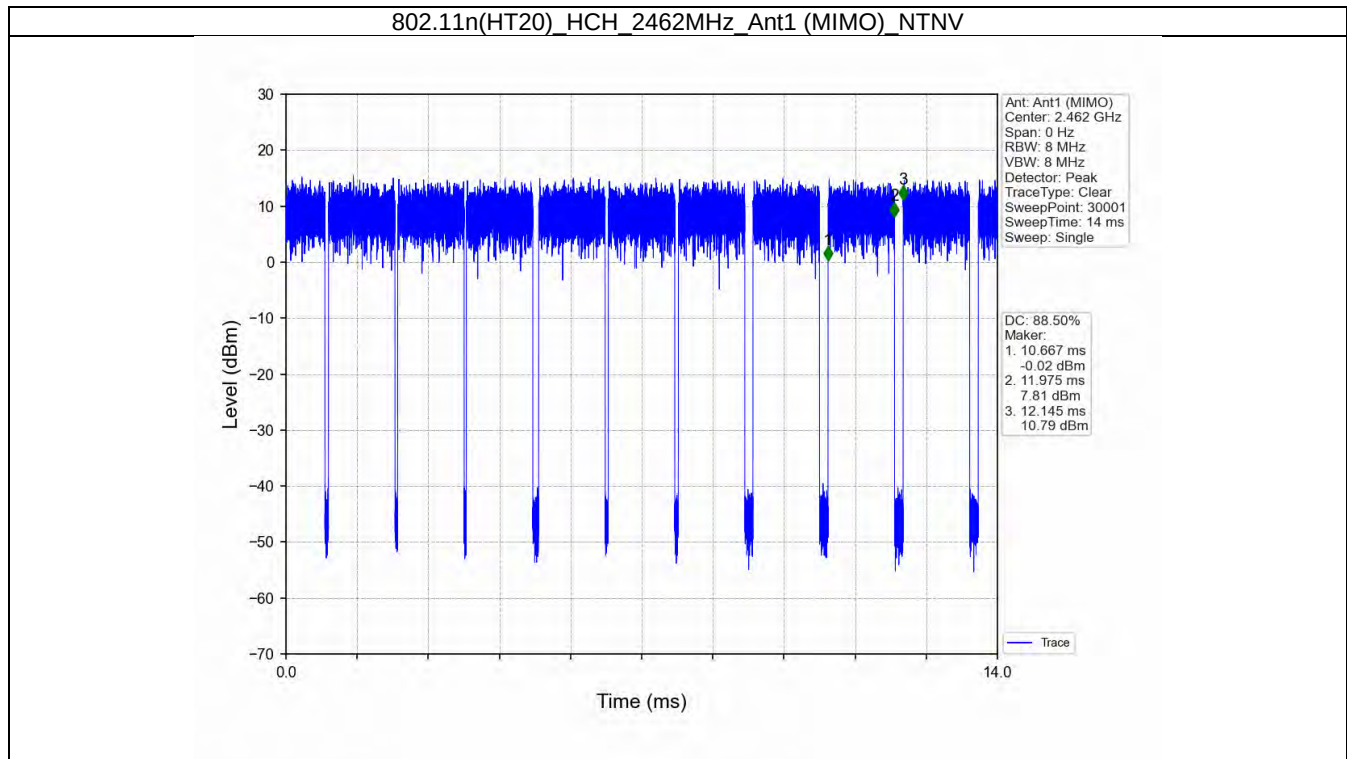


802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV





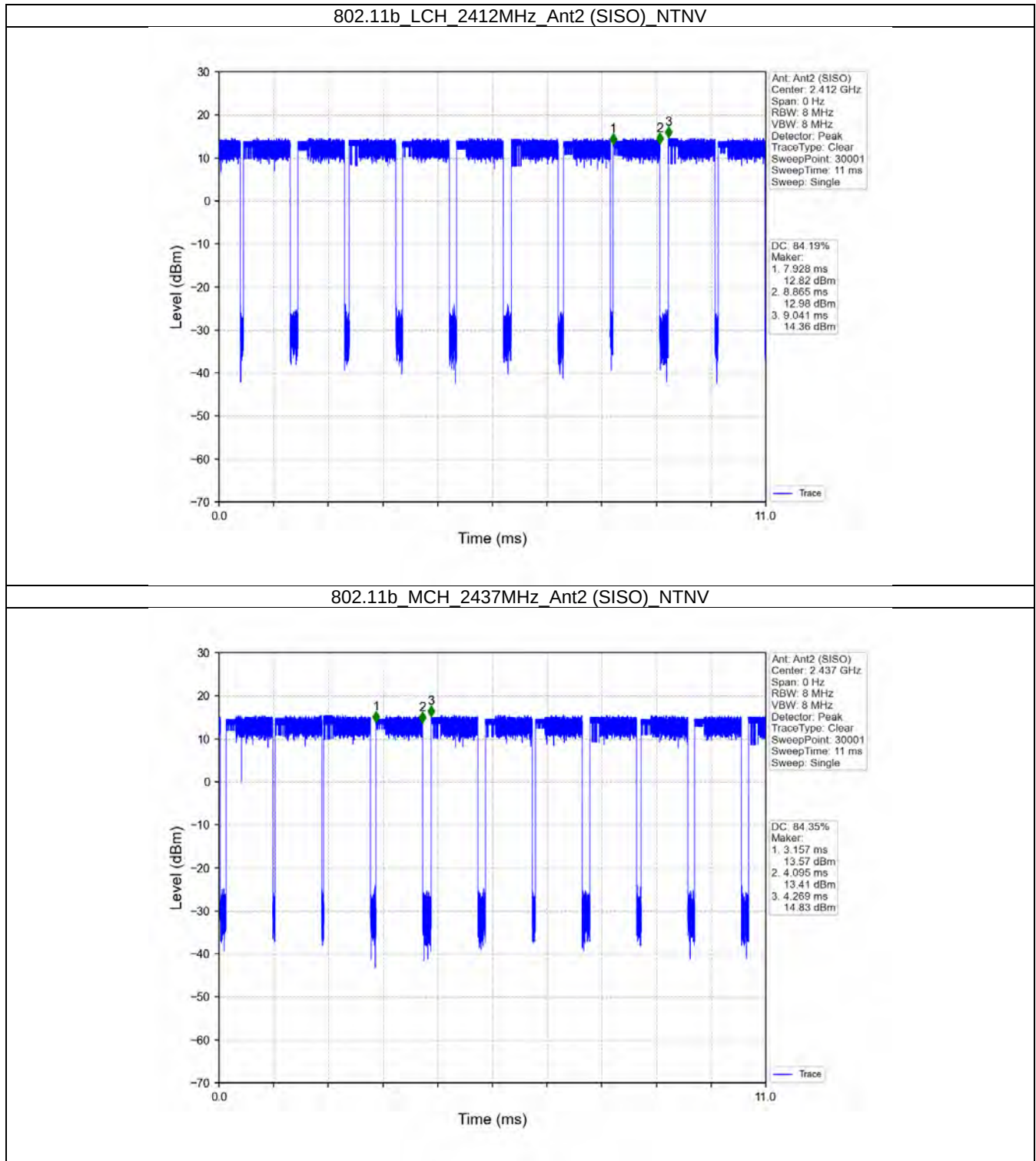
1.2 Ant2

1.2.1 Test Result

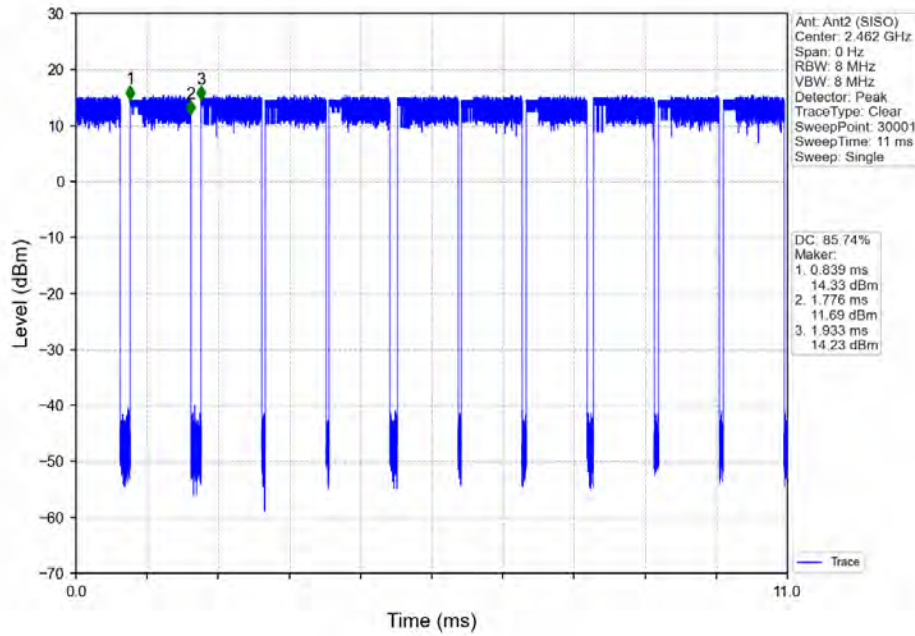
Ant2							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	SISO	2412	0.937	1.113	84.19	0.75	9.93
		2437	0.938	1.112	84.35	0.74	11.66
		2462	0.938	1.094	85.74	0.67	9.43
802.11g	SISO	2412	1.396	1.575	88.63	0.52	8.31
		2437	1.395	1.565	89.14	0.50	6.61
		2462	1.396	1.557	89.66	0.47	6.12
802.11n (HT20)	MIMO	2412	1.308	1.478	88.50	0.53	7.59
		2437	1.308	1.478	88.50	0.53	8.25
		2462	1.308	1.469	89.04	0.50	6.47

Note: 802.11g/n mode has reached the maximum duty cycle under the continuous transmission program provided by the customer.

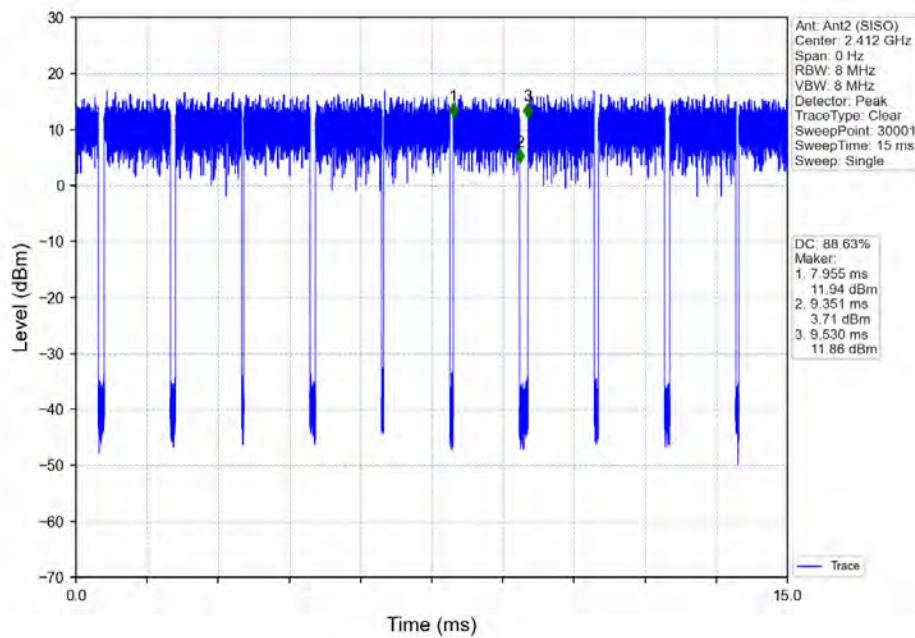
1.2.2 Test Graph



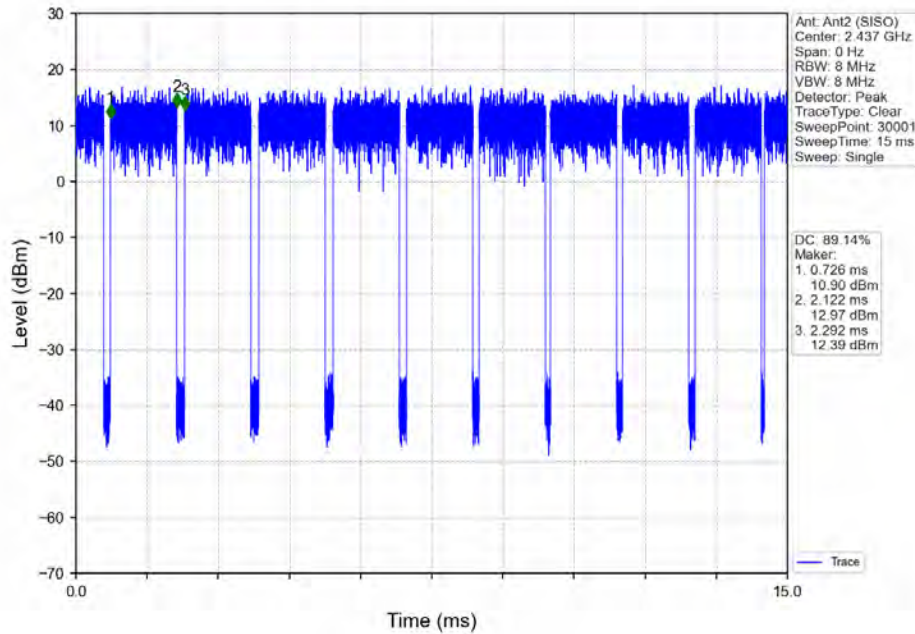
802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV



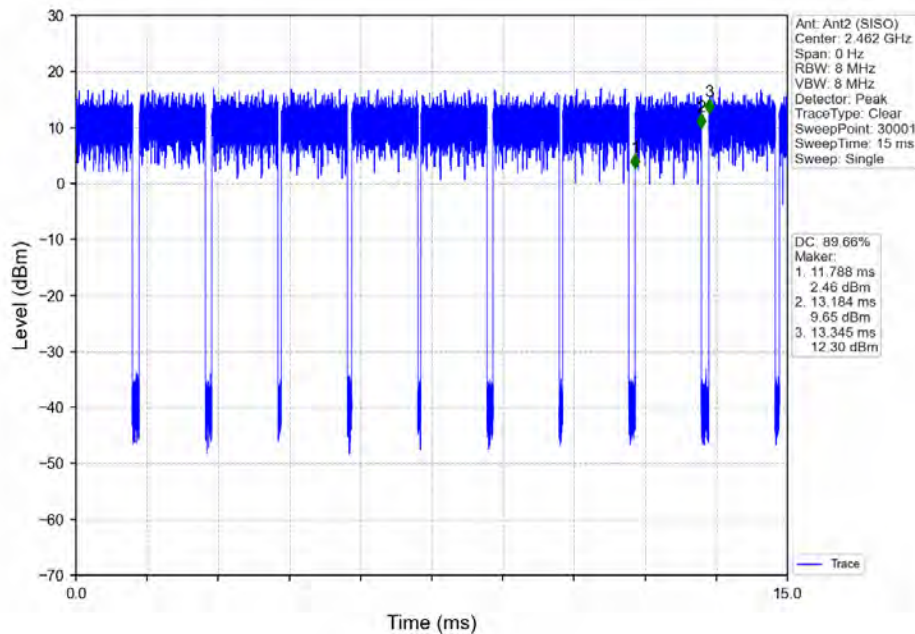
802.11g_LCH_2412MHz_Ant2 (SISO)_NTNV



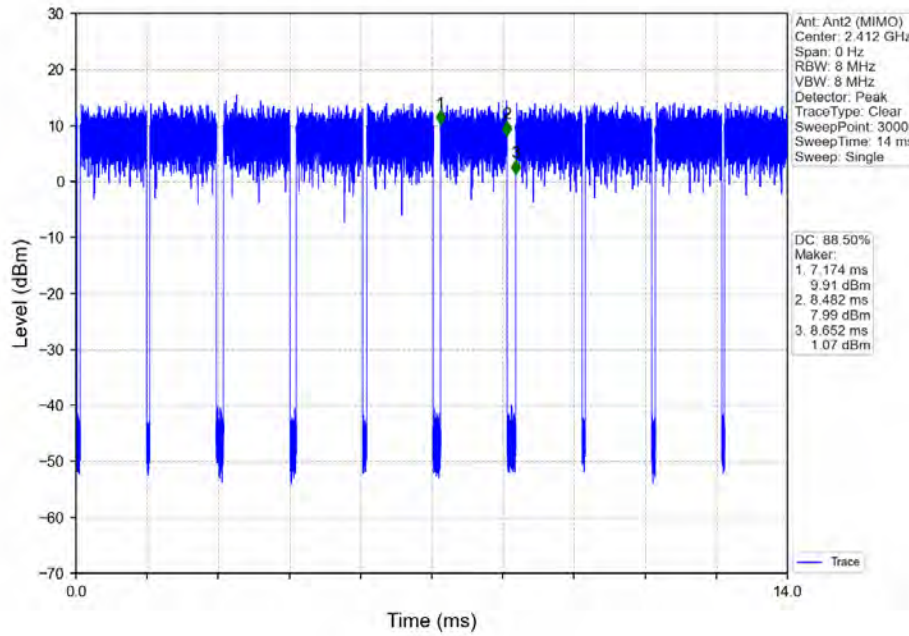
802.11g_MCH_2437MHz_Ant2 (SISO)_NTNV



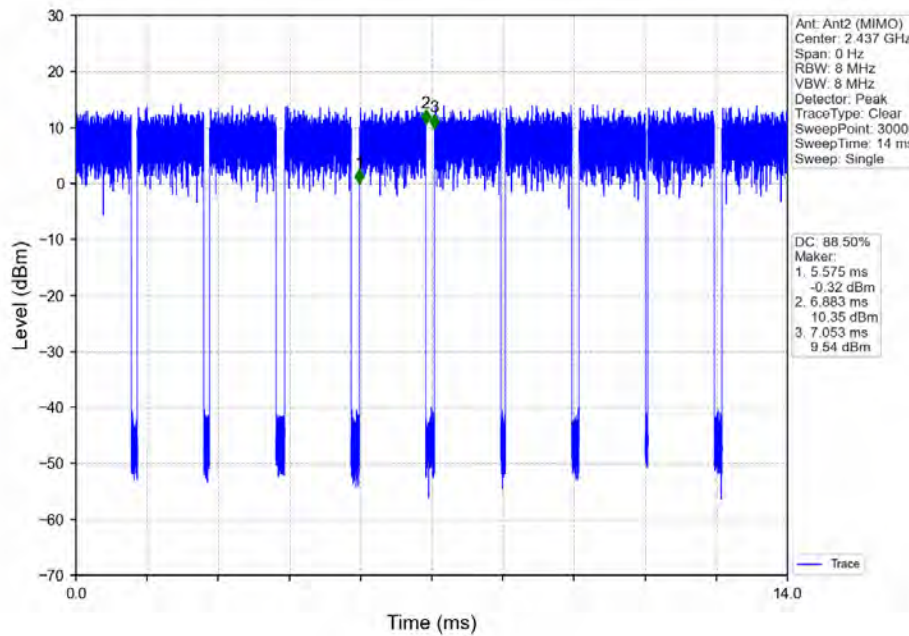
802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV

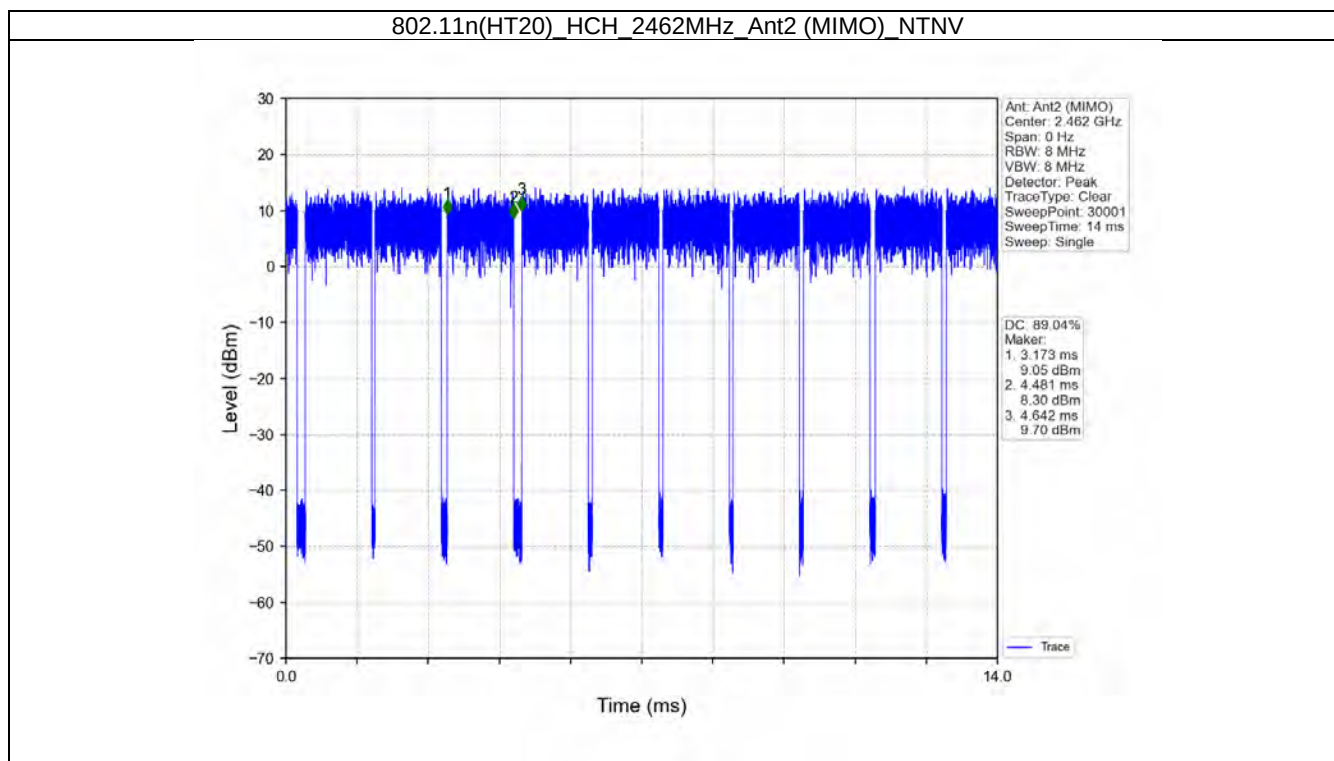


802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV



802.11n(HT20)_MCH_2437MHz_Ant2 (MIMO)_NTNV





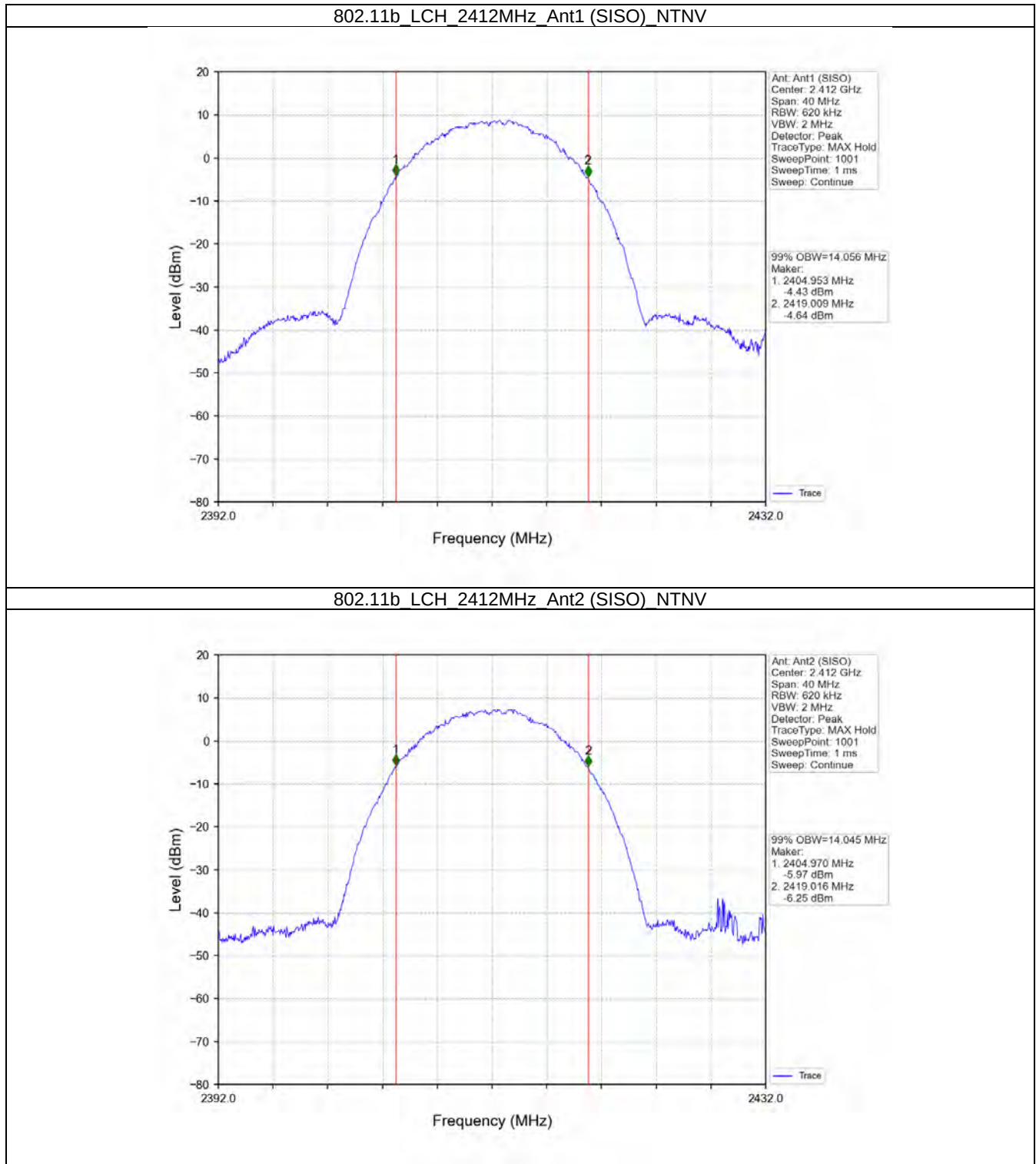
2. Bandwidth

2.1 OBW

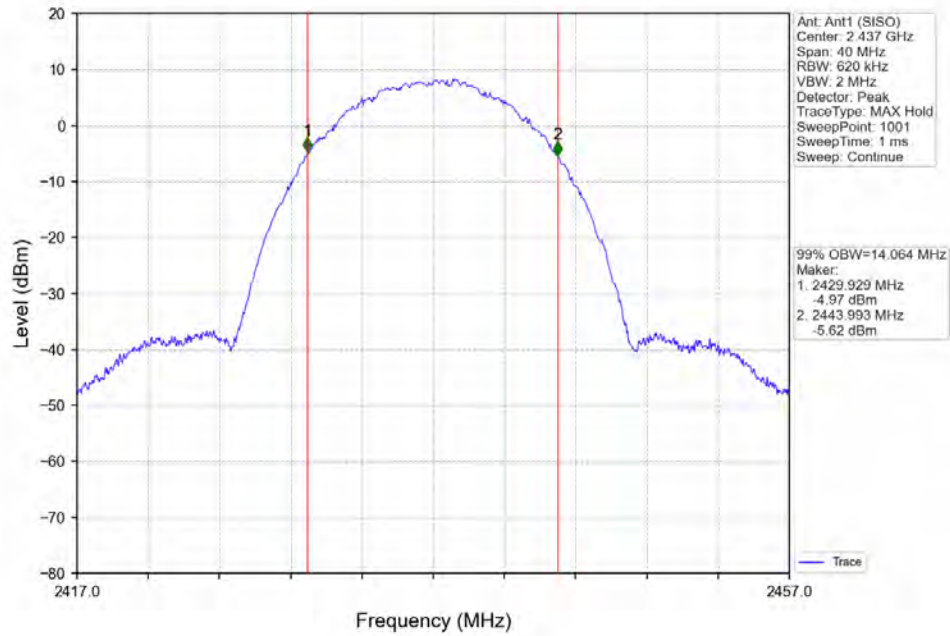
2.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Ant	99% Occupied Bandwidth (MHz)	Limit (MHz)	Verdict
802.11b	SISO	2412	1	14.056	/	Pass
			2	14.045	/	Pass
		2437	1	14.064	/	Pass
			2	14.029	/	Pass
		2462	1	14.059	/	Pass
			2	14.003	/	Pass
802.11g	SISO	2412	1	16.933	/	Pass
			2	16.929	/	Pass
		2437	1	16.957	/	Pass
			2	16.931	/	Pass
		2462	1	16.916	/	Pass
			2	16.902	/	Pass
802.11n (HT20)	MIMO	2412	1	17.682	/	Pass
			2	17.752	/	Pass
		2437	1	17.736	/	Pass
			2	17.705	/	Pass
		2462	1	17.729	/	Pass
			2	17.720	/	Pass

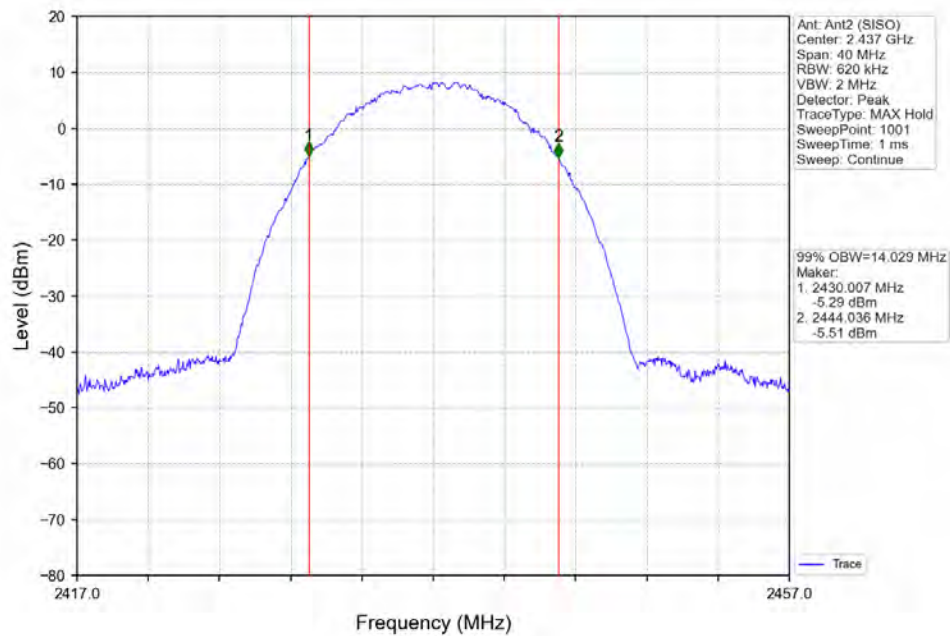
2.1.2 Test Graph



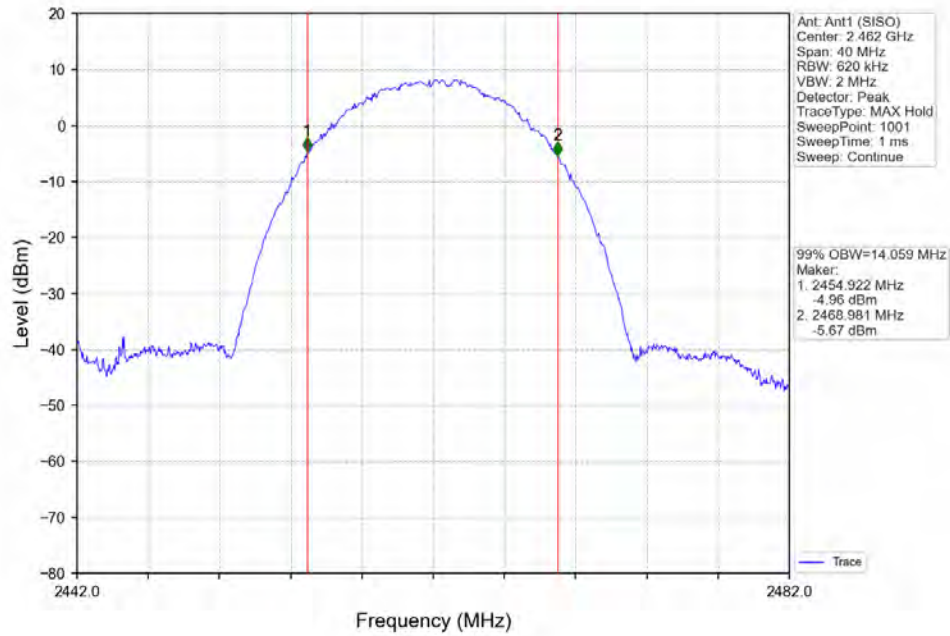
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



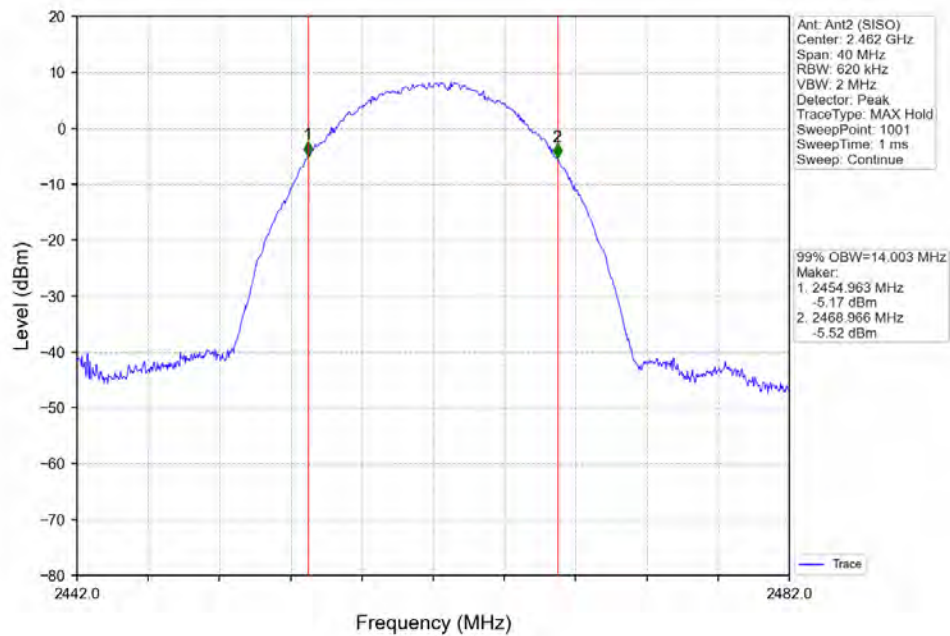
802.11b_MCH_2437MHz_Ant2 (SISO)_NTNV



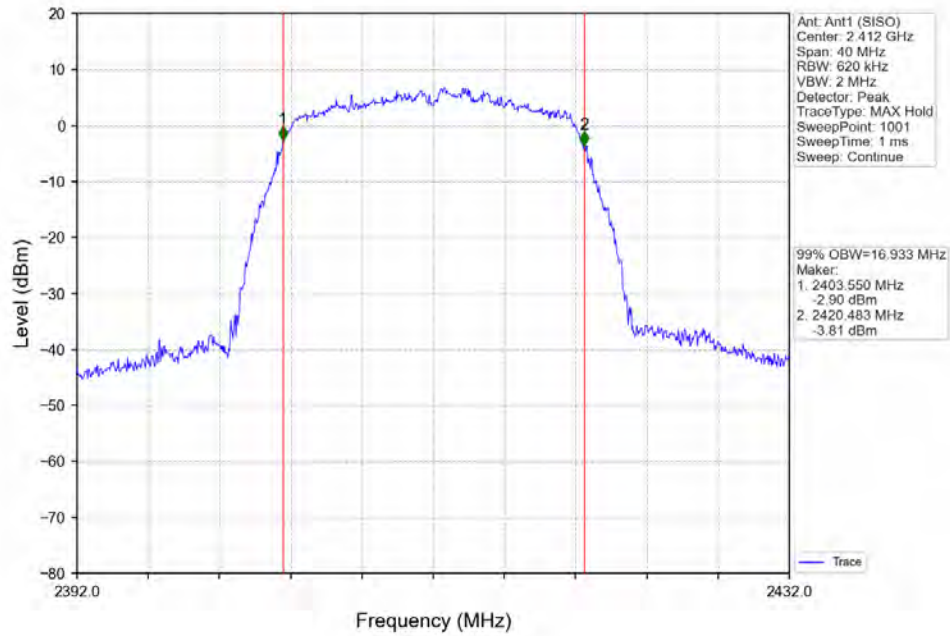
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



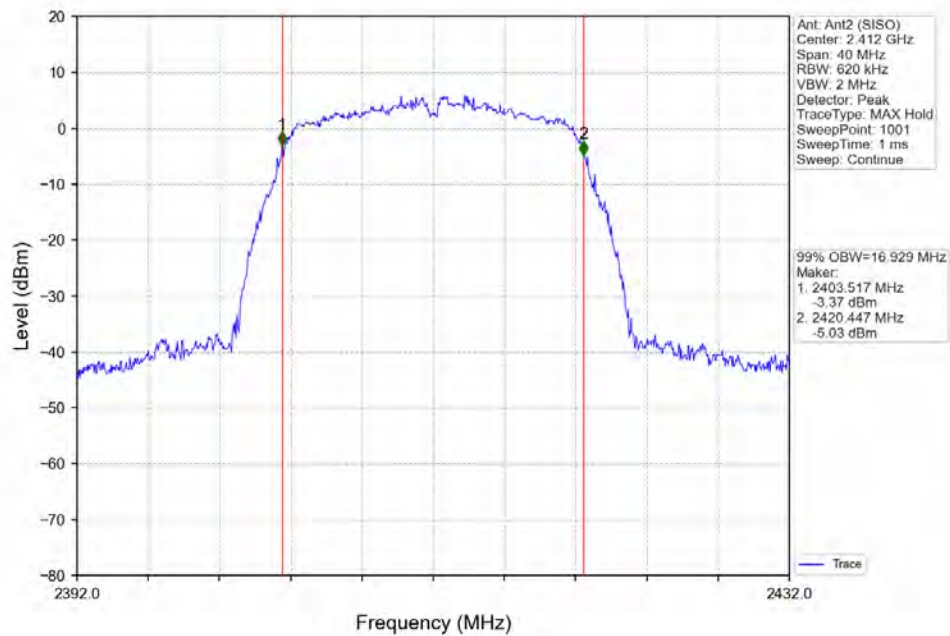
802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV



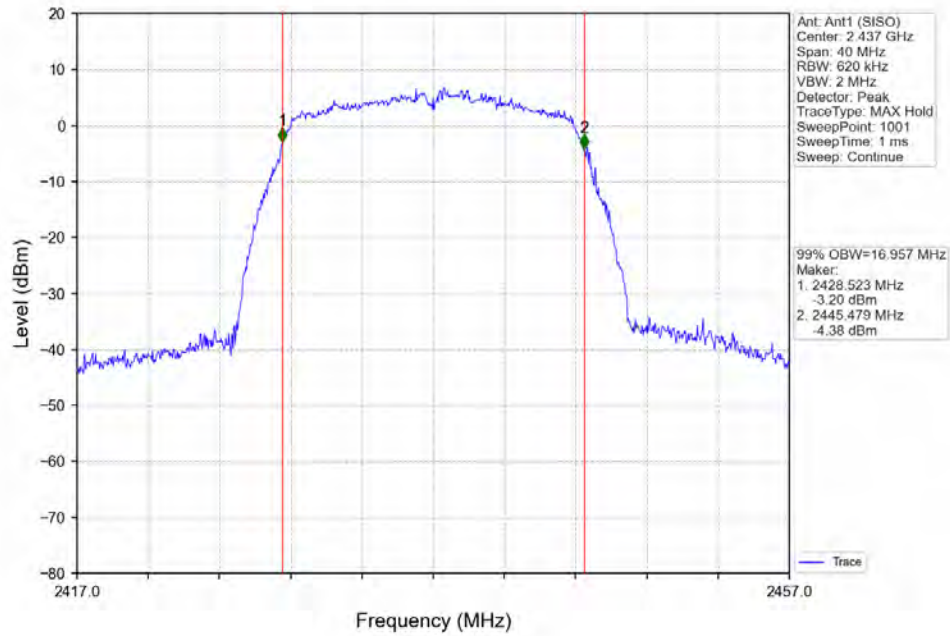
802.11g_LCH_2412MHz_Ant1 (SISO) NTN



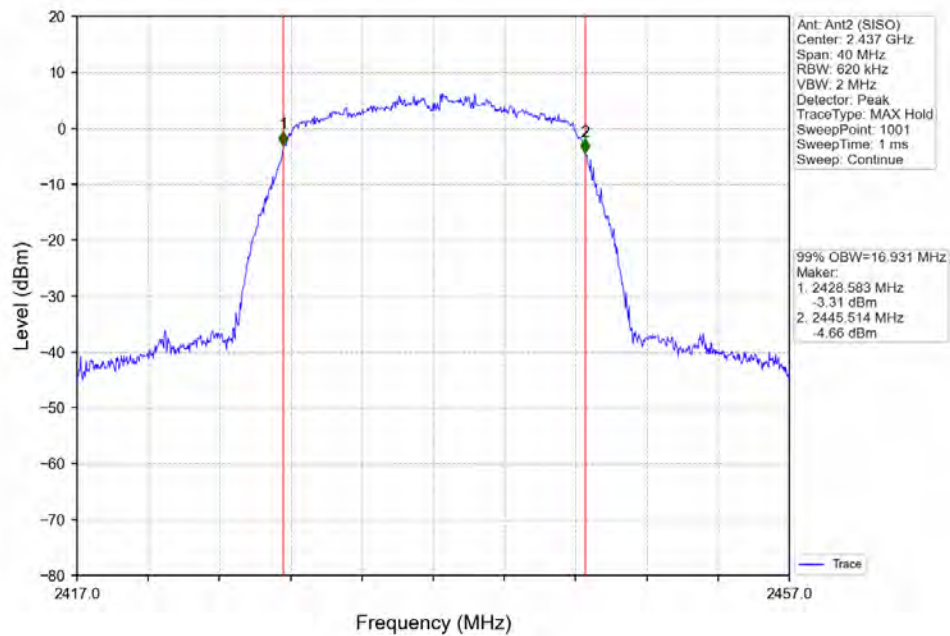
802.11g_LCH_2412MHz_Ant2 (SISO) NTN



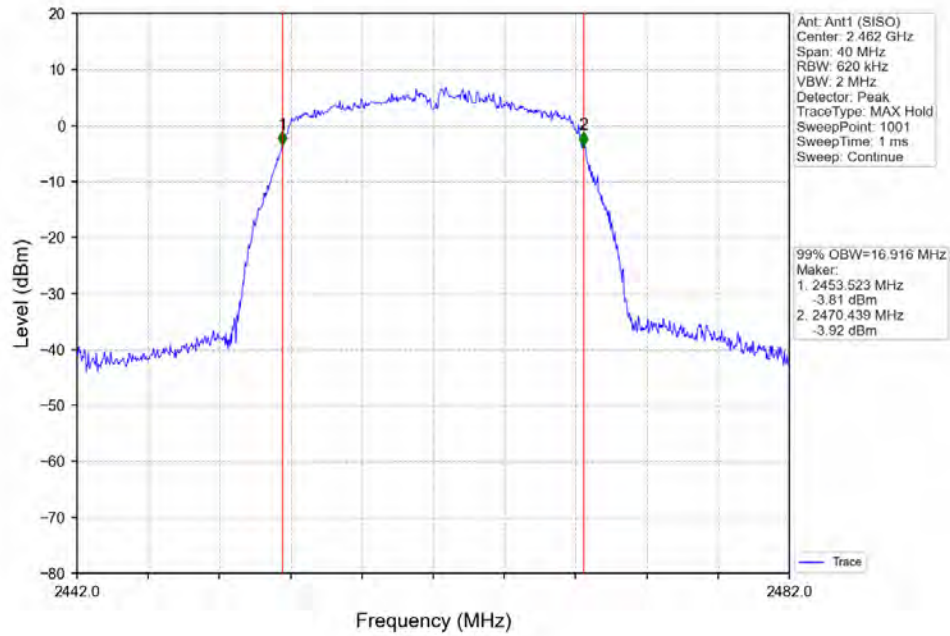
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



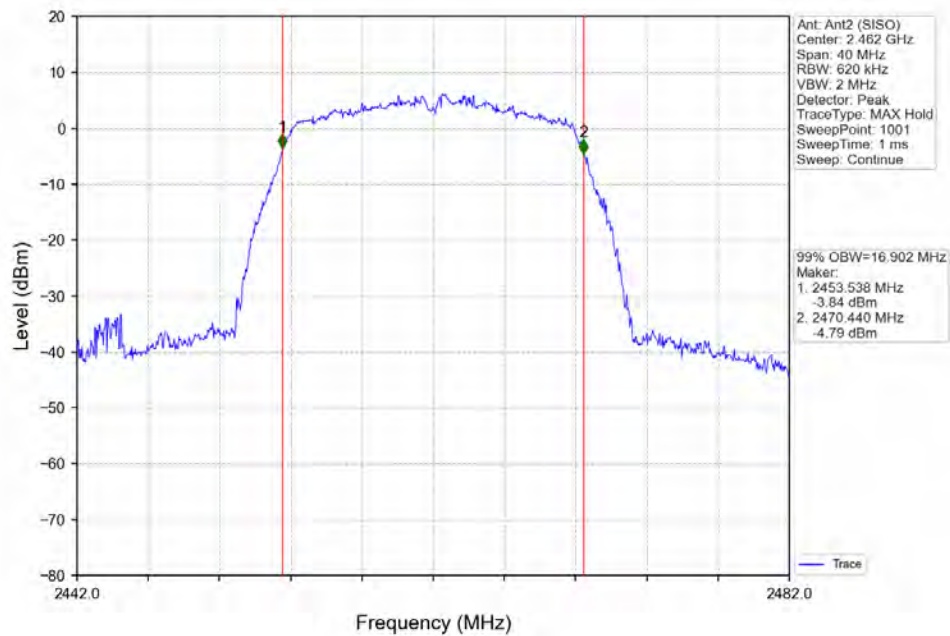
802.11g_MCH_2437MHz_Ant2 (SISO)_NTNV



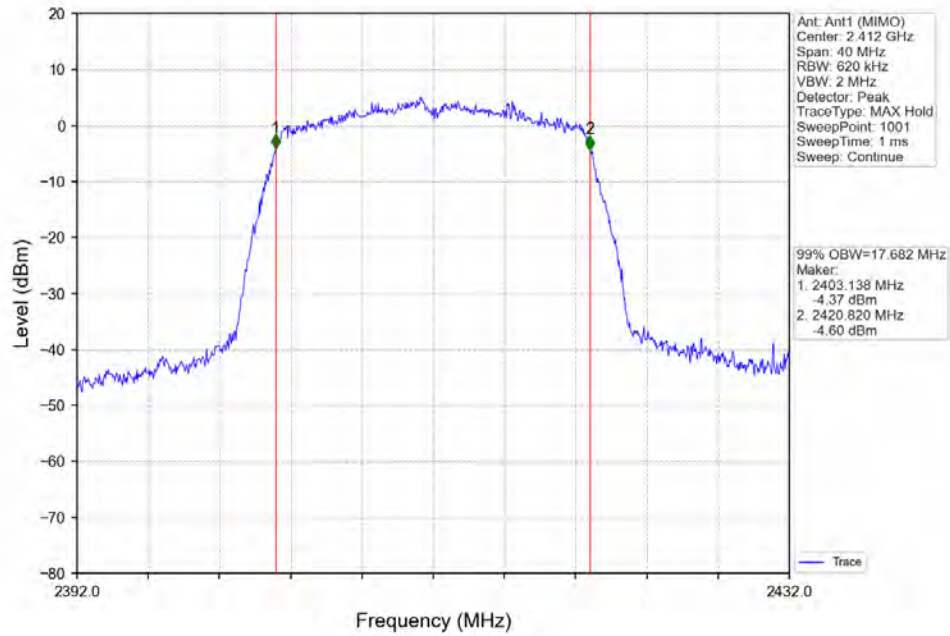
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



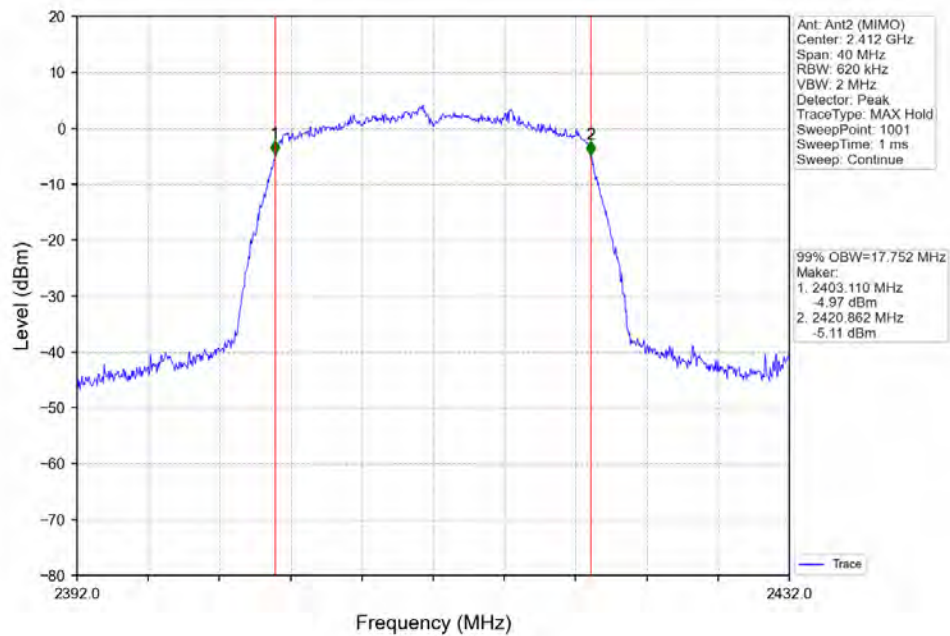
802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



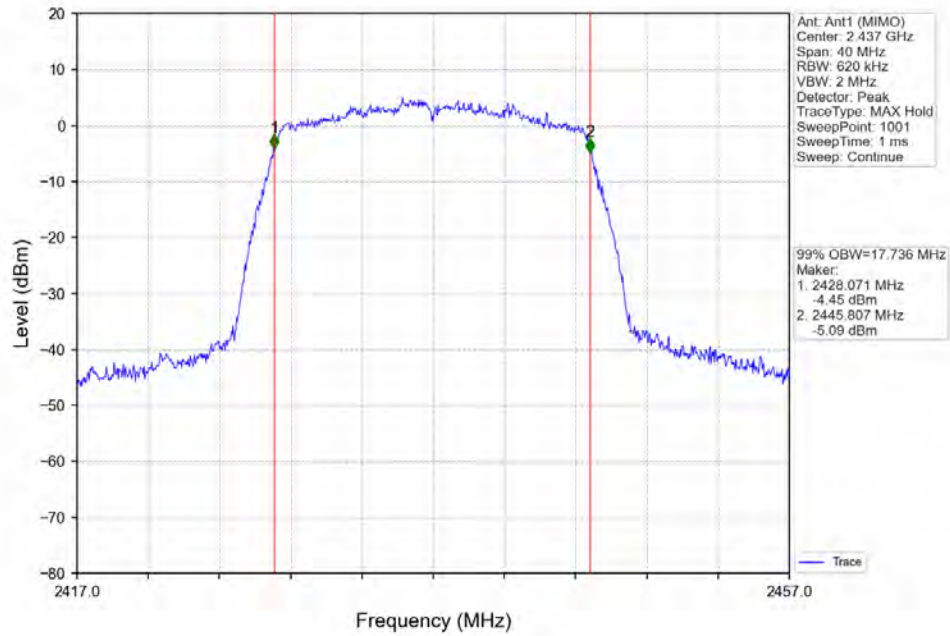
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



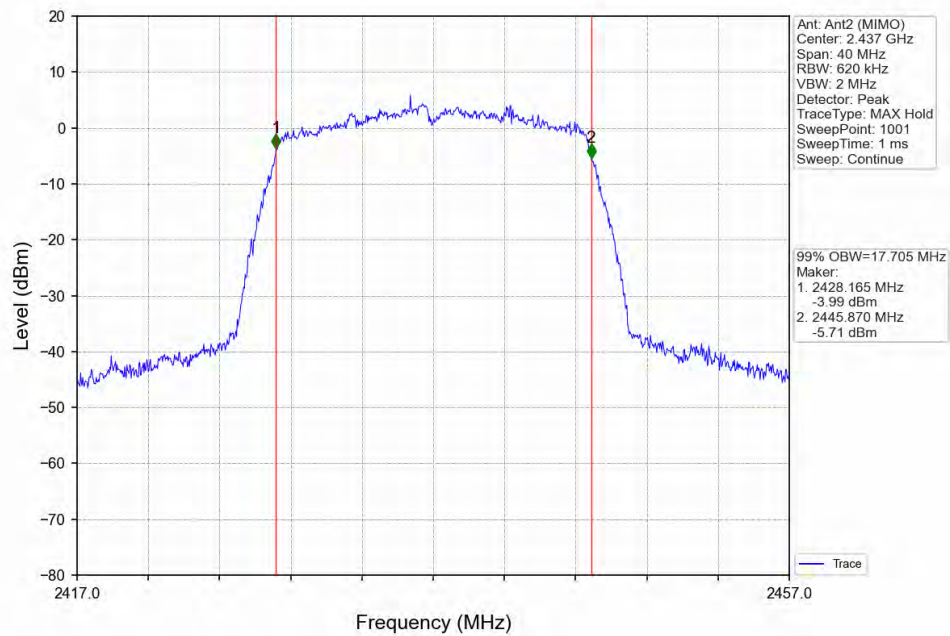
802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV



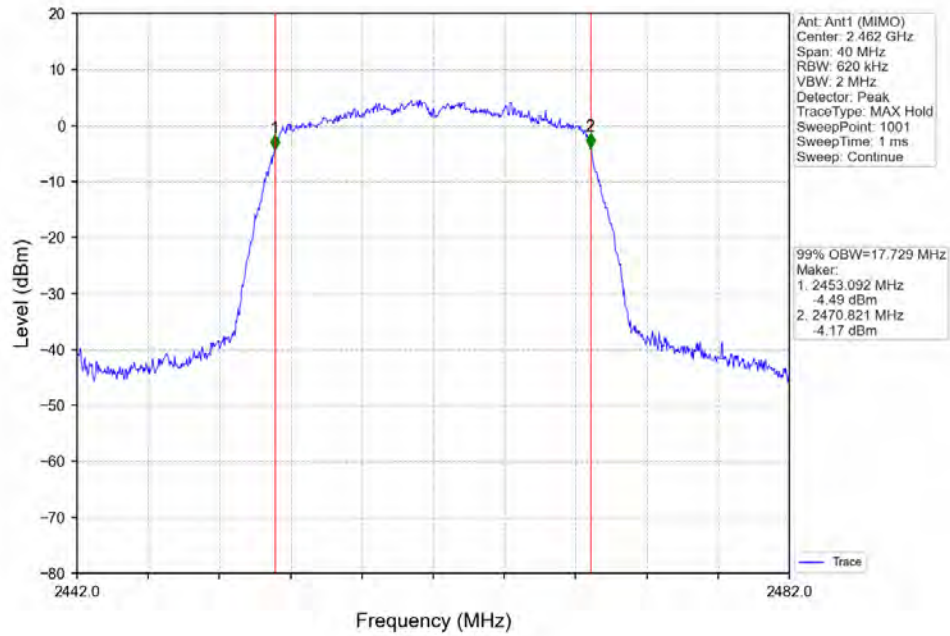
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



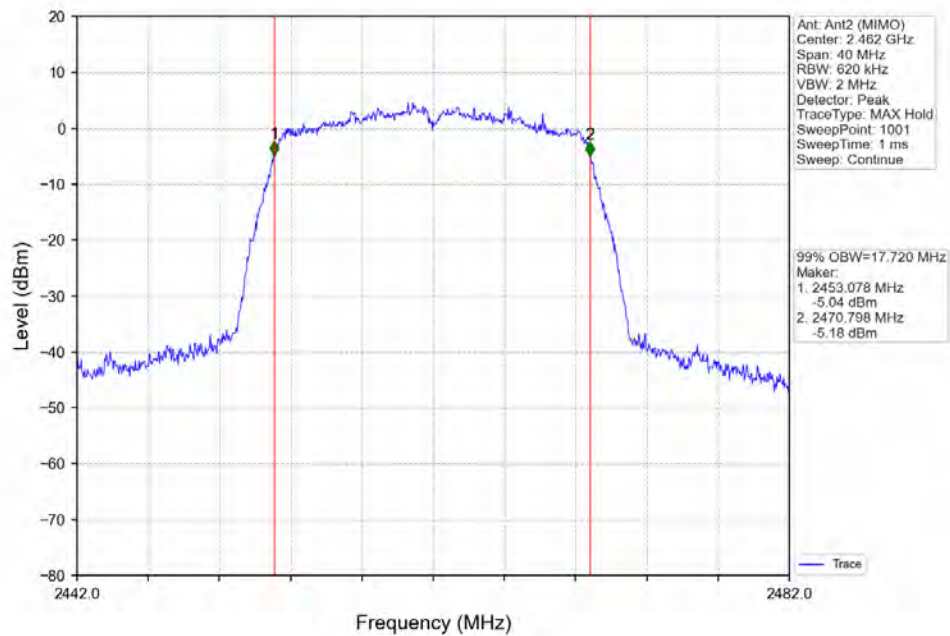
802.11n(HT20)_MCH_2437MHz_Ant2 (MIMO)_NTNV



802.11n(HT20) HCH_2462MHz_Ant1 (MIMO) NTN



802.11n(HT20) HCH_2462MHz_Ant2 (MIMO) NTN

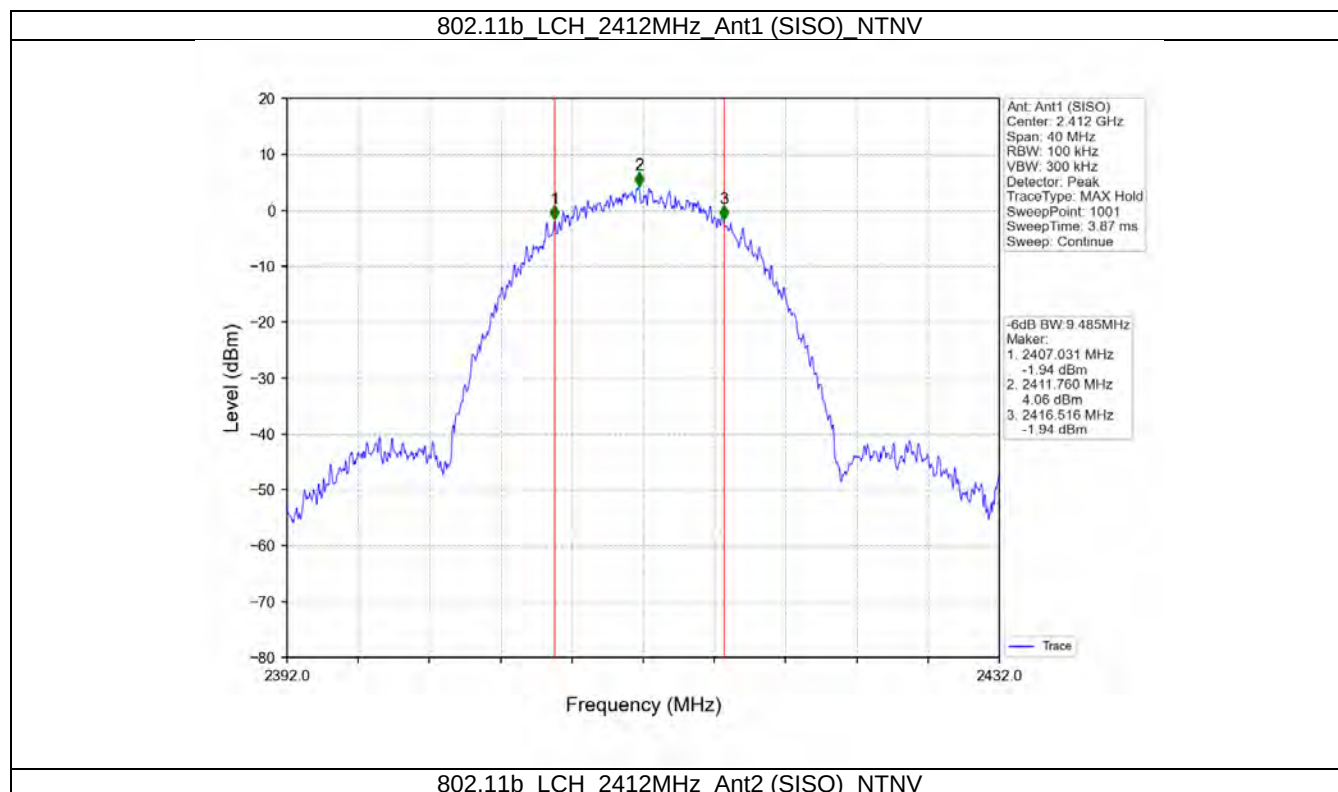


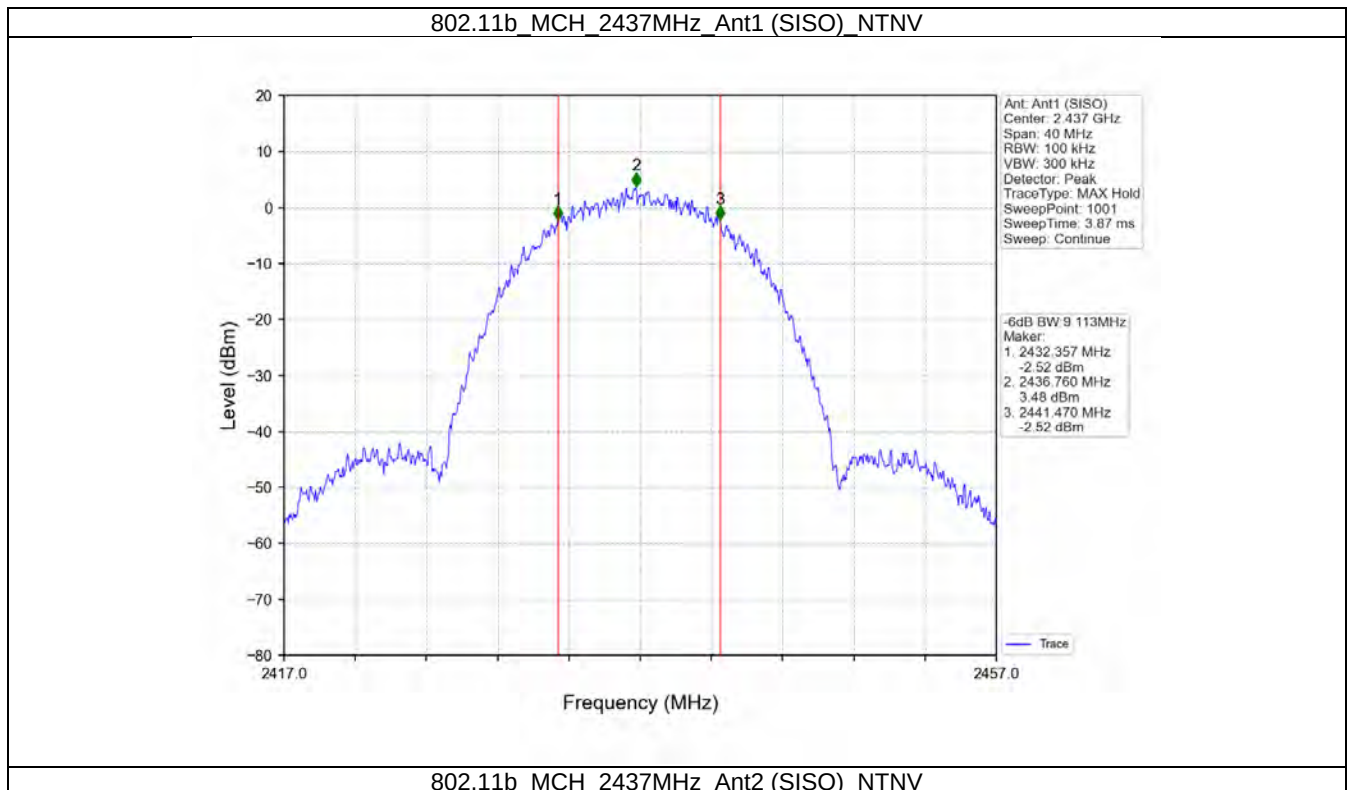
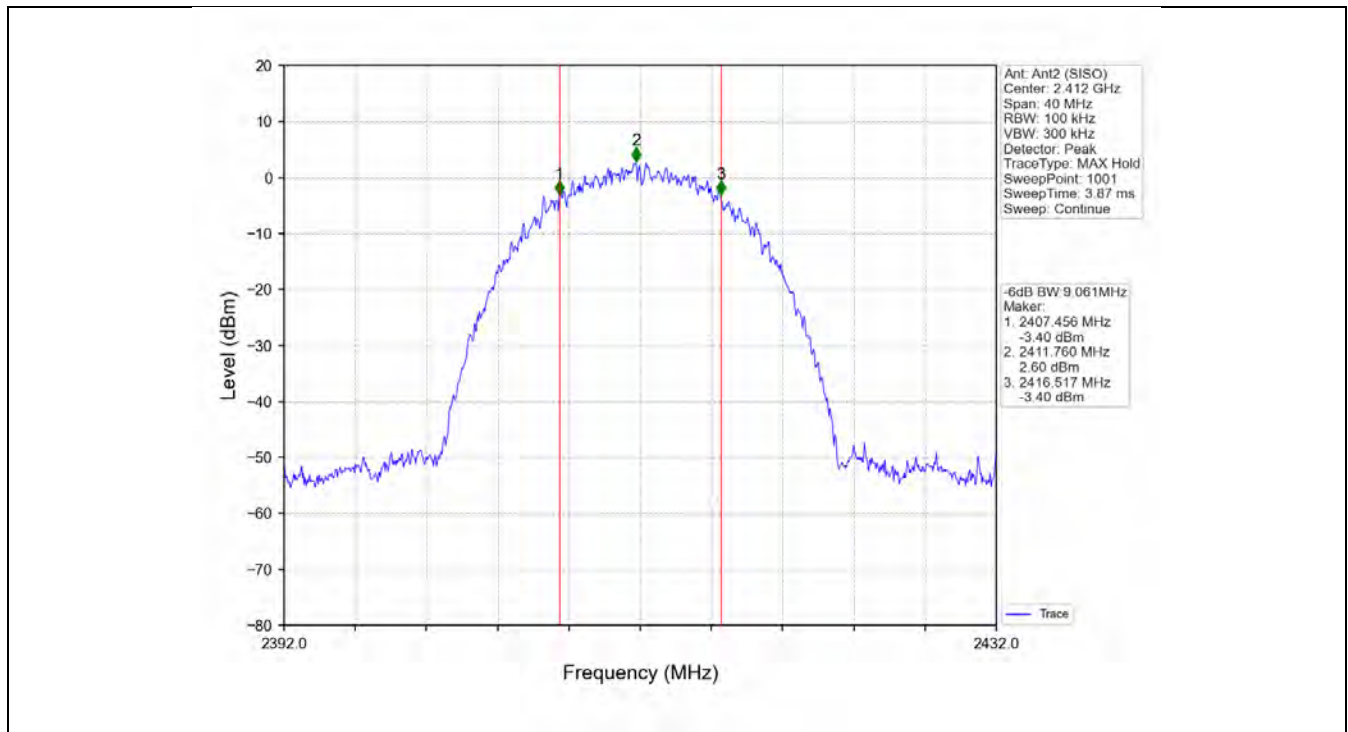
2.2 6dB BW

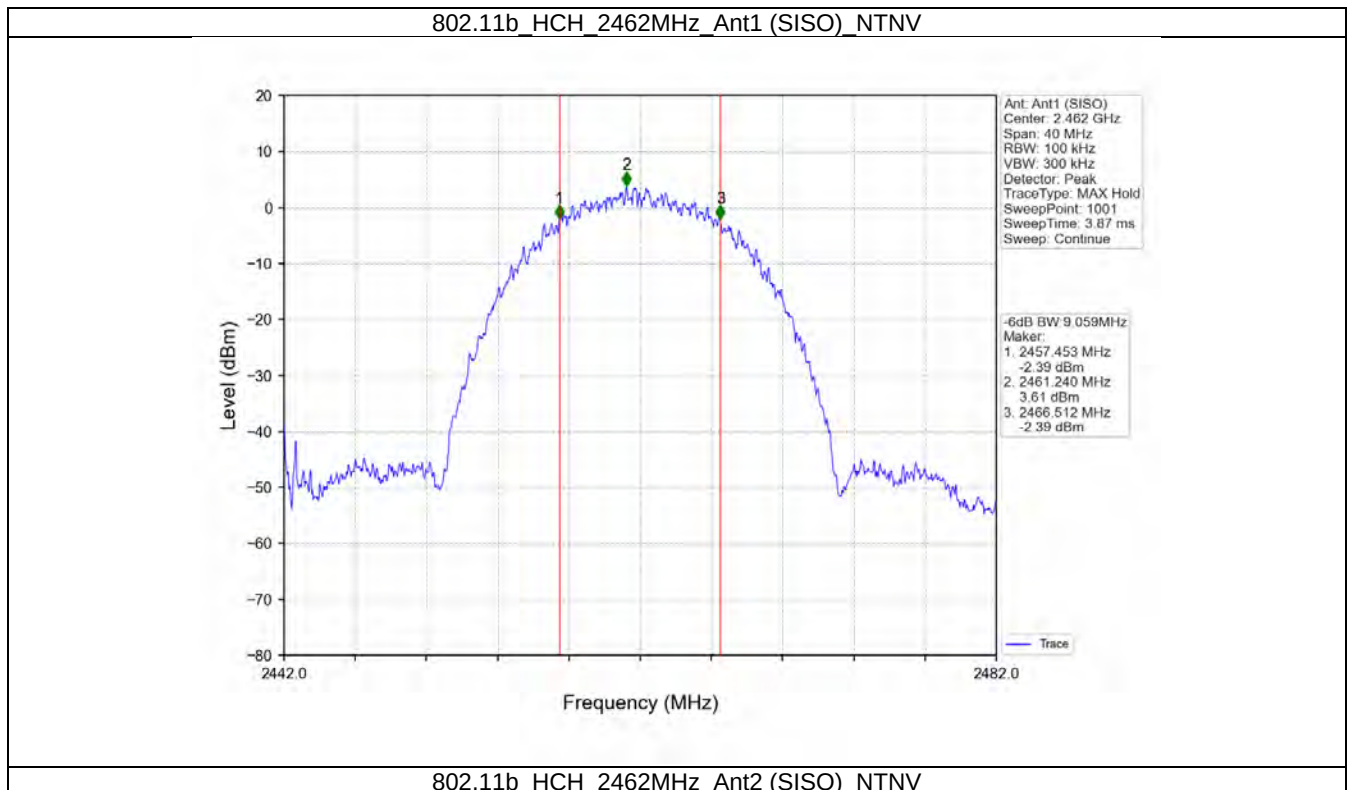
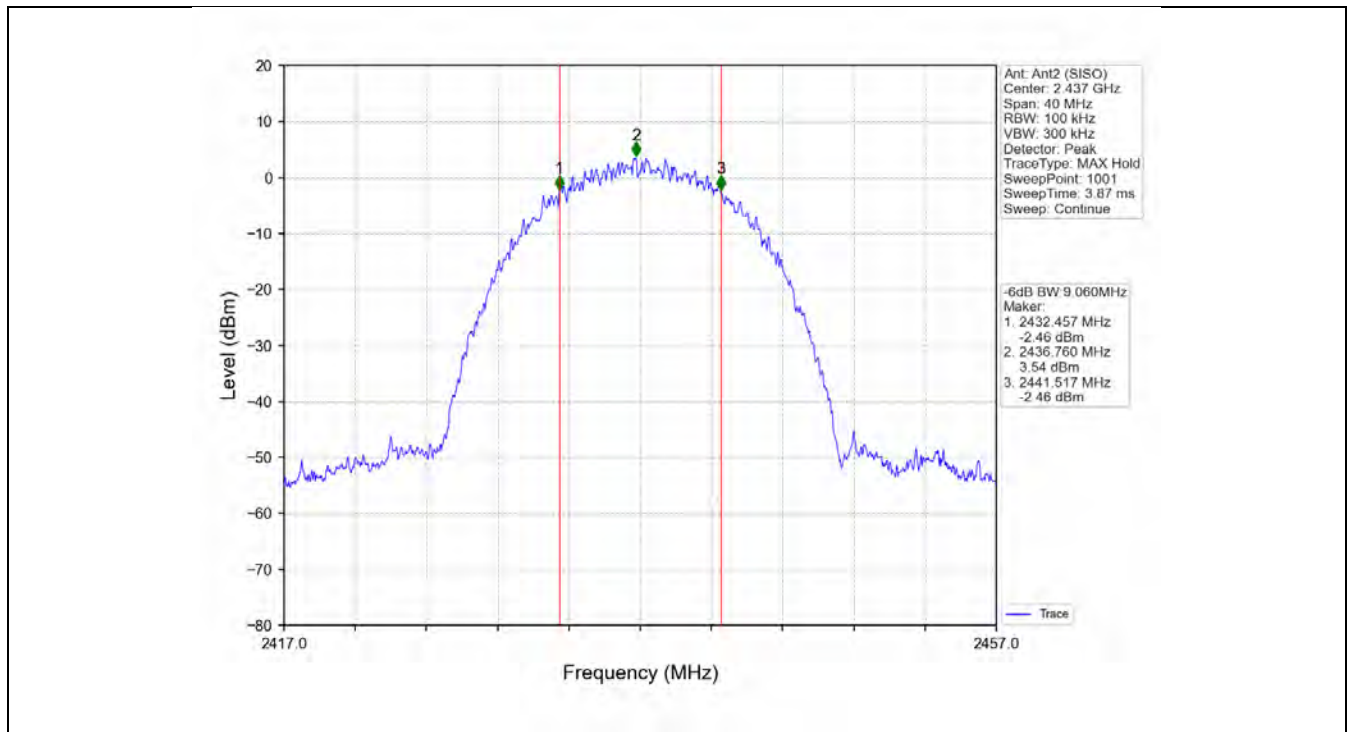
2.2.1 Test Result

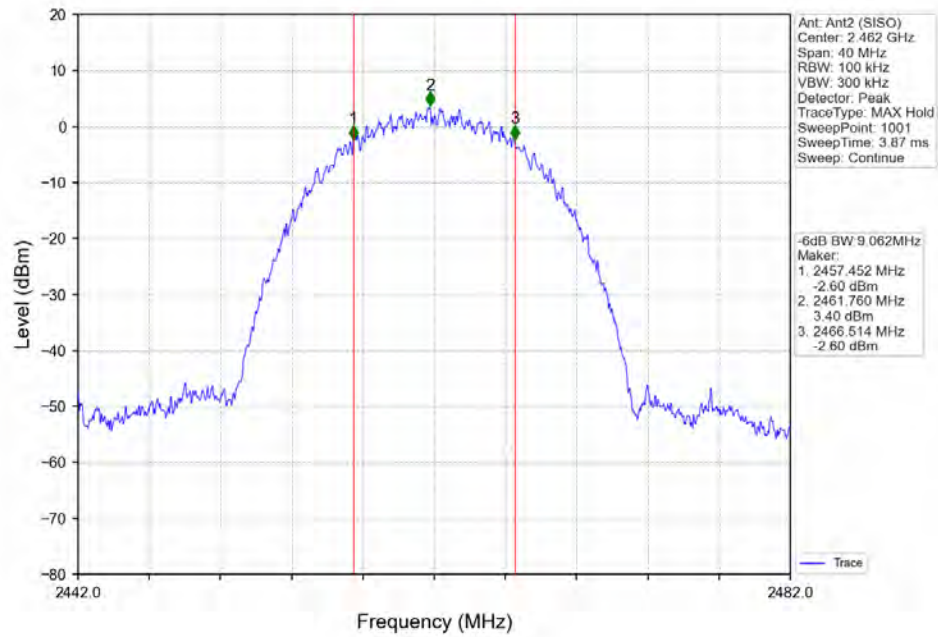
Mode	TX Type	Frequency (MHz)	Ant	6dB Bandwidth (MHz)	Limit (MHz)	Verdict
802.11b	SISO	2412	1	9.485	≥ 0.5	Pass
			2	9.061	≥ 0.5	Pass
		2437	1	9.113	≥ 0.5	Pass
			2	9.060	≥ 0.5	Pass
		2462	1	9.059	≥ 0.5	Pass
			2	9.062	≥ 0.5	Pass
802.11g	SISO	2412	1	15.171	≥ 0.5	Pass
			2	15.141	≥ 0.5	Pass
		2437	1	15.143	≥ 0.5	Pass
			2	15.134	≥ 0.5	Pass
		2462	1	15.147	≥ 0.5	Pass
			2	15.138	≥ 0.5	Pass
802.11n (HT20)	MIMO	2412	1	15.140	≥ 0.5	Pass
			2	15.143	≥ 0.5	Pass
		2437	1	15.141	≥ 0.5	Pass
			2	15.138	≥ 0.5	Pass
		2462	1	15.147	≥ 0.5	Pass
			2	15.146	≥ 0.5	Pass

2.2.2 Test Graph

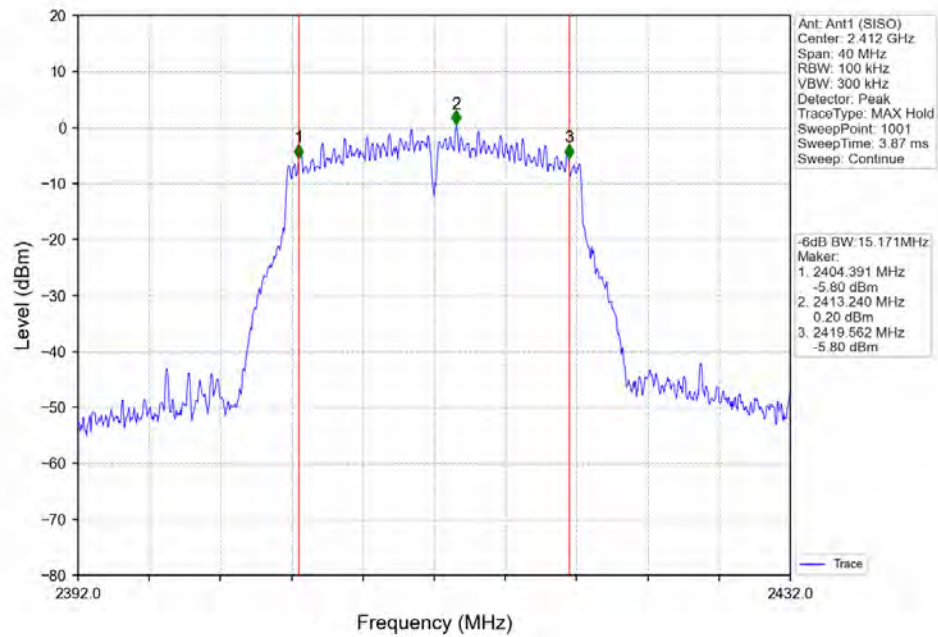




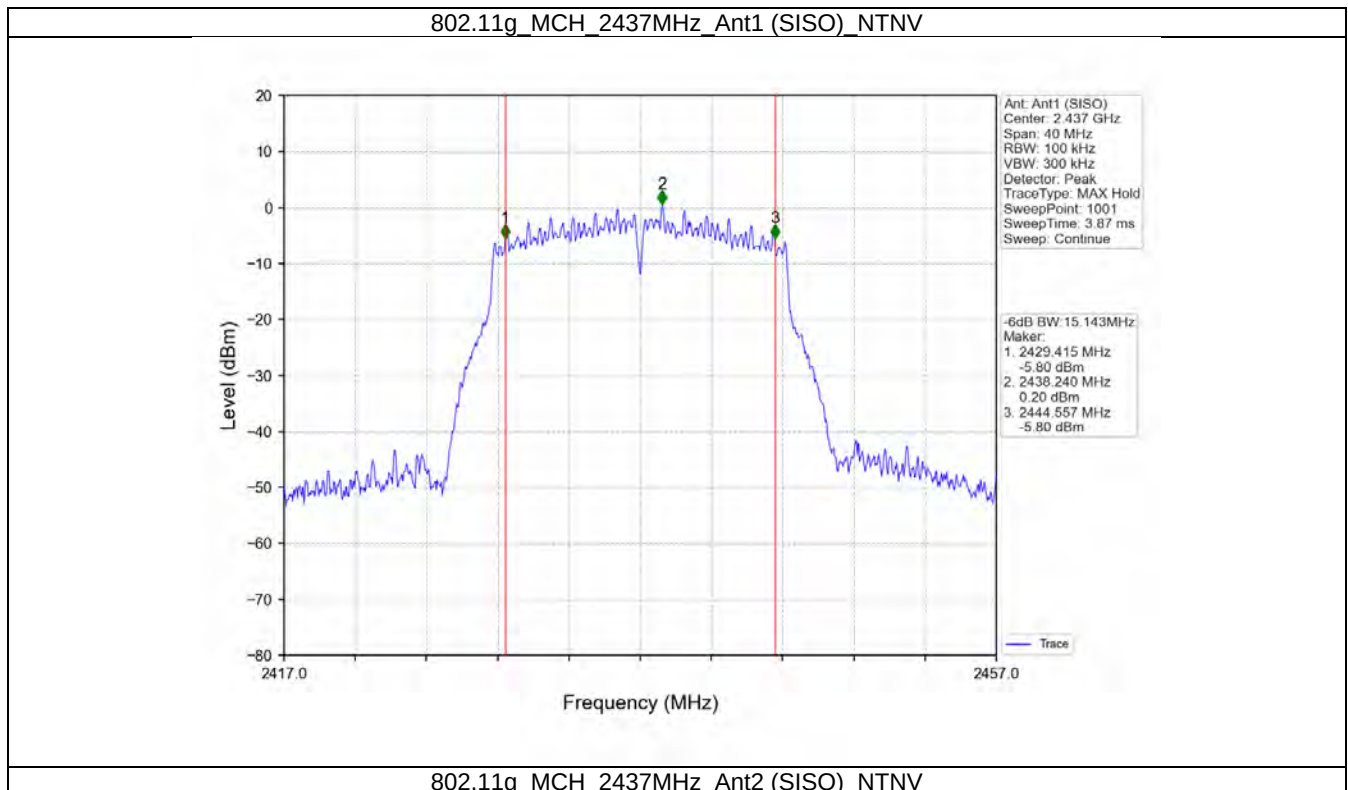
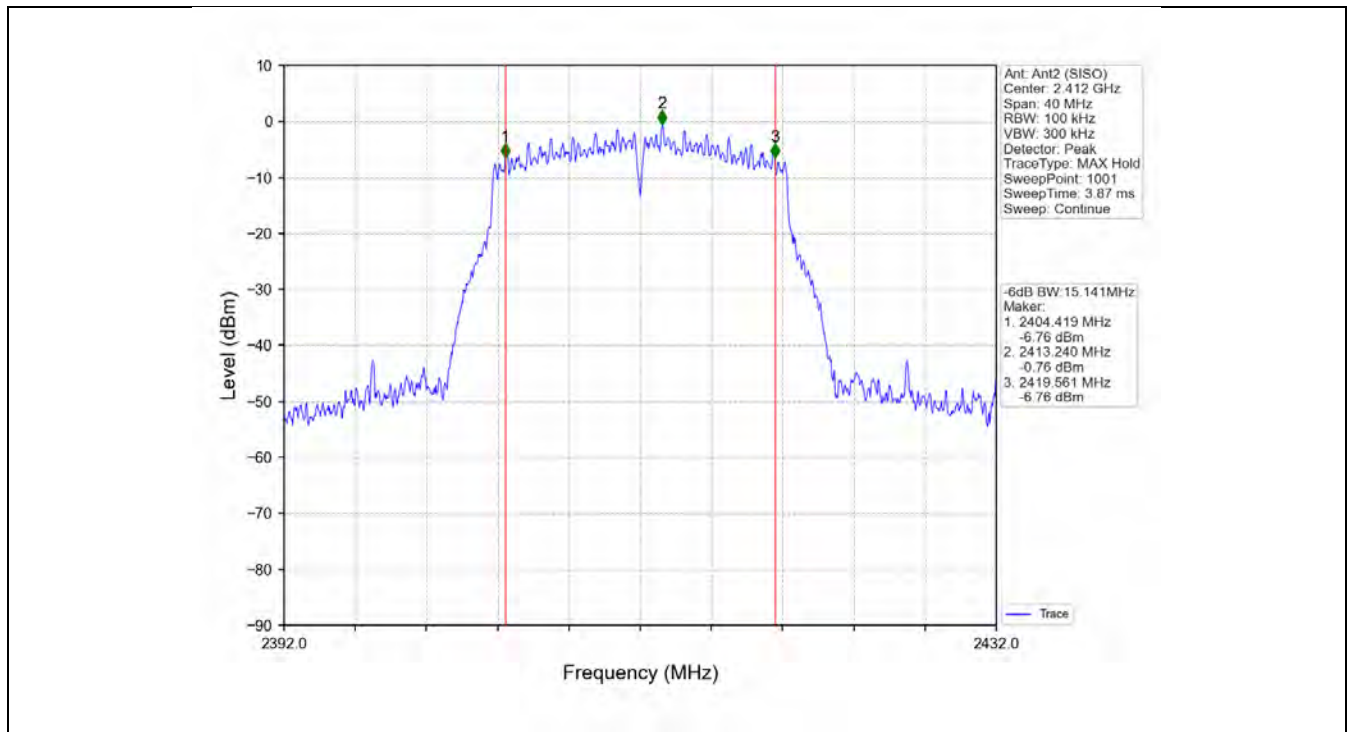


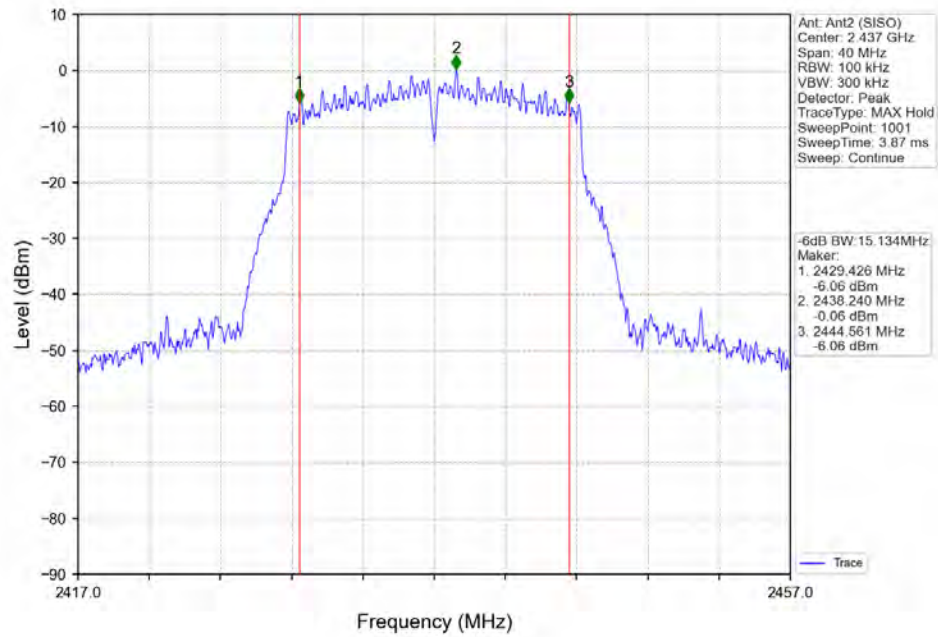


802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

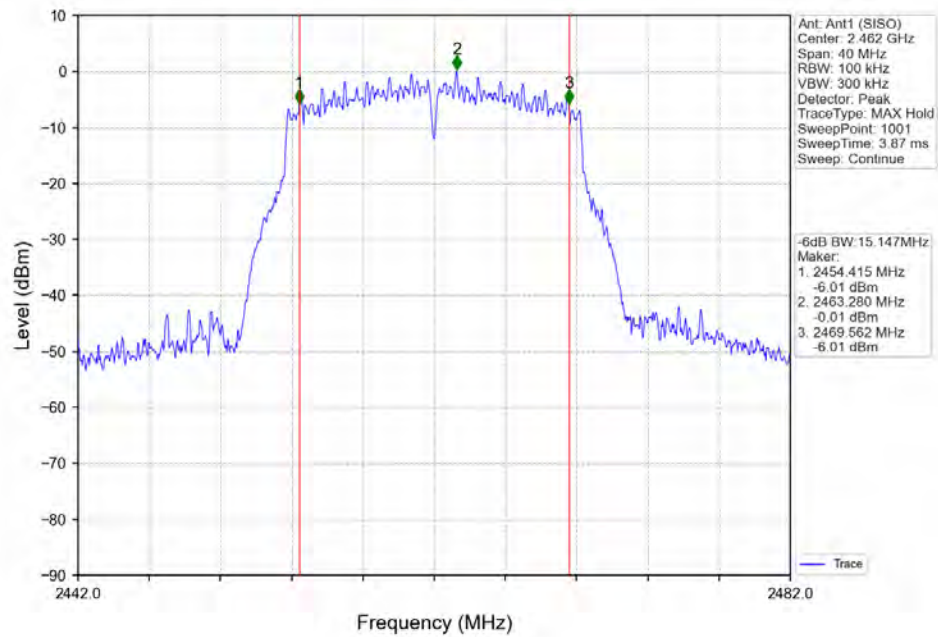


802.11g_LCH_2412MHz_Ant2 (SISO)_NTNV

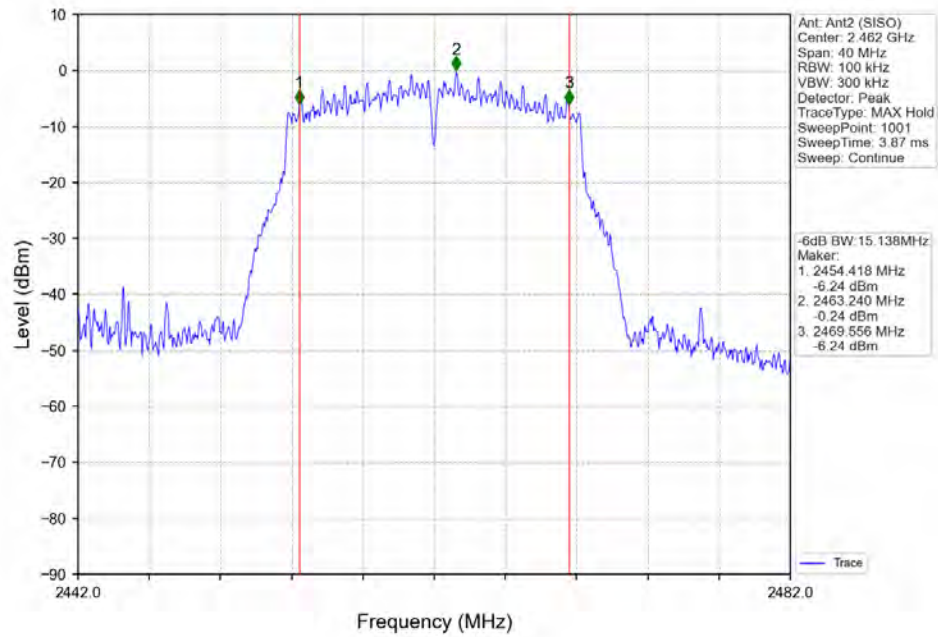




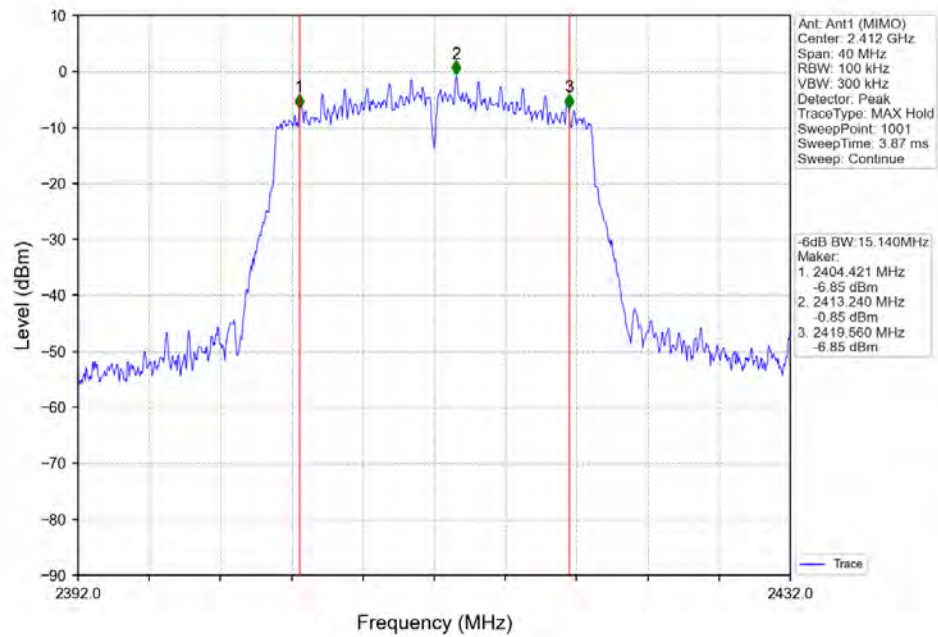
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



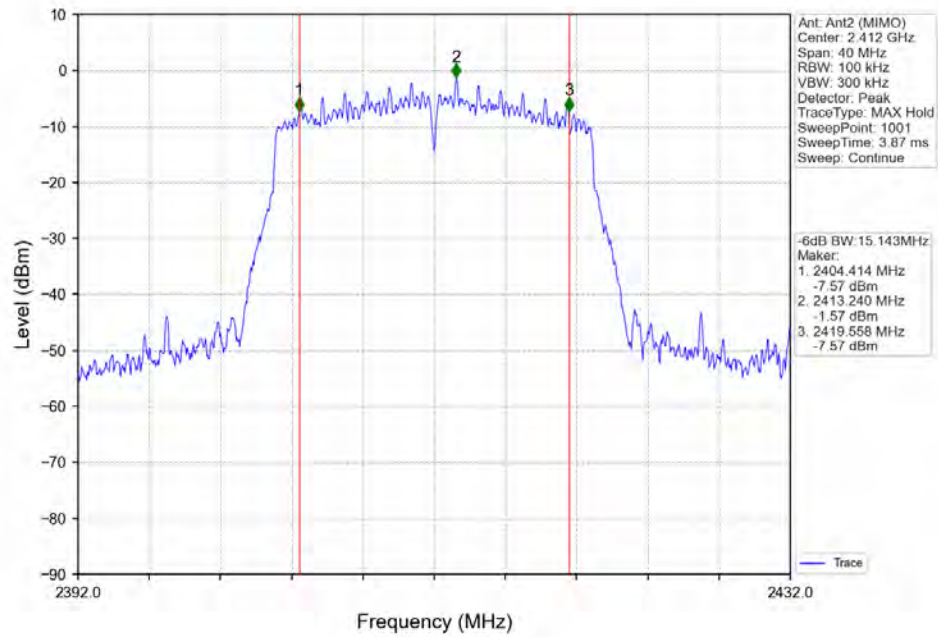
802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



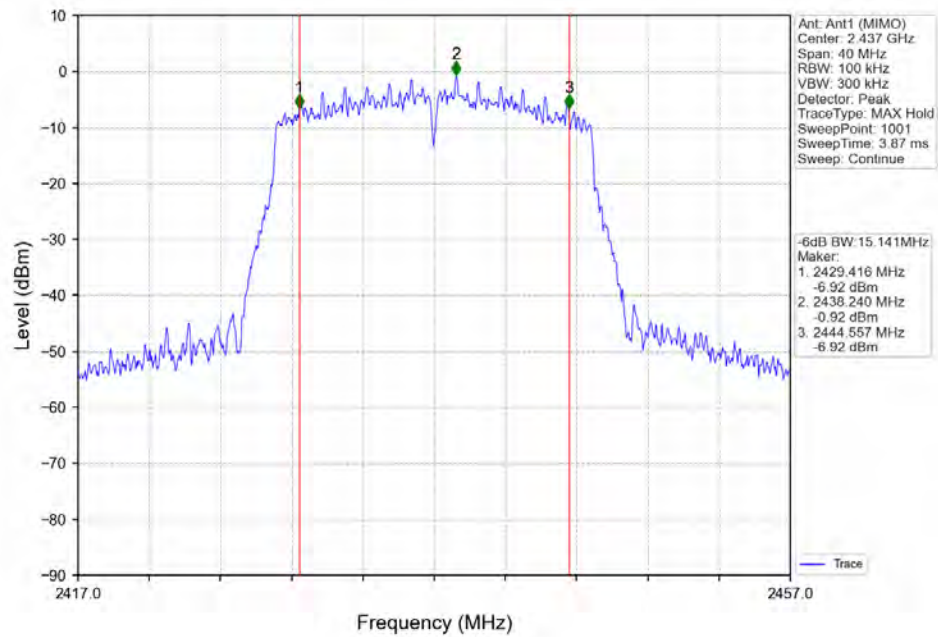
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



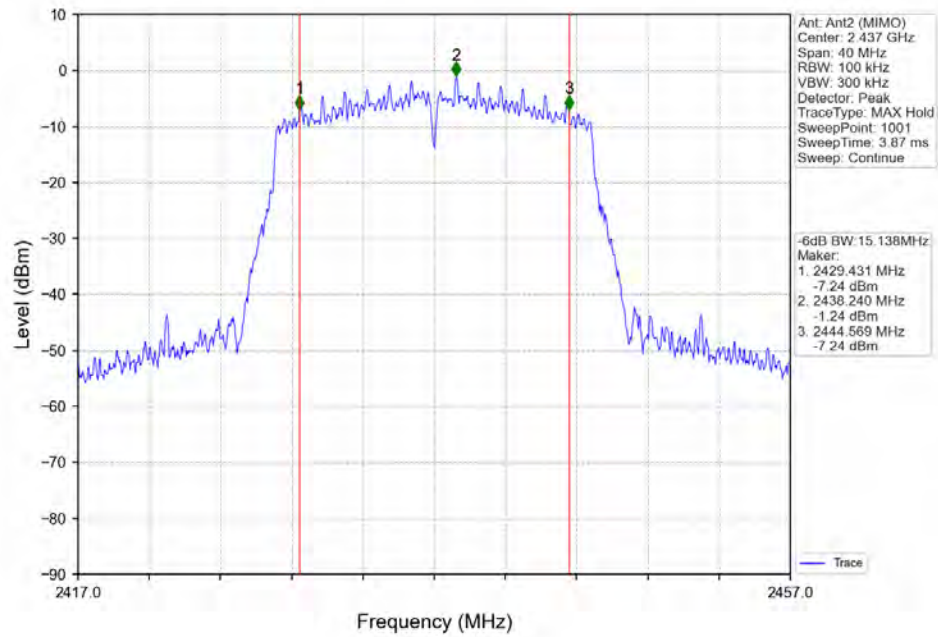
802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV



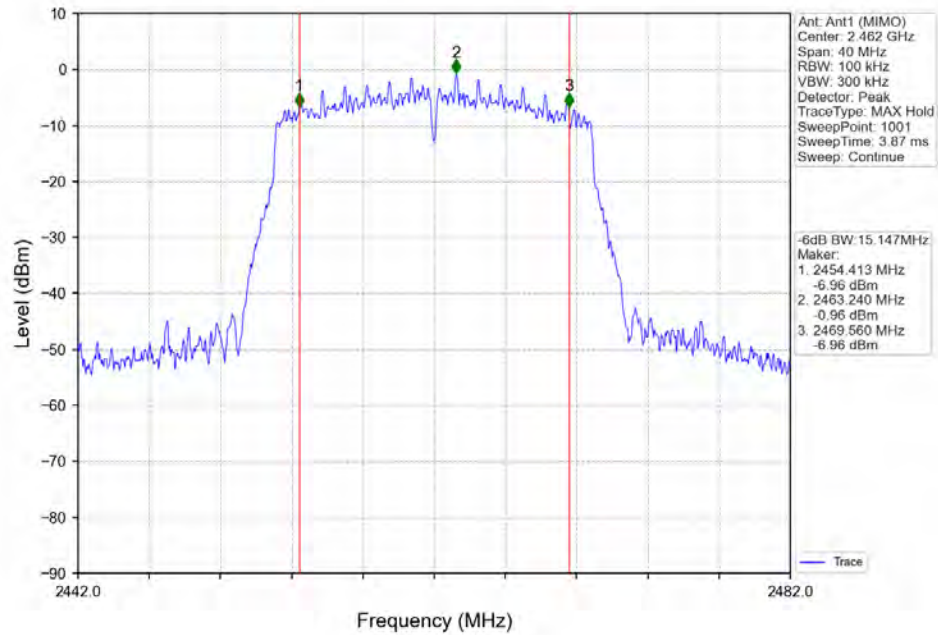
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



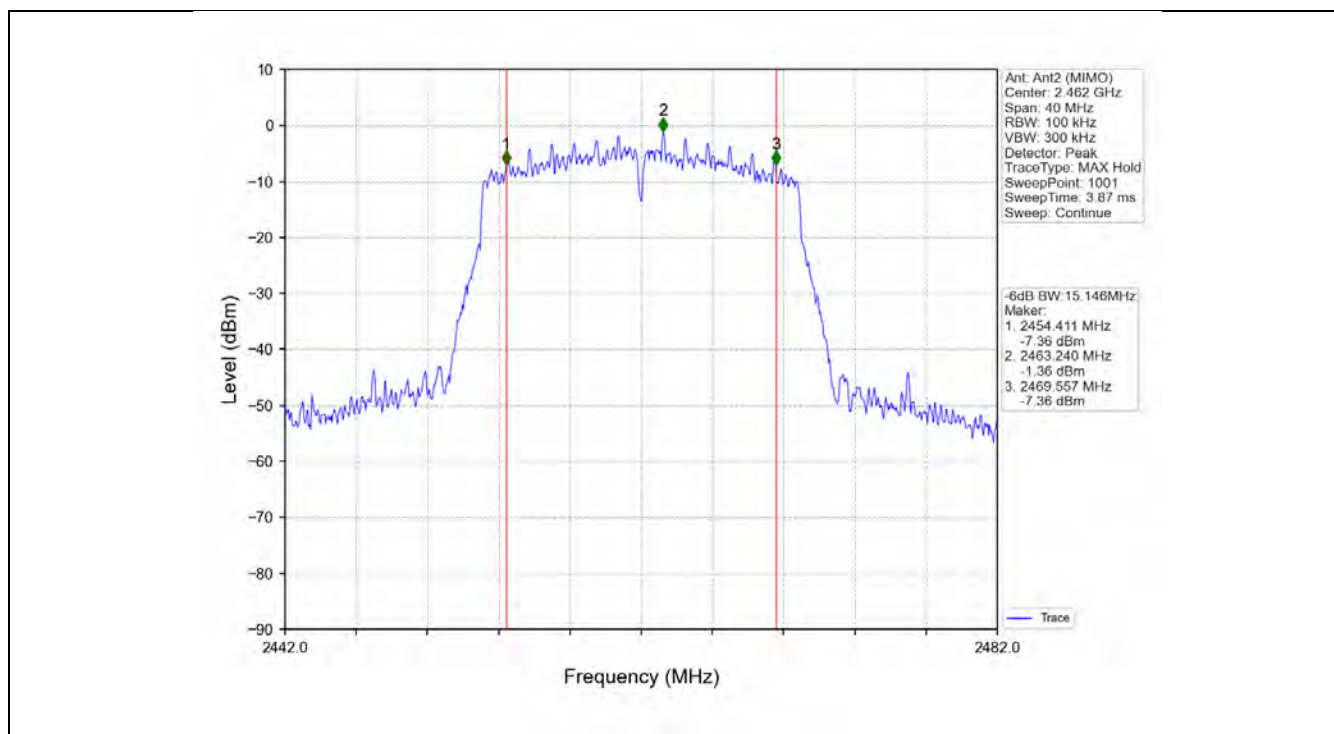
802.11n(HT20)_MCH_2437MHz_Ant2 (MIMO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant2 (MIMO)_NTNV



3. Maximum Conducted Output Power

3.1 Power

3.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Measured Peak Output Power (dBm)				Verdict
			Ant1	Ant2	Sum	Limit	
802.11b	SISO	2412	18.11	16.58	/	<=30	Pass
		2437	17.46	17.50	/	<=30	Pass
		2462	17.47	17.35	/	<=30	Pass
802.11g	SISO	2412	17.93	18.13	/	<=30	Pass
		2437	18.04	17.42	/	<=30	Pass
		2462	18.19	17.38	/	<=30	Pass
802.11n (HT20)	MIMO	2412	15.51	14.77	18.17	<=29.64	Pass
		2437	15.67	14.58	18.17	<=29.64	Pass
		2462	15.58	14.53	18.10	<=29.64	Pass

Note1: Antenna Gain: Ant1: 3.40dBi; Ant2: 3.30dBi;
Note2: Directional Gain: 6.36dBi

4. Maximum Power Spectral Density

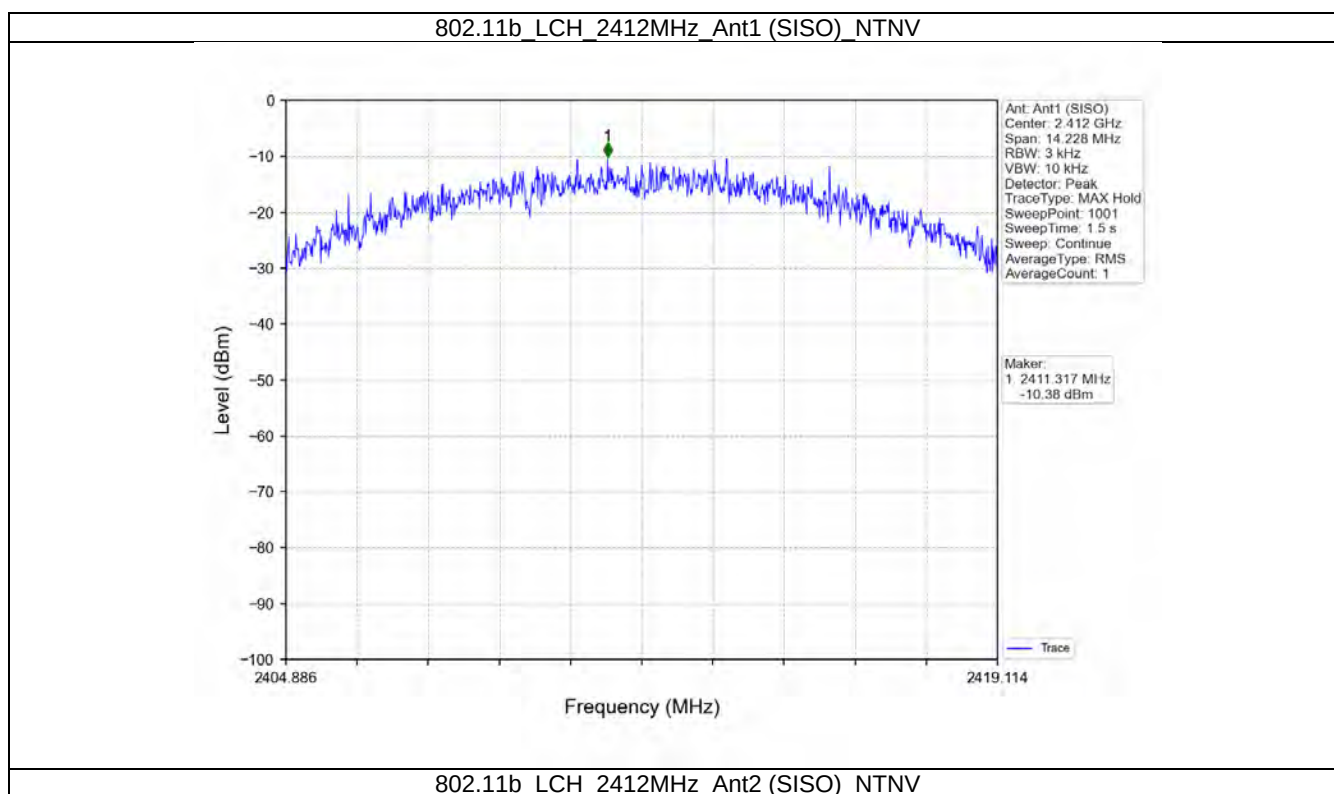
4.1 PSD

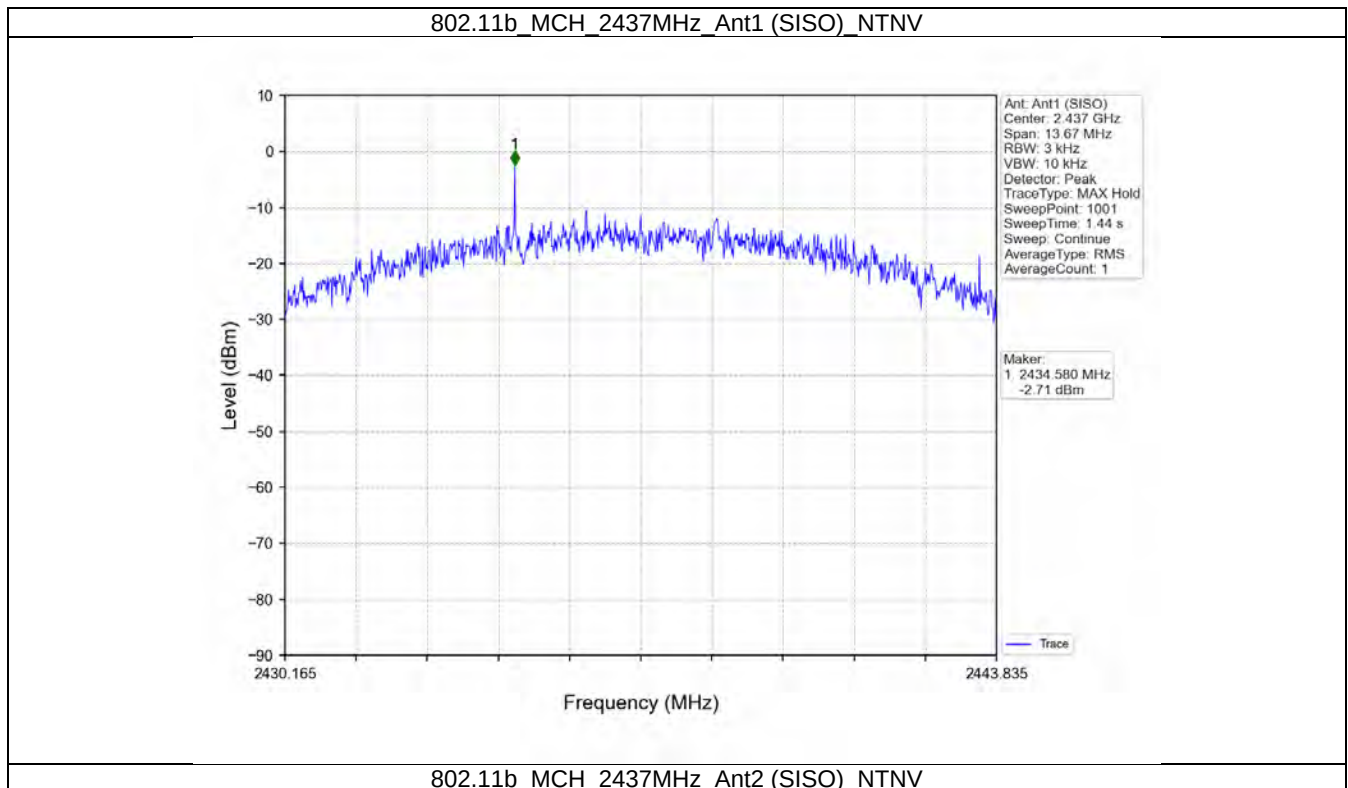
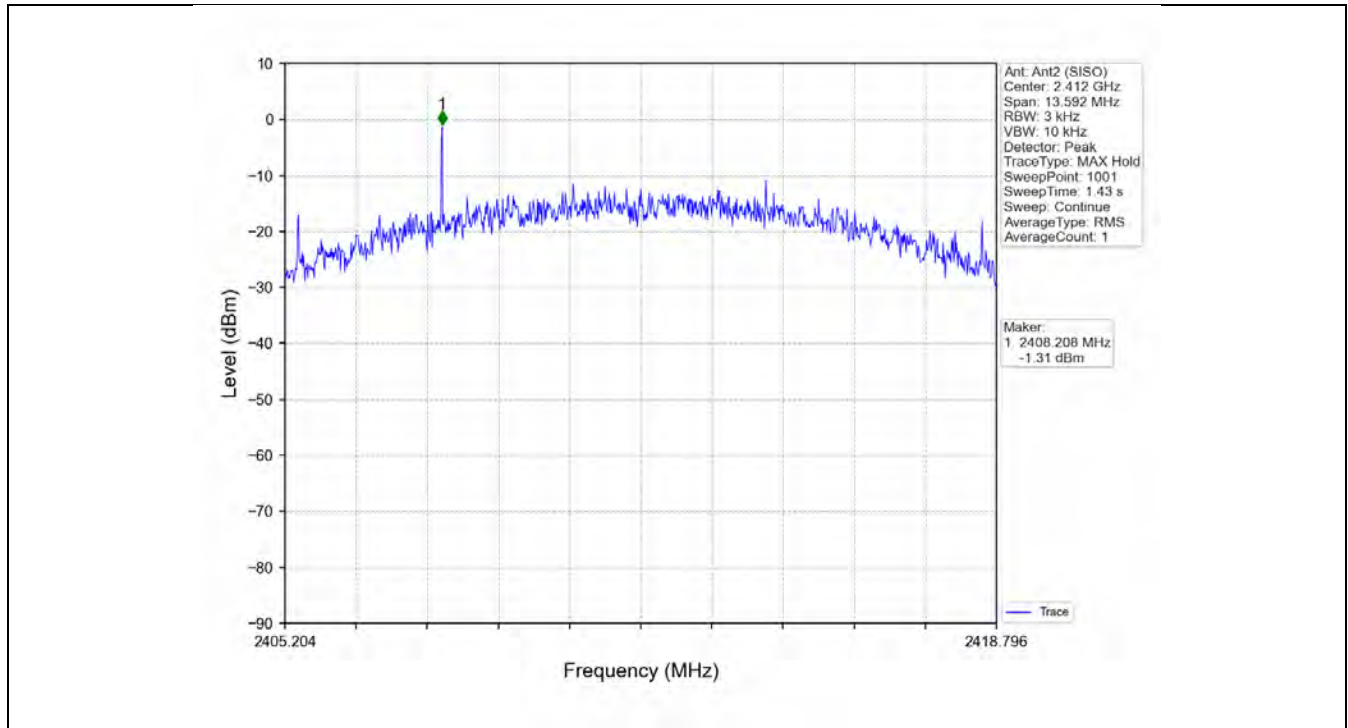
4.1.1 Test Result

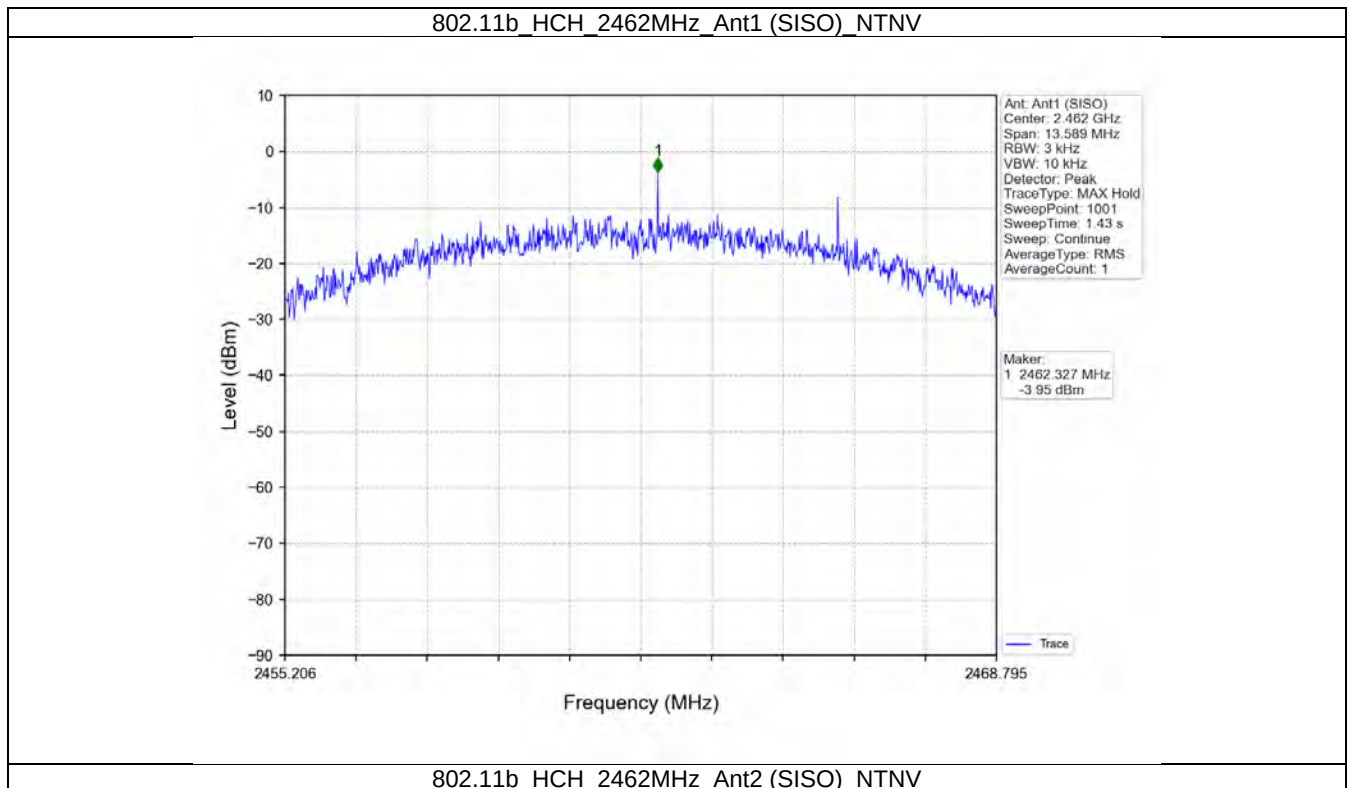
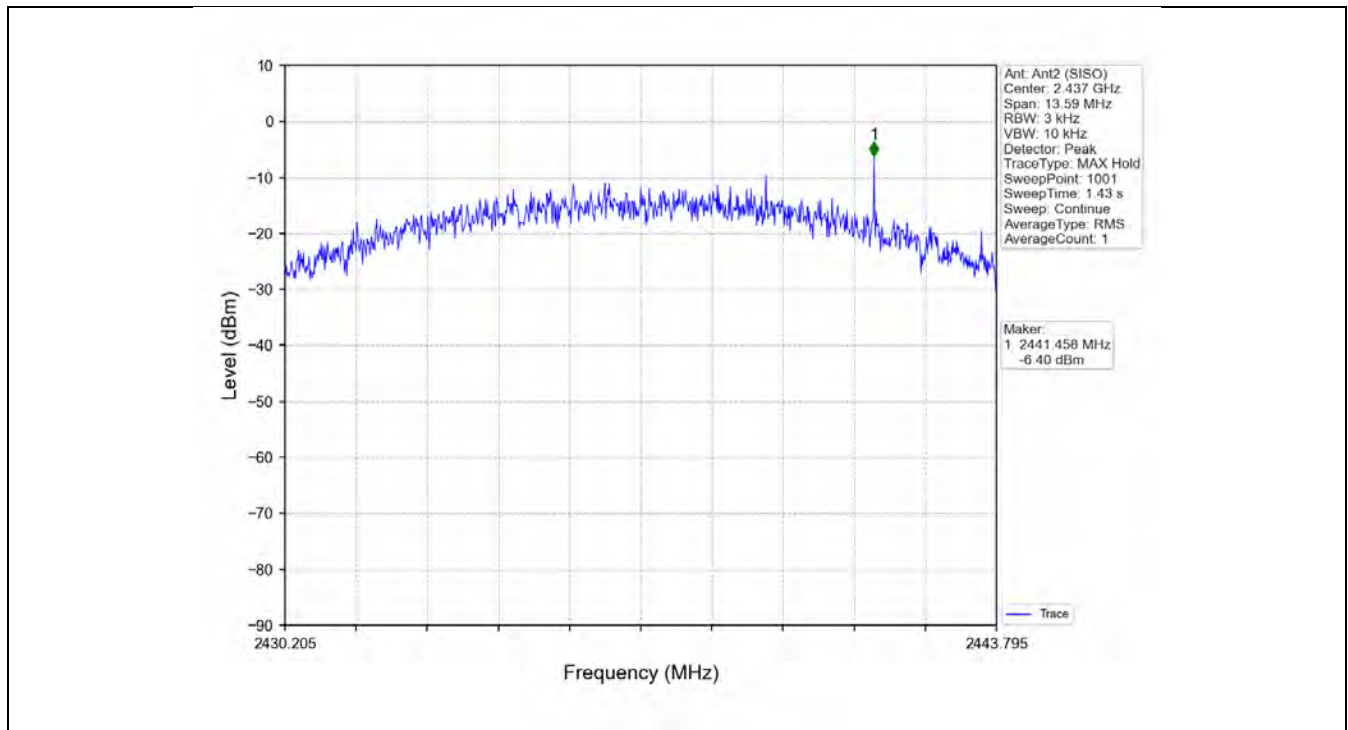
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)				Verdict
			Ant1	Ant2	Sum	Limit	
802.11b	SISO	2412	-10.38	-1.31	/	<=8	Pass
		2437	-2.71	-6.40	/	<=8	Pass
		2462	-3.95	-4.10	/	<=8	Pass
802.11g	SISO	2412	-15.69	-15.50	/	<=8	Pass
		2437	-14.01	-15.97	/	<=8	Pass
		2462	-14.63	-15.80	/	<=8	Pass
802.11n (HT20)	MIMO	2412	-17.34	-18.40	-15.34	<=7.64	Pass
		2437	-17.78	-18.11	-15.81	<=7.64	Pass
		2462	-17.62	-19.25	-15.69	<=7.64	Pass

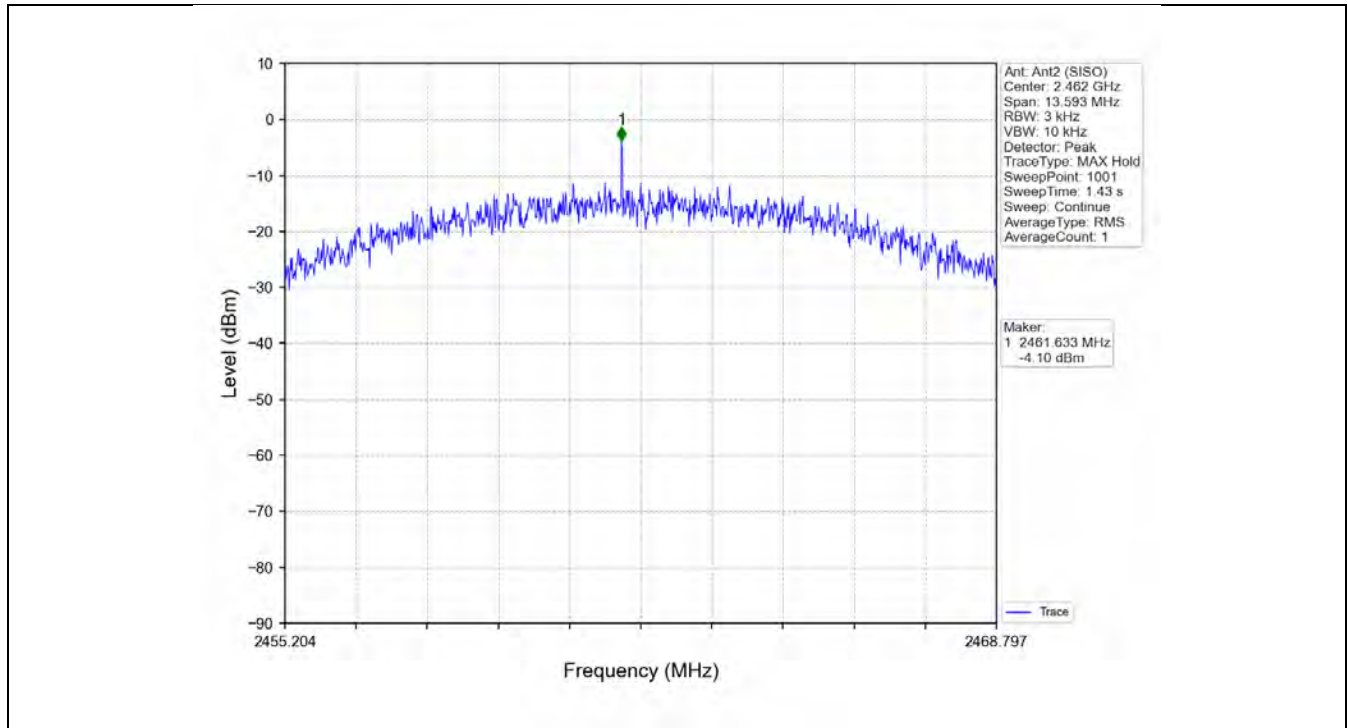
Note1: Antenna Gain: Ant1: 3.40dBi; Ant2: 3.30dBi;
Note2: Directional Gain: 6.36dBi

4.1.2 Test Graph

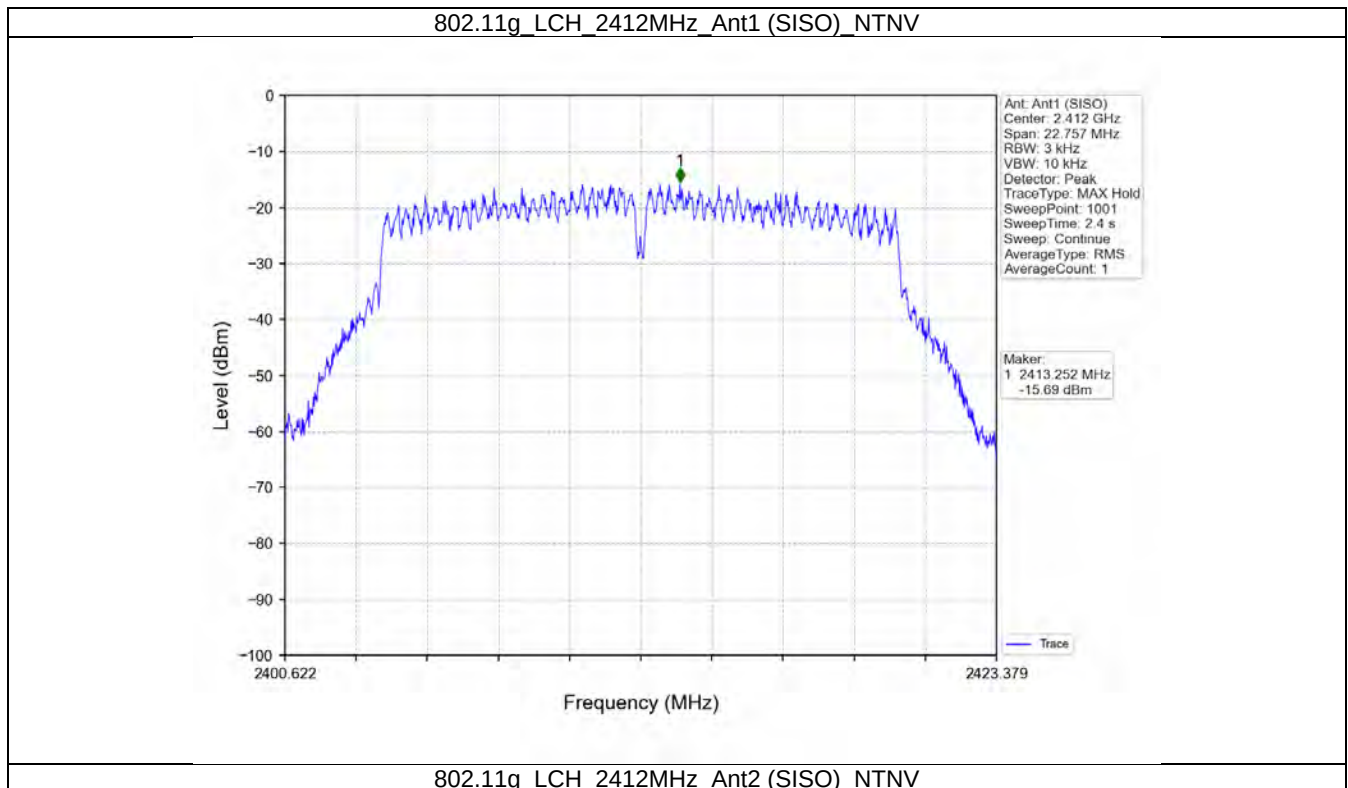


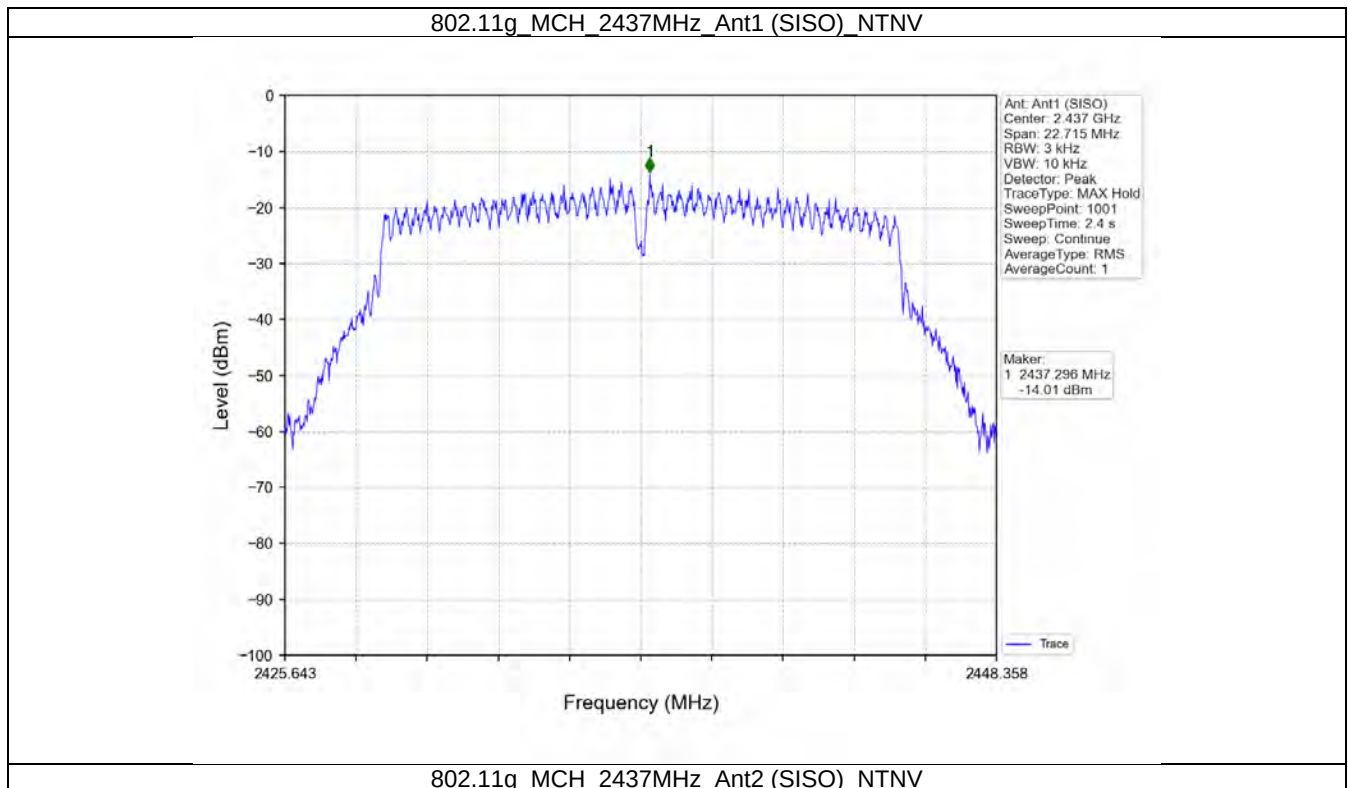
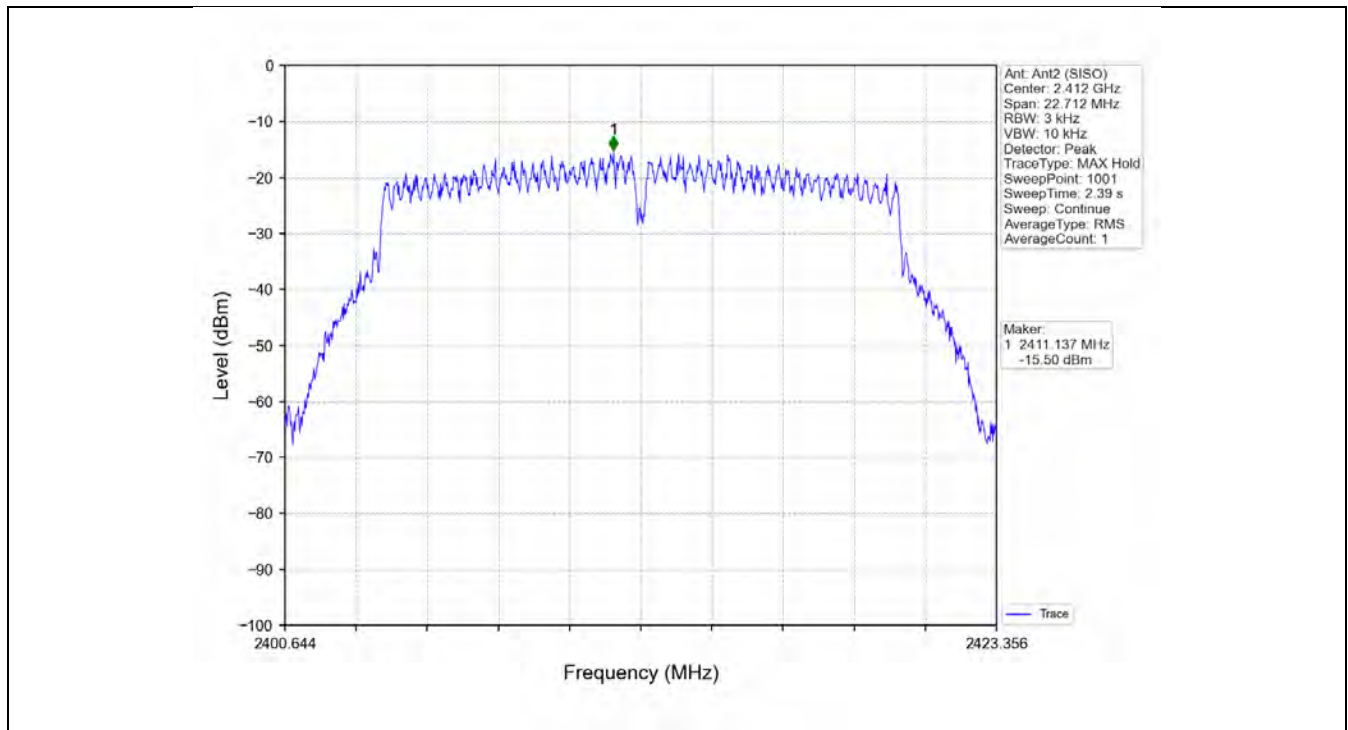


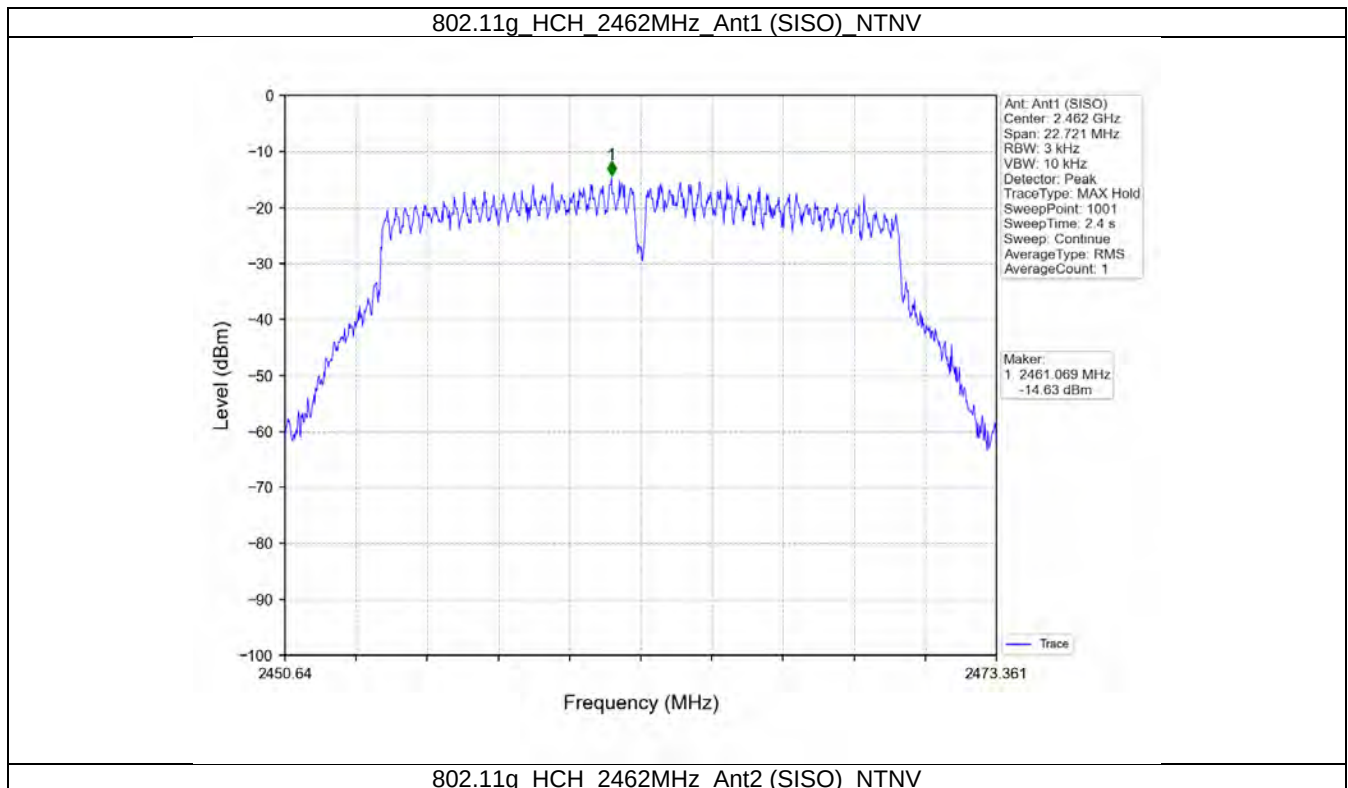
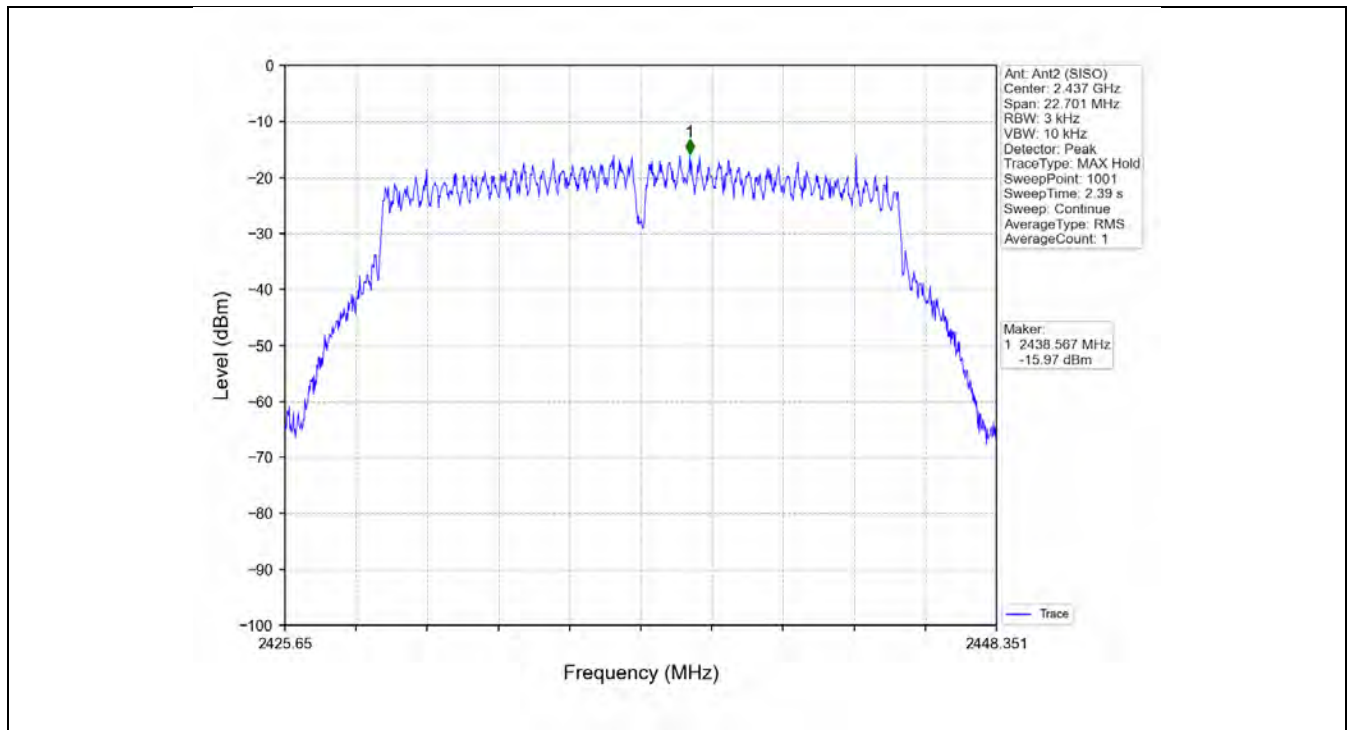


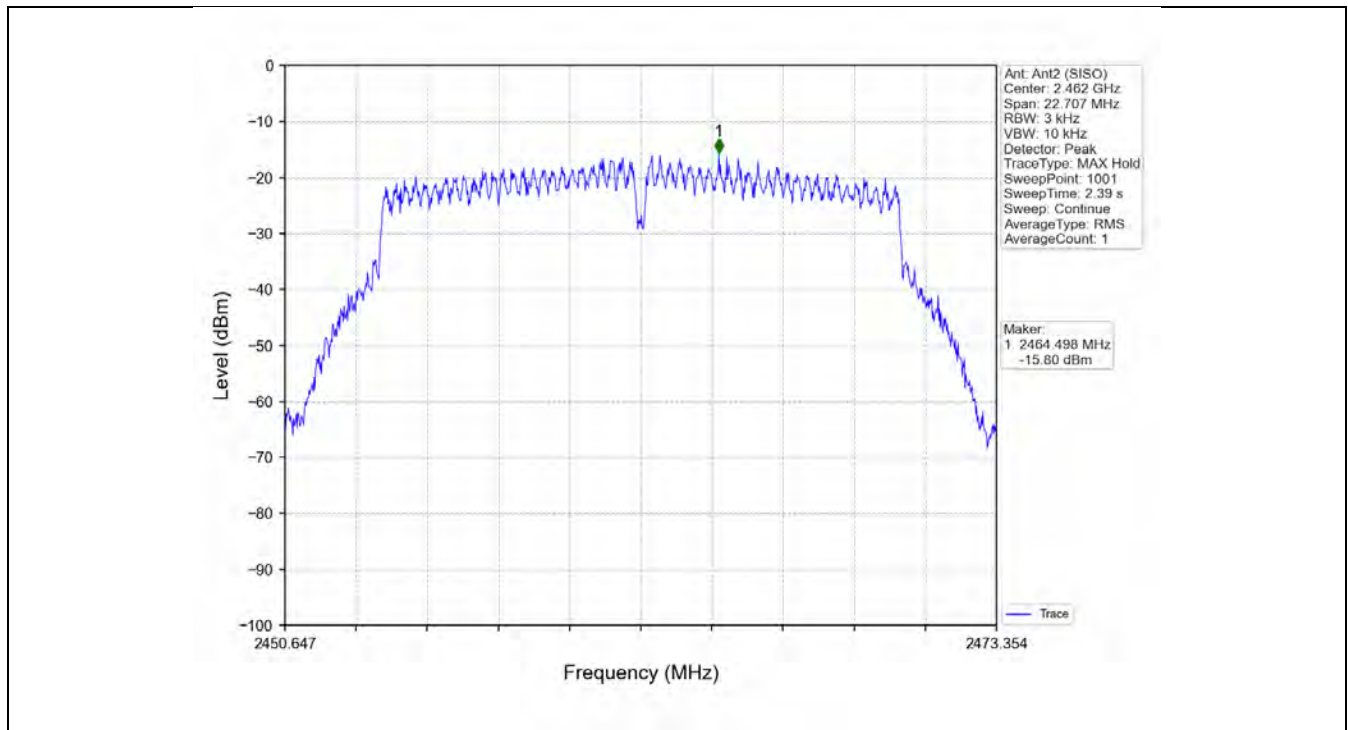


802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV

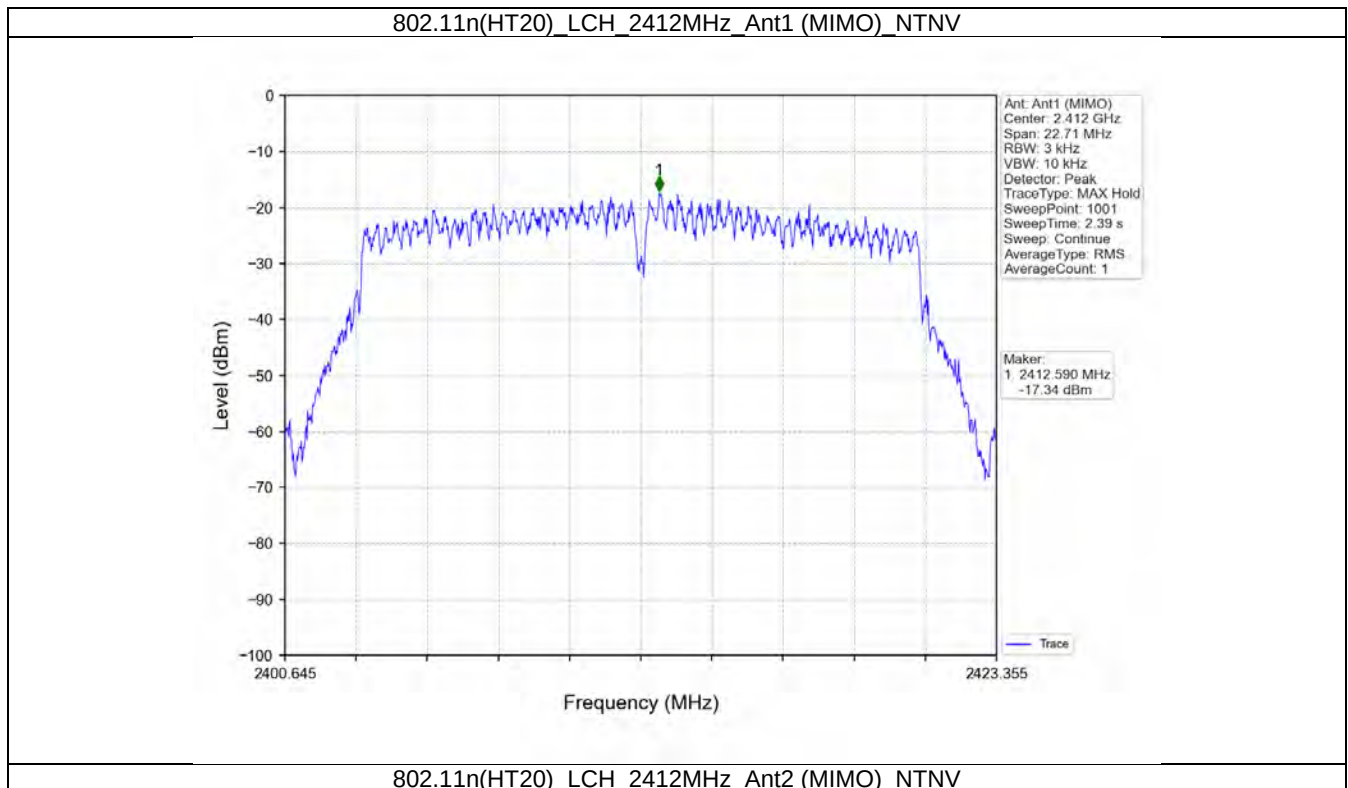




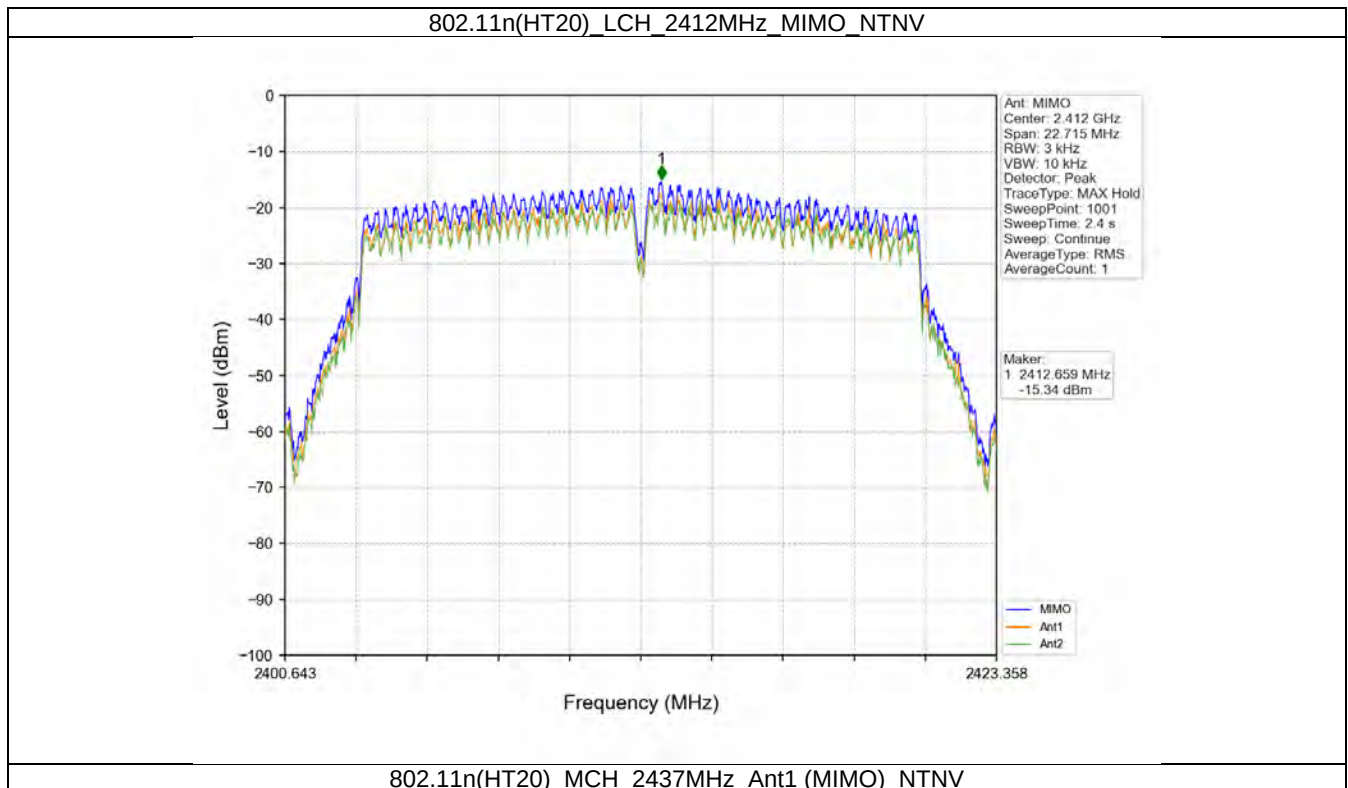
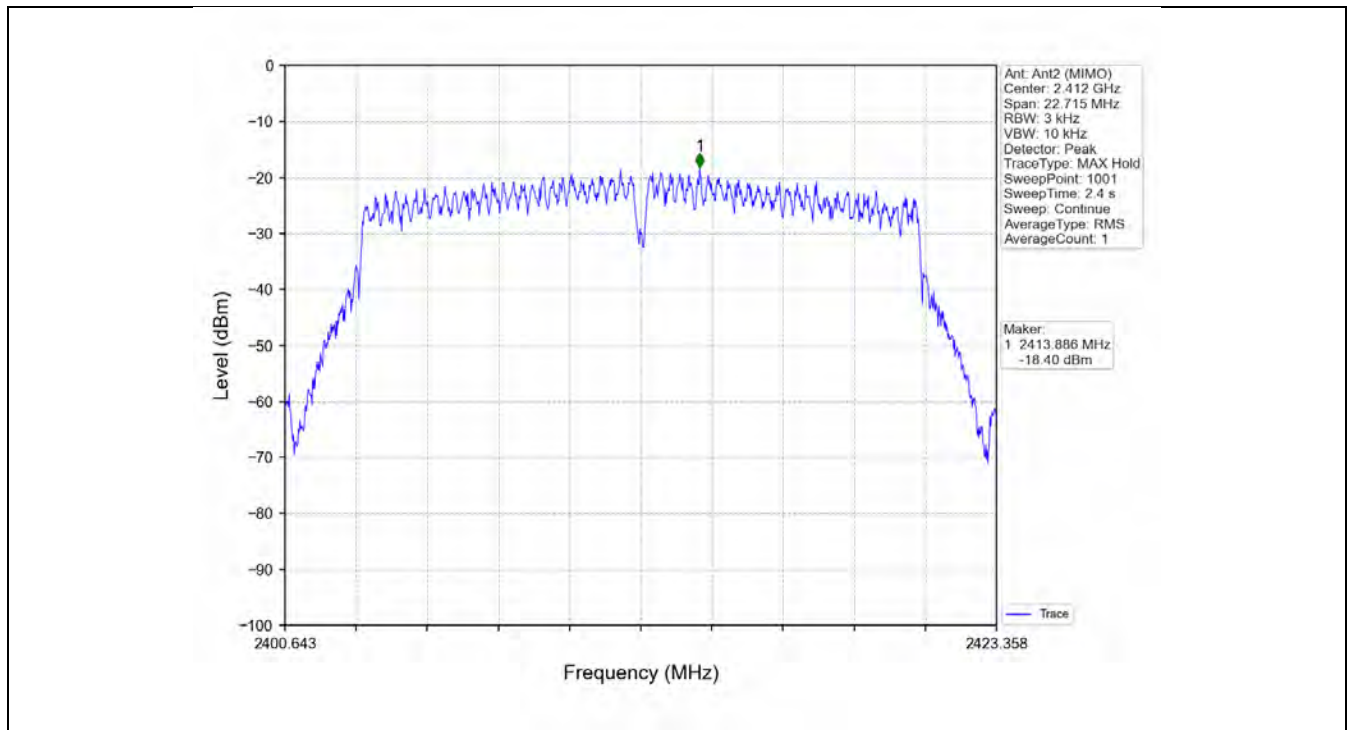


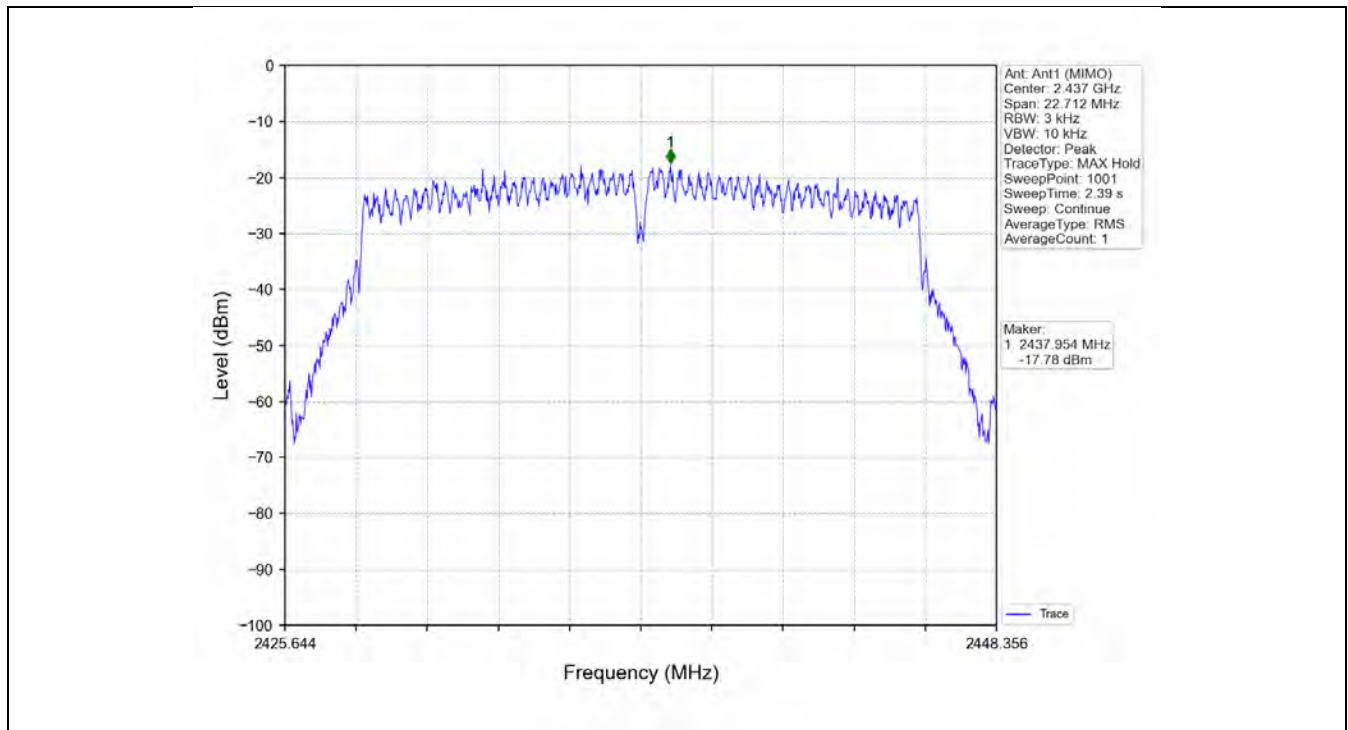


802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV

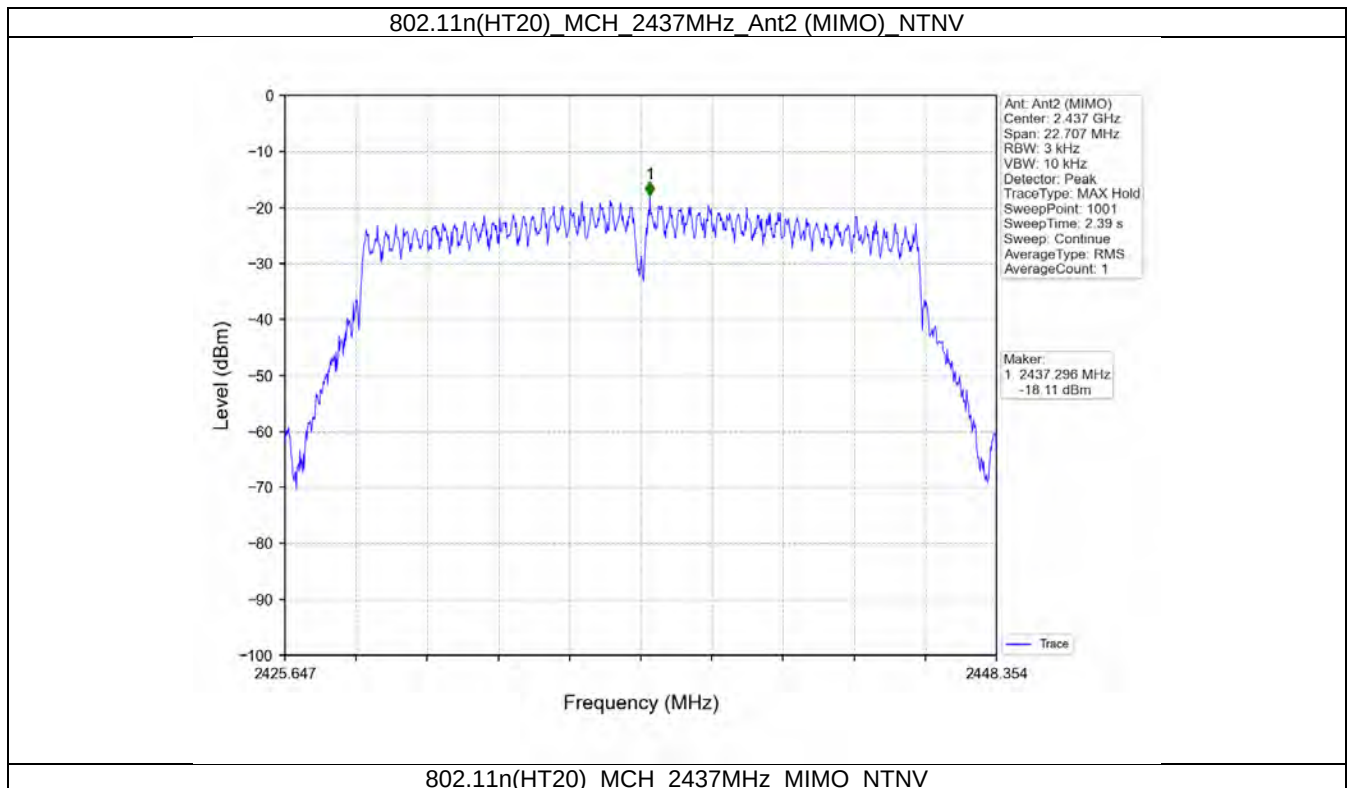


802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV

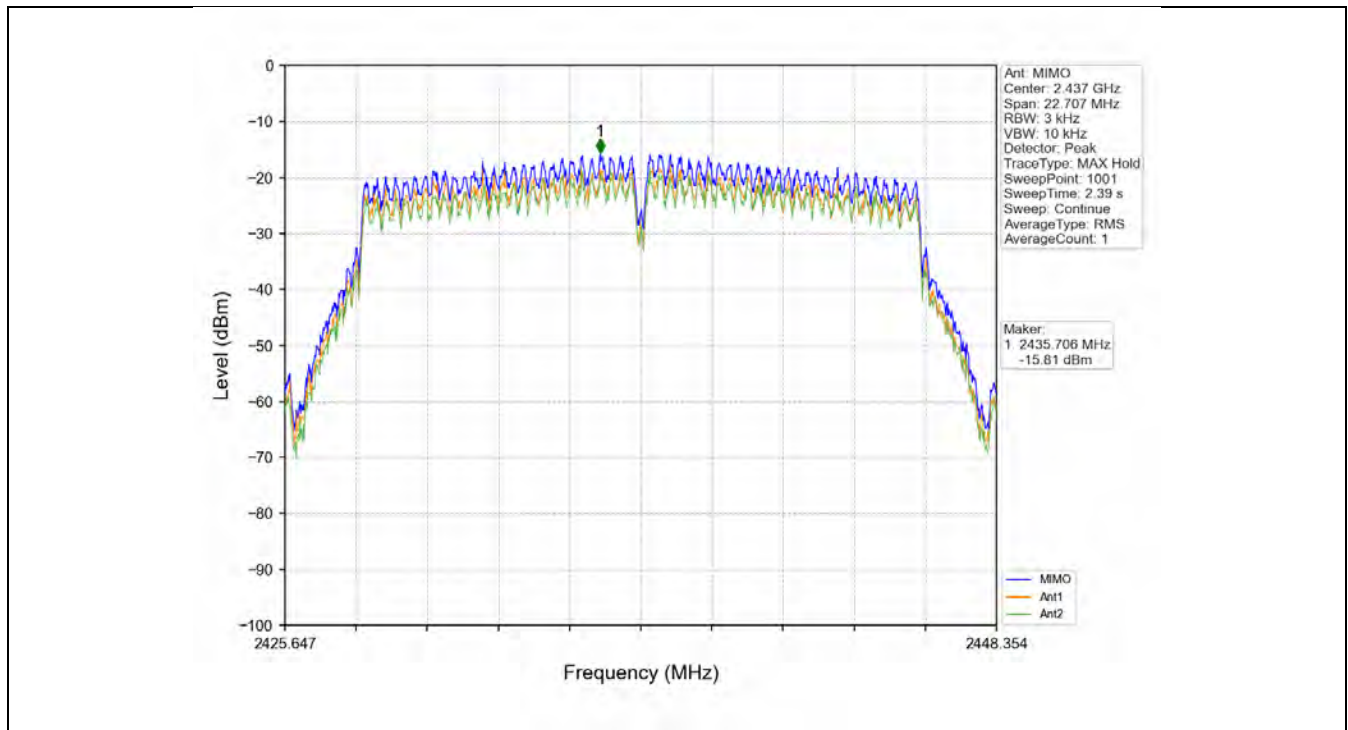




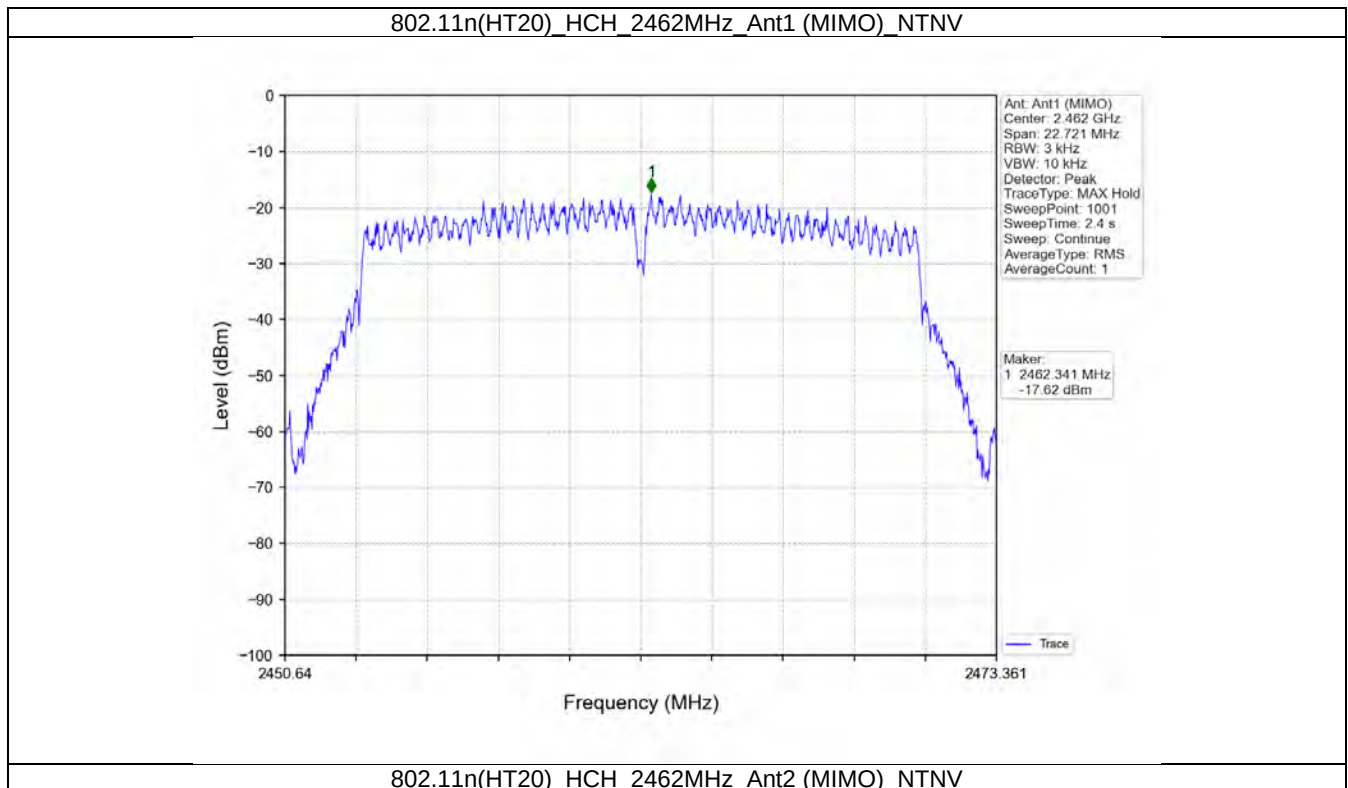
802.11n(HT20)_MCH_2437MHz_Ant2 (MIMO)_NTNV



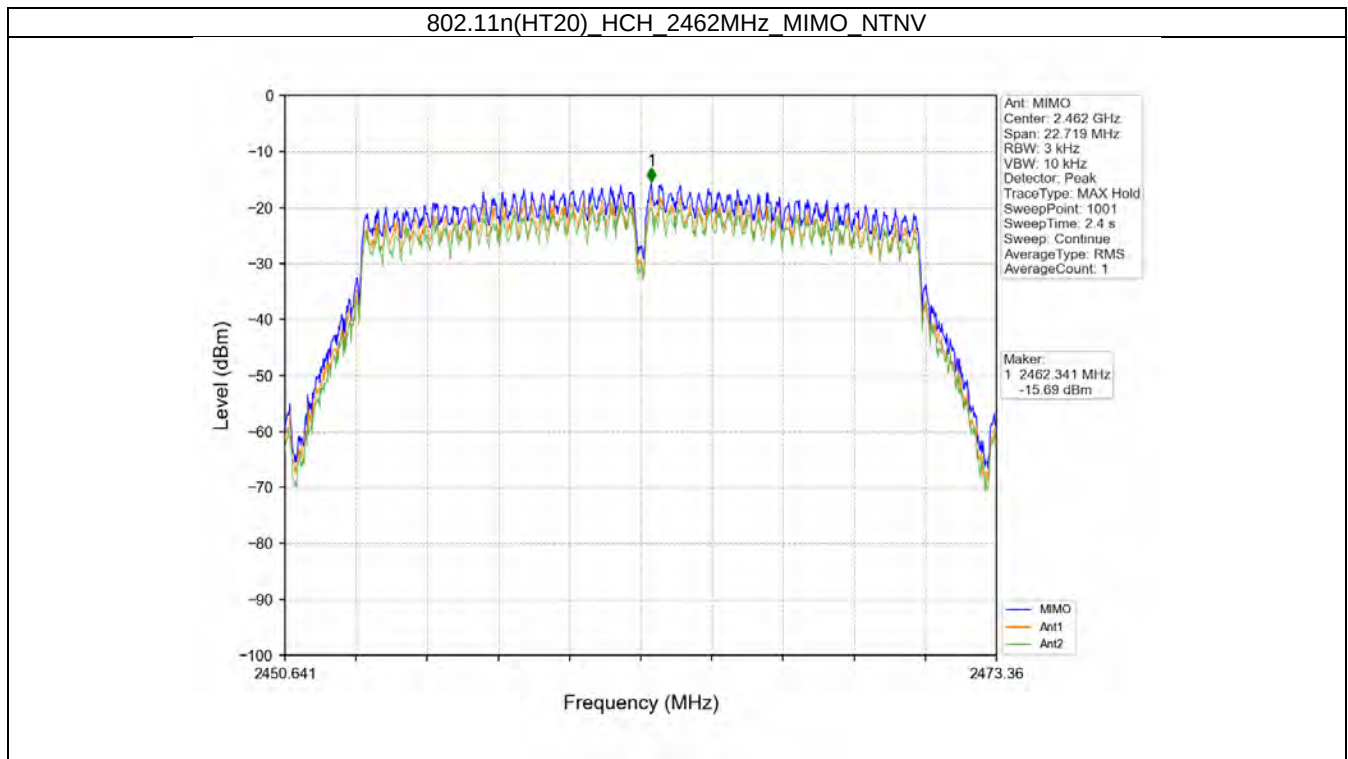
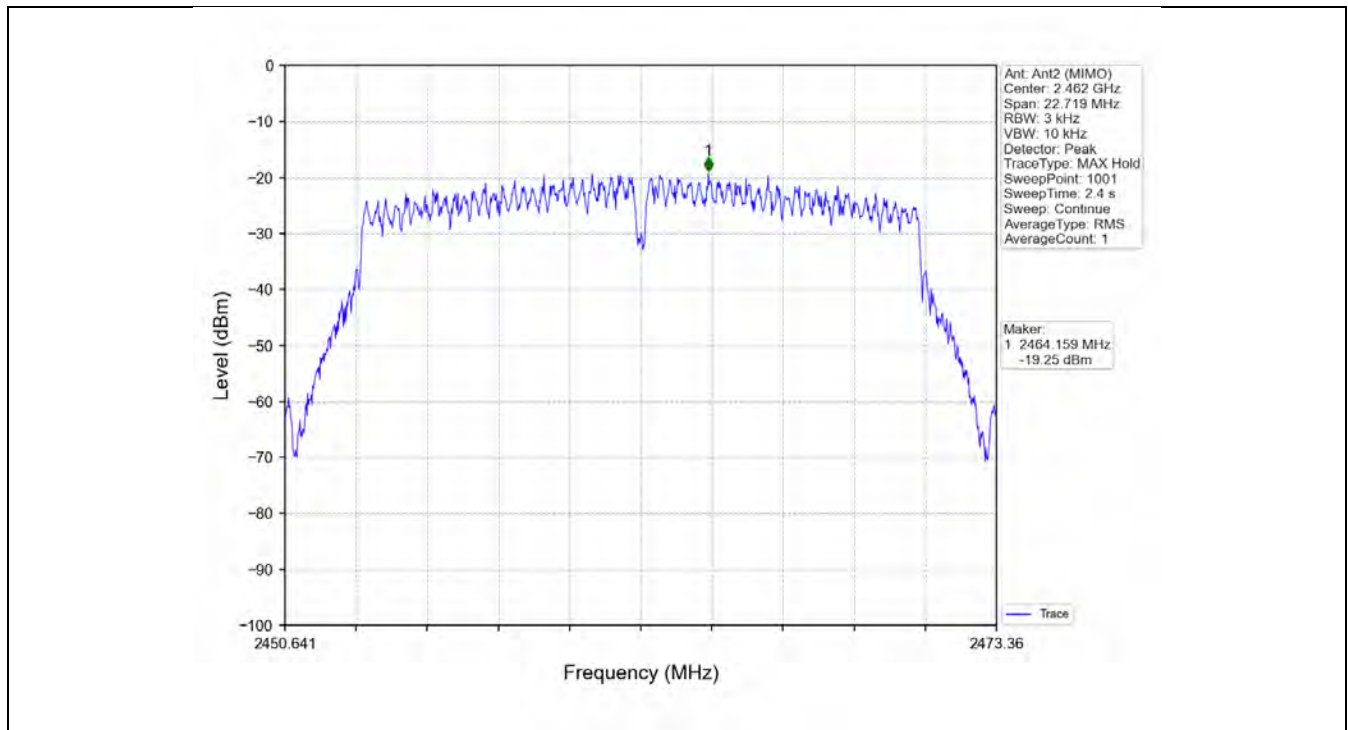
802.11n(HT20)_MCH_2437MHz_MIMO_NTNV



802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



802.11n(HT20)_HCH_2462MHz_Ant2 (MIMO)_NTNV





5. Unwanted Emissions In Non-restricted Frequency Bands

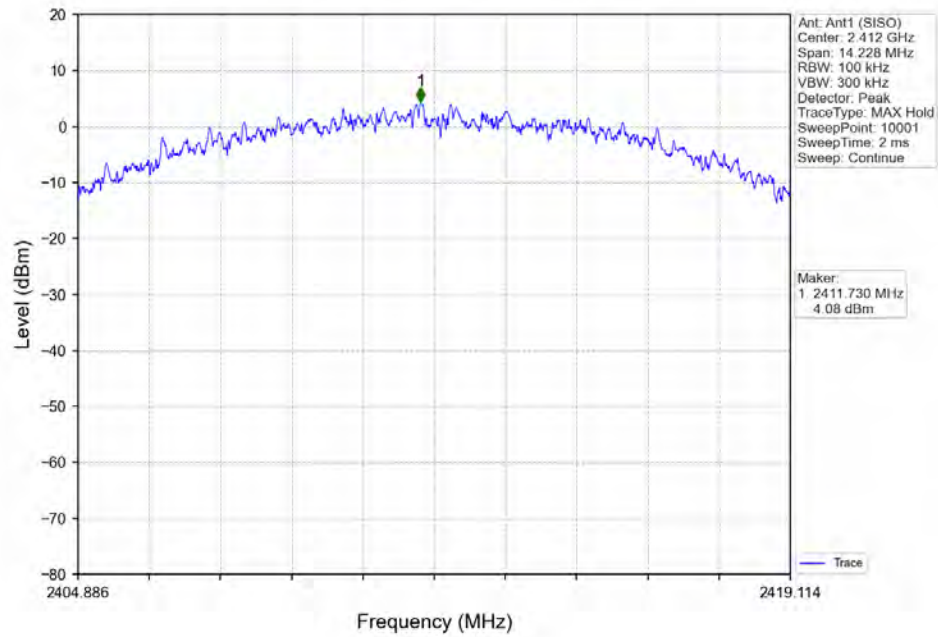
5.1 Ref

5.1.1 Test Result

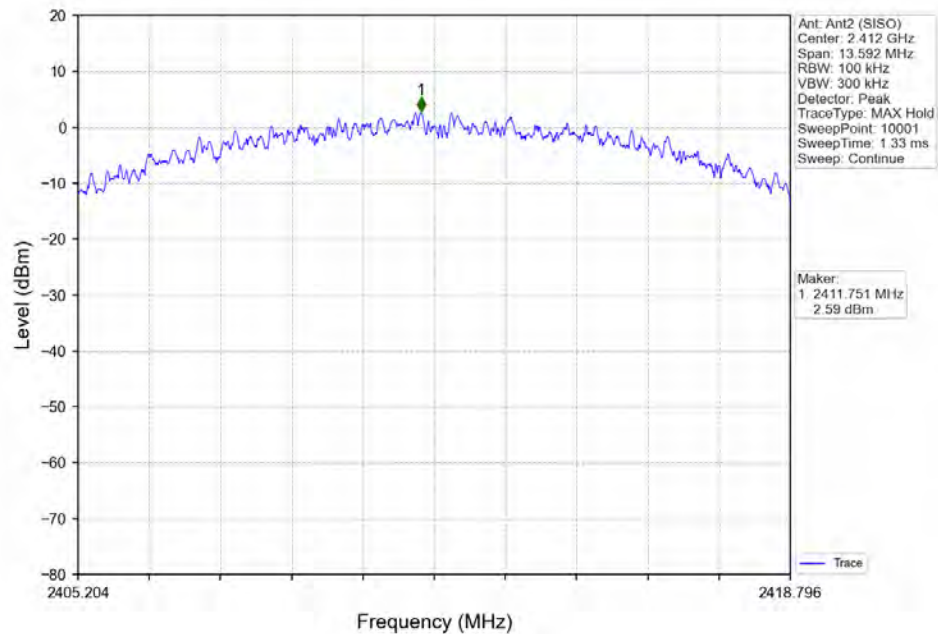
Mode	TX Type	Frequency (MHz)	Ant	Level of Reference (dBm)
802.11b	SISO	2412	1	4.08
			2	2.59
		2437	1	3.48
			2	3.69
		2462	1	3.49
			2	3.36
802.11g	SISO	2412	1	0.09
			2	-0.89
		2437	1	0.03
			2	-0.42
		2462	1	-0.41
			2	-0.41
802.11n (HT20)	MIMO	2412	1	-1.06
			2	-1.99
		2437	1	-1.16
			2	-1.39
		2462	1	-1.11
			2	-1.74
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.				

5.1.2 Test Graph

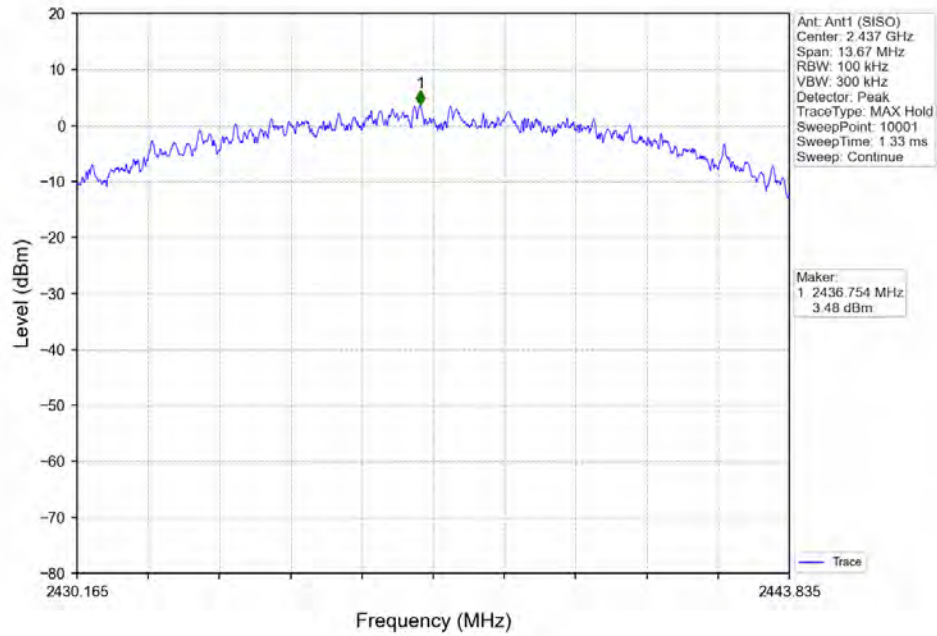
802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



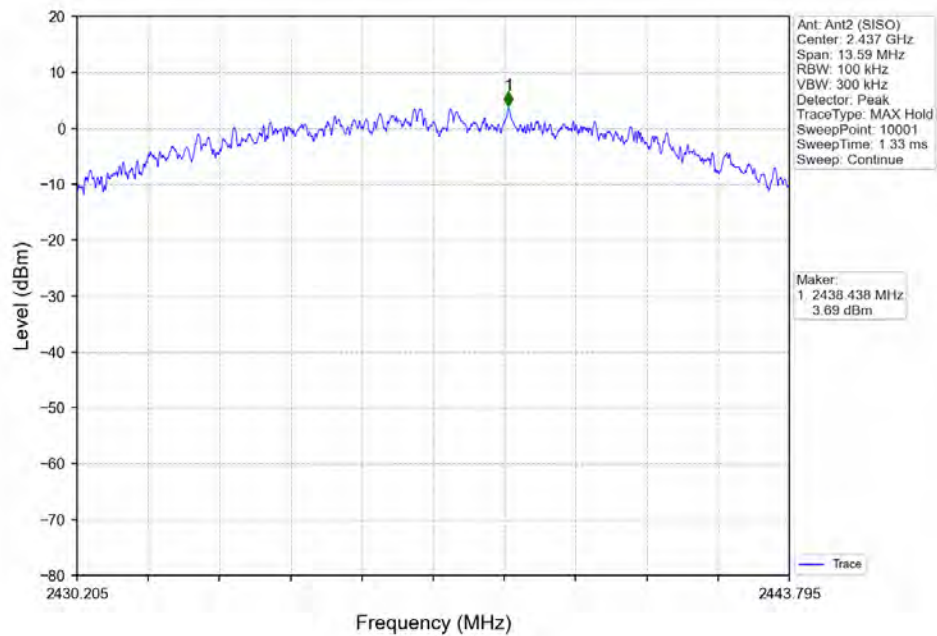
802.11b LCH 2412MHz Ant2 (SISO) NTN



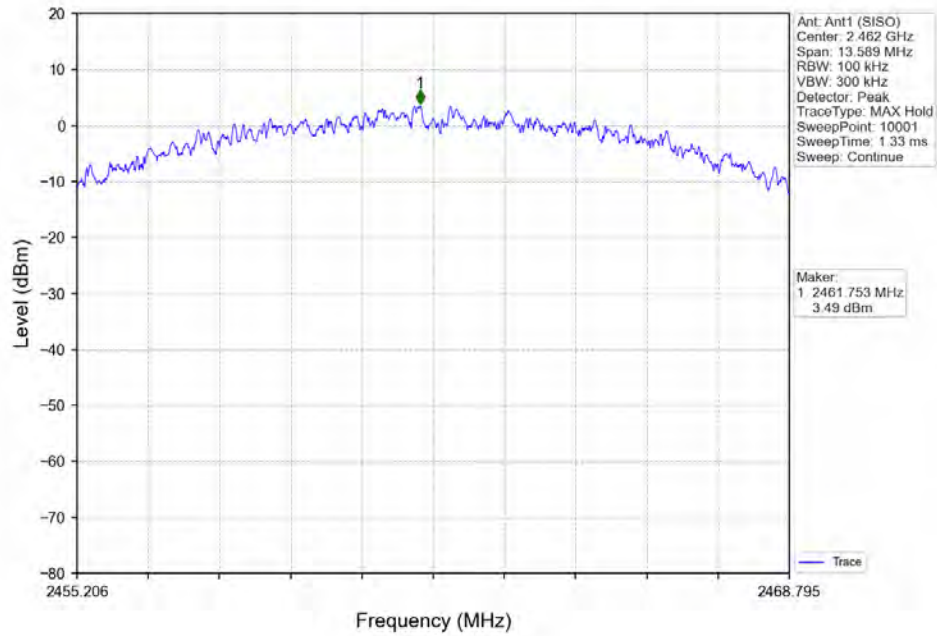
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



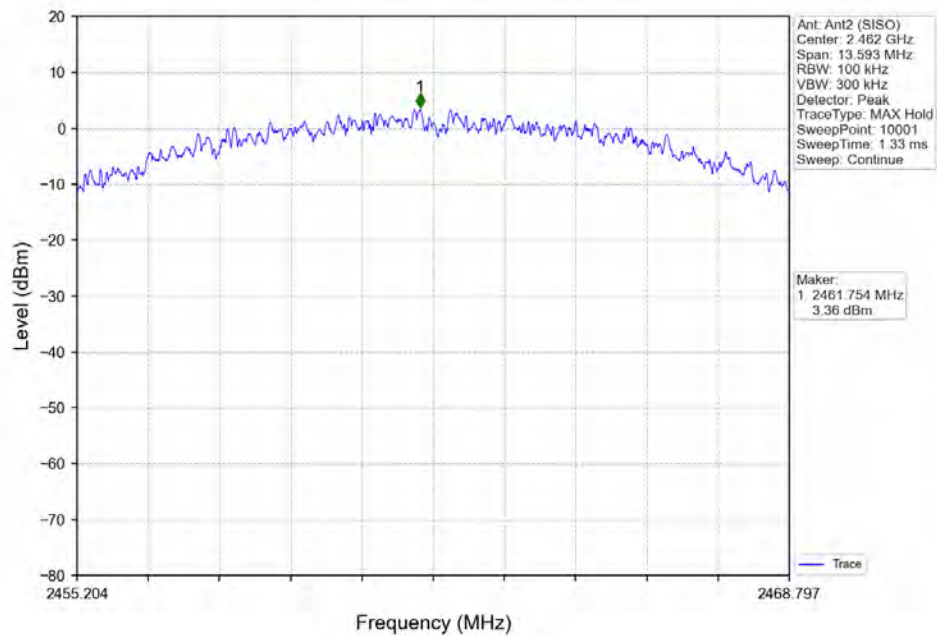
802.11b_MCH_2437MHz_Ant2 (SISO)_NTNV



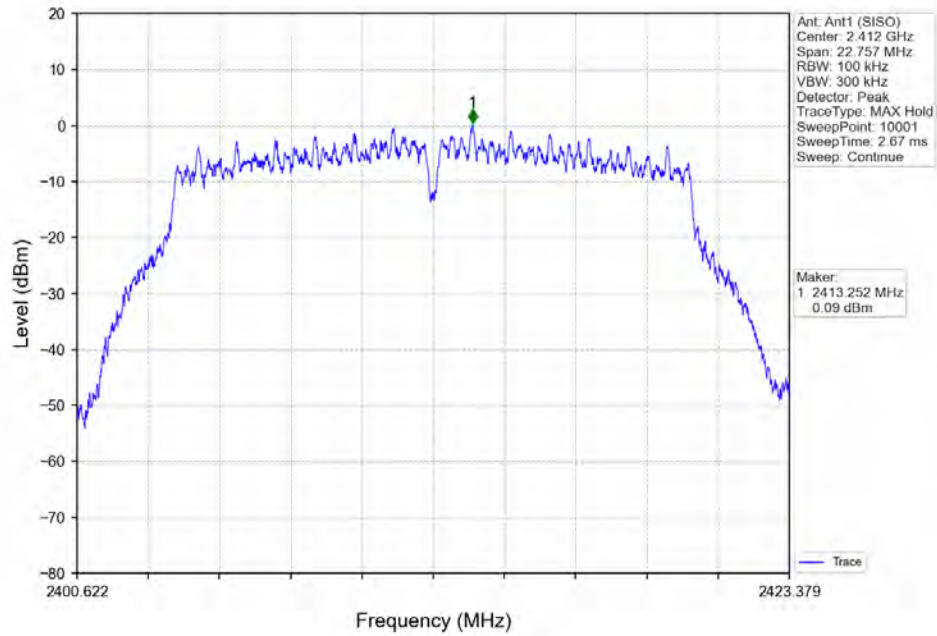
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



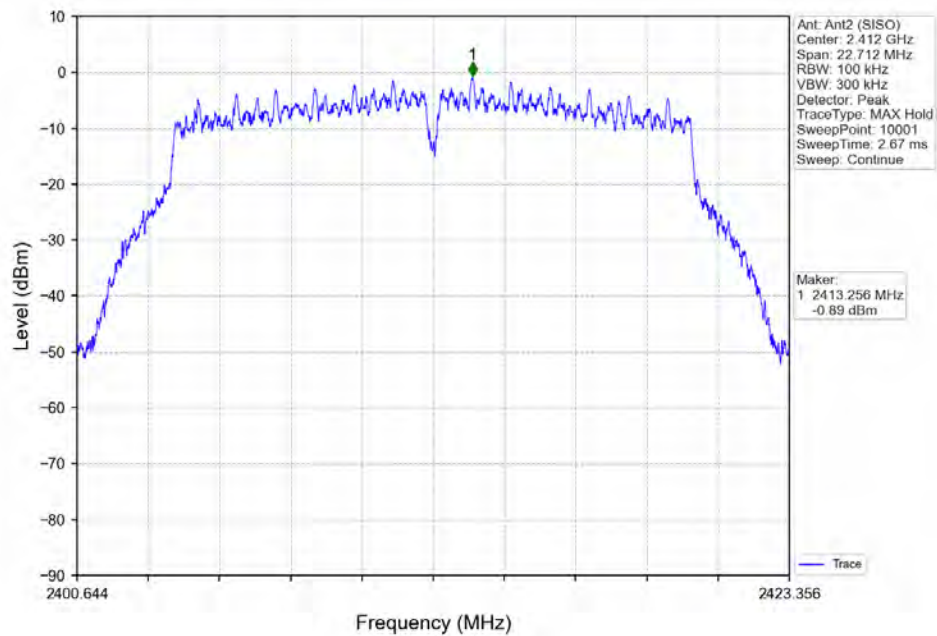
802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV



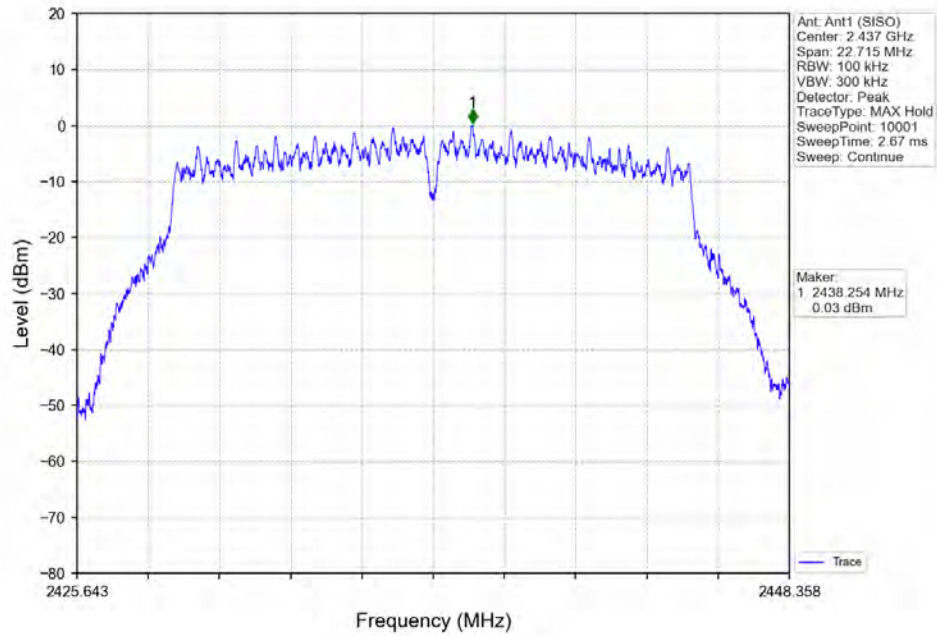
802.11g_LCH_2412MHz_Ant1 (SISO) NTN



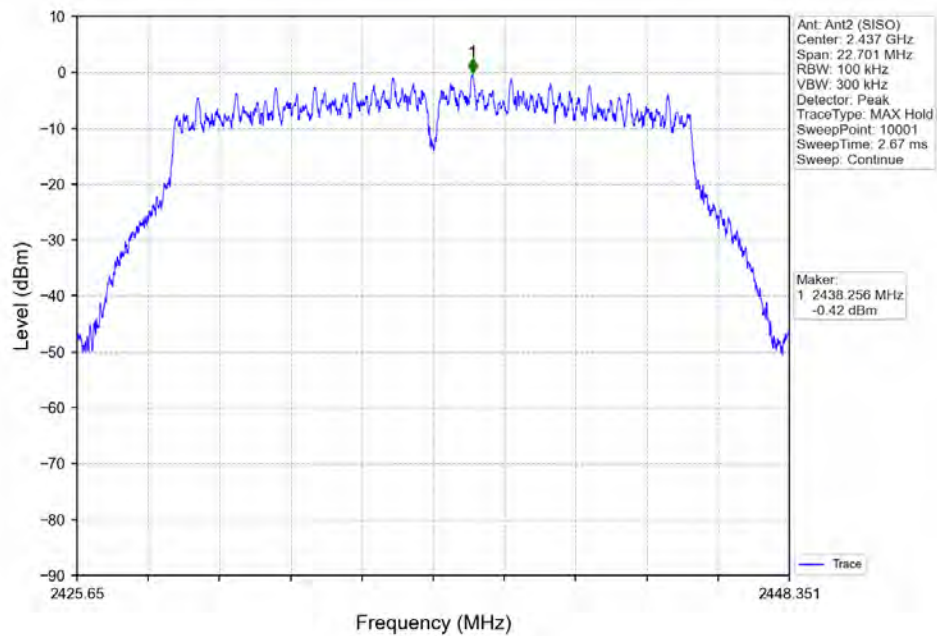
802.11g_LCH_2412MHz_Ant2 (SISO) NTN



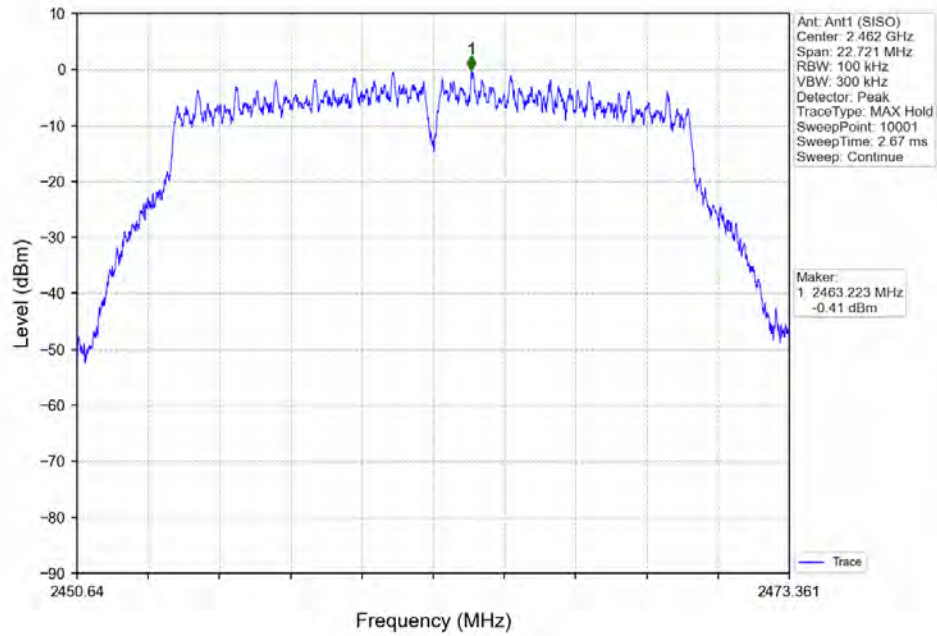
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



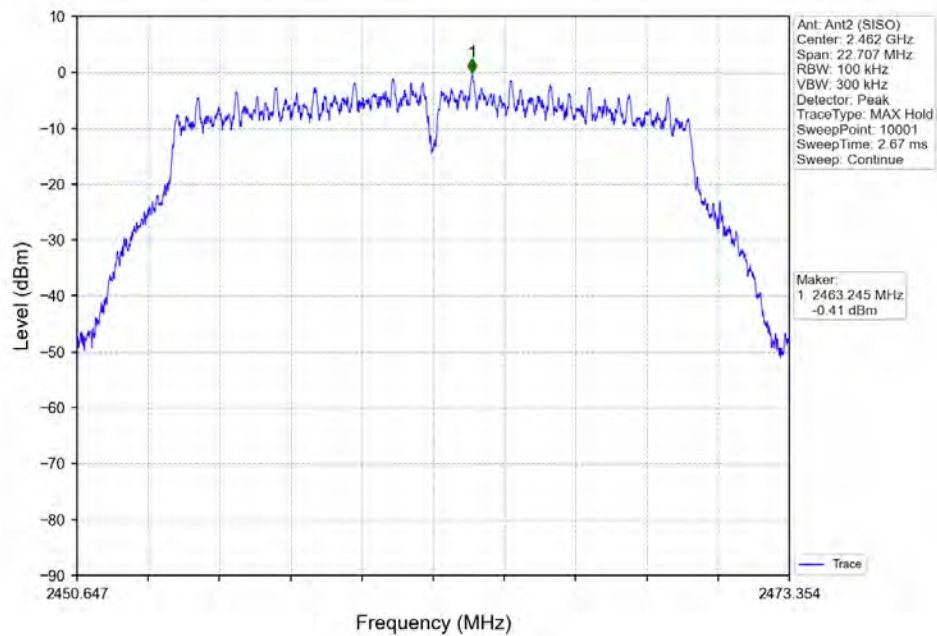
802.11g_MCH_2437MHz_Ant2 (SISO)_NTNV



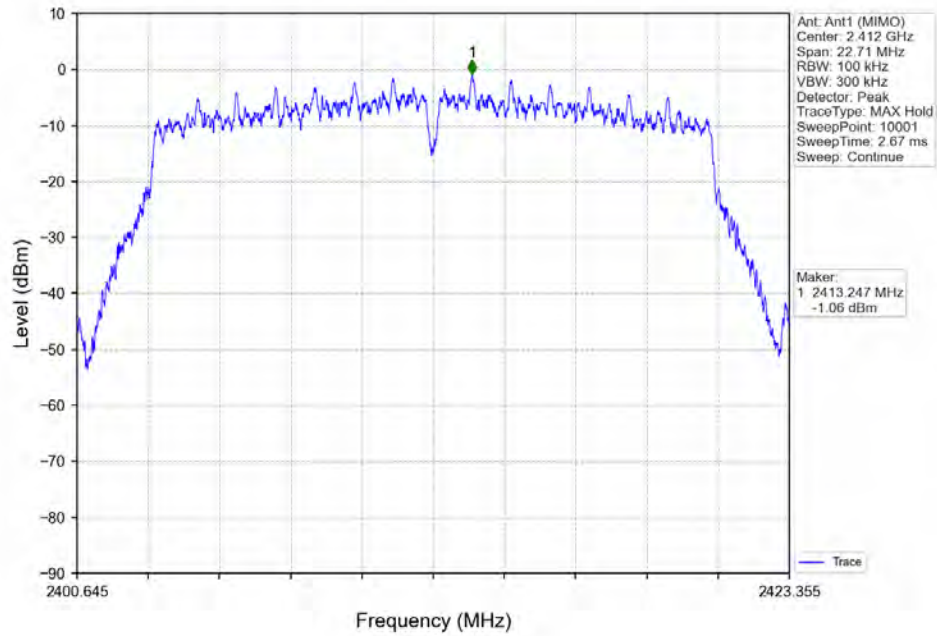
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



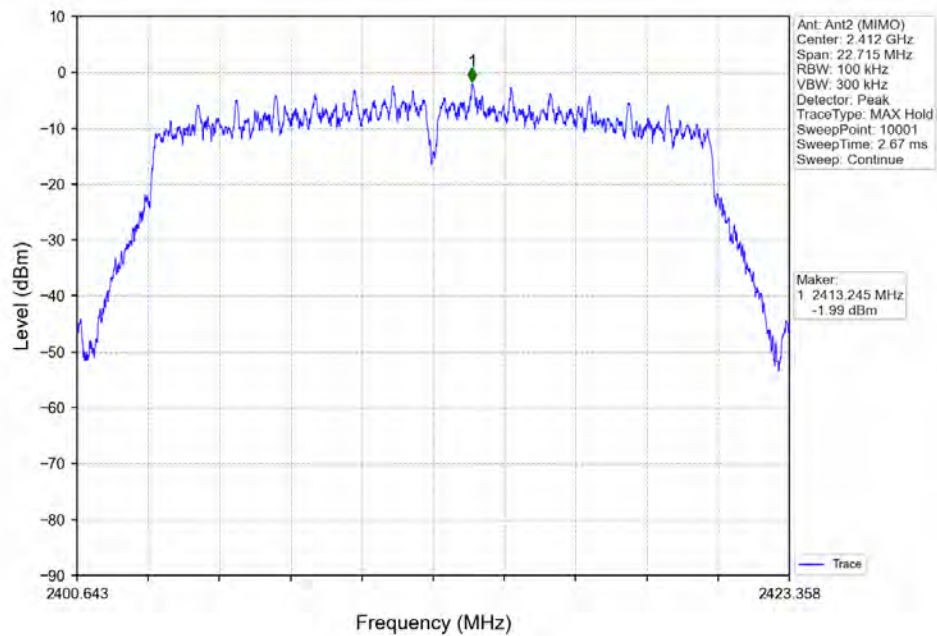
802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



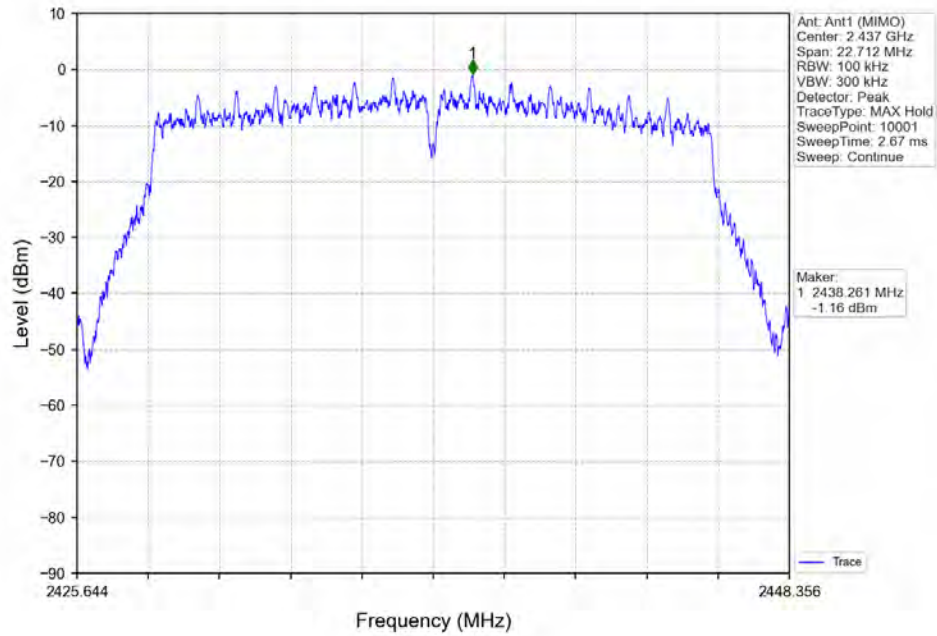
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



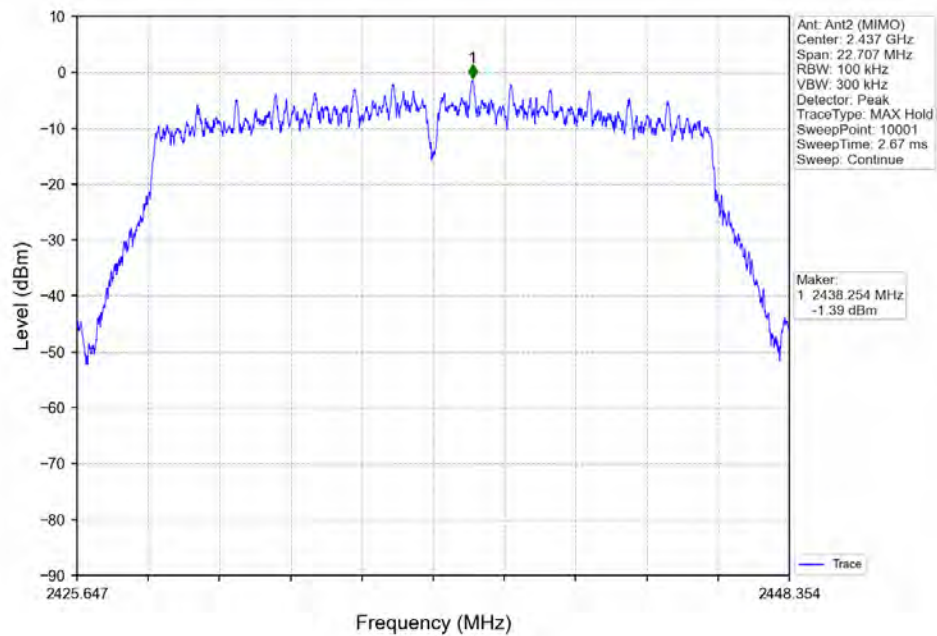
802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV



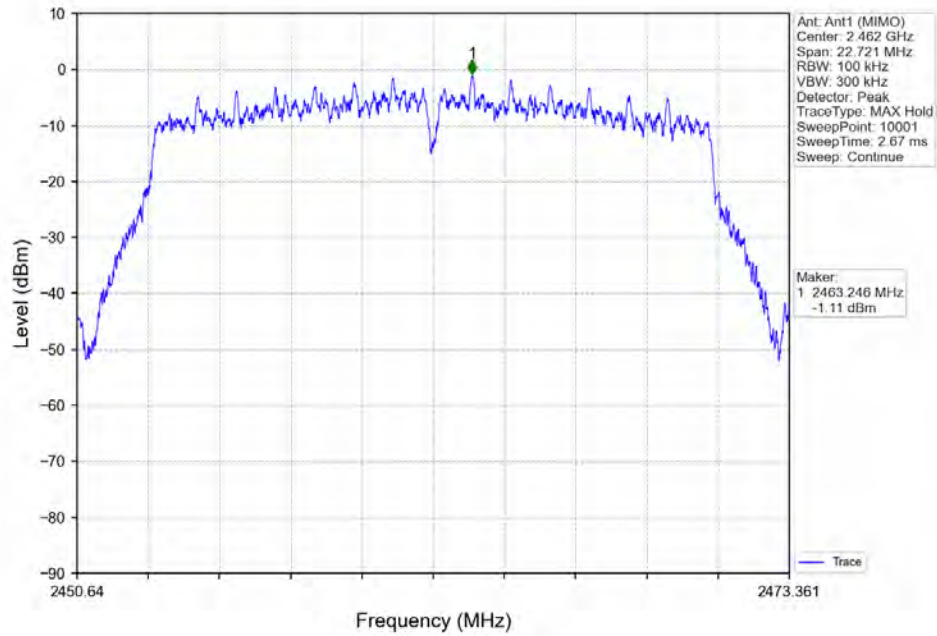
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



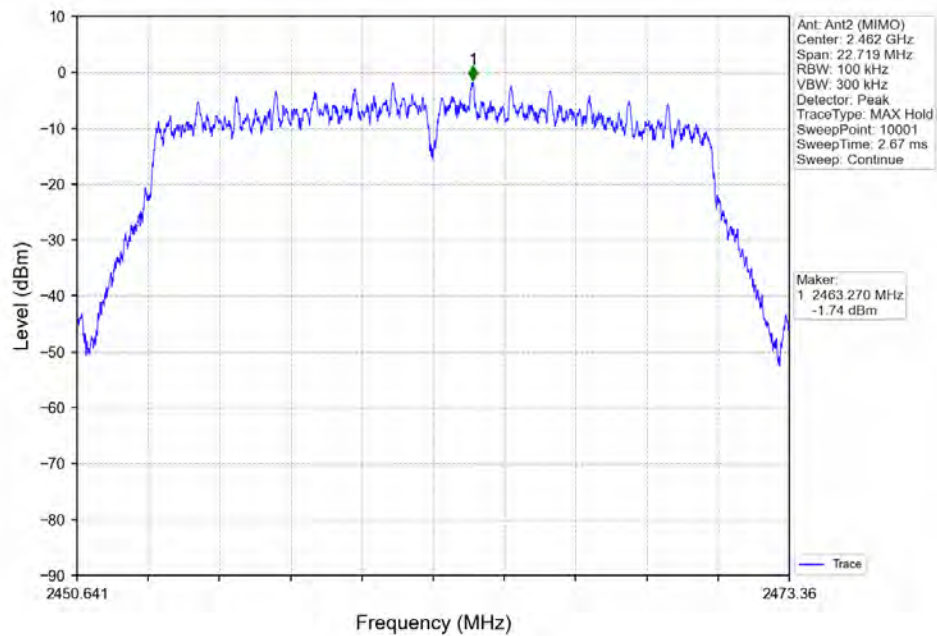
802.11n(HT20)_MCH_2437MHz_Ant2 (MIMO)_NTNV



802.11n(HT20) HCH_2462MHz_Ant1 (MIMO) NTNV



802.11n(HT20) HCH_2462MHz_Ant2 (MIMO) NTNV



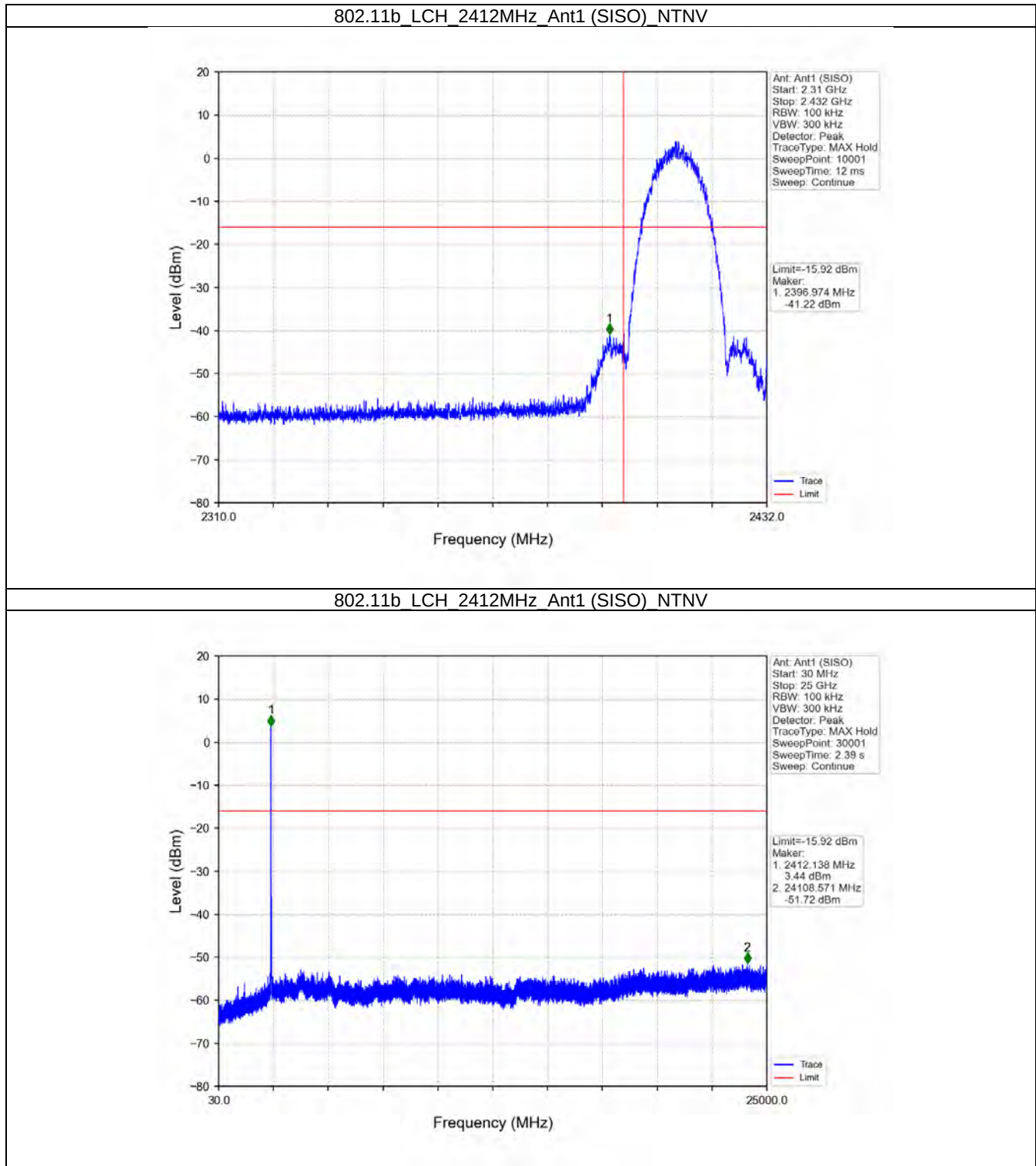


5.2 CSE

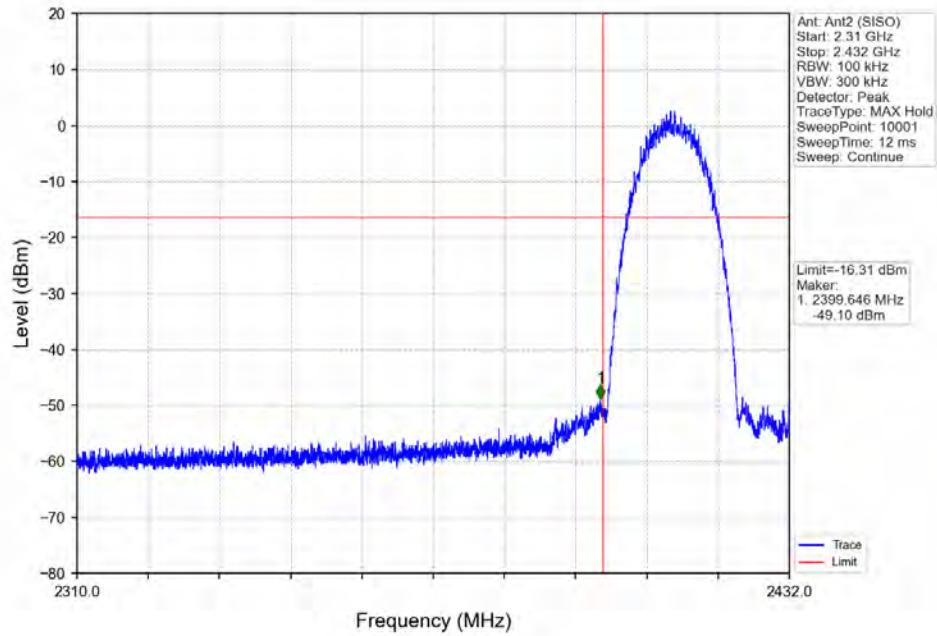
5.2.1 Test Result

Mode	TX Type	Frequency (MHz)	Ant	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	4.08	-15.92	Pass
			2	3.69	-16.31	Pass
		2437	1	4.08	-15.92	Pass
			2	3.69	-16.31	Pass
		2462	1	4.08	-15.92	Pass
			2	3.69	-16.31	Pass
802.11g	SISO	2412	1	0.09	-19.91	Pass
			2	-0.41	-20.41	Pass
		2437	1	0.09	-19.91	Pass
			2	-0.41	-20.41	Pass
		2462	1	0.09	-19.91	Pass
			2	-0.41	-20.41	Pass
802.11n (HT20)	MIMO	2412	1	-1.06	-21.06	Pass
			2	-1.39	-21.39	Pass
		2437	1	-1.06	-21.06	Pass
			2	-1.39	-21.39	Pass
		2462	1	-1.06	-21.06	Pass
			2	-1.39	-21.39	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.						

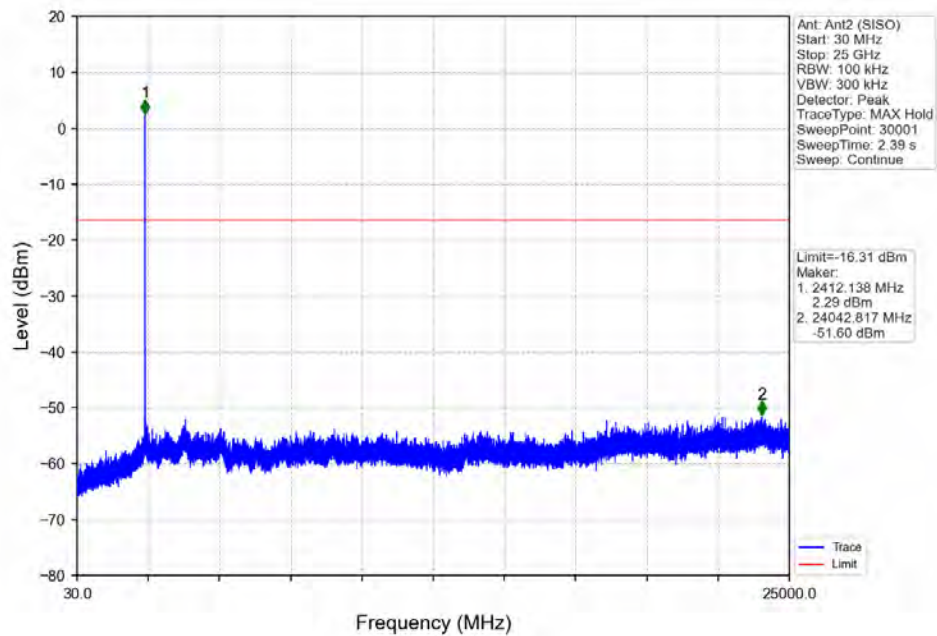
5.2.2 Test Graph



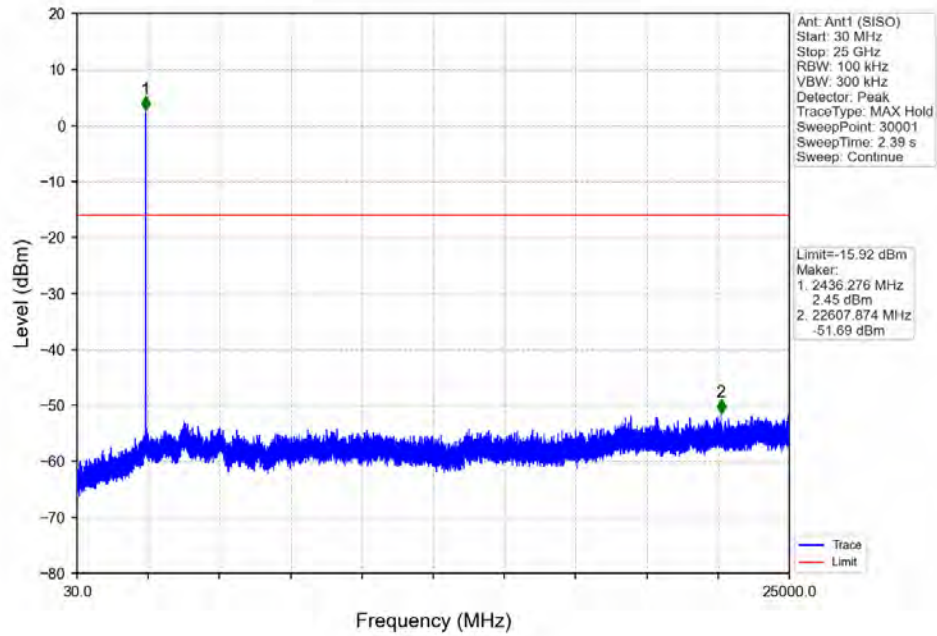
802.11b_LCH_2412MHz_Ant2 (SISO) NTN



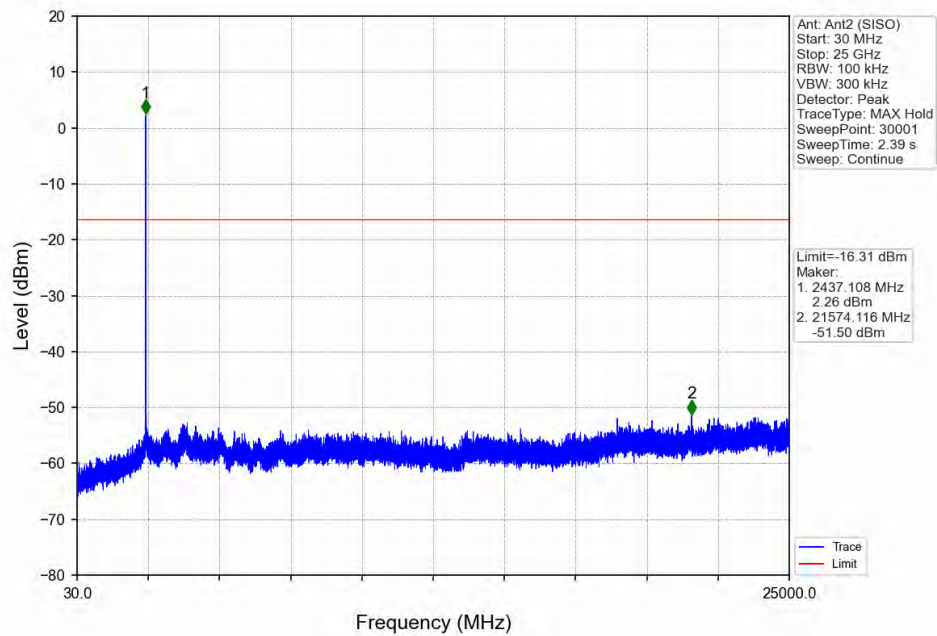
802.11b_LCH_2412MHz_Ant2 (SISO) NTN



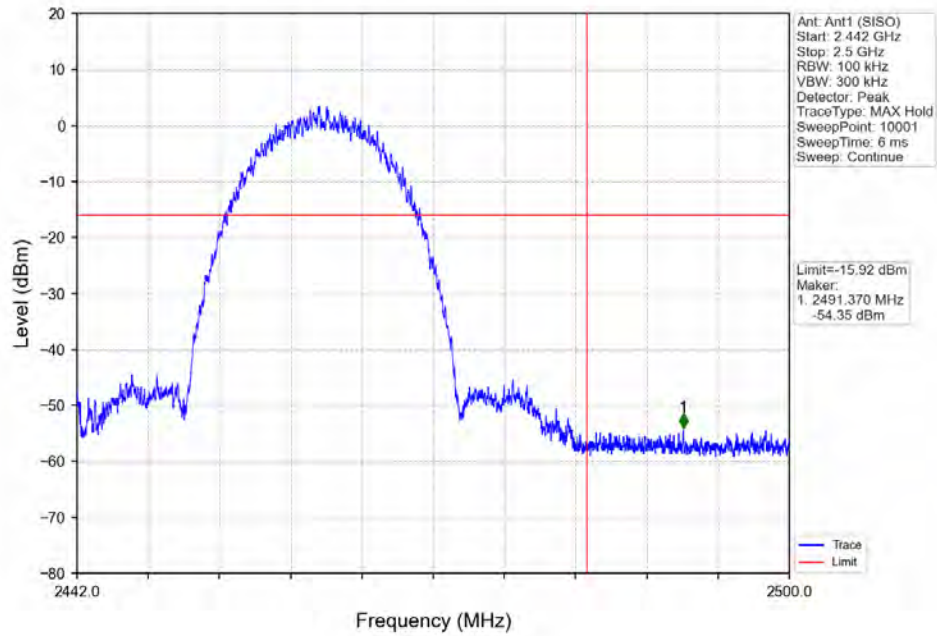
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



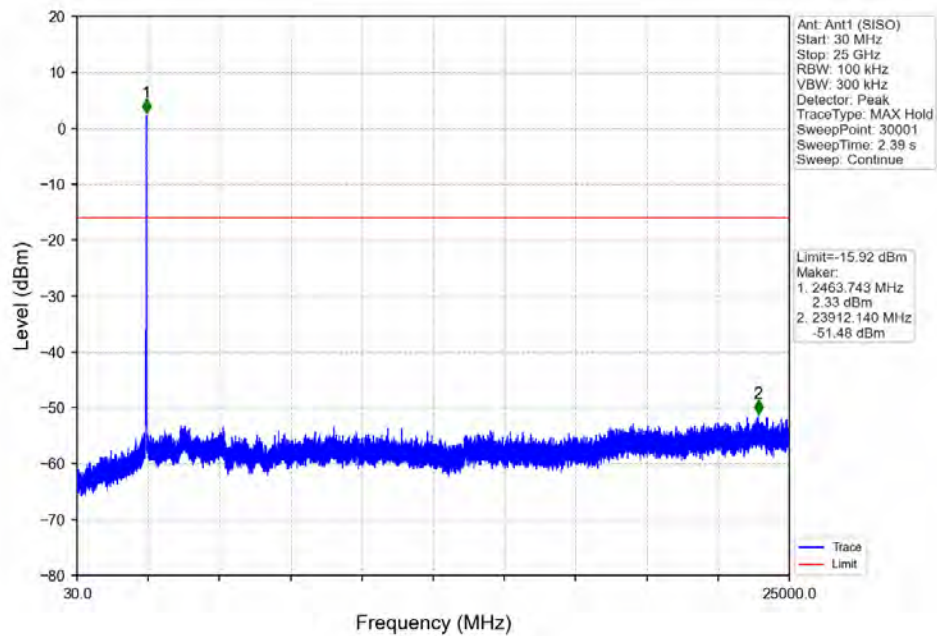
802.11b_MCH_2437MHz_Ant2 (SISO)_NTNV



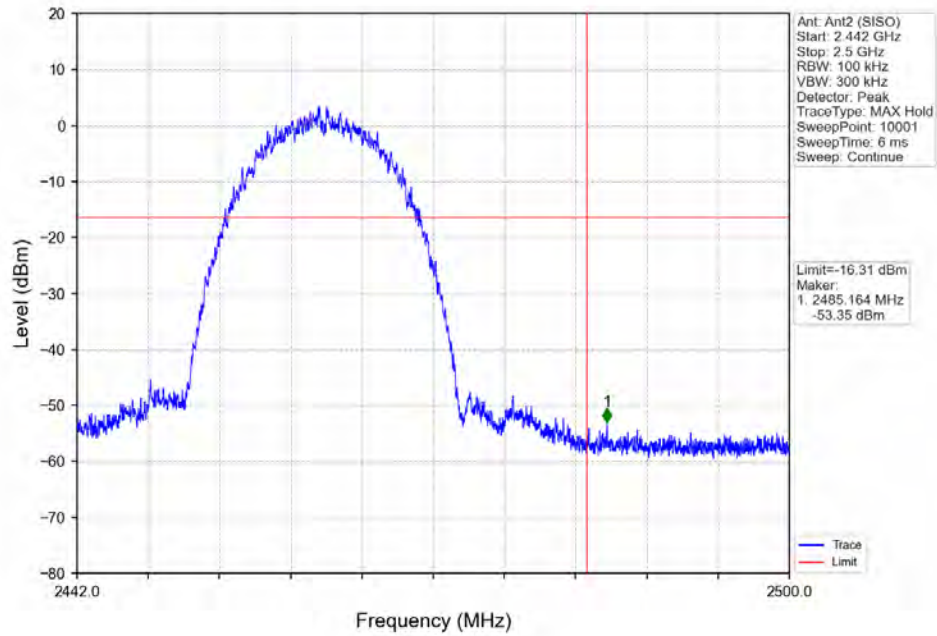
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



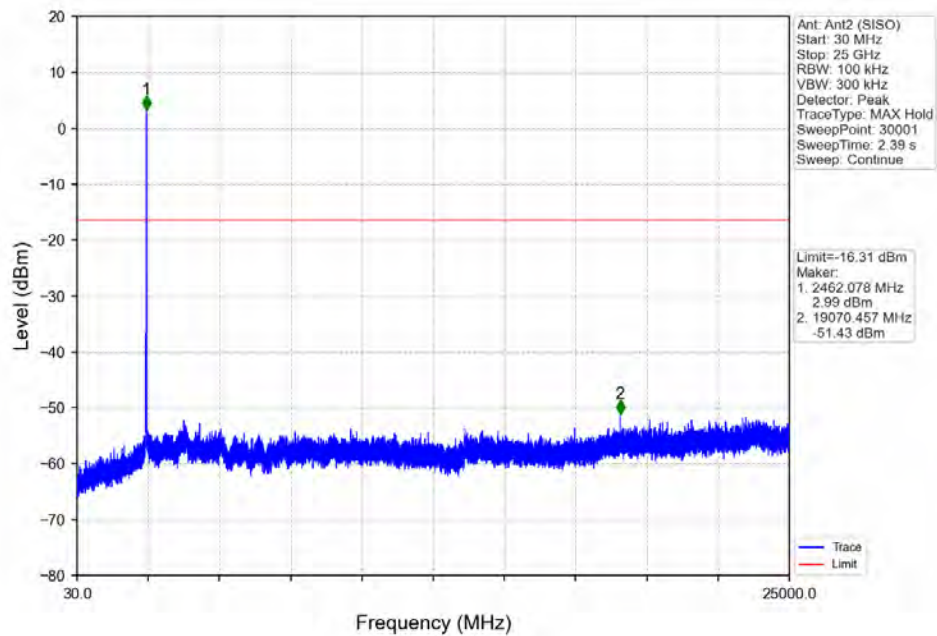
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



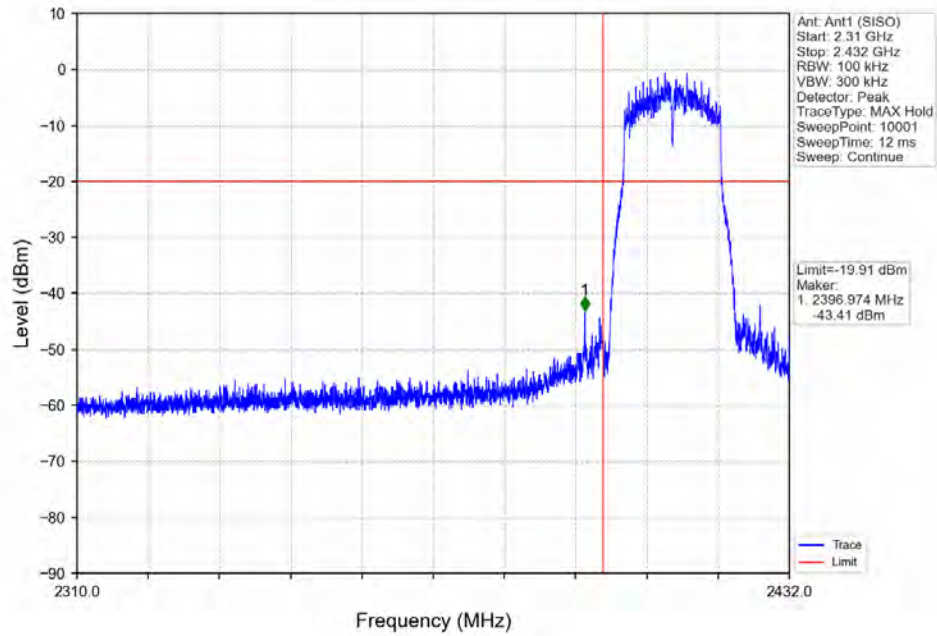
802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV



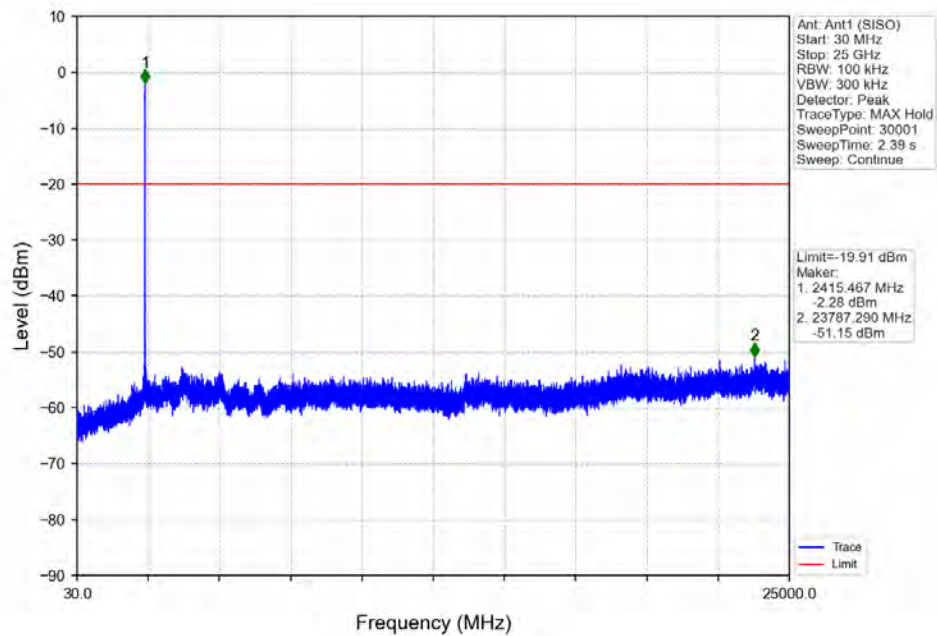
802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV



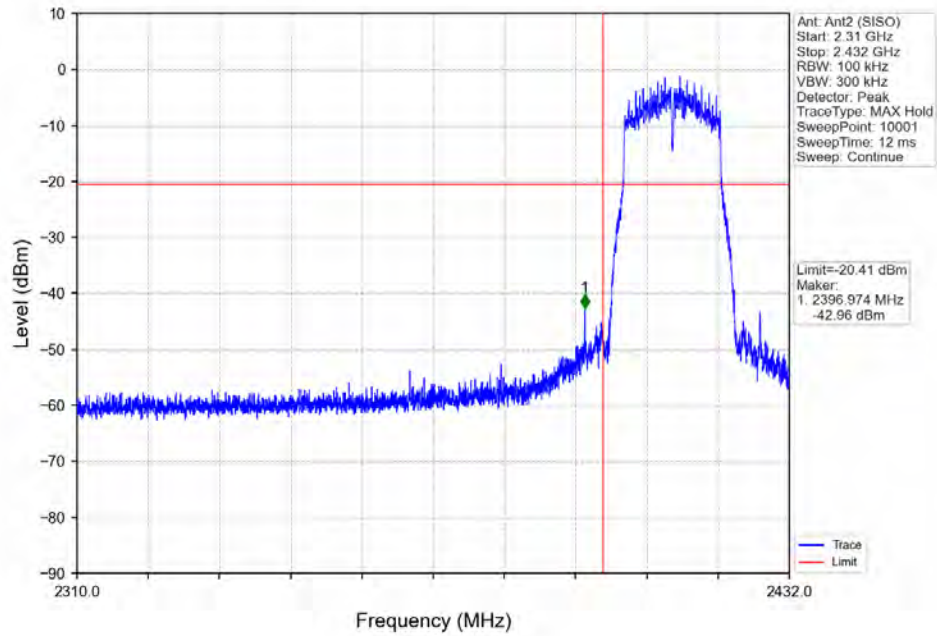
802.11g_LCH_2412MHz_Ant1 (SISO) NTN



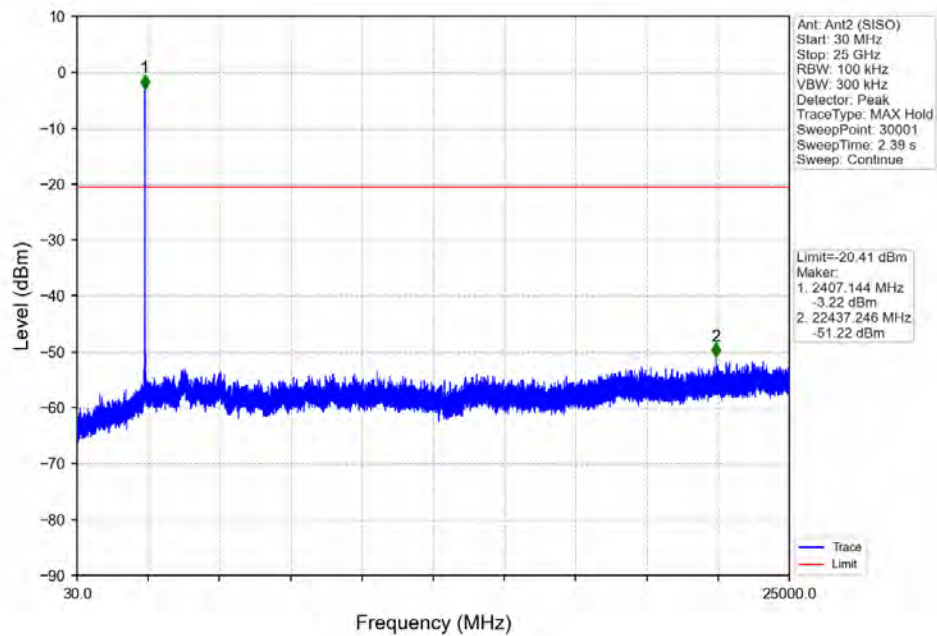
802.11g_LCH_2412MHz_Ant1 (SISO) NTN



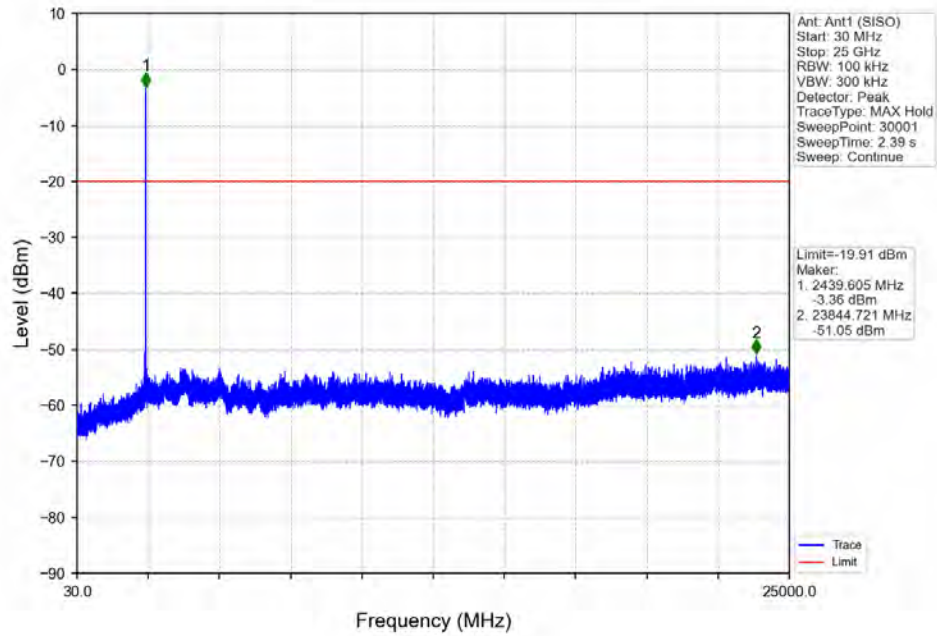
802.11g_LCH_2412MHz_Ant2 (SISO) NTN



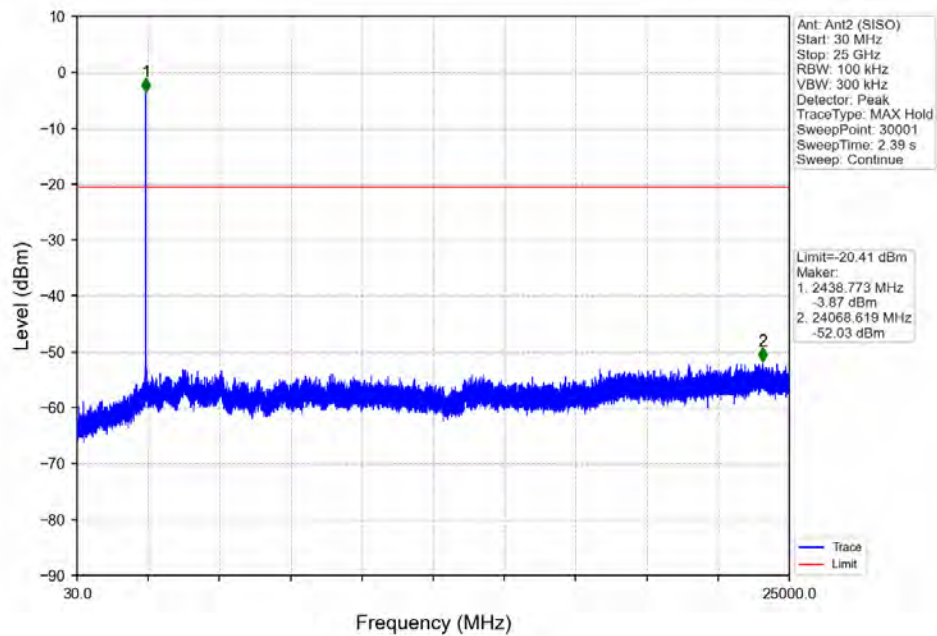
802.11g_LCH_2412MHz_Ant2 (SISO) NTN



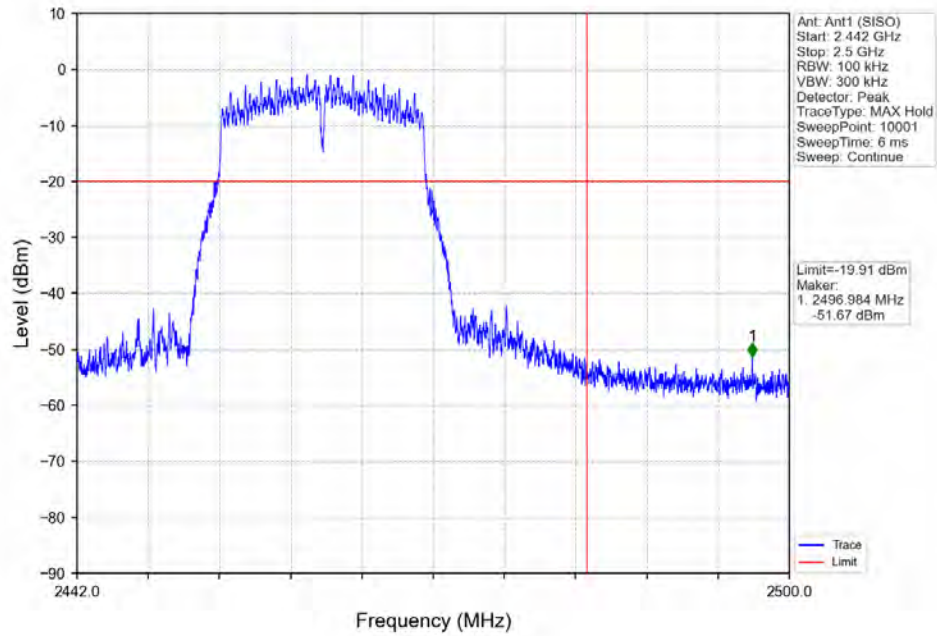
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



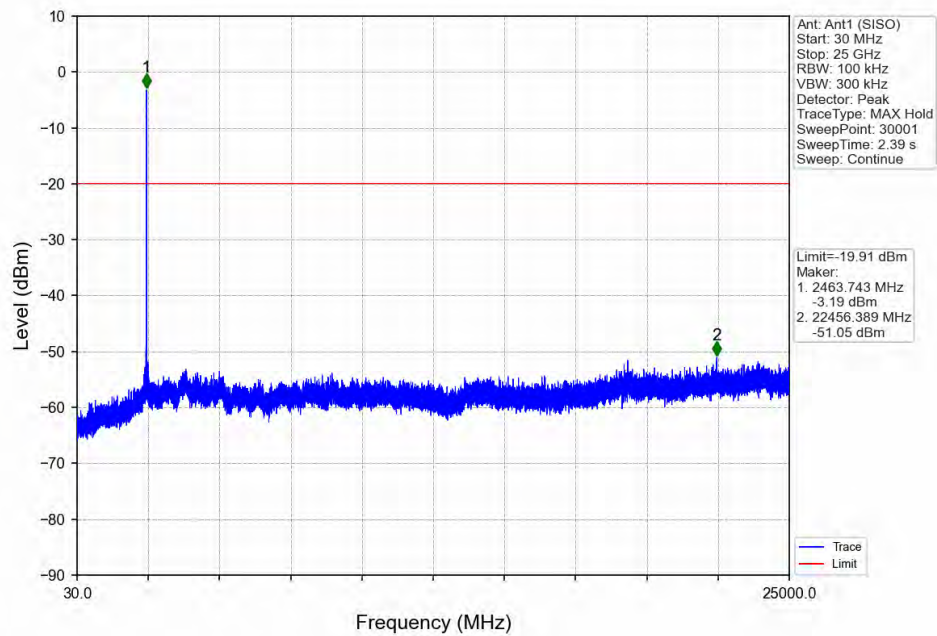
802.11g_MCH_2437MHz_Ant2 (SISO)_NTNV



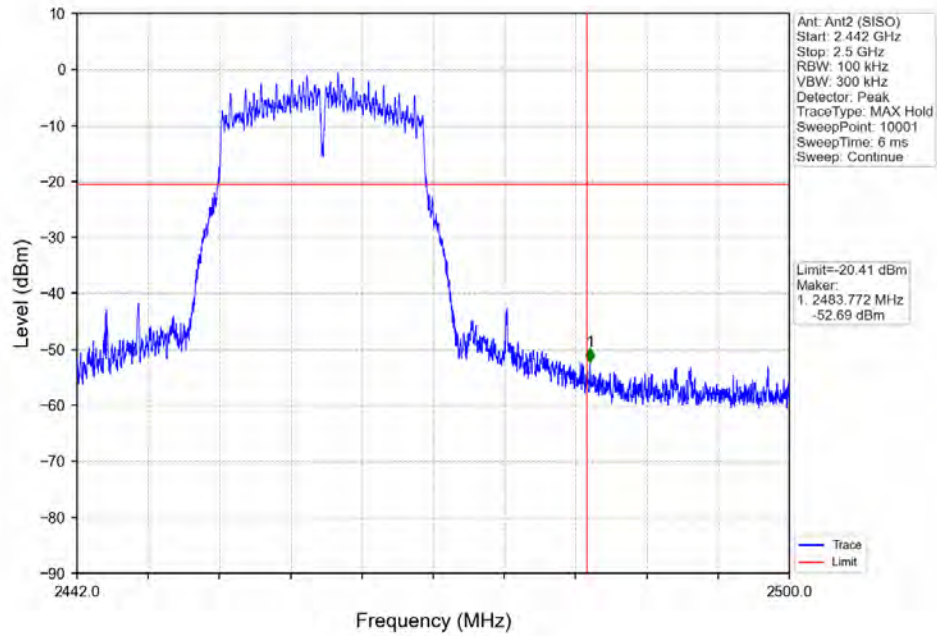
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



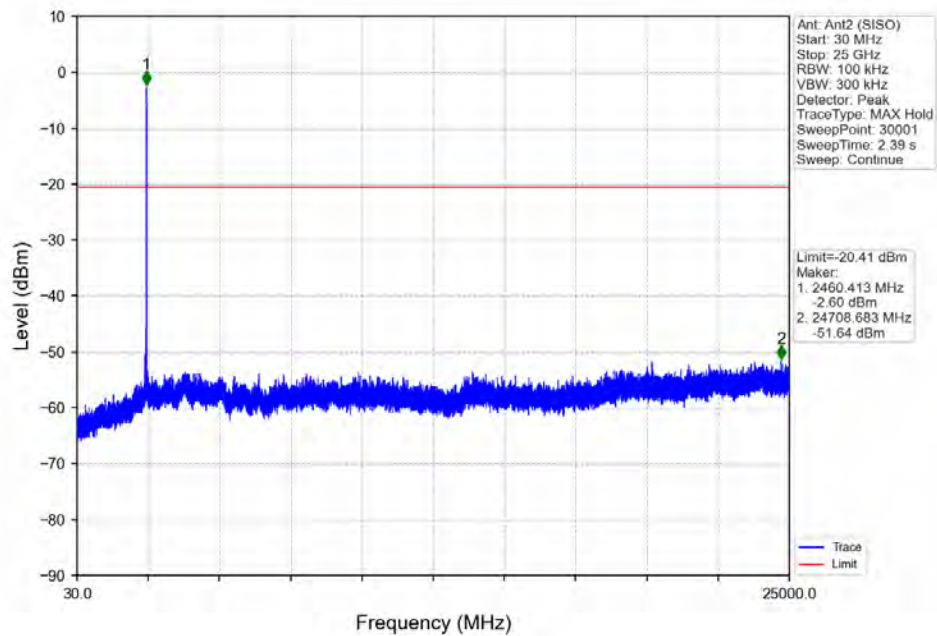
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



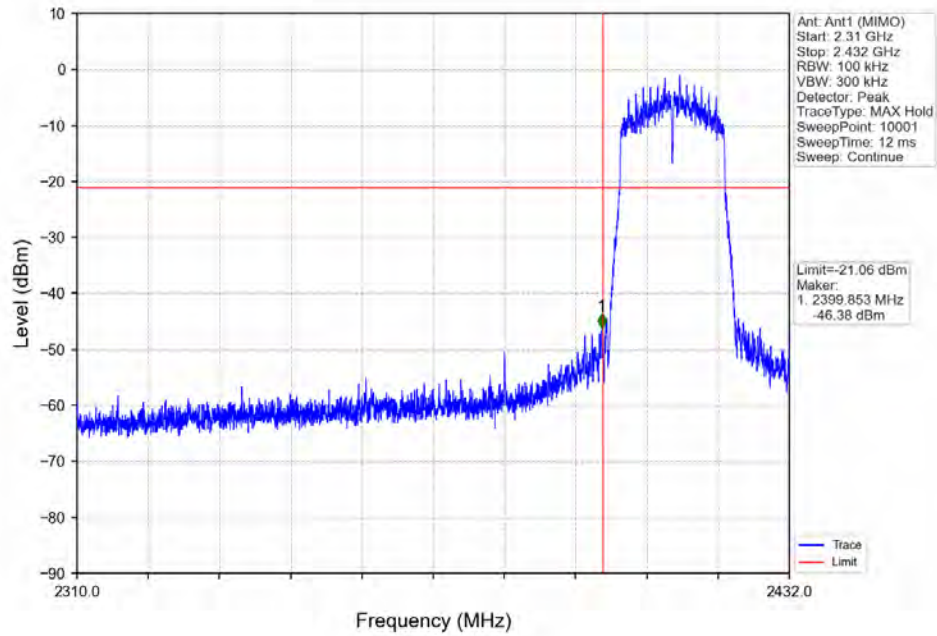
802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



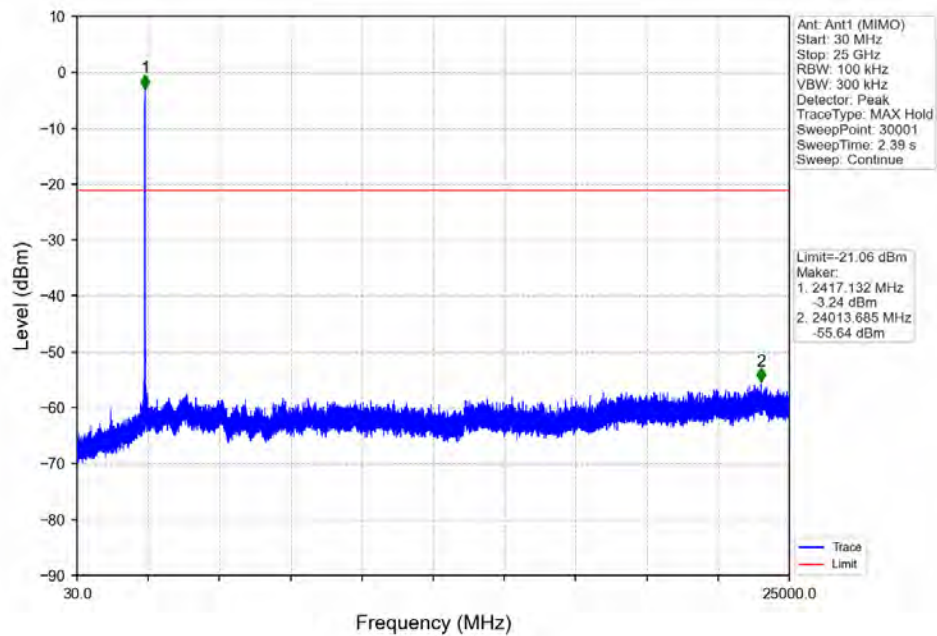
802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



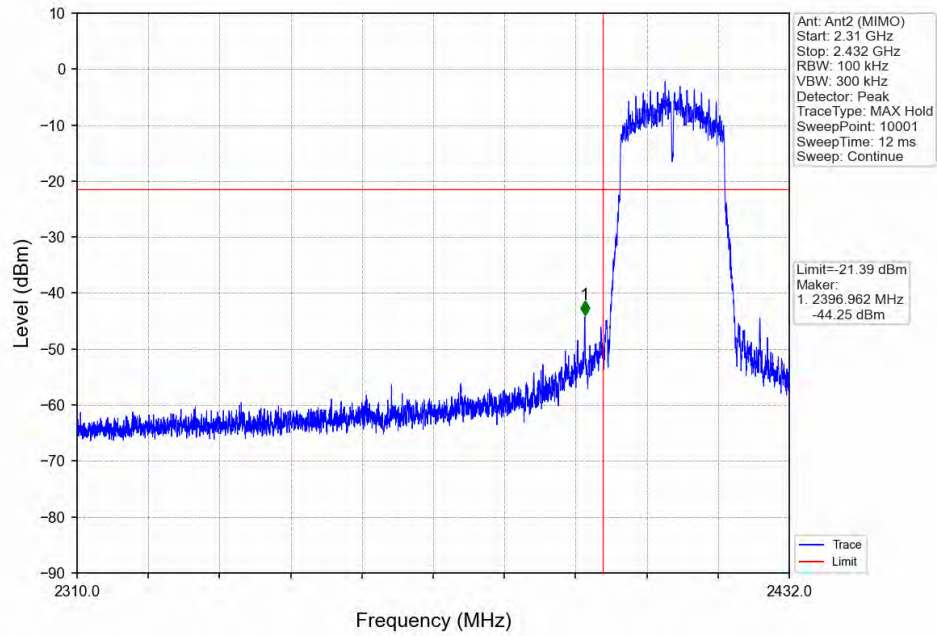
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



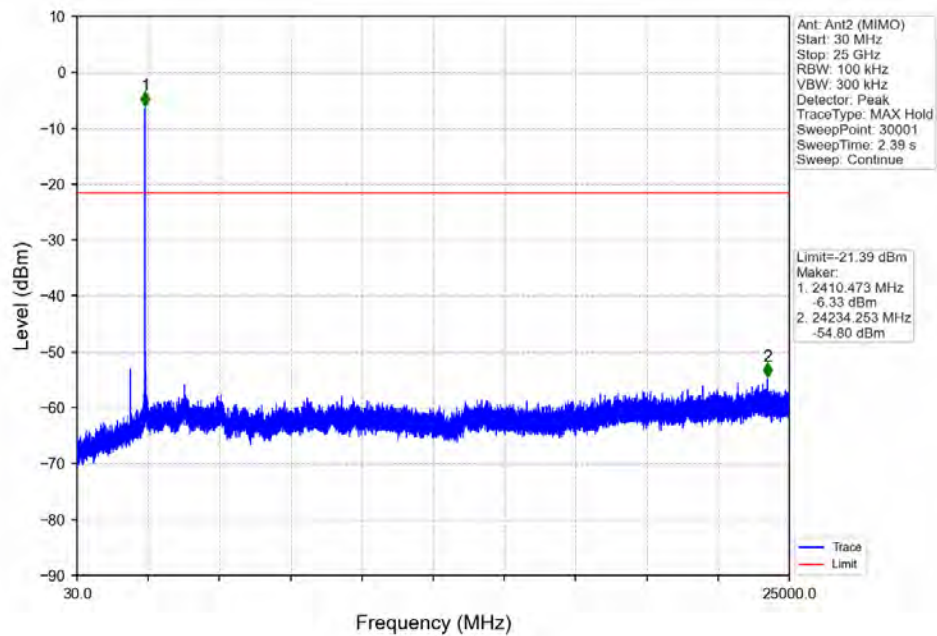
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



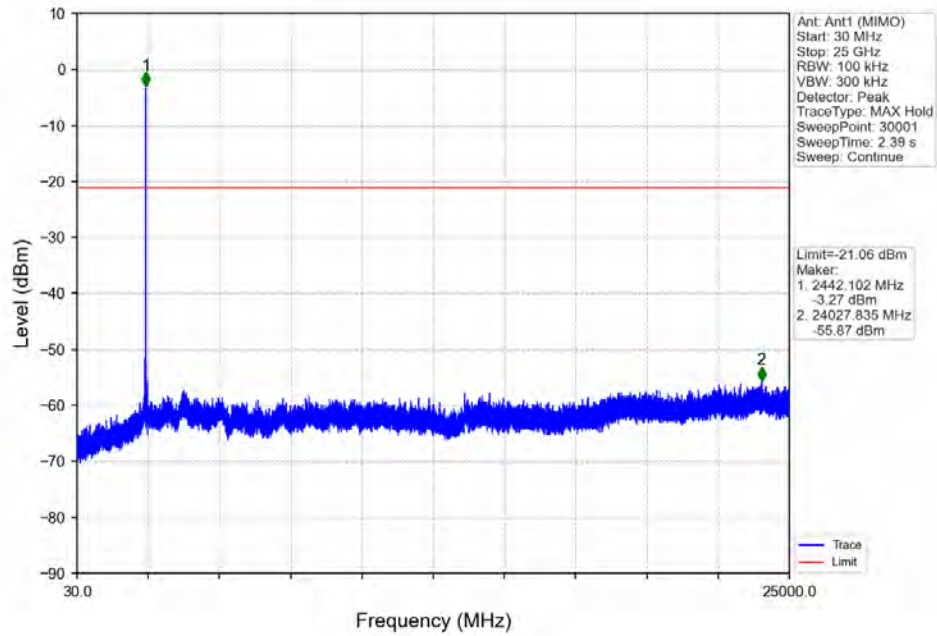
802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV



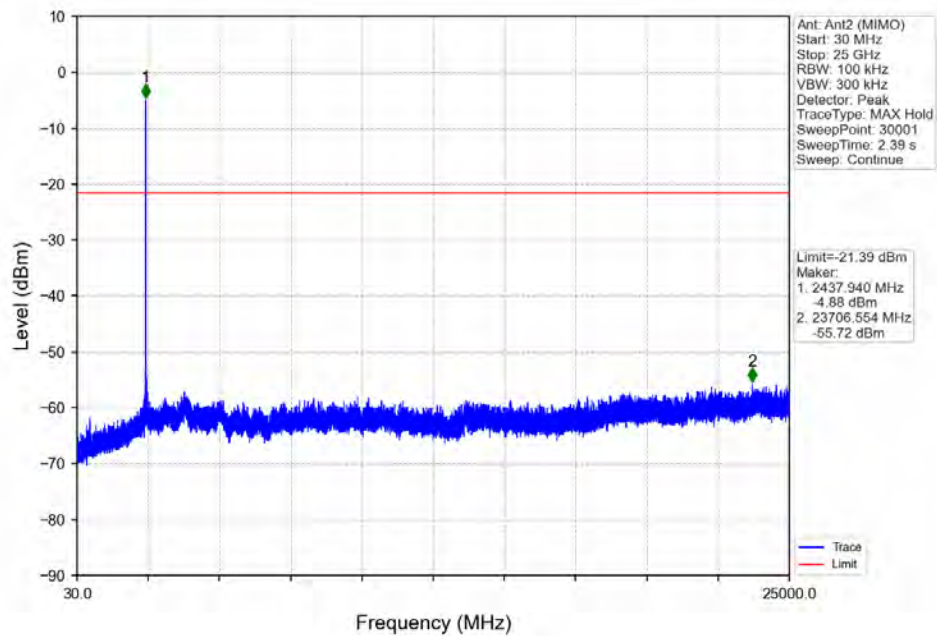
802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV



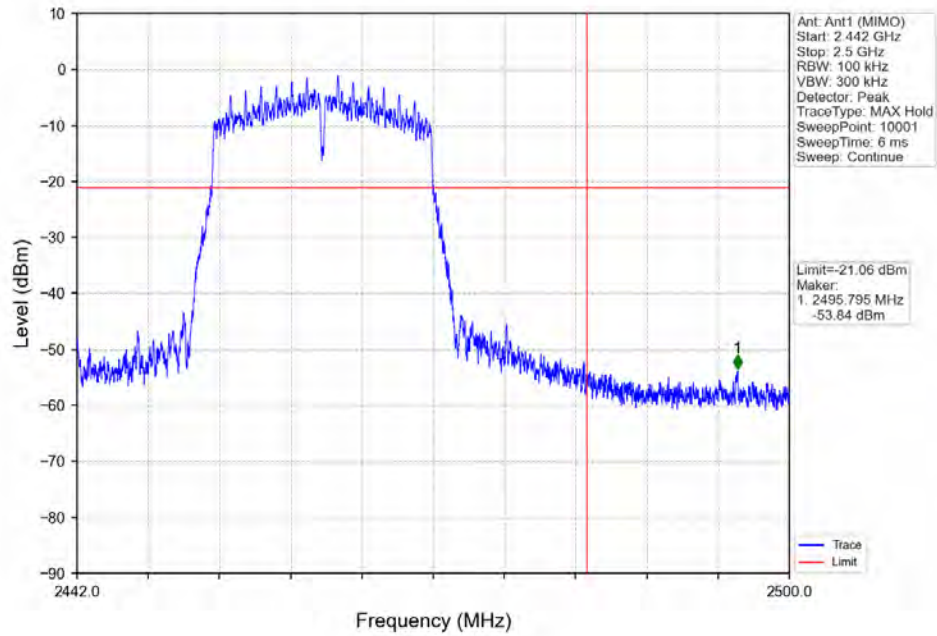
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



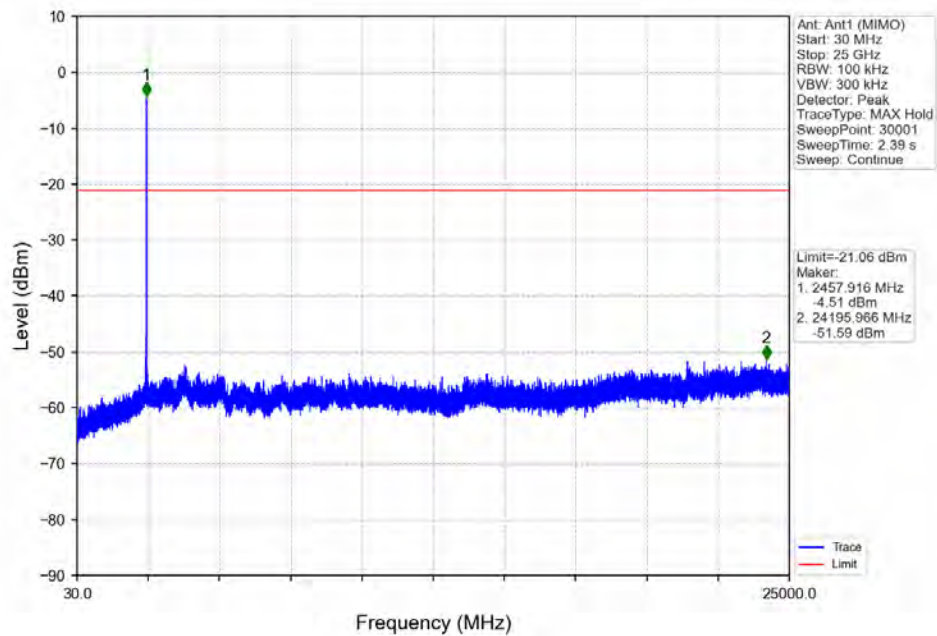
802.11n(HT20)_MCH_2437MHz_Ant2 (MIMO)_NTNV



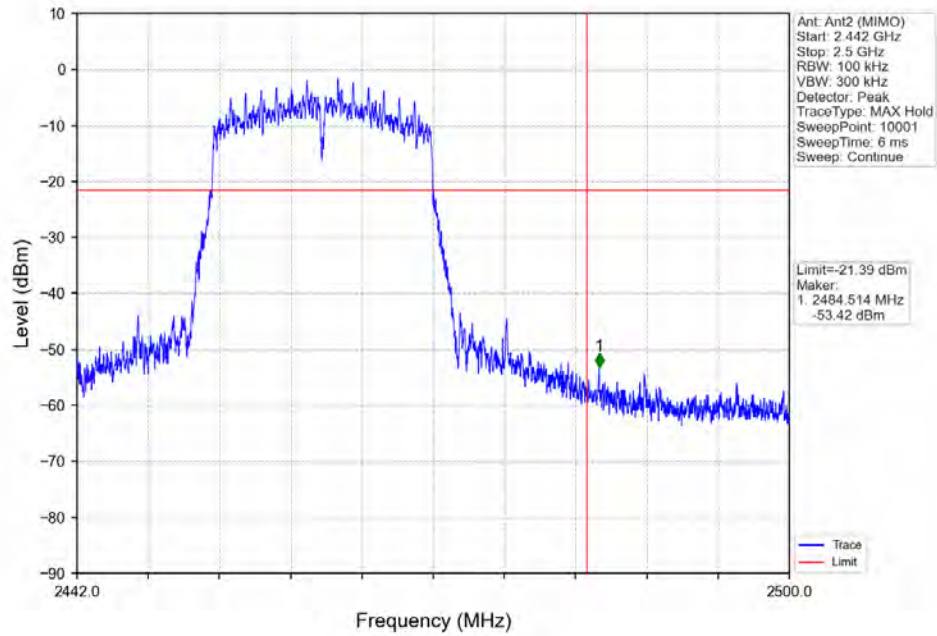
802.11n(HT20) HCH_2462MHz_Ant1 (MIMO)_NTNV



802.11n(HT20) HCH_2462MHz_Ant1 (MIMO)_NTNV



802.11n(HT20) HCH_2462MHz_Ant2 (MIMO)_NTNV



802.11n(HT20) HCH_2462MHz_Ant2 (MIMO)_NTNV

