

Appendix RF test data for WIFI2.4G- Module2

1. Duty Cycle

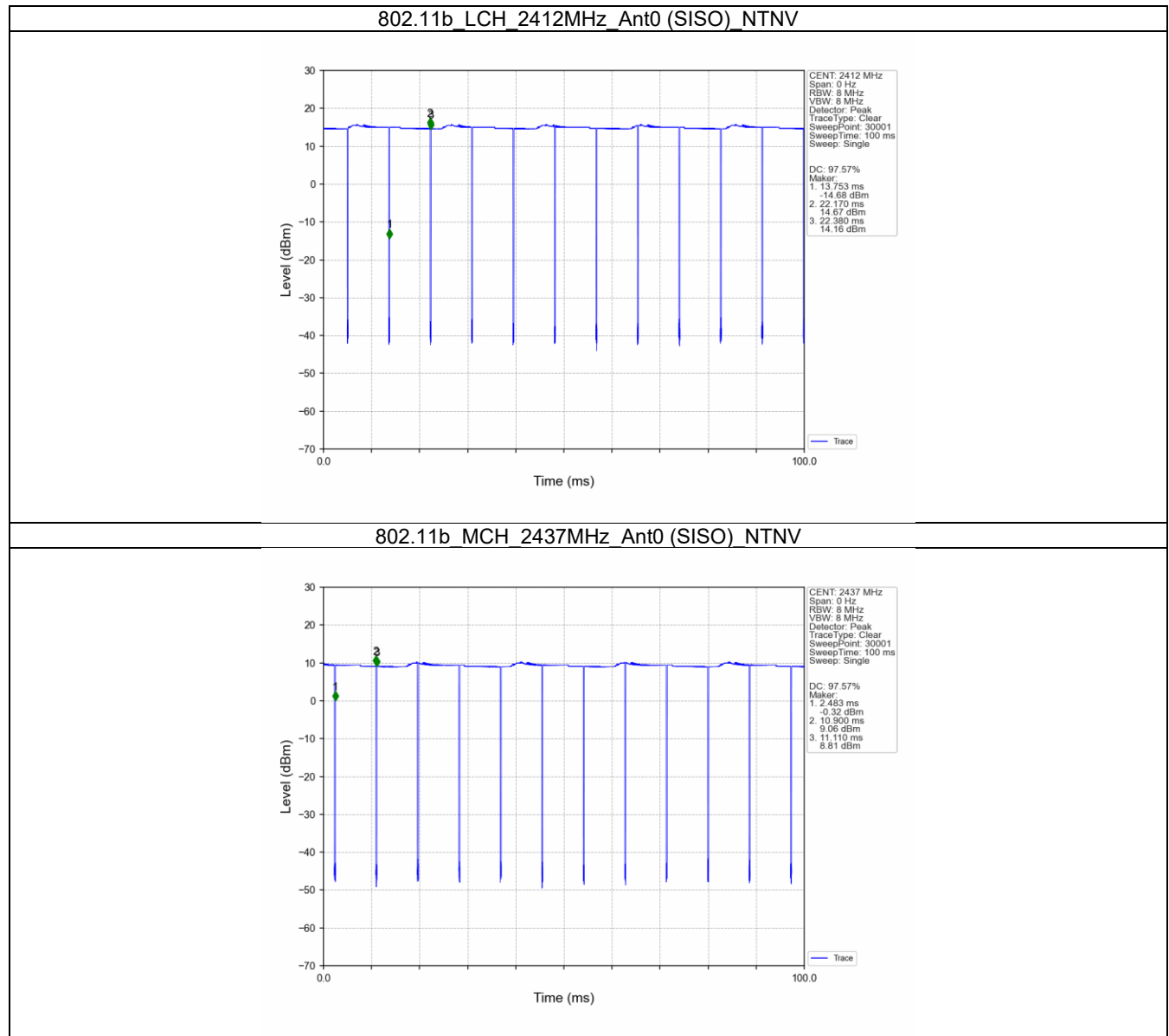
1.1 Test Result

1.1.1 Ant0

Ant0							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11b	SISO	2412	8.417	8.627	97.57	0.11	0.04
		2437	8.417	8.627	97.57	0.11	0.04
		2462	8.417	8.627	97.57	0.11	0.04
802.11g	SISO	2412	1.396	1.606	86.92	0.61	0.03
		2437	1.396	1.605	86.98	0.61	0.03
		2462	1.397	1.605	87.04	0.60	0.03
802.11n (HT20)	SISO	2412	1.309	1.518	86.23	0.64	0.03
		2437	1.309	1.517	86.29	0.64	0.04
		2462	1.309	1.517	86.29	0.64	0.03
802.11n (HT40)	SISO	2422	0.649	0.858	75.64	1.21	0.03
		2437	0.650	0.858	75.76	1.21	0.04
		2452	0.650	0.859	75.67	1.21	0.03

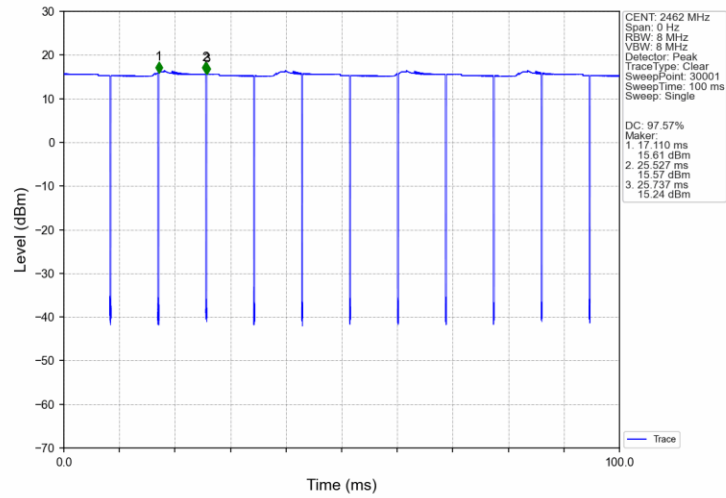
1.2 Test Graph

1.2.1 Ant0

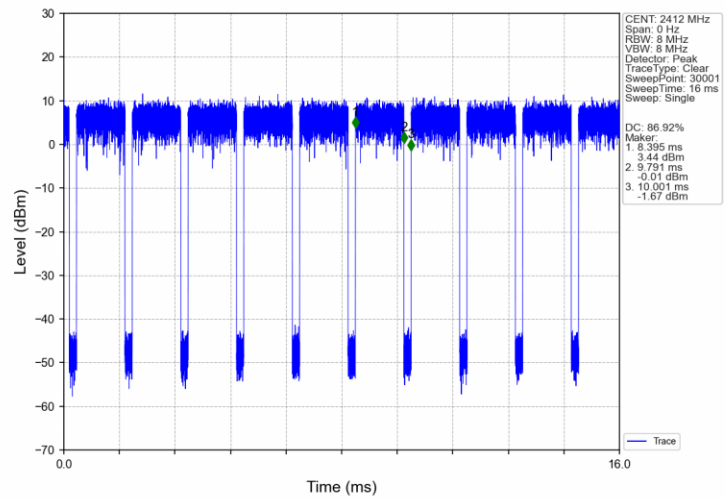




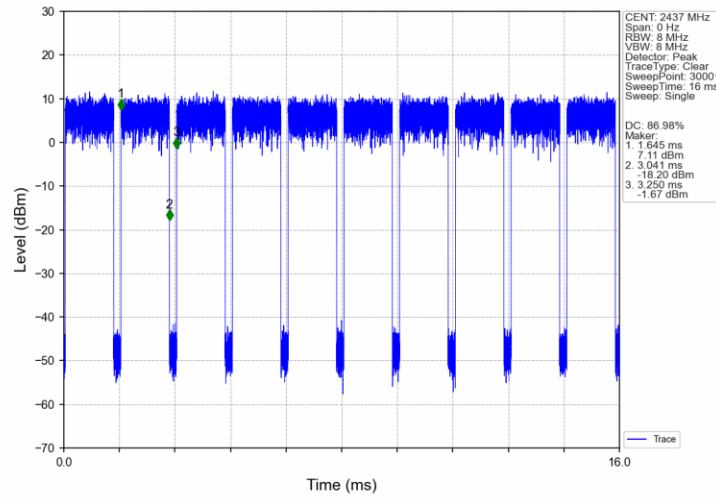
802.11b_HCH_2462MHz_Ant0 (SISO)_NTNV



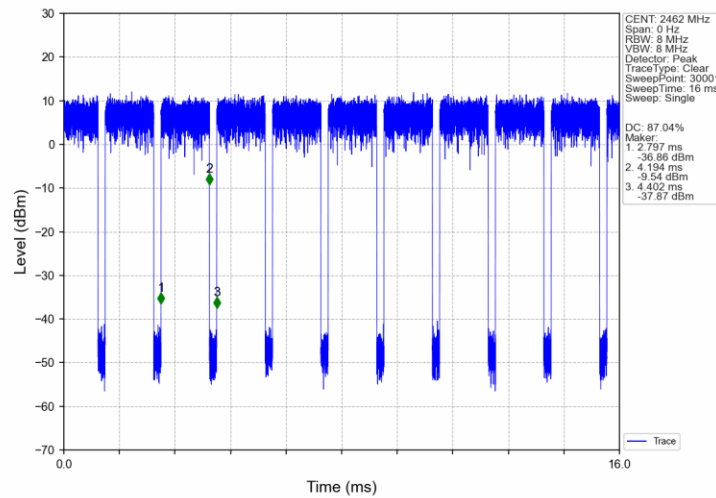
802.11g_LCH_2412MHz_Ant0 (SISO)_NTNV



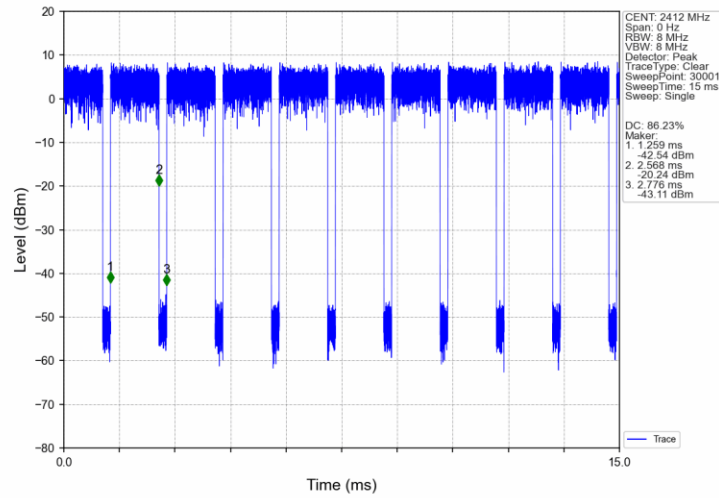
802.11g_MCH_2437MHz_Ant0 (SISO)_NTNV



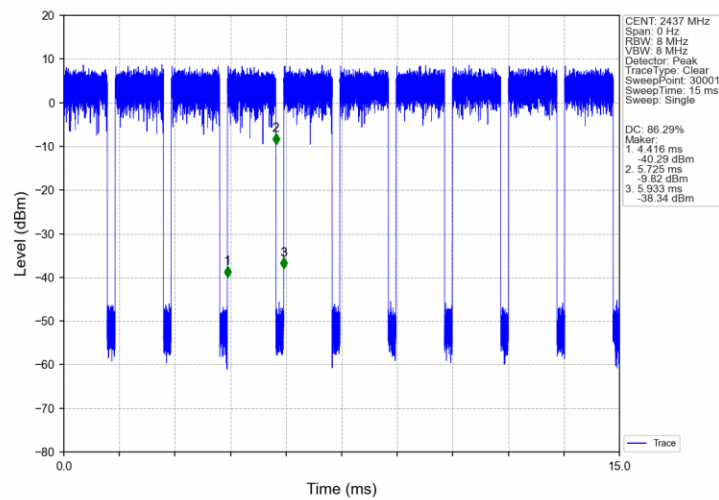
802.11g_HCH_2462MHz_Ant0 (SISO)_NTNV



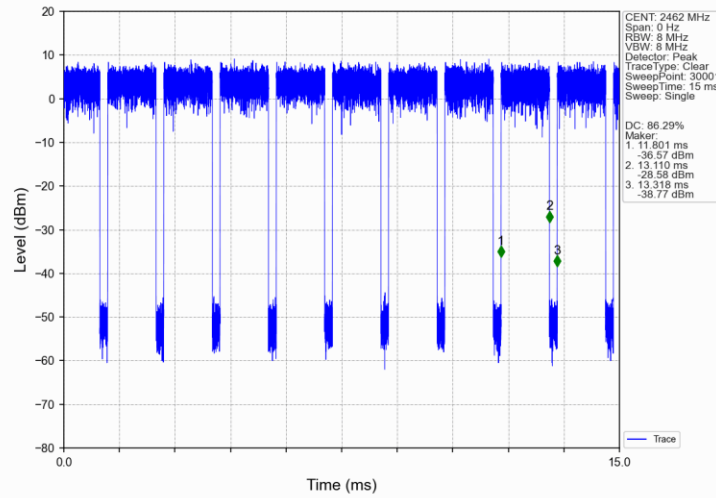
802.11n(HT20)_LCH_2412MHz_Ant0 (SISO)_NTNV



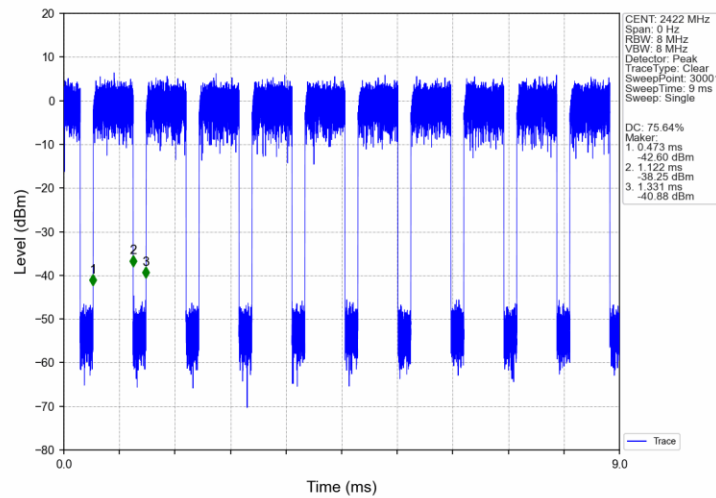
802.11n(HT20)_MCH_2437MHz_Ant0 (SISO)_NTNV



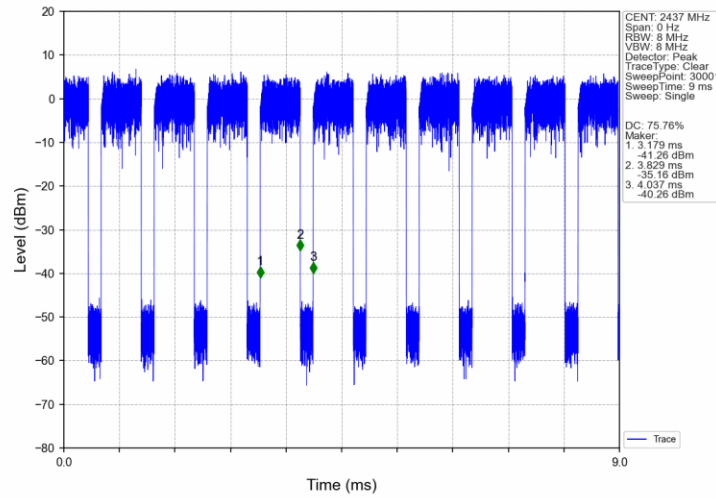
802.11n(HT20)_HCH_2462MHz_Ant0 (SISO)_NTNV



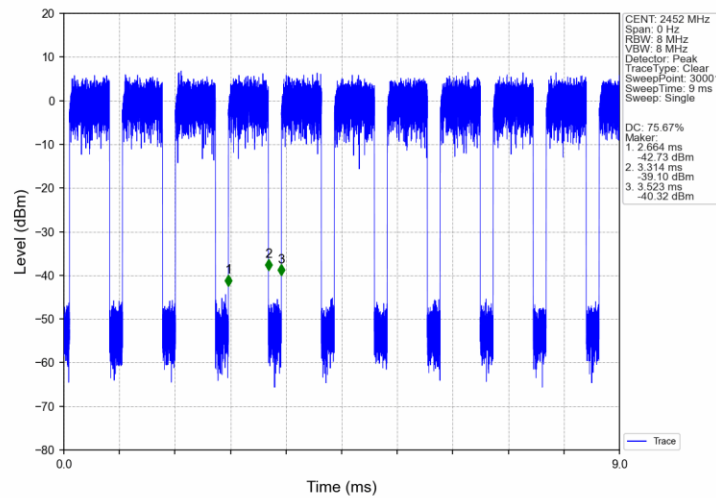
802.11n(HT40)_LCH_2422MHz_Ant0 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant0 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant0 (SISO)_NTNV



2. Bandwidth

2.1 Test Result

2.1.1 OBW

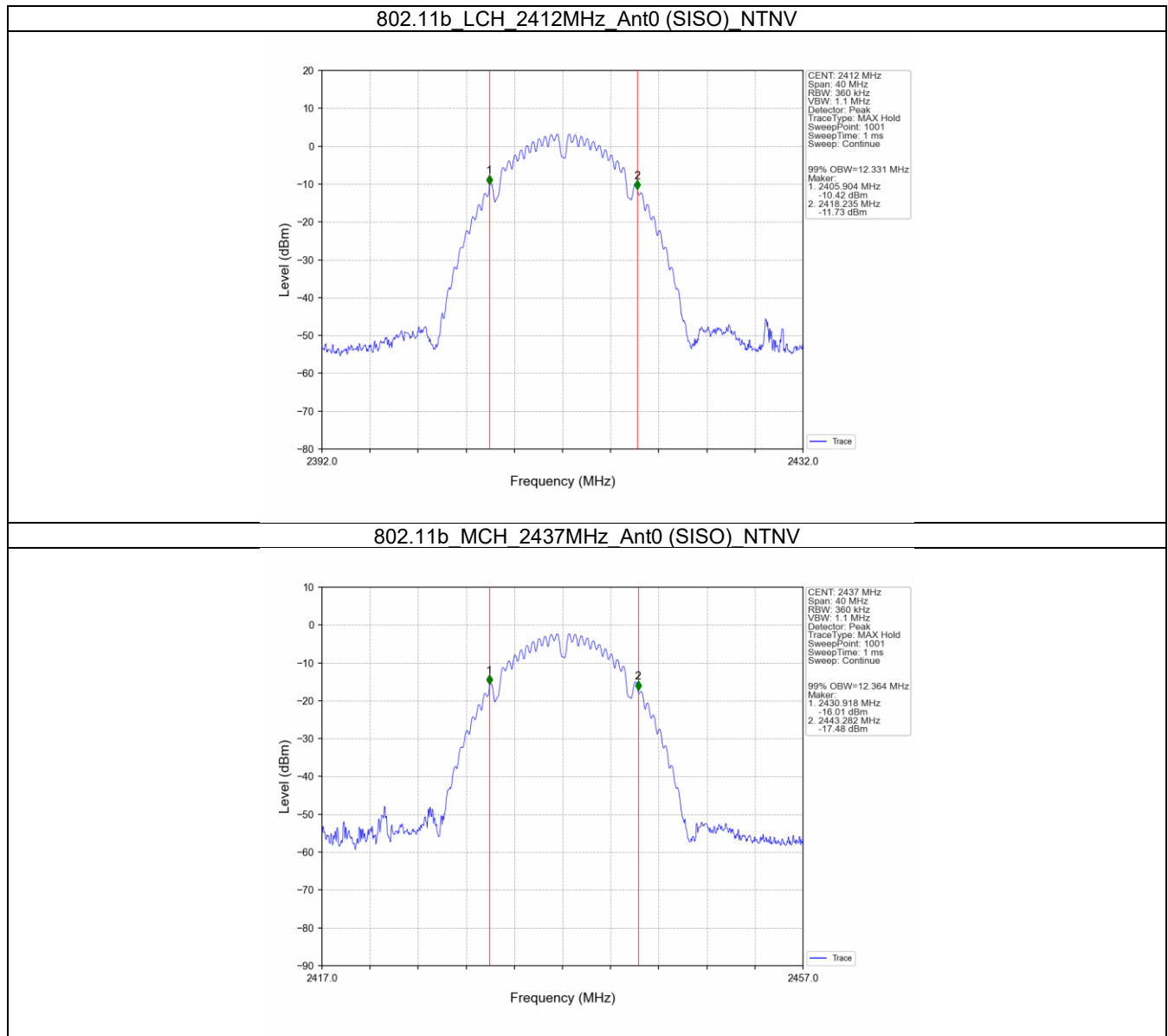
Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	0	12.331	/	Pass
		2437	0	12.364	/	Pass
		2462	0	12.414	/	Pass
802.11g	SISO	2412	0	17.377	/	Pass
		2437	0	17.382	/	Pass
		2462	0	17.469	/	Pass
802.11n (HT20)	SISO	2412	0	18.264	/	Pass
		2437	0	18.374	/	Pass
		2462	0	18.432	/	Pass
802.11n (HT40)	SISO	2422	0	36.582	/	Pass
		2437	0	36.476	/	Pass
		2452	0	36.513	/	Pass

2.1.2 6dB BW

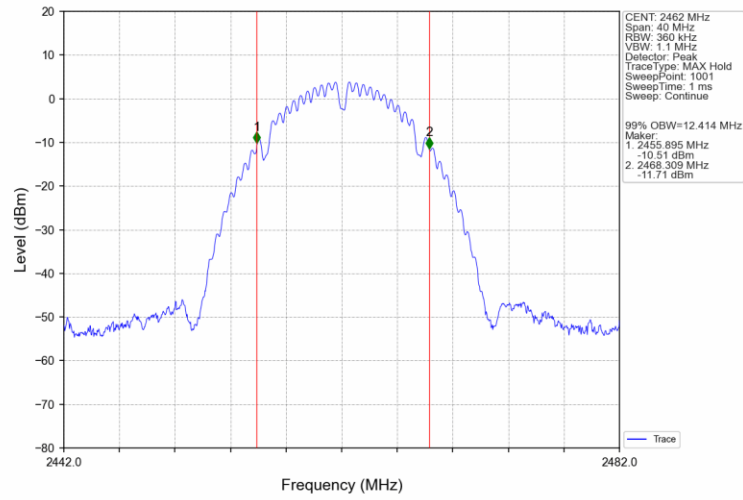
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11b	SISO	2412	0	8.175	≥ 0.5	Pass
		2437	0	8.185	≥ 0.5	Pass
		2462	0	8.187	≥ 0.5	Pass
802.11g	SISO	2412	0	16.107	≥ 0.5	Pass
		2437	0	15.919	≥ 0.5	Pass
		2462	0	15.987	≥ 0.5	Pass
802.11n (HT20)	SISO	2412	0	16.920	≥ 0.5	Pass
		2437	0	16.734	≥ 0.5	Pass
		2462	0	17.125	≥ 0.5	Pass
802.11n (HT40)	SISO	2422	0	35.439	≥ 0.5	Pass
		2437	0	35.306	≥ 0.5	Pass
		2452	0	35.332	≥ 0.5	Pass

2.2 Test Graph

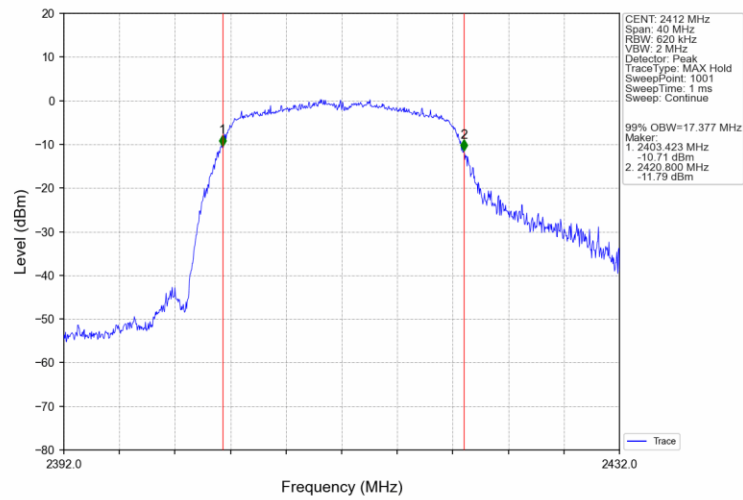
2.2.1 OBW



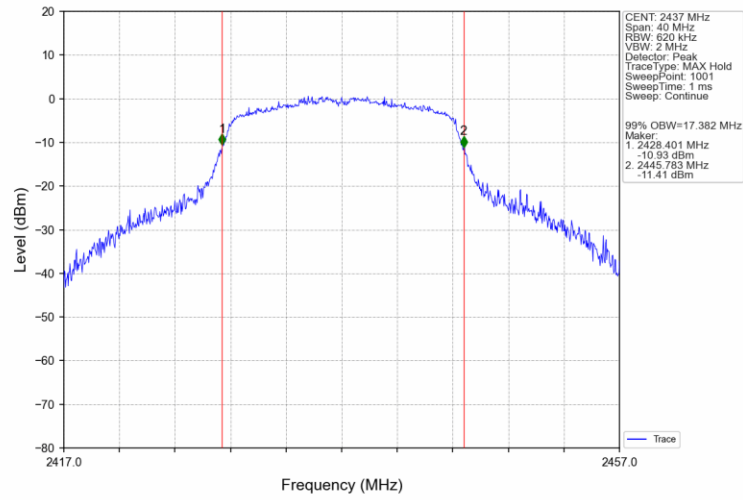
802.11b_HCH_2462MHz_Ant0 (SISO)_NTNV



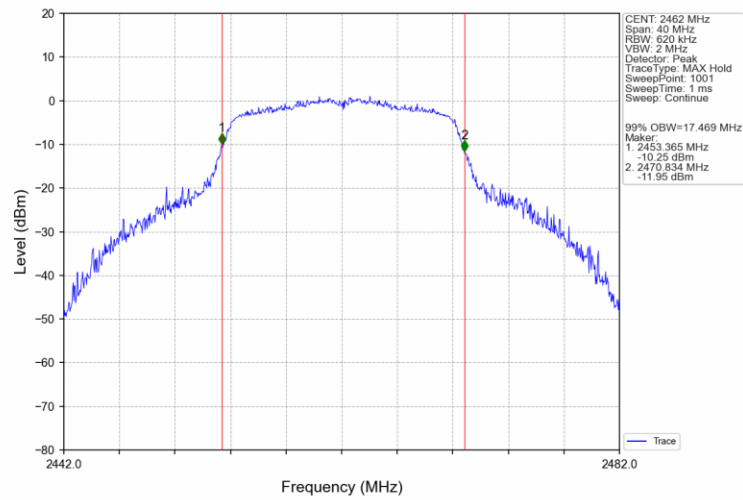
802.11g_LCH_2412MHz_Ant0 (SISO)_NTNV



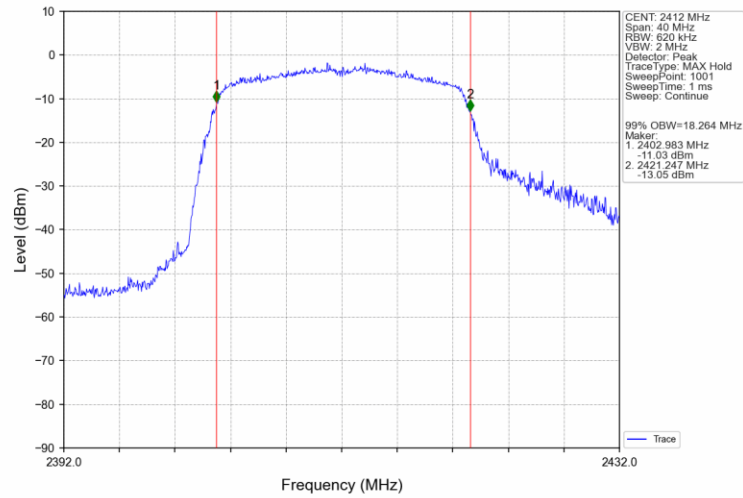
802.11g_MCH_2437MHz_Ant0 (SISO)_NTNV



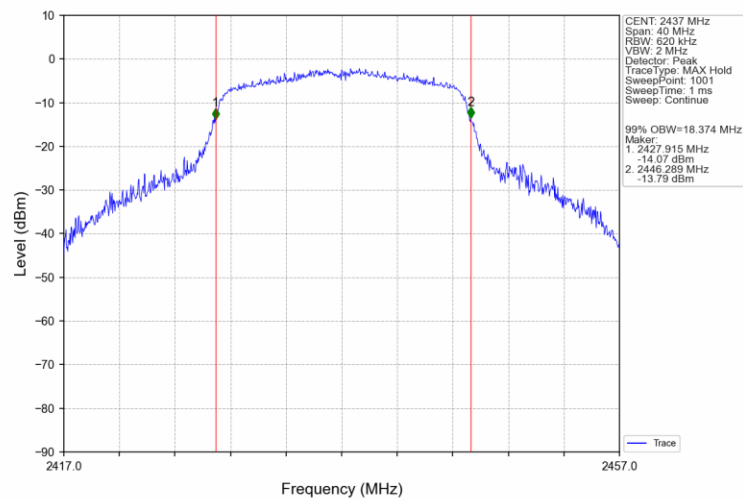
802.11g_HCH_2462MHz_Ant0 (SISO)_NTNV



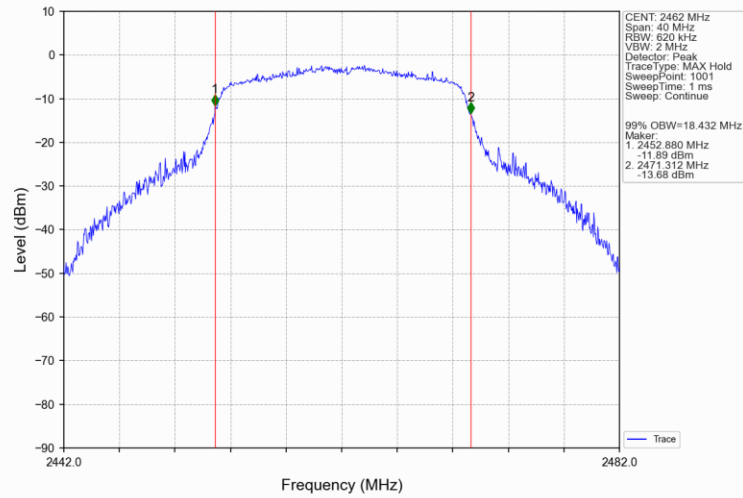
802.11n(HT20)_LCH_2412MHz_Ant0 (SISO)_NTNV



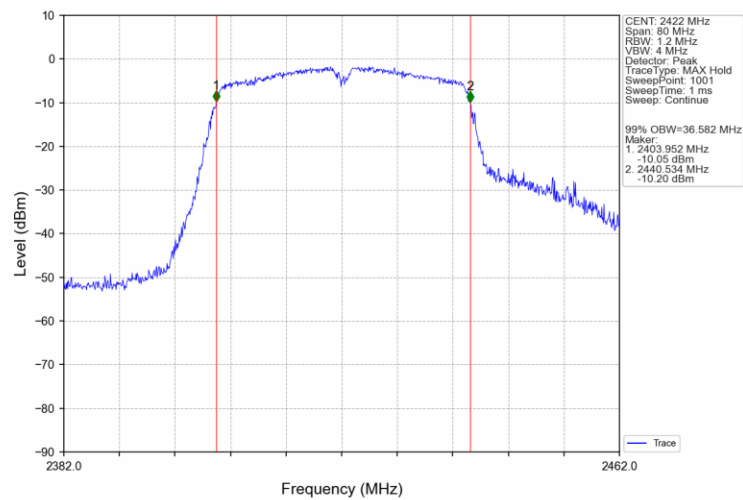
802.11n(HT20)_MCH_2437MHz_Ant0 (SISO)_NTNV



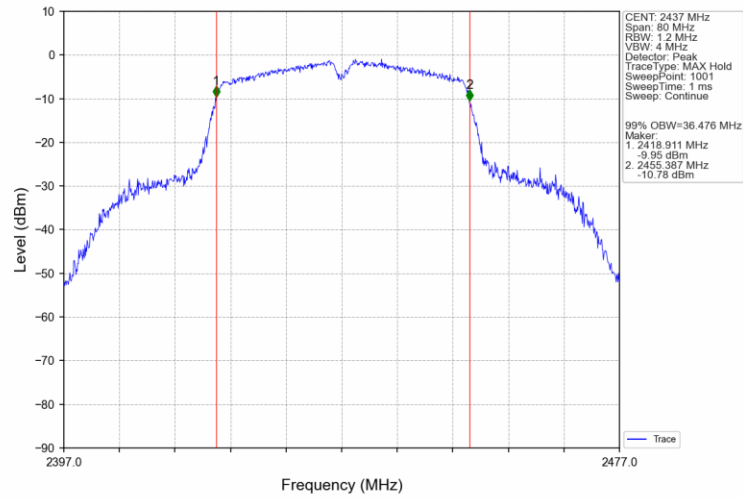
802.11n(HT20)_HCH_2462MHz_Ant0 (SISO)_NTNV



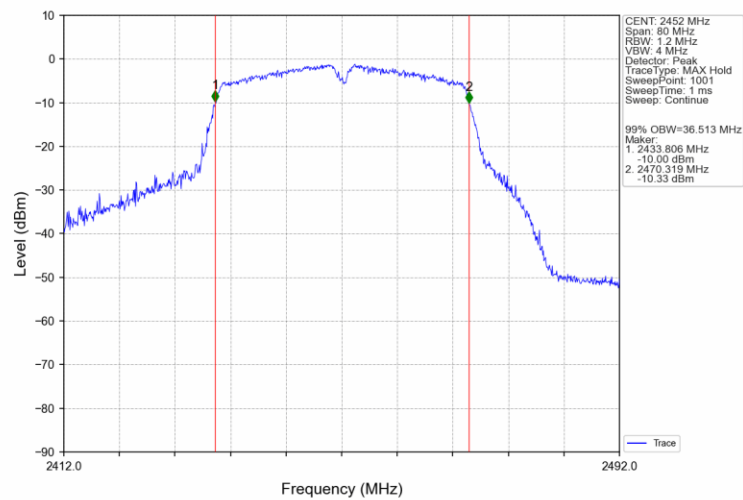
802.11n(HT40)_LCH_2422MHz_Ant0 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant0 (SISO)_NTNV

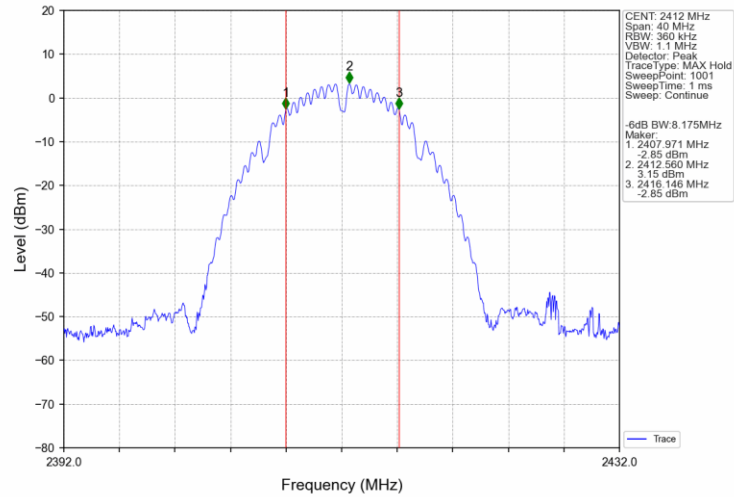


802.11n(HT40)_HCH_2452MHz_Ant0 (SISO)_NTNV

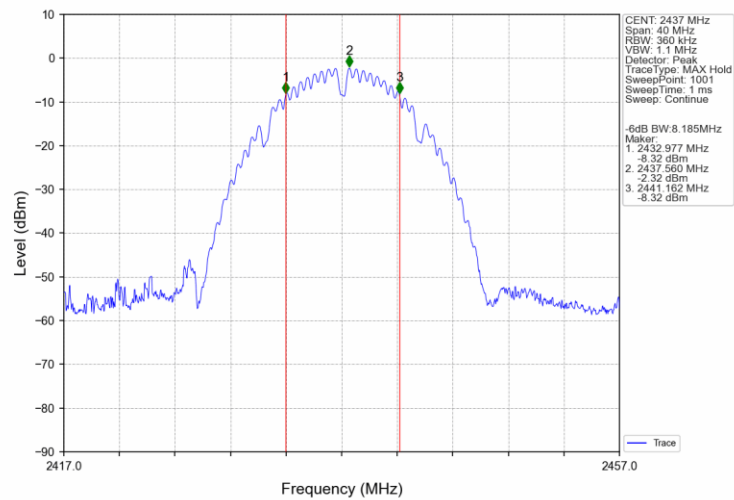


2.2.2 6dB BW

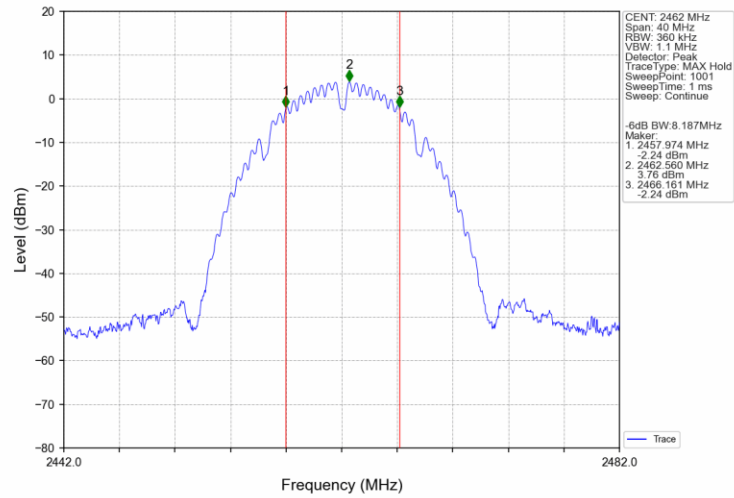
802.11b_LCH_2412MHz_Ant0 (SISO)_NTNV



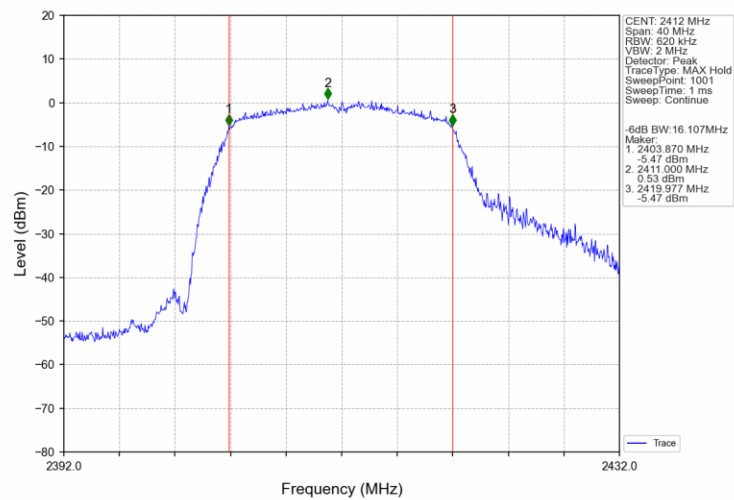
802.11b_MCH_2437MHz_Ant0 (SISO)_NTNV



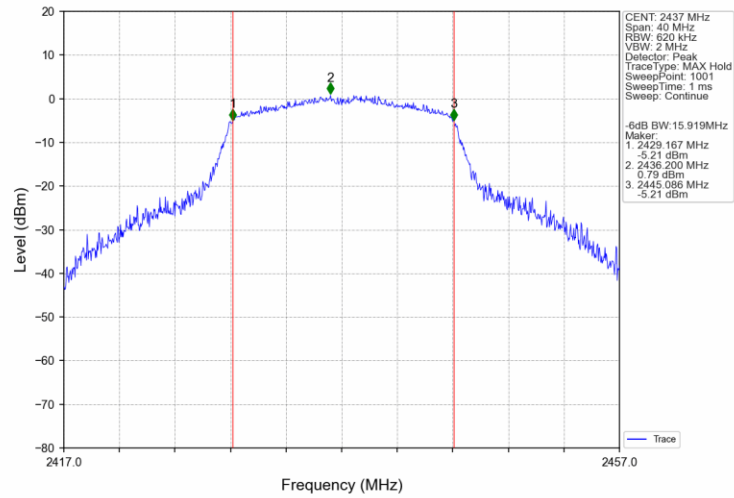
802.11b_HCH_2462MHz_Ant0 (SISO)_NTNV



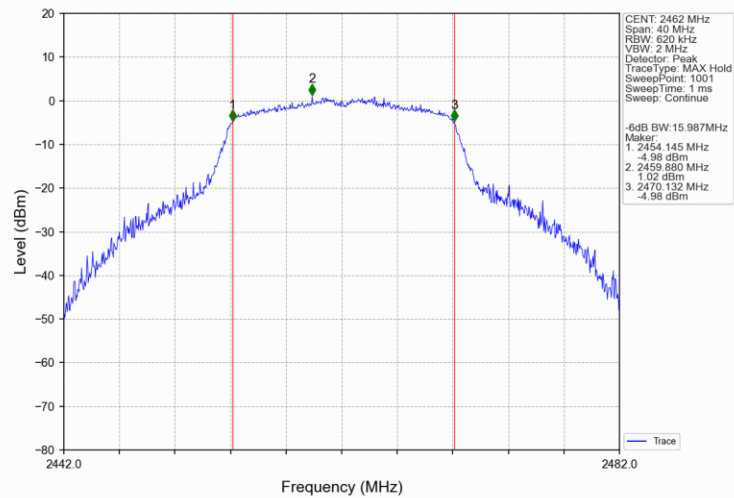
802.11g_LCH_2412MHz_Ant0 (SISO)_NTNV



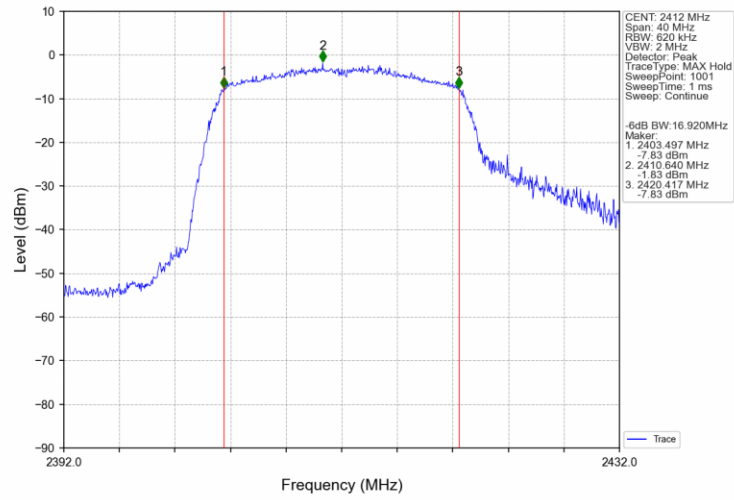
802.11g_MCH_2437MHz_Ant0 (SISO)_NTNV



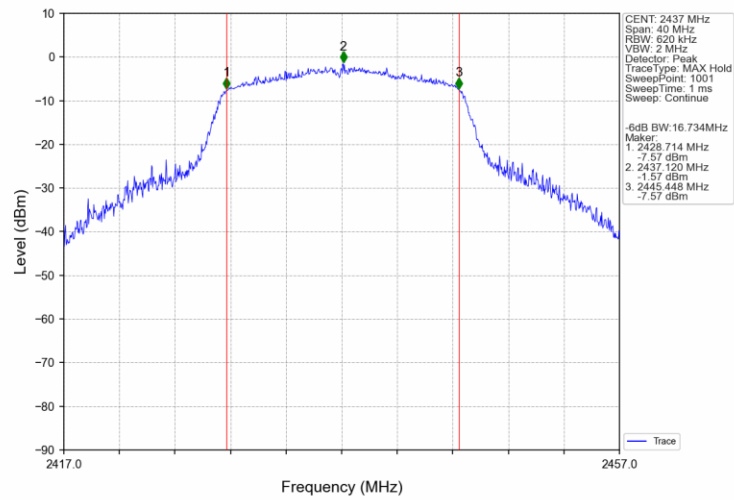
802.11g_HCH_2462MHz_Ant0 (SISO)_NTNV



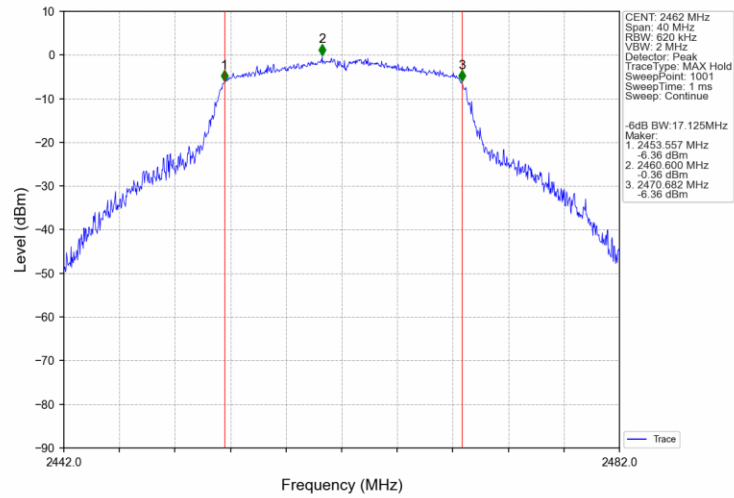
802.11n(HT20)_LCH_2412MHz_Ant0 (SISO)_NTNV



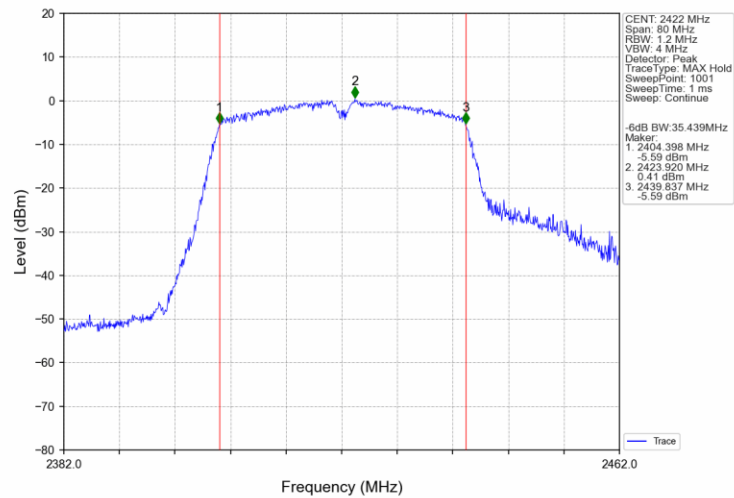
802.11n(HT20)_MCH_2437MHz_Ant0 (SISO)_NTNV



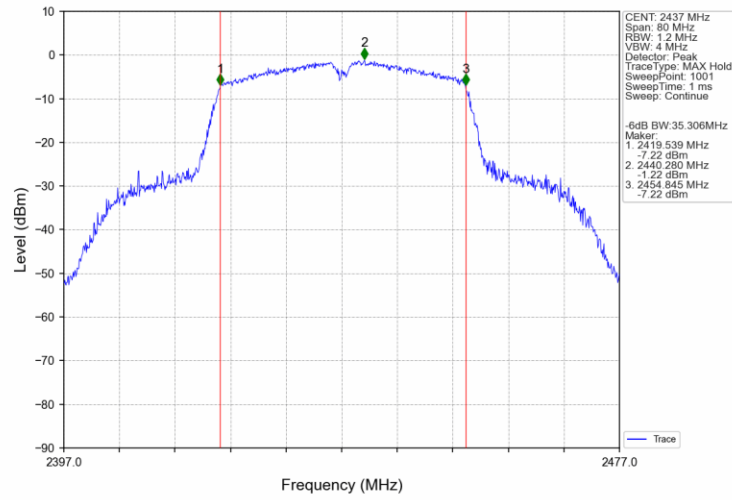
802.11n(HT20)_HCH_2462MHz_Ant0 (SISO)_NTNV



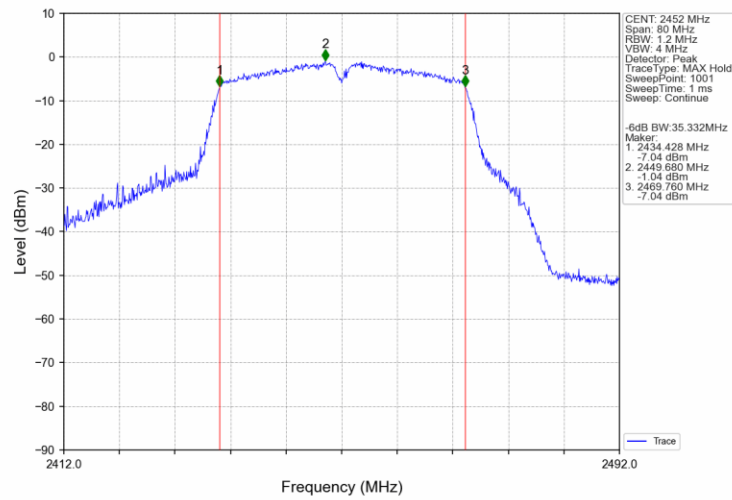
802.11n(HT40)_LCH_2422MHz_Ant0 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant0 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant0 (SISO)_NTNV



3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT0	Limit	
802.11b	SISO	2412	13.21	<=30	Pass
		2437	13.67	<=30	Pass
		2462	13.85	<=30	Pass
802.11g	SISO	2412	12.68	<=30	Pass
		2437	13.02	<=30	Pass
		2462	13.13	<=30	Pass
802.11n (HT20)	SISO	2412	10.23	<=30	Pass
		2437	10.31	<=30	Pass
		2462	12.44	<=30	Pass
802.11n (HT40)	SISO	2422	12.05	<=30	Pass
		2437	10.32	<=30	Pass
		2452	10.51	<=30	Pass
Note1: Antenna Gain: Ant0: 4.76dBi;					

4. Maximum Power Spectral Density

4.1 Test Result

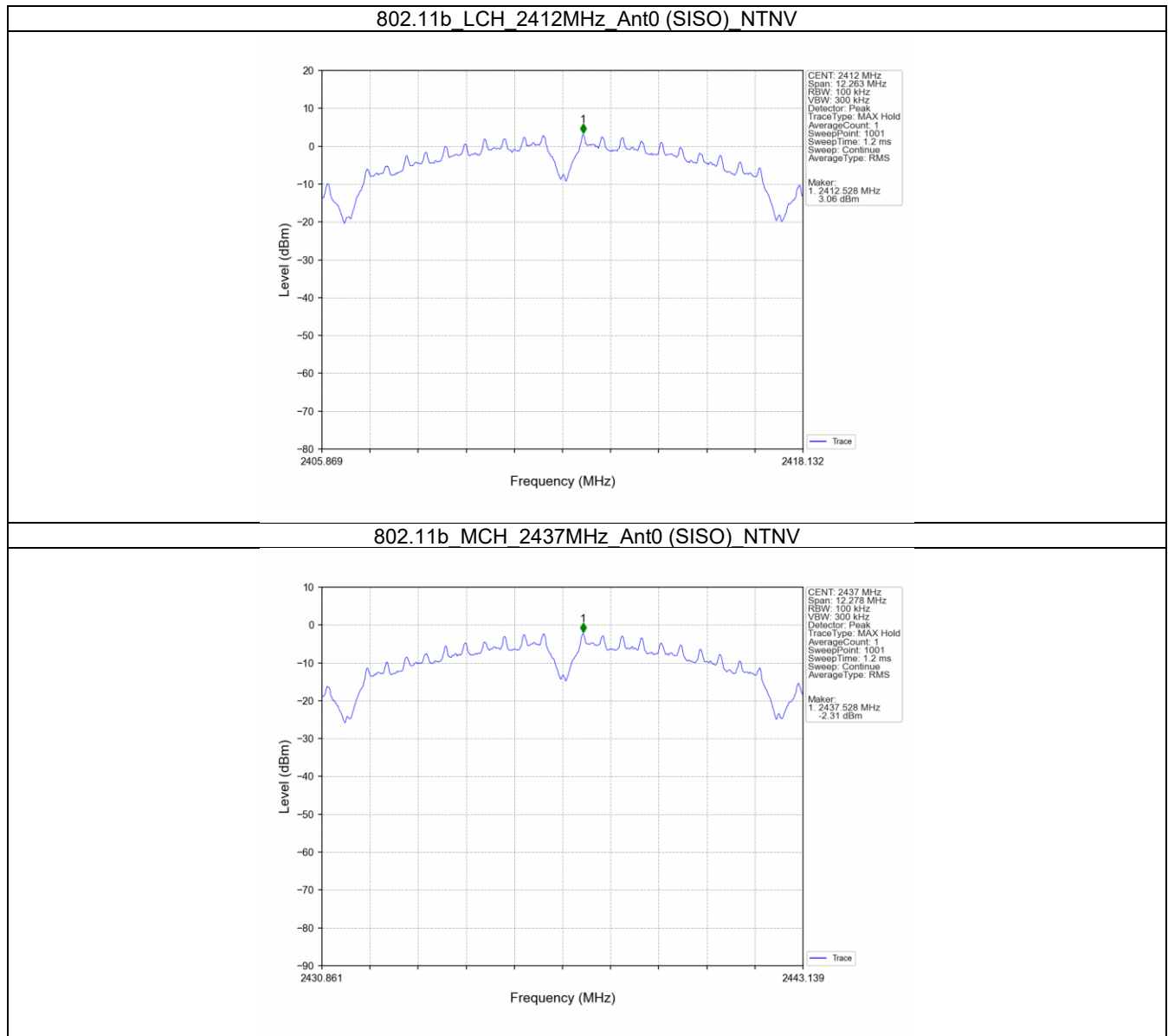
4.1.1 PSD

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm)		Verdict
			ANT0	Limit	
802.11b	SISO	2412	3.06	<=8	Pass
		2437	-2.31	<=8	Pass
		2462	3.31	<=8	Pass
802.11g	SISO	2412	-5.00	<=8	Pass
		2437	-4.23	<=8	Pass
		2462	-4.33	<=8	Pass
802.11n (HT20)	SISO	2412	-7.18	<=8	Pass
		2437	-6.78	<=8	Pass
		2462	-4.82	<=8	Pass
802.11n (HT40)	SISO	2422	-9.05	<=8	Pass
		2437	-10.52	<=8	Pass
		2452	-10.45	<=8	Pass

Note1: Antenna Gain: Ant0: 4.76dBi;

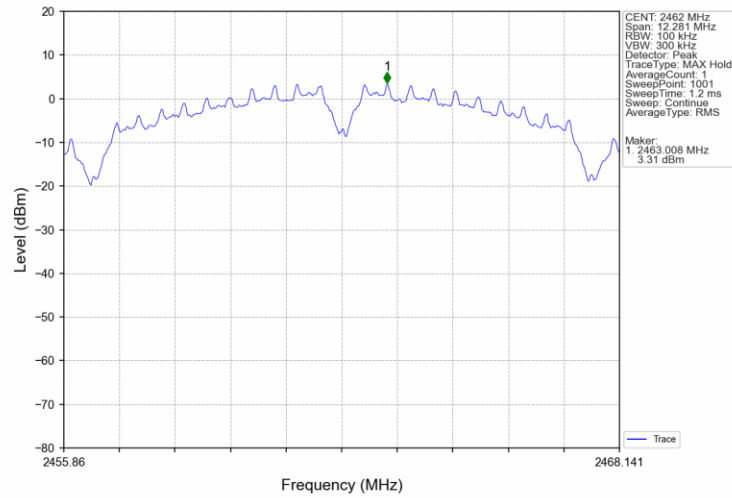
4.2 Test Graph

4.2.1 PSD

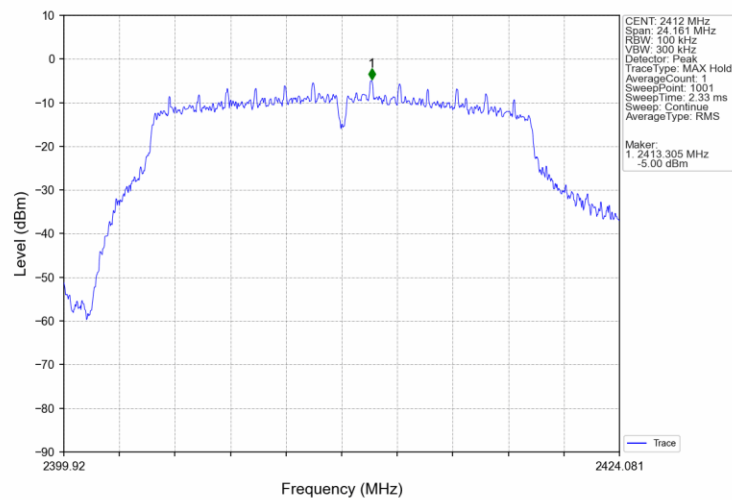




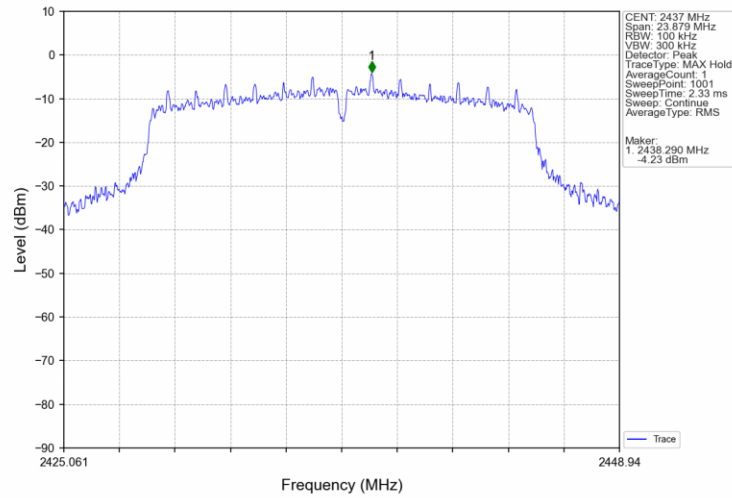
802.11b_HCH_2462MHz_Ant0 (SISO)_NTNV



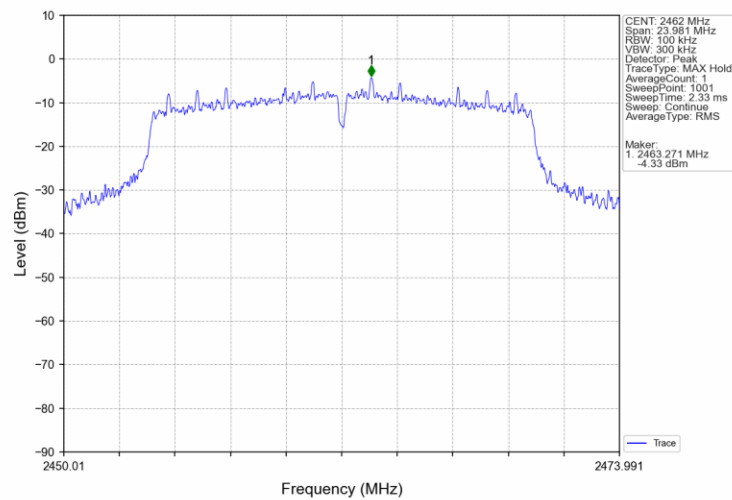
802.11g_LCH_2412MHz_Ant0 (SISO)_NTNV



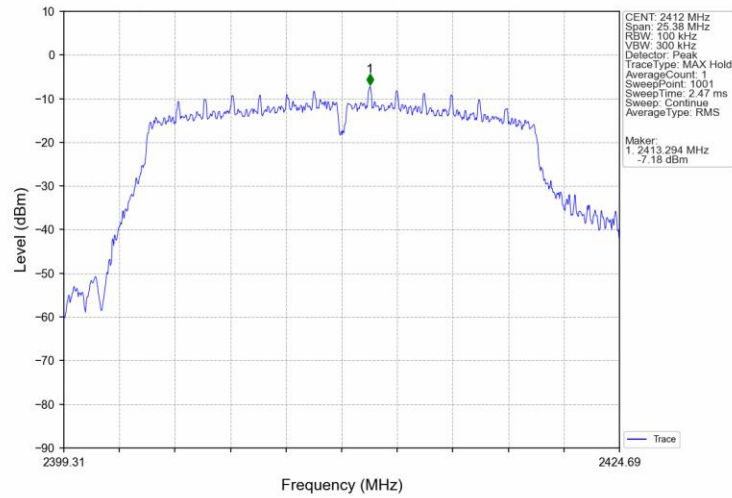
802.11g_MCH_2437MHz_Ant0 (SISO)_NTNV



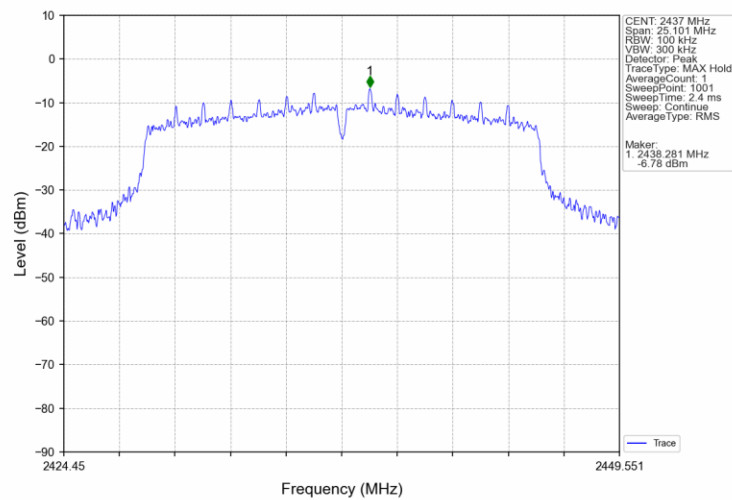
802.11g_HCH_2462MHz_Ant0 (SISO)_NTNV



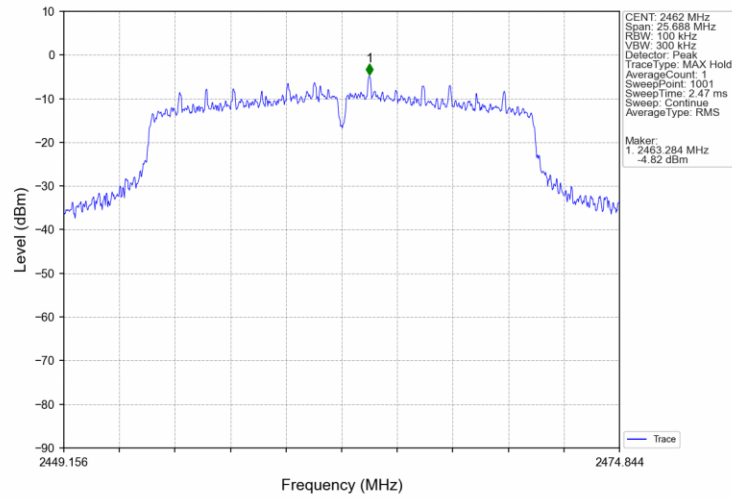
802.11n(HT20)_LCH_2412MHz_Ant0 (SISO)_NTNV



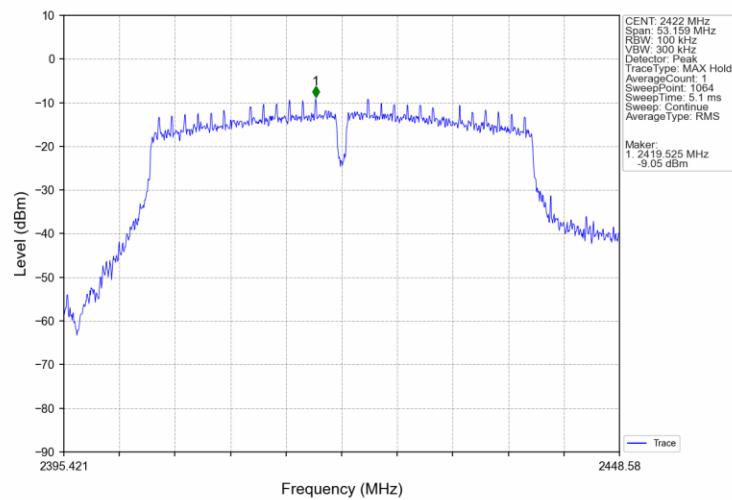
802.11n(HT20)_MCH_2437MHz_Ant0 (SISO)_NTNV



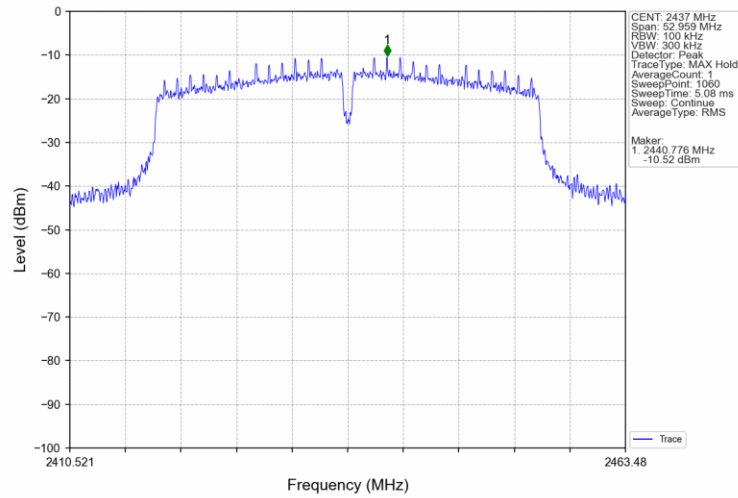
802.11n(HT20)_HCH_2462MHz_Ant0 (SISO)_NTNV



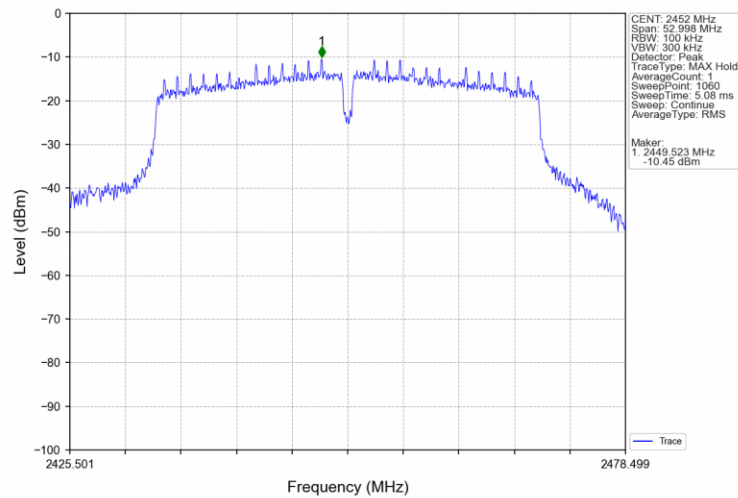
802.11n(HT40)_LCH_2422MHz_Ant0 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant0 (SISO)_NTNV



802.11n(HT40)_HCH_2452MHz_Ant0 (SISO)_NTNV



5. Unwanted Emissions In Non-restricted Frequency Bands

5.1 Test Result

5.1.1 Ref

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
802.11b	SISO	2412	0	2.99
		2437	0	-2.67
		2462	0	3.75
802.11g	SISO	2412	0	-5.27
		2437	0	-4.23
		2462	0	-4.44
802.11n (HT20)	SISO	2412	0	-7.23
		2437	0	-7.29
		2462	0	-6.01
802.11n (HT40)	SISO	2422	0	-9.13
		2437	0	-10.51
		2452	0	-10.50

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

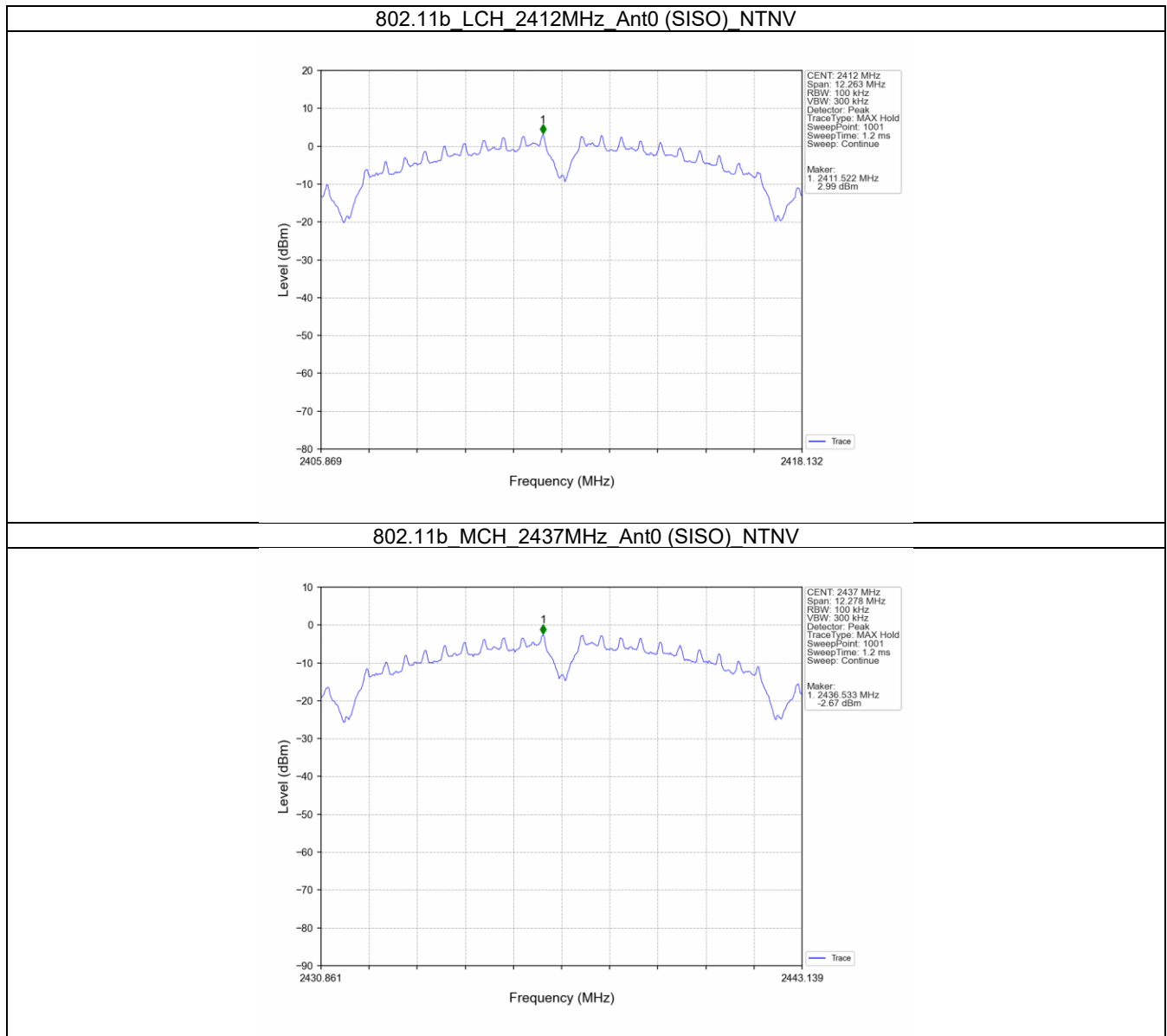
5.1.2 CSE

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
802.11b	SISO	2412	0	2.99	-17.01	Pass
		2437	0	-2.67	-22.67	Pass
		2462	0	3.75	-16.25	Pass
802.11g	SISO	2412	0	-5.27	-25.27	Pass
		2437	0	-4.23	-24.23	Pass
		2462	0	-4.44	-24.44	Pass
802.11n (HT20)	SISO	2412	0	-7.23	-27.23	Pass
		2437	0	-7.29	-27.29	Pass
		2462	0	-6.01	-26.01	Pass
802.11n (HT40)	SISO	2422	0	-9.13	-29.13	Pass
		2437	0	-10.51	-30.51	Pass
		2452	0	-10.50	-30.50	Pass

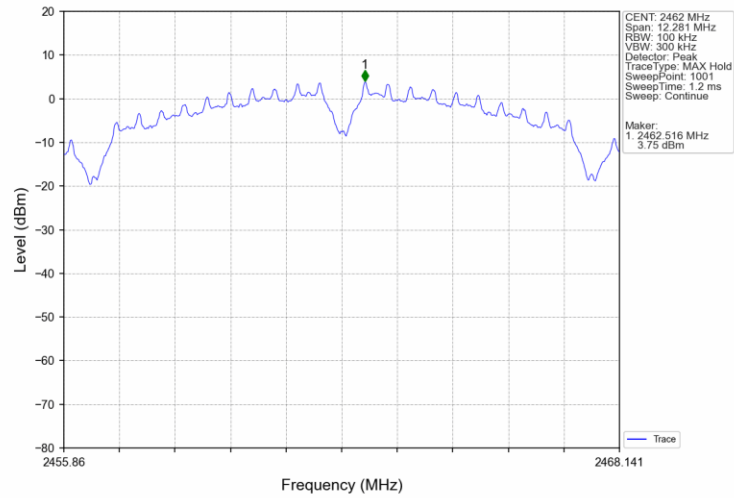
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2020, the channel contains the maximum PSD level was used to establish the reference level.

5.2 Test Graph

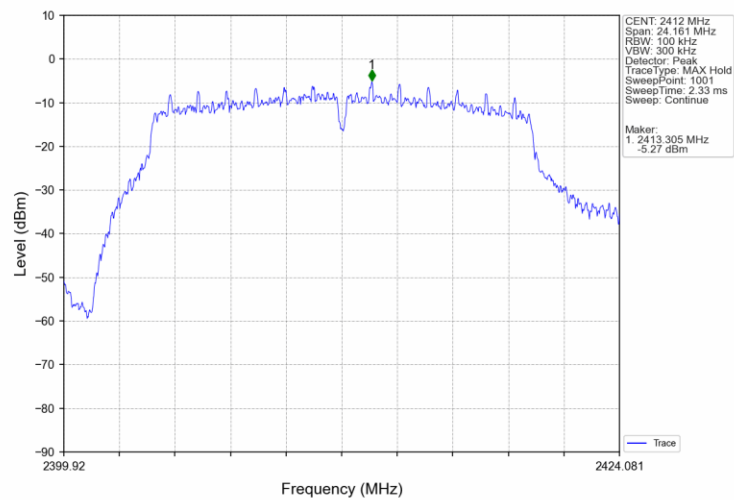
5.2.1 Ref



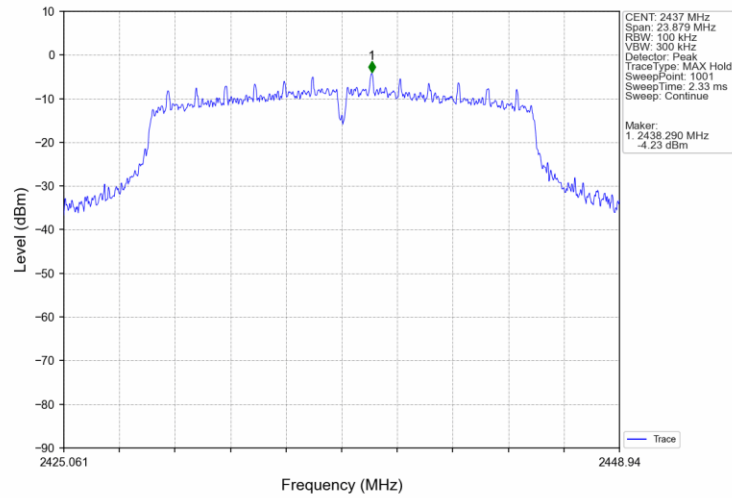
802.11b_HCH_2462MHz_Ant0 (SISO)_NTNV



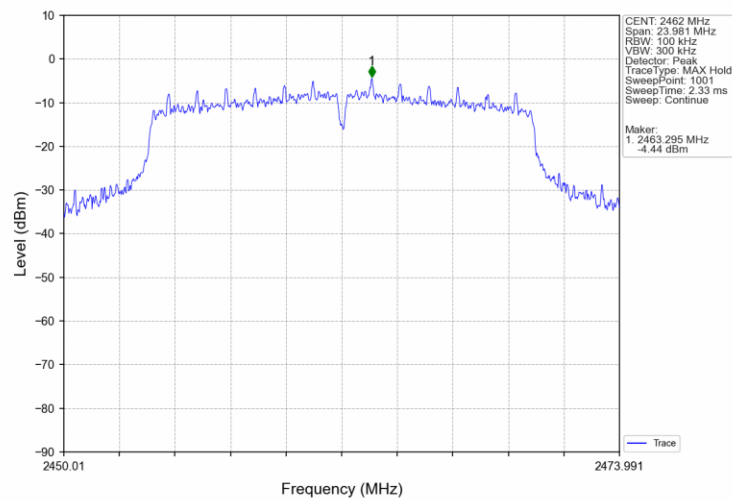
802.11g_LCH_2412MHz_Ant0 (SISO)_NTNV



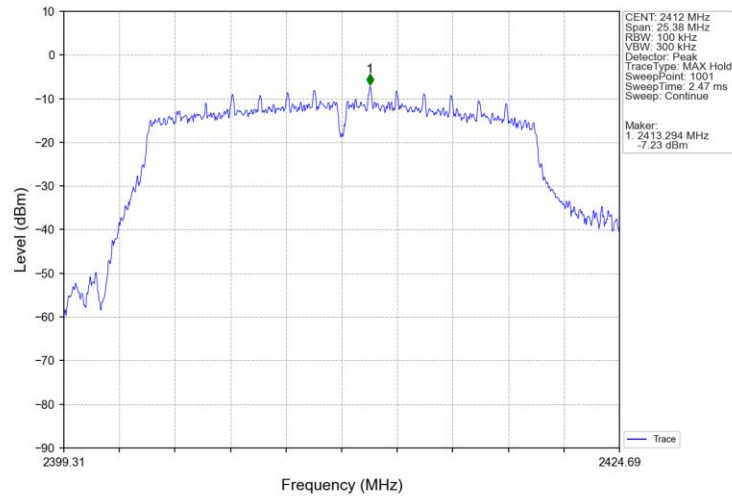
802.11g_MCH_2437MHz_Ant0 (SISO)_NTNV



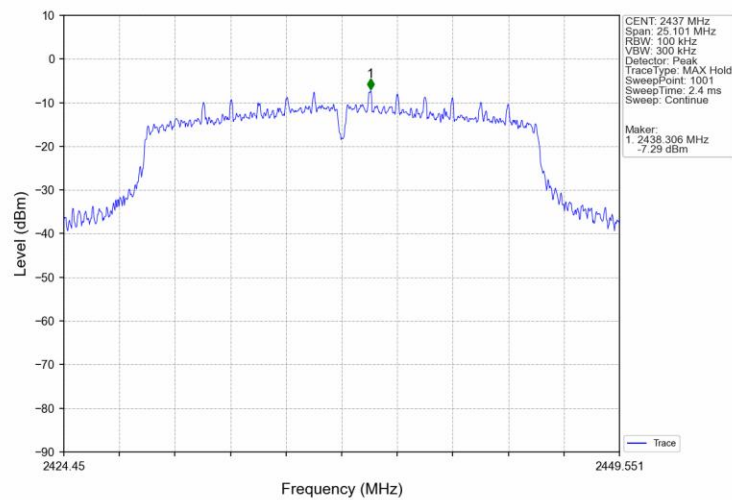
802.11g_HCH_2462MHz_Ant0 (SISO)_NTNV



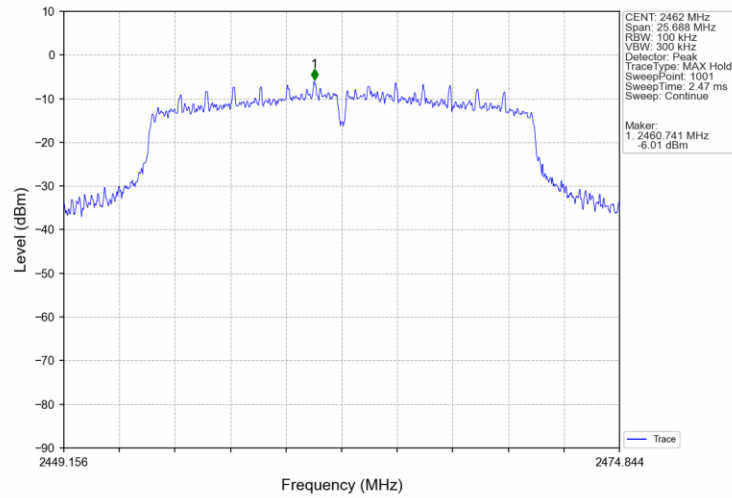
802.11n(HT20)_LCH_2412MHz_Ant0 (SISO)_NTNV



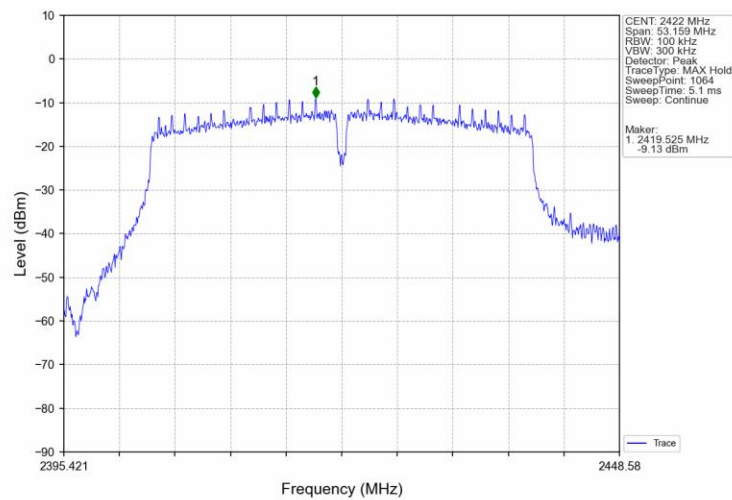
802.11n(HT20)_MCH_2437MHz_Ant0 (SISO)_NTNV



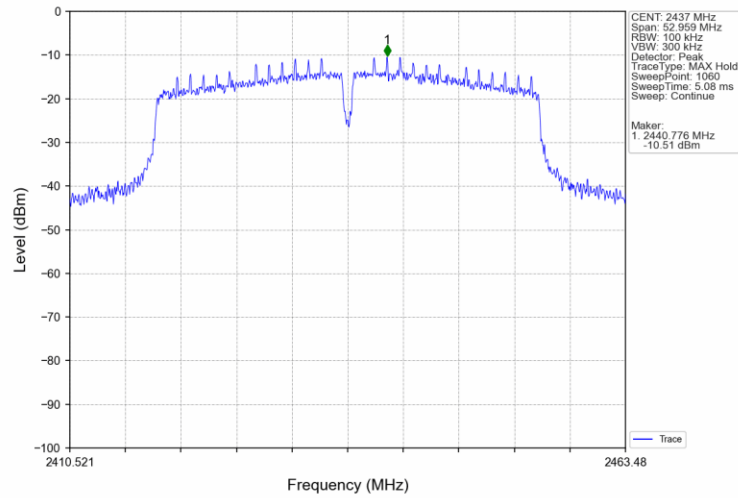
802.11n(HT20)_HCH_2462MHz_Ant0 (SISO)_NTNV



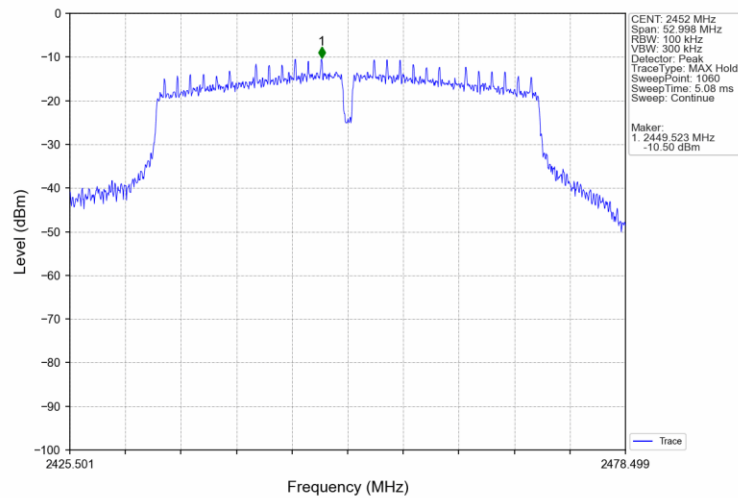
802.11n(HT40)_LCH_2422MHz_Ant0 (SISO)_NTNV



802.11n(HT40)_MCH_2437MHz_Ant0 (SISO)_NTNV

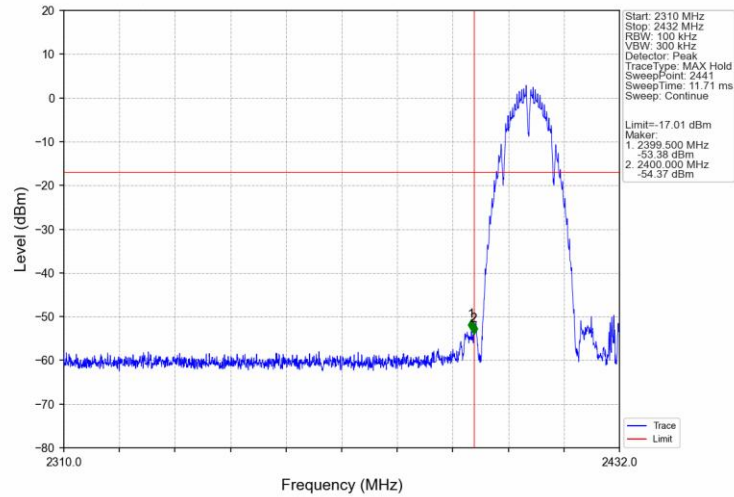


802.11n(HT40)_HCH_2452MHz_Ant0 (SISO)_NTNV

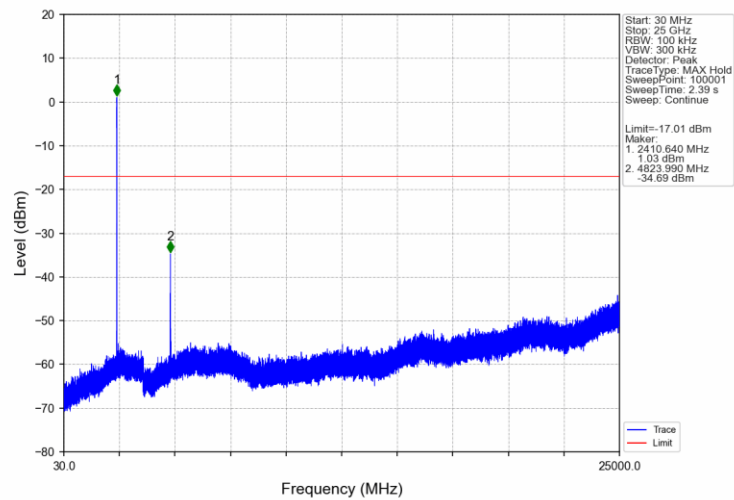


5.2.2 CSE

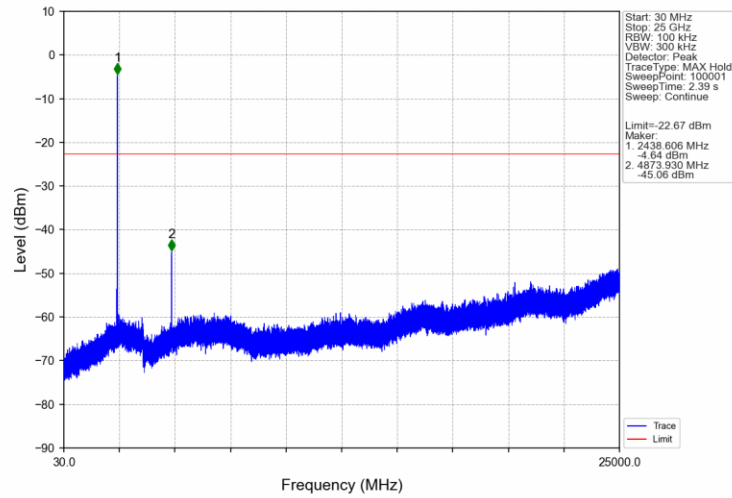
802.11b_LCH_2412MHz_Ant0 (SISO)_NTNV



802.11b_LCH_2412MHz_Ant0 (SISO)_NTNV



802.11b_MCH_2437MHz_Ant0 (SISO)_NTNV



802.11b_HCH_2462MHz_Ant0 (SISO)_NTNV

