

Appendix A for SHEM210800866701

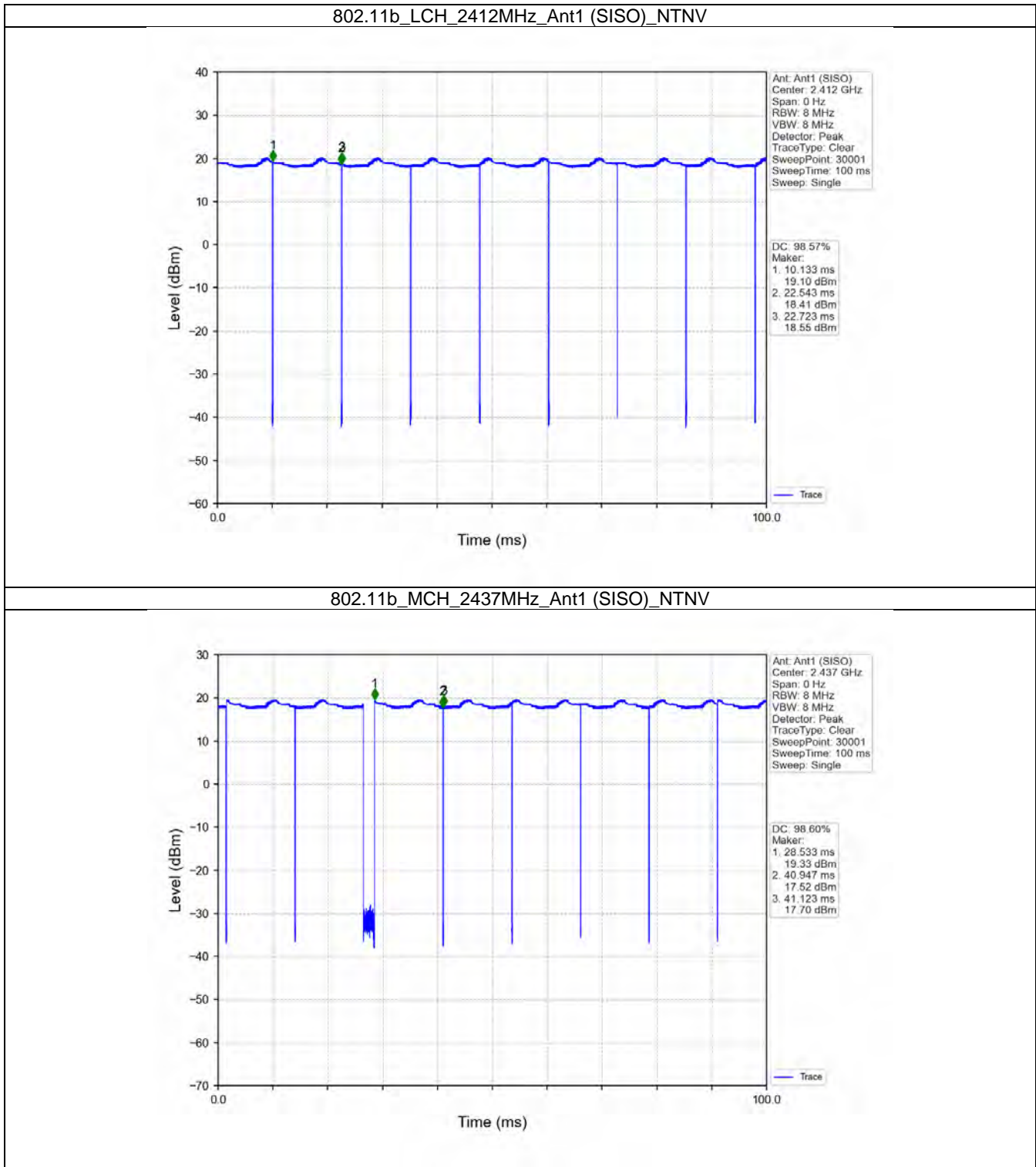
1. Duty Cycle

1.1 Ant1

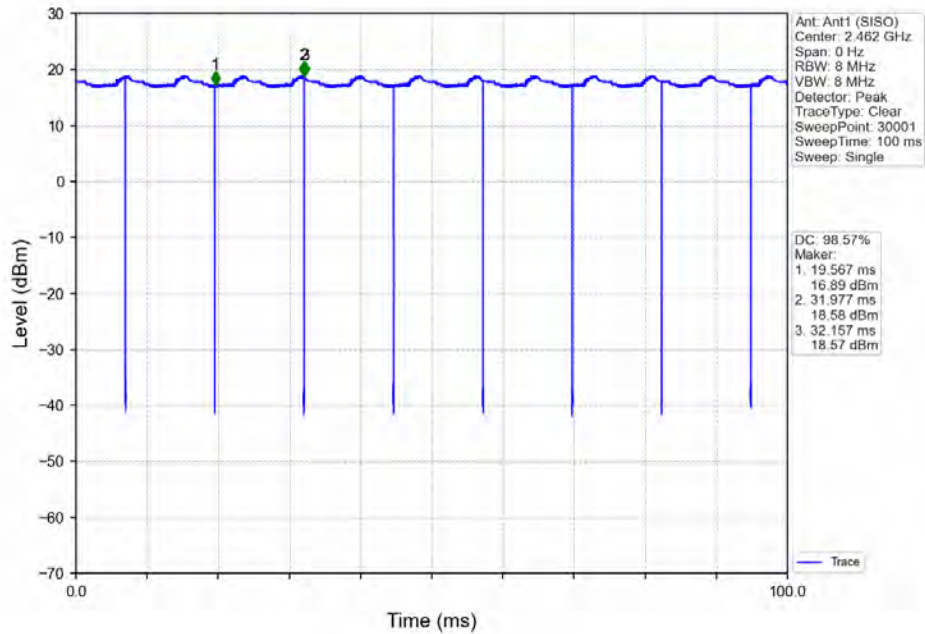
1.1.1 Test Result

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	12.410	12.590	98.57	0.06	0.29
		2437	12.414	12.590	98.60	0.06	1.06
		2462	12.410	12.590	98.57	0.06	0.50
802.11g	SISO	2412	2.064	2.304	89.58	0.48	0.00
		2437	2.052	2.303	89.10	0.50	0.00
		2462	2.064	2.117	97.50	0.11	0.03
802.11n (HT20)	MIMO	2412	1.924	1.977	97.32	0.12	0.03
		2437	1.909	2.177	87.69	0.57	0.04
		2462	1.921	1.977	97.17	0.12	0.03
802.11n (HT40)	MIMO	2422	0.945	1.000	94.50	0.25	0.03
		2437	0.948	1.000	94.80	0.23	0.00
		2452	0.948	1.000	94.80	0.23	0.00

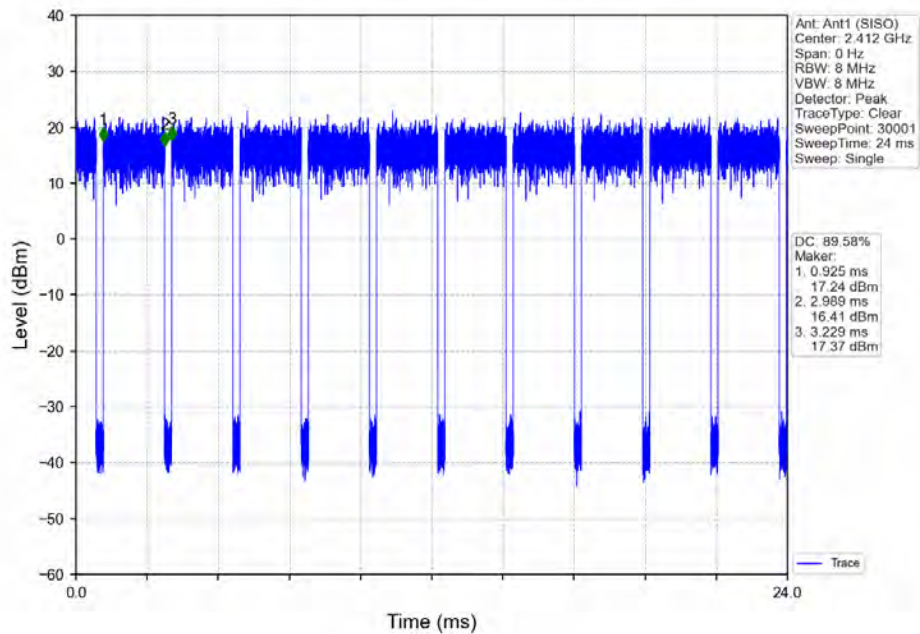
1.1.2 Test Graph



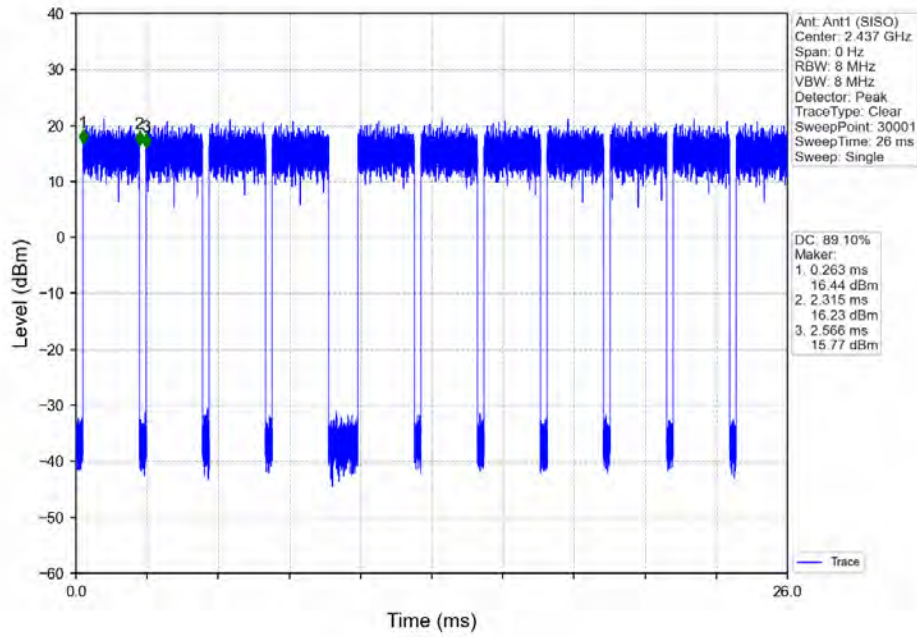
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



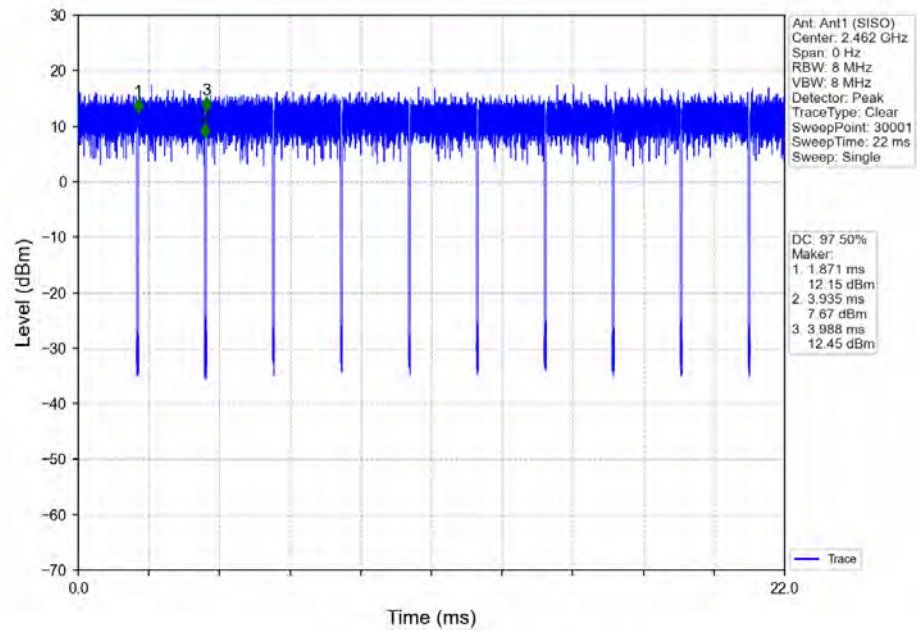
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



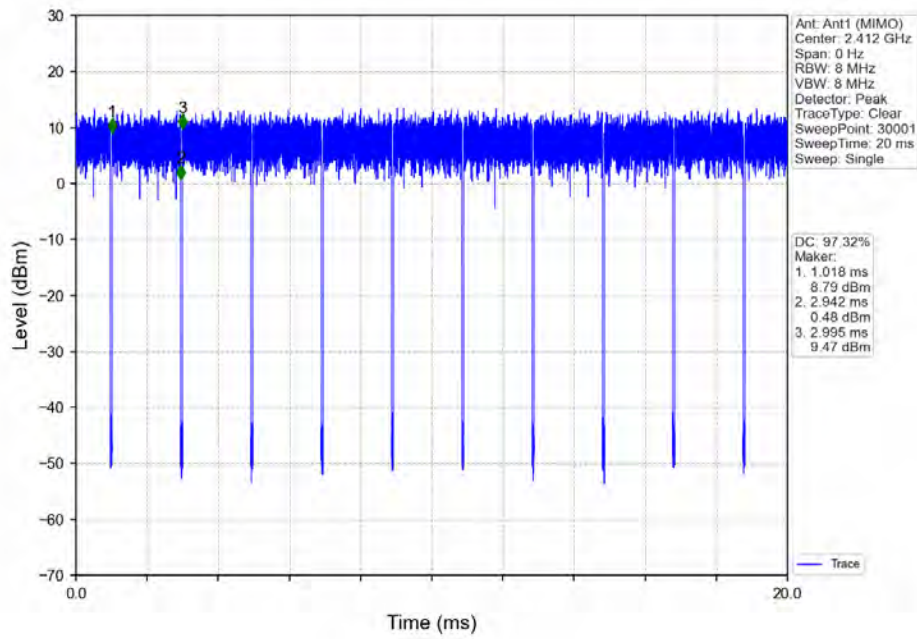
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



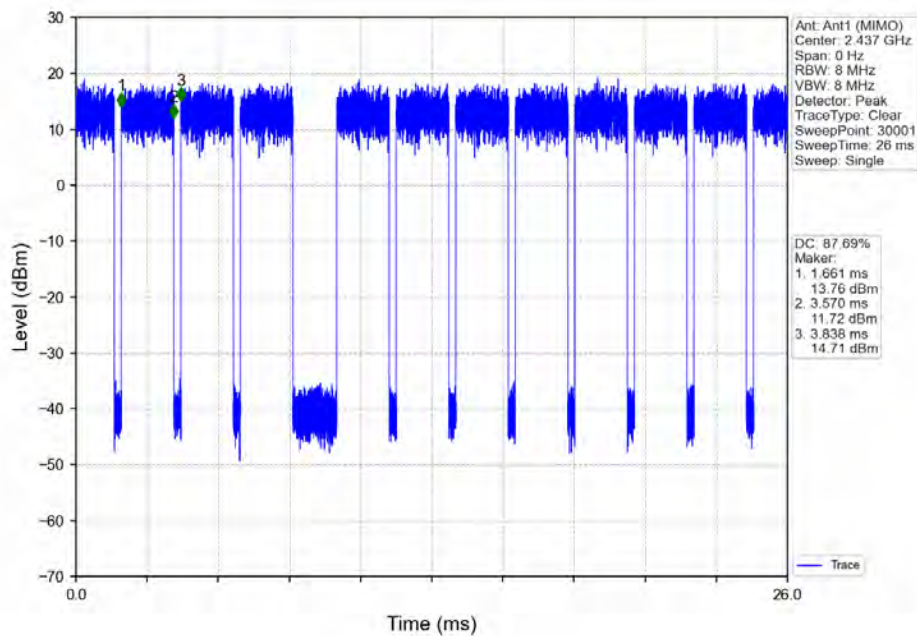
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



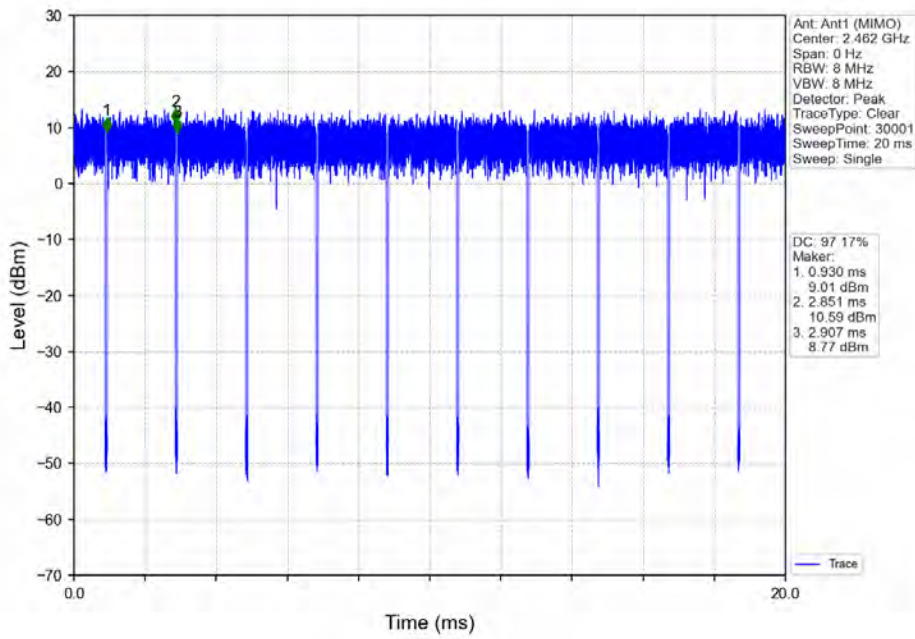
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



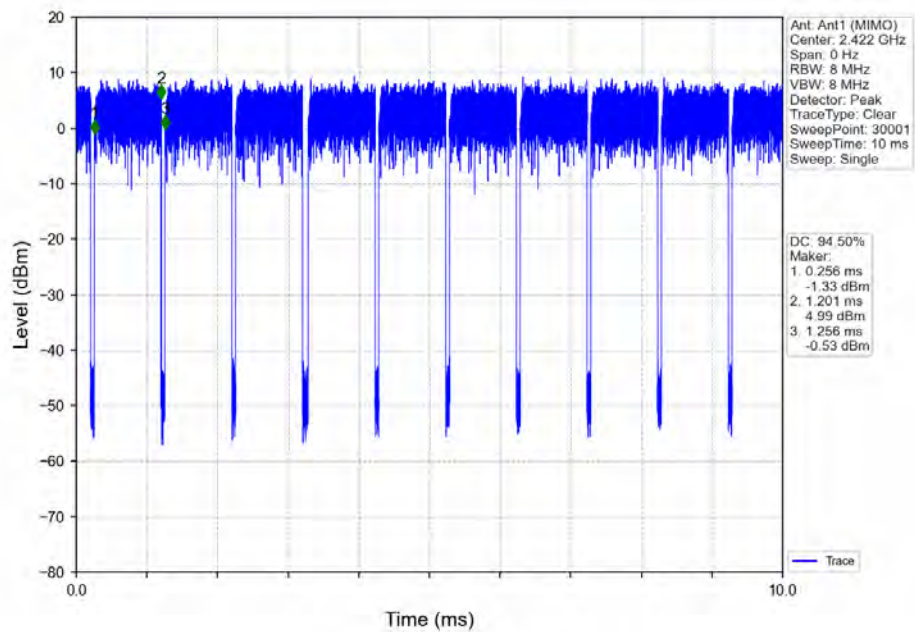
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



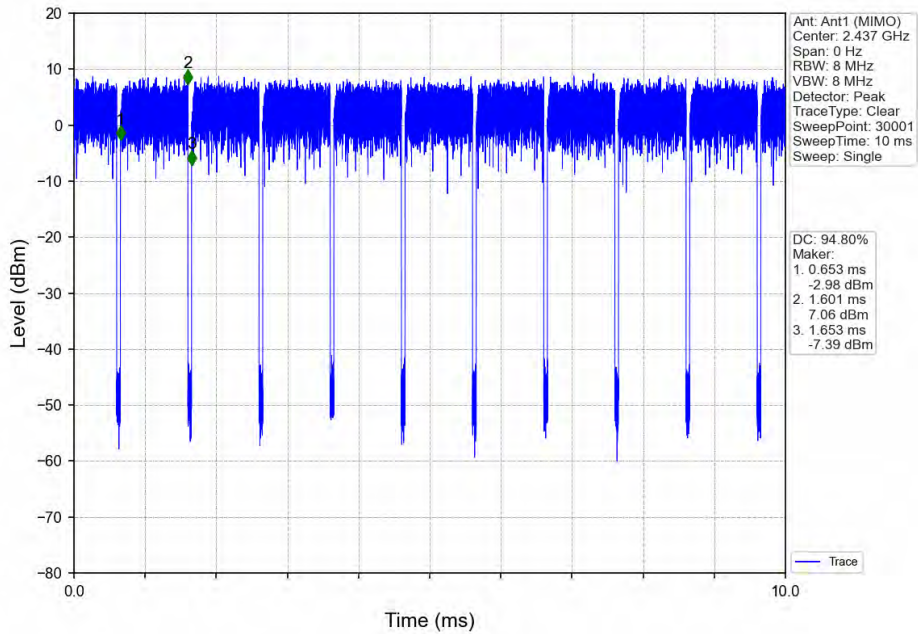
802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



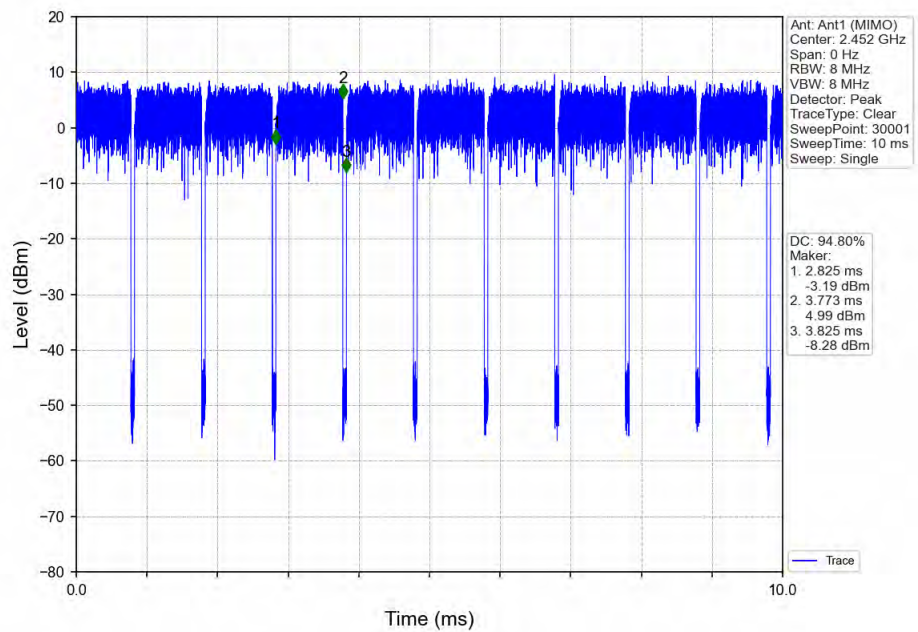
802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



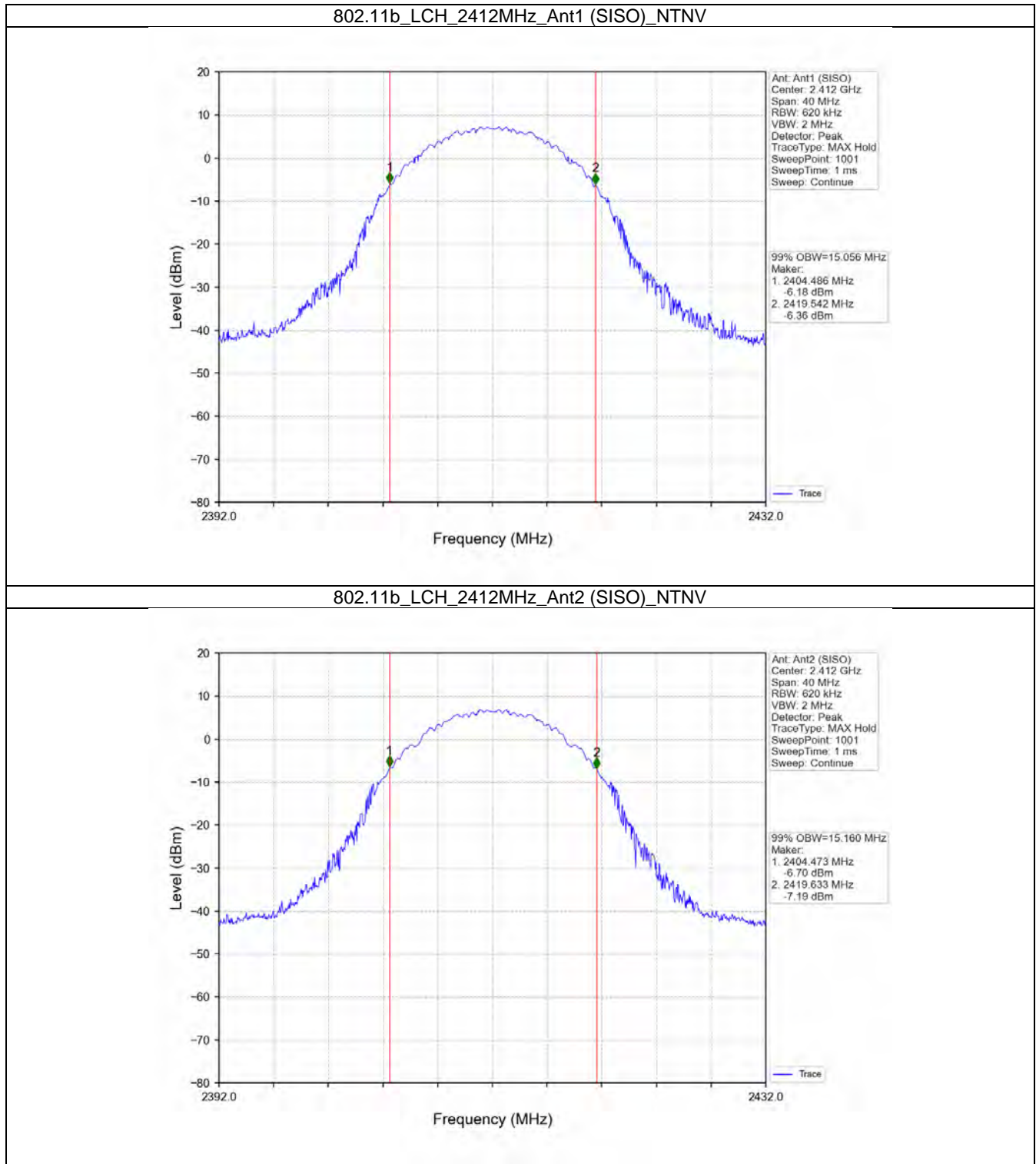
2. Bandwidth

2.1 OBW

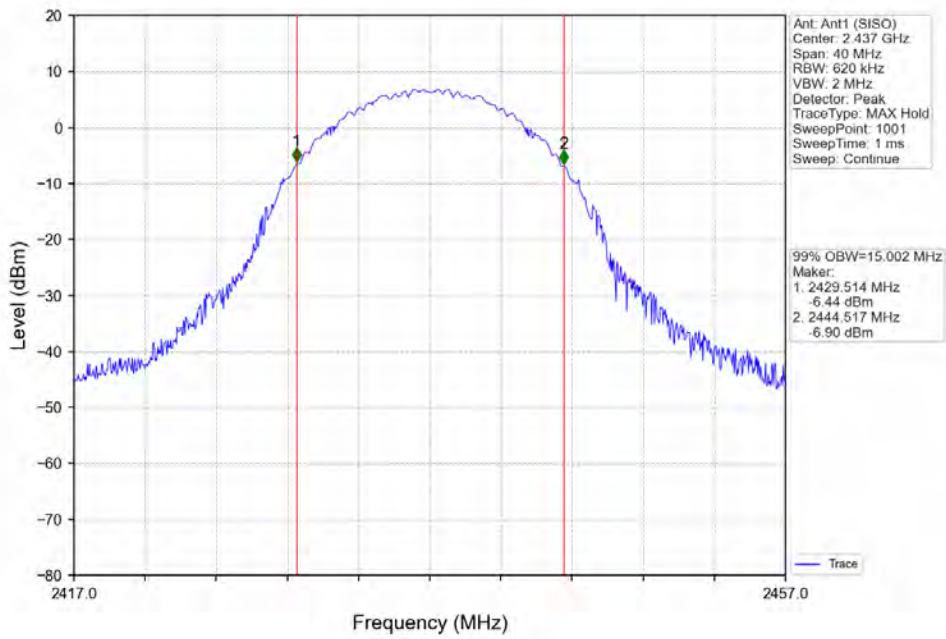
2.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Ant	99% Occupied Bandwidth (MHz)	Verdict
				Result	
802.11b	SISO	2412	1	15.056	Pass
			2	15.160	Pass
		2437	1	15.002	Pass
			2	15.160	Pass
		2462	1	15.023	Pass
			2	15.090	Pass
802.11g	SISO	2412	1	17.532	Pass
			2	17.591	Pass
		2437	1	17.901	Pass
			2	17.736	Pass
		2462	1	17.772	Pass
			2	17.894	Pass
802.11n (HT20)	MIMO	2412	1	18.546	Pass
			2	18.526	Pass
		2437	1	18.525	Pass
			2	18.591	Pass
		2462	1	18.600	Pass
			2	18.678	Pass
802.11n (HT40)	MIMO	2422	1	36.040	Pass
			2	36.050	Pass
		2437	1	36.042	Pass
			2	36.039	Pass
		2452	1	35.976	Pass
			2	36.107	Pass

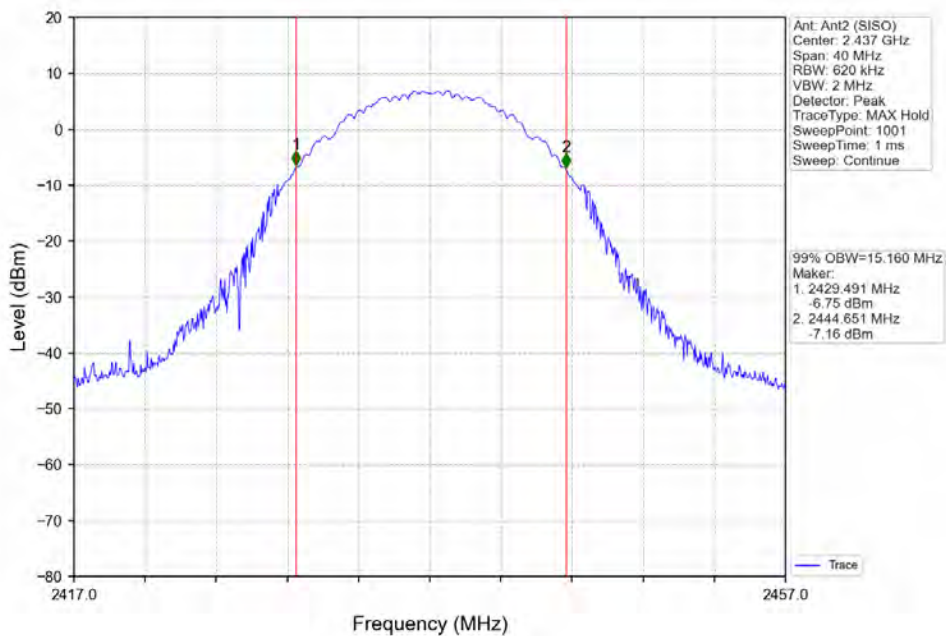
2.1.2 Test Graph



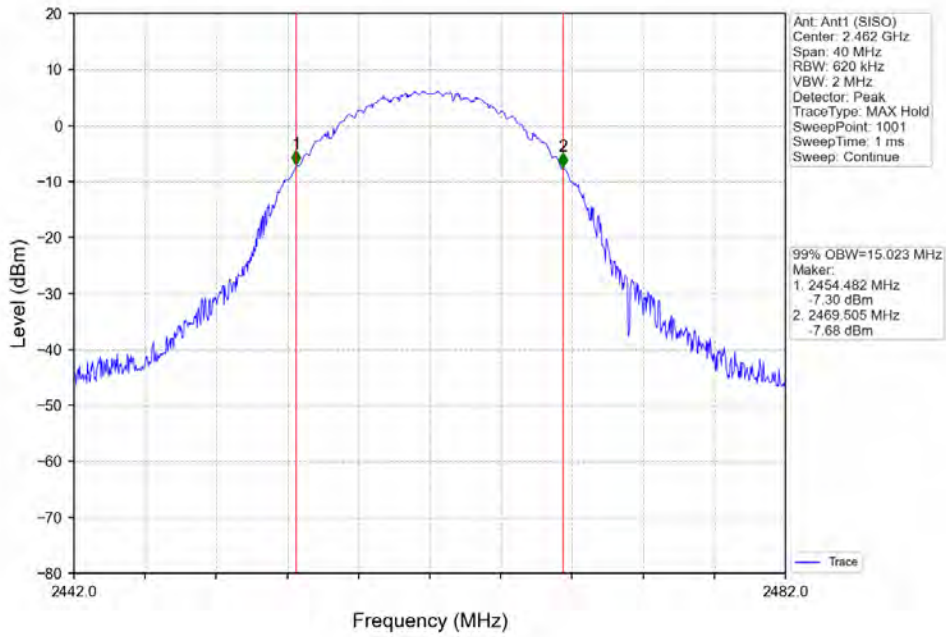
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



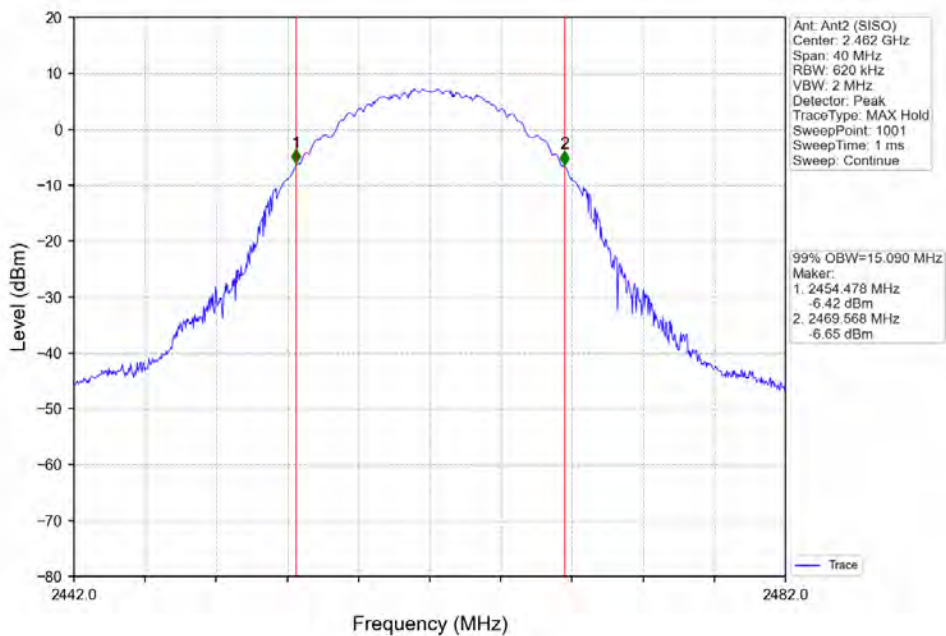
802.11b_MCH_2437MHz_Ant2 (SISO)_NTNV

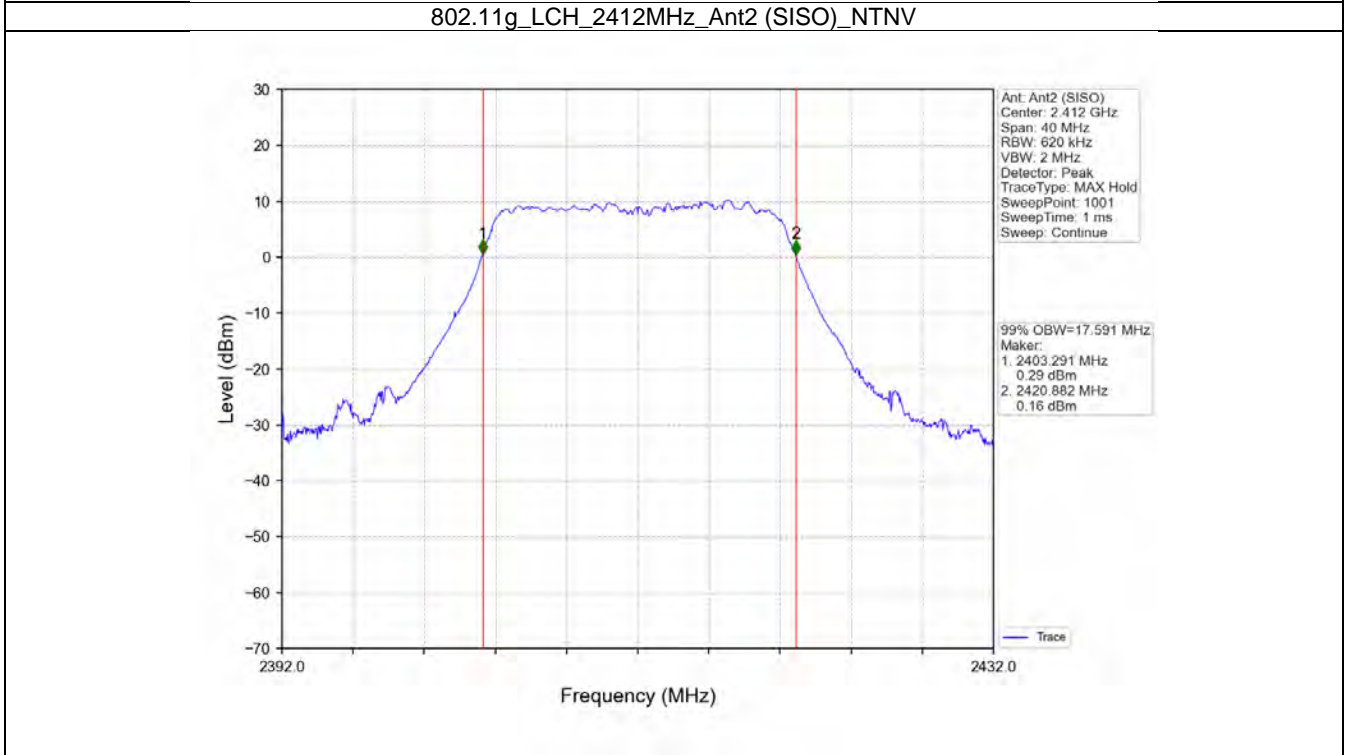
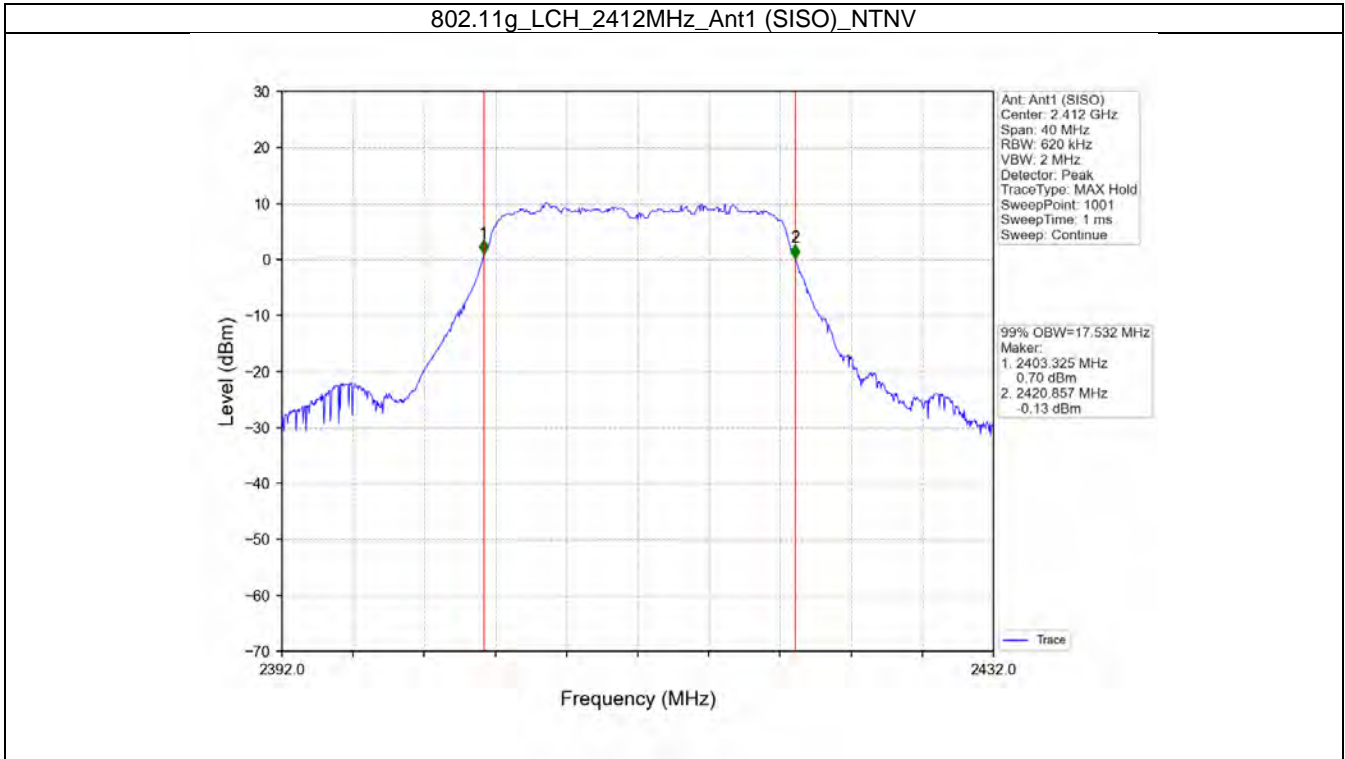


802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

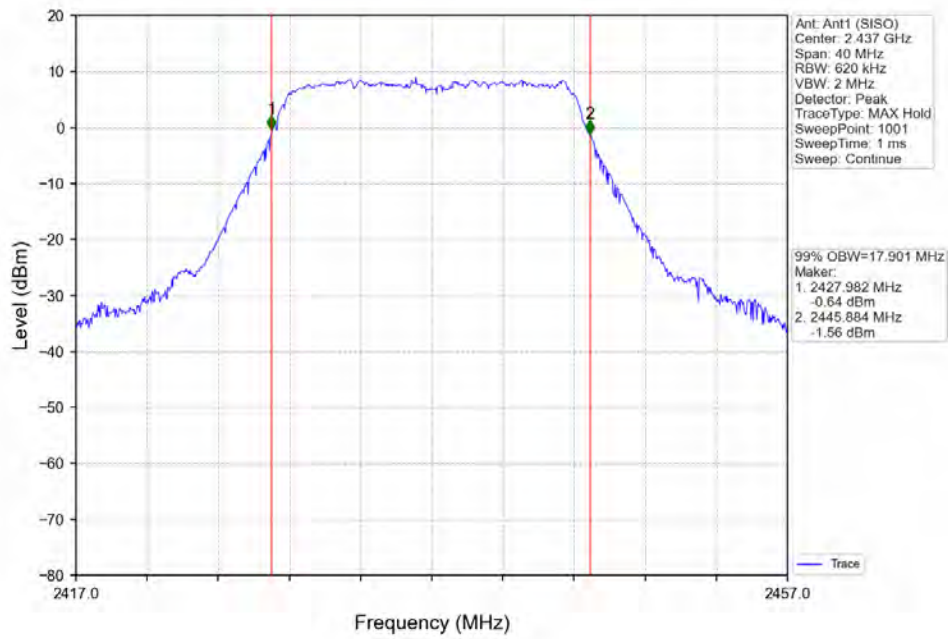


802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV

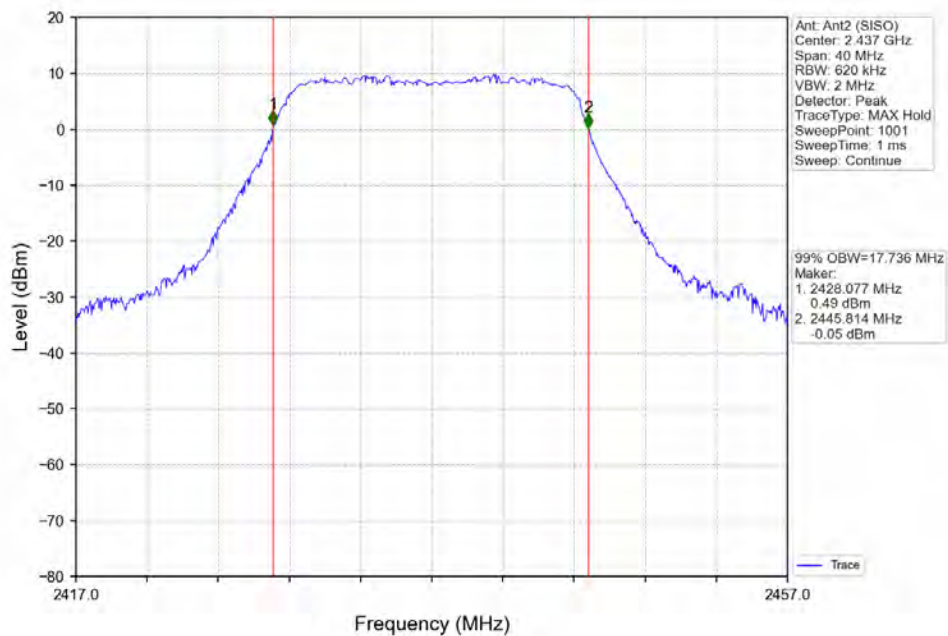




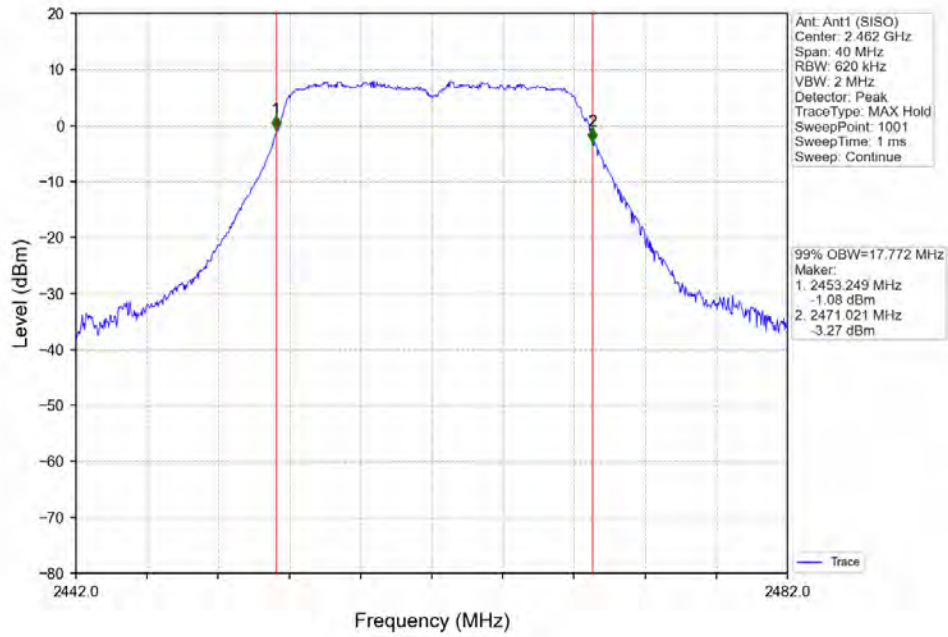
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



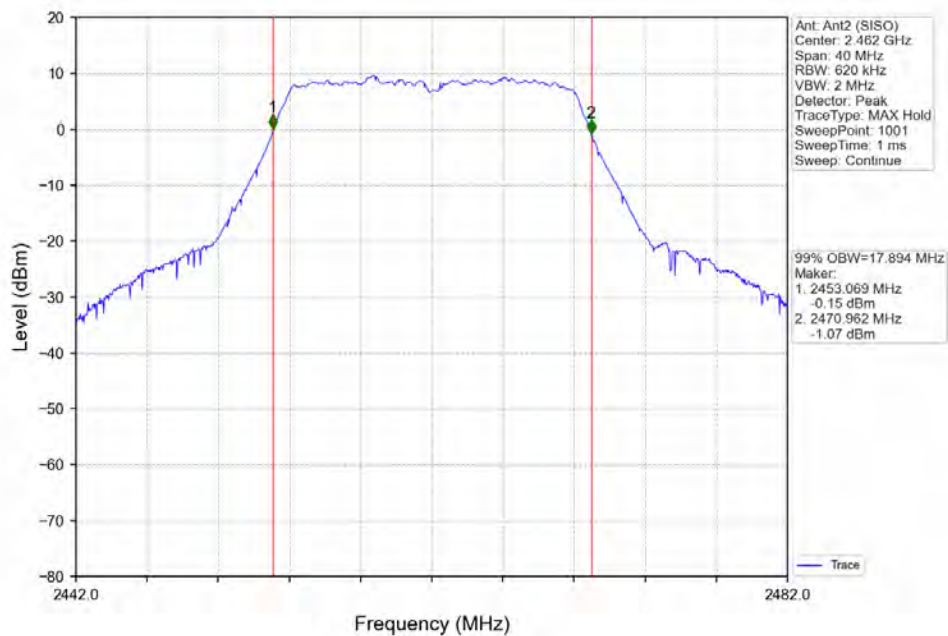
802.11g_MCH_2437MHz_Ant2 (SISO)_NTNV



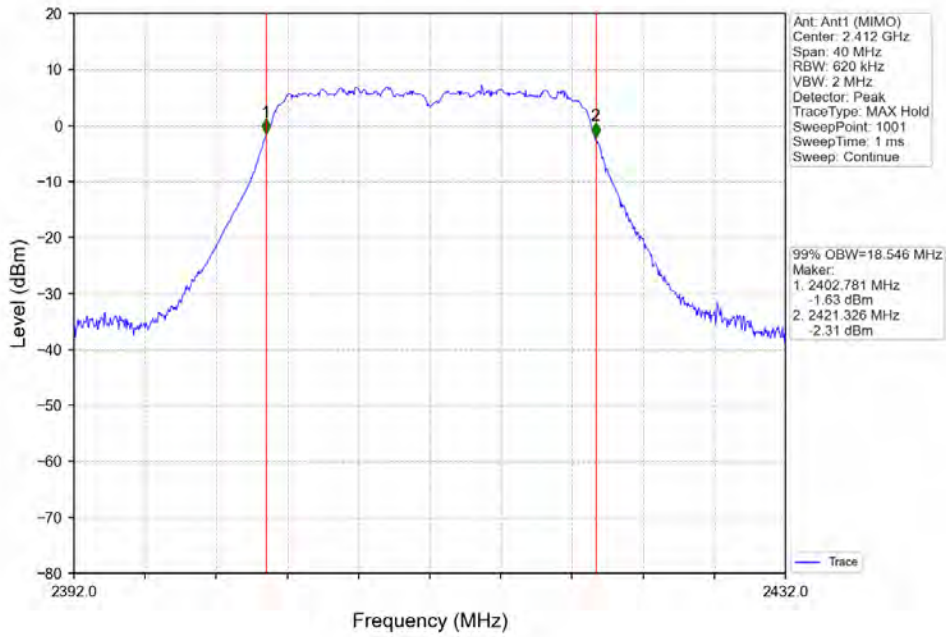
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



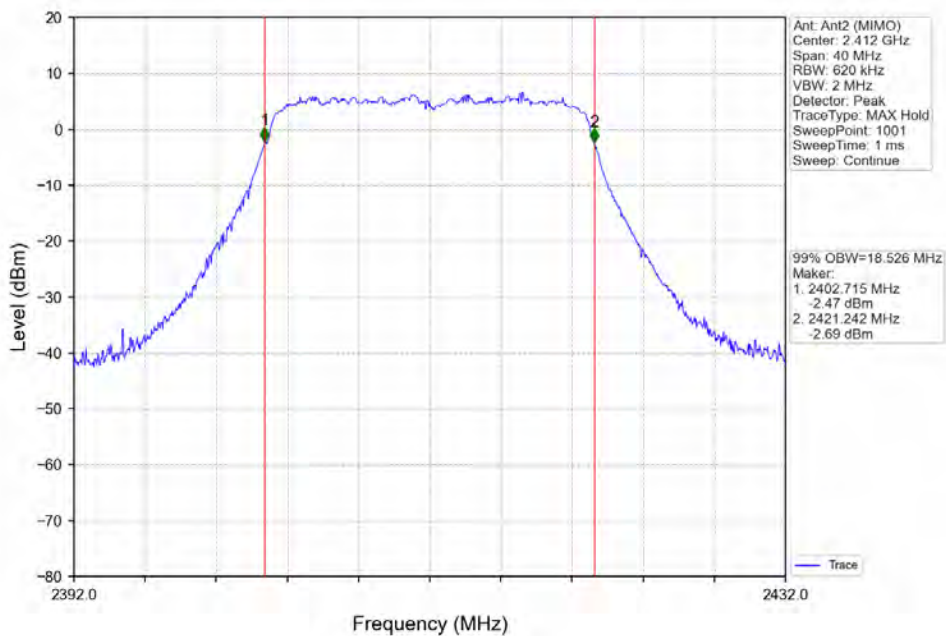
802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



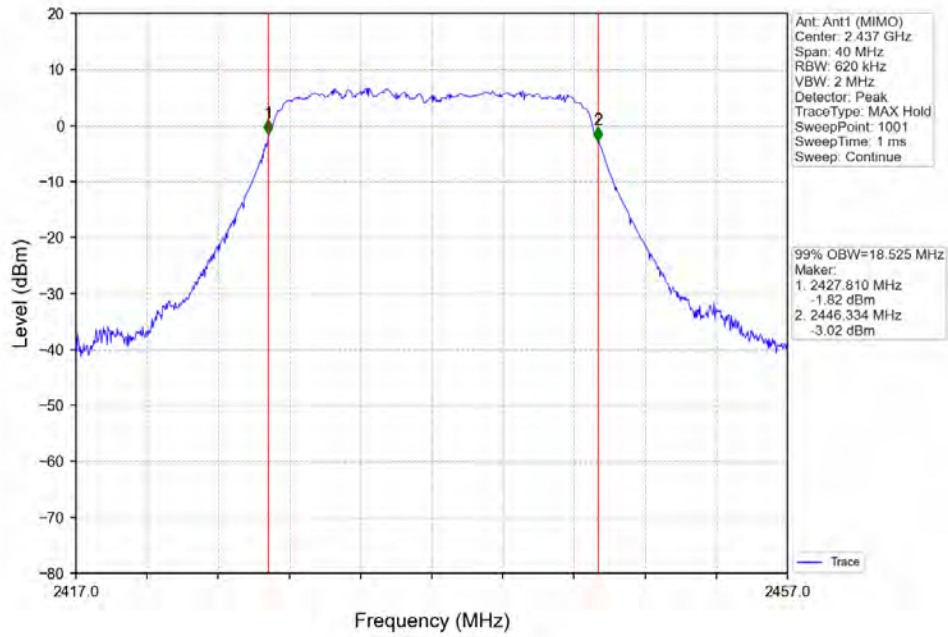
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



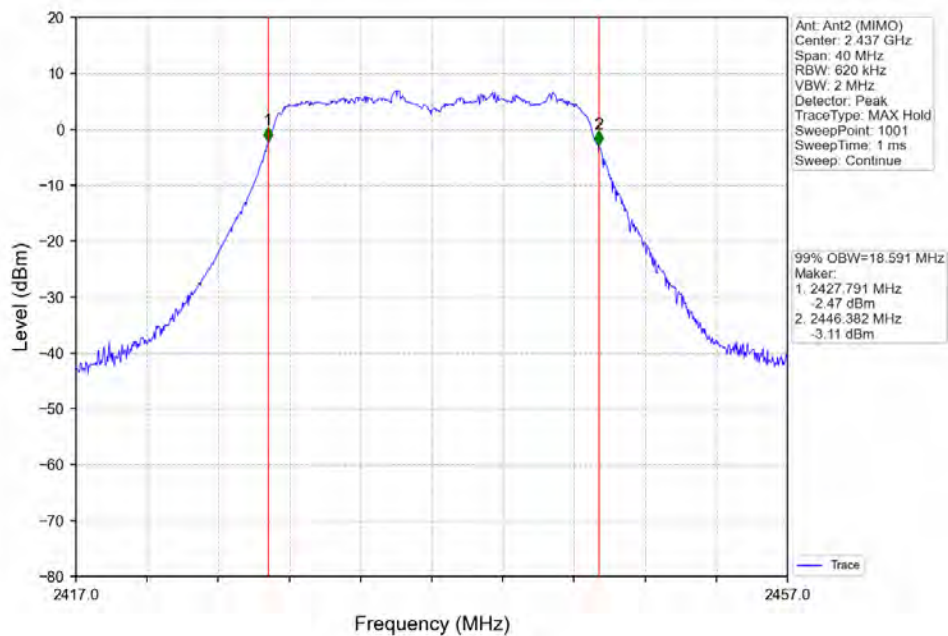
802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV



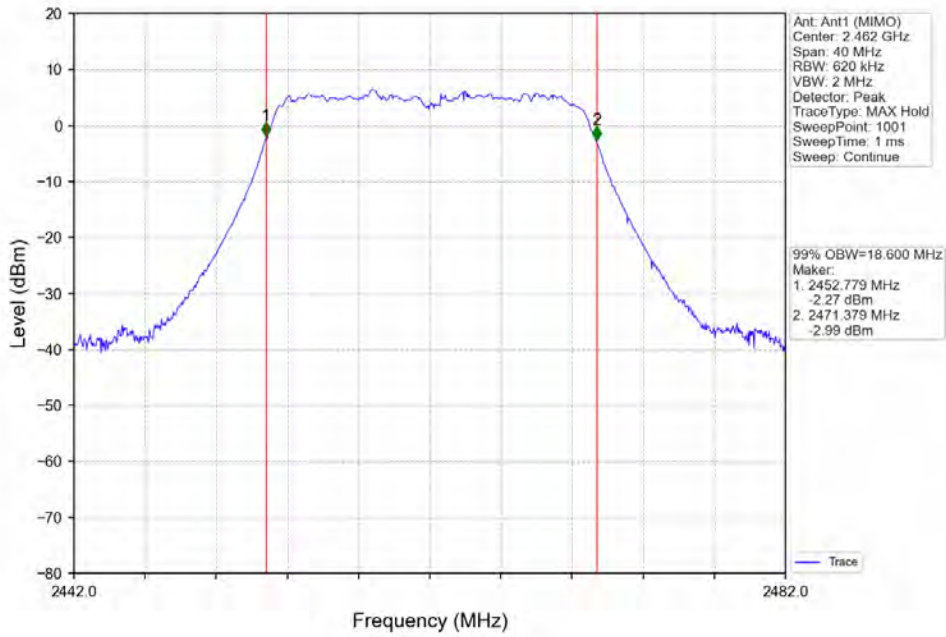
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



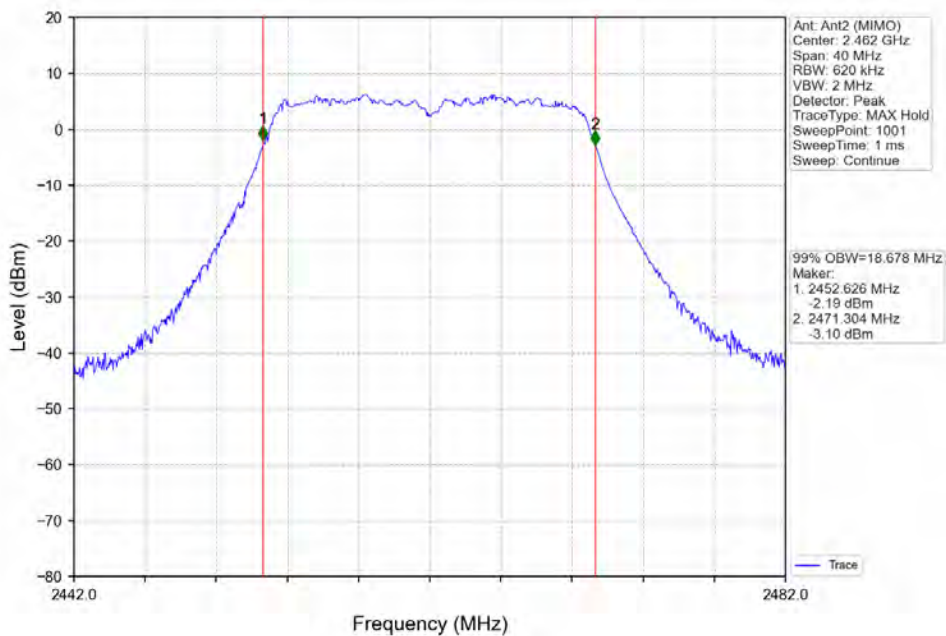
802.11n(HT20)_MCH_2437MHz_Ant2 (MIMO)_NTNV



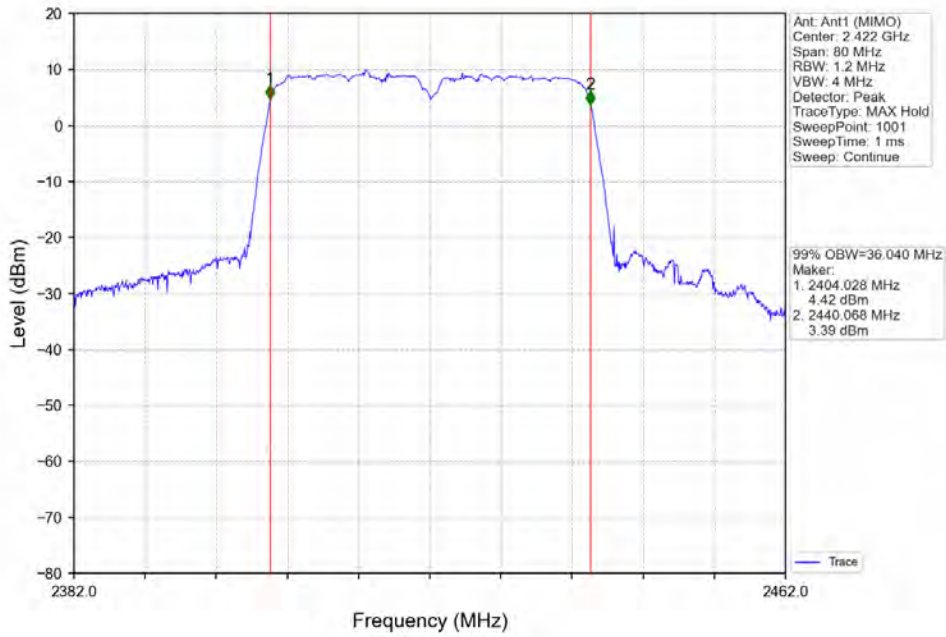
802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



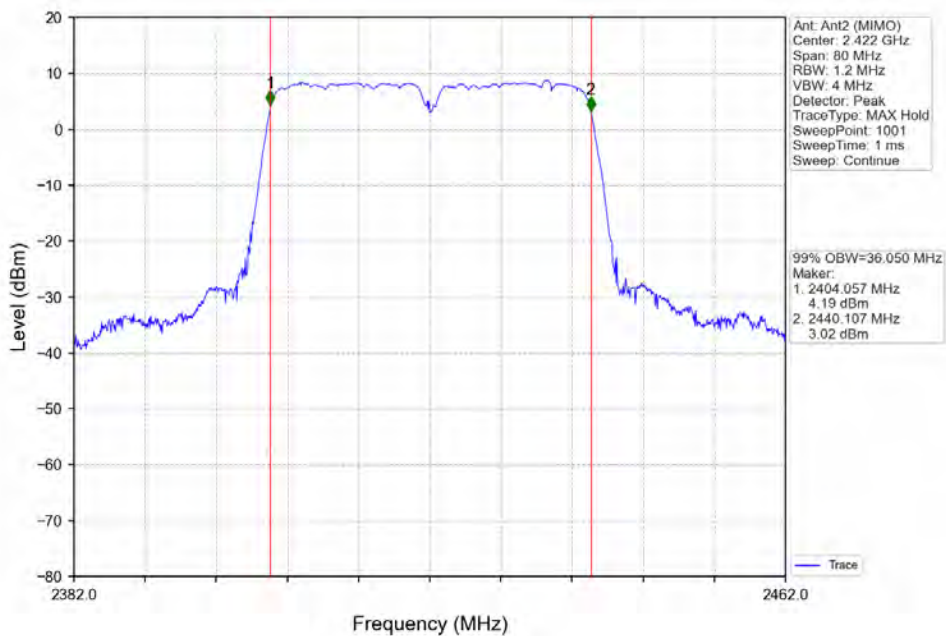
802.11n(HT20)_HCH_2462MHz_Ant2 (MIMO)_NTNV



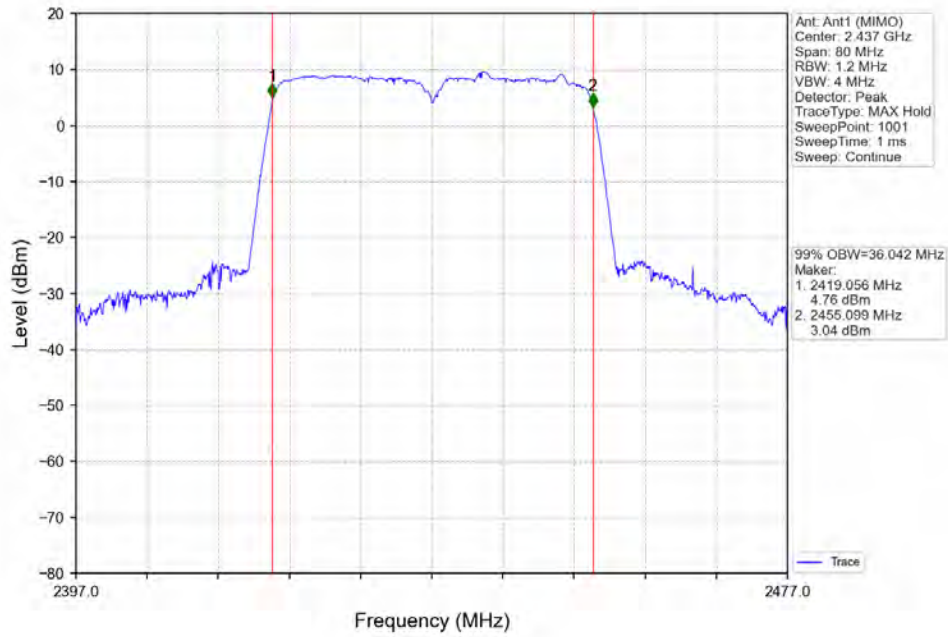
802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



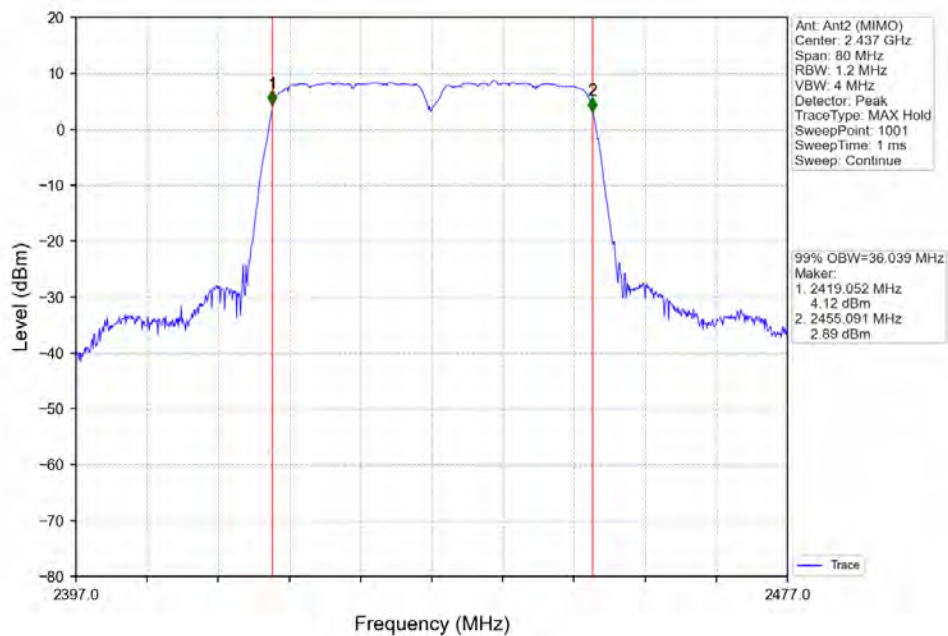
802.11n(HT40)_LCH_2422MHz_Ant2 (MIMO)_NTNV



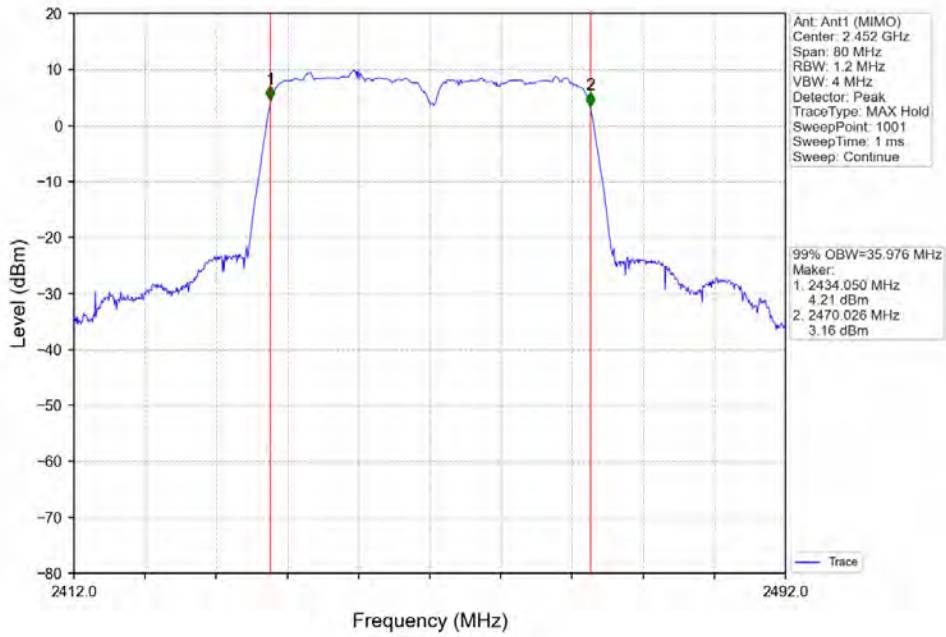
802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



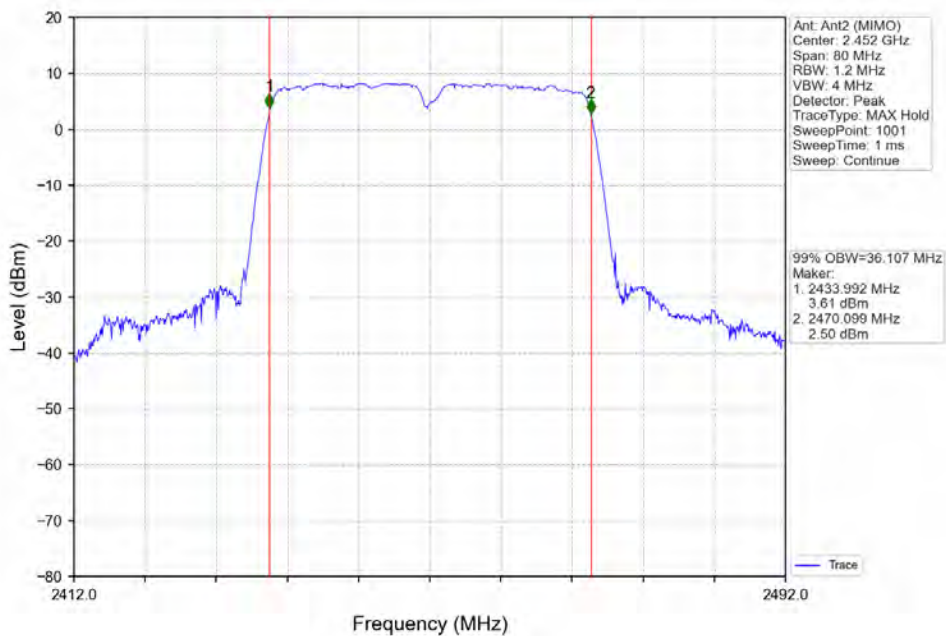
802.11n(HT40)_MCH_2437MHz_Ant2 (MIMO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant2 (MIMO)_NTNV

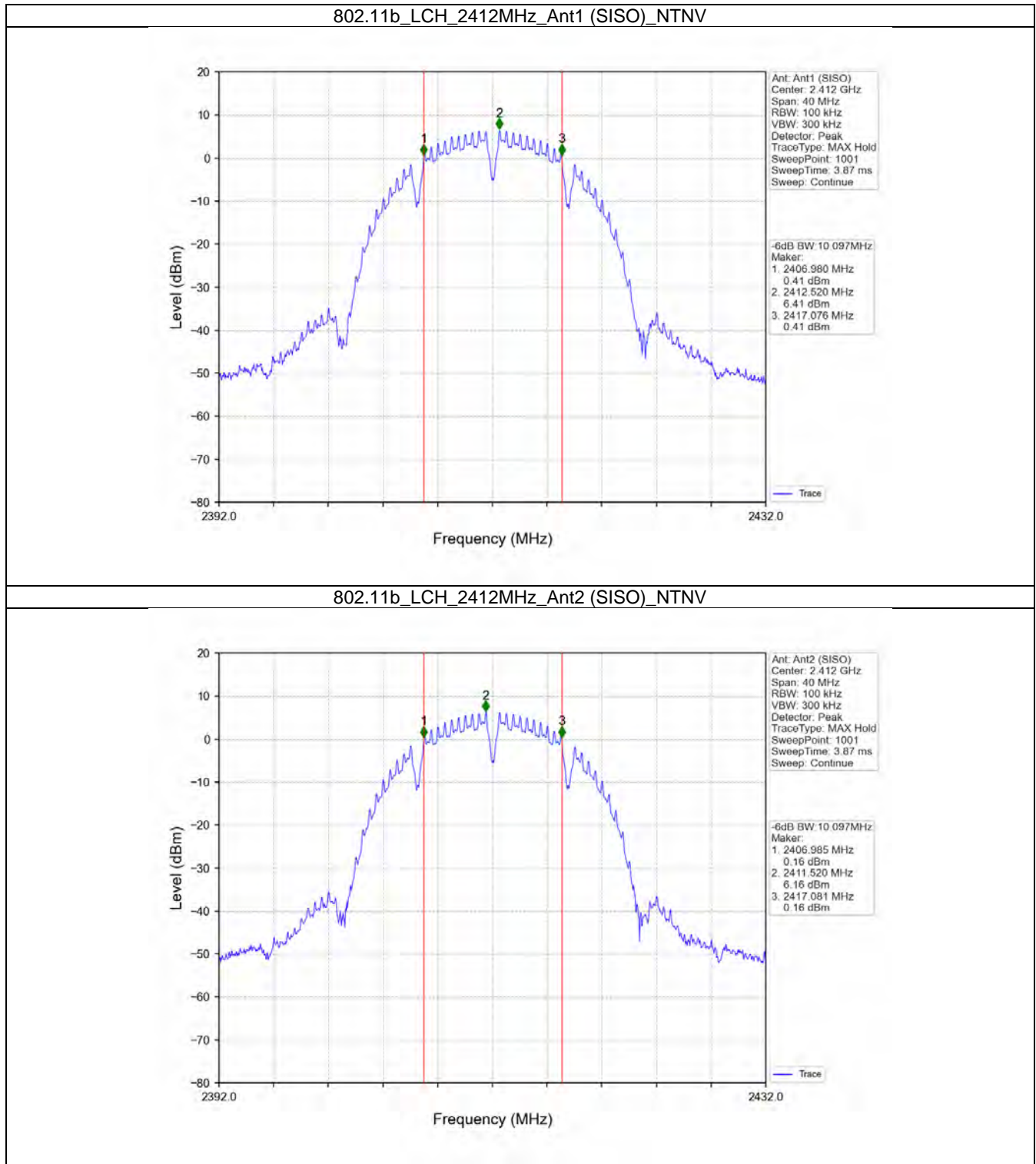


2.2 6dB BW

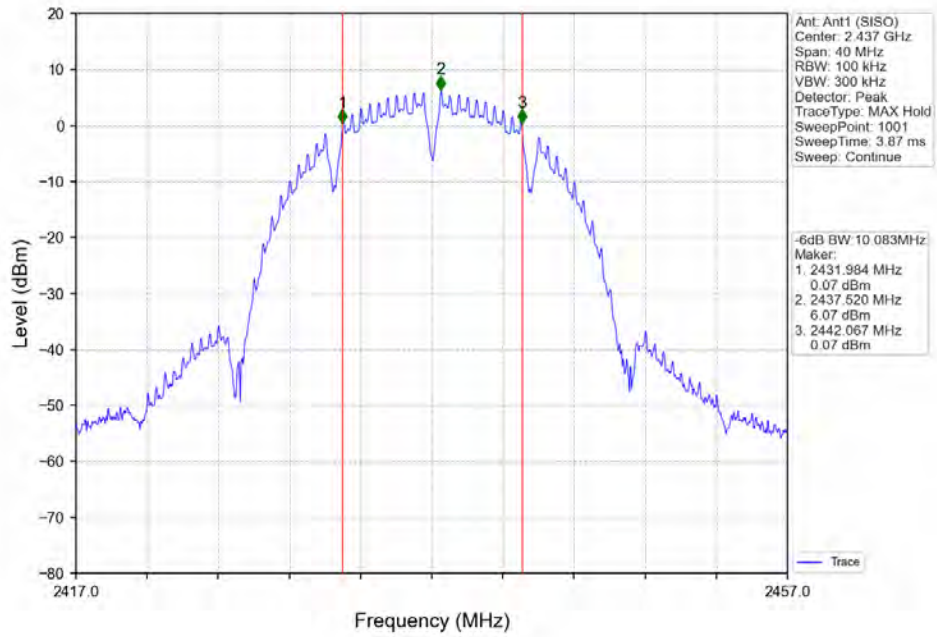
2.2.1 Test Result

Mode	TX Type	Frequency (MHz)	Ant	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	1	10.097	>=0.5	Pass
			2	10.097	>=0.5	Pass
		2437	1	10.083	>=0.5	Pass
			2	10.098	>=0.5	Pass
		2462	1	10.105	>=0.5	Pass
			2	10.105	>=0.5	Pass
802.11g	SISO	2412	1	16.376	>=0.5	Pass
			2	16.383	>=0.5	Pass
		2437	1	16.372	>=0.5	Pass
			2	16.378	>=0.5	Pass
		2462	1	16.391	>=0.5	Pass
			2	16.374	>=0.5	Pass
802.11n (HT20)	MIMO	2412	1	17.384	>=0.5	Pass
			2	17.591	>=0.5	Pass
		2437	1	17.324	>=0.5	Pass
			2	17.573	>=0.5	Pass
		2462	1	17.355	>=0.5	Pass
			2	17.583	>=0.5	Pass
802.11n (HT40)	MIMO	2422	1	35.370	>=0.5	Pass
			2	35.717	>=0.5	Pass
		2437	1	35.479	>=0.5	Pass
			2	35.552	>=0.5	Pass
		2452	1	35.219	>=0.5	Pass
			2	35.559	>=0.5	Pass

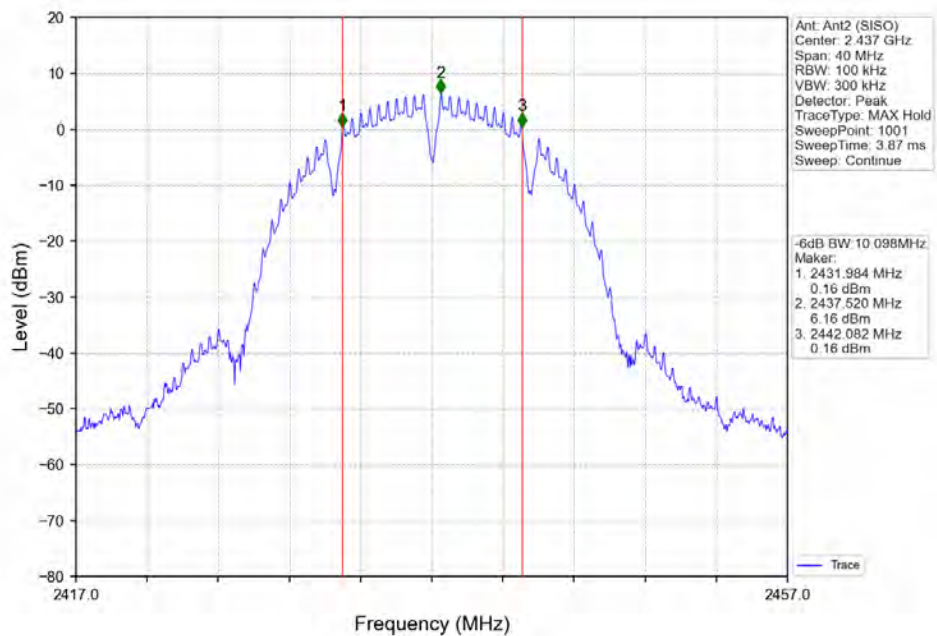
2.2.2 Test Graph



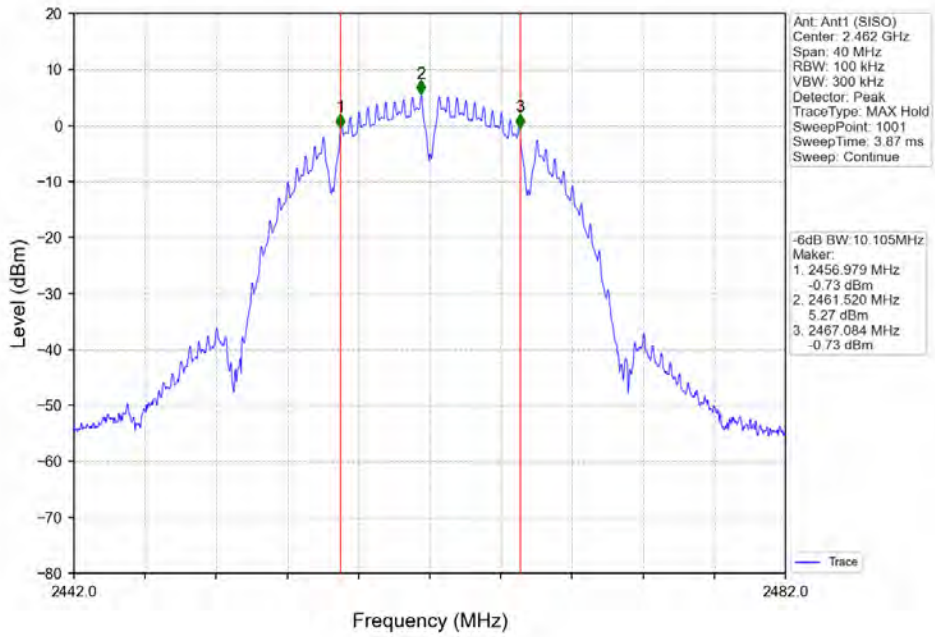
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



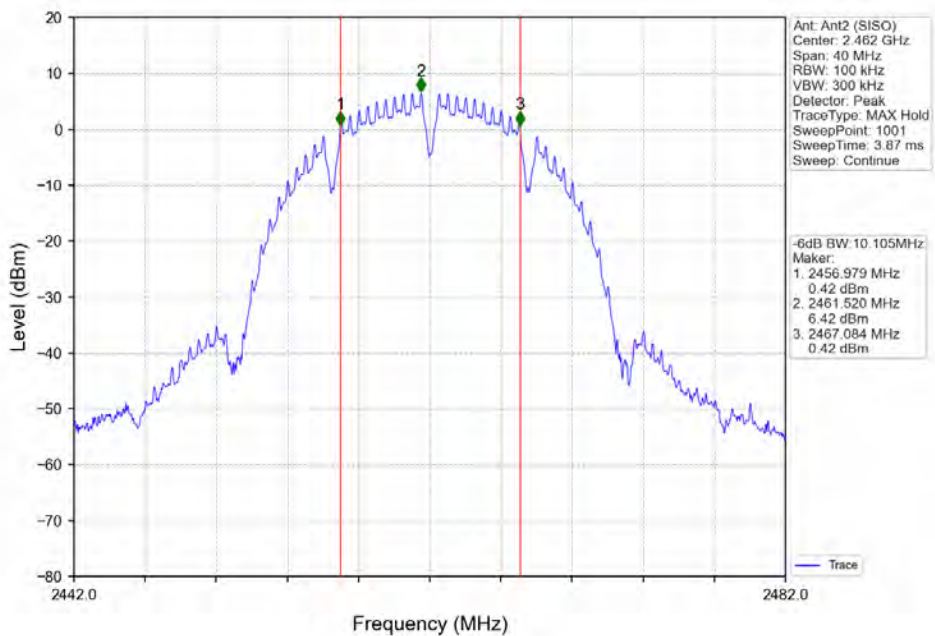
802.11b_MCH_2437MHz_Ant2 (SISO)_NTNV



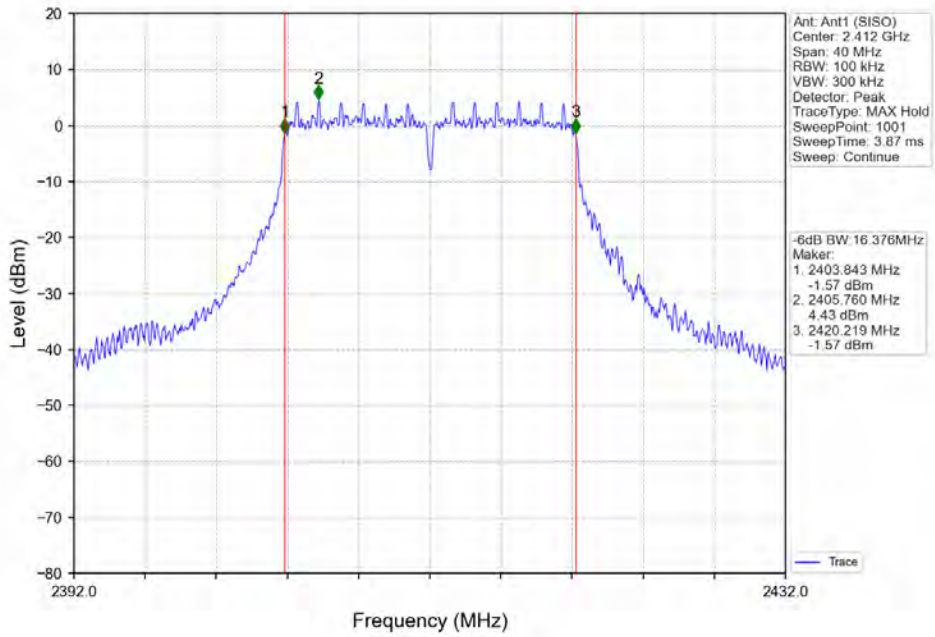
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



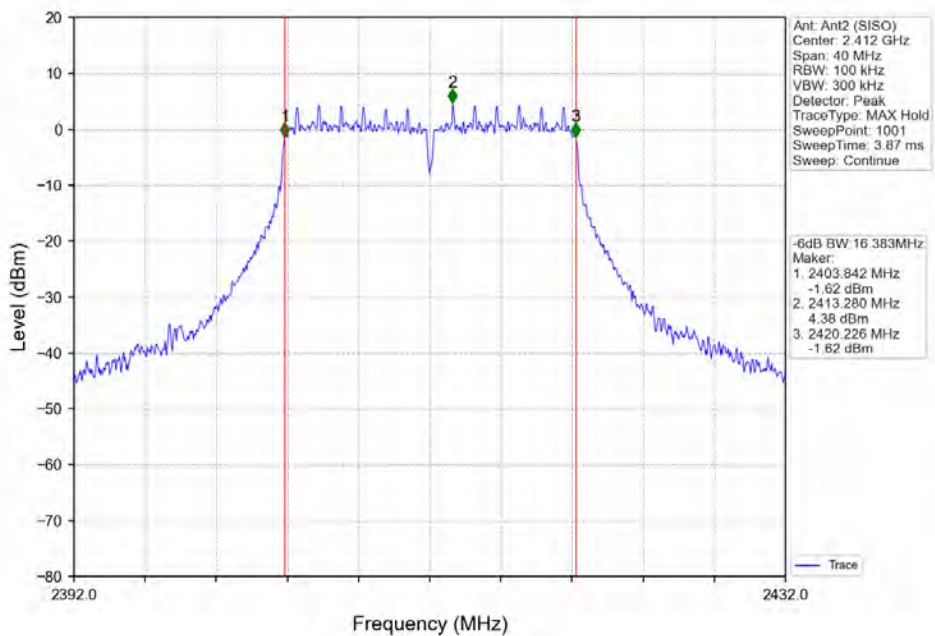
802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV



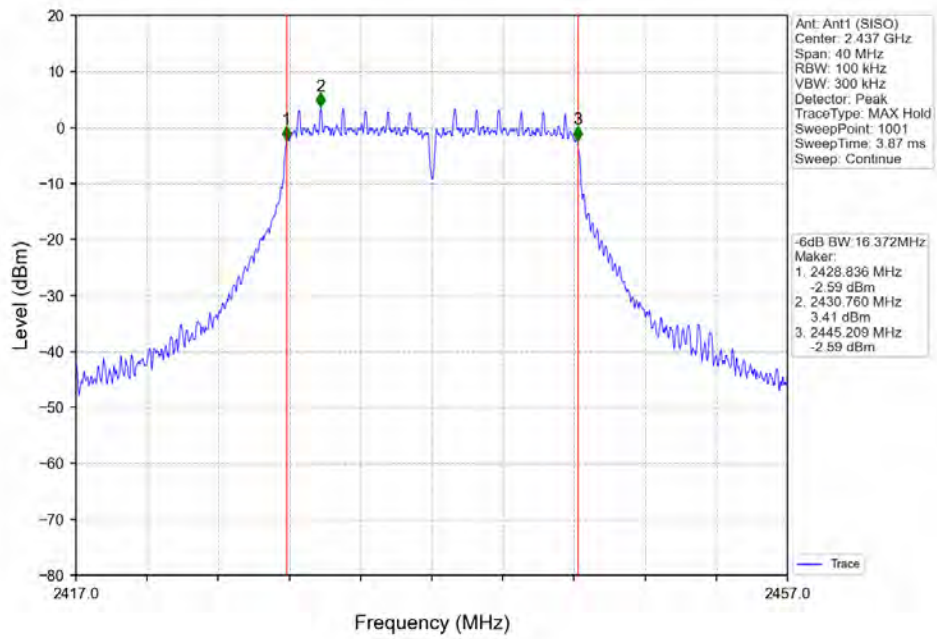
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



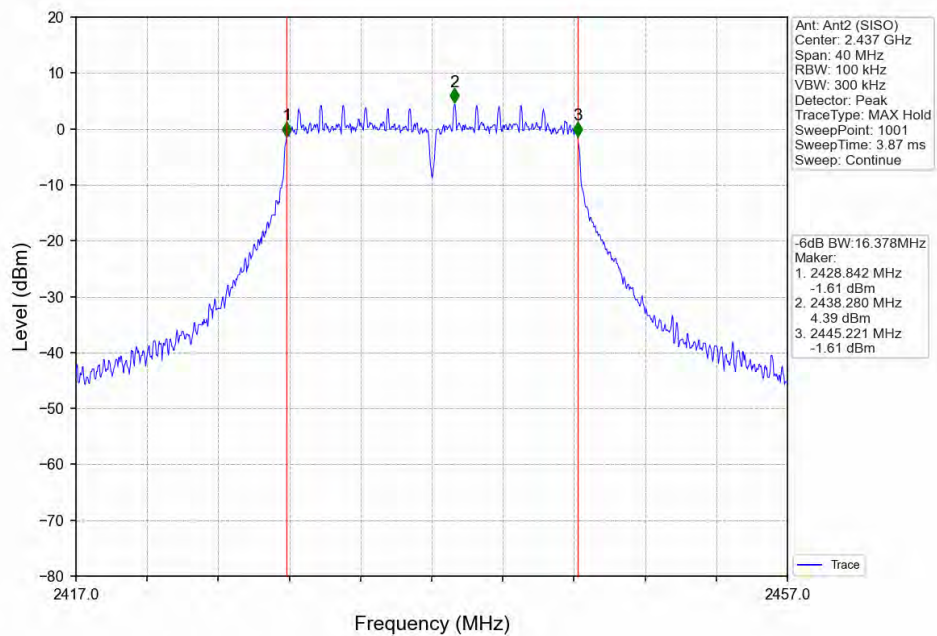
802.11g_LCH_2412MHz_Ant2 (SISO)_NTNV



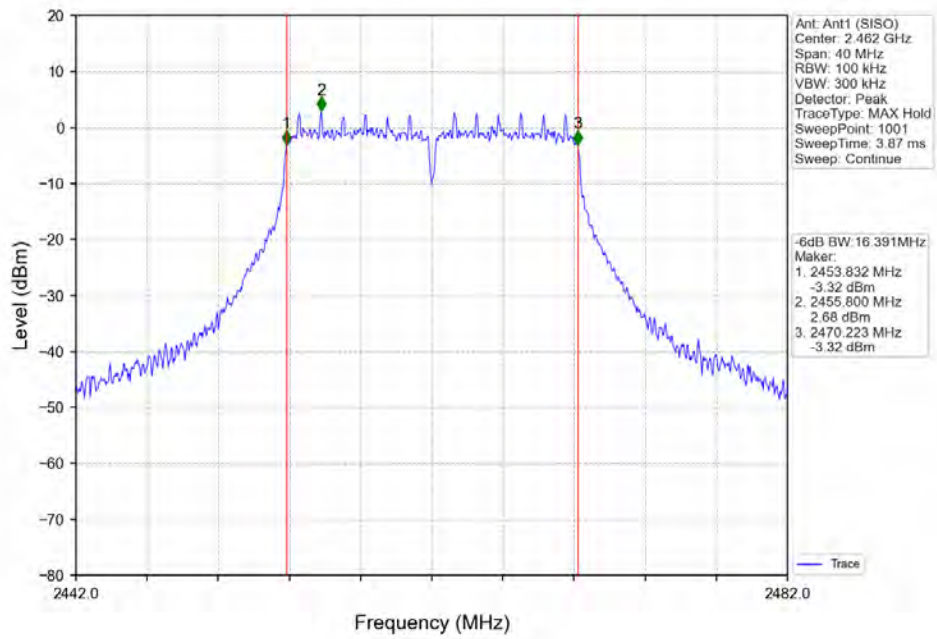
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



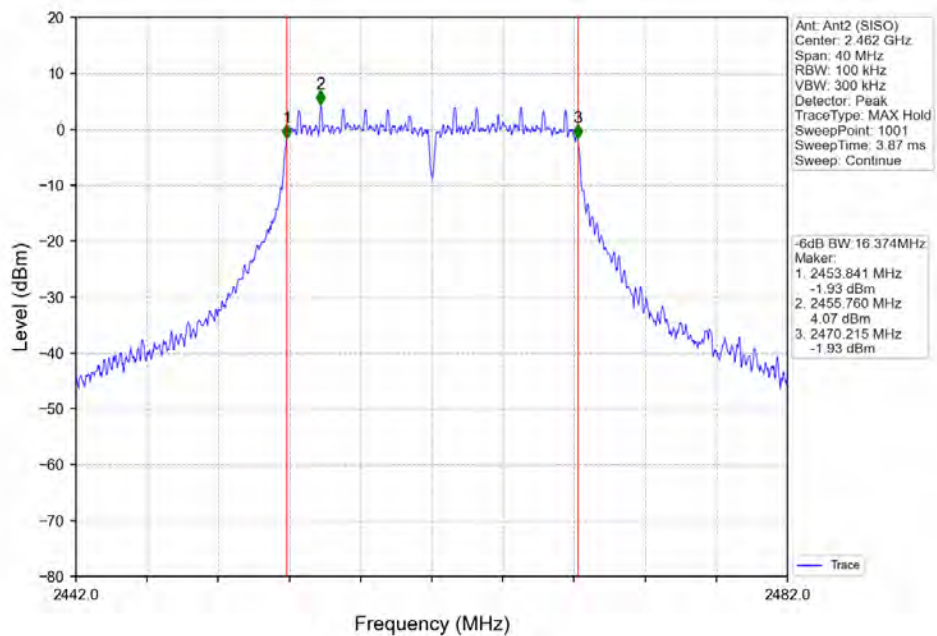
802.11g_MCH_2437MHz_Ant2 (SISO)_NTNV



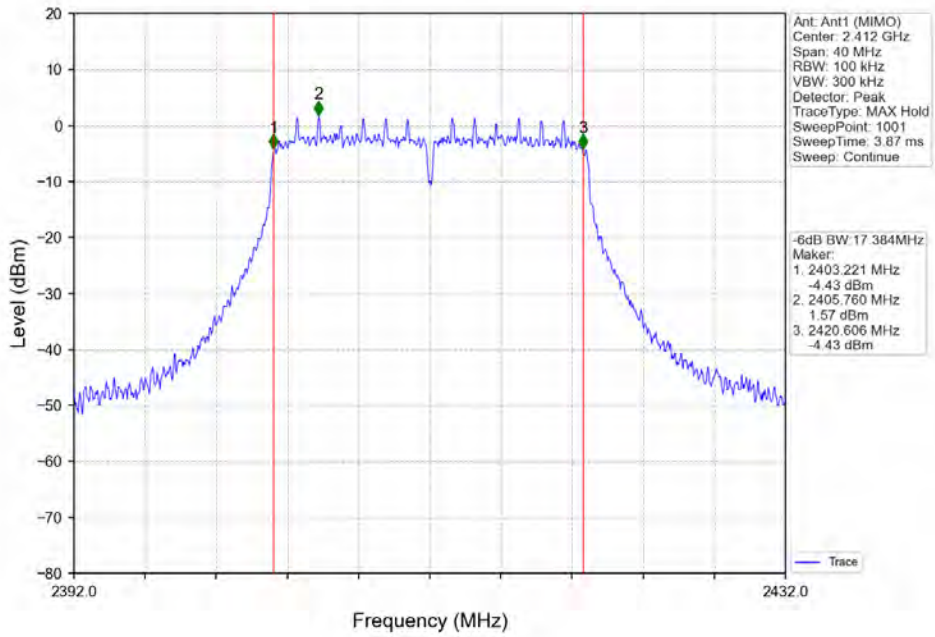
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



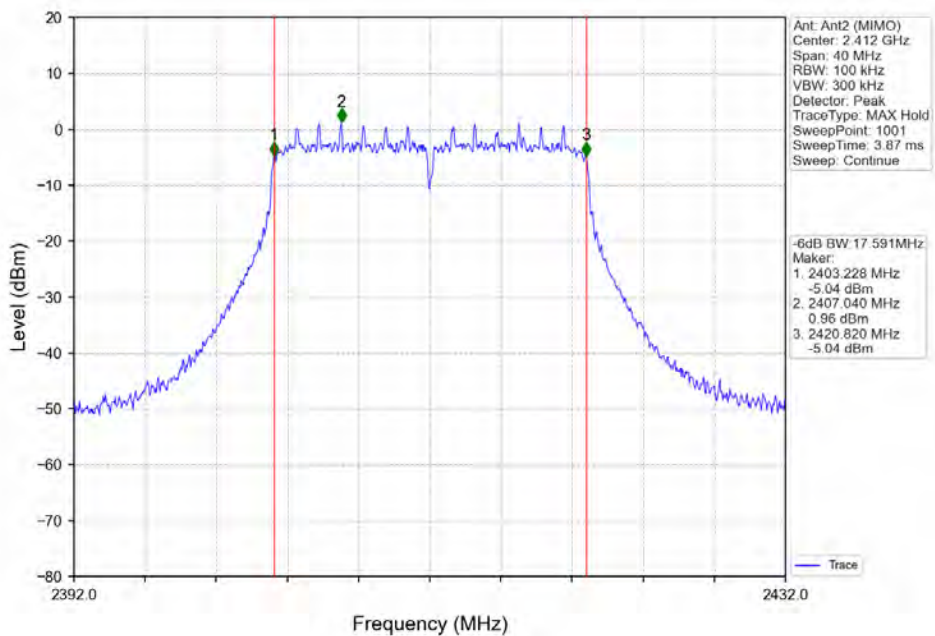
802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



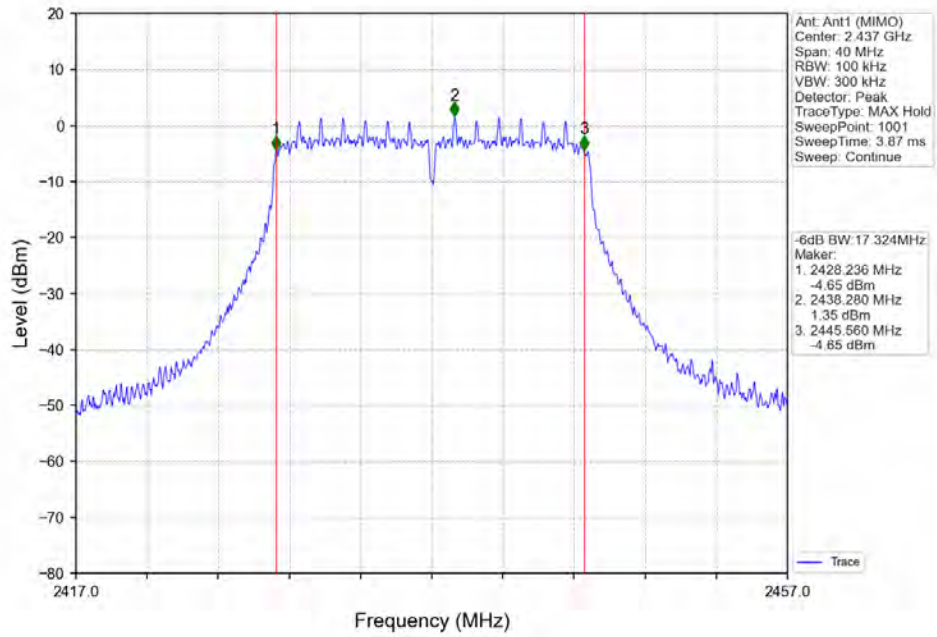
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



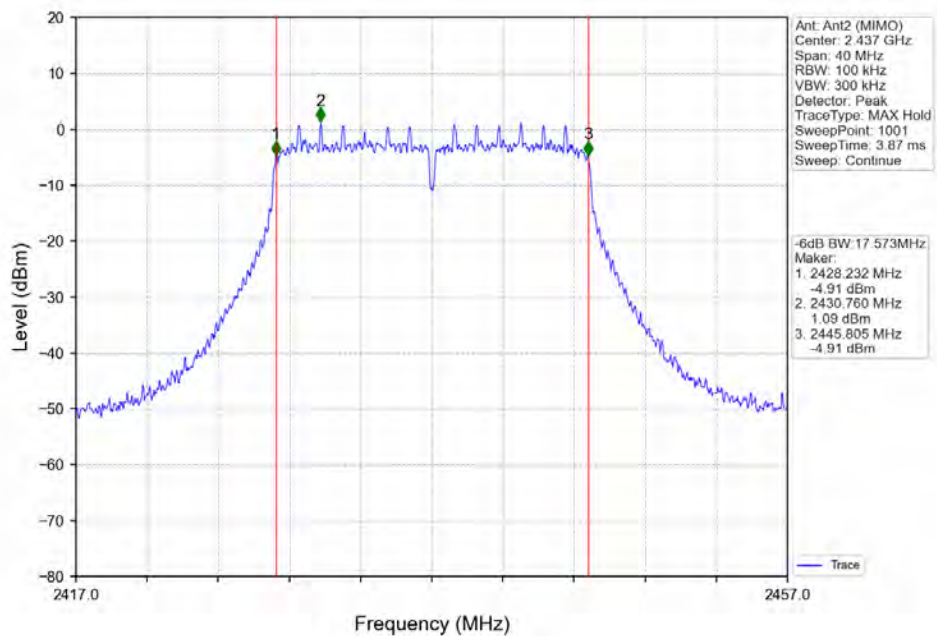
802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV



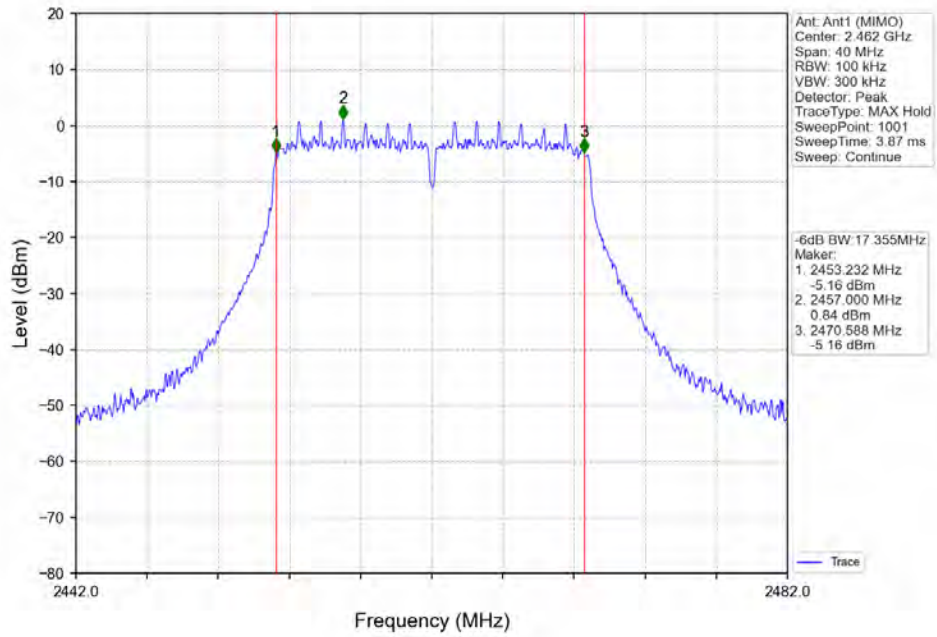
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



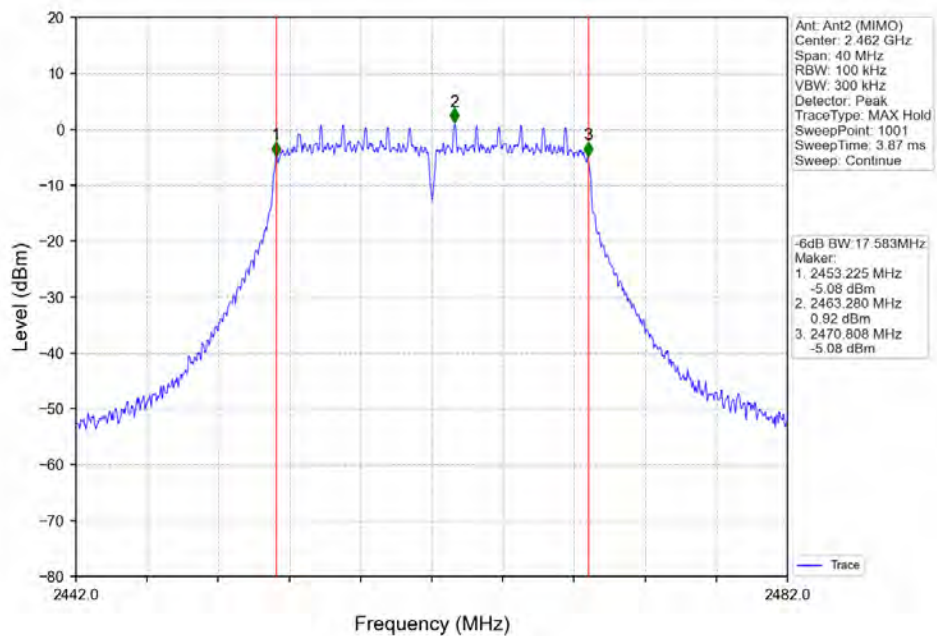
802.11n(HT20)_MCH_2437MHz_Ant2 (MIMO)_NTNV



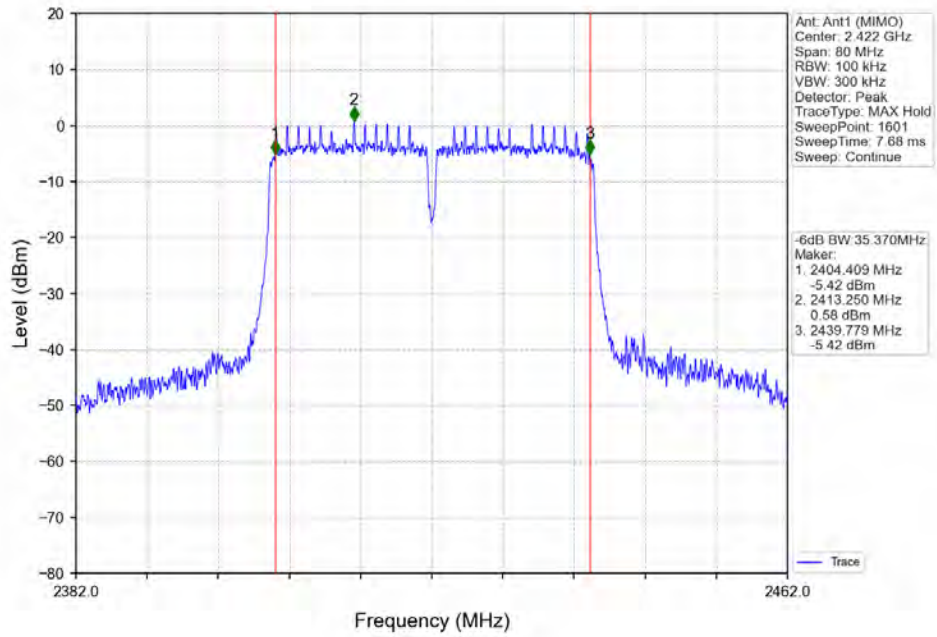
802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



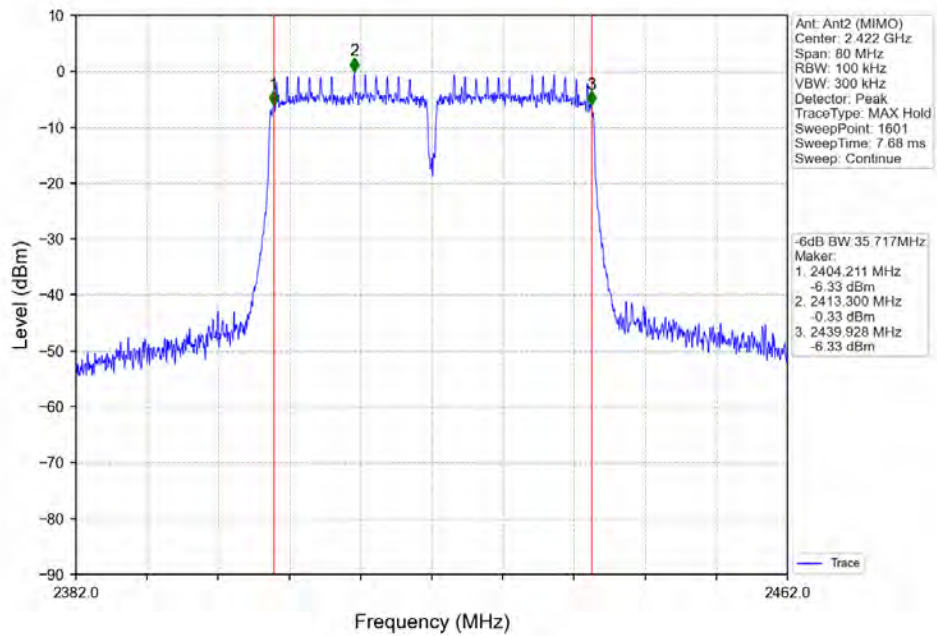
802.11n(HT20)_HCH_2462MHz_Ant2 (MIMO)_NTNV



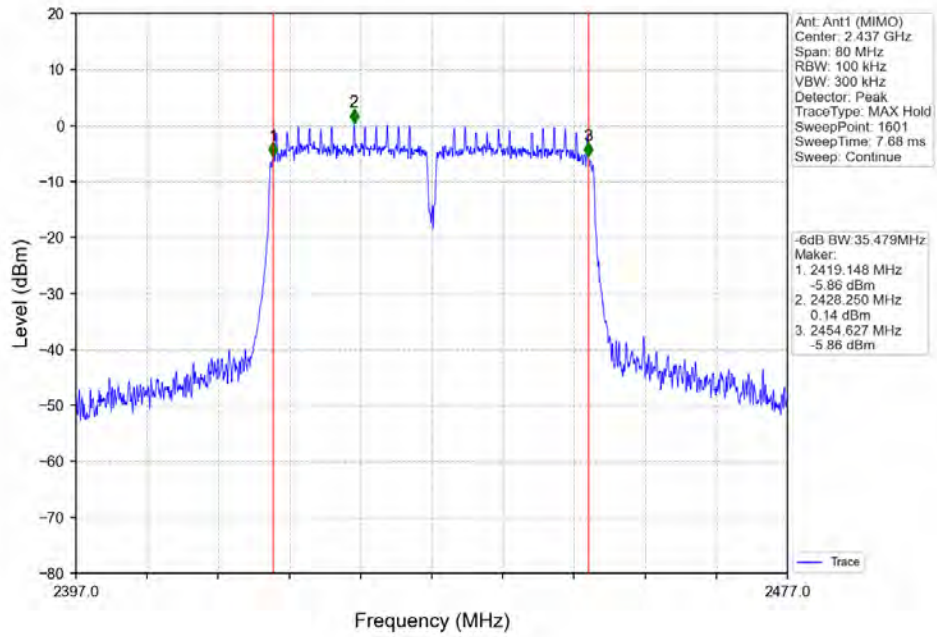
802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



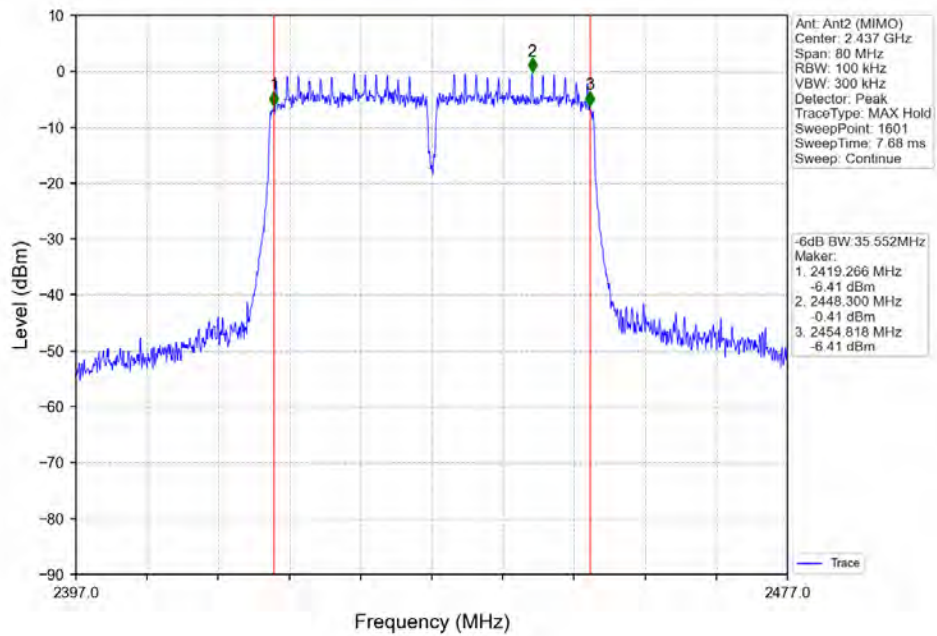
802.11n(HT40)_LCH_2422MHz_Ant2 (MIMO)_NTNV



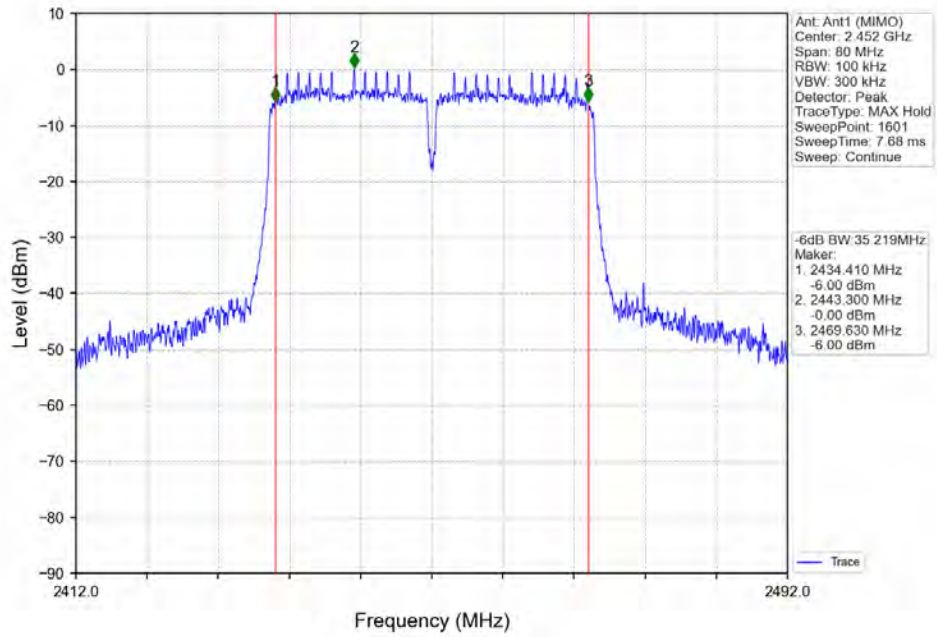
802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



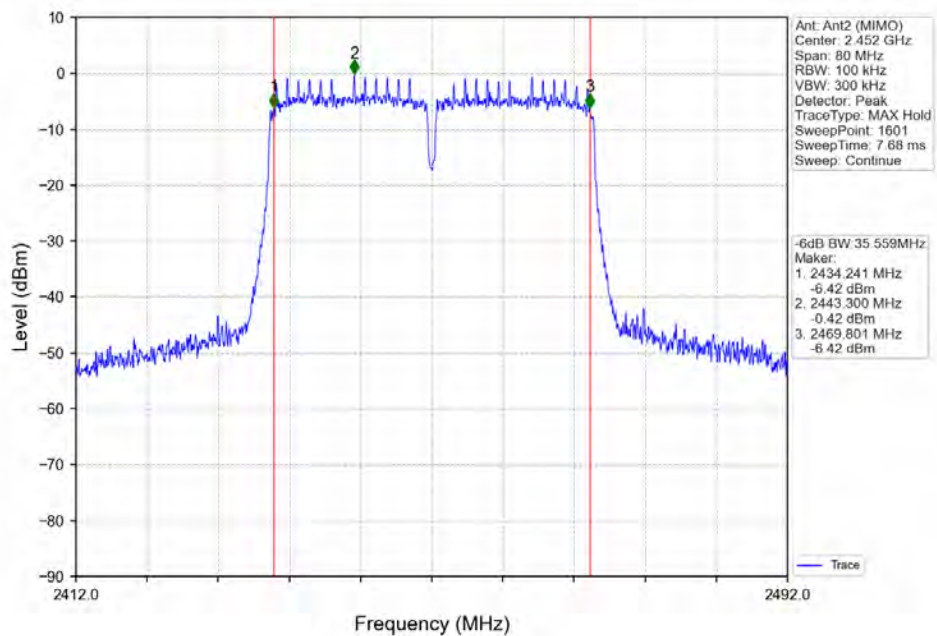
802.11n(HT40)_MCH_2437MHz_Ant2 (MIMO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant2 (MIMO)_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	Ant2	Sum	Limit	
802.11b	SISO	2412	17.84	17.60	/	<=30	Pass
		2437	17.51	17.54	/	<=30	Pass
		2462	16.76	17.83	/	<=30	Pass
802.11g	SISO	2412	23.20	23.24	/	<=30	Pass
		2437	22.20	23.17	/	<=30	Pass
		2462	21.61	22.81	/	<=30	Pass
802.11n (HT20)	MIMO	2412	20.44	19.98	23.23	<=30	Pass
		2437	20.16	20.01	23.10	<=30	Pass
		2462	19.71	19.74	22.74	<=30	Pass
802.11n (HT40)	MIMO	2422	22.25	21.58	24.94	<=30	Pass
		2437	21.89	21.56	24.74	<=30	Pass
		2452	21.75	21.37	24.57	<=30	Pass

Note1: Antenna Gain: Ant1: 2.61dBi; Ant2: 2.61dBi;
Note2: Directional Gain: 5.62dBi

4. Maximum Power Spectral Density

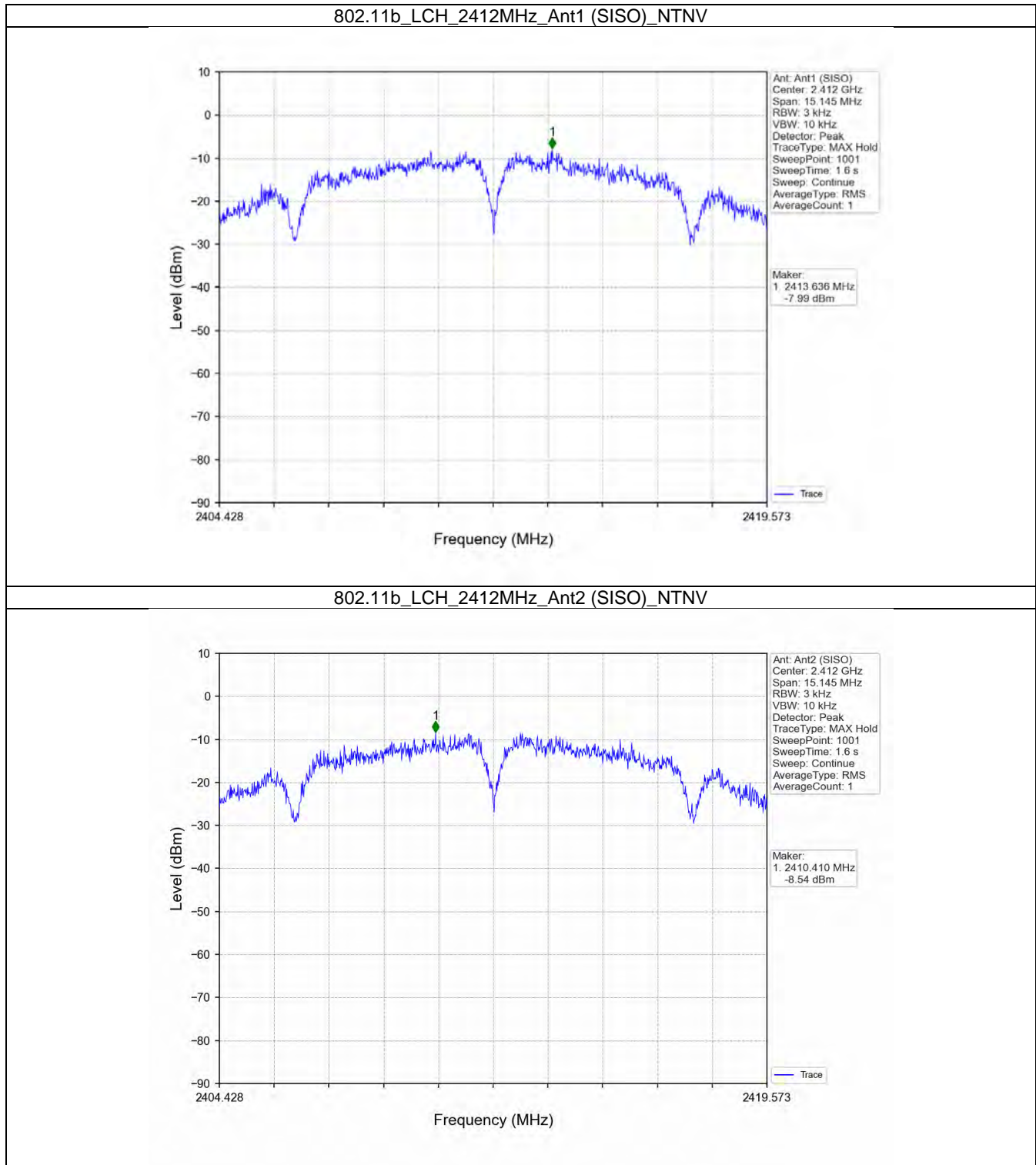
4.1 PSD

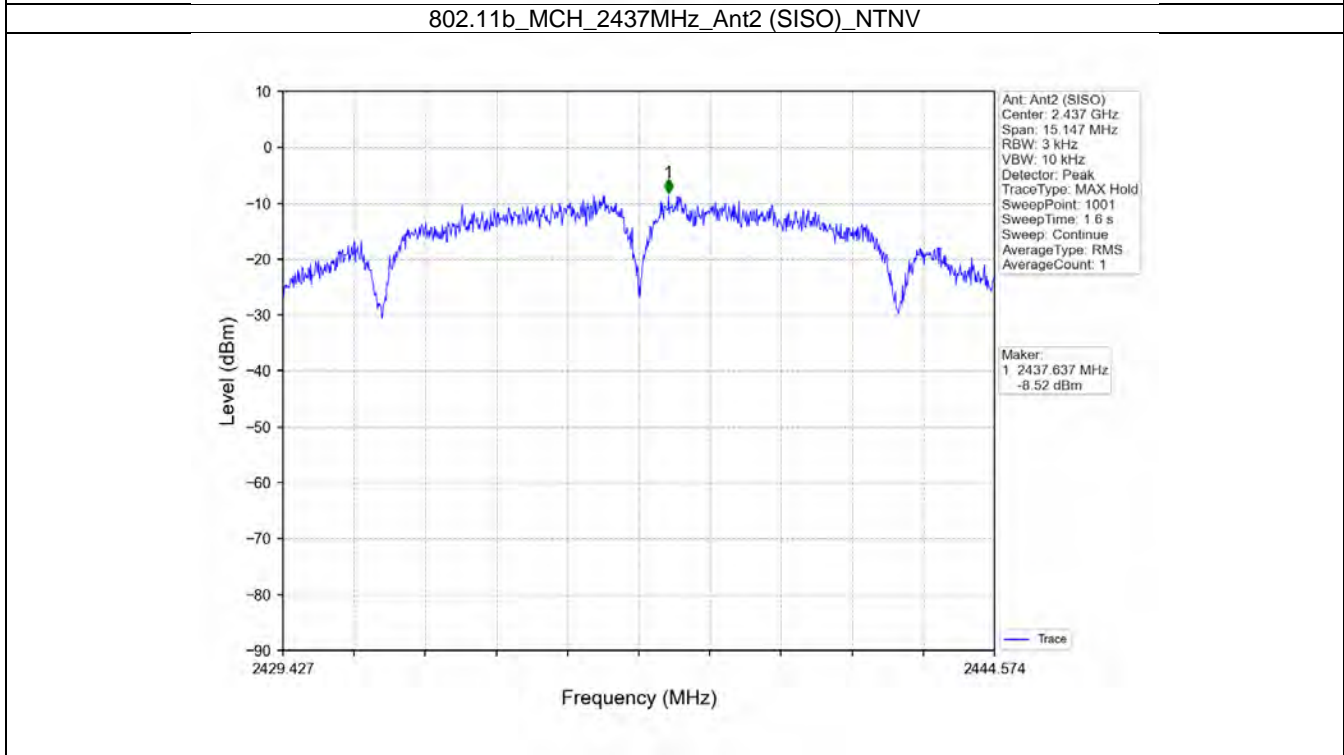
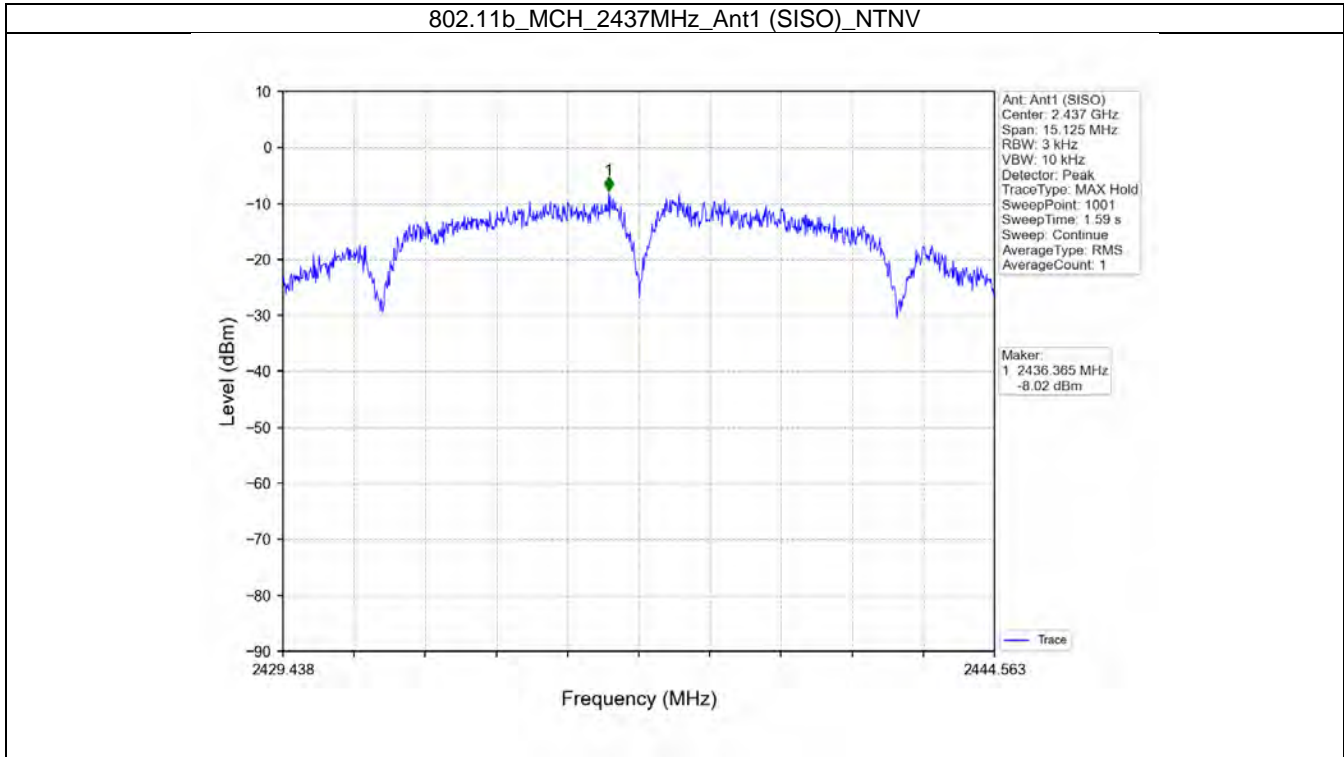
4.1.1 Test Result

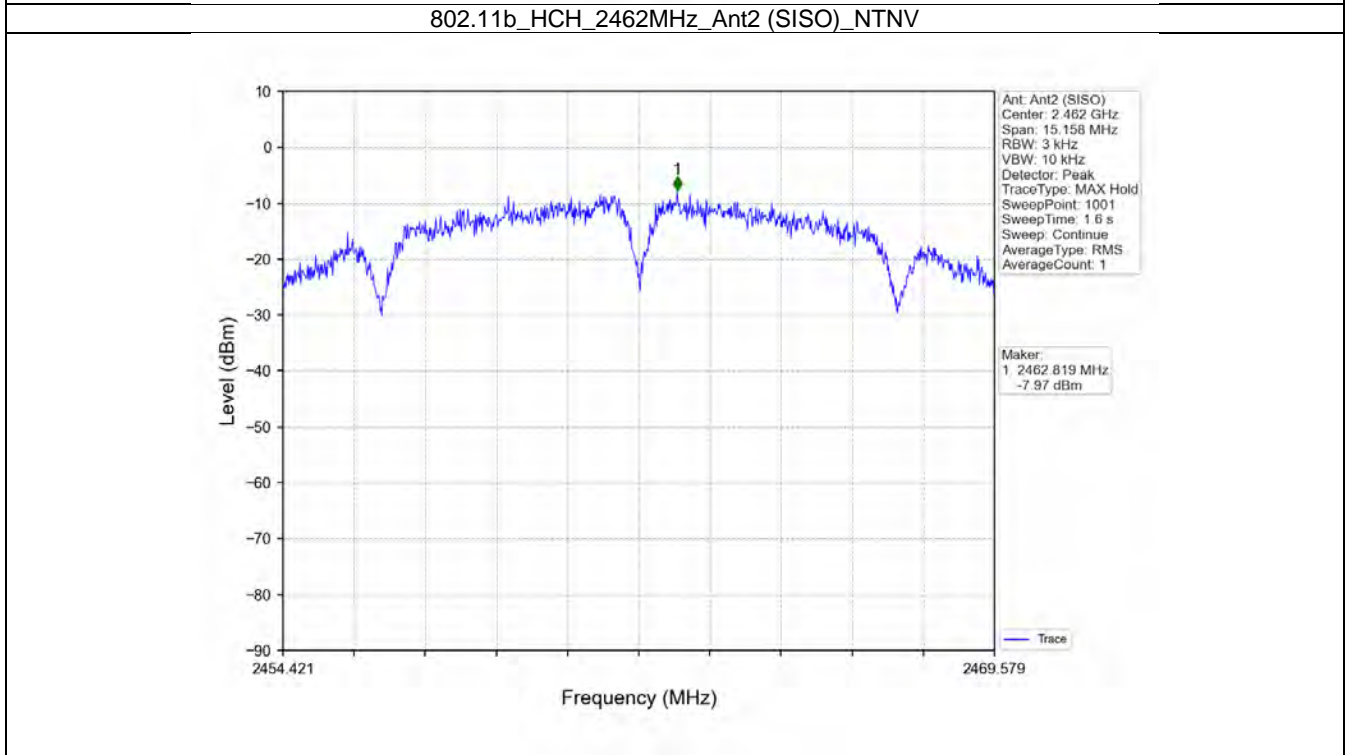
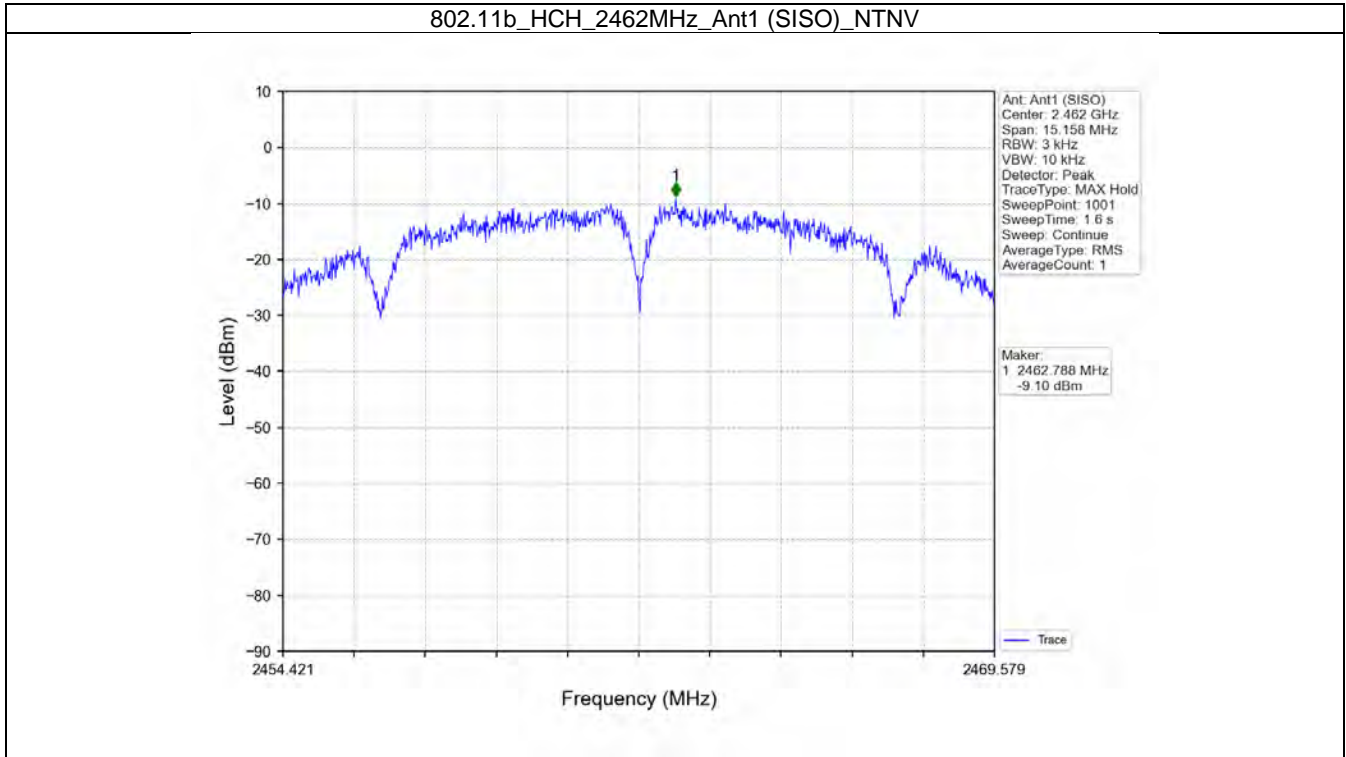
Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)				Verdict
			Ant1	Ant2	Sum	Limit	
802.11b	SISO	2412	-7.99	-8.54	/	<=8	Pass
		2437	-8.02	-8.52	/	<=8	Pass
		2462	-9.10	-7.97	/	<=8	Pass
802.11g	SISO	2412	-9.14	-9.56	/	<=8	Pass
		2437	-8.33	-10.31	/	<=8	Pass
		2462	-11.43	-10.06	/	<=8	Pass
802.11n (HT20)	MIMO	2412	-13.29	-12.83	-11.07	<=8	Pass
		2437	-13.35	-13.03	-11.13	<=8	Pass
		2462	-13.08	-13.38	-11.50	<=8	Pass
802.11n (HT40)	MIMO	2422	-13.14	-14.60	-12.22	<=8	Pass
		2437	-14.75	-15.09	-12.94	<=8	Pass
		2452	-14.73	-15.05	-13.12	<=8	Pass

Note1: Antenna Gain: Ant1: 2.61dBi; Ant2: 2.61dBi;
Note2: Directional Gain: 5.62dBi

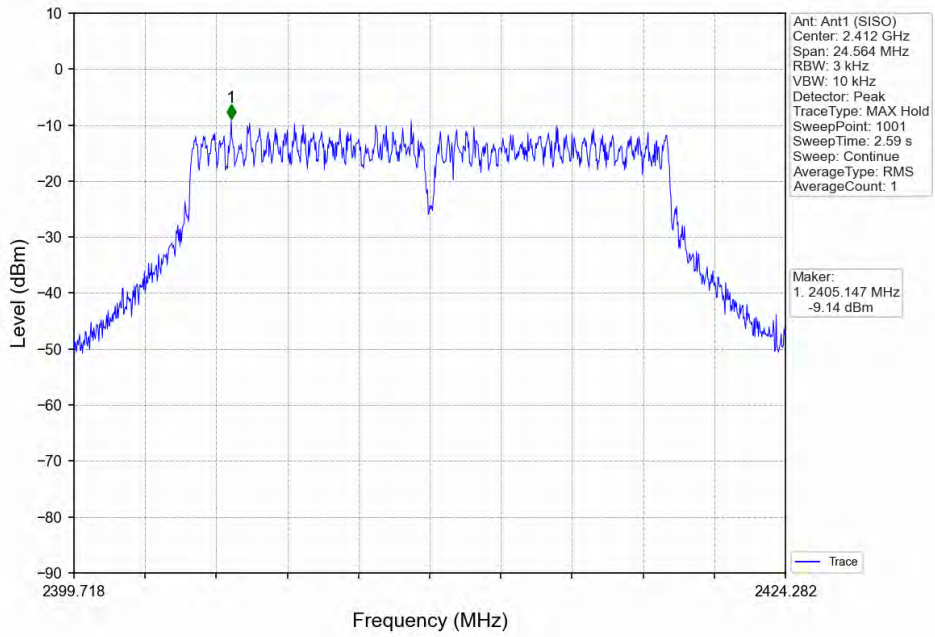
4.1.2 Test Graph



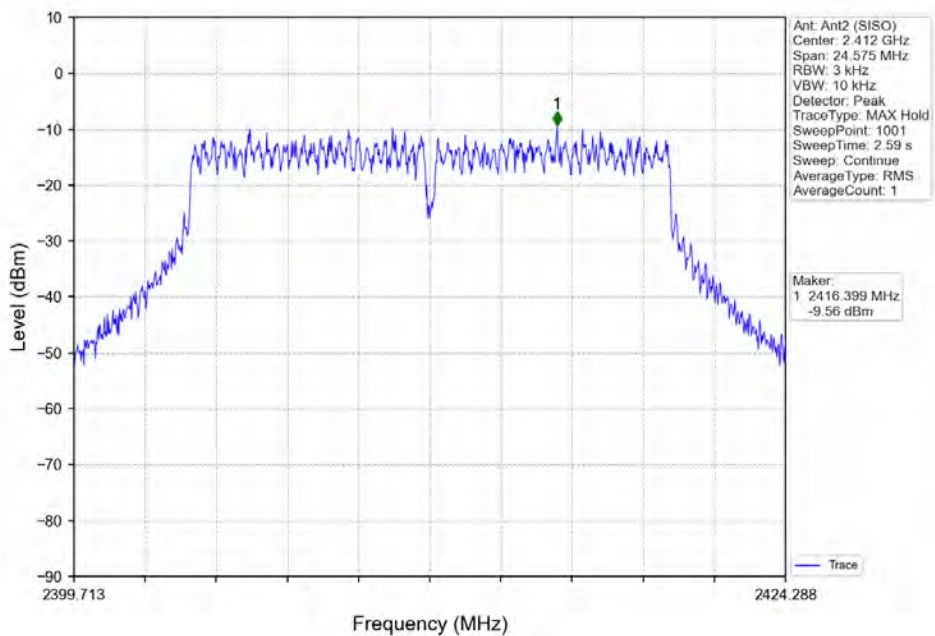




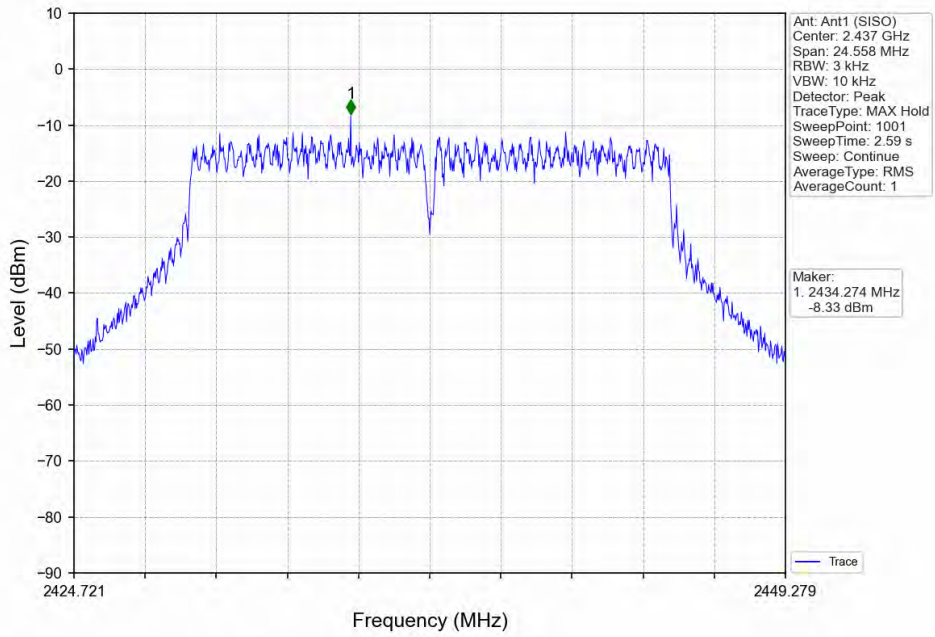
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



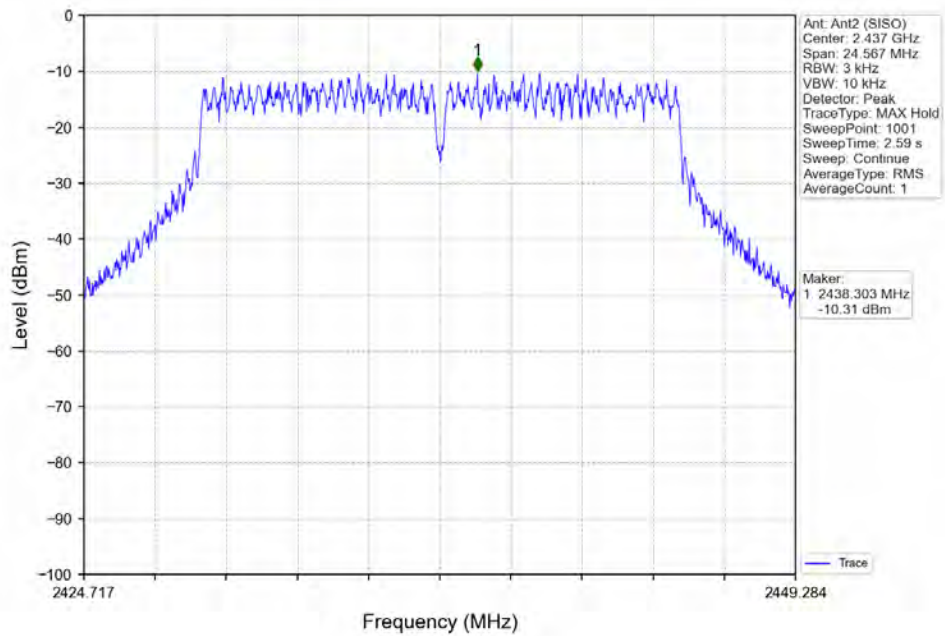
802.11g_LCH_2412MHz_Ant2 (SISO)_NTNV



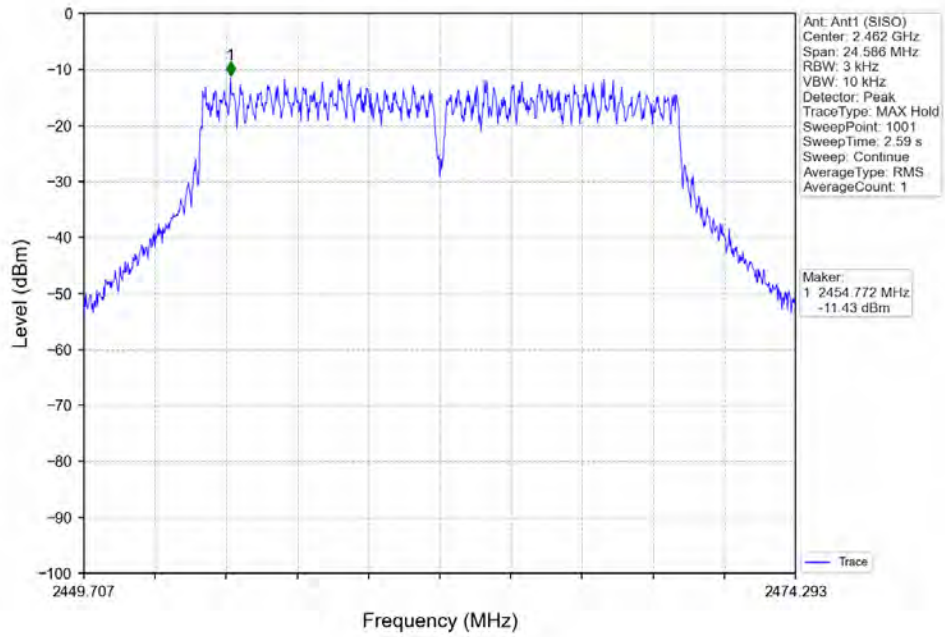
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



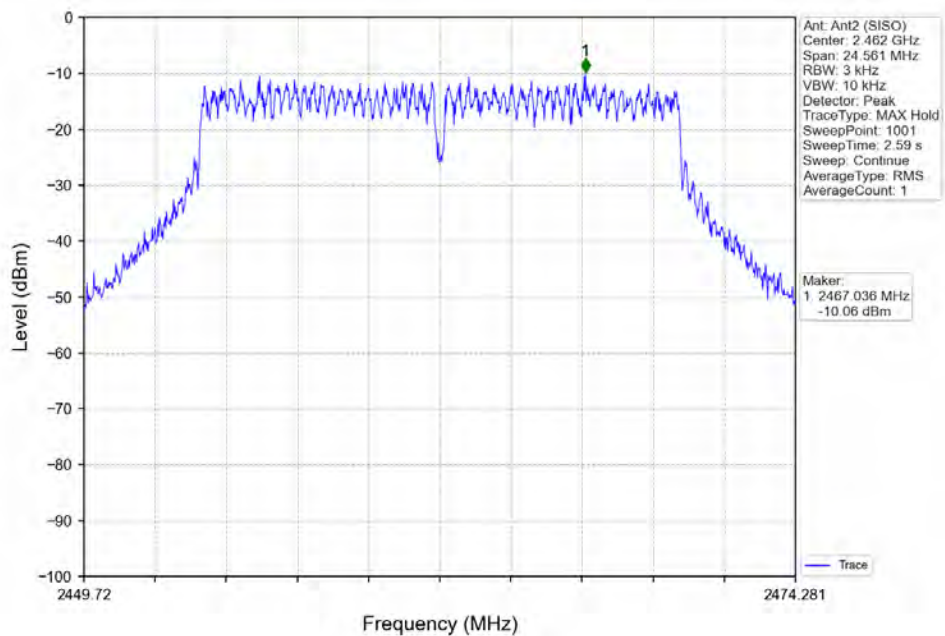
802.11g_MCH_2437MHz_Ant2 (SISO)_NTNV



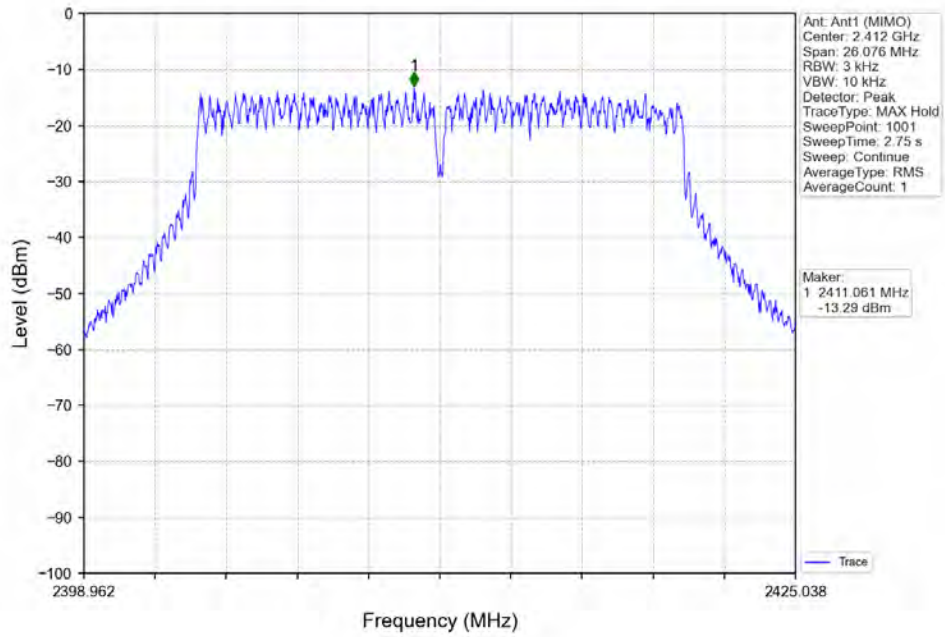
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



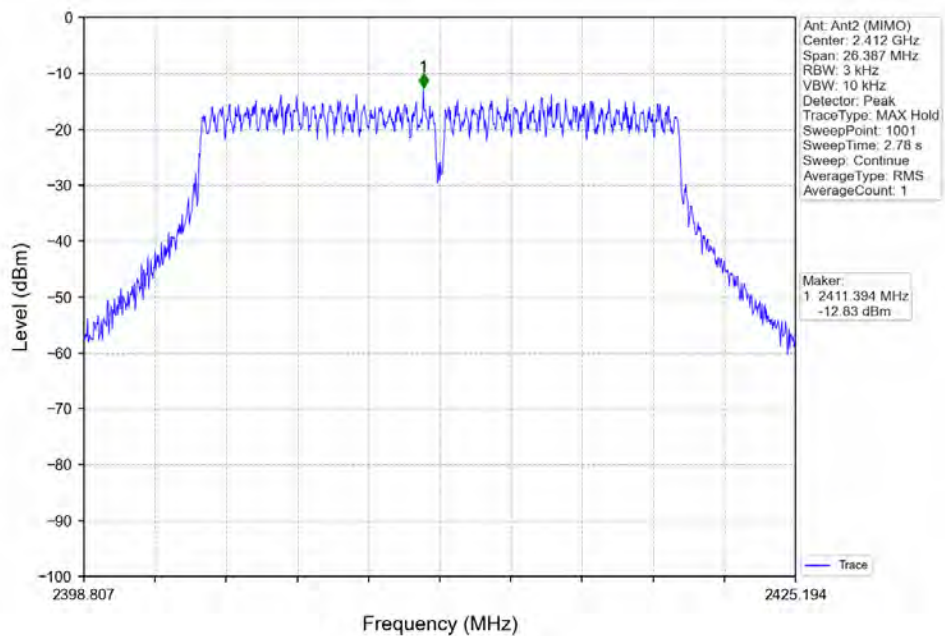
802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



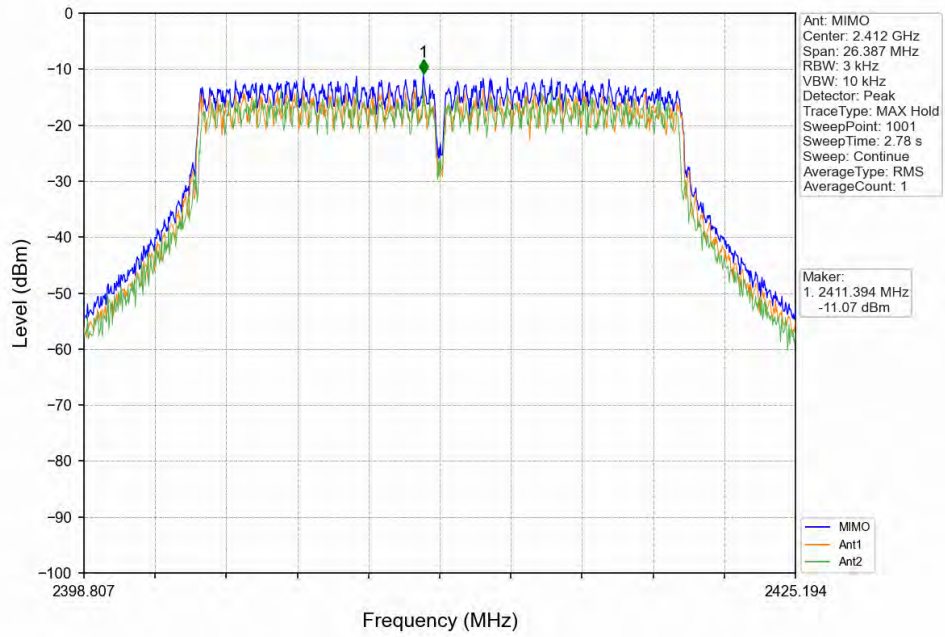
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



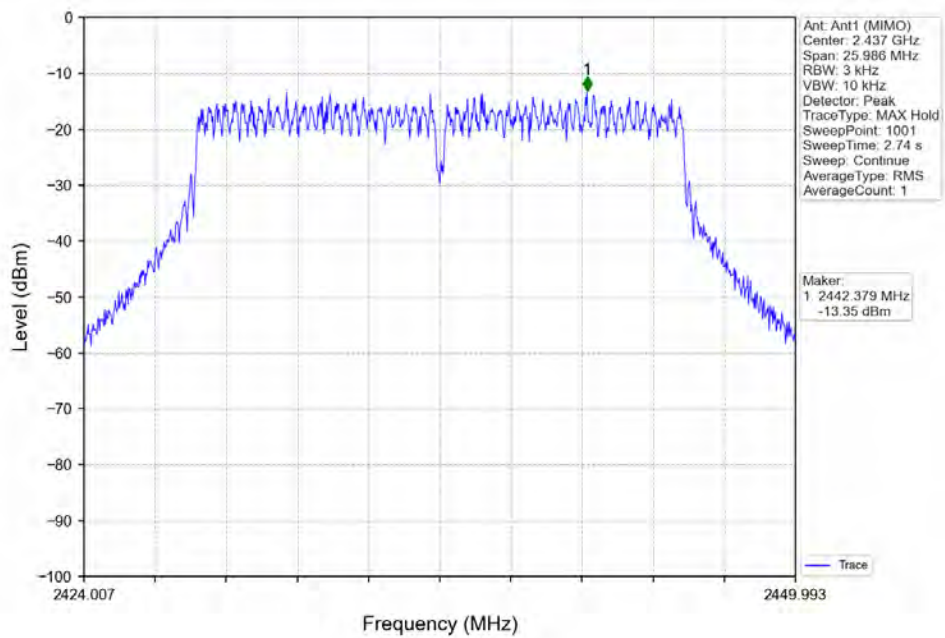
802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV



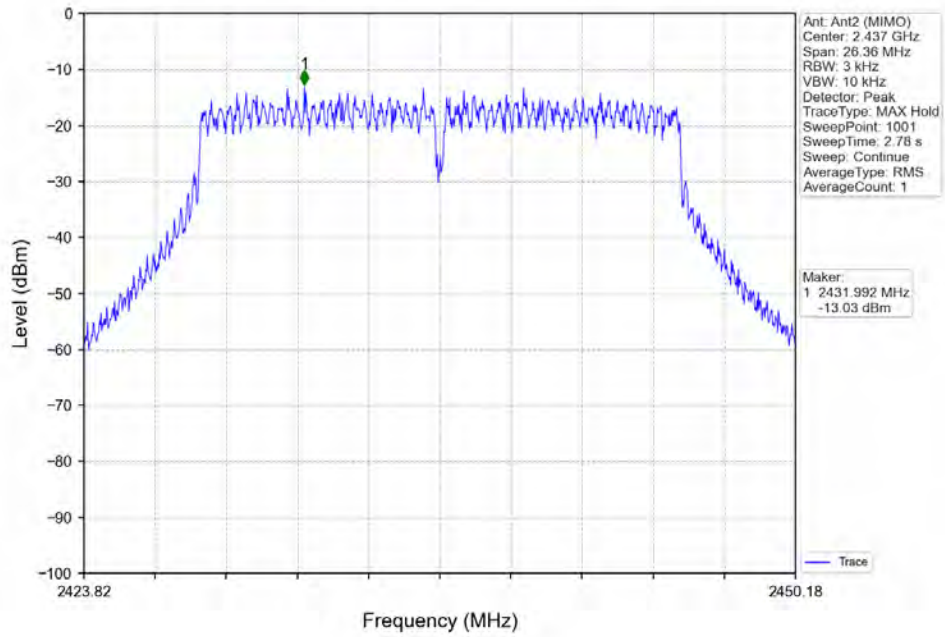
802.11n(HT20)_LCH_2412MHz_MIMO_NTNV



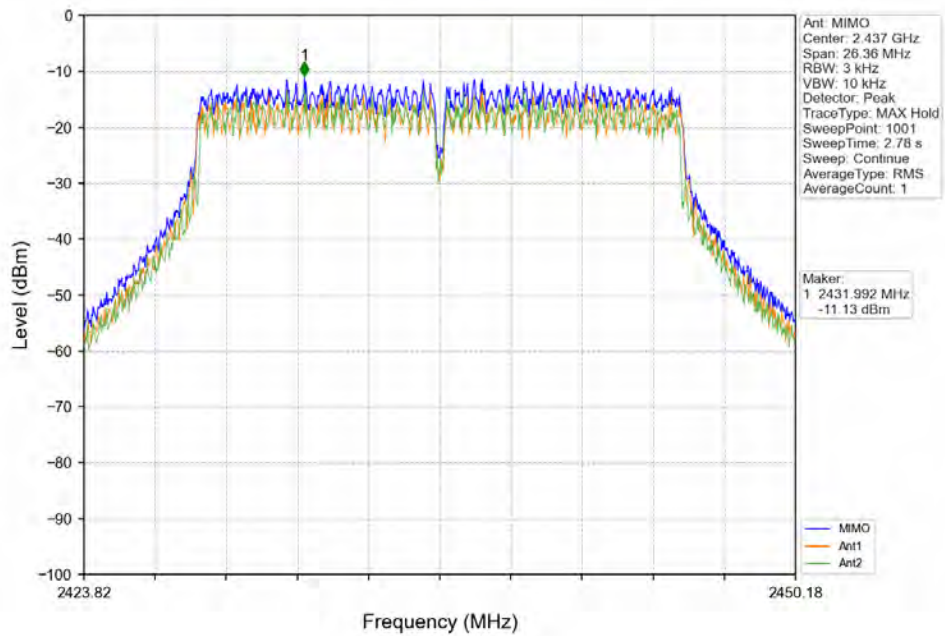
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



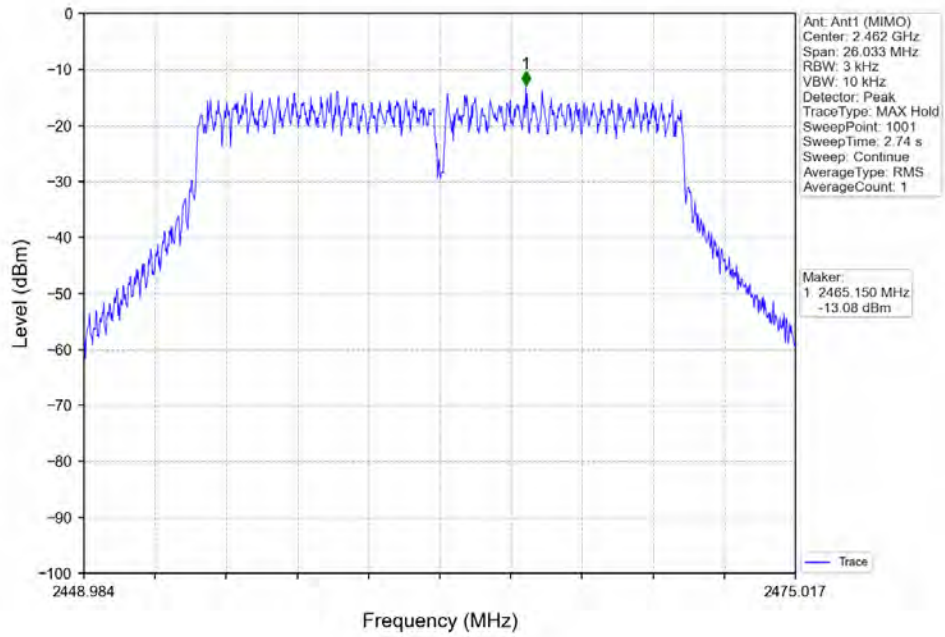
802.11n(HT20)_MCH_2437MHz_Ant2 (MIMO)_NTNV



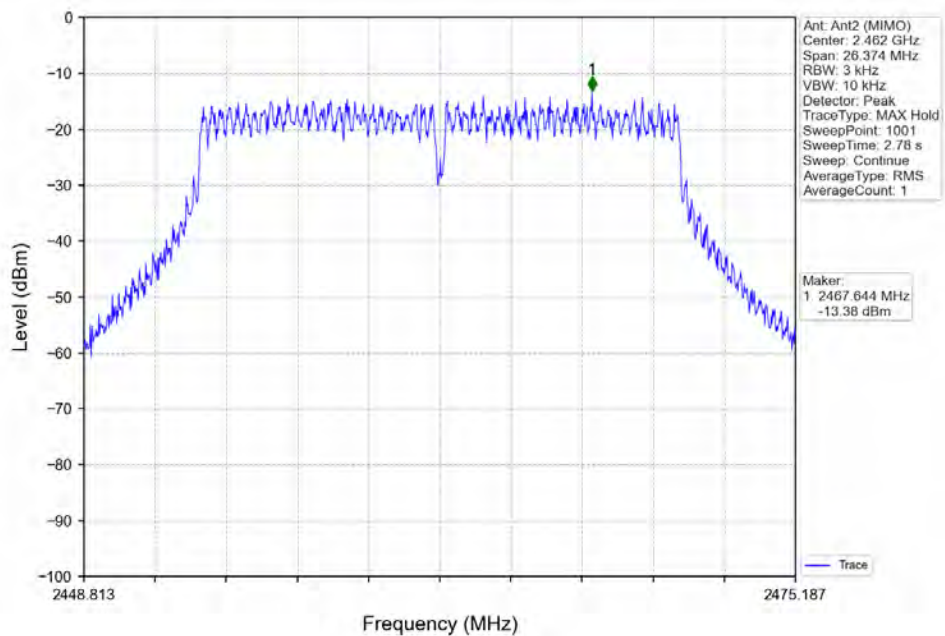
802.11n(HT20)_MCH_2437MHz_MIMO_NTNV



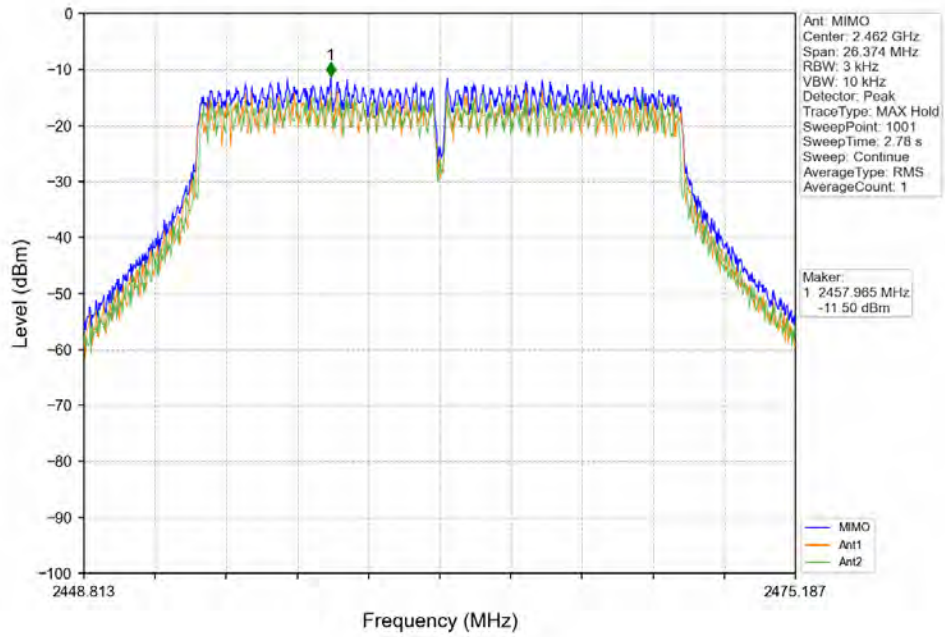
802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



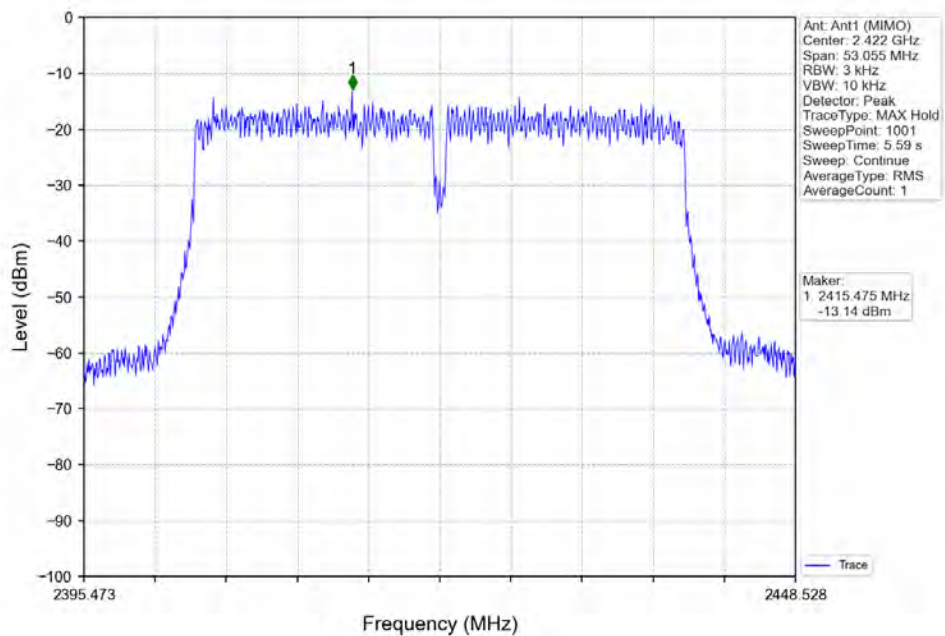
802.11n(HT20)_HCH_2462MHz_Ant2 (MIMO)_NTNV



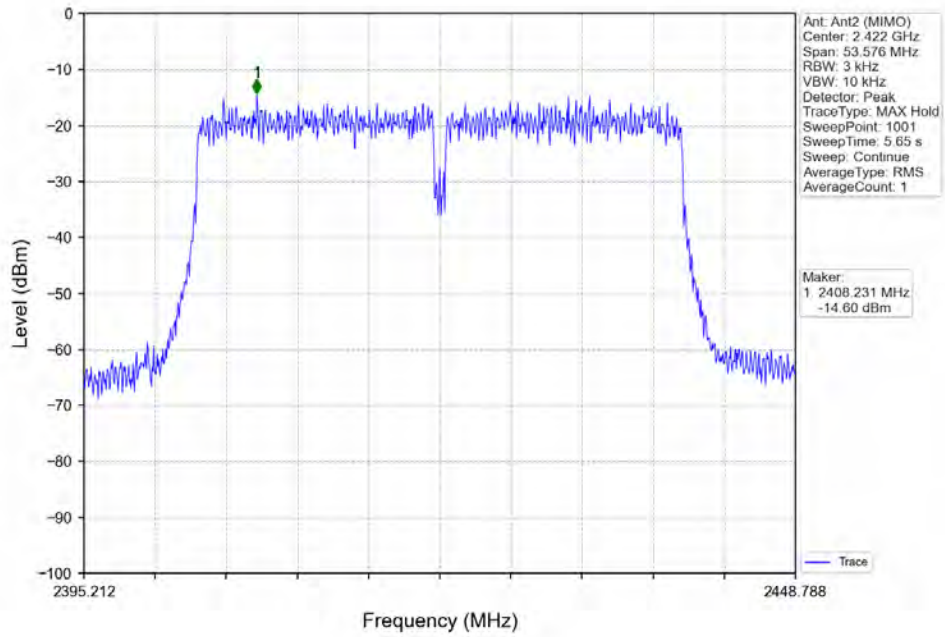
802.11n(HT20)_HCH_2462MHz_MIMO_NTNV



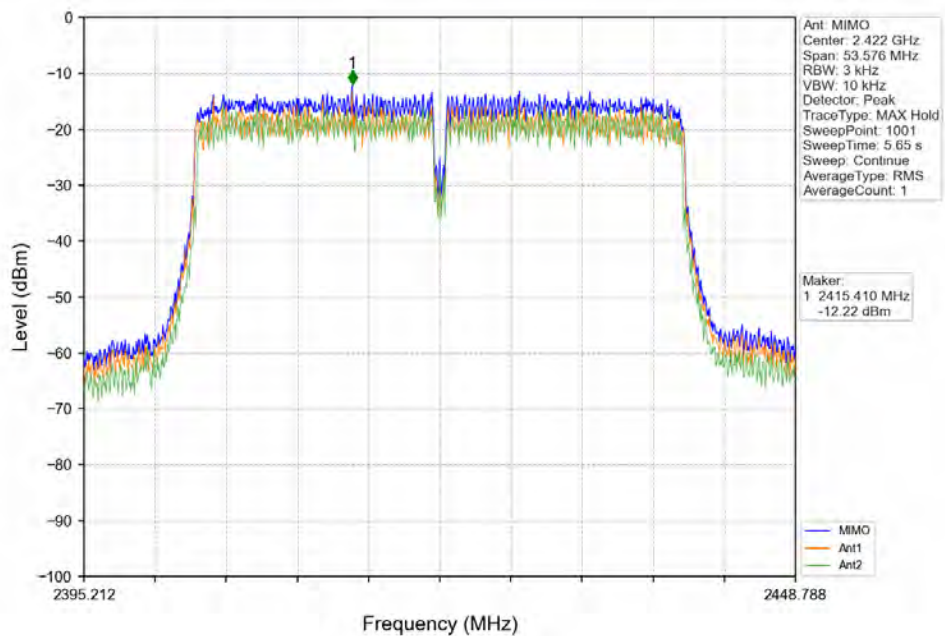
802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



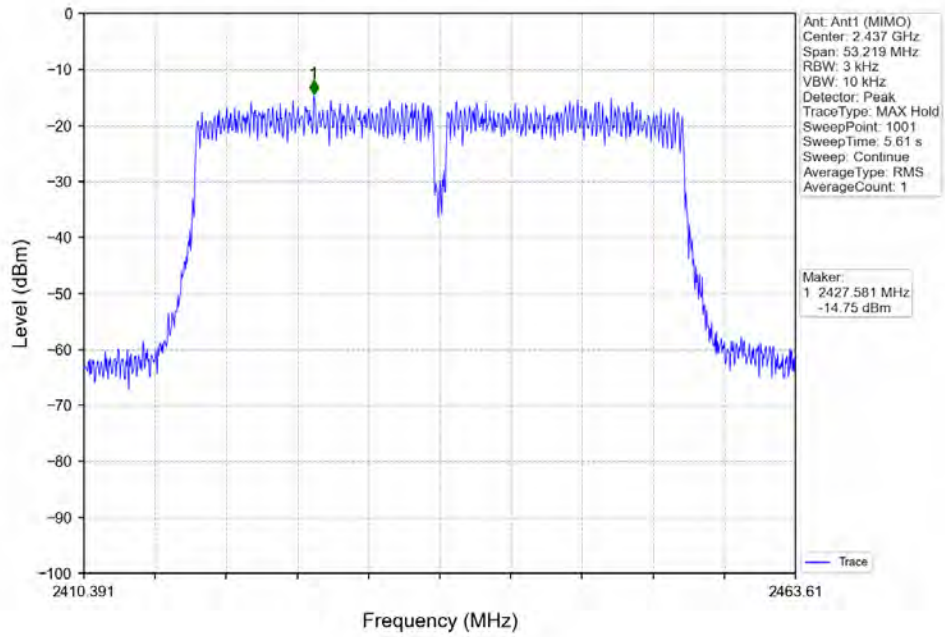
802.11n(HT40)_LCH_2422MHz_Ant2 (MIMO)_NTNV



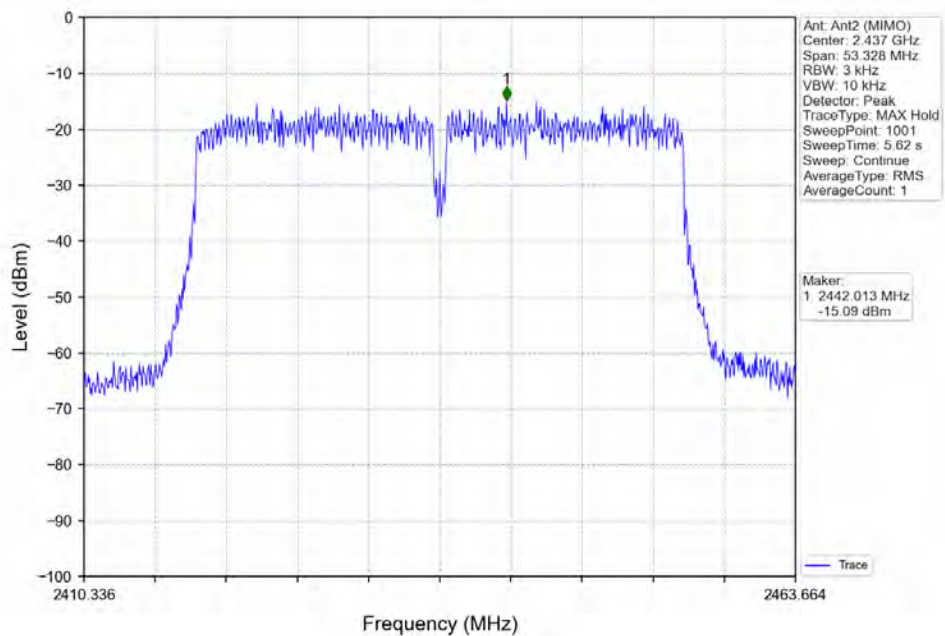
802.11n(HT40)_LCH_2422MHz_MIMO_NTNV



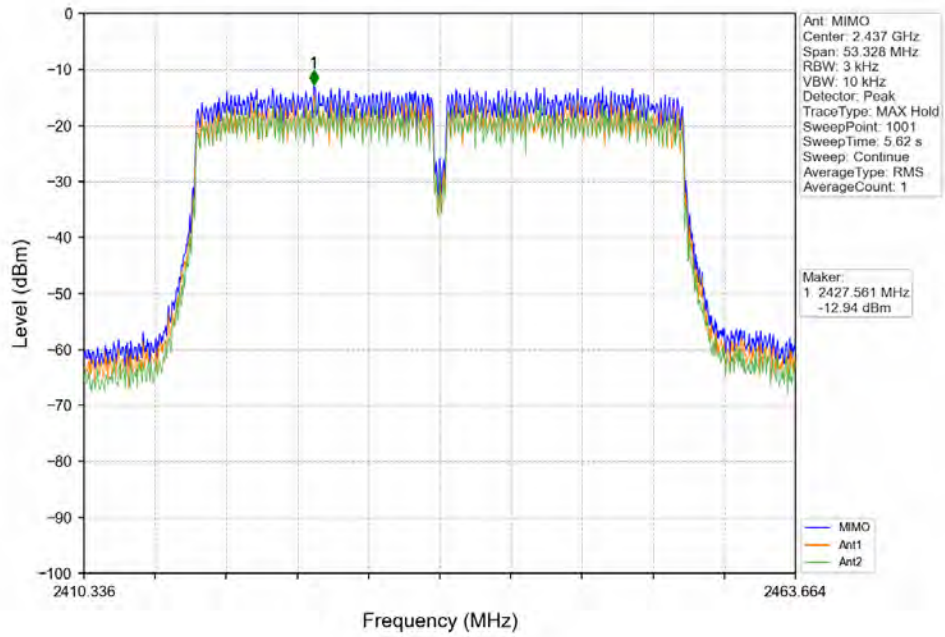
802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



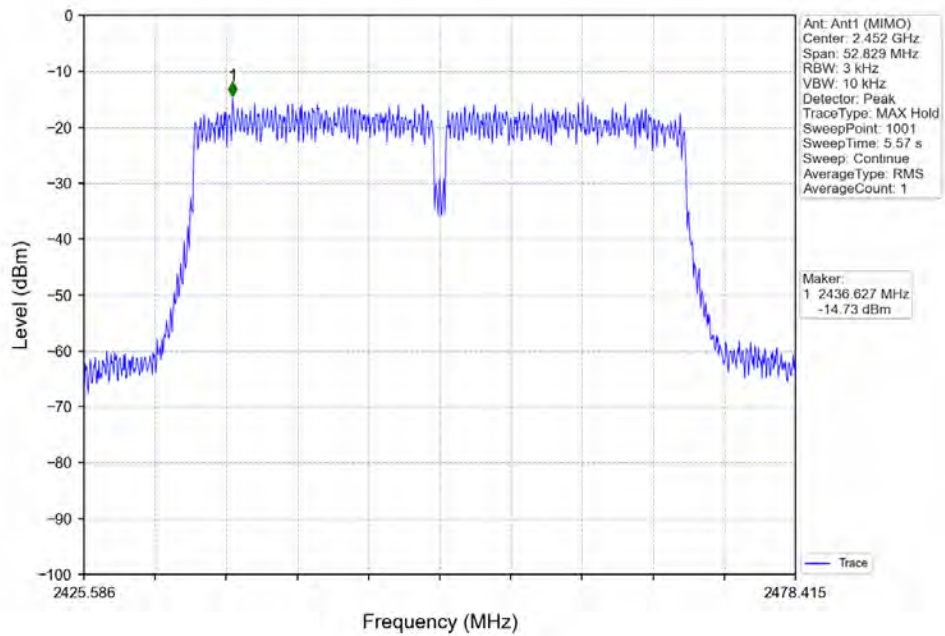
802.11n(HT40)_MCH_2437MHz_Ant2 (MIMO)_NTNV



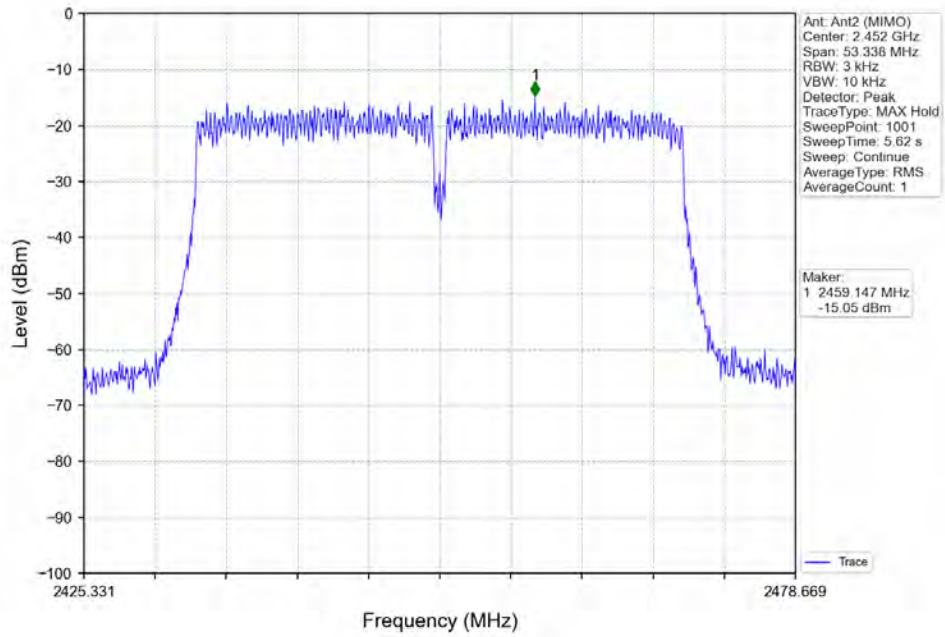
802.11n(HT40)_MCH_2437MHz_MIMO_NTNV



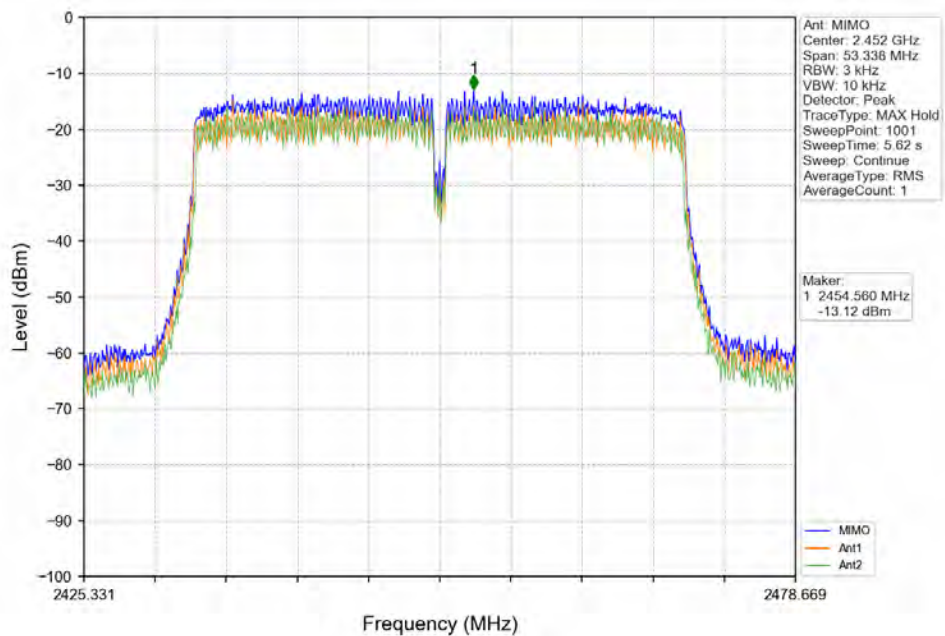
802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant2 (MIMO)_NTNV



802.11n(HT40)_HCH_2452MHz_MIMO_NTNV



5. Unwanted Emissions In Non-restricted Frequency Bands

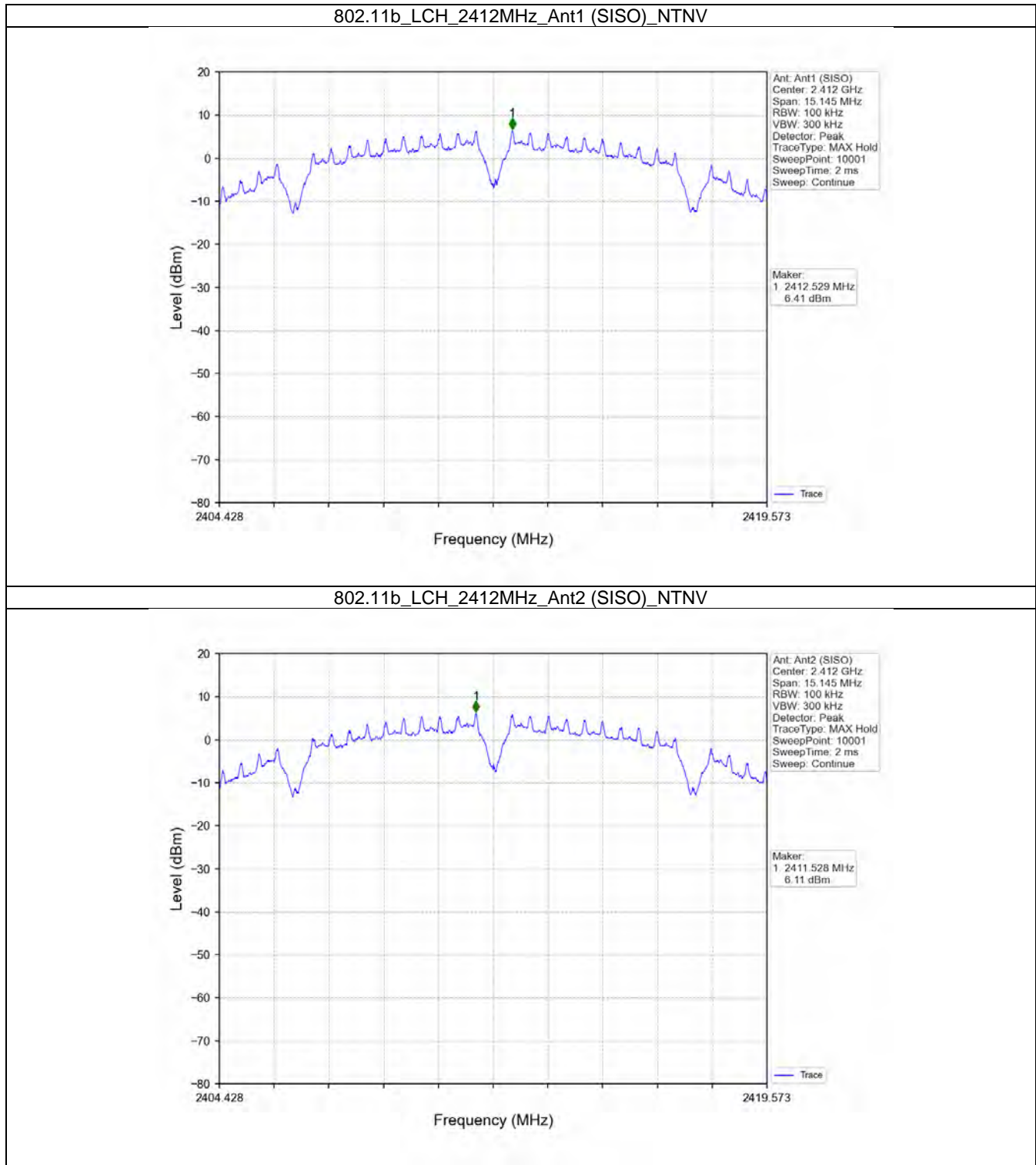
5.1 Ref

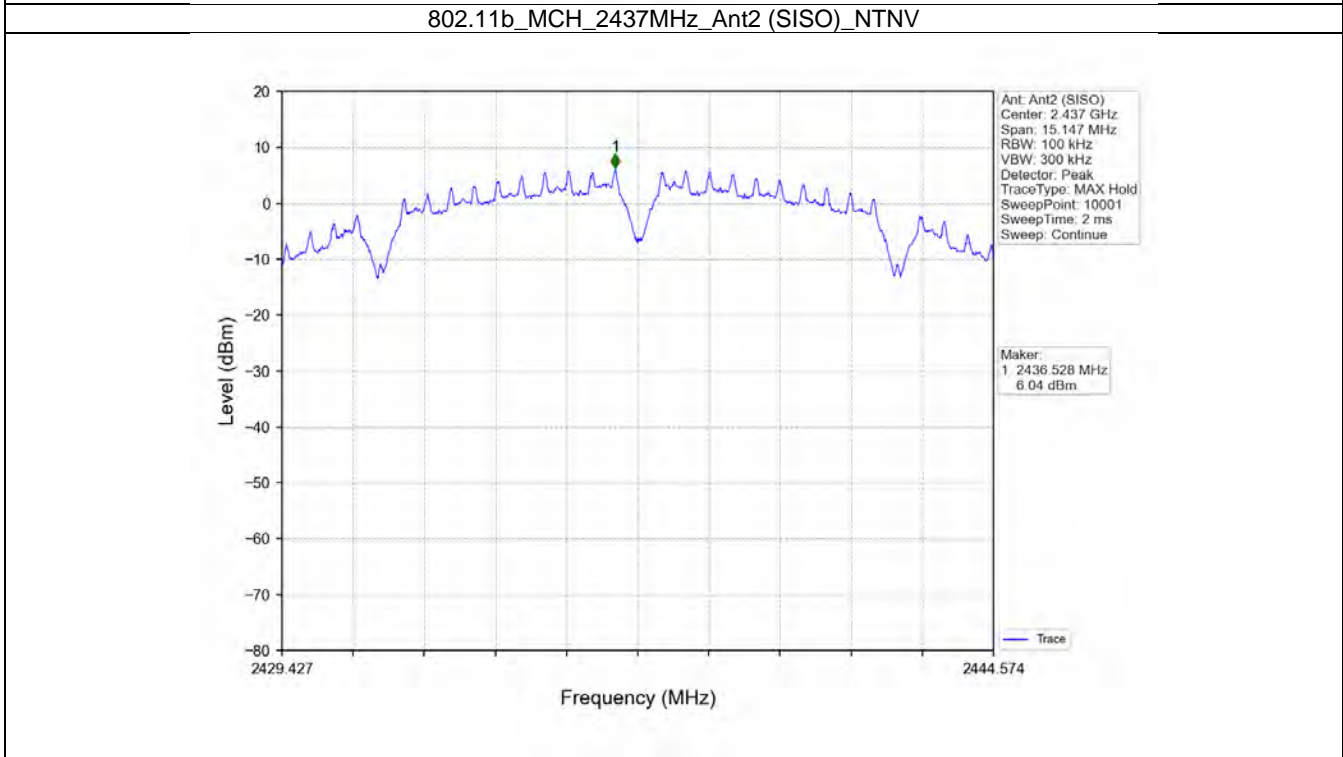
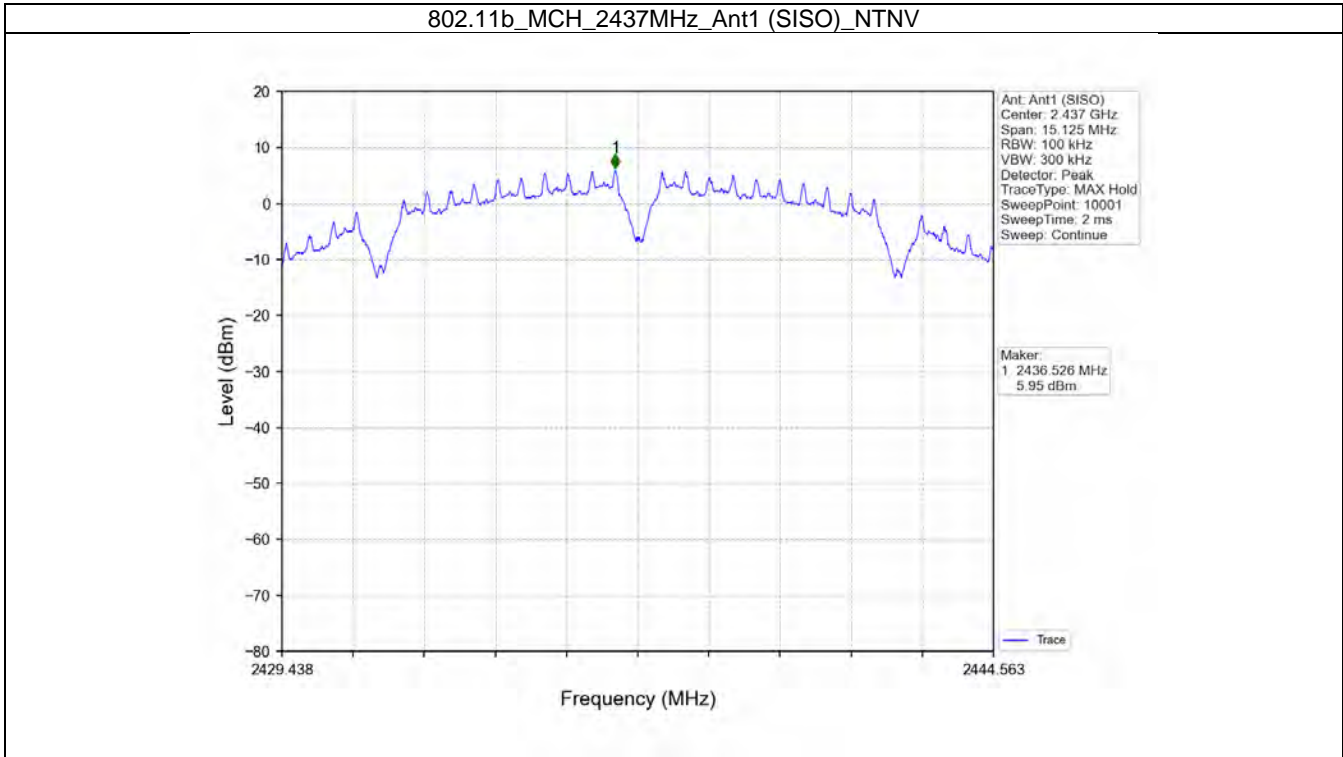
5.1.1 Test Result

Mode	TX Type	Frequency (MHz)	Ant	Level of Reference (dBm)
802.11b	SISO	2412	1	6.41
			2	6.11
		2437	1	5.95
			2	6.04
		2462	1	5.39
			2	6.28
802.11g	SISO	2412	1	4.25
			2	4.25
		2437	1	3.23
			2	4.15
		2462	1	2.74
			2	3.81
802.11n (HT20)	MIMO	2412	1	1.56
			2	1.08
		2437	1	1.44
			2	1.02
		2462	1	1.08
			2	0.79
802.11n (HT40)	MIMO	2422	1	0.44
			2	-0.15
		2437	1	0.08
			2	-0.17
		2452	1	-0.42
			2	-0.81

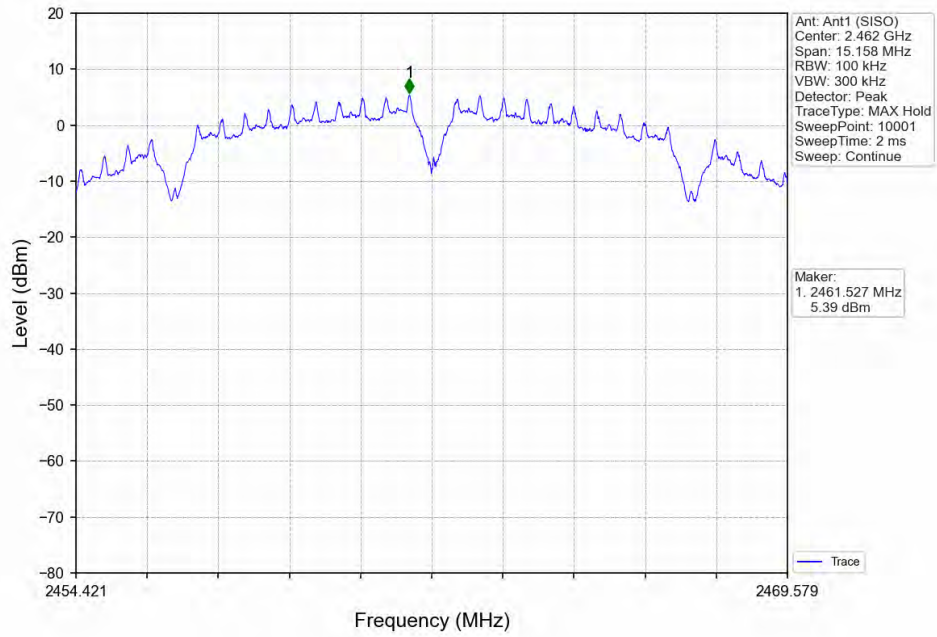
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

5.1.2 Test Graph

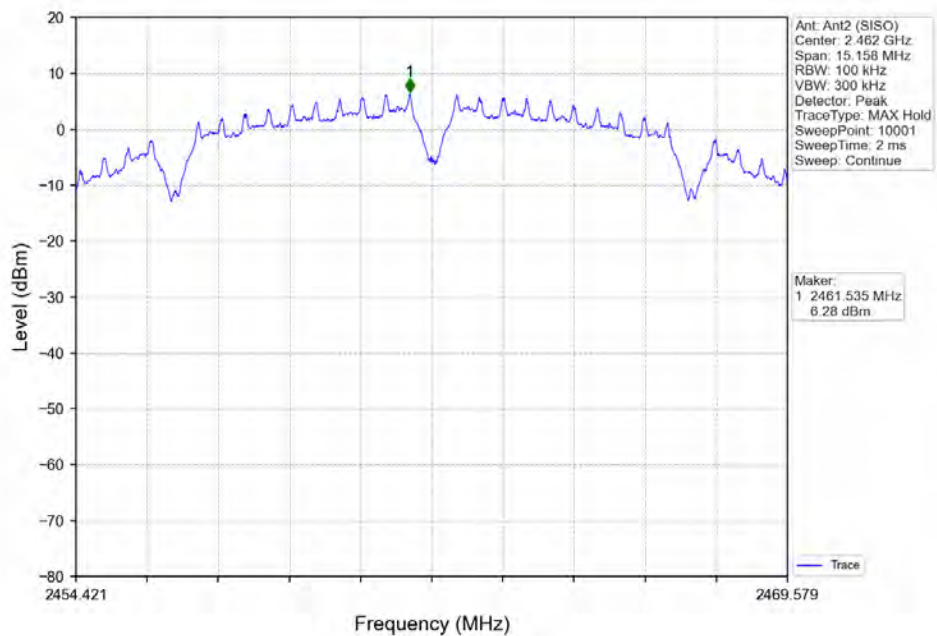




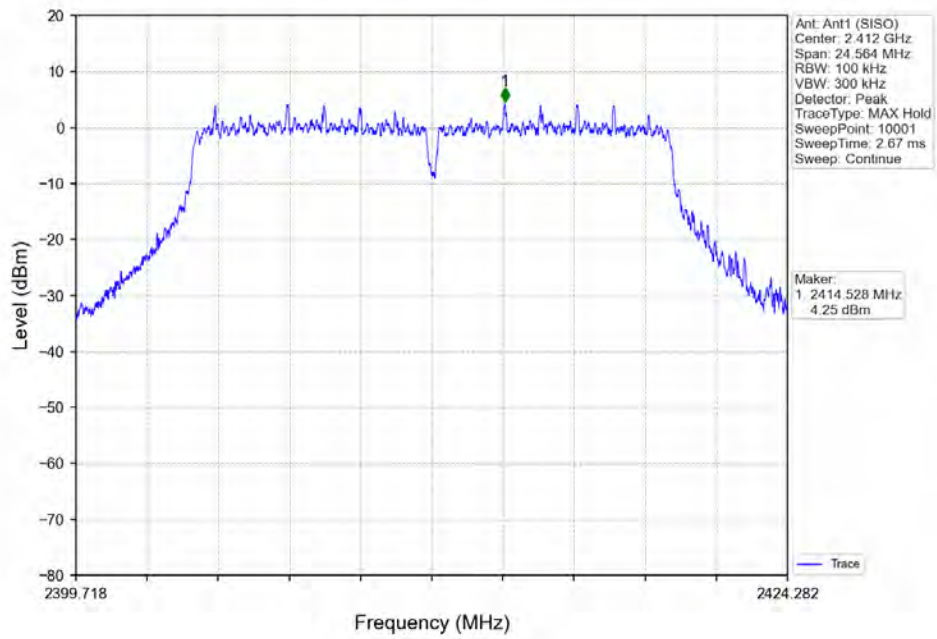
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



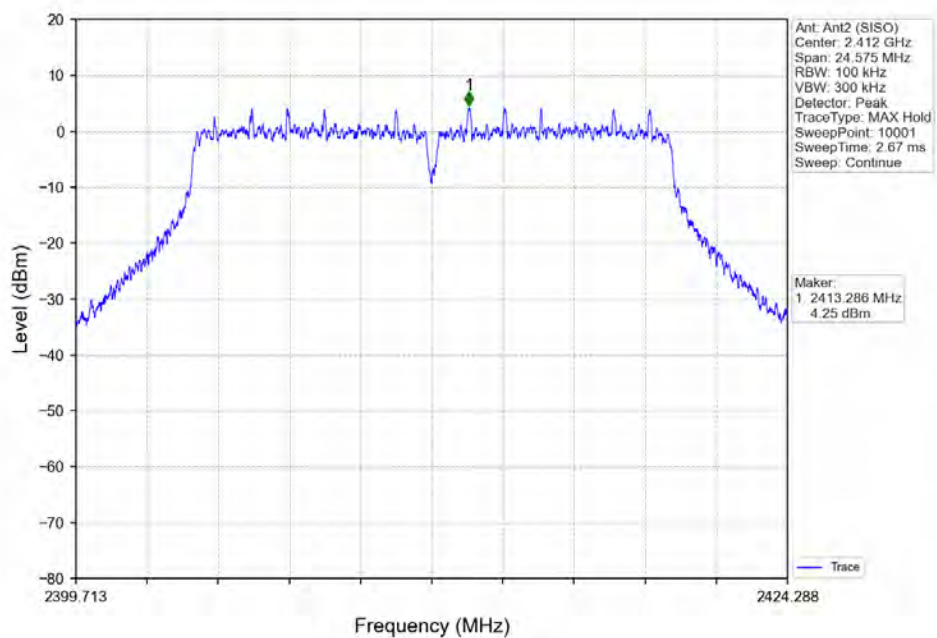
802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV



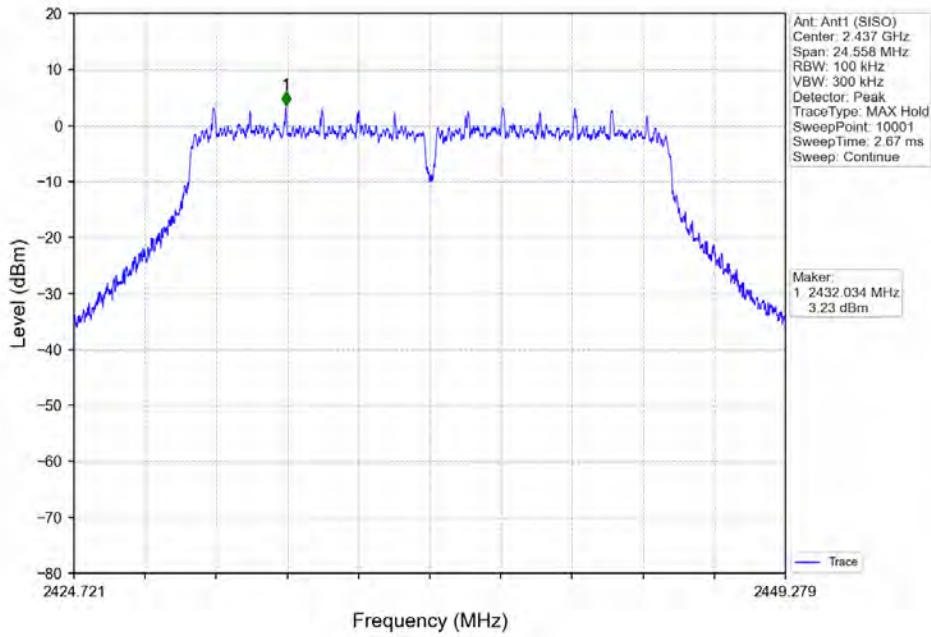
802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



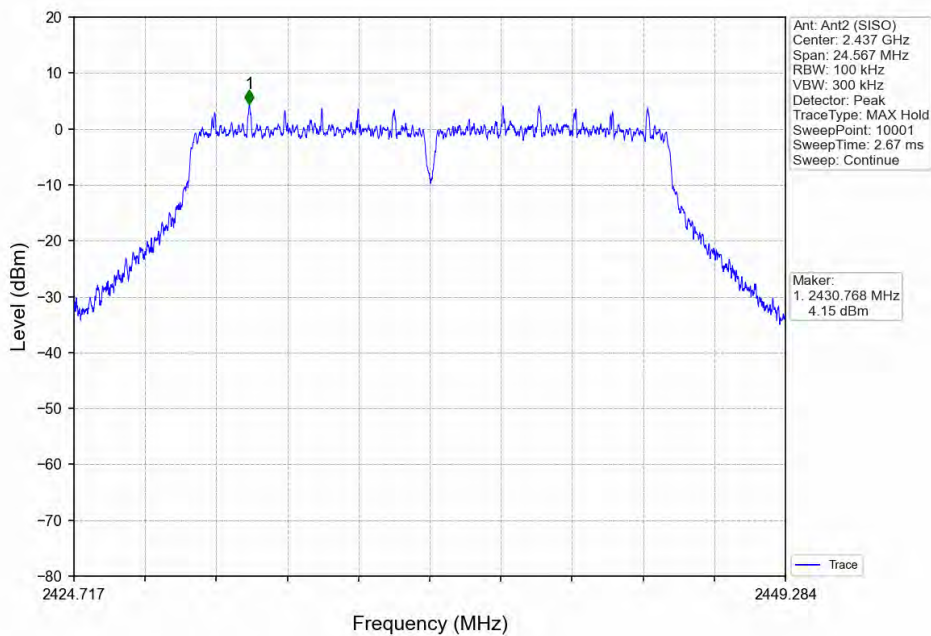
802.11g_LCH_2412MHz_Ant2 (SISO)_NTNV



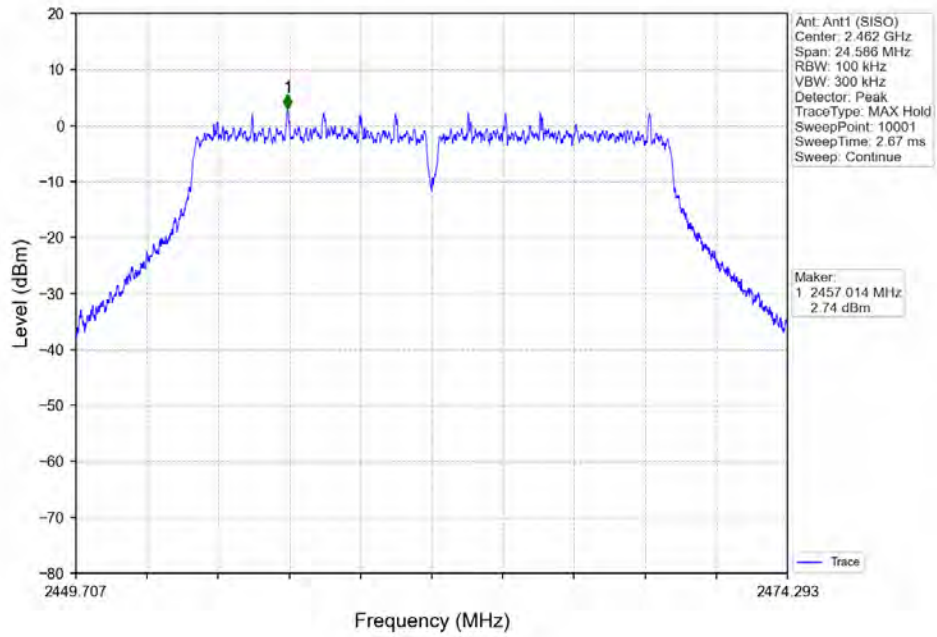
802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV



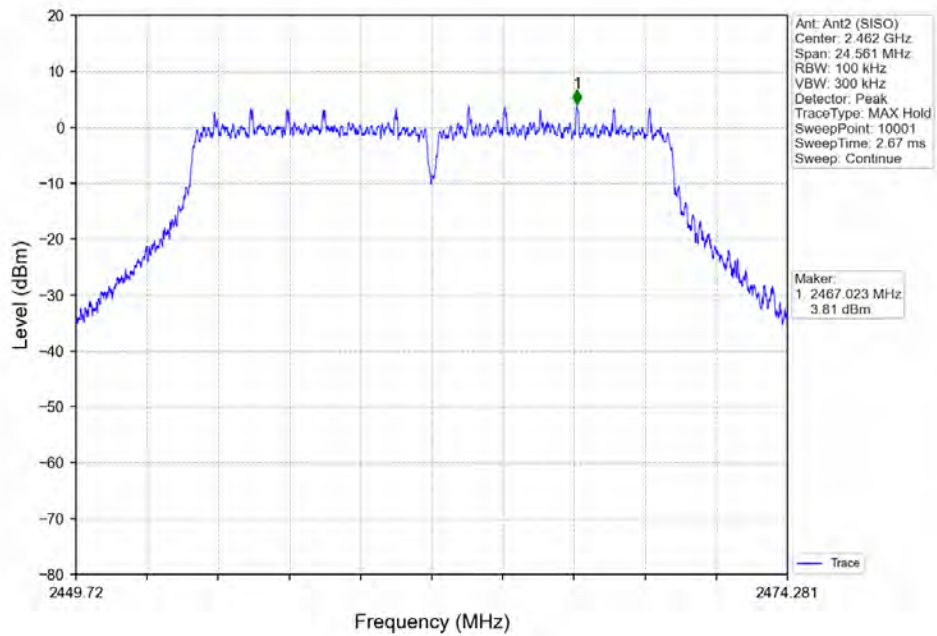
802.11g_MCH_2437MHz_Ant2 (SISO)_NTNV



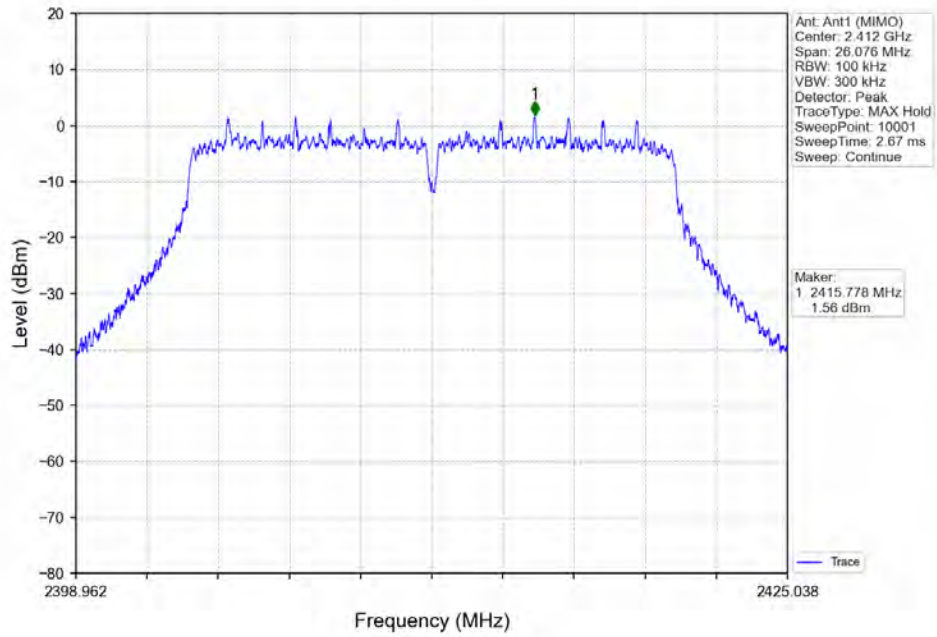
802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



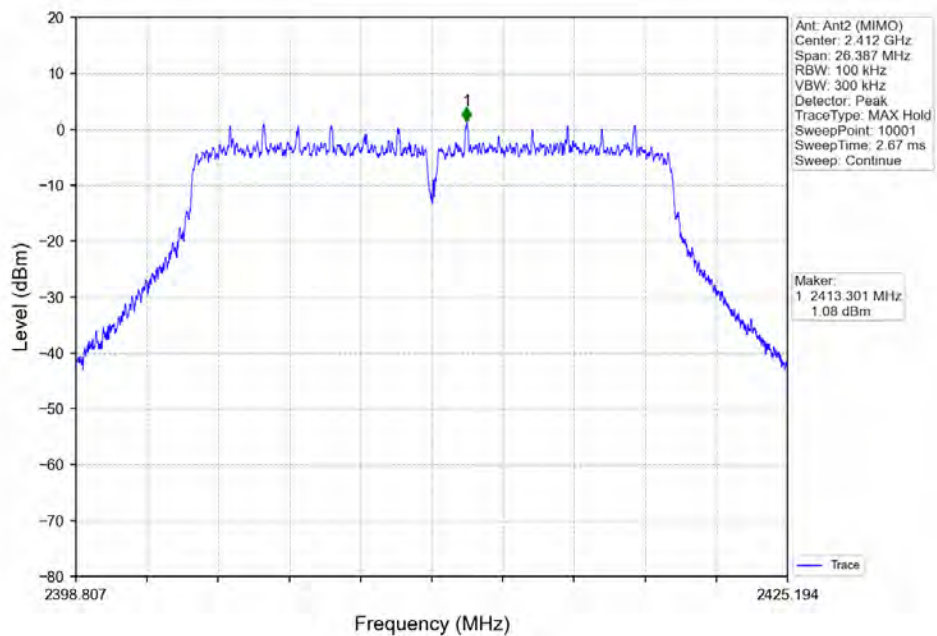
802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



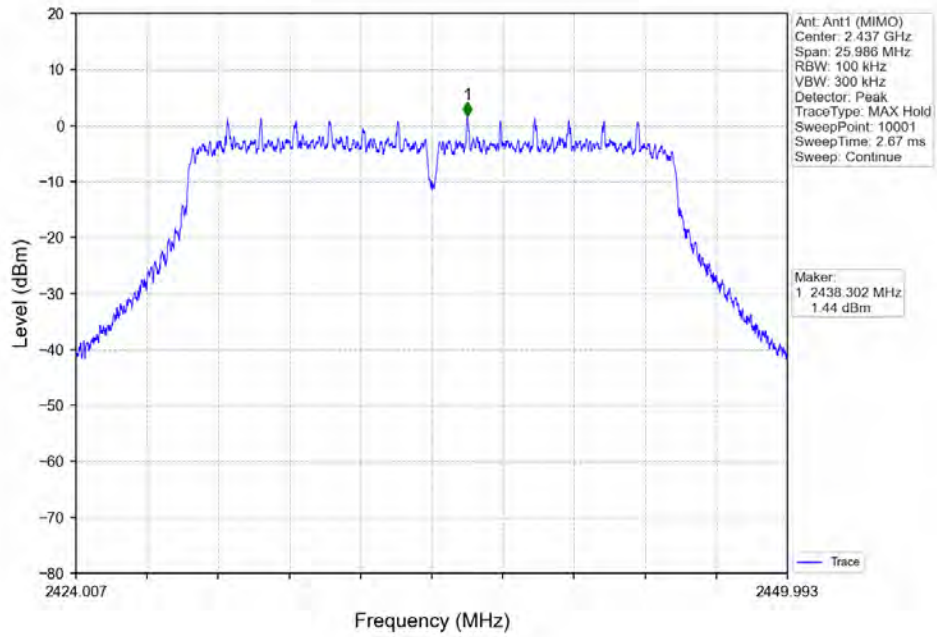
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



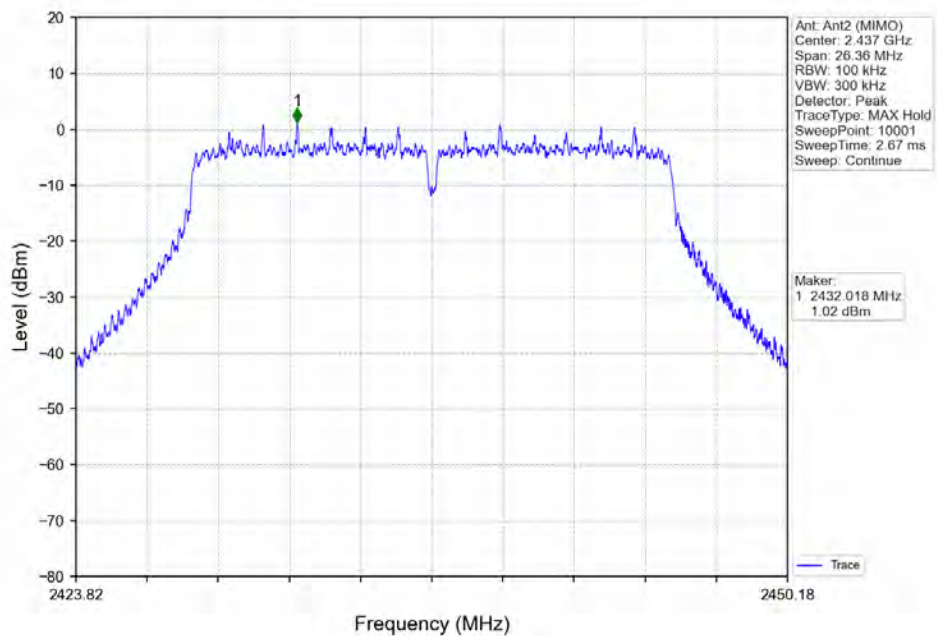
802.11n(HT20)_LCH_2412MHz_Ant2 (MIMO)_NTNV



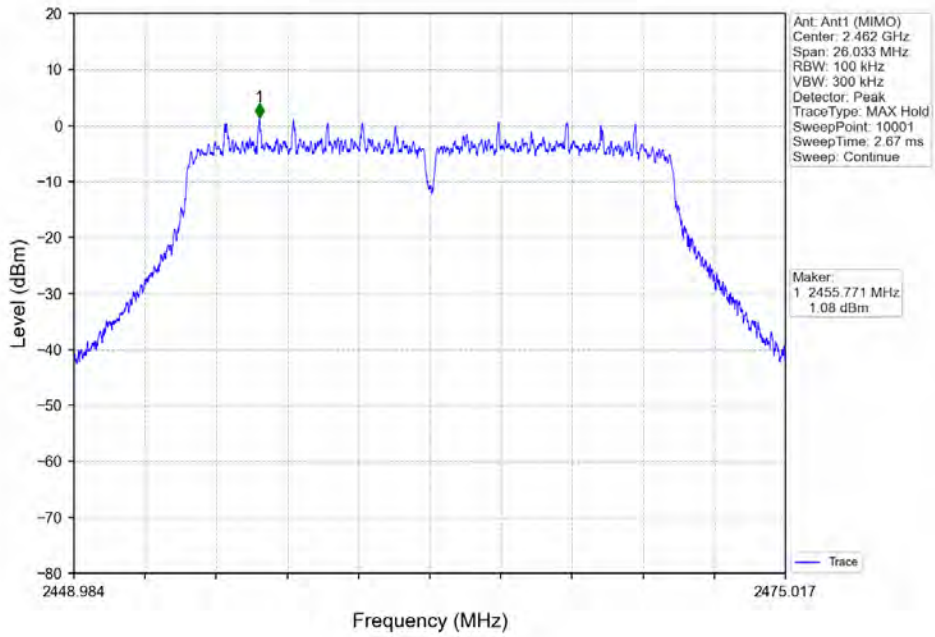
802.11n(HT20)_MCH_2437MHz_Ant1 (MIMO)_NTNV



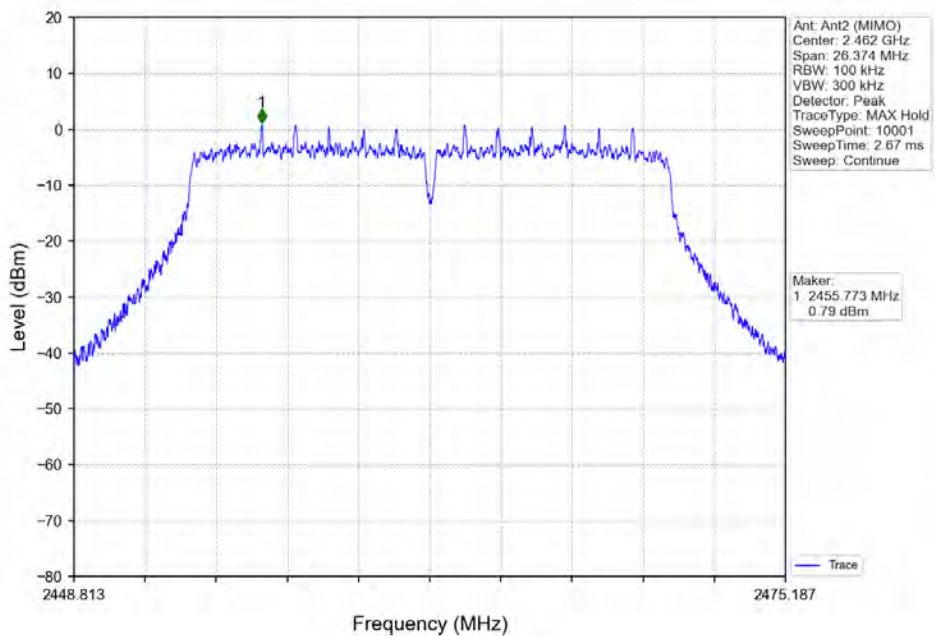
802.11n(HT20)_MCH_2437MHz_Ant2 (MIMO)_NTNV



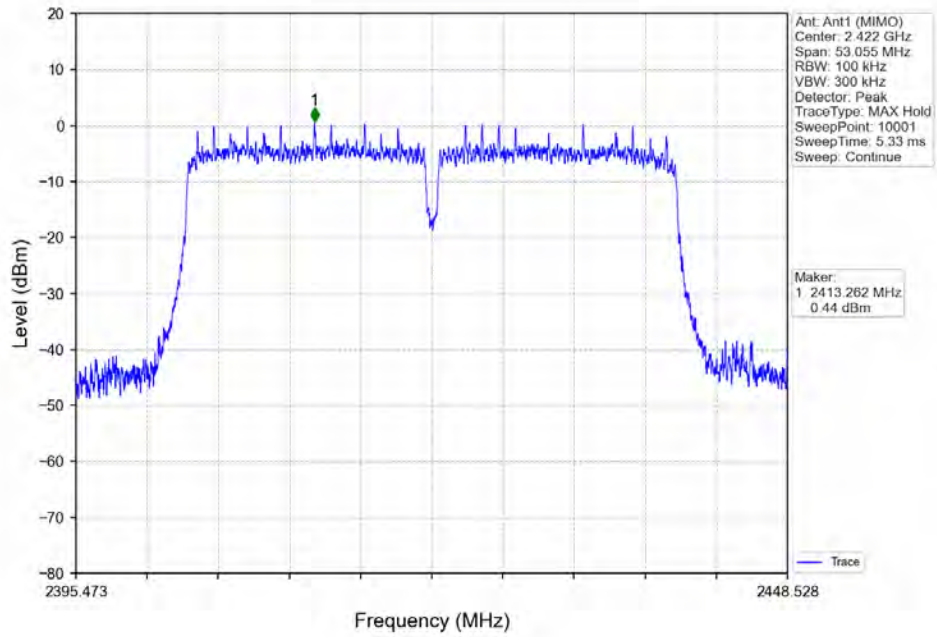
802.11n(HT20)_HCH_2462MHz_Ant1 (MIMO)_NTNV



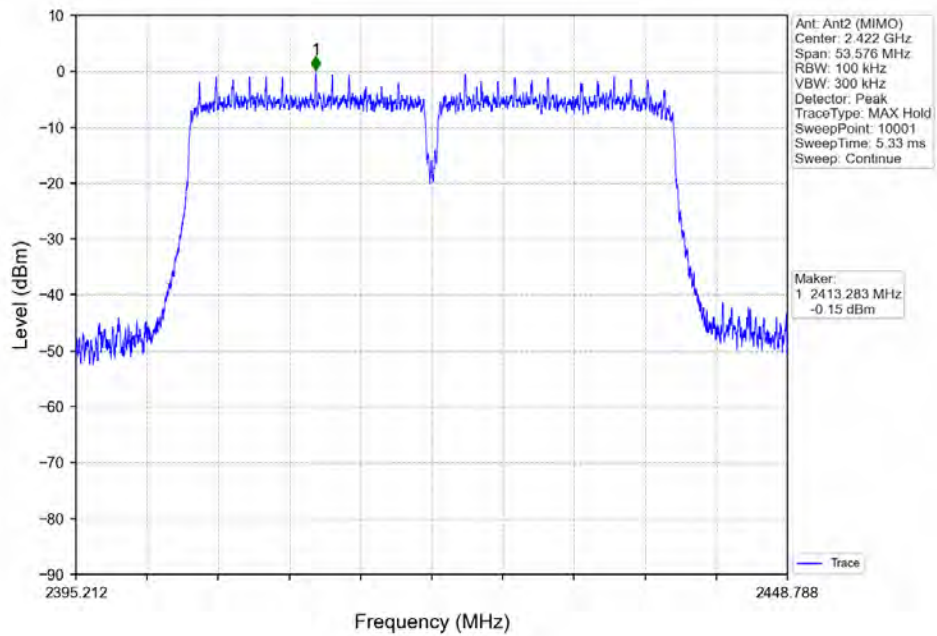
802.11n(HT20)_HCH_2462MHz_Ant2 (MIMO)_NTNV



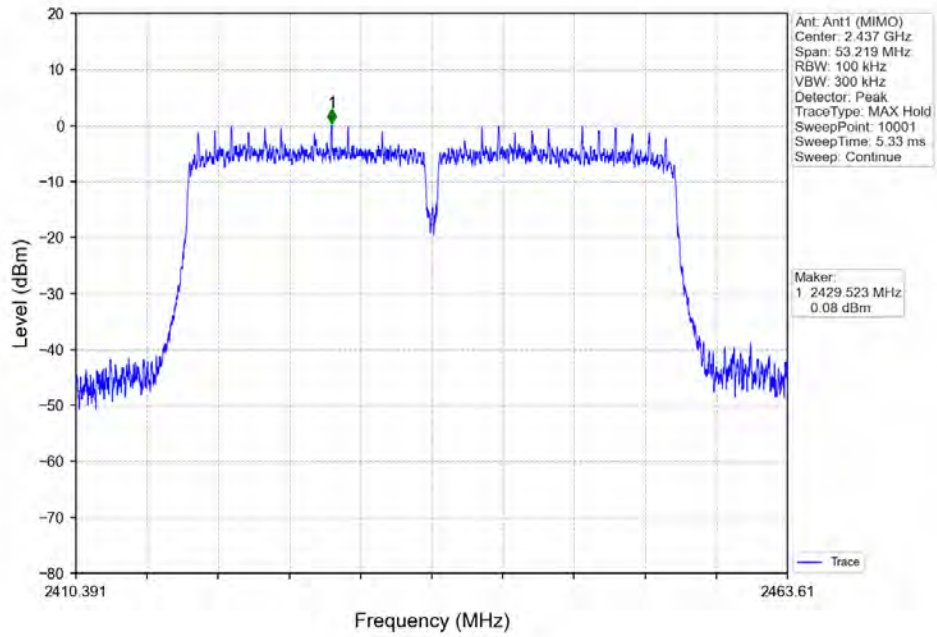
802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



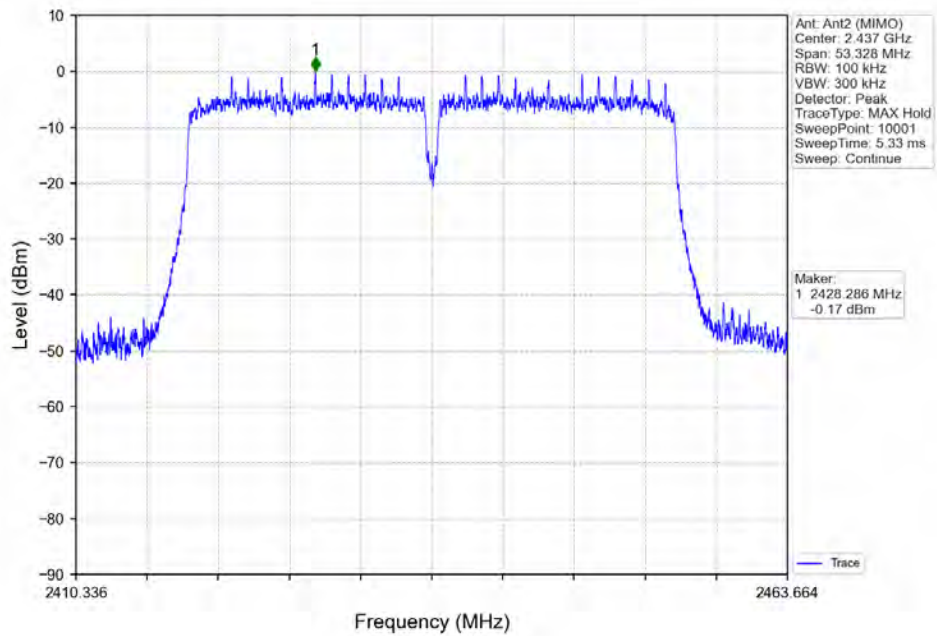
802.11n(HT40)_LCH_2422MHz_Ant2 (MIMO)_NTNV



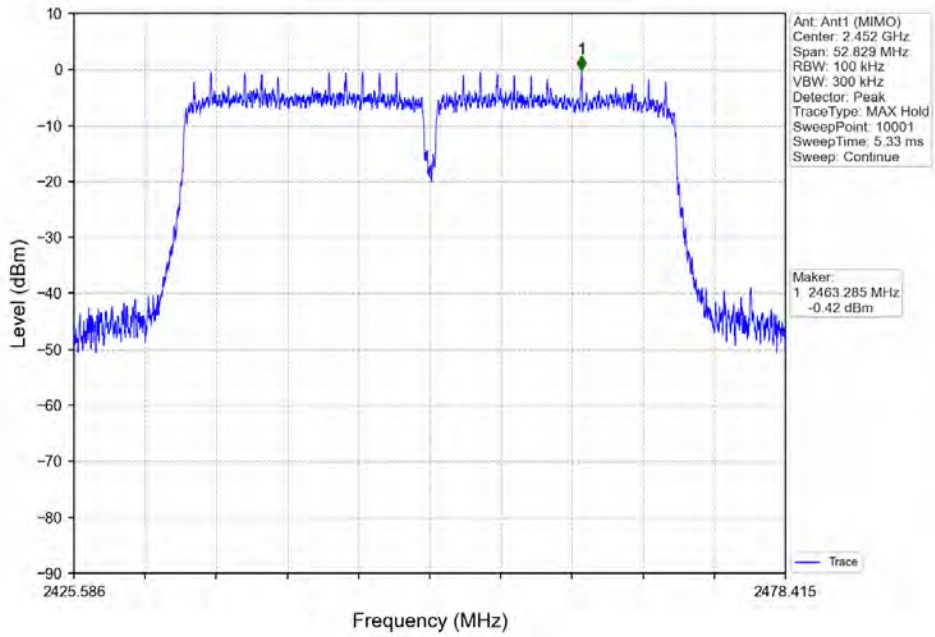
802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



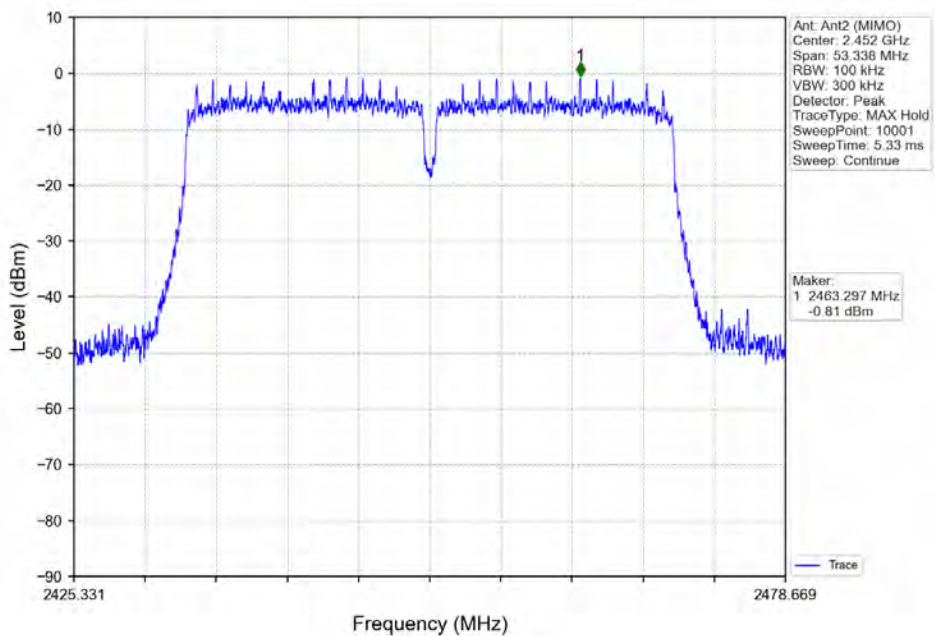
802.11n(HT40)_MCH_2437MHz_Ant2 (MIMO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant2 (MIMO)_NTNV





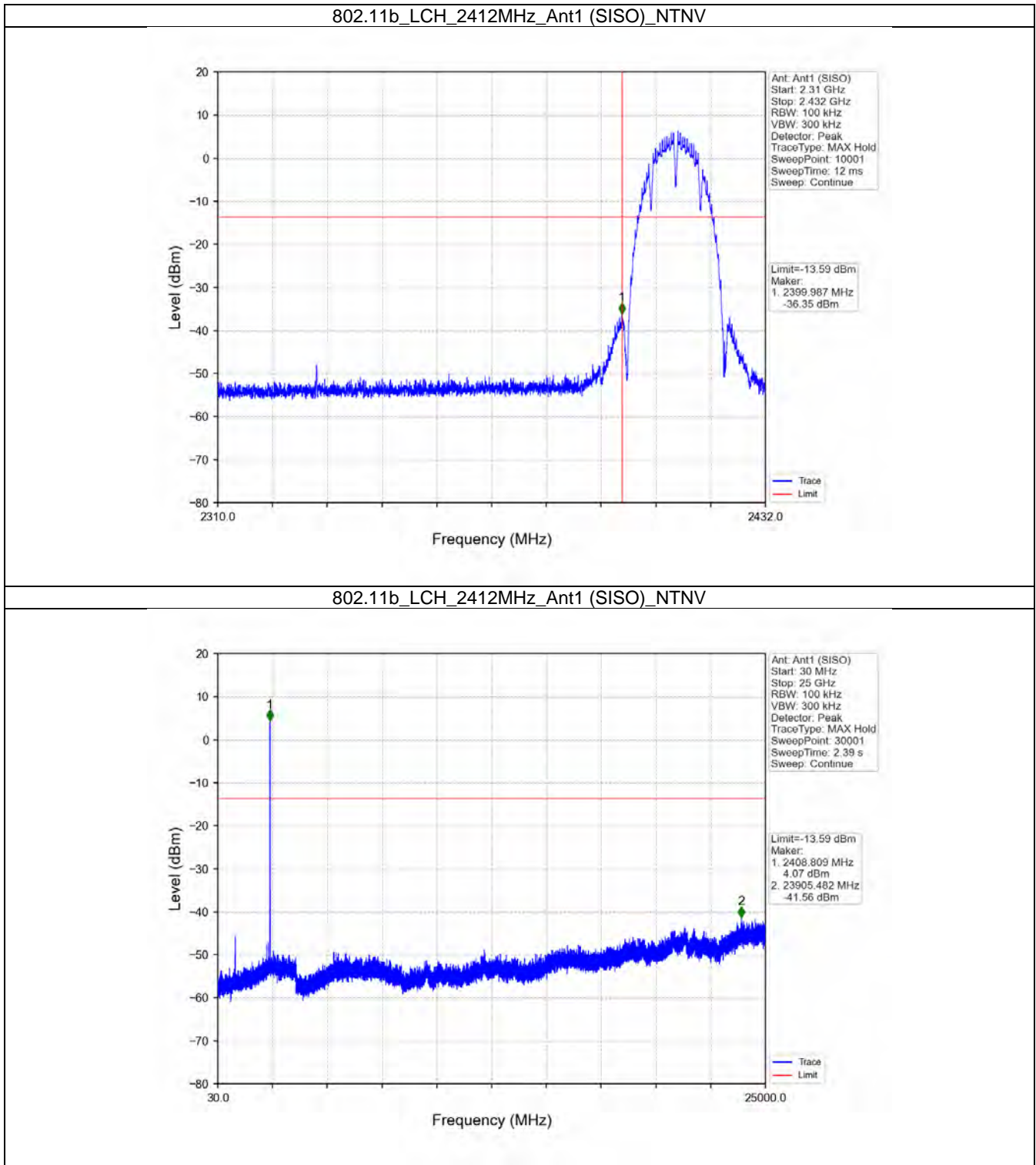
5.2 CSE

5.2.1 Test Result

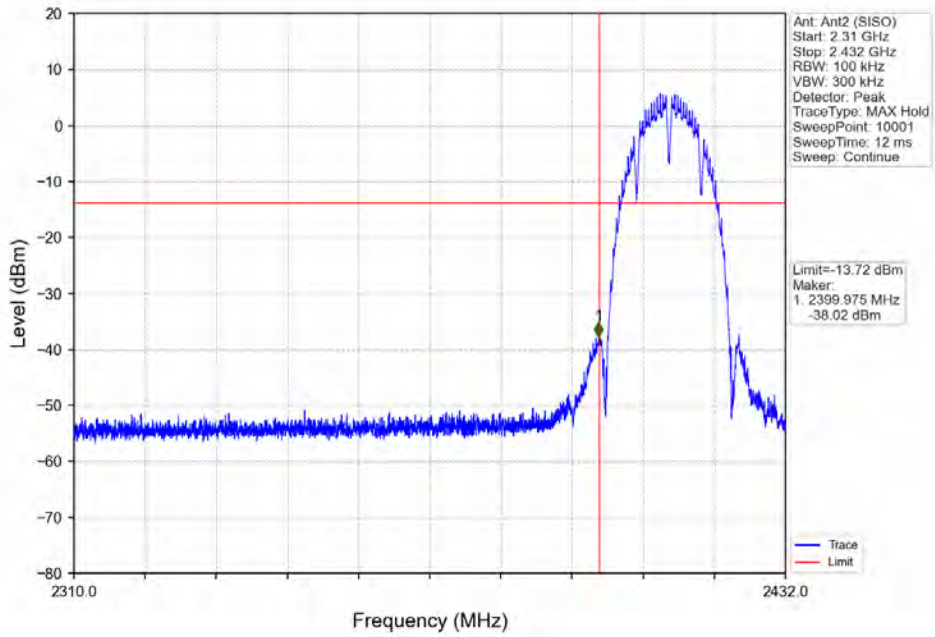
Mode	TX Type	Frequency (MHz)	Ant	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	1	6.41	-13.59	Pass
			2	6.28	-13.72	Pass
		2437	1	6.41	-13.59	Pass
			2	6.28	-13.72	Pass
		2462	1	6.41	-13.59	Pass
			2	6.28	-13.72	Pass
802.11g	SISO	2412	1	4.25	-15.75	Pass
			2	4.25	-15.75	Pass
		2437	1	4.25	-15.75	Pass
			2	4.25	-15.75	Pass
		2462	1	4.25	-15.75	Pass
			2	4.25	-15.75	Pass
802.11n (HT20)	MIMO	2412	1	1.56	-18.44	Pass
			2	1.08	-18.92	Pass
		2437	1	1.56	-18.44	Pass
			2	1.08	-18.92	Pass
		2462	1	1.56	-18.44	Pass
			2	1.08	-18.92	Pass
802.11n (HT40)	MIMO	2422	1	0.44	-19.56	Pass
			2	-0.15	-20.15	Pass
		2437	1	0.44	-19.56	Pass
			2	-0.15	-20.15	Pass
		2452	1	0.44	-19.56	Pass
			2	-0.15	-20.15	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.

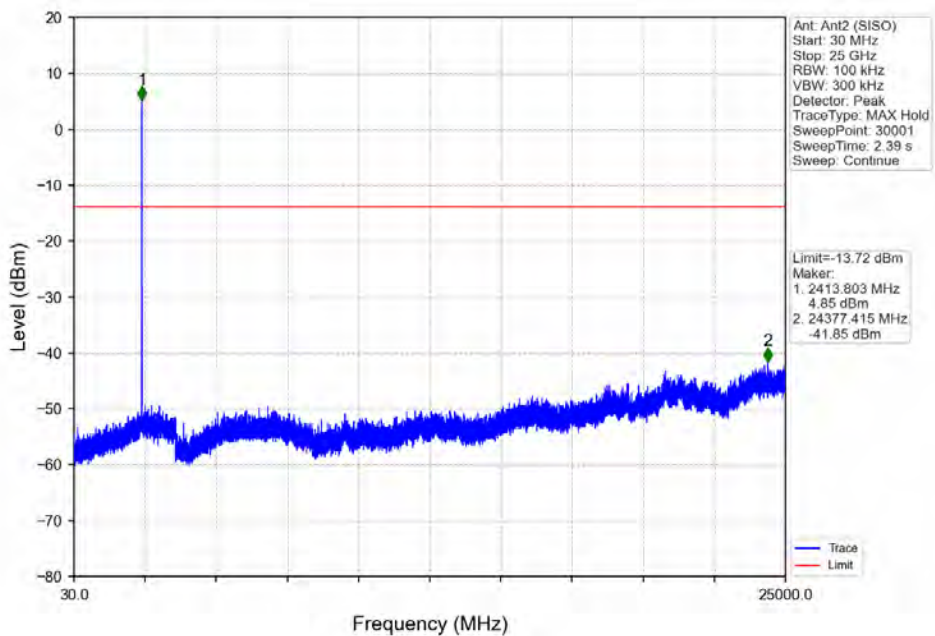
5.2.2 Test Graph



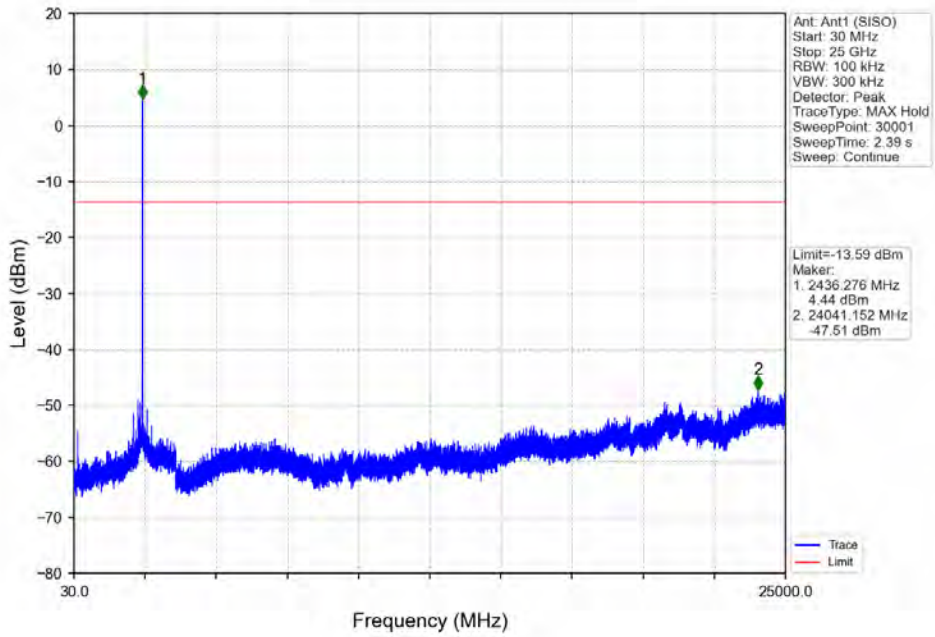
802.11b_LCH_2412MHz_Ant2 (SISO)_NTNV



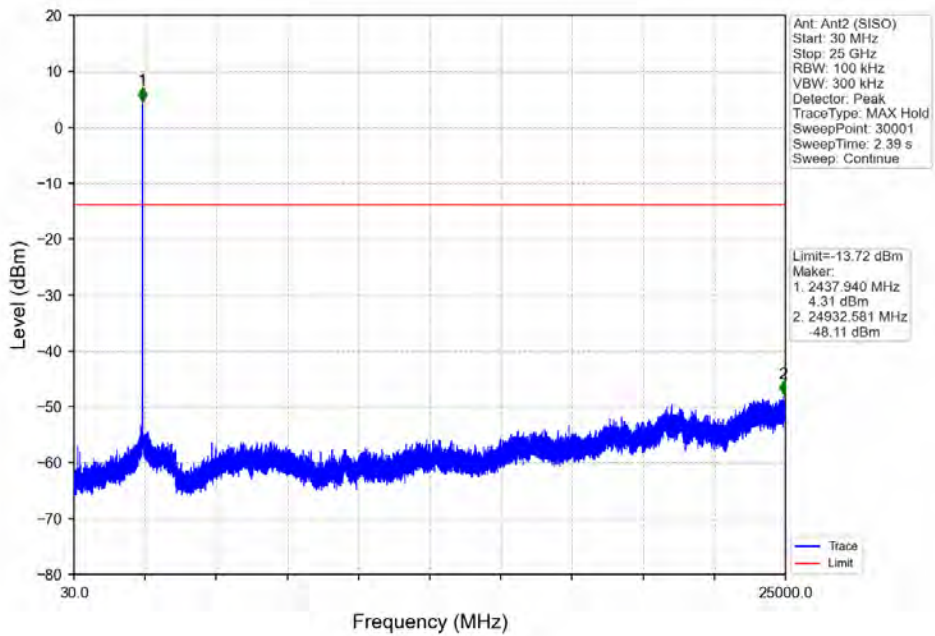
802.11b_LCH_2412MHz_Ant2 (SISO)_NTNV



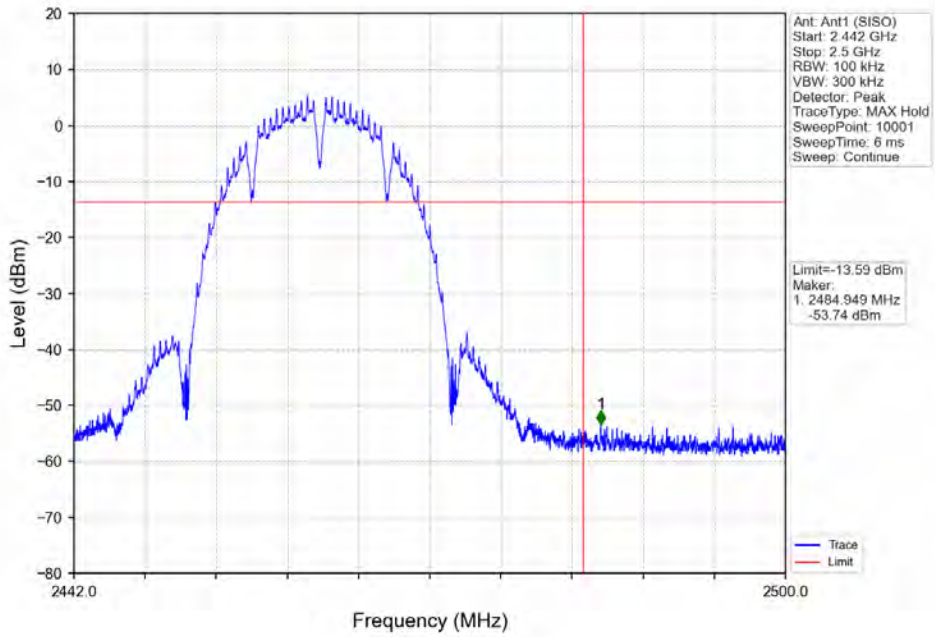
802.11b_MCH_2437MHz_Ant1 (SISO)_NTNV



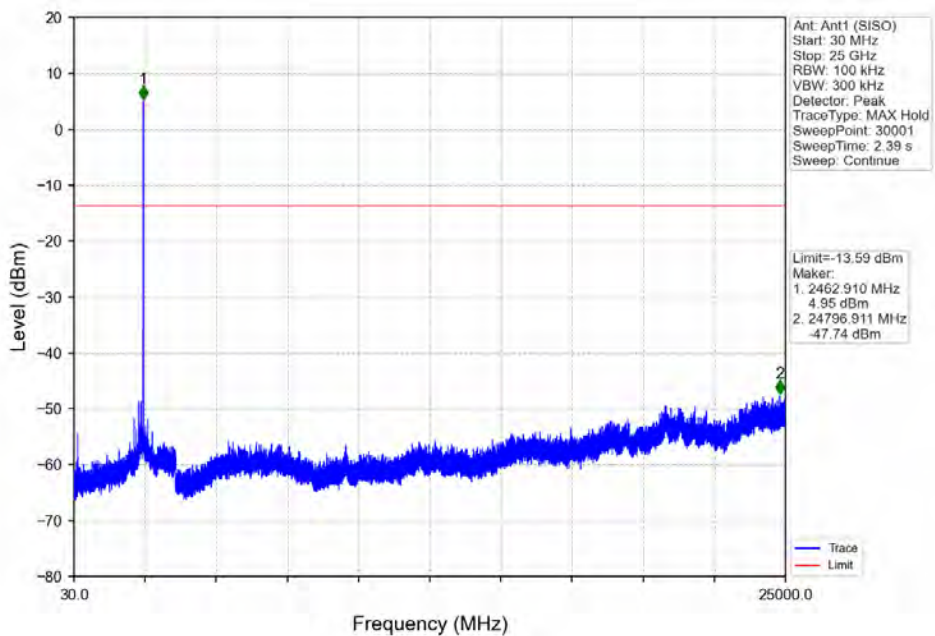
802.11b_MCH_2437MHz_Ant2 (SISO)_NTNV

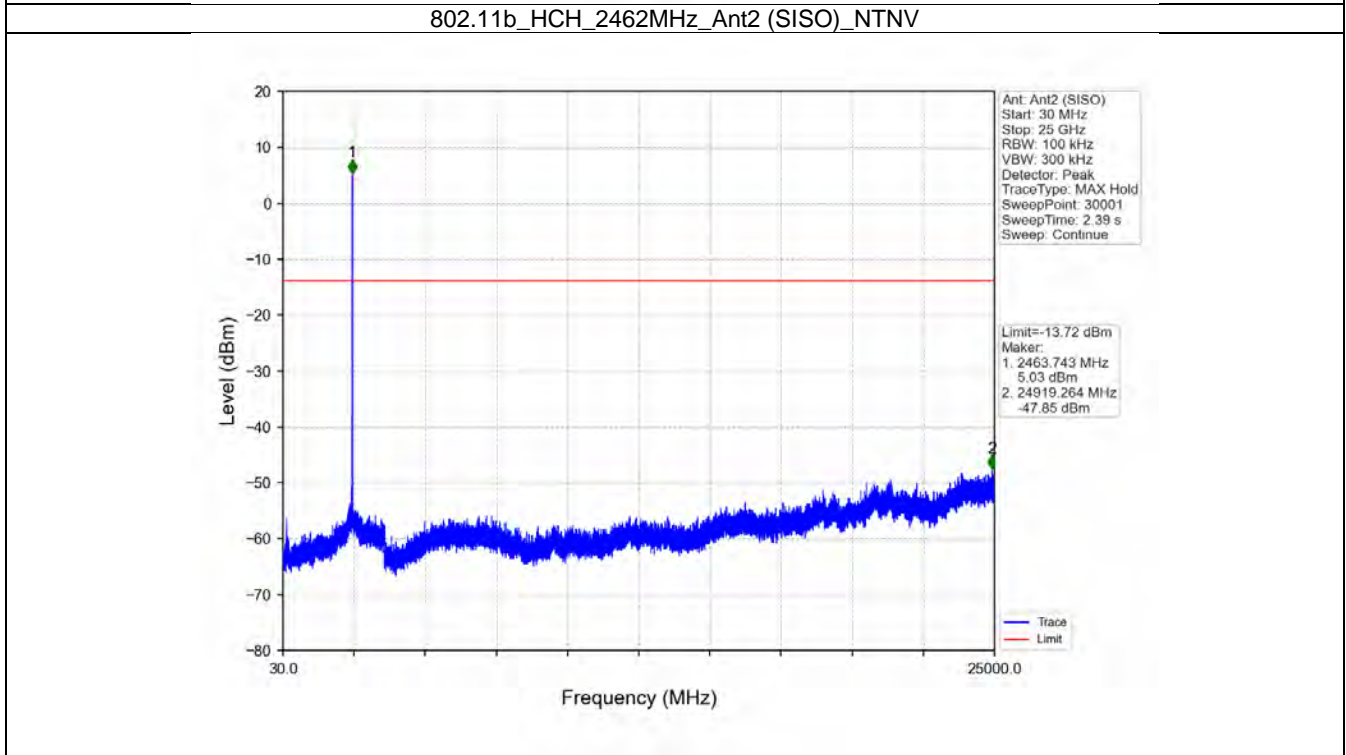
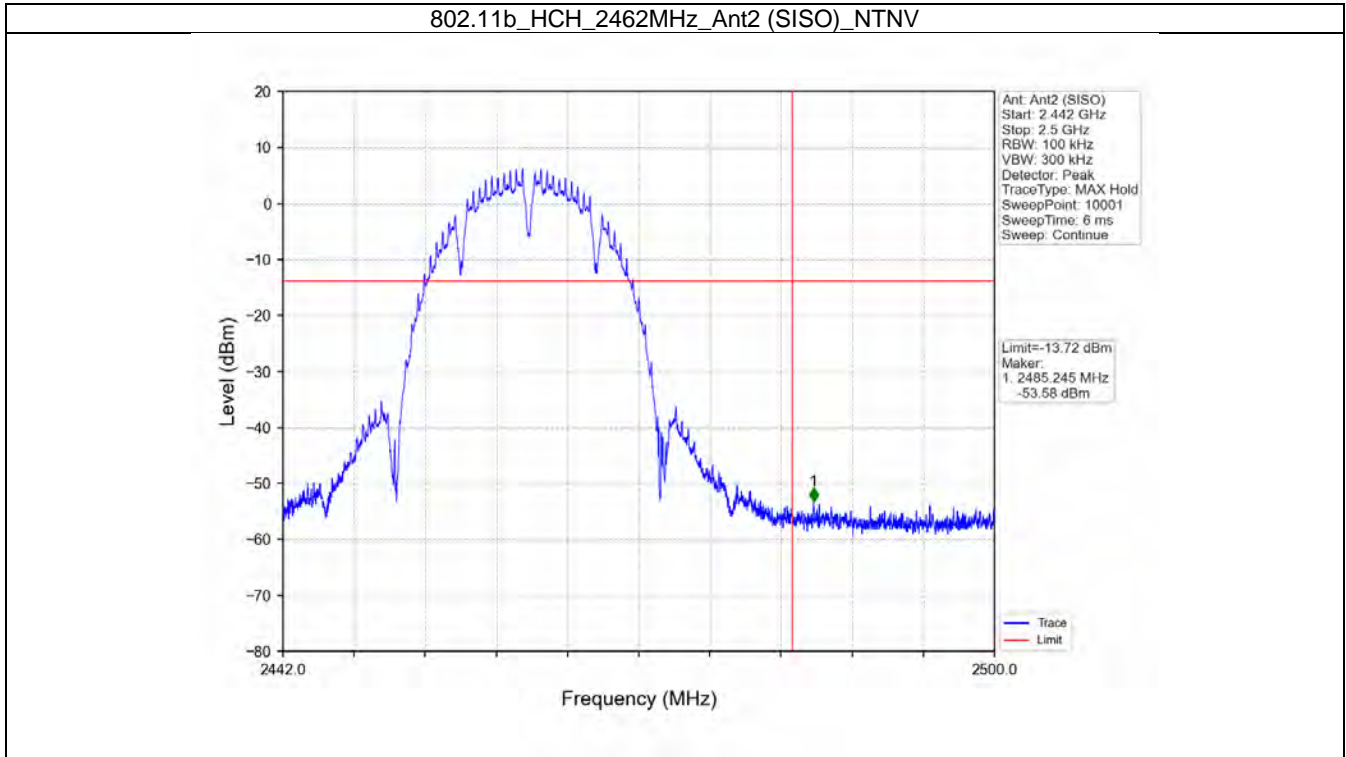


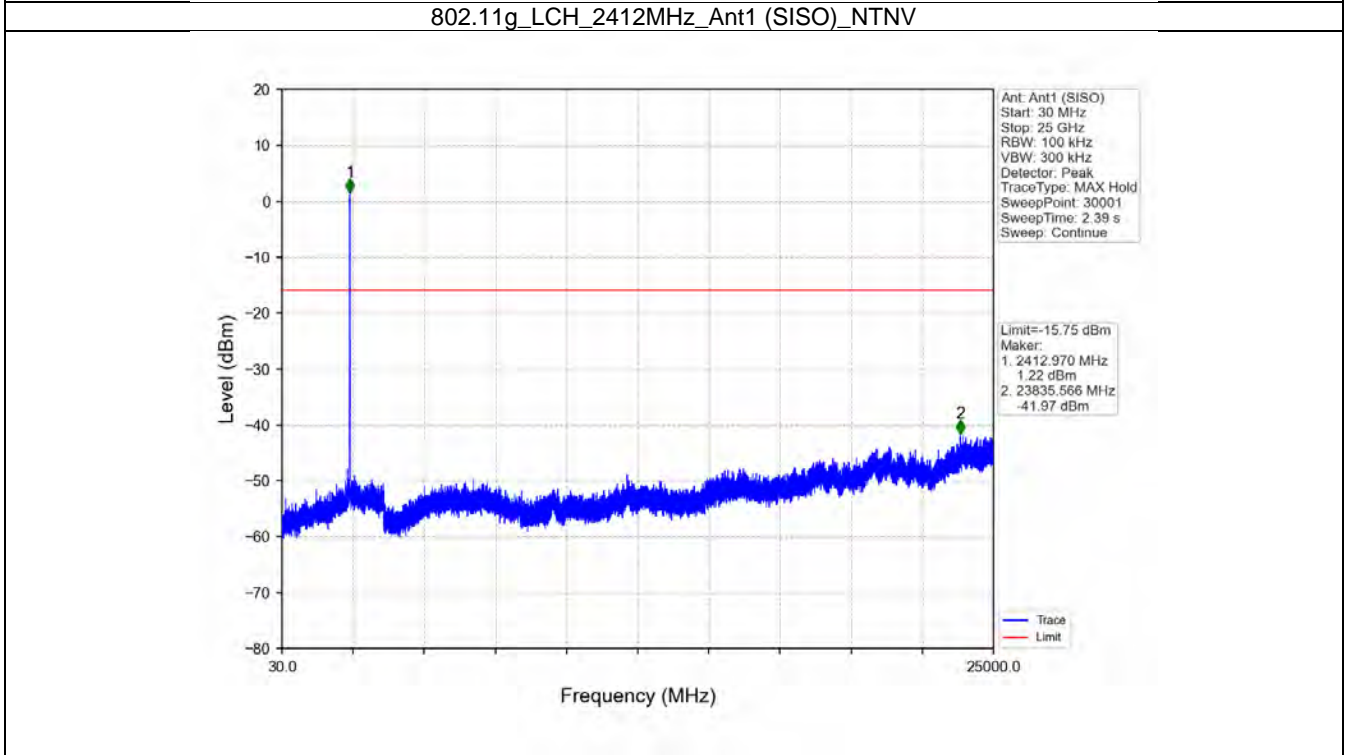
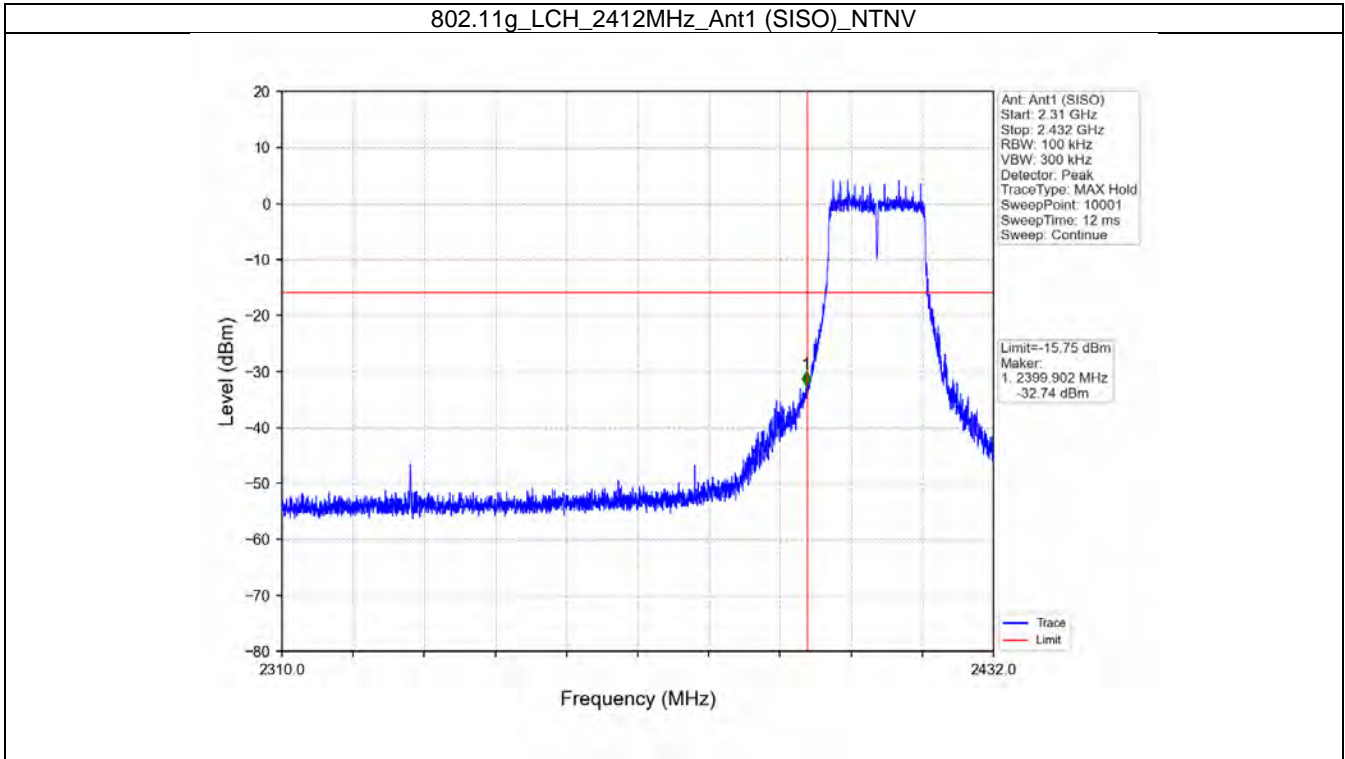
802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

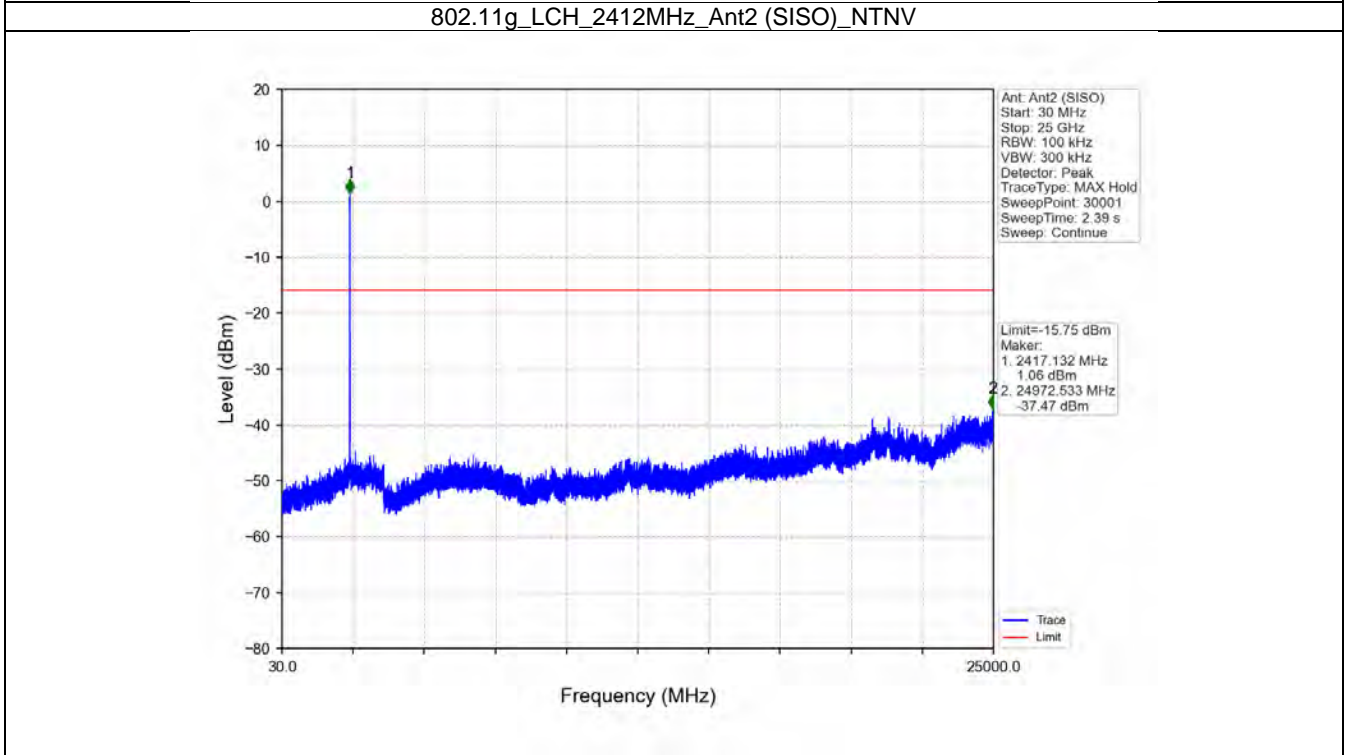
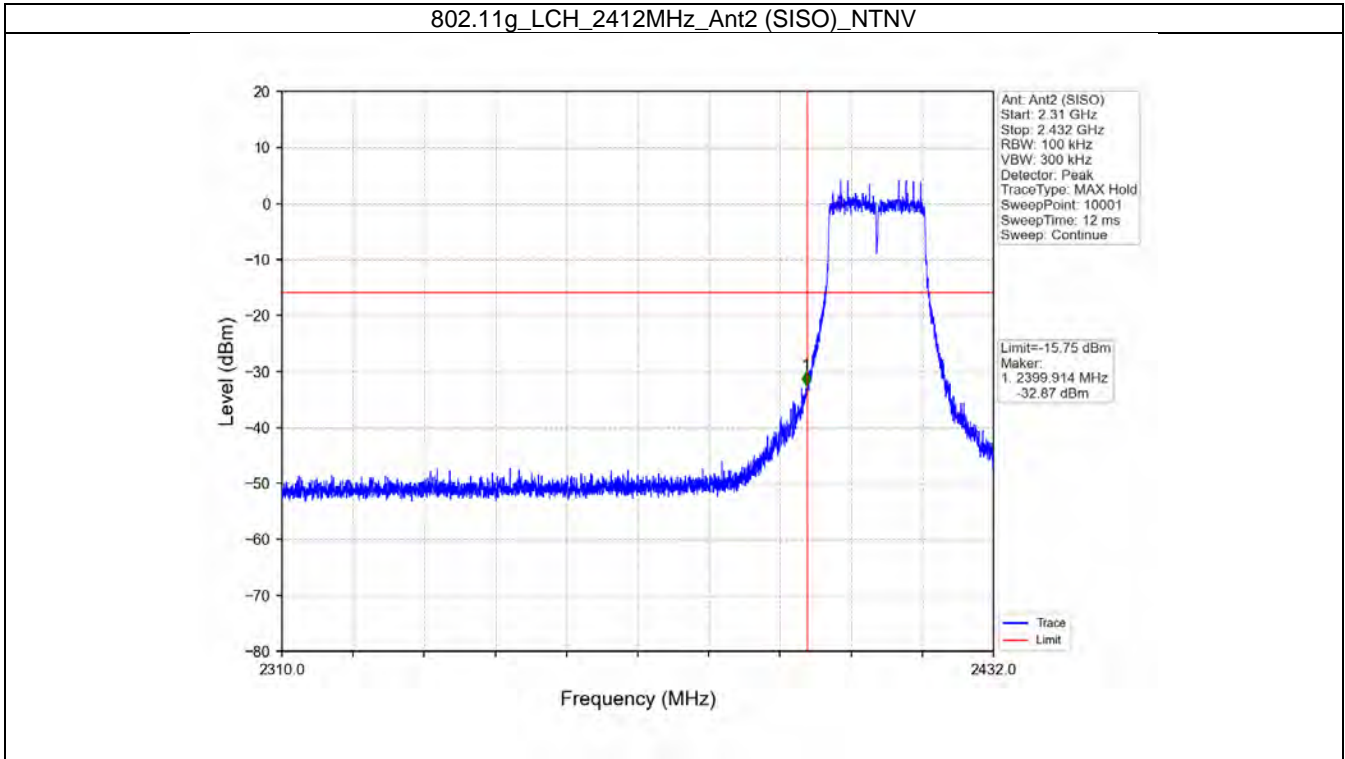


802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV

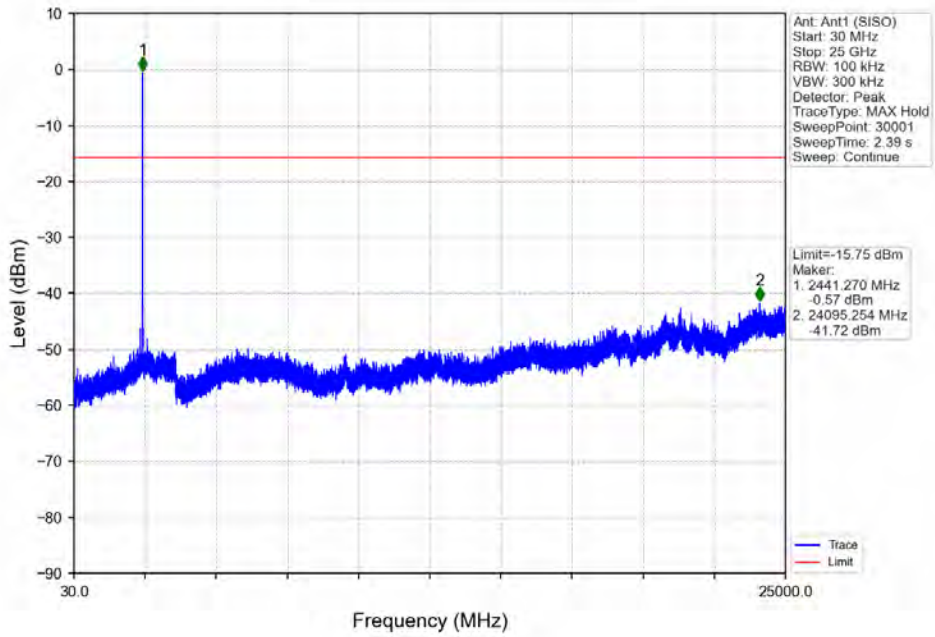




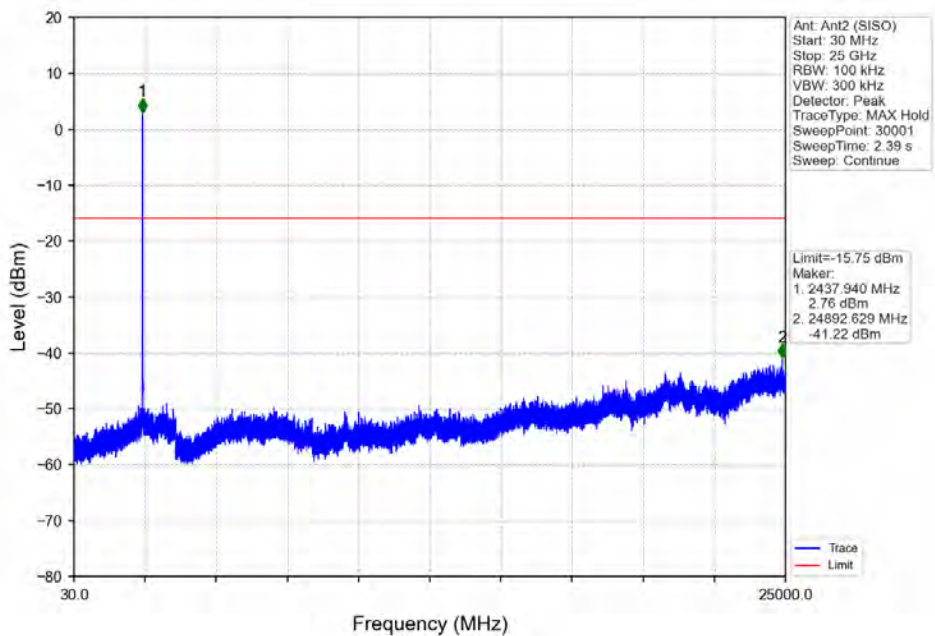


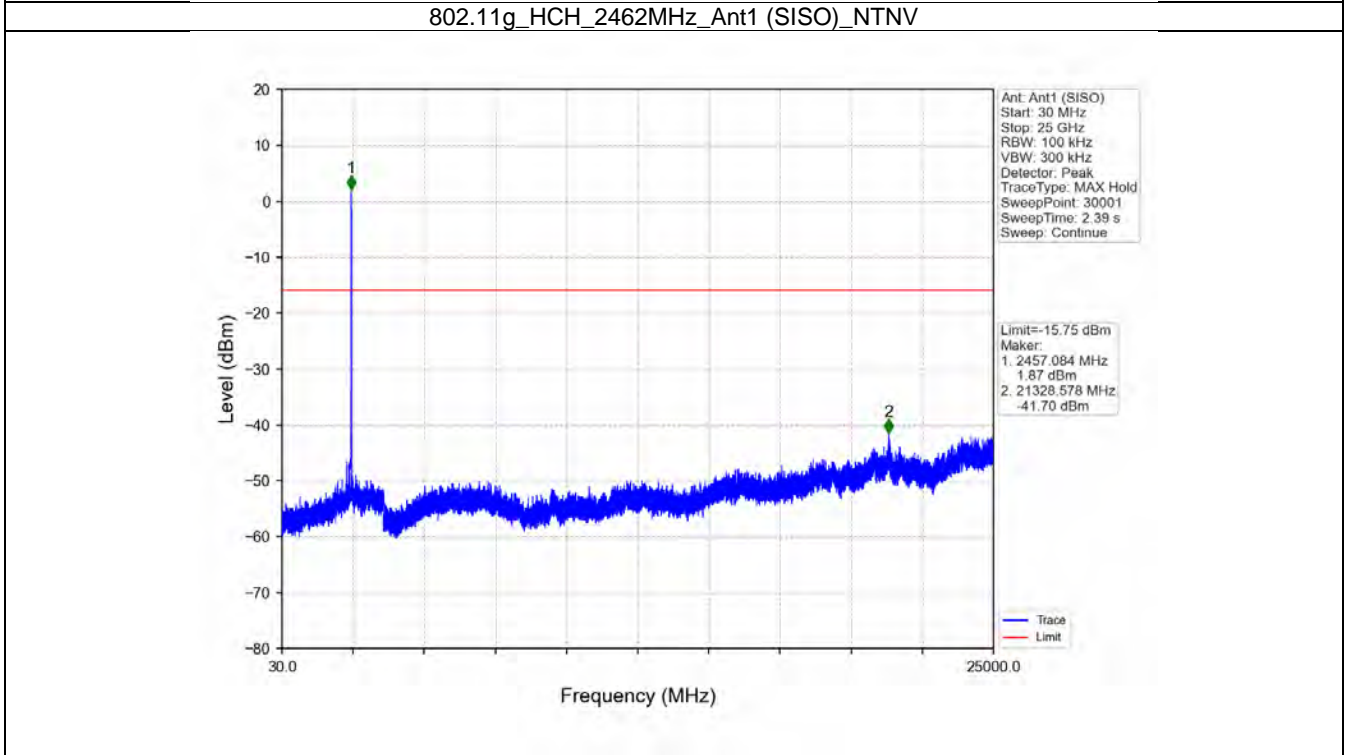
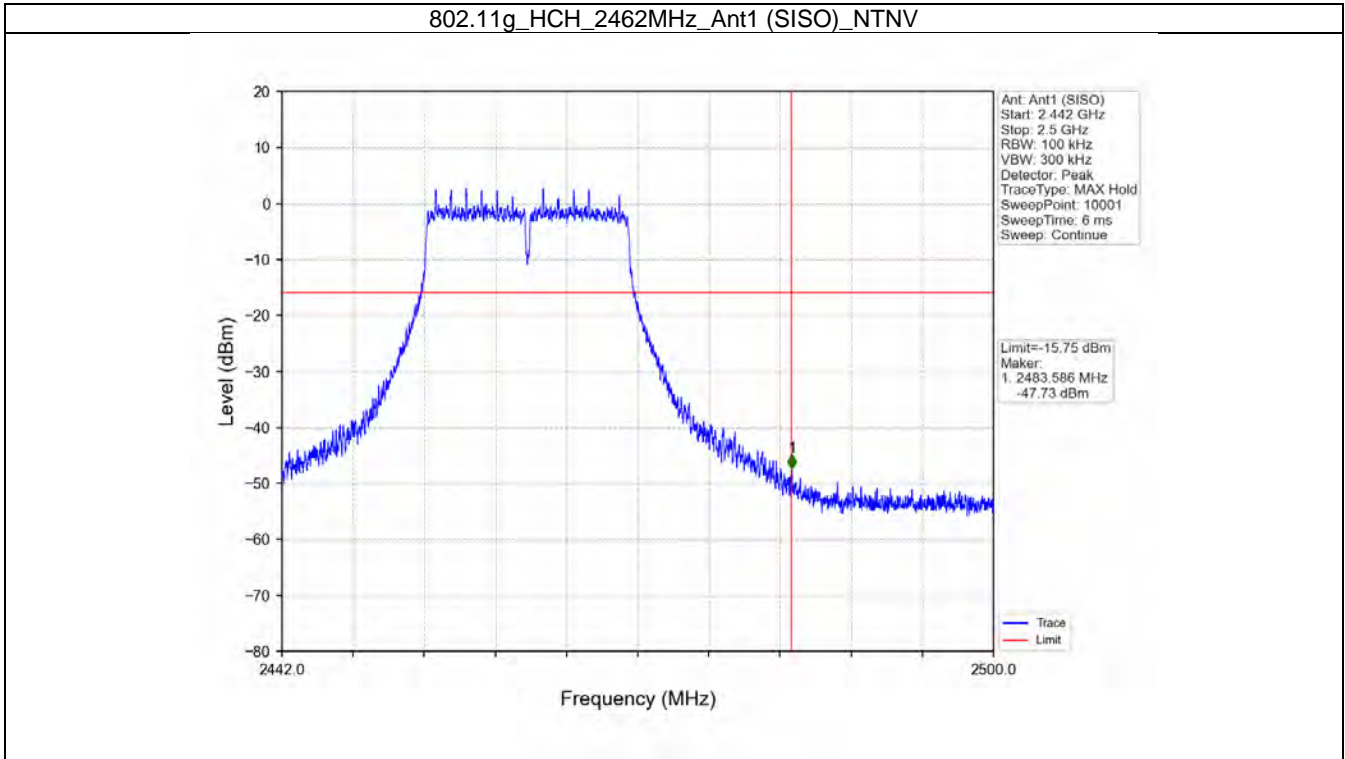


802.11g_MCH_2437MHz_Ant1 (SISO)_NTNV

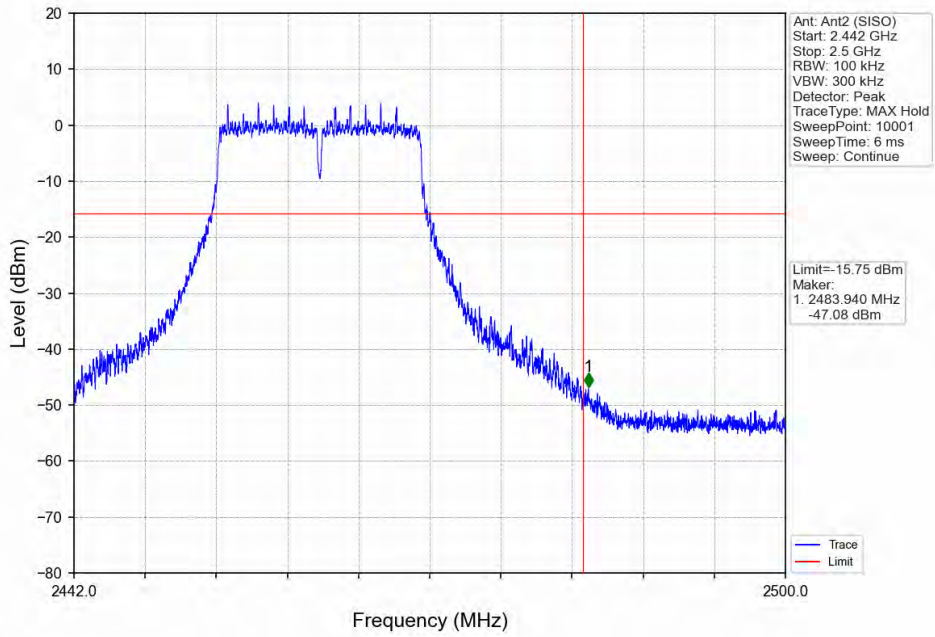


802.11g_MCH_2437MHz_Ant2 (SISO)_NTNV

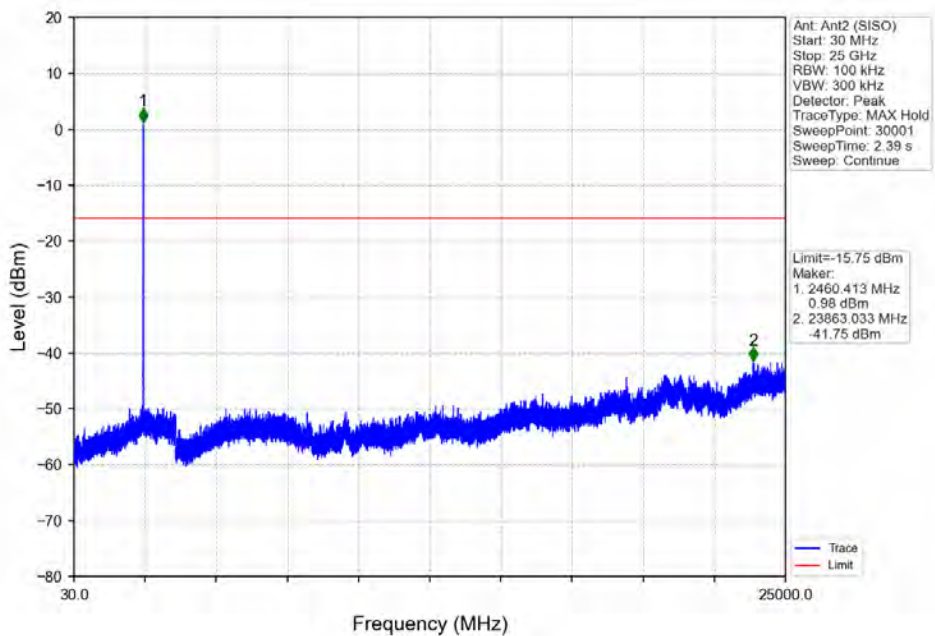




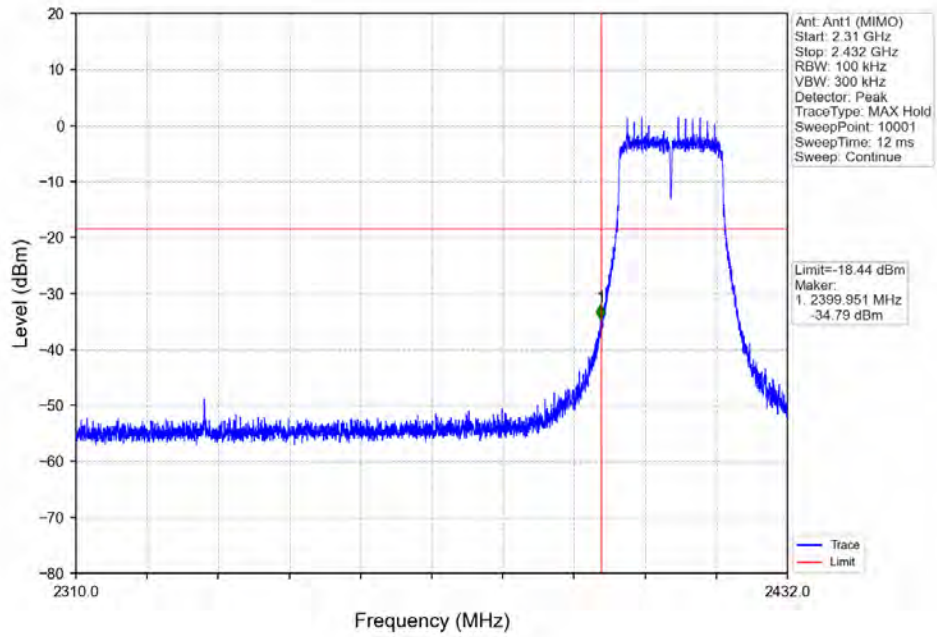
802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



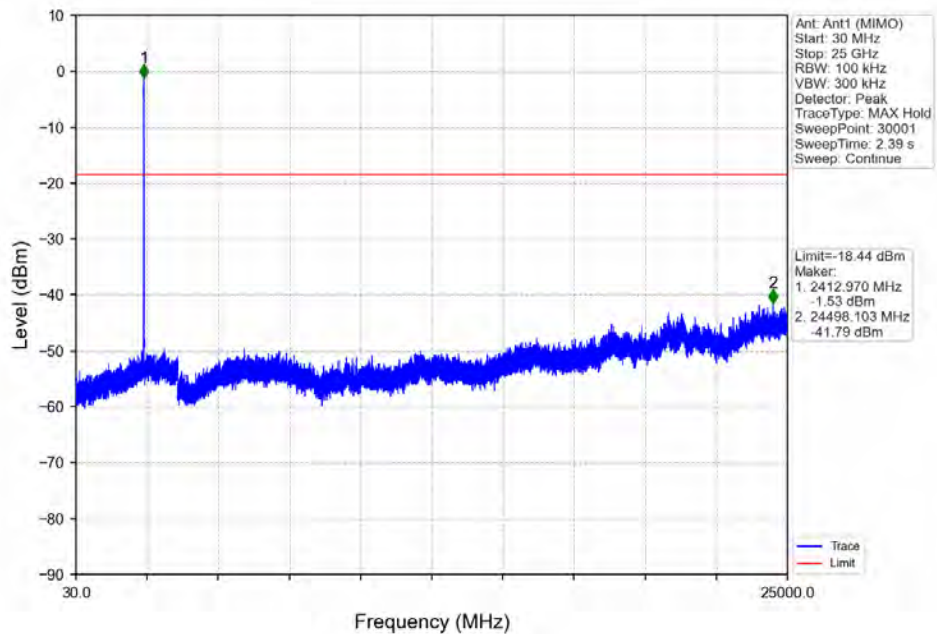
802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



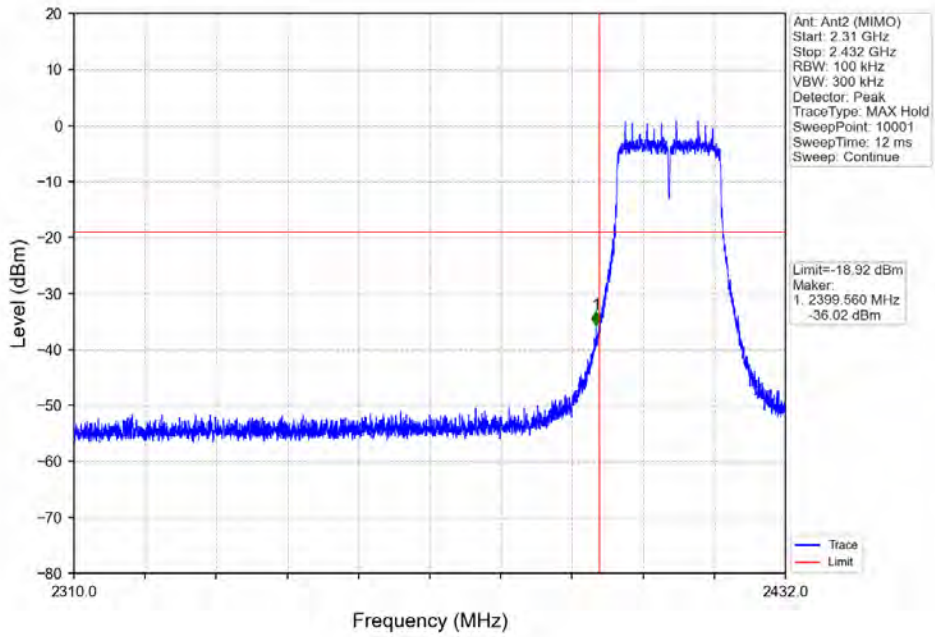
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



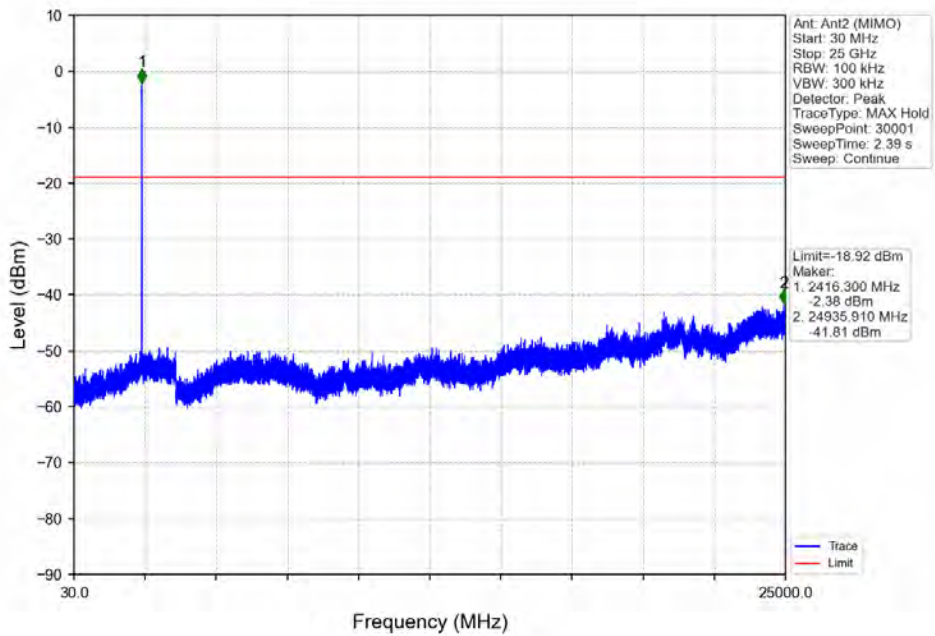
802.11n(HT20)_LCH_2412MHz_Ant1 (MIMO)_NTNV



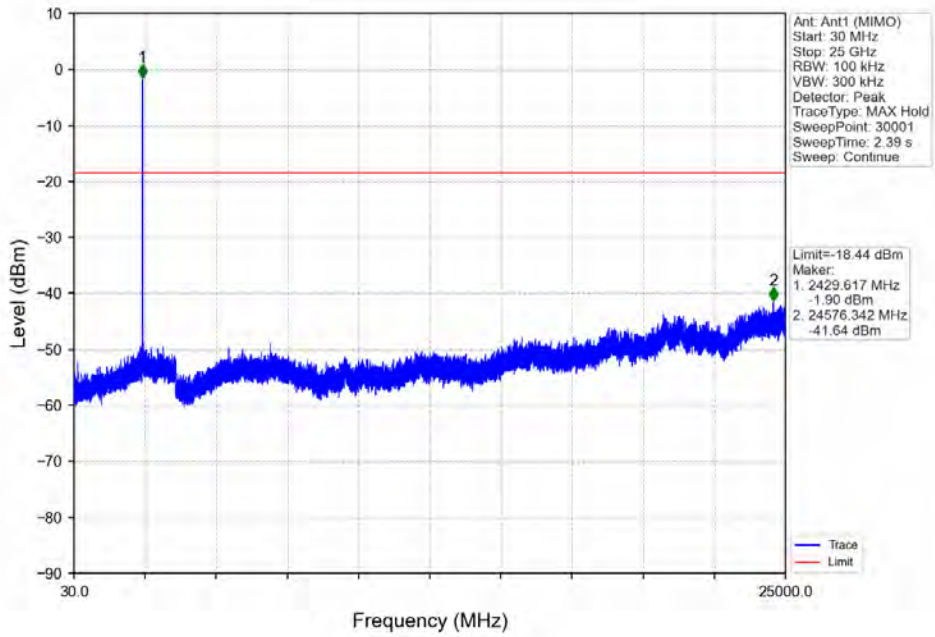
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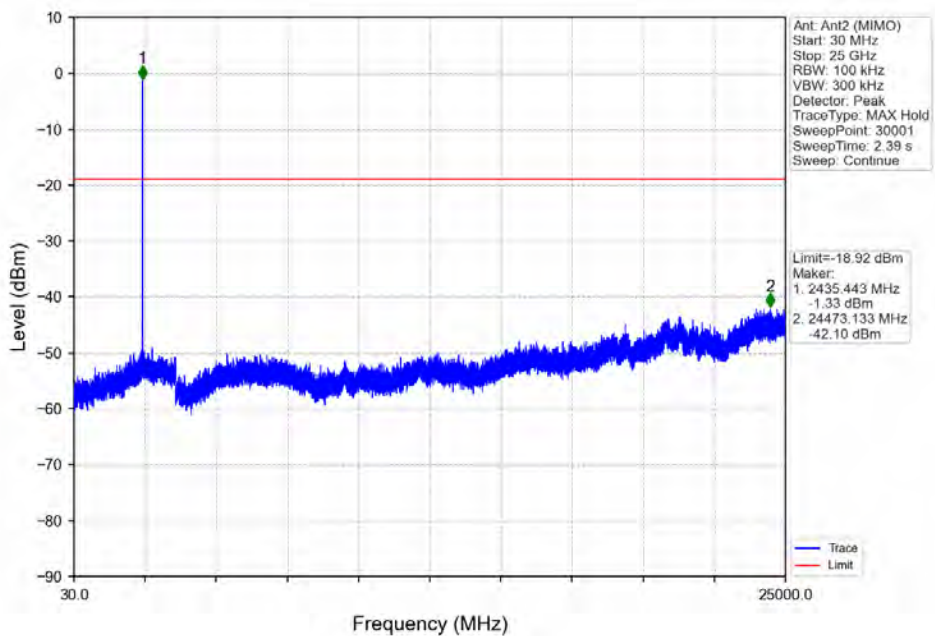
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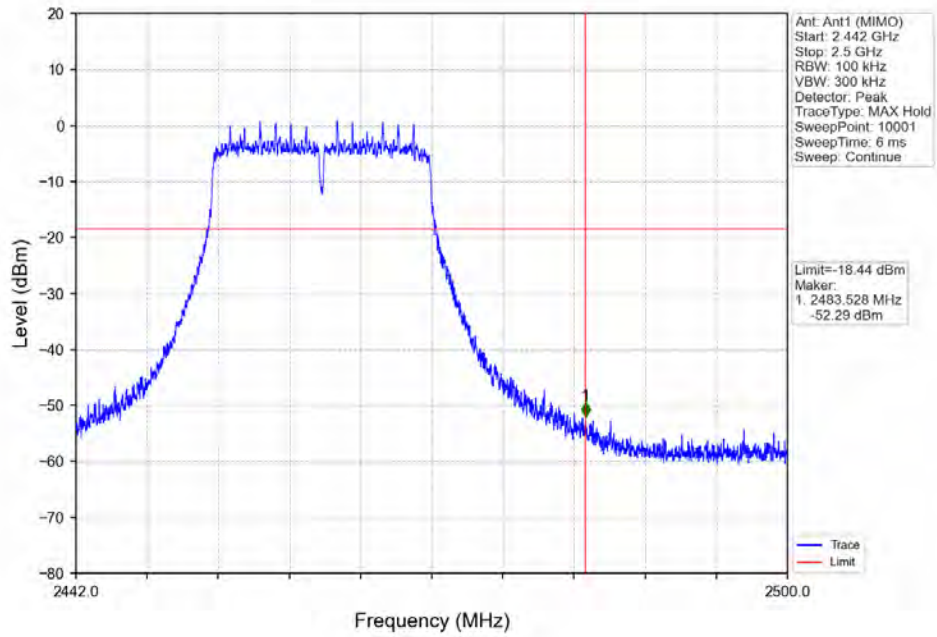
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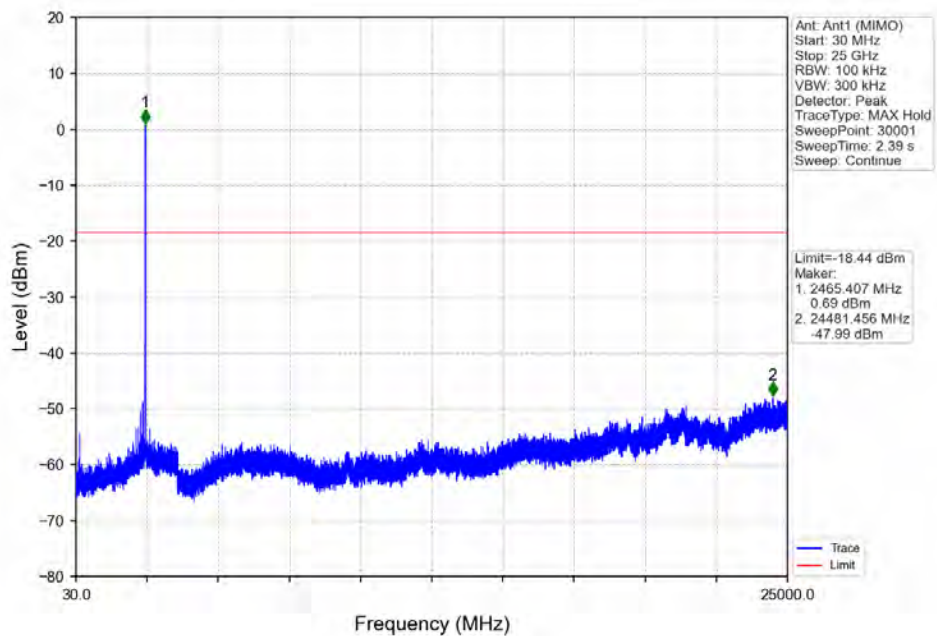
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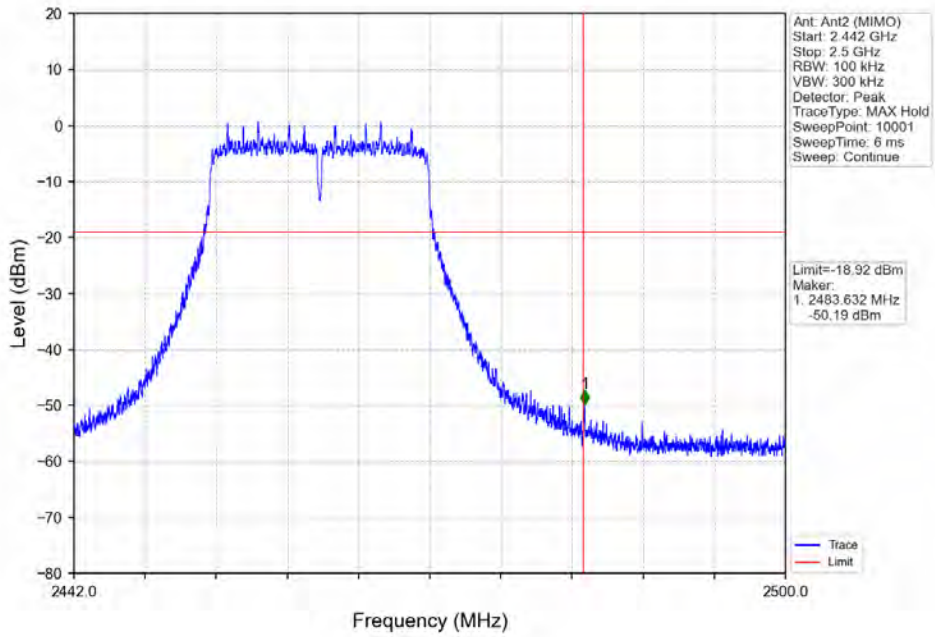
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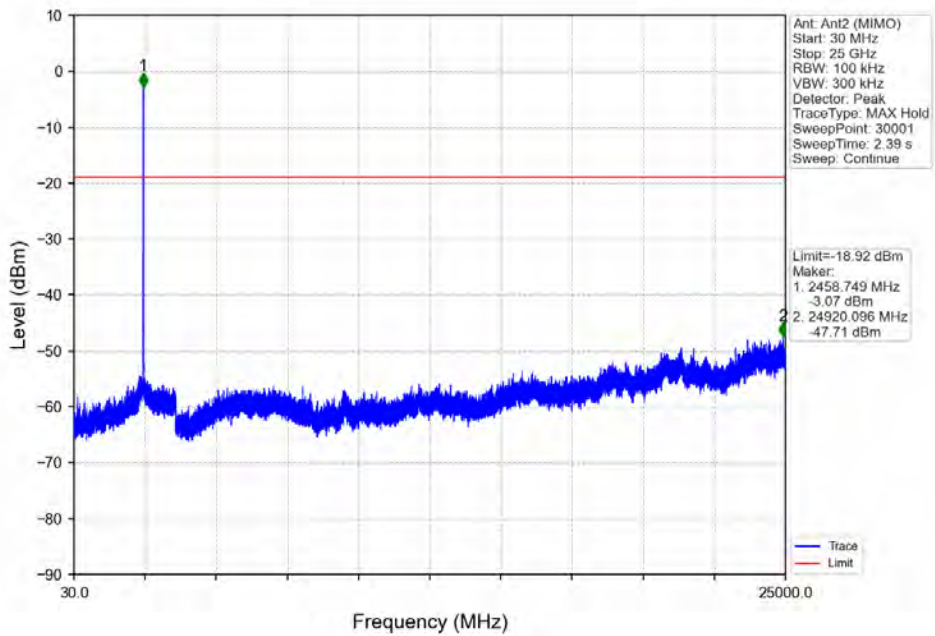
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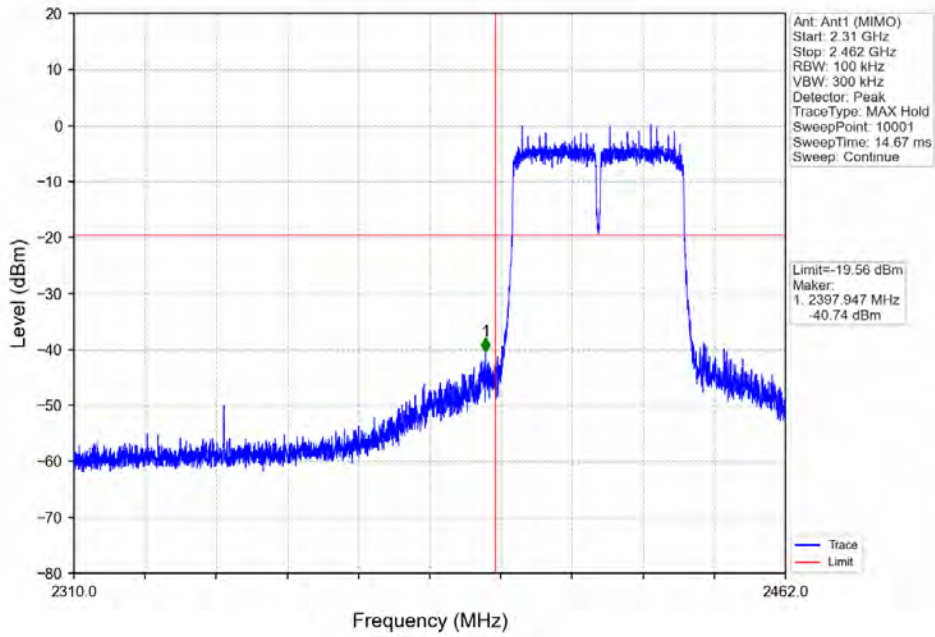
802.11n(HT20)_HCH_2462MHz_Ant2 (MIMO)_NTNV



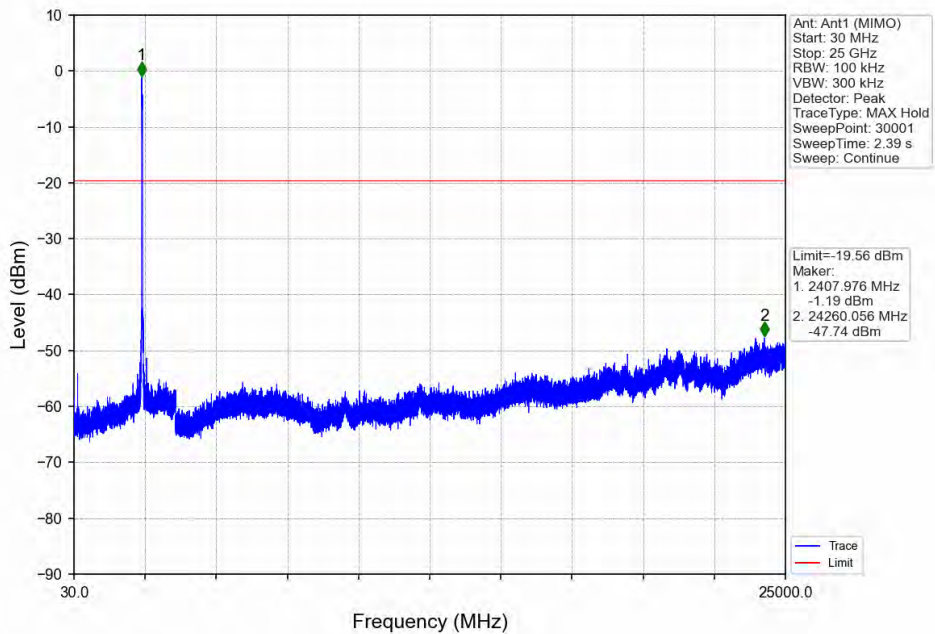
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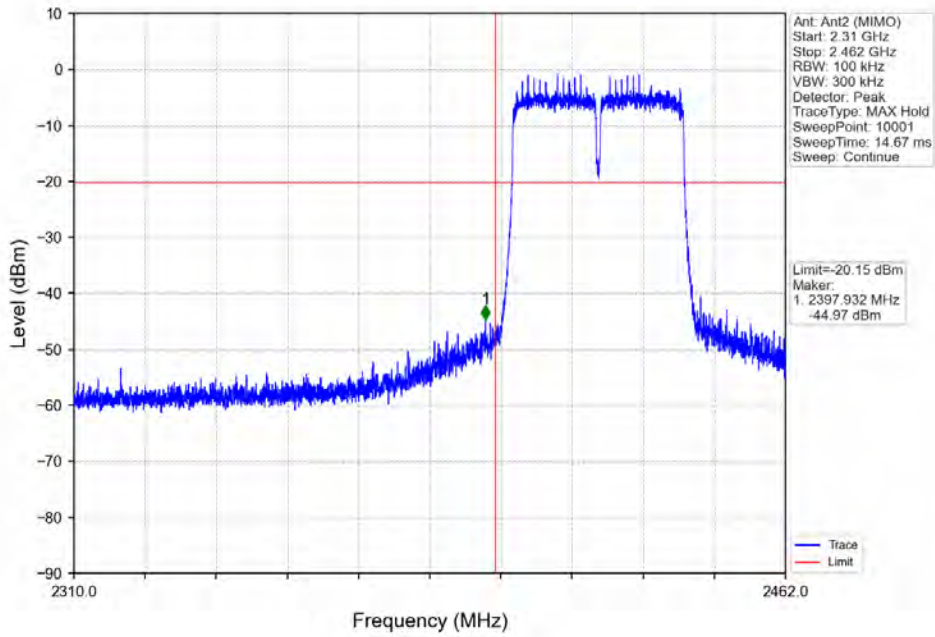
802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



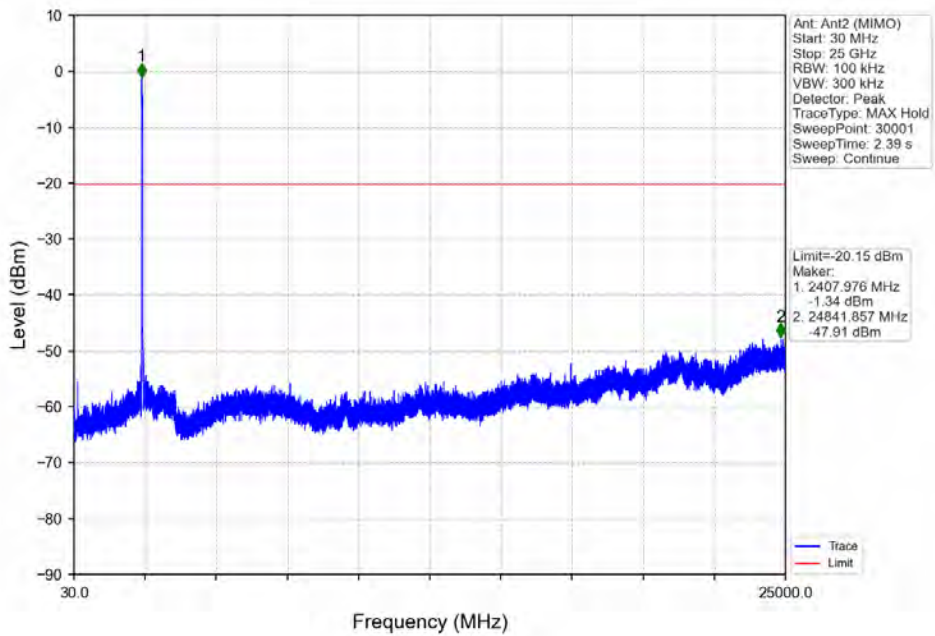
802.11n(HT40)_LCH_2422MHz_Ant1 (MIMO)_NTNV



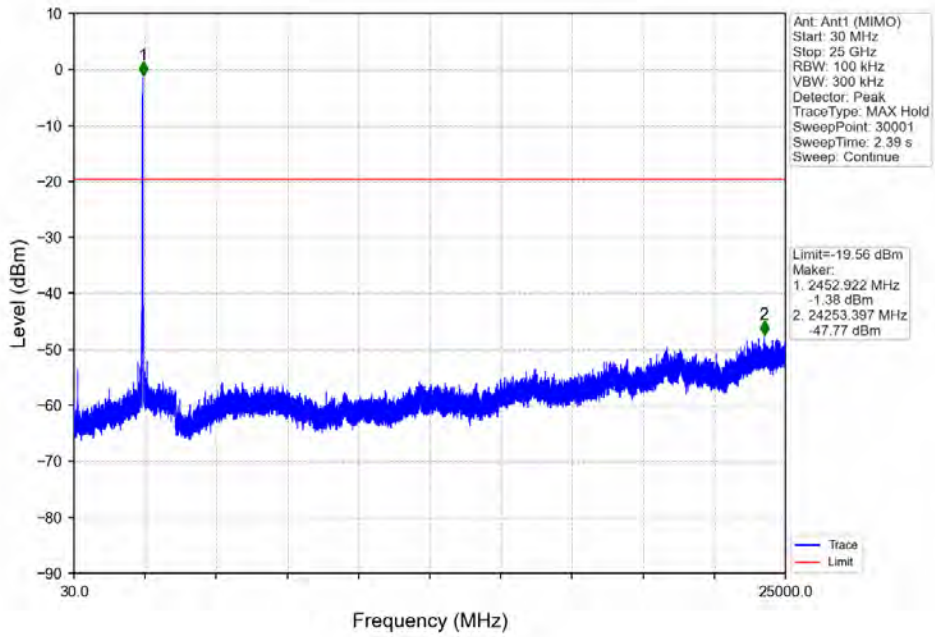
802.11n(HT40)_LCH_2422MHz_Ant2 (MIMO)_NTNV



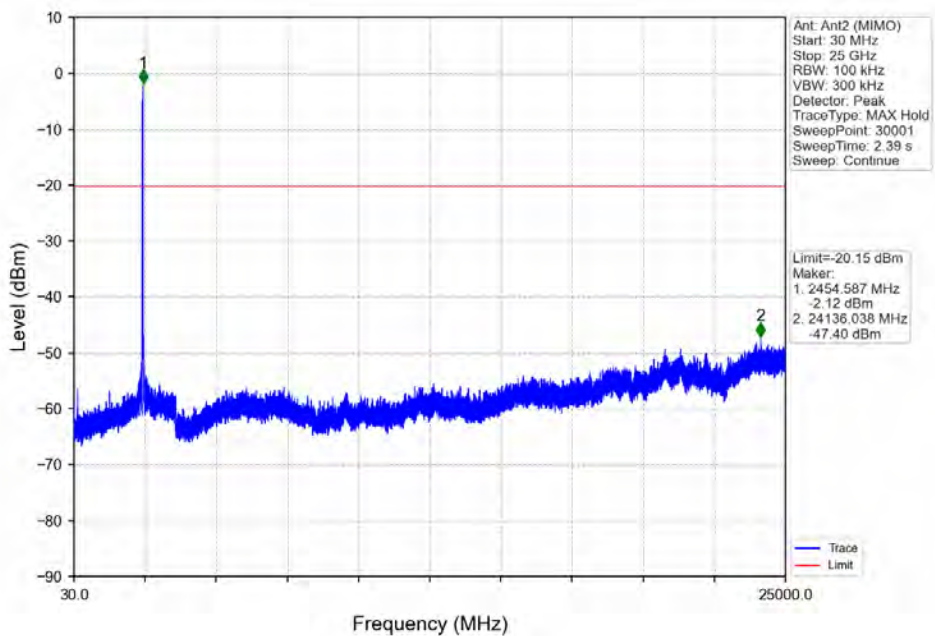
802.11n(HT40)_LCH_2422MHz_Ant2 (MIMO)_NTNV



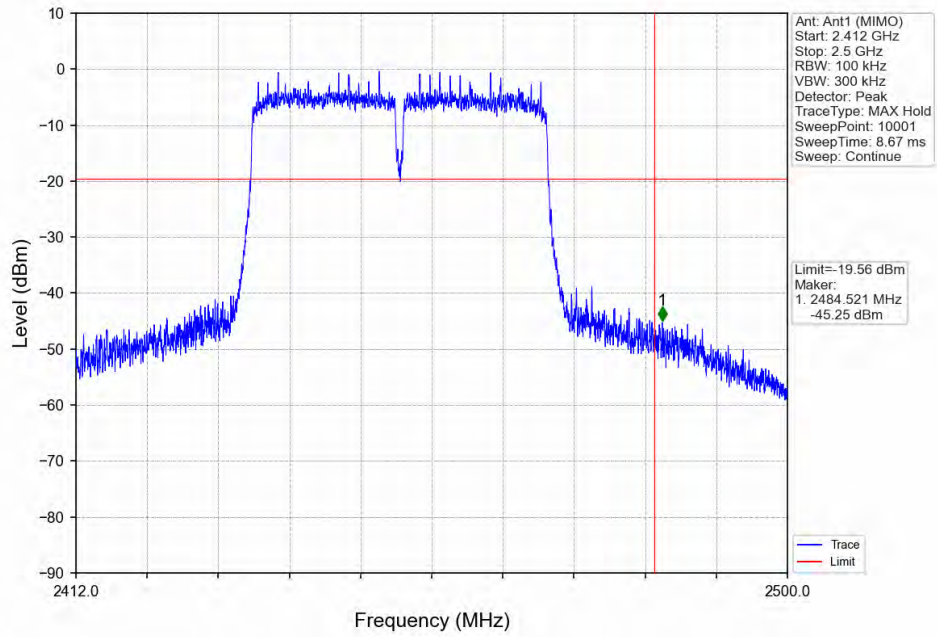
802.11n(HT40)_MCH_2437MHz_Ant1 (MIMO)_NTNV



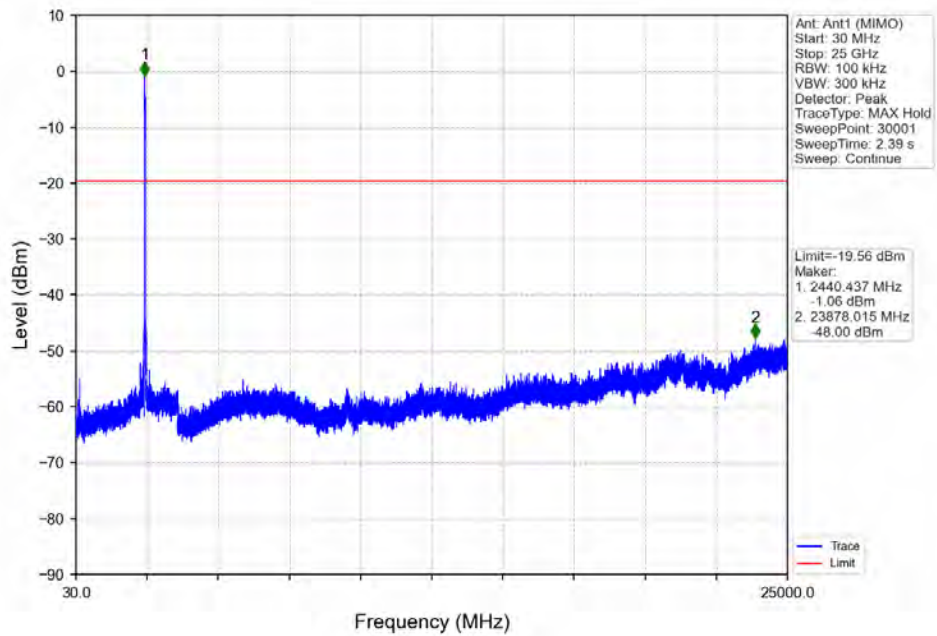
802.11n(HT40)_MCH_2437MHz_Ant2 (MIMO)_NTNV



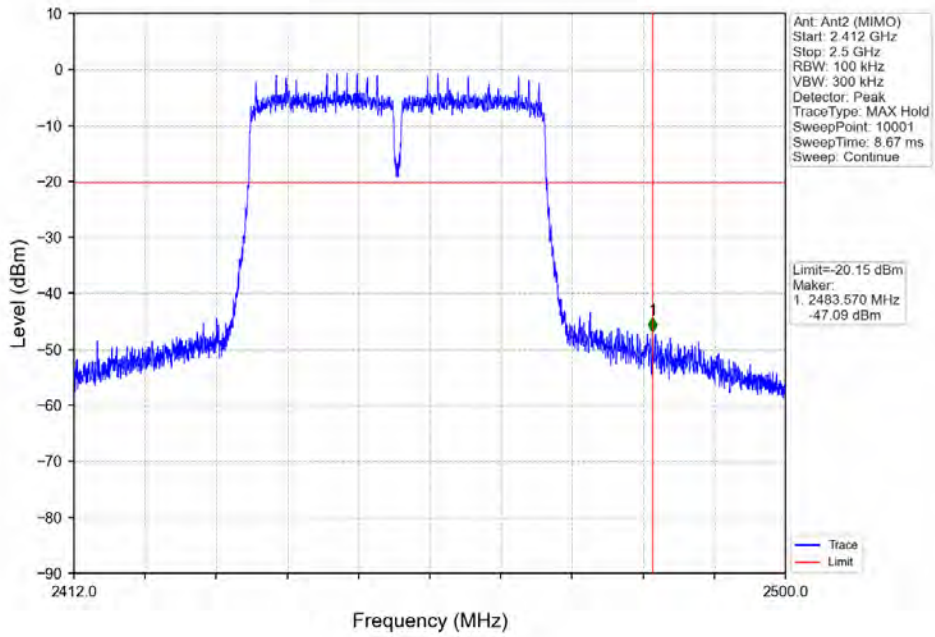
802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant1 (MIMO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant2 (MIMO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant2 (MIMO)_NTNV

